



# Public Service Commission

## State of North Dakota

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February 12, 2013

Jay M. Volk, Ph. D  
Environmental Manager  
BNI Coal, Ltd.  
2360 35<sup>th</sup> Avenue SW  
Center, ND 58530-9499

Dear Dr. Volk:

The Reclamation Division has completed its technical review of BNI Coal, Ltd.'s application for Surface Coal Mining Permit No. BNCR-1101 for the Center Mine in Oliver County, North Dakota. As of today, February 12, 2013, one day of the Commission's 120 day review period remains. As allowed by NDAC 69-05.2-05-01(4)(b), the review period will be extended an additional 120 days following receipt of BNI Coal's response to this letter because of the large number of review deficiencies and changes that will be required to the permit application. Please also note that copies of the updated permit application in response to this letter will be provided to some advisory committee members and federal agencies for additional review. The following items must be satisfactorily addressed before the Reclamation Division will recommend Commission action on the permit application.

### **General**

This permit application contains many conflicting statements and lacks the required detail in many areas. In its current condition, staff believes some of the required written findings cannot be made as required for Commission approval. BNI staff needs to make a concerted effort to improve the overall quality of the document. Also, in some instances tables are called figures, figures are called appendices or plates, appendices are called tables and maps are usually, but not always, referred to as plates. There is no consistent manner in which similar documents are referred. This was very confusing for staff and made it more difficult to conduct the technical review. It was noted a section may be named differently in the Table of Contents than within the section itself. Likewise, there is no consistent use of colors or patterns and labeling on various maps. For example, various classes of wetlands are given a different color on each map. This makes it difficult to determine what the various color codes represent. (All Staff)

## **Section 1. LEGAL AND FINANCIAL INFORMATION**

### **Section 1.7 Business Entity Information**

1. Please revise Section 1.7 as indicated by underscore as follows to state that BNI and Allete have an interest in the Center Mine: "... *no one who previously or presently owns or controls BNI or Allete had or has any interest in a surface coal mine other than the Center Mine.*" (WTG)
2. The second sentence of the first paragraph of Section 1.7, states that "To the best of our knowledge, no one who previously or presently owns or controls BNI or Allete had or has any interest in a surface coal mine. NDCC 38-14.1-14(1)(h) requires more than "the best of the applicant's knowledge" with regard to this matter. The phrase "To the best of our knowledge" must be deleted and BNI needs to do the necessary verification to ensure the ownership and control information is correct. (GAW)
3. The third sentence of the first paragraph of Section 1.7 states that "NDAC 69-05.2-06 (1)(f) does not apply." Please include documentation showing a variance from this regulation or revise to clarify how this regulation "does not apply". (GAW)
4. Since an officer of BNI did not sign the application form certifying compliance with Items 1 through 4 on the application form, please provide the appropriate documentation showing that the person signing the application form is authorized by BNI to do so pursuant to the requirements on NDAC 69-05.2-05-04. (GAW)

### **Section 1.7.2 Controlling Officers of BNI and Allete**

5. Please rearrange the text for the positions held by Alan R. Hodnik for Board of Directors of BNI Coal, Ltd. to accurately represent current and former positions and their effective dates. (WTG)

### **Section 1.9 Surface and Coal Ownership**

6. The first sentence of Section 1.9 states that "*As stated in NDCC 38-14.1-18 (2), BNI has conducted a search of the records in the Office of the Register of Deeds in Oliver County to obtain this information.*" Please replace "As stated in" with "As required by". NDAC 69-05.2-05-02 (GAW)
7. The last sentence under Section 1.9 states that "*If a corporation did not respond to our letter, there is little we can do about it*". This language is unacceptable. NDCC 38-14.1-14(1)(c)(6) requires information containing the names and addresses of the principals, officers and resident agent be included in the application for any business entities with interest in lands in or contiguous to the proposed permit area. If BNI is

unable to obtain this information from the respective company, it can be obtained by doing a records search with the North Dakota Secretary of State. (GAW)

**Plate 1.9-1 Surface and Coal Ownership**

8. As required by NDAC 69.05.2-08-02(1)(a), and as noted in similar deficiencies for Appendix 1.9-1 Ownership Information (within Permit Boundary) and Appendix 1-2 Certified Copies of Leases and Assignment Documents, please resolve the undetermined coal ownership that totals 200 percent interest in the NE $\frac{1}{4}$  of Section 20, T141N, R83W on Plate 1.9-1. (WTG)
9. Please update the coal ownership interests in the S $\frac{1}{2}$ S $\frac{1}{2}$  of Section 13, T141N, R84W, on Plate 1.9-1 to be consistent with what appears to be the most recent coal ownership interests update for the parcel (Anita and Dorothy Erhardt) on page 71 of Appendix 1.9-1. (WTG)

**Appendix 1.9-1 Ownership Information (within Permit Boundary)**

10. The lease for Barbara Hager coal ownership (1.12 percent) in the NW $\frac{1}{4}$  of Section 8, the NW $\frac{1}{4}$  of Section 17, and the N $\frac{1}{2}$ SE $\frac{1}{4}$  of Section 18 of T141N, R83W, appears to be incorrectly labeled as Lease No. 3035. It appears that it should be correctly labeled as Lease No. 2036. Please review and correct as necessary. (WTG)
11. The lease for Jean Clift coal ownership (0.89 percent) in the NW $\frac{1}{4}$  of Section 8, the NW $\frac{1}{4}$  of Section 17, and the N $\frac{1}{2}$ SE $\frac{1}{4}$  of Section 18 of T141N, R83W, appears to be incorrectly labeled as Lease No. 2037. It appears that it should be correctly labeled as Lease No. 3039. Please review and correct as necessary. (WTG)
12. As required by NDCC 38-14.1-14(1)(c)(2), and as noted in similar deficiencies for Plate 1.9-1 Surface and Coal Ownership and Appendix 1-2 Certified Copies of Leases and Assignment Documents, please resolve the undetermined coal ownership that totals 200 percent interest for the NE $\frac{1}{4}$  of Section 20, T141N, R83W, on page 43 of Appendix 1.9-1 and provide addresses for all of the coal owners of record. (WTG)

**Section 1.10 Areas Unsuitable for Mining**

13. In the first paragraph of Section 1.10, please add a statement that lands in the proposed permit area are not within the boundaries of the national system of trails or national wilderness preservation system as required by NDCC 38-14.1-07. (GAW)
14. In the last paragraph of Section 1.10, please indicate which map or plate in the permit shows the occupied dwellings, public buildings, schools, cemeteries, and other areas unsuitable for mining. NDAC 69-05.2-05-02. (GAW)

15. Please revise the third paragraph of Section 1.10 to add a reference to the section of permit with information regarding County roads and right-of-ways that have actually been closed or relocated by the road authority. This paragraph should also reference the section with the public notice regarding these roads and right-of-way closures and relocations and the documentation of the road authority's action. NDAC 69-05.2-05-02. (GAW)
16. The last sentence of Section 1.10 states that BNI is not proposing coal mining within 500 feet of any farm building without written approval from the owner, or within 500 feet of any occupied dwelling. However, the Pit Layout and Facilities Map, Plate 4.1-1, shows pits passing over farmsteads located in the N1/2 of Section 24 and W1/2 of Section 19 that are labeled as areas with 500 foot setbacks. Farm buildings located in the northeast corner of Section 20 have pits passing over them and no setback is shown on the map. Please review and specifically state which farm buildings and dwellings BNI has obtained written approval to operate within 500 feet of or actually mine through. The setback areas on the Pit Layout and Facilities Map appear to be centered over the middle of the farmstead rather than outlying farm buildings. Please update the Pit Layout and Facilities Map and narrative with specificity and clarity. NDAC 69-05.2-04-01.1(4). (GAW)
17. As noted in a related deficiency for Plate 4.1-1 Pit Layout and Facilities Map, add to the narrative if necessary to explain the area depicted as unsuitable for mining within 100 feet of the outside right-of-way line of the public road bordering Sections 13 and 24 of T141N, R84W; Sections 18 and 19 of T141N, R83W; and Sections 19 and 20 of T141N, R84W, on Plate 4.1-1. Please explain when BNI will seek approval from the appropriate public road authority to close or relocate the public road to accommodate the 2027 pit sequence that will apparently intercept the area depicted as unsuitable for mining within 100 feet of the outside right-of-way line of the public road. (WTG)

### **Section 1.12 Other Licenses and Permits**

18. The current address for the ND Department of Health, Environmental Health Section is: 918 E. Divide Ave., Bismarck ND 58501-1947. Please update as appropriate. (RLK)
19. Please update this Section to clarify if each of the existing permits on file for existing permit areas needs to be modified, or are actually applicable to Permit BNCR-1101. NDAC 69-05.2-06-04 requires a list of all other licenses and permits that will be needed to conduct mining activities but it appears only permits and licenses that have actually been obtained are included. Please revise to include a list of all licenses and permits that will be needed. For example, clarify if wetland drainage permits from the State Engineer or 404 Permit from the Corps of Engineers will be needed. [Appendix 1-6 is a letter from Oliver Co. Water Resource District that indicates the State Engineer has entered into MOU with PSC that eliminates Permit to Drain applications for each wetland.] (GAW)

### **Section 1.14 Proof of Federal Reclamation Fee Insurance**

20. The only language included in Section 1.14 is "Can be found in Appendix 1.14-1". Please explain what the information is being provided in this section and list the regulations requiring the information. NDAC 69-05.2-05-02. (GAW)

### **Section 1.15 List of Consultants**

21. Please revise Section 1.5, List of Consultants, to clarify which information in the permit was collected, evaluated and prepared by each of the consultants listed, and the listed official's position with the company. Also, please place Dennis Foss's name under the list of contacts for D&L Enterprises to be consistent with how the firms/contact information was presented. (GAW/BEB)

### **Appendix 1-2 Certified Copies of Leases and Assignment Documents**

22. As required by NDAC 69-05.2-06-03(1), a certified copy of the coal lease with Great Northern Properties for Section 7, T141N, R83W, should be included in the application prior to permit approval. The approved completeness review document submitted for technical review only includes a memorandum giving notice of a coal mining lease for this tract. Please note that BNI Coal may redact financial terms of the lease. (WTG/DKM)
23. As required by NDCC 38-18-06(3) and NDAC 69-05.2-06-03(1), please include certified copies in the permit of the surface easement and coal lease for the E $\frac{1}{2}$  of Section 16, T141N, R83W; the coal lease for the W $\frac{1}{2}$  of Section 16, T141N, R83W; the coal lease for the 50 percent coal ownership in the SW $\frac{1}{4}$  of Section 17, T141N, R83W; and the coal lease for the 50 percent coal ownership in the NE $\frac{1}{4}$ NW $\frac{1}{4}$ , and Lots 1 and 2 of Section 18, T141N, R83W, with the State of North Dakota. Although the surface easement and coal leases in the approved completeness review document includes a signed statement from the Land Commissioner that the documents are true and correct duplications of the original documents, permit applications typically contain copies of lease and easement documents that have been recorded at the county Register of Deeds (Recorders) office. By providing copies of the recorded documents, we have greater certainty that the permit applicant actually has the legal right to mine the tracts in the permit area. Until lease and easement documents obtained by BNI Coal, Ltd. are recorded, it is possible that another entity could also obtain a mining lease for the same tract and have it recorded with the Register of Deeds. In that case, the other entity would have mining rights ahead of BNI Coal, Ltd. Therefore, we recommend that certified copies of lease and easement documents recorded at the Oliver County Register of Deeds, including the Register of Deeds certification of recording, be included in the application prior to permit approval. (WTG/DKM)

24. As required by NDAC 69-05.2-06-03(1), please provide either a certified copy of a surface lease executed by Kasper and Donna Kraft for the SW $\frac{1}{4}$  of Section 16, T141N, R83W, or court order issued pursuant to the Surface Owners Protection Act authorizing the Commission to issue a mining permit. This parcel will need to be removed from the permit application prior to Commission action if neither instrument conveying right of entry is obtained. (WTG/DKM/JRD)
25. As required by NDAC 69-05.2-06-03(1), and as noted in similar deficiencies for Plate 1.9-1 Surface and Coal Ownership and Appendix 1.9-1 Ownership Information (within Permit Boundary), please resolve the undetermined coal ownership that totals 200 percent interest in the NE $\frac{1}{4}$  of Section 20, T141N, R83W, and provide certified copies of coal ownership leases with the coal owners of record. (WTG)
26. As required by NDAC 69-05.2-06-03(1), please provide a certified copy of the surface lease with Robert Reinke for the E $\frac{1}{2}$ SE $\frac{1}{4}$  of Section 31, T142N, R83W. Although we agreed to accept the purchase option agreement executed by Mr. Reinke for completeness approval purposes, Commission approval of the permit application cannot occur until a certified copy of a consent statement executed by Mr. Reinke is provided in the application. (WTG/DKM/JRD)
27. Lease number 12027 with Jesse and Darcy Lackman for Section 14, T141N, R84W, (pages 354-357) should be removed from Appendix 1-2 because the property lies outside of the permit area. (WTG)

#### **Appendix 1-4 Officers of Companies with Mineral Interests**

28. Appendix 1-4 is entitled Officers of Companies with Mineral Interests in the Table of Contents and bookmarked page but as "Letters from Corporations" in the Appendix. Please correct this inconsistency and clarify where the names and addresses of the principals, officers and resident agent can be found for surface ownership entities that are not single proprietors, such as Opp Limited Partnership, Five D's, and Anton Friesz Life Estate. NDCC 38-14.1-14(1)(c)(6). (GAW)

#### **Section 2. EXTENDED MINE PLAN**

##### **Plate 2-1 Extended Mine Plan**

29. Please provide the contour lines for the NW $\frac{1}{4}$  of Section 5, T141N, R83W; SW $\frac{1}{4}$  of Section 32, T142N, R83W, and the SE $\frac{1}{4}$  of Section 31, T142N, R83W, on the Extended Mine Plan Plate 2.1. (ZAT)
30. On the Extended Mine Plan Plate 2.1, please review the Hagel A Coal Seam Outcrop Line, which is depicted on the map by a solid green line. The legend lists the Hagel A Coal Seam Outcrop Line as a dashed green line. Please make the appropriate corrections for consistency. (ZAT)

31. For clarity on Plate 2.1, please remove one BNCR-9401 label and move the other so the 3<sup>rd</sup> ash cell in Section 5 of Permit BNCR-9401 can be depicted as a mined out area. (ZAT)

### **Section 3. ENVIRONMENTAL RESOURCES**

#### **Section 3.1 Topographic Information**

32. Please revise Plate 3.1-2, Pre-mining Area Slope Map, to clearly depict the permit boundary around the cemetery and communication tower in Sections 8 and 18. It is recommended that the permit boundary line color be changed to a color that is not the same as a slope range. NDAC 69-05.2-05-02. (GAW)

#### **Section 3.2 Geology**

33. Site Specific geology narrative in Section 3.2 provides a good discussion of the overburden and coal lithology within the permit area; however, NDAC 69-05.2-08-05(1) also requires a description of the geology of the first aquifer to be affected below the lowest coal seam to be mined. Please supplement the Site Specific geology narrative in Section 3.2 by providing a geologic and lithologic description (including thicknesses and variations) of the Hagel Seam underburden and the Sheet Sand hydrostratigraphic unit. (BEB)
34. The second paragraph of the Regional Geology narrative states that "*Two prominent glacial meltwater channels join with the Square Butte Creek channel, which was itself a major meltwater channel.*" Please provide a general geologic discussion in this paragraph describing the meltwater channels that are tributary to Square Butte Creek and their locations relevant to the permit area. (BEB)
35. In several areas throughout the narrative of the regional and site specific geology narratives, reference is made to glacial till and glacial drift of the Pleistocene, Coleharbor Formation. Coleharbor is not a formation but rather, represents a group of formations and should be characterized as the Coleharbor Group. Please make the appropriate changes to the narrative. (BEB)
36. Please update the narrative in Section 3.2, Site Specific Geology, to describe whether or not drilling information revealed any small-scale structural controls within the permit and/or adjacent area and if so, describe those features in the narrative and describe any potential operational limitations that may result due to the presence of the structure(s). (BEB)
37. Geologic narrative in Section 3.2 describes that numerous sandstone concretions are located within the northern portions of the permit area and the narrative should be expanded to describe the density and range of thicknesses of the sandstone deposits

encountered during your drilling program to provide the reader a sense of the magnitude of the deposits. Also, the opening sentence of the narrative describes these sandstone deposits as “One prominent feature” and that description should probably be changed to “A significant lithostratigraphic feature or deposit” or something similar to that. An improvement, but not a requirement of the narrative would be a discussion of the cementing agent(s) that produced the deposit (silica, calcite, iron oxide, etc.). (BEB)

38. Overburden analysis discussion on Page 1-3 describes increasing clay content and sodium absorption ratios with depth. Please correct the typographical error in the sentence because SAR is an acronym for sodium adsorption ratio. (BEB)

### **Plate 3.2-1 Drill Hole Location Map**

39. Some of the surface elevations for drillholes that are provided on the Drillhole Location Map, Plate 3.2-1, do not correspond with the elevations provided in the Drillhole Locations Information spreadsheet in Appendix 3.2-5. Several of the elevations of drillholes from the map and spreadsheet were randomly sampled for accuracy and as an example, drillholes 11-C020 and 11-C021 both show their surface elevations on the map to be 2162.1 feet; however, the spreadsheet in Appendix 3.2-5 depicts their elevations as being 2123.1 feet and 2154 feet, respectively. Please review the drilling and survey data to determine the correct elevations of all of the drillholes, and review both the map and spreadsheet to make sure the correct elevations are assigned to both the map and spreadsheet. (BEB)

### **Plate 3.2-2 Cross Section Map**

40. The Cross Section Map that is provided in Plate 3.2-2 basically depicts only surface topography and one lithostratigraphic unit; the Hagel coal seam. NDAC 69-05.2-08-05(2)(e) requires the applicant to submit cross-sections sufficient to show the major subsurface variations within the permit area down through the deeper of either the stratum immediately below the lowest coal seam to be mined or any lower aquifer which may be adversely affected by mining, in this case the Sheet Sand. Please update the cross-sections to incorporate the Hagel bed underburden and the stratigraphically lower Sheet Sand. Please incorporate other major subsurface variations into the cross-sections such as glacial till and alluvium. If sufficient correlation information is available across drillhole locations, please depict significant rider seams on the cross-section map above the Hagel seam. Also, please update the legend of the cross-section map to denote Hagel Coal Seam, as opposed to simply labeling the Hagel as *Coal Seam*. (BEB)

### **Plate 3.2-3 Overburden Thickness/Depth to Hagel Seam**

41. NDAC 69-05.2-08-05(2)(f) requires an overburden thickness isopach map to the top of the deepest coal seam to be mined be submitted showing a contour interval of 10 feet.

The Overburden Thickness/Depth to Hagel Seam Map, Plate 3.2-3, currently displays a contour interval of 15 feet and will need to be revised as required by rule to depict the required contour interval of 10 feet. Please update the map as necessary. (BEB)

### **Appendix 3.2-1 Drillers Logs**

42. It is recommended that the name of this appendix be changed to "Lithologic Logs". (BEB)

### **Section 3.3 Groundwater**

43. Several sentences in the narrative of the Probable Hydrologic Consequences on Page 1-6 describe the development of a "base-of-spoils aquifer" after mining and reclamation operations are completed. Unless BNI can provide reference documentation from a reliable source or provide validation from past experience that saturated reclaimed spoils have the ability to function as an aquifer as defined in NDAC 69-05.2-01-02(5), please restate the descriptions of base-of-spoils aquifer to describe the base of spoils saturated zone. (BEB)
44. On the top of Page 1-7 in the Ground Water PHC, the narrative describes water quality and ground water types and then abruptly ends, with a discussion following of water replacement alternatives providing four choices of water replacement for landowners/water well owners. Please preface the water replacement information with a heading that outlines the subsequent information provided. Also, we recommend eliminating possibility #4 (reclaimed spoils) as a viable water replacement alternative and replacing that with an option of utilizing piped rural water as a replacement source. (BEB)
45. The figure (table) provided on Pages 1-7 and 1-8 of Section 3.3 depicts 19 permit area production wells to be destroyed by mining operations and other information regarding the wells including location, condition and year in which mining will be conducted. This table should be supplemented with an additional column stating whether or not water replacement is a permit requirement based on the condition of the premine water well (in use, operable, etc.) in consideration with the proposed postmining land use. Also, NDAC 69-05.2-08-4(c) requires the operator to determine if an underground water source located within the permit or adjacent areas will be affected by contamination, diminution, or interruption from mining and reclamation processes. All of the adjacent water supply wells should also be listed in this table with proposed probable hydrologic reclamation action and replacement alternatives in the event those water resources are impacted. If, after review of probable ground water intake zones derived from your well certification program, no impacts are predicted for adjacent/off-site water resources, that should be demonstrated and specifically stated in the PHC. (BEB)

46. Please note somewhere in the ground water section of the permit whether or not modeling techniques were used in determining the probable hydrologic consequences that is provided in the application. Please include the results of those modeling efforts, if used. NDAC 69-05.2-08-04(7). (BEB)
47. Please provide some narrative in Section 3.3 stating that a sufficient number of postmining reclamation ground water monitoring wells will be placed as near as possible to premine monitoring well locations and will be screened in the base of spoils and also in the Sheet Sand hydrostratigraphic unit to monitor water quality and water level recovery after mining and reclamation operations are completed. (BEB)
48. The third paragraph of the hydraulic characteristics narrative on Page 1-2 states that 19 monitoring wells were elevated for slug testing. We assume the intent was to use the word evaluated. Also, since slug tests were conducted, it would make more sense to state that the wells were evaluated by slug testing. Please correct the typographical error and re-phrase the sentence for clarity. (BEB)
49. Ground Water narrative in Section 3.3 simply states that ground water flow in the permit area is from south to north; however, flow gradient arrows added to the potentiometric surface maps seem to indicate that flow direction is highly variable in both the Hagel Coal Seam and the Sheet Sand. Please review your water level data and revise or expound on the narrative as deemed necessary to provide a more specific assessment of the data that is presented on the maps, particularly for those areas adjacent to the permit that may be impacted by water level drawdown during mining operations. (BEB)
50. Since the time that BNI first approached the Reclamation Division a couple of years ago regarding proposed locations of ground water monitoring well sites, the permit boundary was expanded farther to the west. Due to that expansion at least one additional nest of ground water monitoring wells will be required in the SW1/4 of Section 24 in the future. When additional overburden analysis drilling is conducted on federal coal lease tracts in the SW1/4 of Section 24, we will expect the installation of a monitoring well nest at that time. Please provide a commitment for future well installation in Section 24 in the permit narrative. (BEB)
51. Page 3 of the groundwater narrative references North American Coal's Otter Creek permit application area as NAAOC and should be changed to NAOC-0802. (BEB)
52. Please supplement the narrative in the Probable Hydrologic Consequences of Section 3.3 to describe and quantify (or provide a scientifically sound estimate) of the loss of base flow to Hagel Creek, SCS Dam 5 Creek, and Square Butte Creek due to planned removal of the Hagel seam aquifer supplying base flow as ground water discharge to these surface water features within and adjacent to the permit area. (BEB)

53. The ground water PHC indicates that mining is not expected to cause water quality problems in the area adjacent to the permit area due to topographic disjuncting. Please expound on this concept by describing your interpretation of topographic disjuncting in the narrative as it relates to this specific permit area and the relationship of ground water discharging to surface water features within and adjacent to the permit area. (BEB)
54. Ground Water Resource Description in Section 3.3 provides narrative stating that the Square Butte Aquifer is one of the major aquifers in the area and the location of this aquifer should be provided on one of the maps in the permit. Our preference would be to have this aquifer shown on the Monitoring Well Location Map, Plate 3.3-1. Although not required, Plate 3.3-1 could be overlain on an aerial photo map so that Hagel Creek, Square Butte Creek, Square Butte Aquifer, SCS Dam 5 Creek, farm locations, and other topographic features are all observable on the map. (BEB)
55. Narrative in Section 3.3 states that slug test analyses, or single well response, was problematic in the permit area due to a variety of factors including well construction. This statement needs to be qualified or explained because the statement appears to imply that construction of the monitoring wells may have been inadequate or substandard to the point of not being able to conduct a proper slug test. Please provide an explanation to the statement or re-write the sentence to better explain the intended meaning. (BEB)
56. The ground water sections of the permit did not include any calculations for determination of pit water inflow volumes during active mining operations. Estimated pit water inflow data is a useful and required consideration for determination of both ground water and surface water issues. Based on determined hydraulic conductivity and calculated transmissivity from saturated thickness of the Hagel Coal Seam and/or BNI's nearly 40-years of mining and reclamation experience and recordation of pit water pumping data, please provide the necessary calculations (example provided below) or estimates for determination of the estimated quantity or discharge volume of ground water inflow to active mining pits in gpm/1000 ft. of highwall. (Hagel Seam calculated Transmissivity in  $\text{ft}^2$ ) \* (1,000) \* (.005195) = discharge in gpm/1000 ft. of highwall. (BEB)
57. Ground water narrative in Section 3.3 describes that the Sheet Sand aquifer appears to be a discontinuous unit across the permit area. Therefore, please provide a discussion of the lithology, stratigraphy, depth below the Sheet Sand, thickness and named zone of whatever hydrostratigraphic unit would be considered the next lowest aquifer or water-bearing unit below the Sheet Sand. However, our hydraulic head calculations from available permit data suggest that the Sheet Sand appears to be rather continuous across the entire permit area and under confining conditions, at least in the areas where the Sheet Sand monitoring wells are located. Please provide a description of the next

stratigraphically lower aquifer below the Sheet Sand and further describe why Sheet Sand aquifer appears to be discontinuous across the permit area. (BEB)

58. As required by NDAC 69-05.2-09-12 (d), please provide a plan for restoring the approximate recharge capacity of the permit area as described in NDAC 69-05.2-16-15. The restoration of approximate recharge capacity requirement is accomplished by describing in the permit your plans for re-establishing vegetation to minimize erosion, and the construction or reconstruction of concave landscapes, postmine dugouts or developed water resources, wetlands, ephemeral catchments, etc. (BEB)
59. The second sentence in the Probable Hydrologic Consequences narrative states that water quality will be lower in the mine spoil as opposed to the pre-mine coal seams. Please expound on this statement by providing a discussion based on statistically representative baseline water quality data of the Hagel coal seam in this particular permit area compared with expected water quality change in the reclaimed spoils saturated zone in the postmine setting, based upon review of your overburden analyses information provided in the permit. BNI's decades of experience with mining, reclamation, collection and documentation of ground water monitoring data should be cited in this narrative to draw a comparison between premine and postmine water quality trends, generally specific to TDS, sulfate and sodium concentrations of ground water. Please update the narrative to provide a more specific discussion of expected postmine ground water quality in the reclaimed spoils as opposed to simply stating that water quality in mine spoil will be lower. (BEB)
60. Please add to the ground water narrative in Section 3.3 by describing the confined and/or unconfined nature of groundwater in the Hagel Seam and Sheet Sand aquifers within the permit area and describe if perched aquifers were discovered during overburden drilling or monitoring well drilling operations. (BEB)
61. Please check your reference source for data that is provided in the ground water narrative section on Page 1-2 regarding hydraulic conductivity. Groenewold et.al (RI-64, 1979, p. 140) is referenced; however, his work provides a different range of values of hydraulic conductivity of lignites by several orders of magnitude than what is quoted in the permit narrative, even after conversion to similar units. Quoted values of hydraulic conductivity for sandy bedrock, glacial till and silt/clay bedrock are accurate, but not the range of values for lignites. Additionally, the referenced hydraulic conductivity measurements are in cm/sec as opposed to the quoted m/sec, and should be converted to the same units as those provided by Braun, 2011 (cm/sec) which are being used by BNI as comparative data. Please re-check your reference data and attempt to provide all measurements of hydraulic conductivity in the same units, cm/sec, m/sec, or ft/day. (BEB)

### **Plate 3.3-1 Current Well Monitoring Locations**

62. NDAC 69-05.2-08-02(1)(d) & (i) requires the application include a map that shows the locations **and elevations** of drill holes or monitoring stations used for collecting geologic, ground water, and overburden information. Please incorporate the drillhole (ground surface) elevations (use the average/mean elevation of the wells in a nest of multiple wells) into the Current Well Monitoring Locations Map, Plate 3.3-1. Although not required, we recommend that the name of this map be changed to Current Monitoring Well Location Map. Also, the legend on the map is labeled as “Location Map Active Piezometer Nests” and should be changed to depict the same name in the table of contents, preferably Current Monitoring Well Location Map. (BEB)
63. The Location Map of Active Piezometer Nests, Plate 3.3-1, should list all of the individual monitoring wells in a well nest, e.g. C8-1, 2 and C11-1, 2, etc. as opposed to just the locations of the well nests, e.g. C8, C11, etc.. Also, please extend the map to the north and to the south so the entire permit area is on the map, and place the monitoring well identifiers on top of the permit boundary layer because three of the well nests are covered up by the permit boundary line and are basically illegible on this map. (BEB)
64. The “Sand” Potentiometric Map, Plate 3.3-1, should be relabeled as the “Sheet Sand Potentiometric Surface Map” to maintain consistency with other areas of the permit that refer to this water-bearing unit below depth of mining as the Sheet Sand aquifer. (BEB)

### **Plate 3.3-2 Hagel Potentiometric Map**

65. The Hagel Seam and Sheet Sand Potentiometric Surface Maps, Plates 3.3-2 and 3.3-3 respectively, both show only the monitoring well nests (C7-1, C8-1), etc. as the monitoring wells at the nested locations from which the potentiometric data was obtained. However, each of those potentiometric surface maps should only show the specific monitoring wells that are monitoring the respective zone that is displayed on the map, either the Hagel wells or Sheet Sand wells. Please label only the specific monitoring wells used for generating the data for each of the potentiometric surface maps. (BEB)

### **Plate 3.3-4 Certified Well Location Map**

66. Please spread out the numbering sequence of the six D. Hagerott water wells that are located a mile or so east of the permit area and are displayed on the Certified Well Location Map, Plate 3.3-4. Currently, the well identification numbers and their locations are basically clumped together to the point of being illegible. Also, please number the four Keith and Kent Reuther Wells in the NE1/4 of Section 24 and correct the spelling of Kieth on the map in Sections 18 and 24. (BEB)

67. There are several places on the Certified Well Location Map where the well numbers and well owners' name is covered up by the permit boundary. Please place the ownership and well information layer on top of the permit boundary layer. (BEB)

### **Appendix 3.3-1 Ground Water Monitoring**

68. The Ground Water Monitoring Wells spreadsheet, Appendix 3.3-1, identifies the BNCR-1101 monitoring wells as being 6-1, 6-2, 7-1, 7-2, etc.; however, the Current Monitoring Wells Location map and other information sources in the permit identifies the wells as C11-1, C7-1, C8-1, etc. and Appendix 3.3-1 should also list them as C-series wells to remain consistent with the rest of the permit sections. (BEB)
69. The spreadsheet in Appendix 3.3-1, Ground Water Monitoring, provides ground water monitoring well location information and proposed water quality sampling schedules for all Center Mine permits. Due to the fact that the earliest years of mining within the proposed BNCR-1101 permit area will be located only about 1 to 1.5 miles hydraulically downgradient of monitoring wells 10-2, 11-1, and 11-2 and effects of mining on the ground water flow system will likely be realized early on in the mining process of BNCR-1101, we request that water quality sampling of the above-mentioned monitoring wells begin now and that data be included with the rest of the new monitoring wells information and be sampled for water quality on an annual frequency. Please update Appendix 3.3-1 to that effect. Also, the groundwater monitoring plan designates annual quality sampling of all monitoring wells and this update in sampling frequency as requested will support your current permit narrative. Also suggested but not required would be changing the name of this section to Ground Water Monitoring Well Information, which is precisely the information that is provided in this section. (BEB)

### **Appendix 3.3-2 Water Well Certification**

70. It appears that none of the water well certification field forms in Appendix 3.3-2 have been signed or dated by either Dennis Foss of D&L Enterprises or the Owners/Operators of the wells that were certified. The date and signature blocks are provided on the forms but have not been executed. Please incorporate available signed certification forms into the permit at this time and if any new production well or developed spring certifications or re-certifications have been conducted since submission of the original permit application, they should be incorporated into the permit at this time. (BEB)
71. The bookmarks in the Water Well Certifications, Appendix 3.3-2, list the four D. Diechert wells and the well identifications on the well certification documents and on the Certified Well Location Map also list four D. Diechert wells. However, the owner/operator of the wells is listed as D. Deichert on the well certification forms. This appears to be nothing more than a typographical error, so please check for the correct

spelling of the owner/operator and correct the spelling in all of the locations that need to be corrected. (BEB)

### **Appendix 3.3-6 Ground Water Chemical Analysis**

72. On the spreadsheet of Appendix 3.3-6, Ground Water Chemical Analysis, please place all of the monitoring wells in the ground water monitoring plan for this permit and specifically note in the individual columns under each of the well numbers if, or when, there was an insufficient amount of water to obtain a sample for chemical analysis. Alternatively, an asterisk can be provided in the column(s) and a footnote placed at the bottom of the spreadsheet indicating an insufficient amount of water was available to collect a sample. Missing from the spreadsheet listing is monitoring wells C8-1, C10-1, C11-1 and C11-2. (BEB)

### **Appendix 3.3-7 9401 & 1101 Hydrographs and Water Quality**

73. Appendix 3.3-7 provides an excellent representation of water level hydrographs and total hydraulic head data, and similar to the water quality information spreadsheet provided in Appendix 3.3-6, the raw static water level data should also be provided in the permit application. Please provide a spreadsheet that labels the well number, hydrostratigraphic unit monitored, water level elevation, measuring point elevation, dates of measurement, etc. This should be provided as a separate appendix to this section and this information provided in permits is generally labeled Static Water Level Data, Potentiometric Data, or something similar to that. Please provide a separate spreadsheet or table with all of the premine baseline water level data incorporated into it. (BEB)
74. In Appendix 3.3-7, the water level hydrograph for Sheet Sand monitoring well C4-1 shows a water level below the base of the bottom of the screen. Based on other information provided in the permit, it appears that the top and bottom screen elevations as shown on the hydrograph are erroneous. Please correct the graph and check the remaining hydrographs for accuracy. (BEB)
75. Please update the 9401 and 1101 Hydrographs and Water Quality graphs in Appendix 3.3-7 to show the water level hydrographs of monitoring wells C4-2, C11-1, and C11-2, even if these wells were dry and you were unable to record a water level. As described in a different deficiency, there appears to be no other water level elevation data in the permit to verify if these wells contain a measurable amount of water. (BEB)
76. Appendix 3.3-7 provides water level hydrographs and water quality graphs in the same appendix and this information should be separated in the permit. We ask that you please provide a new appendix for either the water level information or the water quality information to keep them separated. (BEB)

### **Appendix 3.3-8 Well and Geologic Logs**

77. Appendix 3.3-8 is labeled as being “Well and Geologic Logs” but the information provided in this appendix is the geophysical logs of the permit area ground water monitoring wells and the appendix should simply be labeled as “Monitoring Well Geophysical Logs.” (BEB)

### **Section 3.4 Surface Water**

78. Please consider adding subsection headings to identify the type of information provided in the beginning portion of the narrative in Section 3.4 Surface Water. It appears the introductory narrative could be titled “Geomorphology” and the narrative beginning with the last paragraph on page 2 beginning with “The area is divided into 15 drainages...” could be titled “Surface Water Resources”, or something similar. (RLK)
79. On page 2 of the surface water narrative, the second sentence in the first paragraph describes the location of SCS Dam 5 and its relation to Square Butte Creek and provides a link to Plate 3.4.1, General Drainage Map. However, the location of SCS Dam 5 is not shown on the map and the creek leading to the impoundment is not identified. Please revise the narrative or map as appropriate. (RLK)
80. The second paragraph on page 2 of the Surface Water narrative indicates that the approximate drainage areas for Hagel Creek and SCS Dam 5 Creek are shown on Plate 3.4-1; however, the drainage areas for the creeks are not shown on the referenced plate. Rather the plate identifies the portions of the drainage areas within the permit area and does not separate the portion of the Square Butte Creek watershed that drains to SCS Dam 5. Please revise the narrative, map, or both to make the map correspond to the narrative. (RLK)
81. Please revise the first paragraph of the Surface Water Quality narrative, beginning on page 3 of Section 3.4, to more clearly indicate that water quality data has been obtained for surface water features in and near the permit area as well as identifying the types of water features sampled during the baseline data collection. It would be helpful to the reader and for future reference to identify and provide a reference or hyperlink to the map depicting the locations for each surface water feature type included in the baseline monitoring. (RLK)
82. In the second and third paragraphs of the Surface Water Quality narrative, beginning on page 3 of Section 3.4, it is not clear that water quality data being discussed in the narrative are from developed water resources. The stream references used for the sample locations are misleading as presented in the narrative and give the impression that the comparisons are for data obtained from stream flows. Please clearly identify that the data used in the comparisons are from developed water resources (stock ponds) located in the respective drainage channels or stream segments. (RLK)

83. In the second and third paragraphs of the Surface Water Quality narrative, beginning on page 3 of Section 3.4, the water quality data presented in the narrative does not agree with the information in Appendix 3.4-1 and Appendix 3.4-2. Please update the discussion of baseline data to include additional sample events at the respective sites as appropriate. (RLK)
84. The third paragraph of the Surface Water Quality narrative on page 4 of Section 3.4 refers to samples from DWR-SE21-1-141-83; however, the results discussed in the narrative and depicted in the graph provided in Appendix 3.4-2 appear to be for DWR-SE21-2-141-83. Please revise as appropriate. (RLK)
85. In the first sentence on page 4 of Section 3.4, Surface Water, please replace the link provided to Plate 3.5-1, Pre-mining Land Use, with a link to Plate 3.4-5 or another appropriate map identifying the water features by the site descriptions used in the surface water narrative. (RLK)
86. Please revise the last paragraph of the Surface Water Quality narrative found on page 4 of Section 3.4. It is not clear what water features and water quality characteristics are being compared in the narrative. (RLK)
87. In the first paragraph of the Surface Water Quantity narrative in Section 3.4, please refer to the location for finding the flow observations as “in the appendices in Section 3.4” rather than “the preceding appendices”. Also, please revise the last sentence in the paragraph. It may be helpful to indicate that surface water monitoring sites located on Hagel Creek that are currently operated by BNI as part of permit BNCR-9702 are also relevant to surface water monitoring for this permit area. (RLK)
88. The second paragraph of the Surface Water Quantity narrative discusses the difficulty in using flow meters to obtain flow measurements at the monitoring sites established in the permit area. It may be possible to develop a relation between stage (gauge height) and flow using the cross section or culvert information at the monitoring sites. Also, rather than indicating the level-loggers will be re-deployed before the first runoff event, it would be acceptable to state beginning and ending months that level-loggers will typically be deployed during the year. (RLK)
89. Please update the third paragraph in the Surface Water Quantity narrative in Section 3.4 to account for the additional flow data contained in the appendices. The sentence regarding the presence of water and pooling at low flows does not seem necessary in the narrative. Please include narrative summarizing the additional flow (stage) measurement information that has been obtained from the surface water monitoring sites. Information on the length of time flow occurs at the monitoring sites following runoff events may be useful in characterizing water quantity for the sites in the permit area. (RLK)

90. The information provided under the heading Usable Pre-mining Water Supplies in Section 3.4 does not appear to be a complete assessment of the useable or potentially useable pre-mining water supplies in and near the permit area. The subsection provides a brief discussion on the replacement of pre-mine water supplies and provides what appears to be a listing of the acreage of developed surface water resources by section within the permit area. However, no information is provided on the current use (usability) of the features or if other water features in the permit area are being used for domestic, agricultural, industrial or other purposes. The water use needs to be documented to evaluate the probable hydrologic consequences as required in NDAC 69-5.2-08-04(4)(c). Please revise the narrative to provide information on the current uses for each type of water feature in the permit area or adjacent area that may be affected by the mining activity. (RLK)
91. The Usable Pre-mining Water Supplies narrative in Section 3.4, states that all water features can be seen in Plate 3.4-5. However, the plate provides only the location for the wetlands and surface impoundment developed water resources. In addition to wetlands and the developed surface water resources, all streams, springs and wells are potential usable water supplies. Please provide a map that depicts all the useable water supplies or revise the narrative appropriately. (RLK)
92. The Usable Pre-mining Water Supplies narrative in Section 3.4, states all developed water resources are characterized in Table 3.4-1 and Appendix 3.4-8. While both the water sample results listed in Table 3.4-1 and the photographs and species lists provided for springs and developed water resources provided in Appendix 3.4-8 are essential to evaluating the current use and quality of a water feature, it does not identify or characterize the pre-mine use of the water features. Appendix 3.4-7, Spring Certification Summary, provides an excellent characterization of the pre-mine use or potential use for springs identified in the permit area. Please consider incorporating a reference to Appendix 3.4-7 into the narrative along with a discussion on the current use of springs as a water supply. Please document the use of all developed water resources within the proposed permit and adjacent area. (RLK)
93. Please consider replacing the summary of developed surface water resources listed by section number beginning on page 5 of the Usable Pre-mining Water Supplies narrative in Section 3.4, with a table similar to the one provided in Appendix 3.4-7. While the listing provides total acreage of water features and an indication of the features that may be disturbed by mining, it does not provide much information to characterize or quantify the current use of the features. The table or other method of presenting information on current use for developed water resources could include the following: Developed Water Resource ID, Location, Type (dugout, dam, etc.), condition and dimensions for spillways and embankments if applicable, estimated pool dimensions or volume, indicated in sample results are available, detrimental conditions, expected disturbance, and other information related to the feature as you deem appropriate. (RLK)

94. The use of streams in and near the permit area should be identified and discussed under Useable Pre-mining Water Supplies in Section 3.4. It seems reasonable that the streams may provide some level for agricultural use (livestock watering, etc) and Hagel Creek may provide to Nelson Lake which is utilized for industrial and recreational purposes. The narrative should also indicate to what extent if any wetlands may be serving as a water supply for livestock use or other purpose. Wetlands that may be serving as water supply should be identified so that an appropriate replacement water source can be considered. Please expand the Usable Pre-mining Water Supplies narrative to include stream and wetland water use as appropriate. NDAC 69-5.2-08-04(4)(c). (RLK)
95. On page 3 of Section 3.4 the narrative begins by stating that stream segments were classified by a variety of features and goes on to list features ;however, the narrative does not indicate what classifications have been determined or will be determined. The narrative indicates that “*certain drainages will be classified by NDAC 69-05.2-01-02*” but there are several definitions in the rules for stream related aspects that could be used to classify stream segments. If the intent is to classify streams by seasonal flow conditions, please indicate the stream (drainages) were classified as ephemeral, intermittent or perennial according to the definitions in NDAC 69-05.2-01-02, or something similar. The narrative goes on to refer the reader to the wetlands portion of Section 3.5 for more information on the drainage classifications but the only stream related information in the Section 3.5 narrative pertains to wetlands associated with streams and drainage. Please revise as appropriate to indicate the classifications being applied to streams and drainages as appropriate. (RLK)
96. In the second paragraph of the Probable Hydrologic Consequences narrative, please replace the phrase “suspended localized water table” with “perched aquifer”. In the last sentence it appears that “as required by” or similar wording should be placed before the citation to NDAC 69-05.2-16-17. (RLK)
97. The second paragraph in the Probable Hydrologic Consequences narrative states that it would be very difficult to reliably predict which impoundments may be adversely affected by the loss of groundwater flow due to mining. Please describe any effort made, or may be taken, to evaluate or rate impoundments and wetlands in regard to the potential for diminished utility due to the loss of groundwater flows. (RLK)
98. It appears that the water flow from springs and seeps may be contributing to some wetland features in drainage channels. The removal of this source of water may be the result in diminished water features. The probable hydrologic consequences narrative should indicate possible adjustments to post mine drainage way design to provide replacement wetland acres in drainages where such features may be supported by springs and seeps prior to mining. (RLK)
99. Please address how the proposed haulroad crossing will impact Hagel Creek in the Surface Water Probable Hydrological Consequences section. (ZAT)

100. On page 12 of Section 3.4 the discussion on significant impacts for Watershed HC-7 does not appear to correspond to the data provided in the comparison tables. The noted change appears to more closely reflect Watershed HC-8. Please revise as appropriate. (RLK/MDB)

#### **Plate 3.4-1 General Drainage Map**

101. Stream classification/buffer zone differences have been noted between Plate 3.4-1, General Drainage Map, the map included in Appendix 3.4-9, page 22 of 114, Stream Classifications, and Pit Layout and Facilities Map, Plate 4.-1. Please review the classifications of reaches of streams, specifically those in the NW1/4 of Section 12, SW1/4 of Section 7, NW1/4 of Section 5, SE1/4 of Section 16 and S1/2 of Section 21 and revise so that all the maps (including others that depict the stream buffer zones) conform to each other. NDAC 69-05.2-05-02. (GAW/RLK)

#### **Plate 3.4-2 Pre-Mine Watersheds and Plate 3.4-3 Post-Mine Watersheds**

102. Please delineate and identify the drainage area for SCS Dam 5 within the permit area on Plate 3.4-2 and Plate 3.4-3. (RLK)

#### **Plate 3.4-5 Lentic Wetlands, Lotic Wetlands, and DWR Locations**

103. Please label the developed water resource locations on Plate 3.4-5. (RLK)

#### **Appendix 3.4-1 Surface Water Analyses**

104. In Appendix 3.4-1 Surface Water Analysis, the “Avg. EC  $\mu\text{S}/\text{cm}$ ” column appears unnecessary and is actually misleading as it is an estimate based on a selected conversion factor. The correlation between EC and TDS varies with water chemistry. The test results provided for EC (Sp. Cond) and TDS are sufficient for baseline data and can be used to develop a correlation based on the results for a site or group of sites if necessary. Please remove the column or revise using correlations developed from actual site data. (RLK)
105. On the surface water analysis table, Appendix 3.4-1, it is not clear what information is presented in the “Avg. EC  $\text{dS}/\text{m}$ ” column. While the column heading indicates EC in deciSeimens per meter the values in the column do not correlate to the values in the “Avg EC  $\mu\text{S}/\text{cm}$ ” column. Providing EC in both  $\mu\text{S}/\text{cm}$  and  $\text{dS}/\text{cm}$  in the table does not seem necessary as the EC in  $\mu\text{S}/\text{cm}$  should be 1000 times the EC in  $\text{dS}/\text{m}$  units. Please revise as appropriate. (RLK)
106. Please provide the locations for the sample sites identified in the Appendix 3.4-1 as Access (East) and Access (West) on an appropriate map or describe locations in the surface water narrative. (RLK)

107. Sample results are provided in Appendix 3.4-1 for several “Sample Descrip(s)”, presumably springs or seeps, but were not found on Plate 3.4-4 Spring/Seep & SW Monitoring Location or in Appendix 3.4-7, Spring Certification Summary. Please review the following “Sample Descrip(s)” and revise the permit information as appropriate: SPG-NW20-1-141-83, SPG-NW20-2-141-83, SPG-NW5-1-141-83, and SPG-SE20-2-141-83. (RLK)
108. In Appendix 3.4-1, please correct the “Sample Descrip” entry for the August 12, 2010 sample for DWR-SW16-2-83. (RLK)
109. The results for the sample collected on (or about) 8/1/12 depicted in the graph for DWR-NW13-1-141-84 in Appendix 3.4-2 cannot be found in Appendix 3.4-1, Surface Water Analysis. Please revise as appropriate. (RLK)
110. In Appendix 3.4-1, please separate the analytical results for wetlands, developed water resources, springs and stream monitoring sites into separate respective tables (or table sections). Summary lines at the end of the spreadsheet table indicating the average, median, minimum and maximum values for each water feature type would be helpful in evaluating the overall characteristics of the water features in the permit area. (RLK)

#### **Appendix 3.4-5 SWS Quantity Graphs**

111. Please update Appendix 3.4-5 to include information obtained through the 2012 monitoring season. Also, in addition to the flow information provided for sites SWS #101 and SWS #102, please provide any flow information for other surface water sites established as part of the surface water monitoring plan for the permit area. (RLK)

#### **Appendix 3.4-7 Spring/Seep Report**

112. The spreadsheet in Appendix 3.4-7 provides an excellent resource of information regarding permit area and adjacent springs and seeps; however, an additional column should be added to the spreadsheet that identifies the probable hydrostratigraphic unit that is the source unit of ground water discharge emanating as spring and seep flow. We also recommend but don't require that this appendix be renamed to “Spring/Seep Information Summary.” (BEB)

#### **Appendix 3.4-8 Springs Photos and Vegetation Species Lists/DWR Photos**

113. Please revise the title page for Appendix 3.4-8 to indicate the information relates to springs rather than linear surface wetlands. (RLK)

### Section 3.5 Pre-Mine Land Use

114. In the last sentence of paragraph two on page 2 of Section 3.5, please clarify what is meant by there have been no appreciable changes in land use for at least five years prior to 2009. Any changes in land use must be noted or documented not just the appreciable changes. In addition, this sentence indicates that the current and historic uses are the same but we are aware of old cropland fields in the SE1/4 of Section 31, SE1/4 of Section 8 and NE1/4 of Section 21 and aerial photography shows old field boundaries in the NE1/4 and SE1/4 of Section 13, SW1/4 of Section 7 and NW1/4 of Section 8. Page 5 of Section 4.12-1 indicates that there are previously tilled areas primarily in the north half of the NE1/4 of Section 21 comprised primarily of alfalfa and introduced grasses. It appears obvious the current and historic land uses of these tracts are not the same. Please review and revise to discuss the historic uses that are apparent. NDAC 69-05.2-08-08 (3) and NDAC 69-05.2-05.02. (GAW)
115. The last paragraph of page 2 of Section 3.5 states that twelve land uses were mapped and they are listed. However, only eleven land uses are identified in Table 3.5-1, Land Use Acres per Landowners, and the land uses listed on page 2 are not all the same as those listed in the Table. The cemetery category is not used on the land use maps and tables. Please correct this inconsistency. NDAC 69-05.2-05.02. (GAW/ZAT/RLK)
116. Please revise the land use narrative on page 2 of Section 3.5 to clarify how occupied or non-abandoned farmsteads were classified in terms of land use. The narrative on page 2 of Section 3.5 and Table 3.5-1 clearly states abandoned farmsteads, but the values attributed to farmsteads in Table 3.5-1 and Appendix 3.5-2 appears to include occupied and vacant farmsteads. Please review and correct as necessary. NDAC 69-05.2-05.02. (GAW/ZAT)
117. A sentence in the last paragraph on page 2 of Section 3.5 states that “Plate 3.5-1 contains a map delineating the roads/trails/right of ways and Section 3.6 contains information and data on Pre-mine vegetation”. It is not clear why this sentence would only list one land use when referencing Plate 3.5-1, Pre-mine Land Use Map, given that this map shows all land uses within the permit. Please review and clarify what is meant with this sentence. (GAW)
118. Please review **all** land descriptions in Section 3.5 for accuracy and consistency. Each parcel should be assigned **one** description, which remains the same throughout the entire permit application to avoid confusion. For example, one parcel in Section 5 is listed as the N2NW4, N2NW4 (Rev 12), and NW4NW4 in various parts of Section 3.5. Also remove (Rev 12) from parcel descriptions. NDAC 69-05.2-05-02(1). (ZAT)
119. Please review and organize Section 3.5 to provide clarity. List land parcels consistently in the same order. Establish a parcel order on the Pre-mine Land Use Table 3.5-1 in the narrative and use that same order on every table and in every appendix. Landowner

information in Appendix 3.5-2 and landowner maps in Appendix 3.5-3 should be presented in the order they are listed in Table 3.5-1. This same order should be maintained as much as possible throughout the Post Mine Land Use Sections to provide clear and concise information at the time of reclamation. NDAC 69-05.2-05-02(1). (ZAT)

120. Table 3.5-1 in the Section 3.5 narrative, there is a slight discrepancy in the wetland acres for the N2NW4 of Section 5 and the information in Appendix 3.5-1 and Appendix 3.5-2 (9.76 acres verses 9.85 acres). A similar discrepancy appears for Native Grassland for the SW4 of Section 32 (2.99 acres in the narrative and 2.9 acres in the appendices). These are adjacent parcels owned by Minnkota. The table in the body of the narrative may not be necessary since it appears to present the same information as is found in Appendix 3.5-1, Land Use Acres per Landowner Table. If you choose to retain Table 3.5-1 and Appendix 3.5-1, the information (including parcel order, parcel descriptions, land use acreage, and acreage totals) needs to be the same in both. Also please ensure that Appendices 3.5-2 and 3.5-3 are updated as necessary to reflect any acreage changes made as a result of other deficiencies. (RLK/ZAT/GAW)
121. The first sentence of the cropland narrative on page 3 of Section 3.5 states that cropland in the permit area is used to produce alfalfa. Please clarify the land use distinction between “cropland” that is being used to produce alfalfa and “hayland” that is being used to produce alfalfa. NDAC 69-05.2-05-02. (GAW/ZAT)
122. The second to the last sentence of the cropland narrative on page 3 of Section 3.5 states that information on yield productivity can be found in Appendix 3.6-6, Ecological Site Productivity Index. Ecological sites are not applicable to cropland so please correct this error. NDAC 69-05.2-05-02. (GAW/RLK)
123. The last sentence of the cropland narrative on pages 3 and 4 of Section 3.5 and the last sentence of the hayland narrative on page 4 refer to Appendix 3.5-4, Landowner Map. There is no Appendix 3.5-4 in the permit application. Please correct this error. NDAC 69-05.2-05-02. (GAW)
124. Please revise the cropland land use narrative to discuss if there is any conservation reserve program (CRP) cropland in the proposed permit area and if there is, indicate when the contracts expire and how the land was classified as a land use (it should be cropland) in this permit application. Also discuss if there is any ND Game and Fish Department PLOTS land in the permit area, or lands with any other conservation easements or contracts with any agencies and details regarding the terms of the agreements and use or management restrictions. NDCC 38-14.1-14(2)(a)(1). (GAW)
125. Please revise the cropland land use narrative to discuss conservation practices that have been constructed or that are being applied to these lands. Clarify if any of these features were combined with the cropland land use or classified separately and identify where

information regarding each of these features can be found in the permit. Examples include natural and constructed grass waterways, diversions, tree plantings, grass buffer zones adjacent wetlands, etc. NDCC 38-14.1-14(2)(a)(1). (GAW)

126. In the cropland narrative on page 3 of Section 3.5, please revise the sentence that starts “The change in farming practices were in part due to government sponsored farm programs....” by changing “residual” to “crop residue” and clarify the meaning of the remainder of the sentence. (ZAT)
127. Please revise the first sentence on haylands found on page four of Section 3.5 as follows. “Haylands found within the permit boundary consist of 386.76 acres. Through data collection, relative species dominance and field observations, haylands were found to be in good to fair condition. ~~Many of them are in good to fair condition~~; condition being defined by relative species dominance and species vigor.” (ZAT)
128. The last sentence of the shelterbelt narrative on page 4 of Section 3.5 references Appendix 3.6-7, Shelterbelt Descriptions and Maps, but Appendix 3.6-7 is titled Shelterbelt Drawings/Descriptions in the Table of Contents, and when opened it is labeled Appendix 3.5-3, Shelterbelts. Please correct these discrepancies. NDAC 69-05.2-05-02. (GAW)
129. On page 4 of Section 3.5, please revise the following shelterbelt sentence as follows. “Many of the shelterbelts found within the permit area ~~are in a depreciating condition as many of the trees~~ are declining in health due to age and disease.” (ZAT)
130. The shelterbelt table, Table 3.5-3, Premine Shelterbelt Conditions, on page 5 of Section 3.5 is not legible because of font size when printed and it is incomplete. The shelterbelts in Sections 5 and 12 are missing from the table, the acreages are wrong for the shelterbelts in Section 13 and 25-141-84, and the parcel descriptions for Section 19-141-83 should be arranged so the SW1/4 and SE1/4 are listed within the S1/2 of the section. The total acres of shelterbelts are listed at 37.77 acres but Table 3.5-1 indicates the permit area has 55.92 acres of shelterbelts. Each shelterbelt in the proposed permit area must be labeled on the Pre-Mining Land Use Map and listed separately in Table 3.5-5. It is not acceptable to group different plantings and provide a range of condition ratings. A reviewer should be able to take information from this table and transpose it to the particular shelterbelt on the Pre-Mining Land Use Map. Also, as stated in other deficiencies, all parcel descriptions should correspond to parcels in Table 3.5-1. NDAC 69-05.2-05-02. (GAW/ZAT)
131. Please review the conditions/health and age categories for shelterbelts on Table 3.5-3 on page 5 of the narrative in Section 3.5, which uses declining (D) to describe the condition/health and age of shelterbelts. Narrative in Section 3.6 discusses the condition/health of shelterbelts as good, fair, fair (declining) and poor and Appendix 3.6-7 uses the phrase fair to declining health. Please add narrative or a reference to

where the information can be found that explains the terms used to describe conditions/health/ and age of shelterbelts. Review all condition/health and age information on Table 3.5-3 since information is missing entirely, partially missing, incorrect or disjointed. You may wish to review other deficiencies for shelterbelts in Sections 3.5 and 3.6 before revising this table. (ZAT)

132. The semi-permanent wetland discussion on page 6 of Section 3.5 states that semi-permanent wetlands are found on only three tracts but only two tracts are listed and the wetlands in Section 5 are not depicted on Plate 3.4-5, Lentic Wetland, Lotic Wetland and DWR Locations. Please correct these discrepancies. NDAC 69-05.2-05-02. (GAW)
133. The wetlands discussion that begins on page 5 of Section 3.5 states that two forms of wetlands, linear and depressional, were identified within the permit boundary. A sentence in the depressional wetland discussion on page 7 states that initial efforts were spent to characterize the floristic quality and variability within the sloped and linear wetlands. Please provide clarification of what a sloped wetland is and if it is associated with the linear or depressional forms of wetlands or is a separate form. Also explain why no sloped wetlands are identified and how they are being distinguished. NDAC 69-05.2-05-02. (GAW)
134. The wetland acreage values listed on page 6 of Section 3.5 indicates that there are 16.41 acres of semi-permanent wetlands, 90.32 acres of seasonal wetlands and 19.33 acres of temporary wetlands. These values add up to 126.06 acres but Table 3.5-1, Landuse Acres per Landowner indicates there are 126.15 acres of wetland in the permit. The narrative on pages 6 and 7 of Section 3.5 go on to state that there are 122.89 acres of linear wetlands and 3.17 acres of depressional wetlands. Please revise to clarify how many acres of each class of wetland there are within the linear, depressional and sloped forms of wetlands. The acreage values should be consistent throughout the permit. NDAC 69-05.2-05-02. (GAW)
135. The first sentence on page 8 of Section 3.5 states that additional depressional wetlands, two temporary and one seasonal, were added in 2012. However, no seasonal depressional wetlands can be found on Plate 3.4-5, Lentic Wetland, Lotic Wetland and DWR Locations. Please review and revise as necessary. NDAC 69-05.2-05-02. (GAW)
136. Please include a table that identifies each wetland within the proposed permit area and provide its location by legal description, its form, classification, size in acres, and label each of these wetlands on Plate 3.4-5, Lentic Wetland, Lotic Wetland and DWR Locations. NDAC 69-05.2-05.02. (GAW)
137. The heading of the farmstead narrative on page 8 of Section 3.5 and the farmstead column in the pre-mine landuse table, Table 3.5-1, indicates that the farmsteads are

- “abandoned”. The second sentence in the narrative on page 8 of Section 3.5 states that these are a mix of abandoned and occupied farmsteads. Please revise to clarify if abandoned and occupied farmsteads are being combined in this land use or if active occupied farmsteads are being combined with a different land use. NDAC 69-05.2-05.02. (GAW/ZAT)
138. The link to Appendix 3.5-4 on Page 1 of Section 3.5 opens Appendix 3.5-3, Landowner Maps. Please correct. NDAC 69-05.2-05-02. (GAW)
139. The native grassland acreage listed in the native grassland narrative on page 8 of Section 3.5 differs slightly with the value listed in Table 3.5-1. Please correct this discrepancy. It appears that the acreage associated with the “Public Utilities” land use on page 152 of Appendix 3.5-2, may be causing this minor acreage difference. NDAC 69-05.2-05-02. (GAW)
140. In the native grassland narrative on page 8 of Section 3.5-1, please discuss the process used to distinguish native grassland from tame pastureland. No areas within this permit have been classified as tame pastureland but areas exist that are dominated with introduced grass species. NDAC 69-05.2-01-02 defines native grassland as lands on which the natural potential plant cover is principally composed of native grasses, grasslike plants, forbs and shrubs. Tame pastureland is defined as lands used for long-term production of predominantly adapted, domesticated species of forage plants. Tame pastureland is oftentimes areas that were previously farmed/cropped. Please then clarify why areas dominated with non-native species were classified as native grassland and why old cropland fields comprised principally of non-native species are being classified as native grassland. Please review, clarify and/or revise the permit as necessary. NDAC 69-05.2-05-02. (GAW)
141. Please revise Appendix 3.8-1 so that the name of the Appendix is listed on page 1 of the document or include the Appendix title in bookmark column. When Appendix 3.8-1 is opened from the native grassland narrative on page 8 of Section 3.5, the reader has no confirmation that the opened document is actually Appendix 3.8-1. NDAC 69-05.2-05.02. (GAW)
142. Plate 3.8-1 opens when the link entitled Plate 3.8-2 is opened in the native grassland narrative on page 8 of Section 3.5. Please correct this hyperlink. NDAC 69-05.2-05-02. (GAW)
143. A sentence in the native grassland narrative on page 8 of Section 3.5 states that embedded croplands within the native rangelands is allowing for an increased rate of invasive species to replace native species and the sentence is ended with a link to Plate 4.13-1. Please explain how annually seeded cropland species allow for an increased rate in invasive species on native rangeland (it appears that it may be related to management as a result of fragmentation rather than simply a result of embedded

- cropland). It is not clear why a link to Plate 4.13-1, Wildlife Monitoring Map, is provided at the end of the sentence. Please correct as necessary. NDAC 69-05.2-05-02. (GAW)
144. Please revise the Native Rangeland narrative on page 8 of Section 3.5 to include a reference to where the reader can find the mapping unit, i.e. ecological sites, breakdown of the native grassland included in the permit. NDAC 69-05.2-05-02. (GAW)
145. The woodland narrative on page 8 of Section 3.5 provides a link to Plate 3.6-3, Pre-mine Woodlands; however, it opens to Plate 3.6-2, Woodlands, rather than Plate 3.6-3. Please correct this link. NDAC 69-05.2-05-02. (GAW)
146. The woodland narrative on page 8 of Section 3.5 provides a link to Appendix 3.5-2, Pre-mine Woodland Acres; however, when this link is opened there is no heading or title to confirm that Appendix 3.5-2 is what actually opened and that this Appendix contains acreages for all land uses not just woodlands. Please revise as necessary to provide clarity. NDAC 69-05.2-05-02. (GAW)
147. In the woodland narrative, please include a reference to the table that provides a breakdown of woodland land use by mapping unit, i.e. low shrub, tall shrub and deciduous trees. NDAC 69-05.2-05-02. (GAW)
148. A number of plates and appendices are referenced in the Developed Water Resources narrative on Page 9 of Section 3.5; however, it does not include a reference to the Pre-Mine Landuse Map, Plate 3.5-1. Please clarify in the narrative if the DWR's are identified on the Pre-Mine Landuse Map, Plate 3.5-1. NDAC 69-05.2-05-02. (GAW/RLK)
149. In the Developed Water Resources narrative in Section 3.5, the total number of developed features should be provided in addition to the total acres devoted to water sources. The distribution of water sources is a consideration when evaluating water availability for livestock grazing. Also, it would be appropriate to state in the narrative what the developed water resources are typically used for in the permit area. (RLK)
150. Please consider adding the water quality information related to livestock suitability in the Developed Water Resource narrative in Section 3.5 to Section 3.4, Surface Water. Providing a discussion on the suitability for the typical water uses based on sampling should remain in this section. The reader can be referred to the Surface Water Section for a more detailed discussion of sample results. (RLK)
151. Please update the sample results discussion in the Developed Water Resource narrative to correspond to the data in Appendix 3.4-1. Also, rather than introducing a classification for a single DWR at a location in SE1/4 of Section 18, it would be more informative to provide the range of TDS test results from the baseline monitoring period. Providing the average along with the range for TDS results from DWRs within

the permit area would be helpful for comparison. Please consider making a similar comparison for sulfate as recommendations have also been made for sulfate levels for livestock water sources. (RLK)

152. In the Developed Water Resource narrative in Section 3.5, the reader is referred to Appendix 3.5-2, Premine Land Use Acreages for information on DWR acreage by landowner or by soil type. The DWR Summary Table: Soil Map Unit Per Landowner, provided in Appendix 3.5-2 does not appear to be a complete accounting of DWR acres by tract or soil type. Please explain how the soils information is to be used in evaluating the DWRs or consider removing the soil map unit information from the table and revising the narrative appropriately. (RLK)
153. Please revise the last DWR statement on page 9 of Section 3.5 to include the percentage of DWR that are fair for cattle. It also appears from the chart that 78% of the DWR in the permit area are good to excellent for cattle. (ZAT)
154. Please revise the Roads, Trails or Right-of-ways narrative on page 9 of Section 3.5 to clarify how private roads and trails have been classified in terms of land use. The roads to farmstead in Section 13, the old road bed in Section 28 and the road to the tower in Section 8 are not delineated as roads but the heading to this narrative would imply that even trails were considered roads. NDAC 69-05.2-05.02. (GAW)
155. Land use narrative regarding Gravel/Scoria pits on page 10 of Section 3.5 describes scoria pits located in the NE1/4, NW1/4 and NW1/4, NE1/4 of Section 24; however, based on our field investigation as well as cultural resource information that is provided in this application, it appears that the open pit remaining in the NE1/4, NW1/4 is an abandoned surface coal mine. Please review and if required, revise the narrative and add another category to the Pre-mine Land Use Acres Table in Appendix 3.5-1. In addition these features need to be discussed in Section 3.5 and depicted on Plate 3.5-1, Premine Land Use map. NDAC 69-05.2-05-02. (GAW/BEB)
156. Please provide research citations or articles supporting the claim that there is decreased infiltration on native grasslands dominated by Kentucky bluegrass compared to the displaced native species. Much is made of this issue on page 10 of Section 3.5 without any supporting data or documentation and it is mentioned that low vegetative cover on some ecological sites is increasing the potential for erosion. It would seem that having 38.6% of the watershed in annual cultivation might affect the amount and intensity of surface runoff and affect turbidity to a greater extent than a change in perennial species composition of native grasslands; however, this is not even mentioned in the stream narrative on page 10 of Section 3.5. Furthermore, Section 4.12 of the permit indicates that excessive litter and non-use or light utilization is causing a decline in ecological condition. Please revise to provide the requested information and clarity. NDAC 69-05.2-05-02. (GAW)

157. The last sentence on page 10 of Section 3.5 states that it does not appear that mining activities will affect any reaches of streams that are designated other than ephemeral and Plate 3.4-1, General Drainage Map, is referenced in the next sentence. The Pit Layout and Facilities Map indicates that sediment ponds are to be constructed in the intermittent stream in the NE1/4 of Section 16, W1/2 of Section 7, and S1/2 of Section 21, and that the drainage ways above these ponds will be stripped. Please review and revise the statement on page 10 of Section 3.5 accordingly. NDAC 69-05.2-05-02. (GAW)
158. The ND Natural Heritage Inventory narrative on page 11 of Section 3.5 contains a sentence that states “There were no observations of this species within the permit area.” It is not clear which species this sentence is referring to. Please edit to provide clarity. NDAC 69-05.2-05-02. (GAW)
159. The ND Natural Heritage Inventory narrative on page 11 of Section 3.5 contains a sentence that states “All areas were surveyed for Sheathed Pondweed and all other species of concern [Appendix 3.10-2] List of TEC Species & [Appendix 3.10-1] Table of ND 100 Species of Concern by Parcel.” Please revise the sentence so that the information being conveyed is understandable. NDAC 69-05.2-05-02. (GAW)
160. Please revise the first sentence of the third paragraph on page 11 of Section 3.5 so that the sentence states what is intended. The current language “no other records recorded of the permit area by NDNHI” is confusing. It is not clear what kind of records of the permit area that NDNHI is recording. NDAC 69-05.2-05-02. (GAW)
161. The last sentence of the ND Natural Heritage Inventory narrative on page 11 of Section 3.5 leads one to believe that the ND GAP Report is a dynamic document that sets forth areas designated as critical habitats for terrestrial and aquatic species. The term “designated critical habitats” has legal implications and should be used in the appropriate context as intended by the agency responsible for designating critical habitats. Please revise the statement accordingly. NDAC 69-05.2-05-02. (GAW)
162. Please review and update the narrative on page 11 of Section 3.5. The current narrative indicates there are no other species of concern besides Sheathed Pondweed and there are no other significant ecological communities within the permit or buffer area. However, Appendix 4.12-2 Pre-mine and Post-mine Land Use Discussion lists numerous tracts with recorded species of concern and Table 3.10-1 lists 16 observed species of concern. (ZAT)
163. Please review and revise the land use capability narrative on page 11 of Section 3.5. Pursuant to NDCC 38-14.1-14(2)(a)(2), please add narrative about the capability of the land prior to mining to support a variety of uses giving consideration to soils, foundation characteristics, topography, vegetative cover, etc. based on a scientific assessment. (ZAT)

164. In the Pre-Mine Landuse discussions, Section 3.5, please include a narrative discussing all areas that have been previously disturbed by non-agricultural related activities (basically industrial areas). Also, discuss if these areas have been reclaimed, describe their present condition, and how the sites are presently being used. The Reclamation Division is aware of non-agriculture related disturbances consisting of what appears to be old pits and tailings located in the northwest corner of Section 28, southwest corner of NW1/4 of Section 12 and the SW1/4 of Section 12. Please clarify if one of the areas labeled as a gravel/scoria pit in the NW1/4 of Section 24 is actually an old coal mine. The Reclamation Division is also aware of disturbance from an old rock quarry in Section 8, but this area is not identified or distinguished on the land use map or the wildlife habitat map. Aerial photography also shows an unnatural appearing feature located near the woodlands in the NE1/4 of Section 12. Please review and update Section 3.5 and Plate 3.5-1 as necessary to provide the detail required by regulation. NDAC 69-05.2-08-08 and NDAC 69-05.2-08-15. (GAW)

#### **Plate 3.5-1 Pre-mine Land Use**

165. Please review Plate 3.5-1 and correct the overlapping and double labeling of land uses. One example is the section line between Section 32, T142N, R83W, and Section 5, T141N, R83W. (ZAT)
166. Please review the legend for Plate 3.5-1 and include all symbols/abbreviations used on the plate. For example, in the NW1/4NW1/4 of Section 5, T141N, R83W, the abbreviation SP is used, but it is not listed in the legend. (ZAT)
167. Please review Plate 3.5-1 for labeling accuracy and make corrections as necessary. For example, in Sections 12, 13 and 24, T141N, R84W, all shelterbelts are labeled SB but the outline color varies. It is unclear why shelterbelts around farmsteads are outlined in brown, while field shelterbelts are outlined in mint green. If the color of all shelterbelts was mint green as indicated on the legend, there would be no need to use four or more SB labels in one tiny farmstead. (ZAT/GAW)
168. The land use boundary line for the gravel/scoria pits is very difficult to see on Plate 3.5-1, Pre-mining Land Use map, please revise so that the landuse boundary depicting these pits is readily apparent. NDAC 69-05.2-05-02. (GAW)
169. The PSC is aware of old cropland fields in the SE1/4 of Section 31, SE1/4 of Section 8 and NE1/4 of Section 21, and aerial photography shows old field boundaries in the NE1/4 and SE1/4 of Section 13, SW1/4 of Section 7 and NW1/4 of Section 8. Page 5 of Section 4.12-1 indicates that there are previously tilled areas primarily in the north half of the NE1/4 of Section 21 comprised primarily of alfalfa and introduced grasses. Please depict these areas on Plate 3.5-1. NDAC 69-05.2-08-08 (3) and NDAC 69-05.2-05-02. (GAW)

170. The soil survey, Plate 3.8-1 shows mapping unit 3A, which is a Harriet soil, located in the northeast corner of the NW1/4 and northwest corner of NE1/4 of Section 19, near the center of the NW1/4 of Section 19, and in the SE1/4 of the SE1/4 of Section 18. However, these areas are not identified as wetland as would be expected for that soil type. Tonka soils are identified in the S1/2 of Section 19 and, likewise, these areas are not classified as wetland. Lamoure and Regan soils have a water table at or near the surface but these areas are not identified as wetlands. Please review and in each instance explain why these mapping units, which are also often associated with springs, seeps, or depressions are not considered wetlands. NDAC 69-05.2-05-02. (GAW)
171. The narrative in Section 4.12-2 states that there are four developed water resources (DWR) in the E1/2 of Section 16 but only two such features are labeled on Plate 3.5-1. Please clearly identify the four DWR's on Plate 3.5-1. NDAC 69-05.2-05-02. (GAW)
172. Aerial photography indicates that the DWR located in the NE1/4 of Section 25 is surrounded with trees but this area is not identified as woodland on Plate 3.6-2, Woodlands, or Plate 3.5-1, Premine Land Use map. Please review and update if necessary. NDAC 69-05.2-05-02. (GAW)
173. DWR's are labeled but not depicted in the SW1/4 of Section 21. Please depict these DWRs on Plate 3.5-1. NDAC 69-05.2-05-02. (GAW)

#### **Appendix 3.5-2 Premine Land Use Acreages**

174. In Appendix 3.5-2, Karen Shulz is identified as the surface owner of the SW1/4 of Section 17, T141N, R83W, in the cropland, hayland and miscellaneous land use tables, but Wayne and Jerry Reuther are listed as the surface owners in the surface ownership information. Please revise as appropriate. (RLK)
175. Please include the Appendix name and identification numbers in the heading of the bookmark column of Appendix 3.5-2 so it is readily apparent which document is open. NDAC 69-05.2-05-02. (GAW)
176. Please include the name of the table at the top of each table in Appendix 3.5-2 so that it is apparent what information the table is providing. For example, it is not apparent the tables on pages 46 and 47 are soil mapping units for the developed water resources nor can one readily determine what the tables on pages 102 through 106 are representing. NDAC 69-05.2-05-02. (GAW)
177. The native rangeland ecological site summary table on page 108 of Appendix 3.5-2 contains a column labeled N/A. Page 145 of Appendix 3.5-2 provides the names of the abbreviations for the ecological sites and N/A is listed as "Not Rated". Please provide an explanation of why there are 28.63 acres of native grassland that is not assigned an ecological site. These may be disturbed areas that should be included with a different

- land use. Please review, update as necessary, and provide an explanation of any native grassland that cannot be classified as an ecological site. NDAC 69-05.2-05-02. (GAW)
178. Page 152 of Appendix 3.5-2 indicates there is 0.08 acres of public utilities in Lot A of Section 8. Appendix 1.9-1, Ownership Information, indicates that Lot A of Section 8 is not included in the permit application. It is not clear what the public utilities land use is for this tract or why information is included for this tract if the area is not included in the permit. Please review and clarify as necessary. NDAC 69-05.2-05-02. (GAW)
179. Please modify the title for Appendix 3.5-2 to indicate this appendix contains Pre-mine Land Use Acreage tables by Landowner and Mapping Unit. The title will need to be changed in the Table of Contents, the narrative of Section 3.5, and on the title page of the Appendix. (ZAT)
180. Please add a title to the DWR acreage table in Appendix 3.5-2. You may also wish to consider adding *page 1 of 2* in the title block to indicate the extent of this table. (ZAT)
181. Please add industrial land use to the Miscellaneous Landuse Acreage charts in Appendix 3.5-2. (ZAT)
182. On the Woodland Acreage tables of Appendix 3.5-2, please change the township to T141N in the land description title for Minnkota Power N1/2NW1/4 (Less BNCR-9401) of Section 5, T142N, R83W. Also make sure the parcel description is consistent with Table 3.5-1 and the Woodlands summary table in Appendix 3.5-2 as requested in another deficiency. (ZAT)

### **Appendix 3.5-3 Landowner Maps**

183. In Appendix 3.5-3, the maps for the S1/2 of Section 8 are provided by quarter section; however, the acreage total is for the half section owned by Five D's LLP and a note indicating such is not included. Also in Appendix 3.5-3, the acreage table is blank for Section 9 and for the small Minnkota tract in the SW4SW4 of Section 32; the land description caption provided on the map page reads SE4 Sec. 32. Please revise as appropriate. (RLK)
184. Please remove the associated disturbance boundary from the maps in Appendix 3.5-3, and include this information on the Pit Layout and Facilities Map, Plate 4-1.1. The associated disturbance boundary is obviously just what is anticipated at this time and is subject to change. In fact, it appears changes have already been made to the planned associated disturbance boundary. For example, the pit layout and Facilities Map shows 100 foot buffer zones along intermittent streams but the maps in Appendix 3.5-3 show associated disturbances in these drainages. Including associated disturbance boundary hatching on this pre-mine baseline map reduces the usefulness of the map and all of

these maps will need to be revised every time an associated disturbance boundary change is made. NDAC 69-05.2-05-02. (GAW)

185. Soil mapping units are depicted on all of the Landowner Maps in Appendix 3.5-3 except for a few tracts located in Sections 5 and 32. Please include the soil map unit information on all maps so that the information provided is consistent throughout. NDAC 69-05.2-05-02 (GAW)
186. The landowner map, Appendix 3.5-3, does not show two developed water resources in the SW1/4 of Section 21, but two DWR's are labeled on the Pre-mine land use map, Plate 3.5-1. Please review and correct as necessary. NDAC 69-05.2-05-02. (GAW)
187. Page 47 of Appendix 3.5-3 is labeled as SW4SW4 of Section 32 in the bookmark but the map has SE1/4 of Section 32 listed above the legend. It is not clear where this small tract is located by looking at the Landowner Map, Appendix 3.5-3. Please revise the legal description as necessary and clarify where this tract is located. It is not clear why this very small tract isn't combined with an adjacent tract that has the same surface ownership. NDAC 69-05.2-05-02. (GAW)
188. Please label and arrange all parcel maps in Appendix 3.5-3 in the same order that they are labeled and arranged in Table 3.5-1, Pre-mine Land Use. (ZAT)

### **Section 3.6 Pre-mining Vegetation**

189. The last sentence of the second paragraph on page 1 of Section 3.6, Pre-mine Vegetation, states that the area where the species of concern (sheathed pondweed) was observed will not be impacted by mining operations. Please clarify if the area where this species was observed is included in the permit, or if it is not in the permit, indicate the distance from the proposed permit area. NDAC 69-05.2-05-02. (GAW)
190. Please revise the first sentence of the third paragraph on page 1 of Section 3.6, Pre-mine Vegetation, so that the sentence is understandable. The wording "Although there have been no other records were recorded of the permit area by NDNHI,...." is not understandable. NDAC 69-05.2-05-02. (GAW)
191. A sentence in the middle of the third paragraph on page 1 of Section 3.6 states that ... "we found that there indeed were no other species of concern or significant ecological communities within the permit or buffer area". This is confusing as Table 3.10-1, Species of Concern, indicates that numerous species of concern observations were made within the permit area. Please review and clarify. NDAC 69-05.2-05-02. (GAW/ZAT)
192. Please revise the last sentence of the third paragraph on page 1 of Section 3.6 to clarify what is meant by "high value habitats". Clarify if the ND GAP report identifies "high

value habitats” for the area and if so what does the GAP report consider “high value habitats”. Also, it is not clear what is meant by the “designated critical habitats” statement in this paragraph since only the USFWS can designate critical habitat for threatened and endangered species. Please review and clarify how “high value habitats” and “designated critical habitats” are defined for the purposes of this permit. It would seem that woodlands, wetlands, streams and native grasslands would be considered high value wildlife habitat. NDAC 69-05.2-05-02. (GAW)

193. Please expand the cropland narrative to describe the prevalence or proportion of cropland acres devoted to crops other than wheat. Also, it would be appropriate to indicate the typical farming practices used for crop production in the permit area such as no-till, minimum tillage and summer fallow. (RLK)
194. The second to last sentence of the Cropland narrative in Section 3.6 incorrectly indicates the soil map unit productivity index is relative to the county average wheat yield. The NRCS productivity index (PI) is relative to the soils best rated for crop production which are assigned a PI of 100. Based on the NRCS productivity index for Oliver County, the wheat yield for the best crop producing soil map units (PI 100) is 37 bu/ac. Please revise as appropriate. (RLK)
195. Please revise the cropland narrative on pages 1 and 2 of Section 3.6 to discuss the vegetation or crops growing on the cropland areas during the vegetation inventory period. NDAC 69-05.2-08-08(1)(d). (GAW)
196. At the beginning of the native grassland narrative on page 2 of Section 3.6, please provide an overview of the sampling that was completed. Discuss that tracts not sampled are represented by sampling that was completed elsewhere as described in Section 4.12.2, Pre-mine and Post-mine Land Use Discussions, and that this section provides information about how the tract is being managed and includes estimates of ecological condition on sites not sampled. Please also mention if any areas delineated as native grassland were previously cropped years ago and discuss the species composition of these areas if not represented by Similarity Index information in Appendix 3.6-3. NDAC 69-05.2-05-02 (GAW)
197. In the Claypan narrative on page 2 of Section 3.6, please discuss if the one sampled claypan site is representative of other claypan ecological sites in the proposed permit area. The narrative for the SW1/4 of Section 18 in Section 4.12-2 states that the moderate level of grazing intensity is controlling the relative percentage of invasive species. However, the narrative on page 2 of Section 3.6 states that the season of use and intensity adjustments could keep the site in good condition but that does not appear to be the case. Please explain or address this apparent discrepancy. NDAC 69-05.2-05-02. (GAW)

198. The sandy ecological narrative on page 3 of Section 3.6 states that two sandy ecosites were sampled, but information for only one site in Section 7 is included in Appendix 3.6-3, Similarity Index Reports, and only one sandy sample site is shown on Plate 3.6-1, Ecological Site Map. Please review and update as necessary. NDAC 69-05.2-05-02. (GAW)
199. A sentence on page 4 of Section 3.6 states that 5 additional ecosites were present in the permit, but Appendix 3.5-2 identifies 6 ecosites that were not sampled, not including a few sites that are complexes. Please review and revise as necessary. NDAC 69-05.2-05-02. (GAW)
200. A sentence on page 6 of Section 3.6 states that intensive use of native grasslands in the permit area has increased the Kentucky blue grass component significantly, and another sentence mentions the invasion of smooth brome grass and crested wheatgrass. If intensive use is the reason Kentucky bluegrass has increased significantly, then please explain why areas that are not intensively used, such as isolated idle areas are also dominated with these species. NDAC 69-05.2-05-02. (GAW)
201. In the hayland narrative on page 6 of Section 3.6, please reference and provide a link to the location where species composition of each hayland tract can be found. NDAC 69-05.2-08-08(1)(d). GAW
202. Please add alfalfa as a seeded species to the first sentence on hayland on page 6 of Section 3.6-6, since alfalfa is included in the list below. (ZAT)
203. Please review the shelterbelt narrative on page 7 of Section 3.6. The Pre-mine Shelterbelt Condition Table in Section 3.5 lists shelterbelt condition/health as good (G), fair (F) and declining (D) while Section 3.6 uses good, fair, fair (declining) and poor to describe shelterbelt condition/health. Please add narrative that defines good, fair, fair (declining) and poor condition and also add narrative to define the age categories of mature, declining, and newly planted, since declining is used in both categories. Please use and present this condition information consistently throughout Sections 3.5 and 3.6. (ZAT)
204. A sentence in the wetlands discussion on page 8 of Section 3.6 states that a majority of the class I wetlands are tilled through, but Plate 3.4-5 shows that most temporary wetland are not located on cropland. Please revise as necessary. NDAC 69-05.2-05-02. (GAW)
205. In the wetlands narrative on page 8 of Section 3.6, please discuss the system(s) used to classify the wetlands within the permit area. It appears that the wetlands have been classified by water regime modifiers using Stewart and Kantrud's classification system and Cowardin's USFWS NWI system, but Stewart and Kantrud's classification system was designed only for prairie pothole wetlands. Cowardin's classification system and

- the US Army Corps of Engineers hydrogeomorphic classification system do not classify wetlands as linear systems as discussed. Please clarify and explain the wetland classification system used for this permit area. NDAC 69-05.2-05-02. (GAW)
206. A sentence in the wetlands narrative on page 8 of Section 3.6 states that there are only linear and depressional wetlands within the permit boundary and that within these wetland forms there are three types of wetlands based on their seasonality or permanence. Please clarify that the seasonality or permanence is tied to surface water permanence or water regime and clarify how wetlands formed in saturated soils from ground water seeps were classified. Systems that classify wetlands according to surface water regime permanence generally don't work well for wetlands formed from ground water seeps or sloped wetlands. The permit area appears to have depression, sloped and riverine systems according to the hydrogeomorphic classification system. Please revise to clarify and classify the wetlands according to an appropriate established classification system. NDAC 69-05.2-05-02. (GAW)
207. In the linear wetland discussion on page 8 of Section 3.6, it is stated that the hydrology of linear wetlands within the permit area is mainly controlled by seeps/springs. However, a number of seeps and springs shown on Plate 3.4-4 are not identified as wetlands on Plate 3.4-5. Please review and revise as necessary. NDAC 69-05.2-05-02. (GAW)
208. The seasonal wetlands in Section 3.1 that are listed at the top of page 9 of Section 3.6 are not shown on Plates 3.4-5 or 3.5-1. Please either show these wetlands on the wetland and land used maps or remove reference to them if they are not in the permit area. NDAC 69-05.2-05-02. (GAW)
209. The narrative on page 9 of Section 3.6 states that three of the wetlands listed at the top of the page were sampled but the naming convention of the wetlands is not consistent between Page 9 and referenced Appendix 3.6-5. Please revise so that the wetland naming or labeling convention is consistent throughout all sections. NDAC 69-05.2-05-02. (GAW)
210. The second paragraph on page 9 of Section 3.6 indicates that increased disturbance in areas surrounding wetlands is detrimental to the health of the pre-mine wetlands and an attempt is made to indicate that the reclaimed landscape will have less disturbance and more diverse species composition. Given that nearly all of the wetlands are surrounded by undisturbed native grassland, please clarify how seeding a half dozen native grass species on reclaimed native grassland with uniform soil spread thickness creates a more diverse native grassland landscape compared to the pre-mining ecosystems where over 300 species are identified. NDAC 69-05.2-05-02. (GAW)
211. The last paragraph of the woodland section on page 10 of Section 3.6 mentions the quality of the pre-mine woodlands and goes on to state that reclaimed woodlands will be

of equal or better quality. The quality of the woodlands is not discussed in Appendix 3.6-8, Woodland Cover and Density Data. Please discuss how woodland quality was determined and provide an assessment of the quality of the premine woodlands or reference where this information can be found in the permit. The last paragraph of Section 3.6-8 indicates that all of the woodlands are in good condition. (GAW)

212. It does not appear that scattered patches of western snowberry within grassland communities has been classified as woodland. Please discuss how this low shrub species was classified and in which instances was this species considered woodland and in which instances it was considered native grassland, if that was the case. Please provide an assessment of the frequency of this species in the native grassland and its value as wildlife habitat. The Similarity Index Reports, Appendix 3.6-3, indicates that this species was only present in two ecological sites, Loamy and Clayey, and that it comprised less than 1% and about 2% of the relative composition, respectively. Please discuss if the similarity reports properly represent the presence of this species. NDAC 69-05.2-05-0. (GAW)

#### **Plate 3.6-1 Ecological Site Location Map**

213. Please depict and identify the ecological sites of the native grassland located in the northwest corner of Section 5. NDAC 69-05.2-08-08. (GAW)

#### **Plate 3.6-2 Woodlands**

214. The narrative in Section 4.12.2 for the E1/2 of Section 17 states that there are small patches of woodlands throughout the tract and that they will be reclaimed, but no woodlands are identified on this tract on Plate 3.6-2. Please review the narratives for each tract in Section 4.12.2 and update Plate 3.6-2 accordingly, as well as all other applicable plates and tables. NDAC 69-05.2-05-02. (GAW)
215. Plate 3.6-2 is labeled as “Woodlands” in the Table of Contents but as “Premine Woodlands” in the maps title block. Please identify the Plate in a consistent manner. NDAC 69-05.2-05-02. (GAW)
216. It is very difficult to interpret information on the Premine Woodland map, Plate 3.6-2, when the same colors on the map are used for different purposes. For example, it is confusing when deciduous woodland communities are outlined in green but then low shrub density samples are identified with a green symbol. It would be less confusing if the same color were used for the Woodland Cover Density Sample Location as the corresponding Woodland Type that it is representing. Please revise as necessary. NDAC 69-05.2-05-02. (GAW/ZAT)

217. The low shrub sample location in the SW1/4 of Section 21 is essentially covered up by the tall shrub sample location symbol on Plate 3.6-2. Please revise so that both sample locations are readily identified. NDAC 69-05.2-05-02. (GAW)
218. The tall shrub density table in Appendix 3.6-8 indicates that tall shrub communities in the NW1/4 of Section 5, SE1/4 of Section 20, NE1/4 and SE1/4 of Section 21, SW1/4 of Section 16, NW1/4 of Section 8, NW1/4 of Section 25 and NE1/4 of Section 19 were sampled, but none of these sample locations are shown on the map. Please review and revise as necessary. NDAC 69-05.2-05-02. (GAW/ZAT)

### **Appendix 3.6-1 Plant Species List**

219. A sentence in the first paragraph on page 1 of Section 3.6 states that a complete plant species list for the permit area can be found in Appendix 3.6-1. However, this species list only applies to 4 of the 11 landuses identified within the permit boundary. NDAC 69-05.2-08-08(1)(b) requires a comprehensive species list for each land use. Please review and revise as necessary to provide a species list of all landuses. (GAW)

### **Appendix 3.6-2 USDA/NRCS Ecological Site Descriptions**

220. Please include a heading in the bookmark section of this appendix that allows the user to determine which section of the permit is open when this appendix is being viewed. NDAC 69-05.2-05-02. (GAW)

### **Appendix 3.6-5 Wetland Drawings/Methodology**

221. Please revise Appendix 3.6-5, Wetland Drawings and Methodology, to include the legal description of the locations of the wetlands in the bookmark portion of the Appendix. Presently, one has to search the whole map to determine where each sampled wetland is located. NDAC 69-05.2-05-02. (GAW)
222. The second sentence of the first paragraph of Appendix 3.6-5 is incomplete. It reads "Each wetland basin delineated." Please revise to provide clarity. NDAC 69-05.2-05-02. (GAW)
223. The first sentence of the second paragraph on page 1 of Appendix 3.6-5 states that "All wetlands as defined by the ND State Water Commission regulations were delineated. Please include the ND State Water Commission's definition of a wetland. NDAC 69-05.2-05-02. (GAW)
224. A sentence in the second paragraph on page 1 of Appendix 3.6-5 states that "linear" wetlands were modified from the Cowardin classification system to fit Stewart and Kantrud permanence classes. The last paragraph on page 3 of Appendix 3.6-5 then states that the Hydrogeomorphic (HGM) system was used. Neither the Cowardin or

Stewart and Kantrud classification systems use the term “linear” wetlands. Elsewhere the term “sloped” wetland is used. The terms “linear” and “sloped” wetlands are associated with the US Army Corps of Engineers Hydrogeomorphic classification system. Please clarify the classification of these “linear” and “sloped” wetlands using an established and accepted classification system that recognizes these types of wetlands. In other words, clarify if these are Riverine or Palustrine Systems, identify the subsystems and classes with modifiers. The only similarity between the Cowardin classification system and Stewart and Kantrud’s classification system is the water regime modifier – temporary, seasonal and semi-permanent. The terms “Lotic” and “Lentic” are used extensively in the Wetlands section of Section 3.6, Premine Vegetation, yet none of the previously mentioned established wetland classification systems use this terminology and these types of wetland systems are not mentioned or discussed at all in Appendix 3.6-5. Please revise to provide a single, complete classification system for the wetland systems and revise the narrative discussion in this Appendix (3.6-5) to provide clarity. NDAC 69-05.2-05-02. (GAW)

225. The first two wetlands listed in Appendix 3.6-5 are labeled Access (East) and Access (West). There is no legal description shown on the line drawing and these two wetlands are not shown on Plate 3.4-5, Lentic Wetland, Lotic Wetland and DWR Locations. Please identify these sites on Plate 3.4-5. NDAC 69-05.2-05-02. (GAW)
226. The last sentence of the fourth paragraph on page 2 of Appendix 3.6-5 states that “The salinity factor, along with other contributing facts, is likely that a majority of these drainages, ephemeral and intermittent, are still undisturbed native rangeland and not being cropped.” It is not clear what is meant by this sentence. It is not clear why it is “likely” that a majority of these drainages are still undisturbed native rangeland and not being cropped. NDAC 69-05.2-05-02. (GAW)
227. A sentence at the top of page 3 of Appendix 3.6-5 states that wetlands were sampled upstream and downstream of a potential crossing in Section 6, but these sample sites are not shown on Plate 3.4-5, Lentic Wetland, Lotic Wetland and DWR Locations. Please depict these sample locations on Plate 3.4-5. NDAC 69-05.2-05-02. (GAW)
228. A sentence in the first paragraph on page 3 of Appendix 3.6-5 states that wetlands and spring/seeps (92) were sampled. It is not clear why springs and seeps would not be considered wetlands given the hydrology, hydric soils and hydric vegetation characterizing the sites as documented in Appendix 3.4-8, Springs Photos and Vegetation Species Lists/DWR Photos. Please clarify the narrative in Appendix 3.6-5 and explain why the information in Appendix 3.4-8 is not included in Appendix 3.6-5. NDAC 69-05.2-05-02. (GAW)
229. Language in the last paragraphs on pages 2 and 4 of Appendix 3.6-5 states that 13 linear wetlands were sampled and a sentence in the first paragraph on page 3 states that an additional 3 depressional (2 temporary and 1 seasonal) were sampled. The sampling

locations of the 3 depressional wetlands are not shown on Plate 3.4-5 and data for these depressional wetlands does not appear to be included in Appendix 3.6-5. Appendix 3.6-5 indicates that 14 Linear Seasonal Wetlands were sampled (LSW1-14) along with two semi-permanent wetlands (SP NW5, SP NE 12) and two Access (East & West). This is very confusing. It is not even clear why the depressional wetlands are considered depressional wetlands given that they are either in drainages or associated with springs or seeps. Please review and clarify as necessary. NDAC 69-05.2-05-02. (GAW)

230. Page 4 of Appendix 3.6-5 includes what appears to be a reference section at the end although it is not titled as such. It is not clear why documents explaining the wetland classification systems mentioned in this Appendix are not included as reference material. Please review and revise as necessary to provide clarity. NDAC 69-05.2-05-02. (GAW)
231. Please clarify why stream reaches identified on Plate 3.4-4 and on the map on page 22 of Appendix 3.4-9 are not considered wetlands. It appears only pockets in stream channels that held water were identified as wetlands in some areas where a defined stream channel exists. For example, the northernmost drainage in the N1/2 of the NW1/4 of Section 19 is lined with prairie cordgrass and obviously flows water for a short time during spring runoff, but only a few depressions within the channel are identified as temporary wetlands. Likewise, only a few isolated temporary wetlands are associated with the area identified as an intermittent stream in the NE1/4 of Section 16. Please clarify how areas classified as intermittent streams can be considered to be temporary wetlands if these areas have surface water runoff and spring flow for more than 30 days each year. Please review Plate 3.4-4, the map on page 22 of Appendix 3.4-9, stream classifications, and revise Appendix 3.6-5, Plates 3.4-5 and 3.5-1 accordingly. NDAC 69-05.2-05-02. (GAW)

#### **Appendix 3.6-6 Productivity by Soil Type**

232. Please revise Table 3.6-6 Productivity Index, to incorporate the cropland productivity indices found in Table 18 of Appendix 3.8-1, High Intensity Soil Survey Report by Prairie Soil Consultants LLC. As indicated in the soil survey report, the agronomic ratings were provided in the table for map units that were not correlated in the original NRCS Soil Survey for Oliver County and the interpretations may be difficult to find on the Web Soil Survey. The interpretations made by the soil classifier are particularly valued for map units that are somewhat unique to the survey such as the Arnegard concave, Williams thick, Rauville and Typic Ustarents. (RLK)
233. The table of contents indicates that Appendix 3.6-6 is entitled Productivity by Soil Type, but when opened, the bookmark for this Appendix is labeled Table 3.6-6, Productivity Index. Please revise so that the document is identified in a consistent manner. NDAC 69-05.2-05-02. (GAW)

234. The native grassland productivity for mapping unit 1A, Tonka loam, is listed as being capable of yielding 4500 lbs/acre, but Table 1 of our revegetation success document shows that this soil is only capable of yielding 4000 lbs/acre. Likewise, Table 3.6-6, shows that Amor soils will yield 2400 lbs/acre, but our revegetation success document indicates the value should be 1800 lbs/acre. Please review the native grassland values listed in this table and update accordingly. Documentation should be provided in instances where the values listed differ from our revegetation document. (GAW)
235. Please review the yield values listed in the Hay and Pastureland suitability groups. In some instances suitability group A1 is listed as being 2.1 tons/acre and in other instances a value of 1.5 tons/acre is used. Likewise, values such as 1.8 tons per acre are listed but this value does not exist for suitability group A1 in our revegetation success document. Please review the pasture and hayland productivity values listed in this table and provide documentation when values listed are different than what is shown for the mapping unit in our revegetation success document. NDAC 69-05.2-05-02. (GAW)

### **Appendix 3.6-7 Shelterbelt Drawings/Descriptions**

236. The Bookmark heading for this Appendix is labeled Appendix 3.5-3, Shelterbelts, when opened, which is inconsistent with the Table of Contents (Shelterbelts Drawings/Descriptions). Please correct this discrepancy. NDAC 69-05.2-05-02. (GAW)
237. Please include a shelterbelt identification label for each planting included on the tree and shelterbelt forms and include this shelterbelt label on the Pre-Mining Land Use Map. In addition, please include the acreage of each shelterbelt planting in the Tree and Shelterbelt Survey form as required by NDAC 69-05.2-08-08(1)(c). We did notice that the shelterbelt acreages are listed on the Landowner Maps in Appendix 3.5-3. (GAW)
238. Please review and revise as necessary the shelterbelt drawings so that they are properly scaled, or label each individual planting and provide the size (acreage) in table format. For example, the shelterbelt in Section 5 is shown to be about 100 feet wide by about 600 feet in length, but in reality this planting is over ½ mile long. The row of Siberian elm in Section 8 is shown to be about 150 feet in length in Appendix 3.5-3, but in reality this row is over a ¼ mile in length. Please review and revise as necessary. NDAC 69-05.2-05-02. (GAW)
239. Planting No. 5 on the tree and shelterbelt survey form for the E1/2 of Section 24 is not shown on the Premine Land Use map, Plate 3.5-1. Please review and update as necessary. The drawing indicates this planting is located in the SW1/4 of Section 24. NDAC 69-05.2-05-02. (GAW)
240. The planting drawings shown on the last page of the information for the NE1/4 of Section 24 cannot be found on the Premine Land Use map, Plate 3.5-1. Page 34 of

Appendix 3.5-3 shows the plantings near the farmstead in the NE1/4 of Section 24, but page 35 is also included with the information for the NE1/4 of Section 24. The location listed at the bottom of page 35 indicates that the drawing is for plantings located in the NW1/4 of Section 24, but the shelterbelt drawings do not match what is shown on the Premine Land Use map. Please review and correct as necessary. NDAC 69-05.2-05-02. (GAW)

241. Shelterbelt information is provided twice for Porsborg's planting in the NW1/4 of Section 24 and no drawing information is included for the planting bookmarked as SB NW 24-1. The drawing information included for bookmarked planting SB-24-2 does not match the narrative description. Please include the bookmark labels for these plantings on the survey forms so that a distinction can be made between the two plantings located in the NW1/4 of Section 24. NDAC 69-05.2-05-02. (GAW)
242. The survey form for the shelterbelts located in the S1/2 of Section 13 indicates that this is a new planting consisting of five rows. However, aerial photography clearly shows an older planting located on the west side of this new planting. Please provide information for these trees as required by NDAC 69-05.2-08-08(1)(c)(4). (GAW)
243. Please review Appendix 3.6-7 for accuracy and completeness. It appears some information from the field notes may have been accidentally left out of the permit application. For example, the shelterbelt descriptions for areas 8, 9 and 10 in the SW1/4 of Section 8 owned by the Five D's LLP is missing information necessary for the replacement of the shelterbelt post mine, such as the number of trees, arrangement and spacing. Another example is the shelterbelt description for Area #11 in the NE1/4 of Section 18 owned by Schmidt, which reads, "The space between Area #11 and Area #12 is feet." Please review all of Appendix 3.6-7 and provide complete accurate information. (ZAT)

#### **Appendix 3.6-8 Woodland Cover & Density Data**

244. The bookmark heading of this appendix indicates that it is Section 4.13-3 of the permit rather than Section 3.6. Please correct. NDAC 69-05.2-05-02. (GAW)
245. Please include the name of the Appendix at the beginning of the document so that the title of the appendix is apparent when printed. NDAC 69-05.2-05-02. (GAW)
246. Please include a name and table number for each of the Tables in Appendix 3.6-8 so that the information is presented clearly and easily referenced. NDAC 69-05.2-05-02. (GAW)
247. The last paragraph on page 1 of Appendix 3.6-8 states that the woodland standard will be based on what existed prior to mining, but this is not what is stated in the woodland

- discussion in Section 4.12-2. Please review and address this inconsistency. NDAC 69-05.2-05-02. (GAW)
248. Deciduous woodland cover data is listed for the SE1/4 of Section 30, but this area is outside of the proposed permit boundary and the sampling location is not depicted on Plate 3.6-8, Premine Woodland. Please review and correct as necessary. NDAC 69-05.2-05-02. (GAW)
249. A sentence in the third paragraph on page 1 of Appendix 3.6-8 states that the deciduous woodlands communities are dominated by either green ash or boxelder. However, the woodland identified in the southeast corner of Section 17 is listed as being comprised exclusively of American Elm, and 4 of the 9 sample sites listed in the Table on page 10 of Appendix 3.6-8 are growing only cottonwoods. Given the location (north of a farmstead) and arrangement of the woodland in Section 17, it appears as if this grove of trees is a planted shelterbelt rather than a woodland. Please provide additional information regarding the woodland in Section 17 to clarify if it was planted or if it is a natural woodland community, and revise the statement on page 1 of Appendix 3.6-8 so that it is consistent with the data presented. NDAC 69-05.2-05-02. (GAW)
250. A sentence in the third paragraph on page 1 of Appendix 3.6-8 states that the low shrub community is dominated by western snowberry and with lesser amounts of silverberry and wild rose. However, silverberry and wildrose were not detected in the samples. Please review and revise as necessary. NDAC 69-05.2-05-02 (GAW)
251. A sentence in the third paragraph on page 1 of Appendix 3.6-8 states that the tall shrub community is dominated by buffaloberry, chokecherry, hawthorn and to a lesser degree juneberry. However, the tall shrub density table shows that on average there are more stems per acre of juneberry than hawthorn. Please review and revise as necessary. NDAC 69-05.2-05-02. (GAW)
252. The 10 meter woodland density table on page 10 of Appendix 3.6-8 indicates deciduous woodland communities were sampled in the NE1/4 of Section 20, NW1/4 of Section 19, NW1/4 of Section 21, E1/2 of Section 24 and NW1/4 of Section 14, but these sample locations are not identified on the Plate 3.6-2. Please identify these sample sites on Plate 3.6-2 or revise as necessary. NDAC 69-05.2-05-02. (GAW)
253. Please revise the woodland cover data tables in Appendix 3.6-8 so that it is clear what is being presented in the tables. Clarify that the tables at the top of each page is the herbaceous cover values from the Daubenmire frames and that the tables at the bottom of each page show the woodland canopy cover. Please clarify that the percent cover values listed at the bottom of each canopy cover table is the length in centimeters of the canopy cover along each 30 meter transect and that the percent cover value is derived by dividing the average value by 3000 centimeters. NDAC 69-05.2-05-02. (GAW)

254. It is not clear how the relative percent total values were calculated in the herbaceous cover tables in Appendix 3.6-8. Please clarify how these values were calculated. NDAC 69-05.2-05-02. (GAW)
255. In each Woodland Cover table in Appendix 3.6-8, please list the name(s) of the individuals that collected the data and clarify who evaluated the data to create the summary information. NDAC 69-05.2-05-02. (GAW)
256. Please identify the sampling date for each location in the Woodland Density tables in Appendix 3.6-8. In addition, please include the name or names of the individuals who collected the data. NDAC 69-05.2-05-02. (GAW)
257. Please include the conversion factors used to convert stems per quadrant to stems per acre in each of the density tables in Appendix 3.6-8. Obviously a different factor was used for the low shrub counts within tall shrub and deciduous communities. NDAC 69-05.2-05-02. (GAW)
258. The tall shrub woody plant density table shows that the sample community in the NW1/4 of Section 5 is comprised of lilac and caragana. Please clarify why this tall shrub community was considered woodland rather than a shelterbelt. NDAC 69-05.2-05-02. (GAW)
259. Please include total and average stem values for each species listed in the density tables in Appendix 3.6-8. The average values listed per quadrant appears incorrect in some instances so please review the values listed. For example, value listed for number of stems per 100 square meters in the table on page 10 of Appendix 3.6-8 appears to have been calculated as if there were 11 quadrants instead of 9. Please review and show how the values were calculated. NDAC 69-05.2-05-02. (GAW)
260. Please review Appendix 3.6-8, Woodlands. It appears that some Tall Shrub data is missing for the SE of Section 30 and the NE of Section 6. Bookmarks are listed for these two sections in Appendix 3.6-8 and the locations are depicted on Plate 3.6-8, but no cover or density data is included for these two plots. (ZAT)

### **Section 3.7 Prime Farmlands**

261. As required by NDAC 69-05.2-05-02(1) and 69-05.2-09-15, please review the following items in Section 3.7 and revise as appropriate: (WTG)
- a. Expand the Section 3.7 narrative to include the information required for prime farmland operation and reclamation plans by NDAC 69-05.2-09-15(2), (3), (6), and (7);
  - b. Cite the reference for the historically used for cropland definition (NDAC 69-05.2-01-02(43)) in the second paragraph of Section 3.7;
  - c. Retitle Figure 1 as Table 1 and reference it as Table 1 in the narrative;

- d. Restrict the reference to prime farmland soil map units in Table 1 to those occurring in the BNCR-1101 permit area because there are 13 prime farmland soil map units in Oliver County;
  - e. Remove the GcB soil map unit from Table 1 because it does not appear to occur in the BNCR-1101 permit area;
  - f. Retitle Figure 2 as Table 2 and reference it as Table 2 in the narrative; and,
  - g. Revise the acreage numbers for prime farmland soil map units used in the narrative to be consistent with Table 2.
262. As required by NDAC 69-05.2-05-02(1), please review the following items in Table 2 (to be renamed from Figure 2) in Section 3.7 and revise as appropriate: (WTG)
- a. Revise the land owner for the SW $\frac{1}{4}$  of Section 17 in both upper and lower sections to read Wayne and Jerry Reuther rather than Wayne Reuther et al;
  - b. List the ownership for Larry and Virginia Schmidt in the NW $\frac{1}{4}$  of Section 8 in the lower section;
  - c. Combine the ownership for prime farmland attributed to Section 9 where no prime farmland was identified with the neighboring Section 8 ownership in the lower section;
  - d. Correct the totals entry (0.9 rather than 0.09) for the E $\frac{1}{2}$  of Section 17 in the lower section;
  - e. Enter the acres disturbed by mining for the S $\frac{1}{2}$ SW $\frac{1}{4}$ , the NE $\frac{1}{4}$ , and the NW $\frac{1}{4}$  of Section 20 in the lower section;
  - f. Correct the ownership listed for the NW $\frac{1}{4}$  of Section 12 (Frances Fuchs rather than Jolene Burger) in the lower section and please review the entry for mining disturbance acres because it does not appear that the parcel will be disturbed; and,
  - g. Update the footnote to explain all land uses (add IND and TW).
263. Please revise or remove the portion of Section 3.7 (and corresponding Plate 3.7-2) that proposes to mix prime farmland topsoil and subsoil with topsoil and subsoil from non-prime farmland soil map units during SPGM salvage operations (pages 4 through 17 with the exception of the two sentences near but not at the end of the third paragraph on page 4, and the two paragraphs on the bottom of page 4 and the top of page 5). As presented, the proposal lacks the rationale and the detailed analysis necessary to demonstrate that productivity of the 120-some acres of prime farmland disturbed by mining will not be degraded by mixing prime and non-prime farmland SPGM throughout the mining disturbance area. As documented in the High Intensity Soil Survey Report, topsoil and subsoil salvage thicknesses are limited by carbonates, salinity, sodicity, coarse texture, and residual beds in numerous soil map units. Excluding the acreage of miscellaneous land types, it appears that there are about 670 acres of soil map units with topsoil salvage thicknesses of six inches or less within the 5,182 acre mining disturbance boundary, while it appears that there are about 1,390 acres of soil map units with total SPGM salvage thicknesses of 30 inches or less within the mining disturbance boundary. Furthermore, the high intensity soil survey delineated prime farmland and similar good quality soil map units with 60 inch salvage depths

within nearly the entire NRCS prime farmland delineation(s) in seven of the 12 ownership parcels listed in Table 2 (currently Figure 2) that will be disturbed by mining. Topsoil and subsoil thicknesses and quality vary considerably across the dissected heterogeneous landscape and diverse soil parent materials present in the permit area. Considering this variability, the Reclamation Division does not foresee granting approval to mix prime and non-prime farmland SPGM except potentially in a limited number of parcels where BNI provides a detailed comparison between the prime farmland delineation(s) and the high intensity soil survey map units delineated within the parcel and the adjacent nonprime map units proposed to be mixed. (WTG)

264. As noted in a related deficiency for Plate 4.10-1, page 2 of Section 3.7 of Revision 12 to BNCR-9401 explains that 18.61 acres of Minnkota Power Cooperative ownership prime farmland acreage to be removed from Sections 5 and 8 of T141N, R83W in BNCR-9401 will be respread in the W½ of Section 9, T141N, R83W of the same ownership. Please add a paragraph to the Section 3.7 narrative explaining the arrangement and the proposed prime farmland respread area depicted on Plate 4.10-1, and clearly state that the prime farmland acreage removed from Minnkota Power Cooperative ownership in Section 8 of T141N, R83W, in BNCR-9401 that will be respread in Section 9 is not included in Table 2 (currently Figure 2) that accounts for prime farmland acreage in BNCR-1101. (WTG)

#### **Plate 3.7-1 Prime Farmland Soils**

265. Please correct the title for Plate 3.7-1 that is incorrectly titled as Plate 3.7-2. (WTG)
266. Please revise the prime farmland legend on Plate 3.7-1 as follows: revise the legend title as necessary to specify prime farmland soils within the BNCR-1101 permit area because there are 13 prime farmland soil map units in Oliver County; remove the GcB soil map unit from the legend because it does not appear that it occurs within the BNCR-1101 permit area; and, provide a reference for the NRCS soil map unit legend (the Oliver County Soil Survey and an NRCS website such as the Field Office Technical Guide). (WTG)
267. Please revise Plate 3.7-1 as follows: depict and label the non-prime and prime farmland soil map units in Sections 31 and 32 of T142N, R83W, clarify prime farmland soil map unit labels and boundaries in Section 5, T141N, R83W; and, correct the prime farmland soil map unit boundary and label discrepancies in Section 12, T141N, R84W. (WTG/RLK)

#### **Plate 3.7-2**

268. Please revise Plate 3.7-2 or remove it from the permit as noted in a related deficiency in Section 3.7. The plate could display large scale insets of parcels where a detailed comparison is made between the prime farmland delineation(s) and the high intensity

soil survey map units delineated within the parcel if the proposal in Section 3.7 to mix prime farmland SPGM with SPGM from non-prime farmland soil map units is revised. (WTG)

### **Section 3.8 Soil Resources**

269. Please review and revise as necessary the following portions of Section 3.8: (WTG/RLK)
- a. Add M. G. Ulmer as another professional soil classifier who conducted and prepared the soils inventory and report;
  - b. Add a reference, date, and link to Appendix 3.8-2 that was completed separately for portions of Section 5, T141N, R83W, and Section 32, T142N, R83W;
  - c. Add a description of the soil survey completed by Nordan J. Lunde dated February 23, 1995 for Permit BNCR-9401 that includes 110 acres in the W½ of Section 5 within Permit BNCR-1101; reference Plate 3.8-1 for the boundary of the 1995 Lunde soil survey area; and, reference Appendix 3.8-3 as the entire 1995 Lunde soil survey report (including Plate 3.8-1 from the BNCR-9401 permit) that must be added to the permit;
  - d. Add an asterisk of non-inclusion for the E½ of Section 6, T141N, R83W, to the study area list;
  - e. Correct the maximum depth of subsoil removal to read 60 inches rather than 48 inches in the Soil Removal & Replacement subsection;
  - f. Add "... in Section 4 of our coal leases ..." or other wording as appropriate in the paragraph describing soil mixing agreements; and,
  - g. Remove the last paragraph of Section 3.8 and replace it with a paragraph describing mulching and other soil stabilizing practices that will be used as required by NDAC 69-05.2-22-05.
270. Please revise the third paragraph on page 2 of Section 3.8 beginning with "*The laboratory data in Appendix 5 of the High Intensity Soil Survey Report ...*" to accurately summarize the occurrence and extent of soil map units that have limited SPGM salvage depths as defined by NDAC 69-05.2-08-10(1)(b), or remove the paragraph entirely with the exception of the phrase "... *there will be sufficient volumes of suitable plant growth material (SPGM) available for re-spread.*" that should be relocated to a following paragraph referencing Table 4.11-1. Our review of Appendix 5 sampling analysis data in the soil survey report indicates that elevated electrical conductivity and sodium adsorption ratio levels limiting subsoil salvage depths were observed in 17 of the 60 pedons sampled, and elevated electrical conductivity levels limiting subsoil salvage depths were observed in an additional six pedons sampled. (WTG/RLK)
271. Please remove the portion of the third paragraph on page 4 of Section 3.8 that proposes to mix prime farmland topsoil and subsoil with topsoil and subsoil from non-prime farmland soil map units during SPGM salvage operations as noted in a related deficiency in Section 3.7. At your discretion, you may combine the information for

prime farmland operation and reclamation plans required by NDAC 69-05.2-09-15(2), (3) and (6) with the Soil Removal & Replacement subsection provided that Section 3.7 includes a reference to Section 3.8 as the location for the information required by NDAC 69-05.2-09-15(2), (3) and (6). (WTG)

### **Plate 3.8-1 Soils Map**

272. Please review the following items on Plate 3.8-1 and revise as appropriate: (WTG)
- a. Remove the aerial photograph date reference that is no longer used;
  - b. Label section numbers (currently labeled with white font that is not visible);
  - c. Remove the associated disturbance and mining disturbance boundaries and remove their references from the legend to improve soil map unit clarity;
  - d. Clearly define and label the boundary of the 1995 Lunde soil survey area that includes 110 acres in the W $\frac{1}{2}$  of Section 5 within Permit BNCR-1101;
  - e. Add a separate clearly titled soil map unit legend for the 1995 Lunde soil survey that is identical to the soil map unit legend on Plate 3.8-1 of the BNCR-9401 permit, and remove the Lunde soil survey soil map units labeled as “pre” from the existing soil map unit legend;
  - f. Remove the “pre” prefix for all of the soil map unit numbers in the Lunde soil survey area in the W $\frac{1}{2}$  of Section 5 and ensure that the soil map units in the Lunde soil survey area are labeled identical to those on Plate 3.8-1 of the BNCR-9401 permit;
  - g. Remove the boxes from the soil map unit legend that formally contained a color key;
  - h. Correct the map unit key to read “### topsoil/subsoil lift thickness in inches”; and,
  - i. Label all of the soil sample locations: some soil sample locations are not labeled in Sections 7, 16, 18 (it appears that location 29 is mislabeled as location 30 in Section 18).

### **Appendix 3.8-1 High Intensity Soil Survey Report by Prairie Soil Consulting, LLC**

273. Please revise footnote number 2 on page 1 of Appendix 3.8-1 as follows: describe the soil survey completed by Nordan J. Lunde (dated February 23, 1995) for Permit BNCR-9401 as including 110 acres in the W $\frac{1}{2}$  of Section 5 within Permit BNCR-1101; reference Appendix 3.8-3 as the 1995 Lunde soil survey report (including Plate 3.8-1 from the BNCR-9401 permit) that must be added to the permit; and, refer to Table 4a (or similar subtitle) as the Lunde soil survey legend and soil map unit acreages within Permit BNCR-1101. (WTG)
274. Please revise the Lunde soil survey legend in the last portion of Table 4 on page 13 as follows: subtitle the table as Table 4a (or similar subtitle) to identify the table as the numerical legend, topsoil and subsoil thicknesses, and acres from the 1995 Lunde soil survey in the W $\frac{1}{2}$  of Section 5 within Permit BNCR-1101; remove the “pre” prefix for all of the soil map unit numbers and ensure that the soil map unit numbers and soil map

unit names in the Lunde soil survey legend are identical to those on Plate 3.8-1 of the BNCR-9401 permit; and, delete all of the existing text of footnote 2 on page 13 and replace it with a reference Appendix 3.8-3 as the 1995 Lunde soil survey report (including Plate 3.8-1 from the BNCR-9401 permit) that must be added to the permit. (WTG)

### **Section 3.9 Alluvial Valley Floors**

275. Please add the Reclamation Division's July 14, 2011 AVF determination letter (currently resides at the end of the AVF Evaluation Report) to Section 3.9 where the other AVF determination letters are located. Additionally, please rename Appendix 3.9-1 to BNCR-1101 Alluvial Valley Floor Evaluation Report because that is precisely the information that is provided in the appendix. (BEB)

### **Section 3.10 Fish and Wildlife Resources**

276. A sentence in the first paragraph on page 1 of Section 3.10 states that "BNI Coal plans to protect, maintain, and reclaim, to the best of its ability and resources the critical fish and wildlife species, their habitat, water quality, and over all ecosystem health, of areas disturbed or affected by mining". It is not clear what is meant by this statement. Please specifically identify the critical fish and wildlife species and their habitats and clarify how ecosystem health will be protected in areas that will be disturbed or affected by mining activities. NDAC 69-05.2-05-02. (GAW)
277. The last sentence of the first paragraph on page 1 of Section 3.10 indicates that Plate 3.10-1 is labeled as the Pre-mining Habitat and Study Area Location Map but this map is called the Wildlife Study Area Map in the title block and as the Wildlife Study Map in the bookmark section of the permit. Please review and revise as necessary to ensure the correct map is being referenced and label the map in a consistent manor. NDAC 69-05.2-05-02. (GAW)
278. The first two sentences of the second paragraph on page 1 of Section 3.10 states that there are 17 land uses in the study area but some of those listed are not land uses. For example, seasonal and temporary wetlands are not separate land uses and the land use "Released from Bond" is not a land use. Please revise to refer to these "land uses" as habitat types or something other than land uses since Section 3.5 of the permit also identifies land uses of the area and there are not seventeen land uses listed in that section of the permit. NDAC 69-05.2-05-02. (GAW/ZAT)
279. After the statement that there are 17 land uses on the area, a sentence in the second paragraph on page 1 of Section 3.10 states the area has a "homogenous" landscape in terms of land use type and wildlife habitat type. It is inappropriate to base narrative for a technical document on BNI's *perception* that the habitat is of limited value to wildlife when the surveys and later narrative indicate many wildlife species are present in the

- area. Please revise this narrative to be a factual characterization and summarization of the data collected from the study area. NDAC 69-05.2-05-02. (GAW)
280. A sentence in the second paragraph on page 1 of Section 3.10 states the overall quality of these habitat types is typically degraded. First, clarify the difference between habitat type and land use and provide a detailed description of how the “quality” of each habitat type was assessed. A narrative in the woodland section indicates that all of the woodlands are in good condition and providing excellent wildlife habitat, but this statement on page 1 of Section 3.10 indicates that the opposite is true. Again, please provide a detailed assessment of the “quality” of each habitat type and how “wildlife habitat quality” was assessed. NDAC 69-05.2-05-02. (GAW)
281. A sentence in the second paragraph on page 1 of Section 3.10 states that miscellaneous habitats including old farmsteads and streams are of limited value to wildlife. Please explain this statement and refer to the location in the permit where the value of these features is assessed in terms of wildlife habitat. NDAC 69-05.2-05-02. (GAW)
282. Abbreviations are used for the land uses in the columns of the three tables included in Figure 2 but it is not clear what these abbreviations stand for. For example, “D” and “Released” (sp). In addition, it appears that land uses are categorized differently in the three tables. For example, wetlands and woodlands are listed according to their mapping unit types, seasonal, semi-permanent, tall shrub, etc. in the top two tables but then are listed as woodlands and wetlands in the table at the bottom of Figure 2. Please revise so that the land use or habitat type information in the tables is consistently presented throughout the tables. NDAC 69-05.2-05-02. (GAW)
283. The three tables in Figure 2 show that the wildlife study area contains 716.76 acres of “ROW” which is assumed to be right-of-way. However, most of the section lines right-of-ways within the study area do not contain roads but rather are undeveloped lands that may include important wildlife habitat such as woodlands, wetlands and native grassland. Please identify the wildlife habitat types on undeveloped statutory right-of-ways on Plate 3.10-1. NDAC 69-05.2-08-15(2). (GAW)
284. A sentence in the paragraph below Figure 2 on page 2 of Section 3.10 states that many of the native rangelands in the area are declining as more invasive, aggressive, or introduced weed species ... dominate them. Please clarify that the “ecological condition” or health is declining if that is what is intended with the statement rather than that the rangelands are declining. Also, the word “more” in this sentence is confusing. NDAC 69-05.2-05-02. (GAW)
285. The last sentence of the first paragraph on page 3 of Section 3.10 is confusing. The preceding sentence mentions associated disturbance areas but the last part of the last sentence then mentions reclaimed areas. Please revise to provide clarity. NDAC 69-05.2-05-02 (GAW)

286. A sentence in the third paragraph on page 3 of Section 3.10 states that no threatened or endangered species were observed in the survey area but that two species of concern were found. Please clarify that the two species mentioned are Candidate species to the Threatened and Endangered Species Act and provide a thorough discussion about the presence of these species. This should include maps showing suitable habitat for these species within the study area. NDAC 69-05.2-08-15(3). (GAW)
287. Please revise the last sentence of the burrowing owl narrative on page 4 of Section 3.10 to clarify if this species was observed or sighted in the study area (not just the permit area). It is not clear why a whole paragraph is being dedicated to this species of concern if it was not observed in the study area while there is very little discussion about the 16 species of concern that were identified in the study area, according to Table 3.10-1. Please revise to clarify and provide a technically accurate and meaningful discussion about all the species of concern that were detected or have the potential to be present in the study area. NDAC 69-05.2-08-15(3) and NDAC 69-05.2-05-02. (GAW)
288. The paragraph discussing piping plovers and least terns, page 4 of Section 3.10, mentions that within the permit boundary potential habitat may occur on drawn down sediment ponds. Please clarify if there are any pre-mine sediment ponds within the permit or study area when baseline wildlife studies were conducted. Also indicate if drawn down stock ponds or developed water resources could create potential habitat. NDAC 69-05.2-05-02. (GAW)
289. A sentence on page 4 of Section 3.10 refers to the greater sage grouse as another candidate species but the term “candidate species” is not used prior to this statement. Please revise to clarify if there are other candidate species that should be discussed. NDAC 69-05.2-05-02. (GAW)
290. Some of the species considered threatened, endangered or listed as candidate species in North Dakota are discussed on pages 3 and 4 of Section 3.10. It is not clear why only a few of these species are discussed while others are not discussed. Please revise to discuss/list all of the threatened, endangered and candidate species for North Dakota discuss if any of these species were sighted during the inventory work that was completed or if suitable habitat for these species exists in the study area. Please also specifically state whether or not the study area contains any designated critical habitat for any species or if there is any designated critical habitat located near the proposed permit area or if there is any in Oliver County. NDAC 69-05.2-05-02. (GAW)
291. The second half of the first paragraph under ND Natural Heritage Inventory discussion on page 4 of Section 3.10 reads as follows: “All areas were surveyed for Sheathed Pondweed and all other species of concern [Table 3.10-2] List of TEC Species & [Appendix 3.10-1] Table of ND 100 Species of Concern by Parcel. There were no observations of this species with the permit area. The area of the sighting will not be impacted by any of the mining operation.” This language is contradictory and

- nonsensical. The ND Natural Heritage inventory deals only with plants while the ND 100 species of concern list includes species other than plants. The acronym TEC is listed without explanation and it is not clear which species was not observed in the permit area or which species was sighted but will not be impacted. Please revise to provide the necessary clarification. NDAC 69-05.2-05-02. (GAW)
292. The second paragraph under the ND Natural Heritage Inventory discussion on page 4 of Section 3.10 discusses the 100 species of concern in North Dakota but the ND Natural Heritage Inventory is only for plants and plant communities. It is not clear why the Game and Fish 100 species of concern list is discussed under something entitled ND Natural Heritage Inventory which deals only with plants and plant communities. Please revise as necessary to provide the needed clarification. NDAC 69-05.2-05-02. (GAW)
293. The third paragraph on page 4 of Section 3.10 states that all wildlife observations by BNI employees will be recorded.... It would appear this statement belongs in the Wildlife Monitoring Plan portion of the permit rather than in the baseline wildlife inventory section of the permit. Please review and revise as necessary to clarify. NDAC 69-05.2-05-02. (GAW)
294. The last sentence of Section 3.10 states that "By incorporating information found in the ND Gap Report, one can be reassured that the area does not include high value habitats or designated critical habitats for terrestrial or aquatic species". The USFWS is solely responsible for identifying designated critical habitat for threatened and endangered species so it is unclear why the ND GAP report is referenced in this statement. Furthermore, please define what is meant by "high value habitats". Wetlands, woodlands, conservation reserve program (CRP), streams and native grassland are usually considered important or high value wildlife habitat. In consultation with the ND Game and Fish Department, please include an evaluation of the habitats and plant communities within the permit and study area, and provide an assessment as to their relative importance to wildlife as habitat, or plant community biodiversity. This is the purpose of the baseline fish and wildlife resource information. Please refer to the July 21, 2010 Wildlife Monitoring Plan response letter. NDAC 69-05.2-08-15(3)(b). (GAW)
295. Please include a discussion about habitats that are to be used to protect and enhance fish and wildlife and related environmental values as required by NDAC 69-05.2-09-02(11) and identify these areas on Plate 3.10-1. If high value habitats in the permit area will not be disturbed by mining, please depict these areas on Plate 4.1-1, Pit Layout and Facilities Map. (GAW)

**Plate 3.10-1 Wildlife Study Area Map**

296. Please identify the wildlife habitats on all of the land included in the approved wildlife study area. Habitat information is missing for portions of Sections 31, 8 and 5.

Information on page 2 of Section 3.10 indicates that information for Permit BNCR-9401 is included, but this area is not included on the map. Please review and revise as necessary. The values listed in Figure 1 on page 1 of Section 3.10 will also need to be updated. NDAC 69-05.2-05-02. (GAW)

297. Plate 3.10-1, Wildlife Study Area Map, identifies a temporary wetland in the NW1/4 of Section 28 but Plate 3.6-2 identifies this site as deciduous woodland. Please correct this error and the values listed in Figure 1 on page 1 of Section 3.10 accordingly. NDAC 69-05.2-05-02. (GAW)
298. Hagel Creek is not identified as an intermittent stream on Plate 3.10-1, Wildlife Study Area Map. Please review and revise so the required information is shown on the map. NDAC 69-05.2-05-02. (GAW)
299. Please include the name of the streams shown on Plate 3.10-1, Wildlife Study Area Map. This would include Square Butte Creek and Hagel Creek. NDAC 69-05.2-05-02. (GAW)
300. Plate 3.10-1 identifies a tall shrub breeding bird survey site in the NW1/4 of the SE1/4 of Section 16 as a breeding bird reference area site. However, the Pit Layout and Facilities Map shows that this area is going to be surrounded by stockpiles. Please clarify why this area would be chosen as a reference area given its proximity to associated disturbance and potential to be impacted by mining activities. It appears a different reference area may be needed. NDAC 69-05.2-05-02. (GAW)
301. Please review the legend on the Wildlife Study Map, Plate 3.10-1, and revise to clarify what is considered a habitat type. The legend identifies 9 "land uses" but other habitat types such as wetlands, woodlands and developed water resources are also listed but not identified as a habitat. All the habitat types listed in Figure 1 of Section 3.10 should be shown on this map. Land uses such as "Minnkota Stockpile" can be depicted, but it does not seem appropriate to label this as a land use or habitat type on this map. This feature could be combined with the miscellaneous habitats and all miscellaneous habitats must be delineated and identified. NDAC 69-05.2-05-02. (GAW)
302. Please revise the Wildlife Study Map, Plate 3.10-1, that shows the woodland lines on top of the breeding bird study areas. It is difficult to determine the woodland mapping units when the lines are obliterated by other thick lines. NDAC 69-05.2-05-02. (GAW)
303. The second paragraph on page 3.10-3 states that the USFWS once listed both the bald eagle and piping plover as threatened species.... Please revise to clarify that the piping plover continues to be listed as a Threatened species in ND. NDAC 69-05.2-05-02. (GAW)

304. Some of the temporary wetlands delineated on Plate 3.10-1 are outlined with a black color but the legend does not explain this color code, but instead indicates that all temporary wetlands are identified with a light blue line color. Please review and correct as necessary. NDAC 69-05.2-05-02. (GAW)

#### **Appendix 3.10-1 100 Species of Concern by Parcel**

305. For each observation of each species listed in Appendix 3.10-1, please identify the habitat type the species was utilizing when observed. This is necessary to determine which habitats are most important to each species of concern. NDAC 69-05.2-05-02. (GAW)

#### **Appendix 3.10-2 Federal Threatened, Endangered and Candidate Species Found in ND**

306. The Poweshiek Skipperling has been added as a Candidate species to the North Dakota list of Threatened and Endangered Species. Please revise Table 3.10-2 accordingly and update Appendix 3.10-3 with a discussion regarding whether this species was observed in the proposed permit area and whether the permit area contains habitat suitable for this species. NDAC 69-05.2-05-02. (GAW)

#### **Appendix 3.10-3 Fish and Wildlife Resources Report**

307. Please include a copy of the inventory plan for acquiring wildlife information for the study area that was submitted and approved by the ND Public Service Commission. NDAC 69-05.2-08-15(2). (GAW)
308. The first page of Appendix 3.10-3 states that BNI responded to PSC's initial review letter on July 21, 2010 and that the wildlife plan was approved on September 16, 2010. Our records indicate that BNI responded to our initial review on August 31, 2010, rather than July 21, 2010 as written and listed in the bookmarked section of the permit. Also, the plan was approved on September 10, 2010, not September 16, 2010 as listed. Please review and correct as necessary. NDAC 69-05.2-05-02. (GAW)
309. The sixth paragraph on page 3 of Appendix 3.10-3 states that all habitat types are identified on the Pre-Mine Land Use Map, Plate 3.5-1. Please clarify why the wildlife habitats would not be identified on Plate 3.10-1, the Wildlife Study Map. NDAC 69-05.2-05-02. (GAW)
310. The terms "habitat types" and "land uses" are used interchangeably in Section 3.10 of the permit. Please revise and use the term habitat types in Section 3.10 rather than land use since there are differences between land use (Section 3.5) and habitat type (Section 3.10) and Section 3.10 deals with fish and wildlife resources (i.e., habitat type). NDAC 69-05.2-05-02. (GAW)

311. Please revise the second paragraph of pheasant crowing counts discussion on page 4 of Appendix 3.10-3 with information about the results of the surveys. NDAC 69-05.2-05-02. (GAW)
312. The sentence regarding the Raptor Nest Survey on page 4 of Appendix 3.10-3 states that sites were visited to determine species, nest activity and breeding success. However, no other information is provided and nothing regarding raptor nests is shown on Plate 3.10-1. Please revise to explain this statement and provide the necessary information. NDAC 69-05.2-05-02. (GAW)
313. A sentence in the first paragraph on page 5 of Appendix 3.10-3 references the Pre-Mine Land Use section for acreages of each habitat type in the permit. Please clarify why the premine land use section of the permit would be referenced rather than Section 3.10 of the permit. NDAC 69-05.2-05-02. (GAW)
314. The woodland canopy cover information listed on page 7 of Appendix 3.10-3 is not supported or consistent with the woodland sampling data. Please revise the narrative to explain why this is the case or revise accordingly. NDAC 69-05.2-05-02. (GAW)
315. The bottom of each page of Appendix 3.10-3 is labeled Section 3.10-3. Please correct. NDAC 69-05.2-05-02. (GAW)
316. Please revise Appendix 3.10-3 to include an evaluation of the present value and/or condition of the various wildlife habitats as indicated would be done in the approved wildlife inventory plan. The summary discussion at the end of the cropland, native rangeland, shelterbelt land uses or habitat types in this appendix states that each of the habitats ‘can be beneficial’ to many wildlife species depending on condition and management. Please revise and definitively rank the present condition or value of the habitat types in each tract compared to its potential. The woodland narrative in Appendix 3.10-3 provides no information regarding the condition or value of the habitat type. Section 4.12-1 of the permit states that high percentage of smooth bromegrass and Kentucky bluegrass on native grassland limits the habitat functions of the land. Please further explain this and provide technical references as supporting documentation. NDAC 69-05.2-05-02. (GAW)
317. Please revise the shelterbelt narrative to specifically state which shelterbelts and windbreaks in the permit area are being mowed or grazed to help determine the value of these plantings if this type of management reduces their value to wildlife as stated. NDAC 69-05.2-05-02. (GAW)
318. Plate 3.4-2 is referenced as the Surface Water Map in the wetland narrative on page 8 of Section 3.10-3. However, Plate 3.4-2 is the Pre-Mine Watersheds Map and does not provide that information. Please review and revise as necessary. NDAC 69-05.2-05-02 (GAW)

319. Much of the discussion in the second paragraph on page 9 of Section 3.10-3 does not appear applicable to the wetlands in this proposed permit area. Language such as “Semi-permanent and larger seasonal wetland in cropland” is used but there none appear to exist in this proposed permit area and in another instance it is stated that “dry wetland basins are often hayed”. Please review and revise to provide detailed information specific to this permit area. NDAC 69-05.2-05-02. (GAW)
320. Please revise the Developed Water Resource narrative on page 9 of Appendix 3.10-3 to provide specific information for each of these features since their value as habitat can vary greatly depending on the amount of use they receive from livestock. The narrative as currently written provides no information as to the present value of this habitat type. NDAC 69-05.2-05-02. (GAW)
321. A peregrine falcon discussion is included on page 10 of Appendix 3.10-3. Please explain why BNI thought it necessary to include a separate discussion regarding this species and not all of the other Level II species of concern in North Dakota. NDAC 69-05.2-05-02. (GAW)
322. Please revise the third paragraph on page 11 of Section 3.10-3 to clearly state where the designated critical habitat for the piping plover is in relation to the proposed permit area. NDAC 69-05.2-05-02. (GAW)
323. The first sentence of the fourth paragraph on page 3.10-3 states that “Based on USFWS comments at the time of plan submittal, the 100 species of concern in North Dakota were paid special attention to during fieldwork and wildlife surveys”. Please include a copy of correspondence in which the USFWS mentioned or referred to the 100 species of concern in North Dakota. Correspondence from this agency included in Appendix 3.10-3 does not mention this list. NDAC 69-05.2-05-02. (GAW)
324. The fourth paragraph on page 11 of Section 3.10-3 uses the terminology Category II candidate species when discussing candidate species to the Threatened and Endangered Species Act. We understand that the terminology “Category II” is no longer used and the species mentioned in this paragraph are Candidates species the USFWS has proposed for addition to the Federal endangered and threatened species list. Please revise to reflect the current accepted terminology. NDAC 69-05.2-05-02. (GAW)
325. Please revise the Dakota Skipper narrative that begins on page 12 of Appendix 3.10-3 to clearly state which tracts of native grassland were determined to have the greatest potential to support the Dakota Skipper. Please also include a map that shows where Dakota Skipper surveys were conducted in 2009, 2010 and 2011. The USFWS requested that BNI avoid any impacts to potential Dakota skipper habitat via email dated March 11, 2010. In addition, NDAC 69-05.2-08-15(3)(c) requires the identification of habitats identified through agency consultation. (GAW)

326. The first paragraph on page 13 of Appendix 3.10-3 states that “The grazing use patterns on the native rangeland tracts within the permit were often more intense than the Dakota Skipper prefer...” A sentence in the second paragraph on page 13 of Appendix 3.10-3 states “Many tracts are likely trending away from their present status due to apparent management changes that are decreasing intensity of use...” These statements are contradictory to each other so please revise as necessary and identify which tracts had habitat most suitable for the Dakota Skipper. NDAC 69-05.2-05-02. (GAW)
327. A sentence in the fourth paragraph on page 14 of Section 3.10-3 states that the Sprague’s pipit was sighted in the largest tracts of contiguous native rangeland. However, Appendix 3.10-1 shows that this species was sighted in tracts containing about 80 acres of native rangeland that is surrounded by cropland, Sections 30 and 19, and in Section 12 where the native grassland is impacted by irregular shaped fields of cropland. Please revise to accurately characterize each landscape where this species was observed. This should include native grassland tract size, ecological site information with species dominance and vegetation structure, and tract and site management information (such as estimated percent utilization, grazing patterns and timing, and the amount of litter present). NDAC 69-05.2-05-02. (GAW)
328. Please include a map that shows the exact location where Sprague’s Pipet was observed and the date of each observation as required by the approved inventory plan. Table 3.10-1 provides only species absence or presence information based on ownership tract which is insufficient. NDAC 69-05.2-05-02. (GAW)
329. The first sentence on page 15 of Section 3.10-3 states that “No other T & E species were found during wildlife ground reconnaissance surveys in any of the years sampling from 2009-2011”. This sentence implies that a Threatened or Endangered species was sighted. Please clarify if a Threatened or Endangered species was sighted within the study area. NDAC 69-05.2-05-02. (GAW)
330. The USFWS requested in their review letter dated March 3, 2010 that BNI further classify wetlands as to their suitability as potential stopover habitat for the whooping cranes, and provide acreage and temporal expected loss of such habitat. Please review the USFWS correspondence and revise as necessary to address all of their suggestions and comments. NDAC 69-05.2-05-02. (GAW)
331. The first sentence of the “Critical Habitat Evaluation” narrative on page 15 of Appendix 3.10-3 states that “Upon review of data resulting from high intensity ground reconnaissance over multiple years, it can be concluded that no designated critical habitat occurs for any threatened, endangered or candidate species within the proposed permit or buffer area”. Designated critical habitat determinations are only made by the USFWS under the Endangered Species Act and this terminology should be used in this strict sense. Please revise to clarify if there is any designated critical habitat in the

study area for each T & E species and the proximity of any designated critical habitat to the permit and study area. NDAC 69-05.2-05-02. (GAW)

332. Please revise the sentence in the second paragraph on page 15 of Appendix 3.10-3 to specifically state the distance the permit area is to the Missouri River where designated critical habitat for the piping plover exists. In addition, the sentence as currently written is incomplete. NDAC 69-05.2-05-02. (GAW)
333. A sentence in the second paragraph on page 15 of Appendix 3.10-3 states that “No effects from mining should occur on the riverine habitats”. The Pit Layout and Facilities Map shows that temporary, intermittent and perennial streams will be affected by mining activities (e.g. pond construction, dragline crossing, etc.). Please clarify what is meant by this statement or provide the appropriate justification to support it. NDAC 69-05.2-05-02. (GAW)
334. A sentence in the second paragraph on page 15 of Appendix 3.10-3 states that there are no regionally critical streams, wetlands, riparian areas...within the permit or buffer area. Please clarify what is meant by the terminology “regionally critical stream”. There are obviously riparian areas associated with intermittent and perennial streams in the permit and study area even if not classified as such and the permit and buffer area contains numerous types and classes of wetlands. Please revise to provide the necessary clarity. NDAC 69-05.2-05-02. (GAW)
335. A sentence in the third paragraph on page 15 of Appendix 3.10-3 states that the permit areas lies within the broad migration corridor used by whooping cranes... and no critical use habitats for them exists within the permit area. It appears that the cropland, native rangeland and wetlands in the permit area could conceivably be used as stopover habitat. Please review and clarify as necessary. NDAC 69-05.2-05-02. (GAW)
336. The first two sentences in the fourth paragraph on page 15 of Appendix 3.10-3 states that “Access to areas within the buffer zone around the permit was limited to county roads in most cased to collect habitat and wildlife information” and the “Nonetheless, a review of the map, Plate 3.10-1, indicates that no threatened or endangered plant or animal species are present based on current information”. The approved inventory plan required detailed information for the study area which included a 1-mile buffer around the proposed permit area. If access to this buffer area was limited, please clarify how the requirements of the approved inventory plan have been fulfilled. A review of a map that was prepared by BNI based on current information should not be the basis of determining the presence of threatened and endangered species. NDAC 69-05.2-05-02. (GAW)
337. Section 3.10-8 is referenced in the second paragraph on page 16 of Appendix 3.10-3. There is no Section or Appendix 3.10-8 in the permit. Please revise as necessary. NDAC 69-05.2-05-02. (GAW)

338. Please revise the “Significant Ecological Communities” discussion on page 16 of Appendix 3.10-3 to specifically state which ecological communities the ND Parks and Recreation Department considers “Significant Ecological Communities” in Oliver County. Then, specifically state whether or not the study area contains any of these Significant Ecological Communities. Please edit this section of the permit and remove all language that disregards the NDNHI database as the purpose of this study was to determine whether or not the study area contains rare or unique plants or ecological communities. Most of the discussion in this section of the permit discredits NDNHI data base information; however, BNI does not define which rare plants or significant ecological communities have the potential to exist in the study area. NDAC 69-05.2-05-02. (GAW)
339. On page 21 of Appendix 3.10-3, please clarify the prairie type identified by GAP Analysis as being most unique in North Dakota. The last paragraph on page 20 does not make it clear if this “Bluestem – Needlegrass – Wheatgrass” prairie is referring to part of the tall grass prairie or mixed grass prairie ecosystem. Also, it is not clear what is meant by the statement “One exception would be a greater distribution map for the Sprague’s pipit compared to our results”. Please revise as necessary to provide clarity. NDAC 69-05.2-05-02. (GAW)

#### **Appendix 3.10-5 Fish Sampling**

340. The last sentence of the first page of Appendix 3.10-5 states that it is highly unlikely that mining operations will have negative impacts to any potential fish populations within or adjacent to the proposed permit area. Please quantify this statement by explaining why this is the case and include a discussion on Lake Nelson being a North Dakota Tier II fishery. NDAC 69-05.2-05-02. (GAW)

#### **Appendix 3.10-7 Grouse and Pheasant Data Tables**

341. Appendix 3.10-7 indicates that pheasant crowing count locations 29 through 35 were added for BNCR-1101 but only stops 30 through 34 are shown in permit BNCR-1101 on Plate 3.10-1. Stops No. 29 and 35 and another unlabeled stop are shown on Plate 3.10-1 north of the study area in Section 34. It appears these labels were simply placed at this location when the map was produced as they are not located along the crow counting corridor. A sentence on page 4 of Appendix 3.10-3 states that an additional 8 stops were specifically made for this proposed permit area but only 7 are listed in Appendix 3.10-7. Please review and correct as necessary. NDAC 69-05.2-05-02. (GAW)
342. The pheasant tables in Appendix 3.10-7 contain a lot of information for stops not identified on Plate 3.10-1. Please revise the tables so the information is specific to the proposed addition area. The average values listed in the table include numbers adjacent to active mining areas so these tables do not properly provide baseline information for

the proposed permit area. Old monitoring sites that are located in the BNCR-1101 study area may be included in these tables. This would include stops 1, 2, 3, 13, 14, 15 and possibly No. 28. Please revise accordingly so the tables establish appropriate baseline information. NDAC 69-05.2-05-02. (GAW)

343. Please revise the grouse tables so that the information is specific to the BNCR-1101 study area and provide an average number of observed displaying males on these leks. Including numerous old lek sites that have been disturbed by mining skews the data and a number of these sites are not shown on Plate 3.10-1 because they are located outside of the study area. Please revise to provide baseline data for the BNCR-1101 study area. NDAC 69-05.2-05-02. (GAW)
344. Please edit the notations at the bottom of grouse and pheasant tables in Appendix 3.10-7 to include only information relevant to the study area. NDAC 69-05.2-05-02. (GAW)

### **Section 3.12 Cultural and Historical Resources and Protection**

345. The narrative in the first paragraph on page 2 of Section 3.12 indicates that Site 32OL333 is the only remaining site from the 1992 survey area that requires additional work. However, Appendix 3.12-1 and Plate 3.12-1 both indicate that Site 32OL331 also requires additional testing. Please update as necessary. (DKM)
346. Pursuant to NDCC 38-14.1-14(1)(u)(6), please provide a statement in the narrative of Section 3.12, Cultural and Historic Resources, that the permittee will inform the Commission and the State Historical Society of any previously unrecorded archaeological, cultural, or historic material and allow reasonable time for the director to determine the significance of the discovery and, if determined significant, to approve a mitigation plan. (BEB/DKM)
347. Please include all cultural resource reports, testing reports, mitigation reports and SHPO correspondence related to this permit area. For example, the narrative in Section 3.12 indicates that cultural resources inventory report "BNI Coal: A Class III Cultural Resources Inventory of a Portion of Section 5, T141N R83W in Oliver County, North Dakota" was submitted in June, 2012, but a copy of this report is not included in the permit application. Any additional reports or correspondence received since the original submittal of the permit should be included. The narrative in Section 3.12 and Appendix 3.12-1 should also be updated to the current status of the sites and/or if there have been any changes since the last submittal. (DKM)

### **Plate 3.12-1 Cultural Resources Survey Areas / Location Map**

348. It is very difficult to discern the various colors and patterns used on Plate 3.12-1 to denote the various cultural resource inventories in this area. Please clearly identify the

extent of the various cultural resource inventories conducted in this area on Plate 3.12-1. (DKM)

349. Site 32OL635 located in the N½ of Section 28 appears to be labeled incorrectly as Site 32OL355 on Plate 3.12-1. Please correct as necessary. (DKM/BEB)

**Appendix 3.12-1 Site List and Recommendations Table**

350. Following is a listing of discrepancies that were noted between the Cultural Resources Survey Areas Map in Plate 3.12-1 and the table in Appendix 3.12-1. Please review and correct the discrepancies: (BEB)
- a. 32OL334 is shown on the map to be located in Section 8, but the table lists the location as Section 5;
  - b. 32OLX226 is shown on the map to be located in Section 8, but is not listed in the table;
  - c. 32OLX230 and 32OLX231 are on the map in Section 9, but are not listed in the table;
  - d. 32OLX229 is shown on the map in Section 16, but is not listed in the table;
  - e. 32OLX225 and 32OLX227 are on the map in Section 17, but are not listed in the table;
  - f. 32OLX228 is shown on the map as located on the section line between Sections 20 and 21, but is not listed in the table;
  - g. 32OL514 is depicted on the map in both Sections 23, T142-83, and in Section 19, 141-83. It appears the site in Section 23 should be 32OL614 and not 32OL514;
  - h. The table lists all of the sites in Section 30 to be located in T142N, R83W, but should be changed to T141N, R83W; and,
  - i. The table lists site 32OLX240 as 32OLLX240 and should be corrected.
351. On Appendix 3.12-1 it is recommended that the sites that are located outside the permit boundary be somehow denoted as being outside the permit area. This could be done with an asterisk on the location or site number with a footnote at the bottom of the table indicating it is located outside of the permit boundary. (DKM)
352. Appendix 3.12-1 indicates that Site 32OL601 is an eligible site and requires mitigation. This site is located outside the permit boundary and not within the extended mine plan. Therefore, we recommend that this site not be mitigated and it can be simply avoided. (DKM)
353. Appendix 3.12-1 indicates that Site 32OL333 has an “unknown” site eligibility indicating that further testing to determine eligibility will be required. However, under the Recommendation column in the same table, you recommend mitigation for this site. It seems that “site specific testing needed” would be more appropriate since the site has not been determined significant yet and mitigation may not be necessary. (DKM)

354. Appendix 3.12-1 indicates that Site 32OL590 was mitigated even though it is located outside the proposed permit area. Please provide a brief narrative indicating why this site was mitigated since it is not located in the proposed permit area (the site where the human remains were re-interred does not need to be disclosed). (DKM)
355. Those cultural resource sites that are listed as “Eligibility Unknown” with “Site Specific Testing Needed” should also be depicted on the Pit Layout and Facilities Map with the appropriate buffer zone. (BEB)

## **Section 4. OPERATIONS**

### **Section 4.1 Operations Plan**

356. In the third sentence of the first paragraph under Mining Methods, please correct the typographical error in the phrase “... *where mining is to take place* ...”. (RLK)
357. Please remove any references to Area C in Section 4.1 and replace with Permit BNCR-1101. (WTG)
358. Please describe the coal seam(s) by name in the Mining Methods subsection narrative so the reader is not required to return to Section 3.2 (Geology) for the information. Please also make Sections 3.2 and 4.1 consistent with regard to coal seams that will be mined. Section 3.2 states that one coal seam will be mined (Hagel seam) that splits into two seams in places but it is considered one seam because of the thin parting, while Section 4.1 states “... *a second seam will be recovered where overburden and coal thicknesses are favorable*”; and, “*In areas where two seams are mined, the overburden above the lower seam will be uncovered with mobile equipment* ...”. (WTG)
359. The Bureau of Land Management recently requested that the Falkirk Mining Company include narrative in a permit describing how the mine operator will prevent unleased federal coal from being wasted, damaged, or degraded when mining operations approach the adjoining unleased federal coal. Although the BLM has not commented to date on permit application BNCR-1101 that includes unleased federal coal, we expect that such a request may be made at a later date. As a proactive measure, please add a paragraph to Section 4.1 describing how BNI Coal will prevent unleased federal coal from being wasted, damaged, or degraded when mining operations approach the adjoining unleased federal coal in the S½SE¼ and NW¼SE¼ of Section 8, T141N, R83W; the NE¼ of Section 18, T141N, R83W; and the SW¼ of Section 24, T141N, R84W. (WTG)
360. BNI is proposing to construct sediment ponds P-16-1, P-21-4, P-21-5 and P-12-1 in intermittent streams located in the NE¼ of Section 16, SE¼ of Section 21 and NE¼ of Section 12, respectively. We strongly recommend that BNI move these ponds upstream to avoid the intermittent reaches of these streams, and the woodlands in the

NE1/4 of Section 16. BNI has placed these ponds hundreds of yards downstream of areas where coal will be removed which would require that the whole length of the drainages be stripped of topsoil (additional disturbance). Other water management features, such as diversions, may need to be added to accommodate water management in these areas due to the relocation of these ponds. NDAC 69-05.2-16-20 requires that the operator not disturb land within 100 feet of an intermittent or perennial stream unless authorized by the Commission after consulting with the State Engineer and State Department of Health. NDAC 69-05.2-13-05 requires that operations be conducted to minimize disturbances on lands where coal is not removed using the best technology currently available. Please revise the perennial and intermittent stream discussion on Page 4.1-2 of the Section 4.1 and Plate 4.1-2, Pit Layout and Facilities Map, accordingly to comply with these rules and NDCC 38-14.1-24(8). Otherwise, please provide justification why it is necessary to affect these areas within stream buffer zones. In addition, the permit should clearly explain the measures that will be taken to ensure that these activities will not adversely affect water quantity and quality and fish and wildlife habitat. NDAC 69-05.2-16-20. (GAW)

361. Please revise the sentence in the fourth paragraph on page 4.1-2 that reads “Once the initial boxcuts are developed any subsequent boxcut will typically be accompanied by a preceding final pit”. It is not clear what is intended by this statement. In addition, it is not clear how long the boxcut spoil stockpiles will remain in place. Please provide an estimate of time that the boxcut overburden stockpiles will remain in place. NDAC 69-05.2-05-02. (GAW)
362. Please revise item A in the Waste Disposal discussion on page 4.1-3 to clarify what kind of “soil” will be disposed of as inert solid waste. The term “soil” usually refers to suitable plant growth material that is to be salvaged and replaced. NDAC 69-05.2-05-02. (GAW)
363. Please update the equipment list to include the recently purchased truck/shovel fleet. (MDB)

#### **Plate 4.1-1 Pit Layout and Facilities Map**

364. Please revise the Pit Layout and Facilities Map, Plate 4.1-1, to clearly depict the haulroads at a scale that allows one to determine the area they will impact (suggest using a heavier weight line to depict the haulroads). The haulroad located along the west edge of Section 5 appears to be located through a cultural resource site (320L333). This site will need to be avoided until the significance determination has been made and mitigated if necessary. The area of Hagel Creek that will be impacted by the road must also be clearly shown. NDAC 69-05.2-05-02. (GAW)

365. The Reclamation Division is concerned with the proposed disturbance in the NW¼ of Section 16. Although this tract will not be mined, a pond and several SPGM and boxcut spoil stockpiles are planned to be placed in this area. The E1/2 of Section 16 contains native grassland with the greatest amount of woody vegetation in the permit area and we believe this area should be protected to the extent possible and that disturbance should be minimized in this area. In addition, the subsoil stockpiles are proposed to be located on the area designated as a tall shrub breeding bird reference area so disturbance in this area should be kept to a minimum. Please revise the mine plan as necessary to minimize disturbances in Section 16 to areas where coal is not going to be removed. It is recommended that the box-cut spoil and SPGM piles planned for this tract be moved to areas where this material is eventually going to be used or to areas that are eventually going to be mined, such as the area where pit 2040 is located near the section corner common to Sections 9, 16 and 17. Another alternative would be to locate the boxcut spoil stockpiles currently planned in the N½ of Section 16 to the SW¼ of Section 16 near the 2014/2015 pit area. A later deficiency discusses possibly relocating Pond P-16-1. NDCC 38-14.1-24(14), NDAC 69-05.2-13-06 and NDAC 69-05.2-13-08(6)(a). (GAW)
366. The transportation plan section indicates that all of the haulroads shown on the Pit Layout and Facilities Map will be constructed in 2013. However, very few topsoil stockpiles are shown along the haulroad corridors. Please review to ensure that all topsoil stockpile locations are shown on the Pit Layout and Facilities Map, Plate 4.1-1. Likewise, no topsoil stockpile locations are shown for the dragline walkway in Sections 31 and 5. Please review and revise to clarify where the topsoil will be stockpiled along this corridor. NDAC 69-05.2-09-02(2). (GAW)
367. NDAC 69-05.2-09-02(11) requires that habitat areas to be used to protect and enhance fish and wildlife and related environmental values be identified on a map. Please specifically identify any high value fish and wildlife habitat areas that BNI plans to avoid on the Pit Layout and Facilities Map. (GAW)
368. Please remove the dragline walkway label in Section 6, T141N, R83W, from Plate 4.1-1. (WTG)
369. Please identify the line with a label or special line type that runs parallel and primarily north of the section line bordering the boundary between T142N and T141N for more than three miles and intersects the permit area in Sections 31 and 32 of T142N on Plate 4.1-1. (WTG)
370. Please use the stream classifications as depicted on the Streams 2012 map provided in Appendix 3.4-9, Stream Classifications, to depict the extent of intermittent streams on Plate 4.1-1. A similar deficiency is noted for Plate 3.4-1, General Drainage Map. (RLK)

371. Please label Hagel Creek on Plate 4.1-1. Currently, this prominent, perennial drainage is labeled only as "Creek". Also, please label the SCS Dam 5 Creek on the same map. (BEB)
372. Please revise the pit layout to depict no mining of unleased federal coal in the SE $\frac{1}{4}$ SE $\frac{1}{4}$  of Section 8, T141N, R83W, that currently depicts a pit sequence dated 2039 on Plate 4.1-1. (WTG)
373. As required by NDAC 69.05.2-05-02(1), please depict and label the boundaries of unleased federal coal intended for eventual mining in the S $\frac{1}{2}$ SE $\frac{1}{4}$  of Section 8, T141N, R83W; the NE $\frac{1}{4}$  of Section 18, T141N, R83W; and the SW $\frac{1}{4}$  of Section 24, T141N, R84W. Plate 4.1-1 currently depicts setbacks from the unleased federal coal tracts, with the exception of the SE $\frac{1}{4}$ SE $\frac{1}{4}$  of Section 8, T141N, R83W, that must be revised as noted in a related deficiency, but the unleased federal coal tracts must be identified to explain the pit layout inconsistencies between Plate 4.1-1 and Plate 2-1 Extended Mine Plan. (WTG)
374. As required by NDAC 69-05.2-09-15(3), and as noted in a related deficiency in Section 3.7 Prime Farmlands, please depict the locations for prime farmland topsoil and subsoil stockpiles on Plate 4.1-1. (WTG)
375. Plate 4.1-1 should specifically label St. Lucas Cemetery that is located in the E $\frac{1}{2}$  of Section 18 and, if necessary, the appropriate buffer zone around the cemetery should be depicted on the map. (BEB/DKM)
376. In the legend of Plate 4.1-1 the word quarry has been misspelled. Please correct this typographical error. (BEB)
377. In addition to labeling abandoned lignite, scoria and/or gravel mines on Plate 4.1-1 with the cultural resource identification number, please specifically label the sites as abandoned lignite, scoria or gravel mines and provide the name of the mine on the map if that information is available. It is recommended that the cultural resource site numbers for these features be removed since they are not significant sites. See the related deficiency in that section. (BEB)
378. Cultural resource site 32OL534 that is depicted and labeled on Plate 4.1-1 in the SW $\frac{1}{4}$  of Section 13 has two different font sizes for the same site identifier, rendering the label marginally legible. Please update the map. (BEB)
379. Please depict and label the following unmitigated significant sites and/or sites that require additional testing to determine significance with the proper buffer zone on Plate 4.1-1: 32OL331 (requires further testing) and 32OL544 (mitigation needed). (DKM/BEB)

380. A number of insignificant cultural resource sites (e.g., 32OL512, -518, -535, -499, -566) are depicted on Plates 4.1-1 and 4.2-1 while the remainder of the insignificant sites are not depicted on these maps. If the intent was depict an existing feature such as an abandoned mine or farmstead, then please label those features as such and not as a cultural resource site if the site is not significant. Only the unmitigated significant cultural resource sites and sites requiring additional testing should to be depicted as cultural resource sites (with the appropriate buffer zone) on Plate 4.1-1. Other existing features (assuming they are insignificant) should be depicted but they should not be labeled as cultural resource sites. (DKM)
381. Many of the farmsteads depicted on Plates 4.1-1 and 4.2-1 are also labeled as cultural resource sites. Most of the farmsteads have been determined to be insignificant cultural resource sites so these farmsteads should not be labeled as cultural resource sites on Plate 4.1-1 but should rather be clearly identified as farmsteads. The one exception is Site 32OL534 which requires additional testing and/or mitigation prior to disturbance. (DKM)
382. It is not clear why an “unsuitable for mining” 100’ buffer zone is depicted for the county road between sections 13 and 24, 18 and 19, and 19 and 20 on Plate 4.1-1. This appears to depict the proposed county road relocation corridor. Please explain why this area is depicted as being unsuitable for mining since none of the other county roads or section line trails within the proposed permit area are depicted as having a 100’ buffer zone on Plate 4.1-1. It appears that these areas will be mined through at some point thus necessitating some sort of closure. Please explain or clarify this situation. (DKM)
383. NDAC 69-05.2-16-09(1)(b) requires that sedimentation ponds be used individually or in series and be located as near as possible to the disturbed area. It appears that several of these ponds depicted on Plate 4.1-1, particularly Ponds P-12-1 and P-16-1, can be located closer to the disturbance than currently depicted. Please adjust the locations of these ponds on Plates 4.1-1 and 4.6-1 (Surface Water Management Plan) or provide detailed justification for the current proposed locations and why moving them closer to the actual mine area is not feasible. (MDB)
384. NDAC 69-05.2-16-09(5) states that each operator shall design, construct, and maintain sedimentation ponds to prevent short circuiting to the extent possible. As depicted on Plate 4.1-1, it appears that Diversion 12-1 will intercept the emergency spillway of Pond P-12-1. It also appears that Pond P-16-1 will require a diversion to keep sediment from the spoil pile located adjacent to the spillway from flowing directly into the spillway. In both cases, short circuiting can occur where the diversion enters the emergency spillway. It is suggested that the diversions be redesigned to enter the ponds in different locations or provide plans for installing baffles in the ponds forcing the water to the other side of the pond before flowing to the emergency spillway. Please adjust the diversion locations for these ponds on Plate 4.1-1 and on Plate 4.6-1 Surface Water Management Plan as necessary. (MDB)

385. Please update Plate 4.1-1 to depict the extent of the existing or previously surface mined areas within the permit as required by NDAC 69-05.2-08-02(1)(k). Currently these features are only depicted as a dot on the map and do not show the extent of the previous mining. (MDB)
386. Plate 4.1-1 depicts the emergency spillway of Pond P-5-6 intercepting diversion D-5-2 and topsoil pile M15T09 in Permit BNCR-9401 at several locations. This is not acceptable as runoff collected by the diversion would flow out the spillway and not to the pond as designed. Please adjust the location of the emergency spillway on Plate 4.1-1 and on Plate 4.6-1 Surface Water Management Plan as well. (MDB)
387. Plate 4.1-1 depicts Ponds P-5-8 and P-5-9 as being constructed in 2014; however, Section 4.6, Surface Water Management Plan, indicates they will be constructed in 2013, which makes sense considering that is the proposed time frame for the dragline walkway. The ponds need to be installed prior to the walkway. Please correct Plate 4.1-1 as necessary. (MDB)

#### **Section 4.2 Existing Structures**

388. As required by NDAC 69-05.2-05-02(1) and 69-05.2-08-02(1)(e) please revise Section 4.2 and Plate 4.2-1 as necessary to clearly depict and describe all buildings within the permit area. Please use the same approach to depict or describe buildings within the permit area as was used to depict or describe buildings within one-half mile of the permit area, but provide additional information for required setbacks. Please retitle the section as Existing Structures and Buildings to more accurately reflect the information that is presented. Also, please expand the narrative to explain that descriptions of building use labeled by building number on Plate 4.2-1 within the permit area and within one-half mile of the permit area are attached to Plate 4.2-1 as pages 2 and 3. (WTG/ZAT)
389. Please revise the narrative in the second paragraph that states “...*within the previously permitted portion of the permit area and adjacent areas within other permit areas* ...” to read something similar to “...*within previously permitted areas of the Center Mine* ...”. As currently written, the statement implies that some areas of BNCR-1101 have been previously permitted. (WTG/ZAT)
390. Since the premine roads are also included on Plate 4.2-1, please provide additional details regarding the premine roads in the permit area in Section 4.2 as they will need to be reconstructed after mining is complete. Include information on the width, surface treatment, condition (improved section line road, minimum maintenance, or county maintenance schedule), notable infrastructure (cattle guards, livestock culvert crossings), etc. NDAC 69-05.2-09-03(1)(b). (MDB)

391. Please include a schedule of approximate removal and restoration dates for the roads and the rerouting of power lines in Section 4.2. NDAC 69-05.2-09-03(1)(c). (MDB)
392. Please include design specifications in Section 4.2 that meet Oliver County Standards for the construction of the county roads that will be mined through. NDAC 69-05.2-09-03(3). (MDB)

#### **Plate 4.2-1 Existing Structures**

393. Please review Plate 4.2-1 to ensure that all existing features are accurately depicted on this map. Although a powerline and pipeline are depicted on this map, all above and below ground utilities, roads, abandoned coal mines, gravel and scoria pits, cemeteries, farmsteads and dwellings, and all surface and subsurface manmade features should be depicted and properly labeled. The legend indicates that residences/farm buildings are represented by a pentagon shaped symbol and uninhabited structures are represented by a circle; however, neither symbol is actually used on the map. Please do not identify features by the cultural resource site number since the purpose of this map is not to identify cultural resource sites but to depict existing features in the permit and adjacent areas. For example, the scoria pit and abandoned coal mines are only labeled as cultural resource sites making it difficult to determine what the features actually are. It is recommended that the pit layout and other proposed activities (e.g. Pond 21-2) not be depicted on Plate 4.2-1 as these structures/facilities have not yet been constructed and they do not need to be depicted on this map. (DKM/GAW/ZAT)
394. It appears that not all of the section line roads (vehicular trails) are depicted on Plate 4.2-1 (Existing Structures Map). For example, the section line trail between the SE¼ of Section 7 and the NE¼ of Section 18 is not shown nor is the section line trail between Sections 20 and 29. Please depict all roads/section line trails on this map. Even though there may not be an accessible trail on a particular section line right-of-way, BNI will need to obtain road authority (Oliver County) permission to close a section line or to conduct mining related activities within 100' of the outside right-of-way of public roads and section line right-of-ways. (DKM)
395. Please identify the line with a label or special line type that runs parallel and primarily north of the section line bordering the boundary between T142N and T141N for more than three miles and intersects the permit area in Sections 31 and 32 of T142N on Plate 4.2-1. (WTG)
396. Please remove items from the legend of Plate 4.2-1 that do not appear on the map, such as contours, power line relocation routes, etc. (MDB)
397. Please depict the extent of existing or previously surface mined areas within the permit on Plate 4.2-1 as required by NDAC 69-05.2-08-02(1)(k). Currently these are only

shown as a dot on the map and do not show the extent of mining that was conducted. (MDB)

#### **Section 4.4 Blasting Plan**

398. In Section 4.4, please include an example letter that will be sent to the appropriate people informing them how to request a preblasting survey, along with a list of all residents and owners of dwellings or structures within one mile of the permit area that will be notified in writing at least 30 days before blasting. NDAC 69-05.2-17-02(1). (MDB)
399. The Blasting Plan discussion of the preblast survey states “*the residents or owner will be advised they should contact BNI to obtain a copy of this survey.*” Per NDAC 69-05.2-17-02(2), the resident must request the preblast survey through the Commission who will then contact the mine. Please correct as necessary. (MDB)
400. Please include a statement in Section 4.4 concerning the periodic blast monitoring to ensure compliance with the blast standards under NDAC 69-05.2-17-05(5)(c). Monitoring should occur at least twice a year at a minimum. (MDB)
401. Due to proximity of mine pits to county roads, please include a statement in Section 4.4 stating “When blasting is to occur within (we suggest 500) feet of a public roadway, traffic will be stopped prior to the blast until the all clear signal is heard.” NDAC 69-05.2-17-05(4) requires that access to an area possibly subject to fly rock from blasting must be regulated (controlled) to protect the public and livestock. (MDB)
402. The Blasting Plan states “There are no dwellings, schools, churches or commercial buildings nearby the proposed pit area, which would limit the maximum weight to less than the maximum 400 pounds.” However, there are several dwellings shown within the permit area with a 500 hundred foot setback surrounding them. The maximum allowable charge in an 8 millisecond period in these situations would be significantly less than 400 pounds. Please review and correct as necessary. (MDB)
403. The blasting schedule in Section 4.4 currently includes all of Section 18; however, the Pit Layout and Facilities Map shows no mining in the NE¼ of this section. It also includes all of Section 24 but no mining is currently planned in the SW¼ of this section. Please revise the schedule to exclude these quarter sections. (MDB)
404. The Blasting Notice states “*Blasting locations are within the boundaries of Permit BNCR-8901 and include:...*” Please correct the permit to BNCR-1101. (MDB)
405. Please review the dates and times when explosives are to be detonated on page 4.4-3 and on page 4.4-4 of Section 4.4, which states blasting will occur from 10:00 AM to 12:00 AM and from 2:00 PM to 4:00 PM Central Time. Technically, there is no 12:00

AM or PM and the proper way to refer to it is 12:00 Noon or Midnight. Please revise as necessary. (ZAT)

406. On page 4.4-3, please add a statement at the end of the first paragraph indicating blasting locations are within the boundaries of Permit BNCR-1101. (ZAT)

407. In Section 4.4, remove the reference Rev'd 11-11 Rev. 0 below the page number at the bottom of every page of the blasting plan. (ZAT)

#### **Plate 4.4-1 Blasting Map**

408. Please update Plate 4.4-1 as the pits shown do not correspond with the pits shown on the Plate 4.1-1, Pit Layout and Facilities Map. The map also shows a residence in Section 30 which is outside the permit boundary but the distance to the nearest pit is not provided. Please correct as necessary. (MDB)

#### **Section 4.5-1 Transportation Narrative**

409. Please remove any references to Area C in Section 4.5-1 and replace with Permit BNCR-1101. (WTG)

410. Please update the third paragraph on page 2 of Section 4.5 that discusses closing county roads and right-of-ways and include documentation in Appendix 4.5-1 that shows the formal county actions/approvals regarding road closings and make a commitment to update this section as additional closures/approvals are obtained. Also, in this section please explain how access will be maintained to the farmstead located in the NE $\frac{1}{4}$  of Section 18 (Larry & Virginia Schmidt), Great River Energy's tower in the SE $\frac{1}{4}$  of Section 8, and the cemetery in the NE $\frac{1}{4}$  of Section 18. NDAC 69-05.2-04-01.3. (GAW)

411. Section 4.5-1 indicates that portions of the roads will be made from spoil and other portions will be made from subsoil, depending on cut and fills. The Reclamation Division strongly discourages this practice and finds it unacceptable. At this time, there is not a demonstrated surplus of subsoil in this permit area. Therefore, all subsoil will have to be salvaged as such. There would be a loss of subsoil when the surfacing material is removed reducing the amount of subsoil available at the time of reclamation. There is also comingling of materials that will occur at the spoil and subsoil interface which will result in additional subsoil being lost at the time of reclamation. As stated previously, a surplus of subsoil does not exist in this permit at this time so no subsoil material can be waived. Please revise Section 4.5-1 to remove any reference of haul roads being constructed from subsoil as it will not be allowed. (MDB)

412. In Section 4.5-1, please include plans to remove and reclaim each road not retained under the proposed post mining land use and provide a schedule for reclamation and removal of the roads per NDAC 69-05.2-09-06(1)(h). (MDB)
413. The narrative for Haul Road Section B in Section 4.5-1 states “*In areas of fill, subsoil will be left in place and the design sub-grade will either be established out of overburden material from a cut area or from excess subsoil material from a cut area.*” It is not acceptable to place overburden material on top of in-situ subsoil as currently proposed. Please revise. (MDB)
414. The last sentence of the narrative for Haul Road Section B in Section 4.5-1 states: “*Culvert Design Details for Section A are located in Appendix 4.5-2.*” Please correct to state Section **B**. (MDB)
415. The narrative in the last paragraph of the Dragline Walkway Corridor subsection in Section 4.5-1 states “*The stream fill will be hauled into the creek just prior to the draglines walking and will be **removed immediately after.***” However, it later states “*Following the walk, the corridor will be modified to the typical haul road cross section of 80 feet and **remain as a permanent access road and back up haul road to connect the two active mining areas together.***” Yet later in this section plans indicate it will be narrowed up to 40 feet and used for mine support equipment, but not coal haulage. It is considered **Haul Road Section C**. Each of these scenarios is contradictory and it is unknown if the walkway stays, gets modified, or is removed. Please clarify BNI’s intentions for the dragline walkway and update the narratives as necessary. In addition, please include a reclamation schedule for the dragline walkway. (MDB)
416. The Section 4.5-1 dragline walkway corridor narrative states that the Hagel Creek Stream Crossing will be constructed of subsoil. As previously indicated, there is no surplus subsoil in this permit area. Therefore, the crossing and walkway cannot be constructed from spoil. Please revise accordingly. (MDB)
417. As described in Section 4.5-1, the dragline walkway corridor and Haul Road Section C cross a sensitive area that will require additional erosion control measures to prevent runoff from the road from directly entering into the stream below. Please describe the measures that will be taken to control erosion in these areas. NDAC 69-05.2-16-04(1). (MDB)

#### **Plate 4.5-1 Transportation Plan**

418. As prohibited by NDCC 38-14.1-07(5), please modify the pit layout to depict no mining within the 500 foot setback from occupied dwellings on Plate 4.5-1 (similar to the way it is depicted on Plate 4.1-1). (WTG)

419. Please modify the pit layout to depict no mining of unleased federal coal in the S½SE¼ and NW¼SE¼ of Section 8, T141N, R83W; the NE¼ of Section 18, T141N, R83W; and the SW¼ of Section 24, T141N, R84W, on Plate 4.5-1. (WTG)
420. Plate 4.5-1 depicts Haulroad Sections G and F crossing the cemetery and associated buffer zone located in the southeast corner of the NE¼ of Section 18. Please revise as necessary to avoid these areas and to stay within the permit area. (MDB)

#### **Appendix 4.5-1 - Plate 4.5-3**

421. In the Section 4.0 Table of Contents, Plate 4.5-3 is shown within the list of Appendices. Please move Plate 4.5-3 to the plates subsection where it would be chronologically located with Plates 4.5-1 and 4.5-2. NDAC 69-05.2-05-02. (GAW)
422. On Plate 4.5-3 there are a number of roads/section lines that are not depicted as requiring closure or operating within 100' of the right of way (e.g. the section lines between Sections 13 and 18, 24 and 19, the south edge of Sections 19 and 20, the west edge of Sections 24 and 25, etc.). The Pit Layout and Facilities Map clearly indicates that these areas will be mined through or have mining operations within 100 feet of the outside right-of-way. Portions of the County Road Relocation Corridor will also require closure at some point and should be depicted as such. Please update Plate 4.5-3 to reflect all anticipated closures and areas where operations will be within 100 feet of the outside right-of-way. The areas depicted on this map should be consistent with those closures/operations within 100' of the outside right-of-way that are provided in the public notice. (DKM)

#### **Appendix 4.5-2 Culvert information Sheets**

423. Many of the culvert designs in Appendix 4.5-2 show velocities in excess of 5 feet per second. For those culverts that do, please discuss the type of erosion protection that will be placed at the outfall of the culvert to minimize erosion. (MDB)

#### **Appendix 4.5-3 Haul Road Section A**

424. On Appendix 4.5-3, Haul Road Section A Profile, the haul road profile between stations 170+00 and 180+00 "snaps" to the corner of the drawing. Please correct as necessary. (MDB)

#### **Appendix 4.5-5 Dragline Walkway**

425. Please show the locations of the proposed culverts on Appendix 4.5-5. (MDB)

### **Appendix 4.5-6 Haul Road Section C**

426. In Appendix 4.5-6, Page 1 of Plate 4.5-6 shows two 84 inch CMP existing culverts under the access road; however, the calculations were done for three 78 inch CMP culverts. Please provide the correct culvert calculations to reflect the existing culverts. (MDB)

### **Section 4.6 Surface Water Management Plan**

427. A sentence near the end of the first paragraph of Section 4.6 states as follows:  
*“Appendices to this section will contain the detailed design information, construction and reclamation schedules, and pertinent operational plans utilized in BNCR 1101.”*  
However, an approximate removal date for the water management structures cannot be found in the information provided in the Section 4.6 appendices. A removal schedule for surface water management features is provided in Section 4.9, Reclamation Schedule. Please revise as appropriate. (RLK)
428. Section 4.6 states *“In the event that there is not sufficient quantity of subsoil available to construct the embankment, a suitable fill material may be used in conjunction with the subsoil material. Whenever necessary, an as-built drawing depicting the stratification of the different materials within the embankment will be made to assist in reclamation.”* This is not an acceptable practice. Combining spoil and subsoil (even if stratified) would result in comingling and deterioration of the subsoil. In addition, there is not a surplus of subsoil in this permit area; therefore, all subsoil will need to be saved at this time including that from the pond construction. Pond embankments may be made out of subsoil on temporary ponds only, but they must be inventoried as such and the embankment must be constructed entirely of subsoil. (MDB)
429. Please specify in Section 4.6 the moisture content at which the fill material will be compacted. We suggest -2% to +3% as an optimum moisture content. Also, please include the type of testing that will be conducted to demonstrate compliance with the compaction specifications. NDAC 69-05.2-09-09(2)(j). (MDB)
430. Section 4.6 states *“Embankments and spillways which discharge off the permit will be spread with either topsoil or subsoil in order to sustain adequate vegetation and minimize erosion.”* Topsoil should only be respread on pond embankments which remain as permanent structures after mining is complete, otherwise a thin veneer of subsoil should be used to promote vegetative growth. Please clarify and expand this statement. (MDB)
431. In Section 4.6, please include a statement noting that one of the quarterly pond inspections will be conducted by or under the direct supervision of a registered professional engineer annually and submitted to the Commission. NDAC 69-05.2-16-09(19)(d). (MDB)

432. Section 4.6 states “*Diversions will be constructed out of either topsoil or subsoil from the diversion channel...*” We believe this should be Diversion **berms or embankments** will be constructed...(MDB)
433. Section 4.6 states “*During construction of haul roads and other...*” Please change this to “Prior to construction of haul roads...” as BMP’s need to be in place prior to disturbance beginning. (MDB)

#### **Plate 4.6-1 Surface Water Management Plan**

434. Plate 4.6-1 does not address watersheds (pond locations) in Sections 9, 19 and 20, T141N, R83W, or Sections 24 and 25, T141N, R84W. We understand most of these areas will not be disturbed until after 2030; however, proposed pond locations still need to be shown on the map. (MDB)

#### **Section 4.6 Appendices 4.6-1 through 4.6-12**

435. It appears that the ponds in Appendix 4.6 have been designed with a run off curve number between 87 and 90.4 for the disturbed areas; however, we recommend that mining companies use a run off curve number of 90 for all disturbed areas. Please correct. (MDB)
436. Please standardize how the design information for the ponds in the water management section is presented. For instance, in subsection (4) the runoff capacity for Pond P-5-9 is stated at 6.1 acre-ft. In subsection (4) of Pond P-5-8 the runoff storage capacity is 8.5 acre-ft (which is the runoff plus the sediment storage). (MDB)
437. In the pond design information in Appendix 4.6-1 for Pond P-7-1, it states under subpart (4) Impoundment Storage that the sediment storage is 6.1 acre-feet; however, in subpart (6) Elevation it indicates the sediment storage is 4.1 acre-feet. Please review and correct as necessary. (MDB)
438. Please add plans for installing a baffle in Pond P-7-1 or reroute Diversion D-7-1 because as it is currently designed, it appears that the pond will short circuit allowing water flowing into the pond to flow immediately out if the pond were to overflow. NDAC-69-05-16-09(5). (MDB)
439. In Appendix 4.6-3, pond design information for Pond P-7-2 has inconsistencies. Under subpart (A) the sediment volume is 4.4 acre-feet, subpart (4) Impoundment Storage states that the sediment storage is 5.0 acre-feet, but subpart (6) Elevation shows the sediment storage as 4.1 acre-feet. Please correct these discrepancies as necessary. (MDB)

440. The pond design information in Appendix 4.6-5 for Pond P-16-2 has inconsistencies. Under subpart (A) the sediment volume is 5.2 acre-feet, but in subparts (4) Impoundment Storage and (6) Elevation, the sediment storage is 6.0 acre-feet. Please correct this discrepancy as necessary. (MDB)
441. Plate 4.6-5A for Pond P-16-2 indicates the PPE is at 2014 feet according to the stage storage curve; however, the cross section of the pond shows the elevation at 2011 feet. Please review and correct as necessary. (MDB)
442. The pond design information in Appendix 4.6-6 for Pond P-21-1 has inconsistencies. Under subpart (A) the sediment volume is 6.9 acre-feet, subpart (4) Impoundment Storage shows the sediment storage at 9.1 acre-feet, and according to subpart (6) Elevation the sediment storage is 8.7 acre-feet. Please correct as necessary. (MDB)
443. On Plate 4.6-7A, cross section A-A' indicated that the top of the embankment elevation is 2043 feet; whereas, cross section B-B' indicates a top elevation of 2044 feet. Please correct as necessary. (MDB)
444. In Appendix 4.6-11 for Pond P-5-8, please indicate in the narrative that pond 32-1 will ultimately discharge into this pond. Also, please update the Pond Design Information to indicate that the combined discharge of the two ponds can adequately be handled by the spillway of Pond P-5-8. (MDB)
445. The pond design information in Appendix 4.6-11 for Pond P-5-8 has inconsistencies. Under subpart (A) the sediment volume is 4.8 acre-feet, subpart (4) Impoundment Storage shows the sediment storage is 3.7 acre-feet, and subpart (6) Elevation the sediment storage is 4.8 acre-feet. Please correct these discrepancies as necessary. (MDB/RLK)
446. Please include the design and other details for Diversion D-5-8. (MDB)
447. In Appendix 4.6-12, the Pond P-5-9 narrative states that the impoundment will be constructed in 2014 following the construction of Haul Road C. Later in the paragraph it states that excess subsoil from the excavation of the containment area of P-5-9 will be used to construct the dragline walkway. This is not possible since Haul Road C will be constructed by reducing the dragline walkway. In addition, the pond needs to be constructed prior to any disturbance of the area since this is the water management for the haulroad/dragline trail. Please correct as necessary. (MDB)
448. In Plate 4.6-12A, cross section A-A' indicated the top of the embankment at an elevation 1997.5 feet; whereas, the rest of the design information shows the top of the embankment at an elevation of 1940 feet. Please review and correct as necessary. (MDB)

449. The Reclamation Division has several concerns about the proposed locations of ponds P-5-8 and P-5-9. In the pond narratives the flood stage of Hagel Creek must be addressed and BNI needs to determine if the ponds will be protected against spring flooding or if they will be filled with creek overflow. Secondly, since these ponds will be located in close proximity to the creek, please address if the ponds will be susceptible to base flow from the creek. If so, is this accounted for in the pond designs? Please address. (MDB)
450. In the narrative for Pond P-5-9, please include a discussion on the management of this pond. Since the embankment will also serve as a haulroad, please address if holding water in this pond will cause any structural concerns due to saturated conditions in the base of the embankment. For safety reasons, please address the steps that BNI will take to minimize saturation of the embankment/haulroad. (MDB)

#### **Section 4.7 Water Monitoring and Drill Hole Reclamation Plans**

451. The Reporting narrative for ground water levels is indicated on Page 4.7-3 and carries-over to Page 4.7-4 as being from December 1-February 28, March 1 to May 31, etc. Please revise this outdated permit narrative with your current quarterly reporting schedule, i.e. January 1-March 31, April 1-June 30, etc. (BEB)
452. To comply with the requirements of NDAC 69-05.2-14-03, please specifically state in the Drill Hole Reclamation Plan of Section 4.7 whether or not BNI plans to retain any drillholes, boreholes, or wells for other uses. (BEB)
453. Please add to the Ground Water Monitoring Plan in this section by specifically stating that BNI's ground water monitoring wells will be protected during use by barricades, or fences, or other protective devices approved by the Commission. NDAC 69-05.2-14-02. (BEB)
454. The subheading under Surface Water Monitoring Plan reads: "Monthly Surface Water Sampling". The narrative in the Surface Water Monitoring Plan indicates samples will be collected quarterly. Please review and revise as appropriate. (RLK)
455. Please correct the surface water monitoring site description for SWS 102 to indicate the site is located on SCS Dam 5 Creek as it is referred to elsewhere in the permit. (RLK)
456. Please indicate in the surface water monitoring plan how flow data will be made available in the report provided to the Reclamation Division. For example, the flow rate noted at the time of sampling could be provided with water quality data provided in quarterly reports and the hydrograph from data loggers will be provided on an annual basis or as requested by the Reclamation Division. (RLK)

#### **Section 4.9 Reclamation Schedule**

457. With regard to the variance request from the 180 day backfilling and rough grading requirement, please provide additional justification for the variance request. This justification should include approximate pit cycling times, estimated time until backfilling and grading is completed, and how many spoil ridges will be maintained behind the active pit. Additional justification should also be provided for the shorter pit sequences (e.g., those in Sections 7, 8, 12, 13, 17, and 18 that are “offset” from the longer pits) as it appears that a variance may not be necessary due to the shorter pit cycling times. (DKM)
458. In Section 4.9, please include the construction year of each pond and diversion as required by NDAC 69-05.2-09-09(1)(d), or combine Table 4.6-1 with the schedule in Section 4.9. (MDB)
459. In the portion of Section 4.9 dealing with other variance conditions, it states “*However, in the case of long pit ramps that are substantially below post mining topography grade, the necessary corridor width may be as wide as 800’ or more on either side of the centerline of the ramp.*” This seems excessively wide considering the haul roads will have a maximum width of 80 feet. At 4:1 back slopes, a 50 foot difference in elevation (which is unlikely except near the pit in the spoils), would only require a 200 foot setback. Please review and revise as necessary. (MDB)
460. In the portion of Section 4.9 dealing with other variance conditions, it states “*In areas where the spoil can be put to final grade **but it is not prudent to re-spread** subsoil or topsoil, BNI will seek grade approval.*” It is not clear what is being stated/requested here. NDCC 38-14.1-24(14) requires reclamation proceed in a contemporaneous as practical manner. Please clarify what is being stated and clarify that reclamation through seeding will proceed as contemporaneously as possible. (MDB)
461. Please revise the narrative in Section 4.9, Reclamation Schedule, to clarify when the box cut spoil stockpiles will be removed and the affected areas reclaimed. NDAC 69-05.2-09-11(4). (GAW)

#### **Section 4.10 Regrading Plan**

462. Section 4.10 details the design method used to recreate the post mining topography; however, a mass balance of the areas is not included. Please include mass balance calculations showing that the proposed postmining topography is achievable. (MDB)
463. The wetland narrative on page 9 of Section 4.12-1 states that islands will be created in class III wetlands. However, the wetland design information in Section 4.10 does not show any islands in any created wetland basins. Please review and update the grading plan to show islands in some or all of the larger seasonal wetland basins. (GAW)

**Plate 4.10-1 Post-Mining Topography**

464. Plate 4.10-1 shows significant topographic changes in the SE1/4 of Section 8, NE1/4 of Section 18 and SW1/4 of Section 24 (all federal coal tracts) where mineral removal is not planned according to the Pit Layout and Facilities Map. We assume this is due to the likelihood that the federal coal in these tracts will be leased and mined and that the post mine topography was based on that assumption. If that is the case, please state that in the narrative in Section 4.10. If that is not the case, please indicate why the postmine topography was changed in these tracts. If BNI cannot adequately justify why the postmine topography is being modified from the premine topography on these tracts, then the premine topography will need to be retained for these tracts. In addition, postmine topographic changes are shown for farmsteads that are depicted with a 500' setback on the Pit Layout and Facilities Map. Again, please provide an explanation why the postmine topography is changing on areas that are not scheduled to be mined. Topographic changes are also planned on areas that are not going to be mined (outside the coal removal boundary) in the southwest corner of the NW1/4 of Section 16 and the southeast corner of Section 16. Please revise so there are not any topographic changes on areas outside the coal removal boundary or clarify and justify why topographic changes are being proposed on these areas. NDAC 69-05.2-13-05. (GAW/MDB)
465. Please review the following items related to proposed prime farmland respread areas on Plate 4.10-1 and revise as appropriate: (WTG)
- a. As noted on page 2 of Section 3.7 of Revision 12 to BNCR-9401, the proposed prime farmland respread area in the W½ of Section 9, T141N, R83W, apparently depicts the area for respreading 18.61 acres of Minnkota Power Cooperative ownership prime farmland acreage removed from Sections 5 and 8 of T141N, R83W, in BNCR-9401 that apparently cannot be respread in the same sections. Please clearly label the proposed prime farmland respread area on Plate 4.10-1 as prime farmland acreage removed from Minnkota Power Cooperative ownership in Sections 5 and 8 of T141N, R83W, in BNCR-9401 that is being respread in Section 9 of the same ownership;
  - b. Reposition the proposed prime farmland respread area (less than one acre) in the SE¼ of Section 12, T141N, R84W, to a concave topographic position; and,
  - c. Reposition the proposed prime farmland respread area (about 25 acres) in the NW¼ of Section 24, T141N, R84W, to entirely occupy an area of cropland postmine land use. As currently depicted, the proposed prime farmland respread area occupies about six acres of native rangeland postmine land use.

**Plate 4.11-1 Proposed SPGM Respread Depths**

466. As required by NDAC 69.05.2-05-02(1), please review and revise as appropriate the drill hole location labels, particularly for the 24 and 36 inch SPGM respread area fill patterns, that are difficult to read when viewed with Adobe Reader or on the printed

plate. We suggest a white mask or halo for each label that may be the easiest and most effective method to improve label legibility. (WTG)

467. As required by NDAC 69.05.2-05-02(1), please depict and label the boundaries of unleased federal coal intended for eventual mining in the S½SE¼ of Section 8, T141N, R83W; the NE¼ of Section 18, T141N, R83W; and the SW¼ of Section 24, T141N, R84W, on Plate 4.11-1 to explain the absence overburden drill holes in these parcels. (WTG)
468. Please review and revise if necessary the proposed SPGM respread depths on Plate 4.11-1 at the following overburden drill holes locations: (WTG)
- a. It appears that overburden drill holes 09-C006, 09-C007, and 09-C008 in Section 7 may require 36 inch SPGM respread because of coarse texture;
  - b. It appears that overburden drill holes 07-107 and 07-108 in Section 8 may require 36 inch SPGM respread because of coarse texture; and,
  - c. It appears that overburden drill holes 10-C003 and 10-C004 in Section 13 may require 36 inch SPGM respread because of coarse texture.

#### **Section 4.12 Revegetation, Post Mining Land Use and Reclamation Success Narrative**

469. Please revise the second sentence in the Section 4.12 narrative. The statement should include cropland or crop production as it is a significant land use in the permit area with specific revegetation success standards. It is recommended that the statement citing NDCC 38-14.1-14(2)(e) be moved to a separate sentence. (RLK)
470. Please review and revise as appropriate the second sentence in the third paragraph of the Section 4.12 narrative. It appears the continuation of a statement and/or punctuation is missing. (RLK)

#### **Section 4.12-1 Reclamation Plans**

471. The second paragraph of Section 4.12-1, Reclamation Plans, contains a lot of incomprehensible or inconsistent language such as “the landscape will provide diverse habitat conditions and promote plant biodiversity through edge effects”. It is not clear how plant biodiversity will be promoted with edge effects when embedded cropland in grassland is considered “fragmentation” of the native grassland which has been clearly demonstrated out to be detrimental to native grassland. Another sentence reads “Post mine land uses will provide higher quality habitat than the pre-mine native rangelands currently do, as many are degraded. Similarity Index scores for many of these tracts are low (avg. 30.00).” The first statement is erroneous. Please explain how the post mine land uses will provide higher quality habitat than the pre-mine native grasslands and how similarity index scores can be used to assess the habitat value when the score is simply a departure from a perceived climax plant community. Perhaps in some instances the similarity index score is reduced because of an over-abundance of native

desirable species, such as little bluestem on the thin loamy site in the NW1/4 of Section 18 or purple coneflower on the thin loamy site in the NE1/4 of Section 21. With over 50% of the native grassland in the permit area already converted to some other land use and given that the vast majority of the woodlands and wetland areas are associated with this land use, it is not logical to suggest that additional conversion of this land use to cropland will improve wildlife habitat in the area. Another sentence reads “The reclamation of degraded tracts, regardless of land use, produces rejuvenation, high vigor/increased production, and an overall increased value.” Please explain what is meant by “overall increased value”. It is not clear if this is referring to agricultural value or other values. NDAC 69-05.2-05-02. (GAW)

472. Please revise the land use conversion narratives in Section 4.12-1, Reclamation Plans, to remove all language that suggests that “degraded” native grassland is less diverse and valuable as wildlife habitat than reclaimed cropland, and all other erroneous statements that attempt to justify converting native grassland to cropland. Please provide the names of the individual(s) and their qualifications who conducted the technical analysis that allows BNI to conclude that converting additional native grassland to cropland will have minimal impacts to wildlife and include appropriate references to technical and other written material that support the claims made by BNI regarding the proposed land use changes. Regulations for converting native grassland to cropland based on surface owners requests will only be allowed if practical (NDAC 69-05.2-23-03). It is not necessary to attempt to justify these conversions by diminishing the value of the existing native grassland. Please revise and discuss the measures that will be taken to enhance, avoid, and protect wildlife habitat as required by NDAC 69-05.2-13-08(6) and clearly identify the acreage planned for conversion in each tract. (GAW)
473. Wildlife agencies and NRCS have historically used and approved the use of introduced perennial species in the development of wildlife habitat yet BNI includes statements in Section 4.12-1 that would suggest introduced species are less desirable than annually seeded crops. Similarly, state and federal agencies have provided programs (such as CRP) and cost-share incentives to seed cropland to permanent vegetation for the benefit of wildlife and water quality. However, BNI has included numerous erroneous statements suggesting that native grassland consisting of a diverse mixture of ecological sites is somehow less valuable to wildlife than cropland. BNI also suggests and implies that converting additional native rangeland to cropland will reduce surface water runoff and stabilize the down cutting in the drainages that apparently was observed in 2011. Please revise to correct these erroneous statements and include only language that is accurate and technically correct. NDAC 69-05.2-05-02. (GAW)
474. In Section 4.12-1, BNI repeatedly states “The homogenous landscape within and surrounding the permit area will provide numerous opportunities for native rangeland habitat”. It is not clear what is intended with this contradictory statement. Please revise to provide clarity. NDAC 69-05.2-05-02. (GAW)

475. In Section 4.12-1, BNI repeatedly states something to the effect that “the proposed postmine land use for this tract will allow for increase diversity through edge effects and high vigor, increasing the habitat value”. Please revise this statement to clarify how land use will increase vigor. In Sections 3.5, 3.6 and 3.10, BNI repeatedly states how fragmented the pre-mine native grassland is with interspersed fields but in this statement attempts to somehow argue that this is beneficial to wildlife in the postmine setting. And finally, please clarify how “diversity” is increased through edge effects. (GAW)
476. A sentence on page 4 of Section 4.12 states that “Sprague’s Pipet preferred habitat is degraded rangelands”. Please review and revise to clarify and provide a technical citation supporting this statement. NDAC 69-05.2-05-02. (GAW)
477. A sentence on page 4 of Section 4.12 states that “With the high percentage of invasion by smooth brome and Kentucky bluegrass, this tract provides limited habitat functions.” The loamy and thin loamy sampling data for this tract, Pages 23 and 24 of Appendix 3.6-3, does not even list smooth brome grass as being present. Please review and revise to correct this error or otherwise explain. NDAC 69-05.2-05-02. (GAW)
478. The term “degraded” is used frequently in Section 4.12-1, but it is not always clear what is meant by this statement. Please revise to add specificity and documentation as to what is considered degraded. NDAC 69-05.2-05-02. (GAW)
479. Pages 5 and 6 of Section 4.12-1 state that BNI will be converting the native grassland in the NE1/4 of Section 12 and the NW1/4 of Section 12 to cropland. However, the Pit Layout and Facilities Map does not show any mining related disturbance in the NW1/4 of Section 12 and only a small portion of the NE1/4 is shown to be affected by a pond. Please reclaim the pond area to native grassland or provide justification for changing the postmine land use of entire tracts that were only minimally impacted by mining activities. Normally, changing the land use of tracts that are not affected by mining activities will not be approved. NDAC 69-05.2-05-02. (GAW)
480. A sentence in the first paragraph on page 7 of Section 4.12-1 indicates that the “vigor” of the post mining land uses will be superior to that which existed prior to mining. Please reference where species vigor for each land use in the pre mining landscape is assessed and how vigor will be evaluated post mining “to meet or exceed pre-mining conditions” as stated. NDAC 69-05.2-05-02. (GAW)
481. Figure 1, Land Use Changes, at the top of page 7 of Section 4.12-1 is not legible. Please revise so the values can be read when the page is printed. Also, clarify what the values in each row are representing. Perhaps Figure 1 would be better identified as a table (appears to be more of a table than a figure). NDAC 69-05.2-05-02. (GAW)

482. Figure 1, Land Use Changes, appears to be showing **100%** of native grassland located in the W1/2 of Section 7, S1/2 of Section 8, SW1/4 of Section 16, E1/2 of Section 17, N1/2 and SW1/4 of the NW1/4 of Section 18, NE1/4 of Section 21 and NE1/4 of Section 12 being converted to cropland but only a small portion of these areas are actually going to be mined. BNI will not be allowed to significantly alter the pre-mine topography of areas impacted by associated disturbance (see previous deficiencies regarding this matter) and some of these areas contain intermittent streams. Also, postmine land use changes for federal coal tracts that are not yet leased and approved for mining will not be approved at this time. Please revise to show only native grassland to cropland land use conversions on lands that are actually going to be mined that would consist of fields that are manageable in size and shape. Also, BNI must ensure that postmine slopes and soil respread depths are suitable for this alternative land use. The acreage listed in Figure 1 is not consistent with what is shown on the postmine land use map. NDAC 69-05.2-05-02. (GAW)
483. The shelterbelt planting narrative in Section 4.12-1 references Table 4.12-3, Post Mine Shelterbelt Plantings, but this table cannot be found. Appendix 4.12-3 is also labeled Post Mine Shelterbelt Plantings. Please clarify. NDAC 69-05.2-05-02. (GAW)
484. The last sentence of the first paragraph on page 7 of Section 4.12-1 is contradictory and makes little sense in light of known facts regarding landscape diversity and the effects on wildlife. Please revise to clarify. NDAC 69-05.2-05-02. (GAW)
485. The second paragraph on page 8 of Section 4.12-1 states that BNI will replace those fences that were in useable condition prior to mining. Please revise to clarify that BNI will install the necessary support activities to achieve the post mining land use as required by NDAC 69-05.2-09-13. This may include additional fences, water developments, grassed waterways and other conservation practices even if they did not exist prior to mining. (GAW)
486. The first sentence of the third paragraph on page 8 of Section 4.12-1 references the native grassland seed mixture in Table 4.12-2. But Table 4.12-2 cannot be found. It appears that this sentence should be referring to Figure 3 (see the General comments at the beginning of the letter). NDAC 69-05.2-05-02. (GAW)
487. Please clarify and explain in detail how the reclaimed native grassland that is to be reclaimed in a uniform manner with 7 species can be considered more diverse and improved habitat for wildlife. Language in Section 4.12-1 repeatedly states how “degraded” the pre-mine native grassland is yet BNI plans to seed only 7 native grass species on reclaimed native grassland that is going to be respread with a uniform depths of soil. The pre-mine plant species list, Appendix 3.6-1, identifies 398 plant species growing on the pre-mine native grassland in a dozen or more community types (ecological sites). Considering this, it seems unrealistic for BNI to suggest that the reclaimed land will be more diverse than the pre-mining state. Please revise the native

grass seed mixture in Figure 3 of Section 4.12-1 to include several forb species and a greater number of species of native grasses. NDAC 69-05.2-22-01 and NDCC 38-14.1-24(21). (GAW)

488. The woodland narrative on page 9 of Section 4.12-1 states that “direct re-spread will be used to re-establish woodland species” and that if survival rates from direct respread does not result in adequate densities then the woodland will be planted with the woodland species mix, Figure 3. Please include literature reference that suggests it is feasible to re-establish woodland communities with the direct respraying technique. The language discussing direct respraying for re-establishment woodland will need to be revised if literature or research does not support this methodology. The statement in Figure 3 will also need to be revised if supporting literature is not included. NDAC 69-05.2-05-02. (GAW/ZAT)
489. A sentence on page 9 of Section 4.12-1 states the BNI will plant woodlands according to the most up to date USDA NRCS Technical Guidelines. Please specify which of the USDA NRCS Technical Guidelines for tree plantings will be utilized as they are variable with regard to seeding density based on the type of planting. Please also clarify the method in which the woodlands will be planted as required by NDAC 69-05.2-09-11. (GAW)
490. Figure 2 on page 9 of Section 4.12-1 indicates that the permit area contains 65.23 acres of woodlands but Table 3.5-1 shows that the permit area contains 62.37 acres. Please review and update as necessary. NDAC 69-05.2-05-02. (GAW)
491. A sentence at the end of the first paragraph on page 9 of Section 4.12-1 states that “Reclaimed woodland densities will be equal to or greater pre-mine conditions” and cites NDAC 69-05.2-22-07(4)(e)(1). NDAC 69-05.2-22-07(4)(e)(1) does not establish the standard based on “pre-mine conditions”. Please correct as necessary. NDAC 69-05.2-05-02. (GAW/ZAT)
492. Please revise the second paragraph on page 9 of Section 4.12-1 to explain how the woodlands will not be grazed if nearly all are going to be planted on reclaimed native grassland that is going to be grazed. In addition, please describe the support activities needed to protect the woodlands from livestock as required by NDAC 69-05.2-09-13. NDAC 69-05.2-05-02. (GAW)
493. BNI is proposing to place reclaimed seasonal or permanent wetlands on cropland in instances where only temporary wetlands existed prior to mining (Sections 19 and 20). It appears that more permanent wetlands are being replaced on cropland than existed on these tracts prior to mining, which in effect will reduce the pre-mine capabilities of the pre-mine cropland. For example, no seasonal or permanent wetlands existed in the cropland in Section 19 prior to mining but BNI is proposing seasonal basins 19-1 and 19-2 in cropland in Section 19. It seems replacing ground water fed temporary

- wetlands with seasonal basins may be considered a land use change that needs to meet the requirements of NDAC 69-05.2-23-03. Also, BNI needs to discuss if the premine temporary wetlands were capable of being periodically cropped. Please review and revise as appropriate. NDAC 69-05.2-05-02. (GAW)
494. The wetland narrative on page 9 of Section 4.12-1 states that perennial vegetation will be planted near reclaimed wetlands where practical and with landowner approval. The Reclamation Division Revegetation Success Standards Document recommends a buffer zone around reclaimed wetlands to avoid sedimentation into the basin, page II-H-8. Please consider modifying the language accordingly. (GAW)
495. As previously noted, the wetland narrative on page 9 of Section 4.12-1 states that islands will be created in class III wetlands. However, the wetland design information in Section 4.10 does not show any islands in any of the created wetland basins. Please review and update the wetland design plans as necessary. NDAC 69-05.2-05-02. (GAW)
496. Please revise the wetland narrative in Section 4.12-1 to discuss replacement and reclamation plans for wetlands and streams that will be affected by associated disturbances. Please also explain in detail how pre-mine wetlands formed as the result of ground water seeps and springs are going to be replaced if the coal seam which is creating the ground water seep is destroyed by coal removal. This section should also discuss compliance with NDAC 69-05.2-13-05, minimizing disturbances on lands where coal is not removed and utilizing the best technology currently available. NDAC 69-05.2-05-02. (GAW)
497. A sentence on page 10 of Section 4.12-1 states that native species adapted to wetland transition zones will be seeded on wetlands located in reclaimed native grassland to form a buffer zone around the wetland. Please clarify how this wetland buffer zone will be created in reclaimed native grassland. NDAC 69-05.2-05-02. (GAW)
498. The wetland transition zone seed mixture in Figure 3 indicates that only 4 pounds of seed will be planted per acre. The pound/acre values listed are identical to the native grassland mixture even though the relative percentage values of the seed mixtures are different. Likewise, the Fish and Wildlife Habitat mix has different relative percentages but somehow this equates to the same pounds/acre values. Please revise to clarify the pounds of pure live seed (PLS) that will be seeded per acre, and include a table showing the number of seeds in a (1) pound of each of the species listed in Figure 3 and the calculations use to determine the PLS seeding rate per acre. NDAC 69-05.2-05-02. (GAW)
499. Please revise the woodland mix in Figure 3, Perennial Seed Mixtures, to show the number of trees and shrubs to be planted per acre as required by NDAC 69-05.2-09-11(6)(b). (GAW)

500. Please include a comprehensive summary table Section 4.12 that shows the planned postmine land uses for the permit area. Individual tract pre and post mine land use acreages are shown in Section 4.12-2 but summary information for the whole permit area is not provided. NDAC 69-05.2-05-02. (GAW)
501. NDAC 69-05.2-22-02(4) and (6) requires consultation with the ND State Game and Fish department, State Forester and NRCS in development of woodland and fish and wildlife habitat planting mixtures. Please include a discussion about compliance with this requirement. NDAC 69-05.2-05-02. (GAW)
502. The information presented for proposed land use changes for several tracts identified in Figure 1 and the narrative in Section 4.12-1 does not appear to agree with the information depicted on Plate 4.12-1, Post Mining Land Use Map. In most cases the acreage change listed in Figure 1 appears to be substantially more than is depicted on the post-mining land use map or can be accommodated based on the planned mining disturbance in the tract. Also, previously noted above, most of the changes shown in Figure 1 are not justified and do not appear to be appropriate. Please revise the narrative and Figure 1 in Section 4.12-1, Reclamation Plans, the narrative in Appendix 4.12-2, Premine and Postmine Land Use Discussions, and Plate 4.12-1, Post Mining Land Use Map, as appropriate to correct the following discrepancies: (RLK)
- a. In the W1/2 of Section 7 owned by Opp Limited Partnership, the conversion of 307.73 acres of native grassland to cropland does not appear to agree with the post-mining land use map;
  - b. In the S1/2 Section 8 owned by Five D's LLP, the conversion of 208.26 acres of native grassland to cropland does not appear to agree with the post-mining land use map;
  - c. In the SW1/4 of Section 16 owned by Kasper and Donna Kraft, the conversion of 150.21 acres of native grassland to cropland does not appear to agree with the post-mining land use map. Also, based on the proposed postmine slopes and the landowner preference statement it may be more appropriate to designate any converted acres as hayland;
  - d. In the E1/2 of Section 17 owned by 5 D's LLP, the conversion of 162.39 acres of native grassland to cropland does not appear to agree with the post-mining land use map. Also, the post mine slope map indicates that the slopes on most of the land in the NE1/4 of Section 17 would not be desirable as reclaimed cropland. It is not clear why some of the least sloping area in the quarter is designated grassland while the steep slope areas are proposed as cropland;
  - e. In the NE1/4 of Section 21 owned by Delmar Hagerott the conversion of 151.92 acres of native grassland to cropland does not appear to agree with the post-mining land use map;
  - f. In the NW1/4 of Section 12 owned by Frances Fuchs, the conversion of 69.53 acres of cropland to hayland is not supported by the landowner preference statement and the post-mining land use map for this tract which will not be disturbed according to the plans submitted in the permit application; and,

- g. In the NE1/4 of Section 12 owned by Jolene Berger, the conversion of 78.05 acres of native grassland to cropland is not supported by the landowner preference statement which expresses the wish to have cropland planted to hayland and to reclaim the rest to premine conditions.

503. On page seven, the fifth paragraph provides yield estimates for hayland, cropland and native rangeland. Please include the units for each estimate and indicate the type of crop for the cropland estimate. Also in the sentence it appears that text is missing between “rangeland (2123.39)” and “soil mapping units”. Also, it is not clear if the productivity is based on the soil map units dedicated to hayland, cropland and grassland respectively within the permit area or are they for Oliver County as a whole. Please clarify. (RLK)

#### **Section 4.12-2 Determining Reclamation Success**

504. The narrative on pages 13 and 14 of Section 4.12-3 indicates that the Shallow Loamy site is located in the SW1/4 of Section 9 and the Shallow Sandy site in the SE1/4 of Section 8. However, Plate 3.6-1, Ecological Site Location Map, does not show that any sampling occurred on these sites and Plate 4.12-2 only shows that sampling occurred on two of the five sites. Please review and revise as necessary. The Similarity Index Information in Section 4.12-5 should be included in Section 3.6 of the permit as this is important baseline information. NDAC 69-05.2-05-02. (GAW)
505. The Clayey narrative on page 14 of Section 4.12-2 indicates that mapping unit 62B, Rhoades Silt Loam, is included in the proposed clayey native grassland reference area and this information is repeated on Plate 4.12-2. Since Rhoades soils would be a Thin Claypan site, please revise to remove all reference to mapping unit 62B as part of the proposed clayey reference area ecological site. NDAC 69-05.2-05-02. (GAW)
506. The proposed native grassland ecological reference area sites in the SW1/4 of Section 9 are going to be disturbed by mining activities according to the Pit Layout and Facilities Map. Please revise operations plans so the reference areas will not be disturbed by mining activities or propose new locations for these ecological sites. NDAC 69-05.2-05-02. (GAW)
507. Pastureland, presumably tame pastureland, and Fish and Wildlife Habitat revegetation success performance standards are provided on pages 14 and 15 of Section 4.12-2. However, neither tame pastureland nor fish and wildlife habitat is shown as a postmine land use on the Post Mine Land Use map, Plate 4.12-1. If there is no (tame) pastureland or fish and wildlife habitat postmine land use in this permit area, then the revegetation performance standards for these landuses can be deleted. Please review and revise to provide clarity. NDAC 69-05.2-05-02. (GAW)

**Plate 4.12-1 Post Mining Land Use**

508. Please provide a label for each reclaimed shelterbelt listed in Appendix 4.12-3 on the Post Mine Land Use Map. NDAC 69-05.2-09-02. (GAW)
509. The shelterbelt planting in Section 8 is irregular in shape and located in the middle of a cropland field. The location and shape of this planting does not appear conducive to farming. Please consider revising the location and shape of this planting. NDAC 69-05.2-05-02. (GAW)
510. Appendix 4.12-3, shelterbelt plantings, indicates that there will be five 2-row plantings that are each about 2,040 feet in length. Plate 4.12-1 depicts these as shorter plantings (less than the planned length in Appendix 4.12-3). Please revise the map so it agrees with the design plans. NDAC 69-05.2-05-02. (GAW)
511. The postmine land uses in the NE1/4 of Section 18 are labeled and color coded as if they were reclaimed lands. The Pit Layout and Facilities Map indicates that no mining will occur on this tract. Please revise in accordance with the mine plans. (See previous deficiencies related to changing the land use on areas that are not mined.) NDAC 69-05.2-05-02. (GAW)
512. Appendix 4.13-3 identifies shelterbelt plantings as 8a, 8b, 18a-e, 18f-h, etc. Please identify (label) each of these plantings or portions of plantings on the Post Mine Land Use Map, Plate 4.12-1. NDAC 69-05.2-05-02. (GAW)
513. Appendix 4.12-3 indicates that shelterbelts will be planted near farmsteads in Sections 19, 20 and 24 that are identified as areas where mining is prohibited with a 500 foot setback. Please revise the Post Mine Land Use map to not show reclaimed land uses on areas where mining is prohibited or provide an explanation and justification for postmine land use changes on the farmstead areas. Also, it seems unlikely that farmstead type shelterbelt plantings would be planted in areas of reclaimed native grassland when the pre-mine farmstead is not being replaced. Please review and update as necessary. NDAC 69-05.2-05-02. (GAW)
514. The Post Mine Land Use map indicates that all of the reclaimed woodlands will be planted in the exact locations where woodlands existed prior to mining. This will require a large number of very small plantings which does not seem realistic. In addition, a woodland is planned in a large cropland area located in the NE1/4 of Section 20. Again, this seems unlikely. Please review and revise as appropriate. NDAC 69-05.2-05-02. (GAW)
515. A portion of the dragline/haulroad corridor in the northwest corner of Section 5 is not color coded to reflect the postmine land use but rather this area is identified as

- undisturbed land on the Post Mine Land Use map, Plate 4.12-1. Please depict the postmine landuses for this area. NDAC 69-05.2-05-02. (GAW)
516. Please revise Plate 4.12-1 to show that developed water resources will be reconstructed in the NE1/4 and SE1/4 of Section 7. Clearly these DWR's will be affected by mining and they should be identified as features that are being replaced on the map, not as undisturbed features. NDAC 69-05.2-05-02. (GAW)
517. Larry and Ginger Schmidt requested that additional trees be planted in the NW1/4 of Section 8 and NW1/4 of Section 16 to improve wildlife habitat. Please revise the reclamation plan to accommodate the surface owner's request. The Schmidt's request is also complimented by the requirements of NDAC 69-05.2-09-17 and NDAC 69-05.2-13-08. (GAW)
518. BNI is proposing the conversion of native grassland to cropland in the NE1/4 of Section 21 but the surface owner does not specifically request this land use change. The postmine topography indicates that this area is only marginally suited to cropland. Please either justify this land use change and obtain a new postmine land use preference statement from the surface owner specifically requesting this land use change, or update the reclamation plans to not show this land use change. NDAC 69-05.2-05-02. (GAW)
519. BNI is attempting to square up the cropland in the SE1/4 of Section 12 but what is proposed as shown on the Post Mine Land Use Map is not feasible or practical. An irregular shaped tract of reclaimed native grassland is shown between undisturbed and reclaimed cropland. Please revise as necessary to facilitate tract management. NDAC 69-05.2-05-02. (GAW)
520. Keith and Wayne Reuther and Karen Shulz, surface owners of the E1/2 of Section 24, requested that the land be returned to the pre-mine uses. However, BNI is proposing a considerable increase in the amount of hayland. Please explain why the pre-mine uses are not being reclaimed as requested by the surface owners or revise reclamation plans to comply with the wishes of the surface owners. NDAC 69-05.2-05-02. (GAW)
521. Please increase the font size of the labels for the reclaimed wetlands so they are legible. In addition, please label wetlands 8-1a, 8-1b and 8-1c individually since they are distinct and separate basins. NDAC 69-05.2-05-02. (GAW)
522. Please reconsider placing reclaimed wetland 7-1 in cropland. This very small wetland, 0.04 acres in size, will be a nuisance where located in cropland, and given its size could obviously be placed in adjacent to native grassland which is the land use that it was located in prior to mining. Likewise, wetland 16-1 is partially located on cropland but in pre-mining setting the wetland was located in native grassland. Reclaimed wetland 19-1 was located along the quarter line prior to mining and should be placed at this

location to facilitate farming operations rather than in the middle of the cropland field. NDAC 69-05.2-05-02. (GAW)

523. Please revise the Post Mining Land Use Map to show vegetative buffers around the reclaimed wetlands and show a grassed water way through the drainage way above and below the wetlands that are to be reclaimed in Section 8. NDAC 69-05.2-09-13(1)(a). (GAW)
524. Please revise the Post Mining Land Use Map to show where grassed waterways and other conservation practices or support activities are going to be installed on reclaimed lands. As a rule of thumb, drainages with watersheds exceeding approximately 30 acres should be established with permanent vegetation (grassed waterways). NDAC 69-05.2-09-13(1)(a). (GAW)
525. Please revise the Post Mining Land Use Map to not show any reclaimed cropland with slopes exceeding 9 percent. The Post Mining Topography map presently shows significant areas of postmine cropland with slopes exceeding 9 percent in the SW1/4 of Section 12, SW1/4 of Section 8, SW1/4 of Section 16, E1/2 of Section 17, NW1/4 of Section 17, NW1/4 and SE1/4 of Section 18, NE1/4 of Section 19, near the center of Section 20 and the N1/2 of Section 21. Many of these areas are lands that were native grassland in the premine condition that BNI is now proposing to convert to cropland. Cropland with slopes greater than 9 percent are considered marginal cropland. Please review and revise as appropriate and as noted by other deficiencies above. (GAW)

#### **Plate 4.12-2 Ecological Site Reference Areas**

526. Please revise Plate 4.12-2 to show where sampling occurred on the Clayey, Shallow Sandy and Thin Loamy sites. NDAC 69-05.2-05-02. (GAW)

#### **Appendix 4.12.2 Pre-mine and Post-mine Land Use Discussions**

527. Appendix 4.12-2 is entitled Pre/Post Mine Land Use Discussions in the Table of Contents but as 4.12\_2, Pre-mine and Post-mine Land Use Discussions, in the bookmark when opened. Please correct for consistency. NDAC 69-05.2-05-02. (GAW)
528. The bookmarks in Section 4.12.2, Pre-mine and Post-mine Land Use Discussions, are not linked to the tract described. Please revise so that the bookmarks take the reader to the listed tract. NDAC 69-05.2-05-02. (GAW)
529. A sentence at the top of page 2 of Appendix 4.12-2 incorrectly states that the Dakota Skipper is a potential candidate species. Please correct as necessary. NDAC 69-05.2-05-02. (GAW)
530. Please provide literature citations supporting the statements made in the second paragraph on page 2 of Section 4.12-2, Pre-mine and Post-Mine Land Use Discussions.

This includes the suggestion that productivity, soil health and water infiltration decline as litter increases on native grasslands, and that Kentucky bluegrass root penetration does not exceed approximately 2 inches in depth. NDAC 69-05.2-05-02. (GAW)

531. The third paragraph on page 2 of Appendix 4.12-2 briefly mentions western snowberry communities and concludes with a statement that these plant communities appear to support limited wildlife habitat. Please clarify why this low shrub community was not considered woodland and provide specific information of this species presence in each tract of land described. In Section 3.10, Fish and Wildlife Resources, please describe the value of this low shrub community to various species of wildlife. Although it may not be considered as a woodland, this shrub community should be considered a habitat type and depicted on Plate 4.13, if feasible, or otherwise properly represented and documented in the narrative format. NDAC 69-05.2-05-02. (GAW)
532. The tract narratives in Appendix 4.12-2 mention that all pre-mine woodlands and wetlands will be reclaimed to the same acres and to a quality equal or greater than the pre-mine conditions. Please review and edit to further explain what is meant by this statement, especially when considering the revegetation standards are not based upon the pre-mine conditions. NDAC 69-05.2-05-02. (GAW)
533. The term “invasive species” is used repeatedly in the tract narratives in Appendix 4.12-2. Please revise to specifically state which “invasive species” is present. We realize that this term is probably referring to Kentucky bluegrass but in some instances it may also be referring to other species. Please revise to provide specifics. NDAC 69-05.2-05-02. (GAW)
534. Please revise the narrative for the E1/2 of Section 17 to clarify the sentence stating that the “limited management has allowed Kentucky bluegrass and smooth brome grass to dominate the plant community” is only describing that portion of the native grassland that is managed with cropland and not the grazed portion of the tract, if that is the case. A preceding sentence indicates that grazing is controlling the relative percentage of invasive species, but then it is stated that loamy and loamy overflow sites have an estimated invasion of 50% and 70% respectively. Another sentence in this paragraph states that “The limited management has allowed Kentucky bluegrass and smooth brome grass to dominate the plant community with less than 10% of the native component remaining. This is confusing. Please revise to provide clarity. NDAC 69-05.2-05-02. (GAW)
535. As previously noted, BNI is proposing native grassland to cropland conversions in several locations where the post mine topography is too steep to accommodate the land use conversion (see earlier deficiency under Plate 4.12-1). We believe these changes are not appropriate due to the steep slopes resulting in marginal cropland. Please revisit each of the proposed land use conversions and update this section as necessary. (GAW)

536. The tables in Appendix 4.12-2, Pre and Post Mine Land Use Discussions, show that all of the native grassland is going to be converted to cropland on some tracts, such as S1/2 of Section 8, E1/2 of Section 17, W1/2 of Section 7, NW1/4 of Section 18, but the Post Mine Land Use Map, Plate 4.12-1, does not show this to be the case. Please review and reconcile the land use differences shown between the tables in Appendix 4.12-2 and Plate 4.12-1. NDAC 69-05.2-05-02. (GAW)
537. The pre- and post-mine land use table on page 27 of Appendix 4.12-2 states that the surface owner of the NE1/4 of Section 12 requested that the cropland be reclaimed to hayland but the table shows that the native grassland, most of which isn't going to be disturbed, is being converted to cropland. The Postmine Land Use Map, Plate 4.12-1, does not show any land use changes on this tract. Please review and revise as necessary and state when BNI will convert the cropland to hayland as requested by the surface owner. NDAC 69-05.2-05-02. (GAW)
538. The pre- and post-mine land use table on page 28 of Appendix 4.12-2 indicates that the cropland will be converted to hayland but the land owner requested as much cropland as possible. Please revise the table to not show any land use changes since this tract will not be disturbed by mining activities. NDAC 69-05.2-05-02. (GAW)
539. Please review the narrative for the SE1/4 of Section 31 to mention that portions of this tract was previously cropped. The statement that use on this tract was minimal in the past is not consistent with how the tract was actually managed (personal observations). NDAC 69-05.2-05-02. (GAW)

#### **Appendix 4.12-3 Post Mine Shelterbelt Plantings**

540. Please identify the name of this document in the bookmark heading so the reader can readily determine which section of the permit is open. NDAC 69-05.2-05-02. (GAW)
541. Appendix 4.12-3 is labeled as Table 4.12-3, and entitled Shelterbelt Plantings Table. Please revise so that the name of this document is consistent. NDAC 69-05.2-05-02. (GAW)
542. Appendix 4.12-3 indicates that shelterbelts will be planted in the NE1/4 of Section 18 but the Pit Layout and Facilities Map does not show any mining disturbance on this tract or near the occupied farmstead. Please revise as necessary. NDAC 69-05.2-05-02. (GAW)
543. As previously discussed, we are uncertain why postmine farmstead shelterbelts will be planted around former farmstead sites that will likely be mined through and reclaimed to native grassland. Please review and update as necessary. NDAC 69-05.2-05-02. (GAW)

544. The land use map shows that just a short segment of the field windbreak in the SE1/4 of Section 13 is going to be disturbed and reclaimed; however, Appendix 4.13-3 indicates that the row length is 2,044 feet. Please revise or explain this discrepancy. NDAC 69-05.2-05-02. (GAW)

**Appendix 4.12-4 Wetland acreage within Disturbance Boundary Table**

545. Appendix 4.12-4 is labeled as Wetland Acreage within Disturbance Boundary Table in the Table of Contents but when opened the document is entitled Table 4.12-4, Surface Water Acreage within the Mining and Associated Disturbance Boundary. Please revise the name of the Appendix and/or Table so that it is consistent. NDAC 69-05.2-05-02. (GAW)

**Appendix 4.12-5 Ecological Site Reference Areas Appendix**

546. Appendix 4.12-5 is entitled Ecological Site Reference Areas Appendix in the Table of Contents but as Ecological Reference Sites in the bookmark section of the permit when the Appendix is opened. Please revise the title to state that these are proposed reference area sites and use the title consistently between the Table of Contents and Appendix. NDAC 69-05.2-05-02. (GAW)

**Section 4.13 Fish and Wildlife Resource Protection, Enhancement, and Monitoring Plan**

547. The wording “critical habitat” is used repeatedly in Section 4.13. Please revise to use this terminology only when referring to USFWS designated critical habitat, which are areas specifically designated by that agency for threatened and endangered species that has legal and regulatory implications. NDAC 69-05.2-05-02. (GAW)
548. In the third paragraph on page 1 of Section 4.13, please specifically state whether or not native grassland is also an important habitat for wildlife species. NDAC 69-05.2-09-17. (GAW)
549. The fifth paragraph on page 1 of Section 4.13 states that “There are two species of concern that are found within the permit boundary, the Sprague’s pipit and the Dakota skipper, which are discussed below in the Fish and Wildlife Resources Protection and Enhancement Plan [Appendix 3.10-1] [Table 3.10-2].” First, Appendix 3.10-1 and Table 3.10-2 are not discussed below in the permit and both of these documents are tables with no discussion. Secondly, the two species of concern are Candidate species to the Threatened and Endangered Species Act and that should be stated as such rather than simply referring to these species as species of concern. And, finally, please identify where the Dakota skipper was found within the proposed permit boundary. NDAC 69-05.2-05-02. (GAW)

550. The first two sentences of the second paragraph on page 2 of Section 4.13 is in regards to the Sprague's pipit but the preceding paragraph and language below these two sentences is discussing the Piping plover. Please revise to separate the discussions regarding these two distinct species. NDAC 69-05.2-05-02. (GAW)
551. A sentence in the second paragraph on page 2 of Section 4.13 states that Table 3.10-1 is in Appendix 3.10-2 and also references Appendix 3.6-4. The sentence that follows states that "During mining and post mining, they (species of concern) would likely be found in approximately the same relative abundance". Appendix 3.10-2 is the USFWS threatened, endangered and candidate species list. Please revise to clarify if Table 3.10-1 is in Appendix 3.10-2 and if any USFWS threatened, endangered and candidate species were identified in the permit or surrounding area. NDAC 69-05.2-05-02. (GAW)
552. The first sentence of the last paragraph on page 2 of Section 4.13 states that BNI will to the extent possible, and using the best technology available, minimize disturbances and adverse impacts on fish and wildlife and related environmental values... Please specifically state how mining has been planned to minimize disturbances and adverse impacts to wildlife and identify the reclamation techniques that are the best technology that is currently available. Identify important habitat areas that will be avoided by mining activities and discuss the enhancement techniques that will be implemented during mining and reclamation. NDAC 69-05.2-09-17. (GAW)
553. The native grassland narrative on page 3 of Section 4.13 states that the significance of native rangeland to wildlife varies considerably depending on moisture. Please explain what is meant by this statement. NDAC 69-05.2-05-02. (GAW)
554. The native grassland narrative on page 3 of Section 4.13 states that the overall value of the native grasslands to wildlife will be improved by reclaiming areas with a diverse mix of native species that will increase the overall biodiversity. Other statements indicate that the quality of the native grassland habitat will be improved and that benefits to wildlife will include a diversity of food and cover. Please explain how seeding only seven native grasses on the reclaimed native grassland that are respread with a uniform depth of soil can be considered increasing the biodiversity when pre-mine baseline data shows that the undisturbed native grassland consisted of a variety of ecological sites supporting 398 species of plants. Please revise the narrative so that the information is technically correct and accurate. NDAC 69-05.2-05-02. (GAW)
555. The wetland narrative on page 4 of Section 4.13 is written as if the permit area was located in the center of the prairie pothole region. Please revise to provide clarity and specifically state which pre-mine seasonal or more permanent wetlands are typically hayed. Please also clarify how wetlands formed from groundwater discharge will be replaced if the ground water source is removed by mining operations. NDAC 69-05.2-05-02. (GAW)

556. The last sentence of the first paragraph on page 4 of Section 4.13 states that the wetlands will be reclaimed with native species but that is not what is stated in the Reclamation Plan. Please review and revise to provide consistency and clarity. NDAC 69-05.2-05-02. (GAW)
557. The last sentence on page 4 of Section 4.13 states that BNI will make an effort to create a uniform distribution of larger lotic (drainage system) wetlands throughout the post-mining landscape. However, this is not shown on the postmine land use map. Please show these features on the postmine land use map and clarify how this will be accomplished in drainages that will be affected by associated disturbances where the topography will be put back to its pre-mining contours. NDAC 69-05.2-05-02. (GAW)
558. The last sentence of the second paragraph on page 6 of Section 4.13 states that haul roads, sediment ponds and SPGM stockpiles will be constructed and implemented with the least disturbance to plant and wildlife communities as possible. Please specifically state how this will be accomplished. In other words, please specifically state how important habitats such as intermittent streams, woodlands, wetland and native grassland containing habitat suitable to Candidate species will be avoided and discuss the protective measures that will be used during active mining as required by NDAC 69-05.2-09-17. NDAC 69-05.2-05-02. (GAW)
559. A sentence in the first paragraph on page 8 of Section 4.13 states that “Notes about site location (active mine, reclaimed, undisturbed) will also be taken at each of these stations to be able to tract trends.” The preceding sentences are talking about the grassland breeding bird reference area sites. Thus, it is not clear what is meant by this statement if the reference area sites are not going to be disturbed. Please clarify what is meant by this statement. NDAC 69-05.2-05-02. (GAW)
560. The word “breeding” is spelled “breading” in the heading for the Breeding Bird Survey narrative on page 9 of Section 4.13. Please correct. NDAC 69-05.2-05-02. (GAW)
561. In the 2010-2011 monitoring report, BNI states that incidental wildlife sightings are of limited value. Therefore, please revise the last paragraph on page 8 of Section 4.13 to discuss how the incidental sighting monitoring techniques will be conducted so that the information obtained is informative and worthwhile. Likewise, revise the Big Game, Fur Bearers and Raptors and Waterfowl narratives on page 9 of Section 4.13 to discuss how monitoring will be conducted and documented to provide meaningful information. NDAC 69-05.2-05-02. (GAW)
562. Please revise the Fish and Wildlife Monitoring Plan, Section 4.13, to include specific annual monitoring for Sprague’s pipit on undisturbed and reclaimed native grasslands and identify habitats with the greatest potential for this species to exist on the Wildlife Monitoring Map, Plate 4.13. (GAW)

563. Please revise the Fish and Wildlife Monitoring Plan, Section 4.13, to include specific annual monitoring plans for Dakota skipper on undisturbed native grasslands in Permit BNCR-1101 and identify the habitats with the greatest potential for this species to exist on the Wildlife Monitoring Map, Plate 4.13. The USFWS requested that BNI avoid impacts to potential Dakota Skipper habitat, see email dated March 11, 2010, page 26 of Appendix 3.10-3. Please address how BNI will comply with this request. NDAC 69-05.2-08-15(3)(c). (GAW)
564. BNI repeatedly states in Sections 3.5, 3.6 and 4.12 how the present management of the native grasslands in the permit area is decreasing the habitat value of this land use and that the ecological condition is generally declining. Please therefore then, clarify how BNI will require the surface owners to manage reclaimed native grassland to ensure the land is properly managed to enhance the habitat value of this land for wildlife. This should include management of tracts of native grassland that become isolated or are otherwise affected by mining related activities. NDCC 38-14.1-17(8). (GAW)
565. NDAC 69-05.2-09-17(1)(e) requires that the applicant, BNI, consult with the Commission and State Game and Fish Department before selecting indicator species that will be monitored to assess the effects of surface mining on fish and wildlife resources. Please include a discussion about how this was accomplished. If not already done so, the Reclamation Division recommends that a meeting be set up with Game and Fish Department personnel to discuss this issue. (GAW)

#### **Section 4.14 Reclamation Cost Estimate for Bonding Purposes**

##### **Appendix 4.14-1 Worst Case Bond Calculations**

566. Plate 4.14-2 correctly uses a 700 foot haul distance in cross section B-B' as a scraper haul; however, Appendix 4.14-1 calculates this as a dozer push. Please correct Appendix 4.14-1 to a scraper haul. (MDB)
567. In Appendix 4.14-1, please include costs for reclaiming ponds P-5-8 and P-5-9 as they will be constructed in the first permit term prior to building the dragline walkway. These ponds will be needed to contain runoff from the walkway. (MDB)
568. In Appendix 4.14-1, reconstruction of the county roads will require 80,415 cubic yards of subsoil to be hauled a distance of 2000 feet. We are uncertain as which stockpile is this will come from since all stockpiles have been dedicated for the respread of mined areas. Please clarify and correct as necessary. (MDB)
569. In Appendix 4.14-1, a dozer push is used to level the haul roads into the ditch area that are made of subsoil. However, as stated earlier in an earlier deficiency, the roads will need to be constructed out of spoil because there is not a surplus of subsoil in this permit area. Therefore, the costs associated with reclaiming the haulroads will need to

eliminate the push distance of the subsoil into the ditches but include disposal of the spoil material in the pit and hauling in subsoil to reclaim the road. Please adjust the tables accordingly. (MDB)

570. Please include the costs for the removal of the fill which will be used in the Hagel Creek stream crossing in Appendix 4.14-1. (MDB)

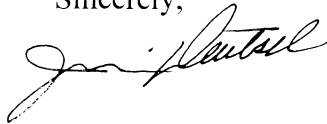
571. Please update Appendix 4.14-1 to the July 2012 Variable Costs. (MDB)

As noted by many of the above items, there are numerous inconsistencies between what is stated in various parts of the permit application. Many of the changes that have to be made to correct this application will affect multiple sections of the permit, especially the pre- and postmining land use sections and the reclamation plans. Prior to submitting your response to this letter, please thoroughly review the revised narratives and plans to ensure that similar inconsistencies do not occur in the next submittal. By ensuring that inconsistencies do not exist and the information and plans in the revised application is otherwise presented in a clear and concise manner, staff's review time will go faster and that should result in quicker Commission action on this permit application.

Also, attached are copies of comments that we have received from Advisory Committee members to date.

If you have any questions, please contact this office.

Sincerely,



James R. Deutsch  
Director  
Reclamation Division

cc: Oliver County Auditor

Attachments