NORTH AMERICAN COAL CORPORATION
OTTER CREEK MINE

March 3, 2017

Mr. Dean K. Moos
Reclamation Director
ND State Public Service Commission
600 East Boulevard, Dept. 408
Bismarck, North Dakota 58505

RE: Technical Review (2) of Otter Creek Mining Permit NAOC-0802

Dear Mr. Moos:

The Otter Creek Mining Company submits the following responses to the second round of review items from the April 26, 2012 letter required to be addressed prior to approval for the above-referenced permit revision.

Section 2.1 - Cultural and Historic Resources

1. ***Follow-up to original item No. 8: Now that Site 32OL456 has been removed from the Site List and Recommendation Table, Section 2.1.3, please update the third paragraph of the Cultural Resources Narrative, Section 2.1.1, to document that there are 30 sites within the permit boundaries, not 31 sites. (BEB & KME)***

   Please see updated Section 2.1.1, Cultural Resources Narrative.

2. ***Follow-up to original item No. 9: NDCC 38-14.1-14(1)(u)(6) requires that the Commission, in addition to the Director, be informed of any discovery within the permitted area of previously unrecorded archaeological, cultural, or historic materials…, etc. Please add the Commission as a notifying agency to the first sentence of your narrative response. (BEB)***

   Please see updated Section 2.1.1, Cultural Resources Narrative.

3. ***As required by NDCC 38-14.1-14(u)(1), please provide a specific statement, preferably in the second paragraph of Section 2.1.1, evidencing compliance with the requirements of NDCC Chapter 55-03, Protection of Prehistoric Sites and Deposits. (BEB)***

   Please see updated Section 2.1.1, Cultural Resources Narrative.

Section 2.2 - Description of Ground Water Hydrology

4. ***Follow-up to original item No. 11: Editing of the narrative regarding the proposed aquifer pump test has inadvertently struck the word "test" from the sentence. We presume the phrase "aquifer pump test" was intended to remain in the narrative. Please review and update the narrative on page 3 of Section 2.2.2. Also, similar narrative regarding the planned pump test in 2009 remains in the second full paragraph on page 5 of Section 2.2.2, and that narrative should also be rephrased or updated. (BEB & KME)***

   Please see updated Section 2.2.2, Water Bearing Formations and Hydrogeology.

5. ***The first paragraph in Section 2.2.3, Quality of Ground Water, describes that water quality information is provided in Sections 2.2.23, 2.2.24, and 2.2.26; however, there is no Section 2.2.26 in this permit application. Please update the narrative. (BEB)***

   Please see updated Section 2.2.3, Quality of Ground Water.

6. ***Follow-up to original item No. 13: The Completion Details of Monitoring Wells spreadsheet, Section 2.2.16, still provides two separate listings for Monitoring Well 27-1R with two different locations noted. One of the locations places the Well in Section 24 and the other location places the Well in Section 32. It appears the entire row of information that places the location of this Monitoring Well in Section 32 needs to be eliminated or explained. Please review and update as necessary. (BEB)***

   Please see updated Section 2.2.16, Completion Details of Monitoring Wells.

7. ***Please incorporate narrative describing the Brady Creek Channel fill in the Ground Water Flow portion of Section 2.2.4. The Brady Creek Channel fill is a significant hydrologic feature within the permit area that is filled with approximately 100 feet of alluvium that truncates both the target Kinneman Creek and Hagel coal seams. Please describe this feature in the narrative and discuss its influence or control on recharge and discharge of the local ground water flow system, then describe in Section 2.2.5 the probable hydrologic consequences associated with removal of the lignites adjacent to this alluvial aquifer once mining operations have been completed on both sides of it. (BEB)***

   Please find changes made as requested.

8. ***Follow-up to original item No. 16: Several monitoring wells and the information provided for them that were listed in Section 2.2.12, Monitoring Well Information, are now missing from the spreadsheet. Please restore the information for Ground Water Monitoring Wells 54-3, 54-4, 54-5, 54-6, 54-7, 55-1, 55-2, and 56-1 back into Section 2.2.12.***

Additionally, the screened beds of Monitoring Wells 54-1 and 54-2 are listed as being Coal Lake and Tavis Creek, respectively, but with a question mark following each of the listed screened zone designations. Using the resources provided in the permit (lithology logs, geophysical logs, well completion reports, etc.) please eliminate the question marks and provide a definitive screened interval designation for these wells so that accurate permit information for the Ground Water Monitoring Plan is available. Again, please restore the monitoring well information and, separately, provide a hydrostratigraphic designation for Wells 54-1 and 54-2. (BEB)

Please find changes made as requested.

9. ***Narrative on page 2 of the Ground Water Probable Hydrologic Consequences, Section 2.2.5, describes predicted water quality of the post-mine reclaimed spoils and a link is intended to take the reader to the Extended Mining Plan Map; however, the link that is provided is to the Pit Layout and Facilities Map, Section 3.1.5. A similar scenario is repeated in the last paragraph of page 5 of the PHC. Please redirect these links to Section 3.1.6, the Extended Mining Plan Topographic Map of Mine Phases. (BEB)***

   Text has been changed and links redirected to Section 3.1.6, Extended Mining Plan Topographic Map of Mine Phases.

10. ***Narrative in the first paragraph under the Monitoring Plan Concurrent with Mining of Section 2.2.6 describes a table listing the monitoring schedule proposed for 2010 and subsequent years. If ground water monitoring has continued since 2010 for those wells listed, no change is required to the narrative; however, if monitoring activities have been suspended since 2009, then the 2010 date needs to be changed in the narrative to provide current permit information. Please address. (BEB)***

    Please find changes made as requested. Monitoring has continued since 2010.

11. ***The Ground Water Monitoring Schedule that was approved through the application completeness review process and which has been incorporated into the Ground Water Monitoring Plan, Section 2.2.6, incorporates Monitoring Wells 54-6, 54-7, 55-1, 55-2, and 56-1 into the monitoring schedule for quarterly water level measurement and twice-yearly water quality sampling; however, baseline water level and water quality information for these monitoring wells appears to be nonexistent in the application. Please provide the collected baseline hydrologic information for these Monitoring Wells. (BEB)***

    Please find the addition of the requested information.

12. ***Please depict and label Ground Water Monitoring Wells 54-6 and 54-7 on the Location of All Wells and Cross-Section Reference Map, Section 2.2.8, and also depict and label these same wells on the Monitoring Wells Location Map, Section 2.2.17. (BEB)***

    Please find changes made as requested.

13. ***For accurate interpretation of information that may be required in the future, it is requested that, in addition to the landowner's name, you specifically label the well and spring identifying numbers on the Location Map - Certified Wells and Developed Springs, Section 2.2.9. For example, there are some landowners that have as many as 5 to 7 individual water wells and several landowners that have more than one spring. Many of these wells and springs are grouped closely together and located within the same quarter-quarter section or even closer, and all of the wells and springs listed in the Well Certification Field Data forms, Section 2.2.11, are specifically labeled as Well #1, Well #2, Well #3 and Spring #1, Spring #2, etc. for each of the individual landowners If water quantity or quality issues arise or baseline verification or re-certification is ever required on any of the wells or springs, having those locations accurately labeled/numbered on the map will prove invaluable, and this location information needs to be accurately depicted on a map. To summarize, in addition to the landowner's name, provide the well and spring numbers next to the well/spring symbols of those water resource locations on the Certified Wells and Developed Springs Map, Section 2.2.9. (BEB)***

    Detailed location information for the well certifications is contained in the individual well certification forms and Section 2.2.10 of the permit. Because of the scale of the map in section 2.2.9, it is very difficult to show an accurate representation of the individual well locations and labels.

14. ***Follow-up to original item No. 21: Please update the main heading name of Section 2.2.11 to "Well and Developed Spring Certification Field Forms" to more accurately characterize the content of the section and to help any readers of the permit to locate the developed spring certification information which is included in this section. (BEB)***

    The main heading name of Section 2.2.11 has been updated to "Well and Developed Spring Certification Field Forms"

15. ***Follow-up to original item No. 29: The Potentiometric Surface Map - Hagel Bed, Section 2.2.19a, depicts Tavis Creek Ground Water Monitoring Well 5-1 that is located in the NW¼ of Section 16 as being one of the Hagel monitoring wells utilized in development of the Hagel Bed Potentiometric Surface Map, which appears to be a typographical error. Please replace the labeling of Monitoring Well 5-1 with Monitoring Well 5-2 on***

the map, as that appears to be the correct well for that particular screened unit and location. (BEB)

Please find changes made as requested.

16. ***Follow-up to original item No. 32: Information regarding Dale Berg Springs #1 and #2 has been added to Section 2.2.10 as requested; however, it is noted that Spring #2 will be mined through and destroyed in 2053-2055, but the probable hydrologic reclamation actions column on the spreadsheet does not provide an action or water replacement alternative for the inevitable loss of the resource as is provided for all of the other wells and springs that will likely require replacement. Please update the spreadsheet or provide an explanation for non-replacement of this spring, as well as the probable hydrologic reclamation actions for Spring #1 in the post-mine setting. (BEB & WTG)***

Please find changes made as requested.

17. ***Assuming the data is available, please update the Well and Developed Spring Certification Field Data Forms, Section 2.2.11, by adding the spring certification information for the recently added Dale Berg Springs #1 and #2. (BEB)***

The information for the Dale Berg Springs #1 and #2 is not available, but will be incorporated into the permit prior to mining.

18. ***Please review the elevations and screen lengths of monitoring wells that are depicted in the time series hydrographs of Section 2.2.25. Based on other information in the permit, monitoring well screen lengths ranged from 2-10 feet for all wells. However, many of the hydrographs depict screen lengths of 15-20 feet or more, even for some of the shorter 3-5 foot length screened zones. Please review the hydrographs and attempt to graphically display accurate screened intervals lengths. (BEB)***

Please find changes made as requested.

19. ***There appears to be discrepancies with information provided in the permit regarding screened elevations, ground level elevations, and the data provided in the time series hydrographs of Section 2.2.25. The screen elevations (top and bottom) provided in the hydrographs differ from information provided in the Monitoring Well Completion Details provided in Section 2.2.16. On average, the screened elevations depicted on the graphs are generally 10-12 feet lower than the actual surveyed elevations. However, several screen/intake elevations were randomly checked and the screen elevations of Ground Water Monitoring Wells 41-1 and 44-1 as displayed on the time series graphs differ from the information provided in Section 2.2.16 by 186 feet and 154 feet, respectively.***

Basically, the hydrographs show the monitoring well intake elevations to be significantly lower than what the surveyed and documented elevation information suggests. Assuming the surveyed elevations provided in Section 2.2.16 are correct, please review all of the graphs in Section 2.2.25 and adjust the screen interval graphics to their actual elevation locations. (BEB)

Please find changes made as requested.

20. ***Please review the "Casing Total Depth" column of the Completion Details of Monitoring Wells, Section 2.2.16, for possible errors. Several of the monitoring wells have total casing depths that are substantially less than what appears would be correct, such as wells 12-1, 14-2, 24-1, 24-2, and others. Please review the provided data on the spreadsheet and make the appropriate changes. (BEB)***

    Please find changes made as requested.

21. ***It appears that some of the measurements of hydraulic conductivity and/or calculated measurements of transmissivity based on unit hydraulic conductivity and saturated thickness may have been miscalculated or, more likely, reflect errors in Section 2.2.21, Transmissivity and Hydraulic Conductivity of Permit Aquifers. Please review the data for Monitoring Wells 12-1, 21-1, 5-1, and 28-1 and determine whether measurements of hydraulic conductivity and/or transmissivity need to be revised based on information provided in other sections of the permit of total hydraulic head for the unconfined Qal Monitoring Wells (12-1, 21-1) and thickness of the Hagel seam confined aquifer (5-1, 28-1). We realize that most of the K/T calculations from the wells noted above were derived from information provided in the NAOC-8902 application; however, any changes made to these calculations will likely affect the statistical analysis summaries that are provided at the bottom of the columns for each of the individual hydrostratigraphic units. Please review the data and make the changes, if necessary. (BEB)***

    Please find changes made as requested.

22. ***There were a total of four springs identified within the permit area during baseline-gathering work associated with Permit NAOC-8902, but none of those springs appear to have been identified or documented in this application. Based on information provided in this application and available aerial photography, it appears that all of the springs are located a short distance up-gradient of stockponds that were identified in the withdrawn NAOC-8902 permit application. The springs identified in NAOC-8902 are located within 143-84-32 CBB, 143-84-31 ACA, 142-85-01 ABD, and 143-85-36 CDB. We ask that you field check the locations of these documented springs and, if necessary, provide the required information regarding them in the permit. If a field investigation determines the***

springs are no longer viable and/or supplying water to the adjacent stock ponds, please disregard this deficiency. (BEB)

The spring locations in question: 143-84-32 CBB, 143-84-31 ACA, and 143-85-36CDB were all field verified as not existing. Spring 142-85-01ABA is listed in the permit as spring SPG6-1-142-84.

Section 2.3 - Description of Geology

23. ***Information in the first paragraph of the General Geology Narrative, Section 2.3.1, describes the permit location with respect to several physiographic features within the North Great Plains Physiographic Province of Fenneman. Since the work of Nevin Fenneman is specifically referenced in this paragraph, please add the appropriate reference information for Fenneman into the cited References of Section 2.3.3 in the permit. (BEB)***

Please find changes made as requested.

24. ***Please correct the typographical error that misspells the word Pleistocene in the fifth paragraph of the Site Specific Geology Narrative, Section 2.3.2. (BEB)***

The typographical error has been corrected.

Section 2.4.1 - Fish and Wildlife Report

25. ***Follow-up to original item No. 40: The first paragraph of Section 2.4.1, Fish and Wildlife Resources Report, states that wildlife monitoring will continue into 2011 and that studies were conducted in 2007 and 2010. Please revise the permit to include the results of the monitoring that was conducted in 2010 and 2011 and change the last sentence of the first paragraph to clarify that monitoring was conducted in 2007 through 2011. The sentence that states that wildlife monitoring will continue into 2011 with the biennial report to be submitted subsequent to years' end needs to be revised to clarify that biennial monitoring reports will be submitted as required after the permit is approved. In the meantime, information obtained from the recent surveys needs to be included in the permit. (KME)***

Section 2.4.1 has been updated to include all monitoring data from 2007-2014 as requested.

26. ***Follow-up to original item No. 43: Kathy Duttenhefner, ND Parks and Recreation Department, writes in her correspondence, Section 2.4.1d, that the ND Parks and Recreation Department defers comments regarding animal species to the ND Game and Fish***

Department and the US Fish and Wildlife Service. Please include information about how Otter Creek addressed Ms. Duttenhefner's recommendation in Section 2.4.1d and include comments received from NDGF and USFWS regarding this issue. (KME)

Please see updated Section 2.4.1, Appendix I. An e-mail from the PSC was added regarding North Dakota Game and Fish Department comments.

27. ***Follow-up to original item No. 43: The new language on page 6 of Section 2.4.1 states that the ND Natural Heritage biological conservation database has been reviewed for the proposed permit area plus an approximate one-mile radius of the project area. Kathy Duttenhefner, ND Parks and Recreation Department, writes in her correspondence, Section 2.4.1d, that her agency only reviewed the sections of land within the proposed permit area. Please include correspondence from the ND Natural Heritage for the whole study area, which includes the buffer area. (GAW)***

Updated correspondence (Feb. 26, 2015) from ND Parks and Recreation Department which includes the entire study area is in Section 2.4.1d.

28. ***Follow-up to original item No. 43: NDAC 69-05.2-05-02(1) requires permit applicants to provide information that is complete, current…. Considering that it has been more that 19 months since Otter Creek Mining Company communicated with the ND Parks and Recreation Department regarding species of concern or significant ecological communities, please include current correspondence from the ND Parks and Recreation Department to ensure new species or communities have not been added over the past 19 months. (KME)***

Updated correspondence (Feb. 26, 2015) from ND Parks and Recreation Department which includes the entire study area is in Section 2.4.1d.

29. ***Follow-up to original item No. 44: In the Wetlands narrative of Section 2.4.1, please include a discussion of Square Butte Creek and if the wetlands habitat delineated are associated with <u>stream systems</u> or if they are prairie pothole basins, or a combination of both. Adding statement that "linear wetlands are common features throughout drainageways characterize most of the perm area", "… a few prairie pothole features that also occur within the permit area…" and that "all temporary wetlands within the permit area are considered prairie potholes, whereas the seasonal and semi-permanent wetlands are linear in nature" is an inadequate response to the original deficiency. Please characterize the hydrologic systems associated with the various types of wetlands and include information regarding the system for each wetland. (KME & GAW)***

Narratives have been updated to provide proper characterization of the wetland types and Table 2 of Section 5.1.1 has been updated to include this information for each wetland.

30. ***Follow-up to original item No. 45: Please include a map that shows which portions of the permit area were determined to have suitable habitat available for the Dakota Skipper Butterfly, and those areas where ground surveys were conducted. We realize that certain ecological sites have the potential to support the preferred habitat, but please identify the area(s) where suitable habitat actually exists. (GAW)***

Areas with potential suitable habitat and those areas with the best habitat where long-term monitoring for the Dakota skipper will occur have been added to the map in Section 2.4.1f.

31. ***Follow-up to original item No. 45: Please include the date that the Long Dash Skipper was observed (photographed) and include the address, and position of officials, such as Ron Royer, and all other private or academic research or governmental agencies consulted in preparing, conducting or analyzing technical studies. (KME)***

Date of the long-dash skipper sighting (along with the new sighting of a tawny-edged skipper in 2014) has been added to the appropriate narrative in 2.4.1. Technical references were added to Section 2.4.1.

32. ***As required by NDAC 69-05.2-05-02(3), please provide the name(s), addresses, and positions of officials, such as Ron Royer, and all other private or academic research organizations or governmental agencies consulted in preparing, conducting or analyzing information contained in the application. (KME & GAW)***

Please see updated Section 2.4.1, Fish and Wildlife Report.

33. ***Follow-up to original item No. 49: A sentence in the first paragraph on page 11 of Section 2.4.1, Fish and Wildlife Resources Report, states that the distribution of the various woody plant communities within the woodlands is shown on the map in Section 2.7.2a. However, the woodland mapping units (low shrub, tall shrub and deciduous) are not depicted on this map and many of the woodlands depicted on the Wildlife Habitat and Study Area Location Map, Section 2.4.1, are not shown on this map. Please review and update to provide clarity. (GAW)***

Please see updated Section Map 2.7.2a and 2.4.1a. Woodland communities (low shrub, tall shrub, and deciduous trees) were depicted on both maps and scattered trees were depicted on 2.4.1a map.

34. ***Follow-up to original item No. 46: Designated critical habitat for threatened and endangered species are areas specifically designated as "designated critical habitat" by the USFWS for specific threatened and endangered species. Several sentences in Section 2.4.1 are ambiguous or hypothetical in terms of designated critical habitat. For example, "...one can be confident that all habitat types within the permit and buffer would fall outside what one would/could designate as critical" and "what one would/could designate as critical." Please revise to clearly state if there is any "designated critical habitat" in the proposed permit area and identify the process used to determine if there is any "designated critical habitat" in or adjacent to the proposed permit area. (KME & GAW)***

    Narratives in Section 2.4.1 have been revised to better define the critical habitat issue.

35. ***Follow-up to original item No. 47: Please update the Threatened and Endangered Species/100 Species of Concern discussion that begins on Page 16 of Section 2.4.1 to thoroughly discuss whether the permit and adjacent area contains habitat suitable for the whooping crane. This should include current accurate and thorough information regarding the whooping crane migration route and stop-over habitat within the permit and adjacent areas that is supported by current literature. (GAW & KME)***

    Narratives have been updated to include current whooping crane migration information.

36. ***Follow-up to original item No. 49: Please update the legend of the Wildlife Habitat and Study Area Location Map, Section 2.4.1, to clarify how the woodlands are depicted and list the woodland community type by labels or polyline color code. (GAW)***

    Please see updated Section 2.4.1a, Pre-Mining Wildlife Habitat and Study Area Location Map.

37. ***Follow-up to original item No. 47: Please revise the woodland narrative that begins on page 10 of Section 2.4.1, Fish and Wildlife Resources Report, to discuss if the woodlands are an important or valuable habitat type as has been done for the other habitat types. (GAW)***

    Woodland narratives have been updated as requested to address importance/value.

38. ***Follow-up to original item No. 43: The bookmark heading for Table 5 of Section 2.4.1, Fish and Wildlife Resources Report, is labeled as "Federal Threatened and Endangered, and Candidate Species <u>Found in Oliver County</u>" but the heading listed on Table 5 is "Federal Threatened and Endangered, and Candidate Species <u>Found in North Dakota</u>". Please correct this inconsistency. (GAW)***

The table has been updated as requested and updated to the most current (July 2014) version from the USFWS website.

39. ***Please revise the sentence regarding the native grassland breeding bird survey that was added in 2009 on page 13 of Section 2.4.1, Fish and Wildlife Resources Report, to clarify that the study plot is also located in a portion of the NW¼ of Section 20. Otherwise, revise the map to show the study area only in the SW¼ of Section 20, if the location of this study area is shown incorrectly on the map. (GAW)***

Narratives have been updated to clarify study plot location.

40. ***Follow-up to original item No. 46: Please revise the Threatened and Endangered Species/100 Species of Concern narrative on page 16 of Section 2.4.1, Fish and Wildlife Resources Report, to clarify that the Poweshiek Skipperling (Oarisma poweshiek) was added as a Candidate species to North Dakota's Threatened, Endangered and Candidate species list and discuss the potential of this species being present within the proposed permit area. Table 5 of Appendix II should also be updated to recognize that this species has been added to the Federal T & E and Candidate species list. (GAW)***

Narratives and tables were updated to include the Poweshiek skipperling and other more recent USFWS additions to the list.

41. ***A sentence near the end of page 16 states that the USFWS lists as endangered six species avian, two mammalian and one fish, but Table 5 only identifies five endangered species and two species are listed as threatened. Please revise this sentence to provide clarity. The peregrine falcon is mentioned at the end of page 16 and on page 17 as if it were a T & E species. Please revise to clarify. (GAW)***

Narratives were revised to reflect most current USFWS T&E Species (along with proposed and candidate species).

42. ***Please include a discussion about the results of the surveys for the 100 species of concern. A single sentence on page 19 of Section 2.4.1 mentions Table 6 and there is no mention if any of these 100 species of concern were identified in the Aquatic Invertebrate and Fish Sampling Report, Section 2.41c. Please discuss the habitat types or land uses where these species of concern were observed and revise Table 6 to include the legal description of the tract where the species was identified since surface ownership changes occur over time and the tract numbers are not consistent between various sections of the permit. Tables 6 and 7 indicate that the 100 species of concern list is a USFWS list***

rather than a list compiled by the ND Game and Fish Department. Please clarify if this is a USFWS list or a ND Game and Fish Department list. (GAW)

Narratives and tables have been updated as requested.

43. ***Follow-up to original items No. 47 & 48: The new paragraph on page 4 of Section 2.4.1 states that there are no important streams, wetlands, riparian areas, cliffs supporting raptors, areas offering special shelter or protection or wintering areas within the permit or buffer area. Please clarify how it was determined that Square Butte Creek is not an important stream and clarify how this statement can be made if the buffer area was accessible only from the public roads. Please also clarify how woodlands, wetlands, shelterbelts and native grassland were determined to be important locally, but not regionally. Also, please discuss criteria used to determine what habitats were important. (KME & GAW)***

Narratives have been updated as requested.

44. ***Follow up to original item No. 48: Please include a copy of the approved Fish and Wildlife Baseline Inventory Plan in the permit and provide the required detailed baseline information for the buffer zone as shown on the map included with the approved plan. The new sentence on page 4 of Section 2.4.1 states that the buffer zone around the proposed permit area was limited to county roads in order to collect habitat and wildlife information but that nonetheless…one can be confident that no threatened or endangered plant or animal species is present based on current information. NDAC 69-05.2-08-15 requires detailed fish and wildlife resource information for the proposed permit and adjacent area. Please provide the information for the buffer zone as indicated in the approved plan. In addition, please discuss whether or not the buffer zone includes any threatened or endangered species or their critical habitats, habitats of unusually high value for fish and wildlife, or any other habitats identified though agency consultation requiring special protection under State or Federal law. The buffer area contains lands that were mined and reclaimed at the Glenharold Mine, but this is not depicted on the map. Also, it is not clear if the woodlands identified in the northern portion of the buffer zone are considered significant ecological communities. Please clarify and add the additional information. (KME & GAW)***

The approved Fish and Wildlife Baseline Inventory Plan was added to the permit and the map was updated to show reclaimed lands at Glenharold Mine. Narratives were updated as requested to include the buffer area. Please see updated Section 2.4.1, 2.4.1, appendix I and 2.4.1a.

45. ***Follow-up to original item No. 52: Please revise the bookmarked Square Butte Creek "Stops" 1-12 to clarify that the stops are labeled "Photo Points OC" 1-12 on the Wildlife Study Map, Section 2.4.1a. The naming and labeling inconsistency is confusing. (KME)***

    Please see updated map in Section 2.4.1a, Pre-Mining Wildlife Habitat and Study Area Location Map, and Section 2.4.1b, Square Butte Creep Deep Water Evaluation.

46. ***Follow-up to original item No. 53: Please include a well-reasoned and consistent argument for replacing the habitat loss associated with the reduced acreage of native grassland. Otter Creek has responded to this issue by stating that "As is seen across the landscape of North Dakota, habitat fragmentation continues to occur as we lose valuable acres of native grassland. However, wildlife species are adaptable and often find appropriate niches in surrounding areas to fulfill their life cycle needs. In many cases, the reclaimed landscape is an enhancement in wildlife habitat quality compared to the undisturbed state. This factor often makes up for any loss of acres by improving the available habitat for numerous species." The fact that habitat fragmentation has already occurred on much of North Dakota's once intact native grassland prairie does not justify further fragmentation. Furthermore, simply stating that "wildlife species are adaptable" is not valid scientific explanation to somehow claim that loss of wildlife habitat is not harmful to the species' population. We understand that wildlife are adaptable to a certain extent, but please provide the references to the research that was used to conclude that such habitat loss does not have a negative impact on various wildlife species and the rate by which wildlife "often find appropriate niches in surrounding areas to fulfill their life cycle needs." The current narrative attempts to downplay the negative aspects of grassland loss. However, contradictory statements are made elsewhere such as: "The cropland is generally considered to be of only minimal value to area wildlife, due to such intensive agricultural management practices as border-to-border tillage and summer fallow, which result in little or no cover values." (page 1, Section 2.4.2) "The dry wetland basins are often hayed which decreases their value as a wildlife habitat. If left idle, these basins can provide the nesting habitat needed for many terrestrial wildlife species" (page 2, Section 2.4.2). Please review the above statements and others in the narrative to ensure the reasoning and statements are consistent rather than contradictory. Then, as originally requested by deficiency #53, please provide scientific evidence and explanation in order to justify the estimated 102.5 acreage loss of native grassland in light of its superior value as wildlife habitat. This includes scientific evidence to validate the argument that cropland is sufficient and even "an enhancement in wildlife habitat quality compared to the undisturbed state," and/or that "wildlife species are adaptable and often find appropriate niches in surrounding areas to fulfill their life cycle needs." (KME)***

    Please see updated section 2.4.2, Fish and Wildlife Management Plan.

Section 2.4.2 - Fish and Wildlife Management Plan

47. ***Follow-up to original item No. 53: The cropland narrative on page 1 of Section 2.4.2, Fish and Wildlife Management Plan, states that conservation practices such as constructed grass waterways and field windbreaks (which could enhance the permit area cropland for use by wildlife) are not, in general, used by local farmers, which further reduces the value of this habitat. However, numerous field windbreaks and grass waterways are shown to exist in most of the cropland fields on the Wildlife Habitat and Study Area Location Map, Section 2.4.1a. Please revise to provide clarity regarding this issue and discuss including enhancement features as required by NDAC 69-05.2-09-17. (GAW)***

    Please see updated section 2.4.2, Fish and Wildlife Management Plan.

48. ***The second paragraph of Section 2.4.2, Fish and Wildlife Management Plan, states that the cropland is of only minimal value to wildlife due to intensive agricultural management practices such as border-to-border tillage and summer fallow, which results in little or no cover values. However, Section 2.7.1, page 2, contradicts this statement by saying that most of the landowners have switched to minimum tillage practices which leave at least 30% residue on the surface of the soil following spring seeding. Likewise, Section 2.6.5, Probable Hydrologic Consequences, states that no-till and minimum tillage is commonly practiced. Please review and revise as necessary to clarify if very little cover is typically left on the cropland or if no-till or minimum tillage is typical. (GAW)***

    Please see updated section 2.4.2, Fish and Wildlife Management Plan.

49. ***Otter Creek is proposing to plant seven or eight conservation tree plantings at the request of the surface owners, some of which specifically asked that the trees be planted for the benefit of wildlife. However, these plantings are not discussed in the Fish and Wildlife Management Plan section of the permit as enhancement features. Please discuss these conservation plantings and how they are designed for the benefit of wildlife. Please redesign these conservation tree plantings in accordance with the NRCS recommendations, "Planting Trees in ND Prairies" which includes planting only native shrubs in block plantings. We also encourage placing these plantings in locations where they might occur naturally, i.e. north and east facing slopes. In addition, please revise the shelterbelt narrative on page 3 of Section2.4.2 to specifically clarify how replacement shelterbelts will be designed to benefit wildlife. (GAW)***

    Please see updated section 2.4.2, Fish and Wildlife Management Plan.

50. ***Follow-up to original item No. 53: Please revise the wildlife protection, enhancement and reclamation plan to specifically state how wildlife will be protected, and how Otter Creek Mining Company will minimize disturbances to the extent possible as required by NDAC 69-05.2-09-17. NDAC 69-05.2-13-08 requires that the mining company affirmatively demonstrate how protection and enhancement will be achieved. Using the best technology currently available, please include other terrestrial wildlife enhancement measures to offset the effects of mining. Some examples are: creating pollinator and/or beneficial insect habitat on reclaimed areas as recommended by NRCS, fencing developed water resources to allow livestock access to only a portion of the pool areas of the ponds, constructing wildlife friendly fences, utilizing pre-cropland grass legume mixtures on cropland, managing cropland as hayland during the revegetation responsibility period, utilizing prescribed grazing management practices on reclaimed native grasslands, including native forbs in the reclaimed native grassland seed mixtures to benefit insects, implementing management practices to control exotic grass species on reclaimed lands and not including any species known to have invasive tendencies in any seed mixtures. Furthermore, please discuss the measures that will be used to protect Square Butte Creek from siltation and off-site impacts. (GAW)***

    Please see updated section 2.4.2, Fish and Wildlife Management Plan.

51. ***Follow-up to original item No. 55: The new sentence on page 4 of Section 2.4.2 states that Otter Creek plans to avoid disturbance to the stream channels of Square Butte Creek. However, the Extended Mining Plan Map shows that mining is planned south of the Creek within several sections in the distant future, as well as to the west of the unnamed channel that confluences with Square Butte Creek in the SW¼ of Section 1, T142N, R85W. Please explain the measures that will be taken to protect these streams and the process involved prior to affecting these streams to ensure minimal impacts and compliance with NDAC 69-05.2-13-08 (6) (f). This should include addressing the requirements of NDAC 69-05.2-16-07 and NDAC 69-05.2-16-20. (KME & GAW)***

    Please see updated section 2.4.2, Fish and Wildlife Management Plan.

52. ***Follow-up to original item No. 53: The first two sentences of the narrative discussing the wildlife monitoring plan under the Threatened or Endangered species/100 species of Concern paragraph on page 3 of Section 2.4.3 is written in past tense. Please revise to clarify how Threatened, Endangered, Candidate and species of concern will be monitored to document spatial distribution. (KME & GAW)***

    Narratives have been updated to reflect past, current and future monitoring of USFWS T&E, proposed, and candidate species.

53. ***Follow-up to original item No. 53: Please revise the last sentence of the second to the last paragraph on page 2 of Section 2.4.2 to clarify that enhancement and reclamation of wildlife habitats are not mutually exclusive actions. In other words, change the "or" to an "and". (GAW)***

    Narrative has been updated for clarification.

54. ***Please add narrative to explain whether or not the Breeding Songbird Survey used methodology that was adequate to properly inventory the presence of Sprague's Pipit. This should include correspondence from the ND Game and Fish Department and/or the USFWS confirming that the survey technique is sufficient in scope and design. (KME)***

    Narrative has been updated to address Sprague's pipit surveys.

55. ***Please update Table 1, Federal Threatened, Endangered and Candidate Species Found in North Dakota, to include Poweshiek Skipperling which was added as a Candidate species last fall. (GAW)***

    Table has been updated using July 2014 USFWS information.

56. ***Please revise the pesticide narrative in Section 2.4.2 to clarify compliance with NDAC 69-05.2-13-08 (6) (g) which states that pesticides cannot be used in the area during surface mining and reclamation activities, unless specified in the operation and reclamation plan or approved by the Commission on a case-by-case basis. (KME)***

    Please see updated section 2.4.2, Fish and Wildlife Management Plan

Section 2.6 - Surface Water Information and Monitoring Plan

57. ***We recommend adding plans for a surface water monitoring site on the tributary that enters the permit from the west in an area near its confluence with Square Butte Creek in the NW¼SW¼ of Section 1. The site would better allow for evaluating changes in stream quality and quantity that may occur in the permit area between the upstream site (Station 1) and the confluence. We understand mining is not planned for several years in the watershed; thus, there will be an opportunity to obtain baseline data to compare and correlate to the data obtained from the proposed upstream monitoring site and the nearby monitoring sites on Square Butte Creek. (RLK)***

    Please see the updated map in Section 2.6.4, narrative in 2.6.7 and the table in 2.6.8. Quality and quantity will start in 2015.

58. ***Please expand the narrative in Surface Water Hydrologic Conditions, Section 2.6.1, to include a discussion on the tributary entering the west side of the permit area and emptying into Square Butte Creek in the SW¼ of Section 1. It appears that this drainage is established in a buried outwash channel similar to the drainage on the east portion of the permit, but appears to have a more prominent drainage channel. Also, please describe the observations or measurements which have been made to characterize the stream as ephemeral. (RLK)***

    Please see updated Section 2.6.1, Surface Water Hydrologic Conditions.

59. ***The last paragraph on page 4 of Section 2.6.3, states "The transducers will be deployed, and their cross-section rating curves prepared and included in this permit in Spring, 2009." Please update this statement to reflect the current timeline for the initiation of monitoring and the preparation of the rating curves. (RLK)***

    Please see the updated narrative in Section 2.6.3. The rating tables and transducers will be in place in 2015.

60. ***If sampling has been conducted at the surface water monitoring sites since 2008, the results should be included or described in the permit to characterize the water quality and quantity of lands within the permit area in accordance with NDAC 69-05.2-08-04(1). (RLK)***

    Please see the updated tables (table 1, 2 4 & 5) in Section 2.6.3, updated Section in 2.6.3a, 2.6.3b and the water quality data in 5.1.1d.

61. ***The surface water monitoring site numbers or station numbers referenced in the Surface Water Monitoring Plan narrative in Section 2.6.7 and listed in Section 2.6.8 are not used in the labeling on the Surface Water Features and Monitoring Sites Map, Section 2.6.4. Please add labels for the surface water monitoring sites (station numbers) to the map in Section 2.6.4 to better identify sites that are part of the surface water monitoring plan. (RLK)***

    Please see the updated map in Section 2.6.4.

62. ***The hyperlink to Section 2.7.2, Pre-Mine Land Use Map, that is inserted in the narrative on watershed modeling added to the beginning of page 7 of Section 2.6.5 appears misplaced. It seems that a link to the Surface Water Probable Hydrologic Consequences Data in Section 2.6.5c would be more relevant to the discussion. Please review and revise as appropriate. (RLK)***

Please see updated link on page 7 of Section 2.6.5.

63. ***Follow up to original item No. 60: New tables were inserted into Section 2.6.5c to correspond with Sections 2.6.5a and Section 2.6.5b; however, the narrative in Section 2.6.5 does not reflect the results shown in the tables. The discussion of watershed modeling results for specific watersheds beginning with the fourth paragraph of page 8 of Section 2.6.5 does not correspond to the data presented in Tables 1 and 2 of Section 2.6.5c. In the modeling results narrative, six watersheds (identified as SB-3, SB-12, SB-18, SB-19, SB-20 and SB-2) are identified as having slight to moderate changes to the watershed area, runoff volume and peak discharge. However, it appears that similar ranges of change are shown for the watersheds that were not identified in the narrative, the exception being the results for several extremely small watershed control points where changes to a small area appear to translate into a large percentage change in area, peak discharge, and runoff volume. For Watersheds SB-3 and SB-21, the narrative indicates that the watersheds showed a slight decrease in watershed area; however, Tables 1 and 2 show a slight (1 acre) increase in watershed area for both SB-3 and SB-21. For Watershed SB-12, the narrative indicates that the model results showed a slight increase in peak discharge and runoff volume for the post-mining conditions; however, Tables 1 and 2 show no changes between pre-mining and post-mining conditions. For Watersheds SB-19 and SB-20, the narrative indicates that the model results showed a moderate increase in peak discharge and runoff volume; however, Tables 1 and 2 show slight decreases in peak discharge. Please revise the model results discussion in Section 2.6.5 or correct the tables in Section 2.6.5c as appropriate. (RLK & MDB)***

Section 2.6.5, Section 2.6.5a, Section 2.6.5b, and Section 2.6.5c have been updated.

64. ***In the second to last paragraph of Section 2.6.5, it appears the last sentence should read "...water supplies will <u>be</u> made..." Please address. (RLK)***

Typographical error was corrected.

65. ***Please update Section 2.6.5b, Post-mining PHC Map, to reflect the updated disturbance boundary and post-mining topography in the W½ of Section 35 and the SW¼ of Section 1. (MDB)***

Section 2.6.5b has been updated.

66. ***Since no mining is proposed in the W½ of Section 35 and SW¼ of Section 1, the post-mining topography will not change in these areas. Therefore, please update Tables 1 and 2 in Section 2.6.5c for Control Points SB-13, SB-15, SB-18, and SB-19. (MDB)***

Please see updated Section 2.6.5c, Surface Water Probable Hydrologic Consequences Data.

Section 2.7.1 - Pre-Mining Land Use and Vegetation Narrative

67. ***Page 2 of Section 2.7.1 states that the current and historic land uses in the permit area are the same and have not changed appreciably for at least 5 years prior to 2007 and 2008, which coincides with the dates that the baseline vegetation surveys were conducted. Although NDAC 69-05.2-08-08(3) requires a map and supporting narrative of the land uses at the time the application was filed, NDAC 69-05.2-05-02(1) also requires information to be current. Please determine if any land use changes have occurred since the application was filed three years ago and update the narrative accordingly. (GAW)***

Please see the updated map in Section 2.7.2, and updated Section 2.7.3, Appendix VI.

68. ***Please include a detailed narrative describing the vegetation established on each tract of Conservation Reserve Program (CRP) land and hayland as required by NDAC 69-05.2-08-08. (GAW)***

Narratives have been updated with available information.

69. ***The first sentence of the wetlands narrative of Section 2.7.1 states that "As discussed above, linear wetlands are common throughout drainageways." Linear wetlands are not discussed above as indicated in this sentence and it is not clear what constitutes a linear wetland. The second paragraph of the wetlands section mentions that the linear wetlands were modified from the Cowardin Classification System, but the Cowardin System does not classify wetlands as linear. Please provide additional information regarding what is meant by the term linear wetlands through the use of an established wetland classification system and discuss the hydro-geomorphology of the various wetland systems found in the permit area. The last paragraph of Section 5.1.1 indicates that the Hydrogeomorphic approach was used, but the wetlands are not classified using this system. For each wetland, please indicate whether it is associated with a depressional, riverine or slope system as defined by the US Army Corps of Engineers Hydrogeomorphic Classification system. (GAW)***

Narratives updated to define classification and table 2 of Section 5.1.1 has been updated accordingly.

70. ***In Section 2.7.1, please include a list of the technical references used and include the names of persons and organizations that collected and analyzed the data, and the qualifications of persons involved as required by NDAC 69-05.2-05-02(2). NDAC 69-05.2-05-02(3) requires the name, address and position of officials of each private or academic re***

search organization or governmental agency consulted in preparing information on land uses, soils, geology, vegetation, fish and wildlife, water quantity and quality, air quality, and archaeological, cultural, and historic features. (GAW)

Please see updated Section 2.7.1.

71. ***Follow-up to original item No. 76: Please include the completed NRCS CPA-33 form for each native grassland sampling site so that growth curve values and grazing adjustment factors can be determined and the conditions at the time of sampling can be documented in the application. (GAW)***

CPA-33 forms have been included and narratives updated to explain methodology.

72. ***Follow-up to original item No. 78: Please identify the two plant species of concern identified by the ND Natural Heritage that have the potential to occur in Oliver County and the habitat suitable for these species. A sentence on page 13 of Section 2.7.1 states that the ND Natural Heritage database has records of the occurrence of green ash upland woodland adjacent to the proposed permit area in Section 21 indicating that the habitat in the project area may be suited for this community and other rare, threatened, sensitive or endangered species. Please clarify what other rare, threatened, sensitive or endangered species may be associated with this habitat. Aerial photography shows a considerable amount of woodlands adjacent to the proposed permit area in Sections 17, 20, 28 and the NW1/4 of Section 21. Also, please clarify if these are green ash upland woodlands. (GAW)***

Species of concern have been identified and narratives updated concerning significant ecological communities.

73. ***Follow-up to original item No. 78: A sentence on page 13 of Section 2.7.1 states that the adjacent area was not directly inventoried. NDAC 69-05.2-08-15 requires site-specific resource information for the permit and adjacent area to determine if the adjacent area has habitats requiring special protection under State or Federal law. Please provide site specific habitat information for the adjacent area based on thorough reconnaissance of the area, and revise the sentence that states the adjacent area was not directly inventoried. (GAW)***

Narratives have been updated to include the entire study area.

74. ***The first paragraph of the woodland narrative in Section 2.7.1 states that aspen is one of the species comprising the woodland communities, but this species is not listed as being present in the species list, Appendix III. Likewise, a sentence on page 5 of Section 2.7.1***

states that the low shrub community is dominated by western snowberry with lesser amounts of silverberry, but silverberry is not listed as being present in the woodland communities in the species list, Appendix III. Please review and revise as necessary. (GAW)

Appendix III has been updated to identify woodland species.

75. ***Please include a detailed narrative that describes the nature and variability of the vegetation in each of the native grassland mapping units. In other words, please include a narrative that discusses and evaluates the results of the sampling data. In addition, include information about mapping units not sampled but where information was ascertained by a thorough reconnaissance. [NDAC 69-05.2-08-08] (GAW)***

Extensive narratives have been added to address nature and variability of native grassland mapping units.

76. ***The woodland sampling data in Section 2.7.3, Appendix VII, does not adequately characterize the woodland communities. Very basic information, such as the species of trees and shrubs comprising the various communities, is not even mentioned in Appendix VII, and the information in Section 2.7.1 is too general. Please provide a detailed description of the trees and shrubs in each woodland and appropriately scaled maps showing the woodland mapping units as required by NDAC 69-05.2-08-08(1)(c)(4). Similar detailed information must be provided for the tree and shrub communities less than 0.1 acres in size that were not classified as woodlands. (GAW)***

Narratives have been added to characterize woodland communities within the study area.

77. ***Appendix VII, Section 2.7.3, indicates that herbaceous and tree canopy cover was sampled from a deciduous tree community in Tract 3, NW1/4 of Section 29, but the Pre-Mining Land Uses and Associated Mapping Unit Map, Section 2.7.2a, shows that a tall shrub community was sampled on this tract. Please review and update as necessary. (GAW)***

Please see the updated map in Section 2.7.2a.

78. ***Please include a discussion that interprets and explains the results of the woodland sampling data in Appendix 2.7.3, Section 2.7.3. (GAW)***

Narrative was added to interpret results of sampling data as requested.

79. Please review the wetland narrative in Section 2.7.1 and revise accordingly so that the total number and acreages of wetlands and relative percentages are consistent with what is listed in Section 5.1.1, Pre-Mining Wetland Narrative. (GAW)

Wetland narratives have been revised so acreages and percentages are similar.

Section 2.7.2 - Pre-Mine Land Use Map

80. Follow-up to original Item No. 84: Otter Creek responded to Item No. 84 by labeling most section line public roads or trails, but it appears that public roads or trails should also be labeled along the west section line of Sections 20 and 29, along the east section line of Section 29, and along the section line common to Sections 20 and 29. Please review and update the map as necessary. (WTG)

Please see the updated map in Section 2.7.2.

Section 2.7.3 - Appendix II

81. Please review the legal description of Lyle and Claudia Albers' land in Appendix II, Section 2.7.3. The legal description indicates they own all of the SW¼ of Section 5, which is incorrect. Please correct this error. (GAW)

Please see updated Section 2.7.3, Appendix II.

Section 2.7.3 - Appendix V

82. The Similarity Index, page 351 of Section 2.7.3, Appendix V, indicates the sampling data represents a Sandy ecological site, but this mapping unit cannot be found on Tract 3 in the NE¼ of Section 29 on the Pre-Mining Land Uses and Associated Mapping Unit Map, Section 2.7.2a. Please review and update as necessary. (GAW)

Similarity index sheet for a loamy ecological site replaced the sandy that was originally submitted.

83. The Similarity Index, page 358 of Section 2.7.3, Appendix V, indicates that a Shallow Sandy site was sampled on Tract 6 in the NW¼ of Section 31, but the sample site is located on a Sandy mapping unit according to the Pre-Mining Land Uses and Associated Mapping Unit Map, Section 2.7.2a. Please review and correct as necessary. (GAW)

The point was moved to the shallow sandy site where it belonged.

84. Page 362 of Section 2.7.3, Appendix V, indicates that a Sandy ecological site was sampled in Tract 7, E½NE¼ of Section 36, but the sample location is not shown on the Pre-Mining Land Uses and Associated Mapping Unit Map, Section 2.7.2a. Please review and correct as necessary. (GAW)

The sandy point was inserted into the appropriate location within Tract 7.

85. Page 386 of Section 2.7.3, Appendix V, indicates that a Sandy ecological site was sampled in Tract 20, but the sample location is shown on a Sands ecological site. Please review and correct as necessary. (GAW)

Similarity index sheet for a sands ecological site replaced the sandy that was originally submitted.

Section 2.8 - Soil Resources

86. Follow-up to original item No. 98: On page 3 of Section 2.8.3, Prime Farmlands, it appears that the word "Survey" has been inadvertently struck from the reference to the Oliver County Soil Survey in the first full paragraph on the page. Please review and revise as necessary. (RLK)

Please see the updated narrative in Section 2.8.3.

Section 3.1 - Operation Plan - General

87. Please update the narrative regarding the anticipated number of acres of land disturbance by mining that is provided on page 2 of Section 3.1.1 because the listing notes that 155 acres of land will be disturbed in 2010 and 2011. (BEB, MDB, RLK, MSK)

Please see updated narrative in Section 3.1.1.

88. Please update the Estimated and Total Production Schedule, Section 3.1.3, as this listing indicates coal production for 2010 and 2011. Any other changes to future production estimates should be revised at this time as well. (BEB, MDB, MSK)

Please see updated Section 3.1.3.

89. Please clearly identify all intermittent and perennial streams within the permit area on the Pit Layout and Facilities Map and add narrative to the Operations Section that discusses any plans for disturbing any lands within 100 feet of any such stream. Compliance with

NDAC 69-05.2-16-20 must be assured which states that an operator must not disturb lands within 100 feet of an intermittent or perennial stream unless specifically approved by the Commission after consulting with the State Engineer and State Department of Health. (GAW)

Please see the updated map in Section 3.1.5.

90. ***The Pit Layout and Facilities Map depicts a couple of sedimentation ponds that are planned within 500 feet of occupied dwellings. NDAC 69-05.2-04-01.1(4) requires a written waiver by the owner(s) of the dwellings consenting to surface coal mining operations within the 500-foot protected zone. Please discuss these plans in the narrative and add the written waivers to the permit. (GAW & BEB)***

Proposed sedimentation ponds have been moved outside of 500-foot setback from occupied dwellings.

91. ***Please update Section 3.1.2, Mining Methods Narrative, because the last paragraph on page 1 states that "A sufficient volume of subsoil will be removed to respread 24, 36, 42, or 48 inches of SPGM..." The 42-inch respread depth no longer applies. Please remove it from the statement. (MDB)***

Please see the updated narrative in Section 3.1.2.

92. ***Follow-up to original item No. 109: Please add a note to the Extended Mining Plan Map, Section 3.1.6, to state that the Otter Creek Mining Company intends to lease and mine the Federal land located in Section 32 so it correlates with the Post-Mining Contour Map which indicates this area will be mined in the future. (MSK)***

Please see added note on Federal Coal Tract and Legend of Section 3.1.6, Extended Mining Plan Topographic Map of Mine Phases.

Section 3.5 - Operations - Transportation Facilities

93. ***Please update Section 3.5.2, Transportation Facilities Map, to show the updated disturbance boundary and post-mining topography in the W½ of Section 35 and in the SW¼ of Section 1. (MDB)***

Section 3.5.2 has been updated.

94. Please update Section 3.5.2, Transportation Facilities Map, because a proposed temporary ramp is still shown routed into the W½ of Section 35, but no mining is planned for this area. (MDB)

Section 3.5.2 has been updated.

95. Please update Section 3.5.21, Road Relocation and Closing Plan Map, to show the updated disturbance boundary and post-mining topography in the W½ of Section 35 and the SW¼ of Section 1. (MDB)

Section 3.5.21 disturbance boundary has been updated. Post-mine topography was not added to this map to make it more readable.

96. Section 3.5.21, Road Relocation and Closing Plan Map, shows proposed road closing dates as of 2010. If these roads were actually closed, please include the approval from the Oliver County road authority in addition to changing the hatching/ color to indicate they are closed. If the roads have not been closed, please update the map accordingly. (MDB)

Section 3.5.21 has been updated.

<u>Section 3.6 - Operations - Surface Water Management</u>

97. Follow up to original item No. 123: In Section 3.6.1a, Total Water Management Plan Map, the watershed acres still do not correspond with those shown in the calculations of Pond P-05-01 in Section 3.6.4, P-05-02 in Section 3.6.5, and P-05-03 in Section 3.6.6. Please review and revise as appropriate. (MDB, RLK, MSK)

Section 3.6.1a, Section 3.6.4, Section 3.6.5, and Section 3.6.6 have been updated.

98. Please update Section 3.6.1a, Total Water Management Plan Map, to show the updated disturbance boundary and post-mining topography in the W½ of Section 35 and the SW¼ of Section 1. (MDB)

Section 3.6.1a has been updated.

99. With the update to the mining sequence in the W½ of Section 35 and the area not being projected to be mined on the Extended Mine Plan Map, it appears that Pond P-35-02 needs to be moved closer to the disturbance boundary or eliminated. Please consider the possibility of increasing the size of P-35-01 and add a diversion to contain the disturbed

area. The appropriate changes will also need to be made to the Pit Layout and Facilities Map, Section 3.1.5. (MDB & GAW)

Pond P-35-02 location has been updated.

100. Please update Section 3.6.1d, Pond Construction and Reclamation Schedule, as it currently shows ponds being constructed in 2010. (MDB & RLK)

Section 3.6.1d has been updated.

101. Please update the planned construction dates in the narratives for the design of Sedimentation Ponds P-05-01, P-05-02, and P-05-03 in Section 3.6. (RLK)

Pond construction dates have been updated.

Section 4.1 - Post-Mining Land Use and Revegetation

102. Follow-up to original item No. 26: Please consider revising the conservation tree plantings on Kent and Deborah Albers' land, Kevin and Penny Hoesel's land and Dale and Cynthia Berg's land such that the plantings will be more natural-appearing in the reclaimed native grassland landscapes. We encourage you to consider irregular shaped woodland-like plantings, rather than linear multi-row field windbreaks, and to the extent possible, these plantings should be located on north and east facing slopes. Furthermore, planting only 0.4 acres of native trees in each quarter section seems very minimal. Please consider revising so that each quarter section has at least an acre of shrubs. Otter Creek Mining Company should contact the surface owners to ensure that the native tree planting design plans are in line with the surface owners' preference statement intentions. We have also noted that the Post-Mine Land Use map does not show any trees being planted in the SE¼ of Section 31 as requested by the surface owner. Please address. (GAW)

Please see the following updated sections: Section 4.1.1, Post-Mining Land Use Narrative, Section 4.1.2, Post-Mining Land Use Map, and Section 4.1.5, Revegetation Procedures and Establishment.

103. Please revise the narrative regarding Burton Beckman's property located in the W½ of the NE¼ of Section 36 to describe how water is going to be supplied to the reclaimed native grassland. The Reclamation Division recommends constructing a developed water resource on this tract of native grassland as this is a necessary support facility to

implement the post-mine land use. Presently, a developed water resource is shown on the property boundary rather than on either the Henke or Beckman property. [NDAC 69-05.2-09-13] (GAW)

Please see updated narrative in Section 4.1.1, Post-Mining Land Use Narrative.

104. Please consider moving Kevin and Penny Hoesel's developed water resource in the SE¼ of Section 36 closer to the center of the tract to encourage grazing distribution rather than placing it on the east side. One possibility is that the locations of the seasonal wetland and the developed water resource could be swapped. (GAW)

Please see the updated location of the DWR in Section 4.1.2, Post-Mining Land Use Map.

105. Otter Creek is proposing to reclaim about 40 acres of native grassland along the north side of Section 6 (Dennis Beckman) with no water source. Please revise to show a developed water resource on this tract or commit to providing water to this tract in some other manner. Please also revise Beckman's narrative in Section 4.1.1 to discuss how water will be supplied to the native grassland located in the E½ of Section 31. NDAC 69-05.2-09-13. (GAW)

Please see updated narrative in Section 4.1.1, Post-Mining Land Use Narrative. The water sources will be provided by well/windmill setups.

106. The new statement on page 9 of Section 4.1.5, Revegetation Procedures and Establishment, states that seven conservation shelterbelts will be added…to provide cover and shade for cattle. Kent and Deborah Albers, who should have six of the <u>eight</u> requested plantings, also mention that the native tree plantings should also be designed to benefit wildlife. Please revise the statement accordingly. (GAW)

Please see updated narrative in Section 4.1.5, Revegetation Procedures and Establishment.

107. Please reduce the steepness of the slopes on the hill located in the SE1/4 of Section 35 that is to be reclaimed to cropland/hayland if this land use change is going to be implemented as requested by the surface owner. As currently proposed, portions of this area has slopes of 9-15% which we believe are too steep for cropland/hayland. (GAW)

Please see updated map, Section 4.2.7b.

108. The wetland located in the NW¼ of Section 2 is outlined as if it was not going to be disturbed but it is shown within the terrain modification boundary. All of the other

reclaimed wetlands are identified with a blue line. Please review and revise as necessary. (GAW)

Please see the updated wetland in Section 4.1.2 - Post-Mining Land Use Map.

109. Areas depicted as being suitable for prime farmland soils on the Post-Mining Land Use Map, Section 4.1.2, must be limited to areas that are to be reclaimed to cropland. Please revise the Post-Mining Land Use Map to not show prime farmland suitable area in the native grassland located in the N½NW¼ of Section 1. (GAW)

Please see Section 4.1.2 - Post-Mining Land Use Map.

110. Otter Creek is proposing to move a temporary wetland in the NW¼ of Section 6 from native grassland in the pre-mining setting to cropland that has the potential of being prime farmland in post-mining setting. Please replace this wetland on native grassland similar to where it exists prior to mining. (GAW)

Please see the updated wetland in Section 4.1.2 - Post-Mining Land Use Map.

111. Follow-up to original item No. 131: Section 4.1.2, Post-Mining Land Use Map, still indicates the section line roads throughout the permit area will be reclaimed as county roads. Please correct. (MDB)

Please see the updated map in Section 4.1.2.

Section 4.1.3 - Pre- and Post-Mining Land Use Acreage Comparisons

112. The narrative on the last page of Section 4.1.3 states that "Falkirk assumes the post-mining temporary wetlands situated in cropland will be managed in a similar manner." We assume this should be Otter Creek rather than Falkirk. Please correct. (GAW)

Please see the updated Section 4.1.3 - Land Use Acreage Comparison Table

Section 4.2 - Reclamation - General

113. Follow up to original item No. 144: Please address Area "A" in Section 4.2.2 because the narrative still states that rough grading take longer than exceed three years. It appears that variances from both the 180 days rough backfilling and grading requirement, NDAC 69-05.2-21-01(2), and the three-year seeding requirement, NDCC 38-14.1-24(14) will be needed for Area A. Please update and add the appropriate justification for variances. (MDB)

Please see updated Sections 4.2.2, Reclamation Schedule, and 4.2.3, Grading Sequence Map.

114. In Section 4.2.4, Reclamation Costs, it appears that no disturbance will occur in the S½SW¼ of Section 32 through the initial incremental bond period. Please delete this tract from the legal description in addition to changing Section 4.2.4a, Worst Case Bonding Plan Map. If you do not wish to delete this tract, then it appears that the worst case condition for this area would actually occur in 2013. (MDB)

Please see updated Section 4.2.4, reclamation Costs (Worst Case) narrative, and Section 4.2.4a, Worst Case Bonding Map.

115. Please update Section 4.2.4a, Worst Case Bonding Map, to show the updated disturbance boundary and post-mining topography in the W½ of Section 35 and the SW1/4 of Section 1. (MDB)

Please see updated Section 4.2.4a, Worst Case Bonding Map.

116. Please include a scale bar, north arrow, pit location, etc. on the Section 4.2.4b, Worst Case Bonding Cross-Sections Map to identify the location and length of the pit. (MDB)

Please see updated Section 4.2.4b, Worst Case Bonding Cross-Sections.

117. Follow up to original item No. 148: In Section 4.2.6, Post Mining Topography Map Generation, please include a mass balance of material showing that the post-mine topography is achievable as proposed. (MDB)

Mass Balance calculations added.

118. In Section 4.2.6, Post Mining Topography Map Generation, the narrative discusses how the in-field post-mining topography may vary from the approximate post-mining topography as mining progresses due to changes in mining direction, density/swell, etc. While we understand many factors can change the proposed post-mining topography, it is not acceptable to have language in the permit that implies a mine operator can deviate from the approved post-mining topographic plan. Changes to the approved post-mining topography, other than minor insignificant changes, must be proposed and approved through the permit revision process. Please update the narrative accordingly. Also, the narrative states Falkirk mining staff which should be changed to Otter Creek. (MDB)

Statement clarified and narrative updated.

119. The Worst Case Bonding Plan Map in Section 4.2.4a shows the access road entering the mine to only require topsoil to be respread. It is our understanding the access road will be constructed out of subsoil; however, there is still equipment time required to level the road into the ditches and blend the area into the surrounding topography. Please account for this cost in the Worst Case Bond and update Section 4.2.4a to show the subsoil requirement of the access road. (MDB)

Please see the updated Table 1 of Section 4.2.4, Reclamation Costs (Worst Case).

120. Follow-up to original item No. 138: Please incorporate all reclaimed wetlands and developed water resources into the Post-Mining Contour Map, Section 4.2.6a. It appears that several of those features are not included on the map. (MSK)

See updated map, Section 4.2.6b

121. In Table 2 of Section 4.2.4, Reclamation Costs (Worst Case), the amount of overburden appears to have been reduced by 50,000 cubic yards; however, the volume of the pit appears to be increased with the additional width added and the reduction in slope of the sidewalls. Our end area calculations show approximately 605,000 cubic yards of overburden fill volume, which is very close to the amount indicated by Otter Creek's previous submittal. Please recalculate and make all other appropriate changes to the worst case bond. (MSK & MDB)

Please see updated information on page 1 of the narrative in Section 4.2.4, Reclamation Costs (Worst Case). The actual calculated volume of overburden removed from the boxcut is 482,000 cubic yards. Therefore, that is the volume shown as being replaced.

<u>Section 5.0 - Wetlands</u>

122. Please include a narrative discussion and identify on the Pre-Mining Wetland Location Map, Section 5.1.1a, which wetlands, if any, are considered jurisdictional wetlands by the US Army Corps of Engineers. (GAW)

Please see the updated narrative in Section 5.1.1 and the updated map in Section 5.1.1a.

123. Please include a detailed narrative that describes the nature and variability of the vegetation in each Wetland Mapping Unit. In other words, please include a discussion that evaluates the results of the wetland sampling data and information attained from the thorough reconnaissance of the permit area. This should include information about the nature and variability of the vegetation established on the temporary wetlands. [NDAC 69-05.2-08-08] (GAW)

Narrative was added to address nature and variability of wetland as requested.

124. The last sentence in the first paragraph of Section 5.1.1 indicates that the Cowardin Classification System was used in some manner and the last paragraph on page 3 of Section 5.1.1 indicates that the Hydrogeomorphic Classification System was used. However, the wetlands are not classified using either system. Instead, the term linear wetland is used but a linear wetland is not defined or characterized. Please classify the wetlands using the US Army Hydrogeomorphic Classification system so that one is able to determine the hydrology associated with each wetland and whether the wetland is associated with a depression, riverine system, or slope (spring/seep) system. The last sentence of the last paragraph on page 3 of Section 5.1.1 states that "Thus, we were able to consider each wetland individually, but in a broader context that related composition and overall quality to landscape scale characteristics and processes." Please discuss the results of this assessment. (GAW)

Narratives have been updated to provide proper characterization of the wetland types and Table 2 of Section 5.1.1 has been updated to include this information for each wetland. Narrative discussing interpretation of results was added as requested.

125. Please include a post-mining wetland map in Section 5.2 that shows the location of the wetlands as was done for the pre-mine wetlands. At a minimum, please reference a map where the locations can be found in Section 5.2.1, Wetland Reclamation and Construction Operations. (MDB)

Please see the updated Section 4.1.2, Post-Mining Land Use Map. The post-mining wetlands were inadvertently omitted from the post mine contours. Please see additional narrative in Section 5.1.2, Post-Mining Wetlands Design Narrative directing readers to 4.1.2 Map for wetland locations.

Additional Changes

Otter Creek permit boundary was modified to exclude the E ½ of Section 5 and a one acre tract in the SE ¼ of Section 32. This modification required all applicable sections of the permit to be updated along with all permits maps. The most recent water quality data was updated for ground and surface water, along with updating the pre-mining land uses and wildlife monitoring data. Please see the list of changes in Section 1.1.3 for all the sections that were updated.

Otter Creek permit rainfall data was updated using NOAA Atlas 14 data.