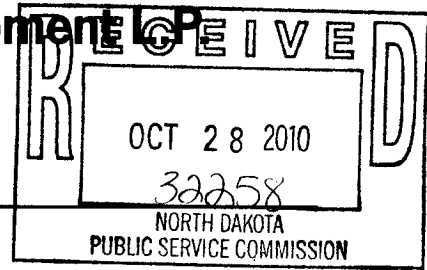




# Great Northern Project Development LP

173 Cottonwood Road  
Townsend, MT 59644  
(406) 266-4360 \* Fax (406) 266-4577



October 26, 2010

Mr. James Deutsch  
Director – Reclamation Division  
North Dakota Public Service Commission  
600 East Boulevard, Dept.408  
Bismarck, ND 58505-0480

FROM DIRECTOR - RECLAMATION DIV.

Date: \_\_\_\_\_

Action: \_\_\_\_\_

Info. Only: \_\_\_\_\_

Info & File: \_\_\_\_\_

**Re: Mine Permit Application No. SHSH-1001  
Revision #1  
South Heart Lignite Mine**

Dear Mr. Deutsch:

On behalf of South Heart Coal LLC (SHC), Great Northern Project Development LP (GNPD) has enclosed a revised application to the North Dakota Public Service Commission (PSC) for a permit to open and operate the South Heart Lignite Mine. The revised application has been prepared in response to deficiencies that the PSC identified in the original application filed with the PSC on March 29, 2010. Four copies of the revised permit application are provided on DVD.

SHC's direct responses to items identified in the PSC's April 28, 2010 letter to me are presented electronically on the enclosed DVDs. Those direct responses identify and provide links to specific parts of the application that have been revised in response to each of the identified deficiencies. The direct responses also identify and provide links to specific parts of the application that have been revised for other reasons. Finally, a wet-signed revision of the Surface Water Management Certification Letter is enclosed.

GNPD looks forward to working with the PSC and its staff during its review of the SHLM permit application. Please do not hesitate to contact Rich Voss, V.P. Project Development at 701-223-8783 ([rvoss@gnplp.com](mailto:rvoss@gnplp.com)) or me at 406-266-4360 ([rsouthwick@gnplp.com](mailto:rsouthwick@gnplp.com)) with any questions pertaining to our application.

Sincerely,

Richard A. Southwick  
Vice President – Environmental

Enclosures: DVDs (4)  
Surface Water Management Certification Letter

cc: Todd Joyner, SHC  
Rich Voss, SHC  
Larry Fox, SHC  
James Sorenson, Norwest  
Rick Kinshella, Golder  
Andrea Reither, Golder

**COMPLETENESS REVIEW RESPONSES  
FOR PERMIT APPLICATION NO. SHSH-1001**

**Section 1.0 – Introductory, Legal, Financial, Compliance and Related Information**

1. *The application form, SFN 10522, in Appendix 1.1.1 requests authorization to engage in surface coal mining and reclamation operations from July 2014 until July 2043. NDCC 38-14.1-12 and NDAC 69-05.2-05-08 (3) limit surface coal mining permits to a period not to exceed five years. However, this provision authorizes the Commission to grant a longer permit term if the applicant demonstrates that a longer term is needed to allow the applicant to obtain necessary financing for equipment and the opening of the operations, and this need is verified, in writing, by the applicant's proposed financing source, and the application is accurate and complete for the longer period. Please revise the permit term on the permit application form to a 5-year permit term to meet the requirements of NDCC 38-14.1-12 and NDAC 69-05.2-05-08 (3) or provide the necessary demonstration for a longer period term. (GAW & SAS)*

The first page of the application form, in Appendix 1.1-1 has been revised to reflect a 5-year permit term and the correct application filing date.

**Section 1.2.4 – Newspaper Publication Notice**

2. *The ownership listing for Section 23 is confusing as it is included with the listing for the N½ of Section 22 under the heading Section 22 (both tracts have the same surface and coal ownership). Please revise the notice to more clearly show that a tract in Section 23 is being permitted. (JRD)*

Appendix 1.2-3 has been revised to split Section 23 into its own entry.

3. *The last ownership tracts listed in the notice are for the NE½ and NW½ of Section 34. These should be corrected to the NE¼ and NW¼ of Section 34. (SAS, GAW, & DKM)*

Appendix 1.2-3 has been revised to correct this typographical error.

4. *The notice lists Linda L. Yoder as a coal owner in Section 22 but she is not listed along with the other owners for Tract IDs C-1399822-B and C-1399822-C. Please review and correct as necessary. (SAS)*

Appendix 1.3-2 has been revised to include Linda L. Yoder as a coal owner for tracts C-1399822-B and C-1399822-C.

5. *The Title ID for Tract C-1399828-A shows that LaVone G. Johnson (with Richard) and Mary Ann Johnson (with Robert) also signed the coal leases. It appears that they should also be listed as coal owners for the tract located in the NE¼ of Section 28. Currently they are not shown as coal owners in the listing in Appendix 1.3-2 or the notice. Please explain or correct as necessary. (SAS)*

The title for this parcel lists Richard Johnson and Robert Johnson as the sole owners but it is normal procedure to have spouses sign this type of a lease to prevent the need for a future affidavit of Non-Homestead if the ownership is challenged. The title report for this tract has been updated with this explanation.

6. *The notice indicates that an overpass will be constructed on 122nd Avenue prior to 2038 and that this will not be removed. Please delete the language that states that the overpass will stay in place and not be removed post-mining. At this time it is not certain if the overpass will be allowed to remain as a permanent feature. That decision will be made once the structure is no longer needed. (MDB/GAW)*

This language has been removed from Appendix 1.2-3.

7. *The discussion regarding conducting mining operations within 100' of the outside right-of-way and road closures in the notice and Section 1.5.5 is very confusing and needs to be clarified. Only road closures are included in this discussion and there is no mention of conducting mining operations within 100' of the outside right-of-way of any public roads as required by NDAC 69-05.2-10-01(1)(d). If mining will be conducted within 100' of the outside right-of-way but the road will not be closed, then this will need to be indicated in the notice and Section 1.5.5. It is suggested that a tabular listing be provided of all of the roads and section lines that will be closed and a separate listing of the roads and section line trails in which mining operations will be conducted within 100' of the outside-right-of-way. The status of each affected road (county road, section line trail, etc.) should also be identified. It is also recommended that roads and section lines be described as common to two sections (e.g., a section line common to Sections 16 and 21 or a county road common to the south half of Sections 27 and 28). The description of an "east-west road bisecting Section 20 at the mid-line of the section" (20) is very confusing. Please clarify this description. Additional items related to road closures and mining within 100' of the outside right-of-way are discussed below in more detail. (DKM/GAW)*
  - *The east-west road bisecting Section 20 at the mid-line of the section is not shown on Figures 1.2-1 or 3.5-11b. It is not clear where this road is located based on the narrative description of the road in the public notice, nor is it clear if this is a public road. The paragraph on page 7 of the notice discusses connecting this road with a new road and improving approximately 4,000 feet of existing road located in the middle and southern portions of Section 20. This is very confusing since these roads are not shown on Figure 1.2-1. Furthermore, the notice states that the east-west road located along the south section line of Section 20 will be closed, but this road is not shown on Figures 1.2-1 or 3.5-11b. A clear distinction between public roads, private roads, and unimproved section line rights-of-way needs to be made when describing the road in and around Section 20. (GAW)*
  - *Figure 3.5-11b identifies a road that will be removed between Sections 21 and 22 that then diagonally crosses the N½ of Section 27 but this road is not shown on Figure 1.2-1. That portion of this road located beyond the section line right-of-way should not be considered a public road unless the county has an easement for the road. Please review and clarify as necessary. (GAW)*
  - *The notice states that the north-south road located along the southern portion of the west section line of Section 27 and the north-south road located along the northern portion of the west section line of Section 27 will be closed. This is confusing. It appears that the southern portion of the section line is an improved section line road while the northern portion is simply a section line right-of-way. Please clarify. (GAW)*

- *The notice does not mention closing the section line right-of-ways located between Sections 15 and 16, Sections 16 and 17, Sections 21 and 22, Sections 21 and 28 and it is not clear if all of the section lines between Sections 27 and 28 and Sections 22 and 27 are being closed. Please review and revise the notice as necessary. (GAW)*
- *The final sentence of the last paragraph on page 7 of the notice is confusing. It is not clear what is meant by improving approximately 1,000 feet of the section line road along both the northern and southern portions of Sections 33 and 34. Preceding statements indicate that a new road will be constructed along the south section lines of Sections 33 and 34 and that the north section line will be closed. (GAW)*
- *Page 8 of the notice identifies five roads that will be closed prior to the beginning of mine construction through life of mine. However, the notice (pages 6 and 7) already states that all but one of these roads will be closed. Please edit for clarity. (GAW)*

Section 1.5.5 and Section 3.5, Appendix 1.2-3 and Figure 3.5-11b have been revised to clarify the section line right of way and road impacts. Figure 3.5-11c has been removed.

8. *Please show the section lines and section numbers on the newspaper publication map, Figure 1.2-1. The map that accompanies the newspaper notice (Figure 1.2-1) must be enlarged to adequately show the proposed permit area in adequate detail. NDAC 69-05.2-10-01(1)(b)(2) (DKM & GAW)*

Figure 1.2-1 has been revised to address this comment.

### Section 1.3 – Business Information, Identification of Interests and Rights of Entry

9. *Please include the names and addresses of the principles, officers and registered agent of all surface and coal owners that are not sole proprietors as required by NDCC 38-14.1-14 (1)(c)(6). Great Northern Properties Limited Partnership and PHP LLP are listed as coal owners so this information must be provided for these coal owners. Please update Section 1.3.5, Permit Area Surface and Coal Interest accordingly. (GAW)*

For coal parcels owned by Great Northern Properties LP, the title reports have been revised to include the necessary names and addresses of the principles, officers and registered agent. The links to the title reports for coal ownership are presented in Appendix 1.3-2.

PHP, LLP has been dissolved and the parcels have returned to their previous ownership. This change has been made in Appendix 1.3-2 and the linked title reports.

Although not specifically commented on in the completeness review, Table 1.3-1 has been revised to reflect a change in ownership and control information.

### Section 2.1 – Cultural

Although not specifically commented on in the completeness review, Figure 2.1-2 was modified from the original permit application to revise the disturbance boundary.

## Section 2.2 – Climate

No comments were received on Section 2.2 – Climate in the completeness review; however the section was modified from the original permit application to incorporate data gathered at the site and to address other editorial changes.

- Section 2.2 text was modified to reflect additional data collected through the end of calendar year 2009.
- The following tables were updated to reflect additional data collected through the end of calendar year 2009:
  - Table 2.2-1
  - Table 2.2-2
  - Table 2.2-3
  - Table 2.2-4
  - Table 2.2.5
  - Table 2.2-6
  - Table 2.2-7
  - Table 2.2-8
- Table 2.2-9 and Table 2.2-10 were deleted and data included in Table 2.2-7 and Table 2.2-8
- Figure 2.2-2 was updated to reflect additional data collected through the end of calendar year 2009
- Figure 2.2-3 was deleted since data are presented in other tables and figures
- Figure 2.2-4 was changed to Figure 2.2-3

## Section 2.3 – Geology

10. *There appears to be a gap in overburden sampling locations for areas within the N½ of Section 16, T139N, R98W. Please provide the required information in applicable sections of the permit as well as in Figure 2.3-17A or provide justification in the permit for the apparent data gap. It appears that an additional two sampling locations within the described area is necessary to meet the requirements of NDAC 69-05.2-08-05(2). (BEB)*

Two additional rotary boreholes were drilled in accordance with NDAC 69-05.2-08 in the north half of Section 16, T139N, R98W. Section 2.3 text was modified to reflect the additional data collected

The following tables, figures and appendices were updated to reflect the additional data collected:

- Table 2.3-4
- Table 2.3-5

- Table 2.3-7
- Table 2.3-9
- Table 2.3-16
- Table 2.3-21
- Figure 2.3-1
- Figure 2.3-4
- Figure 2.3-5
- Figure 2.3-6
- Figure 2.3-7
- Figure 2.3-8
- Figure 2.3-9
- Figure 2.3-10
- Figure 2.3-11
- Figure 2.3-12
- Figure 2.3-13
- Figure 2.3-14
- Figure 2.3-17A
- Figure 2.3-19
- Figure 2.3-20
- Figure 2.3-21
- Figure 2.3-23
- Figure 2.3-24
- Appendix 2.3-6
- Appendix 2.3-9
- Appendix 2.3-14
- Appendix 2.3-16
- Appendix 2.3-17
- Appendix 2.3-20

#### **Section 2.4 - Soil Resources**

11. *In order to help in the review of the soils report, please insert the soil map unit legend shown on the soil survey maps as a separate table in Section 2.4. It is currently only shown as part of Table 2.4-4 Soil Map Unit Descriptions. (WTG)*

Soil map unit descriptions are listed in Table 2.4-5.

12. *Please provide copies as an appendix to Section 2.4 of the laboratory analysis reports conducted for the soil survey that are summarized in Table 2.4-2 in Section 2.4.5.1.*

*Please reference and hyperlink the appendix in Section 2.4.5.1 - Laboratory Results on page 12. (WTG)*

Appendix 2.4-1 was added to include laboratory analysis reports and hyperlinks were added in Section 2.4.5.1 of the text as requested.

13. *Laboratory data summaries for the Flasher and Janesburg series are absent from Table 2.4-2 in Section 2.4.5.1, and there is no notation on the pedon description that the pedon was not sampled. Please include the laboratory data in Table 2.4-2, or explain why it is absent. (WTG)*

#### Janesburg Series

Catena originally sampled several sites expected to be classified as the Janesburg series. However, laboratory testing concluded that the profiles did not exhibit natric horizons, requiring the profiles to be reclassified as Moreau. When the survey was completed, none of the analyzed profiles were confirmed as Janesburg and map units dominated by Janesburg were found to encompass less than 0.5 percent of the Permit Area.

As specified in the scope of work for the soil survey, "...where reclassification based on laboratory results does affect the final distribution of samples between series, this will be noted in the final report and additional samples will not be collected." The third paragraph of Section 2.4.4.5 and the series description of Janesburg in the report text both include mention of the reclassification of soils due to the absence of natric horizons.

The pedon description provided for Janesburg in Appendix 2.4-1 is actually a taxadjunct. During preparation of the lab report, this profile was inadvertently grouped with other reclassified Janesburg profiles under the Moreau series heading. Table 2.4-2 and Table 2.4-6 have been updated to identify this site as a Janesburg taxadjunct for consistency. A sentence has been added to the Janesburg series description further noting that no samples were collected from a typical pedon for this series.

#### Flasher Series

The flasher series was found to occur to a very limited extent with map units comprising approximately 1.2% of the area within the Permit Boundary. Physical characteristics including sandy texture and shallow depth to bedrock made identification and delineation of the series very easy relative to other map units. Similarly, the analytical results from samples collected from other well drained, sandy soils (i.e., Vebar and Parshall) concluded that the depth to bedrock and differences between topsoil and subsoil horizons were the primary factors affecting salvage. The ease of distinguishing the separation between the topsoil and subsoil horizons, ease of identifying the bedrock contact as the lower limit of salvage, shallow depth of available materials, and limited extent of the series within the Permit Boundary were all factors in the decision to not sample this series. Catena believes that this is consistent with the SOW which stated that "...soils with very limited distribution will not be sampled unless they are suspected to have limitations for use in notable contrast to surrounding soils." Additional notation has been added to the text of Section 2.4.5.2 and the profile description in Appendix 2.4.1.

14. *Please insert a page at the beginning of Appendix 2.4-1 Typical Soil Series Pedon Descriptions in Section 2.4.5.2 that provides an explanation for abbreviations. Several of*

*the column headings are abbreviated (percent clay, coarse fragments, effervescence, and visible salts) and they may not be clear to someone unfamiliar with soil descriptions. Rather than changing column headings for each page in the appendix, however, we suggest that the explanation page provide a one-line descriptor of each column heading: for example, Roots - presence or absence. Please also provide an explanation for the following abbreviations used for horizon descriptions: roots, texture, structure, effervescence, and visible salts. (WTG)*

A cover page was added to Appendix 2.4-2 (formerly Appendix 2.4-1) to include an explanation of abbreviations as requested.

## Section 2.5 – Ground Water Hydrology

15. *As available, please incorporate the construction summary details and charts for ground water monitoring (observation) wells SHO-01, SHO-02, SHO-03, SHO-04, and SHO-05 into Appendix 2.5-1, lithologic logs of the described wells into Appendix 2.5-2, and geophysical logs of the described wells into Appendix 2.5-3 as required by NDAC 69-05.2-08-06 (1)(d). (BEB)*

Observation wells SHO-01, -02, -03, -04, and -05 were installed as part of a previous investigation at the site. Well construction and lithologic information from well driller reports for these wells is provided in Appendix 2.5-1 and Appendix 2.5-2, respectively. Geophysical logs at each well cluster are provided in Appendix 2.3-16. A link to this appendix and a brief description has been added to Section 2.5.

16. *As required by NDAC 69-05.2-08-06(1)(d), please incorporate geophysical logs for the SHMW-01, 09, 11, 14, and 15 series of ground water monitoring wells into Appendix 2.5-3 or provide the rationale for not including this information in the permit. Several of the described wells are screened in alluvium, although a couple of the wells are screened in overburden as well as in the D Coal seam. (BEB)*

NDAC 69-05.2-08-06(1)(d) indicates that accompanying data *should* [emphasis added] include lithologic and geophysical (gamma ray and density) logs. The SHMW-01, -09, -11, -14, and -15 series of monitoring wells are shallow completions installed adjacent to stream channels to evaluate the interaction of surface and ground water as part of hydrogeologic and alluvial valley floor investigations. In order to facilitate accurate description of the hydrogeologic material and installation of shallow wells, boreholes were advanced using hollow stem augers and continuous samples were collected with split spoon sampler. Gamma ray and density geophysical logs would provide little to no additional information given the purpose of the wells and the detailed hydrogeologic description provided by the logging technique. Geophysical logs were not collected in these holes due to the limited utility of these data in evaluating the shallow hydrogeologic conditions. NDAC 69-05.2-08-06(1)(d) states that groundwater data points to which geophysical data should accompany should be at a density of one piezometer nest per four square miles. As presented in Section 2.5, there are 16 well nests in the Permit Area resulting in an approximate density of greater than one piezometer nest per one square mile. Geophysical logs are provided for all well series except for SHMW-01, -09, -11, -14, and -15. SHC believes it has complied with the applicable requirements for piezometer nest density and hopes, with this explanation, the PSC agrees.

Although not specifically commented on in the completeness review, Section 2.5 was modified from the original permit application to incorporate additional data gathered at the site and to address other editorial changes.

- Section 2.5 was modified to reflect additional data through the end of calendar year 2009.
- The following tables, figures, and appendices were modified to reflect additional data through the end of calendar year 2009:
  - Table 2.5-5
  - Figure 2.5-3
  - Figure 2.5-4
  - Figure 2.5-5
  - Appendix 2.5-6
  - Appendix 2.5-4

## Section 2.6 – Surface Water Information

17. *As required by NDAC 69-05.2-08-04(1), please provide a description in Section 2.6.2 of all stock ponds and reservoirs (impoundments or excavations) within the permit boundary. We recommend this be done in a table format that lists the designation, location, use, date surveyed, type, water sampling date (if sampled), spillway or embankment condition, estimated pool size, conditions, features, and whether or not it will be disturbed. Additional documentation could include a photograph of each pond with documentation of designation and date. (WTG)*

Table 2.6-4 has been added and provides a listing of identified stock ponds and reservoirs within the permit boundary. Water quality data, including dates of sampling or attempted sampling are provided in Appendix 2.6-4.

18. *As required by NDAC 69-05.2-08-04, please describe in Section 2.6.5 - Surface Water Probable Hydrologic Consequences, what impact the operation will have on surface water availability, particularly with respect to stock ponds and other developed water resources. If necessary, provide information on the availability and suitability of alternate water sources for existing pre-mining and approved post-mining land uses. (WTG)*

Section 2.6.5.5 has been added to describe impacts of mining and reclamation on stock ponds.

19. *The hyperlink to Table 2.6-18 on page 22 in Section 2.6.5.1 does not appear to function. Please correct as necessary. (WTG)*

The hyperlink to Table 2.6-18 has been repaired.

Although not specifically commented on in the completeness review, Section 2.6 was modified from the original permit application to incorporate additional data gathered at the site and to address other editorial changes.

- Section 2.6 text was modified to reflect additional data through the end of calendar year 2009.

- Table 2.6-4 was modified as described above in response to Comment 17.
- Table 2.6-5 was incorrect in the original permit application. The table has been renamed to Stream Gauge and Catchment Information.
- Table 2.6-11 was deleted as this information is now included in Table 2.6-5.
- Table 2.6-12 was renumbered to Table 2.6-11
- Table 2.6-13 was renumbered to Table 2.6-12
- Table 2.6-14 was deleted
- Table 2.6-15 was renumber to Table 2.6-13
- Table 2.6-14 was added as a new table
- Table 2.6-16 was renumbered to Table 2.6-15
- Table 2.6-17 was renumbered to Table 2.6-16
- Table 2.6-18 was renumbered to Table 2.6-17
- Table 2.6-19 was renumbered to Table 2.6-18
- Table 2.6-20 was renumbered to Table 2.6-19

#### **Section 2.7.1 – Land Use**

Although not specifically commented on in the completeness review, Appendix 2.7.1-1 and Appendix 2.7.1-2 were modified from the original permit application to change the landowner name from PHP, LLP to Peters, Mary Louise et al.

#### **Section 2.7.2 – Vegetation**

Although not specifically commented on in the completeness review, Table 2.7.2-3, Table 2.7.2-6 and Table 2.7.2-9 were modified from the original permit application to change the landowner name from PHP, LLP to Peters, Mary Louise et al.

#### **Section 2.10 – Wetlands**

20. *Please consider the use of bookmarks in Appendix D and E of Section 2.10-1 so reviewers can find a field data form or photo of a wetland sample plot without scrolling through 160 pages in Appendix D and 40 pages in Appendix E. (GAW)*

Bookmarks were added to Appendix D and Appendix E as requested.

Although not specifically commented on in the completeness review, the following tables and figures were modified from the original permit application to change the landowner name from PHP, LLP to Peters, Mary Louise et al and to revise the disturbance boundary.

- Appendix 2.10-1: Table 2.3-1, Figure 2-1, Exhibit 1A, Exhibit 1B, and Exhibit 1C

### Section 3.0 – Operations Plan

21. *As required by NDCC 38.14.1-14(2)(c), please include a narrative in Section 3.0, Operations, that discusses the consideration that has been given to maximizing the utilization and conservation of the coal being recovered so that re-affecting in the future can be minimized. (GAW)*

Section 3.1.2.6 now reads; “During development of the mine plan, significant consideration was giving to maximizing the utilization and conservation of the lignite being recovered in the Permit Area so that re-affecting the land in the future can be minimized. The same consideration was given to maximizing the recovery of the lignite in the Permit Area in order to minimize total land disturbance. To ensure that lignite recovery will be maximized, the following procedures will be followed:”

22. *On Figure 3.1-1, Pit Layout and Facilities Map, please indicate where the coal crushing facility and coal stockpile is to be located and address water management for these structures as necessary. NDAC 69-05.2-09-01(3)&(4) (MSK/MDB)*

The coal crushing facility and coal stockpile will be located at the “Plant Facilities.” Hence, there is no coal crushing facility or coal stockpile located within the Permit Area.

Figure 3.1-1 has been updated to show associated water management plan structures.

23. *Please reference an existing or new figure on page 8 in Section 3.1.2.3 - Topsoil Removal, where the land ownership parcels listed in Table 3.1-5 are shown. Please also reference the figure as a footnote to Table 3.1-5. (WTG)*

Text has been added in Section 3.1.2-3 to include a reference to Figure 1.3-2 as requested.

Table 3.1-5 has been revised to add a note referencing Figure 1.3.2.

24. *In Section 3.3.4, Blasting Plan - Notices, the ND Public Service Commission should also be listed as one of the government agencies that receives the blast notice schedule. (MDB)*

In Section 3.3-4, the North Dakota Public Service Commission (PSC) has been added to the list of government agencies who receive a blasting schedule notice as requested.

25. *Please update Section 3.4, Air Quality Control Plan, to discuss compliance with NDAC 69-05.2-09-02(10) which requires a map showing any air pollution collection and control facility. We realize that air pollution collection and control facility sites may not be required by the ND Department of Health Air Quality Permit-to-Construct, but the issue should be discussed and if collection and control facilities are to be constructed, they should be shown on an appropriate map. (GAW)*

The following text has been added to Section 3.4 to address this comment:

- NDAC 69-05.2-09-02(10) requires that an application for a permit to open and operate a surface coal mine include maps showing specific features of the mine including each air pollution collection and control facility. SHC understands the term "air pollution collection and control facility" to refer to a stationary air pollution control device such as

a baghouse or scrubber. As required by NDAC 69-05.2-09-02(10), the locations of such stationary pollution control devices could readily be reflected on a map.

- However, as described above, no discrete air pollution collection and control facilities are proposed for the SHLM. That is because the mining activities proposed in this permit application are conducted with mobile equipment ill suited to the application of stationary air pollution collection and control facilities as SHC understands that term. Instead, as described above, SHC proposes air pollution control measures (e.g., minimization of material drop heights) and practices (e.g., application of water) to reduce emissions to the atmosphere from the proposed mining activities.
- Therefore, because SHC proposes no air pollution control and collection facilities none are reflected on the maps provided as part of this application.
- SHC will apply to the North Dakota Department of Health for the required air quality-related permit-to-construct in which SHC will propose the air pollution control measures and practices described here.

26. ***Please include detailed designs for the South Branch Heart River Bridge which is projected to be constructed prior to 2014. Currently the permit application contains conceptual design and limited information regarding the bridge, but is shown as part of the haul road profile. If the designs are not finalized at this time, the haul road design should not include the bridge at this time. The bridge must meet the requirements of NDAC 69-05.2-24-03(5)(b). (MDB)***

A design of the concrete arch bridge has been prepared and included in the Application. Section 3.5.1.2 has been revised to describe the design, which demonstrates that the structure can safely accommodate the peak flow from a 100-year event. A hydraulic design of the concrete arch bridge and HEC-RAS analysis has been developed from the available 2-foot contour map for the bridge location. The hydraulic design of the bridge and HEC-RAS analysis and cross-sections can be seen in Figure 3.5-13 and Figure 3.5-14. As explained in the revised section, the hydraulic analysis based on the two foot topographic map provides upper bound estimates of water surface elevations because the topographic surface does not delineate the full extent of channel incision. A detailed survey of the area and soil sampling of foundation materials will be completed prior to preparation of construction designs and construction of the bridge. The bridge will be engineered and constructed to support the loads of the mining equipment. The construction designs will be submitted for approval prior to construction of the bridge.

27. ***Please include a brief discussion of the overpass that is to be constructed over County Road 122 between the SW¼ of Section 23 and SE¼ of Section 22 and either include design plans for this overpass or indicate that such plans will be included in the permit by revision prior to construction. Please indicate the approximate time period for its construction and why it will be needed. This overpass is briefly mentioned in a narrative on page 29 of Section 3.5.1.4. (GAW)***

Section 3.5.1.4 has been revised to state “The overpass is being constructed to allow safe access for mine traffic to portions of the mine on the both sides of 122nd Avenue. The overpass will allow mine traffic (haul trucks, mine vehicles, mobile equipment, etc.) to pass under 122nd Avenue. Detailed design and construction plans for the planned overpass

will be provided to the Stark County Road Superintendent and to the PSC as a permit revision prior to any construction. SHC will conduct detailed soil, traffic, and geotechnical studies to support design of the overpass and the detailed design plans will be certified by a professional engineer prior to submission to the Stark County Highway Superintendent and the PSC for approval.”

28. *Please include the watersheds for CVT70+51 and CVT55+75 on Figures 3.6-2 and 3.6-3 as well as detailed design plans and calculations for the diversions flowing into CVT70+51 to show the culvert is capable of handling the flows required by NDAC 69-05.2-24-03(5). (MDB)*

The watersheds that drain to culverts CVT70+51 and CVT55+75 are too large to show on Figure 3.6-2 and Figure 3.6-3. The watersheds are delineated on Figure 3.6-1. SEDCAD flow modeling and culvert design calculations are located in Appendix 3.6-2. This Appendix has been updated to include design flows and calculations for culvert CVT70+51 and well as the design calculations for the West Tributary Diversion segments DD-2 and DD-3 that flow into CVT70+51. The West Tributary Diversion segments DD-1, DD-2 and DD-3 are shown on Figure 3.6-1.

29. *In Section 3.6.1, Surface Water Management Plan, please add a statement that detailed water plans for the Pit 2 sequence, including re-routing of the West Tributary will be provided later as allowed by NDAC 69-05.2-09-09(1)(e). However, preliminary plans for this diversion need to be discussed at this time. (MSK/GAW)*

Changes have been made in Section 3.6-1 to address this comment. The temporary diversions that will be constructed in later permit terms are shown in Figure 3.6-1. Design calculations for the diversion segments DD-1, DD-2 and DD-3 for the West Tributary are included in Appendix 3.6.2 in the sections titled “CVT 70+51 and DD-2, DD-3 of West Tributary Diversion” and “CVT 55+75 and West Tributary Diversion DD-1”.

30. *Please label the contour elevations on all of the Water Management Maps, Figures 3.6-1 through 3.6-9; and, update the legend to show the map scale at an established printed page size. (GAW)*

Contour elevations have been added to the Water Management maps. This includes Figure 3.6-1, Figure 3.6-2, Figure 3.6-3, Figure 3.6-4, Figure 3.6-5, Figure 3.6-6, Figure 3.6-7, and Figure 3.6-8.

Although not specifically commented on in the completeness review, the following modifications from the original permit application were made as described below:

- Figure 3.1-1 has been updated to show the new mine facilities location, associated water management plan structures, and updated disturbance boundary.
- Figure 3.1-2, Figure 3.3-1 and Figure 3.5-6 have been updated to show the new mine facilities location.
- Figure 3.1-5a, Figure 3.1-5b, Figure 3.1-5c, Figure 3.1-5d and Figure 3.5-12 have been updated to show the new mine facilities location and water management plan control features.h

- Section 3.5.1.3 text has been updated to include directions to the new mine facilities location.
- Figure 3.5-4 has been removed because the access road is no longer needed (this figure number will be kept as a place holder).
- Figure 3.6-8 has been removed due to the revised facilities location. Figure 3.6-9 has been renumbered to Figure 3.6-8.

#### Section 4.1 – Reclamation Plan

31. *The overburden quality sample data for borehole SHOB-11R appears to be absent from Table 4.1-1 in Section 4.1.1.1, Topsoil and Subsoil Removal, while the sample data for borehole SHOB-120R appears to be listed twice, although the data presented on page 8 differs from data presented on page 19. Please review and correct as necessary. (WTG)*

Table 4.1-1 has been revised. SHOB-120R was listed twice in the table; the first occurrence was mislabeled and should have read SHOB-11R.

32. *It appears that much of the methodology used to calculate the worst case bond in Appendix 4.1-1 (Worst Case Bond) does not follow the guidance provided in Policy Memo 16 to Mine Operators. We suggest that you contact Mike Berg of the Reclamation Division to discuss this matter further. (MDB)*

Discussed this with Mike Berg; he requested a “simplified” version of the bond calculation that did not include as much information. He suggested using the same format that other mine operations have submitted. Appendix 4.1-1 contains the revised bond calculation and has been completed following a format that is similar to permit submittals for other mining operations as requested. The bond calculations have also been updated in response to the July 2010 Update to Policy Memo 16 to Mine Operators – Reclamation Cost Estimating Guidelines.

33. *Please include 5 foot contour intervals on Figure 4.1-7B, Permanent Diversions and Impoundments and Wetland Restoration, so that the plan can be properly evaluated and include the design plans for the wetland complexes showing that the watersheds will be of sufficient size to contribute an ample supply of water from normal year precipitation by the ND Water Commission and a 50% annual water yield from the contributing watershed as required by our Standards for Evaluation of Revegetation Success and Recommended Procedures for Pre- and Post-Mining Vegetation Assessments document. Incidentally, the terminology “permanent diversions and impoundments” in the narrative on page 4 of Section 4.1.1.2 and in the legend of the figure is poor terminology as the permanent diversions and impoundments are simply recreated drainageways with wetlands. (GAW)*

Figure 4.1-7B has been revised to include 5 foot contours.

Wetland designs are presented in Appendix 4.1-2.

The text in Section 4.1.1.2 has been modified to indicate that the streams are being reclaimed.

The title to Figure 4.1-7B “Permanent Diversions and Impoundments” has been changed to “Permanent Impoundments, Re-Established Channels and Wetland Restoration”.

Section 4.1.1.2 was revised to replace the term “permanent diversion” with “re-established channels”.

#### **Section 4.2 – Post-Mining Land Use**

34. *As required by NDAC 69-05.2-09-13-1, please describe how pre-mine developed water resources affected by mining will be restored during reclamation in support of native rangeland or tame pastureland land use. (WTG)*

Section 4.2.2 was revised to describe reclamation of pre-mine developed water resources.

Figure 4.1-7c was added to show general specifications for reclaimed stock watering ponds.

Figure 4.2-1 was revised to show the post-mining developed water resources.

Table 4.2-1 and Table 4.2-2 were revised to show acreage of post mining developed water resources.

35. *Please include the assumptions and a typical design plan that will be used for the stockponds on reclaimed lands and add a statement that the detailed design plans for each stockpond will be submitted via permit revision before it is constructed. Also, please note that the ponds to be reclaimed in the S½ of Sections 15 and 16, as stated on page 25 of Section 4.2.2 in accordance with the land owner preference statement, are not shown on the Post-Mining Land Use Map. SHC will need to demonstrate that the drainageway that is to be recreated in the S½ of Sections 15 and 16 will support the wetlands within the drainageway and the stockponds (developed water resources). (GAW)*

Figure 4.1-7c provides general specifications for reclaimed stock watering ponds. Reference to this figure has been added to Section 4.1.1.2. A statement has been added indicating that detailed design plans for the reclaimed stock ponds will be submitted prior to construction.

An additional 1-acre pond has been added in the south half of Section 15. There is a 0.45 acre pond, 16SW3, in the south half of Section 16.

Appendix 4.1-2 was added to describe the basis for wetlands restoration design and to demonstrate that contributing watersheds are adequate to support wetlands and stock ponds.

36. *The hyperlink to Table 4.2-2 on page 20 links to Figure 4.2-2 by mistake. Please correct the hyperlink. (WTG)*

The hyperlink to Table 4.2-2 now functions correctly.

Although not specifically commented on in the completeness review, the following modifications from the original permit application were made as described below:

- Post mining land use acreage was revised in Table 4.2-1, Table 4.2-2 and Table 4.1-3 to reflect changes to the disturbance area.

**General**

37. *The Pit Layout and Facilities Map, Figure 3.1-1, Life of Mine Map, Figure 3.1-2, Utilities Maps, Figures 3.1-5a-d, Life of Mine Water Management Plan Maps, Figures 3.6-1, Permit Term Water Management Plan Sheets, Figures 3.6-2 & 3.6-3, Pre- and Post-Mining Topography Maps, Figures 4.1-6 & 4.1-7a, Pre- and Post-Mining Slope Maps, Figures 4.1-8 & 4.1-9, Soil Respread Thickness Map, Figure 4.1-10, Post-Mining Land Use Map, Figure 4.2-1, and other maps have been prepared with a print scale of 1:24,000, 1"=2,000', on 17" X 22" inch paper size. This scale is too small to be usable when printed. Please revise these maps using a scale of 1:12,000, with a page print size of 36" x 44", ANSI "E" size. The map scale between different maps should be consistent to allow overlaying. In addition, the contour interval elevation labels have been placed under the contour line in many instances on these maps. Please place the elevation label on top of the contour line. (GAW)*

The following figures have been revised to plot on a 34 in x 44 in sheet using a scale of 1:12,000.

- Figure 3.1-1
- Figure 3.1-2
- Figure 3.1-5a
- Figure 3.1-5b
- Figure 3.1-5c
- Figure 3.1-5d
- Figure 3.6-1
- Figure 3.6-2
- Figure 3.6-3
- Figure 4.1-6
- Figure 4.1-7a
- Figure 4.1-7b
- Figure 4.1-8
- Figure 4.1-9
- Figure 4.1-10a
- Figure 4.2-1

*Also, while this is not a deficiency, we recommend using an alternative format for presenting the information shown in Figures 1.3-2 and 1.3-3, Surface and Coal Ownership in Section 1.3.5 - Permit Area Surface and Coal Interest. The colors, fill patterns, and labels used on the figures make it difficult to interpret the information presented. Please also consider simplifying these figures by removing roads, railroads, drainages, and the quarter-mile permit boundary buffer line.*

Figure 1.3-2 and Figure 1.3-3 have been revised to address this comment.