May 4, 2022

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MINERALS & MINING PROGRAM

Mr. Eric Holm
Engineer Manager III
Department of Agriculture and Natural Resources
Minerals and Mining Program
523 E Capitol Ave.
Pierre, SD 57501

RE: Loring Quarry Large Scale Mine Permit Application Submission Response

Mr. Holm:

On behalf of Simon Contractors of South Dakota, Inc. (Simon), H2E, Inc. would like to submit the enclosed responses to the Department's March 30th review of the Loring Quarry Large Scale Mine Permit Application. The response package includes:

- Original comments from the Department and Simon's responses;
- Updated Application Package;
  - Hard copy includes entire application package with the exception of the jurisdictional determination and baseline surveys (Reclamation Plan Appendix D).
- USB drive containing an electronic copy of the updated permit application package and shapefiles.

1. Operating Plan, Mining Method and Type, Section 2, page 2 (ARSD 74:29:02:04(2)): In the fourth paragraph on page 3 of this section. Simon Contractors states that pre-mining contours are not available for the extreme northern end of the property. Please note that some contour lines for the northern area are shown on the USGS quadrangle base maps included in the application. If the contours are shown on the base maps, please explain why they are not available.

   Response: Contours were added to the maps.

2. Operating Plan, Unsuitable and Previously Mined Land, Section 4, page 3 (SDCL 45-68- 92(10)): Since DANR's special, exceptional, critical, or unique lands determination is addressed in this section. please add SDCL 45-6B-92(10) to the list of statutes and regulations referenced in this section.

   Response: Statue SDCL 45-6B-92(10) added to Operating Plan Section 4.

3. Operating Plan, Minimizing Adverse Impacts, Section 5, page 3 (SDCL 45-68-92(1 through 9): Since subsections 1 through 9 of SDCL 45-6B-92 are addressed in this section, please add SDCL 45-6B-92(1 through 9) to the list of statutes and regulations referenced in this section. Also, move the title "Critical Resources" from the top of page 8 of this section so it reads "Minimizing Adverse Impacts and Critical Resources". The title on the top of page 8 should be changed to "Cultural and Wildlife".

   Response: Statue SDCL 45-6B-92(1 through 9) added to Operating Plan Section 5. Critical Resources subsection changed to Cultural and Wildlife. Section name updated to include Critical Resources.

4. Operating Plan, Minimizing Adverse Impacts, Water, Section 5, pages 4 through 6 (SDCL 45-6B-92(2) and (4) and ARSD 74:29:07:09): Since subsections 2 and 4 of SDCL 45-6B-92 are addressed in this section, please add SDCL 45-6B-92(2) and (4) to the list of statues and regulations referenced in the "Water" section.

   Response: Statue SDCL 45-6B-92(2)(4) added to the Water subsection.

Also, in paragraph 3 on page 4 of this section. Simon Contractors states that drainages (streams) will not be diverted. As a result. ARSD 74:29:07:10 does not need to be addressed. However, I could not find anywhere in this section where it addresses whether surface runoff diversions will be needed to divert stormwater around surface disturbance at the quarry . Therefore, please address whether surface runoff diversions will be needed, and if so, please address each subsection of ARSD 74:29:07:09.

Response: Added a sentence stating no surface water runoff diversions are anticipated to be needed to Water subsection paragraph 2.

In the first paragraph on page 5 of this section. Simon Contractors discusses visits made to the quarry following rain events greater than 0.25 inches and photos of the visits in Appendix C of the Operating Plan. Even though no surface water now was noted. some of the photos show puddled water and wet soil patches where water appeared to flow in drainages during a rain event. This should also be mentioned in this paragraph. In addition, efforts should be taken to monitor drainages in the area during a rain event.

Response: Added a sentence stating some pooling of water occurred at a low lying area under the recreation trail to Water subsection paragraph 5.

In the sixth paragraph on page 5, Simon Contractors should mention that the domestic well sampled is named domestic well 67605 to match the naming convention on the water quality data sheets in Appendix D. Also. Simon Contractors needs to discuss the potential impacts on the well from the mining operation.

Response: Well number added in paragraph discussing wells within ½ mile of the quarry. Potential impacts to wells discussed in Section 5 of the Operating Plan.

After review of the well log for domestic well 67605, it appears this well has been drilled into red shale and limestone which indicates it was drilled into Minnelusa Formation. The water level in the well is currently at 17 feet and was also noted to be at this level in the well drillers report. The well is also not screened across the alluvium which is at a depth of 20 feet, but it was screened from 30 to 100 feet. In addition, the well drillers report also indicates water was not encountered in the alluvium. Water was first encountered at a depth of 37 feet. Therefore, the presence of the alluvial aquifer has no bearing on the water level in the well. Therefore, please address the question from the February 14, 2022 letter regarding artesian flows in the adjacent well and the barrier that may prevent ground water from entering the quarry during mining activities in the southern and eastern portions of the quarry.

Please provide geologic cross-sections for the site as was requested in the February 14, 2022 letter. Simon Contractors states in the application, that the Madison is present in the quarry area as an elongated dome-like structure. This indicates the presence of geologic structures in the nearby vicinity which may make this location unique. Geologic cross-sections should be done to address all geologic formations known to be present in this area from surface to bedrock showing enough extent from the quarry area to provide some information on the potential structure which created the dome structure. This is important, as a domal structure will have localized impacts to groundwater flows in the area. The analysis should be based on knowledge of the geology within the quarry area and general knowledge of local geology in the Black Hills.

Response: Geological cross sections are provided in Section VIII of the LSMPA, and a more detailed discussion of groundwater in the area was added to Section 5 of the Operating Plan.

Regarding the Potentiometric Map of the Minnelusa Formation in Section VIII of the application, please note the map should take into consideration potential localized impacts based on known geologic structure in this area. While DANR is aware there may be limited knowledge on true potentiometric contours due to limited groundwater data, it may be possible to include flow lines (dashed) to infer the potential direction of groundwater flows in this area.

Response: Assumed local direction of groundwater flow in the Minnelusa aquifer is depicted on the geological cross sections.

Finally, please address comments from the February 14, 2022 letter regarding karstic flows in Madison and potential impacts from surface inflow in the mine area into the Madison aquifer.

Response: Karstic flows and potential impacts to the Madison aquifer due to surface inflow are discussed in Section 5 of the Operating Plan.

5. Operating Plan, Minimizing Adverse Impacts, Soil, Noise, Air Quality, Visual Resources, Cultural and Wildlife, Section 5, pages 7 and 8 (SDCL 45-6B-92) and ARSD 74:29:07:01: Please identify which subsections of SDCL 45-6B-92 are being addressed for the Soils, Noise, Air Quality, Visual Resources, and Vegetation sections on page 7 and the Cultural and Wildlife section on page 8. Also, additional information is required for the following sections:

   Response: Statues for each of the above subsections have been added respectively.

   - Soils - Please address whether the soils mentioned in the soil survey have low vegetation potential and mitigation measures if they do;
     Response: Added paragraph to Soils subsection discussing soils with low vegetation potential.

   - Noise and Air Quality - Please identify the potential nearby receptors, including residences and recreation areas, that may be impacted by noise and fugitive dust from the operation and show the locations on a map; and
     Response: Added sentence discussing potential nearby receptors. Residence locations can be seen on the Viewshed Map.

   - Visual Resources - Since I could not find the viewshed map in Section VIII that is referred to in this section, please submit the map. Also, please explain what the relationship of the map is to the viewshed modelling. In other mine permit applications, viewshed modelling involves taking photos of several areas of a mine and conducting a computer generated view of what each area will look like before, during and after mining.
     Response: Included Viewshed Map. Map legend includes a description of how the model was created.

6. Operating Plan, Minimizing Adverse Impacts, Access, Section 5, page 7 ARSD 74:29:07:12(1 through 10): For the Access section, the "On Property Road" on the Water Resources maps in Section VIII is shown as a separate feature from the DOT approved access. Simon Contractor' s needs to acknowledge in this section that the "On Property Road" is outside the DOT right of way, on Simon Contractor property, and is not a part of the approved access. As a result, the "On Property Road" is required to comply with each subsection of ARSD 74:29:07:12. Simon Contractor's has addressed subsections 2. 4, 6, and 8 of this regulation. However, the remaining subsections need to be addressed, including changing the reference in the Regulatory Cross-Reference from ARSD

74:29:07:12(4)(6)(8)to ARSD 74:29:07:12(1 - 10). Finally, the "On Property Road' and the DOT approved access need to be added to the Mine Plan and the Eastern Mine Sequence Maps.

Response: Added comments to Access subsection stating that the existing "On Property Road" is outside the DOT right-of-way, on Simon property, and is not within a riparian area and does not cross any streams. ARSD 74:29:07:12(4)(6)(8) was updated to include ARSD 74:29:07:12(1 through 10). The "On Property Road" is already shown on the Mine Plan Map. Both roads were added to the Mine Sequence Maps.

7. Reclamation Plan, Grading, Section 3, pages 1 and 2 (ARSD 74:29:07:04): In the first paragraph on page 1 of this section, Simon Contractors states highwalls will be blasted and regraded to a 3: l slope with the exception of highwalls left for bat habitat. However, in the second paragraph, the company contradicts this by stating stockpiled overburden will be used to backfill and recontour the highwalls to the appropriate slope with all overburden being returned to its respective locations. It also states overburden will be placed over blasted limestone and limestone remaining on the quarry floor. Simon needs to clarify its plans for the quarry highwalls by discussing which highwalls will be blasted for slope reduction and which highwalls will be backfilled with overburden. It also needs to clarify what the stockpiled overburden will be used for, whether for highwall backfill, cover over blasted limestone or the quarry floor, or if it will be placed into its original locations. What will be the volume of overburden available for these purposes, including the volume or the existing overburden stockpile shown on the Mine Plan Map? The locations or blasted limestone from highwall slope reduction and final overburden placement need to be shown on a map.

   Response: Grading language clarified. Any material resulting from highwall blasting will be stockpiled for sale. It is not overburden material for use in backfilling. It is unknown at this time which highwalls will remain. Anticipated overburden application areas have been added to the Mine Plan Map.

8. Reclamation Plan, Revegetation, Section 5, page 3 (SDCL 45-6B-39, ARSD 74:29:07:06, and ARSD 74:29:07:19(1)): In this section, Simon Contractors states it consulted with the Hell Canyon Ranger District of the US Forest Service, which indicated that it plants to a density of 150 ponderosa pine seedlings per acre. The company added that this density is not required for private property. It should not matter whether the area is on private or public lands in establishing a proper and definitive planting rate for ponderosa pine. In my February 14, 2022 letter, I suggested Simon Contractors contact the Forest Service to obtain a planting rate for ponderosa pine since the NRCS did not have one. We are looking for a defensible planting guideline for Simon to follow that would reasonably be expected to yield mature timber stand densities appropriate for ponderosa pine. Since the NRCS does not have a planting rate and only made a 100 seedling per acre recommendation, the 150 seeding per acre seedling rate used by the US Forest Service should be the rate used in the reclamation plan.

   Response: Ponderosa pine planting rate updated from 100-150 seedlings per acre to 150 seedlings per acre.

9. Reclamation Plan, Topsoil Salvage, Section 6, pages 3 through 5 (SDCL 45-6B-7(11), SDCL 45-6B-40 and ARSD 74:29:07:07(2, 3, 5, 6, and 8): In the first paragraph on page 3, Simon Contractors does not include any proof that the Custer County NRCS office was consulted during development of the topsoil stockpile seed mix in Table 2 on page 4 as I requested in my February 14, 2022 letter. The company only mentions that the seed mix adheres to South Dakota DOT and South Dakota Seed Laws. In Appendix B of the Reclamation Plan, the only consultation with NRCS was for the final reclamation seed mix which is different from the topsoil stockpile seed mix in Table 2. Therefore,

please submit proof that the Custer County NRCS office was consulted during development of the topsoil stockpile seed mix.

Response: NRCS provided a seed mix. Proof of consultation is provided in Reclamation Plan Appendix B.

In the first paragraph on page 5, Simon Contractors included topsoil replacement estimates for the quarry. In these estimates, did Simon just use plan view acreage or did it account for the slight increase in acreage from plan view during the reduction of the quarry highwalls to a 3:1 slope? Also, an existing topsoil stockpile was shown on the Mine Plan Map in Section VIII. What is the volume of the stockpile, and what effect would it have on the total volume of topsoil available for reclamation?

Response: Acreage was adjusted to account for slope. Volume of the topsoil stockpiles was estimated to be 24,000 yd^3. This volume was not added back into the topsoil volume calculations, since the areas from which it came are already included in the topsoil salvage calculations.

10. Reclamation Plan, Hydrologic Balance Section 7, pages 5 and 6 (SDCL 45-6B-33(4), SDCL 45-6B-41, ARSD 74:29:02:11(1, 2, 3, 4, 5, 7, and 8), ARSD 74:29:07:08(3) and (6), and ARSD 74:29:07:09 and 10): Since this section is basically a repeat of the Water section under Critical Resources in the Operating Plan, Simon Contractors may want to consider combining these two sections and address them in the Operating Plan since the water issues are more associated with that plan rather than the Reclamation Plan.

    Response: Hydrologic Balance Section in Reclamation Plan combined with Operating Plan.

11. Reclamation Plan, Spoil Piles, Section 9, page 6 (ARSD 74:29:07:14(3) and (4)): In the first paragraph of this section, please address subsections 3 and 4 of ARSD 74:20:07:14 in describing if the overburden stockpiles will be a source of water pollution and if the overburden is toxic or will prevent vegetation of the reclaimed land surface.

    Response: Added language to Soils Piles, Weeds Section stating overburden is non-toxic, will not be a source of water pollution and will not prevent vegetation of the reclaimed land surface.

12. Reclamation Plan, Landowner Consultation, Section 10, page 7 (SDCL 45-6-44 and ARSD 74:29:06:02): Consulting with the US Forest Service just on the pine seedlings does not meet the adjacent landowner consultation requirements of SDCL 45-6B-44. Also, there is no mention of consultation with the other adjacent landowner, the South Dakota Department of Transportation (DOT). Simon Contractors is required under this statute to do a meaningful consultation with the South Dakota DOT and the US Forest Service during development of the reclamation plan. Even though under the statute Simon Contractors can send them a copy the reclamation plan after receiving a written request, the company is also required to do the consultation with these landowners. This consultation could include sending them a copy of the first nine pages of reclamation plan and the post mine contour map. The remainder of the plan could then be sent in the event a written request was received by either party. Also, a summary of the reclamation plan and the post mine contour map could be sent to South Dakota DOT and the U Forest Service. Proof of consultation is required to be sent to DANR such as certified mail return receipts. The proof of consultation is a completeness item and must be submitted before the application can be considered complete.

Response: A copy of the reclamation plan (main body) and post-mine contour map will be submitted to the USFS and SD DOT once the plan has been deemed complete.

Also, in the fifth sentence in the second paragraph of this section, Simon Contractors states no financial commitments from public agencies are required. Please note that ARSD 74:29:06:02(4)(b) requires operators to address these public agency commitments in general, not financial commitments. Therefore, please remove the word "financial" from this sentence.

Response: The sentence was amended accordingly.

13. Reclamation Plan, Reclamation Choices, Operator Requirements, Section 11, page 7 (SDCL 45-6B-45(1) and ARSD 74:29:07:19 (3): The baseline survey does not state what the pre-disturbance ponderosa pine stand density is for the area. Since Simon Contractors is using the baseline vegetation survey instead of a reference area to determine the success of the ponderosa pine tree stand and the understory vegetation, the baseline survey must include a discussion on the current ponderosa pine stand density which DANR can use to help assess the success of the tree plantings.

    Response: The baseline survey provided percent cover of ponderosa pine rather than tree density. Ponderosa pine density was calculated by counting individual trees from aerial imagery, which resulted in a density of approximately 56 trees per acre.

14. Reclamation Plan, Concurrent Reclamation, Section 13, page 8 (ARSD 74:29:06:02(4)(d), ARSD 74:29:07:01(2), ARSD 74:29 :07:04(3), and ARSD 74:29:08:01): ARSD 74:29:08:10 states that concurrent reclamation **shall be** conducted during all phases of a mining operation and concurrent reclamation plans and estimated timetables **must be** included in the reclamation plan. In addition, the Board of Minerals and Environment has expressed concerns over the lack of concurrent reclamation at Simon Contractor's Rapid City and Madison quarries, which the company needs to take seriously. As a result. concurrent reclamation **must be** addressed in the mine permit application. DANR realizes constraints on working space will limit the opportunities for concurrent reclamation early in the project. However, as mine sequences are completed, reclamation such as highwall reduction, final grading, topsoil placement, and seeding can be completed in portions of the western mine area as mining continues which will not interfere with these constraints. If the sequences shown on the 2023 to 2042 Mine Sequence Map in Section VIII of the application carry through to the 2042 to 2085 Mine Sequence Map in the same section, concurrent reclamation could be carried out at least in sequences 5, 6, 7, 8, 10, 11, 12 and 13. It would be helpful to show mining sequences on the 2042 to 2085 Mine Sequence Map in developing the concurrent reclamation plan. Also, Simon Contractors could look at reclaiming current disturbed areas that will no longer be used or portions of the current stockpile area that will no longer be used after it is moved to areas mined from 2023 to 2030.

    Also, the development of a concurrent reclamation plan will require changes to discussions regarding final and concurrent reclamation in the following sections of the reclamation plan:
    - Last paragraph Section 3, Grading; and
    - Last paragraph Section 6, Topsoil Salvage.

    Response: Concurrent reclamation discussion added to Section 12 of the Reclamation Plan. The last paragraph in the Grading Section and Topsoil Salvage Section was amended accordingly.

15. Reclamation Plan, Critical Resources, Section 15, pages 8 and 9 (SDCL 45-6B-92): Since Critical Resources is already addressed in the Operating Plan, there is no need to address it here also. Therefore, Simon Contractors can remove this section from the Reclamation Plan.

    Response: Section has been removed.

16. Maps, Section VIII: On the Post-mining Contour Profiles, please add the quarry highwalls prior to slope reduction in a different color on each cross-section . It would also be helpful to include a plan view map showing the highwall contours prior to slope reduction.

    Also, as I requested in my February 14, 2022 letter, please include outlines of the existing quarry and western and eastern expansion areas on the mine sequence maps.

    Response: Maps updated accordingly.

Simon Contractors should also be aware of the following general and technical comments concerning the mine permit application:

1. Table of Contents: Under the Operating (Section VI) and Reclamation (Section VII) Plans, please change the letters for each subsection to numbers to match the numeric format for the subsections in each plan. Also, Simon Contractors should include the title of each appendix under the Appendices heading for each plan.

   Response: Updated accordingly.

2. Regulatory Cross-Reference (ARSD 74:29:02:01): On the Regulatory Cross-Reference, please indicate whether the numbers that appear after Operating Plan and Reclamation Plan are page numbers or section numbers since it is confusing to navigate through the application. Also, please make sure all statute and regulation references in the mine permit application are included in the Cross-Reference.

   Response: Added the word "Page" prior to the numbers.

3. Section Cover Sheets: Please add the section numbers (I, II, III, IV, V, VI, VII, VIII, and IX) listed in the Table of Contents to the corresponding section cover sheets in the mine permit application.

   Response: Updated accordingly.

4. Operating Plan, General Description, page 1 and Reclamation Plan, General Description page 1: In the General Description on page 1 of the Operating and Reclamation Plans, Simon Contractors states the quarry is located approximately four miles south of Pringle. South Dakota. However, after reviewing maps, the quarry is actually approximately four miles southwest instead of south of Pringle, which is also the general location used in the Request for Determination of Special , Exceptional, Critical, or Unique Lands application. Therefore, please change the general location in the General Description to four miles southwest of Pringle.

   Response: Updated accordingly.

5. SDCL 45-6B-7(12) and ARSD 74:29:02:08: Since mining will occur in sequences over many years, Simon Contractors may want to consider using phased bonding for the Loring Quarry. The original

bond for the new permit could cover reclamation costs for the current disturbance and the first five mine sequences, with additional bond being submitted for future sequences.

Response: Simon does not wish to use phased bonding.

6. Operating Plan and Reclamation Plan Maps: Simon Contractors included shapefiles of the Mine Plan Map with the March 23 submittal. However, I also asked for shape files of the various maps in Section VIII in my February 14, 2022 letter. Therefore, please submit shapefiles for the on property road and at least the mine sequence and pre and post mine contour maps, and the cross section profiles.

   Response: Additional shapefiles provided on USB drive.

7. Reclamation Plan, Revegetation, Section 5, page 3: In this section, Simon Contractors states even though there are no annual species listed in the final seed mix, perennial species such as slender wheatgrass germinates quickly which makes it a suitable choice for quick cover. What I was referring to in my February 14, 2022 letter was a nurse crop, which is an annual species such as sterile wheat or annual rye that could help establish a quick vegetative cover until the other self-sustaining grass species such as slender wheatgrass are established. Therefore, please discuss the feasibility of adding an annual nurse crop species to the final seed mix with the Custer County NRCS office.

   Response: NRCS provided an updated seed mix that includes annual rye. See Reclamation Plan Appendix B.

8. ARSD 74:29:06:01: The department concurs with Simon Contractors, who is also the surface owner, that forest is an appropriate postmine land use.

9. ARSD 74:29:01:04: The information requested in this letter and the revised mine permit application must be filed with the Custer County Register of Deeds office with the original mine permit application which is already on file for public review. Proof of filing, such as a letter from the register of deeds office, is required to be submitted.

If you have any questions or concerns, please feel free to contact me via email at bmorris@h2eincorporated.com or by phone 307-696-7007.

Sincerely,
H2E, Inc.

Becky Morris, Ph.D.
Senior Environmental Scientist

Enclosure