



**DEPARTMENT of AGRICULTURE  
and NATURAL RESOURCES**

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November 3, 2021

Ken Nelson  
Mine General Manager  
Wharf Resources (USA), Inc  
10928 Wharf Road  
Lead, SD 57754-9710

Dear Mr. Nelson,

On October 5, 2021 we received Wharf's Request for Determination of Special, Exceptional, Critical, or Unique Lands. We have been reviewing this document and have developed the following comments on the Request for Determination that require clarification or additional information.

**Comments addressing Procedural Completeness:**

1. Page 9, Section 4.0, Defining if the Lands are Ecologically Fragile: In the second paragraph, it states, "much of the land has been previously disturbed by logging or other activities." Please define or explain what other activities have previously disturbed the land, including Wharf's exploration activities.
2. Page 9, Section 4.0, Defining if the Land is Ecologically Fragile: In this section, additional information is required to adequately address ecological fragility. Please include a discussion on any threatened, endangered, and sensitive vegetative or wildlife species, including bat species, and how impacts to these species will be mitigated during mining. Also, Wharf should consider describing reclamation completed at the Wharf and Golden Reward Mines, including the release of reclamation liability at the Golden Reward Mine, to show that it can be returned to its former ecologic role.
3. Page 9-11, Section 4.0, Defining if the Land is Ecologically Fragile: In this section, additional information is required to adequately address whether the proposed mining area has a strong influence on the total ecosystem. There is a brief discussion on the mountain huckleberry, including the information in Appendix B, but there is no information on whether the area where these plants are located will be possibly disturbed during mining or what measures will be taken to minimize or mitigate impacts to this species.

In addition, there is no discussion on bats included in this section. Wharf needs to include a discussion on bat species, including any data collected to date, the potential to adversely impact

any threatened, endangered, or sensitive bat species found in the area, the potential to destroy any bat habitat during mining, and steps that will be taken to minimize damage or mitigate impacts to any bat species.

There was also a reference made to annual raptor surveys in the area, but no information was included to indicate what raptors may have been sighted in this area during previous surveys. There is mention that there had previously been active nesting areas, but no discussion on what species have nested historically in this area or what measures are taken to mitigate or minimize impacts to these nests.

In addition, in Section 5.7.4 of this report, there is a discussion regarding aquatic impacts from spills and discharges into creeks caused by mining activities. Please also include a discussion on aquatic impacts, mitigation, and impacts to macroinvertebrates and periphyton because of these incidents.

Since the ecologically fragile and ecosystem influence items listed under SDCL 45-6B-33.3 (1) and (2) are closely related and address similar items such as threatened and endangered species, past reclamation, and aquatics, Wharf can consider combining subsections 1 and 2 into one section.

4. Page 12, Section 5.1, Scenic: This section needs to address visual impacts from other nearby locations as well, including Terry Peak, Nevada Gulch Road, and Spearfish Canyon. Also, please explain whether the residence areas along the Perkins Road will note visual impacts from this proposed operation.
5. Page 15, Section 5.7, Scientific: In this section it states, "The environmental baseline studies found that the Boston Expansion area is not ecologically fragile, and disturbance from mining activities can be restored and returned to its pre-mining ecological role." This statement appears to confuse the assessments required as part of SDCL 45-6B-33.3(3) with the evaluations to address SDCL 45-6B33.3(1) and (2). This statement would be more accurate if it stated the baseline studies support the conclusions noted in Section 4.0 determining the lands were not ecologically fragile and the lands do not have a strong ecological influence on the total ecosystem.
6. Page 15 and 24, Sections 5.6 and 5.8, Ethnologic and Cultural: In the Ethnologic and Cultural sections of the Request for Determination, please include a summary of the Cultural History Overview mentioned on pages 4 through 8 of the cultural report since the report cannot be viewed by the public because of its confidential nature. This summary should include a discussion on the potential of any Native American features or artifacts within the proposed mine area.
7. Page 16, Section 5.7.1 Vegetation: In this section it states, "Both vegetation community types had areas that are predominantly undisturbed and areas that are predominantly disturbed by

logging or other activities.” There should also be mention of impacts to vegetation based on Wharf’s exploration activities in the area.

Also, Wharf needs to include supporting data for the assessment completed. Although a full baseline report will not be necessary until it is time to submit the mine permit application, data supporting Wharf’s assessment should be included in the appendices.

8. Page 16, Section 5.7.2, Soils: Please include a map and supporting data from the soil survey results from 2010.
9. Page 16, Section 5.7.3, Wildlife: Please include supporting data for Wharf’s wildlife assessment in this section, including any baseline data collected to date.
10. Page 17, Section 5.7.3, Wildlife: When discussing bat surveys, this section states, “Results of those surveys will be provided to SD Game, Fish and Parks and SD DANR upon completion and as part of the Large-Scale Mine Permit application.” However, Stan Michals forwarded an October 11, 2021 email from Amy Allen of Wharf with some bat survey information. Since there is potential for bat species that may be considered threatened, endangered, or sensitive in this area, such as the Northern long-eared bat, additional bat survey information needs to be included as part of the current Request. Please include a summary of information from the September and October 2021 surveys, including bat species found and potential adverse impacts to any threatened, endangered, or sensitive bat species.
11. Page 18, Section 5.7.4, Aquatic: At the bottom of the page it states, “No fish have been observed at the uppermost Annie Creek site since sampling began in 2006, which is likely caused by natural barriers to fish passage (i.e., waterfalls).” Sampling occurred in 1990 and mountains sucker have been observed near the confluence with Lost Camp Creek (see attached).
12. Page 19, Section 5.7.4, Aquatic: In the second paragraph it states, “Macroinvertebrate population metrics in upper and middle Annie Creek have generally improved in recent years following improvements in habitat and water quality after the high-BOD water cleanup in 2008.” Provide a citation for this statement.
13. Page 19, Section 5.7.4, Aquatic: In the second paragraph it states, “The reason for this decline is unknown but seems to be isolated to the lower sampling site on Annie Creek and is not believed to be caused by mining activities.” Provide a citation for this statement.
14. Page 20, Section 5.7.5, Groundwater: In the second paragraph, there is a brief mention of active wells in the nearby region owned by either Wharf or Black Hills Chairlift. There is also mention that general water use for these wells includes housing development, mining, and snowmaking. Please include a more detailed discussion on wells for housing development and snowmaking, distance from the proposed expansion area, and potential impacts to these wells due to mining.

15. Page 21, Section 5.7.5: At the bottom of page 21, there is mention that nitrate concentrations above the 10 mg/L standard have been observed in MW-19 in the last 5 years. Please include a discussion on any mitigative actions Wharf has taken to lower the nitrate levels.
16. Page 22, Section 5.7.5: At the top of this page, the paragraph contains a brief description of drilling programs not indicating the presence of significant water at depths. Please include some supporting information on this to include drill depth and whether holes were dry or wet. If wet, where were these holes located in comparison to the proposed expansion area? Did any drill sites produce quantifiable water?
17. Page 22, Section 5.7.5: The first paragraph notes the potential for an increase in nitrate to the ground water due to mining activity. This could be considered a critical impact to ground water. Please provide more detailed information on the possible increase in nitrate that are anticipated to ground water within the proposed Boston Expansion and what mitigative measures may be taken to counter this impact.
18. Page 23, Section 5.7.6, Surface Water: In the first paragraph of this page, there is a brief analysis stating all water quality results meet state and federal water quality standards. However, there is no data summary providing information to support this analysis. Please include a summary of data to support your analysis.
19. Page 25, Section 5.9, Recreational: In the first full paragraph of this page it states, "Although data are insufficient to support a systematic assessment of effects, trends in winter recreational use have continued to increase." This statement is contradictory. There is either data confirming an increasing trend or there is not enough data to support the statement. Please clarify and explain the source of the information if data supports the statement of increasing trends.
20. Page 24-25, Section 5.9, Recreational: There is a brief discussion on impacts to nearby recreation areas that is limited to only discussing the adjacent Terry Peak Ski area. This discussion should also include potential impacts to other nearby recreational opportunities such as hiking, biking, and ATV usage in areas adjacent to the mine.
21. Page 25, Section 5.9, Recreational: In the second full paragraph of this page there is a brief discussion on the visual impacts of mining from the Terry Peak ski area as the Portland Ridgeline's elevation is lowered during mining. This should be discussed under "Scenic" in Section 5.1 of this document.
22. Page 26, Section 6.0, Summary and Conclusions: There is no mention of any threatened, endangered, or sensitive bat species in this section.
23. Appendix C, QSI, Cultural Resource Inventory Report, Figure 2: This figure shows a good overall view of cultural resources around Wharf Resources. However, please also include a map that

shows the proposed expansion boundary and focus on the cultural resources more immediately adjacent to this area.

24. Please include the SDCL 1-19A-11.1 Consultation letters from SHPO, dated July 14, 2021, and October 21, 2021, in front of the QSI Cultural Resource Survey Report in Appendix C.
25. Please include the site forms for the cultural resources survey at the end of the QSI report in Appendix C. These forms should include newly recorded site 39LA1728 and the site update information for 39A0376.

#### **Technical Comments:**

1. Page 1, Section 1.0, Introduction: In the first paragraph you state, “This document is submitted in support of Wharf Resources (U.S.A.), Inc (Wharf) to obtain the required permits and licenses to operate at the Wharf Boston Expansion area of the existing heap-leach gold operations under Administrative Rules of South Dakota (ARSD) 74:29.” Please note this statement is not correct, since these permits are also required under South Dakota Codified Law (SDCL) 45-6B.
2. Page 1, Section 1.0, Introduction: In the second paragraph you state, “The SD DANR necessitates that the request be submitted and published at least 60 days before the Large-Scale Mine Permit application is submitted.” This statement is incorrect, since the 60-day timeframe is mandated under ARSD 74:29:10:04(1).
3. Page 2, Section 1.3, Scope of Work: In paragraph 3 of this section, Wharf states assessments were completed to determine (1) the ecological condition of the proposed mining expansion, (2) if the area is ecologically fragile, and (3) if ecological disturbances will precipitate into a systemwide ecological response. It then states categories of the assessments include the following: Scenic, Historic, Archaeologic, Topographic, Geologic, Ethnologic, Scientific, Cultural, and Recreational. Please note that these categories are not part of the ecological assessments required under SDCL 45-6B-33.3(1) and (2) and are to be assessed independently. The only exception is there may be some overlap in the Scientific category. SDCL 45-6B-33.3(3) is required to evaluate critical features which may not have overall impacts to the ecosystem, to determine if there are unique or significant attributes that may require additional protections or mitigative measures. Please change the language in this section to reflect that the categories listed in SDCL 45-6B-33.3(3) are not part of the ecological assessments.
4. Page 3, Section 1.4, Preliminary List of Special, Exceptional, Critical or Unique Lands: It states in the Request for Determination that the Boston Expansion is near two sites already on the preliminary list. These are mentioned as Spearfish Canyon and Terry Cemetery. This needs some correction. In 1991, the Spearfish Canyon Watershed was placed on the preliminary list which includes not only the boundary of Spearfish Canyon, but also the other drainages that flow into Spearfish Canyon. Please correct this statement to indicate the Spearfish Canyon Watershed is on the preliminary list.

5. Page 5, Section 2.0, Proposed Mining Area: In the third sentence of first paragraph on page 5 of this section, it states, "...the dashed blue line represents the disturbance boundary." This is incorrect, as the correct terminology is "the permitted affected acreage boundary".

Later in the same paragraph, it states, "Appendix A lists the surface owners of properties within 500 feet adjacent to the proposed surface disturbances." This should be a list of all surface owners adjacent to the proposed permit boundary in accordance with SDCL 45-6B-44 and ARSD 74:29:03:03(10) and ARSD 74:29:10:03(4). We look at the proposed permit boundary instead of proposed disturbance in determining the surface and minerals owners that are within the 500-foot area.

Finally, regarding Figure 2-2 at the end of the paragraph and Figure 2-3 on page 6, "Current Disturbance Boundary" in the legend for the figure should be changed to "Permitted Affected Acreage Boundary". As mentioned earlier, this is the correct term for this boundary.

6. Page 7, Section 3.0, Description of Proposed Mining Operation: In the fifth paragraph, it states "As of January 1, 2021, Wharf Mine comprises 1,979 permitted acres, which includes 1,273 acres that have been previously disturbed, and 269 reclaimed acres (this includes lands at Wharf Mine as well as the Liberty and Harmony Pits at Golden Reward)." This statement is inaccurate. As of January 1, 2021, the permitted affected acreage is 1,480 acres with 1,272 acres disturbed and 266.5 acres reclaimed. Also, regarding the 1,979-acreage figure, was Wharf referring to the current permit boundary acreage? Please revise this paragraph with the correct acreage.

This paragraph also infers that the Liberty and Harmony Pits were fully reclaimed on January 1, 2021. However, only 16 of the 80+ acres accounted for under these pits were reclaimed (graded, topsoiled, and seeded) as of that date. In fact, these two facilities were still undergoing final reclamation as of September 2021. Please revise this statement with the correct reclamation status of these pits.

Finally, this paragraph includes a brief discussion on SDCL 45-6B-96 which requires Wharf to address expansion of surface mined disturbed acres. This discussion should be removed from this application as it applies to the mine permit application and not the Request for Determination.

7. Page 8, Section 3.0, Table 3-1: The bottom line of the table lists Mine License 90-400. Under the comment section of the table it states, "Foley Gravel Permit". To prevent confusion, as a mine license and mine permit are two very different procedures, please refrain from utilizing the term "permit" for a mine license. Please use the term "Foley Gravel Mine License".
8. Page 9, Section 4.0, Defining if the Land is Ecologically Fragile: In the third full paragraph of this page, the report states, "Wharf has been mining in Lawrence County since 1974." This statement is incorrect. Wharf was originally permitted in 1984.

9. Page 16, Section 5.7.1, Vegetation: This section contains a brief discussion on mountain huckleberry. When initially mentioned in the Request for Determination, Wharf provided the scientific name (*vaccinium membranaceum*) followed with the common name, thinleaf huckleberry. It then continues the discussion by referring to it as mountain huckleberry. While we are aware thinleaf and mountain huckleberry are one and the same, this can be confusing as common names for some plant species may be very similar between different species. Therefore, please clarify that thinleaf huckleberry and mountain huckleberry are one and the same plant within the report.
10. Page 18, Section 5.7.4, Aquatic: In the second paragraph on this page it states, "These fine sediments are believed to be from the nearby Annie Creek Road and are not believed to be the result of mining activities." Please include any impacts from sediment that may have been caused by recreational vehicles driving along Lost Camp Road as well.
11. Page 19, Section 5.7.4, Aquatic: In the first paragraph of this page it states, "...no fish have been collected since 2010 after an ammonia and cyanide release from the Wharf Mine in 1995,..." This is partially incorrect. The cyanide release occurred in 1995, while the ammonia release occurred in 2002.
12. Page 20, Section 5.7.5, Groundwater: Foley Shaft is included on Figure 5-2 as a ground water well. Please provide a brief discussion of this well and why it was removed from the baseline sampling program for the proposed expansion.
13. Page 21, Section 5.7.5, Groundwater: In Table 5-2, please correct the information for MW-33. The table indicates the well has a depth of 120 feet but is screened from 80 to 230 feet.
14. Page 21, Section 5.7.5, Groundwater: In the last paragraph there is a statement that appears to be slightly misleading. It states, "All the nitrate detections in MW-33 and MW-66 over the last five years are less than 1 milligrams per liter." MW-66 is a newer well and does not have five years of data collection to make this statement transparent.
15. Page 22, Section 5.7.6, Table 5-3: The table includes a column describing the parameter list for each site. However, we could not find the parameter lists in the Request for Determination. Please include the parameter lists.
16. Page 23, Section 5.7.6, Figure 5-4: There are many surface impoundments marked at Golden Reward that seem to correlate more with sampling locations rather than impoundments. Please make corrections to the impoundments shown on this map.

**Comments to address on baseline analysis:**

1. Page 20, Section 5.7.5, Groundwater: In the third paragraph on this page it states, “three existing wells were considered as baseline for this permit”. Please address why other wells in this area, such as MW-17 and MW-18 are not being used as part of the baseline analysis.
2. Page 22, Section 5.7.6, Surface Water: The report states only three sites, Lost Camp, SS-20, and Annie Creek @ USGS, were used to evaluate baseline for this site. Please explain why other surface water sites along Annie Creek, closer to the proposed expansion area, were not included as baseline analysis, such as Annie Creek II, CP001, and CP005.
3. Page 23, Section 5.7.6, Surface Water: In the second paragraph on this page, there is a brief discussion on the spring survey conducted on Lost Camp. It reports only one spring was found during the survey and this spring was dry after May 2021. However, during the water quality inspection conducted in September 2021, the spring was dry, but inspectors noted the creek maintained low flow at the sample point immediately above the confluence with Annie Creek. This would indicate the potential for other springs to be located within this drainage that were not identified. Please address any additional spring surveys that may be required to determine the full source of flow within this drainage.

This concludes our initial review of Wharf’s Request for Determination of Special, Exceptional, Critical, or Unique Lands. Please address the items outlined above. We will continue to review this document to determine if there are any additional items Wharf needs to address.

If you have any questions, please contact either Roberta Hudson or Eric Holm at (605) 773-4201.

Sincerely,

\s/

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