

**DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES  
RECOMMENDATION  
WHARF RESOURCES (USA) INC.  
LARGE SCALE MINING PERMIT APPLICATION**

*cc: Wharf, Law. Co. Com,  
SP, Rev. Agencio, BME,  
Intervenors, Donna Watson,  
Rebecca Lear, +  
Allen Haide*

The Department of Environment and Natural Resources is recommending conditional approval of Wharf Resources (USA) Inc.'s application for the proposed expansion of its current large scale heap leach gold operation. The resident agent is CT Corporation System, 319 South Coteau Street, Pierre, South Dakota 57501. The legal location of the operation is portions of Sections 1, 2, 3, and 12; T4N-R2E, Sections 6 and 7; T4N-R3E, and Sections 33 and 36; T5N-R2E, Lawrence County. The general location is approximately four miles west of Lead, South Dakota.

The proposed mine expansion project will involve open pit mining and disposal of overburden primarily to the south and west of the existing Wharf and Golden Reward Mines. A portion of the reclaimed Golden Reward Mine will be redisturbed during the project. Ore extracted from the expansion area will be hauled to the existing heap leach facility at the Wharf Mine for processing. As new mine areas are developed, waste rock and overburden will be used to backfill previously mined areas. A portion of State Highway 473 will be relocated during the project. Wharf Resources plans to disturb approximately 308 acres within the 528-acre expansion area, and total production is estimated to be about 175 million tons of material. The proposed expansion will extend the total life of the mine from 2012 to 2020. The proposed postmining land use is a mixture of rangeland or woodland grazing, home sites, and recreation and industrial or commercial development which will revolve around enhancements to the Terry Peak ski area.

As required in ARSD 74:29:01:15, the reason the department is recommending conditional approval of Wharf Resources' permit application is the application addresses all of the requirements of SDCL 45-6B and ARSD 74:29. Also, the application with the department's recommended conditions (below) provides the necessary safeguards to protect the environment during and following operations and ensures that the land is reclaimed to a beneficial use following operations.

This recommendation is being mailed to you pursuant to ARSD 74:29:01:15. Petitions to intervene and become party to the proceedings pursuant to ARSD 74:29:01:09 must be filed with the Department of Environment and Natural Resources no later than October 24, 2011. Since intervention petitions were received after the Notice of Filing was published, a hearing on the mine permit application will be held before the Board of Minerals and Environment on November 16 through 18, 2011 in Pierre, South Dakota.

Persons desiring further information concerning the permit application may contact Eric Holm of the Minerals and Mining Program, 523 East Capitol Avenue, Pierre, South Dakota 57501-3182 - (605) 773-4201. A copy of the permit application can be found at <http://denr.sd.gov/des/mm/wharfminepermitapppage.aspx>.

Steven M. Pirner  
Secretary  
Department of Environment and Natural Resources

October 17, 2011

## RECOMMENDED CONDITIONS

### Technical Revisions

The Board of Minerals and Environment (board), pursuant to ARSD 74:29:03:16, hereby authorizes the Department of Environment and Natural Resources (department) to approve proposed technical revisions to Wharf Resources (Wharf) Expansion Project mining permit for:

1. Modifying monitoring plans, locations, parameters, and time frames;
2. Modifying compliance limits for chemical parameters as allowed within the mining laws and mine permit, including spent ore off-load criteria;
3. Submitting and modifying plans and specifications for permitted facilities;
4. Submitting and modifying quality control and quality assurance plans;
5. Adding contiguous, affected land within the permit boundary with the total of such additions not to exceed twenty (20) percent of the permitted affected land area of 308 acres for this permit. The maximum amount of expansion allowed (20% of 308 acres) is 61.6 acres;
6. Modifying or relocating erosion, sedimentation, or drainage control structures;
7. Implementing new and improved reclamation techniques as they are developed;
8. Modifying seeding mixtures or rates;
9. Using irrigation in reclamation;
10. Modifying water usage and sources as allowed by water rights permits;
11. Modifying dust control measures;
12. Modifying blasting methods and control measures by use of new procedures or products developed in the future provided they are operationally and economically feasible;
13. Modifying the size of area to be worked at any one time;
14. Modifying operating time tables for proposed operations;
15. Locating or modifying ancillary facilities within the permit boundary, including equipment storage areas, parking lots, office buildings, septic systems, perimeter fencing, utilities (phone lines, natural gas lines, power lines, water lines), crushing areas, sludge ponds, stockpiles, and rubble sites;
16. Modifying pit and rock facility configurations within permitted disturbance limits consistent with geotechnical considerations;
17. Modifying plans for stabilizing highwall areas;
18. Modifying and relocating state, county, and private roads and haulage routes within the permit boundary;
19. Modifying topsoil stripping plans and relocating stockpiles;
20. Modifying and relocating slash piles and slash disposal areas;
21. Relocating chemical or petroleum storage areas;
22. Modifying the reclamation plan within the constraints of ARSD 74:29:03;
23. Modifying the operating plan within the constraints of ARSD 74:29:03;
24. Implementing new surface mining techniques or equipment;
25. Modifying the gold recovery process within the process facility to improve performance, recovery, or environmental aspects;
26. Modifying off-load requirements for leach pads;
27. Submitting and modifying the design of capping systems;
28. Modifying action leakage response schedules and leakage response action plans;
29. Providing for or modifying long-term active water treatment;
30. Modifying postclosure plans and monitoring time frames;
31. Modifying handling procedures for potential acid rock drainage (ARD) rock;

32. Modifying reclamation or vegetation success standards;
33. Modifying spent ore backfilling plans to include the American Eagle, Portland, and Trojan pit areas subject to obtaining the necessary Groundwater Discharge Permits;
34. Modifying mine designs and disturbance areas to include contiguous areas of potential ore;
35. Expand the leach pads for better drainage, washing, and production;
36. Build a permanent heap leach pad to improve leaching, recovery, or environmental aspects;
37. Build lined spent ore impoundment for environmental purposes to provide additional water treatment;
38. Build additional water storage capacity;
39. Relocate plant to improve operations aspects and recovery;
40. Change, modify, develop, enhance, or increase water treatment technology and water treatment regimes;
41. Modify pad parameters to enhance leaching or draindown characteristics;
42. Develop and implement other mineral processing technologies that would improve both economic and environmental aspects;
43. Modify reporting procedures and parameters as allowed within the mining laws and mine permit;
44. Allow use of Contingency Pond or other ponds as batch ponds, temporary process, or neutralization ponds;
45. Change the slope angle for final reclamation of specific sites where visually and functionally compatible;
46. Modify the time frame for defining stocking guidelines and reclamation success standards;
47. Modify stocking guidelines and reclamation success standards to reflect climatic conditions;
48. Modify reclamation monitoring techniques;
49. Modify livestock carrying capacities of surrounding areas; and
50. Modify aspects of the recreational, homesite, and industrial (commercial) landuses based on market conditions that do not conflict with statutes or regulations.

Technical revisions must comply with ARSD 74:29:03:03 and must be submitted to the department in writing. The department shall approve, disapprove, conditionally approve, or request additional information deemed necessary to approve technical revisions within thirty days of receipt.

#### General

1. The conditional approval of this permit application incorporates by reference those representations made by Wharf, as to plans, specifications, operations, environmental impacts, and reclamation as contained in the permit application submitted February 18, 2011, with supplemental information submitted on March 1 and 7, June 24 and 28, July 5, 6, 7, 13, 14, 18, 20, and 21, August 1 and 18, and October 7, 11, 13, and 14, 2011. The representations contained in these documents are general conditions of this permit unless modified by a future technical revision, amendment, or permit, or modified by other conditions imposed by the board.
2. This permit and all rights under it are expressly conditioned on the truth of representations made by the applicant, Wharf, its officers, and employees in the application and supporting documentation relating to the application. Should any material representation prove to be false, this permit and all rights under it may be canceled by the board.

3. This permit is conditioned upon compliance with all applicable laws and regulations.
4. The conditions of Permit 476 apply to the entire mining operation, including Permit Nos. 356, 434, 435, 450, and 464. These conditions supersede similar conditions in previous mine permits, amendments, and technical revisions. Any conditions in previous mine permits, amendments, and technical revisions that do not conflict with these conditions remain in effect as applicable.
5. The operation shall be conducted in compliance with all Lawrence County Zoning Requirements and Conditional Use Permit conditions.
6. Wharf shall abide by the recommendations proposed at the time of permit approval, by the South Dakota Department of Tourism, the South Dakota Department of Agriculture, the South Dakota Department of Game, Fish, and Parks, and the South Dakota Department of Health, except as modified or restated in these conditions.
7. All monitoring systems described in the permit application or as modified by the department or the board shall be implemented. Changes to monitoring systems must be approved by the department through technical revisions.
8. Wharf shall, whenever and wherever compatible with the mining operation, retain trees to visually screen the operation and minimize effects to existing wildlife habitat.
9. Wharf shall notify all affected parties of planned utility disruptions at least 48 hours prior to utility relocation. The notifications, either verbal or written, shall state the expected time, date, and length of the disruption.
10. As much as practicable, Wharf shall maintain traffic flow along SD Highway 473 through the permit area for the life of the project.

#### BLM Land

1. Wharf may not commence operations on the 10 unpatented claims on Bureau of Land Management (BLM) land under Large Scale Mine Permit No. 476 until it receives BLM approval for operations on the unpatented claims.
2. If BLM approval for operations on the unpatented claims substantially alters the operating or reclamation plans for the approved project, Wharf shall, depending on the nature and extent of the alterations, submit:
  - a. A technical revision, if the alterations fit the criteria for a technical revision under ARSD 74:29:03:16 and the categories of technical revisions listed above;
  - b. A mine permit amendment, if the alterations are minor modifications pursuant to ARSD 74:29:03:01; or
  - c. A new mine permit, if the alterations are major modifications pursuant to ARSD 74:29:03:02.

### Other Permits

1. Wharf shall obtain or modify, as necessary, any additional surface water discharge or ground water discharge permits for the project area.
2. These conditions do not change the requirements of other existing permits, including Ground Water Discharge Permits and Surface Water Discharge Permits.
3. Wharf shall obtain a US Corps of Engineers 404 permit, if required, prior to initiating construction or mining activities that affect the waters of the United States.
4. Wharf shall obtain, as necessary, any federal or state permit, if required, prior to taking, possessing, breaking, or destroying any nest or the eggs of the kinds of birds, which the taking or killing at any time or at all times is prohibited.

### Terry Cemetery Protection and Stabilization

1. Wharf shall take precautions to protect the stability of the Terry Cemetery during mining in the Golden Reward Pit. Precautions could include, but are not limited to:
  - a. Maintaining and reinforcing buttresses against previously mined highwalls; and/or
  - b. Installing other ground support systems to secure exposed highwalls.
2. Prior to mining operations in the Golden Reward Pit, Wharf shall hire a qualified geotechnical engineer to prepare a stability report to be submitted to the department regarding the pit highwalls and buttresses bordering the Terry Cemetery. Recommendations in the report regarding stability monitoring and improving the stability of the cemetery area shall be implemented by Wharf as required by the department. Wharf shall submit to the department an annual report on the stability of the Terry Cemetery area to include monitoring data and a geotechnical assessment.
3. Wharf shall notify the department within 48 hours of the discovery of any stability problem that could impact the cemetery. If a stability problem is encountered, Wharf shall develop a mitigation plan. This plan shall require Wharf to mobilize, as soon as reasonable, a qualified geotechnical consultant to complete an assessment of the stability problem and a course of action. The mitigation plan shall be submitted to the department for review and approval within 30 days of discovery of the stability problem. If the department determines that further remedial measures are needed, the department reserves the right to apply additional, site-specific ground control measures.

### Golden Reward Ski Season Mitigation

1. Prior to the annual ski season shutdown of mining in the Golden Reward Pit, Wharf shall make every effort to backfill and regrade those areas where mining has been completed to near final reclamation topography. Wharf shall also make every effort to secure exposed highwalls. Where possible on the Golden Reward site, prior to winter shutdown of mining, Wharf shall strive to improve aesthetics and reduce highwall hazards to skiers or the public.

2. By October first for each year mining occurs in the Golden Reward Pit, Wharf shall submit a report to the department regarding mining progress in the pit. The report shall also address planned reclamation activities prior to the winter shutdown of mining.

#### Acid Rock Drainage Prevention and Management

1. If unanticipated conditions are encountered during the course of mining, such as greater than anticipated sulfide mineralization, that are not adequately manageable as determined by the department under the approved reclamation plan and these conditions, the department or the board reserve the right to reopen and modify the permit and increase the reclamation bond as necessary to mitigate potential adverse conditions.
2. The department may require analysis of rock or ore whenever mining encounters an unanticipated geochemical condition which has the potential to be a source of water pollution, such as greater than anticipated sulfide mineralization. Analysis may consist of static (acid-base accounting (ABA)), paste pH, and kinetic (humidity cell, weathering cells, or column leach) tests, or other appropriate tests.

Based on the results of the rock analysis, the department may require Wharf to assess potential water quality related impacts that may occur as a result of disposing of the rock as pit backfill or in waste rock facilities. In assessing the potential water quality impacts, the department may require Wharf to conduct a pathway and fate analysis of the resulting contaminants. Based on the assessment and the pathway and fate analysis, the department reserves the right to apply additional, site-specific rock handling conditions. Special rock handling practices may include, but not necessarily be limited to, isolating acid-producing and/or metal-leaching rock or blending with alkaline rock.

3. Unless modified by other conditions in this section, during mining of the Expansion Project, Wharf shall abide by its Acid Rock Management Plan and the conditions of the Technical Revision approved September 30, 2002, regarding the acid rock drainage prevention plan for the Trojan Pit.
4. All Expansion Project ore having an acid neutralization potential to acid generating potential ratio (ANP/AGP) ratio of less than 3:1 shall be amended or blended with limestone or another suitable base amendment in an amount sufficient to attain an ANP/AGP ratio of at least 4:1. Wharf may use other ore with a high neutralization potential and low total sulfur content as base amendments. Wharf shall track amounts and type of base amendment added, calculate the neutralization potential of the amendments, and report this data with the annual water quality report.
5. To the greatest extent possible, Wharf shall design the Flossie, Green Mountain, and Golden Reward Pits to minimize the amount of acid generating rock exposed in the highwalls. Measures to reduce acid generating rock in the highwalls may include, but are not limited to:
  - a. Expanding pit walls to remove narrow bands of acid generating rock;
  - b. Moving pit walls inward to stay within the oxidized boundary and avoid zones of acid generating rock;
  - c. Removal of small areas of acid generating rock; and

- d. Creating flat areas in zones of acid generating rock, allowing for cover fills to be installed.
6. If at mine closure spent ore composed of potentially acid generating rock is to remain and be reclaimed on the leach pad, Wharf shall submit a plan outlining reclamation alternatives for this material. The plan shall be submitted for approval to the department prior to mine closure. Based upon the reclamation alternative selected, the department or the board reserves the right to adjust the reclamation bond as necessary.
7. Wharf shall continue to monitor and assess elevated sulfate concentrations in wells in the vicinity of the capped depository area in West Liberty Pit. Once the pushback of the Liberty highwall west of the West Liberty capped depository is underway or complete, Wharf shall submit a plan to mitigate the elevated sulfate concern. The mitigation plan shall be based on the geology and geochemistry of the area, and the final mining and backfilling design.
8. Wharf shall submit additional geochemical data from the eastern side of the Portland Ridgeline, the area between Green Mountain and Bald Mountain, and the eastern side of the Golden Reward new disturbance area prior to the commencement of mining in these areas. This shall include ABA, whole rock, Meteoric Water Mobility Testing (MWMT), and nitrogen data.

#### Water Quality

1. Leachate discharge or surface water runoff from the site shall not cause South Dakota Ground Water Discharge Permit requirements, South Dakota Surface Water Discharge Permit requirements, or ground and surface water quality standards, as appropriate, to be violated. There shall not be any unauthorized loss or release of cyanide or any other toxic element associated with the gold recovery process to the surface or subsurface environment outside the mine permit boundary.
2. If the South Dakota Surface Water Discharge Permit is terminated, South Dakota surface water quality standards will apply as appropriate.
3. If the South Dakota Ground Water Discharge Permits are terminated, South Dakota ground water quality standards will apply as appropriate.
4. Wharf shall make every effort to maintain process solutions at normal operating levels. Excess solutions shall be disposed of, and treated if necessary, as soon as practicable.
5. Wharf shall effectively manage and treat nitrate in mining impacted waters as long as necessary to meet surface and ground water quality standards or to comply with ground water and surface water discharge permits, as applicable.
6. Wharf shall maintain safe and adequate process solution management and shall prevent the uncontrolled release of process solution in the event of an electrical power outage.
7. Prior to mine closure Wharf shall submit to the department for approval, an updated hydrologic monitoring plan for the closure period. This plan shall include surface and ground water quality monitoring stations, springs and seeps, and include monitoring

parameters, testing methods, quality assurance/quality control, and sampling schedules. This plan will be in effect until the postclosure hydrological monitoring plan is approved.

8. The department reserves the right to modify the hydrologic monitoring plan if monitoring results indicate that a modification is warranted. Modifications may include establishing additional surface and ground water monitoring sites, adding parameters, changing sampling frequency, and changing sampling schedules, or modifying Wharf's Ground Water Discharge Permit or Surface Water Discharge Permit.
9. On or prior to March 1 of each year the mine is in operation, Wharf shall submit an annual surface and ground water characterization report beginning the year the mine permit is granted. This report shall include, but not be limited to, all chemical, discharge, and water level data gathered, and an interpretation of the data. Wharf shall also submit all surface water and ground water sampling and laboratory data sheets within this report.

#### Surface and Ground Water Mitigation Plans

1. If any completed component of the facility contaminates surface and ground waters to the point that requirements of the Ground Water Discharge Permit, Surface Water Discharge Permit, ground and surface water quality standards, or site specific performance monitoring criteria developed pursuant to Condition No. 1 under "Performance Monitoring" (below) are violated, the department may, in conjunction with an enforcement action, require Wharf to develop and submit a site-specific mitigation plan for the department's review and approval. The plan shall describe those measures that will be taken to mitigate and prevent surface or groundwater contamination. Such measures may include, but are not limited to:
  - a. Installing additional water treatment system facilities;
  - b. Installing capping systems; and
  - c. Treating contaminated ground water or surface water.

Wharf shall include cost estimates for implementing contingency measures. If the department determines that further remedial measures are needed, the department reserves the right to require Wharf to submit for approval plans and specifications and construction quality assurance plans.

#### Sedimentation and Erosion Control

1. Erosion and sedimentation controls shall be in place and functional during all phases of clearing, earthwork, construction, mining, and reclamation, and during the postclosure period in the permit area, in accordance with Wharf's General Storm Water Construction Permit. Wharf shall submit a sediment control map for the permit area showing sediment control locations and type prior to any land disturbance in the permit area. The Best Management Practices/Storm Water Pollution Prevention Plan shall be updated as needed.

Interim sedimentation and erosion controls shall be used on disturbed land during clearing, construction, mining, and reclamation until these areas are stabilized, in accordance with General Storm Water Construction Permit.

Wharf shall inspect, clean out, repair, or upgrade the sediment controls as necessary to maintain compliance with its Surface Water Discharge Permit and storm water permit as applicable.

2. Wharf shall install rock check dams, diversion ditches, or other adequate structures needed to minimize channelization and erosion from surface runoff. Surface water diversions and final reclamation drainage channels must meet the requirements of ARSD 74:29:07:09.

#### Plans and Specifications - General

1. Detailed plans and specifications of any facilities that are designed to prevent environmental contamination or to treat contaminated material shall be submitted to the department for written approval prior to construction. The department recognizes that the plans and specifications in the mine permit application are conceptual. These plans and specifications must be completed to the 100 percent constructible stage. The department will not unreasonably withhold its final approval of the plans and specifications if they reflect the technical parameters specified in the permit. Facilities for which plans and specifications are required include, but may not be limited to:
  - a. Diversion ditches and culverts;
  - b. Major sedimentation ponds and control structures;
  - c. Future expansion of the leach pads or processing facilities; and
  - d. Future spent ore impoundments.

Within 30 days of submission, the department shall approve, disapprove, conditionally approve, or request additional information necessary to approve the plans and specifications. If disapproved, the department shall identify those items necessary for approval. If plans and specifications are disapproved or a request for additional information is made, the department shall have 30 days after receipt of Wharf's response to approve, conditionally approve, or disapprove the plans and specifications.

2. Wharf shall design and construct the rerouted portion of SD Highway 473 and the haul road underpass in consultation with the South Dakota Department of Transportation.

Wharf shall submit final plans and specifications for the haul road underpass to the department for informational purposes only. The department will not review the haul road underpass plans for engineering suitability or approval.

3. Conditions placed on plans and specifications approvals by the department shall be considered permit conditions. Conditions placed on plans and specifications will not alter the conceptual design of the facility as permitted. Wharf may request a hearing before the board to contest any conditions placed on plans and specifications approvals.
4. If the department requires, Wharf shall submit to the department as-built drawings (record drawings) complete with technical specifications for facilities required to have plans and specifications submitted. Wharf shall submit the required drawings within 60 days of completion of each component of the facility.

### Construction Quality Assurance (CQA)

1. As part of a detailed plans and specifications document, if the department requires, Wharf shall submit a CQA plan for any facilities requiring lining systems. If required, the CQA plan shall be submitted to the department for review and approval.
2. Conditions placed on CQA methods, monitoring, testing, sampling, and documenting, shall be considered permit conditions. Wharf may request a hearing before the board to contest any conditions placed on CQA plan approvals.

### Air Quality and Noise

1. Wharf shall effectively control fugitive dust and other air emissions during all phases of clearing, earthwork, construction, mining, and reclamation for the Expansion Project. Dust control measures shall include the use of water trucks, dust suppressants, dust filters on equipment, and revegetating disturbed areas as soon as practicable.
2. The department reserves the right to require Wharf to reestablish air quality and ambient air monitoring if site air quality conditions warrant. This may include establishing an upwind and downwind PM10 ambient air quality monitoring network in accordance with the requirements in 40 CFR Part 50 and Part 58.
3. In accordance with ARSD 74:29:07:02(2), affected lands shall be cleared in small sections or increments to reasonably match the needs of mine production and to reduce the amount of dust generated by the operation.
4. Wharf shall notify the department within five working days of written complaints from land owners adjacent to the operation concerning dust, noise, and blasting. Wharf shall submit to the department a copy of any reports or mitigation plans submitted to Lawrence County regarding the complaints. The department, on finding that a complaint is based in fact on potential permit violations, may require Wharf to develop a mitigation plan to correct the potential violation. The completion date for the mitigation plan will be set at the time of the department's request.
5. Upon the department request, Wharf shall provide to the department blast and noise monitoring data.

### Wildlife Protection

1. Wharf shall install protective structures and make every effort to contain solutions and chemicals, and keep areas harmful to wildlife in a condition where access by wildlife is eliminated. This should include, but is not limited to, major haul roads, process and retention ponds, drainage ways, leach pads and process solution delivery systems, and process buildings.
2. Wharf shall promptly notify the Department of Game, Fish, and Parks if species or critical habitat of species listed as state or federal, threatened or endangered, are discovered within the permit area.

## Biological Assessment and Monitoring

1. Wharf shall continue biological monitoring, following Department of Game, Fish, and Parks wildlife monitoring guidelines for large scale gold mines. The annual wildlife monitoring area will include the permitted expansion and adequate perimeter buffer. Wharf Resources shall work with the South Dakota Department of Game, Fish, and Parks to modify the existing Annual Wildlife Monitoring Plan to include study areas examined during the baseline analysis.

Annual aquatic monitoring will consist of the study sites included in the baseline analysis. Wharf shall work with the department and the Department of Game, Fish, and Parks to modify the existing Annual Aquatic Biomonitoring Plan to consider study sites examined during the baseline analysis.

2. If an aquatic resource is impacted by a discharge, release, or spill of toxic solutions, Wharf shall implement a response plan to assess biological damages. The decision to implement this plan will be mutually agreed upon by the department and the Department of Game, Fish, and Parks. This plan shall require Wharf to mobilize, as soon as reasonable, a qualified consultant to complete a quantified assessment of damages to the stream ecosystem. A preliminary report of these findings shall be provided to the state within 15 working days of completion of field data collection and a final report shall be provided to the state within 45 working days of receiving the preliminary report.

## Spill Contingency

1. All affected land under Permit Nos. 356, 434, 435, 450, 464, and 476 shall be included under Wharf's Spill Contingency Plan. By May 1, 2012, Wharf shall submit for department approval an updated Spill Contingency Plan covering Permit Nos. 356, 434, 435, 450, 464, and 476.

## Reclamation

1. Available topsoil or other material suitable for use as a plant growing medium shall be stripped and stockpiled for use in reclamation. Topsoil stockpiles shall be clearly labeled and shall be stabilized to prevent wind and water erosion. Berms and/or other sediment and erosion control structures shall be installed on and around topsoil stockpiles to minimize erosional loss of soil resources. Topsoil shall not be used as backfill material.
2. Prior to final closure and bond release, Wharf shall maintain sufficient access to reclaimed areas to allow for any necessary reclamation maintenance. Roads not necessary for future use shall be reclaimed after the successful reclamation of all affected areas.
3. As much as practicable, Wharf shall transplant trees and shrubs from areas to be disturbed to land undergoing reclamation.
4. Wharf shall dispose of mine rock and neutralized spent ore in mined-out areas, to the fullest extent practicable, to maximize the amount of material that is available for grading, backfilling, highwall stabilization, and topographic reconstruction of the open pits following mining.

6. If deemed necessary by the department, Wharf shall conduct a geotechnical stability analysis of exposed highwalls prior to final reclamation. If the highwalls are found to be unstable, additional backfilling or other mitigative techniques may be required to buttress or otherwise stabilize exposed walls.
7. In accord with SDCL 45-6B-42, Wharf shall take precautions to limit access to highwall areas by fencing, posting warning signs, and other suitable means. On completion of mining, highwall areas shall be adequately fenced or otherwise protected to prevent hazards to the public.
8. Pursuant to ARSD 74:29:07:17, all underground mine openings and workings remaining after the mining phase shall be sealed or otherwise permanently guarded against unauthorized entry during the reclamation phase. If bats are found utilizing the underground workings, Wharf shall provide bat entrances.
9. The department may require Wharf to use fertilizer on reclaimed areas if it is determined that nutrient deficiencies in the soil are preventing the establishment of a diverse and self-sustaining vegetative cover.
10. Regarding the reclamation of the abandoned portion of State Highway 473, the road surface will either be removed and disposed of properly, or shall be ripped in place to allow for drainage and rooting. In road cut areas, mine waste or borrow material shall be backfilled to cover exposed cut slopes. The backfilled material shall be graded to blend with the existing topography. Top soil shall be applied and the area will be seeded with the final reclamation seed mix.

#### Reclamation Surety (under SDCL 45-6B)

1. Pursuant to SDCL 45-6B-21, Wharf shall submit a reclamation bond or surety to cover reclamation costs for Permit Nos. 356, 434, 435, 464, and 476. The estimated cost of carrying out reclamation activities at Wharf's mine site including the first phase of the Expansion Project is \$32,873,000.00. As of October 14, 2011, Wharf's reclamation bond amount was \$15,553,022.00. Prior to commencing operations under Permit No. 476, Wharf shall post an additional \$17,319,978.00 reclamation bond in the form of surety, letter or credit, or cash deposit. Pursuant to SDCL 45-6B-21, Wharf may submit the reclamation surety in phases corresponding to construction and land disturbance. Issuance of the permit shall be contingent on the department's receipt of the first installment of surety. The reclamation bond or surety for each phase of the mining operation, including all unreclaimed disturbance for the entire mine site, shall be calculated and the final amount submitted to the department before beginning the construction or land disturbance associated with that component or phase.

Pursuant to SDCL 45-6B-27, the department and the board reserve the right to adjust the reclamation bond or surety amount for the Expansion Project for inflation, for unanticipated conditions, and for modifications to the permit by technical revision or amendment. The reclamation bond or surety may also be adjusted downwards as reclamation work is completed.

2. If Wharf submits the required reclamation bond or surety in phases corresponding to construction and land disturbance, Wharf shall submit to the department the reclamation

bond or surety installment for the first project phase prior to commencement of mining in the Expansion Project area. The bond or surety for subsequent phases shall be submitted to the department prior to the beginning of mining for each phase. The phased installments shall be based on reclamation cost estimates developed by Wharf. The cost estimate shall be submitted to the department for review and approval prior to submission of the phased installments.

3. Before total reclamation bond and liability release, in addition to reclamation requirements, water quality at the site must meet water quality standards as determined by Wharf's Ground Water Discharge Permit, Surface Water Discharge Permit, and South Dakota surface and ground water standards, as appropriate. If water quality standards are not met at the time of closure, Wharf shall submit to the department either an environmental surety under SDCL 34A-10 or adjust the postclosure bond in an appropriate amount to provide for ground and surface water remediation. The environmental surety or postclosure bond shall be held until such time as the ground and surface water quality standards are met.

#### Postclosure

1. All affected land under Permit Nos. 356, 434, 435, 450, 464, and 476 shall be included in the postclosure plan.
2. Before the start of the postclosure period, Wharf shall submit an updated postclosure plan, to include an updated hydrologic monitoring plan, to the department for approval. The postclosure plan shall be updated to reflect actual site conditions at the time of mine closure, and shall include, in addition to hydrologic monitoring, air quality monitoring, vegetation monitoring, spent ore treatment, sediment and erosion control systems, and miscellaneous maintenance and care.

The department reserves the right to modify postclosure monitoring plans, schedules, and parameters if monitoring results indicate a modification is warranted.

3. The postclosure period shall begin at the time of reclamation surety release (mine closure) and shall last for a period not to extend beyond 30 years, unless the board determines that a longer or shorter period is necessary for compliance with all applicable performance standards or design and operating criteria.
4. Wharf's liability for the affected mine area shall continue until certification of the completion of the postclosure care plan is approved by the board.
5. Wharf grants to the board or its representatives permission to enter the reclaimed area to monitor reclamation success and to take air, water, and biological samples during the postclosure period. The department shall give Wharf the opportunity to accompany any inspector from the department or other agent of the board during the postclosure period.

#### Postclosure Financial Assurance

1. In accordance with SDCL 45-6B-91, Wharf shall submit a postclosure financial assurance to cover postclosure care and maintenance costs for Permit Nos. 356, 434, 435, 464, and 476. The postclosure financial assurance will be used to correct postclosure problems in the case that Wharf fails to carry out required postclosure activities. The estimated cost of

carrying out postclosure care activities at Wharf's mine site including the first phase of the Expansion Project is \$30,783,000.00. As of October 14, 2011, Wharf's postclosure financial assurance amount was \$8,154,500. Prior to commencing operations under Permit No. 476, Wharf shall post an additional \$22,628,500.00 postclosure financial assurance in the form of surety, letter or credit, or cash deposit. Issuance of the permit shall be contingent on the department's receipt of the first installment of postclosure financial assurance. Postclosure financial assurance for any component or each phase of the mining operation shall be submitted before beginning the construction or land disturbance associated with that component or phase.

In conjunction with the updates to the reclamation bond or surety, subsequent postclosure financial assurance installments for each phase of the Expansion Project shall be calculated for the entire mine operation and the final amount submitted to the department before beginning the construction or land disturbance associated with that component or phase. The installments shall be based on cost estimates developed by Wharf. The cost estimates shall be submitted to the department for review and approval prior to submission of the installments. The department will review and recalculate the required postclosure financial assurance amount and adjust the amount of postclosure financial assurance and the amount of the deposits, as necessary, to reflect anticipated site conditions at the time of mine closure.

Wharf may allow interest on cash deposits to accumulate as part of the postclosure financial assurance to reduce the amount of the deposits.

2. The postclosure financial assurance shall be held for a period of 50 years after reclamation surety release to ensure that all established reclamation and performance standards are met and that the affected land is stable, is free of hazards, has self-regenerating vegetation, has minimal hydrological impacts, has minimal releases of substances that adversely impact natural resources, and is maintenance free to the extent practicable, unless the board modifies the length of the postclosure period. If the board finds that an extension of the postclosure period is necessary, the postclosure financial assurance, or portion necessary to ensure continued compliance, shall be held for the extended period. If the board reduces the length of the postclosure care period, the postclosure financial assurance shall be held until the end of the reduced period. Until the board finds that the site meets all applicable performance standards, the postclosure financial assurance shall include funds to carry out normal monitoring and maintenance work, and funds for contingencies, such as long-term nitrate treatment. Funds left at the end of the postclosure period will be released to Wharf.

When Wharf believes it is in full and continuing compliance with applicable performance standards, it may petition the board for release or reduction of the postclosure financial assurance by submitting certification that postclosure care is complete.

3. The type of postclosure financial assurance may be amended upon mutual consent of the department, the board, and Wharf.
4. The department and the board reserve the right to increase or reduce the amount of postclosure financial assurance based on site performance factors including site stability, presence of hazards, revegetation success, hydrologic impacts, the need for long-term surface or ground water treatment, and releases of substances that adversely impact natural resources.

## Performance Monitoring

1. By May 1, 2012, Wharf shall submit for approval a performance monitoring plan that will be used as a basis for assessing performance of all components of the reclaimed facility, including the rock facilities, spent ore facilities, processing facilities, crusher areas, pit areas, and ancillary facilities. The plan shall identify proposed performance criteria for vegetation, ground water, surface water, and other applicable components of reclamation, such as air quality, slope stability, disposal of refuse, weed control, and highwall fencing. The plan shall address the methods for determining conformance with the criteria. Performance criteria for vegetation shall be developed in consultation with the local district conservationist and must include measurements for forage production, species composition, coverage, and density.

Based upon site conditions at the time of mine closure, the department, in consultation with Wharf, will reassess the plan to develop a final performance monitoring plan that will set site-specific performance criteria and performance monitoring stations for each component of the reclaimed facility. The final performance criteria shall become enforceable requirements and will be used to determine reclamation surety and liability release.

The performance monitoring plan and performance criteria may be modified by mutual agreement of the department and Wharf.