Reclamation Plan

Post Mining Land Uses

Livestock grazing and wildlife habitats are the post-mining land uses for lands affected by mining activities on the amendment area.

Contouring Plan

All mining features will be graded and contoured in such a manner that the approximate original topographic contours will be reestablished.

Post-mining slopes will approximate the pre-mining slopes in terms of magnitude, aspect and shape. Overburden stockpiles which remain as permanent reclamation features will have a maximum height of ten feet and the slopes on stockpiles will be graded to 4(H):1(V) prior to topsoil application and seeding.

Small ephemeral drainages which may be removed during the course of mining activities will be reestablished during the backfilling of pits and by grading and contouring.

Surface Preparation for Topsoil Application

Segregated overburden will be applied prior to the application of topsoil. The segregated overburden will be graded prior to applying topsoil in order to facilitate a uniform application of topsoil.

Topsoil Replacement

Stockpiled topsoil will be applied to the backfilled and contoured overburden with Caterpillar 627F push-pull scrapers. Topsoil will be reapplied to approximately the original topsoil depth.

Topsoil will be bladed with a motor grader following the application of topsoil to eliminate rough areas, thus ensuring a more uniform distribution of topsoil over the entire area. Topsoil will be applied to the affected areas as soon as possible, although the replacement schedule for topsoil application is dependent upon the mining and backfilling schedule. Topsoil application is generally conducted during the late summer or early fall, in advance of the fall planting of the permanent seed mixture.

Revegetation Practices

Cover Crops and Mulch

If a fall seeding is not possible on a topsoiled area due to weather or other circumstances, the area will be seeded with a small grain such as barley, winter wheat or millet the following spring in order to establish a cover crop. Barley and winter wheat will be drill seeded at a rate of fifty (50) pounds per acre and millet will be applied at a drill seeding rate of fifteen (15) pound per acre. Lands seeded with a cover crop will be inter-seeded with the permanent seed mixture in the autumn of the same year.

No mulch will be applied in conjunction with the reclamation activities conducted on the amendment area.

Permanent Seed Mixtures

The permanent seed mixture will be planted in the fall, generally beginning during the month of October. Seed will be planted utilizing a standard grain drill or a no-till drill. The seed will be planted approximately one-quarter to one-half inch in depth.

Species contained in the permanent seed mixture for the amendment area have been selected based on the following criteria:

- Adaptability to existing soil conditions
- Forage potential and palatability to livestock
- Forage, cover and habitat potential for wildlife
- Pre-mining presence as documented by vegetation inventory
- Reclamation success proven by previous revegetation efforts
- Contribution to species and structural diversity
- Ability to remain self-sustaining
- Commercial availability

The components of this seed mixture are listed below:

Common Name (Variety)	Pounds of pure live seed per acre
Bluebunch wheatgrass (Secar CT)	3.00
Indian ricegrass (Rimrock CT)	4.00
Russian wildrye (Bozoisky)	2.00
Bottlebrush squirreltail	2.00
Gardner saltbush	2.00
Fourwing saltbush	2.00
Wyoming big sagebrush	0.10
Rubber rabbitbrush	0.50

Total 15.60

Temporary Seed Mixtures

No temporary seed mixtures will be used on the amendment area other than annual small grains previously discussed.

Protection of Seeded Areas

If necessary, newly reclaimed (seeded) areas will be fenced to protect these areas from grazing by livestock. If fences are constructed, they will be constructed to allow the egress and ingress of wildlife species.

Reclamation Evaluation Procedures

Reclamation Goals

All lands affected under this amendment will be reclaimed in such a manner that forage for domestic livestock grazing, wildlife forage, and wildlife habitats, will be reestablished to a condition equal to or greater than pre-mining conditions on the affected lands.

Revegetation of lands affected under Permit to Mine No. 281C - Amendment Area No. 7 will be considered complete and eligible for full bond release when the following criteria are met:

1) the vegetation species of the reclaimed land are self-renewing under natural conditions prevailing at the site;

2) the total vegetation cover of perennial species, (excluding noxious weed species) and any species in the approved seed mix is at least equal to the total vegetation cover of perennial species (excluding noxious weed species) on the area before mining.

3) the species diversity and composition are suitable for the approved post-mining land use; and

4) the requirements in 1), 2) and 3), are achieved during one growing season, no earlier than the fifth full growing season on the reclaimed lands.

Extended Reference Areas

Black Hills Bentonite, L.L.C. (BHB), will employ the use of Extended Reference Areas (ERA), as described by WDEQ/LQD Guideline No. 2, March 1986 for the purpose of evaluating post-mining reclamation success of affected lands on the amendment area. ERA's will be established

for each vegetation type or mapping unit described in Appendix D-8 which will experience disturbance from mining or associated disturbances.

The selection and verification of the representative nature of the ERA's will be determined by evaluation of the vegetation mapping, pre-mining vegetation data, soils data, physiography, and land use information. The actual sampling locations on the ERA's will be mutually selected on-site with WDEQ/LQD and BHB personnel present.

Evaluation of Reclamation Success

Reclamation success will be evaluated by collecting quantitative data from the extended reference areas and reclaimed area and directly comparing, by standard statistical procedure, the resulting data from each site. Data will be collected from an adequate sample size from each area. Adequate sample size will be determined using the information presented in WDEQ/LQD Guideline No. 2, Section IV - Estimating Adequate Sample Size, March 1986. Alternatively, other procedures agreed upon with LQD may be used to measure reclamation success.

Each sampling site will be randomly located on each area. Sampling for aerial cover will be conducted using point intercept sampling techniques which will include percent total cover and percent absolute vegetation cover. Total herbaceous production data will not be collected from the reclaimed area or the ERA. Production will be qualitatively judged based on visual comparisons and field reconnaissance of the reclaimed lands and the ERA areas. The vegetative cover data collected from the reclaimed area and the ERA's will also be used to qualitatively judge total herbaceous production.

Based on the extended reference area concept, there will be no re-use of pre-mining vegetation data in the evaluation of reclamation success where extended reference areas have been or will be used. Quantitative vegetation data (percent cover) gathered from the appropriate extended reference and reclaimed areas will be directly compared by standard statistical procedure (confidence level = 80%, $\forall$=0.2) as recommended by WDEQ/LQD Guideline No. 2, March 1986.

Species composition and species diversity present on the reclaimed areas will be qualitatively judged based on the relationship between the species present and the post-mining land uses. Species establishment from qualitative and quantitative aspects will be based on the permanent seed mixture. The establishment of these species will be determined through documentation in the quantitative data collected and through qualitative observations using percent cover estimates and qualitative abundance estimates.

The post-mining evaluation process for the determination of full bond release will also include the construction of a species list and an evaluation of surficial stability. The development of a

species list for the reclaimed area will provide quantitative data on the total number (diversity) and kinds (composition) of species established from seeding, and the total number and kinds of species established through natural succession. The species list will be compiled by conducting a thorough field reconnaissance of each reclamation unit and recording all plant species observed. This species list and the cover data will provide the basis for demonstrating the quantity and quality of plant species established on the reclaimed lands. This information will be provided for LQD review when bond release is requested. The development of a detailed species list will provide information on the ability of the reclaimed lands to support the post-mining land uses and should also provide data on the capability of the vegetation to renew itself. Surficial stability of the reclamation units will be assessed by visual field reconnaissance by WDEQ/LQD and BHB personnel present on site.

BHB personnel will make the preliminary decision on the timing of any full bond release request, based in part upon comparison of annual observations of reclamation success and progress. In general, BHB anticipates that 2-3 years of accumulated reclamation may be combined in a single bond release request. In each request package, BHB will also provide a written statement that the reclamation is satisfactory to the surface owner.

Final Hydrologic Restoration

All pits will be backfilled, with no depressions, allowing for through-drainage. Post-mining slopes will approximate the pre-mining topography in terms of magnitude, aspect and slopes. No impoundments are included as final reclamation features in the reclamation plan for the amendment area.

As mining progresses, all secondary access roads and culverts that are no longer needed will be removed and the areas will be graded to restore the approximate original topographic contours.

Reclamation Schedule

Reclamation of disturbed areas will begin as soon as possible, and all attempts will be made to assure that reclamation occurs concurrently with mining activities. Field drying of bentonite will occur on this amendment area. Therefore, as allowed by Wyoming Department of Environmental Quality Rules and Regulations, Chapter 13 - Non-Coal Requirements for Existing Bentonite Mining Operations, reclamation activities will begin within three years from the date an area was affected and reclamation (seeding) will be completed within five years from the date an area was affected.

Reclamation Costs and Bonding

Reclamation costs for the report period are presented below.

The following costs for the reclamation fleet, consisting of Caterpillar 627F push-pull scrapers

Caterpillar 14H motor grader, Caterpillar D8R dozer have been determined by Mr. Doug Emme, Mining Engineer, Wyoming Department of Environmental Quality, Land Quality Division, District III. The operating costs for the Caterpillar fleet are based on 2006 DataQuest hourly rates. Operating costs for the John Deere 7810 tractor, disc and grain drill have been determined by BHB based on actual operating costs.

Hourly Equipment Costs for Topsoil & Overburden Replacement
Caterpillar 627F Push-Pull Scrapers
Data Quest cost without an operator - $170.65/hour
WDEQ/LQD Guideline 12 costs at 100% of DataQuest plus $29.53/hour labor = $200.18/hr.

Caterpillar 14H Motor Grader
Data Quest cost without an operator - $68.85/hour
WDEQ/LQD Guideline 12 costs at 100% of DataQuest plus $29.53/hour labor = $98.38/hr.

Caterpillar D8R Dozer
Data Quest cost without an operator - $109.89/hour
WDEQ/LQD Guideline 12 costs at 100% of DataQuest plus $29.53/hour labor = $139.42/hr.

Cost of Backfilling Overburden Using Caterpillar 627F P-P Scrapers

Average Cycle Time (minutes)	2.50
Efficiency Factor	0.83
Cycles Per Hour	20
Bank Cubic Yards Per Cycle	15
Bank Cubic Yards (BCY) Per Hour	300
Cost Per BCY of Overburden	$0.8654

Cost of Topsoil Replacement Using Caterpillar 627F Push-Pull Scrapers

Average Cycle Time (minutes)	2.50
Efficiency Factor	0.83
Cycles Per Hour	20
Bank Cubic Yards Per Cycle	16.2
Bank Cubic Yards (BCY) Per Hour	324
Cost Per BCY of Topsoil	$0.8013

Cost of Final Grading and Contouring Using Caterpillar 14H Motor Grader

Speed (MPH, 3rd Gear)	3.3
Width of Grading per Pass	8 feet
Feet Per Mile	5,280

Square Feet Per Acre	43,560
Operating Efficiency Factor	83%
(3.3 MPH) H (5,280) H (8)	139,392 ft²/hour
(139,392 ft²/hour)) (43,560 ft²/acre)	3.2 acres/hour
(3.2 acres/hour) H (0.83 efficiency factor)	2.66 acres/hour
($98.38/hour)) (2.66 acres/hour)	$36.99/acre

Hourly Operating Costs for Discing Topsoil using John Deere 7810 Tractor

	Cost/Hour
Tractor Owning & Operating Cost	$32.00
Disk Owning & Operating Cost	$15.00
Operator	$15.00
Supervision	$4.00
Supervisor Transportation	$0.60
Total	$66.60

Hourly Operating Costs for Seeding Topsoil with John Deere 7810 Tractor

	Cost/Hour
Tractor Owning & Operating Cost	$32.00
Drill Owning & Operating Cost	$15.00
Operator	$15.00
Supervision	$ 4.00
Supervisor Transportation	$ 0.60
Total	$66.60

Production Rates & Costs for Discing Topsoil with John Deere 7810 Tractor

Speed (MPH, 2nd Gear)	2.5
Width of Disc per Pass	12 feet
Feet Per Mile	5,280
Square Feet Per Acre	43,560
Operating Efficiency Factor	90%
(2.5 MPH) H (5,280') H (12')	158,400 ft²/hr.
(158,400 ft²/hour)) (43,560 ft²/acre)	3.6 acres/hour
(3.6 acres/hour) H (0.90 efficiency factor)	3.2 acres/hour

Cost per acre for discing with JD7810 tractor

($66.60/hour)) (3.2 acres/hour)	$20.81/acre

Production Rates & Costs for Seeding Topsoil with JD7810 Tractor

Speed (MPH, 3rd Gear)	4.3
Width of Drill per Pass	10 feet
Feet Per Mile	5,280
Square Feet Per Acre	43,560
Operating Efficiency Factor	90%
(4.3 MPH) H (5,280') H (10') =	227,040 ft²/hour
(227,040 ft²/hour)) (43,560 ft²/acre)	5.2 acres/hour
(5.2 acres/hour) H (0.90 efficiency factor)	4.7 acres/hour
Cost Per Acre for Seeding with JD7810 Tractor	
($66.60/hour)) (4.7 acres/hour)	$14.70/acre
Total Equipment Cost for Seeding	**$73.00/acre***

*(Grading Topsoil @ $37.00/acre) + (Discing @ $21.00/acre) + (Seeding @ $15.00/acre)

Equipment costs are based on information provided by Mr. Doug Emme, Mining Engineer, Wyoming Department of Environmental Quality, Land Quality Division, District III. These costs are described in the November 1, 2006 reclamation bond review letter (TFN 4 4/244).

Average cycle times are based on time and production studies conducted by Black Hills Bentonite under a variety of working conditions on similar bentonite mining operations, and are also based on Cat Performance Handbook production rates. Cycles per hour are based on 60 minutes per hour multiplied by a job efficiency factor of 0.83 from Cat Performance Handbook, Edition 35.

Cubic yards moved per cycle is based on Cat Performance Handbook payload data for 627G push-pull scrapers. The payload is rated at 20.0 bank cubic yards multiplied by a load factor of 0.83 for shale (overburden) and a load factor of 0.83 for loam (topsoil).

Bank cubic yards per hour are determined by multiplying the cycles per hour by the cubic yards moved per cycle.

Cost per bank cubic yard of overburden is determined by the following formula: (627G P-P cost/hour) + (D8Rdozer cost/hour) the 4 scrapers it supports) + (14H blade cost/hour) the 4 scrapers it supports) all) bank cubic yards of overburden per hour.

Cost per bank cubic yard of topsoil is determined by the following formula: (627G P-P scraper cost per hour) + (14H blade cost per hour) the 4 scrapers it supports) all) the bank cubic yards of topsoil per hour.

Owning and operating costs for the John Deere 7810 tractor are based on BHB data and the actual 2007 rental rates for a John Deere Model 7810 four wheel drive tractor.

Seed costs are $248.82 per acre based on 2009 seed prices from Wind River Seed Co., Manderson, Wyoming.

Contingency Factors

A twenty-three and one-half percent (23.5%) contingency factor has been added to the reclamation cost estimate in order to reflect the retail costs of completing reclamation activities on the permit area. The contingency factor is based on the following components:

Cost to redesign by independent firm	3%	
Contractor profit		10%
Preconstruction investigation and stabilization		1%
Independent firm management		3%
Site monitor for 10 years		0.5%
Security for site and insurance		1%
Long-term administrative and accounting		1%
Unknown		4%
Total		**23.5%**

Reclamation Bond Estimate

The following reclamation costs and bonding estimates are based on the first year proposed mining activities on amendment area:

Overburden Replacement:
170,978 cubic yards @ $0.8654/cubic yard = $147,964.36
(Table RP-1)

Topsoil Replacement:
42,099 cubic yards @ $0.8013/cubic yard = $ 33,734.17
(Table RP-1)

Grading and Contouring:

10.2 acres @ $37.00 per acre (Table RP-1)	=	$ 377.40
Grading & Contouring Roads: 1.2 acres @ $72.00/acre (Table RP-1)	=	$ 86.40
Seeding: 13.7 acres @ $321.82 per acre (Table RP-1)	=	$ 4,408.93
Subtotal	=	$186,571.26
23.50% Contingency Costs	=	$ 43,844.25
Total Reclamation Liability	**=**	**$230,415.51**

Reclamation Performance Self Bond No. SBNC067 for Permit to Mine No. 281C is currently set at $2,178,032.00 Based on the calculations presented above, the reclamation bond for Permit to Mine No. 281C will require an increase of $230,416.00 cover the additional reclamation costs associated with the first year of mining activities on the Permit No. 281C, Amendment No. 7 area. Additional bonding for future mining activities will be re-calculated on an annual basis and will be presented in the annual mining report for Permit to Mine No. 281C.