



BUCKSKIN MINING COMPANY

BUCKSKIN MINE, PO BOX 3027 - GILLETTE, WY 82717

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JAN 13 2009

Jim Ruby, Executive Secretary
Environmental Quality Council

January 9, 2009

Craig Hults, Environmental Scientist I
Wyoming Department of Environmental Quality
Land Quality Division
122 West 25th Street, Herschler 3W
Cheyenne, WY 82002

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LQD

RE: Rule Package 1-S Written Comments
Buckskin Mining Company, Permit 500-T7

Dear Craig,

Please find attached our comments on DEQ-LQD Rule Package 1-S. We appreciate the time and effort the Land Quality Division and the Environmental Quality Council has invested in the preparation and review of this package.

Our vegetation consultant, Richard Bonine, Jr., Sr. Environmental Scientist with Habitat Management Inc has participated as a member of the joint Wyoming Mining Association - Land Quality Division vegetation group that developed this package beginning in July of 2004. Because of his familiarity with the package, Buckskin Mine requested that he review and comment on issues that will likely negatively impact our reclamation efforts.

While this package is a great improvement over the current rules, we have noted several items that are still of concern to our operations. We respectfully request that you give our concerns due consideration.

Sincerely,

A handwritten signature in cursive script that reads "Laura Ackermann".

Laura Ackermann
Permit Coordinator
Email: Laura.Ackermann@Kiewit.com
Phone: (307) 686-5439

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Chapter 1 Comments:

- (df) **"Quadrat" 1-15:** Should be "sized" not "side"
- (eb) **"Soil Horizons" 1-19:** There should be a definition for "O" horizons, which occur in wetland soils or in other situations where organic matter has accumulated. An "O" horizon is a surface layer dominated by organic material and occurs above the A-horizon.
- (ef) **"Species lacking creditable value" 1-20:** We find the concept of Species Lacking Creditable Value (SLCV) very troublesome. While LQD is to be commended for expressing concern about undesirable species, the notion of eliminating species that are ever-present in undisturbed native range is over-reaching. Many of the species currently listed provide unique function within a reclaimed landscape.

The annual bromes, for example, are a pioneering species in the cycle of vegetation succession toward a climax community. They have a lower C:N ratio than perennial species. This is essential in reestablishing the nitrogen and other nutrient cycles in reclaimed soils. Annual bromes provide a source of high protein forage for livestock and wildlife in the early spring, prior to the growth of other vegetation. They also provide early spring erosion control. Clearly, the annual bromes provide much utility within the landscape regardless of whether they are counted toward revegetation success. They are an early stage component that contributes to the overall success of the revegetation. As such, they should be counted toward vegetative cover and production.

We have conducted a comparative analysis of vegetation data collected at Buckskin Mine from 2005 through 2008. In all but one instance, SLCV was higher in the Extended Reference Area (ERA) -*native land*- than in the reclamation. Our analysis indicates that the perennial vegetation is permanent, diverse, and effective as required by the federal regulations.

In 2005, the mean absolute vegetation cover for SLCV in the ERA was 8.6%. This compares to a mean absolute vegetation cover for SLCV in the Logical Bond Release Unit (LBRU) of 11.2% or a difference of 2.6%. The method detection limit for this sampling episode was 2%. The difference between these two units is barely detectable and statistically insignificant. In all other cases over the last 4 years of sampling, SLCV has been higher in the native ERA than in the LBRU. We honestly don't believe that there is a substantive issue here worthy of state regulation being more stringent than the federal rule.

Another phase of the analysis we conducted was an evaluation of SLCV on sample adequacy. In collecting vegetation ground cover or herbaceous production data, we are required to ensure that we have a representative sample for each individual parameter. This certainty or "confidence interval" is calculated through a sample adequacy equation. Typically, sample adequacy is calculated on Total Vegetation Cover (TVC) and the oven

dried weight of production samples. This calculation is usually done in the field by a consultant prior to the consultant moving on to the next data collection project. The field data is generally not evaluated until much later in the year when the vegetation report is written. Both the federal rule and Chapter 4 of this rule package require quantitative comparisons with a confidence interval of 90%.

Our analysis encountered a situation in the data where sample adequacy is achieved in the field based on TVC. If it is recalculated after the SLCV are removed, one no longer has an adequate sample. In this situation, the TVC of the LBRU is greater than the ERA indicating that it achieves reclamation success. However, because we fail to meet the confidence interval or sample adequacy requirements, an additional year of sampling would likely be required because the time-frame for vegetation collection has passed. The only way to avoid this situation is to calculate sample adequacy base on TVC minus the SLCV. Such a process will result in significant over sampling such as collecting 35 samples when only 20 would otherwise be required.

Collecting cover or production data to meet sample adequacy without SLCV present is clearly more stringent than the federal rule and serves little purpose, given the vast acreages of native range where the concentrations of SLCV are higher than the reclamation. We believe the SLCV concept adds additional complexity to the data collection process that is unwarranted.

From a practical standpoint, our vegetation consultant, who has 22 years of experience, indicates that when clipping production samples from a quadrat, it is much easier and more efficient to clip all of the herbaceous production together than it is to sort and remove the individual SLCV. The definition of production in Chapter 1 of this rule package was specifically negotiated to allow for harvest of the entire plot to facilitate more efficient data collection. This benefit is greatly diminished and sampling is more costly if one needs to spend additional time separating SLCV from the other species present.

We strongly recommend that the SLCV concept be eliminated from this rule package.

(fa) "Topsoil" 1-22: Definition should include "O" horizon.

Chapter 2 Comments:

Section 6 (b)(iii)(J) p2-28: Appears to be a incorrect reference to Chapter 4, Section 2 (d)(xi) doesn't appear that this reference actually exists in Chapter 4.

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Chapter 4 Comments:

- (ii) **Revegetation Success Standards, (E) Post-Mine Wetlands (I) (2):** With regard to mitigation wetlands, LQD clearly delegates their jurisdiction to the Army Corps of Engineers (ACOE). The ACOE issues the final jurisdictional determination that the mitigation wetland meets the appropriate standards. This is an acceptable process.

What is inconsistent and unacceptable is the requirement that if the mitigation wetland is released by the ACOE prior to the 10 year liability period, the *"mitigation wetland is to be included the surrounding area using the standards applied to that area"*.

First, the ACOE process for mitigation wetlands typically has a 5-year permit term. Therefore, it will usually be the case that the mitigation wetland is released by the ACOE with time remaining on the LQD liability release clock.

Secondly, including wetlands with upland vegetation communities is not practical. Such a practice will greatly increase the number of samples required to achieve an adequate sample, especially for production sampling. The variance of entire dataset will likely much greater.

This requirement may also necessitate establishment of some sort of wetland community in the Reference Area. Locating a comparable wetland area within a reference area is not usually practical.

When establishing vegetation communities in baseline sampling LQD requires that wetland communities be distinguished from surrounding communities. We believe that post-mine wetlands should also be treated as separate communities.

Our conclusion is that if LQD is comfortable in delegating their jurisdiction to the ACOE and they willingly accept the results of mitigation wetlands as approved by the ACOE, further sampling of the wetland should not be required. The wetland area ought to be released as part of the bond release unit when the appropriate liability release time frame has been met.

Chapter 4 Appendix 4A Comments:

First, we would point out that any assessment of diversity is not required in the federal rule. Every mine in Wyoming is required to submit the seed-mixes that will be used in the reclamation process to LQD for approval. LQD has significant input and control over the allowable species in the reclamation. They have many opportunities through the inspection process and 10-year liability release period to mitigate significant issues where the insufficient presence of a life-form would negatively impact reclamation success.

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The goal of reclamation, as required by the federal rules is to reestablish the highest economic landuse. In Wyoming the dominant landuse is livestock grazing. In simplistic terms, the ratios of species and life-forms have very little in common with landuse. With a correctly formulated seed-mix, proper agronomic seeding methods, and timely precipitation, revegetation and reclamation of mined lands is an achievable reality. The species present in the seed-mix usually express themselves over the liability release period. Beyond this, livestock and wildlife function extremely well on reclaimed grazing lands. The notion that an evaluation of the ratios of species and life-forms at the end of the liability responsibility period is an exercise of little value.

Specific to this rule package, we have great concern over agreeing to a standard prior to the administrator actually establishing the numerical requirements. Prior to adopting this standard LQD should publish the average number of species per transect and the life-form frequency numbers. These numbers should be established based on data from across the state. We would recommend that the numbers be regionalized by LQD district. For example, the southwest is likely to have significantly different numbers than the Powder River Basin (PRB).

Several years of data ought to be collected to account for mine to mine differences in seeding methods, seed mixes, precipitation, etc. In our view, only after this data has been collected can a reasonable evaluation of the usefulness and applicability of this Appendix be established. We recommend that Appendix 4A not be adopted as a part of the 1S rule package until proper data has been collected, evaluated, and published.

We would also point out the required 100 square meter belt-transect is largely untested. Only one consultant in the Powder River Basin is current using this methodology. Further, the consultant who uses this method developed it as an internal process for use in his company to semi-quantitatively evaluate reclamation as he was rolling up the tape measure from a cover transect. We have a mild concern that LQD is attempting to formalize a data collection methodology without thoroughly testing it.

