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DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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June 14, 1999

Jim Fulton, Chief  
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Office of Surface Mining  
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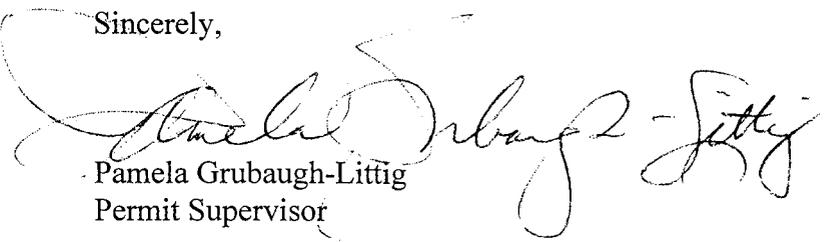
Re: Phase I Bond Release at Cottonwood/Wilberg Waste Rock Site - Concurrence Requested, PacifiCorp, Cottonwood/Wilberg Mine, ACT/015/019-BR98-1, Folder #2, Emery County, Utah

Dear Mr. Fulton:

Enclosed please the Division's decision document for the Phase I Bond Release at the Cottonwood/Wilberg Waste Rock Site. The Phase I Bond Release inspection was conducted on May 13, 1999, with Henry Austin of your staff in attendance. In addition, I have attached the entire application for this bond release.

A concurrence is requested for this Phase I Bond Release by July 1, 1999. If you have any questions, please call me.

Sincerely,

  
Pamela Grubaugh-Littig  
Permit Supervisor

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Attachment

cc: Chuck Semborski, PacifiCorp  
Mary Ann Wright  
Price Field Office

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DECISION DOCUMENT

COTTONWOOD/WILBERG WASTE ROCK  
PHASE I BOND RELEASE  
COTTONWOOD/WILBERG MINE  
ACT/015/019-98BR

BACKGROUND

The Old Cottonwood/Wilberg waste rock site is located alongside Highway 57 and is 1.8 miles from the Cottonwood Mine (Township 17 S Range 7 E Section 34, NE1/4 SE1/4). The waste rock site consisted of seven cells. Waste rock was placed in a cell until it was filled, the cell would then be graded according to the reclamation plan, topsoil would be placed and the area seeded. Waste rock was placed in the first cell in 1983 and the last cell was reclaimed in 1993. The site has been monitored since. Some tension cracks were noticed in the last cell after it was graded and topsoil. The tension cracks have since filled with sediment.

On October 2, 1992, Jesse Kelley inspected the site and stated the following in his inspection report:

Cell #7 of the old waste rock disposal site is now being graded and covered with topsoil, as specified in the plan. The site will be seeded later this fall.

On April 20, 1993, Bill Malencik inspected the site and stated in following in his inspection report:

The lower inactive site is still pending complete reclamation. Additional small areas need to be covered before final reclamation can get underway.

On June 30, 1993, Bill Malencik inspected the site and stated in following in his inspection report:

The lower inactive refuse pile has been topsoiled and will be reseeded with fall.

On June 29, 1994, Gary Fritz conducted an OSM oversight inspection of Cottonwood Mine, in his report he stated on page 3:

The one (old waste rock site) on the east side of the mine access road has been reclaimed. The lower cell for the area was reseeded and planted with permanent cover during the last year.

On September 14, 1998, Bill Malencik and Pam Grubaugh-Littig inspected the site. Bill Malencik stated the following in his inspection report:

Conducted a partial inspection. The reclaimed waste rock site was the area inspected. The permittee is interested in and requested a meeting with the Division to discuss the possibilities of filing a surety bond relinquishment.

The area lies east of the road and contains three cells embracing a total of 15 acres ±. The southerly cell contains about seven acres and the area was seeded about 13 years ago. The northerly cell containing about seven acres was seeded about four years ago. The third cell, containing about an acre has not been seeded. The area is being utilized to store topsoil and reclamation material.

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The extreme northerly position of the original BLM/ROW and DOGM permit was conveyed to Texaco together with Texaco assuming the liability for the undisturbed diversion and Texaco road. The area has been deleted from PacifiCorp's DOGM permit.

Sediment control on the three areas include a berm around the exterior and silt fences in key area on the easterly and southerly areas.

The area seeded last has more woody species; the lower more grass species.

The Permittee stated since none of the reclaimed area has been covered by a Phase I bond release application they would consider two options. Option I. Phase I bond release on the 14 acres. Cover all except the 1 acre active soil/material storage area. Option II. Same as above plus Phase II application on the area that exceeds the 10-year revegetation criterion.

In the application letter dated December 17, 1998 from Energy West the Permittee states the date that the cells were reclaimed are as follows:

1. Cell 1, seeded in 1983, monitored - 13 years
2. Cell 2, seeded in 1984, monitored - 12 years
3. Cell 3, seeded in 1985, monitored - 11 years
4. Cell 4, seeded in 1986, monitored - 10 years
5. Cell 5, seeded in 1989, reseeded in 1993, monitored - 4 years
6. Cell 6, seeded in 1989, reseeded in 1993, monitored -4 years
7. Cell 7, seeded in 1993, monitored - 4 years.

On January 14, 1999, Wayne Western and Dennis Oakley visited the site. The berm was intact and there was no evidence that untreated runoff was leaving the site. The areas that were backfilled were stable and blended into the surrounding landscape. There were no problems at the site associated with the backfilling and grading, and drainage controls.

### CHRONOLOGY AND SUMMARY

- |   |  |
|---|--|
| October 14, 1998                                    | Robert Davidson, (Division) and Dennis Oakley (Energy West) visited the site to discuss the soil analyses and requirements for Phase I bond release. |
| December 17, 1998                                   | Energy West requested Phase I bond release for the Old Cottonwood/Wilberg waste rock site.   |
| December 29, 1998<br>January 5, 12, and<br>19, 1999 | Publication notice for the Phase I bond release in the <u>Emery County Progress</u> .  |
| January 14, 1999                                    | Wayne Western (Division) and Dennis Oakley (Energy West) visited the site to   |

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observe the backfilling and grading and surface hydrologic features. The berm was intact and there was no evidence that untreated runoff was leaving the site. The areas that were backfilled were stable and blended into the surrounding landscape. There were no problems at the site associated with the backfilling and grading, and drainage controls.

- February 9, 1999      Memo to file with topsoil deficiencies.
- February 19, 1999      End of 30-day comment period. No comments were received.
- March 1, 1999      Division responded to Phase I bond release application with a request for more topsoil information. Letter also states that upon submittal and determination that the application is technically adequate, the Phase I bond release inspection will be scheduled.
- March 9, 1999      PacifiCorp responded to the March 1, 1999 deficiency letter.
- April 19, 1999      Letter sent to PacifiCorp, Bureau of Land Management (BLM), and Office of Surface Mining (OSM) inviting them to attend a Phase I bond release inspection at the Cottonwood Waste Rock site on May 13, 1999.
- May 13, 1999      Phase I bond release inspection is conducted at the Cottonwood Waste Rock site. In attendance were:

Dennis Oakley, Energy West Mining Company  
Henry Austin, OSM  
Wayne Western, DOGM  
Robert Davidson, DOGM  
Bill Malencik, DOGM  
Pamela Grubaugh-Littig, DOGM

This bond release inspection consisted of walking the site. The findings for the Phase I bond release had previously been made. This was a verification inspection.

**ANALYSIS AND FINDINGS FOR BOND RELEASE**

Regulatory Reference: R645-301-880 - 880.330

**Administrative Analysis**

The application for final bond release for the Cottonwood Waste Rock site was made on December 17, 1998 and the notification published December 29, 1998, January 5, 12, and 19, 1999 in the Emery County Progress. The comment period ended and there were no comments.

Letters were sent to the landowners by PacifiCorp advising them of this bond release action. Invitations to the bond release inspection were sent to Emery County Planning, OSM, BLM - Price, April 19, 1999. The bond release inspection was conducted on May 13, 1999. In attendance were:

OSM:	Henry Austin
Division:	Bob Davidson, Wayne Western, Bill Malencik, and Pamela Grubaugh-Littig
PacifiCorp:	Dennis Oakley

There were no problems identified during the inspection.

#### Administrative Findings for Phase I Bond Release:

PacifiCorp has met the minimum requirements for Phase I bond release at the Waste Rock Site.

#### Engineering and Hydrology Analysis:

The Permittee seeks to have Phase I bond release on 13.81 acres at the Old Cottonwood/Wilberg waste rock site. The requirements for Phase I bond release are that the operator completes backfilling and grading (which may include the replacement topsoil), and drainage control for the area.

The general backfilling and grading requirements are:

- Achieve the Approximate Original Contour: The area meets the AOC requirements because it resembles the topography of the surrounding area and blends in with the existing drainage patterns.
- Slope Stability: The slopes have a maximum grade of 7%. The Division usually considers slopes gentler than 50% (2V to 1H) to be stable. In the ten years since the backfilling and grading was completed there have been no signs of slope instability.
- Minimize Erosion: The area has a total containment berm that should stop any sediment from moving off site. The area was last reseeded in 1993 and since that time there has not been any significant on site erosion.

The specific requirements for reclaiming a refuse pile (waste rock site) are:

- Suitable for Postmining Land use: The area was reclaimed according to the approved reclamation plan.
- Cover Requirements: R645-301-553.252 requires the permittee to place 4 feet of cover over a refuse pile unless alternative cover requirements are approved by the Division. The information in the MRP, inspection reports and the December 17, 1998 submittal shows that in some areas less than

four feet of topsoil was placed over the cell and 12 inches of soil on the berms. Information in the MRP and inspection reports shows that the Division approved how much cover was placed on the waste rock site.

The Permittee has met all the reclamation requirements in the R645-500 regulations with the possible exception of the four-foot cover requirement (R645-301-553.252) at the Old Cottonwood/Wilberg waste rock site because there were no acid or toxic forming materials identified.

The drainage control for this area is total containment.

#### **Engineering and Drainage Finding:**

The Permittee met the minimum requirements of the backfilling, grading and drainage control for Phase I bond release.

#### **Topsoil Analysis:**

On October 14, 1998, Robert Davidson and Dennis Oakley visited the site. The site was observed from the northwest corner of the site, standing on top of the rock storage pile. The best vegetation was observed on the berms. Cells 1, 2, 6, and 3 appeared to have better vegetation establishment when compared to cells 5, 4 and 7. Cell 7 has the least amount of vegetation establishment. Discussion focused on soil quality for supporting vegetation in terms of salinity and SAR (Sodium Adsorption Ratio). Visual observation seem to indicate that in areas where salts were allowed to leach, vegetation establishment is the best (e.g., berms, upper drainage areas, etc.).

The Permittee seeks to have Phase I bond release on 13.81 acres at the Old Cottonwood/Wilberg waste rock site. Phase I bond release may be considered only after the Division is satisfied that all the reclamation requirements for Phase I have been met. The requirements for Phase I reclamation are completion of backfilling and regrading (which may include the replacement of topsoil); and, completion of drainage control in accordance with the requirements of the approved reclamation plan.

General requirements for backfilling and grading, which may include topsoil replacement, include the following: (topsoil sections highlighted)

- A map illustrating the "as-built" topography if different than the most recently approved plan.
- Pre- and Post-mining Contour Topographic Maps (no smaller than 1"=500') showing:
  - a. Permit Area
  - b. Areas Previously Released
  - c. Areas Proposed for Release
  - d. Post-mining Topography
  - e. Post-mining Hydrologic Features, including drainage, ponds, and monitoring sites
  - f. Cross-sections, including but not limited to, Approximate Original Contour (AOC), drainage systems, ponds, roads, etc.

- g. Dates of Backfilling and Grading Activities
- h. Dates of Topsoil Replacement
- I. Topsoil Replacement Depths

- Results of overburden chemical analysis with discussion on how overburden will not adversely affect plant growth or water quality.
- Evaluation of **topsoil or substitute soil** including analyses and **replacement depths**.
- Evaluation of **subsoil** including analyses and **replacement depths**.
- Any field designs, modifications or changes to the mining and reclamation plan which occurred in conjunction with the reclamation activities.
- A brief history of mining and reclamation activities indicating when mining operations began and ended, when earthwork and topsoil distribution began and ended.

The application explained that as the cells were filled to their capacity, they were backfilled and graded as outlined in the MRP. The letter states that sufficient subsoil material was used to cover the waste rock along with 12" of topsoil. Furthermore, the letter states that the depth of total soil cover varies throughout the waste rock site.

The March 9, 1999, submittal provided information and analysis concerning topsoil replacement depth and volumes. The December 17, 1998 submittal provides cross sections showing original, excavated and final surface configurations; the March 9, 1999 submittal supplements Appendix A showing cross sections areas and calculated volumes of soil between each cross section. The total excavated volume of soil was calculated at 106,907 cubic yards. The volume of soil remaining and stored in the berms is calculated at 27,056 cubic yards. Therefore, the total cover volume of soil is calculated by subtracting the calculated berm volume from the total excavated volume which equals 79,851 cubic yards. The average cover depth for the 15 acre Waste Rock Site equals 3.3 ft. An auger core was taken from Cell 7 to check on soil replacement depth. The depth of the core was approximately 3 ft., which is consistent with the average depth of the entire site. The location of the cored site is found in Appendix C, map drawing dated March 5, 1999. Since the application indicated that soil cover varies throughout the site, the above analysis allows the Division enough information to make a finding on soil replacement depths as they actually occur or currently exist.

The application included discussion and information concerning soil sampling and analysis. Analyses include pH, EC, Ca, Mg, Na, SAR, Se, and B. An excellent summary for analyses is given both in the letter and application, with comparison charts for each cell comparing soil characteristics between 1986 and 1994 sampling periods. However, in order to correlate analyses with soil replacement quality, the depth of soil replacement was needed to help rectify if analyses are for topsoil, subsoil, substitute topsoil, overburden, or refuse.

A general statement in the December 17, 1998 letter is given for soil classification within the waste rock site. Soils range from a sandy loam type on the northern end of the site to sandy clay loam/loam type on the southern most end of the site. The March 5, 1999 submittal provided additional information on soil texture and depths where coal and/or refuse was encountered. Appendix B supplemental material provides the original soil sample reports from the 1989 sampling period and includes analysis from cells 2, 4, 5, and 6. In

review of the 1989 data, the majority of the soils in the reclaimed waste rock area have a textural class rating of sandy loam from 0 to 3 feet in depth. The exception is site 6, where clay loam and sandy clay loam were encountered between 2 and 5 feet in depth. The following table summarizing the 1989 data was provided in the March 5, 1999 submittal which lists the sample sites where coal was detected at the reported sampling depth:

Cell #	1989 Sample Location *	Depth (ft.)
2	I	2
2	I	3
2	J	4
4	A	2
4	B	3
4	C	3
5	B	4
6	A	2

\*Reference Appendix A in the Dec. 17, 1998 submittal for sample locations.

**Topsoil Finding:**

The application met the minimum requirements for topsoil placement for Phase I bond release.

**CONCLUSIONS AND RECOMMENDATION**

Based on the Division findings PacifiCorp has met the requirements for approval of the Phase I bond release for the Cottonwood/Wilberg Waste rock site. It is recommended that this phase I bond release be approved for 13.81 acres for the Cottonwood/Wilberg Mine. There is no change in the bond amount.