



**State of Utah**

**Department of  
Natural Resources**

MICHAEL R. STYLER  
*Executive Director*

**Division of  
Oil, Gas & Mining**

JOHN R. BAZA  
*Division Director*

JON M. HUNTSMAN, JR.  
*Governor*

GARY R. HERBERT  
*Lieutenant Governor*

December 8, 2006

Charles Reynolds, Resident Agent  
Co-Op Mining Company  
P.O. Box 1245  
Huntington, Utah 84528

Subject: Proposed Expansion Project for Coal Leases: U-24316, U-46484, U-61048, U-61049, and Fee Acreages, Deficiency List for Task ID #2680, Co-Op Mining Company, Bear Canyon Mine, C/015/0025, Outgoing File

Dear: Mr. Reynolds:

The Division has reviewed your formal October 28, 2006 response and subsequent electronic submittals provided to address deficiencies identified in your application to expand the Bear Canyon Mine underground permitted acreage for the following coal leases: U-24316, U-61048, U-61049, U-46484, and 2740 acres of privately owned coal.

Some technical deficiencies and clarifications remain that must be addressed before the application can be determined technically complete and approved. Those deficiencies and clarifications are attached to this letter. The list of deficiencies incorporates comments received from the Manti-La Sal National Forest Service office as well.

Each deficiency identifies its author by that author's initials in parentheses, so that your staff can directly communicate with that individual should any questions arise relative to the preparation of C. W. Mining Company's response to that particular deficiency.

Please respond to these deficiencies as soon as possible, preferably no later than December 15, 2006, so that we may continue to process your application in a timely manner. If you have questions, please contact Joe Helfrich, project lead at (801) 538-5290, or me at (801) 538-5286.

Sincerely

D. Wayne Hedberg  
Permit Supervisor

an

Attachment

cc: Mary Ann Wright, OGM  
Alice Carlton, USFS - PFO  
James Kohler, BLM - SLO  
Ranvir Singh, OSM  
Dale Harber, USFS - PFO

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**Deficiency List**  
**Task ID #2680**  
**Bear Canyon Lease Additions**

The members of the review team include the following individuals:

Joe Helfrich	[JCH]
Jim Smith	[JDS]
Steve Christensen	[SKS]
Priscilla Burton	[PWB]
Pete Hess	[PHH]

**Biology**

**R645-301-322, -301-333, -301-342, -301-358**, the application needs to include a commitment to develop a mitigation plan by July 1, 2007 in consultation with the DWR, DOGM, USFWS, USFS and BLM to mitigate impacts to nests and or raptors from potential escarpment failure caused by subsidence. The mitigation plan needs to include site-specific analysis of these nest sites and possibly others for potential loss due to escarpment failure. It should also be noted that C. W. Mining Company would need authorization from the Forest Service to mine under escarpment areas, (Federal Coal Lease U-61049 Special Stipulation #13). [JCH]

**Cultural Resources**

**R645-301-411**, The archeological survey as defined by the applicant, Sagebrush Consultants L. L. C. and Bruce Ellis needs to be completed and included in the application for the new lease additions. The survey should also include coordination with and evidence of clearances by the State Historic Preservation Office (SHPO). [JCH]

**Hydrology**

**R645-301-121.200, -121.300, -150: Clear and Concise, Completeness**

- Prior to permit approval, the Permittee needs to provide the Division with a copy of the entire MRP with all of the proposed mine plan changes identified during the permitting process. The changes should be provided in red line strikeout for reviewing purposes. Considering the number of iterations and revisions of the MRP during this permitting process, a final submittal in this format is necessary in order to determine whether the application is clear, concise and complete. [SKC]
- On Page 7-26 of the MRP, the sub-section entitled "Site Selection" should be changed to make it apparent to the reader that the selected sites are groundwater-monitoring sites. In addition, the Permittee should provide a reference to Table 7-14. [SKC]
- On Page 7-36 of the MRP, the sub-section entitled "Site Selection" should be changed to

make it apparent to the reader that the selected sites are surface water monitoring sites. In addition, the Permittee should provide a reference to Table 7-14. [SKC]

#### **R645-301-724: Baseline Information**

- In order for the MRP to clearly identify the sites that will be utilized for baseline data collection (versus sites utilized for operational data collection), the Permittee should produce separate tables, (14a and 14b), that identify the ground and surface water sites that will be utilized for the collection of baseline data. Each table should outline the timeline for baseline data collection as well as provide page references to where the parameters that will be analyzed for are listed. [SKC]

#### **R645-301-728: Probable Hydrologic Consequences Determination**

- The Permittee should clarify the discrepancy between the 2<sup>nd</sup> sentence of the 4<sup>th</sup> paragraph on page 7-44A, where it's stated that the "MW-116 is only 2 feet lower in head pressure than MW-117", with the depiction of the potentiometric surface of the Spring Canyon sandstone on Plate 7J-2, General West East Cross Section East Portion of Federal Lease U-024316. Upon inspection of Plate 7J-2, it appears that the potentiometric surface depicted at MW-116 is higher than MW-117. The water level values depicted on Plate 7J-2 appear to be correct (7,746' at MW 117 and 7,744' at MW 116), however; the hatched potentiometric surface line appears higher at MW 116 than at MW 117. The Permittee should provide a statement in the text that clarifies that the potentiometric surface of the Star Point Sandstone is above the Hiawatha Seam.
- Upon reading and reviewing Appendix 7J, it's not clear as to whether the baseline data obtained from the various water resources in the proposed expansion area have been analyzed for the proposed lease expansion. The Permittee needs to use baseline data and discuss specific impacts to specific ground and surface water resources in the proposed permit expansion area. The proposed expansion area includes several perennial drainages as well as springs supplying base flow to these drainages. The Permittee needs to specifically discuss the potential for these resources to be impacted by mining. The PHC document in Appendix 7J does not do this. (See PHC Section of Technical Memo for additional comments). Mayo associates have been requested to update chapter 9 according to Mark Reynolds. Representatives from Mayo are encouraged to discuss proposed changes with DOGM and FS staff as directed by Mark Reynolds. [SKC]

#### **R645-301-731.210 and -731.220: Ground and Surface Water Monitoring**

- The Permittee should clarify the sampling duration/frequency to be performed during the operational phase of mining activity. Specifically, the Permittee needs to alter the Sampling Duration language under Operational Monitoring in Table 7-12, Ground Water Sampling, on page 7-51 and in Table 7-16, Surface Water Sampling, on page 7-58 to show that the proposed monitoring includes four sampling events per year (as shown in Table 7-14). [SKC]

- The Permittee needs to update Table 7-14 as well as related text portions in the ground and surface water monitoring sections of the MRP, to reflect the addition of the monitoring points identified in the respective Ground and Surface Water monitoring sections of this analysis (See below). [SKC]

**R645-301-731.210: Ground Water Monitoring:**

- The Permittee should include ground water sites SBC-16, SBC-16A and SBC-16B to the list of sites slated for increased monitoring during the undermining of Fish Creek. The sites should reflect their increased monitoring status in Table 7-14 as well as on page 7-56 of the MRP. [SKC]
- The Permittee should add the following locations to their ground water monitoring program. Table 7-14 as well as related text portions in the surface and ground water monitoring sections of the MRP should be up-dated to reflect these additional monitoring points:
  - South McCadden Trough-located in the T 16S R7E SE ¼ of the SW ¼ of Section 11 as depicted in Figure 7-0, Forest Service Protected Water Resources. The Permittee should address the discrepancy between Figure 7-0 and the text on page 7-61A. Page 7-61A states the South McCadden Trough as being monitored with site SMH-1. However, the location of SMH-1 as depicted on Plate 7-4 does not correlate with the location of the South McCadden Trough as depicted on Figure 7-0.
  - Historical monitoring location FBC-12. [SKC]
- The Permittee should address a discrepancy on Plate 7-4 as it relates to monitoring site SBC-12 (16-7-13-1). Plate 7-4 depicts a historical monitoring point directly south of SBC-12 (16-7-13-1) identified as 16-7-13-1 in green type. [SKC]

**R645-301-731.220: Surface Water Monitoring:**

- The Permittee should add the following location to their surface water monitoring program and make respective changes in Table 7-14 as well as the related text portions of the surface water monitoring section of the MRP:
  - A stream monitoring location in McCadden Hollow up-stream of spring SMH-4 and south of historical monitoring site 16-7-12-6. [SKC]

*Forest Service comments  
Bear Canyon Mine, 4<sup>th</sup> submittal  
Manti-La Sal National Forest  
December 4, 2006*

**Page 1-5, third paragraph.**

Co-op does not have unrestricted use of all access roads leading to their leases. All Forest Roads on the Manti-La Sal NF are closed to commercial uses. Therefore, Co-op must obtain a Road Use Permit to use Forest Roads. This is a general comment to C. W. Mining Company and does not require a change to the current lease expansion application.

**Page 3-43, Birds.**

Name the one bird species in the area that is on the Endangered Species List or delete that sentence.

**Page 3-44, Lease Area, third paragraph.**

There is more than one possible impact due to escarpment failure. Others include impacts to sensitive plants, sedimentation, other wildlife, and visuals; the application needs to include these potential impacts or provide documentation as to why they would not be impacted by an escarpment failure.

**Page 3-68, last half of first paragraph.**

Reference the process of producing a mitigation plan for raptor nests that will be done before the Forest Service will agree to waive the stipulation prohibiting mining under the escarpments. This is also included in the DOGM deficiency comments as noted above (see Biology - R645-301-322, -301-333, -301-342, -301-358.).

**Page 5C-3, second paragraph.**

The Maleki 2006 report (page 10) states that the angle-of-draw in the Bear Canyon area is 25 to 30 degrees. The value used in the mine plan is 22.5 degrees. Explain why 22.5 degrees is being used, so that a reader who reads the Maleki report will not think there is a contradiction.

**Page 5C-4, last 2 sentences.**

This statement does not match Map 5-3A. The map shows over 2 miles of escarpment failure zones. The application should include a more detailed description of potential escarpment failure.

**Page 5C-6, Table 5C-1.**

The maximum subsidence of 5 feet for mining 14 feet of coal in the Hiawatha Seam is inconsistent with some of the other figures shown in the table. The average depth of the Tank seam, listed as 3300 feet and 4600 feet, does not appear to be correct.

**Page 5C-10, second paragraph.**

Describe the process of developing a raptor mitigation plan, as stated above. (see comment under Page 3-68, last half of first paragraph.)

in Apdx. J do not address impacts to springs in the new area.

The same problem exists for section 9.1.2 (Surface water), i.e., it does not address the new permit expansion area. The entire section consists of just six sentences. It says nothing of the upper perennial reaches of the Left and Right Forks of Fish Creek. Furthermore, since we know nothing of how mining will impact the groundwater resources in the new area, we have no idea of how disruptions to baseflow will affect the perennial streams.

Section 9.3 (Impact of coal mining on sediment yield from disturbed areas) does not address the sediment yield to Fish Creek and other streams as a result of mining related escarpment failure. It speaks only in very general terms (nothing specific in terms of sediment volume generated and impacts to specific streams in the new permit expansion area) and only then with regard to SBC-14 in Bear Canyon (outside of the new area).

The bottom line is this, the raw data for the Gentry Mountain/Mohrland areas presented in Chapters 1-8 of Apdx. J needs to be analyzed and incorporated into the PHC; and other sections of Apdx. J need to be updated with new and pertinent information relative to the permit expansion area presently under consideration.

*(See above R645-301-728: Probable Hydrologic Consequences Determination section for further discussion)*

2. Page 7-44A, 728.100, PHC Determination, 2<sup>nd</sup> paragraph, 2<sup>nd</sup> sentence.

By comparing Plates 5-3A, 6-2, and 7-4 it appears that the perennial section of the Right Fork of Fish Creek near the Forest Boundary has less than 600 feet of overburden in an area planned for subsidence. However, it has been determined that the overburden map has a 400 foot error and the actual overburden is just under 1,000 feet. The mine plan submittal must be corrected to show the actual conditions.

3. Pages 7-44B & C, 728.100, PHC Determination.

The volume of water welling up through the mine floor while mining in the new permit expansion area must be estimated based upon the best available information. This information would include slug test data performed on the Star Point sandstone in the new area, drill hole data showing sandstone thickness and water levels, information from previous mining in the area, and any other useful information that could be used in making an estimate. How the intercepted water will affect surface resources, how it will be disposed of, and how this will affect the hydrologic balance, water quality, and stream flow alteration are concerns that must be addressed in the PHC.