



State of Utah

Department of Natural Resources

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Division of Oil, Gas & Mining

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September 2, 2005

Erwin Sass, General Manager
Canyon Fuel Company, LLC
P.O. Box 1029
Wellington, Utah 84542

Subject: Refuse Pile Expansion, Canyon Fuel Company, LLC., Dugout Canyon Mine, C/007/0039, Task ID #2156, Outgoing File

Dear Mr. Sass:

The Division of Oil, Gas and Mining has reviewed your permit amendment to expand the waste storage capacity at the Dugout Canyon Mine Refuse site from an area of 5.7 acres to an area of 12.25 acres and a proposed elevation of 5,995 ft, with a capacity of 686,055 tons of waste storage. The proposal describes a waste pile that is 65 ft higher than currently approved designs. The Division found that the reclamation designs are inadequate to meet Approximate Original Contour (AOC) because:

- The reclaimed slopes are straight. When sheet flow occurs over straight slopes, rills and gullies are likely to form. The Division recommends that the Permittee construct concave slopes.
- The top of the refuse pile is graded in one direction that concentrates sheet flow on one slope. Concentrations of sheet flow increase the chances of rill and gully formation. The Division recommends grading the top of the refuse pile so that water flows onto each slope.
- The reclaimed slopes and drainage do not blend into the surrounding area because they lack the undulations of the surrounding area. The Division recommends creating a sinuous, ephemeral drainage.

The definitions of AOC are contained in U.C.A. 40-10-3 and R645-100-200. The objectives of postmining backfilling and grading is to return the site to a configuration resembling the topography of the land prior to mining, and to blend the site into the drainage pattern of the surrounding terrain. On Wednesday, August 31, 2005, the Division met with Dugout Mine representatives at the waste rock site to discuss changes to the proposed design that would create a landform to blend with the surroundings, while still accommodating the desired capacity.

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Before the Division can approve this amendment, the Permittee must provide the information outlined in the attached deficiencies, in accordance with the R645 Coal Mining Rules cited. For clarification or more information, you can contact the Division specialist whose initials are at the end of each deficiency.

pwb	Priscilla Burton	(435) 613-1146 x 207
dwd	Dave Darby	801-538-5341
jch	Joe Helfrich	801-538-5290
whw	Wayne Western	801-538-5263

Technical Memos prepared by each of the reviewers are available upon request. If you have any questions, please call me, or Priscilla Burton at (435) 613-1146 x 207.

Sincerely,

Pamela Grubaugh-Littig
Permit Supervisor

PWB/an
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TECHNICAL DEFICIENCIES

R645-301-114.100, The plan must include a description of the legal document and date of execution that provides the Permittee with right of entry. [PWB]

R645-301-121.200, MRP page 1-9 must indicate the currently approved disturbed acreage. [PWB]

R645-301-341.300, The Permittee must provide additional specifics of the study plan by providing a contour map showing locations and dimensions (height, length, and width) of all the treatment sites, reference area, access roads/traffic flow on the site, and locations of the different piles as proposed. The map must include a clear key to these “structures”. If construction plans differ from those proposed, the Permittee must resubmit this map as an as-built following final implementation of the study project. • To correlate the study results to the potential success of vegetation growth on the final height of the waste pile, the Permittee must install an anemometer at the height of the test plots and another just over the height of the highest point of the proposed pile. The Permittee will continually collect data from both anemometers from the beginning through the end of the study, analyze the data, and provide a summary of the results in Annual Reports. • Typically, the liability period for low precipitation areas is 10 not 6 years. The Permittee may extend monitoring past six years if the results show that cover, shrub density, productivity, and diversity do not meet the Divisions success standards for final reclamation. • The Permittee must clearly state their understanding that the Division will evaluate the test plots, anemometer results, and chemical analysis of the waste over time and that Division authorization of lesser cover may include additional final reclamation plan requirements, such as windbreaks or variable soil depths as the pile increases in height. [JAE, PWB]

R645-301-356, The Permittee will monitor the study at the refuse pile for six years, and then evaluate their supporting evidence to apply less than 4 ft. of cover. The Division cautions the Permittee that results showing no differences among treatments may not be a result of reclamation practices, but rather environmental conditions. The Permittee must use a reference area for the standard of success, not comparisons among treatments. • Visual observation of the test plots for rills and gullies must be included with the soil evaluations conducted in years 3 and 6 as described in the monitoring schedule. [[JAE, PWB]

R645-301-521.130, The surface ownership map is found in the MRP volume 1, but it does not include information on the refuse site in the N1/2 of the NE ¼ of Section 18, T14 S R 12 E. This map must be updated to include the refuse site. [PWB]

R645-301-521.131, The Permittee must show the subsurface ownership for refuse site. [WHW]

R645-301-521.141 and R645-301-521.190, The Permittee must update RA Plate 1-1 to show the leach field disturbed area and the Pace Canyon portal breakout disturbed area. [WHW]

R645-301-521.150 and R645-301-521.190, • The Division requires a map that shows the surface configuration before the site was permitted as a mine waste rock storage site. The Permittee must show the “pre-permitted” contours on a separate map. RA Plate 5-1 shows the “pre-permitted” contours with the operational contours superimposed. The map appears to be from an AutoCAD file. This AutoCAD file could be used to generate a separate map of the pre-permitted contours, by turning off the operational contour layers. • On RA Plate 5-1 in the approved MRP, the cross sections are placed every 100 feet. On RA Plate 5-1 received by the Division on February 18, 2005, the cross sections are every 250 feet. The Division requires cross sections on 100-foot intervals and cover the entire refuse site. [WHW]

R645-301-521.165, The Permittee must provide a commitment in the plan to update Plate 2-2 within 6 months of stockpile after construction of the new stockpiles. [PWB]

R645-301-521.190, The Permittee must provide the following: 1) Lease acreage must be broken out into federal, state, fee, and other and 2) The location must be given according to the Township, Range and Section down to the quarter-quarter section. [WHW]

R645-301-534.120, The Permittee must use nonacid- and nontoxic-forming substances for road surfaces and discuss those characteristics in the amendment. [WHW]

R645-301-534.130, The Permittee must show/discuss that all road embankments have a static safety factor of 1.3 or greater. [WHW]

R645-301-527 and R645-301-534, • The Permittee must include detailed plans and cross sections for each primary road. At a minimum, the Permittee must also **1)** Show/label the site road on RA Plate 5-1. **2)** Show generalized cross sections for each road. **3)** Have the designs certified by a registered professional engineer. **4)** Discuss how the sediment pond will be accessed. • In Section 512 and Section 527.100, the Permittee refers to the primary roads as access road and temporary access road. In Section 527.200, the Permittee refers to the roads as the access road and the site road. The Permittee needs to use the same names for the roads throughout the document. [WHW]

R645-301-536.200, The Permittee must clarify the compaction procedure and the compaction specification listed by the Permittee must be achievable. In Section 536.200, the Permittee states that the refuse will be spread in thin lifts using compaction equipment. Later the Permittee states that the lifts will be a maximum of two feet thick and that the proper compaction will be achieved. The

Permittee commits to compacting the material to the desired density but they do not define what that density is. The Permittee also states that trucks will be used to compact the refuse material as needed however, trucks cannot compact 2 foot thick rock lifts. [The Caterpillar Handbook lists the maximum lift thickness of an 825G Series II as 10 inches and states that a vibrating drum must be used to compact rock material. Unless the Permittee has compaction equipment with a vibrating drum or other device for compacting rock material they will not be in compliance with the approved mining and reclamation plan.] [WHW]

R645-301-536.510, The Permittee must clarify the statement in Section 536.200 regarding placement of material from other sites at the Dugout refuse site. The R645 Rules require that the Division approve of waste disposal from other sites. While the statement that material may be brought in from another site is appreciated as an indication of future activities, the MRP must also include a statement that when the situation arises. An amendment to the MRP will be provided to the Division for approval, prior to hauling waste from another site. [WHW]

R645-301-542.200, • The Permittee must include final reclamation maps and cross sections. In the February 18, 2005 submittal, the Permittee requested the RA Plate 5-3 and RA Plate 5-4 (reclamation map and cross sections) be removed from the MRP. The Division requires reclamation maps and cross sections in order to evaluate the reclamation plan for the refuse pile, the topsoil and subsoil storage areas, roads and sediment pond. • The Permittee must provide volumes for the anticipated earthwork that will be done at final reclamation. Such items include but are not limited to reclamation of the sediment pond area and the roads and refuse pile final grading to achieve an overall concave slope and irregular plateau surface and final grading to achieve a sinuous ephemeral drainage. [WHW]

R645-301-542.300, The Permittee must provide the Division with cross sections on 100-foot intervals. In addition, the cross-sections must show the “pre-permitted,” operational and reclamation topography. [WHW]

R645-301-553.110, The Permittee must design the reclaimed slopes so that they are not susceptible to the formation of rills and gullies. The Division recommends that the Permittee use concave slopes with some slope breaks and slopes the top of the pile so that water flows over each of the outslopes. The reclaimed slopes must also have a similar shape (undulations) to slopes in the surrounding area.

R645-301-553.140, The plan must indicate that the steepness of the refuse slopes will be reduced at their base, providing a concave slope. [PWB]

R645-301-553.252, The plan must describe a source of suitable substitute topsoil to augment final reclamation coverage over the refuse to a depth of four feet. [PWB]

R645-301-830.140, The Permittee must include detailed reclamation cost estimates for the refuse site. Items that are needed include but are not limited to: • cost to haul road surface material off site for disposal, • The bond must be based upon four feet of cover for the waste, not the 2.5 ft of cover described in RA Attachment 2-2. • volume of topsoil and subsoil must be updated and • ripping costs. [WHW, PWB]

R645-301-302-270, The Permittee requests a variance from the approximate original contour requirements; however, the Division will not grant a variance from the approximate original contour requirements because the Permittee showed that they could comply with the requirements of R645-301-302-270. Note: AOC does not require that the site be restored to the premining condition rather that the site blend into the surrounding area. [WHW]