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TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

June 15, 2010

TO: Internal File

THRU: April Abate, En Sci II, Reclamation Geologist, Team Lead *AAA* 6-22-2010
James D. Smith, En Sci III, Permit Supervisor, Task Manager *JS* 22 June 2010

FROM: Peter Hess, En Sci III, Engineering *PHH by SDS*

RE: SUFCO Mid-term Permit Review Follow-up Response to TID # 3464,
Canyon Fuel Company, LLC, SUFCO Mine, C/041/002, Task ID #3464

SUMMARY:

The Price Field Office of the Utah DOGM received a response to deficiencies identified in the review of **Task ID # 3464, Mid-term Permit Review** on June 1, 2010. The deficiencies, which are being addressed in this response, are as follows:

4. R645-301-542.200: The Permittee must submit a plan describing how the Quitchupah portals and the 4th East fan portal pad areas will be backfilled, reshaped and sealed in order to meet the requirements of approximate original contour. The Division recommends that Section 5.4.2.2 Plan for Backfilling, Soil Stabilization, Compacting and Grading of the SUFCO Mine MRP be updated to include this additional information. (PHH)

5. R645-301-542.300-310: Final Surface Configuration Maps and Cross Sections. Provide plans and drawings to show how the areas identified above will be reclaimed and to what configuration:

- 1) Post reclamation "as-built" drawings for the Link Canyon Substation #1 location
- 2) "Anticipated final surface configuration" drawings with cross-sections for the Link Canyon #2 substation, Link Canyon intake portal, the Quitchupah portals, and the 4th East Fan Portal and Pad. (PHH)

The submittal received on June 1, 2010 contains four revised Plates, numbered 5-2Cv9, 5-2Dv6, 5-2Ev3 and 5-2Fv2, as well as several revised Pages from Chapter 5 in the mining and reclamation plan.

This memo will address the adequacy of the Permittees response to the aforementioned R645 Coal Mining Rules.

TECHNICAL ANALYSIS:

RECLAMATION PLAN

Analysis:

As previously noted, the Division identified two deficiencies in the SUFCO Mine mining and reclamation plan relative to the reclamation of several surface disturbed areas which provide one or more utilities to the underground mining operations. The two areas identified which required updates to the MRP were as follows;

- 1) The Quitchupah portals (mine water discharge to the North Fork of Quitchupah Canyon), and
- 2) The 4th East fan portal installation / pad disturbance.

Both areas were developed by advancing toward the direction of the coal outcrop, eventually breaking through to the outside. There is no access road to either disturbed area from the extreme NW end of the north fork of Quitchupah Canyon. All access must be from inside the SUFCO Mine. The locations are adjacent to each other, with the 4th East fan pad being on the north side of the Canyon terminus, and the Quitchupah mine water discharge portals being on the west side of the terminus.

The Permittee submitted a revised Section **5.4.2.3, Final Surface Configuration Maps and Cross Sections**, Page 5-75, which states that Plates 5-2C, 5-2D, 5-2E and 5-2F show the final surface configurations and cross sections for the 4th East fan pad facility and the Link Canyon substation and all out-by mine portals.

The four submitted Plates depict the “anticipated” final surface configuration to which the disturbed areas will be reclaimed.

The Link Canyon #1 substation location has been reclaimed and revegetated. Subsequent visual inspections of this site by Division personnel indicate that the reclamation is adequate to receive bond release. The Permittee has not applied for any of the three phases of bond release, which a disturbed area must go through.

Plate 5-2Dv6 indicates on cross-sections A-A' and B-B' that the reclaimed slope is identical to the pre-mining configuration. This is an anticipated backfilling and grading configuration, and not an “as-built”; the Division can not make a determination that the Permittee has met the requirements of approximate original contour restoration at the Link Canyon #1 substation location. However, visual inspections of the reclaim area indicate that the reclaimed surface blends well into the adjacent undisturbed area and is aesthetically pleasing. It is doubtful that additional contouring will be necessary to effectively meet AOC requirements.

The currently approved MRP contains a commitment by the Permittee (Page 5-67, paragraph two) to restore the #1 and #2 Link Canyon substation locations to “the extent possible and in accordance with Approximate Original Contour regulations”.

The #2 substation location and the west Link Canyon portal are being actively used to meet ventilation and electrical requirements for the underground mining operation. The submitted drawing for each of these locations (Plate 5-2Ev3 is Link Canyon #2 substation location) shows cross sections A-A' and B-B'. These anticipated slope configurations show that the pre-mining slope configuration will be restored, becoming the post-mining configuration. If the “as-built” drawings and the Phase I bond release inspections confirm that the restored reclamation configuration meets the requirements of AOC, a bond amount will be released. Plate 5-2Ev3 is P.E. certified by Mr. John Byers, Manager of Tech Services for the Permittee and a Utah registered professional engineer.

Plate 5-2Fv2, Detail of Link Canyon Portal Surface Facilities, also shows the anticipated reclamation configuration for the west portal, as well as the reclamation channel through the disturbance, and the reclaimed access road. Cross-sections A-A', B-B' and C-C' all indicate that the anticipated post-mining reclamation configuration will approximate the original surface or pre-mining configuration.

This same Plate also depicts pre-mining and post-mining surface topography. As the same plan view depicts both, a determination that the post-mining configuration will be very nearly exact to the pre-mining configuration can be surmised, and that will meet the requirement of approximate original contour restoration.

The 4th East fan portal facility (See page 5-67 of the submittal) will be regraded for its entire length (i.e., area / PHH). To construct the fan pad, fill material was hauled through the Mine, dumped, spread and compacted.

In order to reclaim this pad, the fan and ducting will be disassembled, and hauled back into the mine works. It is not known if the mechanism will remain in mine, or if it will be hauled back outside in East Spring Canyon and sold for scrap.

After the mechanical devices are removed, small earth moving machines such as a small caterpillar tractor and/or a rubber-tired backhoe will be brought through the mine. The fill material will be pushed toward the portals and then the backhoe will place the material to the location where the concrete block seal will be constructed, which will be at least 25 feet in by the portal.

As the fill is removed, “the pre-existing slopes for the 4E Fan facility area will be restored to the extent possible and in accordance with Approximate Original Contour regulations using all of the fill material stored in the pad area. The slopes will be constructed using the equipment which was transported through the mine”. Requirements for the re-seeding of the replaced soils are established in Section 2.4.2 of the SUFCO MRP. Re-seeding will be conducted in accordance with the methods

described in Section 3.40 of the MRP. Erosion controls will be installed in the same locations as those installed for the reclamation of the areas, (See Plate 5-2C). All references made on this page can be found on page 5-67 (revised, Task ID 3464 submittal of June 1, 2010).

After all surface work is completed, the concrete block seals will be constructed on the in by side of the fill material, (at least 25 feet in by the surface breakout).

The Quitchupah portals consist of two entries, which were broken through to the outside from the mine workings. The entries have been heavily cribbed in order to maintain these openings for the mine water discharge lines, which report to the North Fork of Quitchupah Canyon.

Revised Page 5-77, as submitted with the Permittee's response to Task ID # 3464 on June 1, 2010, states the following: "some entries that are completely cribbed off due to bad roof conditions, such as the 3E Portals and Quitchupah Portals, will need to be backfilled with the use of explosives to blast the cribs and roof rock down to fill the entry before the seal construction. The surface soil will then be raked and revegetated with the approved seed mixture".

A pad was not constructed at the Quitchupah portals. No vegetation was ever removed, nor were cut banks or fills created. The openings exit the mine, and one immediately observes rock formations and thick vegetation. A small disturbed area perimeter has been marked with "T" posts, although the only disturbance is the break out itself.

There is no fill material is available for re-contouring. The use of explosives to seal the entries appears to be the best method to prevent future unauthorized access. Concrete block seals will be constructed from inside the mine, at least 25 feet into the mine entry from the surface.

Plate 5-2Cv9 depicts both the pre-mining and the "anticipated" post-mining surface configurations for the Quitchupah and 4th East Fan portals.

Findings:

The Permittee's response to the deficiencies aired in the Division review document dated May 26, 2010 (Task ID # 3464) is adequate.

Upon submittal of the proper number of clean copies prepared for incorporation, the Division should approve and finalize the mid-term review of the SUFCO Mine mining and reclamation plan.

RECOMMENDATION:

The Division should conditionally approve the submitted MRP updates, which include text changes and updated maps, and finalize the mid-term review process for the SUFCO Mine.

Upon receipt of the proper number of clean copies prepared for incorporation, the Division will grant final approval of this permit review process.

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