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Governor
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State of Utah
DEPARTMENT OF NATURAL RESOURCES
MICHAEL R. STYLER
Executive Director
Division of Oil, Gas and Mining
JOHN R. BAZA
Division Director

FINDINGS DOCUMENT

Utah Coal Regulatory Program

PID: C0410002
TaskID: 4394
Mine Name: SUFCO MINE
Title: EXPANSION OF LIFT #5

Environmental Resource Information

Soils

Analysis:

Deficiencies Details:

pburton

Operation Plan

Topsoil

Analysis:

Topsoil Removal and Storage
 Vol. 3 p. 2-9 describes removal of 18 inches from the 0.54 acre expansion and either live haul to Lift #5 or stockpiling on Topsoil Storage site No. 2. The estimated volume of topsoil to be salvaged is 1,300 yd³s (Sec 2.12). Boring B-1 is shown on Map 4 and discussed in MRP Section 2.12, but referencing the MRP location of the drilling log was requested and discussed in a phone conversation on June 21, 2013.

Deficiencies Details:

R645-301-122, In Section 2.12, please reference where the B-1 boring log can be found in the MRP.

R645-301-121.200, Draw a line around the Lift #4 topsoil storage area on Map 4.

pburton

Spoil Waste Refuse

Analysis:

The waste rock site has been contemporaneously reclaimed (Vol. 3, Section 3.4). Map 4 of Volume 3, illustrates the status of reclaimed, active and topsoil salvage areas at the refuse site as of August 2005. Map 4 shows the first three cells reclaimed. Cell #3 of the waste rock site was seeded in November 1998 (email from Mike Davis 11/19/2009). Cell #4 was started in 1998 and completed in the fall of 2009. Cell #4 has been topsoiled and gouged and was seeded in the fall 2009 (see photographs in image folder 11182009). Vol. 3, Section 3.2.4 specifies a thirty inch cover depth over the waste rock site which was confirmed for cell #4 during a site inspection on 11/18/2009. Cell 5 or Lift #5 is the final remaining cell.

The waste rock disturbed area was enlarged from 7.223 acres to 8.733 acres with the West Lease amendment approved 2/1/2011. The waste rock area was enlarged from 8.733 to 10.76 acres with the west lease subsoil as built (Task 4395 Vol 1, p. 1-12). The current proposal increases the waste rock disturbed area by 0.5 acres to 11.29 acres (Vol 1, p. 1-12). The permitted area has increased since 2/1/2011 from 10.98 acres to 11.6 acres (Task 4395) to 12.22 acres with this amendment. Please explain, since the waste rock permit boundary appears to be the same.

In 2005, the waste rock fill covered 4.5 acres as stated in Section 3.4 as 4.5. This statement has been removed from the narrative in Sec. 3.4 with this amendment, without using strikeout. The designed final acreage of waste rock storage site was stated in Section 4.2 as 8 acres. This statement was also removed without strikeout. The acreage figures should not be deleted, but should be updated in the narrative of Section 3.4 and 4.2.

Narrative in Vol 3, sections 3.3. and 4.2 has been removed without the use of strikeout. This narrative concerning the original construction design is still pertinent and must be retained.

The design capacity of the waste rock site was 204,700 tons (Vol. 3, Sec. 4.2 and Appendix II the HSB report). In 2005, an aerial survey of the site was used to calculate that 163,748 tons of waste rock were in storage at the site. The Permittee estimates that there is 213,407 tons of waste rock stored at the site in 2012 (Sec. 3.3). This figure agrees with the 5,180 tons/year average annual weight of waste rock transported to the site from 1996 to 2012 (Vol 3. p. 3-12), but the amendment also states that without expansion there is an additional 30,000 tons capacity in Lift #5. This would bring the final current design volume to 243,407 tons which is approximately 20% greater than that currently stated in Vol. 3, Sec. 4.2 and Appendix II the HSB report. These recent figures were not developed through survey or certified by a professional engineer, therefore, the Division engineer visited the site on September 18th and made an estimate of the total and remaining capacity of the site which was discussed with the Permittee. These Division figures should be reported in Section 3.3.

This amendment proposes to enlarge the site by a half an acre (Vol. 1, p. 1-12) and provide an additional 40,000 tons of waste rock capacity in Lift #5 (Sec 3.3). The maximum height of lift 5 is 20 ft (Vol. 3, Sec. 3.3.)

Map 2 shows final contours of the reclaimed cells or lifts # 1 through 5.

Deficiencies Details:

R645-301-121.100, 1) The C2 form indicates pages 2-1 through 2-10 in Vol. 3 are to be replaced. Replacement page 2-3 (Sections 2.4 and 2.4.1) was not found with this submittal. Please include Section 2.4 and 2.4.1 with the amendment. 2) Narrative in Vol 3, section 3.4 and 4.2 has been removed without the use of strikeout; Do not delete, but update the narrative with the acreage dedicated to waste rock storage currently, the approximate final acreage of the waste rock fill in all lifts, and the final design capacity of the waste rock site.

R645-301-121.200, The permitted area has increased since 2/1/2011 from 10.98 acres to 11.6 acres (Task 4395) to 12.22 acres with this amendment (Vol 1, p. 1-12). Please explain, since the waste rock permit boundary appears to be the same.

R645-301-121.300, Amendments to the MRP must be provided in redline/strikeout format; new language is shown in redline and deleted language is shown in strikeout. Narrative in Vol 3, sections 3.3 and 4.2 has been removed without the use of strikeout. This narrative concerning the original construction design is still pertinent and must be retained.

R645-301-512.200, Please modify the capacity estimates in Section 3.3 of Volume 3 (page WRDS 3-13) to match the estimates provided by the DOGM engineer. Section 3.1.3 also needs to be modified to include the following commitment language: ""The slope stability and safety factor will be maintained throughout the expansion of lift #5 and any reconfiguration depicted on updated versions of Map 2."" Also, please resubmit Map #2 to include the previously included cross section lines as well as add an additional cross section for the expansion portion of lift #5.

R645-301-521.165, The revision to Map 2 must include cross section locations (as currently shown on the approved map). A cross section should be added in the Lift #5 expansion area showing ditch #2 in relation to the waste rock slope.

pburton

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jowen

Hydro Acid_Toxic

Analysis:

Acid- and Toxic-Forming Materials and Underground Development Waste

The original sampling plan entailed four quarterly samples during periods of deposition. This plan was based upon an annual average of 10,000 tons hauled/year. With such variable tonnages described annually (27,135 tons in 2012, Vol 3, p.3-12), the Division requested in Task 4335 that the sampling plan be redefined based on tonnage, rather than quarterly. A suggested plan was one composite grab sample for every 5,000 tons hauled. During periods of no deposition, no sampling would be required as is currently the case. The Permittee has responded with a sampling plan of one sample per 10,000 tons (Section 3.1.5). This sampling rate is not adequate, does not correspond with sampling required at similar waste rock sites and will not be approved.

A density of 1.2 tons/ yd³ is implied by the statement, ""The original fill volume was estimated at 10,000 tons or 8,200 cubic yards per year."" (Vol 3, p. 3-12). In the cover letter received 8/14/2013, the Permittee states a reluctance to rely on the existing density information provided in Vol 3, p. 3-12 of the MRP. Please provide a current approximation for density of the SUFCO waste rock in the MRP, such that conversion between tonnage and volume can be made.

The 2012 Annual Report contains a summary of all chemical analysis of the material stored in at the waste rock site since 2005. The earliest waste rock analyses are located in Vol 3, Exhibit. 5 and in Appendix 6-2 (confidential). Vol 3.

Deficiencies Details:

R645-301-731.100 and -553.252, 1) The Permittee has modified the sampling plan from one quarterly sample to one sample per 10,000 tons (Section 3.1.5). This suggested sampling rate will not provide an adequate representation of the waste; does not correspond with sampling required at similar waste rock sites and can not be approved. 2) A density of 1.2 tons/ yd³ is implied by the statement, ""The original fill volume was estimated at 10,000 tons or 8,200 cubic yards per year."" (Vol 3, p. 3-12). In the cover letter received 8/14/2013, the Permittee states a reluctance to rely this density for conversion from tonnage to volume. If this figure is no longer useful, please provide a current approximation for density of the SUFCO waste rock in the MRP, such that conversion between tonnage and volume can be made.

pburton