

November 6, 2003

TO: Internal File

THRU: Daron R. Haddock, Permit Supervisor
Pamela Grubaugh-Littig, Permit Supervisor

FROM: Priscilla W. Burton, Sr. Environmental Scientist III/Soils

RE: Technical Field Visit, Co-Op Mining, Bear Canyon Mine, C/015/025

Other Attendees:

Mark Reynolds, Mining Engineer, Co-Op Mining,
Jerriann Ernsten, PhD, Environmental Scientist, DOGM

Date & Time:

October 27, 2003, 10:30 am – 3:30 pm

PURPOSE:

To observe the following items:

1. The progress of the construction of the #4 mine portals and associated topsoil stockpile.
2. The first year growth on the Wild Horse Ridge topsoil stockpile and the old Tank Seam portal.
3. The reclamation of the old Tank Seam access road.
4. To view the condition of the spring beneath the conveyor, SP14.
5. To observe areas of coal fine accumulation in the vicinity of the load out.

TECHNICAL FIELD VISIT

OBSERVATIONS:

Item 1.

The #4 Mine portal has not been blasted yet. An upper and a lower pad have been constructed at this location, due to the rock face encountered about midway down the face of the cut. The cut extends farther south than planned due to a request by the cabin owner. (This extended cut has been included in the disturbed area.) Plans will be adjusted to accommodate the change in drainage as a result.

The topsoil from the #4 mine construction area has been stockpiled on the slope adjacent to the pad. The topsoil stockpile is at the angle of repose and has a rough surface, but could not be gouged except on top surface. The stockpile contains a lot of woody debris. The stockpile is surrounded by a large berm. The Interim Seed mix to be used on this stockpile is outlined in Table 3-3 of the re-formatted MRP (dated 8/01/02, not yet approved). The seed mix is listed as follows: Agropyron dasystachyum (thickspike wheatgrass); Agropyron spicatum (bluebunch wheatgrass); Elymus cinerus (Great Basin Wildrye); Oryzopsis hymenoides (Indian ricegrass); Poa sedcunda (Sandberg Bluegrass); Medicago sativa (Alfalfa). (A cover crop of Avena sativa (oats) is also listed.) The Division made recommendations concerning the components of the seed mix in Table 3-3 (communication between Ms. Ernstsen and Mr. Charles Reynolds on October 28, 2003). The recommendations were to eliminate the alfalfa from the mix and increase the percentage of grass in the mix. During the field visit, Mr. Reynolds stated that the stockpile would be seeded promptly (as soon as seed can be ordered and is received).

The subsoil from the #4 Mine pad development is being used to widen the access road and the pad and to improve the inlet to Pond 002A. The first switchback below the pad has a north-facing slope that was constructed of subsoil. It was seeded in October 2003 and covered with an excelsior mat. The slope that was constructed to extend the #4 Mine pad is yet to be seeded. Neither slope was gouged due to the stability requirements for compaction. It was recommended that the next seeding be followed by hydromulching of both the #4 mine topsoil stockpile and associated berm and the outslope of the #4 mine portal pad, as per the reformatted MRP, page 3-18. The reformatted MRP indicates that for interim reclamation, all seed will be raked after sowing and that an application of 1,500 to 2,000 lbs of hydromulch will follow seeding as per the rates outlined in Table 3-4. Table 3-4 indicates that for a 100% slope (1:1), 120 lbs of tack will be added per 2,000 lbs of fiber.

Item 2.

The Wild Horse Ridge topsoil stockpile (at the mouth of the canyon) was seeded in March of 2002 (see FV_4192002.doc). Eighteen months after seeding, the Wild Horse Ridge topsoil stockpile is mainly vegetated by Russian Thistle and Kochia. Closer inspection reveals some grasses in the depressions and a few cheat grass plants. With the exception of the cheat

grass, these grasses are stressed and did not produce seed this year. Canyon Sweet Vetch seed was collected from a location within the permit area and scattered over the stockpile in late July.

During a field visit in April of 2002, it was noted that...

“Topsoil from the Wild Horse Ridge expansion had been seeded in March [2002]. The seed was hand broadcast and raked into the soil. No mulch was applied. Very little seed was observed on the surface. The slopes of the topsoil pile are at the angle of repose. If this seeding fails to produce cover over the topsoil, the Permittee should use either mulch and tackifier or an excelsior blanket to keep the seeds on the slope.”

“By way of comparison, the existing Tank Seam topsoil pile (on the south facing Tank Seam road) was observed. The topsoil pile is also at the angle of repose, but the run of the slopes is much shorter than the WHR topsoil pile. In 1994, seed was hand broadcast and raked into the topsoil pile with no mulch application. Existing vegetation is robust, but the cover is limited. The Tank Seam topsoil pile slopes were gouged whereas the WHR topsoil pile slopes were not gouged.”

Item 3.

We climbed up the slope to view the reclamation of the old Tank Seam portals that were seeded last fall. Small grass seedlings were noted emerging through the excelsior matting. Russian thistle was also growing on the reclaimed site. About 200 yards of the tank seam access road had been reclaimed and seeded in the spring 2003. There was no growth evident through the excelsior. The soils were very hard and cemented with carbonates. The slopes were steeper than 2h:1v. The old Tank Seam road was partially reclaimed and seeded in the spring of 2003. Split logs were mixed with the topsoil and spread out over the slope before gouging. The ratio of logs to topsoil was 1:1, by volume, according to Mr. Reynolds. The rest of the tank seam access road will be reclaimed when the construction on the #4 mine portal is finished.

Item 4.

The spring, SBC14, is located in the Wild Horse Ridge Canyon at the location of the conveyor transfer point. Water emerges from a pile under a small rock overhang. The water flows down the slope. Although this site was carefully protected during development of the conveyor, coal has spilled onto the site from the conveyor on at three occasions in the last two years. It was recommend that the loose siding on the north side of the conveyor be fastened closed to avoid spilling from this location.

TECHNICAL FIELD VISIT

Item 5.

We viewed areas of Bear Canyon Creek immediately adjacent to the disturbed area that have been vacuumed of coal fines over the years. The surface of the soil was gray with coal fines, but at the time of the field visit the fines had not accumulated to a measurable depth. The creek channel was well vegetated.

We viewed the conveyor tower installation on Bear Creek where Mr. Reynolds indicated that three feet of coal was found just four inches below the surface. The waste was removed and subsoil replaced during tower construction.

We viewed the canyon west of the loadout where up to four inches of coal has accumulated. Holes were dug with a shovel at various locations in the drainage and slopes of the canyon to observe the depth of coal fine accumulation. This canyon has never been vacuumed according to Mr. Reynolds. Image P0001352.jpg illustrates the accumulation of one inch on the steep slopes of the canyon. Approximately four inches have accumulated on the surface of the canyon floor (P0001331.jpg, P0001332.jpg). In the drainage, beneath the surface, the coal fines and soil are layered as a result of runoff events periodically covering the accumulated fines with alluvium (P0001335.jpg, P0001342.jpg, P0001343.jpg, P0001353.jpg).

RECOMMENDATIONS/CONCLUSIONS:

Based on the condition of the Wild Horse Ridge topsoil, mulch should be applied after seeding of the #4 Mine topsoil stockpile. Hydromulch and tackifier were recommended.

Mr. Reynolds agreed to have the Russian thistle and kochia weeds removed by hand when they re-emerge in the spring. (Hand culling is preferable to applying herbicide, since the Canyon Sweet Vetch seed and other dicots would also be susceptible to the herbicide.)

The loose siding on the north side of the conveyor above Spring SBC 14 should be fastened closed to avoid spilling from this location.

cc: All Attendees
Price Field Office
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