



State of Utah

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DIVISION OF OIL, GAS AND MINING

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February 10, 1994

TO: File

THRU: Daron Haddock, Permit Supervisor

FROM: Sharon Falvey, Senior Reclamation Hydrologist *SJF*

RE: Eccles Creek Buffer Zone Loadout Expansion Approval, Condition Response, Coastal States Energy and Skyline Coal Companies, Skyline Mine, Folder #2, ACT/007/005, Carbon County, Utah.

SUMMARY

The Operator has submitted the response to conditions for the approved amendment 93-D expanding the existing Train Loadout Coal Storage Pile. The response was submitted on December 21, 1993. This review focuses on the hydrologic deficiencies numbers 1, 2, 4, 5, and parts of 3.

ANALYSIS

Condition

1. *Pond Construction and Certification. In accordance with the requirements of R645-301-514.300 the operator shall be required to inspect and provide a certified report promptly upon completion of the construction and modification of the load out facilities sediment pond. In conjunction with the as-built certification report, detailed information demonstrating that the sediment control structure is in compliance with performance standards will be required. This detailed information will include but not be limited to the following: Detailed contour and cross section maps of the sediment pond to clearly show the embankment elevation width and slopes, the location and the extent of the french drain in relation to the bottom of the sediment pond, and location and relation of the pond to the stream channel; details and designs for the clay liner installed in the pond; details of the emergency spillway configurations sufficient to demonstrate adequate discharge capacity; and, maps locating and identifying the runoff areas with supporting runoff calculations based on the as-built configuration to demonstrate adequate pond sizing and capacity. The certified as-built report for the pond shall be submitted with the above information within 30 days of completion of the construction facilities.*



Response:

Pond Construction and Certification. Attached is a new certification for the RRLO sediment Pond, new map 3.2.1-4 and new engineering alterations pages 1/18, 1a/18, 2/18, 2a/18, 2b/18, 3/18, and 4/18.

Analysis:

Pond Designs

The operator has changed the required volume of containment from 95,380 cubic feet in the 6/20/89 submittal to 45,887.6. The majority of the change in storage volume came from re-analyzing the sediment volume. The operator previously used a conservative 0.1 Acre Feet/Acre including the undisturbed drainage to the pond. The re-calculated volume was incorporated in Attachment A revised August 29, 1989 and was assumed to be correct. The operator uses Israelson et. al., 1984: a version of the USLE. The operator may have originally over designed the pond (if assumptions and calculations made were correct) but, now reports a less conservative method. The operator retains a three year volume of sediment and therefore, the sediment detention volume is assumed to be adequate.

The proposed embankment height is shown to be less than the 7922' elevation shown in the previously approved plan. The operator's as-built pond volume is shown in drawing 3.2.1-4. According to the submitted stage volume curve the as-built is larger than the approved proposed design by approximately 1,403 cubic feet. The drawing lacks contour information necessary for determination of adequacy by the Division since, the contour elevations for the 7920' and 7921' are not complete. Additionally, the change in embankment elevation raises concern as to whether the remaining freeboard is adequate. The minimum embankment height is critical since the overflow elevation is shown at 7919.7' and the last complete contour shown is at 7918'. Without the 7920' contour information the minimum embankment height can not be verified. The map also does not provide clear contours across Eccles Creek.

Also in question are the 18 inch culverts shown at the south end of the pond. The inlets appear to be at a elevation some where near the overflow elevation. It is not clear if these culverts extend further than shown in the drawing.

This shows a definite need to supply the requested detailed contour and cross section maps of the sediment pond which clearly show the embankment elevation width and slopes. The location and the extent of the french drain in relation to the bottom of the stream channel and details and designs for the clay liner installed in the pond were not provided in this submittal. The operators presented map references Drawings 3.2.1-4A, and 3.2.1-3 for tributary areas and primary outlet information.

Information that should be included on the sediment pond map is enumerated below:

1. Decant elevation, decant details.
2. Minimum embankment elevation.

3. Depth from pond bottom to underlying French drain.
4. Clay liner depth and location.

Spillway Designs

The operator includes a demonstration that the pond will retain the 100 year- 6 hour precipitation event of 2.26 inches which is less than the 10 year 24 hour event in this case. The operator has not demonstrated that it may safely pass the design event because the minimum embankment height and thus, existing freeboard are not clarified. Additionally the operators existing plan contains a sedimentation pond Emergency Spillway in Section 13, revised 10-30-91. No emergency spillway is shown on the drawing.

Remaining condition:

1. Provide detailed contour and cross section maps of the sediment pond to clearly show the embankment elevation width and slopes, the location and the extent of the french drain in relation to the bottom of the sediment pond, and the location and relation of the pond to the stream channel; detailed information demonstrating that the sediment control structure is in compliance with performance standards and, details and designs for the clay liner installed in the pond.

Condition

2. *Diversions and Drainages. Within 30 days of acceptance of this partial approval, the operator shall provide a map identifying the drainage areas used in the design calculations for ditches DD-13, -13A and -14. The existing surface drainage design map shall be modified to incorporate these additional ditches and drainage areas. Design information and supporting calculations must be provided which demonstrate that the diversions and ditches downstream from these proposed ditches are adequate to handle the additional flow.*

Response:

Diversions and Drainages. To avoid confusion created by further clutter on map 3.2.1-3 the drainage is shown on an 8-1/2 X 11 sheet. It should be included in the Engineering section 10, Volume 5.

Analysis:

The drainage area draining to DD-13, shown on the drawing Section 10, Volume 5, was provided to avoid confusion created by further clutter. In general, the new information was not of improved quality. A single map should include all watersheds provided within the area covered. Large watershed areas are generally covered on a

separate map. The drainage map should be complete and accurate for all watersheds in the area presented. The operator proposes to submit newly flown maps. At that time the watersheds map is expected to be updated. The watershed area was not analyzed for accuracy.

The operator has not provided for increased design flow in the Drainages DD-10, DD-11 and culvert CD-14 downstream of DD-14. However, the runoff volume for DD-13 is small and the existing design (rev. 9/4/92) for ditches DD-10, DD-11 and culvert CD-14 is based on a 10 year-24 hour event. The design peak is considered within an adequate design range the additional runoff volume assuming the presented design input parameters are representative of the site.

Remaining Condition

None. The operator proposes to submit newly flown maps. At that time the watersheds map is expected to be updated for the area draining to DD-13.

Condition

3. *Foundation materials and Slope Stability ...The cross section will show : the location of the stream channel in relation to the outslope of the pad area.*

Response:

Foundation materials and slope Stability. Attached is a copy of the slope stability analysis for both the expansion and main coal storage area.

Analysis:

The Operator shows the drainage ditch at the toe of the slope but does not provide a cross sectional relationship to the stream at that point. The operator appear to have considered failure of the addition of fill only and not a combination of the two fill surfaces. The coal cross section is represented to be a maximum height of 16'.

Remaining Condition

3. Foundation materials and Slope Stability ...The cross section will show : the location of the stream channel in relation to the outslope of the pad area. The operator is also referred to the engineering comments for this permit condition.

Condition

4. *Maps and Plans. Maps provided of the railroad loadout facility, through successive changes to the site configuration have become illegible. An as-built surface operations and facilities map of the railroad load out facilities must be submitted to the Division in conjunction with the certified report required in condition 1 above. Contour information facilities, boundaries and the text on the map must be made*

more clear and legible. It is understood that this site will be flown and new maps digitized and submitted in 1994.

Proposal:

Map 3.231-3. To be completely redone in early 1994. It has already been flown, and the digitizing will be done this winter.

Analysis:

The map has been provided. Some details are still poorly displayed although, the operator has improved the quality of some labels. Maps should provide information sufficient to determine slope for hydrologic designs. The new maps should greatly improve the operators map quality.

On reclamation Map 4.4.2-1C the operator added the additional disturbed area but, did not change acreage of disturbance as indicated in note 3 of the map.

Remaining Condition

None.

Condition

5. *Protection of Buffer Zones. Information found in the proposal does not specifically address the measures taken to prevent coal spills from occurring as a result of coal handling on the coal storage area. A distinctive physical barrier must be provided to readily identify the extent to which coal can be stockpiled and to help prevent coal spillage on the out slopes of the pad area into the buffer zone. This can be accomplished by incorporation of berms or preferably jersey barriers along the top of the out slope of the pad area into the proposed permit change. In no case should coal materials be allowed to accumulate against or on top of these barriers in order to prevent such spillage. Such changes to the proposed plan shall be submitted to the Division within 30 days from the acceptance of this partial approval.*

Response:

MSHA requires a berm at the end of any pad where machinery operates. This dirt berm is shown on Map 3.2.1-3. (If coal is pushed against this berm, we will fill in ditch DD-13, a violation).

Analysis:

The operator has not addressed this permit condition in relation to protection of the Buffer Zone and drainage across the storage area. The suggestion that the berm will fill ditch DD-13 is only valid for the a portion of the storage area.

Remaining condition

5. Protection of Buffer Zones. Information found in the proposal does not specifically address the measures taken to prevent coal spills from occurring as a result of coal handling on the coal storage area. A distinctive physical barrier must be provided to readily identify the extent to which coal can be stockpiled and to help prevent coal spillage on the outslopes of the pad area into the buffer zone. This can be accomplished by incorporation of berms or preferably jersey barriers along the top of the outslope of the pad area into the proposed permit change. In no case should coal materials be allowed to accumulate against or on top of these barriers in order to prevent such spillage. Such changes to the proposed plan shall be submitted to the Division within 30 days from the acceptance of this partial approval.

RECOMMENDATION:

Within the approval document it is stated " With the exception of conditions 1 and 4 the requirements of these commitments must be met prior to final approval, which would allow the utilization of the area for coal storage within the expanded pad area." The operator has not met those conditions.

From a hydrologic standpoint, the lack of needed detail in this submittal raises concerns about compliance issues. It is recommended that the Division set a short time line for the operator to meet the remaining pond deficiencies.

cc: Steve Demczak

SKYLOADR.TD1