



# State of Utah

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October 10, 2002

TO: Internal File

THRU: Joseph C. Helfrich, Team Lead *JCH*

FROM: James D. Smith, Sr. Reclamation Specialist/Hydrology *JDS*

RE: Midterm Review, PacifiCorp, Cottonwood/Wilberg Mine, C/015/019-MT02-1

## SUMMARY:

As part of the Division's midterm permit review process, sections of the Cottonwood/Wilberg mining and reclamation plan were reviewed for compliance with the R645 Coal Mining Rules.

A midterm review of the applicable portions of the MRP has found that the plan contains a commitment that appropriate sediment control measures will be designed, constructed and maintained using the Best Technology Currently Available (BTCA) to:

- Prevent, to the extent possible, additional contributions of sediment to stream flow or to runoff outside the permit area;
- Meet the effluent limitations under R645-301-751; and
- Minimize erosion to the extent possible.

Design and as-built information in the MRP generally indicates that BTCA is being used for sediment control at ASCAs at the Cottonwood/Wilberg Mine, but the location of some ASCAs and disposition of the BTCA sediment control measures are not clear on some maps and plans.

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**TECHNICAL ANALYSIS:**

**OPERATION PLAN**

**HYDROLOGIC INFORMATION**

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

**Analysis:**

**Alternate Sediment Control Areas (ASCA)**

There are ten ASCAs in the permit area. A total of 15.61 acres is disturbed by these ASCAs according to Table 5 in Part 3 of the MRP.

1 - Miller Canyon – 0.02 acre. Sediment control at this reclaimed area is by surface roughening and deep pocking. This is discussed in Appendix XXII. Locations of the three small disturbed areas are shown on a map in Attachment # 4, but there are no detailed maps or plans. A photo essay in Attachment #5 and other photos in Appendix XXII document the nature of the ASCAs and BTCA used for sediment control. Detailed maps or drawings would provide no additional useful information.

2 – Sewer Absorption Field – 1.25 acres. Silt fence provides sediment control. Map 1-3 shows the general location at a small-scale. Map 7704-PP10 in Volume 6 details the placement of the silt fence at a larger scale. The Sewer Absorption Field covers approximately 3.7 acres, and the ASCA covers 1.25 acres. The location and outline of the ASCA is still unclear, and sediment control measures on the remaining 2.5 acres is not clear from information in the PAP.

3 – Proposed Cottonwood Fan-Portal Reclamation – 8.4 acres. This site is being reclaimed, and surface roughening, deep pocking, strawbales, silt fence, sedimentation basins, berms, and rock gabions provide sediment control. Although not specified in the MRP, vegetation is becoming established and provides substantial sediment control. Sedimentation ponds were removed in 2002. Silt fences may be removed in the near future. Map 3-13 of Volume 11 shows the features of this ASCA.

4 – Waste Rock Site – Outslope – 0.93 acre. Strawbales and silt fence provide sediment control at this ASCA, which is the outslope of a reclaimed waste rock pile. Plate 4-1 (Drawing CM-10826-WB) in Appendix VII shows the location of this ASCA.

5 – Guard Station – 0.18 acre. Silt fence provides sediment control. According to Map 3-16 (Drawing WS449D), part of the silt fence is outside not only the ASCA, but also outside the

disturbed area boundary. An inspection of the mine on September 19, 2002 revealed several additional discrepancies between the map and actual locations of siltation structures and the permit and ASCA boundaries around the Guard Station.

Behind the Guard Station there is a large silt fence across the main drainage, just above the outlet of the 90-inch main by-pass culvert. According to the permittee, this silt fence requires frequent cleaning and maintenance. This silt fence traps sediment mainly from undisturbed drainages outside the permit area, but also sediment from:

- sections of road that do not report to the South Pond (below the slot drains that report to the pond);
- the out slopes of the South Pond; and
- the outslope of the berm around the boulder pile located below the South Pond.

Although not shown on Map 3-16, straw bales filter runoff from these areas before it enters the drain leading to the silt fence.

The permittee has discussed removal of the large silt fence across the main drainage channel, but has not proposed an amendment to do this. After checking the disposition of these features during the September 19, 2002 inspection and reviewing the MRP, the Division has identified several things that need to be clarified if the Permittee wishes to pursue removal of this silt fence: these include some items identified as deficiencies in this technical memo.

- Map 3-16 needs to correctly show actual conditions before the Division can determine if removal of the silt fence can be done in compliance with the Coal Mining Rules. Discrepancies on Map 3-16 that have been identified during the mid-term review are discussed under the discussion of Maps, Plans, And Cross Sections Of Mining Operations.
- The disturbed area boundary needs to be accurately determined. Maps (dated 1991) in Appendix XIII show the area beyond the Guard House ASCA as undisturbed and show no silt fences in the main channel. Map 3-16 shows a larger Guard House ASCA, and a disturbed area outside the ASCA that includes the silt fences and part of the main channel and extends along both sides of the road down to the gate.
- The purpose, design, construction, and maintenance of the "boulder" area between the South Pond and the roads and of the "berm" around it needs to be clarified.

The inspection on September 19, 2002 also identified an area on the east side of the road, beginning between the first and second sections of guardrail inside the gate, that is used for access to clean-out the silt fence. This access area is an ASCA, treated by a second silt fence adjacent to and perpendicular to the large one across the drainage. This ASCA needs to be

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described in the MRP and shown on appropriate maps.

6 – Conveyor Bent Pad – 0.04 acre. Sediment control is by strawbales. Map 3-16 shows this ASCA surrounds the base of a conveyor bent located inside the disturbed area boundary; however, the contours on Map 3-16 are not sufficiently detailed to show that this ASCA is a relatively flat area cut into the side of a steep escarpment. The drainage from the area around this ASCA reports to the sedimentation ponds, but runoff from the ASCA is directed toward the adjacent 30-inch bypass culvert rather than to the disturbed area. Design and function of this ASCA are not clear from information in the MRP.

7 – Tube Conveyor Access Road - 0.24 acre. Sediment control is by silt fence, strawbales, and berms. Map 3-16 shows this ASCA.

8 – Wilberg Fan - 0.67 acre. A sediment trap and berm provide sediment control. Map 3-16 shows this site.

9 – Deer Creek Mine 9<sup>th</sup> East Breakouts – 0.60 acre. Reclamation of this site was completed in 1999, and surface roughening and deep pocking provide sediment control. The ASCA is shown on Map 3-16.

10 – Waste Rock Site –65027 – 3.28 acres. Map 4-2 in Volume 10 indicates the general location of this ASCA, and Map 4-1 details the location of the ASCA and the silt fences.

#### Other

Map 3-16 shows a small permitted, disturbed area centered on four concrete footings that support the bent on the north-south conveyor, which runs from the Wilberg Mine belt portal-C to the silo. This small disturbed area is an island surrounded by non-permitted pre-SMCRA disturbance. The footings themselves are pre-SMCRA structures. There has been no post-SMCRA disturbance of this small area, but it is included in the disturbed area because the conveyor system supported by these footings is part of the permitted operation: the reclamation plan is not clear as to whether these footings will be removed during reclamation. The concrete supports take up a large portion of this small area, and the remainder is the same as the pre-SMCRA disturbed surface outside the disturbed area boundary - mostly bare rock, rubble, and coal-mine waste. Erosion appears to be minimized to the extent possible, with no contribution of additional sediment to stream flow or to runoff outside the permit area.

This small area is not designated as an ASCA or SAE. Runoff from this small disturbed area can flow down onto disturbed, unpermitted, pre-SMCRA land, and drainage from this pre-SMCRA area reports to the main 72-inch by-pass culvert without treatment. Exemptions to the Siltation Structures requirements of R645-301-742.200 and R645-301-763 may be granted if the disturbed drainage area within the total disturbed area is small and the operator demonstrates that siltation structures and alternate sediment control measures are not necessary for drainage from

the disturbed areas to meet the effluent limitations under R645-301-751 or the applicable Utah and federal water quality standards for the receiving waters. The MRP contains no such demonstration from the operator, but this has apparently been accepted as *de facto* since the permit for this mine was issued.

### **Findings:**

Some items discussed in this section are listed as deficiencies in the section labeled Maps, Plans, And Cross Sections Of Mining Operations. Information on the use of BTCA to prevent additional contributions of suspended solids to stream flows outside of the permit area is not sufficient to meet the requirements of the Coal Mining Rules. Prior to approval the Applicant must provide the following information for the Mill Fork Lease PAP in accordance with:

**R645-301-742.124**, The Sewer Absorption Field covers approximately 3.7 acres, and the ASCA covers 1.25 acres. The permittee must clarify the sediment control measures used on the remaining 2.5 acres.

**R645-301-742.124**, The inspection on September 19, 2002 identified an area on the east side of the road, beginning between the first and second sections of guardrail inside the gate, that is used for access to clean-out the silt fence. This access area is an ASCA, treated by a second silt fence adjacent to and perpendicular to the large one across the drainage. This ASCA must be described in the MRP and shown on appropriate maps.

## **MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS**

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

### **Analysis:**

#### **Mining Facilities Maps**

ASCAs are shown on different maps, plans, or drawings in the MRP. Depictions of several of these ASCAs are inaccurate and need revision.

1 - Miller Canyon – Locations of the three small disturbed areas are shown on a map in Attachment # 4, but there are no detailed maps or plans. A photo essay in Attachment #5 and other photos in Appendix XXII adequately document the nature of the ASCAs and BTCA used for sediment control. Detailed maps or drawings would provide no additional useful information.

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2 – Sewer Absorption Field – Silt fence provides sediment control. Map 1-3 shows the general location at a small-scale. Map 7704-PP10 in Volume 6 details the placement of the silt fence at a larger scale. The Sewer Absorption Field covers approximately 3.7 acres, and the ASCA covers 1.25 acres. The location and outline of the ASCA are still unclear, and sediment control measures on the remaining 2.5 acres are not clear from information in the PAP.

3 – Proposed Cottonwood Fan-Portal Reclamation – 8.4 acres. This site is being reclaimed. Map 3-13 of Volume 11 shows the features of this ASCA.

4 – Waste Rock Site – Outslope – Strawbales and silt fence provide sediment control at this ASCA, which is the outslope of a reclaimed waste rock pile. Plate 4-1 (Drawing CM-10826-WB) in Appendix VII shows the location of this ASCA.

5 – Guard Station – Silt fence provides sediment control. According to Map 3-16 (Drawing WS449D), part of the silt fence is outside not only the ASCA, but also outside the disturbed area boundary. An inspection of the mine on September 19, 2002 revealed several additional discrepancies between the map and actual locations of siltation structures and the permit and ASCA boundaries around the Guard Station. These features need to be accurately surveyed and mapped, and if appropriate, indicated on the ground with signs, stakes, or other markers.

There is a large silt fence across the main drainage, just above the outlet of the 90-inch main by-pass culvert. This fence traps sediment from sections of road below the slot drains, the outslope of the earth-fill dam that forms the South Pond, and the outslope of the berm around the boulder pile: the berm and boulder pile are not shown on Map 3-16. Straw bales, which also are not indicated on Plate 3-16, filter runoff from these areas before it reaches the drop inlet.

The inspection on September 19, 2002 also identified an area adjacent to the road, on the east side near the entry gate and beginning between the first and second sections of guardrail, that is used for access to clean-out the silt fence. This access area is also an ASCA and is treated by a second silt fence adjacent to and perpendicular to the large one across the drainage. This ASCA needs to be identified on appropriate maps in the MRP.

Maps, dated 1991, in Appendix XIII show the area beyond the ditch and silt fence around the Guard House ASCA as undisturbed and show no silt fence in the main channel. Map 3-16 shows the silt fence, a larger Guard House ASCA, and a disturbed area outside the ASCA that includes the silt fences in the main channel and extends along both sides of the road down to the gate.

6 – Conveyor Bent Pad – Sediment control is by strawbales. Map 3-16 shows this ASCA surrounds the base of a conveyor bent located inside the disturbed area boundary; however, the contours on Map 3-16 are not sufficiently detailed to show that this ASCA is a relatively flat area cut into the side of a steep escarpment. The drainage from the area around

this ASCA reports to the sedimentation ponds, but runoff from the ASCA is directed toward the adjacent 30-inch bypass culvert. Design and function of this ASCA is not clear from the map, even though the actual disposition and function of this ASCA is evident upon inspection. Plate 3-16 needs to indicate the location of the straw bales and the flow path from the ASCA to the undisturbed channel

7 – Tube Conveyor Access Road - Sediment control is by silt fence, strawbales, and berms. Map 3-16 shows this ASCA.

8 – Wilberg Fan - A sediment trap and berm provide sediment control. Map 3-16 shows this site.

9 – Deer Creek Mine 9<sup>th</sup> East Breakouts – Reclamation of this site was completed in 1999, and surface roughening and deep pocking provide sediment control. The ASCA is shown on Map 3-16.

10 – Waste Rock Site –65027 – Map 4-2 in Volume 10 indicates the general location of this ASCA, and Map 4-1 details the location of the ASCA and the silt fences.

#### Other

Map 3-16 shows a small permitted, disturbed area centered on four concrete footings that support the bent on the north-south conveyor, which runs from the Wilberg Mine belt Portal-C to the silo. This small disturbed area is an island surrounded by non-permitted pre-SMCRA disturbance. The footings themselves are pre-SMCRA structures. There has been no post-SMCRA disturbance of this small area, but it is included in the disturbed area because the conveyor system supported by these footings is part of the permitted operation. This small area is not designated as a SAE; however, this has apparently been accepted *de facto* as a small SAE within a pre-SMCRA disturbed area since the permit for this mine was issued.

#### Findings:

**R645-301-512.140, -742.124,** The Sewer Absorption Field covers approximately 3.7 acres, and the ASCA covers 1.25 acres. The permittee needs to clarify the location and outline of the ASCA within the 3.7 acres, and also the sediment control measures on the remaining 2.5 acres.

**R645-301-512.140, 742.124,** According to Map 3-16 (Drawing WS449D), part of the silt fence at the Guard Station is outside not only the ASCA, but also outside the disturbed area boundary. An inspection on September 19, 2002 revealed several additional discrepancies around the Guard Station between the map and actual locations of siltation structures, permit boundaries, ASCA boundaries, and the

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boundary between pre-SMCRA and post-SMCRA disturbance. The permittee needs to accurately survey and map these features, and if appropriate, indicate their locations on the ground with signs, stakes, or other markers.

**R645-301-512.140, -742.124,** An area adjacent to the road, on the east side and beginning between the first and second sections of guardrail inside the gate, is used for access to clean-out the silt fence in the main channel. This access area is an ASCA, treated by a second silt fence adjacent to and perpendicular to the large one across the main channel. The permittee needs to identify this ASCA on appropriate maps in the MRP.

**R645-301-512.140, -742.124,** To help clarify sediment control measures for the area below the South Pond, the boulder pile below the South Pond, the berm around the boulder pile, and the straw bales at the drop-inlet that filter runoff from these areas need to be added to Map 3-16.

**R645-301-512.140, -742.124,** Map 3-16 shows Plate 3-16 needs to indicate the location of the straw bales at ASCA #6 (Conveyor Bent Pad) and the flow path to the undisturbed channel

**RECOMMENDATION**

To complete this mid-term review, the Permittee must provide the information required in the R645 Coal Mining Rules as outlined above.