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Technical Analysis and Findings

Utah Coal Regulatory Program

September 21, 2015

PID: C0250005
TaskID: 4967
Mine Name: COAL HOLLOW
Title: PIT 10 to SED POND 3

Summary

This is the third iteration of the Pit 10 to Sediment Pond 3 and as-built design update to Pond 1 amendment. These amendments to the Coal Hollow MRP are lumped together to reduce the number of amendments going back and forth between the Division and the Permittee. The Division inspector originally asked the Permittee to submit the Pond 1 amendment as the Pond 1 and Water Valve Task #4894. During development of underground mining in Pit 10, the Permittee decided it was necessary to install a mine de-watering system. They have decided to pump the underground mine water discharge to Sediment Pond 3 where it can flow offsite through UPDES 003. The Pond 1 amendment has been relatively straight forward. The Pit 10 to Pond 3 amendment is more complex because it deals with pond sizing and erosion prevention/stabilization measures.

Deficiencies Details:

kstorrar

Operation Plan

Spoil Waste Impounding Structures

Analysis:

The application does not meet the minimum standards of R645-301-533 due missing text updates within the MRP text in regards to Appendix 5-13 and discussion of the additional flow to Sediment Pond 3.

- The Permittee will update the MRP text to include updated references and information found in Appendix 5-13:
  - Chapter 5 Section 526.300, page 5-38
  - Chapter 5 Section 531, page 5-54
  - Chapter 5 Section 533.700, page 5-57

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Hydrologic General

Analysis:

The amendment does not meet the minimum hydrologic requirements of providing documentation of the area that will be affected by mine water discharge. In the event that Lower Robinson Creek receives continuous mine water discharge from Sediment Pond 3, the adjacent downstream geomorphology will likely be negatively impacted. The amendment needs to provide photo documentation of the geomorphic conditions down-stream of the permit area.

The amendment must provide a commitment to update the PHC in the event of continuous mine water discharge. The Smirl Coal seam is a fully saturated geologic unit. As active mining at the face continues into the water bearing seam appreciable amounts of water will drain from the face. This amount of water will likely exceed the amount of water needed for in-mine processes. Thus, water produced at the face from the two continuous miners will be continuously pumped out as mine-water discharge. At this time the PHC does not anticipate continuous mine water discharge.
However, a threshold value such as the volume of flow discharged over an uninterrupted length of time must be established to define continuous mine-water discharge from the underground workings. In the event underground mining continuously discharges mine-water the Permittee must commit to updating the Probable Hydrologic Consequences. This update PHC will trigger a study as to whether streamflow alteration is impacting the quantity or quality of water resources adjacent to the permit area.

Deficiencies Details:

R645-301-731; R645-301-120.200: The application does not provide a reference of where aerial photography of Lower Robinson Creek channel can be found. Additionally, the aerial photography in Appendix 7-1 does not show where Lower Robinson Creek channel and the channel receiving discharge from Sediment Pond 3 join. Pre-flow documentation of the channel downstream of Pond 3 (overlapping photos along the channel length) is necessary to identify future scour caused by sustained mine water discharge flows within Lower Robinson creek.

R645-301-728.333; R645-301-731.121: The application must establish a threshold value to define continuous mine-water discharge (volume/time) from the underground workings. In the event continuous mine-water discharge occurs, the Permittee must commit to updating the Probable Hydrologic Consequences. The commitments to update the PHC will trigger a study as to whether streamflow alteration is impacting the quantity or quality of water resources adjacent to the permit area.

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Hydrologic Sediment Control Measures

Analysis:

The amendment does not meet the minimum hydrologic requirements of diverting runoff in a protected channel. Appendix 5-2 shows the calculated flow velocity of Ditch 4 exceeds the reasonable non-erosive velocity of 4-5 fps for a grass lined open channel. Runoff velocities in Ditch 4 increase even beyond the calculated velocity when routed through the inlet to Pond 3 because there is a steep drop in elevation into the pond. Inspections of the inlet have verified the current constructed design is unstable and is in need of additional protection. The application must design the inlet to Sediment Pond 3 so it is stable and provide calculations for rip-rap sizing. Drawing 5-30 will be updated to show the new design that will stabilize the inlet.

Deficiencies Details:

R645-301-742.123: The amendment does not meet the minimum hydrologic requirements of diverting runoff in a protected channel. Appendix 5-2 shows the calculated flow velocity of Ditch 4 exceeds the reasonable non-erosive velocity of 4-5 fps for a grass lined open channel. Runoff velocities in Ditch 4 increase even beyond the calculated velocity when routed through the inlet to Pond 3 because there is a steep drop in elevation into the pond. The application must design the inlet to Sediment Pond 3 so it is stable and provide calculations for rip-rap sizing. Drawing 5-30 will be updated to show the new design that will stabilize the inlet.

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Hydrologic Siltation Treatment

Analysis:

The amendment does not meet the minimum hydrologic requirements for sediment pond sizing in the State's Coal Mining rules. The amendment states 4.95 ac. ft. is the runoff volume from watershed 3 for a 10-year 24-hour rain event. In the event that Pond 3 receives continuous mine water discharge, the static level of the pond will be held at the elevation of decant pipe. At this static elevation, the remaining pond retention capacity is 4.98 ac. ft. This is a very narrow margin of error as far as pond sizing goes. Therefore it is important the amendment provides calculations and a discussion of how the rain event runoff volume is determined so the Division can find the pond is adequately sized.

Deficiencies Details:

R645-742.221.33: The amendment does not meet the minimum hydrologic requirements for sediment pond sizing in the State's Coal Mining rules. The amendment needs to provide a narrative of the methodology and show the calculations for determining 4.95 ac. ft. is the runoff volume for a 10-year 24-hour event from Watershed 3 (Dwg. 5-26). These calculations will be shown and added to the Sediment Impoundment Sizing tables in Appendix 5-2.

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Support Facilites and Utility Installations

Analysis:

ANALYSIS:
The application does not meet the minimum requirements of R645-301-521.180 and -526 the require the description, plans, and drawing for each support facility to be constructed, used, or maintained within the proposed permit area. Text updates are missing within the MRP in regards to Appendix 5-13 and discussion of the additional flow to Sediment Pond 3.

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Maps Facilities

Analysis:

The application meets the minimum requirements of R645-301-521.120 through-521.125 which require maps to clearly show existing surface and subsurface facilities. The stage storage capacity table on Pond 3 and Pond 1 drawing was updated to reflect the as built designs.

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Maps Certification Requirements

Analysis:

R645-301-512 minimum requirements are met as all mine drawings and plates are stamped by a Utah certified professional engineer with experience in underground mining operations.

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Reclamation Plan

General Requirements

Analysis:

The minimum requirements of R645-301-540 are met within the application as there is no change to the existing MRP reclamation details. All pipes will be disconnected five feet below the surface, capped and then backfilled. The buried pipes will remain in place.

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Backfill and Grading General

Analysis:

The minimum requirements of R645-301-553 are met within the application as there is no change to the existing MRP grading reclamation details.

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Maps Reclamation Facilities

Analysis:

The minimum requirements of R645-301-542 are met within the application as there is no change to the existing MRP plan of the estimated final surface configuration back to AOC.

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Bonding and Insurance General

Analysis:

The application meets the minimum requirements of R645-301-800 as the applicant is current on the bond and insurance standings.

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