



Technical Analysis and Findings

Utah Coal Regulatory Program

February 16, 2016

PID: C0070013
TaskID: 5056
Mine Name: HORSE CANYON MINE
Title: DRAINAGE REVISIONS

Operation Plan

Mining Operations and Facilities

Analysis:

The amendment does not meet all the State of Utah R645 requirements for Mining Operations and Facilities.
The amendment does not meet the minimum requirements of R645-301-512.120,512.200, -542.800, and -553 by updating cut/fill certified engineered drawings and narrative for the proposed changes in reclamation. The narrative of grading activities within Chapter 5 was not updated nor were any cut/fill tables provided for the proposed earthwork detailed on Plate 7-5. Additionally culvert and ditch information presented in Chapter 5 conflicts with the information presented on Plate 7-5 and Appendix 7-4 (e.g. length and size). For example, DC-6 appears to be 120 ft long on Plate 7-5, reported as 106 ft long and 2 ft diameter in Chapter 5, and reported as 30 ft long and 1.25 ft diameter in Table 9 of appendix 7-4.

Deficiencies Details:

R645-301-512.120, R645-301-532, R645-301-533.200, R645-301-542.800, R645-301-553, and R645-301-830.140: The Permittee must provide updated narrative and/or tables within Chapter 5 and Earthwork grading bonding sheets that detail the changes in volumes of grading detailed on Plate 7-5.
R645-301-512.200, R645-301-521.180-.190, R645-301-532: The Permittee must provide correct culvert and ditch lengths throughout the MRP (Chapter 5, Appendix 7-4, and Plates 7-5, 5-2.

cparker

Relocation or Use of Public Roads

Analysis:

The amendment does not meet the State of Utah R645 requirements for the Relocation or Use of Public Roads.
The Permittee failed to provide enough information for the Division to be able to determine if the requirements of R645-301-527, -534 and -552 are met within the amendment. The additional road grading appears that the primary purpose will likely be as an access road for the Pond 1. The Permittee will demonstrate what the primary purposes of the road is, demonstrate if the road will be utilized by other entities beyond coal mining operations, and ownership/maintenance of the road.
In the event the Permittee is the owner and sole user on the roadway, the Permittee must follow applicable R645 rules for

ancillary roads. In the event the road is open to the public the Permittee must address the following R645 rules. Specifically the amendment must meet R645-301-521.133 by detailing general mining methods that would be employed under or within 100 ft of public roads to protect interest of the public. The amendment must also address R645-103.224.422 by providing proof of a weekly public notice. In addition, narrative in the corresponding sections of Chapter 5 and/or Appendix 5-4 would need to be updated to reflect the changes proposed within this amendment.

Deficiencies Details:

R645-301-521.133, R645-103-224.422, R645-301-527, R645-301-534: The Permittee will clarify the ownership and primary use of the roadway adjacent to the Disturbed area.

R645-301-527, R645-301-552: The Permittee will clarify the reclamation or final retention of the newly graded segment of the roadway at final reclamation within Chapter 5 and/or Appendix 5-4 narrative.

cparker

Topsoil and Subsoil

Analysis:

Analysis:

The application does not meet the requirements of R645-301-230, because the application does not include topsoil salvage from undisturbed areas within the surface facilities area. Topsoil salvage and volume stockpiled at the site are stated in Section 232.100 of the MRP, Available Soil Resources Table and in Figure 1. Both references were last updated in 2010 with the first Soil Salvage Report.

The Annual Report for 2014 (received February 2015) includes a Soil Salvage report of soil handling completed in 2014. The 2014 annual report includes a revision of Dwg 5-2 Surface Facilities showing 8.2 acres of undisturbed within the disturbed area and 2.88 acres yet to be disturbed for facilities expansion. However, a Drawing 5-2 was recently revised (May 2015) and incorporated into the MRP, which does not show any undisturbed areas within the facilities area. Therefore, soil salvage must have occurred in 2015 and a soil salvage report for the topsoil salvage from the 8.2 acres remaining in 2015 is required with this application. In addition, an accounting of the soil salvaged in 2014 and 2015, its placement and protection is required.

This amendment outlines interim phase I construction drainage control. The amendment removes several disturbed area culverts due to grading changes and revises the overland flow such that most of the flow from the upper pad reports to pond #1. Only a small amount of flow from the NW corner of the disturbed area will report to Pond #2 at two locations. Where topsoil remains in the path of culverts to be installed, the application must call out topsoil salvage, storage and protection.

The amendment adds culverts DC-12b, DC-12c, DC-12d, DC-13, DC-14, SP2-1 and UC-1. In total the amendment describes placement of 680 linear feet of culverts that are 24-30 inches in diameter and 480 ft of 60 inch diameter culvert for UC-1 which is already installed (Section 520/Culverts) as shown on Plate 7-5.

Table 9 of Appendix 7-4 Lila Canyon Mine Sedimentation and Drainage Control Plan, summarizes the length and width for each culvert. Alternate sediment control for the topsoil storage location is described in Section 5 of Appendix 7-4 .

Deficiencies Details:

Deficiencies:

R645-301-121.100 and R645-301-231.400, (1) The application must provide a topsoil salvage report for soil salvage activity conducted in 2015. (2) The application must update the Actual Salvaged Topsoil column of the Available Soil Resources Table of Section 232.100 of the MRP and the topsoil volume calculations in Figure 1 of the MRP for soil salvaged in 2014 and 2015. (3) The application must revise the narrative in Chapter 2 to reflect the current status of undisturbed soil within the disturbed area and provide the final configuration of the topsoil stockpile. (3) The application must state the location of topsoil placement in 2015 on the topsoil stockpile (NW, SW, NE or SE) and indicate surface roughening treatment and date of seeding and refer to the seed mix used. If seed mix differed from that described in Chapter 2 of the MRP, describe the seed mix.

R645-301-121.200, (1) Plate 7-5b should show the locations of flow entering the pond either by culvert or ditch. (2) If topsoil remains in the path of culverts to be installed, the application must call out topsoil salvage, storage and protection.

pburton

Vegetation

Analysis:

On December 17th, 2015 the Division received an amendment from Utah American Energy Inc. to revise drainage ditches and culverts at the Lila Canyon mine. This memo will include an analysis and findings of that information. A site visit was conducted on January 19th, 2015 with Karin Madsen and PJ Jensen from the mine. Photographs were taken along the routes of the proposed changes. The following changes as depicted on map 7-2 include:

Removal of culvert DC 9 from near the guard shack West to its outlet. Disturbed area drainage will then flow into disturbed ditch DD-17 and into sediment pond # 2;

Ditch DD7 will be constructed beginning near the confluence of DC8 and 9 to where it will connect with culvert DC-12a;

Additional culverting will continue along the East side of the existing road in sections 12b, c and d;

Culvert 3d will connect to a manhole at the South end of section 12d and daylight onto the inslope of sediment pond 1;

Drainage from the outlet of culvert 3d will be transported easterly across the inslope of sediment pond 1 in DD-16 to a rip-rapped inlet at the East end of the pond.

Topsoil is located in the tan shaded areas depicted on map 7-2. Additional topsoil may exist along the East side of the existing road where culvert DC-12a-d will be constructed. It is suggested that seeding in accordance with the approved MRP be implemented in the late Fall for those areas where topsoil has been manipulated. Excess topsoil should also be stored and seeded in accordance with the approved MRP. Additional topsoil protection measures may be recommended in the topsoil section of this review. The information presented in this amendment is adequate to meet the requirements of this section of the regulations.

jhelfric

Road Systems Classification

Analysis:

The amendment does not meet the State of Utah R645 requirements for Road Classification Systems.

The amendment does not provide enough information for the Division to determine if the amendment meets the minimum requirements of R645-301-527.100 by classifying each road as primary or ancillary in the existing MRP. The additional road grading appears that the primary purpose will likely be as an access road for the Pond 1. The Permittee will demonstrate what the primary purposes of the road is, demonstrate if the road will be utilized by other entities beyond coal mining operations, and ownership/maintenance of the road.

In the event the Permittee is the owner and sole user on the roadway, the Permittee must follow applicable R645 rules for ancillary roads, R645-301-527. In the event the road is open to the public the Permittee must address the following R645 rules. Specifically the amendment must meet R645-301-521.133 by detailing general mining methods that would be employed under or within 100 ft of public roads to protect interest of the public. The amendment must also address R645-103.224.422 by providing proof of a weekly public notice. In addition, narrative in the corresponding sections of Chapter 5 and Appendix 5-4 would need to be updated to reflect the changes proposed within this amendment.

Deficiencies Details:

R645-301-521.133, R645-103-224.422, R645-301-527, R645-301-534: The Permittee will clarify the ownership and primary use of the roadway adjacent to the Disturbed area.

R645-301-527, R645-301-552: The Permittee will clarify the reclamation or final retention of the newly graded segment of the roadway at final reclamation within Chapter 5 and/or Appendix 5-4 narrative.

cparker

Hydrologic Sediment Control Measures

Analysis:

The amendment does not meet the State of Utah R645 requirements for Hydrology: Sediment Control Measures.

The Permittee submitted an proposed amendment to the current Horse Canyon MRP. The amendment includes changes to the current drainage and sediment control measure at the mine surface facilities. Section 520 of the MRP was revised to list proposed changes to the culverts throughout the mine site.

Plates 5-2, 7-2, 7-6a, and 7-6b were also revised to include changes to these drainage systems.

Along with changes to Chapter 5, Appendix 7-4 was revised with new calculations and tables of the revised ditches, culverts, and watersheds of the surface facilities. Page 42 of Appendix 7-4 has a note added that would allow for minor adjustments to pond designs. This should be removed. With this statement it will be very difficult for the Division inspector to ensure the system is working as designed.

Tables 1 thru 13b of Appendix 7-4 were heavily revised to include all proposed changes. However, when review of these changes began, it quickly became clear that there were many problems with these tables. There were problems between what was designed in the tables in Appendix 7-4 and what was included in section 520 of the MRP. The culvert specifications were very inconsistent, including the lengths and diameters of each culvert. There were also inconsistencies between Appendix 7-4, chapter 5 specifications, and what was put in the revised plates. Other things were just unclear. See the deficiencies below for examples.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Hydrology: Sediment Control Measures. the following deficiencies must be addressed prior to final approval.

R645-301-732 The added note on page 42 of Appendix 7-4 must be removed. The design and operations of all aspects of the sediment pond should be clear at each phase of operations.

R645-301-732 There are numerous inconsistencies between Appendix 7-4, chapter 5 specifications, and what was put in the revised plates. These must be revised and corrected. For example, DC-6 is listed as 30 feet long and 1.5 feet in diameter in Table 9. In the revised chapter 5 text, DC-6 is listed as 107 feet long and 2 feet in diameter. To further add to problems, there is a note at the bottom of Table 9 stating that this culvert was replaced by culverts 20, 21 and 22. However, this culvert is still shown in the submitted plates. There are similar issues with Table 6 notes about ditches that no longer exist, but are still shown on plates. All of the hydrology information should be reviewed before resubmitting information to ensure that it is consistent throughout the MRP, as these examples are just some of the problems encountered.

adaniels

Hydrologic Ponds Impoundments Banks Dams

Analysis:

The amendment does not meet the State of Utah R645 requirements for Hydrologic: Ponds.

Tables 11a thru 13b of Appendix 7-4 revises the design of sediment ponds 1 and 2, that are existing at the mine facilities. These tables have a large amount of discrepancies, for example, Table 12a states that the bottom of sediment pond 1 is at elevation 5829, but plate 7-6a state that the bottom of the pond is at elevation 5839. This is just one error of many, so until the entire pond design and drawings have been corrected, they cannot be reviewed.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Hydrologic: Ponds. The following deficiency must be addressed prior to final approval:

R645-301-742.220 The Division is unable to review the design of the sediment ponds until inconsistencies between Appendix 7-4 and the submitted plates have been corrected. Table 11a thru 13b of Appendix 7-4 are inconsistent with the design shown of ponds in Plates 7-5, 7-6a, and 7-6b. For example, Table 12a states that the bottom of sediment pond 1 is at elevation 5829, but plate 7-6a state that the bottom of the pond is at elevation 5839. The Permittee must review and correct all sediment pond discrepancies before resubmitting the amendment.

adaniels

Maps Affected Area

Analysis:

The amendment does not meet the State of Utah R645-301-521.100 requirements for Affected Area Maps.

Plate 7-6a and Plate 7-5 show competing disturbance area boundaries. Plate 7-6a details grading associated with Pond 1 within the disturbance area. Plate 7-5 shows the same grading outside the disturbance area. All plates failed to detail the Permit boundary.

Deficiencies Details:

R645-301-521.140: The Permittee must correct all plates to show the approved disturbance area and permit area.

cparker

Maps Facilities

Analysis:

The amendment does not meet the State of Utah R645 requirements Mining Facilities Maps.

The Plates provided within the application provide competing information with the amendment narrative. Plate 7-5 lengths of ditches and culverts to not match the Table 9 of Appendix 7-4 and Chapter 5 table.

Deficiencies Details:

R645-301-512.200, R645-301-521.180-.190, R645-301-532: The Permittee must provide correct culvert and ditch lengths throughout the MRP (Chapter 5, Appendix 7-4, and Plates 7-5, 5-2.

cparker

Maps Certification Requirements

Analysis:

The amendment meets the State of Utah R645 requirements for Certification Requirements.

R645-3010-512 minimum requirements are met as all mine drawings and plates are stamped by a Utah certified professional engineer, David W Hibbs.

cparker

Reclamation Plan

Backfill and Grading General

Analysis:

The amendment does not meet the State of Utah R645 requirements for Backfill and Grading.

The amendment does not meet the general requirements of R645-301-553 by failing to detail the additional grading shown on Plate 7-5. The Permittee must provide a general backfill and grading plan that details how disturbed areas will be backfilled and graded to achieve the approximate original contour, eliminate all highwalls, spoil piles, and depressions, and achieve a postmining slope that does not exceed either the angle of repose or such lesser slope as is necessary to achieve a minimum long term static safety factor of 1.3 and to prevent slides, minimize erosion and water pollution both on and off the site, and support the approved postmining land use.

Deficiencies Details:

R645-301-512.120, R645-301-532, R645-301-533.200, R645-301-542.800, R645-301-553, and R645-301-830.140: The Permittee must provide updated narrative and/or tables within Chapter 5 and Earthwork grading bonding sheets that detail the changes in volumes of grading detailed on Plate 7-5.

cparker

Road System Retention

Analysis:

The amendment does not meet the State of Utah R645 requirements for Retention of Roadway Facilities.

The requirements of R645-301-534 and -552 are not met within the amendment. The additional road grading appears that the primary purpose will likely be as an access road for the Pond 1. The Permittee will demonstrate what the primary purposes of the road is, demonstrate if the road will be utilized by other entities beyond coal mining operations, and

ownership/maintenance of the road.

Deficiencies Details:

R645-301-534: The Permittee will clarify the ownership and primary use of the roadway adjacent to the Disturbed area.

R645-301-552: The Permittee will clarify the reclamation or final retention of the newly graded segment of the roadway at final reclamation within Chapter 5 narrative.

cparker

Maps Bonded Area

Analysis:

The amendment does not meet the State of Utah R645 requirements for Bonded Area.

The minimum requirements of R645-301-800 are not met within the amendment as grading is shown outside the disturbed area boundary detailed on Plate 7-5.

Deficiencies Details:

R645-301-521.100, R645-301-800: The Permittee must correct Plate 7-5 to show all grading within the disturbed boundary area.

R645-301-542.800, R645-301-830.140: The Permittee must provide detailed grading volumes for the new reclamation requirements for all ditches and pond 1 shown on Plate 7-5.

cparker

Maps Reclamation Final Surface Configuration

Analysis:

The amendment meets the State of Utah R645 requirements for Reclamation Backfilling and Grading Maps.

The minimum requirements of R645-301-542 are met within the amendment due to no changes suggested to the final reclamation backfill maps.

cparker

Maps Reclamation Certification Requirements

Analysis:

The amendment meets the State of Utah R645 requirements for Certification Requirements.

R645-3010-512 minimum requirements are met as all mine drawings and plates are stamped by a Utah certified professional engineer, David W Hibbs.

cparker

Bonding and Insurance General

Analysis:

The amendment does not meet the State of Utah R645 general requirements for Bonding and Insurance Requirements.

The amendment includes changes to Chapter 5 text culverts that is change the line item bond amounts, however, the information presented conflict with the details in Chapter 7 and Plate 7-5, 7-6a.

Deficiencies Details:

R645-301-121.200, R645-301-542.800, R645-301-553, R645-301-843.140: The Permittee shall correct all tables within Chapter 5, Appendix 7-4, Bond sheets and all relevant plates to match.

R645-301-121.200, R645-301-542.800, R645-301-553, R645-301-843.140: The Permittee shall update the additional grading required on the earthwork bond sheets.

cparker

Bonding Form of Bond

Analysis:

The amendment meets the State of Utah R645 requirements for Form of Bond.

The amendment meets the minimum requirements of R645-301-860.100 as the applicant does currently meets all the -860 requirements of a surety bond.

cparker

Bonding Determination of Amount

Analysis:

The amendment does not meet the State of Utah R645 requirements for Determination of Bond Amount.

The amendment does not meet the minimum requirements of R645-301-830.140 as the Permittee did provide detailed bond information but conflicting ditch and culvert information is present throughout the application in the narrative, tables and plates. The Permittee updated the demolition sheet to current year dollars. In order for all the sheets to still be cumulative both earthwork and re vegetation sheet must also be updated to the same year dollars and the years to escalate reduce to two years, to 2018 Dollars (the year of the next midterm).

Deficiencies Details:

R645-301-121.200, R645-301-542.800, R645-301-553, R645-301-843.140: The Permittee shall correct all tables within Chapter 5, Appendix 7-4, Bond sheets, and all relevant plates to match.

R645-301-121.200, R645-301-542.800, R645-301-553, R645-301-843.140: The Permittee shall update the additional grading required on the earthwork bond sheets

R645-301-121.200, R645-301-542.800, R645-301-553, R645-301-843.140: The Permittee will update the earthwork and revege sheets to the same year dollars as the demolition and change the escalate years from 5 to 2 to get 2018 dollars.

cparker

Bonding Terms and Conditions Liability Insurance

Analysis:

The amendment meets the State of Utah R645 requirements for Terms and Conditions for Liability Insurance.

The amendment meets the minimum requirements of R645-301-850 as the applicant currently holds liability insurance through The insurance includes the required Marsh from, explosives and claims made per occurrence.

cparker