



Technical Analysis and Findings
Utah Coal Regulatory Program

July 12, 2016

PID: C0150015
TaskID: 5211
Mine Name: EMERY DEEP MINE
Title: EXPANSION WITHIN BOUNDARY

Operation Plan

Mining Operations and Facilities

Analysis:

The amendment meets the State of Utah R645 requirements for Existing Structures.
The revisions include additional coal conveyor systems, a new substation, new screening and crushing facility, and truck loadout facilities associated with the new Emery 2 expansion project. The area where facilities will be constructed is located in the main portal area and an approved drainage basin. Reclamation bond calculations for the existing and new structures were included within this amendment.

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Existing Structures

Analysis:

The amendment meets the State of Utah R645 requirements for Existing Structures.
The amendment meets the requirements of R645-301-526.100 through -526.112 by providing updated information to include the discussion of the condition of any existing buildings detailed on Plate II-1. Plate II-1 was revised to show only existing structures and includes photographic evidence of the condition of each building depicted on the plate. The Permittee added clarifying statements at the beginning of Chapter II to broadly cover the conditions or required rehabilitation of the existing structure for the current operations to meet the R645-301-526 regulations pertinent to existing structures.
The amendment meets the requirements of R645-301-526.100 through -526.112 by showing extensive proposed facilities that do not exist and do not have all the required R645 supporting details shown on Plate II-1A. Plate II-3 was revised to reflect the demolition that has occurred at the 4th East Portal since temporary cessation at the mine.

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Road System Plans and Drawings

Analysis:

The amendment meets the State of Utah R645 requirements for Transportation Plans and Drawings.

The amendment meets the requirements of R645-301-534.100 by submitting plans and drawing for each road to be maintained within the permit area. The amendment now includes detailed narrative additions to Chapter II that detail the truck load out shown in red on the revised Plate II-1. Chapter IV Appendix IV-7 and Plate IV-8 details the existing approved mine roads. Plate IV-8A details the design specification for the proposed new road systems associated with Emery 2. The new section of road consist of four various parts. Section one is a paved section and contains specific road details. The remaining sections two through four are in a flat area with no real defined roadway but are constructed of compacted durable surfaces. Plan details of these sections have been included in Plate IV-8A.

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Road System Other Transportation Facilities

Analysis:

The amendment meets the State of Utah R645 requirements for Other Transportation Facilities.

The amendment meets the requirements of R645-301-521.170 by submitting detailed specification plans and drawing for each road, conveyor, and rail system to be used within the proposed permit area in updated Chapter II pated 5 through 17f , Chapter IV Part IV.B, Plates Plate IV-8, and Plate IV-8A

The amendment now includes detailed narrative additions to Chapter II to detail the four conveyors, reclaim tunnel, radial stacker, screening and crusher, and truck load out. The amendment also includes Plate II-1 to show the plan view of the proposed features.

The amendment includes detailed drawings of the four stated conveyor systems, reclaim tunnel, and truck loadout area. The plans and drawings, and design specifications demonstrate that the design utilizes best technology currently available to minimize additional contributions of suspended solids and disturbed the smallest practicable area. Existing roadways and structures are shown as black on Plate II-1.

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Support Facilites and Utility Installations

Analysis:

The amendment meets the State of Utah R645 requirements for Support Facilities and Utility Installations.

The amendment meets the 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.

The amendment includes detailed narrative additions to Chapter II to detail the four conveyors, reclaim tunnel, radial stacker, screening and crusher, and truck load out. The amendment also includes Plate II-1 to show the plan view of the proposed features. The additional mine substation will consist of an electric substation mount on a 75 CY concrete pad adjoined to the existing substation pad. The truck load area now includes enough details to show if the truck turn around will not be paved. The narrative for the loadout does detail a 48 inch conveyor, Conveyor 6, from the screen/Crusher building to the Truck loadout area. The conveyor is 217 linear feet supported by the two concrete pads (33 CY) for the elevated section. The screening and crushing equipment is a metal structure (40x22x55 Ft) mounted to a 143 CY concrete pad. The screening facility receives coal from Conveyor 5 and discharged into Conveyor 6. Conveyor 5 consists of a 54 inch conveyor partially elevated, at grade and supported through the reclaim tunnel. The elevated section is supported by four concrete pads for a cumulative 259 CY of concrete. Conveyor 5 receives coal from feeders beneath the radial stacker and discharged to the screening/crushing facility. The reclaim tunnel is a 12 foot diameter corrugated 320 foot long tunnel to reduce spill potential into the stream buffer area. Approximately 141 CY of concrete forms a floor support for the structure. A 120 foot escape tunnel is also included in the structure. The radial stacker is a 48 inch metal frame anchored to a concrete pad. Conveyor 4 receives coal from the drop chute of Conveyor 2 and discharged to a stockpile. Conveyor 2 is a 60 inch 260 foot long conveyor support on by two concrete pads for a cumulative concrete support structure of (186 CY+ 39 CY= 225 CY).

The amendment meets the R645-301-521.180 and -526 as the application includes plan and drawings for each support facility to be constructed. The plans and drawings, and design specifications demonstrate that the design utilizes best technology currently available to minimize additional contributions of suspended solids and disturbed the smallest practicable area. The truck load area narrative now includes enough details to describe the turnaround with design drawings to meet R645-301-526.220-526.222. The reclaim tunnel portion is now more detailed in the volume of cut/fill for

reclamation of the tunnel and what earthwork will be required to reclaim. The narrative of the reclaim tunnel specifies all reclamation grading that will be required at final reclamation of the site.

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Maps Affected Area

Analysis:

The amendment meets the State of Utah R645-301-521.100 requirements for Affected Area Maps.

The amendment meets the requirements of R645-301-521.100 through-521.130 by updating Plate II-1 to detail the new associated support facilities. All disturbances are located within already disturbed areas and will not increase the current disturbance boundary. The Permittee added drawings Plate II-1A was added to show the full extent of Emery 2 proposed plans. Chapter IV Appendix IV-7 and Plate IV-8 details the existing approved mine roads. Plate IV-8A details the design specification for the proposed new road systems associated with Emery 2.

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Maps Facilities

Analysis:

The amendment meets the State of Utah R645 requirements Mining Facilities Maps.

The amendment meets the requirements of R645-301-521.120 through-521.125 which require maps to clearly show existing surface and subsurface facilities. The amendment includes an update to Plate II-1 which details the main surface facilities associated with the existing and facilities proposed within this amendment. Plate II-1A was added to detail the full extent of the propose future plans of the Emery 2 mine. The updated plate details the new mine substation, truck loadout, screening and crushing facility at the new location, radial stack, a reclaim tunnel, and four sections of conveyor.

The amendment meets the requirements of R645-301-521.180 and R645-301-526 through -526.222. The application includes plans, and drawings for each support facilities detailed in the amendment to be constructed. The plans and drawings, and design specifications demonstrate that the design utilizes best technology currently available to minimize additional contributions of suspended solids and disturbed the smallest practicable area. The truck load area narrative now includes enough details to describe the turnaround including relevant design drawings that meet R645-301-526.220-526.222 on Plate IV-8A.

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Maps Certification Requirements

Analysis:

The amendment meets the State of Utah R645-301-512 Certification Requirements.

R645-301-512 requirements are met as all mine drawings and plates are stamped by a Utah certified professional engineer, Richard White, who has experience in underground mining operations.

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Reclamation Plan

General Requirements

Analysis:

The amendment meets the State of Utah R645 requirements for Reclamation Activities.

The requirements of R645-301-540 are met within the amendment as there is no change to the existing MRP reclamation details in Chapter III detailing the removal of all structures and grading to match Plate III-8.

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Maps Bonded Area

Analysis:

The amendment meets the State of Utah R645 requirements for Bonded Area.

The requirements of R645-301-800 are met within the amendment as the disturbance proposed within this amendment falls within previously approved and disturbed areas that will be reclaimed as detailed in Plate II-1 and Plate III-8 to AOC. The current bond is applicable to the disturbed area.

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Bonding and Insurance General

Analysis:

The amendment meets the State of Utah R645 requirements for Bonding and Insurance Requirements.

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

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Bonding Form of Bond

Analysis:

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

The amendment meets the requirements of R645-301-860.100 as the applicant currently maintains a surety bond amount of \$3,510,000. The Permittee must post an additional bond amount of \$298,000 for the minimum required bond amount of \$3,808,000.

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Bonding Determination of Amount

Analysis:

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

The amendment meets the requirements of R645-301-830.140 as the Permittee submitted detailed bond information in regards to the amendment. The Permittee updated all unit costs to second quarter R.S. Means Heavy Construction or provided contractor bids. All demolition sheet quantities were updated to reflect the current condition of the facilities at the site. Sheets 1 through 46 are features associated with the main facilities that remain from the original Emery Deep Mine. Sheets e1 through e7 are new construction items at the main facility associated with Emery 2. The sheets 4E01 through 4E34 are features associated with the old Emery Deep 4th East portal area. Plate II-1 shows the location and footprint of all features detailed within the demolition calculations along with Chapter II. Photos were added to Plates II-1 and Plate II-3 to show the current site conditions at both the main facilities and the 4th East portal area.

Thirteen sheets were removed from the demolition cost estimate (Rock Dust Silo, Seal Portals, Storage Trailers, Metal Storage Building, Truck Scale, Water Tank, Water Treatment Building, Coal Stockpile Feeder, Sampler Building, Conveyor System, Entrances 4th East, Trash Pit, and Skid Mounted Sheds. An appendix IV-9 was added to the MRP to document the removal of all the above features. A narrative describing what was removed, approximate removal dates, and photo showing the current conditions at the time of application for removal from the bond, May 2016.

The Rock Dust Silo sheet 07 was originally located near the southeast corner of the main portal supply yard (Map code 27 Plate II-1). The silo was moved to the 4th east portal and shown on Plate II-3, map code 13, and was later removed from the site entirely. Photo P3 shows the last location of the silo and that it has been removed. Detailed information of the facilities and specific photos of the silo can be found in Chapter IV, Appendix IV-9. The Division approves the removal of the structure from the demolition bond calculations.

Sheet 27 accounted for sealing of the four portals, map codes 10. Plate II-1 shows the location and P4 shows the reclamation of the portals. Detailed information of the facilities and specific photos of the portals can be found in Chapter IV, Appendix IV-9. The Division approves the removal of the structure from the demolition bond calculations.

Sheet 25 accounted for three storage trailers at the supply yard. The location of the trailers can be seen on Plate II-1 map

code 14. Detailed information of the facilities and specific photos of the trailers can be found in Chapter IV, Appendix IV-9. The Division approves the removal of the structure from the demolition bond calculations.

Sheet 20 accounted for metal storage building that was previously located adjacent to the return air shaft. Map code 20 now described the min fan building on Plate II-1. Detailed information of the facilities and specific photos of the facility can be found in Chapter IV, Appendix IV-9. The Division approves the removal of the structure from the demolition bond calculations.

Sheet 14 accounted for an old truck scale foundation that was located on the south side of the entrance near pond eight. The scale has since been dismantled as seen on Photo P2 on Plate II-1. Detailed information of the facilities and specific photos of the facility can be found in Chapter IV, Appendix IV-9. The Division approves the removal of the structure from the demolition bond calculations.

Sheet 31 accounted for a 100,000 gallon water tank, map code 5 on plate II-1, that was moved to the 4th East portal area. See chapter II page 2 for more details. Detailed information of the facilities and specific photos of the facility can be found in Chapter IV, Appendix IV-9. The Division approves the removal of the structure from the demolition bond calculations.

Sheet 11 accounted for a fresh water treatment system that was reclaimed when the mine facilities began using city water. The equipment was retro fitted to the Forman Bath house, Map code 6 on plate II-1. A new demolition tab title Forman's bath house was created to account fo the building and concrete demolition and removal. Detailed information of the facilities and specific photos of the facility can be found in Chapter IV, Appendix IV-9. The Division approves the removal of the structure from the demolition bond calculations to a new sheet.

Sheet 34 accounted for a coal stockpile feed that was part of the Tipple/stacker reclaim detailed on demolition sheet 1 at the main portal. The map code 1 was placed on Plate II-1 with P7. Detailed information of the facilities and specific photos of the facility can be found in Chapter IV, Appendix IV-9. The Division approves the removal this sheet and the information present within it on Demo sheet Stacker-Reclaimed sheet 01 of the demolition bond calculations.

Sheet 29 accounted for the conveyor system of the 42 inch and 54 inch belts, map codes 6 and 7. Entire length of the old foot print of the 42" conveyor must be shown. Photo P5 show the footprint of the 42" conveyor after it ascends out of the pit and connects to the crusher building. Detailed information of the facilities and specific photos of the facility can be found in Chapter IV, Appendix IV-9. The Division approves the removal of the structure from the demolition bond calculations as the conveyor's were disassembled and moved to Emery 2 conveyor system. They are now accounted for within the emery bond sheets.

Sheet 37 accounted for the three entry portals a the 4th East portal, map code 24. . Detailed information of the facilities and specific photos of the facility can be found in Chapter IV, Appendix IV-9. The Division approves the removal of the structure from the demolition bond calculations. Only portal demolition was removed and regrading associated with the portals remains in the Earthwork sheet.

Sheet 44 accounted for a trash pit that was never constructed. Detailed information of the facilities and specific photos of the facility can be found in Chapter IV, Appendix IV-9. The Division approves the removal of the structure from the demolition bond calculations.

Sheet 46 accounted for skid mounted sheds. The Skid mounted shed structures appear to have been removed. It is clear the concrete pads associated with these structures has been removed as well. . Detailed information of the facilities and specific photos of the facility can be found in Chapter IV, Appendix IV-9. The Division approves the removal of the structure from the demolition bond calculations.

Demolition sheet 29 contained a modular storage shed that was removed from the area at the time of temporary cessation. Photo 5 on Plate II-1 shows the now empty area as the conveyor is sitting the original place of the explosive shed. The Permittee will be adding a similar shed in the future and left this sheet within the MRP blank as a place holder.

The radial stacker equipment listed on Sheet e2 Radial Stacker GA-5-H-eg is from 4th East area and is placed on exposed bedrock. No concrete footings are associated with the structure.

Several errors described below were corrected in the demolition, earthwork, and revegetation cost estimate sheets. The demolition sheets had three reoccurring errors that were corrected. The concrete demolition was updated on demolition sheets through the reclamation bond calculations with an updated contractor bid. There were various line item errors that were corrected on demolition sheets detailed above. The resulting new demolition subtotal is \$304,780

The earthwork sheets had some general errors in the operator wages. The wages were corrected to use the bare cost that

does not include overhead and profit, following OSM Bonding reclamation cost estimate guidelines. The new earthwork subtotal is \$2,166,952.

The revegetation sheet after being updated to 2016 unit costs totaled to \$489,926.

The three categories re-calculated in this new estimate, and their sub-totals are as follows:

Facility Demolition and Removal.....\$304,780

Disturbance Backfilling and Grading.....\$2,166,952

Re-vegetation of Disturbed Areas.....\$489,926

The Total Direct Cost to reclaim all disturbed areas associated with the Emery Deep Mine

Indirect Costs have been calculated to Total.....\$793,724

Total Reclamation Cost in 2016 dollars\$3,755,383

Total minimum Bond Required in 2018 dollars\$3,808,000

Current Bond posted \$3,510,000

The application is recommended for conditional approval pending the Permittee must post an additional \$298,000 to meet the minimum required reclamation bond.

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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 requirements of R645-301-850 as the applicant currently holds liability insurance through Illinois National Insurance Company, effective until 12/1/16. The insurance includes the required Marsh from, explosives and claims made per occurrence.

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