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Technical Analysis and Findings

Utah Coal Regulatory Program

November 6, 2015

PID: **C0250005**
TaskID: **4965**
Mine Name: **COAL HOLLOW**
Title: **PHASE I BOND RELEASE**

Summary

Analysis:
This bond release application, task 4965, is for Phase 1 bond release on areas identified as BRP1-1 (55.2 acres), BRP1-2(55.2 acres) and BRP1-3 (4.4 acres), shown on Bond Release 15_1/Figure 1, totaling 100.5 acres. Surface ownership is held by C. Burton Pugh (BRP1-1 and BRP1-3); and by Richard L. & Alecia S. Dame(BRP1-2), as shown on Drawing 1-3 of the MRP. Original lease agreements were received June 14, 2007.

Bond release Drawing 5-19 shows the polygons of bond release areas. The 100.5 acres includes final grading in portions of mining western Pits 1-9 and southern Pits 21-28. (See Drawing 5-10 of the Mining and Reclamation Plan for Pit and HWT locations.)

Figure 1-A, shows BRP1-1 and 1-3 in more detail and provides cross section locations in plan view. The cross sections for BRP1-1 and BRP1-3 are shown on Figure 1-D and Figure 1-E.

Bond release area BRP1-2 is shown on Figures 1-B and 1-C in more detail. These figures provide cross section locations in plan view. The cross sections for BRP1-2 are found on Figures 1-F, 1-G, and 1-H.

The task 4965 bond release application was received on August 6, 2015, with supplemental information received on August 13, 2015. After the bond release inspection on October 6, 2015, maps were revised to show original contour and to document reclaimed roads. In addition, the update removed topographic lines from Drawing 5-17 (Overburden removal Ultimate Disturbance) and Drawing 5-19 (Bond Polygons). Drawing 5-18 was revised to remove calendar dates from the bond release phases. These revisions were received October 21, 2015, and revised again on 11/3/2015 to provide basic information such as identification of bond release areas and station locations for cross sections on the plan view. Errors in presentation still remain with the final maps, as the numbers of the station locations are presented backwards and the change in elevation from original to final reclamation is reported as a positive number, when the change was negative. But the Division has been able to interprete the information. This review of task 4965 considers all the information received pertaining to BRP1-, BRP1-2, and BRP1-3.

Deficiencies Details:

pburton

The Permittee submitted erroneous sheets within the bond application of Task 4965 and 4980 that arrived at the Division October 21, 2015. The Division expedited the review and documented the critical errors in as promptly as time as possible given pressure from several other operator amendments. A complete detail document was sent on November 4, 2015 to the Permittee outlining each error along with the complete electronic Division estimate to expedite the Permittee's response.

The Division reached out to the Permittee's staff to offer assistance November 4th and 5th. The Permittee submitted revised cost estimates on November 6, 2015.

The current application cannot be finalized with the submitted information but the analysis of the Bond release was completed utilizing the Division's estimate, which was provided to the Permittee. The Permittee still needs to provide corrected bond sheets, updated figures that display bond calculations, and chapter 8 with correct bond numbers and all references of the North Lease permit removed.

Deficiencies Details:

cparker

General Contents

Maps and Plans

Analysis:

The applicant submitted revised maps on November 6, 2015 showing the bond release areas along with cross-sections.

Deficiencies Details:

pburton

Reclamation Plan

Approximate Original Contour Restoration

Analysis:

Analysis:
The application meets the requirements of R645-301-553.110, to achieve approximate original contour, because the graded area closely resembles the surface configuration prior to mining. It is difficult to determine from the maps whether the land blends into the surrounding terrain, because the contour lines do not continue into the adjacent area. However during the onsite inspection, the blend was apparent.

Figure 1-A shows BRP1-1and BRP1-3 in more detail and provides cross section locations in plan view. West to east cross sections for BRP1-1 and BRP1-3 are found on Figure 1-D. North to south cross sections for BRP1-1 and BRP1-3 are found on Figure 1-E. These cross sections show approximately 75 ft of fill. The cross sections illustrate the difference between original surface and backfilled surface. This difference is recorded as a positive number, which is misleading. The difference is a negative number. That is to say, the fill is below the original grade. Fill above Pits 1,2,4,7 and 8 averages six feet lower than the original ground level and is a maximum of 11 feet below the original ground. (This conclusion was arrived at by comparison of the August 6, 2015 cross sections with the October 21,2015 cross sections.) Settling of the backfilled pits is anticipated and the ground surface may lower further over time.

Reconstructed Robinson Creek picks up the drainage from its north and east as the topography slopes at its original grade. From the southeastern portion of BRP1-1 the topography slopes to the base of the spoil stockpile and northwest towards DD4. Low spots north and south of the haul road over pit 2 do not report to DD4 and will need to be watched (Cross section B-B' Station 3+75 and Cross section C-C' station 14+75).

Figure 1-B shows BRP1-2 in more detail and provides cross section locations in plan view. West to east cross-sections F-F' and G-G' are shown on Figure 1-F. The north to south cross section H-H' is shown on Figures 1-G. The cross sections show the depth of fill to be approximately 100 feet deep and the final contour is on the average about five feet and a maximum of ten feet below the original land surface. The land follows the original grade. The general direction of overland flow is to the southeast. There are low spots north and south of Dames road above pits 23 and 25 that will need to be

watched. Rebuilt Roads cross-section C-C' shows a significant drop in elevation of 1.5 feet above the Dames road culvert and below the Dames road culvert. Erosion at the outlet of the culvert will be monitored and repaired.

pburton

Backfill and Grading General

Analysis:

The minimum requirements of R645-301-553 are met within the application as the application includes updated backfill and grading information if the Permittee address the errors in the application regarding volumes. The analysis below was conducted on the corrected sheets the Division supplied to the Permittee 11/5/2015.

The bond application included update Drawing 5-17 to reflect the changes of 2.1 acres of surface disturbance that was changed to excavated area of 2.1 acres. The application also increased the total excavation volume of 20,651,261 BCY.

Figures of the bond release areas were provided detailing the plan and profile view for Bond Release Submission 15_1. The total bond release area was broken into three groups BRP 1-1 through BRP1-2. BRP 1-1 and BRP 1-3 includes Pits 1A, 2 through 9A for a total surface disturbance of 60 acres and approximately 9,508,729 BCY of backfill. BRP 1-2 includes Pits 9A, 21A, 22 through 28 for a total surface disturbance of 40 acres and approximately 5,086,351 BCY of backfill. In total 100.4 acres were backfilled with 14,595,080 BCY of overburden. The application meets the minimum requirements for Phase I bond release.

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Road System Reclamation

Analysis:

Analysis:
The County road was reconstructed in BRP1-2. The location of cross section A-A' along the length of the county road is shown in plan view, Rebuilt Roads Figure 1C, but the cross section could not be found with the application received on 10/21/2015.

Kane County was involved in the reconstruction and approved of the compaction of the road (letter from Kane County Road Department dated 4/9/2015). A letter from Byrad Kershaw for the Kane County Commission expressed acceptance of the reconstructed road along its length (communication dated 10/16/2015, sent to file 10/29/2015), although only the southern portion of the permit area (over pits 22 - 28) has received final compaction and graveled surface. The road through BRP1-1 and BRP1-3 has not been compacted and is not at final grade and does not have the final graveled surface.

Lou Pratt, Kane County Road Department was present at the bond release inspection on 10/6/2015. He is aware that only the County Road in BRP1-2 has been reconstructed to the terms of the County Agreement (Appendix 1-7 and Dwg 5-22F of the MRP). Some repair work was noted as necessary along the county road within BRP1-2. He gave his final approval of that work in an email dated 10/30/32015.

Cross section locations of the reconstructed Dames road are shown on Rebuilt Roads Figure 1-C. The road is 1,200 feet long and intersects with the County road above Pit 25, approximately 200 feet north of its original alignment. Cross section B-B' illustrates the topography of the current Dame's access road. A comparison of the original grade with the existing grade in the new location is also provided.

The reconstructed farm access road runs from the County road 1,100 feet east to the Dame's property gate. The road is 2.5 feet above the surrounding land and was improved with a gravel surface. From the County road, the access road descends at a grade of 4.3 to 4.8% for 250 feet. It then has a gentle grade of 1.7% or less up to the farm gate. Reconstruction of an 'all-weather roadway' was outlined in the original lease agreement (Appendix 1-2, Article 9.05, Confidential Binder, received 6/14/2007). Mr. Dame gave verbal concent to change the location of the road (personal communication with Priscilla Burton on 10/1/2015), but expressed concern about the grade of the new road and the drainage culvert in the road (communication received 10/13/2015). The original road had a shorter climb of 100 ft at 4.3% grade to meet the county road, but also had a climb of 500 feet on the east to the farm house at grades of 2.5 to 3.6%. After discussion with Alton Coal Development, Mr. Dame is accepting of the new road construction (personal communication with Priscilla Burton on 11/4/2015).

pburton

Hydrological Information Reclamation Plan

Analysis:

The Phase I Bond Release application meets the State of Utah R645 hydrology requirements for reclamation.

The application provides multiple plan view maps and cross-sections of the reclaimed areas slated for Phase I bond release. The maps and cross-sections show the Permittee has achieved approximate original contour (AOC) of the land surface for all of the backfilled pits. In achieving AOC, the Permittee has met the minimum hydrology reclamation requirements of R645-301-762.100. Restoring the natural drainage patterns. During the Oct. 6th Bond Release inspection it was determined the post-mining drainage within the bond release area matches the pre-mining drainage of Watersheds 3 and 4.

The permanent diversion of miscellaneous flows under Dame's road meets the State of Utah R645 hydrology requirements. The culvert installed under Dame's access road receives miscellaneous flow from ~62 acres of watershed 4. The Permittee has provided culvert sizing calculations showing it will safely and adequately pass runoff from a 10 year-6 hour storm event as required by R645-301-742.333.

kstorrar

Contemporaneous Reclamation General

Analysis:

The minimum requirements of R645-301-553 of backfill and grading are met within the application as detail in Backfill and grading reclamation finding details if the Permittee address the errors in the application regarding volumes. The analysis below was conducted on the corrected sheets the Division supplied to the Permittee 11/5/2015.

The mine continues reclamation actives at the site including end dumping from the excess spoil pile to backfill Pits 9-B, HWT 1B, HWT 2, and HWT 3. Groundwater flows into the open HWT were witnessed at the bond release inspection; specifically along the eastern side of HWT 3. The flows have been documented in month inspection reports and continue to flow but maintain a combine flow rate under one gpm. As part of the reclamation process the mine has developed haul roads through BRP 1-1 and BRP 1-3, as detailed on Figure 1 and Figure 1-A in blue. The surface area associated with the roads is approximately one acre. The subsoil within the roadway has been removed and stored immediately on either side of the roadway. The immediate proximity of the subsoil for replacement and minimal area disturbed with the roadway results in a negligible cost associated with subsoil reapplication can be assumed to be accounted for in the rounding off of the Coal Hollow Mine's total bond of $12,750,000.

A culvert was installed in the Dames access road and was completely open at the time of the bond release inspection. All ditches and culverts associated with the restored country road were to Kane County's satisfaction as documented in the final approval letter from Byrad Kershaw from Kane County Commission (sent to OGM file 10/29/2015). In correspondence with the OGM inspector and Louis Pratt from the Kane County Commission GIS, additional work will be completed on the Kane County Road in a low area to add an additional culver and re-compact back in place. The Kane County has express that such a remedy should be more than sufficient to meet their concerns.

cparker

Stabilization of Surface Areas

Analysis:

On September 10, 2015 the Division received an application for phase I bond release on certain areas within the Coal Hollow mine permit area. This memo will include a review of that information. The amendment meets the State of Utah R645 requirements for R645-301-357. However the application includes areas that have been backfilled and graded and some of which have also been topsoiled and seeded. The Division clearly realizes that topsoil redistribution and seeding are not required for phase I bond release. However if there are areas that have received these treatments and they are included in the phase I application pertinent information such as acreages, locations, volumes, seed mixes and times of seeding are typically provided in order to determine when the 10 year liability period will begin. The permittee (Alton Coal Development) needs to provide that information and include it in their MRP for those revegetated areas included in the phase one bond release application and a statement regarding when the last augmented seed has or has not occurred as well as a request to start or not start the 10 year liability bond clock on those areas. [JCH]

jhelfric

Maps Affected Area Boundary

Analysis:

The minimum requirements of R645-301-542 are met within the application as Figure 1 of Bond Release submission 15_1 was updated to reflect the application for Phase I Bond release of 100.5 acres if the Permittee address the errors in the application regarding volumes. The analysis below was conducted on the corrected sheets the Division supplied to the Permittee 11/5/2015.. The remaining total Phase I Bond release area is 241.5 acres.

The application included updating the overall surface disturbance of the site in Figure 5-17. The updated figure reflects more accurate excavation volumes of 20.6 MBCY within the original total surface disturbance of 342. Excavated areas were expanded a total of 2.1 acres since the figure was updated in March 2015. The 2.1 acres were originally considered part of the surface disturbance associated with the facilities. The Permittee will engage with Division to establish documentation to justify the changes in area with no changes to the volumes associated with the individual pits in a timely manner after permit renewal.

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Maps Bonded Area

Analysis:

The minimum requirements of R645-301-800 are meet within the application as the bonded area map was updated in Figure 1. Figure 1 of Bond Release submission 15_1 was updated to reflect the application for Phase I Bond release of 100.5 acres. The remaining total Phase I Bond release area is 241.5 acres.

The application also included update bond maps Drawing 5-18 to demonstrate the bond release sequence for the southern portion. Drawing 5-19 was also update to reflect the change in the bond polygons utilized in the bond calculations sheets within Chapter 8. The Permittee will engage with Division to establish documentation to justify the changes in area with no changes to the volumes associated with the individual pits in a timely manner after permit renewal.

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Maps Reclamation BackFilling and Grading

Analysis:

The minimum requirements of R645-301-542 are met within the application as updated backfilling and grading areas were provided. Additional scaled profile views of bond release areas BRP 1-1 and BRP 1-3 where provided in Figure 1-D to demonstrate how AOC was achieved in restoring the historic drainage patterns at the site. The profile also demonstrates where areas were backfilled vs undisturbed. The largest variance from AOC in BRP 1-3 within the provided profiles is 11.59 feet below AOC. Figure 1-E was provided and shows how AOC was achieved in BRP 1-2 and what portions where backfilled vs original AOC elevation. The largest variance from AOC in BRP 1-2 is 11.10 feet below AOC. These variances from AOC are within acceptable tolerances of the Division.

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Maps Reclamation Final Surface Configuration

Analysis:

The minimum requirements of R645-301-542 are met within the application detailed figures were included within the bond release application that show final surface configuration back to AOC. Additional scaled plan views of bond release areas BRP 1-1 and BRP 1-3 where provided in Figure 1-A to demonstrate how AOC was achieved in resorting the historic drainage patterns at the site. Figure 1-B was provided and shows how AOC was achieved in BRP 1-2 by establishing drainage flow to the south east.

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Bonding Form of Bond

Analysis:

The application meets the minimum requirements of R645-301-860.100 as the applicant currently maintains a surety bond amount of $12,750,000 which is held by Lexon Insurance Co with a rider held by Ironshore Indemnity Inc.

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Bonding Determination of Amount

Analysis:

The Permittee submitted a complete updated Chapter 8 of the MRP to reflect the change in areas, pit release sequencing, and titles utilized to call out each bond release application. The complete Chapter 8 includes information pertaining to the North Lease permit area that is currently within the Division for review under Task 4942. These references should have been removed prior to submission to the Division, but due to a lack of response in a timely manner by the Permittee the Division had no recourse but to review the Chapter 8 and disregard all North Lease permit area. The approval of this amendment does not endorse any and all the North Lease permit area verbiage within the submitted Chapter 8. The Permittee will provide clean copies with the North Lease permit area removed for final approval.

The application meets the minimum requirements of R645-301-830.140 if the Permittee address the errors in the application regarding escalation. The analysis below was conducted on the corrected sheets the Division supplied to the Permittee 11/5/2015.

The Permittee submitted an initial application for Phase I bond release on approximately 80 acres within the permitted area for a surety bond reduction of $10,900,681. The Division staff conducted site inspection on March 2nd and 24th of these areas where each of the bond areas was walked an inspected for grading and stability. The Permittee submitted several more successive bond application that resulted in changes of pit dimensions. The Division requested the Permittee to combine the updated information into one coherent application to expedite the process.

As a result of this a formal new submission for Phase I bond release was received by the Division and a new site inspection was conducted October 6, 2015. The current bond application is for a release on 100.4 acres within the permitted area for a surety bond reduction of $21,921,515. The site inspection verified that the following pits within the application have achieved approximate original contour: Pit 1A, 2, 3, 4, 5, 6, 7, 8, 9A, 21A, 22, 23, 24, 25 ,26, 27, and 28.

The remaining bond required for the Coal Hollow Mine is $13,797,000.

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Bonding Terms and Conditions Liability Insurance

Analysis:

The application meets the minimum requirements of R645-301-850 as the applicant currently holds liability insurance through American Mining Insurance Company, effective until 12/10/15. The insurance includes the required Marsh from, explosives and claims made per occurrence.

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