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DEPARTMENT OF NATURAL RESOURCES

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Technical Analysis and Findings
Utah Coal Regulatory Program

PID: C0070019
TaskID: 4683
Mine Name: CENTENNIAL MINE
Title: MIDTERM COMPLETION RESPONSE

Summary

The required bond amount needed to maintain compliance at Centennial until 2019 is \$ 1,303,000.00
The posted bond amount currently being held by the Division and also payable to the U.S. Office of Surface Mining is \$ 1,520,000.00.
The difference between the posted bond amount and the required bond amount is \$ 217,000.
This is 14.27 % of the posted bond. As this amount is more than the required bond amount, NO ADDITIONAL BOND IS NEEDED AT THIS TIME (10/28/2014).
Findings:
NO ADDITIONAL BOND IS NEEDED AT THIS TIME (10/28/2014).
RECOMMENDATION:
The Division should complete the 2014 Mid-term Review Process for the Centennial Project.

phess

General Contents

Identification of Interest

Analysis:

R645-301-112.220. Chapter 1 Updates, including listing Jay Marshall as resident agent, was approved with Task #4518, Lease Relinquishments and has been made part of Appendix AA.

R645-301-112.300. The application addresses the discrepancies to the MRP for the Murray Energy Corporation (#152552) as requested.

The requirements of R645-301-112 have been met.

sssteab

Violation Information

Analysis:

R645-301-113 The Operator updated Appendix 1, Part 3 to contain a listing of all violations received within the last three

years by Andalex and affiliated companies.

The requirements of R645-301-113 have been met.

ssteab

Operation Plan

Topsoil and Subsoil

Analysis:

Several shrub species were seeded on topsoil pile F in 1983 and on the Left Hand Fork topsoil pile in 1995 (p. 3-18). During the mid term site inspection (July 7, 2014) rabbit brush and big sage were dense on the slopes of Topsoil pile F. Black sage and winterfat shrubs were noted as very prevalent on topsoil stockpile C. Neither of the latter two shrubs is included in the recommended seed mix for the mine site, provided on pages 3-21 and 3-22.

Cut slopes around the shop building and the Apex truck loadout have been designated as substitute topsoil (p. 2-3 and Plate 6) These slopes were seeded with the interim mix in 1982 with 1 ton/ac straw and seeded again with final seed mix (pp. 3-21 and 3-22) 1990. They were not hydromulched as described on p. 3-15) in 1990 because the vegetation was already well established. Vegetation on these slopes included beg sage, rabbit brush and wheat grass. These slopes will be protected from erosion.

pburton

Hydrologic General

Analysis:

During the completion of the midterm review and subsequent field inspection, several discrepancies were noted on two plates within the approved Mining and Reclamation Plan (MRP): Plate 6, As-Constructed Surface Facilities, and Plate 8, Support Facilities Surface Area Drainage. Several examples were provided where hydrologic structures/features depicted on these plates did not appear to match what was documented during the field inspection:

I. Based on observations during the field inspection, Plate 8 does not appear to accurately reflect the alignment and length of culverts CD-9, CD-10 and CD-11.

II. Plate 8, Support Facilities Surface Area Drainage, does not depict Catch Basin B.

III. A 24" culvert located on the east side of the primary haul road (PR-1) was observed. The culvert is located approximately 300'-500' north of the guard shack. The culvert does not appear on either Plate 6 or Plate 8.

Upon review of the submitted plates, the vast majority of hydrologic features have been labeled. A field inspection was conducted on November 4th, 2014 in order to verify the accuracy to the submitted plates. The revised plates (Plate 6 and Plate 8) now accurately depict the various hydrologic drainage features at the Centennial Mine site.

schriste

Hydrologic Diversion General

Analysis:

The initial mid-term review identified a deficiency relative to the diversion information provided in the MRP.

Figure IV-3, Typical Disturbed Diversion Ditch, contains a footnote (See footnote 2) that indicates that this typical cross-section applies to "all disturbed diversion ditches except DD-3, which has a one-foot bottom width." The only design drawing that depicted a diversion with a flat bottom channel was Figure IV-3A, Typical Section for Trapezoidal Ditch. Figure IV-3A stated that "minimum depth and/or area will be maintained to dimensions shown on Table IV-B". However; Table IV-B could not be located within the approved MRP nor found on the list of tables found on page lvii of the Table of Contents.

The Permittee's response indicated that the reference to Table IV-B was in error. The correct reference is Table IV-3B. The Permittee has made the correction on Figure IV-3A, Typical Section for Trapezoidal Ditch.

Reclamation Plan

PostMining Land Use

Analysis:

The post mining land use of wildlife and grazing is stated in Section 412.100 for the seventeen gas vent hole pads created on privately owned surface. Also, an agreement between landowners and OSO is stated as a current mining land use. Degas well methane capture was begun by OSO Energy (now operating as Blue Tip Energy) in Feb 2006. An operating agreement between OSO and UEI spells out the terms of this operating arrangement with regard to reclamation (Chapter 1, Attachment 1-1). Under the terms of the Operating Agreement agreement, UEI is responsible for full reclamation of the degas wells sites, unless Blue Tip takes over the permit under the Oil & Gas program (Article II, Section 2.3). The coal program could facilitate such a discussion.

There are 17 well pads are being tracked for reclamation in Table 1-2 of Appendix X. Centennial Mine entered Temporary Cessation in 2008. Table 1-2 itemizes the acres of original, existing and reclaimed degas well disturbance as of 2014. This table shows full reclamation at sites GVH-1, GVH-5, GVH-12, GVH-13, GVH-14, GVH-15, GVH-16, and GVH-17. In all but the first two cases, the pads have been reclaimed around a large vertical culvert protecting Blue Tip's collection system. Only sites GVH 1 and GVH 5 can be considered for bond release, because this contemporaneous reclamation is not final reclamation. Contemporaneous (partial reclamation) at the remaining sites (GVH 3, 4, 5A, 6, 7, 7A, 8, 8A, 9 and 11) has been around valves, and solar arrays that were either installed by the mine or by Blue Tip. These structures are hindering full reclamation. Unless the post mining land use is changed under R645-301-413.300 and Blue Tip permits these locations under the Oil and Gas program, UEI retains full responsibility for reclamation.

pburton

Contemporaneous Reclamation General

Analysis:

The following items were noted in the Mid-Term review. This memo will include a review of the permittee's response to the noted items in accordance with R645-301-330 and 340 et. sec.. It is suggested that the permittee meet with DOGM staff to: Develop and implement a plan to fence the the GVH sites in accordance with Section 333.300, page 3-10 of Appendix X, Protective Measures, Refer to Section 333.300 of the approved M&RP, and Section 333 above. All well sites will be fenced and road construction will be minimized by utilizing existing roads where possible.

Permittee Response: Field fencing to keep out livestock will be installed around reclaimed pads # 12, #13, #14, #15, #16, And #17. The fencing project is being done by Shute Supply, installation of the fencing began on August 27, 2014.

Discuss when the bond clock and vegetation monitoring will commence for sites 1 and 5, (Reclamation was completed in 2009. However no monitoring has been initiated to date), and the remaining GVH sites. Appendix X of the approved MRP includes a two phased approach to reclaiming the sites, (contemporaneous and final), the remaining sites would need to be adequately plugged, risers and collars removed and compacted areas ripped and seeded before the liability period could begin.

Permittee Response: Since both Phase I and Phase II of the reclamation has been completed a letter has been sent to DOGM requested the 10 year bond clock start on GW's #12, #13, #14, #15, #16, and #17. All sites have been fenced. The letter also requested that GYH's #1 and #5 be set at 5 years once a vegetation inventory has been completed.

Discuss the possible need of a weed control protocol for the sites reclaimed in 2013 that showed a dominance of knotweed.

Permittee Response: (Jay Marshall) discussed with Joe Helfich about the need to address the knotweed now growing on some of the GVH sites. It was decided to watch to see if the desired grasses out compete the knotweed. If the desired grasses do not out compete the knotweed, means of controlling the knotweed will be discussed with DOGM.

RECLAMATION SUCCESS The permittee needs to address the following deficiency noted in this commitment; Reclaimed areas will be monitored monthly for the first two growing seasons following reclamation. Volume 1 chapter 3 page 3-17 paragraph 5. This commitment was from the original MRP under the heading Measures to Determine Success. The GVH sites were later permitted separately under Appendix X. The Protective Measures section in Appendix X (p. 3-10) refers to

Section 333.300 of the MRP, but the correct citation should be MRP Section 301-331 p. 3-17, Measures to Determine Success Therefore the monitoring of the Gob Vent holes should take place at least twice in a growing season. At an average elevation of 8400' the number of frost free days would average about 60. Therefore monitoring during the growing season at this elevation should occur in June and July. Please make the correction in Appendix X of the MRP.

Permittee Response:After discussion with DOGM it was decided that vegetation inventories would be done in years 5, 9, and 10. In addition in year 7 consultation with DOGM will determine if an inventory might be necessary in year 7 in addition to years 5, 9, and 10. Appendix X reference on Page 3-10 has been revised to refer to Section 301-331, of the approved MRP.

The information provided is adequate to meet the requirements of this section of the regulations. Division staff will need to conduct a field visit to follow up on these items in either late Fall 2014 or Spring of 2015.

jhelfric

Contemporaneous Reclamation General

Analysis:

Gas vent hole pads were created in 2005 - 2007 on privately owned surface. Degas well methane capture was leased to OSO Energy (now operating as Blue Tip Energy) in Feb 2006. There are 17 well pads are being tracked for reclamation in Table 1-2 of Appendix X. Centennial Mine entered Temporary Cessation in 2008.

Under the terms of the Operating Agreement agreement, UEI is responsible for full reclamation of the degas wells sites, unless Blue Tip takes over the permit under the Oil & Gas program (Article II, Section 2.3). Table 1-2 itemizes the acres of original, existing and reclaimed degas well disturbance as of 2014. This table shows sites GVH-1, GVH-5, GVH-12, GVH-13, GVH-14, GVH-15, GVH-16, and GVH-17 have been reclaimed. In all but the first two cases, the pads have been reclaimed around Blue Tip's structures such as stand pipes, valves, and solar arrays. This contemporaneous reclamation is not final reclamation. Stand pipes, valves, and solar arrays that are not tied in to the Blue Tip collection system are hindering full reclamation at sites #3, #4, #5A, #6, #8A, #11, #13, #14. Unless and until Blue Tip permits these locations under the Oil and Gas program, UEI retains full responsibility for reclamation.

Dates of reclamation are not listed in Table 1-2, but the July 7, 2014 mid-term inspection report #3907 indicates the following:

- Pads 1 and 5 were fully reclaimed in 2009.
- A small area of GVH site 9 holding the topsoil stockpile was contemporaneously reclaimed, and the rest of the pad site was removed from the coal mining permit for construction of a compressor station.
- In 2014, topsoil at GVH pads 3, 4, 5A, 6, 7, 7A, 8, 8A, 9, and 11 had been graded around remaining gas well structures (solar arrays, well piping, etc) .
- In 2014, topsoil at GVH pads 12, 13, 14, 15, 16 and 17 had been graded around a vertical CMP that protects the buried OSO/Blue Tip collector line.

Sites 1 and 5 were fenced during operations and are still fenced. The permittee has indicated that sites 12, 13, 14, 15, 16 and 17 were fenced in 2014. Section 333.300 and Section 341 of MRP Appendix X describes fencing of all well sites during operations as well as reclamation. All sites must be fenced to promote vegetation growth and allow reclamation to succeed.

Deficiencies Details:

R645-301-244.200 and R645-301-357.331, Sites 1 and 5 were fenced during operations and are still fenced. The permittee has indicated that sites 12, 13, 14, 15, 16 and 17 were fenced in 2014. Section 333.300 and Section 341 of MRP Appendix X describes fencing of all well sites during operations as well as reclamation. All sites must be fenced to promote vegetation growth and allow reclamation to succeed. i.e. GVH Sites 3, 4, 5A, 6, 7, 7A, 8, 8A, 9 reclaimed area, and 11 need fencing.

pburton

Revegetation General Requirements

Analysis:

Reclamation techniques to be used at the gob vent holes will include ripping 18 - 24 inches, followed by topsoil application. One ton/acre hay mulch will be applied with the hydroseeding application. The hay will be raked in after seeding and the sites will be fenced (MRP Appendix X pages 2-5 and 3-11). The seed mix is described in Table 3-3.

At the mine site, 34.2 acres will be seeded as shown on Plate 20 (p. 3-17). Mine site reclamation techniques include grading, topsoil application, and mulch application to all reseeded areas. Straw mulch (1.5 to 2 tons/ac.) will be surface applied and crimped in to the soil. An Hydro application of the straw mulch will be used on steep slopes. Wood fiber mulch will be used over the whole site ("where ever seeds are planted"). Seeded sites will be protected from wildlife by drift fences.

pburton

Bonding Determination of Amount

Analysis:

The Division initiated a mid-term review of the Centennial Project mining and reclamation plan on June 2, 2014 (Task ID # 4602). The review included an analysis of the cost estimate sheets from the mid-term review completed on February 12, 2010. Aired as a deficiency in the initiatory letter to the Permittee, the Permittee was instructed to submit new cost sheets using unit costs from the 2014 R.S. Means Heavy Construction Cost Data Manual.

The Permittee submitted revised reclamation cost sheets for the reclamation of the Centennial Project on September 17, 2014, using unit cost data from the 2013 R.S. Means Heavy Construction Cost Data Manual.

No reclamation activities have occurred at the main facilities area since the Mine was closed and sealed. Reclamation has occurred on the various gob vent boreholes in the Bookcliffs north of the Mine facilities.

The Permittee states in the cover letter received in response to the TID # 4602 deficiency letter that unit costs from 2013 were used to update the cost estimates. No reclamation activities have occurred at the main facilities area since the Mine was closed and sealed. Reclamation has occurred on the various gob vent boreholes in the Bookcliffs north of the Mine facilities.

The Permittee states in the cover letter received in response to the TID # 4602 deficiency letter that unit costs from 2013, 4th Quarter were used to update the cost estimates.

The Division took these cost sheets and checked them using 2013 unit costs from the rsmeansonline.com cost data manual.

Using the 2013 unit costs, a total for the demolition of Centennial surface facilities and the gob vent wells was determined at \$ 449,744.00.

Earthwork costs were updated and determined to be \$ 309,329.00.

Revegetation costs were calculated to be \$ 175,940.00 using the 2013 unit costs.

A total of the direct costs = \$ 935,013.00.

Indirect Costs were calculated using the 26.8 % rule of the Direct Cost Total or \$ 250,583.00.

The total reclamation cost for the 2014 Mid-term Permit Review is calculated @ \$ 1,185,596.00.

This cost (\$ 1,347,800.00) must be escalated to 2019 (5 years) using the 2014 escalation factor of 1.9 %.

1.019 to the fifth power equals 1.09868.

The escalation dollar amount until 2019 = (0.09868) (\$1,185,596.00) = \$ 116,995.00.

The total escalated reclamation cost estimate to 2019 is \$ 1,302,591.00.

The required bond amount needed to maintain compliance at Centennial until 2019 is \$ 1,303,000.00

The posted bond amount currently being held by the Division and also payable to the U.S. Office of Surface Mining is \$ 1,520,000.00.

The difference between the posted bond amount and the required bond amount is \$ 217,000.

This is 14.27 % of the posted bond. As this amount is more than the required bond amount, NO ADDITIONAL BOND IS

NEEDED AT THIS TIME (10/28/2014).

phess

Bonding Terms and Conditions Liability Insurance

Analysis:

Gas vent hole pads were created in 2005 - 2007 on privately owned surface. Degas well methane capture was leased to OSO Energy (now operating as Blue Tip Energy) in Feb 2006. Under the terms of the Operating Agreement agreement (Chap. 1, Attach. 1-1), UEI is responsible for full reclamation of the degas wells sites, unless Blue Tip takes over the permit under the Oil & Gas program (Article II, Section 2.3).

There are 17 well pads are being tracked for reclamation in Table 1-2 of Appendix X. Centennial Mine entered Temporary

Cessation in 2008. Table 1-2 itemizes the acres of original, existing and reclaimed degas well disturbance as of 2014. This table shows full reclamation at sites GVH-1, GVH-5, GVH-12, GVH-13, GVH-14, GVH-15, GVH-16, and GVH-17. In all but the first two cases, the pads have been reclaimed around a large vertical culvert protecting Blue Tip's collection system. Only sites GVH 1 and GVH 5 can be considered for bond release, because this contemporaneous reclamation is not final reclamation. Contemporaneous (partial reclamation) at the remaining sites (GVH 3, 4, 5A, 6, 7, 7A, 8, 8A, 9 and 11) has been around valves, and solar arrays that were either installed by the mine or by Blue Tip. These structures are hindering full reclamation.

The amendment received on September 17, 2014 states that the Permittee is seeking to begin the bond clock for sites GVH #12, #13, #14, #15, #16, #17 and that the Division recognize that five years have passed since reclamation was completed at GVH sites 1 and 5. In accordance with R645-301-840.300 and -840.400, only sites GVH 1 and GVH 5 will be considered for bond release unless Blue Tip permits the remaining locations under the Oil and Gas program, UEI retains full responsibility for reclamation of the remaining structures (vertical stand pipes, valves, collection pipes, solar arrays) at all the remaining sites.

Deficiencies Details:

In accordance with R645-301-840.300 and -840.400, only sites GVH 1 and GVH 5 can be considered for bond release. Unless UEI changes the post mining land use in the permit and Blue Tip permits the remaining locations under the Oil and Gas program, UEI retains full responsibility for reclamation of the remaining structures (vertical stand pipes, valves, collection pipes, solar arrays) and the bond clock can not begin until removal of these structures and backfilling and grading is completed at the affected sites (GVH-3, 4, 5A, 6, 7, 7A, 8, 8A, 9, 11,12, GVH-13, GVH-14, GVH-15, GVH-16, and GVH-17).

pburton