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DEPARTMENT OF NATURAL RESOURCES

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February 23, 2021

Karin Madsen, Resident Agent
UtahAmerican Energy, Inc.
P.O. Box 910
East Carbon, Utah 84520-0910

Subject: Upper Pad Extension, Horse Canyon Mine, UtahAmerican Energy, Inc.,
C/007/0013, Task #6266

Dear Ms. Madsen:

The Division of Oil, Gas and Mining (the Division) has reviewed your application. The Division has identified deficiencies that must be addressed before final approval can be granted. The deficiencies are listed as an attachment to this letter. The deficiencies authors are identified so that your staff can communicate directly with that individual should questions arise.

As a reminder, the five year Horse Canyon mine permit expires on May 6th, 2021. If it's determined that this amendment requires the current reclamation bond to be increased; the requisite bonding documents would need to be provided and approved by the Division prior to May 6th in order to ensure continued operation.

The plans as submitted are denied. Please resubmit the entire application by no later than March 26, 2021. If you have any questions, please call me at (801) 538-5350.

Sincerely,

Steve Christensen
Coal Program Manager

SKC/sqs



Technical Analysis and Findings

Utah Coal Regulatory Program

PID: C0070013
TaskID: 6266
Mine Name: HORSE CANYON MINE
Title: UPPER PAD EXTENSION

Summary

Right of Entry to 42.6 acres is provided by BLM ROW # UTU-91789 and #UTU-77122.

This amendment would expand the disturbed area by 0.98 acres (Plate 2-3) to install UC 5, UC 6 and UC 7 culverts as shown on Plate 5-7E-1.

Plate 5-2, As-Built Surface Facilities, revised January 2021, shows the current and proposed disturbed and undisturbed areas within the permit boundary.

pburton

Operation Plan

Mining Operations and Facilities

Analysis:

The application meets the State of Utah R645 requirements for Mining Operations and Facilities.

The application satisfies the requirements of R645-301-521 and R645-301-526 because the application includes an engineering narrative that describes how the proposed culvert system will be constructed and maintained in accordance with the R645 regulations. Appendix 5-9 includes a detailed narrative that describes how proposed culverts UC-5, UC-6, and UC-7 will be installed. The culvert system will be installed to prevent sediment and coal fines from drifting into the undisturbed drainage channel south of the Upper Pad. The culverts are designed to be temporary and will be removed upon reclamation.

The application contains several detailed Plates that contain design illustrations that correspond to the narrative in Appendix 5-9. Plate 5-6 shows a plan view of the Post Mining Topography, with section views depicted in Plates 5-7A-1 through 5-7A-4.

Plate 5-7E-1 - New Culvert Disturbance Area Plan and Typical Details show a plan view of the reclamation contours for the proposed culvert system and illustrate which areas will be cut and which areas will receive compacted fill. Cross-section lines show the locations of the profiles drawn on Plates 5-7E-2 through 5-7E-6.

Plates 5-7E-2 through 5-7E-6 show detailed profile views for culverts UC-5, UC-6, and UC-7. Plate 5-7E-6 includes a mass balance table with cut/fill volumes for every 25-foot interval along the length of each culvert.

Topsoil and Subsoil

Analysis:

The Mining and Reclamation Plan meets the Utah R645 requirements for Soil: Operation Plan.

This amendment describes the installation of culverts UC-5, UC-6, and UC-7 in the ephemeral wash located in the SE corner of the disturbed area (Chap. 5, Section 520, p. 26). The culvert will be seated on, and covered with, compacted fill. The fill will come from soil cut (borrowed) from the North slope of Pond 1 and from the slopes adjacent to the ephemeral channel (Plate 5-2). The culvert installation details are shown on Plate 5-7E-1 and Plate 5-7E-2.

Plate 2-3, Soil Salvage and Replacement, the proposed culvert installation will add 0.98 acres of new disturbance, including the borrow area. Plate 2-3 states that approximately 1,042 bank CY will be salvaged prior to culvert installation. An as-built drawing will provide actual volumes salvaged (Plate 2-3 Note). Geotextile will be laid down in the channel, to protect 0.25 acres soils in-situ (Plate 5-7E-1, Chap. 2, Sec. 232.710). Section 520 and Appendix 5-9 provide further construction details.

Salvage of 18 inches of VBJ soils from the borrow area, and 8 – 12 inches of XBS and RBL soils (and a minor amount of RBT soil) from the culvert installation area (Plate 2-3 Projected Topsoil To Be Salvaged Table) is in agreement with the pre-mining soil survey estimate found on the Salvageable Soils Map in Chap. 2, App. A2.

The sequence of grubbing, boulder removal and soil salvage is described in Appendix 5-9 Chapter 4. A soil scientist will supervise the operation (Appendix 5-9, p. 7). Salvaged topsoil will be placed on the SW side of the topsoil stockpile (Plate 2-3). Geotextile placement and importation of borrow fill is also described on page 7 of Appendix 5-9.

The total required fill material is 2,215 CY of which 1,952 CY will be imported from the borrow location (Plate 5-7E-6 Cut/Fill Comparison table). After topsoil salvage, the borrow material is to be cut from the slope of pond 1 from an area approximately 250 ft x 75 ft, as shown on Plate 2-3 and 5-2. The Division calculates that to produce 1,900 CY from this area will require a cut of approximately 3 feet.

All exposed slopes above the new culvert and at borrow areas will be seeded with an interim mix (Appendix 5-9 p. 8).

In addition, this amendment corrects the disturbed acreage tally and removes it from MRP Plate 2-3a and places it on Plate 2-3. The new table on Plate 2-3 states 6.12 acres of undisturbed land (5.14 acres after this proposal). (Plate 2-3 and 2-3a now agree on the remaining undisturbed being 6.12 acres, mostly associated with the BLM ROW #UTU-91789).

MRP Plate 2-3 accounts for the site acreage as follows:

Total disturbed area boundary	40.11 acres
Total undisturbed area	6.12 acres
Total Proposed new disturbed area	0.98 acres
Area Disturbed to date	33.99 acres
Total disturbed area after proposed disturbance	34.97 acres
Total undisturbed area after proposed disturbance	5.14 acres

This new tally on Plate 2-3 is based on aerial surveys (Incoming document 11102020.6233.pdf, page 4). In 2019, 2.65 acres were disturbed for construction of the new storage yard, expansion of the new shop area, and associated access roads (described in Chap 5, Sec. 520, p. 23). This revised acreage supersedes the acreage information presented in the 2019 Annual Report Plate 2-3a. A comparison of the revised Plate 2-3a and the current MRP plate 2-3a shows that much of the land formerly within the Upper & Middle pad is now accounted for in the new shop pad polygon, directly

North of the topsoil storage pile.

Section 232.100 Available Soil Resources Table also accounts for 33.99 acres and a volume of 78,700 loose CY in storage (Chap. 2, pp. 9 and 10). This table and the tables on Plates 2-3a and Plate 2-3 bring the information current with the reported soil storage volume in the 2019 annual report. As stated on Plate 2-3, the table in Section 232.100 and those on Plates 2-3a and 2-3 will be revised with as-built information.

Section 232.600 states that topsoil will be removed in two Phases. The first phase removed topsoil in an area large enough to allow for mining of diligence tons. The second phase will "remove the remainder of the approved topsoil." In reality, the second phase has been completed in increments over a number of years.

Annual Reports have tracked the total disturbed area and topsoil storage volumes. At the end of 2010, 29.48 acres were disturbed. By the end of 2014, the disturbed area was increased to 31.02 acres to widen the upper warehouse pad. In 2015, the disturbed area was reported to be 31.88 acres after a temporary storage yard was created west of the parking area. Construction of an additional 1.09 acres for drainage control and 3.02 acres for the upper storage pad in 2018 brought the total disturbed area to 40.11 acres in 2018, with topsoil salvaged from 33.39 acres. The 2019 Annual Report Plate 2-3a reported a total disturbed area boundary of 40.26 acres, with the total expected disturbed area of 36.31 acres, with 35.22 acres disturbed to date (Dec. 2019). As previously stated, this amendment supersedes the acreage information provided in the 2019 annual report, but supports the salvage volume reported in the 2019 annual report.

pburton

Hydrologic Impoundments

Analysis:

This application does not meet the State of Utah R645 requirements for Hydrologic Impoundments.

The application does not satisfy the requirements of R645-301-733 because the Sediment Yield Calculations for Sediment Pond 1 need updated. After reviewing the Sediment Yield Calculations with Tom Suchoski, yield errors in the table were found on DA-27, DA-28, DA-29, and TS01. The permittee will need to update the sediment yield calculations to equate to the total of 0.9236 ac-ft. Table 11a No. 4 Runoff Volume needs updated to the correct value of 3.51 ac-ft. The summary in Appendix 7-4 section 3.4 has been updated with the correct values.

Deficiencies Details:

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

R645-301-733: The Permittee must update the Sediment Yield Calculations Table for DA-27, DA-28, DA-29, and TS01 for Sediment Pond 1, and the Runoff Volume on No. 4 in Table 11a.

khinton

Maps Facilities

Analysis:

The application meets the State of Utah R645 requirements for Facilities Maps.

The application contains the following facilities maps as per R645-301-521.124, and -521.170:

- Plate 5-2 - As-Built Surface Facilities - contains the locations of all current surface facilities within the permit area as well as the location of the proposed culvert channel disturbance and proposed borrow area north of Pond 1. The disturbed area and BLM R.O.W. boundaries are clearly shown.
- Plate 5-7E-1 - New Culvert Disturbance Area Plan and Typical Details - contains the plan view of the entire length of incised culvert ditch along with a typical cross-sectional view showing how the culvert will be bedded and installed. Scaled installation details regarding the culvert installation are included at the top of the page. A Legend describes the topographical details as well as the color scheme for the proposed cut and fill areas.
- Plate 5-7E-2 - New Culverts UC-6 and UC-7 Profile and Sections - contains the profiles and section views for culverts UC-6 and UC-7. Also depicted are the areas of proposed cut and fill within the channel. The longitudinal view at

the top is looking southeasterly.

- Plate 5-7E-3 - New Culverts UC-6 and UC-7 Sections - contains section views for culvert UC-7. The locations of the sections within the channel are depicted on Plate 5-7E-1. Also depicted are the areas of proposed cut and fill within the channel.
- Plate 5-7E-4 - New Culverts UC-6 and UC-7 Sections - contains section views for culvert UC-7. The locations of the sections within the channel are depicted on Plate 5-7E-1. Also depicted are the areas of proposed cut and fill within the channel.
- Plate 5-7E-5 - Culverts UC-6 and UC-7 Sections and UC-5 Profile and Sections - contains the profile and section views for culverts UC-5, UC-6, and UC-7. The locations of the sections within the channel are depicted on Plate 5-7E-1.
- Plate 5-7E-6 - New Culverts UC-5 Sections and Cut/Fill Tabulations - contains section views for culvert UC-5, UC-6, and UC-7. The locations of the sections within the channel are depicted on Plate 5-7E-1. Also depicted are the areas of proposed cut and fill within the channel. Included in this Plate are cut/fill tabulations for each section of the channel. According to the volume calculations, 1951.91 cubic yards of borrow material will be required to install the proposed culvert. This material is to be harvested from the north flank of Pond 1.
- Plate 5-7E-7 - New Culvert Disturbance Area Reclamation Plan - contains the plan view of the entire length of reclaimed culvert along with a cross-sectional view showing how a typical sediment log will be bedded and installed. Details regarding the culvert reclamation plan are included in Appendix 5-9. A Legend describes the topographical details as well as the color scheme for the proposed cut and fill areas.
- Plate 5-6 - Post Mining Topography - contains a plan view illustrating anticipated final topography for all the disturbance areas within the BLM R.O.W #UTU-77122 and #UTU-91789. Section locations are drawn at 100-foot intervals, the details of which are included in Plates 5-7A-1 through 5-7A-4. A Legend describes the topographical details as well as disturbed area boundaries.
- Plates 5-7A-1 through 5-7A-4 - Surface Longitudinal Profile and Surface Profile Sections - contains detailed profile information for the sections shown in Plate 5-6. There are three profiles drawn for every section: Original, Working, and Reclaimed. Prominent features and surface facilities are identified in each profile, as well as disturbed and undisturbed area boundaries.

jeatchel

Reclamation Plan

General Requirements

Analysis:

The amendment meets the State of Utah R645 General Reclamation requirements.

The application satisfies the requirements of R645-301-542.200 because the application includes an engineering narrative that describes how the proposed culvert system will be reclaimed in accordance with the R645 regulations. Appendix 5-9 includes a detailed narrative that describes how proposed culverts UC-5, UC-6, and UC-7 will be installed and eventually reclaimed. The application contains several detailed Plates that contain design illustrations that correspond to the narrative in Appendix 5-9. Plate 5-6 shows a plan view of the Post Mining Topography, with section views depicted in Plates 5-7A-1 through 5-7A-4.

Plate 5-7E-1 - New Culvert Disturbance Area Plan and Typical Details show a plan view of the reclamation contours for the proposed culvert system and illustrate which areas will be cut and which areas will receive compacted fill. Cross-section lines show the locations of the profiles drawn on Plates 5-7E-2 through 5-7E-6.

Plates 5-7E-2 through 5-7E-6 show detailed profile views for culverts UC-5, UC-6, and UC-7. Plate 5-7E-6 includes a mass balance table with cut/fill volumes for every 25-foot interval along the length of each culvert.

Plate 5-7E-7 illustrates a plan view of the reclaimed culvert system and shows the locations of sediment control measures such as pocking, tackifier, and silt fences. The cross-section lines shown on this map are equal to the section lines drawn on Plate 5-7E-1.

Topsoil and Subsoil

Analysis:

The Mining and Reclamation Plan meets the Utah R645 requirements for Soil: Reclamation Plan.

Chap 2, Section 242, Section 244, Section 520 and Appendix 5-8 describe the reclamation plan for the site. The final reclamation plan for the UC culvert system is described in Appendix 5-9 Chapter 5, including re-exposing, sampling and stabilizing the buried soil in the ephemeral wash.

Chapter 2 Section 242.100 (p. 18) states that efforts will be taken to replace varying depths of topsoil to resemble the original soil depths. Plate 2-3 shows the original soil depths by soil type. They vary from 8 inches to 18 inches. A quick assessment of this map indicates that the lower half of the site was designated to receive 18 inches at final reclamation and the upper half, 12 inches at final reclamation.

Final topography and variable replacement depths are shown for the culvert installation area on Plate 5-7E-7. The plan involves re-exposing the buried ephemeral channel. PAM 12 Plus or best technology will be applied to the re-exposed channel and any slopes steeper than 1.5h:1v (Chap 5, Sec. 520, p. 26 and Ex. 5-7E-7). Topsoil application will follow plans outlined in Chapter 2, Section 242 and 243.

Final reclamation topography for the borrow area has not changed from that shown on Plates 5-6 and Plate 7-7 (pond 1). These plates have been updated to extend to the new disturbed area.

After the culvert installation, assume 35 acres will be disturbed (Plate 2-3). Assume 79,500 CY of topsoil and subsoil stockpiled (Available Soil Resources Table, Chap 2, p. 9). This storage volume represents 2,271 CY/disturbed acre or approximately 16 inches of topsoil cover over the entire site (not accounting for large rocks taking up volume in the stockpile).

The rock slope material described in Chap 5, Sec. 520 (p. 21) will require three feet of subsoil and one foot of topsoil cover for final reclamation. Appendix 5-7 refers to Plate 5-7A for final placement of the waste. Plate 5-7A shows that the shale rock waste will be redistributed over 300 feet length (shown on from x-sec station 14+50 to 17+75) and a width of 200 feet (shown on x-sec 16 & 17 on Plates 5-7B-5). Approximately 6,766 CY of subsoil will achieve three feet of cover over the 330 x 200 ft area or 1.4 acres. This cover will come from grading of nearby areas. For instance there will be 2,215 CY of subsoil stored in the adjacent pad over UC 5, UC6, & UC7 (Plate 5-7E-6 Cut/Fill Comparison table).

pburton

Stabilization of Surface Areas

Analysis:

The Mining and Reclamation Plan meets the Utah R645 requirements for Soil: Stabilization.

Pocking and seeding and mulch are described in Section 244 and App. 5-8 Reclamation Plan.

Chapter 5, Section 521, p. 26 describes the use of PAM 12, terra fiber on soils buried in situ, and sediment logs on the adjacent slopes. These reclamation treatments are further described in Appendix 5-9 Chapter 5 Reclamation Plan and on Plate 5-7E-7 Final Reclamation Plan notes.

Excessive rills and gullies will be repaired (Section 244.300).

pburton

Bonding Determination of Amount

Analysis:

The application does not meet the State of Utah R645 requirements for Determination of Bonding Amount.

The application does not satisfy the requirements of R645-301-830 because the bond cost summary appears to be outdated. The Reclamation Bond Estimate gives a cost breakdown of direct and indirect costs and applies an escalation

factor to account for inflation. The subtotal at the bottom states the bond amount is \$2,309,000 versus a posted bond of \$2,166,000. A note in the margin states that a Rider updated the posted bond on January 28, 2020. Since that time, there have been two amendments that have increased the bond liability:

- Task #6079 increased the bond by \$63,000 to \$2,229,000 on 3/25/2020.
- Task #6147 increased the bond by \$106,000 to \$2,335,000 on 6/15/2020.

Since the reclamation bond has not changed since Task #6147, the posted bond should be \$2,335,000. Please revise the bonding figures for accuracy and resubmit. Please use an escalation factor of 2.95% for 2 years (the next midterm bond review is in 2023).

Deficiencies Details:

The application does not meet the State of Utah R645 requirements for Determination of Bonding Amount. The following deficiency must be addressed prior to final approval:

R645-301-830: The Permittee must revise the most recent bonding figures for accuracy and resubmit. Please use an escalation factor of 2.95% for 2 years.

jeatchel