GARY R. HERBERT
*Governor*

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*Lieutenant Governor*

# State of Utah

**DEPARTMENT OF NATURAL RESOURCES**

**MICHAEL R. STYLER**
*Executive Director*

**Division of Oil, Gas and Mining**
**JOHN R. BAZA**
*Division Director*

February 24, 2017

Chris Hansen, Environmental Engineer
Canyon Fuel Company, LLC
HC 35 Box 380
Helper, Utah 84526

Subject: Completion of Midterm Review, Task #5315, Canyon Fuel Company, LLC, Gordon Creek Mine #2, #7 & #8, C/007/0016

Dear Mr. Hansen:

On December 1, 2016, Canyon Fuel Company, LLC was informed that the Division of Oil, Gas and Mining (the Division) had commenced a midterm permit review for the Gordon Creek Mine #2, #7 & #8.

The midterm review has now been completed and will now be closed; however, the Division has identified deficiencies that must be addressed. The deficiencies have been included with this letter (See Attached). The name of the author for each of the respective deficiencies has been provided.

Your response to these deficiencies will need to be submitted as an amendment to your MRP and will be processed as a separate task. Please submit the required amendment with the accompanying C1 and C2 forms by no later than March 31, 2017.

If you have any questions regarding these requirements or the Midterm Review process, please don't hesitate to call me at 801-538-5325.

Sincerely,

Daron R. Haddock
Coal Program Manager

DRH/sqs

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# State of Utah
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# Technical Analysis and Findings

## Utah Coal Regulatory Program

**PID:** C0070016
**TaskID:** 5315
**Mine Name:** GORDON CREEK 2, 7 & 8 MINES
**Title:** MIDTERM PERMIT REVIEW

## General Contents

### Identification of Interest

*Analysis:*

The findings from this section of the midterm review do not meet the State of Utah R645 requirements for Identification of Interest R645-301-112.

The text in General Chapter one, Pages 1-1 and 1-2 and Appendix 1-1 need to be updated to coincide with the current organizational Family Tree (OFT Figure 1-1) and ownership and control (ONC) information in the Applicant Violator System (AVS). They include Galena US Holdings Inc., Cedars Energy LLC and Halos Energy LLC.

The words and etc. found in Chapter one, Page 1-2 Paragraph 3 need to be deleted or clearly explained.

*Deficiencies Details:*

The findings from this section of the midterm review do not meet the State of Utah R645 requirements for Identification of Interest R645-301-112.

The text in General Chapter one, Pages 1-1 and 1-2 and Appendix 1-1 need to be updated to coincide with the current organizational Family Tree (OFT) and ownership and control (ONC) information in the Applicant Violator System (AVS).

The words and etc. found in Chapter one, Page 1-2 Paragraph 3 need to be deleted or clearly explained.

**jhelfric**

### Violation Information

*Analysis:*

The midterm permit review does not meet the State of Utah R645 requirements for R645-300-132 Violation Information.

A report was generated in the Applicant/Violator System (AVS) on February 23, 2017. The report generated 12 violations. All of the listed violations are under settlement. There were no outstanding violations listed.

**ssteab**

### Violation Information

*Analysis:*

The findings from this section of the midterm review do not meet the State of Utah R645 requirements for violation information R645-301-113. General Chapter one table 1-2 needs to be updated to coincide with the current violation information in the Applicant Violator System (AVS)

*Deficiencies Details:*

The findings from this section of the midterm review do not meet the State of Utah R645 requirements for violation information R645-301-113. General Chapter one table 1-2 needs to be updated to coincide with the current violation information in the Applicant Violator System (AVS)

**jhelfric**

## Legal Description

*Analysis:*

The MRP does not meet the State of Utah R645-301-121.120 and/or R645-301-141 requirements for providing a legal description that identifies the land (on a map) subject to coal mining (and reclamation).

General Chapter 1 Right of Entry information is located in Section 114 on Page 1-6. This section refers to the MRP for Gordon Creek Mine for specific information.

Chapter 1, Section 1.2 refers to Figure 1-2 for the permit area. Figure 1-2 is an old black and white topographic map with the project boundary vaguely identified. Due to the age and quality of the map, it is difficult to ascertain exact permit boundaries. However, the permit boundary on Figure 1-2 is clearly not the permit boundary as described in the permit. (2286 +/- acres vs. 161 +/- acres)

Chapter 2, Section 2.4, page 9, refers to Tables 4-1 and 4-2 for all required leases, easements and rights to access. Tables 4-1 and 4-2 are located in Chapter 4 and identify surface and mineral ownership.

Section 2.6 (a) states the number of surface acres disturbed by the operation is 20.3 acres. In addition, some 2286.05 acres of the permit area has some potential to be affected by underground mining. The 2286.05 acres must be reconciled with the current permit area of 161 acres +/-.

The affidavit of Publication in Ch.2 (Incorporated September 11, 2013) contains a legal description different the one contained in the permit.

The Division issued Permit includes the following property as the Permit Area:
Township 13 South, Range 8 East, SLBM
Section 18: N1I2SE1I4, N1/2SW1/4SE1I4, S1I2NE1/4SW1I4, SE1/4SW1/4, SE1/4SW1I4SW1/4. (161 acres +/-)

*Deficiencies Details:*

The MRP does not meet the State of Utah R645-301-121.120 and/or R645-301-141 requirements for providing a legal description that identifies the land (on a map) subject to coal mining (and reclamation).

The Permittee must update Figure 1-2 to show the current permit boundary.

The Permittee must update Ch. 2, Section 2.4 and provide a legal description of the permit area.

The Permittee must update Section 2.6 to accurately describe the acreage of disturbance and permit area.

**lreinhart**

## Maps and Plans

*Analysis:*

The results of the midterm review indicate that the State of Utah R645 requirements for compliance with the terms and conditions of the permit (R645-300-143) are being met.

Permittee initiated plan changes approved subsequent to permit renewal have been appropriately incorporated into the MRP. The MRP does not include any variances. However the permit does include one special permit condition under attachment A, Mountain Coal Company will submit water quality data for the Gordon Creek 2, 7 and 8 mines in an electronic

format through the Electronic Data Input web site. This is done quarterly and is current. However the Division needs to update the permit to reflect the current owner.

**jhelfric**

# Environmental Resource Information

## Maps Vegetation Reference Area

*Analysis:*

The analysis of the midterm review criteria meets the State of Utah R645 Requirements for Reference Area Maps, R645-301-323.

The locations of the reference areas (Mountain Grassland) are shown on Plate 9-1. Sections 3.5.5.5 and 3.5.5.6 discuss the monitoring procedures for reference areas and revegetation during operations and reclamation at the Gordon Creek No. 2/7/8 Mines.

A qualitative assessment of the reference areas for this site is scheduled for the summer of 2017 (June-September) with representatives from the Division, Bowie Resources LLC and the Natural Resource Conservation Service (NRCS).

**jhelfric**

# Operation Plan

## Mining Operations and Facilities

*Analysis:*

The current MRP meets all the State of Utah R645 requirements for Mining Operations and Facilities.

The current MRP meets the requirements of R645-301-523, -526, and 528 by including a description of the mining operation, method of coal mining, engineering techniques, anticipated annual and total production of coal by tonnage, and major equipment to be used for all aspects of those operations proposed to be conducted during the life. The Gordon Creek No 2/7/8 mines consisted of three different mines in Bryner Canyon and ranged from operations in late 1969 to 1989, with No 8 mine being the last to be constructed. All three mines shared surface facilities located in the canyon. At the time of this review all surface facilities have been removed from the site except for hydrologic controls and access road. Plate 3-1 shows the location of the remailing facilities. Historic mining facility maps can be seen on Plate 3-3, 3-4, and 3-5 that show the extent of mining operations prior to final closure.

**cparker**

## Existing Structures

*Analysis:*

The current MRP meets the State of Utah R645 requirements for Existing Structures.

The current MRP meets the requirements of R645-301-526 by providing historic information to include the discussion of the existing buildings in the Canyon in Chapter 3 section 3.2. At the time of this review all surface facilities have been removed from the site except for hydrologic controls and access road. Plate 3-1 shows the location of the remaining facilities.

**cparker**

## Relocation or Use of Public Roads

*Analysis:*

The current MRP meets the State of Utah R645 requirements for the Relocation or Use of Public Roads.

The current MRP meets the requirements of R645-301-521.133 due to information detailing measure to be used such as a general mining method that will be employed under or within 100 ft of public roads to protect interest of the public.

**cparker**

## Coal Recovery

*Analysis:*

The current MRP meets the State of Utah R645 requirements for Coal Recovery.

The current MRP meets the requirements of R645-301-522 due to a discussion of the measures to be used to maximize the use and conservation of the coal resources.. At the time of this review all surface facilities have been removed from the site except for hydrologic controls and access road. Plate 3-1 shows the location of the remaining facilities.

**cparker**

## Road Systems Classification

*Analysis:*

The current MRP meets the State of Utah R645 requirements for Road Systems and Other Transportation Facilities.

The current MRP meets the requirements of R645-301-527.100 by as all transportation facilities have been removed except for an access road seen on Plate 3-1.

**cparker**

## Road System Other Transportation Facilities

*Analysis:*

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

The current MRP meets the requirements of R645-301-521.170 by submitting plans and drawing for each road, conveyor, and rail system to be used within the proposed permit area. All transportation facilities have been removed except for an access road seen on Plate 3-1.

**cparker**

## Hydrologic Sediment Control Measures

*Analysis:*

The approved MRP meets the State of Utah R645 requirements for Sediment Control Measures.

The Gordon Creek #2, #7 and #8 mining facility has been fully reclaimed per the requirements and approved techniques outlined in the Mining and Reclamation Plan (MRP). The Permittee utilizes several techniques utilized on the site to prevent erosion and contributions of suspended solids outside the permit area. Sediment control measures include the use of alternative sediment control areas (i.e. ASCA's) such as silt fences, straw bales and/or containment berms. The main channel was restored and rip-rapped to eliminate erosion and cutting of side slopes. Additionally, areas were mulched following the redistribution of topsoil.

A significant rainfall event occurred in September of 2014 within the Gordon Creek drainage, including the Gordon Creek tributaries within the Gordon Creek, 2,7 and 8 mine areas. The rainfall event resulted in the displacement of rip rap and erosion of sections of reclaimed channels SD-4, SD-6 and the main Bryner Canyon Creek channel below the confluence of the left and right forks as well as a portion of channel below the confluence of the creek channel with channel SD-6.

Initial repairs to the reclaimed channels began in June of 2015. Filter material and rip rap in the reclaimed sections of the drainages was replaced. A second rainfall event occurred in the late summer of 2015 that resulted in a lower portion of SD-6 channel being eroded and rip rap displaced. The Permittee added a second layer of coarser filter material placed on top of a finer filter material prior to the installation of D50 rip rap equal to 18"". The work to repair the 2015 rainfall event was completed in November 2015. The Permittee spread seed in the repaired sections of the reconstructed channels to encourage vegetative growth that could aid in stabilizing the rip rap.

The approved reclamation plan and subsequent repair work that occurred as the result of the two aforementioned rainfall events represents utilization of the best technology currently available to control sedimentation and additional contributions of suspended solids to flow outside the permit area.

Division staff will conduct an inspection in the spring once the snow has melted and a complete evaluation can be done of the site (i.e. the ground and reclaimed channels are fully visible). The inspection will evaluate the effectiveness of the repair work, the stability of the site and the effectiveness of the previously discussed sediment control/stabilization measures.

**schriste**

### Support Facilites and Utility Installations

*Analysis:*

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

The current MRP meets the requirements of R645-301-521.180 and -526 the require the description, plans, and drawing for each support facility that was constructed, used, and maintained within the permit. At the time of this review all surface facilities have been removed from the site except for hydrologic controls and access road. Plate 3-1 shows the location of the remaining facilities.

**cparker**

### Signs and Markers

*Analysis:*

The current MRP meets the State of Utah R645 requirements for Signs and Markers.

The current MRP meets the requirements of R645-301-521.200 by the general discussion of signs including Waring, stream buffer and perimeter signs. Chapter 3 Section 3.3.3 details how all of the sign standards will be within the Permit area.

**cparker**

### Maps Facilities

*Analysis:*

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

The current MRP meets the requirements of R645-301-521.120 through-521.125 which require maps to clearly show existing surface and subsurface facilities. At the time of this review all surface facilities have been removed from the site except for hydrologic controls and access road. Plate 3-1 shows the location of the remailing facilities. Historic mining facility maps can be seen on Plate 3-3, 3-4, and 3-5 that show the extent of mining operations prior to final closure.

**cparker**

### Maps Mine Workings

*Analysis:*

The current MRP meets the State of Utah R645-301-521.140 requirements for Mine Workings Maps.

The current MRP meets the requirements of R645-301-521.140 which requires maps that clearly show all mine plans. At the time of this review all surface facilities have been removed from the site except for hydrologic controls and access road. Plate 3-1 shows the location of the remaining facilities. Historic mining facility maps can be seen on Plate 3-3, 3-4, and 3-5 that show the extent of mining operations prior to final closure.

**cparker**

## Reclamation Plan

### General Requirements

*Analysis:*

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

The requirements of R645-301-540 are met within the current MRP as there is no change to the existing MRP reclamation details in Chapter 3 Section 3.5. All structures were removed and any foundations left in place were buried with at least two feet of cover. Plate 3-7 shows the reclaimed topography for these mines.

*Deficiencies Details:*

**cparker**

## PostMining Land Use

*Analysis:*

The analysis of the midterm review criteria does not meet the State of Utah R645 Requirements for PostMining Land Use R645-301-413.100

The text on page 3-59 notes that, production will not be measured, since the post-mining land-use is wildlife habitat. This is true for this type of postmining land use, However sections 3.4.1 and 3.5.5.6 state that the postmining land use is stock grazing that does require a value for production. In reality the past 17 years of post reclamation have shown that wildlife utilize the area year around where as stock grazing occurs minimally in the spring and fall when the animals are moving to and from higher elevation grazing areas.

These sections of the MRP need to be clarified.

*Deficiencies Details:*

The analysis of the midterm review criteria does not meet the State of Utah R645 Requirements for PostMining Land Use R645-301-413.100

The text on page 3-59 notes that, production will not be measured, since the post-mining land-use is wildlife habitat. This is true for this type of postmining land use, However sections 3.4.1 and 3.5.5.6 state that the postmining land use is stock grazing that does require production value. In reality 17 years of post reclamation have shown that wildlife utilize the area year around where as stock grazing occurs minimally in the spring and fall when the animals are moving to and from higher elevation grazing areas.

These sections of the MRP need to be clarified.

**jhelfric**

## Approximate Original Contour Restoration

*Analysis:*

The current MRP meets the State of Utah R645 requirements for Approximate Original Contour Restoration.

The current MRP meets the requirements R645-301-512.200 ,-553.110 through -553.150, and -302-270 due to general grading plant that restores approximate original contour (AOC).

AOC as defined by R645-301-553.100 through -553.150 is achieved when the final grade closely resembles the general surface configuration of the land prior to mining activities and provides a subsurface foundation for vegetative cover capable of stabilizing the surface from erosion. The final reclamation grading plan for surface disturbances associated with the Gordon Creek No 2/7/8 Mines in Chapter 3 Section 3.5 of the currently approved MRP.

**cparker**

## Backfill and Grading General

*Analysis:*

The current MRP meets the State of Utah R645 requirements for Backfill and Grading.

The current MRP meets the general requirements of R645-301-553 by detailing 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. The final reclamation grading plan for surface disturbances associated with the Gordon Creek No. 2/7/8 mine is detail in Chapter 3 Section 3.5.4 of the currently approved MRP. Plates 3-1, 3-2, 3-7A, 3-7B and 3-7C show the mine disturbances and the final configuration. Plates 3-8A through 3-8E show the related cross sections.

**cparker**

## Mine Openings

*Analysis:*

The current MRP does not meet the State of Utah R645 requirements for Mine Openings.

The requirements of R645-301-513.500, R645-301-529, and R645-301-551 are met within the current MRP as there is no change to the existing MRP sealing of mine openings at the time of final reclamation. Chapter 3 Section 3.2.2 details how all five portals associated with Mine No 2, three portals associated with No 7 and three portals associated with No8 were all sealed and backfilled.

**cparker**

## Road System Reclamation

*Analysis:*

The current MRP meets the State of Utah R645 requirements for Reclamation of Roads.

The requirements of R645-301-534 are met within the current MRP as there is no change to the existing MRP reclamation of all roads throughout the permitted area.

**cparker**

## Revegetation Standards for Success

*Analysis:*

The analysis of the midterm review criteria does not meet the State of Utah R645 Requirements for Standards for Success, R645-301-323.

Chapter 3, Page 3-58 states that the Oak Shrubland Reference Area of No. 2 Mine will be used as the vegetative standard for success for all sites, including the No.8, No. 7 and No. 2 mine areas, the Sweets Pond area, and the Old Fan Portal area.

The text on page 3-59 and Chapter 9, Page 9-2 note that, In an effort to provide one standard of success for cover, the Mountain Grassland (also referred to as Mountain Brush/Grassland Community Reference Area will be used as the vegetative standard for success for all reclaimed sites. This coincides with the reference areas identified on plate 9-1.

The appropriate sections of the MRP need to be revised to clarify the differences noted in the text.

*Deficiencies Details:*

The analysis of the midterm review criteria does not meet the State of Utah R645 Requirements for Standards for Success, R645-301-323.

Chapter 3, Page 3-58 states that the Oak Shrubland Reference Area of No. 2 Mine will be used as the vegetative standard for success for all sites, including the No.8, No. 7 and No. 2 mine areas, the Sweets Pond area, and the Old Fan Portal area.

The text on page 3-59 and Chapter 9, Page 9-2 note that, In an effort to provide one standard of success for cover, the Mountain Grassland (also referred to as Mountain Brush/Grassland Community Reference Area will be used as the vegetative standard for success for all reclaimed sites. This coincides with the reference areas identified on plate 9-1.

The appropriate sections of the MRP need to be revised to clarify the differences noted in the text.

**jhelfric**

## Maps Reclamation BackFilling and Grading

*Analysis:*

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

The requirements of R645-301-542 are met within the current MRP as there is no change to the existing MRP plan of backfilling and grading areas or volumes. The final reclamation grading plan for surface disturbances associated with the Gordon Creek No. 2/7/8 mine is detail in Chapter 3 Section 3.5.4 of the currently approved MRP. Plates 3-1, 3-2, 3-7A, 3-7B and 3-7C show the mine disturbances and the final configuration. Plates 3-8A through 3-8E show the related cross sections.

**cparker**

## Maps Reclamation Facilities

*Analysis:*

The current MRP meets the State of Utah R645 requirements for Reclamation Facilities Maps

The requirements of R645-301-542 are met within the current MRP as there is no change to the existing MRP plan of facilities that will remain post mining operations. Plates 3-1, 3-2, 3-7A, 3-7B and 3-7C show the mine disturbances and the final configuration. Plates 3-8A through 3-8E show the related cross sections.

**cparker**

## Maps Reclamation Final Surface Configuration

*Analysis:*

The current MRP meets the State of Utah R645 requirements for Final Surface Configuration Maps.

The requirements of R645-301-542 are met within the current MRP as there is no change to the existing MRP plan of the estimated final surface configuration back to AOC Plates 3-1, 3-2, 3-7A, 3-7B and 3-7C show the mine disturbances and the final configuration. Plates 3-8A through 3-8E show the related cross sections.

**cparker**

## Bonding Determination of Amount

*Analysis:*

The midterm review of the MRP does not meet the State of Utah R645 requirements for Determination of Bond Amount.

The Division requires an evaluation of the reclamation cost estimate during each midterm permit review. This cost estimate is then escalated for five years or until the next midterm review. In accordance with the requirements of R645-303-211, R645-301-830, and -301-830.140, it is the Permittees responsibility to provide detailed estimated cost sheets to support the reclamation cost estimate.

*Deficiencies Details:*

The midterm review of the amendment to update the MRP does not meet the minimum requirements of R645-301-830.140 due to missing information as that the Permittee has not submitted updated bond information in regards to the midterm review of the MRP.

The Permittee must update the unit cost data used in the 2011 Midterm Permit Review reclamation cost estimate to 2016 unit costs using the 2016 R.S. Means Heavy Construction Cost Data manual. All computation sheets for demolition, earthwork and re-vegetation must be updated and submitted to the Division so the Division can determine the required bond amount needed through 2021.

In accordance with R645-301-830.410, Division Technical Directive 007, and Office of Surface Mining Handbook for Calculation of Reclamation Bond Amounts the Permittee may utilize third party contractors for cost references when a general cost references does not adequately describe the required reclamation task. In the event the Permittee utilizes local third party contractors cost estimates within the reclamation bond amount additional information must be submitted with the application including a minimum of three individual quotes for the work. References may include items such as a letter or email transcript but must include all relevant contact information from the contractor so that the Division may contact said contractor to verify unit cost is valid in the event the Division was the hiring personal. References must be submitted at the time the reclamation bond amount is submitted to the Division. The Permittee will submit detailed cost references for all contracted costs of reclamation.

In accordance with R645-301-830.410, Division Technical Directive 007, and Office of Surface Mining Handbook for Calculation of Reclamation Bond Amounts the Permittee must utilize bare unit costs when using standardized cost reference manuals such as R.S. Means Heavy Construction. The Division applies an indirect cost of 26.8% that covers overhead and profit calculations in the indirect line items of the total sheet. The Permittee will utilize the bare unit cost when utilizing R.S. Means Heavy Construction cost reference.

The Gordon Creek 2, 7 & 8 Mines Midterm review, in accordance with R645-303-211, was commenced on December 1, 2016 by the Division. In accordance with R645-301-830.410, Division Technical Directive 007, and Office of Surface Mining Handbook for Calculation of Reclamation Bond Amounts the Permittee must utilize the dollar year for which the midterm was commenced. The escalation to the next midterm must also be amended to calculate the new escalation to the next midterm review, five years.

The total reclamation cost for the Gordon Creek 2, 7 & 8 Mines (sum of the direct and indirect costs) must be escalated from 2016 to 2021 (5 years) using an escalation factor of 0.7%.

This escalated cost is rounded to the nearest $ 1,000 to determine the amount of required bond which must be posted with the Division by the Permittee.

FINDINGS:

R645-303-211, R645-301-830.100 through -830.140, R645-301-830.410: The Permittee must submit the detail reclamation bond estimate in 2016 Dollars.

R645-303-211, R645-301-830.100 through -830.140, R645-301-830.410: The Permittee must submit detail cost quotes from three parties to utilize a cost reference outside of published construction related cost reference manuals, e.g. R.S. Mean Heavy Construction.

R645-303-211, R645-301-830.100 through -830.140, R645-301-830.410: The Permittee will utilize R.S. Means Heavy Construction cost reference or other approved cost referencing.

R645-303-211, R645-301-830.100 through -830.140, R645-301-830.410: The permittee will add indirect and escalation to the next midterm on the Total sheet.

**bwiser**