



GARY R. HERBERT
Governor

SPENCER J. COX
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

August 30, 2017

John Byars, General Manager
Canyon Fuel Company, LLC
597 South SR24
Salina, Utah 84654

Subject: 3 Right 4 East Panels, Canyon Fuel Company, LLC, Sufco Mine, C/041/0002,
Task #5501

Dear Mr. Byars:

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. The plans as submitted are denied. Please resubmit the entire application.

If you have any questions, please call me at (801) 538-5325.

Sincerely,

Daron R. Haddock
Coal Program Manager

DRH/sqs
O:\041002.SUF\WG5501 3RIGHT4EAST\Deficiencies.doc



GARY R. HERBERT
Governor
GREG BELL
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

Technical Analysis and Findings

Utah Coal Regulatory Program

PID: C0410002
TaskID: 5501
Mine Name: SUFCO MINE
Title: 3 RIGHT 4 EAST PANELS

Environmental Resource Information

Historic and Archeological Resource Information

Analysis:

The amendment does not meet the State of Utah R645 requirements for Historic and Archeological Resource Information at R645-301-411;

SHPO concurrence is required for final approval of the amendment. The surface ownership is the Manti La-Sal National Forest. They have completed the required archaeological survey for the area potentially affected by subsidence and sent it to the SHPO for concurrence ("E" mail from Charmaine Thompson 8/24/2017). The forest service has made a determination of no affect.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Historic and Archeological Resource Information at R645-301-411;

SHPO concurrence is required for final approval of the amendment. The surface ownership is the Manti La-Sal National Forest. They have completed the required archaeological survey for the area potentially affected by subsidence and sent it to the SHPO for concurrence ("E" mail from from Charmaine Thompson 8/24/2017). The forest service has made a determination of no affect.

jhelfric

Fish and Wildlife Resource Information

Analysis:

The amendment does not meet the State of Utah R645 requirements for Fish and Wildlife Resource Information R645-301-322, 333;

A take permit from the U. S. Fish & Wildlife Service is required prior to approval of this amendment and;

The amendment needs to include a raptor survey monitoring regimen for the 3R, 4E panels that includes surveying at the appropriate time in 2018.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Fish and Wildlife Resource Information R645-301-322, 333;

A take permit from the U. S. Fish & Wildlife Service is required prior to approval of this amendment and;

The amendment needs to include a raptor survey monitoring regimen for the 3R, 4E panels that includes surveying at the appropriate time in 2018.

jheltric

Hydro Baseline Information

Analysis:

The amendment meets the State of Utah R645 requirements for Baseline Information.

3 Right 4 East Panels are located on existing leases U-63214 and U-62453 within the Quitchupah Tract/Lease. The leases were issued to the company in 1989. The mine plan is shown on Plate 5-7 with mining to occur only within the Upper Hiawatha coal seam. The overburden in this area is approximately 900'. No surface disturbance is anticipated and/or planned with the proposed expansion into these two panels

Previously submitted and approved baseline information relative to ground and surface water resources have been approved the proposed location of Panel 3R4E. Beginning on page 7-3 of the approved Sufco MRP and continuing in Appendix 7-17, the Permittee provides baseline data and supporting narrative and analyses that characterizes the ground and surface water resources in the area of and adjacent to the 3R 4E panel.

A detailed discussion of the geologic units within the permit and adjacent area are provided beginning on page 7-5 and continued in Appendix 7-17. Plate 7-3 depicts the water monitoring wells and spring locations in the permit and adjacent area.

The major surface drainages are discussed beginning on page 7-17 and continued in Appendix 7-17. Figure 7-4 depicts the major surface drainages. The North Fork of Quitchupah is the closest surface water body to the 3R4E panel. The most exterior development of Panel 3R4E appears to be approximately 1/8th of a mile from the North Fork of Quitchupah Creek.

Appendix 7-17 discusses the water monitoring that's conducted in the Quitchupah Coal Lease Tract (Quitchupah Tract). The Permittee began quarterly monitoring of five creek sites, four springs, 13 monitoring wells, mine discharge water and one roof drip site within the mine in 1983. Once the Quitchupah Coal Lease Tract was acquired in 1989, three springs, one creek and seven monitoring wells were added to the monitoring program. The monitoring wells are monitored for water level only.

Additionally, gain/loss studies have been performed on Quitchupah Creek and its tributaries in an effort to evaluate and characterize the flow characteristics of this drainage.

Figure 4 of Appendix 7-17 provides a plan view of the surficial geology within the Quitchupah Coal Lease Tract. Figure 5 provides a southwest to northeast cross-sectional view of the geologic units within the Quitchupah Coal Lease Tract. Figure 6 depicts the generalized stratigraphic sections of each of the geologic units within the Quitchupah Coal Lease Tract. A detailed discussion of each of the geologic units within the area of panel 3R4E begins on page 8 of Appendix 7-17. Panel 3R4E is located primarily in the Black Hawk Formation

Appendix 7-17 provides baseline data relative to ground and surface water and their inherent chemical compositions and flow rates.

Plate 7-2, Surface and Groundwater Rights Quitchupah Tract depict the ground and surface water rights in the area of the 3R4E panels. The 3R4E panels are located in an area with minimal ground and surface water rights identified. Surface water right 94-949 is located on the North Fork of Quitchupah Creek approximately 1 mile south of the panels. Two storm-water runoff catchment ponds (94-584 and 94-585) are located well over ½ mile to the north of the 3R4E panels. In both instances, the identified water rights are located well outside the anticipated subsidence area.

Based upon the baseline information presented in Appendix V-17, the location of Panel 3R4E and the adjacent area are essentially void of springs that could potentially be affected. The nearest springs to Panel 3R4E are approximately two miles away east and west of the panel (well outside the projected/potential limits of subsidence impacts).

schriste

Hydro Baseline Cumulative Impact Area

Analysis:

The amendment meets the State of Utah R645 requirements for Baseline Cumulative Impact Area.

The proposed 3R4E panel is located within the Quitchupah and Muddy Creek Cumulative Impact Area (CIA) located in Sevier County, Utah west of the town of Emery. The CIA is depicted on Plate 1, Location Map of the Cumulative Impact Area Quitchupah-Muddy Creek and Plate 2, Workings Map Cumulative Impact Area Quitchupah-Muddy Creek of the Cumulative Hydrologic Impact Assessment (CHIA).

The hydrologic and geologic information required to establish the CIA has previously been provided to the Division. Federal leases U-63214 and U-62453 were awarded to the Permittee in 1989. As the proposed 3R4E panel is located within these two leases and as baseline data and on-going water monitoring data was and continue to be provided to the Division, the CIA does not require a revision at this time.

schriste

Probable Hydrologic Consequences Determination

Analysis:

The amendment meets the State of Utah R645 requirements for Probable Hydrologic Consequences Determination.

The approved MRP discusses the probable hydrologic consequences of mining beginning on page 7-26 and continuing with a more detailed analysis of the Quitchupah Tract (location of the 3R4E panel) in Appendix 7-17.

With the exception of subsidence, no surface disturbance is proposed or anticipated. The 3R4E panels are located within existing leases U-63214 and U-62453 (part of the Quitchupah Tract). The leases were issued to the company in 1989. As part of that Federal Mine Plan Determination, the potential impacts to hydrologic resources were reviewed and subsequently approved. The proposed area of mining for the 3R4E panel was evaluated for mining impacts. The difference between then and now is essentially threefold: 1) The orientation of mining has been changed from a north/south to east/west 2) The number of mining sections has been reduced from 4 distinct sections to one longwall panel and 3) The method of mining has been changed from room and pillar to long-wall mining.

The previous technical review (Task ID #5360) identified a deficiency relative to the PHC determination. The Permittee was directed to revise the PHC determination section of the MRP to provide a more detailed discussion as to the potential for subsidence to impact ground and surface water resources in the area of and adjacent to the 3R4E panel.

Although the mining method has changed for the area of the 3R4E panel, during the issuance of the two aforementioned Federal Leases associated with the Quitchupah Lease, long-wall mining and its potential impact to ground and surface water resources was reviewed. However; due to the proximity of Panel 3R4E to the North Fork of Quitchupah Creek, additional information was requested in order to properly evaluate the probable hydrologic consequences. Based upon a review of the proposed location of the 3R4E panel, it appears to be less than a ¼ mile north east of the North Fork of Quitchupah Creek. A large escarpment is located between the two. The potential impacts as a result of subsidence (e.g. stream flow alteration from spalling material) must be addressed. Upon review of Appendix V-17, longwall mining in the proposed location of panel 3R4E was not contemplated.

On page 7-38F, the Permittee has provided additional discussion/analysis of long-wall mining and the potential hydrologic impacts. The narrative discusses how in 1986 and 1987, an experimental practice of subsidizing escarpments on the west side of Quitchupah Canyon was approved by the Division. The area for this experimental practice was located in Section 32, Township 21 South, Range 5 E and Section 5 of Township 22 South, Range 5 East. The 3R4E panel straddles Sections 28, 29, 32 and 33 of Township 21 South, Range 5 East on the east side of the Quitchupah Canyon. The experimental practice and resulting test results were submitted to the Division in 1991. The report outlined the data collection (visually, photography and survey measurements) to document the degree of horizontal and vertical movement of the surface as a result of subsidence/long-wall mining. The report documented that "One independent block of rock fell during subsidence and a few tension cracks were created along the cliff face. No other visible signs of mining were found even though the surface elevations were reduced several feet".

Additionally, spalling is considered a natural occurring event with the Castlegate Formation. Thus, it's anticipated that cliff spalling may occur as a result of subsidence since the entire area of the Quitchupah Canyon escarpment is heavily fractured. The pre-mining slopes are littered with blocks of stone which have eroded and fell from the Castlegate Formation. As a result, impacts to hydrologic resources as a result of long-wall mining of the 3R4E panel are considered minimal. Additionally, the slope of the Quitchupah Canyon channel west of the panel is of a sufficient grade to allow continued flow to occur should rocks spall from the escarpment. Surface water monitoring site 042 is located downstream of the proposed mining and will be checked during and after the mining of the panel to determine if potential hydrologic impacts have occurred.

schriste

Maps Monitoring and Sampling Locations

Analysis:

The amendment meets the State of Utah R645 requirements for Monitoring and Sampling Location maps.

Plate 7-3, Hydrologic Monitoring Stations depicts the monitoring and sampling locations in the area of the 3R4E panel(s). The Permittee has updated Plate 7-3, Hydrologic Monitoring Stations to accurately reflect the proposed mining activity in the 3R4E panel mining activity.

schriste

Maps Subsurface Water Resources

Analysis:

The amendment meets the State of Utah R645 requirements for Subsurface Water Resource Maps.

The previously approved baseline data, Probable Hydrologic Consequences and subsequent CHIA document found that groundwater occurs in perched zones of limited areal extent within the area of the proposed 3R4E panel. The data provided in Appendix 7-17 and 7-18 of the approved MRP demonstrate that none of the formations down through the Blackhawk formation support a continuous aquifer. The ground water systems in the area are perched and discontinuous.

schriste

Maps Surface and Subsurface Manmade Features

Analysis:

The amendment meets the State of Utah R645 requirements for Surface Water Resource Maps.

Plate 7-2 identifies the state appropriated water rights within the permit and adjacent area. Additionally, Plate 7-3 depicts the surface water resources and drainages both within and adjacent to the permit area (including the proposed location of Panel 3R4E).

schriste

Operation Plan

Hydrologic Ground Water Monitoring

Analysis:

The amendment meets the State of Utah R645 requirements for Groundwater Monitoring.

Appendix 7-17 discusses the groundwater monitoring that's conducted in the Quitchupah Coal Lease Tract (Quitichupah Tract). The Permittee began quarterly monitoring of five creek sites, four springs, 13 monitoring wells, mine discharge water and one roof drip site within the mine. Once the Quitichupah Coal Lease Tract was acquired in 1989, three springs, one creek and seven monitoring wells were added to the monitoring program. The monitoring wells are monitored for water level only. Upon review of the baseline data provided in Appendix VI-17, there are minimal spring sites in the area of Panel 3R4E. The closest spring sites that are monitored are approximately 2 miles away (well outside the potential limits of subsidence).

schriste

Hydro Surface Water Monitoring

Analysis:

The amendment meets the State of Utah R645 requirements for Surface Water Monitoring.

The current water monitoring plan identifies three surface water monitoring sites in the adjacent area to panel 3R4E (two above the panel and one below). Monitoring site 06D is located on the South Fork of Quitichupah just above the confluence with the North Fork of Quitichupah Creek. Monitoring site 06D has been monitored quarterly since 2012. Monitoring site 007 is located above panel 3R4E and has been monitored quarterly from 1979 to the present. Monitoring site 042 is located downstream from panel 3R4E and has been monitored quarterly since 1979 to the present.

schriste

Maps Affected Area

Analysis:

The amendment does not meet the State of Utah R6545 requirements for Affected Area Maps.

The previous technical review (Task ID #5360) identified a deficiency relative to Plate 5-10, Potential Subsidence Limits Sufco Mine. The Permittee was directed to revise Plate 5-10 so as to be consistent with the projected subsidence depicted on "Projected Subsidence" Sheet No. 1 that was submitted with Task ID #5360.

Upon review of the most recently submitted amendment, Plate 5-10 has not been updated to show the potential subsidence limits as shown on Sheet No. 1. Additionally, Sheet No. 1 was not submitted with this amendment, not was "Proposed Panel" Sheet No. 1 (previously submitted with Task ID #5360).

The Permittee must revise Plate 5-10, Potential Subsidence Limits Sufco Mine" to depict the potential subsidence extent as was previously identified on "Projected Subsidence" Sheet No. 1 (previously submitted with Task ID #5360).

The Permittee must re-submit "Projected Subsidence" Sheet No. 1 and "Proposed Panel" Sheet No. 1. The figures were submitted with Task ID #5360, but do not appear to have been submitted with this amendment.

Deficiencies Details:

The amendment does not meet the State of Utah R6545 requirements for Affected Area Maps. Prior to final approval, the following deficiencies must be addressed:

R645-301-731: The Permittee must revise Plate 5-10, Potential Subsidence Limits Sufco Mine" to depict the potential subsidence extent as was previously identified on "Projected Subsidence" Sheet No. 1 (previously submitted with Task ID #5360). The subsidence limits depicted on this plate do not appear to have been revised from the previous submission.

R645-301-731: The Permittee must re-submit "Projected Subsidence" Sheet No. 1 and "Proposed Panel" Sheet No. 1. The figures were submitted with Task ID #5360, but do not appear to have been submitted with this amendment.

schriste

Reclamation Plan

Hydrological Information Reclamation Plan

Analysis:

The amendment meets the State of Utah R645 rules for Hydrologic Reclamation Plan.

As the proposed mining of panel 3R4E does not call for any additional surface disturbance, the approved hydrologic reclamation plan does not require a revision with this amendment.

schriste

CHIA

CHIA

Analysis:

The amendment meets the State of Utah R645 requirements for Cumulative Hydrologic Impact Assessment (CHIA).

The proposed location of panel 3R4E is located in the center of the existing Cumulative Impact Area (CIA). The Quitcupah and Muddy Creek CHIA was completed initially in 1989 with a second revision in 2005. The addition of the 3R4E panel does not require revisions to the existing CHIA as the potential impacts from coal mining activity in the area of the panel has been previously examined and a finding made by the Division that the mine plan has been designed to prevent material damage to the hydrologic balance.

schriste