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**State of Utah**  
DEPARTMENT OF NATURAL RESOURCES

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**Technical Analysis and Findings**  
**Utah Coal Regulatory Program**

May 5, 2016

**PID: C0070005**  
**TaskID: 4935**  
**Mine Name: SKYLINE MINE**  
**Title: SWENS CANYON VENTILATION FACILITY**

**Summary**

The Swens Canyon application describes a 2.62 mile powerline (Sec 2.9.7) which will disturb a 15 ft wide swath along its length. (The total powerline disturbance is 4.8 acres.) The powerline is a 3-phase, 12.5 kV, single pole line with adaptation for raptors. No road building is involved in construction of the powerline. To minimize visual impact, the powerline will be buried under Huntington Creek (p. 2-68 and p2-131).

The Swens Canyon facility will be 120 -150 feet from state highway 264. At Swen's Canyon, 6.8 acres will be disturbed, although 9.7 acres is included in the permit area (Sec 2.1 and Sec 2.9). The Swen's Canyon facility will include construction of a 900 ft access road (p. 4-114(a); two vertical shafts: a 16 foot diameter escapeway and a 6 or 8 foot diameter exhaust shaft, without a fan (Sec. 2.2, p. 2-21b and Sec 2.9.7 and p. 3-31b); a sediment pond to contain drill cuttings (Sec 2.3 and p 3-21 and p. 3.2.2); a topsoil stockpile; and the installation of a transformer.

*Deficiencies Details:*

[Empty box for deficiencies details]

pburton

**General Contents**

**Identification of Interest**

*Analysis:*

The information provided meets the requirements of R645-301-112, Identification of Interests.

The Permittee and Operator is Canyon Fuel Co. The legal and financial information for Canyon Fuel Co is provided in General Chapter 1. The resident agent is Corporation Service Company, Salt Lake City. The contact person is Eugene E. DiClaudio. He is also responsible for AML fee payment.

Canyon Fuel is owned by Bowie Resource Holdings, LLC. and Bowie Resource Partners, LLC. both with corporate offices in Louisville, Kentucky. Ultimate ownership of the above companies is by Galena US Holdings Inc and Cedars Energy, LLC. Both Galena US Holdings Inc and Cedars Energy LLC are in turn controlled by individuals and corporate entities. The ownership tree is illustrated on Figure 1-1 of General Chapter 1. The The list of officers and directors for Canyon Fuel Co and all its owners is found in Appendix 1-1 of General Chapter 1, which remains unchanged since 2013.

The ownership entities were evaluated in the Applicant Violator System on June 29, 2015 with no violations reported.

pburton

## Violation Information

### Analysis:

The application meets the requirements of R-645-301-113, Violations, which requires that the applicant provide, ""a list of all violation notices received by the applicant during a three year period preceding the application date."" Section 113 and Table 1-2 of General Chapter 1 provide information on violations issued at Canyon Fuel Co., LLC mines and mines controlled by the owners of Canyon Fuel Co., LLC. The current practice in Table 1-2 is to report violations, even those vacated. In 2014 and 2015, there were violations issued, and subsequently vacated at the Skyline Mine and the Gordon Creek Mine.

pburton

## Right of Entry

### Analysis:

The application meets the requirements of R645-301-114, Right of Entry. Swens Canyon shaft will be located in T 13 S, R 6 E Section 27 adjacent to Hwy 264 (shown on Dwg 1.6-3). The powerline will stretch over Section 27, 28, 23 and 13 of T13S, R6E. Both the powerline and surface disturbance all lie within Lease UTU-44076. The United State Forest Service is the surface managing agency and was consulted during the site planning process.

The Permittee states that the shaft is required for the existing mine and will be used to access federal coal lease UTU-771114 (Flat Canyon) in the future. The lease boundaries are portrayed on Dwg 1.6-3 and described in Table 1.114 and pp. 1-32 and 1-39.

pburton

## Legal Description

### Analysis:

The information provided does not meet the requirements of R645-301-121.100, Legal Description and R645-300-141 Bonded Area Description.

The shaft is located on the north side of the mouth of Swen's Cyn in the SW 1/4 NW 1/4 Sec 27 T 13 S, R 6 E. on USFS managed land within Lease UTU-44076. The legal description is specifically provided for the fifteen foot wide powerline on p. 1-34a. The powerline will disturb 4.8 acres (p. 1-34a). Total acreage for both powerline and shaft is stated as 14.50 acres on p. 1-37 and in the public notice. By subtraction, the Division arrives at 9.7 acres associated with the shaft disturbance. The legal description provided on page 1-38 identifies the S1/2NW1/4 and S1/2NE1/4 in Sec 27 T13S, R6E being added to the permit area. A more specific legal description and acreage of the shaft disturbed area must be included.

The path of the powerline and the location of the shaft are shown on Dwg 1.6-3, Skyline Mine Permit Area. With this action, the total permit areas to be disturbed (bonded area) totals 139.81 acres (p. 1-37). The table states that the powerline disturbance of 4.8 acres will not be reclaimed.

### Deficiencies Details:

R645-301-141, Bonded Area Description. A specific legal description of the 9.7 acre Swens Canyon disturbance is requested (similar to that provided for the power line on p 1-34a of the application).

pburton

## Permit Term

### Analysis:

The information provided meets the requirements of R645-301-116, Permit Term. The existing 5 year permit issued 2012 with right of successive renewal. The life of mine with existing leases is through June 2019 (p. 1-36).

pburton

## Public Notice and Comment

*Analysis:*

The application has met the public notice requirements of R645-300-120, public notice. A public notice ran in the Emery County Progress and the Sun Advocate for four consecutive weeks (October 27 - November 17). An affidavit of publication is included in Appendix 118-A.

pburton

## **Reporting of Technical Data**

*Analysis:*

The Swens Canyon facility will have two vertical shafts: a 16 foot diameter escapeway and a smaller exhaust shaft that is eight feet in diameter (Sec. 2.2, p. 2-21b and Sec. 2.9.7 p. 3-31b). The application meets the requirements of R645-301-130, Reporting of Technical Data.

The application includes the following reports:

2002 Flat Canyon EIS produced by USFS and BLM is found in Vol. 2, App.. A-3

The PHC in Vol 2., App. N and O was written by Peterson Hydrologic, Inc  
Peterson Hydrologic Investigation of Groundwater and Surface-Water Systems Aug 13, 2014.

Peterson Hydrologic. Aug. 18, 2104. Groundwater Conditions in the Star Point Sandstone.

Alpine Ecological.2013. Wildlife Survey Report Powerline, Ventilation Hole, Access Road Analysis Area, Subsidence Area, and Spring Survey.

Alpine Ecological. November 16, 2014. 2014 Wildlife Survey Report Power Line and Ventilation Pad.

Environmental Planning Group, LLC. Oct 7, 2014. Cultural Resource Inventory For the Skyline Mine Expansion and Transmission Line Construction Project, Carbon and Emery Counties, Utah.

Mt. Nebo Scientific Dec. 2014. Vegetation of the Powerline Corridor & Swen Canyon Pad.

Joseph Dyer. June 19, 2014. NRCS Prime Farmland Determination.

Long Resource Consultants. December 4, 2014. Powerline Corridor Soil Survey Report.

Earthfax Engineering December 2014. Skyline Mine Swen Canyon Ventilation Shaft Pad Design Report.

pburton

## **Environmental Resource Information**

### **General**

*Analysis:*

The application meets the minimum requirements of R645-301-521 in regards to environmental information related to engineering due to information stated in Chapter 2 section 2.1 general environmental resources summary. The additional text to the section details the preliminary studies for permitting conducted in 2014. The study area covered 13 acres for the 9.7 acres for the proposed pad site and 200 ft corridor for the 4.8 acres for a 15 ft wide 2.6 mile long power line corridor.

cparker

### **Permit Area**

*Analysis:*

The application meets the minimum requirements of R645-301-521.140 due to information stated in Chapter 2 Section 2.1

that states the disturbed area will included a total of 14.5 acres of pad and power line corridor. Updated plates which match the provided legal description of the mine boundary were provided in plates 3.2.4-4A through 3.2.4-4 F and 1.6-3.

cparker

## Historic and Archeological Resource Information

### Analysis:

As noted on page 2-4c2, an intensive class III cultural resource survey was conducted on the areas to be disturbed, including those areas that are associated with other amendments. The report identifies the areas associated with this project as third and fourth parcels. A total of five (5) isolated occurrences and three (3) new resources were identified. None of the sites were recommended for eligibility in the NRHP. Cultural resource report No. U-14-EO-0753f; ML-14-1535 has been provided as evidence of SHPO consultation and concurrence. None of the three new sites found within the project area are eligible for the NRHP (isolated occurrences are not recorded). No historic properties will be affected by the proposed project.

A map of the survey location is provided as figure 2-2 in the cultural resources report.

Findings: Information provided in the application meets the minimum requirements of R645-301-411

Ireinhart

## Vegetation Resource Information

### Analysis:

Section 2.7.9, page 2-63a, describes general vegetation of the powerline corridor & Swens Canyon pad. A detailed report conducted by Mt. Nebo Scientific describes those plant communities that could be impacted and provides qualitative and quantitative data from sampling within them. The report also provides data from reference areas that could be used for future revegetation success standards at the time of final reclamation. A list of potential threatened, endangered, candidate and sensitive plant species known to occur in the general area is provided including the potential impacts that could occur from proposed construction activities at Skyline Mine. The report contains numerous photos of the vegetation communities and a map indicates general locations of veg study areas and powerline route.

Findings: The information provided is adequate to predict the potential for reestablishing vegetation and productivity of land before mining and meets the requirements of R645-301-321.

Ireinhart

## Fish and Wildlife Resource Information

### Analysis:

R645-301-322. Information provided in the application is adequate to meet the minimum requirements of the regulations.

The approved MRP includes an updated T&E species list utilizing the IPaC Trust Resource Report provided by Fish and Wildlife Service. The 2013 & 2014 wildlife report is provided for explanation of potential habitat for species that may be impacted. The reports adequately cover Northern Goshawk, other general raptors and Western Boreal Toad. An on-site field visit was conducted on October 6, 2015 with representatives from the Division, Utah Division of Wildlife, and US Forest Service for evaluation of habitat for Greater Sage-grouse, American three-toed woodpecker, Mexican spotted owl, Southwestern willow flycatcher and Yellow-billed cuckoo. Consensus of all wildlife biologists™ concur that habitat for these species does not exist in the project area and therefore, a monitoring and/or mitigation plan is not required. The Division determined that approval of this amendment would not affect a listed species or designated critical habitat and therefore did not initiate informational consultation with U.S. Fish and Wildlife Service.

Ireinhart

## Soils Resource Information

### Analysis:

Analysis:  
The information provided meets the requirements of R645-301-200, Soils Resource.

Chap 2, Sec 2.7 & Sec 2.11 & 2.12. describe the pre-mining resources. The description is based on the Order II Powerline Corridor Soil Survey Report by Long Resource Consultants, December 4, 2014 found in App. A2, Vo. 2. this soil survey includes 11.8 acres in the coal pile expansion area; 18.9 acres at Swen's Canyon; and, 77 acres of powerline corridor. But it stops short at the location where the powerline goes underground. The soil survey did not include the 0.3 mile long corridor for power line burial because the buried section of power line will not be disturbed. The power line will be bored below the surface along that length [Sec. 2.11 p 2-120(l) and 2-120(m)].

Two soil sample locations are shown on Figure 2 on the Swen's Canyon pad area. They are sample 14SKY14 and 14SKY15. Appendix A of App. A2 provides the soil profile descriptions for those locations. Appendix B provides soil profile location photographs. Appendix C provides soil profile box photographs. Appendix D provides laboratory analysis for 14SKY14 and 14SKY15. Soil location 14SKY14 was mapped in the Kamack family sandy loam on convex slopes (10 - 35%). Soil location 14SKY15 was mapped as Hailman family sandy loam on concave slopes (5-15%). The Kamack family is map Unit S2 is the Typic Haplocryoll and the Hailman family is map unit S2, a Pachic Haplocryoll. This mapping corresponds to the Manti La-Sal soil map unit 32, Pando-Toze families 2-15% slopes. Dominant vegetation is mountain big sagebrush, quaking aspen, Oregon grape, buckwheat, mountain brome, grasses and forbs. The Manti LaSal soil survey mentions silver sage as a dominant forb. The elevation is 8,687 feet.

Three sample locations are shown on Figure 2 for the transmission line corridor. They are 14SKY10, 14SKY09, and 14SKY08. These soils are also mapped on Figure 2. They are Sout-Merino families (15-60% slopes) and Lotex-McCadden families (5-25% slopes). These are shallow sandstone derived soils. The average depth to bedrock is 20 inches along the ridge. Vegetation is mixed conifer, aspen and mountain shrubs. The transmission corridor was mapped by the Manti-LaSal National Forest as Map Units 32, 42 and 560. These map units are Pando-Toze families (2-15% slopes); Becks-Cryaquolls-Silas families (0-5% slopes); and Lucky Star--Skylick families (30-60% slopes), respectively.

Table 11 in Appendix A2 provides an estimated topsoil salvage depths for map unit S1 (16 inches) and S2 (10 inches). A subsoil salvage depth is also proposed for S1 (27 inches) and for S2 (31 inches).

The following must be a requirement of approval in accordance with R645-301-222.400 and R645-301-231.300, just prior to disturbance in Swens Canyon, soil samples will be collected from the A and B horizon at sample locations 14SKY14 and 14SKY15 for analysis of nutrients nitrogen, phosphorus and potassium in accordance with Table 3 of the Division's January 2008 Guidelines for Topsoil and Overburden.

#### *Deficiencies Details:*

#### Deficiency/Commitment:

The following must be a requirement of approval in accordance with R645-301-222.400 and R645-301-231.300, just prior to disturbance in Swens Canyon, soil samples will be collected from the A and B horizon at sample locations 14SKY14 and 14SKY15 for analysis of nutrients nitrogen, phosphorus and potassium in accordance with Table 3 of the Division's January 2008 Guidelines for Topsoil and Overburden.

pburton

## **Land Use Resource Information**

#### *Analysis:*

R645-301-411: Information provided in the application meets the minimum requirements of the regulations. Section 2.12.2 discusses land use, which is primarily grazing, and wildlife and forestry use. Table 2.12.2-1 incorporates AUM's from the Swens vent pad. Section 2.12 of the MRP discusses land use of the adjacent area and further explanation is not warranted in this amendment.

Ireinhard

## **Prime Farmland**

#### *Analysis:*

#### Analysis:

The application meets the requirements of R645-301-221, prime farmland reconnaissance investigation. An email discussing the potential for prime from Joseph Dyer, Area Resource Soil Scientist with the NRCS/Price Field Office is included in Appendix A-2 Volume 2. It is accompanied by two files showing the locations of the sections evaluated and the terrain. However, the files sent with the maps were not included and therefore evaluation of the information presented is

not readily available to the Division. However, having been at Swen's Canyon and seen the location of the proposed ventilation shafts, I agree that there is no prime farmland present. And soil mapping units described for the shaft location are not prime farmland soils (App. A-2, Vol. 2).

pburton

## Geologic Resource Information

### Analysis:

The application meets the R645-301-620 requirements for describing the Geologic Environment. R645-301-624. Geologic information will include, at a minimum, the following:

624.100. A description of the geology of the proposed permit and adjacent areas down to and including the deeper of either the stratum immediately below the lowest coal seam to be mined or any aquifer below the lowest coal seam to be mined which may be adversely impacted by mining. This description will include the regional and structural geology of the permit and adjacent areas, and other parameters which influence the required reclamation and it will also show how the regional and structural geology may affect the occurrence, availability, movement, quantity and quality of potentially impacted surface and ground water. It will be based on:

624.110. The cross sections, maps, and plans required by R645-301-622.100 through R645-301-622.400.

624.120. The information obtained under R645-301-624.200, R645-301-624.300 and R645-301-625; and

624.130. Geologic literature and practices.

The plan now contains the required geologic information. In the cover letter with this application was a response that discusses how issues raised in the ACR were addressed. It indicates that Section 2.2.14 was modified to refer to the location of the lithologic log and a statement that a drill hole will be done at the shaft location prior to shaft construction. There is a lithologic log of drill hole 95-28-1 that is included in Appendix A-4. This drill hole is located approximately 1/2 mile west of the Swens Canyon area. The 95-28-1 drill hole log does contain descriptions of the lithology down to 1650 feet. The coal seam is located from approximately 1211 feet to 1219 feet with another seam located from about 1157 feet to 1164 feet and a third from 1341 to 1348 and a another from 1357 to 1365 feet. From the log there is no indication of strata that would be toxic or acid forming or cause delirious effects to the environment. The applicant has committed to putting in a drill hole at the shaft location prior to installing the shafts to verify the lithology of the strata at this location.

dhaddock

## Hydro Sampling and Analysis

### Analysis:

The amendment meets the State of Utah R645 requirements for Hydro: Sampling and Analysis.

Methods used to conduct water sampling are described in the PHCs. Laboratory analysis of water samples are typically performed by SGS Laboratories and Chemtech Ford Laboratory. These labs are both NELAC certified. Any isotopic analysis done of water samples were conducted at the University of Miami, Florida, the BYU Department of Geology, and Geochron Laboratories of Cambridge, Massachusetts.

adaniels

## Hydro Baseline Information

### Analysis:

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

The Permittee has states that there are no groundwater springs in the vicinity of the Swens Canyon Ventilation Facility. This facility is located on a south-facing, sagebrush covered ridge.

Monitoring location CS-16 is located on Swens Creek, downstream of disturbance related to this facility. This monitoring point is already part of the Skyline operational water monitoring program and has been monitored since 2001.

Monitoring location CS-28 has been added to the monitoring program, and is a stream monitoring location located on Swens Creek above any potential disturbances related to the Swens Canyon Ventilation Facility. This site has had baseline data

## Hydro Baseline Cumulative Impact Area

### Analysis:

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

Hydrologic and geologic information has been provided for the proposed ventilation facility area. Much of this area has already been discussed in the MRP and the CHIA.

adaniels

## Hydro Modeling

### Analysis:

The amendment meets the State of Utah R645 requirements for Hydro: Modeling.

No additional modeling was required for the proposed ventilation facility.

adaniels

## Probable Hydrologic Consequences Determination

### Analysis:

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

Section 2.3 of the MRP contains the probable hydrologic consequences of mining at the Skyline Mine. This section was revised to discuss sediment control features that will be used at the proposed ventilation facility, and references section 3.2, which describes in more detail how these sediment control features will be placed and functioned. A report prepared by EarthFax Engineering also details a design report of the facility as well.

The application describes the operations that will be taken to prevent hydrologic consequences during construction, operation, and reclamation of the ventilation facility. Page 2-51a of the MRP contains the PHC determination statement.

adaniels

## Hydro GroundWater Monitoring Plan

### Analysis:

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

There is no new ground water monitoring needed for the small amount of disturbance required for the proposed Swens Canyon Ventilation Facility.

adaniels

## Hydro SurfaceWater Monitoring Plan

### Analysis:

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

There are two surface water monitoring locations that will be utilized to evaluate any potential impacts to surface water. These points are stream monitoring locations CS-16 and CS-28. CS-28 will provide an upstream of disturbance monitoring point on Swens Creek, and CS-16 will provide a downstream monitoring point on Swens Creek. Between these two point, there will be sufficient data to evaluate whether there are any impacts to the creek from the new surface disturbance. CS-16 has had data collected and submitted to the Division since 2001. Tables 2.3.7-1 and 2.3.7-2 were updated with these monitoring requirements. Baseline monitoring occurred along Swens Creek from 2001 to 2004. This baseline monitoring included the entire suite of laboratory parameters, including the required monitoring listed in the rules. Since then, monitoring has been quarterly field data, and baseline monitoring every 5 years.

## Maps Affected Area Boundary Maps

### Analysis:

The application meets the minimum requirements of R645-301-521.100 through-521.130 by updating all the relevant maps for the entire area relevant to Swens Canyon ventilation pad as shown on the mine drawings detailed on plates 3.2.4-4A through 3.2.4-4F and 1.6-3.

The application meets the minimum requirements of R645-301-521.110.R645-301-521.110 which requires previously mined areas to be shown on Drawing 2.2.7-7. The previously mined areas are also discussed in Chapter 2 section 2.12.2. No changes were made to the MRP text within the above section at the time of this amendment.

cparker

## Maps Existing Structures and Facilities

### Analysis:

The application meets the minimum requirements of R645-301-521.120 which require a map that clearly shows the location of all buildings in and within a 1000 ft of the proposed permit area, along with identifying the current use of said buildings. Such information is provided on Drawing 2.2.7-7 and discussed in Chapter 2 section 2.12.2. No changes were made to the MRP text in section 2.12.2 at the time of this amendment.

cparker

## Maps Existing Surface Configuration

### Analysis:

The application meets the minimum requirements of R645-301-521.150 as it includes a drawing or plate that clearly calls out the existing surface of the entire mine permit and adjacent area. The application included updates to such information on plates 1.6-3 and 1.6-3A to include the Swens Canyon ventilation facility.

cparker

## Maps Mine Working

### Analysis:

The application does not meet the minimum requirements of R645-301-521.140 which requires maps that clearly show all mine plans. Plate 3.3-2 Rev10 clearly show proposed mining operations to meet said regulations, however, the operations show planned mining outside the current lease and permitted area. The Skyline mine recently acquired the Flat Canyon lease, however, the Flat Canyon lease area has not been permitted by the Division for mining operations. As discussed with the Permittee previously in an email sent August 26, 2015, the Permittee will add a note to all plates that include planned mining operations outside currently approved leases or permits stating, "Any projected mining shown beyond existing lease boundary lines is subject to future lease modifications and approvals."

For the purposes of the Swens Canyon ventilation facility plate 3.3-2 Rev10 will be amended to include the following note:

Any projected mining shown beyond existing lease boundary lines is subject to future lease modifications and approvals.

cparker

## Maps Monitoring and Sampling Locations

### Analysis:

The amendment meets the State of Utah R645 requirements for Maps Monitoring and Sampling Locations.

Map 2.3.6-1 has been updated to include the new surface water monitoring point, CS-28, on Swens Creek.

adaniels

## Maps Permit Area Boundary

### Analysis:

The application meets the minimum requirements of R645-301-521.140 as relevant permit boundary drawings were updated within the application to detail the new permit boundary, lease boundary, and adjacent areas to the current mine plan. Plate 1.6-3 details the updated permit boundary, current lease boundary, and adjacent areas to include the Swens Canyon ventilation facility. The pad and power line corridor are located within the permit boundary of the current leases held by Canyon Fuel Company. The fan installation at Swens Canyon will be utilized for mining operations within the Flat Canyon Lease area, which has yet to be approved by the Division.

cparker

## Maps Subsurface Water Resources

### Analysis:

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

This application did not require any updates to subsurface water resource mappings.

adaniels

## Maps Surface and Subsurface Manmade Features

### Analysis:

The application meets the minimum requirement of R645-301-521.122 as the application includes a drawing or plate that clearly calls out the existing surface and subsurface man made features within, passing through, or passing over the permit area. R645-301-521.120 through-521.125 require maps to clearly show existing surface and subsurface facilities. Plate 1.6-3A was updated within the application to show the surface and sub surface man made features that would include the Skyline buried pipe and power lines in the Swens Canyon area.

cparker

## Maps Surface and Subsurface Ownershiip

### Analysis:

The application meets the minimum requirements of R645-301-521.130 which requires landowners, right of entry, and public interest maps. Chapter 1 details the ownership and control information for the current Skyline mine lease areas. Drawing 1.6-1 details the surface ownership within the Skyline permit and adjacent areas. Drawing 1.6-2 details the coal ownership within the Skyline permit and adjacent areas. The current application contemplates modifications to areas already incorporated within the existing Skyline permit and adjacent areas and changes were made Drawings 1.6-1 and 1.6-2 to include the Swens Canyon ventilation pad and power line disturbances. Chapter 1 edits were made to add the surface disturbance associated with the Swens Canyon pad and powerline to the permit area.

cparker

## Maps Surface Water Resource

### Analysis:

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

Maps already contained within the approved MRP display all relevant surface water resources associated with this application. There is a perennial stream, Swens Creek, that runs just to the south of the proposed facility. There are no proposed disturbances to this creek.

adaniels

## Maps Vegetation Reference Area

### Analysis:

R645-301-323. Information provided in the application is not adequate to meet the minimum requirements of the regulations. Plate 2-7.2-1 must be updated to include all vegetation reference areas, including those for Swens pad and powerline. The Plate also is missing reference areas for the NOG shaft, the Waste Rock Disposal Site, and the Winter Quarters Site.

*Deficiencies Details:*

R645-301-323. Information provided in the application is not adequate to meet the minimum requirements of the regulations.

Prior to approval, the Permittee must update Plate 2-7.2-1 to include all vegetation reference areas, including those for Swens pad and powerline. The Plate also is missing reference areas for the NOG shaft, the Waste Rock Disposal Site, and the Winter Quarters Site.

Ireinhart

## **Operation Plan**

### **Mining Operations and Facilities**

*Analysis:*

The application meets the minimum requirements of R645-301-523, -526, and 528 by addressing the Swens Canyon Ventilation facility in Chapter 2 Section 2.2.13 and Chapter 3 Section 3.2.

The application meets the minimum requirements of R645-301-523 by updating relevant Chapter 3 sections 3.2.4 and 3.2.1 changes to included the description of the Swens Canyon ventilation and power line. The majority of Chapter 3 remained unchanged detailing 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.

cparker

### **Existing Structures**

*Analysis:*

The application meets the minimum requirements of R645-301-526 by no changes in the information to include the discussion of the existing buildings already approved within the MRP.

cparker

### **Protection Public Places**

*Analysis:*

As evidenced by the land use map (2.12.1-1) and section 4.41 of the MRP, there are no public parks, cultural or historical resources listed or eligible for listing in the National Register of Historic Places, cemeteries, National System of Trails or the Wild and Scenic Rivers Systems, in the permit or adjacent area.

Information provided in the MRP meets the minimum requirements of R645-301-411.

Ireinhart

### **Relocation or Use of Public Roads**

*Analysis:*

The application meets the minimum requirements of R645-301-521.133 due to no change in the information detailing measures 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 in Chapter 2 Section 2.12.2.

cparker

### **Air Pollution Control Plan**

*Analysis:*

Analysis: Information provided in the application meets the minimum requirements of R645-301-422. The Air Pollution Control Plan is described in Section 4.22 of the MRP.

ireinhart

## **Coal Recovery**

*Analysis:*

The application meets the minimum requirements of R645-301-522 due to no change in Chapter 3 in regards to the discussion of the measures to be used to maximize the use and conservation of the coal resources.

cparker

## **Subsidence Control Plan Renewable Resource**

*Analysis:*

The minimum requirements of R645-301-525.130 are met in the application as the Permittee followed the subsidence plan for protected areas. Changes were made to Chapter 4 Section 4.17 detailing that a pre-subsidence survey was conducted over the Flat Canyon Lease area to insure that no adverse effect from subsidence would impact public road SR-264, the ventilation shaft and pad, and the power line. Plate 4.17-3-1A was updated to illustrate the anticipated areas of subsidence within the Flat Canyon Lease area.

cparker

## **Subsidence Control Plan Subsidence**

*Analysis:*

The minimum requirements of R645-301-525.400 are met in the application as the Permittee presented a clear subsidence plan for protected areas. Text was added to Chapter 4 Section 4.17 detailing that the subsidence control plan was followed by conducting a pre-subsidence survey of the area prior to any mining operations. Plate 4.17-3-1A was update showing the areas of expected subsidence in the proposed Flat Canyon Lease mining area.

cparker

## **Subsidence Control Plan Subsidence**

*Analysis:*

The application meets the requirements of R645-301-632 with respect to a Subsidence Control Plan. The subsidence control plan is detailed in section 4.17. Subsidence Control will be confirmed annually with Aerial Surveys and Field checks. Verbiage has been added to section 4.17 indicating that Boulger reservoir and Flat Canyon are not planned for undermining at this time. While the Company may choose to undermine these areas in the future, they recognize that additional approval will be required by the BLM, USFS, DOGM and other agencies prior to undermining these areas. A pre-subsidence survey map (DWG. 4.17.3-1 A) has been provided which shows areas of projected subsidence and areas where subsidence cracking might occur. The initial plan calls for mining that could cause subsidence to 4500 linear feet of SR-264. Overburden in this area ranges from 700 to 1300 feet. An agreement has been entered with UDOT that will allow for the undermining of the road provided that repairs will be made immediately upon any subsidence damage. A public notice should be advertised for those areas of the public road where mining would be within 100 feet of the outside right of way.

dhaddock

## **Subsidence Control Plan Performance STD**

*Analysis:*

The application meets the minimum requirements of R645-301-525.300 due to no change in the discussion in Chapter 4 Section 4.17.3 that addresses the measures the Permittee will utilized to minimize and prevent subsidence in protected areas.

## Subsidence Control Plan Notification

### Analysis:

The minimum requirements of R645-301-525.700 are met in the application as the Permittee presented a clear subsidence plan for protected areas that includes the appropriate notification at least six months prior to mining in Chapter 4 Section 4.17. No changes were made to the notification section of the MRP within this amendment due to no additional new owners or effected parties.

cparker

## Subsidence Control Plan Slides and Other Damage

### Analysis:

The application meets the minimum requirements of R645-301-515.100 with procedures already described within the existing MRP detailing the emergency contact procedures in the event of a slide. No changes were made to MRP text in relation to the Swens Canyon ventilation facility.

cparker

## Fish and Wildlife Protection and Enhancement Plan

### Analysis:

R645-301-333: Information provided in the application is considered adequate to meet the minimum requirements of the regulations. Section 2.10 Raptors Page 2-111 has been modified to include potential of additional raptor monitoring and mitigation if necessary due to active Northern Goshawk nest in 2015. A power pole design is provided to illustrate avian protection on the power poles. Section 2.9, pages 2-104(1) and 2-104(m) have been modified to include the Western boreal Toad survey conducted in 2014 confirming no boreal toads are present in the Swens Canyon. The survey of the Western Toad is also provided.

The application states there will be no impact to the adjacent stream. The disturbance of the shaft area will be a minimum of 350 north of the creek. Silt fencing or BMP's will also be used along the road to minimize any debris from entering Swens Canyon Creek thus disturbing the benthic community.

Ireinhard

## Topsoil and Subsoil

### Analysis:

Analysis:  
The application meets the requirements of R645-301-230, soils handling operation plan.

At Swen's Canyon, 6.8 acres will be disturbed, although 9.7 acres is included in the permit area (Sec 2.1 and Sec 2.9). The Swen's Canyon facility will include construction of an access road; two vertical shafts: a 16 foot diameter escapeway and an 8 foot diameter exhaust shaft, without a fan (Sec. 2.2, p. 2-21b and Sec 2.9.7 and p. 3-31b); a sediment pond to contain drill cuttings (Sec 2.3 and p 3-21 and p. 3.2.2); a topsoil stockpile; a topsoil sediment basin (ASCA 41, electronic page 56); and the installation of a transformer.

Chap 2. Sec 2.12. Chap 3, Sec. 3.2. Chap. 4 Section 4.6 (p. 4-34a) and Dwg 3.2.4-4F describe the soils handling during construction of the pad. Topsoil will be removed from a depth of 10 inches to 16 inches, depending on soil type (either Hailman Soil or the more shallow Kamack soil). Another 24 - 31 inches of subsoil will be removed, depending on soil type (page 2-120(1)). Plate 3.2.4-4F maps the topsoil removal depths which are stated to be 1.1 ft. to 2.4 feet of topsoil and subsoil. This plate outlines the projected topsoil and subsoil volumes as 8,295 CY topsoil and 5,705 CY of subsoil.

Efforts will be made to segregate topsoil and subsoil (p. 4-34b). Topsoil and subsoil stockpile locations are shown on the facilities layout Dwg 3.2.4-4A and on Plate 3.2.4-4F. The Division previously questioned the need for salvage of subsoil, because storage of the additional subsoil would create additional disturbance and a larger stockpile. By Division calculations, one foot of topsoil and 1.5 feet of subsoil over the 6.8 acres would generate 7,421 CY of topsoil and 11,132 CY of subsoil. This amendment estimates about half that (or nine inches of subsoil) will be salvaged to produce 5,705 CY

(Plate 3.2.4-4F) or perhaps 6,350 CY of subsoil (p 4-34b). This amendment states an estimated 8,750 CY of topsoil will be salvaged (p. 4-34b). Dedicating more of the limited space to storage of topsoil in a shallow pile with gentle side slopes is preferable to creating steep sided piles. Limiting subsoil salvage will enable more easily vegetated stockpiles.

The topsoil stockpile area is shown on Plate 3.2.4-4F. It has a capacity of 16,400 CY. The topsoil area ASCA 41 is shown on Plate 3.2.4-4D. The plans state that soil collected in the sediment basin will either be re-applied to the pile or utilized at final reclamation. The plan is vague concerning the protection of the topsoil pile from erosion and should describe a method of sediment control that will keep the pile intact.

The topsoil pile will cover an area 120 x 60 ft. (Dwg 3.2.4-4A). The topsoil pile will be 20 ft deep at its greatest depth. It appears from the cross-sections that the south facing slope of the pile will be 2h:1v (Dwg 3.2.4-4B).

Establishing vegetation on the topsoil pile is alluded to in the description of ASCA 41. An interim seed mix is listed in Table 4.7-8F (p. 4-58f) that would likely be applied. This mix includes a nitrogen fixing legume to improve the quality of the subsoil and topsoil in the long term.

The Swens Canyon application describes a 2.62 mile powerline (Sec 2.9.7) which will disturb a 15 ft wide swath along its length. (The total powerline disturbance is 4.8 acres.) The powerline is a 3-phase, 12.5 kV, single pole line with adaptation for raptors. No road building is involved in construction of the powerline and no topsoil will be salvaged. To minimize visual impact, the powerline will be buried under Huntington Creek (p. 2-68 and p2-131) for a distance of 0.3 miles (App. A2). The construction will not substantially disturb the surface. Soils will not be salvaged. Areas disturbed by the pipeline will be watched for one growing season and repaired if necessary following the seeding described in Section 4.7 (p. 4-103B) and soil sampling described on p. 2-120 (m). Areas disturbed along the pipeline will be repaired, seeded, mulched (Sec.4.6.8).

#### *Deficiencies Details:*

##### Deficiencies:

R645-301-230 and R645-301-243, The plan must include a testing plan to evaluate the results of topsoil handling and reclamation procedures related to revegetation. The plan is vague concerning the protection of the topsoil pile from erosion and should describe a method of sediment control that will keep the topsoil pile intact (silt fence, berm, excelsior logs etc. surrounding the pile).

R645-301-242.200, The plan should describe ripping of compacted areas (such as roads and other surfaces) prior to topsoil replacement.

pburton

## **Vegetation**

### *Analysis:*

The disturbance has been reduced to the smallest practical area. Section 2.9.7 indicates there will be minimal disturbance along the powerline corridor since there will be no roads established and access is limited to rubber-tired or tracked vehicles.

Findings: Information provided in the application meets the minimum requirements of R645-301-331

Ireinhardt

## **Road Systems Classification**

### *Analysis:*

The application meets the minimum requirements of R645-301-527.100 by classify each road as primary or ancillary. Chapter 4 Section 4.20.5 was updated to detail the additional ancillary roads associated with the Swens Canyon ventilation facility. A pre-existing road will be temporary realigned to create the access road for the pad.

cparker

## **Road System Plans and Drawings**

*Analysis:*

The application meets the requirements of R645-301-534.100 by submitting plans and drawing for each road to be maintained within the permit area. Earthfax was retained by the Permittee to design the roads associated with the Swens Canyon ventilation facility. The geotechnical report supplied in Appendix D details that the road will have a minimum width of 17 feet, with an outside radius of 90 feet around the curves. The road surface will be constructed from road base or similar material with drainage along the road designed to safely convey storm water from a 10-year, 6-hour event. The maximum slope of the road will not exceed 7.25%.

The application was amended to meet the requirements of R645-301-521.170, -534.150 that requires each permit application to describe each road. The description includes a map, appropriate cross sections, specification for each road width, road gradient, road surface, road cut, fill embankment, culvert, bridge, drainage ditch, drainage structure in Section 3.2, page 3-31c. The Permittee added call outs the swale described in the MRP text on plate 3.2.4-4A and on the appropriate cross section on plate 3.2.4-4B. Cross section E-E' on plate 3.2.4-4B is also was amended to show the pad elevation.

cparker

## **Road System Performance Standards**

*Analysis:*

The application meets the minimum requirements of R645-301-534.150 by submitting plans and drawing for each road to be maintained within the permit area to prevent and control erosion. Cross section of the various road typical show appropriate road drainage along the length of the pad access road.

cparker

## **Road System Certification**

*Analysis:*

The application meets the minimum requirements of R645-301-521.170 by submitting plans and drawing for each road to be prepared by or under the direction of and certified by a qualified registered professional engineer. Plate 3.2.4-4A contains appropriate cross sections and is stamped by PE Richard White.

cparker

## **Road System Other Transportation Facilities**

*Analysis:*

The application meets the minimum requirements of R645-301-521.170 by updating the relevant plates to detail the power line corridor that will be associated with the Swens Canyon ventilation facility. Plate 1.6-3A details the location of subsurface lines associated with the power line. No changes made to the already approved plans and drawing for each conveyor, and rail system to be used within the proposed permit area.

cparker

## **Spoil Waste Disposals of Noncoal Mine Wastes**

*Analysis:*

The application meets the minimum standards of R645-301-528.330 due to no changes in the MRP text noncoal mine waste disposal located in the current MRP.

cparker

## **Spoil Waste Coal Mine Waste**

*Analysis:*

The application meets the minimum standards of R645-301-528.320 due to no changes in the MRP text in regards to spoil and coal mine waste placement.

cparker

## Spoil Waste Refuse Piles

### Analysis:

The application meets the minimum standards of R645-301-528.322 due to no changes in the MRP text in regards to refuse piles at the Skyline mine.

cparker

## Spoil Waste Impounding Structures

### Analysis:

The application meets the minimum standards of R645-301-533 due updates within Chapter 3 Section 3.2.1 of the MRP text detailing the impoundments at the Swens Canyon ventilation facility for the topsoil pile.

cparker

## Spoil Waste Burning and Burned Waste Utilization

### Analysis:

The application meets the minimum standards of R645-301-528.323 due to no changes in the MRP text in regards to burning and burned waste utilization.

cparker

## Spoil Waste Coal Processing Waste to Abandoned

### Analysis:

The application meets the minimum standards of R645-301-528.340 due to no changes in the MRP text in regards to returning waste to abandoned underground workings.

cparker

## Spoil Waste Excess Spoil

### Analysis:

The application meets the minimum standards of R645-301-535 due to no changes in the MRP text in regards to excess spoil.

cparker

## Hydrologic Ground Water Monitoring

### Analysis:

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

There is no additional ground water monitoring required with the disturbance associated with the proposed Swens Canyon Ventilation Facility. As stated in the application, there are no springs within the area of the disturbance.

adaniels

## Hydro Surface Water Monitoring

### Analysis:

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

CS-16 is a monitoring location on Swens Creek that is already part of the Skyline water monitoring program. This point has been monitored since 2001. This point will provide a downstream of disturbance monitoring location. CS-28 will be added to Swens Creek above the proposed disturbance.

These two stream monitoring locations will give a clear indication if there is any impact occurring to Swens Creek.

Baseline monitoring occurred along Swens Creek from 2001 to 2004. This baseline monitoring included the entire suite of laboratory parameters, including the required monitoring listed in the rules. Since then, monitoring has been quarterly field data, and baseline monitoring every 5 years. With the proposed surface disturbances associated with the ventilation pad, quarterly monitoring at sites CS-16 and CS-28 will include field data as well as TDS, TSS and oil and grease. Baseline monitoring will still occur every five years.

adaniels

## Hydrologic Acid and Toxic forming Materials

*Analysis:*

The amendment meets the State of Utah R645 requirements for Hydrologic Acid and Toxic Forming Materials.

Any cuttings from the shafts will be placed in the cuttings plan, and then used to backfill the shafts during reclamation.

adaniels

## Hydrologic Transfer Wells

*Analysis:*

The amendment meets the State of Utah R645 requirements for Hydrologic Transfer Wells.

There are no proposed wells within this application.

adaniels

## Hydrologic Discharge Into an Underground Mine

*Analysis:*

The amendment meets the State of Utah R645 requirements for Hydrologic Discharge Into an Underground Mine.

The Permittee has clarified in the plan that any storm water runoff will not drain into the shaft. They have stated that the pad is sloped to the south, away from the shaft, and that there is a 2 foot collar on the shaft that will prevent runoff from getting into the shaft.

adaniels

## Hydrologic Gravity Discharge From Underground Mine

*Analysis:*

The amendment meets the State of Utah R645 requirements for Hydrologic Gravity Discharge From Underground Mine.

The proposed vent and escape shaft are vertical shafts that will prohibit any type of mine discharge.

adaniels

## Hydrologic Water Quality Standards

*Analysis:*

The information provided and contained within the currently approved MRP is sufficient to meet the requirements of the State of Utah R645-301 Coal Mining Rules.

The Permittee has proposed using ASCAs to control disturbed runoff from leaving the site. These ASCAs employ ditches, berms and sedimentation areas to prevent untreated water from leaving the disturbed area. The application does not call for the use of any UPDES outfalls. See Hydrologic Sediment Control Measures for further analysis.

adaniels

## Hydrologic Diversion General

### Analysis:

The amendment meets the State of Utah R645 requirements for Hydrologic Diversions General.

The ventilation facility is located on the top of a hill, and there are no ephemeral, intermittent, or perennial streams that will required diverting through or around the site.

adaniels

## Hydrologic Diversion Perennial and Intermitten

### Analysis:

The amendment meets the State of Utah R645 requirements for Hydrologic Diversion Perennial and Intermittent.

See analysis under "Diversions General".

adaniels

## Hydrologic Stream Buffer Zones

### Analysis:

The amendment does not meet the State of Utah R645 requirement for Hydrologic Stream Buffer Zone.

Page 3-31(c) of the amendment discusses the protection of Swens Creek. The stream will be monitored above and below mining activities to establish if there are any impacts to the stream occurring. The access road to the pad utilizes a section of a previous Forest Service road, but will be re-aligned to create access to the pad. This road will disturb closer than 100 feet of Swens Creek, a perennial stream. Through the use of the proposed sediment control measures along the access road, the Division finds that the operations will not adversely affect the water quality or quantity of Swens Creek.

The Permittee has not discussed how R645-301-731.620 will be addressed. The Permittee must designate at the site the boundary at which they are not permitted to disturb.

### Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Hydrologic Stream Buffer Zone. The following deficiency must be addressed prior to final approval.

R645-301-731.620 Regarding Swens Creek, the Permittee must commit to designate a buffer zone, through signs or markers.

adaniels

## Hydrologic Sediment Control Measures

### Analysis:

The amendment meets the State of Utah R645 requirements for Hydrologic Sediment Control Measures.

The analysis of proposed sediment controls for the Swens Canyon Ventilation Facility will be broken into the following four categories: Cuttings Pond, Vent Pad, Topsoil Pile, and Access Road.

#### Cuttings Pond Analysis:

The Permittee has proposed a cutting pond for the north end of the facility. This pond will receive approximately 13,000 CY of cutting material, which will be approximately 50% water. The cuttings will be allowed to dry and will end up with a volume of approximately 6,500 CY. This material will remain in the pond. The pond will also receive storm water runoff from watersheds UW-2 and DW-1 as displayed on Plate 3.2.4-4D. For a more detailed design analysis of the impoundment, see section ""Hydrologic Impoundment"".

#### Vent Pad Analysis:

This area is proposed as ASCA Area 40. Area 40 is described in Section 3.2 as a combination of undisturbed (UW-3) and disturbed (DW-3) area totaling 1.5 acres. The MRP explains that the sediment from this area is controlled by a small catch basin located at the southern end of the pad, this is displayed on plate 3.2.4-4D. Also, Plate 3.2.4-4D indicates that sediment controls on the west side of the pad (DB-2) will either be a berm or a silt fence.

**Topsoil Pile Analysis:**

The topsoil pile will be surrounded by berms UB-2, DB-1, and DB-3. These berms will direct any runoff from the topsoil pile to a small basin on the southwest side of the stockpile. From here, if any topsoil has eroded it can be place back on the topsoil pile. It appears from the design and drawings of this pile, that any runoff from topsoil pile will be contained to prevent drainage from leaving the pile. The EarthFax engineering report provides calculations for these berms and indicates that they were designed to safely convey the runoff from a 100 year, 24 hour storm event.

**Access Road Analysis:**

The access road to the facility will be lined with ditches DD-1, DD-2, and DD-3. To convey runoff away from the road, there are also three culverts, C1, C2, and C3. These ditches and culverts have been designed to convey runoff from a 10 year, 6 hour storm event. The culverts will be HDPE material and be 18 inch in diameter. The calculations for the culverts are provided in the EarthFax report.

adaniels

## Hydrologic Exemptions

*Analysis:*

The amendment meets the State of Utah R645 requirements for Hydrologic Exemptions.

The permittee has proposed using two ASCAs, Area 40 and 41 to control and treat storm water. For further analysis and deficiencies, see Hydrologic Sediment Control Measures.

adaniels

## Hydrologic Discharge Structures

*Analysis:*

The amendment meets the State of Utah R645 requirements for Hydrologic Discharge Structures.

For analysis, see section "Hydrologic Impoundments".

adaniels

## Hydrologic Impoundments

*Analysis:*

The amendment meets the State of Utah R645 requirements for Hydrologic Impoundments.

The cuttings ponds for the ventilation facility will be in place throughout the life of the operating facility. The ponds will also receive a small amount of runoff from watersheds UW-2 and DW-1 as displayed on Plate 3.2.4-4D. Pond cross sections are also displayed on Plate 3.2.4-4C.

The pond is designed to contain the cuttings from the shaft drilling process. These cuttings will have a maximum wet volume of 13,000 CY (6,500 CY dry). The pond has been designed to contain the runoff from a 10 year, 24 hour storm event (430 CY) and one year of accumulated sediment from watersheds UW-2 and DW-1. The impoundment design is detail further in the EarthFax engineering report included in the application.

The application goes on to state that the pond has been designed to convey the peak flow from a 25 year, 6 hour storm event immediately following a 10 year, 24 hour storm event via the design of the emergency spillway. The spillway is shown on Plates 3.2.4-4A, -4C, and -4D. These include detailed designs of the spillway.

The cuttings pond, although not a sedimentation pond, will be inspected quarterly and PE-certified.

adaniels

## Support Facilities and Utility Installations

### Analysis:

The application meets the requirements of R645-301-521.180 and -526 the require the description, plans, and drawing for each support facility to be constructed, used, or maintained within the proposed permit area. Chapter 3 Section 3.2.4 was updated to detail the general purpose and function of the Swens Canyon ventilation facility. The Earthfax geotechnical report was included in Appendix D of the application. The report found that the field investigation generally encountered Sandy Loam topsoil on top of fractured sandstone with a shale bedrock. The report states on page 13, "The actual rock structure of the shale bedrock is unknown and should be evaluated during construction."

Slide 5.0 was utilized to develop a slope stability analysis from the Long Resource field investigation for the topsoil pile, access road and pond. The stockpile will be constructed to a maximum height of 20 feet with a maximum side slope of 2H:1V. The pond will be constructed to an inner slope of 17 feet at a 3H:1V, a crest of maximum 17 feet, and an outer slope of 52.3 feet at a 2H:1V. All analysis results show a minimum factor of safety against slope failure of the topsoil stockpile to be 1.9. The minimum factor of safety for the sediment basins and pond without ponded water is 2.3. The sediment basin and pond embankment factor of safety, under rapid drawdown is 5.4. The minimum factor of safety for the road side slope is 3.3.

R645-301-521.180, -526.220 requires a description, plans, and drawing for each support facility to demonstrate compliance with preventing erosion, damage to public or private property and minimize damages to environmental values. The Permittee updated information and supplied details of the surface of the ventilation shaft such as the extent above grade and cover material. The Permittee also detailed how the shaft will be constructed, i.e. raised bore drilling, and if blasting will be implemented. The Permittee added text to Chapter 3 Section 3.2.4 clarifying the extent above grade the ventilation shaft will extend, and how the shaft will be constructed such as if a raised bore drill will be used and/or if blasting will be expected.

R645-301-514.312 requires inspection by a professional engineer will promptly provide to the Division a certified report that the impoundment has been constructed and maintained as designed. Due to the technical aspect of the recommendations stated in the Earthfax Geotechnical report the Division requires language be added into the MRP Chapter 3.2.4 pg 3-31(b) detailing that a certified inspection report will promptly be provided to the Division upon the completion of the Swens Canyon ventilation pad detailing that pad was indeed constructed to design and all assumptions made in the Earthfax geotechnical report are still valid. The report will include common Quality Control/Quality Assurance measures used in the construction industry, such photography and compaction tests.

cparker

## Signs and Markers

### Analysis:

The application meets the minimum requirements of R645-301-521.200 by the general discussion of signs.

cparker

## Explosives General

### Analysis:

The application meets the minimum requirements of R645-301-524 by no changes made to the blasting plan of the MRP Chapter 3 Section 3.2.9. within the application. The Skyline mine currently does not have an approved blasting plan and may not utilize explosive larger than five pounds on the site.

cparker

## Explosives Preblasting Survey

### Analysis:

The application meets the minimum requirements of R645-301-524.300 by no changes made to of the MRP Chapter 3 Section 3.2.9. within the application. The Skyline mine currently does not have an approved blasting plan and may not utilize explosive larger than five pounds on the site.

cparker

## **Explosives General Performance Standards**

### *Analysis:*

The application meets the minimum requirements of R645-301-524.430 by no changes made to MRP Chapter 3 Section 3.2.9 within the application. The Skyline mine currently does not have an approved blasting plan and may not utilize explosive larger than five pounds on the site.

cparker

## **Explosives Blasting Signs Warnings Access Control**

### *Analysis:*

The application meets the minimum requirements of R645-301-524.460 and -524.530 by no changes the MRP Chapter 3 Section 3.2.9. The Skyline mine currently does not have an approved blasting plan and may not utilize explosive larger than five pounds on the site.

cparker

## **Explosives Control of Adverse Effects**

### *Analysis:*

The application meets the minimum requirements of R645-301-524.600 by no changes made to the MRP Chapter 3 Section 3.2.9. The Skyline mine currently does not have an approved blasting plan and may not utilize explosive larger than five pounds on the site.

cparker

## **Explosives Records of Blasting Operations**

### *Analysis:*

The application meets the minimum requirements of R645-301-524.700 by no changes made to the MRP Chapter 3 Section 3.2.9. The Skyline mine currently does not have an approved blasting plan and may not utilize explosive larger than five pounds on the site.

cparker

## **Maps Affected Area**

### *Analysis:*

The application meets the minimum requirements of R645-301-521.100 through-521.130 by updating all the relevant maps for the entire area shown on the mine plan as detailed on plates 3.2.4-4A through 3.2.4-4F and 1.6-3.

The application meets the minimum requirements of R645-301-521.110.R645-301-521.110 requires previously mined areas to be shown on Drawing 2.2.7-7 and discussed in Chapter 2 section 2.12.2. No changes were made to the MRP text within the above section at the time of this amendment.

cparker

## **Maps Facilities**

### *Analysis:*

The application meets the minimum requirements of R645-301-521.120 through-521.125 which require maps to clearly show existing surface and subsurface facilities. The application included update plates 1.-3A, 3.2.4-4A through 3.2.4-4F detail all surface and sub surface facilities related to the Skyline mining operations.

cparker

## **Maps Mine Workings**

*Analysis:*

The application meets the requirements of R645-301-521.140 which requires maps that clearly show all mine plans. Plate 3.3-2 Rev10 clearly show proposed mining operations outside the current lease, which includes Flat Canyon. The Flat Canyon lease has been issued to the Skyline Mine but the Flat Canyon lease area has not been permitted by the Division. As discussed with the Permittee previously in an email sent August 26, 2015, the Permittee will add a note to all plates that details show planned mining operations outside currently approved leases or permits stating, "Any projected mining shown beyond existing lease boundary lines is subject to future lease modifications and approvals."

For the purposes of the Swens Canyon ventilation facility plate 3.3-2 Rev10 was be amended to include the following note: "Any projected mining shown beyond existing lease boundary lines is subject to future lease modifications and approvals."

cparker

## Maps Monitoring and Sampling Locations

*Analysis:*

The amendment meets the State of Utah R645 requirements for Maps, Monitoring and Sampling Locations.

Map 2.3.6-1 has been updated to include the new surface water monitoring point, CS-28, on Swens Creek.

adaniels

## Maps Certification Requirements

*Analysis:*

R645-301-512 minimum requirements are met as all mine drawings and plates are stamped by a Utah certified professional engineer Richard B White, with experience in underground mining operations.

cparker

## Reclamation Plan

### General Requirements

*Analysis:*

The minimum requirements of R645-301-540 are met within the application due to updated Chapter 4 sections and plates 4.4.2-4A, 4.4.2-4B, and 4-9D that detail the Swens Canyon ventilation facility reclamation contours to AOC as a stable slope. Text was edited within Chapter 4 Section 4.9 also details how the mine opening of the ventilation shaft will be reclaimed as shown in Drawing 4-9D.

cparker

### PostMining Land Use

*Analysis:*

Information provided in the application is adequate to meet the minimum requirements of the R645-301-412 or R645-301-413. Table 4.12-1 has the SCVF added and Page 4-78(a) has been modified to reference other sections of Section 4 of the M&RP for the various management plans and performance standards.

Ireinhart

### WildLife Protection

*Analysis:*

Information provided in the application meets the minimum requirements of R645-301-342 and R645-301-3582. Section 9.7 states habitat disturbed by the SCVF will be revegetated at reclamation with increased forbs and grasses to provide better post mining habitat.

## Approximate Original Contour Restoration

### Analysis:

The application meets the minimum R645-301-512.200 and -553.110 as there is no change in the MRP and all grading will be place back to approximate original contours. Plates 4.4.2-4 A and 4.4.2-4B detail the reclamation contours of the Swens canyon ventilation facility shown to match existing AOC.

cparker

## Backfill and Grading General

### Analysis:

Plate 4.4.2-4 A through B meets the requirements of R645-301-553 detailing how AOc will be restored at the point of reclamation of the Swens Canyon ventilation facility.

The requirements of R645-301-553 are now met within the application as information regarding the Swens Canyon ventilation facility was added to Chapter 4 Section 4.1.2 where similar discussion is currently present within the MRP regarding Winter Quarters. The Permittee did supply updated text within the grading section of Chapter 4 Section 4.4.2 to include the required information for backfilling of the Swens Canyon ventilation facility that meets the R645-301-553 requirements.

cparker

## Backfill and Grading Previously Mined

### Analysis:

The minimum requirements of R645-301-553.500 are met within the application as there is no change to the existing MRP grading reclamation details on previously mined areas.

cparker

## Backfill and Grading on Steep Slopes

### Analysis:

The minimum requirements of R645-301-553.130 are met within the application as there is no change to the existing MRP grading reclamation details on steep slopes.

cparker

## Backfill and Grading Steep Special Provisions

### Analysis:

The minimum requirements of R645-301-537 and -553 are met within the application as there is no change to the existing MRP grading reclamation details.

cparker

## Mine Openings

### Analysis:

Finding: This application meets the minimum regulatory requirements for backfilling and sealing of the Swens Canyon Vent Shafts as required by R645-301-631.  
R645-301-631. Casing and Sealing of Exploration Holes and Boreholes. Each permit application will include a description of the methods used to backfill, plug, case, cap, seal or otherwise manage exploration holes or boreholes to prevent acid or toxic drainage from entering water resources, minimize disturbance to the prevailing hydrologic balance and to ensure the safety of people, livestock, fish and wildlife, and machinery in the permit and adjacent area.  
Chapter 4 Section 4.9 contains the description of the Opening and Sealing Plan for the shafts. There are two shafts

planned for construction that will ultimately require backfilling and sealing. The first is the Vent shaft which is 16 feet in diameter. The second shaft is an 8 foot shaft and will be an Escape shaft. Both shafts will be completely backfilled at the time of reclamation. There is a diagram labeled DWG #4.9-D that shows the backfill design. It shows rock, gravel, sand, bentonite and 5 feet of concrete and another bentonite layer. The rest of the shaft will then be filled with pit run gravel. This is approximately 855 feet for the vent shaft.

dhaddock

## Mine Openings

### Analysis:

The minimum requirements of R645-301-529,542.710 and -551 are met within the application as there is no change to the existing MRP sealing of mine openings at the time of final reclamation. Drawing 4-9D was added detailing how the Swens Canyon and ventilation shaft will be backfilled following all required regulations. Text within Chapter 4 Section 4.9 of the MRP was also added to detail the backfilling of the ventilation and escape shafts. Cuttings from the original drilling that will be stored in the impoundment on the pad will be utilized as backfill material.

cparker

## Topsoil and Subsoil

### Analysis:

Analysis:  
Plates 4.4.2-4A and 4.4.2-4B show the final reclamation topography and cross-sections. The site and access road (p. 4-114a) will be brought to final grade which for the shafts means 20 ft above ground level (Section 4.9, p. 4-62a). Subsoil (6,345 CY) will be redistributed over the site (p 4-41e). Then, 8,755 CY of topsoil will be spread one foot deep over 5.4 acres (Table 4.6-4). Topsoil will be placed with a dozer and poked with a trackhoe (Section 4.6.7). Final seed mix is listed in Table 4.7-8E. Noxious weeds will be controlled (Section 4.8.9).

pburton

## Road System Reclamation

### Analysis:

The minimum requirements of R645-301-534 are met within the application as Chapter 4 Section 4.20.6 details that all pre-existing roads will be slightly rerouted while the ventilation facility if function but will be re-established in the original location at reclamation. Approximately 900 feet of access road to the pad will be removed during reclamation as shown on Plates 3.2.4-4A and 4.4.2-4A.

cparker

## Road System Retention

### Analysis:

The minimum requirements of R645-301-534 and -552 are met within the application as there is no change to the existing MRP reclamation of roads that will be retained at the end of mining that exist throughout the permitted area. Chapter 4 Section 4.20.6 details that all pre-existing roads will be slightly rerouted while the ventilation facility if function but will be re-established in the original location at reclamation.

cparker

## Hydrological Information Reclamation Plan

### Analysis:

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

During reclamation, the facility structures will be removed. Any cuttings in the pond will be used to backfill the shafts, and the site will be returned to approximate original contour. The ditches, berms, and culverts will be removed.

adaniels

## Contemporaneous Reclamation General

### Analysis:

The minimum requirements of R645-301-553 of backfill and grading are met within the application as there is no change to the existing MRP grading reclamation details.

cparker

## Revegetation General Requirements

### Analysis:

Information provided in the application meets the minimum requirements of R645-301-341. Section 4.7 of the MRP discusses the revegetation plan for the mine. A specific seed mix for this project is based on existing conditions with some modifications for habitat improvement.

Ireinhart

## Revegetation Timing

### Analysis:

Information provided in the application meets the minimum requirements of the R645-301-354. Interim vegetation is referenced on page 3-31 and table 4.7-8F, and includes a narrative describing when the interim seedmix will be planted.

Ireinhart

## Revegetation Mulching and Other Soil Stabilization

### Analysis:

Information provided in the application is adequate to meet the minimum requirements of R645-301-355. Section 4.7.11 addresses mulch and soil stabilization methods that may be used. Section 4.4.2 indicates the surface will be roughened with deep gouging.

Ireinhart

## Revegetation Standards for Success

### Analysis:

Information provided in the application meets the minimum requirements of R645-301-356. Section 4.7.11 (page 4-50(a)) was modified to indicate a current commitment to a success standard of 2,500 woody-species per acre, with the caveat that it may be modified with consultation with USFS, DWR, DOGM, and mine personnel. This is based on the interpretation of the report that a higher percentage of grasses and forbes are more desirable for the post mining land use than the current high percentage of sage brush. Table 4.7-11B was also modified with the added qualifier, "Containerized shrubs may be used as warranted to achieve reclamation standards".

Ireinhart

## Stabilization of Surface Areas

### Analysis:

Analysis:  
Areas disturbed by the pipeline will be watched for one growing season and repaired if necessary following the seeding described in Section 4.7 (p. 4-103B). Areas disturbed along the pipeline will be repaired, seeded, mulched (Sec.4.6.8).

Surface roughening is described as a soil stabilization measure (Section 4.6.7). Surface mulch is also describe in accordance with R645-301-244.100 (Section 4.6.8).

pburton

## Cessation of Operations

Analysis:

The minimum requirements of R645-301-515 and -541 are met within the application as there is no change to the existing MRP plan of communication with the appropriate parties in the event of the cessation of operations and final reclamation.

cparker

### **Maps Affected Area Boundary**

Analysis:

The minimum requirements of R645-301-542 are met within the application as updated reclamation maps were provided in regards to the reclamation of the Swens Canyon ventilation facility on plates 4.4.2-4A and 4.4.2-4B.

cparker

### **Maps Bonded Area**

Analysis:

The minimum requirements of R645-301-800 are met within the application as the bonded area map was updated in Plate 1.6-3.

cparker

### **Maps Reclamation Backfilling and Grading**

Analysis:

The minimum requirements of R645-301-542 are met within the application as there Plate 4.4.2-4A and 4.4.2-4B detail the required backfill and grading associated with the Swens Canyon Ventilation facility.

cparker

### **Maps Reclamation Facilities**

Analysis:

The minimum requirements of R645-301-542 are met within the application as there is no change to the existing MRP plan of facilities that will remain post mining operations. All structures associated with the Swens Canyon ventilation facility will be reclaimed at final mine reclamation as detailed on Plate 4.4.2-4A.

cparker

### **Maps Reclamation Final Surface Configuration**

Analysis:

The minimum requirements of R645-301-542 are met within the application as updated Plate 4.4.2-4A and 4.4.2-5B detail the final surface configuration back to AOC for the Swens Canyon ventilation facility along with all previous pre-existing roads will be returned to the original location.

cparker

### **Maps Reclamation Monitoring and Sample Locations**

Analysis:

The amendment meets the State of Utah R645 requirements for Maps, Reclamation Monitoring and Sampling Locations.

Map 2.3.6-1 has been updated to include the new surface water monitoring point, CS-28, on Swens Creek.

adaniels

### **Maps Reclamation Surface and Subsurface Man Made**

Analysis:

The minimum requirements of R645-301-542 are met within the application all surface man made features will be reclaimed and all subsurface manmade features within the permit area will be reclaimed below grade and sealed to applicable R645 regulations as shown on Plate 4.4.2-4A.

cparker

## Maps Reclamation Certification Requirments

Analysis:

R645-3010-512 minimum requirements are met as all mine drawings and plates are stamped by a Utah certified professional engineer Richard White, with experience in underground mining operations.

cparker

## Bonding and Insurance General

Analysis:

The application meets the minimum requirements of R645-301-800 as the applicant is current on the bond and insurance standings.

cparker

## 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 \$5,799,00 which is held by Lexon Insurance Co with a rider held by Ironshore Indemnity Inc.

cparker

## Bonding Determination of Amount

Analysis:

The application meets the minimum requirements of R645-301-830.140 as the Permittee submitted detailed bond information in regards to the application. The demolition cost was increased to \$2161532 with the additional removal of the new Swens Canyon sheet for fence, building and concrete removal of \$22,573. The backfilling and grading total was increased to \$1,649,006 for the additional regrading out of the pad area and 900 feet of road for \$126,555. The shaft and escape shaft at the Winter Quarters ventilation facility were never built and were removed from the bond at this time bring the Winter Quarters subtotal to \$48,608. Drawing 3.2.4-3A through G show the Winter Quarters site only had one portal which remains bonded for in the amended sheet. The revegetation was increased \$440,016 was increased for the addition 9.7 acres of seeding.

cparker

## 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 National Union Fire Ins Co, effective until 2/1/16. The insurance includes the required Marsh from, explosives and claims made per occurrence.

cparker