



GARY R. HERBERT
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State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

June 16, 2017

Kirk Nicholes, Resident Agent
Alton Coal Development, LLC
463 North 100 West, Suite 1
Cedar City, Utah 84720

Subject: Application Review and Deficiencies, North Private Lease Areas 2 & 3, Alton Coal Development, LLC Coal Hollow Mine, C/025/0005, Task ID #5369

Dear Mr. Nicholes:

The Division has reviewed your application for permitting areas 2 & 3 of the North Private Lease. A copy of our Technical Analysis and Findings is enclosed. The Division has identified deficiencies in addressing the Utah Coal Mining Rules. The deficiencies are listed and will need to be addressed before further processing can occur. The initials of the deficiency's author are provided so that your staff can communicate directly with that individual should questions arise.

The plans as submitted are incomplete. Please revise the application accordingly in order for us to complete the processing of your permit change.

Thank you for your help during this process. If you have any questions, please feel free to call me at (801) 538-5325.

Sincerely,

Daron R. Haddock
Coal Program Manager

DRH/sqs
Enclosure
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Technical Analysis and Findings

Utah Coal Regulatory Program

PID: C0250005
TaskID: 5369
Mine Name: COAL HOLLOW
Title: NPL AREAS 2 & 3

General Contents

Identification of Interest

Analysis:

The minimum requirements of R645-301-112 were met.

The Division performed a cross check with the Applicant/Violator System. No errors in the ownership and control information were identified.

Appendix 1-10, Ownership and Control, of the MRP is current. No updates are required at this time.

ssteab

Violation Information

Analysis:

The minimum requirements for R645-301-113 were met.

An AVS evaluation was generated on 4/7/17. No suspensions, revocations or unabated violations were reported.

ssteab

Legal Description

Analysis:

The application meets the requirements of R645-301-820.113

The application Chapter 1, contains the updated legal description to include the North Private Lease, Areas 1, 2 & 3 for a total of 295.633 acres.

Drawing 1-1 Permit Area and Drawing 1-7 Permit Boundary and Nearest Alton Town Buildings have been updated to include Areas 2 & 3 in the North Private Lease.

ssteab

Public Notice and Comment

Analysis:

The minimum requirements for R645-301-117 were met.

The addition of the North Private Lease was determined administratively complete on July 15, 2015.

Publication took place for four consecutive weeks. The first publication on 7/23/15 and the last on 8/13/15.

ssteab

Filing Fee

Analysis:

Not applicable.

ssteab

Permit Application Format and Contents

Analysis:

The minimum requirements of R645-301-120 were met.

The application to add the North Private Lease Areas 2 and 3 contained current information and was filed in a format required by the Division.

ssteab

Permit Application Format and Contents

Analysis:

pburton

Permit Application Format and Contents

Analysis:

The amendment does not meet the State of Utah R645 Clear and Concise requirements.

The amendment clearly directs the reader to the appropriate appendix when a narrative is expanded upon. Appendix 7-18, Appendix 7-19, and Appendix 7-20 have been added to the amendment and are clearly referenced in the narrative in Chapter 7 when needed.

The amendment is missing Appendix 7-3N providing water right data associated with the NPL. The drawing associated with this amendment Drawing 7-3N Project Area Water Rights, must also be submitted.

Deficiencies Details:

The amendment does not meet the State of Utah R645 Clear and Concise requirements. The following deficiencies must be addressed prior to final approval:

The amendment is missing Appendix 7-3N providing water right data associated with the NPL. The drawing associated with this amendment Drawing 7-3N 'Project Area Water Rights', must also be submitted.

kstorrar

Reporting of Technical Data

Analysis:

The amendment meets the State of Utah R645 requirements for Reporting of Technical Data.

The amendment includes well completion data for the wells within and adjacent to the North Private Lease. The data is found in Table 3 in Appendix 7-16 and in Table 1 in Appendix 7-18. The data includes the following: 1. Location, date drilled, and aquifer represented. 2. Ground elevation and elevation of the measuring point. 3. Drill bit and casing diameter. 4. Packer base depth and elevation. 5. Casing depth and total depth. 6. Total hydraulic head elevation. 7. Method of measuring formation pressure. 8. Gravel pack - yes or no. 9. Casing material. 10. Well development techniques.

Environmental Resource Information

General

Analysis:

The amendment meets State of Utah R645-301-300 requirements for a description of the vegetative, fish, and wildlife resources of the permit area and adjacent areas.

The amendment describes vegetative, fish, and wildlife resources of the permit area and adjacent area (North Private Lease and Coal Hollow Lease) in Section 321. Detailed vegetation information and reports are provided in Appendix 3-2, 3-4 and 3-9. Potential impacts to those resources are discussed in the Operations Plan Sections 331 and 332. Proposed reclamation design to restore or enhance those resources is described in Section 342 and Appendix 3-9.

Ireinhart

Historic and Archeological Resource Information

Analysis:

The amendment meets the State of Utah R645-301-411.140 requirements for cultural and historic resources information.

Based on previous inventories, planned mining operations within the North Private Lease area will result in an adverse effect on two eligible cultural sites, 42KA3077 and 42KA3097. One additional site, 42KA6080 is present along the southern edge of the lease area and can be avoided. A data recovery treatment plan is in Appendix 4-7 and identifies mitigation measures that shall be implemented. See Appendix 4-7 pages 28-36 for details on Tier 1 and Tier II testing plan.

Tier I testing on sites 42DA3077 and 42KA3097 was completed in February and March 2016 by Bighorn Archaeological. ACD submitted the Testing & Historic Road Reconnaissance with the 2016 annual report. Bighorn recommended that no further data recovery work be conducted (Tier II) on the two cultural sites as the testing suggested that cultural materials were relegated primarily to the surface of the site which has been disturbed by agricultural use. The historic road reconnaissance concluded the historic fabric of the original road has been obliterated, thus, the road does not meet the requirements established for documentation as either a site or isolated linear feature. This report provides documentation of all tested and excavated components and associated features, synthesis of analytical data, a technical report summarizing findings and results of analysis, updated maps, and photographs.

ACD is also committed to presenting a public presentation on the results of the mitigation work and how the work furthered our knowledge concerning the past.

One final inventory of the North Private Lease area will occur once the weather permits in 2017. This survey will cover all of the project area beyond the 1986 boundaries of sites 42KA3077 and 42KA3097, which were intensively surveyed as part of the mitigation work on those sites.

A map pursuant to R645-301-411.141 is provided in the confidential aforementioned reports and Exhibit 4-4 on page 4-12 of the amendment. There are no public parks or cemeteries within 100 feet of the permit area. Utah has approximately 169.3 miles of designated Wild and Scenic River, all of which are tributaries of the Virgin River in southwest Utah and outside the adjacent area. National System of Trails in Utah are inclusive of the Pony Express, California National Historic Trail, Mormon Pioneer Trail, and Old Spanish National Historic Trail. None of the trail systems are within the adjacent area.

Ireinhart

Climatological Resource Information

Analysis:

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

Monthly wind direction and velocity data are updated within the approved MRP. The data is presented in windrose plots in Appendix 7-6 Climate Data. Precipitation and maximum and minimum temperature and daily and average precipitation data collected at the weather station are also provided in Appendix 7-6 Climate Data.

kstorrar

Vegetation Resource Information

Analysis:

The amendment meets the State of Utah R645-301-321 requirements for vegetation resource information.

Section 321.100 describes plant communities within the permit area and drawing 3-1 shows reference areas. Detailed vegetation information is available in Appendix 3-2, 3-4, and 3-9. Vegetation surveys identify if any listed or proposed endangered or threatened species of plants may occur in the permit area. The description is adequate to predict the potential for reestablishing vegetation and includes productivity measurements on all lands that will be disturbed. Productivity is expressed as pounds/acre and is listed in Table 3-34. The NPL contains approximately 6.34 acres of palustrine emergent wet meadow wetlands, 0.04 acre of stock pond and 4,632 feet (0.14 acre) of the Kanab Creek stream channel that was delineated and verified by the U.S. Army Corps of Engineers (SPK-2011-01248) September 2015. More information on the wetland can be found in Volume 10 of the MRP.

Ireinhart

Fish and Wildlife Resource Information

Analysis:

The amendment meets the State of Utah R645-301-322 requirements for fish and wildlife resource information.

In Section 322 the amendment describes fish and wildlife resource information within the proposed permit area and any reference areas. It also includes a history of agency consultation and studies conducted in an effort to design the protection and enhancement plan required under R645-301-333.

On 2/28/2017, the Division conducted analysis using IPaC (U.S. Fish and Wildlife Service) for species determinations. Listed species that could potentially be impacted include: (birds) California Condor, Mexican Spotted Owl, Southwestern Willow Flycatcher, Yellow-billed Cuckoo, (plants) Jones Cycladenia, Siler Pincushion Cactus, and (mammals) Utah Prairie Dog.

The area is not likely to include any listed proposed endangered or threatened species of plants or animals as evidenced by USFWS Consultation Code 06E23000-2017-E-00481 and analysis in Table 3-35. Table 3-35 does not evaluate impacts to the California Condor which is listed as "Experimental Population, Non-Essential". However, they inhabit the forests, rocky shrubland and oak savannas which are not abundant within the permit area.

The permit area contains habitats of unusually high value for the Greater Sage-grouse. As such, Appendix 3-8 has been developed in consultation with Utah Division of Wildlife to outline specific monitoring and mitigation measures required by the Permittee.

The Division determined that approval of this amendment would not affect a listed species or designated critical habitat and therefore did not initiate informal consultation with U.S. Fish and Wildlife Service.

Ireinhart

Soils Resource Information

Analysis:

Analysis:

The application meets the requirements of R645-301-220, soils Environmental Description for Area 2 (97.8 acres) and Area 3 (57.2 acres) which lie on either side of Kanab Creek within the North Lease Permit Boundary, shown on Dwg 1-7.

The soil survey of the North Lease is found in Volume 11. The soil survey was revised with the Area A1 application in December 2015, but was not revised with this application. The survey was completed by Robert Long Associates in 2014.

Soil data point locations are identified on Soil Map 1. The soil map units are outlined on Soils Map 2 - Order 2 Soil Survey, which is reproduced in the application as Dwg 2-3. Limiting soil features for reclamation suitability are outlined by map unit on Soils Map 4.

The soil survey was included in the Alluvial Valley Floor determination (Task 4704) and therefore contains the following additional soil maps: soil parent materials (Map 3), Irrigation Areas (Map 5), subirrigated lands (Map 6), and the Prime Farmlands (Map 9).

In December 2016, Map 9 (with revision date of September 2015) was accepted by the Utah NRCS State Soil Scientist as a more detailed evaluation of the Prime Farmland than the conservation planning map used by the NRCS, which is reproduced as Map 8. Correspondence from the NRCS on this matter is found in Volume 9, Appendix A.

Volume 11 soil survey profile descriptions are in Appendix B. Soil Laboratory Analysis is found in Appendix C. The list of parameters analyzed is shown in Table 3 and include density and total metals (SW 846 method) for some samples. Soil samples were analyzed by Intermountain Laboratory-Sheridan, WY. Soil profile photographs are in Appendix D. Piezometers were installed at several aquic soil profile locations (Table 2) and the seasonal groundwater fluctuation is described in the NPL geo-hydrology report.

pburton

Land Use Resource Information

Analysis:

The amendment meets the State of Utah R645-301-411 requirements for land use information.

In Section 411.100 on pages, 4-2 through 4-5 pre-mining land-use is described as grazing and wildlife (undeveloped rangeland), pastureland, and wetlands. The narrative analyzes the landuse in conjunction with other environmental resources and provides analysis of the capability of the land before any coal mining and reclamation operations to support a variety of uses. Exhibit 4-2 on page 4-5 is a land use map.

Ireinhart

Prime Farmland

Analysis:

Analysis:

The application meets the requirements of R645-301-221, Prime Farmland Investigation and R645-302-313.200, Soil Survey of Prime Farmland Soils. Prime Farmlands and Farmlands of Statewide Importance within the permit area that have historically been used as cropland or pastureland, that are both irrigated and non irrigated, and used for agriculture are illustrated on Soil Map 9 in Volume 9. (The elk fence shown on Map 9 is the southern boundary of irrigated lands and thus forms the southern boundary of the Prime Farmlands.) Irrigated and non-irrigated pastureland are also designated on Exhibit 4-2 Land Use Map - Vegetation Types.

In December 2016, Map 9 (dated September 2015) was accepted by the Utah NRCS State Soil Scientist as an Order 1 evaluation of the Prime Farmland of the North Lease. The NRCS described Map 9 as more detailed than the conservation planning map used by the NRCS (Vol 11, Map 8). The NRCS had used the original Map 9 (dated November 2014) to identify 292 acres of Prime Farmland in the North Lease in 2012 (Vol 9, Appendix A). The Prime Farmland and Farmland of Statewide importance acreage subject to more intensive survey was 251 acres (Chap 2, pg. 2-2). The Prime Farmland and Farmland of Statewide Importance acreage was reduced to 153 acres within the North Lease permit area after the intensive survey (Vol 11, p. 36). Additional farmlands North of the farm road were removed from the permit when the permit area was reduced to its present boundary. (The farm road is a faint white line North of the elk fence on Soil Survey Map 9.)

Prime farmland within the permit boundary was further reduced by eliminating non-irrigated lands (Table 11, Vol 11). The Order II Soil Survey of Map 9 shows approximately 60 acres of irrigated Prime Farmland and Farmland of Statewide Importance South of the farm road. (The exact acreage is difficult to determine, since Map 9 does not have the current permit boundary on the map.)

Map 9 shows that within the revised permit boundary, soils in Areas 2 & 3 are mapped as either Prime Farmland or Farmlands of Statewide Importance and either irrigated or non-irrigated. Drawing 5-46 outlines Area 2 and states that it is 97.8 acres. Area 3 is outlined and described as 57.2 acres. The total acreage in Areas 2 & 3 to be disturbed is 155 acres. Drawing 5-57 shows the projected pit boundaries and Dwg 5-53 illustrates the auger mining.

South of the Elk fence in Areas 2 & 3, non irrigated soil map units are not considered Prime Farmland or Farmlands of Statewide Importance due to lack of irrigation.(Map 9).

Chapter 3, Appendix 3-9, Table 43 provides productivity information for the North Private Lease Prime Farmlands. Chapter

Geologic Resource Information

Analysis:

The application meets the minimum requirements for Geologic Resource information as required by the R645-301-620 regulations.

Chapter 6 was not changed with the latest submittal associated with Task #5369 but was updated in the previous submittal which was found to meet the regulatory requirements for Geologic Resource information. Chapter 6 describes the Geology of the North Private Lease Area. Appendix 6-2 provides an overburden assessment on 8 drill holes located throughout the North Private lease. Information from a 2012 drilling program in the North Private Lease is found in Appendix 7-16.

Cross-section showing stratigraphic relationships and overburden thicknesses are found in Appendix 7-16. A geologic map of the North Private lease area is found as Figure 6 in Appendix 7-16. An update to the information, dated July 20, 2016, was submitted and is now found in Appendix 7-18 Characterization of Alluvial Groundwater Systems in the North Private Lease Area at the Alton Coal Development, LLC Coal Hollow Mine. The entire report was stamped by Erik Petersen, Professional Geologist. Figure 2 is the Geologic map of the North Private lease area. It contains the monitoring wells in relation to the geologic boring locations that were drilled in 2012. The map identifies the strike and dip of the Smirl coal seam as well as identifying the areas of coal outcrop within and adjacent to the proposed permit area.

Attachment A to the report contains the Geologic logs for 2016 boreholes. There are 15 logs that depict the stratigraphy above the coal seam in the North lease area. There are basically three geologic formations involved. The Dakota Formation, the Tropic shale just above the coal seam and then the Quarternary alluvium overlying much of the 2 and 3 area.

Chemical information on acid and toxic forming potential are presented in Appendix 6-2 and information on the Smirl Coal Zone is in Appendix 6-1. The overburden suitability was judged on levels of pH, Boron, Selenium, Organic Carbon and Acid Base potential. There are specific zones within the overburden (specifically in the Tropic Shale) where the material would be considered unsuitable for use as growth medium or placed within the upper 4 feet of the backfill. However, the backfill would be selectively placed to avoid having the unacceptable materials within this root zone. Overburden materials and coal from the 8 drill holes in the North Private Lease were analyzed and described in Appendix 6-2 and Appendix 6-1 respectively. The Stratum immediately below the coal seam was also analyzed. Appendix 6-1 is labeled as confidential.

There are no oil or gas wells within the proposed permit boundary.

dhaddock

Hydro Baseline Cumulative Impact Area

Analysis:

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

The amendment provides adequate baseline information for the alluvial aquifer within the permit area. The narrative discusses the mining method, extent of disturbance, depth of the pit, duration of the mining, and potential impacts to surrounding water resources and water rights. The detailed narrative, with maps, and supporting calculations of the hydraulic characteristics are located in Appendix 7-18.

The Permittee conducted a robust aquifer test and thoroughly analyzed the results from the study. Hydraulic characteristics of the alluvial aquifer were determined using a constant-rate pumping test. The pumping test ran for a 56 hour period, while simultaneously measuring the cone of depression in 22 surrounding observation wells. Attachment B in Appendix 7-18 include monitoring well data logged during the aquifer test. The drawdown results of two observations are analyzed in Aqtesolv and provided in Table 2 and Attachment C of Appendix 7-18.

The responses seen in the monitoring wells during the drawdown test suggests the aquifer is a leaky-confined system. Draw down in monitoring well CN4-49 occurred on the opposite side Kanab Creek, while little or no change in water quality was detected in the creek. The response from the well on the opposite side of the creek suggests the creek is not a constant head boundary. Instead, it likely flows as a semi-perched feature through the permit area. In addition to this detailed narrative and supporting analysis and calculations a more broad discussion of the alluvial aquifer is provided in Appendix 7-16.

The amendment includes a discussion on Kanab Creek's interaction in terms of its Gain/Loss with the alluvial aquifer within the permit area. The discussion details how the two water resources interact, thus affecting quality and quantity

through gaining and losing sections within the permit area. The stream gains flow volume from groundwater discharge as the stream flows from the northern end of the permit area to the southern end. The groundwater discharge to the stream causes an increase in TDS along the stream length through the permit area.

The amendment has expanded upon the statement on p. 15, Appendix 7-16, it is common for Kanab Creek to have little or no discharge south of the tract during much of the year. The amendment now refers to the surface water monitoring site SW-2 to support this claim.

The total volume of surface and groundwater outflow from the permit is calculated. The outflow is determined at the monitoring well matrix just south of the permit area. The calculation is the combined volumes of surface flow and groundwater discharge along the cross-sectional area of the alluvial aquifer.

A well planned and methodical study was conducted to determine total discharge at this location. The groundwater discharge was determined using Darcy's Law of $Q = KIA$. A pumping test was conducted on well CLEM-4 to determine the hydraulic conductivity of the aquifer within the vicinity of the wells. The gradient at the location of the wells was the difference in head between the two up-gradient wells and the two-down gradient wells. The cross-sectional area is the width and depth of the geologic bottle neck of the quaternary alluvial sediments at the southern end of the permit area. Using these data it is determined the total groundwater discharge at the southern end of the permit area is 4.6 gpm. In early May when this study was conducted Kanab Creek was flowing at a rate of about 330 gpm. Therefore, the total calculated outflow at the southern boundary of the NPL permit area is 335 gpm.

kstorrar

Hydro Modeling

Analysis:

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

The amendment includes a groundwater model of the aquifer within and adjacent to the permit area. The model utilizes the hydraulic characteristics determined from the results of the drawdown test. The aquifer was modeled as leaky-confined using the program THWELLS. Three drawdown scenarios are modeled and presented in Figure 2 and Attachment F in Appendix 7-18. The areal extent of the cone of depression for each scenario is provided. The model used pumping wells along a north south orientation to simulate a 1000 linear foot open-pit face. The extraction rates varied from a low of 0.74 cfs to 1.84 cfs. Modeled drawdown of the aquifer ranged in depth from 20 feet to 50 feet and the cone of depression extending out laterally 450 ft to 500 ft. The model results are used to calculate inflows into open-pits. Saturated sediments are estimated to produce 35 gpm per 100 linear feet of exposed highwall.

The amendment includes a commitment to update the groundwater model every mid-term. The updated groundwater model will include water levels in backfilled pits and the surrounding undisturbed alluvial aquifer. At the time of the update the groundwater recharge rate of the backfilled sediments and the surrounding undisturbed alluvial aquifer will be estimated. At the time of the model update, more information about the response of the aquifer to mining will be known. With this knowledge the amendment includes a commitment to estimate how long it will take the alluvial to reach pre-mining aquifer characteristics of the water table elevation, recharge/discharge rates.

kstorrar

Probable Hydrologic Consequences Determination

Analysis:

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

The amendment provides a narrative on the pre-mining groundwater conditions and the anticipated post-mining groundwater conditions. The amendment discusses potential impacts to the local and regional groundwater system. A description of the anticipated post-reclamation aquifer characteristics and recharge sources is provided. Estimates of the final hydraulic properties of the aquifer including hydraulic conductivity, storativity, the saturated thickness are included. A rough estimate has been given of the anticipated time it will take the mined out pits to resaturate. Limited effects to adjacent aquifers, wells, springs, and surface waters are anticipated post-reclamation. This is because the major water body, Kanab Creek, is primarily a perched stream or losing along its length as it flows through the permit area.

The amendment provides a discussion on the water quality of the alluvial aquifer following reclamation. The Tropic Shale backfill in Pits 20 and 21 will likely act as an aquaclude. Post-mining groundwater flow paths will flow around rather than through these sediments reducing the likelihood of increasing TDS into the alluvial aquifer.

Hydro GroundWater Monitoring Plan

Analysis:

The amendment meets the State of Utah R645 requirements for Baseline Ground-water Monitoring.

The groundwater monitoring plan has adequately monitored the alluvial aquifer within and adjacent to the permit area. Shallow wells have monitored the upper aquifer on a quarterly basis for many years. Deeper monitoring wells that are also in direct communication with the shallow wells have been monitoring the aquifer for over a year within and adjacent to the NPL. Additionally, a well network directly adjacent and on either side of Kanab Creek has been monitoring the groundwater discharging from the permit area for over a year as well. This well network accurately characterizes the aquifer to the north and south and within the permit area.

Many of the wells in the well monitoring network will not be destroyed by mining activities. This will allow for long term monitoring well data before and during operations, and after reclamation. The monitoring well network was developed in consultation with the Division hydrologist Keenan Storrar. The monitoring well locations were selected to be undisturbed by mining operations and in locations that accurately characterize the aquifer and monitor its response to mining activities.

The gridded monitoring well network downstream of the permit area is a critical location to establish long-term monitoring of groundwater and surface flows in the incised channel of Kanab Creek. Groundwater passing southward through the alluvial aquifer is most accurately quantified at this location because it is forced into the narrow bedrock outcrop or bottleneck of the Dakota sandstone near the southern permit boundary. As groundwater enters this transition zone it up-wells and discharges into Kanab Creek leaving a relatively low volume of groundwater held within the shallow gravel alluvial deposits. At this location both the groundwater discharge and surface runoff from the permit area can be readily and accurately monitored to detect any changes in the hydraulic balance caused by mining.

kstorrar

Maps Affected Area Boundary Maps

Analysis:

The application meets the requirements of R645-301-521 for Affected Area Boundary Maps.

The requirements of R645-301-521 are met in regards to including relevant maps detailing the affected area in regards to environmental impacts in Area 1 through 3 extent in Drawing 5-46 Drawing 5-46 details the North Private Lease permit area with the premining topography at four foot contour intervals. Drawing 5-74 and 5-77 were updated in the December 18, 2015 resubmission to show enough detail of topography and hydrology for the Division to be able to identify what areas will be affected by mining operations. Drawings 5-74A through 5-74C were added to show the specific post mining topography for each sub areas.

Drawing 5-46 details the different sub areas where mining operations will take place, i.e. Area 1 through Area 3. All activates displayed on drawings and narratives throughout the current MRP application that are relevant to Area 2 and Area 3 were reviewed by the Division at this time.

To address the December 18, 2015 deficiency number 8 the Permittee will always address Alton Coal Mine road with both the name and county road number K3100. The original deficiency was written due to the confusion between the historic Alton Coal Mine, for which the county road K3100 leads to and is named after, with the current Coal Hollow Mine owed by Alton Coal Development. The Permittee has reaffirmed that indeed the legal name of the road is Alton Coal Mine Road, therefore, will keep the name on the drawings but will add the county road number to help clarify that it is the historic mine road.

cparker

Maps Affected Area Boundary Maps

Analysis:

The amendment meets the State of Utah R645-301-323 requirements for maps and aerial photographs.

Drawing 3-1 shows vegetation types and plant communities, including sample locations. Drawing 3-5 shows habitats of high value for the Greater Sage-grouse. Detailed maps and photos of vegetation are provided in respective appendices.

Ireinhart

Maps Existing Surface Configuration

Analysis:

The application meets the certification requirements of R645-301-512.150 for Existing Surface Configuration Maps.

To address deficiency #21 of the December 18, 2015 submission and to meet R645-301-121.200 requirements the Chapter 6 drawings 6-12, 6-13, and 6-14 were added to the MRP to detail the geology drawings consistent with the current Coal Hollow MRP.

The original submission contained a deficiency as the application did not meet the requirements of R645-301-121.200 by following the establish MRP outline of the current Coal Hollow lease geologic maps contained within Chapter 6, e.g drawing 6-1 through 6-5. The North Private Lease geologic drawings were contained within Chapter 7 Appendix 7-16 sub Figures 6 through 7 and simple referenced as Appendix 7-16 within Chapter 6. Appendix 7-16 remains a detailed PHC that contains extensive information beyond the geologic drawings. The appropriate information was moved to new Chapter 6 drawings discussed above.

cparker

Maps Mine Working

Analysis:

The application meets the requirements of R645-301-512.110 for Mine Workings Maps.

The original application did not meet the requirement of R645-301-512.110, -512.130, and R645-301-521.140 which require certified maps that clearly show all mine plans. Drawings 5-53, 5-55, and 5-77 all detailed the North Lease mining sequence operations footprints throughout the proposed North Private Lease area for various sequences of mining and reclamation.

The updated drawings meet the requirements of R645-301-512.110, -512.130, and R645-301-521.140 as the Permittee amended Drawing 5-53 and 5-77 to show the correctly calculated pit floors and pit crests that remain within the permit boundary. Notes have been added to Drawings 5-53, 5-57, and 5-77 describing the different footprints that are depicted on each of the specific drawings. The pit boundaries depicted on this drawing detail the pit crests or maximum surface disturbance associated with each pit. Drawing 5-53 shows the coal removal sequence and the pit boundaries depicted represent the maximum extent of coal extracted within each pit. Drawing 5-57 shows the overburden removal sequence for each pit. Drawing 5-77 shows the bond polygons and each pit polygons details the approximate crest of the backfill slope during reclamation to achieve the post-mining topography.

cparker

Maps Permit Area Boundary

Analysis:

The application meets the requirements of R645-301-521.140 for Permit Area Boundary Maps.

The application meets the requirements of R645-301-521.140 as Drawing 5-45 details the new permit boundary, lease boundary, and adjacent areas to the current mine plan in a clear and concise fashion. Narrative in Chapter 5 Section 521.132 details that the proposed permit areas are shown on all applicable drawings within the MRP.

The Permittee addressed the previous deficiency (#25) within the December 18, 2015 resubmission in the January 18, 2016 resubmission. The Permittee addressed the clarification on the drawing in two sentences added to the Chapter 5 narrative Section 521.140 and 521.150, and updated relevant sections within the narrative describing transitions between the various Areas of development.

cparker

Maps Subsurface Water Resources

Analysis:

The amendment meets the State of Utah R645 requirements for Cross Sections and Maps.

The plan view map geologic map Figure 2 in Appendix 7-18 and the geologic cross-section in Appendix 16, Figure 7 adequately portray the geologic and hydrologic features within and adjacent to the permit area.

kstorar

Maps Surface and Subsurface Manmade Features

Analysis:

The application meets the requirements of R645-301-521.122 for Surface and Subsurface Manmade Features Maps.

The application meets the requirement of R645-301-521.122 as Chapter 5 Section 521.122 details existing surface and subsurface facilities within, passing through, or over the permit area throughout the North Private Lease.

The application meets the requirements of R645-301-521.123 by detailing the two public roads operated by Kane County roads (K3900 and K3100) that are within or in 100 feet of the permit areas as shown on Drawing 5-47 for the North Private Lease.

The application now meets the requirements of R645-301-121.200, R645-301-521.122: at the Permittee updated Drawing 7-7 to show the North Private Lease surface and subsurface information on single map.

cparker

Maps Well

Analysis:

The amendment meets the State of Utah R645 requirements for Cross Sections and Maps.

The amendment includes multiple plan view maps and a cross sections map of the NPL. In both Appendix 7-16 and Appendix 7-18 the following features are shown: Potentiometric surface(s) and equipotential lines; Lithologies; The mineral to be mined; Geologic features such as faults, paleochannels, gravel deposits, etc.; Extent of mining, open-pit and highwall in Drawing 5-52; Aquifers and aquitards; Hydrologic boundaries; Recharge and discharge areas; and Wells used for hydrogeologic interpretations. Additionally, Attachment A in Appendix 7-18 includes the Geologic logs for the boreholes drilled in the NPL. These provide a very accurate picture of the lithology and water table elevation in the permit area.

kstorar

Operation Plan

Mining Operations and Facilities

Analysis:

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

Narrative was included in the Mine Facilities section committing to send the Division a copy of the Mitigation Completion report as well as an Individual Section 404 permit once it has been completed and approved by the U.S. Army Corps of Engineers.

cparker

Existing Structures

Analysis:

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

The application meets the requirements of R645-301-526.110-.116 by including narrative describing complete removal of ponds outlined on Drawing 7-7 as per landowners request. Pond removal will be completed once approval of Individual Permit 404 has been obtained.

Deficiencies Details:

cparker

Relocation or Use of Public Roads

Analysis:

The application meets the requirements of R645-301-521.133 for Relocation or Use of Public Roads. The application now meets the requirements of R645-301-521.133 due to information detailing measure to be used such as a general mining method that will be employed under or within 100 ft of public roads to protect interest of the public. Chapter 5 section 521.133.2 details how County Road 136 (K3900) and Alton Coal mine road (K3100) will be temporarily relocated outside the North Private Lease permit area. Temporary bypass roads will be constructed by Alton Coal as detailed in Drawings 5-61 through 5-63. Appendix 1-11 contains the Grant of Easement, Permit and Design by Kane County DOT. The appendix details how the County will hold the required bond amount for the reconstruction of the roads which are expected to be diverted around the mine for approximately 5 years. Chapter 5 Section 521.133.2 details how the public will be protect by each bypass road will constructed, inspected, and certified for public prior to closure of the exiting public road. The Permittee provides a letter from Kane County date January 28, 2016 for the Division to be able to determine that Kane County road K3100 bypass is not a significant bypass or relocation that does not require the same level of grant easement, Permit and Design by Kane County DOT. The relocation of K3100 includes moving approximately 500 feet of roadway and moving the intersection of K3100/K3600 approximately 500 feet south of the current intersection. K3100 is missing from all legal descriptions of the lease signed with Kane County.

The application now meets the requirements of R645-103.224.422 as the North Private Lease area requires rerouting public road K3900 and K3100 as shown in Drawing 5-45. In accordance with R645-103.224.420 through -103.224.422 the Permittee provided proof of a weekly public notice from 7/30/2015 until 8/13/2015 in the Southern Utah New. An affidavit was submitted to the Division on 9/9/2015 detailing the above. Appendix 1-11 details the finding in writing that the interests of the affected public and landowners will be protected. The appendix also include a letter from Kane County date January 28, 2016 for the Division to be able to determine that Kane County road K3100 bypass is not a significant bypass or relocation that does not require the same level of grant easement, Permit and Design by Kane County DOT.

The Permittee incorrectly submitted a request for finding to the Division on December 15, 2015. The Division makes their findings in the official Findings Database, sent to the Permittee in response to any amendment. The Division's findings are based off information presented in the application. The findings determine if all the R645 required information is present and the application meets the requirements of the R645 regulations. All the information submitted in the "Request for Finding-Relocation of Public Roads..." matches the information presented within Appendix 1-11 and is missing all reference to the 500 feet relocation of K3100 and intersection of K3100/K3600 in the legal description, Grant easement, Permit and Design approved by Kane County DOT. The cover letter incorrectly states that K3100 is included in the information. No such information could be found.

Narrative is added to Chapter 5 Section 526.116.1 detailing how K3100 and K3900 will be relocated due to North Private Lease Mining operations. Text details that a fence will be installed between the public roads and the mining operations to protect the public interests.

cparker

Air Pollution Control Plan

Analysis:

The amendment meets the State of Utah R645-301-422 requirements for air pollution control plan.

A description of the coordination and compliance efforts with the Utah Division of Air Quality is discussed in Section 422 page 4-24. The Fugitive Dust Control Plan is provided in Appendix 4-5. Alton Coal development began coordination preparation of the NOI with Jon Black of UDAQ on June 4, 2015. The North Private Lease will be an amendment to the Coal Hollow Mine Approval Order and will require dispersion modeling. Ramboll Environ has completed the dispersion modeling in coordination with UDAQ. The final NOI and dispersion model was submitted to UDAQ on September 9, 2015 with the model being accepted September 24, 2015 and the engineering review approved September 25, 2015. Public Notice was advertised in the Southern Utah News October 1, 2015. The revised Air Approval Order including all of the North Private Lease was received November 10, 2015 (DAQE-AN140470005-15)

Ireinhart

Subsidence Control Plan Renewable Resource

Analysis:

The amendment meets the State of Utah R645-301-332 requirements for describing impacts of subsidence to fish, wildlife, and vegetative resources.

Anticipated impacts of subsidence on wildlife and vegetation are described in Section 332 and 525. Although the Permittee does not project mining induced subsidence, they will conduct surface observation walkovers of each of the 4 developed panel areas. If surface cracking, sinkholes or other surface impacts are noted, they will be reported to the Division and subsequently repaired. Appendix 7-15 describes the PHC and in the event that diminution of discharge rates from seeps and springs occurs, any lost water will be replaced using the water replacement source specified in R645-301-727. Due to the nature of disturbance associated with surface mining, the Permittee has committed to compensatory mitigation efforts as identified in Appendix 3-8.

Ireinhart

Subsidence Control Plan Subsidence

Analysis:

The Applicant has met the minimum regulatory requirements for this section of the regulations. Mining in the North Private Lease area will only be conducted by surface methods (Open pit and Highwall mining). No underground mining is planned. As such, no subsidence is projected to occur and no subsidence monitoring plan is required.

dhaddock

Fish and Wildlife Protection and Enhancement Plan

Analysis:

The amendment meets the State of Utah R645-301-333 requirements to describe how using best technology currently available to minimize adverse impacts to fish and wildlife, including compliance with the Endangered Species Act.

A discussion of practices implemented to avoid or minimize impacts on fish and wildlife species is located in Section 333. The Greater Sage-grouse requires protection and enhancement measures. Since quality sage-grouse habitat is synonymous with quality sagebrush ecosystems, sage-grouse habitat improvement projects will also provide benefits to the resident wildlife population.

Because of the unavoidable impact on Greater Sage-grouse habitat, ACD has committed to compensatory mitigation at a rate of 1,700 acres for the disturbance associated with the Coal Hollow Lease and 4:1 (habitat improvement: disturbance) for the North Private Lease. On page 3-24, ACD commits to 1,000 acres of habitat improvement in accordance with Appendix 3-8. Habitat improvement treatments will be completed prior to mining disturbance. Other compensatory mitigation includes work to reestablish connectivity between Alton and Hoyt's Ranch, the establishment of a core sage-grouse conservation area, predator control plans, and restoration of quality brood rearing habitat through reclamation. At the time of this analysis, ACD has completed 591.79 acres of a habitat improvement.

Other measures include a wildlife awareness program, posted speed limits, safety meetings regarding awareness of important wildlife species in the area, designing transmission facilities to minimize electrocution hazards to raptors, and wildlife friendly fence designs.

Ireinhart

Topsoil and Subsoil

Analysis:

Analysis:

The application does not meet the requirements of R645-301-230, topsoil handling and storage, because the recovery volumes expected for storage in the combined Area 3 Map Unit C stockpile (0.25 ft layer of topsoil with 1.25 feet of underlying subsoil) do not agree with soil map unit descriptions presented in the soil survey found in volume 11. Since this combined topsoil will be the final topsoil redistributed in the North Lease, a severe shortage can not be recovered elsewhere.

Dwg 2-4 provides estimated salvage quantity for topsoil and subsoil salvage for the 17.86 acre Area 1 extension, for the 65.97 acres of non-prime farmland in Area 2, for 31.9 acres of Prime Farmland soils in Area 2 and for 57.05 ac in Area 3. Dwg 2-4 specifies that within Areas 2 & 3 only 40 acres will be live hauled. Non-prime farmland stockpiled soil will be stockpiled in the designated area for topsoil and subsoil stockpile locations shown on Dwg 2-4.

Section 232.100 provides an estimated salvage recovery table for the North Lease, which includes Areas 2 & 3 (p. 2-27 to 2-28). The table indicates that on average 11-12 inches of topsoil and 37 inches of subsoil (48 inches total) will be salvaged from all map units within Areas 2 & 3. Volume 11, Map 10 provides the estimated salvage depth of topsoil and subsoil by Map Unit in all areas of the North Lease. Soil Map Units and recovery depths are also depicted on Dwg 2-3. An evaluation of the representative pedons suggests that the estimated recovery of 48 inches topsoil and subsoil stated on Dwg 2.3 will not likely be achieved, as follows.

AREA 2

Soil sample locations 12SA018, 12SA019, 12SA019A represent a third of the non-prime farmland soils in Area 2. These soils are in Map Unit G which is classified as the AAA family 0-5% slopes. These soils were previously plowed and have a mixed BA topsoil layer. Within the salvage zone of 48 inches, these soils are silty clay to clay in texture, are alkaline (pH 7.7 - 8.4), have low EC values (less than 0.6 mmhos/cm) and have moderately high CaCO₃ content of 50 – 60%.

Soil sample locations 12AS012 and 12AS011 also represent a third of the non-prime farmland soils in Map Unit E in Area 2. These soils are classified as the Atlatl –CCC family 0-4% slopes. Dwg 2-3 describes 48 inches of recovery from Map Unit E, but the sample pedon descriptions indicate that the salvage zone of these soils should not be below 45 inches, due to extremely alkaline pH values of 8.9 and 9.0 below this depth. In the salvage zone, these soils are clay in texture, are alkaline (pH 7.9 – 8.4), have low EC values (less than 0.54 mmhos/cm) and have moderately high CaCO₃ content of 38 - 62%

Map Units A1, A2 and A3 represent the last third of dominant soils in Area 2. These soils are classified as Sideshow Families of 0-4% (sample location DP 28 and 12AS015); Sideshow-Teremote family 4-8% slope (sample location 12AS013, 12AS016 and 12AS032 in Area 1), and Sideshow Family 8 – 18% slope (12AS014), respectively. These soils are slightly alkaline (pH 7.7 – 8.4), much lower in carbonate content (below 15%) and are shallow to rock. Soft shale bedrock is exposed at 39 – 40 inches. In Map Unit A1, the recovery is limited by gypsum accumulation at 34- 39 inches. Limitations of gypsum or bedrock in Map Units A1, A2, and A3 will not produce the expected 48 inches of recovery shown on Dwg 2-3.

AREA 3.

In Area 3, Map Units A2, B, D, E and C will be salvaged. Map Units A2 and C are shallow to bedrock. (Map Unit A2 and Map Unit E are discussed above.) Map Unit B is the Flugle-Brumley Family, 0-8% slope, represented by sample locations 12AS04 and 12AS07. These are sandy clay loam to clay loam soils, slightly alkaline (pH 7.4 – 7.8), low in carbonate (1.4 – 20%), low EC values (0.26 to 0.4 mmhos/cm). The only limitation on salvage of 48 inches from Map Unit B is that bedrock is encountered at 30 – 32 inches. Map Unit D is the Wimmer-Teremote-Bobknoll Family, 2-8% slopes, represented by sample locations 13AS02, 13AS03, and 13AS05. These are clay loam soils slightly alkaline (pH 7.6-8.5), low in carbonate (14 – 24%), moderate EC values 1.8 to 2.2 mmhos/cm. Map Unit D soils can supply the 48 inch recovery depth, except at the far south end of the permit, where bedrock is exposed (sample 13AS02).

AREA 3. Map Unit C. Deficiency.

Vol. 11 soil survey describes the soils in map unit C as having three components. These components are sandstone outcrop (12AS006) and soils that are shallow to bedrock, varying only in substrate, as follows. The Vesilla Family (sample location 12SA008) has a 3.5 in A horizon with 0.75 ft total soil depth over sandstone. The Quezcan family (sample location

12AS005) has a 2 inch A horizon with a total soil depth of 0.83 ft over Tropic Shale. The third component of Map unit C is sandstone outcrop. Dwg 2.4 calculates the outline of Map Unit C to be 21 acres. If salvage of 1.5 feet were possible, the combined stockpile would hold a combined total of 50,355 CY. But these calculations appear incorrect, based upon the soil survey, since the total depth of the two soil components of Area C is less than a foot.

Salvage and Storage Plans

The salvage plan in Section 231.100 (and Sec. 523) states that the depth of soil salvage will be determined in the field by a Coal Hollow environmental technician in consultation with a certified soil scientist (p. 2-24). The oversight of this process by a Certified Professional Soil Scientist is stressed several times within the Order II Soil Survey (Vol 11, p. 41-43), because the topsoil and subsoil salvage depths described are for planning purposes, but actual depths will vary in the field. Section 231.100 and Section 232.100 of the topsoil salvage plan includes the use of pedestals for quality control and for later confirmation of topsoil and salvage depth by the CPSS.

Sediment control during soil salvage is shown on Dwgs. 5-48, 5-48A, 5-65 and 5-65A. Soil will be recovered using dozers or scrapers (Section 231.100). Stockpiles will be constructed with 3h:1v slopes and will be bermed as described in Section 231.400. In accordance with the requirements of R645-301-234.230, all piles will be stabilized by seeding either with an interim mix or in the off-season, a cover crop (Quick Guard) (Sections 231.100 and 231.400 and Section 244.100). Stockpiles in place for longer than a year will also be mulched (Section 231.100). During contemporaneous reclamation activity, tackifier will be used to stabilize slopes of partially consumed, reshaped topsoil stockpiles, pending re-seeding in appropriate season (late fall, Sections 234.230 (c) and Section 244.100).

All topsoil and subsoil from Area 1 (through Pit 11) will be stockpiled in the location shown on Dwg 2-4. Topsoil and subsoil stockpiles replaced on backfill in Area 1 will be seeded and replaced on Heaton Brothers, LLC property (refer to note on Dwg 2-4). The depleted Area 1 topsoil and subsoil stockpiles will be replaced by one Area 3 Map Unit C topsoil/subsoil, which will be used to reclaim Area 3. Dwg 2-4 indicates the remaining map units in Area 3 will be live hauled.

The timing of topsoil removal (R645-301-232.600) precedes overburden removal. The sequence for overburden removal is shown on Dwg 5-57 and described on page 5-56 as occurring first in Pits 1 – 10 , then 11 – 21, then HWT 1. Chapter 5, p. 5-88 describes a possible exception to backfilling and grading that could occur due to a delay in Pond 7 construction which would keep Pit 9 open. (After Pond 7 is constructed, Pond T1 will be mined through and Pit 9 will be completed (Dwg 5-49 and Dwg 5-57). Dwg 5-57 shows overburden removal in Pit 11 occurring in the same year as the North half of Pits 9 & 10.

The Area 1 temporary topsoil stockpile straddling the location of proposed Route 136 bypass will be relocated prior to construction of the bypass, a.k.a. North Haul Road, as shown on Dwg 5-51B. The volume of this topsoil pile is currently unknown, because the pile has been partially consumed for reclamation and has been re-stocked with soil salvaged from Pit 7 and Pond T1. In accordance with R645-301-234.240, prior to moving topsoil from its current location, MRP Section 234.240(d) states that the Permittee will notify the Division in advance of the volume of stored topsoil to be moved and the timing for this movement from the County Road 136 bypass.

In Area 2: Prime farmland soils will be encountered above the N and East of Pit 15 all the way through Pit 21. Prime Farmland handling procedures are discussed under Special Categories of Mining/Prime Farmland Operation Plan.

Deficiencies Details:

Deficiencies:

The application does not meet the requirements of Topsoil Operation Plan. Prior to approval, please provide the following in accordance with:

R645-301-230, Confirm expected recovery volumes for Area 3, Map Unit C with field investigation, because the recovery volumes expected for storage in the combined Area 3 Map Unit C stockpile (0.25 ft layer of topsoil with 1.25 feet of underlying subsoil) do not agree with soil map unit descriptions presented in the soil survey found in volume 11. Since this combined topsoil from Map Unit C will be the final topsoil redistributed in the North Lease, a severe shortage can not be recovered elsewhere.

pburton

Vegetation

Analysis:

The amendment meets the State of Utah R645-301-331 requirements for protection of vegetation.

The amendment describes measures to disturb the smallest practicable area at any one time and prompt establishment and maintenance of vegetation for interim stabilization of disturbed areas to minimize surface erosion in Section 331.

Each mine segment will be contemporaneously reclaimed as the next segment is developed. The exceptions to this are semi-permanent locations such as loadout, office buildings, underground access and pit 10. These locations needed for mining operations have been designed to disturb the smallest practicable area and areas not needed for immediate use will be stabilized with interim vegetation seeding.

lreinhardt

Road System Plans and Drawings

Analysis:

The application meets the State of Utah R645 requirements for Road Systems Plans and Drawings.

The application meets the requirements of R645-301-526, R645-301-527.220, and R645-301-541.400 by including a commitment to send the Division a copy of the Mitigation Completion report required for the Nationwide SPK 2011-01248 with the Divisions annual report in the year which the mitigation is completed.

The application meets the requirements of R645-301-731 by including narrative describing complete removal of ponds outlined on Drawing 7-7 as per landowners request. Pond removal will be completed once approval of Individual Permit 404 has been obtained.

Deficiencies Details:

cparker

Road System Certification

Analysis:

The application meets the requirements of R645-301-512.250 for Road Systems Primary Road Certification.

The application meets the requirements of R645-301-512.250 by having all primary haul roads designed and certified by Dan Guy, a professional engineer. All primary haul roads will be built in a stable manner to ensure environmental protection and safety with no stream fords.

The application now meets the requirements of R645-301-521.170 by addressing deficiency # 51 by updating the narrative to include reference to required USACE NWP permit acquired. Narrative was also added detailing NWP and that the pre-construction notification was acquired and a copy of all documents was included in Appendix 5-14.

The application meets the minimum certification requirements 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. Chapter 5 Section 521.170 details each road that will be constructed and maintained within the North Private Lease. Drawing 5-60 details the primary haul road that will be located within the North Private lease permit area. The above stated drawing details that the haul road will be approximately 2,700 feet long with three culverts. The maximum grade of the haul road will be 7.1% to get the haul around the location of Pond 6.

cparker

Spoil Waste Disposals of Noncoal Mine Wastes

Analysis:

The application meets the requirements of R645-301-528.330 for Disposal of Noncoal Mine Wastes.

The application meets the requirements of R645-301-528.330 due detailing the disposal of noncoal mine waste disposal

located in the current MRP Chapter 5 Section 528.330. Noncoal mine waste will be temporary stored in appropriate containers and removed from the permit area to be properly disposed of according to applicable State and Federal regulations.

Section 528.332 contains a discussion of the proposed alluvial ground water drains to be left in place. These drains were not installed at the site due to the site spoil having such a low permeability that the drains would not facility any collection. This narrative was removed in December 18, 2015 to address deficiency # 54.

cparker

Spoil Waste Coal Mine Waste

Analysis:

The application meets the requirements of R645-301-513.300 for Coal Mine Waste.

The application meets the minimum standards of R645-301-513.300 due to no changes in the MRP text. The application does not change the approved MRP that states no underground development, coal processing waste, or excess spoils will be disposed of underground.

The application original application did not meet the requirements of R645-301-528.320, -301-536.300- through 563.330, and -542.730 due to missing information detailing the handling of the coal mine waste associated with the development of Pit 1 to meet R645-301-528.333. The text meets the requirements of R645-301-528.320 as all coal mine waste generated past Pit 1 will be backfilled in other subsequent pits as part of the contemporaneous reclamation and operations meeting R645-301-528.333.

To address deficiency #55 the December 18, 2015 submission added clarifying text detailing that coal mine waste developed during the extraction of Pit 1 will be stored on top of the unmined coal until enough coal has been removed to place the coal mine waste on the floor of the pit. This narrative was added to Chapter 5 Section 522 and 528 to meet the requirements of R645-301-528.320, -301-536.300- through 563.330, and -542.730.

cparker

Spoil Waste Impounding Structures

Analysis:

The application meets the requirements of R645-301-512.140 for Impounding Structures.

The application meets the minimum requirement of R645-301-512.140 by having all hydrology maps as described under -301-722 certified by a professional geologist Eric Petersen.

The application meets the requirements of R645-301-512.240 by having a professional engineer, Dan Guy, who has experience in design and construction of impoundments certify the designs of Ponds 5 through Pond 9.

The Permittee amended text within Chapter 5 Section 512.240 to clarify that a detailed geotechnical analysis was only conducted for the south Coal Hollow private lease in and the report can be found in Appendix 5-1. Text was added to the section stating how the detail field investigation that was conducted for the North Private Lease found the soils to be representative of the south lease negating the need for another detailed geotechnical analysis, specific slope stability, as demonstrated in Appendix 5-11 for the North Private Lease. The original text did not take into account the additional ponds added since the last submission of the permit application. The Permittee amended this section to address all ponds in the North Private Lease. The December 18, 2015 submission did update the pond and ditch information to match the updated proposed structures.

The application meets the requirements of R645-301-513.200 by detailing within the MRP that no impoundments and sedimentation ponds meet the size or other qualifying criteria of MSHA 30 CFR 77.216.

The application meets the requirements of R645-301-514.310-313 by text within Section 514.310-313 and 514.320 detailing inspection made regularly during construction, upon completion, and at least yearly until removal at final reclamation.

The application meets the requirements of R645-301-532 by adding a detail to Drawing 5-48 stating the sediment control measures carried out within the disturbed area to prevent untreated runoff along the eastern edge of disturbance with a berm and silt fence.

The application meets the requirements of R645-301-533.110 -220 by detailing that a geotechnical report was completed for the impoundments. The expected consolidation of the native soils around the ponds is expected to be minimal, approximately 1%.

The application meets the requirements of R645-301-533.300 due to similar soils experienced in the south lease, as detailed in Appendix 5-11, so an expected slope stability factor range of 1.2 to 1.9 can be expected.

The application meets the requirements of R645-301-533.400-500 by detailing that slopes will be protected by seeding and prior to construction all vegetation, topsoil, and sub soil will be removed.

The application meets the requirements of design drawings as detailed on Drawing 5-67 and 5-68 for the north private lease permit areas. Drawing 5-76B details the reclamation sequence of the facilities to meet R645-301-356.300 and -763 by retaining all ponds until the second year of seeding to facility erosion control treatment.

cparker

Spoil Waste Excess Spoil

Analysis:

The application meets the requirements of R645-301-521.143, R645-301-745.111, R645-745.113 for Soil Waste Excess Spoil.

To address deficiency # 58 of the December 18, 2015 resubmission and to meet the requirements of R645-301-521.143, R645-301-745.111, R645-745.113: The Permittee added reference to Appendix 7-16 to Chapter 5 Section 521.143 subsection 745.111 and 745.113 to support the statements made in regards to the soil toxicity within each section.

The application meets the requirements of R645-301-512.210 due to new slope stability calculations provided for the North Lease temporary excess spoil pile in Appendix 5-11. Chapter 5 Section 512.210, 521.143 and various other sections call out that a professional engineer has certified the designs of the North Private Lease temporary excess spoil pile according to 535.100 and that the analysis can be viewed in Appendix 5-11. The Permittee submitted text detail the design, placement, and disposal sequencing of the North Private Lease temporary spoil pile with applicable designs and slope stability analysis as required by R645-301-535.

The application meets the requirements of R645-301-514.100 detailing inspection of the excess spoil pile during construction, completion and quarterly. There was no change was made to Chapter 5 Section 514.100-.120.

To address deficiency # 60 of the December 18, 2015 resubmission and to meet the requirements of R45-301-532.200: The permittee amended the narrative of Section 532.200 to state that in the event the temporary spoil pile is left in place beyond six months it will be covered with tackifier or some other means of stabilization.

The application in Chapter 5 Section 521.143, subsection 745.111 and 745.113 states that the excess spoil piles in the current Coal Hollow Mine permit are and the temporary North Private Lease spoil pile will be composed of high-clay tropic shale that will limit infiltration and has a minimal potential for leaching of pollutants.

Section 528.310 does detail that the temporary spoil will be in place for less than six months before being rehandled as pit backfill.

To address deficiency # 61 of the December 18, 2015 resubmission and meet the requirements of R645-301-528.200 the Permittee added a reference to Appendix 5-11 for geotechnical properties of spoil to section 528.310.

R645-301-535.100 Long term static safety factor for the temporary spoil pile is 1.6 to 1.7 with lifts not to exceed four feet. The MRP states that the spoil structure will be rehandled to backfill the open pit in a short time frame, defined as six months. The spoil pile within the North Private Lease will not be covered with subsoil or topsoil. The geotechnical report in Appendix 5-11 contains a sufficient foundation investigation for the temporary spoil pile, with an expected consolidation of the area of approximately 5% meeting R645-301-535.112, -535.151, and -535.152.

cparker

Hydrologic General

Analysis:

The amendment meets the State of Utah R645 requirements for Water Rights and Replacement.

The amendment includes a commitment for Water Rights and Replacement. The Permittee commits to replace water rights if it is shown mining has damaged the hydrologic balance within or adjacent to the permit area.

kstorrar

Hydrologic Ground Water Monitoring

Analysis:

The amendment does not meet the State of Utah R645 requirements for Groundwater monitoring.

Coyote seep's elevation will be measured quarterly in addition to flow when it is discharging. Coyote seep is the alluvial aquifer's water table exposed at the surface. It is in equilibrium, needing no recharge to be full of water and it has no baseflow discharge like a spring. Measuring water elevation and flow at this location will adequately quantify this surface water feature.

In Appendix 7-20 the amendment proposed to install a monitoring well the backfilled alluvial sediments. This well will quantify the recharge characteristics within the backfill with respect to the adjacent undisturbed well monitoring network.

The water monitoring map 7-10 must be updated to show the water monitoring locations detailed in Table 7-5. The map name should be updated to indicate these are operational water monitoring locations.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Groundwater monitoring.

The water monitoring map 7-10 must be updated to show the water monitoring locations detailed in Table 7-5. The map name should be updated to indicate these are operational water monitoring locations.

kstorrar

Hydro Surface Water Monitoring

Analysis:

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

The water monitoring program has been updated to comply with Special Condition 4 of the permit which is to, "monitor for selenium where water leaves the minesite, during operational and reclamation phases". Water monitoring sites downstream of the NPL have been updated to include the water quality parameter of Protocol #8 from Table 7-4 in the Water Monitoring Program.

kstorrar

Hydrologic Water Quality Standards

Analysis:

The amendment meets the State of Utah R645 requirements for Water-Quality Standards and Effluent Limitations.

The mine plan is designed to treat all disturbed area runoff through sediment ponds and one small BTCA area. These are shown on Drawing 5-65, 'Diversion Ditch and Sediment Impoundment Plan View'. The Permittee has acquired UPDES outfalls for all the sediment ponds at the mine site that will discharge to Waters of the State. The BTCA area will treat road runoff with an engineered check dam prior to discharging from the permit area.

kstorrar

Hydrologic Diversion General

Analysis:

The amendment does not meet the State of Utah R645 requirements for Diversions.

Diversion ditches will be constructed within Area 2-3 to convey all disturbed area runoff to sediment ponds. The diversion ditches are shown on Drawing 5-65, 'Diversion Ditch and Sediment Impoundment Plan View'.

Diversion DD-13 will capture and route disturbed area runoff from watershed DA-1 to Pond 7. Undisturbed diversion UD-14 will capture undisturbed area runoff from UA-4 and route it around the site and into Kanab Creek. In the northern area of watershed DA-1 disturbed area runoff will flow south, away from UD-14, so there is no need to install DD-13 to the northern boundary of the permit. However, in order to have a distinct boundary between disturbed and undisturbed areas the excavated material for UD-14 should be placed on the disturbed area side of the ditch to form a berm. This berm will prevent any minor amount of disturbed area runoff from reaching UD-14.

Deficiencies Details:

R645-301-742. The amendment does not meet the State of Utah R645 requirements for Diversions. The following deficiency must be addressed prior to final approval:

The amendment should provide a narrative detailing that excavated material for UD-14 will be placed on the disturbed area side of the ditch to form a berm.

kstorrar

Hydrologic Diversion Perennial and Intermitten

Analysis:

The amendment meets the State of Utah R645 requirements for the Diversion of Perennial Streams Draining a watershed of at Least One Square Mile.

The removal of the haul road crossing Kanab Creek and reconstruction of the channel will be overseen by the USACE.

kstorrar

Hydrologic Diversion Misc. Flows

Analysis:

The amendment meets the State of Utah R645 requirements for Diversion of Miscellaneous Flows.

Appendix 5-12 includes an additional narrative on the boundary of the undisturbed watershed UA-4 in Drawing 5-66. This narrative helps clear up confusion about the runoff flow paths and the total catchment area of the watershed. This narrative adequately addresses deficiencies within earlier amendments.

kstorrar

Hydrologic Stream Buffer Zones

Analysis:

The amendment meets the State of Utah R645 requirements for Stream Buffer Zones.

The approved MRP currently details Stream Buffer Zones will be established by posting signage and installing appropriate sediment control structures between the disturbed area and Kanab Creek.

kstorrar

Hydrologic Sediment Control Measures

Analysis:

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

The amendment will implement sediment control structures and the best technology currently available to prevent sediment

from exiting the permit area and causing offsite impacts. The amendment provides narratives, maps and supporting calculations for all sediment control measures in the NPL.

kstorrar

Hydrologic Siltation General

Analysis:

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

The amendment includes an adequate narrative on the open-pit dewatering system for the open pits. Ultimately, all excess water encountered within the mining area will be discharged through UPDES the outfall issued for Pond 7. All water discharged through this outfall must meet all applicable Clean Water Act effluent standards.

kstorrar

Hydrologic Discharge Structures

Analysis:

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

The post-mining topography map shows multiple areas where water is routed from the elevation of the fields down to the elevation of Kanab Creek. The most notable diversion is the new bowl that will be created instead of reforming the ephemeral channels to the west of Kanab Creek. The amendment includes a narrative with the supporting Drawing 5-79 for the post-mining topography of permanent diversions within the NPL. These diversions are designed to be stable while routing miscellaneous flows from the height of the fields bordering Kanab Creek down to the elevation of Kanab Creek.

kstorrar

Hydrologic Impoundments

Analysis:

The amendment meets the State of Utah R645 requirements for sediment ponds.

The amendment proposes to construct three additional sediment ponds in the North Private Lease in addition to the two ponds currently included in the NPL. Pond 7 will sit west of Kanab Creek and will capture all disturbed area runoff prior to discharging through the UPDES outfall issued for the treatment structure. Ponds 8 and 9 will be constructed to the east of Kanab Creek within Area 3. These ponds will be used in series to treat runoff from the disturbed area. All disturbed area runoff will be used treated within this series of ponds prior to discharging through UPDES outfall assigned to Pond 9.

kstorrar

Maps Affected Area

Analysis:

The application meets the requirements of R645-301-521.100 for Affected Area Maps.

Drawings 5-45 and 5-46 of the pre-mining topography meets the requirements of R645-301-521.100 by accurately showing the proposed North Lease permit boundary according to the pre mining topography.

The original application did not meet the requirements of R645-301-141 in Drawing 5-74 and 5-75 due to the scale. The reclamation scenario drawings must match the scale of bond release figures. Division standard in Technical Directives and R645-301-141 regulations require a larger scale (1":100') for the post mining topography and two foot contour intervals. To address this deficiency, #78 of the December 18, 2015 resubmission, and meet the requirements of R645-301-141, R645-301-121.200, R645-301-521.151: Drawing 5-57 was amended to include alluvium overburden. Drawings 5-74 and 5-75 scales and contours were amended to two foot contours to match the bond release map designs of a 1:100 scale with two foot contours. The Permittee also added Drawing 5-74A through Drawing 5-74C detailing the post mining topography for each Area 1 through 3.

The application meets the requirements of R645-301-521.110 which requires previously mined areas to be show. Within

the application Chapter 5, Section 521.110 details the previously historic mining operations within the Alton Amphitheater. The text also details how none of these previous mining operations are within the permit areas or adjacent to the permit areas, as defined in R645-100-200.

cparker

Maps Facilities

Analysis:

The application meets the requirements of R645-301-521.161 for Mining Facilities Maps.

The application meets the requirements of R645-301-521.161 by detailing the proposed facilities to be constructed within the permit area on Drawing 5-47 for the life of the North Private Lease.

The application meets the requirements of R645-301-521.162 by providing a map detailing the yearly and overall disturbance for the North Private Lease within Drawings 5-46 through 5-50 for each of the respective Areas 1 through 3.

The application meets the requirements of R645-301-521.163 as there is a clear narrative, or reference to a narrative or drawing, that details what pits will be bonded for within the permit area in Drawing 5-53 and 5-77.

cparker

Maps Mine Workings

Analysis:

The application meets the requirements of R645-301-521.140 for Mine Workings Maps.

The application meets the requirements of R645-301-521.140 which requires maps that clearly show all mine plans. Drawings 5-53, 5-57, and 5-77 we updated with notes detailing the specific phase of operations or reclamation depicted by each pit extent shown respectively.

cparker

Maps Monitoring and Sampling Locations

Analysis:

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

Section R645-301-731.200 of the amendment commits to update Figure 18 in Appendix 7-16 during operational and reclamation phases. The map will be updated every three years. The commitment discusses all available monitoring data will be used to update the map.

kstorrar

Reclamation Plan

General Requirements

Analysis:

The application meets the State of Utah R645 requirements for General Reclamation Requirements.

The application meets the requirements of R645-301-526, R645-301-527.220, R645-301-541.400, and R645-301-731 by committing to send the Division a copy of the Mitigation Completion report required to the USACE for the Nationwide SPK 2011-01248 with the Division's annual report in the year which the mitigation is completed.

Additionally, the requirements of R645-301-521.124 and R645-301-541 are met by the addition of narrative addressing the complete removal of ponds outlined in Drawing 7-7 as per landowner's request after obtaining an appropriate Individual Section 404 permit.

Deficiencies Details:

PostMining Land Use

Analysis:

The amendment meets the State of Utah R645-301-412 requirements for postmining land use.

A description of the post-mining land use is located in Section 412.100 of the MRP with a summary in Chapter 3, Section 356.120. The discussions include the utility and capacity of the reclaimed land and the relationship of the proposed uses to existing land use policies and plans, as well as the desires of the current landowners. Post-mining land use will be achieved by following the detailed reclamation plan included in the MRP. The reclamation plan includes descriptions for structure removal, excess spoil, and mine waste disposal, backfilling, compacting, and regrading (Chapter 5); soil handling and stabilization (Chapter 2); revegetation techniques (Chapter 3); measures to control sediments during mining and reclamation activities (Chapter 7).

The majority of the area in the North Private Lease, especially those areas south of Farm Road, are comprised of rangelands that have been converted to pasture lands. Surface landowners of the permit area provided written comments (Appendix 4-3 and 4-4) expressing grazing and wildlife habitat would be the desired postmining land use, with emphasis on grazing by domestic livestock in most of the pasture land areas (these areas are shown on Vegetation Map, Drawing 3-1 of the MRP and on Vegetation Map 1 in Appendix 3-9 (Vegetation & Wildlife Habitat of the North Private Lease Area). One exception is pre-mining pasture land will be reseeded appropriately to provide additional habitat for Greater sage-grouse, a sensitive species in the area. A land ownership map of the current Coal Hollow Mine and North Private Lease areas is in the MRP (Drawing 1-3).

The channels support some riparian and wetland communities including riparian wet meadows, mixed riparian scrub/shrubs, as well as narrow bands of sagebrush communities on the adjacent upland terraces. The field studies found that the Private North Lease study area supports 9.44 acres of jurisdictional wetlands, most of which were identified in the Kanab Creek drainage. Wetlands will be restored to conditions required by the Army Corps of Engineers Individual Permit. Kanab Creek and the plant communities supported within it will not be disturbed by mining activities. The other channels, however, may be disturbed by mining, some of which support wetland and upland communities. The landowner has indicated that the erosional features be eliminated, therefore areas of the channels will be reclaimed and seeded to support pasture land.

Ireinhart

WildLife Protection

Analysis:

The amendment meets the State of Utah R645-301-342 requirements for a fish and wildlife plan for the reclamation and postmining phase of operation.

Enhancement measures are identified in Section 342 and include restoration efforts (both through reclamation and offsite mitigation) aimed at improving sagebrush ecosystems and wetlands pursuant to the Army Corps of Engineers requirements. Because most of the premining rangeland conditions consist of heavy brush (pinyon-juniper and decadent sage) and low-quality herbaceous vegetation (grasses and forbs) on the native rangelands, reclamation efforts are aimed at restoring these ecosystems to an earlier seral state dominated by grasses and forbs.

Although not the primary PMLU, wildlife species will benefit from the final reclamation seed mix identified in Table 3-37. These mixtures include plant species that provide nutritional value and cover for wildlife.

The Division has determined the proposed operation will not affect the continued existence of endangered or threatened species or result in the destruction or adverse modification of their critical habitats, as determined under the Endangered Species Act.

Ireinhart

Backfill and Grading General

Analysis:

The application meets the requirements of R645-301-553 for General Backfill and Grading.

The application now meets the general requirements of R645-301-553 by detailing a general backfill and grading plan. The plan details how disturbed areas will be backfilled and graded to achieve the approximate original contour, eliminate all highwalls, spoil piles, and depressions, and achieve a post mining slope that does not exceed either the angle of repose or such lesser slope as is necessary to achieve a minimum long term static safety factor of 1.3 and to prevent slides, minimize erosion and water pollution both on and off the site, and support the approved post mining land use. The application of the 1500 linear feet is the linear distance in the direction of the working face and that backfill and grading must commence within 60 days of coal removal. The pits as depicted on Drawing 5-53 show that no pit is longer than approximate 1000 linear feet, therefore the ruling factor of R645-301-553 is that rough backfill and grading will begin in each pit 60 days after coal removal for the area within the pit. The pit development, as discussed and depicted in the Chapter 5 drawings, show work will move from south to north. Backfill and grading of each pit will then progress 60 days following from south to north behind the working coal removal face.

To address deficiency #92 of the December 18, 2015 submission R645-301-121.200: The narrative stating R645-301-553.800 applies to the North Private Lease area was removed. The narrative in the Section -553.800 was corrected to only reference the current south Coal Hollow Mine and all North Private Lease references will be removed. Section 553.110 originally incorrectly stated that R645-301-553.800 apply as the North Lease Permit area does not meet the conditions listed within R645-301-553.110. A site having a swell factor alone does not qualify the -553.800 thick overburden regulations. Thick overburden regulations only apply when the site has a swell factor, cannot achieve AOC due to underground coal mining fill, has permanent features such as spoil, waste, or refuse piles, previously mined areas, and underground mining regraded fills.

To address deficiency # 93 of the December 18, 2015 resubmission meet the requirements of R645-301-553.140,-527.220, 542.620 the Permittee added a new Drawing 5-79 and discussion in Appendix 5-12, Chapter 5 section 527.220 and chapter 5 section 542. Clarify if any of the culverts will remain and how the changed slope will control drainage without erosion. The original application contained no discussion how R645-301-527.220 and R645-301-542.

To address deficiency # 77 the Permittee added additional narrative along with supplemental bonding information to clarify that all pits will be backfilled within 60 days to Section 553.

cparker

Mine Openings

Analysis:

The applicant has met the minimum regulatory requirements for the closure of wells and boreholes. The plans for Casing and Sealing of holes is located in the original MRP Section 631. No changes have been proposed with this application. Boreholes will be backfilled to within 1 foot of the land surface with concrete or other materials approved by the Division as necessary to prevent contamination of groundwater or surface-water resources or to protect the prevailing hydrologic balance. The upper approximately 1 foot will be backfilled with native materials to facilitate reclamation (see Drawing 6-11). Exploration holes and boreholes that may be uncovered during mining and reclamation activities will be permanently closed unless approved for water monitoring or otherwise managed in a manner approved by the Division. Permanent closure methods will be designed to prevent access to the mine workings by people, livestock, fish and wildlife, and machinery and to keep acid or other toxic drainage from entering water resources.

dhaddock

Topsoil and Subsoil

Analysis:

Analysis:
The application meets the requirements of R645-301-240, Soils Reclamation Plan.

Section 232.300 refers to Table 14, Vol. 11 (p. 44) for the estimated salvage quantities and replacement depths of topsoil and subsoil from the non-prime farmland map units. The estimated topsoil replacement depth will follow the average recovery for non-prime farmland soils as stated in Section 232.200 and restated in Section 233.100-400, as follows: 18 inches in Area 1, 11 inches in Area 2, and 12 inches in Mine Area 3.

Overall for Areas 2 and 3, an average subsoil replacement depth of 37 inches is stated in Section 232.100 (Table p. 2-28). Where replacement falls short of three feet depth, the Division will request that the graded spoils are sampled for suitability within the root zone.

Note: Recent reclamation of Pits 1 & 2 in Area 1 replaced only 8 inches of topsoil rather than 18 inches described in MRP Section 232.300. Replacement depths are critically dependent on the monitoring of topsoil and subsoil recovery. For instance, much less subsoil was recovered from Area 1 than anticipated. This is likely due to the imperfect method of recovering subsoil stored in situ beneath the spoil pile that was observed during inspections. This method of insitu subsoil is not proposed again. Using soil pedestals will improve monitoring of the activity and help ensure the average recovery for the disturbance area (Section 231.100 and Section 232.100).

Substitute subsoil testing is described in Section 232.300, following procedures described in Section 232.720. Testing of the re-graded spoil surface is described in this section for Area 1 and Area 1 extended. Dwg 5-76A shows the sample locations on a grid within Area 1 & Area 1 Extended. No areas of sampling are proposed for Areas 2/3 on Dwg 5-76A, because the Permittee believes that there are sufficient sources of native subsoil to provide the 48 inches of total cover (Section 232.720, p. 2-33).

The Permittee will track the salvage, stockpiling and replacement of topsoil and subsoil using a balance sheet (Chapter 2, p. 3-36 and Appendix 2-2). New Appendix 2-7 contains tables with soil balance for bond release areas.

Soil redistribution to a uniform, stable thickness, prevention of compaction, ripping, discing on the contour, and seeding and mulching is described in Chapter 2 Sections 242 through Sections 244.200. These sections have not changed except to add that the results of topsoil and subsoil nutrient analysis prior to salvage are found in Appendix C of Vol 11.

Earthwork reclamation sequence is found on Dwg 5-76A (including locations of subsoil sampling in Area 1 extended). Facilities reclamation is described on Dwg 5-76B. Bond polygons are shown on Dwg 5-77. Final reclamation topography is provided on Dwgs 4-74A (Area 1); 5-74B (Area 2); 5-74C (Area 3). Post mining surface hydrology is found on Dwg 5-79.

pburton

Road System Reclamation

Analysis:

The application meets the requirements of R645-301-534 for Road Systems Reclamation.

The requirements of R645-301-534 are met within the application as all primary roads will be designed to R645-301-534.300 and all temporary ancillary roads will meet the general 534 design requirements. There are not any roads with the permit area that R645-301-537 would apply.

The minimum requirement of R645-301-542.600, R645-103-224.420 through -224.422 are met due to mention of K3100 within the attached Kane County Agreements, see Operations Relocation and/or Use of a Public Road.

cparker

Contemporaneous Reclamation General

Analysis:

The application meets the requirements of R645-301-553 for Contemporaneous Reclamation.

The requirements of R645-301-553 in regards to contemporaneous reclamation and backfilling activities are met within the application. The MRP details the sequencing of mining and backfilling of the operation in Chapter 5 Section 526, 528 and 553.

cparker

Contemporaneous Reclamation General

Analysis:

The amendment meets the State of Utah R645-301-352 requirements for contemporaneous reclamation.

Section 352 discusses contemporaneous reclamation. A detailed schedule and timetable for the completion of each major step in the mine plan are in Chapter 5 of the MRP. Drawing 5-76 shows the schedule for the North Private Lease. Operations will be conducted in one area (segment) at a time. During the development and initial mining period, facilities

temporary in nature may be used until permanent facilities can be built. Construction of sedimentation ponds, diversion ditches, and mine roads accessing the initial mining areas will also be ongoing.

Once the coal is removed, the pit will be backfilled by spoil from adjacent mine pits. Once the pit is backfilled to the planned final surface contour, suitable topsoil and subsoil will be replaced, and the area reseeded. Revegetation work will proceed seasonally as appropriate for planting. The mine plan has been engineered to disturb the smallest practicable area at any one time. The alternate highwall mining will reduce the practicable area to be reclaimed. With prompt establishment and maintenance of vegetation, immediate stabilization of disturbed areas will minimize surface erosion. Details of the plan are included in Chapter 5, Section 540 of the MRP.

Ireinhart

Revegetation General Requirements

Analysis:

The amendment meets the State of Utah R645-301-341 requirements for revegetation plan.

The reclamation plan for final revegetation is located in Section 340. The plan describes how all lands disturbed by mining and operations (except water areas and surface of roads approved as part of the postmining land use) comply with the biological protection performance standards. The plan includes a detailed schedule and timetable for each major step in Chapter 5, seed mixtures (341.210), planting methods (341.220), and mulching (341.230). Measures proposed to determine the success of revegetation are identified in Section 356 and include production, cover, and shrub density requirements. Grazing and pasture are the primary post-mining land uses. Wildlife use is a secondary use and therefore, seed mixtures have been developed to include shrubs and forbs beneficial to wildlife.

The amendment meets the State of Utah R645-301-357 requirements for extended responsibility period.

The average annual precipitation is less than 26.0 inches and therefore, the extended responsibility period will be 10 years.

Ireinhart

Revegetation Timing

Analysis:

The amendment meets the State of Utah R645-301-354 for revegetation timing.

The planting schedule is identified in Section 354 and 341.100 and identifies early spring and late fall for the seeding period which is the favorable planting time for this location.

Ireinhart

Revegetation Mulching and Other Soil Stabilization

Analysis:

The amendment meets the State of Utah R645-301-355 requirements for mulching and soil stabilizing.

Mulching and soil stabilizing practices are identified in Section 355 and 340. Suitable mulch and other soil stabilizing practices will be used on all areas that have been regraded and covered by topsoil or topsoil substitutes.

Ireinhart

Revegetation Standards for Success

Analysis:

The amendment meets the State of Utah R645-301-356 requirements for revegetation standards for success.

The Permittee commits to using approved sampling techniques for measuring success as identified in DOGM's Vegetation Information Guidelines, Appendix A. Success standards are identified in Section 356. The primary PMLU is grazing land or pastureland, and the ground cover and production of living plants on the revegetated area will be at least equal to that of a reference area or such other success standards approved by the Division. On areas identified as a wetland, and authorized

by the Army Corp of Engineers, success standards will meet Corp requirements set forth in that permit. Because wildlife habitat is a secondary post-mining land use, ACD consulted with DOGM and UDWR to determine an appropriate shrub stocking densities. It was agreed that a 10% shrub density of the reference site for sagebrush/grass locations was an adequate success standard. (See email dated 9/29/16 between Lisa Reinhart and Rhett Boswell.)

lreinhart

Cessation of Operations

Analysis:

The application meets the requirements of R645-301-515.321 and -515.322 for Cessation of Operations.

To address deficiency # 105R645-301-515.321 and -515.322 The Permittee addressed errors within said sections. Section 515.320 labeled was corrected 515.321 and is pertinent to Underground mining which requires beyond the exact number of surface acres affected, the horizontal and vertical extent of subsurface strata which have been in the permit area prior to cessation. The section labeled 515.321 within the application was corrected to 515.322 which is pertinent to Surface mining operations

The original application did not meet the requirements of R645-301-515 by not detailing a clear procedure to be followed in the event of temporary cessation of coal mining and reclamation activities after Pit 1 in the North Private Lease. The application did not detail temporary cessation procedures in the event mining and pit development may be halted beyond the 60 days allowed by R645-301-553. The application does include that 30 days or more before temporary cessation the Permittee will notify the Division and now meets the R645-301-515 requirements.

To address deficiency # 106 of the December 18, 2015 resubmission meet the requirements of R645-301-515.312 the narrative was added how the temporary excess spoil pile would be stabilized to meet R645-301-532.200 minimize erosion and sediment transport off site, e.g tackifier.

The requirements of R645-301-541 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 Bonded Area

Analysis:

The application meets the requirements of R645-301-800 for Bonded Area Map.

The requirements of R645-301-800 are met within the application as the bonded area map was updated in Drawing 5-77 to show the reclamation backfill crest of the individual pits.

cparker

Maps Reclamation Backfilling and Grading

Analysis:

The application meets the requirements of R645-301-542 for Reclamation Backfilling and Grading Maps.

The requirements of R645-301-542 are met within the application with extraction footprints of the individual pits detailed on Drawing 5-55 and reclamation backfill crest shown on Drawing 5-57 and 5-77.

cparker

Maps Reclamation Facilities

Analysis:

The application meets the requirements of R645-301-542 for Reclamation Facilities Maps.

The requirements of R645-301-542 are met within the application as included the addition of Drawing 5-74 through 5-74C detailing the proposed design of the replacement of the natural drainages that will be destroyed due to mining operations will be placed back in a stable manor meeting the requirements of R645-301-358.400, R645-301-521.100 through-521.130,

R645-301-731.610, R645-301-527.220 and R645-301-121.200. Drawing 5-75 details the cross sections shown on Drawing 5-74 of the post mining topography.

cparker

Maps Reclamation Final Surface Configuration

Analysis:

The application meets the requirements of R645-301-542 for Final Surface Configuration Maps.

The requirements of R645-301-542 are met within the application as there engineering designs provided on Drawing 5-74 through 5-74C detailing the proposed design of the replacement of the natural drainages that will be destroyed due to mining operations will be placed back in a stable manor meeting the requirements of R645-301-358.400, R645-301-521.100 through-521.130, R645-301-731.610, R645-301-527.220 and R645-301-121.200. Drawing 5-75 details the cross sections shown on Drawing 5-74 of the post mining topography.

cparker

Maps Reclamation Surface and Subsurface Man Made

Analysis:

The application meets the requirements of R645-301-542 for Reclamation Surface and Subsurface Manmade Features Maps.

The requirements of R645-301-542 are met within the application due Drawing 5-77 showing the removal of all manmade facilities within the disturbed North Private Lease area.

cparker

Bonding and Insurance General

Analysis:

The application meets the requirements of R645-301-800 for Bonding and Insurance Requirements.

The application meets the requirements of R645-301-800 as the applicant is currently approved to mine through Pit 11 while maintaining a minimum posted reclamation bond of \$12,450,000. The Permittee's current bonding schedule, and discussion with Permittee's engineer, shows a planned increase of minimum posted reclamation bond to \$14,600,000 to mine through Pit 13.

cparker

Bonding Form of Bond

Analysis:

The application meets the Requirements of R645-301-860.100 for Form of Bond.

The application meets the requirements of R645-301-860.100 as the applicant currently maintains a surety bond amount of \$12,750,000 which is held by Lexon Insurance Co with a rider held by Ironshore Indemnity Inc for 342 disturbed acres.

bwiser

Bonding Form of Bond

Analysis:

The application meets the requirements of R645-301-860.100 for Form of Bond.

The application meets the requirements of R645-301-860.100 as the applicant currently maintains a surety bond amount of \$12,750,000 which is held by Lexon Insurance Co with a rider held by Ironshore Indemnity Inc for 342 disturbed acres.

cparker

Bonding Determination of Amount

Analysis:

The application meets the requirements of R6459301-830.140 for Determination of Bond Amount.

The application did not include any changes the currently approved bonding schedule contained in Chapter 8, Appendix 8-1 and Appendix 8-2. The applicant is currently approved to mine through Pit 11 while maintaining a minimum posted reclamation bond of \$12,450,000. The Permittee's current bonding schedule, and discussion with Permittee's engineer, shows a planned increase for minimum posted reclamation bond to \$14,600,000 to mine through Pit 13.

bwiser

Bonding Determination of Amount

Analysis:

The application meets the requirements of R645-301-830.140 for Determination of Bond Amount.

The application did not include any changes the currently approve bonding schedule contained in Chapter 8, Appendix 8-1 and Appendix 8-2. The applicant is currently approved to mine through Pit 11 while maintaining a minimum posted reclamation bond of \$12,450,000. The Permittee's current bonding schedule, and discussion with Permittee's engineer, shows a planned increase of minimum posted reclamation bond to \$14,600,000 to mine through Pit 13.

cparker

Special Categories

Prime Farmland Soil Removal and Stockpiling

Analysis:

Analysis:

The application does not meet the requirements of R645-302-317.410, prime farmland soil removal and stockpiling, because prime farmland topsoil salvage preceding the overburden sequence presented on Dwg. 5-57 will likely result in handling prime farmlands when soils are saturated and not conducive to soil sampling or handling due to muddy conditions.

In Area 2: Prime farmland soils will be encountered above the N and East extent of Pit 15 all the way through Pit 21 (refer to Dwg 5-57 and 5-53). Procedures described in Chapter 9 for Prime Farmland soil removal and stockpiling (Vol 9, Section 317.400 et seq). These procedures include sampling by horizon one sample per 2 acres prior to salvage; salvage by landowner and by horizon. The Division is uncertain of how these sampling and salvage operations will progress across landowner boundaries and soil types. The Division recommends that all prime farmland within a bonding unit is sampled and recovered at one time allow for soil recovery during an appropriate season and to allow mining to continue uninterrupted.

Procedures for soil replacement (Vol 9, Sec.317.500 et seq) met the requirements of R645-302-317.400 and R645-302-317.500. These procedures were reviewed and approved by the Utah NRCS State Soil Scientist (Incoming document 03212017.5369.pdf).

Salvage of Prime Farmland Soils is discussed in Vol 11, pages 41-43. Volume of salvage by horizon and Map Unit is summarized in Table 13. The volume to be salvaged by landowner acreage is provided in a Table on Dwg 2-4. Prime farmland topsoil stockpiles are illustrated on Dwg 2-4 and Dwg 5-51B. The topsoil piles are shown in cross section. These stockpiles are labeled by landowner: Dean R Heaton (DRH); G. Ferril and Dorothy Heaton (GDH); and Orval & Gretta Palmer (OGP).

The application states that the total acreage of Prime Farmland and Farmland of Statewide Importance within the permit boundary to be disturbed is tabulated by landowner and totals 31.9 acres (Dwg 2-4). The Order II soil survey states that the criteria for salvage and replacement of prime farmland soils will apply to both Prime Farmlands and Farmlands of Statewide Importance (Vol 11 p. 41).

South of the farm road and North of the elk fence, Prime Farmlands are designated in both Areas 2 and 3 (Map 9 and Dwg 2-4). Surface ownership and permit boundary lines are shown on Dwg 1-3. The acreage of Prime Farmland to be surface

disturbed is calculated as 31.9 acres in the table on Dwg 2-4. Area 2 Prime Farmland is owned by:

T 39 S, R 6 W SE1/4 SE1/4 Sec 12

Orval & Greta Palmer (6.9 acre parcel 9-6-12-3);

Dean R. Heaton (17.9 acres of a 20 acre parcel 9-6-12-2); and

G. Ferril and Dorothy M. Heaton (3.7 acres of a 10 acre parcel 9-6-12).

T 39 S, R 5 W SW1/4 SW1/4 Sec 7

G. Ferril and Dorothy M. Heaton (3.5 acres of a 30 acre parcel 9-5-7-3A)

In Area 2, the remainder of the of Prime Farmland owned by Dean R. Heaton and by G. Ferril and Dorothy M. Heaton will not be surface disturbed, but will be undermined using highwall (auger) mining techniques (refer to Dwgs. 5-46, 5-52, 5-53 and 5-57).

In Area 3, the 30 acres of Prime Farmland owned by G. Ferril and Dorothy M. Heaton in T 39 S, R 5 W, Sec 7 will not be surface disturbed, but will be undermined using highwall mining techniques (refer to Dwgs. 5-46 and Dwg 5-52).

Deficiencies Details:

The application does not meet the requirements of prime farmland soil removal and stockpiling, prior to approval, provide the following in accordance with:

R645-302-317.410, Provide a commitment in Chapter 9, Section 317.400 that the prime farmland soils will be sampled as described prior to salvage and salvaged when soils are not saturated. The Division recommends that all prime farmland within a bonding unit is sampled and recovered at one time allow for soil recovery during an appropriate season and to allow mining to continue uninterrupted.

pburton

Prime Farmland Soil Replacement

Analysis:

Analysis:

The application does not meet the requirements for R645-302-317, Prime Farmland Performance Standards, because the following soil revegetation and productivity standards are requested by the NRCS (communication from M. Alber, Acting State Soil Scientist, June 12, 2017).

Vegetation to be planted (Section 302-317.610) and Reference crop selection (302-317.626 through 317.627.2).

The NRCS recommends that "the landowners of each parcel work with local NRCS staff to develop a seeding mix suited to their specific site (irrigated vs. non-irrigated) and operation goals. A specialized seeding mix will likely be more successful, more productive, and potentially less expensive than the mix recommended in Table 3-38." In the NRCS communication dated June 12, 2017, several contacts for Kane County are provided.

Method of Prime Farmland productivity measurement (302-317.621 and 302-317.622).

Chapter 9 must state that the AUM yield assessment will be at the rate of "26 pounds of dry forage consumed per 1,000 pound animal per day."

Yield Records (R645-302-627.1).

Chapter 9 will state that the soil productivity standard will be 2,000 lbs/ac for irrigated pastureland and 1,100 lbs for dry pastureland.

Procedures described in Chapter 9 for Prime Farmland soil replacement (Vol 9, Sec.317.500 et seq) were reviewed and

approved by the Utah NRCS State Soil Scientist (Incoming document 03212017.5369.pdf). Section 317.610 states that the reclamation plan for Prime Farmland soils will follow the mulching and fertilization plan given in Section 240, Chapter 2.

Deficiencies Details:

The application does not meet the requirements for R645-302-317, Prime Farmland Performance Standards. Prior to approval, please provide the following in accordance with:

Vegetation to be planted (Section 302-317.610) and Reference crop selection (302-317.626 through 317.627.2): Chapter 9 must state "the landowners of each parcel work with local NRCS staff to develop a seeding mix suited to their specific site (irrigated vs. non-irrigated) and operation goals. A specialized seeding mix will likely be more successful, more productive, and potentially less expensive than the mix recommended in Table 3-38." In the NRCS communication dated June 12, 2017, several contacts for Kane County are provided.

Method of Prime Farmland productivity measurement (302-317.621 and 302-317.622):

Chapter 9 must state that the AUM yield assessment will be at the rate of "26 pounds of dry forage consumed per 1,000 pound animal per day."

Yield Records (R645-302-627.1): Chapter 9 will state that the soil productivity standard will be 2,000 lbs/ac for irrigated pastureland and 1,100 lbs for dry pastureland.

pburton

Operations Alluvial Essential Hydrologic Functions

Analysis:

The application meets the minimum requirements of R645-302-322. A report entitled "Alluvial Valley Floor Field Investigation in the North Private Lease" was developed and submitted to the Division on July 17, 2014. This report is included in the application as Appendix 7-17. This report along with supplemental information submitted on October 10, 2014 allowed the Division to make a determination regarding the existence of any alluvial valley floor within the proposed permit and adjacent areas. It was determined by the Division that an alluvial valley floor does not exist in the area being proposed for mining, however, there is an alluvial valley floor to the North on adjacent property.

Further, the hydrologic monitoring data indicate that the alluvial groundwater systems present within and adjacent to the North Private Lease area do not contribute to the essential hydrologic function of agricultural lands within the North Private Lease area. No irrigation wells are present in the shallow alluvial groundwater system within the North Private Lease area. Waters that are currently or have historically been utilized for irrigation of lands within the North Private Lease area have been derived from the Kanab Creek surface-water system. The surface-water diversions to the existing and historic irrigation systems are located up-stream of the North Private Lease area. The depths to water in the shallow groundwater systems within agricultural areas in the North Private Lease area are too deep to facilitate subirrigation of agricultural vegetation within the area. Additionally, the water quality of shallow groundwaters in much of the North Private Lease area is poor (Table B-2a, Table B-2b in appendix B), which would likely limit its usefulness for flood irrigation and/or subirrigation even if it were accessible for use.

Consequently, there is essentially no potential for mining-related activities to affect the water supply of any potential AVF areas in the North Private Lease area. Also, because it is possible to successfully restore the flat land surface and associated soils during reclamation, the potential for mining-related activities to cause material damage to the land resource within potential AVF areas is very low. In other words, proposed mining operations in the North Private Lease area will not cause damage to the water source of any identified alluvial valley floors in the North Private Lease.

dhaddock

Operations Alluvial Protection of Agricultural

Analysis:

The Division finds that the regulatory requirements for the protection of farming have been met. A determination has been made that the proposed mining area does not contain an AVF, but that the AVF is to the north of the proposed permit area. Mining in the proposed permit area will not interrupt, discontinue, or preclude farming on the adjacent area AVF. Recharge to the AVF is from the North and would not be disrupted by mining in the proposed permit area, which is to the south of the AVF.

dhaddock

Auger Mining

Analysis:

The application meets the requirements of R645-302-240 for Auger Mining and Remining Operations

The application meets the requirements of R645-302-240 as the applicant included the addition of a new Chapter 9 to address all special mining operations. Narrative in Chapter 9 details the due diligence to investigate any previous mining in the North Private lease and identify any potential environmental and safety problems related to auger mining in the area. The Permittee maintains that with thick overburden auger mining is the best design to maximize the utilization and recovery of the coal. All auger holes are located at the bottom of active pits and will be backfilled in accordance with R645-301-553 backfill and grading regulations outlined in Chapter 5 section 553.

cparker