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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 11th, 2019

Larry Johnson, Resident Agent
Coal Energy Group 3, LLC
2850 Crimson Ridge Drive
St. George, Utah 84790

Subject: Deficiencies in Application for Permitting the Kinney No. 2 Mine, Coal Energy Group 3, LLC, Kinney No. 2 Mine, C/007/0047, Task #5779

Dear Mr. Johnson:

The Division of Oil, Gas and Mining (the Division) has completed its review of the proposed Kinney No. 2 Mine. The Division has identified deficiencies that must be addressed before final approval can be granted. A Permit Report as well as a Deficiency Report is attached to this letter.

The Permit Report provides the findings, analysis and context for this latest review. The Deficiency Report provides a list of the outstanding deficiencies. The deficiencies authors are listed to facilitate communication between your staff and ours.

I would recommend that prior to re-submitting a response to the identified deficiencies; we schedule a face to face sit down with you and your staff in an effort to ensure that the next round of review is the last one. We will make ourselves available to you at your convenience.

If you have any questions, please don't hesitate to call me (801) 528-5350.

Sincerely,

Steve Christensen
Coal Program Manger

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Technical Analysis and Findings

Utah Coal Regulatory Program

PID: C0070047
TaskID: 5779
Mine Name: KINNEY #2
Title: PERMIT APPLICATION

Summary

The Division ensures that coal mining and reclamation operations in the State of Utah are consistent with the Coal Mining Reclamation Act of 1979 (Utah Code Annotated 40-10) and the Surface Mining Control and Reclamation Act of 1977 (Public Law 95-87). The Utah R645 Coal Mining Rules are the procedures to implement the Act. The Division reviews each permit or application for permit change, renewal, transfer, assignment, or sale of permit right for conformance to the R645-Coal Mining Rules. The Applicant/Permittee must comply with all the minimum regulatory requirements as established by the R645 Coal Mining Rules.

A complete and current copy of the coal rules can be found at <http://ogm.utah.gov>. The following analysis is organized into section headings following the organization of the R645-Coal Mining Rules. The Division analyzes each section and writes findings to indicate whether or not the application is in compliance with the requirements of that section of the R645-Coal Mining Rules.

The Kinney No. 2 Mine permit application package (PAP) was found to be deficient. The deficiencies must be addressed prior to receiving final approval for the project.

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The Kinney Mine plan was previously approved as Task 3860 in 2011. Carbon Resources, LLC never posted bond and therefore, the permit was never issued. Coal Energy Group 3 (CEG3) has renewed interest in the mine with a permit application, first received on December 10, 2018. A revised application was received April 23, 2019.

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General Contents

Identification of Interest

Analysis:

The application meets the State of Utah R645 requirements for Identification of Interests.

Ownership and control information for the operation and surface lands affected is provided in Chapter 1, Section 112. The applicant is Coal Energy Group 3, LLC (CEG3). A separate or different operator was not provided. CEG3 is a limited liability company formed in Nevada. The application provides the registration form from the State of Utah Department of Commerce in the confidential binder information (dated 11/15/2018). CEG3 is registered with the Utah Department of Commerce as a limited liability corporation.

CEG3's address is provided in Section 112.200 as 6602 Illex Circle, Naples, FL 34109. The provided phone number is

(239) 825-2332. Larry W. Johnson is identified as the resident agent on page 1-10 of Section 112.200. Mr. Johnson's address and telephone number are provided: 2850 Crimson Ridge Drive, St. George, Utah 84790. Mr. Robert Nead is identified in Section 112.330 as the individual responsible for reclamation fee payments per R645-300-147. Based on the information provided in Section 112 of the application, CEG3 is the only business entity associated with the Kinney No. 2 Mine.

The tax payer identification number information for CEG3 is provided in Section 112.200 on page 1-9. An employer identification number (EIN #83-2286468) was issued by the Department of the Treasury- Internal Revenue Service on October 23rd, 2018.

In Section 112.310, two individuals are identified as holding 10% ownership or more. James Wayland and Robert Nead are identified as holding 50% ownership of CEG3 in Section 112.320 on page 1-11. Both individuals are identified as "Members" of CEG3 with their starting dates identified as October 18th, 2018. Their contact information is provided on page 1-11 in Section 112.330. Robert Nead's contact information is 6602 Ilex Circle, Naples, Florida 34109, (239) 825-2332. Jim Wayland's contact information is 2841 Capistrano Way, Naples, FL 34105, (239) 659-4525. The contact information for both Mr. Nead and Mr. Wayland is provided in Section 112.310 and 112.330.

A previous analysis by the Division directed the Permittee to provide additional information for the Western Reserve Coal Company, Incorporated (Western Reserve). Within the Chapter 1, Right of Entry information in the confidential binder, Western Reserve is identified within Exhibit 3 of the Lease and Sub-Lease of Coal Estate and Option Agreement between Carbon Resources, LLC and Coal Energy Group 3, LLC. Exhibit 3 was a prior lease agreement between the surface land owners for the majority of Kinney No. 2 Mine site (i.e. the Telonis family) with. The lease agreement Exhibit 3 is between the Telonis Family and Western Reserve. It was unclear as to what the relationship was between Western Reserve and the Permittee, thus additional information was requested.

In Section R645-301-114, the Permittee indicates that "Western Reserve, Incorporated no longer exists and all titles, leases, properties were forfeited in September, 2015. That foreclosure document is in the confidential file." Upon review of the confidential file, a trustee deed and foreclosure and final sale document is provided. The cover letter (from George A. Hunt, Law Offices of Williams & Hunt) dated September 29th, 2015 provides a copy of a Trustee's Deed (dated September 21st, 2015).

R645-301-112.340, -112.400, -112.410, -112.420 require additional information for any coal mining and reclamation operation owned or controlled by either the applicant or operator in the last five years. In Section 112.340 beginning on page 1-11, the application provides the employer identification number (EIN), MSHA number, State permit number, permittee's and operators name and address as well as the ownership and control relationship to the applicant and the operator, including percentage of ownership and location in the organizational structure for both the Coal Hollow Mine and Wildcat Loadout.

In section 112.350, the Permittee indicates that R645-301-112.350 is "NA" relative to other pending coal mining and reclamation operations. The Division is unaware of any other pending coal and reclamation operations within the State of Utah or elsewhere.

On page 1-13, the application discusses approval of a Utah Pollutant Discharge Elimination Systems (UPDES permit) from the Utah Division of Water Quality (DWQ) and states, "*CEG3 will obtain the permit prior to the start of any mining and in conjunction with approval of the mine and reclamation permit*". In the following paragraph on page 1-13, the application provides similar language relative to the approval of an Air Emission Permit from the Utah Division of Air Quality (DAQ) and again states, "*CEG3 will obtain the permit prior to the start of any mining and in conjunction with approval of the mine and reclamation permit*".

Section 112.500 begins on page 1-15 of the application. R645-301-112.500 requires the name and address of each legal or equitable owner of record of the surface and mineral property to be mined, each holder of record of any leasehold interest in the property to be mined, and any purchaser of record under a real estate contract for the property to be mined. Map 11, Regional Surface Ownership Map depicts the locations of the various surface owners. Map 12, Regional Coal Ownership Map, depicts the coal ownership.

On page 1-15 in Section 112.500-600, Owners of Surface and Minerals, the application identifies Carbon Resources, LLC and Evangelos George Telonis Trust as the owners of record for the surface lands associated with the areas to be disturbed by coal mining activity. The addresses for both are provided on page 1-14.

Following this information in Section 112.500-600, the application identifies the following entities as owners of surface

property contiguous to any part of the proposed permit area: Evangelos George Telonis Trust, Hilda M. Hammond, Utahna Pace Jones Trust, LH2 Enterprises, Inc., Utah Department of Transportation and Carbon County. As required per R645-301-112.600, the addresses are provided as required per R645-301-112.600.

The legal and equitable owners of record of the coal to be mined within the permit area are identified as: Carbon County, Carbon Resources, LLC (per a lease from Carbon County dated March 7th, 1997, as amended December 31st, 2002) and CEG3, LLC.

Coal ownership of record in areas contiguous to the proposed permit area are provided on page 1-16. The following entities were identified with coal ownership in the contiguous area: Pit-Min, Inc, Hilda M. Hammond and Utahna Pace Jones Trust. Per R645-301-112.500, their addresses are provided.

In Section 112,700, the MSHA number for the Kinney No. 2 mine is provided (424-02566).

In Section 112.800, Interest of Land on page 1-17, the Permittee discusses potential interest/future mining in lands contiguous to the proposed permit area. The Permittee indicates that it is their intent to modify the proposed permit boundary/area authorized to mine by adding portions of the Carbon County lease, which extends east and south of the permit boundary (See Map 12, Regional Coal Ownership). A date for this permit modification is not provided.

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Violation Information

Analysis:

The application meets the State of Utah R645 requirements for Violation Information.

In section 113.110, Revocation of Federal or State Permits, the Permittee provides the statement, "Neither the applicant, affiliate nor persons controlled by or under common control with the applicant has had a Federal or State mining permit suspended or revoked in the five (5) years previous to the date of this application."

In section 113.120, Forfeiture of Bond, the Permittee states, "No mining bond or similar security deposited in lieu of bond has been forfeited by any affiliated entities or persons associated with Carbon Resources".

In Section 113.300, List of Violation Notices for Past 3 years, the Permittee indicates that a history of violations for the last three years, in connection with the Coal Hollow Mine (C/025/0005) and the Wildcat Loadout (C/007/0033) are provided in Exhibit 4 of the application. Upon review of Exhibit 4, a table entitled, Alton Coal Development, LLC, Coal Hollow Mine, History of Citations is provided. The table provides the permit and MSHA number for the Coal Hollow Mine as well as the violation number, date of issuance, issuing agency, a brief description and the current status of the violation.

The Wildcat Loadout facility has not received any issuances of violation in the 3 years

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Right of Entry

Analysis:

The application does not meet the Right of Entry requirements of the State of Utah R645 rules.

Right of entry information is provided beginning on page 1-17 in Section 114, Right of Entry Information.

The proposed permit area is 448.14 acres. Of this surface acreage, 15.33 acres are identified as owned by Coal Energy Group 3, LLC in Section 112.800 on page 1-17. The remaining 432.5 acres are owned by Evangelos George Telonis, ETAL. Of those 432.5 acres, 22.8 acres are identified as being held by Carbon Resources as a lease from George Telonis, ET AL in section 112.800 on page 1-17. The Permittee indicates in Section 112.800 that the area of surface disturbance is confined within the 38.1 acres of combined fee and lease acreages (15.33 acres of Carbon Resources, LLC + 22.8 acres of Telonis ETAL = 38.1 acres) owned or controlled by CEG3.

For surface land, the Permittee indicates in Section R645-301-114 on page 1-17 that CEG3's right of entry is based on its ownership of the part of the proposed surface disturbance and on an agreement with the major property owner, Evangelos George Telonis, ET AL. The Permittee then states, "The Leases giving CEG3 Right of Entry is in the confidential files".

Within the confidential binder in Chapter 1, Right of Entry, the Permittee provides a document entitled Lease and Sub-Lease of Coal Estate and Option Agreement between Carbon Resources, LLC and Coal Energy Group 3, LLC (lease agreement). The document identifies Carbon Resources, LLC as a Utah limited liability company with its principal office at 3019 Country Club Drive, Pueblo, Colorado 81008 and Coal Energy Group 3, LLC as a Nevada limited liability company with its principal office at 6602 Ibex Circle, Naples, Florida 34109.

Pam Reeves is identified as the manager/contact individual for Carbon Resources, LLC. Ms. Reeves signed the lease agreement on September 25th, 2018. However; a signature was not provided by a representative from Coal Energy Group 3, LLC. The Permittee must provide a copy of the Lease and Sublease of Coal Estate and Option Agreement between Carbon Resources, LLC and Coal Energy Group 3, LLC that has been signed by authorized representatives from both entities (See Confidential Binder, Chapter 1, Right of Entry, Lease and Sub-Lease of Coal Estate and Option Agreement between Carbon Resources, LLC and Coal Energy Group 3, LLC).

The lease agreement between Carbon Resources, LLC and CEG3 contains five exhibits that provide for the transfer/leasing of surface land and mineral interest held by Carbon Resources, LLC to CEG3, LLC (the Permittee).

Exhibit 1 - COAL INFORMATION

Information in Article 1, Section 1.01(a) of Grant of Leasehold and Sublease, discusses the "Carbon County Leased Coal Estate". The description references a lease and agreement between Carbon County and Carbon Resources dated March 15th, 2017. Exhibit 1 contains this agreement. The Carbon County leased coal estate is referred to in the document as "Parcel 1" within the lease agreement. In Exhibit 1, the lease agreement between Carbon County and Carbon Resources will extend for a period of 10 years from the date of execution on March 15th 2017.

Exhibit 2 - CARBON RESOURCES SURFACE

Information in Article 1, Section 1.01(b) of Grant of Leasehold and Sublease discusses the lands which Carbon Resources holds a surface estate only. A copy of the deed conveying the estate to Carbon Resources is provided in Exhibit 2 of the lease agreement. The Carbon Resources surface land estate is referred to as "Parcel 2" within the lease agreement. In Exhibit 2, a special warranty deed is provided between Peabody Natural Resources Company and Carbon Resources, LLC. The document was signed on October 4th, 2007 by James C. Severn, Vice President of Peabody Natural Resources Company and signed by J.H. Reeves, President of Carbon Resources, LLC on September 28th, 2007..

Exhibit 3 - TELONIS LEASED LAND

Information in Article 1, Section 1.01(c) of Grant of Leasehold and Sublease discusses the lands described in a lease and easement agreement between the Telonis Family and Western Reserve Coal Company, Incorporated dated December 1, 2007. A copy of the agreement is provided in Exhibit 3. The Telonis leased surface is referred to as "Parcel 3". The term of the lease agreement shall remain in effect for a term of twenty five years from the date of execution of February 14th, 2008 (i.e. February 14th, 2033). The Permittee has been directed to clarify the relationship between Western Reserve Coal Company, Incorporated and Carbon Resources, LLC in the Identification of Interests Section.

Exhibit 4 - CARBON RESOURCES COAL

Information in Article 1, Section 1.01(d) of Grant of Leasehold and Sublease describes lands in which Carbon Resources holds the entire coal estate. A copy of the deed conveying the estate to Carbon Resources is provided n Exhibit 4 of the lease agreement and referred to as "Parcel 4" within the lease agreement.

Exhibit 5- LEASE AND SUB-LEASE OF COAL ESTATE

Exhibit 5 to the lease agreement provides a document titled Lease and Sub-lease of Coal Estate and Option Agreement Between Carbon Resources, LLC and Coal Energy Group 3, LLC (sub-lease). The sub-lease is effective as of January 21st, 2019 and is between Carbon Resources, LLC and Coal Energy Group 3, LLC. The sub-lease is signed by Pamela Reeves, Managing Member of Carbon Resources, LLC and Robert Nead of Coal Energy Group 3, LLC and Nick Sampinos, Attorney-in-Fact for the Telonis family. The sub-lease discusses how Carbon Resources leases parcels of property and minerals pursuant to a lease between the Telonis Family and Western Reserve Coal Company (Telonis lease, dated December 1st, 2007, See Exhibit 3). The terms of the sub-lease identifies an initial period of four years, commencing from the effective date. The sub-lease further indicates that the permitted use is that as described in the

Telonis lease (See Exhibit 3). The uses is described in Exhibit 3 as “Construction, operation and maintenance of buildings and facilities to be used in connection with operation of Lessee’s coal mine, as permitted by the Utah Division of Oil, Gas and Mining.”

Exhibit 5 also provides a copy of the Telonis Lease, as previously discussed and provided in Exhibit 3. Exhibit A (of the attached Exhibit 3, Telonis Lease) contains an amendment (dated January 21st, 2019). The amendment describes the lease agreement (provided in Exhibit 3) between Carbon Resources, LLC and Western Reserve Coal Company, LLC dated December 1st, 2007. It further identifies Carbon Resources as the “successor-in-interest to Western Reserve Coal Company under the Lease Agreement.” The amendment is signed by Nick Sampinos (Attorney-in-Fact for the Telonis family) and Pamela Reeves (Managing Member of Carbon Resources, LLC).

The application also provides a document entitled ‘Lease of Coal Estate Between Angelo G. Telonis, Thomas G. Telonis and John G. Telonis and Carbon Energy Group 3, LLC’. The document was signed by Nick Sampino as acting attorney for the Telonis Family (Angelo, Thomas and John) on December 6th, 2018. Robert Nead signed the document as the authorized representative for CEG3 on December 17th, 2018.

The Permittee must place the document entitled ‘Lease of Coal Estate Between Angelo G. Telonis, Thomas G. Telonis and John G. Telonis and Carbon Energy Group 3, LLC’ in succession with the other legal instruments and documents provided in the confidential folder. The current application places this document after hundreds of pages cultural resource and coal resource information. To ensure the permit is clear and concise, place this document with the other legal documents provided.

The application also provides new documentation relative to Western Reserve Coal. In Section R645-301-114, the Permittee indicates that “Western Reserve, Incorporated no longer exists and all titles, leases, properties were forfeited in September, 2015. That foreclosure document is in the confidential file.” Upon review of the confidential file, a trustee deed and foreclosure and final sale document is provided. The cover letter (from George A. Hunt, Law Offices of Williams & Hunt) dated September 29th, 2015 provides a copy of a Trustee’s Deed (dated September 21st, 2015).

In Exhibit 4, the Permittee provides a copy of a Conditional Use Permit from Carbon County for the construction of the Kinney No. 2 Mine. The date of issuance is September 20th, 2010 to Carbon Resources, LLC. Based on information provided by the Permittee, it is the Divisions understanding that the aforementioned conditional use permit from Carbon County is still valid and that prior to the issuance of any building permits (from either Carbon County or Scofield Town) Carbon County planning officials will need copies of all applicable permits from DOGM, and Utah Department of Environmental Quality.

Deficiencies Details:

The information provided does not meet the requirements of the Regulations for Right of Entry. The following deficiencies must be addressed prior to final approval:

R645-301-114: The Permittee must provide an executed/signed copy of the ‘Lease and Sub-lease of Coal Estate and Option Agreement between Carbon Resources, LLC and Coal Energy Group 3, LLC’. Carbon Resources, LLC Manager Pamela Reeves signed the document on September 25th, 2018. A signature from a Coal Energy Group 3, LLC representative is not provided.

R645-301-114, -121.200: The Permittee must place the document entitled ‘Lease of Coal Estate Between Angelo G. Telonis, Thomas G. Telonis and John G. Telonis and Carbon Energy Group 3, LLC’ in succession with the other legal instruments and documents provided in the confidential folder. The current application places this document following hundreds of pages of cultural resource and coal resource information. To ensure the permit is clear and concise, please place this document with the other legal documents provided.

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Legal Description

Analysis:

The application meets the State of Utah R645 requirements for Legal Description and Status of Unsuitability Claims.

The proposed mine site is not located within the boundaries of a National Park System, National Wildlife Refuge, National System of Trails, National Wilderness Preservation System nor a Wild and Scenic River System. There are no

public parks or cemeteries within 100 feet of the permit boundary. The Scofield Cemetery is located approximately 950 feet south and 685 feet west of the permit boundary. There are no National System of Trails or Wild or Scenic Rivers System resources in the permit boundary. Map 14, as well as the cultural resource survey found in Exhibit 3-1 (Confidential), depicts the location of cultural and historical resources in and around the permit area, including sites eligible for the National Register of Historic Places.

Mining operations will be conducted within 100 feet of Utah State Highway 96 (public road). Per R645-103-234.200, the Permittee must obtain necessary approvals from the authority with jurisdiction over the road. In Section 115.300 on page 1-20 of the application, the Permittee indicates that access approval has been obtained from the Utah Department of Transportation (UDOT). In Exhibit 4, a copy of a Conditional Access Permit issued by the UDOT is provided. The Conditional Access Permit was issued on February 27th, 2019. In addition to a copy of the Conditional Access Permit, a copy of a pre-application meeting summary between the Permittee and UDOT is provided as well as a plan view drawing of the acceleration lane additions for the mine site.

Prior to constructing the mine site, the installation of the acceleration lanes will be required by the Division. Upon reviewing the Conditional Access Permit discussed above, the document contains a provision that discusses how prior to construction of the acceleration lanes, an encroachment permit is required by UDOT in order to allow work to be conducted in state right-of-way. Per discussions with UDOT representatives and DOGM staff, an encroachment permit is typically issued within 24 hours of submission provided the appropriate paper work and information is provided (i.e. bond, insurance, traffic management plan). UDOT indicated that this procurement of an encroachment permit is typically obtained by the contractor hired to perform the work within state right-of-way.

R645-103-224.510 and -103-235.200 require the owner of a dwelling located within 300 feet, measured horizontally, of the proposed mine site must provide a written waiver consenting to coal mining and reclamation operations. Exhibit 4 provides a Dwelling Within 300 Feet Waiver letter from Jim Levanger, Treasurer L2H Enterprises Inc. The document was signed by Mr. Levanger on February 22, 2019 and states, "As the owner of the property, Carbon County Parcel No. 18-433-2, L2H Enterprises, Inc waives all objections to which Coal Energy Group 3, LLC seeks to secure a permit from the Utah Department of Oil, Gas and Mining to conduct coal mining, reclamation activities, and other mining activities and processes". Mr. Levanger is the owner of the small general store located across SR 96 from the proposed mine site.

A legal description for the proposed permit boundary is provided on page 1-20. The permit boundary is shown on Map 4, Regional Land Use Map and on Map 13, Surface Facilities Map.

The reviewer is referred to pages 1-18 and 1-19, R645 301-114.100, (Documentation of Ownership). They include legal descriptions of the Fee surface and Leased surface boundaries. Page 1-20 includes a legal description of the of the permit boundary. The text on pages 1-18 and 19 of the application include a reference to a lease area and permit area boundary maps 11 and 12. The maps are to a scale of 1"=1000' that clearly show the boundaries of the lease and permit areas in order to verify the legal description.

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Permit Term

Analysis:

The application meets the State of Utah R645 requirements for Permit Term.

In Section 116.100 on page 1-21, the application discusses a permit term of 5 years. The proposed timetable for each phase of mining and reclamation is discussed in Section R645-301-500, Engineering Design, Operation and Reclamation Plans. The applicant has not requested a longer term, but has projected a twenty year life of mine. The mining sequence is shown on Map 15 for the 448.14 acre permit area.

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Public Notice and Comment

Analysis:

The application meets the State of Utah R645 requirements for Public Notice and Comment.

The Permittee provided the Division with a proof of publication affidavit from ETV News. ETV News is a weekly newspaper of general circulation published in Price, Utah in Carbon County. The public notice was published for four consecutive weeks: December 19th, December 27th, January 3rd and January 9th, 2019.

In response to the public notice, the Division received comments from Wolverine Fuels/Canyon Fuel Company, LLC (dated February 11th, 2019). The commenter has not requested an informal conference. The comment letter identified two areas of concern. The first is that the Skyline Mine operates a waste rock facility that is located south of the proposed Kinney No.2 Mine site. They want the Division to ensure that the quality and stability of the waste rock site is protected from adverse impacts as a result of the proposed mining. The second concern raised was in connection to potential public safety/traffic issues that could arise. The Skyline Mine ships a significant amount of coal via truck along Highway 96. Highway 96 is located directly adjacent to the proposed Kinney No. 2 mine site. The Permittee has proposed the addition of turn lanes/truck entrances to the mine site in an effort to alleviate the concerns associated with potential public safety and truck traffic.

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Filing Fee

Analysis:

The application meets the State of Utah R645 requirements for filing fee.

The Permittee paid the requisite filing fee to the Division on December 7th, 2018.

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Permit Application Format and Contents

Analysis:

The application meets the State of Utah R645 requirements for Permit Application Format and Contents.

A notarized statement as to the veracity and accuracy of the permit application was provided to the Division from Larry Johnson, Manager CEG3. The application has been formatted to correspond to the major sections/chapters State of Utah R645 rules.

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Reporting of Technical Data

Analysis:

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

In section R645-301-130 on page 1-23, the Permittee provides the names of the persons who collected and analyzed the data. Technical data presented throughout the application is accompanied by the name(s) of the persons who obtained and analyzed the data.

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Maps and Plans

Analysis:

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

In section R645-31-140 of the application, the Permittee indicates that all maps in the application are based on either U.S. Geological Survey Mapping or site specific mapping developed using surveyed aerial control and accepted aerial photogrammetry methods. Maps depicting the permit and adjacent area were produced at a scale of 1" = 1,000', or 1"=2,000' for larger areas. Smaller area coverage maps have scales down to 1"=100'.

Maps and plans are referenced in the Environmental Resource Information, Operational Plan and Reclamation Plan section of the Technical Analysis.

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Completeness

Analysis:

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

The Kinney No. 2 Mine permit application package (PAP) was received on November 20th, 2018. The filing fee was received by the Division on 12/7/2018. The PAP was determined to be administratively complete on 12/12/2018. The

Environmental Resource Information

General

Analysis:

The application meets the State of Utah R645 requirements for Environmental Resource Information.

Descriptions of the existing, pre-mining environmental resources within the proposed permit and adjacent areas that may be affected or impacted by the proposed Kinney No. 2 Mine are provided in the Permit Application Package (PAP). The PAP's chapters (1-9) are formatted to that of the major sections of the State of Utah R645 rules (e.g. Chapter 1 corresponds to the R645-301-100 rules relative to ownership and control, Chapter 2 corresponds to the R645-301-200 section that pertains to soils information).

The proposed Kinney #2 Mine is located in Pleasant Valley, one half mile north of Scofield, Carbon County, Utah and east of and adjacent to Utah State Highway 96. The proposed Kinney #2 Mine permit area covers an area of approximately 448 acres. Surface facilities will be located at the outcrop of the Hiawatha Coal Seam, on relatively flat areas near the portal and adjacent the highway. The proposed mine facilities area has been extensively disturbed by previous mine development, highway construction, and AMR projects completed in the 1980's. To the extent possible, the Applicant has designed the facilities to minimize additional disturbance, and entry will be via an approximately 600 foot wide corridor between old abandoned mine workings.

The proposed mine location is dry and sparsely populated by quaking aspen, fir, and brush. Within the proposed permit area, topographic relief ranges from 7,650 feet near the highway to over 8,800 feet on the ridge to the east. All drainage eventually reports to Scofield Reservoir. With the exception of two perennial streams, drainages flow only in response to spring snowmelt or major thunderstorm events.

The underground mining operations are planned to recover coal from the Hiawatha Coal Seam, using continuous mining techniques, with no pillar recovery planned at this time. Mining will be restricted to fault-bounded blocks, and numerous faults will need to be crossed during mining operations. The Applicant has designed the mine for a nominal annual production rate of 800,000 tons of coal, with a projected life (within the currently proposed boundary) of approximately three years; there is a potential to extend the mine life significantly through acquisition of coal reserves to the south and east.

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General

Analysis:

The application meets the State of Utah R645-301-411 requirements for General Environmental Resource Information relative to land use.

The MRP provides a description of the existing, pre-mining environmental resources within the proposed permit and adjacent area.

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Permit Area

Analysis:

The application meets the State of Utah R645 requirements for Permit Area.

Chapter 5, Engineering of the PAP describes and identifies the lands subject coal mining and reclamation operations with the proposed Kinney No. 2 Mine.

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Historic and Archeological Resource Information

Analysis:

The application meets the State of Utah R645-301-411 requirements for Historic and Archeological Resource Information.

In the application for the proposed coal mine, a cultural resource inventory, pedestrian survey of 394.7 acres, for the areas to be disturbed in (T12S, R7E, Sections 32 and 33), in Carbon County Utah. The field work was conducted between May 16 and 25, 2007 by Keith Montgomery, Patricia Stavish and Adam Thomas. The inventory resulted in the location of one previously located site (42 cb2436), the documentation of three previously recorded sites (42cb477, 42cb479 and 42cb1032) and the documentation of five new sites (42cb2622 through 42cb 2626). Five of these sites are located within the proposed mine facilities disturbed area (42cb477, two locations, 42cb479, 42cb2622 and 42cb1032). Of these five, three were eligible (42cb477, 42cb479 and 42cb1032), under Criterion A for the NRHP.

A letter and map from Montgomery Archaeological Consultants, (MOAC), prepared by Jody Patterson provided additional information and clarification about the three eligible sites, (42cb477, 42cb479 and 42cb1032), at the proposed Kinney #2 mine location. According to the additional information, Site 42cb477 will be avoided although fencing is recommended. Site 42cb479, the original Kinney mine opened in 1920, contained 12 features. All but one of these features could be avoided. Only feature 12, thought to be a tipple area, would be potentially affected by the footprint of the disturbed area. The feature was 7 to 10 feet away from the disturbance area and only 4% of the site might be encroached upon by the proposed mine. Site 42cb1032 was a minor spur of the Utah and Pleasant Valley Railway. In as much as the adjoining rail system had been continually upgraded and maintained into the 1970's, two minor impacts to the spur would not have an adverse impact on the railroad grade. MOAC had recommended a "no historic properties adversely affected" determination for the three sites as discussed in the additional information and site map provided.

The Division agreed with MOAC's recommendation in 2010 and made a determination of no adverse effect to historic properties. Concurrence from the SHPO was received by the Division on October 13, 2010. Exhibit 21 includes a copy of the SHPO clearance. In March of 2019, SHPO reaffirmed the clearance from 2010 with a request to the operator to install fencing along the disturbed area adjacent to feature No. 12 of site 42cv479. This fencing would be additional to the fencing recommended for site 42cb477.

tmiller

Climatological Resource Information

Analysis:

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

The MRP provides the climatological information for the proposed permit and adjacent area in Section R645-301-724.400. The data was obtained from multiple SNOTEL meteorological reporting stations (Clear Creek #1, Clear Creek #2, Scofield Dam and Price, UT) located in close proximity to the proposed permit and adjacent area. The Clear Creek stations provide the temperature, precipitation and snowfall data from 1989 to 2018. The Price, UT, SNOTEL station provided the wind data from 1989 to 2018. Table 13 provides a summary of temperature data. Table 14 provides a summary of precipitation data collected at the Scofield Dam. Table 15 provides a summary of wind data obtained in Price, UT.

Based on the presented climatological data, the region of the permit and adjacent area is semi-arid. Due to significant elevation differences within the proposed permit and adjacent area, climatic conditions can vary. The area is characterized as temperate with summer high temperatures ranging from 75 to 80 degrees Fahrenheit and corresponding winter temperature ranges from 0 to -5 degrees Fahrenheit. The average annual precipitation for the area is approximately 14.6 inches.

Generally, temperature values are lower on the exposed high plateaus when compared with the lower slope/valley areas. Precipitation amounts also exhibit variation due to changes in topography, exposure and wind direction.

kstorrar

Vegetation Resource Information

Analysis:

The application meets the State of Utah R745-301-320 requirements for Vegetation Resource Information.

Section R645-303-321 of the application includes a description of the vegetation information. Exhibit 7 includes a vegetation survey, (TE&S species included), for the proposed disturbed area prepared by Mount Nebo Scientific. Vegetative communities, reference areas and TE&S plant species surveys are included in the exhibit. A current list of the TE&S plant, animal and fish species for Carbon County is included in the application and can be located in Chapter 3, Section 301-322.210, Table1, Pages 3-8, 9, 10, and 11. The list of maps section in Chapter 3 identifies map 1-A as "Facilities Area Vegetation". The TE&S list also includes a description and rationale of their presence or absence.

tmiller

Fish and Wildlife Resource Information

Analysis:

The application does not meet the State of Utah R645-301-322 requirements for Fish and Wildlife Resource Information.

Section R645-301-322 of the application includes a description of the fish and wildlife information. A list of the TE&S animal species for Carbon County obtained from the Utah Natural Heritage Program's Biodiversity Tracking and Conservation System is included. The list is dated November 1, 2017 and can be located in Volume 1, chapter 3, Section 301-322.210, Table 1, Pages 3-8, 9, 10, and 11. The TE&S list provides a description and rationale of their presence or absence.

As part of the Endangered Species Act Section 7 consultation, DOGM obtained a species list from USFWS on Feb. 25, 2019 which listed 1 bird (the Mexican spotted owl) and four fish (the bonytail chub, Colorado pikeminnow, humpback chub, and razorback sucker). There is no critical habitat for any of these species in or near the project area, however, water depletion from the Colorado River Basin must be considered for the endangered Colorado River fish. Information on page 3-64 regarding water depletion reveals a potential depletion of 30.7 acre-feet of water from the Colorado River system. This information was the primary consideration of consultation between DOGM and the U.S. Fish and Wildlife Service which occurred in 2011. The result of that consultation was that mitigation for this water depletion was to be handled through the Upper Colorado River Basin Endangered Fish Species Recovery Program. Because the annual depletion would result in less than 100 acre-feet of water being depleted from the Colorado River system each year, no depletion fee will be required for the project. Consultation with the U.S. FWS in 2019 indicated that the previous consultation in 2011 remains valid unless one of the following conditions is true: new information reveals that the effects of the proposed action will be in a manner or extent not previously considered, if the action has been modified in a manner that causes an effect to a listed species or habitat that was not previously considered, or if newly listed species or habitat designations have arisen that may be affected by the proposed action. None of these criteria have occurred so consultation with the U.S. Fish and Wildlife Service is considered completed for this proposal.

Map 2 in the Confidential section of the application shows the location of raptor nests as well as the species and status of the nests. However, the most recent data on this map is from 2007. As part of ongoing consultation with DWR, it was determined that updated raptor information is required in order to determine potential impact to raptor species in the project area. A commitment to conduct a survey prior to any surface disturbance at the mine site is included on page 3-13 of the application.

Mapping of wildlife information on Maps 2A-2G and includes black bear, blue grouse, moose, mule deer, elk, sage grouse, and snowshoe hare.

Chapter 3, Section R645-301.330, page 3-60 includes information relating to avoidance and/or enhancement of wetlands, riparian areas, and aquatic habitat.

According to the information in the Utah Natural Heritage Program database species of concern listed in the project area include the bald eagle and sandhill crane and river otter in the vicinity of the project area (letter from Sara Lindsey to Ben Grimes dated August 13, 2007). Page 3-58 of Section R645-301.322.300 states that a "request for updated information from the UNHP has been requested (November 9, 2018). Results from this request are forthcoming." It is the understanding of DOGM that this updated information has been provided by the Utah Natural Heritage Program and should be included in the MRP.

Deficiencies Details:

The application does not meet the State of Utah R645-301-322 requirements for Fish and Wildlife Resource Information. The following deficiencies must be addressed prior to final approval:

R645-301-322: Updated information from the Utah Natural Heritage Program must be included in the application. A raptor survey report and updated map must also be included in the permit application.

tmiller

Soils Resource Information

Analysis:

The information provided meets the requirements for the Utah R645 soil survey.

An area of 36.7 acres, East of Scofield, Utah, in T 12 S, R7 E Sections 33 and 28 was surveyed by Bruce Chessler in 2006 and 2007. Elevations are between 7,500 and 7,900 ft. The undisturbed soils are mapped as Mollisols and Alfisols (Map Units 1B, 2A, 2B, 3A). These undisturbed soils have a 10-15 inch "A" horizon and 2 – 3 feet of very stony to bouldery subsoil. Undisturbed area vegetation is sagebrush on the West and South facing slopes, and aspen/snowberry on the North to East facing slopes.

Over half the area is reclaimed, mined land which is separated by slope into Map Units DA (0 – 20% slope) and DB (20 – 50% slope). Reclaimed areas are dominated by grasses, rabbitbrush and Wyoming big sagebrush. Staging areas, haul roads, portals and mine dumps were reclaimed with a variable mixture of soil, rock, and reclaimed coal (Ex. 6, p. 9). Mr. Chesler's report characterizes the chemistry of the disturbed soils and their potential for salvage. The full report is found in Exhibit 6.

Exhibit 6 includes field description of soil pits, laboratory analysis of samples taken by horizon, and a soil map (Figure 1). The soil survey classifies the soil into five map units: DA (0 – 20% slopes previously disturbed land); DB (20 – 50% slopes previously disturbed land); 2A (Typic Argixeroll-Typic Haploxeroll complex, 0 – 35% slopes); 1B (Typic Argicryoll Consociation (35-70% slopes); 2B Typic Argixeroll Consociation (35 – 70 % slopes). These map units are described and representative pedons are provided for each unit.

Mr. Chesler concludes that "soil salinity, pH, calcium carbonate percentage, and plant nutrition do not pose any limitations to the plant growth medium." However, rock content greater than 50%, steep slopes (exceeding 50%), and the unknown quantity of coal within the salvage depth all indicate that final volumes of soil recovered will deviate from the projected salvage volumes. Figure 1 and Table 8 of Exhibit 6, project that 69,092 CY of soil might be recovered from 27.3 acres on the East side of SR96. The deepest soils are found in concave slope positions (Map Unit 1B) and on flood plain terraces and drainages (Map Unit 3A) (Ex. 6, p. 9).

pburton

Soils Resource Information

Analysis:

The application meets the State of Utah R645-301-411 requirements for Soils Resource Information relative to biology.

Exhibit 7, Vegetation Information, provides total living cover estimates for both the disturbed (40%) and undisturbed (64%) vegetation types. Table 25 in Chapter 3, page 3-2 provides an estimate of productivity for each vegetative community type.

tmiller

Land Use Resource Information

Analysis:

The application meets the State of Utah R645-301-411 requirements for Land Use Resource Information.

The land use classifications begin in Section R645-301-411.100 on page 4-2 of Chapter 4 and are identified as the Carbon County Watershed and Mountain Range zones, and the Scofield Town zones including Residential, Commercial and Agricultural zones. They are identified on Map # 4: The Regional Land Use & Zoning Map. The coal reserves currently controlled by the applicant are found beneath the Carbon County Watershed Zone, which does not allow the construction of coal mining surface facilities. Surface facility construction will be limited to the Carbon County Mountain

Range Zone and the Scofield Town Commercial Zone. There is no area in the permit boundary in the Scofield Town Residential Zone or the Scofield Town Agricultural Zone, though it does abut the permit boundary on the west as seen on Map 4.

tmiller

Alluvial Valley Floors

Analysis:

The information provided meets the requirements of Alluvial Valley Floor identification. The application identifies an AVF adjacent to the proposed permit area.

The alluvial valley floor is discussed in Chapter 9 and shown on Map 32. The Permittee states that the requirements of R645-302-321.100 pertain solely to surface coal mining and reclamation operations. However, the Rule heading, R645-302-320, clearly addresses "coal mining and reclamation operations," the definition of which includes surface impacts of underground coal mining operations. Therefore the application must evaluate the permit area and adjacent area for the presence of an alluvial valley floor. As stated in the Application, the information is collected, because it is pertinent to the probable hydrologic impact of the underground mining operation.

320. Alluvial Valley Floors. R645-302-320 applies to any person who conducts or intends to conduct coal mining and reclamation operations on areas or adjacent to areas designated as alluvial valley floors.

The existence of an alluvial valley floor with irrigated pastures and areas of subirrigation along Mud Creek in Pleasant Valley below the Utah No. 2 Mine (now the reclaimed White Oak Load Out) was previously established by the Division (1984 Technical Analysis of the Valley Camp Mine, ACT/007/001, and Valley Camp MRP Map R645-301-411.100 Premining Land Use Map).

Regional Surface Geology Map 6, Regional Geology Map, illustrates Mud Creek flowing through alluvial sediments adjacent to the mine site permit area. Map 1A identifies many acres of pastureland between Hwy 96 and the railroad tracks. The proposed site is situated in an area that has been zoned agricultural (Map 4, Regional Land Use Map). Mine Surface Facilities Map 14 illustrates the location of an irrigation ditch on the proposed mine site. Although the irrigation ditch is not in use (Chapter 9, R645-302-322.100), cross section A-A' on Map 16 Mine Surface Facilities Area Cross Sections, shows the irrigation ditch will be culverted during mining and restored after mining, to preserve the conveyance for future use.

As illustrated on Map 32, the AVF follows both sides of Mud Creek to the Scofield Reservoir. The AVF is outside of the proposed permit boundary, which is west of SR 96. Map 32 outlines an AVF (alluvial deposits) and a "Quasi-AVF" area (area with the potential for flood irrigation), the soil map units, the locations of the Scofield Ditch Company ditches. Map 32 highlights the AVF on the East side of Mud Creek in shades of green and provides a table of AVF acreage by landowner on the East side of Mud Creek. The AVF extends across mud creek to the West as can be seen by the blue hatched AVF area designation.

Productivity estimates are given for the Silas soil map unit as cited in the 1988 NRCS publication, Carbon County Soil Survey. Silas Soil is the main component of both Map Unit 108 and 109, along stream channels and in low lands. The Silas soil is in the Mountain Meadow range site, with an expected annual productivity of 3,000 lbs/ac, with an estimated carrying capacity of 1 AUM/acre (Chap 9, Livestock capability). The Division has observed that the Jones and Smiths run a sizeable calf/cow operation (landowners for areas 1 – 9), but that the Hammond land (area 10, across the highway from the proposed mine site) is not presently in agricultural use.

A comment was received during the (2008) public comment period that adequate information was not available in the application to ensure protection of renewable resource lands. In accordance with R645-302-320, the application includes a description of the potential for agricultural activity for the predominant Silas Loam soil within the adjacent AVF. The application describes Scofield Ditch system as the source of irrigation for the adjacent lands. The East Branch ditch divides as shown on Map 32. The last successful use of the ditch was 25 years ago, according (Productivity discussion, Chap 9). The applicant has provided a map identifying the adjacent [agricultural] landowners, identifying subirrigated (AVF) and potentially irrigated (Quasi-AVF) lands, showing all irrigation ditches, and defining the extent of the adjacent alluvial valley floor in Pleasant Valley.

Map 32 does not extend north to take in the mouth of Miller Creek. The Applicant indicates that Miller Creek will be addressed during future expansion (Chapter 9, Discussion).

Alluvial Valley Floors

Analysis:

The application meets the Alluvial Valley Floor Determination requirements as required by the State of Utah R645-Coal Mining Rules.

The alluvial valley floor is discussed in Chapter 9 and shown on Map 32. The Permittee notes that the requirements of R645-302-321.100 pertain solely to surface coal mining and reclamation operations. However, the Rule heading, R645-302-320, clearly applies to both underground and surface coal mining operations.

320. Alluvial Valley Floors. R645-302-320 applies to any person who conducts or intends to conduct coal mining and reclamation operations on areas or adjacent to areas designated as alluvial valley floors.

As stated in the Application, the information is collected, because it is pertinent to the probable hydrologic impact of the underground mining operation.

The existence of an alluvial valley floor with irrigated pastures and areas of subirrigation along Mud Creek in Pleasant Valley below the Utah No. 2 Mine (now the reclaimed White Oak Load Out) was previously established by the Division (1984 Technical Analysis of the Valley Camp Mine, ACT/007/001, and Valley Camp MRP Map R645-301-411.100 Premining Land Use Map).

Regional Surface Geology Map 6, Regional Geology Map, illustrates Mud Creek flowing through alluvial sediments adjacent to the mine site permit area. Map 1A identifies many acres of pastureland between Hwy 96 and the railroad tracks. The proposed site is situated in an area that has been zoned agricultural (Map 4, Regional Land Use Map). Mine Surface Facilities Map 14 illustrates the location of an irrigation ditch on the proposed mine site. Although the irrigation ditch is not in use (Chapter 9, R645-302-322.100), cross section A-A' on Map 16 Mine Surface Facilities Area Cross Sections, shows the irrigation ditch will be culverted during mining and restored after mining, to preserve the conveyance for future use.

As illustrated on Map 32, the AVF follows Mud Creek to the Scofield Reservoir. The AVF is outside of the proposed permit boundary, west of SR 96. Map 32 outlines an AVF (alluvial deposits) and a "Quasi-AVF" area (with a potential for flood irrigation), the soil map units, the locations of the Scofield Ditch Company ditches, and provides a table of AVF acreage by landowner. Productivity estimates are given for the Silas soil map unit as cited in the 1988 NRCS publication, Carbon County Soil Survey. Silas Soil is the main component of both Map Unit 108 and 109, along stream channels and in low lands. The silas soil is in the Mountain Meadow range site, with an expected annual productivity of 3,000 lbs/ac, with an estimated carrying capacity of 1 AUM/acre (Chap 9, Livestock capability). The Division has observed that the Jones and Smiths run a sizeable calf/cow operation (landowners for areas 1 – 9), but that the Hammond land (area 10, across the highway from the proposed mine site) is not presently in agricultural use.

Map Unit 108, Map 32 does not extend north to take in the mouth of Miller Creek. The Applicant indicates that Miller Creek will be addressed during future expansion (Chapter 9, Discussion).

The MRP provides information that examines the presence of an Alluvial Valley Floor in Chapter 9, Section R645-302-320. As required by R645-302-321.300, the Division will determine that an alluvial valley floor (AVF) exists if it finds that:

1. Unconsolidated streamlaid deposits holding streams are present; and,
2. There is sufficient water to support agricultural activities as evidenced by:
3. The existence of flood irrigation in the area in question or its historical use;
4. The capability of an area to be flood irrigated, based on stream flow water yield, soils, water quality and topography; or,
5. Subirrigation of the lands in question derived from the ground water system of the valley floor.

Beginning on page 9-3, the MRP discusses AVF's within the permit and adjacent area. Based upon the aforementioned criteria, an AVF is located within the adjacent area (west of SR 96) of the permit area. Map 32, *AVF Evaluation Map* depicts the AVF location. Map 6, *Regional Surface Geology Map*, depicts alluvial material directly adjacent to Mud Creek on either side of the stream channel. The areal extent of the alluvial material adjacent to Mud

Creek is relatively small (limited to within less than 500 feet of the Mud Creek stream channel). However, an irrigation network has been identified; evidence to the existence of flood irrigation in the adjacent area. The source of the irrigation water for the AVF area is Mud Creek. The water from Mud Creek has been historically utilized for irrigation purposes in this area with an irrigation network originating well upstream from the permit area. The permit describes the Scofield Ditch System as the source of irrigation water for the adjacent land outside the permit area. The East Branch Ditch divides as shown on Map 32. One irrigation ditch flows through the southwestern corner of the permit area. Based upon research conducted by the Permittee, the irrigation ditch has not been utilized for approximately 25 years. The ditch will be routed into a culvert that will be maintained throughout the life of the mine. During reclamation, the pre-existing drainage characteristics of the ditch will be restored. Potential impacts to the function of the AVF are discussed in Section R645-302-322.100. The potential for the AVF to be impacted by the mining operations are considered negligible for the following reasons:

1. Mining will occur well above the regional water table (as presented in Chapter 7 of the MRP). As a result, the potential for ground water interception of the regional water table is considered negligible. Additional ground water investigations will be conducted as mining progresses eastward. However; based upon the baseline information provided by the Permittee, it appears that any ground water component that may contribute recharge to the AVF area adjacent to the permit area will not be affected by mining activity. Surface runoff will be controlled via the storm water drainage system (See Chapter 7). All surface runoff generated during snowmelt and precipitation events will be routed to Sediment Pond No. 1. A Utah Pollutant Discharge Elimination System has been obtained by the Permittee and establishes water quality/effluent standards for any discharge that could potentially enter the AVF area.
2. The source of irrigation water for the AVF area comes from Mud Creek at a diversion point located upstream of the mine site. As can be seen from Map 32, irrigation ditches supplying water to the AVF area are part of the Scofield Ditch system. The diversion point for this system is located approximately $\frac{3}{4}$ of a mile south of the most southern point of the permit area.
3. The only ditch that supplies water to the AVF that is located in close proximity to the mine site has not been utilized for an extensive period of time as evidenced by the vegetation present in the channel and general state of disrepair.
4. With the exception of the snow and rainfall that is captured within the disturbed area of the mine, all adjacent undisturbed drainage will be routed around the mine during operations and interim reclamation and thus still report to the adjacent AVF area.

The MRP identifies a "Quasi AVF" area that is much closer to permit area on Map 32. The existence of historic flood irrigation and the capability of the mine-site to be irrigated have been documented. However, the unconsolidated streamlaid deposits required for an AVF are not present within this area and as such do not meet the criteria of an AVF. The MRP discusses the geology of the permit area relative to AVF's beginning on page 9-6. Pleasant Valley (located directly west of the permit area) is a graben produced by faulting. Based upon the extent of the valley floor relative to the size of the Mud Creek drainage and resulting flows, it seems apparent that the valley floor of Pleasant Valley was primarily the result of faulting and not by fluvial processes solely. The result of this explains the minimal amount of streamlaid deposits located directly adjacent to the Mud Creek stream channel (i.e. the identified AVF).

In summary, the coal seam to be mined is located well above the regional water table. As a result, the possibility that mining activity could interrupt or impact recharge to the identified AVF is minimal. In addition, the irrigation water that supplies the AVF is derived from Mud Creek at a diversion point upstream of the proposed mine site. Based upon a Utah Department of Environmental Quality TMDL analysis of Scofield Reservoir, 87% of the inflow to the Scofield reservoir comes from Fish and Mud Creek. The proposed mining activity poses a minimal potential for interrupting or impacting these drainages due to its proximity to the drainages and the utilization of first mining practices only (i.e. no planned subsidence).

kstorrar

Prime Farmland

Analysis:

The application meets the State of Utah R645 requirements for Prime Farmland reconnaissance evaluation within the permit area.

The NRCS determined the land was not prime farmland (Figure 2 of Exhibit 6). The Division concurs with the NRCS, due to the fact that the land has been historically used for mining (Map 5) and was reclaimed by the Division under the Scofield Abandoned Mine Reclamation project (AMR/007/904). Although the remnants of a diversion ditch exist within

Geologic Resource Information

Analysis:

The application meets the State of Utah R645 requirements for Geologic Resource Information.

The application provides geologic resource information for the proposed permit and adjacent area in Chapter 6.

Chapter 6 contains descriptions of the Geology for the proposed mine site and adjacent area. These include stratigraphy, lithology, structure, and faults and joints, the coal seam to be mined, rider seams, and underlying and overlying strata. Sources for the geologic information are in Section 624.130 Figure 3, Stratigraphic Column Kinney Area provides a cross-sectional view of the proposed Kinney No. 2 permit and adjacent area. Cross sectional figures 6 through 9 provide illustrative depictions of the four major north-south grabens that are predominant structural elements in the vicinity of the proposed Kinney No. 2 Mine. Lines of sections are provided on Figure 4, Regional Geology and X-Section Lines and Figure 5, Hiawatha Top Structure and X-Section Lines. Figure 6, W-E Structure X-Section A-A' and Figure 8 (N-S Structure X-Section B-B' depict the piezometric surface of the regional water table. Figure 7, W-E Structure X-Section B-B' and Figure 9, N-S Structure X-Section D-D' do not depict the regional water table. Figure 11, Hiawatha Thickness and Mining Blocks is provided in Exhibit 3 confidential information.

Information on acid- or toxic forming or alkalinity-producing materials and their content in the strata immediately above and below the coal seam to be mined is in Chapter 6 under Section 624. Table 4 lists Roof and Floor Samples with data from Acid Forming and Neutralization Potential Analysis. Table 4A shows characteristics of the "reclaimed coal" buried on-site by AML, and Exhibit 6 (Soils Information) contains the Lab analysis sheets. Table 5 presents the chemical analysis parameters used to evaluate coal, roof, and floor materials. Exhibit 19 contains the non-confidential data and confidential data are in the confidential folder. lab sheets. Additional lab sheets with data including Sulfur Forms of Hiawatha Seam Coal can be found in Exhibit 3 (confidential). Coal overburden and interburden characteristics are presented on page 6-25.

Section 624 discusses roof and floor rock characteristics. Table 4 presents % saturation, pH, EC, and acid and neutralization potential data for samples taken from the roof and floor of the Hiawatha Coal Seam. Map 7 shows borehole locations. Section 627 presents the information on overburden thickness and geology, and Table 5A contains information on strength of the roof and floor materials. The Applicant submitted confidential drilling data for nine holes drilled in 2006. The data include geophysical logs; core logs; cuttings logs; deviation logs; coal, roof, and floor quality analysis lab sheets; completion diagrams; and a data checklist. These document the lithologic character of coal and roof and floor lithologies. Table 5A in Chapter 6 depicts physical properties of coal, roof, and floor material. Exhibit 19 contains the Agapito Associates, Inc. rock mechanics report and lab sheets.

Lab data sheets documenting chemical analyses of the coal seam, including sulfur forms, are located in Exhibit 3 and with the previously submitted drilling data.

Because there will be only first mining and no pillar pulling, there is no subsidence control or subsidence monitoring plan.

Section 631 describes the method the Applicant will use to seal bore holes. Holes to be used for ground-water monitoring will be cased, completed and developed as a monitoring well consistent with Figure 21 and as described in Chapter 7 Section R645-301-738. Conversion of a water-monitoring well to a water well will comply with R645-301-731.400.

schriste

Hydro Sampling and Analysis

Analysis:

The application meets the Sampling and Analysis requirements of the State of Utah R645-Coal Mining Rules.

In section R645-301-723 of the MRP, the Permittee states, "All water quality samples will be analyzed according to the most current copy of the Standard Methods for the Examination of Water and Wastewater, a joint publication of the American Public Health Association, the American Water Works Association and the Water Pollution Control

Federation.”

Additionally, in Table 20, Hydrologic Monitoring Schedule, the Permittee indicates that quarterly lab water quality results will be submitted to the Division within 90 days of the end of the quarter and that an annual hydrologic review and summary of data will be submitted on or before June 1st.

kstorrar

Hydro Baseline Information

Analysis:

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

The MRP presents baseline ground and surface water information in Chapter 7 beginning in Section R645-301-724.100. The hydrologic characterizations are based on available regional information as well as ongoing water monitoring. Exhibit 9 contains a spring and seep survey conducted in the permit and adjacent area. Exhibit 10 contains field measurements through 2018, obtained from both ground and surface water resources in the permit and adjacent area. Exhibit 12 contains the analytical lab reports generated from the baseline data collection. Table 6, *Kinney #2 Baseline Monitoring Stations*, provides a comprehensive list of the ground and surface water resources that were monitored during the baseline data collection period. Map 10, *Regional Water Quality*, provides a depiction of the permit and adjacent area with Stiff Diagrams that correspond to the various baseline water monitoring points. Figure 18, *Basic Water Quality*, provides charts of total dissolved solids (TDS), total manganese (T-Mn) and total iron (T-Fe) for baseline water monitoring stations. Additionally, Figure 19 provides charts of water quality versus flow for the baseline water monitoring stations. Table 10 provides a water quality summary for both ground and surface water.

Water right information has been compiled and presented in the MRP in several locations. Exhibit 13, *Water Rights* contains the print outs of the water rights located within the permit and adjacent area. Table 11, *Ground Water Rights* and Map 30, *Ground Water Rights Locations* provide a comprehensive listing and depiction of the ground water rights located within the permit and within a two mile radius from it. Table 12, *Surface Water Rights* and Map 31, *Surface Water Rights Locations* provide a comprehensive listing and depiction of the surface water rights located within the permit and within two mile radius from it.

Ground-water Information

The ground water characterizations and occurrences within the permit and adjacent areas were produced by the completion of a spring and seep survey, the completion of 15 water monitoring wells (completed within and outside the permit area at 11 different locations), geologic analysis of potential water-bearing strata and the analysis of water quality and quantity characteristics. Map 7, *Regional Hydrology* provides the names and locations of the seeps, springs and wells that are located within the permit and adjacent area. Map 8, *Works-Wells-Springs-Faults*, depicts the locations of the monitoring wells, identified springs and faults superimposed over the mine workings. Section 724.100 describes baseline water-quantity, seasonal flow rates and usage. Ground water rights are discussed on page 7-44 of the MRP. Map 30, *Ground Water Rights* depicts the location of the ground water rights located within and adjacent to the permit area. Table 11, *Ground Water Rights* lists the ground water rights depicted on Map 30. Field data collected from the monitoring wells is provided in Exhibit 10, *Surface and Ground Water Field Measurements*. Laboratory analytical reports generated from the baseline data collection process are provided in Exhibit 12 of the MRP.

Beginning in Section R645-301-724.100 of the application, the Permittee presents the baseline information utilized in characterizing the nature of the groundwater systems of springs and aquifers in the permit and adjacent area. Ground water resources are found in 1) shallow alluvial/colluvial valley fill deposits in the valley area west of the permit area; 2) perched ground water located in discontinuous sedimentary units in the Blackhawk formation and in adjacent faults; 3) ground water that has accumulated in existing underground mine workings; and 4) potentially a regional water table.

The data presented in the application indicates there are limited ground water resources within the permit and adjacent area. Based upon the information in the MRP and field investigations conducted by both the Permittee and the Division, a general lack of ground water in the permit and adjacent area due to the semi-arid conditions of the area, limited outcrop exposures for direct infiltration and steep slopes that accelerate storm water runoff thus limiting the amount of direct infiltration.

In preparing the ground water baseline characterization of the area, the Permittee installed an even spatial distribution of fifteen monitoring wells at eleven different locations within and adjacent to the permit area shown in Map 7. The wells

were also completed in an evenly space vertical distribution above, within, and below the coal seam to be mined. Quarterly monitoring began in 2006 and has continued with intermittent breaks up to the present. The monitoring wells completed above, within and below the Hiawatha coal seam are:

Above the Seam:

- CR 06-02 ABV (dry well)
- CR 06-03 ABV (water encountered)
- CR 06-09 ABV (water encountered)
- CR 10-11 (water encountered)
- CR 10-12 (water encountered)

In Seam:

- CR 06-01 (dry well)
- CR 06-02 (dry well)
- CR 06-05A (dry well)
- CR 06-09 (water encountered)
- WRN-2012-7 (dry well)

Below Seam:

- CR 06-01 BLW (dry well)
- CR 06-09 BLW (water encountered)
- WNR-2012-5 (water encountered)
- WRN-2012-7BLW (dry well)
- WNR-2012-8 (water encountered)

Water was encountered in eight of the fifteen wells. Monitoring well CR 06-03 ABV is located just outside the permit area on the north-eastern extent. Water was obtained above the coal seam in this well. CR 06-09 was completed within the coal seam approximately ½ mile east of the north-east corner of the permit area. Monitoring wells CR 10-11 and CR 10-12 were installed within the Pleasant Valley Graben on the western extent of the permit area. At this location within the graben, the Hiawatha Coal Seam is approximately 600' below the monitoring wells due to the extensive displacement of the fault in this area. Mining will not occur in the area of wells CR 10-11 a CR 10-12 due to the vertical displacement produced by the fault at the western boundary of the Eagle Canyon Graben and the subsequent lowering of the Hiawatha Seam in this area.

Based upon Map 7A, *W-E Section A-A'*, the water levels obtained at monitoring wells CR 06-03 ABV, CR 06-09 ABV, CR 06-09 and CR 06-09 BLW indicate that the Hiawatha Coal Seam is potentially within the water table at these locations. However; the mining projections/plan provided in Map 15, *Mine Plan Layout and Production Schedule*, show that mining will not occur within the Eagle Canyon Graben where monitoring wells CR 06-09 ABV, CR 06-09 and CR 06-09 BLW are located. Map 15 depicts the eastern most extent of mine workings stopping short of the western boundary of the Eagles Canyon Graben. As a result, the potential for impact of the ground water table in this location is minimal. However; in the future if mining activity is to be conducted east of the Eagle Canyon Graben, additional monitoring well installation and baseline data collection will be required. Based upon the data obtained from the monitoring wells, the coal seam to be mined is located above the regional water table.

The MRP provides a discussion of the regional stratigraphy of the permit and adjacent area in Section R645-301-724.100 of the application. The geologic formations in the permit and adjacent area are contained within the Blackhawk Formation. Figure 3, *Stratigraphic Column Kinney Area*, provides a cross-Sectional view of the local geology. The geology is an important factor in determining the characteristics of the ground water systems in the area. The Blackhawk formation is characterized by a sequence of alternating sandstone, mudstone and coal units. In ascending order, the major units of the Blackhawk Formation include the Panther Sandstone, Flat Canyon coal seam, Spring Canyon sandstone, Hiawatha coal seam, McKinnon coal seam and Haley Coal Seam. The sandstones are characterized as fine to medium-grained and are typically well cemented resulting in relatively low permeabilities. Ground water can be present in all of the major straigraphic units in the permit and adjacent area; however, all are considered to be poor to moderate aquifers.

Continuing in Section R645-301-724.100 the MRP identifies four aquifer systems within the permit and adjacent area. The four aquifer systems include: alluvial/colluvial aquifer system, perched/isolated ground water systems, stored mine

water system and the regional ground water system. A detailed discussion of each of the four systems begins on page 7-25 of the MRP.

The Permittee is basing their ground water characterization upon the completion of a seep and spring survey in June of 2006 (See Exhibit 9), exploratory well drilling and baseline data collection and field observations. Table 6, *Kinney #2 Mine Baseline Monitoring Stations*, provides a depiction of the monitoring/sampling events conducted at the ground water monitoring sites. Table 20, *Hydrologic Monitoring Schedule*, provides a list of the water quality parameters that were analyzed during the baseline data collection period.

The seep and spring survey identified limited ground water resources within the permit and adjacent area. Six active seeps and 27 active springs were identified within the permit and adjacent area. Map 7, *Regional Hydrology*, depicts the locations of these ground water resources. Table 9, *Seep and Spring Flow Summary*, provides a flow summary from the June 2006 spring and seep survey. This survey is adequate to quantify the springs and seeps within and adjacent to the permit area up to the current permitting time period of 2019. The Seep and Spring survey (the Survey) identified very few springs and seeps within the permit boundary. Eagle Springs 1, 1A, 2 and 3 as well as Aspen spring are the only springs identified within the permit boundary. However, the Survey identified many seeps and springs within Long Canyon (approximately $\frac{3}{4}$ of a mile from the eastern permit boundary), Miller Canyon and the UP Canyon moving east to west from the proposed permit area.

The baseline groundwater monitoring locations for Springs are evenly distributed within and adjacent to the Permit area to accurately quantify the entire shallow groundwater resource. The Spring and Seep survey in Exhibit 9 shows springs primarily occurring in Eagles Canyon on the eastern edge of the permit area and one spring, Sulphur Spring, occurring near the western edge of the permit area. Thus, by monitoring three of four baseline monitored springs within Eagles Canyon the majority of the groundwater resource is being quantified on the eastern edge of the permit. The baseline monitoring of Sulphur Spring is quantifying a representative groundwater resource on the western edge of the permit area. The springs have been monitored at both low and high flows beginning in 2005 and extending up to the present. The baseline water monitoring data will continue to be updated through the permitting process as more information becomes available.

Initially during the baseline data collection period, Angle Spring was selected as a representative spring/seep within the permit and adjacent area (namely Aspen Spring, Eagle 1, Eagle 1A, Eagle 2 and Eagle 3). The aforementioned springs are all located within the Eagle Canyon Graben. Angle Spring was sampled 12 times from September 2005 to October 2012 (See Exhibit 10, *Surface and Ground Water Field Measurements*) at which time, access to the spring was denied by the land owner. As a result, the Permittee selected Aspen Spring (located within the permit area, See Map 7, *Regional Hydrology*) for representative sampling of the seeps/springs within the permit and adjacent area. Aspen Spring has been visited 13 times with four of those visits producing measurable data (See Exhibit 10, Exhibit 12, Table 10 and Figure 17). Data collection at Aspen Spring was interrupted during 2009 due to lack of funding and no flow measurements were obtained during that year.

Per R645-301-724.100, the Permittee is required to, at minimum, approximate rates of discharge or usage for ground water resources. To that end, the Permittee has provided an estimate of Aspen Springs flow in Exhibit 10. The approximation is based on a pan evaporation method that takes into account the size of the pond and utilizes a basic water balance approach. Based upon the estimates, the flow range of Aspen Spring is approximately 2-5 gpm. The Permittee has indicated that additional water monitoring will be conducted on Aspen Spring as well as Eagle Springs 1, 1A, 2 and 3 to more accurately assess the quantity of flow from these resources (See Table 7, *Kinney Mine Operational Monitoring Stations*). The Permittee commits to collecting an additional 2 years of data from the aforementioned springs.

Based upon the approximation that the maximum flow from Aspen Spring is 5 gpm, and that Aspen Spring is representative of Eagle Springs 1, 1A, 2 and 3, the Permittee provides a commitment in Section R645-301-731.800 that "if the springs in the graben area are affected by mining, CR commits to replace the estimate quantity of Aspen Spring and the total of the flow measurements for the other springs in the graben area". Based upon the maximum estimate of flow from Aspen Spring (i.e. 5 gpm), the Permittee would be required to replace 25 gpm in the event that mining impacts these resources.

In summary, the baseline data presented in the MRP indicates that ground water resources within the permit and adjacent area are limited. Ground water resources are found in 1) shallow alluvial/colluvial valley fill deposits in the valley area west of the permit area; 2) perched ground water located in discontinuous sedimentary units in the Blackhawk formation and in adjacent faults; 3) ground water that has accumulated in existing underground mine workings; and 4) potentially a regional water table.

The ground water movement in the permit and adjacent area is limited by the generally low transmissivity values of the area geology and limited recharge due to the arid conditions of the site as well as limited outcrop exposures coupled with steep terrain.

Four of the five water monitoring wells that were completed within the Hiawatha Coal seam were dry with no ground water was encountered. Additionally, two of the five monitoring wells completed below the Hiawatha Coal seam were dry. Five wells (CR 06-03 ABV, CR 06-09, CR 06-09 ABV, CR 10-11 and CR 10-12) had water present above the Hiawatha Coal Seam. CR 06-03 ABV is located within the Eagle Canyon Graben. Due to the faulting in the graben, the coal seam is located below the regional water table. However; mining will not be conducted within the Eagle Canyon Graben (See Map 15, *Mine Plan Layout and Production Schedule*). Monitoring wells CR 06-09 and CR 06-09 ABV (a double completion monitoring well) are located nearly a half a mile north-east of the permit boundary on the ridgeline between Eagle and Long Canyons. In this location, the Hiawatha Seam is lower than the projected regional aquifer (See Map 7A, *W-E X-Section A-A*). Monitoring wells CR 10-11 and CR 10-12 are completed well above the Hiawatha Seam which is significantly lower in the area of these wells do to the extensive fault in this area.

Surface Water

The MRP presents water information in Section R645-301-724.200. Map 7, *Regional Hydrology* depicts the surface water resources within the permit and adjacent area. Map 31, *Surface Water Rights*, depicts the locations of the surface water rights within the permit and adjacent area. Exhibit 13, *Water Rights*, provides the written documentation of the water rights as provided by the Utah Division of Water Rights. Table 10, *Surface and Ground Water Quality Summary*, provides a basic statistical summary of the water quality information obtained during the baseline data collection. The permit and adjacent areas are located within the Upper Price River basin.

Surface water in the permit and adjacent areas is limited to Scofield Reservoir, perennial flows within Mud Creek, Miller and Long Canyon and ephemeral flows from various side drainages and Eagle Canyon. The permit and adjacent area fall within the Upper Price River watershed. Perennial streams within the area adjacent to the mine site are Mud Creek and Miller Canyon. These drainages are tributary to Scofield Reservoir. The perennial streams within the adjacent area include Mud Creek and Long/Miller Canyon. All of the other drainages within the permit and adjacent area are characterized as ephemeral (Monay Draw, Blue seal Draw, Kinney Draw, Columbine Draw, Jones Draw, UP Canyon and Eagle Canyon).

Baseline surface water monitoring data was collected at three surface water monitoring points: Miller Outlet, Mud Creek and Res-1. Map 7, *Regional Hydrology* depicts the location of these surface water monitoring points. Map 10, *Regional Water Quality* provides a depiction of the permit and adjacent area with corresponding water quality diagrams for the baseline water monitoring stations. There are no perennially flowing surface water features within the permit area, with these three baseline surface water monitoring points being located along perennial streams and the Scofield Reservoir adjacent to the permit area. These surface water monitoring features have been monitored for at low and high flows beginning in 2005 up through 2018.

Perennial Streams

No perennial streams are located within the permit boundary. Miller Canyon and Mud Creek are the only perennial streams located in the adjacent area of the permit boundary. Significant variation in flow has been recorded within these drainages. The baseline data presented in the application for Miller Canyon has noted variability from zero flow (in winter months when the stream is frozen) to 1.21 cubic feet per second (cfs) in the spring. Similarly, Mud Creek has produced flow variability's ranging from 11.0 cfs to 131.1 cfs.

The water quality data for these two drainages is presented in Table 10, *Surface and Ground Water Quality Summary*, Exhibit 12, *Surface and Ground Water Quality Data* and Figure 17, *Field Data*.

Intermittent Streams

No intermittent streams were identified within the permit and adjacent area. The Permittee has provided information in Exhibit 20, *Ephemeral Drainage Information* that discusses the drainages (other than the perennial area drainages of Mud Creek and Miller Outlet) located within the permit and adjacent area. Based upon that information as well as monitoring well information, the seven drainages located within or adjacent to the permit area (with the exception of Mud Creek and Miller Outlet) are ephemeral (See Ephemeral Streams discussion below).

Ephemeral Streams

Seven ephemeral drainages have been identified within the permit and adjacent area. Of the seven, four are within or cross a portion of the permit boundary (from North to South): Eagle Canyon, Kinney Draw, Columbine Draw and Jones Draw. The remaining three ephemeral drainages are located outside the permit boundary (from North to South): Monay Draw, Blue Seal Draw and UP Canyon.

In Exhibit 20, the Permittee characterizes the ephemeral nature of these drainages by utilizing photographs, analyses of the drainages 3D geometry, alluvial and vegetative material as well as their position relative to the water table. Monitoring well CR 06-01 BLW is located directly adjacent to the Jones Draw. Measurable ground water was not detected/encountered within this monitoring well. The bottom of the well screen is approximately 120 feet below Jones Draw. As a result, it's unlikely that the drainage receives any recharge from a ground water system thus characterizing it as an ephemeral (as opposed to intermittent) drainage.

Additionally, Exhibit 20 discusses how the 7 drainages outlined above are ephemeral based on the following observations:

- Relatively small drainage basins for these drainages,
- Low sinuosity,
- Absence of a defined channel,
- Minimal amounts of alluvium in the channel
- No noticeable difference between in channel vegetation and surrounding drainage basin vegetation.
- Virtual absence of bank and bed storage material.

Exhibit 10, *Surface and Ground Water Field Measurements* and Figure 17, *Field Data* documents 21 observations of no flow for Eagle Canyon, Kinney Draw, Columbine Draw, Jones Draw, Monay Draw, Blue Seal Draw and the UP Canyon drainage. The field visits were documented by Carbon Resources, LLC representative Benjamin Grimes. The field visits began in May of 2006 and with the exception of 2008 (based upon discussions with the Permittee, lack of funding at this time terminated active field work), extended to October of 2010.

Water Quality

As required by R645-301-724.100, the Permittee provided ground water quality data for total dissolved solids, specific conductance, pH, total iron and total manganese. Additionally, the Permittee provided baseline data for total suspended solids, total dissolved solids (or specific conductance), pH, total iron and total manganese for surface water monitoring stations as required by R645-301-724.200. Table 20, *Hydrologic Water Monitoring Schedule* provides a comprehensive list of additional analytical parameters that were analyzed. The list of additional parameters is derived from State of Utah Tech Directive 004, *Water Monitoring Programs for Coal Mines*. Water quality data obtained during the baseline data collection period is provided in numerous locations within the MRP. Exhibit 10 contains field measurements obtained from both ground and surface water resources in the permit and adjacent area. Exhibit 12 contains the analytical lab reports generated from the baseline data collection. Map 10, *Regional Water Quality*, provides a depiction of the permit and adjacent area with Stiff Diagrams that correspond to the various baseline water monitoring points. Figure 18, *Basic Water Quality*, provides charts of total dissolved solids (TDS), total manganese (T-Mn), sulfate and total iron (T-Fe) for baseline water monitoring stations over time. The figure aids in identifying the presence/absence of water quality trends. Additionally, Figure 19, *Water Quality vs. Flow* provides charts of water quality versus flow for the baseline water monitoring stations. Table 10 provides a water quality summary for both ground and surface water.

Ground water quality data was obtained from three of the fifteen wells (CR 06-03ABV, CR 10-11 and CR 10-12). The amount of water quality data obtained from monitoring wells was limited simply because little water was encountered (with the exceptions identified above). Water quality data was also obtained from Angle Spring, Aspen Spring, Eagle Spring and Sulfur Spring. Map 10, *Regional Water Quality*, provides a depiction of the major cations and anions identified during the baseline data collection period.

The data indicate that the general water chemistry of the ground water in the permit and adjacent area is a calcium bicarbonate type with some variations. Water quality from Angle and Sulfur Springs as well as from monitoring well CR 06-03ABV show a strongly calcium bicarbonate type water. Miller Outlet, Mud Creek and Res-1 are composed of slightly lower concentrations indicative of this water type. Mud Creek also contains higher concentrations of sodium potassium, magnesium and sulfate. An additional anomaly has been identified with Eagle Spring which shows distinctly higher quality sodium-calcium bicarbonate type water. As a result, it appears that there is a distinct difference between the water qualities of Eagle Spring when compared to the water chemistry data obtained from the other ground water monitoring sites.

Surface water quality data was obtained from Miller Outlet, Mud Creek, and Scofield Reservoir. Table 12, *Surface Water Rights* and Map 31, *Surface Water Rights Locations* provides a comprehensive list and location depiction respectively. The basic chemical characteristics of these surface water monitoring sites is displayed on Map 10, *Regional Water Quality*. Based upon the data presented in the MRP, the surface waters within the permit and adjacent areas are of a calcium-bicarbonate type, although Mud Creek shows higher components of sodium, potassium and sulfate than Scofield Reservoir and Miller Outlet. Angle Spring, Sulfur Spring and monitoring well CR 06-03 ABV were also found to be of calcium-bicarbonate type water and to have higher concentrations than that of surface water resources. As discussed, Eagle Spring exhibits different concentrations of basic anions-cations and is of higher water quality. As discussed above, Figure 19 provides charts for pH, conductivity, TDS and sulfate versus flow. A clear pattern showing variation in water quality relative to recorded flows is not readily apparent.

Water Wells

Four water wells have been identified within 1 mile of the permit boundary. Map 30, *Ground Water Rights* depicts the locations of these wells. No water supply wells are located within the permit boundary.

State Appropriated Water Rights

The MRP provides a comprehensive list and depictions of the State Appropriated Water Rights located within the permit and adjacent area. The water right information presented in the MRP was compiled in consultation with the State of Utah Division of Water Rights (DWRi).

Map 30, *Ground Water Rights Locations* and Map 31, *Surface Water Rights Locations* depict the locations of State Appropriated Water Rights within the permit and adjacent area.

Table 11, *Ground Water Rights* and Table 12, *Surface Water Rights* provide a comprehensive listing of the State Appropriated Water Rights located within the permit and adjacent area.

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Hydro Baseline Cumulative Impact Area

Analysis:

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

Information needed to meet the regulatory requirements of R645-301-725 is available from federal, state and a number of other sources. The Permittee is not required to provide data specifically for the CHIA determination, but may gather and submit such information. The Division is not limited to information in the MRP in preparing the CHIA; however, data presented in Chapter's 7 and 9 were utilized in the preparation of the CHIA.

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Hydro Modeling

Analysis:

The application meets the Modeling requirements of the State of Utah R645-Coal Mining Rules.

In Section R645-301-726, the MRP discusses the regional aquifer water modeling that was conducted. The Permittee utilized SERVCAD software with a triangulation interpolator and a 500 ft. grid size. Static water level data obtained from CR 06-09, CR 06-03ABV, CR 10-11 and CR 10-12 were utilized in constructing the model. Additionally, limiting data provided by the screened interval elevation in dry monitoring wells CR 06-01BLW and CR 06-05A was data input for the model. The perennial reaches of Mud Creek and Miller Creek were also utilized in constructing a 3D image of the regional aquifer system.

In order to the design the collection system ditches and culverts, the Permittee utilized Hydrologic Modeling Software (HEC-HMS) 3.1.0 developed by the Army Corps of Engineers using the Soil Conservation Service (SCS) curve number loss method and the SCS unit hydrograph transform method.

Drainage basins were delineated in AutoCAD by utilizing existing and proposed elevation contour data and the location of proposed pads and storm drainage facilities. Drainage basins were modeled in HEC-HMS using the SCS unit hydrograph transform method.

Probable Hydrologic Consequences Determination

Analysis:

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

The MRP discusses the probable hydrologic consequences beginning in Section R645-301-728.

Adverse Impacts to the Hydrologic Balance

Based upon the lack of ground water encountered during the baseline data collection, the potential for impacts to the hydrologic balance relative to ground water is considered minimal. The data obtained from the completion of fifteen monitoring wells both within and adjacent to the permit area shows no evidence of a lateral continuous aquifer or ground water system within or above the coal seam to be mined. It's anticipated that small perched ground water systems will be encountered, but the direct impact of that will be minimal. It would be expected (based on the baseline data) that loss of ground water from the perched ground water systems within the permit area would be very localized and characterized by low flow rates and low total flow volumes as these ground water systems are small.

The potential for intercepting the recharge for the springs located within the permit and adjacent area is considered minimal. Based on the data presented for ground water, the limited number of springs located within the permit and adjacent area are recharged by snowmelt and precipitation events at the surface. As mining will be constrained to first mining practices only (i.e. no subsidence) the potential for mining induced fracturing to intercept the recharge to these springs is considered minimal. Based upon a Utah Department of Environmental Quality TMDL analysis of Scofield Reservoir, 87% of the inflow to the Scofield reservoir comes from Fish and Mud Creek. The proposed mining activity poses a minimal potential for interrupting or impacting these drainages due to its proximity to the drainages and the utilization of first mining practices only (i.e. no planned subsidence).

Potential impacts to the hydrologic balance relative to surface water are also considered minimal. The Kinney No. 2 surface facility is confined to a very small area. No perennial or intermittent streams are located within the permit area. Surface water resources within the adjacent area are essentially limited to Mud Creek and Scofield Reservoir. With only first mining to be conducted (i.e. no subsidence) and the lack of any significant surface water resources within the permit area, the potential for hydrologic balance impacts relative to surface water is considered minimal. Mud Creek and Scofield Reservoir are located within the Pleasant Valley Graben approximately a half a mile from the mine works. The potential for the recharge to these surface water resources of being impacted as result of mining activity at the Kinney No. 2 Mine is considered minimal based upon the proximity of these surface water resources to the mine works and the limited ground water encountered during the baseline data collection period. The baseline data indicates that a regional water table may exist within the permit and adjacent area, however, based upon the drill logs of the fifteen monitoring wells and the lack of water encountered within the coal seam to be mined, it appears that the regional water table is located below the coal seam, thus the potential for the mining to intercept this ground water resource is considered minimal. As a result, any potential impact to the recharge of Scofield Reservoir and Mud Creek from the regional ground water table is considered minimal.

The ephemeral drainages that are located within the permit area will be effectively routed around the surface disturbance with the construction of the facilities drainage network and sediment control measures.

Based on available data and expected mining conditions, the mining and reclamation operation is not expected to proximately result in contamination, diminution or interruption of an underground or surface source of water within the proposed permit or adjacent area.

Sediment yield from the disturbed area

Sediment control structures will be constructed to minimize impacts as a result of increased sediment yield from the disturbed area. The MRP discusses the sediment control measures in Section R645-301-732. Exhibit 16, *Runoff Control Design Details* provides the calculations and design considerations utilized in designing the sediment control/drainage controls at the mine site.

All diversion ditches (disturbed and undisturbed), associated culverts as well as the sediment pond have been designed to the required performance standards outlined in R645-301-740. All storm water runoff and associated sediment load

generated from the disturbed area will report to the primary sediment pond where it will be retained and treated prior to discharge.

Temporary sediment controls and alternative sediment controls will be utilized in smaller areas that do not report to the primary sediment pond.

Flooding or streamflow alteration

The potential for flooding or streamflow alteration impacts is minimal. No perennial or intermittent streams are located within the permit area. Mud Creek is a perennial stream located 0.5 mile west of the permit area in the Pleasant Valley Graben. Mining impacts are not anticipated to affect Mud Creek given its proximity to the mine works. Miller/Long Canyon is a perennial drainage located approximately 1.5 miles north of the permit area. As with Mud Creek, given the proximity of this drainage as well as no anticipated subsidence impacts, the potential for flooding or streamflow alteration of this drainage is considered minimal.

Additionally, the primary sediment pond has been designed and will be built to be geo-technically stable, minimizing the potential for breaches that could cause flooding impacts. Flow routing through the sedimentation pond and other sediment-control devices will reduce peak flows from the disturbed areas, decreasing the potential for flooding in downstream areas. By retaining sediment on site in the sediment-control devices, the ditch elevations directly adjacent to the permit area on the west side (adjacent to SR 96) will be maintained.

Ground Water Impacts

Impacts to ground water resources within the permit and adjacent area are considered to be minimal given the overall lack of ground water encountered during the baseline data collection period (See Baseline Ground Water discussion above).

The following potential impacts to the ground water resources are identified in Section R645-301-728:

- Alterations of local ground water flow patterns
- Drainage of seeps/springs
- Alterations of recharge/storage/discharge relationships
- Localized increases in concentrations of TDS and other individual chemical constituents.

Alterations of local ground water flow patterns

Coal mining operations have the potential to cause ground water to flow into the mine. An alteration of ground water flow towards the mine workings could occur if a perched aquifer was encountered. Encountering these perched ground water systems can alter existing ground water storage as well as flow patterns. The result of such an impact could be the partial or full drainage of the perched system which can affect the discharge of receiving springs and seeps.

However, given the baseline data collected from the extensive monitoring well completions and subsequent data collection from those wells, it would follow that impacts to the hydrologic balance of the ground water resources in the permit and adjacent area are minimal based on the monitoring well completion diagrams (See Exhibit 11, *Monitoring Well Completion Details*) and the lack of ground water encountered. Monitoring well CR 06-01 BLW's screen is completed at a depth of approximately 7,700'. The lowermost spring elevation is Angle Spring at approximately 7,940'. Given that the monitoring wells completed within the permit area did not encounter water and that the monitoring wells were completed well below the springs, it would appear that the limited springs in the region are recharged by annual snowmelt and precipitation events. Additionally, as the mine plan does not call for secondary mining (i.e. no planned subsidence) and that the areas where water was encountered in the coal seam (i.e. within the Eagle Canyon Graben) will not be mined, the potential for impacts to ground water resources appears to be minimal.

Additionally, perched aquifer systems in the permit and adjacent area are believed to be discontinuous due to the faulting in the area. Any water that is encountered within the mine works would flow down dip inside the mine and serve as a possible recharge source. Once operations at the mine have ceased and the site is reclaimed, it would be expected that the underground workings may partially fill with encountered ground water. No significant changes would be expected to the potentiometric surface of the regional aquifer as it appears to be well below the Hiawatha Coal seam.

Impacts to water users within the permit and adjacent area would be expected to be minimal. Map 30, *Ground Water*

Right Locations, depicts the locations of the ground water rights within the permit and adjacent area. Beneficial uses of ground water are primarily located on the south-eastern shoreline of Scofield Reservoir. As discussed in Chapter 6 (Geology), the regional dip of the stratigraphic units is to the east (towards the mine works).

Drainage of seeps/springs

Mining activity could result in the draining/dewatering of overlying perched aquifers resulting in the vertical migration of water through mining related fractures. As a result, springs/seeps that discharge from the stratigraphic units containing the encountered perched ground water could be impacted. The potential for such impacts is considered minimal. Mining induced fractures will be minimized by the maintenance of barrier pillars and the limited extraction of the coal seam to first or development mining only (i.e. no planned subsidence/secondary mining). If it's determined that seeps or springs have been impacted as a result of mining activity, the Permittee commits to mitigate these impacts through the purchase of affected water rights, monetary compensation, development of alternative water facilities (such as guzzlers) or other appropriate mitigation measures. Additionally, the overall lack of springs/seeps within the permit and adjacent area (See discussion above) further reduce the potential for such impacts.

Alteration of recharge/storage/discharge relations

Mining activity could produce alterations of the recharge, storage and discharge relations of ground water in the permit and adjacent area. However; as discussed in the Baseline Section above, the recharge of water to the underlying ground water systems occurs primarily as a result of direct precipitation, snowmelt and infiltration. As the mine workings and associated surface disturbance are limited in a real extent and are not located within a major recharge area, the mining operations are not expected to produce significant impacts in this regard. Additionally, as a result of the vertical separation between the mine workings and the elevation of the overlying springs, it's unlikely (given that secondary mining will not occur) that appreciable recharge sources will be encountered.

Once mining operations cease and the site is reclaimed, encountered ground water will accumulate in the mine workings. The result will be an increase in localized ground water storage. The increase in storage could temporarily reduce down gradient ground water flows as the underground mine works fill. However, this would be a temporary development as over time the mine water levels would reach equilibrium.

Localized increases in concentrations of TDS

As ground water resources are encountered and enter the mine workings, it is exposed to subsurface materials in the mine thus potentially producing oxidation and weathering processes that can cause changes to ground water chemistry. The resulting impacts can be increases in total dissolved solids (TDS) and an increase in the concentrations of other individual chemical constituents (e.g. total-iron). However, over time such increases will stabilize and decrease as the finite amount of chemical constituents are depleted. Additionally, in the event that mine-water reached an elevation where discharge to the surface was necessary, the Permittee would need to comply with all applicable State and Federal water quality standards. The Permittee has obtained a Utah Pollutant Discharge Elimination System permit under the Federal Clean Water Act. The site will utilize a sediment pond to treat the storm water runoff generated/ on site prior to discharge.

Surface Water Impacts

The MRP discusses surface water impacts beginning on page 7-92 of the MRP. As with ground water resources, the amount of surface water resources within the permit and adjacent area are limited (See Surface Water Baseline discussion above).

Surface water in the permit and adjacent areas is limited to Scofield Reservoir, perennial flows within Mud Creek, Miller and Long Canyon and ephemeral flows from various side drainages and Eagle Canyon. No perennial or intermittent streams are located within the permit area. Perennial streams within the area adjacent to the mine site are Mud Creek and Long/Miller Canyon. These drainages are tributary to Scofield Reservoir. All of the other drainages within the permit and adjacent area are characterized as ephemeral (Monay Draw, Blue Seal Draw, Kinney Draw, Columbine Draw, Jones Draw, UP Canyon and Eagle Canyon).

Of the seven ephemeral drainages that have been identified within the permit and adjacent area four are within or cross a portion of the permit boundary (from North to South): Eagle Canyon, Kinney Draw, Columbine Draw and Jones Draw. The remaining three ephemeral drainages are located outside the permit boundary (from North to South): Monay Draw, Blue Seal Draw and UP Canyon.

The following potential impacts to surface water resources are identified in Section R645-301-728:

- Temporary increases in runoff from disturbed areas
- Minor reductions in surface flows and alteration of surface flow patterns due to operation of the sedimentation structure.
- Changes in surface water chemistry.
- Increases in the levels of TDS, TSS and certain individual chemical constituents.

Temporary increases in runoff from disturbed areas

Constructing the surface facilities of the mine, will result in disturbing the surface as grading is performed and topsoil and vegetation removed. The disturbance will result in the reduction of infiltration rates and a potential for increases in runoff from the disturbed area. In order to reduce the potential impact of the surface disturbance, the Permittee has designed a surface runoff/drainage plan (See Sediment Control Discussion below). As part of the drainage plan, undisturbed/upgradient drainage will be routed around the surface disturbance to minimize increased runoff from the disturbed area. Disturbed areas will be graded to minimize runoff when possible. Additionally, the Permittee has designed the surface facility to reduce the area of surface disturbance (and thus the potential for greater temporary increases in runoff). Additionally, the drainage control plan utilizes a sediment pond that has been designed to retain the surface runoff volume produced by a 10-year, 24-hour storm event. The retention of storm flow within the sediment pond will decrease the amount of increased runoff from the disturbed area.

Minor reductions in surface flows and alteration of surface flow patterns due to operation of the sedimentation structure.

The storm water runoff/erosion plan utilizes a primary sediment pond to retain and treat the water prior to leaving the disturbed area. The operation of a sediment pond can reduce discharge flow volumes and extend the period of effective flow for runoff from snowmelt and precipitation events. The sediment pond designed for the Kinney No. 2 Mine (See Sediment Pond discussion below for further detail) is designed to gradually release impounded water after the required retention times for sediment control have been achieved.

Changes in Surface Water Chemistry: Increases in Levels of TDS, TSS, Sedimentation and Individual Chemical Constituents

No perennial or intermittent streams are located within the permit area. However, several ephemeral drainages are located within the permit area. Contact between disturbed area runoff and exposed surficial materials could result in increases in TDS and TSS to primarily receiving drainages within the adjacent area (i.e. Scofield Reservoir).

The surface disturbance produced by the construction of the facility could also potentially impact surface water quality in the receiving drainage (i.e. the drainage system adjacent to SR96 that reports to Scofield Reservoir). As disturbed area runoff flows over exposed surficial materials, additional contributions of sodium, sulfate materials could be introduced to adjacent area drainages as the materials are subjected to weathering.

The potential for such impacts is considered minimal. The MRP provides the details of the sediment control measures beginning in Section R645-301-732. The primary sediment control measure for the disturbed area is the sediment pond. All disturbed area storm water runoff will report to the primary sediment pond. The pond has been adequately sized and designed to safely contain the 10-year, 24-hour event. As a result, the potential for increases in TSS, TDS, sedimentation and other chemical constituents to receiving drainages outside the permit area is minimal. The Permittee's UPDES permit establishes the minimum water quality standards that must be met by any discharge that ultimately leaves the sediment pond and enters the Scofield Reservoir drainage. By effectively maintaining and operating the sediment pond during the construction and operational phase, the amount of sedimentation and resulting increases in TSS, TDS to receiving drainages is minimized. During reclamation, the Permittee has committed to the re-establishment of the pre-mining drainage patterns (See Reclamation Discussion below).

Acid-forming/Toxic-forming materials

In Chapter 6 of the MRP, the Permittee presents the acid/toxic information. Tables 4 and 4A in Section R645-301-624 presents the results of the analyses that were performed on the coal located within the lease area as well as on mine waste buried within the proposed disturbed area boundary. Exhibit 19 in Volume 4 of the MRP provides the details of the core analysis which was performed by SGS Labs, Denver. Exhibit 6 provides the details of the mine waste analysis (also conducted by SGS Labs). The information provided suggests that potentially acid forming material is located in the roof and floor of the mine. Table 4 provides the supporting calculations for Acid Production Potential (APP),

Neutralization Potential (NP) and Net Neutralization Potential (NNP). Negative net neutralization potential values are identified in Table 4 indicating that acid/toxic forming materials may be present.

The potential for acid/toxic forming materials to impact surface and ground water resources is considered minimal. The roof and floor material will not be stored for long periods of time at the surface facility. The MRP indicates that the material will be blended with the coal product, placed temporarily in the Temporary Stockpile (See Map 13, *Surface Facilities*). The MRP indicates that any unused material stored in the Temporary Stockpile will be taken to the Wildcat Loadout.

The potential for acid/toxic impacts to surface and ground water facilities is further minimized by the utilization of the primary sediment pond. The sediment pond located at the surface facility is designed to contain the 10-year, 24-hour event. In addition, the Permittee has obtained a Utah Pollutant Discharge Elimination System (UPDES Permit) under the Federal Clean Water Act. As all storm water generated on site is routed to the sediment pond for retention/treatment prior to discharge, the potential for acid/toxic impacts to migrate outside the permit area is limited. The UPDES permit establishes water quality standards that must be met prior to any discharge leaving the sediment pond. As a result, the potential for acid/toxic material to impact Scofield Reservoir is minimal.

The potential for ground water to be impacted by acid/toxic materials is also minimal. The ground water baseline information (See Ground Water baseline discussion above) indicates that there is a general lack of ground water that could even come in contact with potentially acid/toxic forming materials. Additionally, the baseline data indicates that the coal seam to be mined is located well above the potential regional water table thus limiting even further the potential for impacts to ground water systems in the permit and adjacent area.

kstorrar

Maps Affected Area Boundary Maps

Analysis:

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

The application satisfies the requirements for R645-301-521.140 and -521.162. The application includes maps depicting affected areas, mine facilities, mine workings, and monitoring and sampling locations. The maps depict location of each facility used in conjunction with mining operations such as buildings, roads, and facilities to be used in mining and reclamation operations or by others within the permit area; each coal storage, cleaning, and loading area; each topsoil, coal preparation waste, underground development waste, each water diversion, collection, conveyance, treatment, storage and discharge facility; each source of waste and each waste disposal facility. Also included are the locations and extent of known workings of proposed, active, inactive, or abandoned underground mines, including mine openings to the surface within the proposed permit and adjacent areas.

Maps with the following information are also included: Map 12 – Regional Coal Ownership shows affected area (permit boundary), Map 29 – Post Mining Topography shows final reclamation contours and final surface configuration, Map 28 – Groundwater Monitoring Sites shows the location of groundwater sampling wells, and Map 13 shows all of the proposed Surface Facilities. Maps 12, 13, 29 and 29A were certified by a Registered Professional Land Surveyor.

jeatchel

Maps Archeological Site Maps

Analysis:

The application meets the State of Utah R645-301-411 requirements for Archeological Site Maps.

Map 14, Mine Surface Facilities Area Pre-Mining Topography, depicts the locations of features of the 42cb479 site in relation to the proposed disturbed boundary. Exhibit 3-1 (Confidential) Archeology Report includes the cultural resource inventory conducted by MOAC in 2007 which includes a map depicting the locations of historical/cultural sites in relation to the permit boundary.

tmiller

Maps Coal Resource and Geologic Information

Analysis:

The application meets the State of Utah R645 requirements for Coal Resource and Geologic Information Maps.

The application meets the requirements of R645-301-624.100 and -624.110 with the inclusion of the following maps: Map 6 – Regional Geology Map, Map 7A – Cross Section A-A, and Map 7B – Cross Section C-C. Maps 7A and 7B are cross sections of the geology profiled in Map 6, and illustrate the various coal seams within the Permit Area along with the major and minor faults that truncate the seams at various locations. The Permit Boundary is clearly illustrated, as well as a scaled depiction of the surface topography.

jeatchel

Maps Cultural Resource

Analysis:

The application meets the State of Utah R645-301-411 requirements for Cultural Resource Maps.

There are no public parks or cemeteries within 100 feet of the permit boundary. The Scofield Cemetery is located approximately 950 feet south and 685 feet west of the permit boundary. There are no National System of Trails or Wild or Scenic Rivers System resources in the permit boundary. Map 14, as well as the cultural resource survey found in Exhibit 3-1 (Confidential), depicts the location of cultural and historical resources in and around the permit area, including sites eligible for the National Register of Historic Places.

tmiller

Maps Existing Structures and Facilities

Analysis:

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

The application meets the minimum requirements of R645-301-526.110 with the inclusion of Map 13 – Surface Facilities, which depicts the location of the primary sedimentation pond and associated embankment. Existing structures are also depicted on Map 14 – Mine Surface Facilities Area and Pre-Mining Topography Map.

jeatchel

Maps Existing Surface Configuration

Analysis:

The application meets the State of Utah R645 requirements for Existing Surface Configuration Maps.

The application meets the minimum requirements of R645-301-521.150 with the inclusion of Maps 13, 14 and 16 through 19. Map 13 is an illustration of the proposed surface facilities. Maps 16 through 19 are cross sections through the proposed surface facilities area depicted in Map 13 and include profiles for pre-mining, mining, and post-mining scenarios. Map 14 is an illustration of the Pre-Mining Topography. All of these maps were prepared by a Benjamin A. Grimes, a Registered Land Surveyor in the State of Utah.

jeatchel

Maps Mine Working

Analysis:

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

The application satisfies the minimum requirements for R645-301-512.100 because Map 5 Previous Mining Activity and Map 15 Mine Plan Layout shows the proposed underground workings in relation to old mine workings. The old mine workings are located in the Hiawatha and UP Seams, and the proposed new workings will also be located in those two seams but maintaining a safe distance from the old workings as much as practicable. Map 5 clarifies that the locations of the old mine workings depicted on these maps are positioned for reference only and do not necessarily represent actual locations horizontally or vertically. Map 5 has been stamped and signed by Mr. Ben A. Grimes, Registered Land Surveyor in the State of Utah.

jeatchel

Maps Monitoring and Sampling Locations

Analysis:

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

The application satisfies the minimum requirements for R645-301-541.200 and -541.300 because the MRP includes Maps and Tables that discuss the locations of monitoring sites within the permit area. Table 20, Hydrologic Monitoring Schedule provides the parameters to be analyzed during post-mining hydrologic monitoring. Map 28, Surface and Ground Water Monitoring Sites depicts the water monitoring locations that will be monitored during the reclamation liability period. Figure 40, Subsidence Monitoring Plan shows the locations of subsidence monitoring points that will be installed over all active mining areas for the first five years of operation.

jeatchel

Maps Monitoring and Sampling Locations

Analysis:

The application meets the State of Utah R645 requirements for Monitoring and Sampling Location Map relative to hydrology.

The 'Surface and Ground Water Monitoring Sites' are shown on Map 28. Additionally, Map 7 'Regional Hydrology' also depicts the locations of the water monitoring sites that were utilized for the baseline data collection as well as the operational water monitoring sites. The location of springs and surface water monitoring sites have not changed since the initial permitting of the mine over a decade ago.

kstorrrar

Maps Monitoring and Sampling Locations

Analysis:

The application meets the State of Utah R645-301-323 requirements for Monitoring and Sampling locations maps relative to biology.

Map 1a depicts the sagebrush/grass reference area along with sample areas for the previously disturbed rabbit brush/grass area and the proposed disturbed sagebrush/grass area.

tmiller

Maps Permit Area Boundary

Analysis:

The application meets the State of Utah R645 requirements for Permit Area Boundary Maps.

The application satisfies the minimum requirements for R645-301-521.140 because with rare exception almost all of the maps included in this submittal clearly show the Permit Area Boundaries as well as the subareas for which additional permits may be sought. Particularly well-defined Permit Area Boundaries are depicted on Map 11 – Regional Surface Ownership Map, and Map 12 – Regional Coal Ownership Map.

jeatchel

Maps Permit Area Boundary

Analysis:

The application meets the State of Utah R645 requirements for Permit Area Boundary Maps for hydrology.

The permit area is depicted on Map 7, Regional Hydrology.

kstorrrar

Maps Subsurface Water Resources

Analysis:

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

Maps 7A, *W-E X-Section A-A'* and Map 7B, *N-S X-Section C-C'* provide cross-sectional view of the permit and adjacent area. The cross-sections depict the piezometric surface of the local water table as it is currently understood.

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

Map 7, *Regional Hydrology* depicts the surface water resources located within the permit and adjacent area.

kstorrar

Maps Surface and Subsurface Manmade Features

Analysis:

The application meets the State of Utah R645 requirements for Surface and Subsurface Manmade Features Maps.

The application satisfies the minimum requirements for R645-301-521.121 through -521.122 because the MRP includes Maps that illustrate the locations of manmade features within the permit area of proposed mining. Maps 29 and 29A illustrate how the topography within the permit area will appear after having been regraded back to approximate original contour. Also included are the locations of features such as old railroad grades, culverts, water bars, drainage ditches, irrigation ditches, and State Highway 96. The drawings are scaled, and compiled by a Registered Land Surveyor for the State of Utah.

jeatchel

Maps Surface and Subsurface Ownership

Analysis:

The application does not meet the State of Utah R645 requirements for Surface and Subsurface Ownership Maps.

Upon comparing Map 11, Regional Surface Ownership Map with the most recent Carbon County Plat Map for Township 12 S, R 7 E, Section 32, it appears that the surface ownership information depicted on Map 11 is out of date. Specifically, the lands just south of the D & RGW R/R grade within the 1,000 zone boundary line are labeled on the map as belonging to the Sanpete Water Conservancy District, but according to the Carbon County plats should belong to Gayland B. Jones. Additionally, the parcel on the western extremity of the permit boundary (1B-483-1) is labeled as Carbon Resources but the Carbon County plats indicate that it belongs to Wasatch Natural Resources, LLC. The Permittee must revise Map 11, Regional Surface Ownership Map with the most recent surface ownership information. The plat maps are available here:

<https://www.carbon.utah.gov/Administration/Taxes/Documents>

Map 12, Regional Coal Ownership Map sufficiently depicts the coal ownership within the proposed permit and adjacent area.

Deficiencies Details:

The application does not meet the State of Utah R645 requirements for Surface and Subsurface Ownership Maps. The following deficiency must be addressed prior to final approval:

R645-301-521.131: The Permittee must revise Map 11, Regional Surface Ownership Map with the most recent ownership information.

jeatchel

Maps Surface Water Resource

Analysis:

The application meets the Surface Water Resource Map requirements of the State of Utah R645-Coal Mining Rules.

Map 7, *Regional Hydrology* depicts the surface water resources located within the permit and adjacent area.

kstorrar

Maps Vegetation Reference Area

Analysis:

The application meets the R645-301-323 requirements for vegetation reference area maps.

Map 1A, Facilities Area Vegetation Map, depicts the location of vegetation sample areas and the sagebrush/grass reference area. Map 1B, provides an aerial view of the vegetation in the permit area.

tmiller

Maps Well

Analysis:

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

Map 7, *Regional Hydrology* depicts the locations of all monitoring wells that were constructed during the baseline data collection period. Additionally, the map depicts the locations of the monitoring wells that will be utilized for on-going water monitoring activity.

Map 30, *Ground Water Rights Locations* depicts the locations of the water wells located within the adjacent area. No culinary water wells are located within the permit boundary.

There are no oil and gas wells within the Portal Block Permit Boundary (Section 622.400).

kstorrar

Operation Plan

Mining Operations and Facilities

Analysis:

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

The application satisfies the State of Utah requirements for R645-301-526 and -528. The application gives a comprehensive list of all required surface facilities on pages 5-35, 5-49, 5-50, and 5-54. Supporting narrative on pages 5-35 through 5-55 goes into detail about how these facilities will be operated, maintained, and ultimately reclaimed in a manner that prevents erosion and siltation, water pollution, and damage to public or private property. The permit further states that the proposed facilities will operate using the best technology currently available, minimizing damage to fish and wildlife, as well as minimizing additional contributions of suspended solids to streamflow or runoff outside the permit area. Figures 26 through 34 offer detailed scaled drawings that illustrate the appearance and configuration of various proposed facilities. The locations of all proposed surface facilities are shown on Map 13, Surface Facilities Map.

Narrative on pages 5-19 through 5-31 offer an explanation of the type and method of coal mining to be employed, as well as a description of proposed engineering techniques that will be used to address dewatering, ventilation, roof control, and safety when working around old workings. Figures 23 and 24 offer an illustration of the typical mine entry development that will be executed by continuous miners.

Narrative on page 5-21 states that the anticipated production rate for the first two years of production ranges from 0.18 to 0.49 million tons per year. Table 17 provides a projection of annual coal production for the first 5-year permit term. Map 15 shows a mine plan layout and a basic production schedule and highlights areas of the mine that may be used to backfill with development rock.

Included on pages 5-40 through 5-46 are descriptions of the construction, operation, and maintenance of all sediment control structures, including Sediment Pond 1, the primary sediment control structure within the permit area. The pond spillway has been designed to safely pass runoff from a 100-year, 6-hour storm event, and the pond has adequate

capacity for at least five years of sediment accumulation before a cleanout is required. Additionally, the Sediment Pond 1 design has been prepared under the direction of a qualified Registered Professional Engineer and will be inspected quarterly by a qualified person for any indication of structural weakness or other problems. Map 29 includes plan and profile views of Sediment Pond 1 and is stamped and signed by a David E. Hansen, Professional Engineer for the State of Utah.

jeatchel

Existing Structures

Analysis:

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

The application satisfies the State of Utah requirements for R645-301-526.110 because narrative within the permit clarify that there are very few structures that exist within the permit area. The only structures currently present are various small historic buildings made of stone or concrete, and appear to have been related to coal mining activities sometime between 1890 and 1920. A cultural survey conducted by Montgomery Archaeological Consultants in 2007 determined that the proposed mining activities by the Permittee will not diminish the historic integrity of these structures. None of these structures will be used by the Permittee. The location of these structures may be found on Map 14, Mine Surface Facilities Area, Pre-Mining Topography.

jeatchel

Protection Public Places

Analysis:

The application meets the State of Utah R645-301-411 requirements for Protection of Public Parks and Historic Places. The land use information is included in Chapter 4 and Map #4 (Regional Land Use and Zoning) of the application. The proposed disturbed area includes two zoning classifications for the proposed disturbed area, Scofield Commercial and Carbon County Mountain Range. A portion of the area is a reclaimed abandoned mine site and the remaining is an undisturbed grass, shrub aspen community. There are no public parks in or adjacent to the permit area however there are three historic sites (42cb477, 42cb479, and 42cb1032) that are eligible for the National Register of Historic Places within the permit boundary. These sites have been addressed in Exhibit 3-1 (Confidential), Exhibit 21, and in Chapter 4. In a letter from Jody Patterson to Greg Hunt dated September 20, 2010, fencing is recommended along the edge of the disturbance boundary closest to the lone standing structure, a fan house, of site 42cb477. This recommendation is included in DOGM's letter to SHPO dated September 23, 2010, to which SHPO concurred in a letter dated October 13, 2010. This fencing is to be installed by the permittee prior to the properties being affected by any mining operations. In an email received by DOGM from SHPO on March 7, 2019, additional fencing is requested along the disturbance boundary between the mining disturbance and feature 12 of site 42cb479. This fencing is to be installed by the permittee, so long as placement of the fencing is practicable for the protection of the resource, prior to the properties being affected by any mining operations. The applicant has committed to installing this fencing in Section R645-301-411.144 page 4-16 of the application.

tmiller

Relocation or Use of Public Roads

Analysis:

The application does not meet the State of Utah R645 requirements for Relocation or Use of Public Roads.

Utah Highway SR 96 passes through the northwest corner of the permit boundary and is adjacent to the operations area. The highway is within 100 feet of the outside right-of-way of SR96. On page 5-39, the application states that public notice was offered during two public notice and comment periods but no comments or objections were received. The claim is incorrect and appears to be remnant language from the previous permit review of the Kinney No. 2 Mine (Task #3860). Based on the affidavit of publication provided to the Division, the Permittee provided public notice for four consecutive weeks, with one corresponding comment period. Additionally, a comment was received by the Division.

The Division received a comment from Wolverine Fuels on February 11, 2019. Wolverine Fuels operates the Skyline Mine located approximately six road miles from the proposed permit area. Wolverine Fuels raised concerns relative to truck traffic and public safety in the absence of proper turning lanes and truck entrances. The Permittee must revise the statement on page 5-39 that incorrectly discusses two public notices and no comments/ objections received. Exhibit 5

includes a copy of Skyline's letter of concern as well as language that addresses the public notices, but the original narrative on page 5-39 has not been changed. The narrative on Page 5-39 must be changed otherwise the remnant language contradicts what is presented in Exhibit 5.

Page 5-39 goes on to further indicate that the Department of Transportation (UDOT) requires a standard intersection design that provides turn lanes into the mine site from both directions as well as through lanes and acceleration and deceleration lanes. Exhibit 4 contains a conditional access permit from UDOT as well as a plan view map and accompanying cross-sections illustrating plans for the proposed intersection on Highway 96. The conditional access permit will expire if the construction access is not completed within one year of the issuance date of February 27, 2019.

Deficiencies Details:

The application does not meet the State of Utah R645 requirements for Relocation or Use of Public Roads. The following deficiency must be addressed prior to final approval:

R645-301-121.200: The Permittee must revise the statement on page 5-39 that incorrectly discusses two public notices and no comments/ objections received. Exhibit 5 includes a copy of Skyline's letter of concern as well as language that addresses the public notices, but the original narrative on page 5-39 has not been changed. The narrative on Page 5-39 must be changed otherwise the remnant language contradicts what is presented in Exhibit 5.

jeatchel

Air Pollution Control Plan

Analysis:

The application meets the requirements of R645-301-421, because the Permittee filed a Notice of Intent with the Utah DEQ/Division Air Quality on March 6, 2019. The Intent to Approve is currently under management review. When an AO is issued, it will go out for 30 day public comment. At that time, the Permittee's name will be changed from Wasatch Natural Resources, LLC to Coal Energy Group 3. (email communication with S. Foran, 5/6/2019).

Deficiencies Details:

Condition of permit: In accordance with R645-301-421, The Permittee must provide confirmation of the Air Quality Approval Order prior to construction of the site.

pburton

Coal Recovery

Analysis:

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

R645-301-522: The permit lists as its project objectives:

- Maximize recovery of available coal resource
- Optimize coal production efficiency and economics
- Facilitate potential development of nearby coal reserves
- Provide a safe healthy secure working environment
- Minimize potential adverse environmental impacts

The final mine plans were selected as the best combination of mine layout, mining method, and mining sequence in order to maximize the utilization and conservation of the coal, while utilizing the best technology currently available to maintain environmental integrity, so that re-affecting the land in the future through coal mining operations is minimized.

Narrative on pages 5-17 through 5-30 includes a description of the measures to be used to maximize the use and conservation of the coal resources. This description includes coal recovery, mine development and sequence, use and

conservation of coal resource, mining method, mining equipment and activities, projected annual coal production, support activities, pillar dimension details, and approach to old mine workings areas. The permittee will utilize room and pillar mining methods as the primary coal extraction and production technique. The primary production equipment will include continuous miners, shuttle cars, LHD scoops, and roof bolters. Map 15 includes the development and production schedule although the mining dates need to be updated.

The underground mining operations are planned to recover coal from the Hiawatha seam using continuous mining techniques, with no pillar recovery planned for the first permit term. The Applicant has designed the mine for an annual production rate of 0.18 to 0.49 tons of coal, with a projected life of approximately two years within the currently proposed boundary. There is potential to extend the mine life significantly through acquisition of coal reserves to the south and east.

jeatchel

Subsidence Control Plan Renewable Resource

Analysis:

The application meets the State of Utah R645 requirements for Subsidence Control Plan Renewable Resources Survey.

R645-301-525.100: Maps 1A, 7, 8, 10, 13, 28, 31 and the cultural resource survey in Exhibit 3-1 shows the location and type of structures and renewable resource lands that subsidence may materially damage. During the Cultural Resource/Pre-Subsidence survey, no structures were found above planned underground mining areas. There are no aquifers or bodies of water that serve as a significant water source for any public water supply system.

Currently, the mine plan only provides for first mining practices only. No secondary mining (i.e. planned subsidence) will take place. As a result, the amount of subsidence and subsidence related impacts should be minimal.

jeatchel

Subsidence Control Plan Renewable Resource

Analysis:

The application meets the State of Utah R645 requirements for Renewable Resources Survey requirements relative to hydrology.

The application provides several maps that identify and depict the locations of renewable resources. Map 7, *Regional Hydrology* depicts the locations of all surface water bodies located within the permit and adjacent area as well as the projected piezometric surface elevation of the regional ground water aquifer. Map 8, *Works-Wells-Springs-Faults* depicts the locations of the springs, surface water bodies, faults and piezometric surface elevation of the regional ground water aquifer. Maps 30, *Ground Water Rights Locations* and Map 31, *Surface Water Rights Locations* depict the locations of State Appropriated Water Rights within the permit and adjacent area. Exhibit 13, *Water Rights* provides the documentation of each water right located within the permit and adjacent area and depicted on the aforementioned maps.

kstorrar

Subsidence Control Plan Subsidence

Analysis:

The application meets the State of Utah R645 requirements for Subsidence Control Plans.

R645-301-525: A Subsidence Control Plan in chapter 5 states that methods used to control subsidence may include backfilling voids, leaving support pillars of coal, and leaving areas where no coal is extracted.

Permittee commits to conduct a subsidence monitoring program including installation of monitoring points above mining areas. Figure 40 illustrates the location of 10 different subsidence monitoring points installed over the active mining areas for the first 5 years. The permit states that monuments will be installed prior to mining consisting of 3/4 inch rebar driven a minimum of 3 feet into the ground and topped with plastic caps. High precision GPS survey shots will be made

on each monument prior to mining, and once each year for the first 5 years. After the first 5 years, the monuments will be surveyed every other year. Control monuments will be established outside the subsidence zone to use as a baseline control for the subsidence monuments, Control monuments will be calibrated to the Scofield Cemetery US Geodetic Survey control point to ensure accuracy and consistency. Visual inspections will be conducted with the subsidence surveys. The results of the survey will be provided to DOGM yearly with the annual report.

The application includes a narrative indicating whether subsidence, if it occurred could cause material damage or diminish the value of structures or water resources. The mine plan is based on the retention of barrier pillars and first mining only, with no pillar extraction. This design, combined with the mining depth, should minimize fracture propagation at or near the ground surface in areas overlying the underground workings. As a result, the potential for drainage of overlying perched aquifer systems and alteration of surface infiltration characteristics is minimal.

The Division received a comment on February 11, 2019 from Wolverine Fuels, operator of the Skyline Mine located approximately six road miles from the proposed permit area. Wolverine Fuels raised concerns regarding how the proposed mining operations would affect a waste rock site that is in close proximity to the Kinney No. 2 permit area. The waste rock site is located in UP Canyon in the SW¼NW¼ of Section 4, Township 13 South, Range 7 East, SL&M, directly South of the current proposed Kinney No. 2 Mine permit boundary. Wolverine Fuels anticipates continued use of this facility through the life of the Skyline Mine and would like to ensure that the proposed Kinney No.2 Mine operations do not compromise the environmental quality and stability of the waste rock site.

To determine the probability that the proposed mining activity at the Kinney No.2 mine might affect the stability of the Wolverine Fuels waste rock site, the following maps were consulted: Map 5 – Previous Mining Activity, Map 8 – Works-Wells-Springs-Faults, Map 11 – Regional Surface Ownership Map, and Map 15 – Mine Plan Layout. The exact location of the waste rock site was approximated using Google Earth and scaled against the previously listed maps. It appears that the nearest proposed mine workings are estimated to be over 2,600 feet in linear distance from the waste rock site. The Permittee cannot advance any closer than this distance because there is a large buffer of mined out workings from the old UP Mine that extracted coal from the UP and Hiawatha Seams just north of the waste rock site. In addition to the distance between the proposed workings and the waste rock site, Page 5-32 of the application clarifies that only first mining will be employed. It is anticipated that there will be no subsidence, and the location of the waste rock site is outside of the area that could be adversely affected by the proposed mining activities.

jeatchel

Subsidence Control Plan Performance STD

Analysis:

The application meets the State of Utah R645 requirements for Subsidence Control Plan Performance Standards.

R645-301-525.500: The Permittee commits to correct any material damage resulting from subsidence on surface lands to the extent technologically and economically feasible, and restore the land to a condition capable of maintaining the value and reasonably foreseeable use. Permittee will either correct material damage resulting from subsidence or compensate parties in the full amount of diminution in values resulting from subsidence.

jeatchel

Subsidence Control Plan Notification

Analysis:

The application meets the State of Utah R645 requirements for Subsidence Control Plan Notification.

R645-301-525.700: The application includes a commitment to mail notification to all owners and occupants of surface property and structures above the underground workings at least 6 months prior to mining. The notification includes, at a minimum, identification of specific areas in which mining will take place, dates that specific areas will be undermined, and the location or locations where the operator's subsidence control plan may be examined.

jeatchel

Subsidence Control Plan Slides and Other Damage

Analysis:

The application meets the State of Utah R645 requirements for Slides and Other Damage.

Narrative on page 5-3 describes the emergency reporting measures for instances where slides may have an adverse effect on public safety or environmental health. Additionally, if any impoundment examination discloses that a potential hazard exists the Division will be promptly informed and emergency procedures formulated for public protection and remedial action.

jeatchel

Fish and Wildlife Protection and Enhancement Plan

Analysis:

The application does not meet the State of Utah R645 requirements for a Protection and Enhancement Plan.

Chapter 3, page 3-59 through 3-74, Section R645-301.330, (Operation Plan) includes a list of potential impacts and mitigation measures to be implemented for wildlife protection.

Chapter 3, pages 3-14 through 3-16, Section R645-301.220, includes a description of high value or crucial habitats for several species of animals within the permit and disturbed areas. These habitats are clearly defined on maps 2A through 2G. The maps and associated legends also define the range of these habitats. Pages 3-69 through 3-74, Section R645-301.333, include a description of the protection and enhancement plan for the wildlife species that have been described as occupying crucial or substantial habitat within and adjacent to the Kinney #2 permit area. They include: black bear, blue grouse, moose, mule deer, elk, sage grouse and snowshoe hare.

Due to the crucial habitats and sensitive species located within the permit area, consultation between DOGM and DWR was initiated in February of 2019 to determine the best plan for protecting the wildlife resources of the area that may potentially be affected by the proposal. Though the consultation is ongoing, there is concern regarding the disturbance to sage grouse habitat. It has been determined that the best way to minimize adverse impacts to the sage grouse is for the applicant to complete compensatory mitigation of 4 acres for every 1 acre of disturbance within the Carbon Sage Grouse Management Area (SGMA) to be handled through the DNR Credit Exchange Service. The applicant has committed to doing this Section R645-301-322.333 page 3-73.

Additionally, changes to the temporary and final seed mixes were requested by the DWR to improve wildlife forage resources. Many of the requested changes have been made, however one of the recommendations was not implemented in the updated application. The final seed mix should replace Kentucky blue grass with orchard grass at a suggested rate of 0.42 PLS lbs./acre and/or mountain brome at 1.96 PLS lbs./acre.

Map 2 in the Confidential section of the application shows the location of raptor nests as well as the species and status of the nests. However, the most recent data on this map is from 2007. During previous permitting of this site a raptor nest, #1541, was identified as being within ½ mile of the mine disturbance boundary. Extensive consultation was performed regarding this nest during that time (circa 2011) and mitigation measures were identified and implemented by the company. One of these measures included nest deterrence by temporarily placing traffic cones in the nest to prevent the raptors from nesting at that location during the 2011 season so that mine facility construction could begin. Authorization for this deterrence was obtained in a letter from the U.S. Fish and Wildlife Service dated April 26, 2011 which is included in Exhibit 4 of the application. However, that authorization expired 90 days from the date of that letter. The cones were placed in the nest for deterrence purposes at that time but no construction activities ever took place. In November of 2018, DOGM biologists along with Patrick Collins from Mt. Nebo Scientific accompanied Coal Energy Group 3 representatives on a site visit. One of the objectives of this visit was to determine the status of nest #1541. The nest was located and it was observed that the deterrence cones were still in place. Prior to approval of this application, a new raptor survey must be completed to determine the current status of raptor nests in the area and new authorization must be obtained from the U.S. FWS for nest deterrence of nest #1541. The language in the Raptor Nest Deterrent portion of the R645-301-230 *Other Wildlife Species & Habitat Information of the Permit & Adjacent Areas*, pages 3-44 through 3-46 must be updated as they were written prior to the events of the 2011 nesting season and do not reflect the status of raptor nesting issues and protection for 2019 and beyond. Previous mitigation has been completed, including the construction of osprey nests and purple martin houses, and no further mitigation is required at this time. Following discussion with DWR and the U.S. FWS, it was determined that the best course of action for the nest deterrence is to leave the cones in place until the end of the 2019 nesting season, at which time they should be removed provided that construction has already begun. If the initiation of construction will not be until the 2020 nesting season or beyond,

further consultation will be required at the end of the 2019 season.

Deficiencies Details:

The application does not meet the State of Utah R645 requirements for the fish and wildlife protection and enhancement plan. The following deficiencies must be addressed prior to final approval:

R645-301-322: The language on pages 3-44 through 3-46 relating to the 2011 nesting season must be updated to reflect the current season and conditions.

R645-301-342: An update to the Final seed mix to remove Kentucky bluegrass. Suggestions to replace these species are orchard grass and mountain brome.

tmiller

Fish and Wildlife Endangered and Threatened

Analysis:

The application meets the State of Utah R645 requirements for Endangered and Threatened Species.

The results of the vegetation survey, Exhibit 7, indicate that there are no threatened, endangered or sensitive plant species within the permit or proposed disturbed areas as noted by Dr. Pat Collins. Section R645-301-322.201 of the application includes a current list of the sensitive animal species for Carbon County.

tmiller

Fish and Wildlife Bald and Golden Eagles

Analysis:

The application meets the State of Utah R645 requirements for Bald and Golden Eagles.

According to the information provided from the Utah Natural Heritage program there are records of bald eagles within the proposed permit area. Eagles typically migrate through the area during the winter taking advantage of the food supply at or near the near-by Scofield Reservoir. There are no bald or golden eagle nests within ½ mile of the proposed permit area due in part to a lack of adequate nesting habitat. Protection measures are described on pages 3-49, 56-62, 60, 64, and 66-69 of Chapter 3 and include the construction of raptor proof power poles.

tmiller

Fish and Wildlife Wetlands and Habitats High Value

Analysis:

The application meets the State of Utah R645 requirements for wetlands and habitats of unusually high value for fish and wildlife. Chapter 3, Section R645-301.330, page 3-60 includes information relating to avoidance and/or enhancement of wetlands, riparian areas, and aquatic habitat.

Other habitats of high value for fish and wildlife within the proposed disturbed area include Black Bear, Moose, Blue Grouse, Elk, Mule Deer, Sage Grouse and Snowshoe hare. Chapter 3, Pages 3-14 through 3-16, Section R645-301-322.220 includes descriptions of the high value or crucial habitats for these species of animals within the permit and disturbed areas. These habitats are clearly defined on maps 2A through 2G. The maps and associated legends also define the range of these habitats. Pages 3-69 through 3-74 Section R645-301.330 include a description of the conservation and mitigation plans for the wildlife species that have been described as occupying crucial or substantial habitat within and adjacent to the Kinney #2 permit area.

tmiller

Topsoil and Subsoil

Analysis:

The information presented meets the requirements of the R645 Coal Rules for soil operation plan.

Section R645-301-222 states that the proposed disturbed area is 27.6 acres and includes 0.4 acres across SR 96 from

the main facilities. The maximum potential topsoil and yield is 68,845 yd³ (Section 232.100 and Map 34). However, the Permittee states that topsoil salvage yield will be reduced from slopes greater than 30% as shown on Map 36 which shows salvage from 21.5 acres. This exemption from topsoil salvage is allowed by R645-301-232.710. Map 37 Planned Topsoil Cut accompanies Map 36 to show the topsoil salvage plan from slopes less than 30% which will achieve 54,969 total substitute topsoil volume.

Topsoil Removal and Storage

Most of the soil (40,460 yd³) will come from 20 acres of previously disturbed lands, and most of the previously disturbed soil (38,859 yd³) will be from Map Units DA-3, DB-2, DB-4, and DB-5. The plan calls for soil removal from 1.2 feet to 3 feet depth (Map 37). Topsoil and subsoil from undisturbed slopes will contribute 27,396 cubic yards from 6.94 acres (Map Units 1B, 2A, and 2B) to the stockpile. However, steep areas will not have topsoil salvaged and approximately 13,879 yd of topsoil from steep areas will be mixed with the fill (Section 232.100). Map 37 demarcates the topsoil salvage boundary along those areas considered too steep (> 30%) for soil salvage. Map 33 illustrates the slopes within the proposed disturbance and itemizes 7.37 acres or 29.47% of the permit area as unavailable for soil salvage due to slope. Specifically, the area of the portal pad and access road (40% slope) will not have topsoil salvaged.

There is an estimated 12,000 cubic yards of buried coal fines that will be removed during the salvage operation (Section 232.100, Essential Step #13). Map 45 illustrates the known locations of these buried coal fines. Section 232.100 describes inclusion of coal fines with soil salvage, if the buried coal is less than six inches deep.

A qualified reclamation specialist/soil scientist will be on site to direct the soil salvage, which is complicated by areas of previously disturbed and pockets of buried coal. The applicant commits to reporting final salvage volumes in an annual report (R645-301-232.100).

The salvaged soil will be stored in three locations as described on Maps 38 through 44. Topsoil storage locations are also shown on Map 13, Surface Facilities. Two stockpiles west of the SR 96 will (together) hold approximately 2,000 yd³ (Map 43). East of SR 96, the largest stockpile will be layered against the bathhouse parking lot fill (Maps 38, 39, 41, & 42) and could hold 20,000 CY. The stockpile will be isolated from the bathhouse pad by a berm (shown in cross-section A-A' on Map 16).

Topsoil pile construction is illustrated on Plate 38. The main stockpile will be constructed in a trapezoidal shape against the existing slope and against a fill slope (Maps 40 & 44). Section 231.400 (and Section R645-301-526 Mine Facilities) state topsoil stockpiles will have side slopes of 2h:1v or less. Map 16 illustrates the office pad topsoil pile with an outslope of approximately 3h:1v and an approximate depth of 20 feet (cross Section A-A'). The soil will be protected by a ditch, a berm and by a six foot excavated material base that will raise the level of the topsoil pile above the expected level of road salt accumulation (Map 38 and narrative in Sections 234.220 and 234.230. The topsoil stockpile sediment control plan is illustrated on Map 24.

Stockpiled topsoil and subsoil will be roughened, seeded and hydromulched (Section R645-301-331, p. 3-73). The temporary seed mixture of wheatgrasses, bluegrass and Utah Sweetvetch is found in Chap 3, Table 21.

In addition to seeding, a variety of sediment control measures will be employed to prevent topsoil loss, as necessary (R645-301-331, p. 3-73).

Stockpiles will be signed (MRP Section 521.270 and MRP R645-301-526 Mine Facilities).

pburton

Vegetation

Analysis:

The application meets the State of Utah R645-301-330 requirements for Vegetation.

Exhibit 7 includes a description of the vegetative communities within the disturbed, permit and reference areas. The disturbed area will affect the rabbitbrush/grass community that has been impacted by previous mining activities and a native sagebrush/grass community and a small portion the aspen community that extends into the pre disturbed and proposed disturbed north east end of the disturbed area. The vegetation survey references the compilation of a list of threatened, endangered and sensitive plant species for the area. They are included in chapter three pages 3-8 through 3-11. The vegetation survey results indicate that there are no threatened, endangered or sensitive plant species within

Road Systems Classification

Analysis:

The application meets the State of Utah R645 requirements for Road Classification Systems.

Pursuant to R645-301-521.170 and R645-301-527, a narrative on page 5-10 states that all roads are classified as primary roads. This classification includes any roads used for transporting coal or spoil, roads which are used frequently for periods exceeding 6 months, and roads which will be retained to support the post-mining land use. The permit states that all roads will be utilized on a frequent, long term basis to support the proposed mining and related operations. All proposed roads are shown on Map 13, Mine Surface Facilities Map, and profiles can be found on Maps 20 through 22, Mine Surface Facilities Road Profiles.

jeatchel

Road System Plans and Drawings

Analysis:

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

The proposed primary roads are depicted on Map 13, Surface Facilities Map. Profiles for all seven roads (PR-1 through PR-7) are provided on Maps 20 through 22, Mine Road Profiles. The locations for all associated drainage ditches are provided on Map 24, Drainage and Sediment Control Plan Disturbed Drainage Areas. Map 27, Runoff Control Details provides detailed design and installation information for the components of the road drainage system. Table 18, Ditch Design Details, provides a table of the dimensions and design criteria for all diversion ditches. Table 19, Culvert Design Details provides the design information/criteria for all disturbed and undisturbed drainage culverts to be constructed on the site.

Exhibit 16 provides the hydrologic and hydraulic calculations that were utilized in designing and sizing the surface runoff control plan and associated components. Figure 25 - Typical Primary Road Configuration provides a cross-sectional view of the road design to be implemented for all roads (PR1-PR-7). Figure 25A, Primary Roads P8 & P9 Configuration, provides cross-sectional views for primary roads P8 and P9. Map 22, Mine Surface Facilities Road Profiles provides the profiles for roads P8 and P9. Narrative on page 5-7 and 5-39 reiterates that preliminary plans to access the mine from Highway 96 have been drafted and approved by UDOT and those plans may be found in Exhibit 4.

jeatchel

Road System Plans and Drawings

Analysis:

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

Map 13, *Surface Facilities*, depicts the locations of all roads to be utilized. The locations for all associated drainage ditches are provided on Map 24, *Drainage and Sediment Control Plan Disturbed Drainage Areas*. Map 27, *Runoff Control Details* provides detailed design and installation information for the components of the road drainage system. Table 18, *Ditch Design Details*, provides a table of the dimensions and design criteria for all diversion ditches. Table 19, *Culvert Design Details* provides the design information/criteria for all disturbed and undisturbed drainage culverts to be constructed on the site. Exhibit 16, *Runoff Control Design Details*, provides the hydrologic and hydraulic calculations that were utilized in designing and sizing the surface runoff control plan and associated components. Figure 25, *Typical Primary Road Configuration*, provides a cross-sectional view of the road design to be implemented for all roads (PR1-PR-7) with the exception of PMLU Road 8 and PMLU Road 9. Figure 25A, *Primary Roads P8 & P9 Configuration*, provides cross-sectional views for primary roads P8 and P9. Map 22, Mine Surface Facilities Road Profiles provides the profiles for roads P8 and P9.

No road will be constructed within a perennial or intermittent stream. However, a road crossing will be constructed across an irrigation ditch. The road crossing of this drainage will require the installation of a culvert (UDC-1, See Map 24). The irrigation ditch has not been utilized for several decades as evidenced by the amount of vegetation overgrowth in the channel as well the overall lack of maintenance.

Road System Performance Standards

Analysis:

The application meets the State of Utah R645 requirements for Road System Performance Standards.

The permit states that all roads have been or will be designed and constructed to the extent operationally feasible in the most stable areas available and outside of the channel of intermittent or perennial streams. The design and construction of all primary roads will be certified by a qualified Registered Professional Engineer. Road PR-1 will be a paved asphalt road with all-weather travel surface from Highway 96 to the Shop Warehouse. PR-2 will also be paved to the mine office building, along with the mine office pad. All other primary roads will be constructed using compacted road base and durable granular surfacing.

Road construction will involve cut and fill earthwork operations. Potentially acidic or toxic forming materials will not be utilized in road construction or as surfacing material. Cut and fill slopes will be established at maximum grades up to 0.8H: 1V. Typical road configuration and dimensions are illustrated in Figure 25. Road gradients will vary from flat to a maximum of approximately 14.5% for the majority of the roads. Road embankments will be constructed and compacted in a controlled manner to provide a minimum static safety factor of 1.3.

Adequately sized ditches and culverts will be installed and maintained to effectively carry road and other disturbed area drainage. The locations of all proposed ditches are shown on Map 24, Drainage and Sediment Control Plan Map. The permit states that all roads and ditches will be operated and maintained according to the requirement of Utah Coal Mining Rules.

jeatchel

Road System Performance Standards

Analysis:

The application meets the State of Utah R645 requirements for Performance Standards for hydrology.

The permit states that all roads have been or will be design and constructed to the extent operationally feasible in the most stable areas available and outside of the channel of intermittent or perennial streams. The permit states that design and construction of all primary roads will be certified by a certified by a qualified Registered Professional Engineer. Road PR-1 will be a paved asphalt road with all-weather travel surface from Highway 96 to the Shop-warehouse building. PR-2 will also be paved to the mine office building. The mine office pad will also be paved. All other primary roads will be constructed using compacted road base and durable granular surfacing.

Road construction will involve cut and fill earthwork operations. No potential acid or toxic forming materials will be utilized in road construction or as surfacing material. Cut and fill slopes will be establish at maximum grades up to 0.8H: 1V. Typical road construction practices, road configuration and dimensions for roads are illustrated in Figure 25. Road gradients will vary from flat to a maximum of approximately 14.5% for the majority of the roads. Road embankments will be constructed and compacted in a controlled manner to provide a minimum static safety factor of 1.3. Only road PR-6 had a gradient about 14.5%, at 18.8%.

Adequately sized ditches and culverts will be installed and maintained to effectively carry road and other disturbed area drainage. The locations of all proposed ditches are shown on Map 24, Drainage and Sediment Control Plan Map. The permit states that all roads and ditches will be operated and maintained according to the requirement of Utah Coal Mining Rules.

As required by R645-301-742.423.1, all of the roads (which have been classified as 'primary') have been designed to safely pass the peak flow generated from a 10-year, 6-hour storm event. Exhibit 16, *Runoff Control Design Details*, provides the hydrologic and hydraulic calculations that were utilized in designing and sizing the surface runoff control plan and associated components. Table 18, *Ditch Design Details* provides the design considerations for each of the diversions to be utilized at the mine-site. Table 19, *Culvert Design Details* provides the design considerations for the culvert sizing calculations that were performed.

All roads will be reclaimed following mining activity, with the exception of PMLU Road P8 and PMLU Road P9. Roads P8 and P9 are to be retained permanently following the termination of mining activity and post-reclamation. The two

roads are to be retained permanently per an access agreement with an adjacent land-owner. The roads are required to access private property east of the mine-site. Access roads to the private property east of the mine site were in existence prior to mining. As a result, the retention of PMLU Road P8 and PMLU Road P9 following reclamation is in line with the post-mining land use and pre-mining land use of the property. Figure 25A, *Primary Roads P8 & P9 Configuration*, provides cross-sectional views for primary roads P8 and P9. Drainage control from the two roads will be achieved by utilizing two diversion ditches and a culvert (UDD-1, UDD-2 and UDC-2 respectively). The diversions do not route a perennial or intermittent stream. As such, the design standard for a diversion of miscellaneous flows (R645-301-742.330) applies. The design standard for a permanent diversion of a miscellaneous flow is to safely pass the peak runoff generated from a 10-year, 6-hour event. The design information provided in Exhibit 16 and Table 18 show that diversions UDD-1 and UDD-2 have been over designed to safely pass a 100-year, 6-hour event.

In order to the design the collection system ditches and culverts, the Permittee utilized Hydrologic Modeling Software (HEC-HMS) 3.1.0 developed by the Army Corps of Engineers using the Soil Conservation Service (SCS) curve number loss method and the SCS unit hydrograph transform method. Drainage basins were delineated in AutoCAD by utilizing existing and proposed elevation contour data and the location of proposed pads and storm drainage facilities. Drainage basins were modeled in HEC-HMS using the SCS unit hydrograph transform method. The sub-basins peak flows were then calculated in order to properly size the culverts and diversion ditches.

kstorrar

Road System Certification

Analysis:

The application does not meet the State of Utah R645 requirements for Primary Road Certification.

The application states that the proposed primary roads are depicted on Map 13, Surface Facilities Map. Profiles for all seven roads (PR-1 through PR-7) are provided on Maps 20 through 22, Mine Road Profiles. Maps 13, 20, 21, 22, 29, and 29A are correctly certified. Typical Primary Road Configurations for sloping and level terrain are included in Figure 25 within the text. Also provided within Figure 25 are the details of the thickness of the asphalt and sub-base for the Primary Roads. Figure 25A includes the configurations and cross-sections for Primary Roads P8 and P9. Although most maps and profiles for primary roads have been certified by a qualified professional engineer, Figures 25 and 25A have not been certified.

Deficiencies Details:

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

R645-301-512.200, -512.250: Figures 25 and 25A depict the construction and configuration of Primary Roads and therefore must be certified by any of the following: a qualified, professional engineer, professional geologist, or a professional land surveyor.

jeatchel

Road System Other Transportation Facilities

Analysis:

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

As per the State of Utah coal mining regulations R645-301-521.170, -527, and -528.100, the application offers a description of the handling system used to transport coal from the mine to the loadout facilities on pages 5-49 through 5-53. The mine's coal handling system will consist of both the underground coal haulage system and the surface coal handling components which will transport coal from the mine portal to the truck load-out.

Components of the surface portion of the coal handling system are shown on Map 13, Surface Facilities Map and include:

- Conveyor SB-1
- Conveyor Transfer Tower

- Conveyor SB-2
- Non-spec Coal Pile & Stacking Tube
- Conveyor SB-3
- Spec Coal Pile & Stacking Tube
- Conveyor SB-4
- Screening & Crushing Building
- Truck Load-out Building

The application states that the coal handling system had been designed using the best current technology and accepted engineering practices to provide adequate transportation for mined material. The MRP includes a detailed description of the conveyor system that will be used for mine material transportation. The description includes details of conveyor transfer & details, conveyor components, vibrating aprons, pan feeders, and coal stockpiles. The description includes construction, operation, and maintenance of the conveyor system and load-out facilities.

jeatchel

Spoil Waste Disposals of Noncoal Mine Wastes

Analysis:

The application meets the State of Utah R645 requirements for Disposal of Noncoal Mine Waste.

The application meets the minimum requirements of R645-301-528.330 because on page 5-71 of the application the Permittee discusses the generation and disposal of non-coal waste. The application states that used oil and lubricants, garbage, paper waste, machinery parts, tires, cable, wood waste, and other miscellaneous debris will be generated by the proposed mining activity. Smaller sized non-coal solid wastes will be stored in dumpsters. Larger solid waste materials (i.e. used equipment, machinery parts, tires, etc.) will be temporarily stored in designated storage yards as illustrated on Map 13, Surface Facilities.

A contract disposal service will regularly collect and haul the smaller non-coal solid wastes from the dumpsters to the permitted Carbon County municipal landfill, or to the East Carbon Development Corporation facility.

Depending on market conditions for used machinery, scrap metal etc., the larger non-coal solid waste will be collected periodically either by a salvage contractor or by a contract disposal firm which will haul these materials off-site to a permitted disposal site.

Any waste other than used oil/lubricants that doesn't meet applicable EPA requirements will be collected and stored in either closed drums or in the waste oil storage tank located in the maintenance shop building. The temporary storage areas for this waste will provide for full containment in order to prevent an accidental release of petroleum products to flow onto the site.

jeatchel

Spoil Waste Disposals of Noncoal Mine Wastes

Analysis:

The application meets the Disposal of Noncoal Mine Wastes requirements of the State of Utah R645-Coal Mining Rules relative to hydrology.

In Section R645-301-727 of the MRP, the Permittee discusses the generation and disposal of noncoal waste. The application discusses that used oil and lubricants, garbage, paper waste, machinery parts, tires, cable, wood waste and other miscellaneous debris will be generated by the proposed mining activity. Smaller sized noncoal solid wastes will be stored in dumpsters. Larger solid waste materials (i.e. used equipment, machinery parts, tires etc.) will be temporarily stored in designated storage yards as located on Map 13, Surface Facilities.

A contract disposal service will regularly collect and haul the smaller noncoal solid wastes from the dumpsters to the permitted Carbon County municipal landfill, or to the East Carbon Development Corporation facility.

Depending on market conditions for used machinery, scarp, metal etc., the larger noncoal solid waste will be collected periodically either by a salvage contractor or by a contract disposal firm which will haul these materials off-site to a permitted disposal site.

Any waste other than used oil/lubricants that don't meet applicable EPA requirements will be collected and stored in either closed drums or in the waste oil storage tank located in the maintenance shop building. The temporary storage areas for this waste will provide for full containment in order to prevent an accidental release of petroleum products to flow into the sites.

Non-coal mine wastes generated in conjunction with mining and related activities include but are not limited to used oil and lubricants, garbage, paper waste, machinery parts, tires, cable, wood waste, and other miscellaneous debris. All non-coal solid wastes will be collected and stored in dumpsters or similar closed containers. Larger solid waste materials including such items as equipment, machinery parts, tires, and cables will be temporarily stored in designated sap yards located in areas as shown on Map 13, Surface Facilities Map. Non-coal wastes will be regularly collected and disposed of by a contract disposal service and hauled to a State-approved waste disposal site. The permit will adhere to the disposal requirements of the State of Utah and the EPA.

kstorrar

Spoil Waste Coal Mine Waste

Analysis:

The application does not meet the State of Utah R645 requirements for Coal Mine Waste.

In Chapter 5 of the application, the Permittee discusses three potential classes or categories of generated material that are classified as coal mine waste:

1. Rock with no coal.
2. A mixture of coal and rock.
3. Dirty coal (coal containing high ash or high sulfur content).

Items 2 and 3 above are considered coal processing waste. The material that is generated in this category will be placed on a 'non-spec coal pile' (See Map 13, Surface Facilities, Item 7 and figure 41). The Permittee discusses how the material that is placed on this pile will either be blended into the saleable coal product, or if the volume of this coal processing waste becomes too great, it will be moved to a temporary coal processing waste storage pile (See map 13, Surface Facilities, Item 38 and Figure 41). The Permittee indicates that "When sufficient volume of coal processing waste is accumulated on this temporary pad, it will then be sold, as "distressed coal", to the Arch Coal Washing Facility on Ridge Road south of Price, UT." The Permittee has committed to providing a Distressed Coal Letter of Intent with the Arch Coal Washing Facility, and a copy of this contract is supposed to be located in Exhibit 3, Confidential Information, although there is no contract or agreement located in Exhibit 3.

The application discusses how the underground development waste will be returned to designated areas of the underground mine workings. As the underground development waste is generated, it will be temporarily stockpiled on the off-spec coal pile (See Map 13, Surface Facilities, Item 7 and Figure 41) until it's possible to return the material underground. Map 15, Mine Plan Layout & Production Schedule Map depicts the areas where this material will be permanently stored. Coal processing waste will not be returned to underground areas. Only underground development will be returned to underground areas.

The application states that any underground development waste that is hauled back underground will be placed into designated panel areas inside the mine and will serve to encapsulate pillars. The permit states that this will passively stabilize pillars in those areas with some confinement. The permit states that these backfill areas will be ventilated until they are filled and have been monitored for products of combustion for a period of 1 year after backfill operations are complete. If no significant products of combustion have been found the area will be sealed and monitored according to an approved ventilation plan.

Page 5-68 states that underground development waste "is not coal processing waste" and will be stacked in a pile for a minimum of two years until it can be returned to the mine for permanent storage. However, Page 5-69 states that underground development waste "may or may not be classified as coal processing waste." Regardless of classification, specific requirements regarding the placement and storage of coal mine waste must be observed as outlined in the Utah Coal Mining Rules. Coal mine waste residing on the surface for any amount of time must be placed in a refuse pile in approved portions of the permit area only as per R645-301-528.320 and R645-301-536.420.

Deficiencies Details:

The application does not meet the State of Utah R645 requirements for Coal Mine Waste. The following deficiency must

be addressed prior to final approval:

R645-301-528.320, -536.100 thru -536.420: Permittee must remove references within the narrative to “off-spec” or “non-spec” coal and use established R645 definitions for waste material that will be generated and stored on the mine site (e.g. coal processing waste or underground development waste). Permittee must elaborate on the anticipated dimensions of the anticipated waste pile, and describe how this pile will be designed to attain long-term static safety and stability.

jeatchel

Spoil Waste Coal Mine Waste

Analysis:

The application does not meet the State of Utah R645 requirements for Coal Mine Waste relative to hydrology.

In Chapter 5 of the MRP, the Permittee discusses three categories of coal mine waste:

1. Rock with no coal.
2. A mixture of coal and rock.
3. Dirty coal (high ash or high sulfur content)

It is proposed this material will be placed on a ‘non-spec coal pile’ also referred to as an ‘off-spec coal pile’ (See Map 13, *Surface Facilities*, no. 7 and Figure 41). This material must be defined as coal or coal mine waste or another defined term within the R645 rules. All maps and narratives must be updated to reflect the correct terminology when referring to this material including Chapters 5 and 7. Additionally, Map 13 Item no. 7 and no. 38 and Figure 41 referring to the ‘non-spec/off-spec coal pile’ must be updated to reflect the true nature of the piled material.

Coal mine waste will be dealt with by hauling it off-site to the Wildcat Loadout. The Permittee indicates, “If the volume of coal processing waste or low quality coal is too great to blend into the saleable coal product onsite, will then be hauled to the Wildcat Loadout (owned and operated by Coal Energy Group 2, which has the same ownership as CEG 3) located in Spring Glen, Utah for blending into the saleable coal product there. In either scenario coal processing waste will be sold and removed from the property.” If coal mine waste material will be temporarily piled on-site before it is hauled off-site, the maximum size of the pile shall be provided and a bond posted for worst case scenario.

Deficiencies Details:

The application does not meet the State of Utah R645 requirements for Coal Mine Waste relative to hydrology. The following deficiency must be addressed prior to final approval:

R645-301-746: The coal mine waste generated as a result of mining activity will be stock-piled on the ‘off-spec’ or ‘non-spec’ coal pile shown in Map 13 Item no. 38. This material must be defined as coal or coal mine waste or another defined term within the R645 rules. All maps and narratives must be updated to reflect the correct terminology when referring to this material including Chapters 5 and 7. Additionally, Map 13 Item no. 7 and no. 38 and Figure 41 referring to the ‘non-spec/off-spec coal pile’ must be updated to reflect the true nature of the piled material. If any form of coal mine waste material is proposed to be stored on-site (i.e. not immediately removed), the applicable design/performance standards for that material must be addressed. The maximum size of the pile shall be provided and a bond posted for worst case scenario.

kstorrar

Spoil Waste Refuse Piles

Analysis:

The application does not meet the State of Utah R645 requirements for Refuse Piles.

The narrative on page 5-71 states that there is no refuse pile planned since there will be no coal preparation plant at the site but then further states that there will be a 3,900 ton coal processing waste pile on site to temporarily store waste coal. According to the Utah R645 Coal Regulations, a refuse pile is a surface deposit of coal mine waste that does not impound water, slurry, or other liquid. Coal mine waste is defined as coal processing waste as well as underground waste. Specific requirements regarding the placement and storage of coal mine waste must be observed as outlined in the Utah Coal Mining Rules.

Deficiencies Details:

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

R645-301-528.322, -536.900: The Permittee must describe how the 3,900 ton coal processing waste pile will be designed to comply with the performance standards of a designed refuse pile according to the Utah R645 coal regulations.

jeatchel

Spoil Waste Refuse Piles

Analysis:

The application does not meet the State of Utah R645 requirements for Refuse Piles.

The application proposes to pile coal mine waste in a "Small Mine Development Rock Waste Pile" (no. 38, Map 13). This small pile is referred to as the 'off-spec' or 'non-spec' coal pile. This material must be defined as coal or coal mine waste or another defined term within the R645 rules. All maps and narratives must be updated to reflect the correct terminology when referring to this material including Chapters 5 and 7. Additionally, Map 13 Item no. 7 and no. 38 and Figure 41 referring to the 'non-spec/off-spec coal pile' must be updated to reflect the true nature of the piled material. If coal mine waste material will be temporarily piled on-site before it is hauled off-site, the maximum size of the pile shall be provided and a bond posted for worst case scenario.

Deficiencies Details:

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

R645-301-746: This small pile 'off-spec' or 'non-spec' coal pile must be defined as coal or coal mine waste or another defined term within the R645 rules. All maps and narratives must be updated to reflect the correct terminology when referring to this material including Chapters 5 and 7. Additionally, Map 13 Item no. 7 and no. 38 and Figure 41 referring to the 'non-spec/off-spec coal pile' must be updated to reflect the true nature of the piled material

If any form of coal mine waste material is proposed to be stored on-site (i.e. not immediately removed), the applicable design/performance standards for that material must be addressed. The maximum size of the pile shall be provided and a bond posted for worst case scenario.

kstorrar

Spoil Waste Impounding Structures

Analysis:

The application meets the State of Utah R645 requirements for Spoil Waste Impounding Structures.

No impounding structures are proposed for either impounding coal mine waste nor are there are plans for impounding coal mine waste. As such, the Impounding Structures requirements relative to coal mine waste are not applicable.

jeatchel

Spoil Waste Impounding Structures

Analysis:

The application meets the Impounding Structures requirements of the State of Utah R645-Coal Mining Rules relative to hydrology.

No impounding structures are proposed for either impounding coal mine waste nor are there are plans for impounding coal mine waste. The potential coal-mine waste will be stored at the surface facility temporarily and will occupy a small area. As such, the Impounding Structures requirements relative to coal mine waste are not applicable.

kstorrar

Spoil Waste Burning and Burned Waste Utilization

Analysis:

The application meets the State of Utah R645 requirements for Spoil Waste Burning and Burned Waste Utilization.

The State of Utah regulations concerning burning waste do not apply because Page 5-71 of the application states that no burned waste is expected to be encountered and there are no plans to burn or utilize burned waste.

jeatchel

Spoil Waste Coal Processing Waste to Abandoned

Analysis:

The application meets the State of Utah R645 requirements for Return of Coal Processing Waste to Abandoned Underground Workings.

Pages 5-68 through 5-69 of the application state that coal processing waste will not be returned to abandoned underground mine areas. Only underground development waste will be returned to abandoned underground workings.

jeatchel

Spoil Waste Excess Spoil

Analysis:

The application meets the State of Utah R645 requirements for Excess Spoil Waste.

The application satisfies the minimum State of Utah R645 requirements for spoil waste disposal. Narrative on page 5-36 of the application states that spoil materials will not be generated. Spoil is defined by the State of Utah R645-Coal Mining Rules as 'overburden that has been removed during coal mining and reclamation operations'. The proposed mining operation is strictly underground, and no surface mining is proposed. As such, the excess spoil requirements are not applicable to this project. The Permittee does not anticipate the generation of excess spoil.

jeatchel

Spoil Waste Excess Spoil

Analysis:

The application meets the Excess Spoil requirements of the State of Utah R645-Coal Mining Rules relative to hydrology.

As discussed previously, there is the potential for the mining operation to produce coal processing waste and underground development waste. Spoil is defined by the State of Utah R645-Coal Mining Rules as '*overburden that has been removed during coal mining and reclamation operations*'. The mining operation is strictly underground. No surface mining is proposed. As such, the excess spoil requirements are not applicable to this project. The Permittee does not anticipate the generation of excess spoil.

There will be no spoil for the Kinney No. 2 Mine since there will no overburden removed during coal mining and reclamation operations.

Page 5-70 was revised to reference no.38 instead of no.7. Map 13 was revised to make it clear that item no.18 points to the Solid Construction Debris Disposal Areas (multiple), and that no.38 points to the Coal Processing Waste - Temporary Stockpile. Revised copies of page 5-70 and Ma 13 were included in the submittal.

kstorrar

Spoil Waste Excess Spoil

Analysis:

The application meets the State of Utah R645-301-412 requirements for Spoil and Waste Materials relative to land use.

Chapter 5, page 5-1, states that no excess spoil fill is planned for the mine. As such, the concern that final configuration of the fill be in conformance with the post-mining land use is nullified. Should excess fill become necessary to be left permanently on the landscape, the final configuration of that fill must be suitable for the reclamation and revegetation and be compatible with the post-mining land use.

tmiller

Hydrologic General

Analysis:

The application meets the General Hydrologic Information requirements of the State of Utah R645-Coal Mining Rules.

Chapter 7 of the application provides narratives and maps on groundwater and surface water resources within and adjacent to the permit area. Chapter 7 of the application provides an extensive discussion and presentation of ground and surface water resources within the permit and adjacent area.

The underground mining and reclamation activities have been designed to minimize disturbance of the hydrologic balance within the permit and adjacent areas, to prevent material damage to the hydrologic balance outside the permit area and to support approved post-mining land uses.

The Permittee met those requirements by submitting baseline information for ground and surface water in sections R645-301-724.100 and R645-301-724.200. The baseline data was utilized to identify the probable hydrologic consequences from the proposed mining activity (see Section R6445-301-728). Based on the identified probable hydrologic consequences, the Permittee developed a ground and surface water monitoring program (See Section R645-301-731.200).

kstorrrar

Hydrologic Ground Water Monitoring

Analysis:

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

In order to protect the hydrologic balance, the Permittee has developed a Ground Water Monitoring Plan. The plan is described in Section R645-301-731.200 of the MRP. Table 6, *Kinney Mine Baseline Monitoring Stations* and Table 7, *Kinney Mine Operational Monitoring Stations* provides a list of the baseline and operational ground water monitoring stations respectively. Table 20, *Hydrologic Monitoring Schedule* provides a list of the water quality parameters that will be analyzed for during the operational and post-mining phases of the project. Map 28, *Surface and Ground Water Monitoring Sites* depicts the locations of the ground water monitoring sites.

The Permittee commits to obtaining water quality samples on a quarterly basis. The data will be submitted to the Division within 90 days of the end of the quarter. On an annual basis, the Permittee commits to providing the Division with a hydrologic review and summary of data that will be submitted on or before June 1st.

The operational and reclamation phase ground water monitoring program consists of monitoring thirteen monitoring wells (CR 06-01, CR 06-01 BLW, CR 06-02, CR 06-02 ABV, CR 06-05A, CR 06-09 ABV, CR 06-09 BLW, CR 10-11, CR 10-12, WNR-2012-5, WNR-12-07, WNR-12-07BLW, WNR-2012-8) and 7 spring sites (Aspen Spring/Pond, Eagle Spring 2 and Pond 2, Eagle Seep 1, Eagle Seep 1A, Eagle Seep 3, Eagle Spring and Sulfur Spring). The sites will be monitored for water level/flow as well as field and laboratory analytical parameters.

The Permittee will monitor Eagle Seep 1, Eagle Seep 1A, Eagle Seep 3, Eagle Spring 2, Eagle Pond 2 and Aspen Spring (aka Eagle Pond 1) on a monthly basis for a minimum of 12 months (with the exception during months when access is not possible due to snow).

As mining progresses, it is the intent of the Permittee to expand eastward beyond the Eagle Canyon Graben. In Section R645-301-731.200, the Permittee commits to collecting water quality data for any water sources where sufficient flow is available on a quarterly basis for 12 months.

kstorrrar

Hydro Surface Water Monitoring

Analysis:

The application meets the General Hydrologic Information requirements of the State of Utah R645-Coal Mining Rules.

In order to protect the hydrologic balance, the Permittee has developed a Surface Water Monitoring Plan. The plan is described in Section R645-301-731.200 of the MRP. Table 6, *Kinney Mine Baseline Monitoring Stations* and Table 7, *Kinney Mine Operational Monitoring Stations* provides a list of the baseline and operational ground water monitoring stations respectively. Table 20, *Hydrologic Monitoring Schedule* provides a list of the water quality parameters that will be analyzed for during the operational and post-mining phases of the project. Map 28, *Surface and Ground Water Monitoring Sites* depicts the locations of the ground water monitoring sites.

There has been no surface disturbances within the permit area since this site was first permitted over a decade ago. The locations of all surface water monitoring sites have not changed in the interim. Therefore, the surface water monitoring plan is adequately up-to-date to monitor potential impacts to the hydrologic balance due to mining activities.

The Permittee commits to obtaining water quality samples on a quarterly basis. The data will be submitted to the Division within 90 days of the end of the quarter. On an annual basis, the Permittee commits to providing the Division with a hydrologic review and summary of data that will be submitted on or before June 1st.

The operational and reclamation phase surface water monitoring program consists of monitoring 6 surface water monitoring sites (Miller Outlet, Mud Creek, Scofield Reservoir, Jones Draw, Kinney Draw and Columbine Draw). The sites will be monitored for flow as well as field and laboratory analytical parameters.

kstorrar

Hydrologic Acid and Toxic forming Materials

Analysis:

The information provided meets the Utah Coal Rules for handling acid/toxic material.

Table 4 in Section R645-301-624 presents a summary of the analytical results found in Exhibit 19 for Hiawatha seam roof and floor samples within the proposed lease area. Two Hiawatha seam floor samples (CR-06-01 and Cr-06-05A) were analyzed for acid forming and neutralization potential. The results indicate that the floor rock has limited neutralization capacity and is potentially acid-forming. Two Hiawatha roof samples (CR-06-05A and CR-06-09 3/1) were likewise analyzed. These samples indicated adequate neutralization potential of the roof rock, suggesting it is not likely to be acid forming waste. However a sample labeled Immediate Roof (CR-06-09 4/1 indicates the Immediate Roof rock is likely to be strongly acid forming. Section R645-301-621 of Chapter 6 acknowledges the potential for acid/toxic forming waste rock.

The handling plan for waste rock is described on pages 6-5 and 6-6 of Chapter 6. The waste rock may be blended with the coal product, or it may be placed temporarily in the Temporary Stockpile shown on Map 13, Surface Facilities, or it may be temporarily stored in the "off-spec" stacking tube for eventual shipping. If the volume of waste is too great or the quality is too poor to be blended, the waste will be stockpiled in the temporary storage pile shown on Map 13 and Figure 41 (Section 528.320. Or, the waste may be hauled to the Wildcat Loadout (Section 528.320 and Section 536), which is also under CEG3 ownership. To receive the waste, the Wildcat Loadout MRP must be modified accordingly.

Section 528.320 states that the maximum time the temporary waste pile will remain on the surface is two years (p. 5-67). Section 515.300 of the MRP states that during periods of temporary cessation lasting 30 days or more, one composite waste sample will be drawn for every 5,000 Tons in the pile to be analyzed according to Tables 3 & 7 of the 2008 Division Topsoil and Overburden Guidelines. Chapter 6, p. 6-7 also describes sampling of the waste pile during temporary cessation.

Section 542.200 Backfilling and Grading to Establish Final Configuration states that the all coal seams and any coal mine materials or coaly materials will be covered with four feet of suitable soil (p. 5-88 and 5-92). Section 553.250 Refuse Pile & 553.260 Disposal of Coal Processing Waste states that coal mine waste encountered during reclamation will be covered with four feet of suitable material (p. 5-98) and Section 553.300 provides a commitment to backfill the coal seam with four feet of cover (p. 5-98).

pburton

Hydrologic Acid and Toxic forming Materials

Analysis:

The application does not meet the State of Utah R645 requirements for Acid- and Toxic-Forming Materials and Underground Development Waste.

In Chapter 6 of the MRP, the Permittee presents the acid/toxic information. Tables 4 and 4A in Section R645-301-624 presents the results of the analyses that were performed on the coal located within the lease area as well as on mine waste buried within the proposed disturbed area boundary. Exhibit 19 in Volume 4 of the MRP provides the details of the core analysis which was performed by SGS Labs, Denver. Exhibit 6 provides the details of the mine waste analysis (also conducted by SGS Labs). The information provided suggests that potentially acid forming material is located in the roof and floor of the mine. Table 4 provides the supporting calculations for Acid Production Potential (APP), Neutralization Potential (NP) and Net Neutralization Potential (NNP). Negative net neutralization potential values are identified in Table 4 indicating that acid/toxic forming materials may be present.

In Chapter 5 of the MRP, the Permittee discusses three categories of coal mine waste:

1. Rock with no coal.
2. A mixture of coal and rock.
3. Dirty coal (high ash or high sulfur content)

It is proposed this material will be placed on a 'non-spec coal pile' also referred to as an 'off-spec coal pile' (See Map 13, *Surface Facilities*, no. 7 and Figure 41). This material must be defined as coal or coal mine waste or another defined term within the R645 rules. All maps and narratives must be updated to reflect the correct terminology when referring to this material including Chapters 5 and 7. Additionally, Map 13 Item no. 7 and no. 38 and Figure 41 referring to the 'non-spec/off-spec coal pile' must be updated to reflect the true nature of the piled material.

Coal mine waste will be dealt with by hauling it off-site to the Wildcat Loadout. The Permittee indicates, "If the volume of coal processing waste or low quality coal is too great to blend into the salable coal product onsite, will then be hauled to the Wildcat Loadout (owned and operated by Coal Energy Group 2, which has the same ownership as CEG 3) located in Spring Glen, Utah for blending into the saleable coal product there. In either scenario coal processing waste will be sold and removed from the property." If coal mine waste material will be temporarily piled on-site before it is hauled off-site, the maximum size of the pile shall be provided and a bond posted for worst case scenario.

The potential for acid/toxic forming materials to impact surface and ground water resources is considered minimal. The roof and floor material will not be stored for long periods of time at the surface facility. The MRP indicates that the material will be blended with the coal product, placed temporarily in the Temporary Stockpile (See Map 13, *Surface Facilities*). The MRP indicates that any unused material stored in the Temporary Stockpile will be transported to the Wildcat Loadout.

The potential for acid/toxic impacts to surface and ground water facilities is further minimized by the utilization of the sediment control/drainage control network. The disturbed area/surface facilities primary water treatment/retention component is the primary sediment pond. The sediment pond located at the surface facility is designed to contain the 10-year, 24-hour event. In addition, the Permittee has obtained a Utah Pollutant Discharge Elimination System (UPDES Permit) under the Federal Clean Water Act. As all storm water generated on site is routed to the sediment pond for retention/treatment prior to discharge, the potential for acid/toxic impacts to migrate outside the permit area is limited. The UPDES permit establishes water quality standards that must be met prior to any discharge leaving the sediment pond. As a result, the potential for acid/toxic material to impact Scofield Reservoir is minimal. Additionally, the ground water baseline information (See Ground Water baseline discussion above) indicates that there is a general lack of ground water that could even come in contact with potentially acid/toxic forming materials. Additionally, the baseline data indicates that the coal seam to be mined is located well above the potential regional water table thus limiting even further the potential for impacts to ground water systems in the permit and adjacent area.

Tables 4 and 4A in Section R645-301-624 present the results of acid/toxic analysis on six cores within the proposed lease area and on mine waste buried within the proposed disturbed area boundary. Exhibit 19 in Volume 4 presents the details of the core analysis which was performed by SGS Labs, Denver. Exhibit 6 presents the details of the mine waste analysis, also performed by SGS Labs.

The information provided suggests that the roof and floor is potentially acid forming. The roof and floor may be blended with the coal product, or it may be placed temporarily in the Temporary Stockpile shown on Map 13, *Surface Facilities*. The Permittee indicates that "If the volume of coal processing waste or low quality coal is too great to blend into the

saleable coal product onsite, will then be hauled to the Wildcat Loadout (owned and operated by Coal Energy Group 2, which has the same ownership as CEG 3) located in Spring Glen, Utah for blending into the saleable coal product there. In either scenario coal processing waste will be sold and removed from the property.”

Section 515.300 of the MRP states that during periods of temporary cessation lasting 30 days or more, one composite waste sample will be drawn for every 5,000 Tons in the pile to be analyzed according to Tables 3 & 7 of the 2008 Division Topsoil and Over burden guidelines.

Section 542.200 Backfilling and Grading to Establish Final Configuration states that the all coal seams and any coal mine materials or coal materials will be covered with four feet of suitable soil (Priority #1). Section 553.250 Refuse Pile & 553.260 Disposal of Coal Processing Waste states that coal mine waste encountered during reclamation will be covered with four feet of suitable material and Section 553.300 provides a commitment to backfill the coal seam with four feet of cover.

Deficiencies Details:

The application does not meet the State of Utah R645 requirements for Acid/Toxic Forming Materials. The following deficiency must be addressed prior to final approval:

R645-301-731.300: The coal mine waste generated as a result of mining activity will be stock-piled on the ‘off-spec’ or ‘non-spec’ coal pile shown in Map 13 Item no. 38. This material must be defined as coal or coal mine waste or another defined term within the R645 rules. All maps and narratives must be updated to reflect the correct terminology when referring to this material including Chapters 5 and 7. Additionally, Map 13 Item no. 7 and no. 38 and Figure 41 referring to the ‘non-spec/off-spec coal pile’ must be updated to reflect the true nature of the piled material. If any form of coal mine waste material is proposed to be stored on-site (i.e. not immediately removed), the applicable design/performance standards for that material must be addressed. The maximum size of the pile shall be provided and a bond posted for worst case scenario.

kstorrar

Hydrologic Transfer Wells

Analysis:

The application meets the Transfer of Wells requirements of the State of Utah R645-Coal Mining Rules.

In Section R645-301-748 of the application, the casing and sealing of wells is discussed. The Permittee commits to plugging and sealing all exploration boreholes and any boreholes which have been converted to monitoring wells during mining reclamation.

In Section R645-301-755, the Permittee outlines the methods to be utilized in plugging any water monitoring wells/boreholes. The boreholes or casing will be sealed with cement to form a plug from the bottom of the hole to at least 20 feet above any zone of completion or water bearing rock strata. The remainder of the hole will be filled with concrete to within 20 feet of the ground surface and then filling the remainder of the hole to the ground surface with cement to form a surface plug. In addition, the Permittee commits to placing a steel fence post in the center of the surface plug before the cement sets up in order to provide a permanent marker of the hole location.

kstorrar

Hydrologic Discharge Into an Underground Mine

Analysis:

The application meets the Discharges into Underground Mine requirements of the State of Utah R645-Coal Mining Rules.

In Chapter 5 of the MRP, the Permittee discusses the mine portal area where surface water could potentially enter into the mine. Map 17, *Mine Surface Facilities Area Pre-Mining, Mining & Post Mining Cross Sections*, shows a typical cross Section of the portals. The portal pad will be graded to prevent surface runoff water from entering the mine.

In light of the absence of any form of surface water present in the disturbed area, the elevation difference between the mine entries and the disturbed area and the primary and emergency spillways of the primary sediment pond reporting to Scofield Reservoir, there is minimal potential for any significant water discharge to enter the underground mine works.

Hydrologic Gravity Discharge From Underground Mine

Analysis:

The application meets the Gravity Discharges From Underground Mine requirements of the State of Utah R645-Coal Mining Rules.

In Chapter 5 of the application, the Permittee states, "*potential mine inflows are expected to be minimal and there will be sufficient storage capacity in both the existing abandoned underground mine workings and in inactive working areas*".

Gravity discharges from the mine are not expected based on the minimal amounts of ground water encountered during the baseline data collection period. Additionally, based on the data submitted for the MRP, the potentiometric surface of the regional water table is well below the Hiawatha Coal seam.

kstorrrar

Hydrologic Water Quality Standards

Analysis:

The application meets the Water Quality Standards and Effluent Limitation requirements of the State of Utah R645-Coal Mining Rules.

The Permittee has not yet obtained a Utah Pollutant Discharge Elimination System (UPDES) permit. A UPDES permit will be obtained prior to initiation of disturbance at the site. The Division has been informed by Jeff Studenka with the Division of Water Quality, that the permittee is in the process of acquiring a Coal Mine General UPDES permit (UTG040000) for the sediment pond outfall 001. Mr. Studenka anticipates the permit will be renewed by April of 2019.

The UPDES permit authorizes the Permittee to discharge from Outfall 001 (lone sedimentation pond) to Mud Creek and Scofield Reservoir. The Permittee will be required to sample for flow, oil and grease, total iron, total suspended solids and pH every month.

kstorrrar

Hydrologic Diversion General

Analysis:

The application meets the Diversions: General requirements of the State of Utah R645-Coal Mining Rules.

The Permittee discusses the diversions to be utilized at the site in Section R645-301-742.300. Map 23, *Drainage and Sediment Control Plan* depicts the undisturbed drainage areas. Map 24, *Drainage and Sediment Control Plan Disturbed Drainage Areas* depicts the disturbed drainage areas and all temporary diversions. Map 25, *Sedimentation Pond 1 Sections and Details*, depicts the diversions from the primary detention pond. Map 26, *Drainage and Sediment Control Plan Disturbed Drainage Sub-Basins* depicts the sub-watersheds utilized to calculate the peak storm flow and sizing of the disturbed area diversions. Map 29, *Mine Surface Facilities Area Post Mining Topography and Interim Drainage Control* depicts the diversions to be utilized following reclamation. MAP 29A, *Mine Surface Facilities Area Post Mining Topography* depicts the final surface configuration/topography of the surface facility. Design calculations for temporary and permanent diversions are provided in Exhibit 16, *Runoff Control Design Details*. The surface facilities will be constructed to intercept and divert surface runoff flows from undisturbed up gradient areas around the mine surface facilities areas.

Diverting the undisturbed drainage around the mine-site will greatly minimize the potential for erosion and sedimentation impacts and also significantly reduce the requirements for retention and treatment of surface runoff from the disturbed area. The MRP discusses how the diversion structures to be utilized will include both temporary diversions (used to control undisturbed runoff during the operational phase of mining and reclamation) as well as permanent diversions (used to restore effective surface drainage following the completion of mining activity).

All diversions have been designed to appropriate design standards. With the exception of undisturbed drainage ditches UDD-1 and UDD-2 and undisturbed culvert UDC-2 all diversions will be utilized on a temporary basis (i.e. removed

following reclamation). Only the aforementioned diversions will be retained permanently and they have been designed accordingly per R645-301-742.300.

kstorrar

Hydrologic Diversion Perennial and Intermitten

Analysis:

The application meets the Diversions: Perennial and Intermittent Stream requirements of the State of Utah R645-Coal Mining Rules.

Map 24, *Drainage and Sediment Control Plan Disturbed Drainage* areas depicts the drainage control plan for the surface facility. Undisturbed drainage will be routed around the site with culvers (UDC-1 and UDC-2 respectively). The drainages reporting to these culverts have been characterized as ephemeral.

No perennial or intermittent streams are located within the area of the proposed surface facility.

kstorrar

Hydrologic Diversion Misc. Flows

Analysis:

The application meets the State of Utah R645 requirements for Diversions of Miscellaneous Flows.

Exhibit 20 identifies several ephemeral drainages that cross the disturbed area. The drainage and sediment control plan will effectively route these drainages around the disturbed area with the utilization of diversions UDD-1 and UDD-2 and culvert UDC-2. Each of these three diversions will be permanent and have been designed to meet the performance standard of safely passing a 10-year, 6-hour event.

kstorrar

Hydrologic Stream Buffer Zones

Analysis:

The application meets the Stream Buffer Zone requirements of the State of Utah R645-Coal Mining Rules.

A stream buffer zone will not be required with the proposed mining operation. No intermittent or perennial streams are located within the proposed disturbed area.

kstorrar

Hydrologic Sediment Control Measures

Analysis:

The application meets the Sediment Control Measure requirements of the State of Utah R645-Coal Mining Rules.

Erosion and sediment control measures are discussed in Section R645-301-732. Runoff generated on the site during mining operations will be contained and controlled by utilizing a network of ditches, culverts, a sedimentation pond and alternate sediment control methods. The network will be comprised of diversion ditches which route undisturbed runoff around or through the disturbed area, collection ditches which intercept disturbed area runoff and route it to the sedimentation pond and the sediment pond.

The Permittee commits to utilizing various drainage control measures to prevent or mitigate excessive erosion and sediment transport. These measures include: the placement of straw bales, sediment fence, erosion netting, mulch berms, stilling basins, sumps and other small structures to control and surface runoff and limit erosion.

Map 27, *Runoff Control Details*, provides the design drawings for various components of the sediment control measures to be implemented at the site. The drawings include typical silt fence and straw bale installations, headwall protection measures, channel designs and drainage berm details. Map 24, *Drainage and Sediment Control Plan Disturbed Drainage Areas* depicts a plan view of the surface facilities and locations of the various components of the sediment control plan.

The permit states that drainage and sediment control structures, which will be constructed and utilized in conjunction with the proposed mining and related activities, will effectively route natural drainage through the mine surface disturbance area, intercept and route undisturbed drainage from upslope areas around disturbance areas, and collect and route disturbed area drainage to sedimentation structures to allow settlement of suspended solids prior to discharge to natural drainages. The permit states that drainage and settlement control structures required under the proposed MRP will include Sedimentation Pond 1, a number of undisturbed drainage diversion ditches, disturbed area collection ditches, drainage culverts, containment berms, and various alternative drainage and sediment control measures as appropriate. Sediment control measures include practices carried out within and adjacent to the disturbed area.

kstorrar

Hydrologic Siltation Sedimentation

Analysis:

The application meets the Siltation Structures: Sedimentation Pond requirements of the State of Utah R645-Coal Mining Rules.

The primary sediment control measure to be implemented at the mine site is a sole sediment pond. Map 25, *Sedimentation Pond 1 Section & Details*, provides the design drawings for Sediment Pond 1. Map 24, *Drainage And Sediment Control Plan Disturbed Drainage Areas* depicts the location of the sediment pond relative to the undisturbed drainage areas east of the mine site.

Exhibit 16, *Runoff Control Design Details*, provide the design calculations and methodology utilized in designing the sediment pond. As required by R645-301-742.221.33, the sediment pond has been designed to retain the surface runoff volume produced a 10-year, 24-hour storm event. The runoff generated from the adjacent undisturbed areas is to be diverted around the mine site and as such, were not considered in the sediment pond design.

The Permittee commits to installing a staff gage in the sediment pond that will be clearly marked so it can be visually monitored. Marks will be established at an elevation of 7,683.80 (5.3 year sediment level) and at each 0.5' level below that. This will allow the mine and Division inspectors to clearly identify when the sediment needs to be removed.

In Section 526.300, the application discusses the sediment pond maintenance procedures. The sediment pond maintenance procedures include: ongoing sampling and discharge monitoring under applicable provisions of the UPDES permit, quarterly inspections of pond embankments, impoundment areas, discharge structures and inlet/outlet structures as well as reporting any hazardous conditions, maintenance and repair of any problems noted during the inspections as well as the periodic removal of accumulated sediment. Control of potential water quality impacts from pond discharge will be monitored through the compliance with the UPDES permit. During the quarterly inspections, the depth and elevation of any impounded water will be measured and based on those measurements; the storage capacity will be estimated as well. If the inspections identify any potential public hazard, the Permittee will promptly notify the Division.

kstorrar

Hydrologic Siltation Treatment

Analysis:

The application meets the State of Utah R645 requirements for Hydrologic Siltation Treatment.

This section of the rules is not applicable. Sediment control will be performed using standard sediment ponds and drainage ditches. No other treatment facilities proposed.

kstorrar

Hydrologic Exemptions

Analysis:

The application meets the State of Utah R645 requirements for Siltation Structures: Exemptions.

The application is not proposing or requesting an exemption.

kstorrar

Hydrologic Discharge Structures

Analysis:

The application meets the Siltation Structures: Sedimentation Pond requirements of the State of Utah R645-Coal Mining Rules.

The pond has been designed with vertical risers for both the primary and emergency spillways. The primary spillway is set at an elevation of 7,683.80 feet. The primary spillway will be used to dewater the pond and discharge stormwater inflows. The invert of the emergency spillway will be set at an elevation of 7,686.9 feet. The spillways have been over-designed to safely pass the 100-year, 6-hour event (as opposed to the 25-year, 6-hour event as required by rule). The principal and emergency spillways were over designed to provide additional safety due to the proximity of the sediment pond to SR 96.

kstorrar

Hydrologic Ponds Impoundments Banks Dams

Analysis:

The application meets the State of Utah R645 requirements for Ponds, Impoundments, Banks, Dams, and Embankments.

The application states that Sedimentation Pond 1 has been designed and will be constructed to meet the following regulatory design criteria:

- Located as close as possible to the disturbed area and out of perennial streams unless approved by the Division.
- Provide adequate storage drainage
- Provide adequate detention time to meet applicable effluent standards
- Provide a non-clogging dewatering device
- Minimize short circuiting
- Facilitate periodic sediment removal
- Foundation structures will be stable under all conditions of construction and operation

The application states that in addition, Sedimentation Pond 1 design has been prepared by or under the direction of a certified by a qualified Registered Professional Engineer in accordance with Rules R645-301-512.200 and 240.

The application states that the sedimentation pond will be inspected quarterly by a qualified person for any indication on structural weakness or other hazardous condition, instability, erosion, or other problems. Impounded water depth will be measured, and any required structural monitoring will be performed. The qualified registered professional engineer, or qualified registered professional land surveyor as applicable, shall promptly after each inspection provide to the Division a certified report that the impoundment has been constructed and/or maintained as designed and in accordance with the approved plan and this section. The report shall include discussion of any appearance of instability, structural weakness or other hazardous condition, depth and elevation of any impounded waters, existing storage capacity, any existing or required monitoring procedures and instrumentation, and any other aspects of the structure affecting stability. A copy of the report shall be retained at or near the mine-site. If any examination or inspection discloses that a potential hazard exists, the person who examined the impoundment shall promptly inform the Division of the finding and of the emergency procedures formulated for public protection and remedial action. If adequate procedures cannot be formulated or implemented, the Division shall be notified immediately. The Division shall then notify the appropriate agencies that other emergency procedures are required to protect the public.

Sedimentation Pond 1 will be located at the northern end of the mine site, as shown on Maps 24 and 13. It is the only sedimentation pond that is proposed to be used for mining operations. The total contributing drainage area for pond 1 is approximately 28 acres. The pond has been designed to provide adequate total retention capacity of 3.15 acre feet.

The application states that Sediment Pond has been designed to meet a minimum 1.3 static safety factor and all other provisions of the required regulations. The pond does not meet the NRCS Class B or C criteria for dams in TR-60 or the size or other criteria of 30 CFR Section 77.216.

Stability analyses were performed for the proposed pond and sudden drawdown conditions. For the sudden drawdown condition, the phreatic surface was modeled to be within one foot of the slope surface 10 feet down-slope of the crest, existing at the toe of the slope after full drawdown. A factor of safety of 3.37 was obtained for the steady state condition. For sudden drawdown, the factor of safety reduces to 2.3. Both are able the required 1.3. Map 25, Sediment Pond No. 1, Sections and Details has been certified by a Registered Professional Engineer Ponds, Impoundments, Banks, Dams, and Embankments

kstorrar

Support Facilities and Utility Installations

Analysis:

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

The application satisfies the minimum requirements for R645-301-526.200 because of narrative on pages 5-14, 5-39, and 5-58 that provides a detailed description of the utilities and facilities that are proposed for this project. The mining and related operations will utilize new utility installations including electrical distribution, telephone, potable and raw water, and sewer systems. All existing and proposed utility installations are shown on Map 13, Surface Facilities Map.

Descriptions were provided for electrical power systems that will service the mining operation. Electrical power will be provided through an existing power line running north-south immediately east of the portal area. The power line is shown on Map 11, Regional Surface Ownership Map. Electrical voltage will be reduced from the existing power source at a substation located at the portal pad. The substation location is depicted on Map 13. All electrical components will be designed, constructed, and operated in accordance with regulatory requirements. Any new power lines will be constructed with "Raptor Proof" power poles. The design specification for these poles is located on Figure 22 on page 3-67 within the biology section of the application. All substations, electrical transformers, switchgear, and electrical control components will either be located so that it is not readily accessible to wildlife and the public or appropriate fences with locked gates or other enclosures will be utilized to limit access to authorized personnel.

Buried or overhead telephone lines will be extended by US West from Highway 96 to provide telephone service for mine facilities. The permit states that potable water, raw water, and sewer connections are expected to be provided by the town of Scofield. Water requirements for the mine are calculated to be a maximum of 4.7 acre-feet per year potable water and 61 acre-feet per year non-potable water for mining operations.

jeatchel

Signs and Markers

Analysis:

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

The application satisfies the minimum requirements for R645-301-521.200 because narrative on pages 5-16, 5-17, and 5-63 of the application that describes what signs will be posted, what they will convey, and how they will be maintained. Signs and markers will be constructed of durable materials and will be posted so as to be clearly visible. Mine identification signs listing the name, business address, and telephone number of the permittee and the permit number will be clearly posted. Perimeter markers will be posted for topsoil stockpile, blasting areas, buffer zones, etc. All required signs and markers will be maintained or replaced during the period of active operations, site reclamation, and until final bond release is approved for all areas within the permit boundaries.

jeatchel

Explosives General

Analysis:

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

The application satisfies the minimum requirements for R645-301-524 because narrative within Exhibit 15 gives a general description of the explosives and blasting plan that will be executed at the mine. The application commits to submit specific blast design information to the Division prior to any blast. The blasting plan included within Exhibit 15 is an example of a general blast plan and not a specific blast design. The application further states that any surface blasting will be conducted by or under the direction of a certified blaster. Certificates of blaster certification will be

carried by blasters or shall be on file at the permit area during blasting operations. A blaster and at least one other person shall be present at the firing of a blast. Any blaster who is responsible for conducting blasting operations at a blasting site shall be familiar with the site-specific performance standards and give direction and on-the-job training to persons who are not certified and who are assigned to the blasting crew or assist in the use of explosives.

A blast design was included with the application (Page 5 of Exhibit 15, Kinney No. 2 Mine Blasting Plan). Blasting operations will be conducted within 1,000 feet of State Highway 96 and within 500 feet of abandoned underground mines. The blast design contains sketches of the drill patterns, delay periods, and decking and shall indicate the type and amount of explosives to be used, critical dimensions, and the location and general description of structures to be protected, as well as a discussion of design factors to be used, which protect the public and meet the applicable air-blast, fly-rock, and ground-vibration standards.

jeatchel

Explosives Preblasting Survey

Analysis:

The application meets the State of Utah R645 requirements for Explosives Preblasting Survey.

The application satisfies the minimum requirements for R645-301-524.300 through -524.350 because narrative within Exhibit 15 gives a description of the protocol surrounding the preblasting survey that precedes any proposed blasting at the mine.

The application states that the Permittee commits that at least 30 days before initiation of blasting, the operator shall notify in writing all residents or owners of dwellings or other structures located within 1/2 mile of the permit area how to request a pre-blasting survey. A resident or owner of a dwelling or structure within 1/2 mile of any part of the permit area may request a pre-blasting survey. This request shall be made in writing directly to the operator or to the Division, who shall promptly notify the operator. The operator shall promptly conduct a pre-blasting survey of the dwelling or structure and promptly prepare a written report of the survey. An updated survey of any additions, modifications, or renovations shall be performed by the operator if requested by the resident or owner. Any surveys more than ten days before the planned initiation of blasting will be completed by Permittee before the initiation of the proposed blasting.

jeatchel

Explosives General Performance Standards

Analysis:

The application meets the State of Utah R645 requirements for General Explosives Performance Standards.

The application satisfies the minimum requirements for R645-301-524.140 because narrative in Exhibit 15 describes the standard protocols that are to be installed to ensure that all personnel are familiar with the blasting plan and carried out by persons certified in the use of explosives. The application commits to notify in writing residents within 1/2 mile of the blasting site and local governments of the proposed times and locations of blasting operations. Such notice of times that blasting is to be conducted may be announced weekly, but in no case less than 24 hours before blasting will occur. Unscheduled blasts may be conducted only where public or operator health and safety so require and for emergency blasting actions. Residents within one-half mile will be notified of unscheduled blasts using audible signals.

jeatchel

Explosives Blasting Signs Warnings Access Control

Analysis:

The application meets the State of Utah R645 requirements for Explosives Blasting Signs, Warnings, and Access Control.

The application satisfies the minimum requirements for R645-301-524.500 due to narrative in Exhibit 15 which describes the proposed plans to alert the general public of on-site blasting activities. The application states that conspicuously place signs reading "Blasting Area" shall be installed at the following locations: along the edge of any blasting area that comes within 100 feet of any public road right-of-way, at the point where any other road provides access to the blasting area, and at all entrances to the permit area from public roads or highways. Conspicuous signs which state "Warning! Explosives in Use" will also be posted. These signs will clearly list and describe the meaning of the audible blast warning

and all-clear signals that are in use, and explain the marking of blasting areas and charged holes awaiting firing within the permit area.

Warning and all-clear signals of different characters or patterns that are audible within a range of 1/2 mile from the point of the blast shall be given. Each person within the permit area and each person who resides or regularly works within 1/2 mile of the permit area shall be notified of the meaning of the signals in the blasting notification.

Access within the blasting areas shall be controlled to prevent the presence of livestock or unauthorized persons during blasting. An authorized representative of the operator shall reasonably determine that no unusual hazards such as imminent slides or un-detonated charges exist, and allow safe access and travel within the blasting area to resume.

jeatchel

Explosives Control of Adverse Effects

Analysis:

The application meets the State of Utah R645 requirements for Explosives Control of Adverse Effects.

The application satisfies the minimum requirements for R645-301-524.600 due to narrative in Exhibit 15 of the application which states that blasting shall be conducted to prevent injury to persons, damage to public or private property outside the permit area, adverse impacts on any underground mine, and change in the course, channel, or availability of surface or groundwater outside the permit area. UDOT will be notified if Highway 96 needs to be temporarily closed for blasting activities. Flyrock traveling through the air or along the ground will not be cast from the blasting site more than one-half the distance to the nearest dwelling or structure, or beyond the permit boundary. Airblast will not exceed the limits spelled out in R645-301-524.621, and the decibel table on page 4 of Exhibit 15 illustrates the allowable ranges that will be observed.

jeatchel

Explosives Records of Blasting Operations

Analysis:

The application meets the State of Utah R645 requirements for Explosives Records of Blasting Operations.

The application satisfies the minimum requirements for R645-301-700 due to narrative on page 8 of Exhibit 15 that states the Permittee will retain a record of all blasts for at least 3 years. Upon request, copies of these records shall be made available to the Division and to the public for inspection. Table 15-2 includes a sample Blasting Record that will be filled out by the certified blaster upon completion of each blast.

jeatchel

Maps Affected Area

Analysis:

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

The application satisfies the minimum requirements for R645-301-521.140 and -521.162 because the MRP includes maps depicting affected areas, mine facilities, mine workings, and monitoring and sampling locations. The maps depict location of each facility used in conjunction with mining operations such as buildings, roads, and facilities to be used in mining and reclamation operations or by others within the permit area; each coal storage, cleaning, and loading area; each topsoil, coal preparation waste, underground development waste, each water diversion, collection, conveyance, treatment, storage and discharge facility; each source of waste and each waste disposal facility. Also included are the locations and extent of known workings of proposed, active, inactive, or abandoned underground mines, including mine openings to the surface within the proposed permit and adjacent areas. Maps with the following information are also included: Map 12 – Regional Coal Ownership shows affected area (permit boundary), Map 29 – Post Mining Topography shows final reclamation contours and final surface configuration, Map 28 – Groundwater Monitoring Sites shows the location of groundwater sampling wells, and Map 13 shows all of the proposed Surface Facilities. Maps 12, 13, 29 and 29A were certified by a Registered Professional Land Surveyor.

jeatchel

Maps Facilities

Analysis:

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

The application satisfies the minimum requirements for R645-301-521.160 because Map 13 – Surface Facilities Map clearly shows all of the buildings, roads, and facilities to be used on site. Map 13 has been prepared and certified by a Registered Land Surveyor.

jeatchel

Maps Mine Workings

Analysis:

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

The application satisfies the minimum requirements for R645-301-512.100 because Map 5 Previous Mining Activity and Map 15 Mine Plan Layout shows the proposed underground workings in relation to old mine workings. The old mine workings are located in the Hiawatha and UP Seams, and the proposed new workings will also be located in those two seams but maintaining a safe distance from the old workings as much as practicable. Map 5 clarifies that the locations of the old mine workings depicted on these maps are positioned for reference only and do not necessarily represent actual locations horizontally or vertically. Map 5 has been stamped and signed by Mr. Ben A. Grimes, Registered Land Surveyor in the State of Utah.

jeatchel

Maps Monitoring and Sampling Locations

Analysis:

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

The application satisfies the requirements for R645-301-541.200 and -541.300 because the application includes Maps and Tables that discuss the locations of monitoring sites within the permit area. Table 20, Hydrologic Monitoring Schedule provides the parameters to be analyzed during post-mining hydrologic monitoring. Map 28, Surface and Ground Water Monitoring Sites depicts the water monitoring locations that will be monitored during the reclamation liability period. Figure 40, Subsidence Monitoring Plan shows the locations of subsidence monitoring points that will be installed over all active mining areas for the first five years of operation.

jeatchel

Maps Monitoring and Sampling Locations

Analysis:

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

Map 28, *Surface & Ground Water Monitoring Sites*, depicts the locations of the ground and surface water monitoring sites.

kstorrar

Maps Certification Requirements

Analysis:

The application meets the State of Utah R645 requirements for Certification.

The application satisfies the minimum requirements for R645-301-512 because cross sections, maps, and plans required to show the design, location, elevation, or extent of land surfaces or structures where mining and reclamation operations will be conducted have been stamped and certified by either a Registered Land Surveyor or a Professional Engineer licensed in the State of Utah. The following maps and plans have been stamped and certified by Benjamin A. Grimes, Registered Land Surveyor in the State of Utah:

1. Map 4 – Regional Land Use & Zoning
2. Map 5 – Previous Mining Activity
3. Map 8 – Works, Wells, Springs, & Faults
4. Map 9 – Ground Water Level Data
5. Map 12 – Regional Coal Ownership
6. Map 13 – Surface Facilities
7. Map 14 – Mine Surface Facilities Area Pre-Mining Topography
8. Maps 16 - 19 – Mine Surface Facilities Area Pre-Mining, Mining, & Post Mining Cross Sections
9. Maps 20 - 22 – Mine Surface Facilities Road Profiles
10. Map 29 – Mine Surface Facilities Area Post Mining Topography & Interim Drainage Control
11. Map 29A – Mine Surface Facilities Area Post Mining Topography
12. Map 31 – Surface Water Rights
13. Map 38 – Top Soil Storage

The following maps and plans have been stamped and certified by David E. Hansen, Licensed Professional Engineer in the State of Utah:

1. Map 25 – Sedimentation Pond 1 Sections and Details
2. Map 26 – Drainage and Sediment Control Plan Disturbed Drainage Sub-Basins

jeatchel

Reclamation Plan

General Requirements

Analysis:

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

The MRP discusses the re-establishment of the pre-mining topography and the re-establishment of pre-mining drainage patterns. The exception to this is undisturbed drainage ditches UDD-1, UDD-2 and UDC-2. The diversions do not route a perennial or intermittent stream. As such, the design standard for a diversion of miscellaneous flows (R645-301-742.330) applies. The design standard for a permanent diversion of a miscellaneous flow is to safely pass the peak runoff generated from a 10-year, 6-hour event. The design information provided in Exhibit 16 and Table 18 show that diversions UDD-1 and UDD-2 have been over designed to safely pass a 100-year, 6-hour event. UDD-1 and UDD-2 will be utilized as runoff control for the post-mining land use access roads. UDC-2 will route runoff into the adjacent irrigation ditch that ultimately reports to Scofield Reservoir.

kstorrar

General Requirements

Analysis:

The application meets the State of Utah R645 requirements for General Reclamation Plan relative to biology and land use.

Chapter 3, Section R645-301.340, beginning on page 3-74 and going through the end of the chapter, describes the reclamation plan's process and measures taken to protect and reclaim the permit area to meet the post-mining land use objective of wildlife habitat and watershed, a Carbon County zoning designation. These measures include revegetation practices and timing, grading pad areas to original contour, drainage reestablishment, seeding and soil stabilization, monitoring, and success standards along with many other considerations.

tmiller

PostMining Land Use

Analysis:

The application meets the State of Utah R645-301-412 requirements for Postmining Land Uses.

Chapter 4, Section R645-301-412.100, Page 4-19, includes Mountain Range, Watershed and Commercial as zoning classifications established by Carbon County and the Scofield Town for zoning purposes described in chapter 4 on page

4-3. Table 3 in Section R645-301-411.100 includes wildlife habitat, grazing, and recreation as historic land uses that will continue post-mining.

tmiller

WildLife Protection

Analysis:

The application does not meet the State of Utah R645 requirements for wildlife protection.

The Biological Resources Protection Plan; Measures to Stabilize and Minimize Erosion from Mine Disturbance Areas; Provisions to Minimize Raptor Electrocution Hazards; Fish and Wildlife Monitoring; Measures to Minimize Barriers to Large Mammal Movements; Protective Measures for the Facilities Area and Any Open Ponds Containing Potentially Hazardous or Toxic Materials; Provisions for Protection of Threatened, Endangered or Sensitive Species; Compliance with the Bald and Golden Eagle Protection Act; and Reporting and Consultation Procedures sub-sections from Section R645-301.330 *Operation Plan* along with the Protection and Enhancement Plan found in Section R645-301-322.333 of Chapter 3 provide a description of the measures taken to avoid disturbances to, enhance where practicable, and restore high value habitats.

Due to the crucial habitats and sensitive species located within the permit area, consultation between DOGM and DWR was initiated in February of 2019 to determine the best plan for protecting the wildlife resources of the area that may potentially be affected by the proposal. Though the consultation is ongoing, there is concern regarding the disturbance to sage grouse habitat. It has been determined that the best way to minimize adverse impacts to the sage grouse is for the applicant to complete compensatory mitigation of 4 acres for every 1 acre of disturbance within the Carbon Sage Grouse Management Area (SGMA) to be handled through the DNR Credit Exchange Service. The applicant has committed to doing this Section R645-301-322.333 page 3-73.

Additionally, changes to the temporary and final seed mixes have been requested by the DWR to improve wildlife forage resources. Many of the requested changes have been made, however one of the recommendations was not implemented in the updated application. The final seed mix should replace Kentucky blue grass with orchard grass at a suggested rate of 0.42 PLS lbs./acre and/or mountain brome at 1.96 PLS lbs./acre.

Map 2 in the Confidential section of the application shows the location of raptor nests as well as the species and status of the nests. However, the most recent data on this map is from 2007. During previous permitting of this site a raptor nest, #1541, was identified as being within ½ mile of the mine disturbance boundary. Extensive consultation was performed regarding this nest during that time (circa 2011) and mitigation measures were identified and implemented by the company. One of these measures included nest deterrence by temporarily placing traffic cones in the nest to prevent the raptors from nesting at that location during the 2011 season so that mine facility construction could begin. Authorization for this deterrence was obtained in a letter from the U.S. Fish and Wildlife Service dated April 26, 2011 which is included in Exhibit 4 of the application. However, that authorization expired 90 days from the date of that letter. The cones were placed in the nest for deterrence purposes at that time but no construction activities ever took place. In November of 2018, DOGM biologists along with Patrick Collins from Mt. Nebo Scientific accompanied Coal Energy Group 3 representatives on a site visit. One of the objectives of this visit was to determine the status of nest #1541. The nest was located and it was observed that the deterrence cones were still in place. Prior to approval of this application, a new raptor survey must be completed to determine the current status of raptor nests in the area and new authorization must be obtained from the U.S. FWS for nest deterrence of nest #1541. The language in the Raptor Nest Deterrent portion of the R645-301-230 *Other Wildlife Species & Habitat Information of the Permit & Adjacent Areas*, pages 3-44 through 3-46 must be updated as they were written prior to the events of the 2011 nesting season and do not reflect the status of raptor nesting issues and protection for 2019 and beyond. Previous mitigation has been completed, including the construction of osprey nests and purple martin houses, and no further mitigation is required at this time. Following discussion with DWR and the U.S. FWS, it was determined that the best course of action for the nest deterrence is to leave the cones in place until the end of the 2019 nesting season, at which time they should be removed provided that construction has already begun. If the initiation of construction will not be until the 2020 nesting season or beyond, further consultation will be required at the end of the 2019 season.

Deficiencies Details:

The application does not meet the State of Utah R645 requirements for wildlife protection. The following deficiencies must be addressed prior to final approval:

R645-301-322: The language on pages 3-44 through 3-46 relating to the 2011 nesting season must be updated to

reflect the current season and conditions.

R645-301-342: An update to the Final seed mix to remove Kentucky bluegrass. Suggestions to replace these species are orchard grass and mountain brome.

tmiller

Approximate Original Contour Restoration

Analysis:

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

The application satisfies the minimum requirements for R645-301-553.110 because narrative on pages 5-91 and 5-101 that states that all new disturbance will be reclaimed to the approximate original contour (AOC) as it exists at the beginning of the Kinney #2 Mine construction. Since this area was mined by several other mining companies in the past and then reclaimed by AML in the 1980's, Permittee commits to reclaiming only the disturbance for which they are responsible. The disturbed area for the Kinney #2 mine will be reclaimed to AOC as it exists as of December 2007, the state it was left by the most recent Utah AML reclamation project.

jeatchel

Backfill and Grading General

Analysis:

The application meets the State of Utah R645 requirements for General Backfilling and Grading.

The application satisfies the minimum requirements for R645-301-553 because narrative on pages 5-94, 5-95 and 5-98 addresses the earthwork necessary to achieve the following priorities:

1. Cover exposed coal seams, sealed mine openings, coal fines, or coaly materials and any solid waste disposal sites with a minimum of 4 feet of suitable material.
2. Backfill and/or regrade disturbed slopes to establish a stable configuration which provides for effective drainage and minimizes erosion potential.
3. Backfill and regrade steep cuts and highwall areas to eliminate cut or highwall exposure.

Following completion of mining and related operations, subsequent facility removal, and sealing of mine openings, the associated disturbances will be backfilled and re-graded. Steep cuts and highwall exposure will be eliminated and post-mining slopes regraded as is necessary to achieve a minimum long term static safety factor of 1.3. Additionally, slopes will be graded in a manner that will minimize slides as well as erosion and water pollution both on and off the site. Final backfilling and grading of the mine surface facilities area will require the movement of approximately 221,877 cubic yards of material.

The post-mining slope is not expected to vary greatly from the approximate original contour. Small depressions will be constructed to retain moisture, minimize erosion, create and enhance wildlife habitat, and assist revegetation. The topsoil on the area shall be removed, segregated, stored, and redistributed in accordance with regulatory requirements. Preparation of final-graded surfaces shall be conducted in a manner that minimizes erosion and provides a surface for replacement of topsoil that will minimize slippage.

jeatchel

Backfill and Grading Previously Mined

Analysis:

The application meets the State of Utah R645 requirements for Backfilling and Grading Previously Mined Areas.

The application satisfies the minimum requirements for R645-301-553.500 because narrative on page 5-101 addresses the reclamation of the Kinney #2 Mine in previously disturbed areas. The Kinney No. 2 Mine area was mined by several mining companies as discussed in other sections of the permit application. These mining operations left numerous roads and structures in the area, as well as a highwall remnant at the old Columbine Mine portal area. This area was reclaimed by the Utah AML program in the 1980's; however, the highwall remnant was not fully reclaimed, leaving a near vertical face of exposed rock and soils. Permittee commits to reclaiming only the disturbance for which they are

responsible. The disturbed area for the Kinney #2 mine will be reclaimed to AOC as it exists as of December 2007, the state it was left by the most recent Utah AML reclamation project.

jeatchel

Mine Openings

Analysis:

The application meets the State of Utah R645 requirements for Mine Openings.

The application satisfies the minimum requirements for R645-301-542.700 and R645-301-551 because narrative throughout the MRP details the specific activities involved in permanently sealing all mine openings. The permit states that five main portals will be constructed. These openings will be permanently sealed upon completion of mining. The plan states that portals will be sealed and stabilized by constructing a concrete block wall a minimum of 25 feet in by the portal opening. Further casing and sealing details are located on page 5-97 through 5-98 of the MRP.

Map 17 depicts 25 feet of backfill from the portal seals to the portal face-up. The corresponding text, on page 5-97 includes a commitment to backfill the portals for a minimum of 25 feet from the portal seal to the portal face-up.

In Section R645-301-551 of the application, the Permittee discusses the sealing all mine openings. On completion of mining and related activities, all mine openings including portals, shafts, raises, boreholes and wells will be stabilized and sealed unless they are utilized for ongoing monitoring. The portals will be sealed by constructing a concrete block wall a minimum of 25' in-by the portal openings (See Figure 37 on Page 5-73).

In Section R645-301-765, the Permittee discusses the casing and sealing of wells. The Permittee commits to sealing and backfilling the monitoring wells once the Division has made a finding that they are no longer needed for monitoring. The application discusses how the monitoring wells will be sealed. The boreholes or well casings will be sealed by filling them with cement to form a plug from the bottom of the hole to at least 20 feet above any zone of completion or water-bearing zone. The remainder of the hole will be filled with cement to within 20 feet of the ground surface and then the remainder of the hole will be filled with cement to the ground surface to form a surface plug. A steel fence post will be placed in the center of the surface plug in order to provide a permanent marker of the hole location.

jeatchel

Mine Openings

Analysis:

The application meets the State of Utah R645 requirements for Mine Openings relative to hydrology.

In Section R645-301-765, the Permittee discusses the casing and sealing of wells. The Permittee commits to sealing and backfilling the monitoring wells once the Division has made a finding that they are no longer needed for monitoring. The application discusses how the monitoring wells will be sealed. The boreholes or well casings will be sealed by filling them with cement to form a plug from the bottom of the hole to at least 20 feet above any zone of completion or water-bearing zone. The remainder of the hole will be filled with cement to within 20 feet of the ground surface and then the remainder of the hole will be filled with cement to the ground surface to form a surface plug. A steel fence post will be placed in the center of the surface plug in order to provide a permanent marker of the hole location.

kstorrar

Topsoil and Subsoil

Analysis:

The application meets the State of Utah R645 requirements for Topsoil and Subsoil.

The initial reclamation contours with the sediment pond retained are shown on Map 29, Post Mining Topography. After pond removal the final contours are shown on Map 29A. Cross sections of the post mining topography are shown on Maps 16 through 19; cross-section locations are shown on Map 13, Surface Facilities.

Chapter 5, Figure 36 is the reclamation timetable. Final backfilling and grading will require 221,877 CY (Chap 5, Section 542.300 – 542.700, p. 5-92). Reclamation slopes will vary from 5h:1v to 0.5h:1v (p. 5-93). Regraded, backfilled slopes of less than 30% will be deep ripped. Slopes of greater than 30% will be roughened with a track hoe (Chap 2 Section

242.200 p. 2-18). Refer to Map 33 for slope steepness.

Equipment to be used to replace topsoil may include tractor-scrappers on gentle slopes or tracked dozers or track hoes on steeper slopes (Section 242, p. 2-16). A uniform thickness of 14.8 inches will be replaced on the graded surface (p. 2-16 and Table 23). Soil replacement thickness will be monitored (Section R645-301-242 p. 2-16). After soil placement, soils will be sampled and analyzed, with 1 sample taken per four acres (Section R645-301-243, p. 2-17). Samples will be analyzed for suitability parameters described in the Utah Guidelines for Topsoil and Overburden. Further fertility amendments will be dependent upon the results of the laboratory analysis.

After ripping, prior to topsoil placement, regraded slopes will be amended with 3 Tons/ac chopped hay (Section R645-301-243, p. 2-17). Seeding will occur immediately after topsoil placement (Section R645-301-244.200, p. 2-18, Soil Stabilization). In conjunction with seeding, the topsoil will be deep ripped, plowed or disked (30% or less slopes) or gouged or plowed on the contour (greater than 30% slopes). After seeding, an additional 2.0 tons/acre straw or hay mulch will be followed by crimping on slopes 30% or less (Sections R645-301-244.200 p. 2-18 and Section R645-301-341.230, p. 3-86, and Section R645-301-355, p. 3-91). On slopes greater than 30%, seeding will be followed by hydrospray of organic mulch and tackifier (Section 244.200, p. 2-18).

pburton

Road System Reclamation

Analysis:

The application meets the State of Utah R645 requirements for Road Systems Reclamation.

The application satisfies the minimum requirements for R645-301-534.140 due to narrative on page 5-96 that describes the removal and reclamation of roads within the permit area that will not be retained under an approved post-mining land use. The Permit states "Roads that will not be retained for use under an approved post-mining land use will be reclaimed immediately after they are no longer needed for coal mining and reclamation activities". The reclamation of the roads will be accomplished by reshaping all cut and fill slopes to be compatible with the post-mining land use and to complement the drainage pattern of the surrounding topography and the removal of all associated culverts/diversions.

Map 29, Mine Surface Facilities Area Post Mining Topography & Interim Drainage Control and Map 29A, Mine Surface Facilities Area Post Mining Topography depict the mine site post-mining and reclamation. As depicted on Maps 29 and 29A Sections of road will remain on the site permanently after reclamation efforts. As directed by the landowners, the post-mining land use roads will provide access to private property in the mining area and the area east of the mining area as well as to private property north of the mine area.

With the exception of roads to be used for post-mining land use, roads will be reclaimed in accordance with the approved reclamation plan as soon as practicable after it is no longer needed for mining and reclamation operations. This reclamation shall include: closing the road to traffic; removing all bridges and culverts unless approved as part of the post-mining land use; removing or otherwise disposing of road-surfacing materials that are incompatible with the post-mining land use and revegetation requirements.

jeatchel

Road System Retention

Analysis:

The application meets the State of Utah R645 requirements for Road Systems Retention.

The application satisfies the minimum requirements for R645-301-534.140 due to narrative on page 5-94 that details which roads will be retained upon reclamation. All roads will be reclaimed following mining activity with the exception of PMLU Road P8 and PMLU Road P9. Roads P8 and P9 are to be retained permanently following the termination of mining activity and post-reclamation. The two roads are to be retained permanently per an access agreement with an adjacent land-owner. The roads are required to access private property east of the mine-site. Access roads to the private property east of the mine site were in existence prior to mining. As a result, the retention of PMLU Road P8 and PMLU Road P9 following reclamation is in line with the post-mining land use and pre-mining land use of the property. Figure 25A, Primary Roads P8 & P9 Configuration, provides cross-sectional views for primary roads P8 and P9. Drainage control from the two roads will be achieved by utilizing two diversion ditches and a culvert (UDD-1, UDD-2, and UDC-2 respectively). The diversions do not route a perennial or intermittent stream. As such, the design standard for a diversion of miscellaneous flows (R645-301-742.330) applies. The design standard for a permanent

diversion of a miscellaneous flow is to safely pass the peak runoff generated from a 10-year, 6-hour event. The design information provided in Exhibit 16 and Table 18 shows that diversions UDD-1 and UDD-2 have been over-designed to safely pass a 100-year, 6-hour event.

The permit states that certain roads within the mine facilities area will continue to provide access to areas during reclamation and extended liability periods. Roads to be retained for an approved post-mining land use are classified as primary roads and designed, constructed, and maintained in accordance with the requirements for primary roads and in consideration of the approved post-mining land use.

jeatchel

Hydrological Information Reclamation Plan

Analysis:

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

In Section R645-301-760 the application discusses the hydrologic restoration plans to be implemented during the reclamation phase of the mining operation. The MRP states, "*CR has incorporated specific control and mitigation measures in mining, processing and reclamation plans in order to prevent any significant impacts on surface or ground water quality.*"

The reclamation plan involves backfilling and regrading disturbed areas, replacement of soil, re-establishment of pre-mining drainage patterns and establishing a vegetative community. A component of the reclamation plan includes the removal of some temporary operational drainage structures, establish designed permanent post-mining drainage structures, and modify some of the existing temporary drainage structures to provide for effective drainage and sediment control.

As part of the reclamation activities, the Permittee will implement an interim runoff control plan. During this phase, the majority of temporary operational drainage structures will be removed. The primary sediment pond will remain throughout the re-vegetation effort on the mine site. Once vegetation is established, the sediment pond will be removed and the site re-vegetated. The interim drainage control plan is depicted on Map 29, *Mine Surface Facilities Area- Post Mining Topography & Interim Drainage*.

Once reclaimed slopes have been stabilized, vegetation established and when no longer needed for sediment control, all temporary diversions and associated structures will be removed. The exceptions to this are permanent diversion ditches UDD-1, UDD-2, UDC-2 and culvert CP-2 and the associated energy dissipation riprap depicted on Map 29. The irrigation ditch shown at the southern end of Map 29 will be re-established. Post mining land use roads P8 and P9 will be retained permanently to facilitate access to private property following mining activity. Reclamation will consist of filling of the diversion ditches, grading to blend ditch areas with adjacent terrain and reseeding of the affected areas. Map 29 and 29A; depict diversion ditches UDD-1 and UDD-2 as permanent diversions. The ditches have been designed to handle the 100-year, 6-hour event. Undisturbed drainage culvert UDC-2 will also be retained permanently following final reclamation. The culvert will divert storm water generated from the undisturbed area above post-mining land use road PMLU P9. Culvert UDC-2 will be tied into the existing UDOT culvert that routes storm water under SR 96 (CP-2). UDC-2 will also serve as runoff control for the post-mining land use road.

Sediment pond reclamation will include the removal of the man-made discharge structures, removal and disposal of any riprap, concrete and bedding materials which will not be utilized in conjunction with the reestablishment of post-mining drainages. The application states, "*CR will continue to operate and maintain sedimentation ponds and associated drainage structures until contributing drainage areas are effectively restored through application of the reclamation activities.*" Effective restoration will be established once re-vegetation success has been accomplished and the surface drainage has been restored such that contributions of suspended solids from untreated disturbed area runoff are within applicable water quality standards.

The Permittee proposes to control erosion and sediment transport during reclamation of the interim drainage and sediment control structures with a combination of silt fences, hay bales and other appropriate alternative sediment control measures. The Permittee commits to installing these temporary controls prior to "*any reclamation activities.*" The alternative sediment controls are to remain in place during backfill/regarding operations, placement of soil material, reseeding and re-establishment of vegetation. The structures will be removed once vegetation has been reestablished on the site.

The Permittee discusses the restoration of drainage patterns at the mine site. The application states, “*In conjunction with final backfilling and regarding activities, permanent drainage features, designed to pass the peak flows from the 100-year, 6-hour event, will be established to effectively pass natural drainage through the reclaimed areas and provide for effective control of runoff from reclaimed areas while minimizing the potential for any significant erosion.*” The application continues that “*some temporary drainage structures may be retained and modified as necessary to carry disturbed area drainage flows from permanent drainages to the sedimentation pond which will also be retained to provide ongoing sediment control through the extended liability period.*”

Interim Drainage Control

As part of the reclamation activities, the Permittee will implement an interim runoff control plan. During this phase, the majority of temporary operational drainage structures will be removed. The primary sediment pond will remain throughout the re-vegetation effort on the mine site. Once vegetation is established, the sediment pond will be removed and the site re-vegetated. The interim drainage control plan is depicted on Map 29, *Mine Surface Facilities Area- Post Mining Topography & Interim Drainage*.

When no longer needed for sediment control, all temporary diversions and associated structures will be removed. The exceptions to this are permanent diversion ditches UDD-1, UDD-2, UDC-2 and culvert CP-2 and the associated energy dissipation riprap depicted on Map 29. The irrigation ditch shown at the southern end of Map 29 will be re-established. Post mining land use roads P8 and P9 will be retained permanently to facilitate access to private property following mining activity. Reclamation will consist of filling of the diversion ditches, grading to blend ditch areas with adjacent terrain and reseeding of the affected areas.

In order to demonstrate that pre-mining drainage patterns have been restored, the Permittee will provide documentation to the Division with one of two methods or by a combination of: 1) Comparing pre- and post-mining water monitoring data as well as analyzing applicable effluent standards and 2) Providing runoff and sedimentation modeling results by utilizing measured reclamation vegetation cover values and calculated sediment contributions with that of modeling results developed using baseline pre-mining vegetative cover values.

Permanent Casing and Sealing of Wells

All exploration drill holes within the permit and adjacent area will either be completed as monitoring wells or sealed following completion of drilling, sampling and logging. If the hole is to be utilized as a monitoring well, it will be cased, completed and developed as a monitoring well consistent with Figure 21, *Typical Well Completion Diagram*. If the hole will not be utilized as a monitoring well, or when an existing well is no longer needed for on-going water monitoring, it will be sealed by filling the casing with cement to form a plug from the bottom of the hole to at least 20 feet above any zone of completion or water bearing zone; filling the remainder of the hole to within 20 feet of the ground surface with bentonite; and filling the remainder of the hole to the ground surface with cement to form a surface plug.

The Permittee does not intend to transfer title of any monitoring wells to a second party following the cessation of mining and reclamation activities.

kstorrar

Contemporaneous Reclamation General

Analysis:

The application meets the State of Utah R645-301-352 requirements for General Contemporaneous Reclamation relative to biology.

Section R645-301-352 describes contemporaneous reclamation practices for exploration activity including timing of revegetation activities for revegetation of areas that could be reclaimed during the active life of the mine. Due to the nature of the mine plan, with surface facilities being used throughout the life of the mine, there is not anticipated to have need for extensive contemporaneous reclamation.

tmiller

Revegetation General Requirements

Analysis:

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

Revegetation is described in section R645-301-353 of the application. Implementation includes seedbed preparation, seeding, woody species transplanting, mulching and monitoring. Two seed mixes, temporary and final, are included in Table 21 of Section R645-301-341.

tmiller

Revegetation Timing

Analysis:

The application meets the State of Utah R645 requirements for Revegetation Timing.

Section R645-301-354, page 3-90, includes timing of revegetation activities for revegetation of areas that could be reclaimed during the active life of the mine and post mining. Seeding will occur immediately after seedbed preparation with preference for planting in the fall, however, there may arise occasions where prompt revegetation of small areas may be used to minimize erosion and sedimentation potential.

tmiller

Revegetation Mulching and Other Soil Stabilization

Analysis:

The application meets the State of Utah R645 requirements for Mulching and Other Soil Stabilizing Practices.

Sections R645-301-341.230, beginning on page 3-85, and R645.301-355 on page 3-91 describe the mulching techniques to be used during reclamation, including rates, crimping, plowing and or disking. Additionally, tackifier will be incorporated on slopes steeper than 3:1.

tmiller

Revegetation Standards for Success

Analysis:

The application meets the State of Utah R645-301-356 requirements for revegetation standards of success. Page 3-92 of Section R645-301-356 has been updated to exclude rubber rabbitbrush (*Chrysothamnus nauseosus*) from being considered in the 1,700 woody plants per acre success standard.

Section R645-301-356 includes a commitment to sample the revegetated areas during years 3 (qualitative), 4 (quantitative), 7 (qualitative), 8 (qualitative), 9 (quantitative), and 10 (quantitative) which is in accordance with the DOGM vegetation guidelines.

tmiller

Stabilization of Surface Areas

Analysis:

The application meets the State of Utah R645 requirements for Stabilization of Surface Areas.

Stockpiled topsoil and subsoil will be bermed and seeded and hydromulched (Section R645-301-331, p. 3-73). In addition to seeding, a variety of sediment control measures will be employed to prevent topsoil loss, as necessary (R645-301-331, p. 3-73).

Section R645-301-331 p. 3-73 also describes interim reclamation of roadcuts, ditches, sedimentation pond embankments to control erosion. The interim seed mixture is found in Table 21. Interim seeding will be followed by hydro-spray of mulch (1.5 tons/ac) and an organic tackifier (Section R645-301-341, p. 3-80). MRP Section R645-201-527 p.5-47 emphasizes all road cut and fill slopes and excavated slopes will be stabilized with an interim vegetation mix.

Roads PR-1 (from Hwy 96 to the shop/warehouse) and PR-2 (to the mine office building) will be paved (MRP Section R645-201-527, p.5-47). Other roads will be watered or be treated with dust suppressants and a 15 mph speed limit will be imposed in accordance with the air quality permit dated December 11, 2008 (Exhibit 4).

Final reclaimed surface will be ripped or gouged, seeded (Table 22 seed mix) and top dressed with 2 tons/acre straw crimped into the soil (Section R645-301-341.230, p. 3-86, and Section R645-301-355, p. 3-91) or on steeper slopes, hydro-sprayed with 2 tons/ac organic mulch and tackifier (Section 244.200, p. 2-18).

A commitment for the treatment of rills and gullies in excess of 6 inches is found in Section 244.300, p. 2-18.

pburton

Cessation of Operations

Analysis:

The application meets the State of Utah R645 requirements for Cessation of Operations.

The application satisfies the minimum requirements for R645-301-515.300 because of narrative on page 5-4 that describes procedures to be taken in the event that Cessation of Operations takes place. Permittee will submit a notice of intention to UDOGM. The notice will include a statement of the exact number of acres which have been disturbed prior to cessation, the nature and extent of any reclamation completed, and any reclamation, environmental monitoring, water treatment, or other activities which will continue during the period of cessation.

Monitoring will include taking one composite sample of the temporary waste coal processing waste storage pile for each 5,000 tons in the pile, should there be coal processing waste in the temporary pile at the time of cessation. The sample(s) will be analyzed for parameters listed in Tables 3 and 7 in the UDOGM January 2008 "Guidelines for Management of Topsoil and Overburden".

Since the mine site provides access to private property to the north and east, the private property owners involved will have keys to the site gates to access their property during any cessation period, and during the reclamation bond period. Roads have been designed into the reclamation plan for post mining land use to allow the private property owners access.

jeatchel

Maps Affected Area Boundary

Analysis:

The application meets the State of Utah R645 requirements for Affected Area Boundary Maps.

The application satisfies the minimum requirements for R645-301-521.141 and -521.162 because the MRP includes maps depicting affected areas. Maps with the following information are included: Map 12 – Regional Coal Ownership shows affected area (permit boundary), and Map 29 – Post Mining Topography shows final reclamation contours and final surface configuration. Maps 12, 29 and 29A were certified by a Registered Professional Land Surveyor.

jeatchel

Maps Bonded Area

Analysis:

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

The application satisfies the minimum requirements for R645-301-820.113 and -521.163 because the MRP includes maps depicting the areas submitted for approval. Maps with the following information are included: Figure 1 - General Location, and Map 12 – Regional Coal Ownership (permit boundary).

jeatchel

Maps Reclamation Backfilling and Grading

Analysis:

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

The application satisfies the minimum requirements for R645-301-540.200 because the MRP includes maps depicting the before, during, and after topography for the planned disturbance areas of the permit. Maps 13, 16, 17, 18, and 19

show plan and cross sections for the entire facilities area, which comprises the majority of the disturbance planned within the permit area. The drawings are scaled, and compiled by a Registered Land Surveyor for the State of Utah.

jeatchel

Maps Reclamation Facilities

Analysis:

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

The application satisfies the minimum requirements for R645-301-542.320 because the MRP includes maps that illustrate the drainage controls and facilities that will be left in place throughout the reclamation bond period. Maps 29 and 29A illustrate the Post Mining Topography and include locations of culverts and drainage ditches that will manage runoff. A note at the bottom of Map 29A states that all alternative sediment controls will be removed at the end of the bond period.

jeatchel

Maps Reclamation Final Surface Configuration

Analysis:

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

The application satisfies the minimum requirements for R645-301-542.200 and -542.300 because the MRP includes maps depicting the before, during, and after topography for the planned disturbance areas of the permit. Maps 13, 16, 17, 18, and 19 show plan and cross sections for the entire facilities area, which comprises the majority of the disturbance planned within the permit area. Additionally, Maps 29 and 29A illustrate how the topography within the permit area will appear after having been regraded back to approximate original contour. The drawings are scaled, and compiled by a Registered Land Surveyor for the State of Utah.

jeatchel

Maps Reclamation Monitoring and Sample Locations

Analysis:

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

The application satisfies the minimum requirements for R645-301-541.200 and -541.300 because the MRP includes Maps and Tables that discuss the locations of monitoring sites within the permit area upon reclamation. Table 20, Hydrologic Monitoring Schedule provides the parameters to be analyzed during post-mining hydrologic monitoring. Map 28, Surface and Ground Water Monitoring Sites depicts the water monitoring locations that will be monitored during the reclamation liability period.

jeatchel

Maps Reclamation Monitoring and Sample Locations

Analysis:

The application meets the State of Utah R645 requirements for Reclamation Monitoring and Sampling Location Map.

Table 20, *Hydrologic Monitoring Schedule* provides the parameters to be analyzed for during post-mining. Map 28, *Surface and Ground Water Monitoring Sites* depicts the water monitoring sites that will be monitored during the reclamation liability period.

kstorrar

Maps Reclamation Monitoring and Sample Locations

Analysis:

The application meets the State of Utah R645-301-323 requirements for Reclamation Monitoring and Sampling Location Maps relative to biology.

Map 1a depicts the sagebrush/grass reference area along with sample areas for the previously disturbed rabbitbrush/grass area and the proposed disturbed sagebrush/grass area.

tmiller

Maps Reclamation Surface and Subsurface Man Made

Analysis:

The application meets the State of Utah R645 requirements for Reclamation Surface and Subsurface Manmade Features Maps.

The application satisfies the minimum requirements for R645-301-521.121 through -521.122 because the MRP includes Maps that illustrate the locations of manmade features within the permit area upon reclamation. Maps 29 and 29A illustrate how the topography within the permit area will appear after having been regraded back to approximate original contour. Also included are the locations of features such as old railroad grades, culverts, water bars, drainage ditches, irrigation ditches, and State Highway 96. The drawings are scaled, and compiled by a Registered Land Surveyor for the State of Utah.

jeatchel

Maps Reclamation Certification Requirements

Analysis:

The application meets the State of Utah R645 requirements for Certification.

The application satisfies the minimum requirements for R645-301-512 because cross sections, maps, and plans required to show the design, location, elevation, or extent of land surfaces or structures where mining and reclamation operations will be conducted have been stamped and certified by either a Registered Land Surveyor or a Professional Engineer licensed in the State of Utah. The following maps and plans have been stamped and certified by Benjamin A. Grimes, Registered Land Surveyor in the State of Utah:

1. Map 4 – Regional Land Use & Zoning
2. Map 5 – Previous Mining Activity
3. Map 8 – Works, Wells, Springs, & Faults
4. Map 9 – Ground Water Level Data
5. Map 12 – Regional Coal Ownership
6. Map 13 – Surface Facilities
7. Map 14 – Mine Surface Facilities Area Pre-Mining Topography
8. Maps 16 - 19 – Mine Surface Facilities Area Pre-Mining, Mining, & Post Mining Cross Sections
9. Maps 20 - 22 – Mine Surface Facilities Road Profiles
10. Map 29 – Mine Surface Facilities Area Post Mining Topography & Interim Drainage Control
11. Map 29A – Mine Surface Facilities Area Post Mining Topography
12. Map 31 – Surface Water Rights
13. Map 38 – Top Soil Storage

The following maps and plans have been stamped and certified by David E. Hansen, Licensed Professional Engineer in the State of Utah:

1. Map 25 – Sedimentation Pond 1 Sections and Details
2. Map 26 – Drainage and Sediment Control Plan Disturbed Drainage Sub-Basins

jeatchel

Bonding and Insurance General

Analysis:

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

The application satisfies the minimum requirements for R645-301-542.800 and -820 due to narrative on pages 8-1 through 8-4 which details the intent of the Permittee to file a reclamation bond payable to the Utah Division of Oil, Gas, & Mining. The bond will cover long-term surface facilities, structures, and surface disturbance related to mining and related

activities.

Permittee commits to return the land to a condition and productive capacity capable of supporting the approved post-mining land use. The bond will be based on the approved reclamation plan, reflect the anticipated effort required to reclaim all surface disturbance, and reflect any appropriate inflation factors to address potential increases in reclamation costs over the entire permit term.

Detailed bonding calculations addressing the direct and indirect costs associated with the reclamation of all disturbed areas of the permit have been included in this permit application.

jeatchel

Bonding Form of Bond

Analysis:

The application meets the State of Utah R645 requirements for Form of Bond.

The application satisfies the requirements for R645-301-820.200. Narrative on page 8-3 states that once the reclamation bond amount is determined, the Permittee will evaluate potential bonding alternatives and will select and submit a bond in a form which meets all applicable compliance criteria. Exhibit 18 includes a complete analysis of all reclamation costs required to successfully reclaim the mine site. Further detailed calculations determined the reclamation bond amount to be \$2,585,200. This amount may be posted in the form of cash, Treasury Securities via an Escrow Agent, or more commonly through a Surety Policy held through an insurance company with a minimum rating of A- as indicated in R645-301-860.110.

Permittee must post a surety bond through an approved insurance company for the full amount of \$2,585,200 and include a rider providing for notification to The Division of any termination or substantive changes in the policy. If Permittee elects not to secure a surety bond, then alternative means to bond for the calculated reclamation costs must be offered. Final approval of the permit application package will not be provided until the Permittee has obtained adequate bond coverage and the accompanying documentation has been provided to the Division.

jeatchel

Bonding Determination of Amount

Analysis:

The application meets the State of Utah R645 requirements for Determination of Bond Amount.

The application satisfies the minimum requirements for R645-301-830 because detailed bond calculation spreadsheets were included in this submittal. The bonding calculations include details for all direct and indirect costs. The Permittee provided updated unit cost estimates for reclamation aspects. Direct costs include subtotals for removal (demolition), backfilling and grading (earthwork), and revegetation. Indirect costs include mobilization/demobilization, contingencies, engineering redesign, office expenses, and project management fees. Direct & Indirect costs were adequately calculated and summarized as follows:

Bonding Calculations:

Direct Costs

Subtotal Demolition & Removal - \$862,829

Subtotal Earthwork Backfill & Grading - \$616,846

Subtotal Revegetation - \$143,239

Subtotal Direct Costs - \$1,622,914

Indirect Costs

Mobilization/Demobilization (10%) - \$162,291

Contingencies (5%) - \$81,146

Engineering Redesign (2.5%) - \$40,573

Main Office Expense (6.8%) - \$110,358

Project Management Fee (2.5%) - \$40,573

Subtotal Indirect Costs (26.8%) - \$434,941

Total Costs = \$2,057,855

The bond summary spreadsheet includes the following details: The escalation factor used is 1.78%. The total 5-year escalation cost is \$189,786. The total reclamation cost + escalation (2023 dollars) is \$2,247,641. The total required bond to be posted (in 2023 dollars) will be \$2,248,000 (cost + escalation, rounded to nearest \$1000).

The proposed bond amount that will be posted is \$2,585,200 and will exceed the required bond amount by \$337,200. This practice is not required but is widely adopted to address additional contingencies and unforeseen permit adjustments in the future. Further analysis of the bonding calculations reveals that all of the direct costs account for overhead and profit costs as instructed in the Division of Oil, Gas, & Mining Technical Directive 007.

Final approval of the permit application package will not be provided until the Permittee has obtained adequate bond coverage and the accompanying documentation has been provided to the Division.

jeatchel

Bonding Terms and Conditions Liability Insurance

Analysis:

The application meets the State of Utah R645 requirements for Terms and Conditions of Liability Insurance.

The application satisfies the minimum requirements for R645-301-890 due to the narrative on Page 1-21 that states Permittee will obtain and provide UDOGM with the certificate of insurance prior to initiation of development and mining activities. On receipt, a copy of the certificate of insurance will be submitted to UDOGM for insertion in Exhibit 18, Bonding and Insurance Information. The insurance policy will meet all applicable regulatory requirements for minimum coverage, will be maintained in full force during the permit term and all subsequent renewals, and will include a rider providing for notification to The Division of any termination or substantive changes in the policy. Final approval of the permit application package will not be provided until the Permittee has the requisite insurance coverage in place and the documentation has been provided to the Division.

jeatchel

Special Categories

Experimental Practices Mining

Analysis:

The application meets the State of Utah R645 rules for Experimental Practices.

In Chapter 9, page 9-1 the application states, "*CEG3 has no current plans to implement or utilize experimental practices in conjunction with planned and related activities for the Kinney No. 2 Mine*".

At this time, the Experimental Practices section of the State of Utah R645 rules does not apply.

schriste

Mountaintop Removal Mining

Analysis:

The application meets the State of Utah R645 rules for Mountaintop Removal Mining.

In Chapter 9, page 9-1 the application states, "...Kinney No. 2 Mine operations will be exclusively underground coal mining operations." The proposed mine plan provided in detail in Chapter 5, Engineering, clearly shows that no surface mining activities are planned in conjunction with the Kinney No. 2 Mine operations.

At this time, the Mountaintop Removal Mining sections of the State of Utah R645 rules do not apply.

schriste

Prime Farmland Application Contents

Analysis:

The Special Category of Prime Farmland does not apply to the proposed Kinney #2 mine permit boundary (disturbed area). The NRCS determined the land was not prime farmland (Figure 2 of Exhibit 6). The Division concurs with the NRCS, due to the fact that the land has been historically used for mining (Map 5) and was reclaimed by the Division under the Scofield Abandoned Mine Reclamation project (AMR/007/904). For further discussion refer to the Environmental Resource - Prime Farmland section of this Technical Analysis.

pburton

Operations Alluvial Essential Hydrologic Functions

Analysis:

The Special Category of mining within an Alluvial Valley Floor does not apply to the proposed Kinney #2 mine permit (disturbed area) boundary or lease area. As illustrated on Map 32, the AVF follows Mud Creek to the Scofield Reservoir. The AVF is west of SR 96. Map 32 outlines an AVF (alluvial deposits) and a "Quasi-AVF" area (with a potential for flood irrigation). Refer to the Environmental Resources - Alluvial Valley Floors section of this Technical Analysis for more information.

pburton

Operations Alluvial Essential Hydrologic Functions

Analysis:

The application meets the Essential Hydrologic Function requirements of the State of Utah R645-Coal Mining Rules.

The MRP provides information that examines the presence of an Alluvial Valley Floor in Chapter 9, Section R645-302-320. As required by R645-302-321.300, the Division will determine that an alluvial valley floor (AVF) exists if it finds that:

1. Unconsolidated stream laid deposits holding streams are present; and,
2. There is sufficient water to support agricultural activities as evidenced by:
3. The existence of flood irrigation in the area in question or its historical use;
4. The capability of an area to be flood irrigated, based on stream flow water yield, soils, water quality and topography; or,
5. Subirrigation of the lands in question derived from the ground water system of the valley floor.

Beginning on page 9-3, the MRP discusses AVF's within the permit and adjacent area. Based upon the aforementioned criteria, an AVF is located within the adjacent area (west of SR 96) of the permit area. Map 32, *AVF Evaluation Map* depicts the AVF location. Map 6, *Regional Surface Geology Map*, depicts alluvial material directly adjacent to Mud Creek on either side of the stream channel. The areal extent of the alluvial material adjacent to Mud Creek is relatively small (limited to within less than 500 feet of the Mud Creek stream channel). However, an irrigation network has been identified; evidence to the existence of flood irrigation in the adjacent area. The source of the irrigation water for the AVF area is Mud Creek. The water from Mud Creek has been historically utilized for irrigation purposes in this area with an irrigation network originating well upstream from the permit area. The permit describes the Scofield Ditch System as the source of irrigation water for the adjacent land outside the permit area. The East Branch Ditch divides as shown on Map 32. One irrigation ditch flows through the southwestern corner of the permit area. Based upon research conducted by the Permittee, the irrigation ditch has not been utilized for approximately 25 years. The

ditch will be routed into a culvert that will be maintained throughout the life of the mine. During reclamation, the pre-existing drainage characteristics of the ditch will be restored. Potential impacts to the function of the AVF are discussed in Section R645-302-322.100. The potential for the AVF to be impacted by the mining operations are considered negligible for the following reasons:

1. Mining will occur well above the regional water table (as presented in Chapter 7 of the MRP). As a result, the potential for ground water interception of the regional water table is considered negligible. Additional ground water investigations will be conducted as mining progresses eastward. However; based upon the baseline information provided by the Permittee, it appears that any ground water component that may contribute recharge to the AVF area adjacent to the permit area will not be affected by mining activity. Surface runoff will be controlled via the storm water drainage system (See Chapter 7). All surface runoff generated during snowmelt and precipitation events will be routed to Sediment Pond No. 1. A Utah Pollutant Discharge Elimination System has been obtained by the Permittee and establishes water quality/effluent standards for any discharge that could potentially enter the AVF area.
2. The source of irrigation water for the AVF area comes from Mud Creek at a diversion point located upstream of the mine site. As can be seen from Map 32, irrigation ditches supplying water to the AVF area are part of the Scofield Ditch system. The diversion point for this system is located approximately $\frac{3}{4}$ of a mile south of the most southern point of the permit area.
3. The only ditch that supplies water to the AVF that is located in close proximity to the mine site has not been utilized for a long time as evidenced by the vegetation present in the channel and general state of disrepair.
4. With the exception of the snow and rainfall that is captured within the disturbed area of the mine, all adjacent undisturbed drainage will be routed around the mine during operations and interim reclamation and thus still report to the adjacent AVF area.

Based upon a Utah Department of Environmental Quality TMDL analysis of Scofield Reservoir, 87% of the inflow to the Scofield reservoir comes from Fish and Mud Creek. The proposed mining activity poses a minimal potential for interrupting or impacting these drainages due to its proximity to the drainages and the utilization of first mining practices only (i.e. no planned subsidence).

The MRP identifies a "Quasi AVF" area that is much closer to permit area on Map 32. The existence of historic flood irrigation and the capability of the mine-site to be irrigated have been documented. However, the unconsolidated streamlaid deposits required for an AVF are not present within this area and as such do not meet the criteria of an AVF. The MRP discusses the geology of the permit area relative to AVF's beginning on page 9-6. Pleasant Valley (located directly west of the permit area) is a graben produced by faulting. Based upon the extent of the valley floor relative to the size of the Mud Creek drainage and resulting flows, it seems apparent that the valley floor of Pleasant Valley was primarily the result of faulting and not by fluvial processes solely. The result of this explains the minimal amount of stream laid deposits located directly adjacent to the Mud Creek stream channel (i.e. the identified AVF).

In summary, the coal seam to be mined is located well above the regional water table. As a result, the possibility that mining activity could interrupt or impact recharge to the identified AVF is minimal. In addition, the irrigation water that supplies the AVF is derived from Mud Creek at a diversion point upstream of the proposed mine site. Based upon a Utah Department of Environmental Quality TMDL analysis of Scofield Reservoir, 87% of the inflow to the Scofield reservoir comes from Fish and Mud Creek. The proposed mining activity poses a minimal potential for interrupting or impacting these drainages due to its proximity to the drainages and the utilization of first mining practices only (i.e. no planned subsidence).

kstorrar

Operations In Alluvial Monitoring

Analysis:

The application meets the State of Utah R645 requirements for Operations in Alluvial Monitoring.

In order to protect the hydrologic balance, the Permittee has developed a Ground Water Monitoring Plan. The plan is described in Section R645-301-731.200 of the MRP. Table 6, *Kinney Mine Baseline Monitoring Stations* and Table 7, *Kinney Mine Operational Monitoring Stations* provides a list of the baseline and operational ground water monitoring stations respectively. Table 20, *Hydrologic Monitoring Schedule* provides a list of the water quality parameters that will be analyzed for during the operational and post-mining phases of the project. Map 28, *Surface and Ground Water Monitoring Sites* depicts the locations of the ground water monitoring sites.

The Permittee commits to obtaining water quality samples on a quarterly basis. The data will be submitted to the Division within 90 days of the end of the quarter. On an annual basis, the Permittee commits to providing the Division with a hydrologic review and summary of data that will be submitted on or before June 1st.

The operational and reclamation phase ground water monitoring program consists of monitoring 9 monitoring wells (CR 06-01, CR 06-01 BLW, CR 06-02, CR 06-02 ABV, CR 06-05A, CR 06-09 ABV, CR 06-09 BLW, CR 10-11 and CR 10-12) and 7 spring sites (Aspen Spring/Pond, Eagle Spring 2 and Pond 2, Eagle Seep 1, Eagle Seep 1A, Eagle Seep 3, Eagle Spring and Sulfur Spring). The sites will be monitored for water level/flow as well as field and laboratory analytical parameters.

The Permittee will monitor Eagle Seep 1, Eagle Seep 1A, Eagle Seep 3, Eagle Spring 2, Eagle Pond 2 and Aspen Spring (aka Eagle Pond 1) on a monthly basis for a minimum of 12 months (with the exception during months when access is not possible due to snow).

The water monitoring program will allow the Permittee to determine if mining activity is producing impacts to the hydrologic balance as well as the effectiveness of future reclamation efforts. The obtained data will be used to identify problems/issues and if necessary, develop necessary mitigation measures as needed.

kstorrar

In SITU Processing

Analysis:

The application meets the State of Utah R645 rules for In SITU Processing.

In Chapter 9, page 9-2 the application states, "CEG3 has no current plans to implement or utilize in-situ extraction or processing methods in conjunction with planned mining and related activities for the Kinney No. 2 Mine."

At this time, the In-situ Processing sections of the State of Utah R645 rules do not apply.

schriste

Auger Mining

Analysis:

The application meets the State of Utah R645 rules for Auger Mining.

As provided in Chapter 5, engineering, the proposed coal mining method will be conventional underground coal mining utilizing continuous mining methods. On page 9-2 of Chapter 9, the Permittee states, "CEG3 has no present plans to conduct auger mining in conjunction with the Kinney No. 2 Mine operations and the provisions of rule R645-302-240 are not applicable."

At this time, the Auger Mining sections of the State of Utah R645 rules do not apply.

schriste



State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

Technical Analysis and Findings

Utah Coal Regulatory Program

PID: C0070047
TaskID: 5779
Mine Name: KINNEY #2
Title: PERMIT APPLICATION

General Contents

Right of Entry

Deficiencies Details:

The information provided does not meet the requirements of the Regulations for Right of Entry. The following deficiencies must be addressed prior to final approval:

R645-301-114: The Permittee must provide an executed/signed copy of the 'Lease and Sub-lease of Coal Estate and Option Agreement between Carbon Resources, LLC and Coal Energy Group 3, LLC'. Carbon Resources, LLC Manager Pamela Reeves signed the document on September 25th, 2018. A signature from a Coal Energy Group 3, LLC representative is not provided.

R645-301-114, -121.200: The Permittee must place the document entitled 'Lease of Coal Estate Between Angelo G. Telonis, Thomas G. Telonis and John G. Telonis and Carbon Energy Group 3, LLC' in succession with the other legal instruments and documents provided in the confidential folder. The current application places this document following hundreds of pages of cultural resource and coal resource information. To ensure the permit is clear and concise, please place this document with the other legal documents provided.

schriste

Environmental Resource Information

Fish and Wildlife Resource Information

Deficiencies Details:

The application does not meet the State of Utah R645-301-322 requirements for Fish and Wildlife Resource Information. The following deficiencies must be addressed prior to final approval:

R645-301-322: Updated information from the Utah Natural Heritage Program must be included in the application. A raptor survey report and updated map must also be included in the permit application.

tmiller

Maps Surface and Subsurface Ownership

Deficiencies Details:

The application does not meet the State of Utah R645 requirements for Surface and Subsurface Ownership Maps. The following deficiency must be addressed prior to final approval:

R645-301-521.131: The Permittee must revise Map 11, Regional Surface Ownership Map with the most recent ownership information.

jeatchel

Operation Plan

Relocation or Use of Public Roads

Deficiencies Details:

The application does not meet the State of Utah R645 requirements for Relocation or Use of Public Roads. The following deficiency must be addressed prior to final approval:

R645-301-121.200: The Permittee must revise the statement on page 5-39 that incorrectly discusses two public notices and no comments/ objections received. Exhibit 5 includes a copy of Skyline's letter of concern as well as language that addresses the public notices, but the original narrative on page 5-39 has not been changed. The narrative on Page 5-39 must be changed otherwise the remnant language contradicts what is presented in Exhibit 5.

jeatchel

Air Pollution Control Plan

Deficiencies Details:

Condition of permit: In accordance with R645-301-421, The Permittee must provide confirmation of the Air Quality Approval Order prior to construction of the site.

pburton

Fish and Wildlife Protection and Enhancement Plan

Deficiencies Details:

The application does not meet the State of Utah R645 requirements for the fish and wildlife protection and enhancement plan. The following deficiencies must be addressed prior to final approval:

R645-301-322: The language on pages 3-44 through 3-46 relating to the 2011 nesting season must be updated to reflect the current season and conditions.

R645-301-342: An update to the Final seed mix to remove Kentucky bluegrass. Suggestions to replace these species are orchard grass and mountain brome.

tmiller

Road System Certification

Deficiencies Details:

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

R645-301-512.200, -512.250: Figures 25 and 25A depict the construction and configuration of Primary Roads and therefore must be certified by any of the following: a qualified, professional engineer, professional geologist, or a professional land surveyor.

jeatchel

Spoil Waste Coal Mine Waste

Deficiencies Details:

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

R645-301-528.320, -536.100 thru -536.420: Permittee must remove references within the narrative to “off-spec” or “non-spec” coal and use established R645 definitions for waste material that will be generated and stored on the mine site (e.g. coal processing waste or underground development waste). Permittee must elaborate on the anticipated dimensions of the anticipated waste pile, and describe how this pile will be designed to attain long-term static safety and stability.

jeatchel

Spoil Waste Coal Mine Waste

Deficiencies Details:

The application does not meet the State of Utah R645 requirements for Coal Mine Waste relative to hydrology. The following deficiency must be addressed prior to final approval:

R645-301-746: The coal mine waste generated as a result of mining activity will be stock-piled on the ‘off-spec’ or ‘non-spec’ coal pile shown in Map 13 Item no. 38. This material must be defined as coal or coal mine waste or another defined term within the R645 rules. All maps and narratives must be updated to reflect the correct terminology when referring to this material including Chapters 5 and 7. Additionally, Map 13 Item no. 7 and no. 38 and Figure 41 referring to the ‘non-spec/off-spec coal pile’ must be updated to reflect the true nature of the piled material. If any form of coal mine waste material is proposed to be stored on-site (i.e. not immediately removed), the applicable design/performance standards for that material must be addressed. The maximum size of the pile shall be provided and a bond posted for worst case scenario.

kstorrar

Spoil Waste Refuse Piles

Deficiencies Details:

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

R645-301-528.322, -536.900: The Permittee must describe how the 3,900 ton coal processing waste pile will be designed to comply with the performance standards of a designed refuse pile according to the Utah R645 coal regulations.

jeatchel

Spoil Waste Refuse Piles

Deficiencies Details:

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

R645-301-746: This small pile ‘off-spec’ or ‘non-spec’ coal pile must be defined as coal or coal mine waste or another defined term within the R645 rules. All maps and narratives must be updated to reflect the correct terminology when referring to this material including Chapters 5 and 7. Additionally, Map 13 Item no. 7 and no. 38 and Figure 41 referring to the ‘non-spec/off-spec coal pile’ must be updated to reflect the true nature of the piled material

If any form of coal mine waste material is proposed to be stored on-site (i.e. not immediately removed), the applicable design/performance standards for that material must be addressed. The maximum size of the pile shall be provided and a bond posted for worst case scenario.

kstorrar

Hydrologic Acid and Toxic forming Materials

Deficiencies Details:

The application does not meet the State of Utah R645 requirements for Acid/Toxic Forming Materials. The following deficiency must be addressed prior to final approval:

R645-301-731.300: The coal mine waste generated as a result of mining activity will be stock-piled on the 'off-spec' or 'non-spec' coal pile shown in Map 13 Item no. 38. This material must be defined as coal or coal mine waste or another defined term within the R645 rules. All maps and narratives must be updated to reflect the correct terminology when referring to this material including Chapters 5 and 7. Additionally, Map 13 Item no. 7 and no. 38 and Figure 41 referring to the 'non-spec/off-spec coal pile' must be updated to reflect the true nature of the piled material. If any form of coal mine waste material is proposed to be stored on-site (i.e. not immediately removed), the applicable design/performance standards for that material must be addressed. The maximum size of the pile shall be provided and a bond posted for worst case scenario.

kstorrar

Reclamation Plan

WildLife Protection

Deficiencies Details:

The application does not meet the State of Utah R645 requirements for wildlife protection. The following deficiencies must be addressed prior to final approval:

R645-301-322: The language on pages 3-44 through 3-46 relating to the 2011 nesting season must be updated to reflect the current season and conditions.

R645-301-342: An update to the Final seed mix to remove Kentucky bluegrass. Suggestions to replace these species are orchard grass and mountain brome.

tmiller