

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

August 12, 2008

OK

TO: Internal File

THRU: James D. Smith, Permit Supervisor
Steve Christensen, Environmental Scientist III SKC

FROM: Priscilla Burton, CPSSc, Environmental Scientist III *PB by ar*

RE: Full Extraction Pillar Splitting, Consol Energy Company, Emery Deep Mine, C/015/0015, Task ID #2990

SUMMARY:

Full extraction and planned subsidence was previously approved for the 14th and 15th west panels and 8th North Main; 4th E Mains, and the 15th W, 6th W, and Zero North panels. This full extraction application was received on June 13, 2008. It consists of a pre-subsidence survey for the surface lands above **panels 1, 2, 3, and 4 North; 1, 2, 3, 4, and 5 West; 7, 8, 9, 10, 11, 12, and 13 West; 8 South and 5 West Mains, prior to full extraction.** Ownership of this land is shown on the pre-subsidence survey Appendix V-7, Figure 1 as well as on Plate I-1 Surface Ownership Map.

The Division's 1985 Technical Analysis for the Emery Mine found that prime farmlands exist in Sections 20, 22, 29, 30 and 31 of T22S, R6E within the permit area. The Important Farmlands of Parts of Carbon, Emery, Grand, and Sevier Counties. 1981. Utah Ag Exp Sta Res Rpt No. 76 confirms that finding.

The following deficiencies were noted with this application. Refer to Task 2975 mid-term review for ownership and control and air quality deficiencies.

R645-301-332 and R645-301-121.200, The Pre-Subsidence survey Appendix V-7 suggests that the previous 1980 pre-subsidence survey was in error, because conditions have not remained the same on the land surface. i.e. It is entirely possible that in 1980 irrigated farmlands created a stream of return flow in the vicinity of Feature 87, which is now dry. In the interim, Consol purchased the surrounding farmlands and kept them out of production. Naturally, the stream channel would dry up. This does not imply that the 1980 survey was in error. It does provide a statement on the source of the flow. Statements casting doubt on

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the veracity of the previous survey are not appropriate, and should be removed from Appendix V-7. • Reference number 93 states that 48 acres above Panels L-2, 3, 4 are irrigated, but does not describe the design of the ditches or state which ditches shown on Figure 1 are functional. [On Figure 1, App. V-7 Irrigation ditches are shown in pink for the 1980 survey and in green for the 2008 survey.] The survey narrative should clearly indicate which ditches are presently functional and provide reference numbers and design information on those existing, functional irrigation ditches. Similar information is requested for Features 109 and 110. • Farmland acreage in Features 109 and 122 should be disclosed. • Feature 110 could not be located on Figure 1 of App. V-7. • Acreage irrigated by Features 72 and 74 should be disclosed.

R645-301-623, Since the MRP has limited roof and floor analysis and is missing several parameters from those samples that were taken from the Zero North location, the plan should include a commitment for further geologic testing as discussed with John Gefferth on 3/31/2008.

TECHNICAL ANALYSIS:

GENERAL CONTENTS

IDENTIFICATION OF INTERESTS

Regulatory Reference: 30 CFR 773.22; 30 CFR 778.13; R645-301-112

Analysis:

No information or changes to the MRP were provided. For deficiency, please see Task 2975 mid-term review.

Findings:

No changes to the MRP were provided. For deficiency, please see Task 2975 mid-term review.

ENVIRONMENTAL RESOURCES

PRIME FARMLAND

Regulatory Reference: 30 CFR 785.16, 823; R645-301-221, -302-270.

Analysis:

On February 25, 1985, The Division found that prime farmlands do exist within the permit area in Sections 20, 22, 29, 30 and 31 of T22S, R6E (see February 25, 1985, Technical Analysis, p 41). These farmland locations were shown on Plate 8-3 of the 1981 permit application. Plate 8-3 showed the 4th East Portal location as being Wildlife and Grazing with pasture land immediately north of the disturbed area. Plate 8-3 has been superceded by Plate VIII-1.

On November 4, 2005, the Division found that there were prime farmlands within the permit area, specifically flood irrigated and specially managed agricultural land in Sections 8 - 11, 13 - 17, 19 - 23, and 28 - 32 of T. 22 S. R. 6 E. Salt Lake Meridian, but not within the area of 4th East Portal development, NE1/4 of Section 27, T. 22 S. R. 6 E. Salt Lake Meridian.

Findings:

The Division finds that there are prime farmlands within the permit area, in Sections 8 - 11, 13 - 17, 19 - 23, and 28 - 32 of T. 22 S. R. 6 E. Salt Lake Meridian.

OPERATION PLAN

AIR POLLUTION CONTROL PLAN

Regulatory Reference: 30 CFR 784.26, 817.95; R645-301-244, -301-420.

Analysis:

The facility will include a screening/crusher building, and a 10,000 ton processed coal stockpile along with associated conveyors. The facility will handle a capacity of approximately 1,300,000 tons of coal per year (page 17b, Chapter II).

MRP Appendix X.C-2 contains the Air Quality Approval Order (AO) DAQE-117-95 from the Division of Air Quality dated August 5, 2002. The AO itemizes following at the 4th East portal site.

- The production limit of 1,300,000 tons/yr should not be exceeded

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- The ROM surge pile may contain 1500 tons maximum.
- The maximum time period of operation for the 425 hp diesel generator should be 300 hours of operation /12 mo period (using #2 diesel fuel oil).
- Visible emissions from conveyor transfer points should not exceed 10% opacity and emissions from all other sources should not exceed 20% opacity. Observations of opacity are to be made in accordance with 40 CFR 60.11 (b) and 40 CFR 60, Appendix A, Method 9.

Two opacity readings of the conveyor transfer points were taken by the Permittee for the abatement of N03-39-1-1 (two separate occasions in June and July of 2003). Fugitive dust from the coal pile itself was not evaluated. At the time of the readings, the wind was between 0 – 2 nauts and there was no exceedence of the opacity requirement. Chapter II, page 25 includes a statement that “opacity readings will be conducted as required by the modified approval order.” The air quality approval order specifies 20% or less opacity at the facility. The AO requires that a certified individual take the opacity readings

The Permittee will designate an individual who will be certified in Method 9, stationed at the Emery Mine, to be responsible for on-going monitoring of opacity. Continual monitoring of opacity in concert with soil surface evaluations will be the means of measuring success of the dust control strategy (pg 5b, Chap X-C.)

No additional information was provided with this application. For deficiency, please see the Task 2975 review.

Findings:

No additional information was provided with this application. For deficiency, please see the Task 2975 review.

SUBSIDENCE CONTROL PLAN

Regulatory Reference: 30 CFR 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-731.

Analysis:

Subsidence Control Plan

Plate V-5 shows the mining panels. The Important Farmlands of Parts of Carbon, Emery, Grand, and Sevier Counties. 1981. Utah Ag Exp Sta Res Rpt No. 76 indicates that the irrigated cropland above the 14th West and the 6th West panels is prime farmland. Planned subsidence, as a result of full extraction is shown on Plate V-5 and includes a general lowering of the land by

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three feet. Since the panels lie diagonally the direction of the irrigation, there may be reduced flow to the southern 9-acre section of D.U. Company's irrigated land.

The federal coal in lease U5287 (issued 1971) encompasses approximately 450 – 500 acres as shown on Plate IV-2 UG Operations Plan and VI-6A Historic and Planned Mining Sequence. The 14th West panel runs beneath 68 acres of privately held surface in Sec. 29, T. 22 S., R. 6 E., belonging to Osbrun Bret Carter. The panel runs on a NW to SE diagonal beginning in the NE ¼ NW ¼ through the NW ¼ NE ¼ of Section 29.

The Permittee has also outlined the 15th West panels and the 8th North Main for full extraction, Plate VIII-1 Vegetation and Landuse Map. Landowners on the surface of the 15th west and 8th North Main include Russell H. Odle and Morgan Robertson. When the 15th West and 8th North Main are undermined, the surface features that may be affected by subsidence include the county road and a water supply line.

The First North and Panels 3,4, 6 West and Panels L-1 through L-4 area is also shown as Prime Farmland in Important Farmlands of Parts of Carbon, Emery, Grand, and Sevier Counties. 1981. Utah Ag Exp Sta Res Rpt No. 76. Figure XIII-1a shows that within the 160 acre 1st North federal lease, there are approximately 50 acres of prime farmland soils, that is one-third of the soil is prime farmland, if irrigated. Communication with the NRCS on December 12, 2006, confirms that there are approximately forty-eight irrigated acres within the First North federal lease at this time. Appendix V-7 records 198 + acres of irrigated farmland.

Zero North panel in federal lease U-50044 runs beneath Consol owned rangeland surface. The irrigation ditches that are currently in disrepair, as described in App. V-5, attest to the fact that this land was historically farmed and irrigated.

The 6th West panel in federal lease U-50044 runs beneath 9.1 acres of a larger, irrigated D.U. Company field and County Road 915 as well as Consol owned rangeland surface, County Road 915, and a power line (App. V-5, Pre-Subsidence Survey and Plate I-1).

The 4th East Mains parallels Christiansen Wash and is beneath Consol surface and County Road 907 and a power line.

Roads are labeled and other features are shown on Appendix V-5 Figure 1. and Plate V-5. The Permittee has notified the County and has obtained an agreement for subsidence mitigation with the County. Chapter V, page 40 confirms that the required pre-subsidence landowner notification letters to landowners and irrigation companies were sent and are on file with the Division.

In accordance with R645-301-525.110, the Permittee has provided a map showing the location or renewable resource lands, and narrative describing the potential for material damage

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or diminished value of the renewable resource lands. **The term renewable resource lands is defined by R645-100, includes agricultural lands, croplands, and grazing lands.**

- Appendix V-4 states that there are 24 acres of irrigated cropland within the 132-acre area surveyed in April 2007. Figure V-4 Figure 1 provided with the April 2007 survey does not indicate the location of the 24 acres of cropland, however, Figure 1 and 2 included in Appendix VIII-3 indicate the location of cropland.
- Appendix V-5 Figure 1 provides a pre-subsidence survey for the 4 East Mains, 6th West and 0 North.
- Plate VI-3 shows the location of irrigated land.
- Previous communication with the NRCS confirms the designation of Penoyer soils as prime farmland in the fee portion of the 1st North IBC. (see App XII-1). Recent mapping by the NRCS has determined that the soils having potential for prime farmland within the IBC are Minchey loam, Penoyer loam, Ravola loam, and Tusher fine sandy loam, when irrigated.
- Subsidence movement between 3 and 10 ft is projected with the area shown on Plate V-5. Ground movement will be monitored (Sec V.B.1).

Findings:

R645-301-332 and R645-301-121.200, The Pre-Subsidence survey Appendix V-7 suggests that the previous 1980 survey was in error, when conditions have changed on the land surface, such as with the amount of water in a stream channel. Statements casting doubt on the veracity of the previous survey are not appropriate, and should be removed from Appendix V-7. i.e. It is entirely possible that in 1980 irrigated farmlands created a stream of return flow in the vicinity of Feature 87. Consol has purchased those farmlands and kept them out of production. Naturally, the stream channel would silt in and dry up. This does not imply that the 1980 survey was in error. ● Reference numbers 72 and 74 are allotted to describe irrigation ditches near the 8 – 12 West panels. Reference number 93 states that 48 acres above Panels L-2, 3, 4 are irrigated, but does not describe the design of the ditches or state which ditches shown on Figure 1 are functional. [On Figure 1, App. V-7 Irrigation ditches are shown in pink for the 1980 survey and in green for the 2008 survey.] The survey narrative should clearly indicate which ditches are presently functional and provide reference numbers and design information on those existing, functional irrigation ditches. Similar information is requested for Feature 109 and Feature 110. ● Farmland acreage in Features 109 and 122 should be disclosed. ● Feature 110 could not be

located on Figure 1 of App. V-7. •Acreage irrigated by Features 72 and 74 should be disclosed.

GEOLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.22; R645-301-623, -301-724.

Analysis:

Chapter V.A. 4 of the MRP describes roof and floor analyses.

Chapter V.A. 4 contains the 2007 analysis of the 1st North roof and Zero North floor, representing federal lease U-50044. According to the cover letter provided with Task 2951, the samples were in different panels, but were 200 ft. apart. Samples were analyzed by Geochemical Testing, David Glessner, Laboratory Manager. Electrical Conductivity and SAR analyses were not conducted and no sample remains to conduct those tests.

The 2007 1st north roof sample is potentially acid forming, due to concentrations of pyrite and virtually no neutralizing, carbonate content. The pH was 6.4. No analysis of SAR or EC was provided.

The Zero North floor sample did not have much more carbonate than the 1st north roof sample, but it had significantly less pyritic sulfur and is therefore less likely to produce acid. The pH of the floor was 6.9. No analysis of SAR or EC was provided.

Since we have limited roof and floor analysis available and are missing several parameters from those samples that we do have, further geologic testing will be made available as mining progresses (personal communication with John Gefferth, 3/31/2008).

Findings:

R645-301-623, Since we have limited roof and floor analysis available and are missing several parameters from those samples that we do have, the plan should provide a commitment for further geologic testing (personal communication with John Gefferth, 3/31/2008).

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT (CHIA)

Regulatory Reference: 30 CFR Sec. 784.14; R645-301-730.

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Analysis:

The 14th West, 6th West and 1st North areas are shown as Prime Farmland in Important Farmlands of Parts of Carbon, Emery, Grand, and Sevier Counties. 1981. Utah Ag Exp Sta Res Rpt No. 76. Consequently the PHC must consider the effect of undermining on irrigated renewable resource lands.

Findings:

A statement of renewable resource lands has been provided with the application. The Cumulative Hydrologic Impact of mining beneath agricultural lands will be assessed by the Division.

RECOMMENDATIONS:

The application is not recommended for incorporation into the Mining and Reclamation Plan.