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November 12, 2002

Rick Olsen, General Manager  
Canyon Fuel Company, LLC.  
P.O. Box 1029  
Wellington, Utah 84542

Re: Methane Degas, Canyon Fuel Company, LLC., Dugout Mine, C/007/039-02J, Outgoing File

Dear Mr. Olsen:

The above-referenced amendment has been reviewed. There are a number of deficiencies that must be adequately addressed prior to approval. A copy of our Technical Analysis is enclosed for your information. In order for us to continue to process your application, please respond to these deficiencies by February 6, 2003.

If you have any questions, please call me at (801) 538-5268 or Stephen J. Demczak at (435) 613-5242.

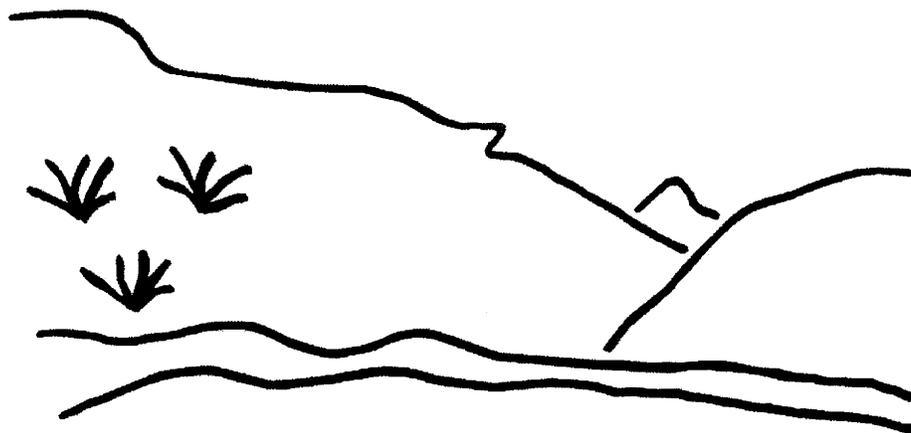
Sincerely,



Pamela Grubaugh-Littig  
Permit Supervisor

SJD/sd  
Enclosure  
cc: Price Field Office  
O:\007039.DUG\FINAL\DEF02J.DOC

# State of Utah



## Utah Oil Gas and Mining

### Coal Regulatory Program

Dugout Canyon Mine  
Methane Degas  
C/007/039-02J  
Technical Analysis  
November 6, 2002

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## TECHNICAL ANALYSIS

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### TECHNICAL ANALYSIS

The Division regulates the Surface Mining Control and Reclamation Act of 1977 (SMCRA). When mines submit a Permit Application Package or an amendment to their Mining and Reclamation Plan, the Division reviews the proposal for conformance to the R645-Coal Mining Rules. This Technical Analysis is such a review. Regardless of these analyses, the permittee must comply with the minimum regulatory requirements as established by SMCRA.

Readers of this document must be aware that the regulatory requirements are included by reference. A complete and current copy of these regulations and a copy of the Technical Analysis and Findings Review Guide can be found at <http://ogm.utah.gov/coal>

This Technical Analysis (TA) is written as part of the permit review process. It documents the Findings that the Division has made to date regarding the application for a permit and is the basis for permitting decisions with regard to the application. The TA is broken down into logical section headings which comprise the necessary components of an application. Each section is analyzed and specific findings are then provided which indicate whether or not the application is in compliance with the requirements.

Often the first technical review of an application finds that the application contains some deficiencies. The deficiencies are discussed in the body of the TA and are identified by a regulatory reference which describes the minimum requirements. In this Technical Analysis we have summarized the deficiencies at the beginning of the document to aid in responding to them. Once all of the deficiencies have been adequately addressed, the TA will be considered final for the permitting action.

It may be that not every topic or regulatory requirement is discussed in this version of the TA. Generally only those sections are analyzed that pertain to a particular permitting action. TA's may have been completed previously and the revised information has not altered the original findings. Those sections that are not discussed in this document are generally considered to be in compliance.

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November 6, 2002

**TECHNICAL ANALYSIS**

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## INTRODUCTION

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### INTRODUCTION

The submittal was received on September 18, 2002. The Dugout Mine requires a ventilation borehole for the Rock Canyon seam to reduce methane along the RC-4 longwall panel. The site proposed for the MW-02 degas drill hole was previously permitted and developed as an exploration drill hole (DC-5) that was drilled in 1998. The location of MC-02 is shown on Figure 1-1 of the Amendment and on the Pine Canyon Quadrangle map. The amendment will increase the size of the permit area by 1.6 acres.

The degas hole will be located on Canyon Fuel Company, LLC property. This will be above the third longwall panel in the Dugout Canyon Mine. The intent of the degas hole is to drain off methane gas from the longwall gob. The degas hole will increase safety and coal production. Therefore, this action is associated with mining.

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November 6, 2002

## INTRODUCTION

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**SUMMARY OF DEFICIENCIES**

**SUMMARY OF DEFICIENCIES**

The Technical analysis of the proposed permit changes cannot be completed at this time. Additional information is requested of the permittee to address deficiencies in the proposal. A summary of deficiencies is provided below. Additional comments and concerns may also be found within the analysis and findings made in this Draft Technical Analysis. Upon finalization of this review, any deficiencies will be evaluated for compliance with the regulatory requirements. Such deficiencies may be conditioned to the requirements of the permit issued by the division, result in denial of the proposed permit changes, or may result in other executive or enforcement action and deemed necessary by the Division at that time to achieve compliance with the Utah Coal Regulatory Program.

Accordingly, the permittee must address those deficiencies as found within this Draft Technical Analysis and provide the following, prior to approval, in accordance with the requirements of:

***Regulations***

- R645-301-112.600**, The amendment must be updated to reflect owners of property contiguous to the permit area, as reflected in the MRP..... 11
- R645-301-121.200**, Attachment 3-2 indicates that the area had less than 100 lbs/ac productivity, not equal to 100 lbs/ac. .... 21
- R645-301-121.200**, The application indicates that there are “no suitable nesting sites noted on or adjacent to the degas well site” (Section 322.200). The raptor survey did not cover the immediate location of the degas well site, and therefore, this statement is misleading. .... 23
- R645-301-121.200**, The submittal must consistently indicate the acreage of disturbance in all sections and in the C1/C2 forms. .... 14
- R645-301-131**, The application must include the following information for the raptor survey and the bat survey: the dates of collection, the analysis of the data, and descriptions of the methodology used to collect and analyze the data..... 15
- R645-301-132**, The qualifications of the JBR consultants to perform bat surveys must be disclosed..... 15
- R645-301-222.200**, The application should describe and quantify how much topsoil is available from the side-cast material on the edges of the pad..... 24

**SUMMARY OF DEFICIENCIES**

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- R645-301-224**, The application must include a commitment to analyze the stored topsoil and salvaged disturbed soils of MW-02 for the following parameters immediately after salvage: pH, Electrical Conductivity, Sodium Adsorption Ratio, percent CaCO<sub>3</sub>, plant available Nitrogen, Potassium, and Phosphorus. .... 35
- R645-301-231.100**, The application should describe topsoil handling plans including the equipment to be used and moisture content below which soils will not be handled. .... 35
- R645-301-232.200 and -232.300**, Clearly indicate that six inches of soil will be removed and stored for use as substitute topsoil from the disturbed site and eliminate contradictions in the narrative between Section 232.300 and 232.500 concerning the depth of soil salvage..... 35
- R645-301-232.400**, Remove the statements such as those found in R634-301-232.400 from the operating plan, unless there are specific areas being contemplated for disturbance without topsoil removal and outline those areas where topsoil is not to be removed on a map. .... 35
- R645-301-234.230**, The application should describe surface pitting of the stockpile. .... 35
- R645-301-234.300**, The Division reserves its right to review information before approving any modifications and requests that information included under the Host Site and Topsoil Suitability headings of the amendment is removed. .... 35
- R645-301-242.120**, (1) The plan must indicate that the site will be ripped to a depth of 18 – 24 inches where possible and the bonding information for the site should reflect this reclamation step. (2) The plan must indicate a method to reduce compaction in the mud pit. The plan should indicate some mixing of the cover material with the clays of the mud pit to avoid creating an abrupt boundary between the layers. .... 44
- R645-301-243**, Clearly indicate what soils will be sampled and what analysis will take place to ensure that there is an adequate rooting depth and rooting medium for revegetation and the plan must contemplate the addition of organic matter to enhance the soils. .... 44
- R645-301-321.100**, (1) Vegetation field notes for transect 14/15 of Attachment 3-1 are illegible and methodology described in Attachment 3-1 incorrectly states the number of sampling points in each transect. (2) Range condition should be estimated for the site and a reference area. .... 21
- R645-301-321.200**, (1) *The application must provide an estimate of the productivity of the MW-02 site and for comparison productivity of a reference area. (2) Productivity estimates should be evaluated by the Natural Resources Conservation Service. (3) Productivity measurements reported for the purposes of meeting this Regulation must be based upon weight per unit area as described in the Division's 1992 Vegetation Guidelines.* .... 21

**SUMMARY OF DEFICIENCIES**

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**R645-301-322.230**, The application must evaluate whether the area is suitable Spotted Owl habitat..... 23

**R645-301-323.100**, The application must include the location and boundary of a reference area on a map..... 21

**R645-301-323.400**, The application must include a map outlining vegetative types and plant communities in the area adjacent to MW-02, sufficient to allow evaluation of vegetation as important habitat for wildlife identified as potentially occurring at the site (loggerhead shrike and burrowing owl)..... 23

**R645-301-333**, (1) The application must indicate that the 1500 foot access road will be reduced in size during final reclamation to comply with the commitment to minimize disturbance and reclaim disturbed areas when no longer needed given in Section 333 of the approved MRP.  
(2) The reclamation plan should include fencing the site until vegetation is established..... 42

**R645-301-333.300**, Section 333.300 of the submittal must indicate (1) that the perimeter of the site will be marked and that entire site will be fenced (2) that the location of this well MW-02 will be added to the UDWR flight pattern during their annual raptor survey flights from this point forward until two seasons after mining operations cease. .... 34

**R645-301-354**, The application in Figure 5.4 does not indicate topsoil/subsoil sampling, ripping subsoil, straw mulch application, gouging, and creation of brush and rock piles in the timetable..... 48

**R645-301-355**, The plan must describe efforts to re-establish a layer of litter 1 – 2 inches deep on the surface of the reclaimed site..... 48

**R645-301-356.100**, Provide further information on the vegetation existing in the undisturbed areas around the site so that a vegetation success standard can be established, woody plant density standards can be determined, a reference area can be chosen and seed mix can be evaluated. Vegetation surveys must follow the Division’s Vegetation Guidelines..... 48

**R645-301-356.200**, The application must describe a method to exclude grazing animals from the site during operations and reclamation. .... 48

**R645-301-411.120**, The application must include a discussion of the land capability giving consideration to the major plant communities of the area before exploration drilling disturbed the surface. .... 25

**R645-301-512**, The surface facilities map must be certified by a qualified, registered, professional engineer or land surveyor. .... 31

**SUMMARY OF DEFICIENCIES**

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**R645-301-521**, In Section 111 of the application, clearly identify the lands subject to surface disturbance resulting from construction of MW-02 using the correct UTM coordinates (R 13 S, R12 E), include the ¼ section location and identify the USGS Quadrangle map that locates the site. .... 17

**R645-301-521.132**, The permittee must update the permit area map to show the location of the disturbed area of MW-02. .... 29

**R645-301-521.141 and -521.150, -521.151, -521.152, -521-162**, The application must include a map of the site showing disturbed area boundaries and areas within the proposed boundaries that have been previously disturbed by exploration. .... 29

**R645-301-521.180**, The permittee must submit a description, plan, and drawings for each support facilities to be constructed, used, or maintained within the proposed permit area. .... 31

**R645-301-527.100**, The permittee must justify the ancillary road status. .... 37

**R645-301-542.310**, The permittee must supply final surface configuration of the affected area. Cross section of pre-disturbance, operational, and final reclamation will be required. .... 49

**R645-301-724**, The application must include climatological information. .... 19

**R645-301-731.311**, The application must indicate that the slurry in the mud pit will be sampled for acid/toxic forming characteristics as described in Table 6 of the Division’s Topsoil and Overburden Guidelines. .... 39

**R645-521.112**, The applicant should submit a surface pre-mining topographic map on a scale of at least 1 inch = 30 feet to identify the surface configuration. .... 29

**R645-731**, The applicant shall provide a clear description of the use and life of the facilities during the operational period. The applicant shall describe all facilities that will be on the pad during the operational period and the expected life of the well facilities. .... 31

**R645-741**, The applicant should submit an operational surface map showing the area of the methane degasification well pad, including a detailed drawing of surface features. The map should depict all sediment control features (silt fences, berms and straw bales), slope of the pad, area of runoff storage, and all operational structures. The map should be a scale of at least 1 inch = 50 feet. .... 39

## GENERAL CONTENTS

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# GENERAL CONTENTS

## IDENTIFICATION OF INTERESTS

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

### Analysis:

The Identification of Interest information is in the MRP in Chapter 1 on Page 1-2. This information was revised in January 2000. This information has not changed.

Canyon Fuel Company, LLC, is the surface and mineral owners.

The officers have not changed. This information is in the MRP in Chapter 1 on Page 1-3.

Three names are lacking in this amendment for owners of property contiguous to the permit area. The Milton & Ardith Thayne Trust, George & Alice Conover Et. Al., and KFJ Ranch Partnership are in the MRP in Chapter 1 on Page 1-18. The permittee must update this amendment to reflect the three missing names.

The permittee does have a MSHA identification number. This information is in Chapter 1 on Page 1-19 in the MRP.

Canyon Fuel Company, LLC has no interest in contiguous lands other than those currently owned as shown on Plate 1-3 of the MRP.

### Findings:

The information has not met the minimum requirements of this section. Prior to approval the permittee must address the following R645 Coal Rule:

**R645-301-112.600**, The amendment must be updated to reflect owners of property contiguous to the permit area, as reflected in the MRP.

## VIOLATION INFORMATION

Regulatory Reference: 30 CFR 773.15(b); 30 CFR 773.23; 30 CFR 778.14; R645-300-132; R645-301-113

## GENERAL CONTENTS

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### **Analysis:**

This information is in the current Mining and Reclamation Plan. This information was last updated in May 1999. Canyon Fuel Company has received at least one violation since January 1999. The permittee has, however, submitted updated violation information in the Dugout refuse pile amendment. This will be incorporated once this amendment is approved.

### **Findings:**

The permittee has met the minimum requirements of this section

## **RIGHT OF ENTRY**

Regulatory Reference: 30 CFR 778.15; R645-301-114

### **Analysis:**

This information is in the MRP in Chapter 1 on Page 1-28. This information was last updated in November 2001.

### **Findings:**

The permittee has met the requirements of this section.

## **LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS**

Regulatory Reference: 30 CFR 778.16; 30 CFR 779.12(a); 30 CFR 779.24(a)(b)(c); R645-300-121.120; R645-301-112.800; R645-300-141; R645-301-115.

### **Analysis:**

The permittee has submitted maps showing the MW-02 degas well. The permittee has given information in the amendment that the disturbed area will be 1.61 acres. The permittee will not have to advertise in the newspaper, since this area is within the current permitted area.

### **Findings:**

The permittee has met the minimum requirements of this section.

## GENERAL CONTENTS

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### PERMIT TERM

Regulatory References: 30 CFR 778.17; R645-301-116.

**Analysis:**

The permittee has a five-year permit term. This information is in the MRP and has not changed.

**Findings:**

The permittee has met the minimum requirements of this section.

### PUBLIC NOTICE AND COMMENT

Regulatory References: 30 CFR 778.21; 30 CFR 773.13; R645-300-120; R645-301-117.200.

**Analysis:**

This area is within the present day permit area. Therefore, public notice will not be required.

**Findings:**

The permittee has met the minimum requirements of this section.

### FILING FEE

Regulatory Reference: 30 CFR 777.17; R645-301-118.

**Analysis:**

This will not be required. This is an amendment and not a permit application.

**Findings:**

The permittee has met the minimum requirements of this section.

## **PERMIT APPLICATION FORMAT AND CONTENTS**

Regulatory Reference: 30 CFR 777.11; R645-301-120.

### **Analysis:**

The application indicates on the C1/C2 forms that the disturbed area will be 1.2 acres. This information does not agree with the dimensions of the disturbance (200 X 350 ft) given on page 2-2 of the application. Those dimensions equate to an area of 1.6 acres.

### **Findings**

The information provided does not meet the minimum requirements of the Environmental Resource Information. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-121.200**, The submittal must consistently indicate the acreage of disturbance in all sections and in the C1/C2 forms.

## **REPORTING OF TECHNICAL DATA**

Regulatory Reference: 30 CFR 777.13; R645-301-130.

### **Analysis:**

Baseline soils information (Attachment 2-1) was compiled by Mr. Dan Larsen (Soil Scientist) with EIS Environmental and Engineering Consulting. Mr. Larsen's resume is attached with the report.

Baseline vegetation (Attachment 3-1) was documented by Mr. David Steed (Ecologist) and Mr. Mel Coonrod (Silviculturist and Zoologist) both with EIS Environmental and Engineering Consulting. Mr. M. Dean Stacy also participated, but his qualifications were not disclosed. Presumably, Mr. Stacy was acting under the direction of Mr. Steed and Mr. Coonrod.

Threatened and Endangered Species investigation (Attachment 3-2) was conducted by Mr. David Steed (Ecologist) and Mr. Mel Coonrod (Silviculturist and Zoologist) with EIS, Environmental and Engineering Consulting.

A bat survey was conducted by JBR (Section 322.200). The qualifications of the individual conducting the survey were not included with the application (neither was the survey).

## GENERAL CONTENTS

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The cultural resource evaluation and archaeological inventory was conducted by Mr. Glade Hadden and Mr. Patrick Walker (archaeologists) with Archeological-Environmental Research corporation.

### **Findings**

The information provided is not adequate for the reporting of technical data requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-131**, The application must include the following information for the raptor survey and the bat survey: the dates of collection, the analysis of the data, and descriptions of the methodology used to collect and analyze the data.

**R645-301-132**, The qualifications of the JBR consultants to perform bat surveys must be disclosed.

### **MAPS AND PLANS**

Regulatory Reference: 30 CFR 777.14; R645-301-140.

#### **Analysis:**

The permittee has submitted a map with a scale of 1" = 1500' on Figure 1 in the amendment.

#### **Findings:**

The permittee has met the minimum requirements of this section

### **COMPLETENESS**

Regulatory Reference: 30 CFR 777.15; R645-301-150.

#### **Analysis:**

Completeness is not required for this review.

#### **Findings:**

The permittee has met the minimum requirements of this section.

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**GENERAL CONTENTS**

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## **ENVIRONMENTAL RESOURCE INFORMATION**

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

### **GENERAL**

Regulatory Reference: 30 CFR 783.12; R645-301-411, -301-521, -301-721.

#### **Analysis:**

The borehole is located in the Book Cliffs between Dugout and Soldier Canyon Mines at an elevation of 8,000 feet. The UTM coordinates are T. 13 S., R. 12 E., Section 16, shown in Figure 1-1, (in the NE ¼ SE ¼ of Section 16).

The disturbed area will be approximately 1.6 acres in dimension (200 X 350 ft) as noted on page 2-2 of the application. The site was previously permitted and developed as an exploration drill hole (DC-5) in 1998.

Pine Canyon Utah USGS quadrangle map also shows the location. From the Quad map, one can see that the site is on a narrow ridge, above a small drainage contributing to Fish Creek. The soil survey indicates that the northwest slopes of the ridge supports Douglas fir and the southwest slopes support Ponderosa pine.

The applicant provides geologic information describing the existing stratigraphy and structure of the Dugout Mine area in Section 621 through 627 of the MRP. Hydrologic resources are described in Chapter 7 of the MRP. The information provided in the amendment is designed for incorporation into the MRP.

#### **Findings:**

The information provided does not meet the minimum requirements of the Environmental Resource Information. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-521**, In Section 111 of the application, clearly identify the lands subject to surface disturbance resulting from construction of MW-02 using the correct UTM coordinates (R 13 S, R12 E), include the ¼ section location and identify the USGS Quadrangle map that locates the site.

## **HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.12; R645-301-411.

### **Analysis:**

Archeological-Environmental Research Corporation (AERC) evaluated the site for historic and archeological resources in July of 1998 before exploration drilling. The survey consisted of a series of 10 – 20 meter transects within the exploratory well pad location and a 100-foot wide corridor for the access route into unit F. The results of the survey are found in Appendix 4-1. The site received clearance for drilling with the following stipulations: 1) all vehicular traffic, personnel movement, and construction and restoration operations should be confined to the flagged area examined as referenced in this report, and to the existing roadways. 2) All personnel should refrain from collecting artifacts and from disturbing any significant cultural resources in the area. 3) The authorized official should be consulted should cultural remains from subsurface deposits be exposed during construction work or if the need arises to relocate or otherwise alter the location of the exploration area.

These stipulations for development of DCH-5 would also be applicable to the development of site MW-02.

### **Findings**

The information provided for the development of drill hole site DCH-5 is adequate for the purposes of the Regulations, assuming that the disturbed area boundary of MW-02 is the same as that of DCH-5.

## **CLIMATOLOGICAL RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.18; R645-301-724.

### **Analysis:**

The site is at an elevation of approximately 8000 feet.

The application indicates on page 7-3 that climatological information can be found in Appendix 4-1 of the MRP. Appendix 4-1 of the MRP contains the air quality permit.

Page 7-39 of the approved MRP indicates that climatological information for the site is summarized in Appendix 4-2 of the MRP. This is an incorrect reference; Appendix 4-2 is titled Land Uses.

The Division could not locate the climatological information referred to on page 7-39 of the MRP and on page 7-3 of the submittal.

### **Findings**

The information provided does not adequately addresses the minimum requirements of the climatological information section of the regulations. Prior to approval, please provide the following in accordance with:

**R645-301-724**, The application must include climatological information.

## **VEGETATION RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.19; R645-301-320.

### **Analysis:**

The archaeologist's report in Appendix 4-1, dated July 1998, indicates that the observation of cultural materials was hampered by vegetation densities with 50 – 66% of the surface covered by vegetation.

After the exploration occurred at DCH-5, the OSM Evaluation Team 2002 Exploration report on the site reads as follows:

*“Revegetation was not successful at one of the drill-hole sites disturbed, graded, and seeded in 1998 (Canyon Fuel Company LLC Dugout Mine, ACT/007/039-AM99H, hole DCH-5). Almost no vegetation existed at the site. After the field visit, the operator submitted an application to go back onto the site for the purposes of extracting coal methane gas in advance of the underground mine. If Utah-DOGM approves this application, the disturbance at this site will be subject to the reclamation requirements of Utah's coal mining rules rather than the coal exploration rules. If Utah-DOGM does not approve this application, the team recommends that Utah-DOGM require the operator to reseed the disturbed area under the coal exploration rules.”*

Attachment 3-1 Vegetation Inventory of the site (EIS Environmental & Engineering Consulting, June 4, 2002) reports that transect #8 was in the location of MW-02 (DCH-5). The 100-foot transect was sampled at 10-foot intervals. For the MW-02 sampling point:

- total vegetative ground cover equaled 12 %.
- woody plant cover equaled 1%.
- ocular estimate of productivity was less than 100 lbs/ac.
- ocular estimate of percent overstory was 10%.
- litter accounted for 15% of the surface.
- rock accounted for 9% of the surface.
- bare ground equaled 64%.

A list of species for site MW-02 reads as follows:

- Alfalfa, *Medicago sativa*.
- Needle & thread grass, *Stipa comata*.
- Wheat grass, *Agropyron sp.*
- Snowberry, *Symphoricarpos oreophilus*.

The low productivity of the site was accounted for by drought and grazing pressure. The consultant specifically mentioned that seed chosen to reclaim the site was attractive to grazing animals and encouraged heavy use by the animals. Productivity measurements reported for the purposes of meeting this Regulation must be based upon weight per unit area as described in the Division's 1992 Vegetation Guidelines. Range condition of the site should be estimated.

Productivity of a reference area should be evaluated by the Natural Resources Conservation Service as per the Division's 1992 Vegetation Guidelines, (incorporated into the Regulations by reference R645-301-356.110).

The site of MW-02 is not in good range condition. Reclamation of the site must be compared to adjacent undisturbed areas, not the existing condition of the site.

Vegetation information for the adjacent undisturbed area of similar topography must be provided to allow development of seed mixes, revegetation success standards, and woody plant density, see discussion under Reclamation Vegetation Success Standards and deficiencies written under R645-301-356.100.

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**Findings:**

Vegetation information for the adjacent undisturbed area of similar topography must be provided to allow development of seed mixes, revegetation success standards, and woody plant density, see discussion under Reclamation Vegetation Success Standards and deficiencies written under R645-301-356.100. The information provided is not adequate for the purposes of the Regulations. Prior to approval, please provide the following in accordance with:

**R645-301-321.100**, (1) Vegetation field notes for transect 14/15 of Attachment 3-1 are illegible and methodology described in Attachment 3-1 incorrectly states the number of sampling points in each transect. (2) Range condition should be estimated for the site and a reference area.

**R645-301-321.200**, (1) The application must provide an estimate of the productivity of the MW-02 site and for comparison productivity of a reference area. (2) Productivity estimates should be evaluated by the Natural Resources Conservation Service. (3) Productivity measurements reported for the purposes of meeting this Regulation must be based upon weight per unit area as described in the Division's 1992 Vegetation Guidelines.

**R645-301-323.100**, The application must include the location and boundary of a reference area on a map.

**R645-301-121.200**, Attachment 3-2 indicates that the area had less than 100 lbs/ac productivity, not equal to 100 lbs/ac.

**FISH AND WILDLIFE RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 784.21; R645-301-322.

**Analysis:**

Attachment 3-2, Threatened, Endangered, and Sensitive Species Inventory Report (EIS Environmental & Engineering Consulting, May 10, 2002) reports that a survey was conducted for the species identified by the U.S. Fish and Wildlife Service (USFWS), the State of Utah and the Bureau of Land Management (BLM) as having the potential to occur at the site of MW-02.

**Federally listed species** with the potential for occurrence in the area were the following (the green font indicates potential habitat at MW-02):

Uintah basin hookless cactus (*Sclerocactus glaucus*)  
Wright fishhook cactus (*Sclerocactus wrightiae*)  
Despain footcactus (*Pediocactus dewspainii*)  
Winkler footcactus (*Pediocactus winkleri*)  
Last chance townsendia (*Townsendia aprica*)  
Jones cycladenia (*Clycladenai humilis* var. *Jonesii*)  
Graham beardtongue (*Penstemon grahamii*)  
Maguire daisy (*Erigeron maguirei* Cronq. Var. *maguirei*)  
Shrubby reed-mustard (*Schoenocrambe suffrutescens*)  
Barneby peppergrass (*Lepidium barnebyanum*)  
Barneby reed-mustard (*Schoenocrambe barnebyi*)

**State of Utah and BLM candidate and sensitive species** potentially occurring in Emery, Carbon, and Duchesne Counties (green font indicates potential habitat at MW-02):

Tufted cryptantha (*Cryptantha caespitosa*)  
Creutzfeldt-flower (*Cryptantha creutzfeldtii*)  
Canyon sweetvetch (*Hedysarum occidentale* var. *canone*)  
Low hymenoxys (*Hymenoxys depressa*)  
Helenium hymenoxys (*Hymenoxys helenioides*)  
Bicknell milkvetch (*Astragalus consobrinus*)  
Basalt milkvetch (*Astragalus subcinereus*)  
Sedge fescue (*Festuca dasyclada*)  
Mussentuchit gilia (*Gilia tenuis*)  
Entrada rushpink (*Lygodesmia entrada*)  
Book Cliffs blazing star (*Mentzelia multicaulis* var. *librina*)  
Jones indigo-bush (*Psorothamnus ploydenius* var. *jonesii*)  
Psoralea globemallow (*Sphaeralcea psoraloides*)  
Thompson talinum (*Talinum thompsonii*)

And:

Burrowing owl (*Athene cunicularia*)  
Loggerhead shrike (*Lanius ludovicianus*)

Suitable habitat was encountered for the Last chance townsendia (*Townsendia aprica*), Tufted cryptantha (*Cryptantha caespitosa*), Canyon sweetvetch (*Hedysarum occidentale* var. *canone*), Helenium hymenoxys (*Hymenoxys helenioides*), Bicknell milkvetch (*Astragalus consobrinus*), Basalt milkvetch (*Astragalus subcinereus*), and Sedge fescue (*Festuca dasyclada*), but none were encountered during the survey. The habitat at MW-02 was considered unsuitable for loggerhead shrike and burrowing owl.

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Attachment 3-2 also contains the Division of Wildlife Resources, 2002 Raptor Survey for the Pine Canyon UT Quad. The survey came within a half-mile of the proposed location. Nests number 27 and 28 are the nearest raptor nests shown on the Pine Canyon Quad. There is no discussion of whether the nest is inhabited or what species might occupy the nest, see deficiency written under R645-301-131. The application indicates that there are "no suitable nesting sites noted on or adjacent to the degas well site" (Section 322.200). The raptor survey did not cover the immediate location of the degas well site, and therefore, this statement is misleading.

The application has not evaluated whether the area is suitable Spotted Owl habitat.

JBR conducted a survey in 2002 for bats. No further information is provided. See deficiencies written under R645-301-131 and 132.

The site which was reported to have 64% cover hampering the investigation for archaeological remains was disturbed in 1998 by the Permittee and now is 64% bare ground. The consultant's vegetative survey was solely of the disturbed area. A map of the vegetation of the surrounding area must be provided.

### **Findings**

The information provided is not adequate for the purposes of the Environmental Resources Fish and Wildlife information. Deficiencies that cover some issues identified above have been written under R645-301-131 and -132. In addition, prior to approval, the Permittee must provide the following in accordance with:

**R645-301-121.200**, The application indicates that there are "no suitable nesting sites noted on or adjacent to the degas well site" (Section 322.200). The raptor survey did not cover the immediate location of the degas well site, and therefore, this statement is misleading.

**R645-301-323.400**, The application must include a map outlining vegetative types and plant communities in the area adjacent to MW-02, sufficient to allow evaluation of vegetation as important habitat for wildlife identified as potentially occurring at the site (loggerhead shrike and burrowing owl).

**R645-301-322.230**, The application must evaluate whether the area is suitable Spotted Owl habitat.

### **SOILS RESOURCE INFORMATION**

**Analysis:**

Attachment 2-1 Topsoil Evaluation for Methane Degas Wells Dugout Canyon Mine Carbon County Utah, May 20, 2002 indicates that the soils in the vicinity of MW-02 were classified in the 1988 Carbon County Soil Conservation Service Soil Survey as Map Unit 62, Midfork-Comodore Complex. According to the information provided in Attachment 2-1 the Midfork-Comodore Complex includes Midfork family bouldery loam and Comodore bouldery loam on the slopes and 30% other soils. In all instances, the surface soil has a layer of partially decomposed twigs, leaves, and needles between one or two inches thick covering a brown bouldery loam (topsoil) layer about six inches thick.

The other soils mentioned in the SCS survey for Map Unit 62 include Midfork family soil that has a layer of calcium carbonate accumulation. The soils of the site are noticeably white in the photos taken by the OSM Evaluation team 2002 review of exploration reclamation success (O:007039.dug/IMAGES/DugoutEXP/P0000471 and P0000475). This leads the Division to believe that the removal of topsoil, prior to exploration, left the layer of calcium carbonate accumulation on the surface. This would create a surface crust, making the site resistant to wind erosion, but also difficult for seed germination and water infiltration.

The consultant notes in Attachment 2-1 that topsoil has been pushed to the sides of the present pad and side cast over the slopes. The application should quantify how much topsoil is available on the edges of the pad. This side-cast material more than likely is the best available material in the area for reclamation.

**Findings**

The information provided does not meet the minimum requirements of the Environmental Resource Information. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-222.200**, The application should describe and quantify how much topsoil is available from the side-cast material on the edges of the pad.

**LAND-USE RESOURCE INFORMATION**

**Analysis:**

Current land use is wildlife and grazing. The land is zoned MG-1 (mining and grazing) by Carbon County. The land is owned by Canyon Fuel Company, LLC. The submittal does not provide the information required by R645-301-411.120.

**Findings**

The information provided does not meet the minimum requirements of the Land Use Resource Information. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-411.120**, The application must include a discussion of the land capability giving consideration to the major plant communities of the area before exploration drilling disturbed the surface.

**ALLUVIAL VALLEY FLOORS**

Regulatory Reference: 30 CFR 785.19; 30 CFR 822; R645-302-320.

**Analysis:**

**Alluvial Valley Floor Determination**

The site is at an elevation of approximately 8,000 feet on a ridge above a drainage. The site is in the NorthHorn formation. Alluvial sediments deposited by Dugout and Fish Creek drainages are far below the site as shown on Plate 6-1.

**Findings:**

The Division finds that the site is not located in an alluvial valley floor.

**PRIME FARMLAND**

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

**Analysis:**

Prime farmland does not exist at this elevation in the Book Cliffs. The growing season is short (60 days) and there is no developed water source. The Utah Agricultural Experiment

Station Research Report Number 76 entitled "Important Farmlands of Parts of Carbon, Emery, Grand, and Sevier Counties" does not include R 12 E, T 13 S.

Regulation R645-302-313 requires that a reconnaissance inspection is done for all permit applications whether or not Prime Farmland is present and that the Division and Natural Resource Conservation Service will determine the extent of the reconnaissance inspection. On November 11, 2002, the Division consulted with Gary Roeder, Area Conservationist with the NRCS Price Field Office concerning this well location. Mr. Roeder also concluded that the site does not fit the parameters of prime farmland.

### **Findings**

The information provided is adequate for the purposes of the Regulations.

## **GEOLOGIC RESOURCE INFORMATION**

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

### **Analysis:**

A description of the regional geology, including stratigraphy and structure is presented in the Dugout Mine MRP. The applicant describes the stratigraphic units of the mine site in Section 623. A generalized geologic cross-section is shown in Figure 6-1. The well will be drilled from the North Horn Formation, through the Price River and Castle Gate Formations down to the Blackhawk Formation just above the coal seam to be mined. Figure 5-3 depicts the well design.

### **Findings:**

The applicant has submitted sufficient information in the MRP to address the Geologic Resources Information section.

## **HYDROLOGIC RESOURCE INFORMATION**

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

### **Analysis:**

#### **Sampling and Analysis**

There are no springs, streams, or ponds on the proposed site.

### **Baseline Information**

There is no need to collect baseline information from the drilling operation. Ground water baseline information has been collected for the mining operation and is provided in the Dugout Canyon Mine MRP in Chapter 7, Section 724.100.

### **Ground-Water Information**

The well will be cased to create a continuous column from the Blackhawk Formation to the surface. During drilling of the wells, the groundwater could be affected. Once drilling is completed, the well will be cased and grouted. This will seal any groundwater movement between stratigraphic units.

### **Surface Water Information**

No surface water will be influenced other than direct runoff from the 350' X 200' pad.

### **Probable Hydrologic Consequences**

A Probable Hydrologic Consequences determination is presented in Section 728.300 of the MRP. Sediment control measures have been designed to prevent off site impacts.

Information on acid and toxic forming materials have been collected for mining of the Dugout Canyon Mine and are discussed in Sections 624.300 and 731.300 of the MRP. Analyses presented in chapter 6 of the MRP indicate that acid and toxic forming materials are not present within the permit area.

### **Findings:**

The information provided in the application and the Dugout Canyon MRP is sufficient to address the Probable Hydrologic Consequences of the Regulations.

## **MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

**Analysis:**

**Affected Area Boundary Maps**

The application must include a map of the site showing disturbed area boundaries and areas within the proposed boundaries that have been previously disturbed by exploration.

**Existing Structures and Facilities Maps**

The existing structure map will not change. This map is in the MRP.

**Existing Surface Configuration Maps**

There are no high-resolution pre-mining surface configuration maps. Surface configurations are portrayed in Figure 1-1 and cross-section 5-2. The applicant should submit a surface pre-mining topographic map on a scale of at least 1 inch = 30 feet to identify the surface configuration.

**Mine Workings Maps**

The permittee has submitted a site-specific underground mine map where the degas hole will be drilled into the underground workings on Figure 1-1. This map will need to be P. E. certified.

**Monitoring and Sampling Location Maps**

The monitoring sampling location map indicates no water resources in the vicinity of the proposed disturbed area.

**Permit Area Boundary Maps**

This map is in the MRP. The permittee will need to update the surface facility map to include MW-02 degas well as disturbed area. This will also address the areas under a performance bond.

**Subsurface Water Resource Maps**

Subsurface water resources are described in Section 722.100 of the MRP and 728.100 and the amendment. Drilling will penetrate several formations. During the drilling process some perched water zones may be contacted; however, drilling muds should seal the adjacent areas from groundwater movement. During final well development, the well will be cased and the

areas around the casing sealed to prevent vertical migration of ground water. No surface or ground water discharges will occur at the well site.

### **Surface Water Resource Maps**

Plates 7-1, the surface water-monitoring map, and 7-2, the water rights and map, provided in the MRP indicates that no water resources exist in the vicinity of the proposed drilling pad.

Subsurface water resources are described in Section 722.100 of the MRP and 728.100 and the amendment. Drilling will penetrate several formations. During the drilling process some perched water zones may be contacted; however, drilling muds should seal the adjacent areas from groundwater movement. During final well development, the well will be cased and the areas around the casing sealed to prevent vertical migration of ground water. No surface or ground water discharges will occur at the well site.

### **Vegetation Reference Area Maps**

The application must include the location and boundary of a reference area on a map. See deficiency written under R645-301-232.100.

### **Well Maps**

Figures 1, 1-1, and Map 1, Appendix B identify drilling exploration maps. Figure 1 identifies the borehole sites that will be drilled for methane degasification wells.

### **Findings:**

The information provided is not adequate for the purposes of the Regulations. The application must include the location and boundary of a reference area on a map. See deficiency written under R645-301-232.100. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-521.141 and -521.150, -521.151, -521.152, -521-162,** The application must include a map of the site showing disturbed area boundaries and areas within the proposed boundaries that have been previously disturbed by exploration.

**R645-521.112,** The applicant should submit a surface pre-mining topographic map on a scale of at least 1 inch = 30 feet to identify the surface configuration.

**R645-301-521.132,** The permittee must update the permit area map to show the location of the disturbed area of MW-02.

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**ENVIRONMENTAL RESOURCE INFORMATION**

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**OPERATION PLAN**

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**OPERATION PLAN**

**MINING OPERATIONS AND FACILITIES**

Regulatory Reference: 30 CFR 784.2, 784.11; R645-301-231, -301-526, -301-528.

**Analysis:**

The permittee has given a surface facilities map (layout) on Figure 5-1. This is a surface facility map for an exploration site. The permittee must submit an operational surface facilities map. This map must be P.E. certified.

A clear description of the use and life of the facilities during the operational period is not provided. The applicant should describe all facilities that will be on the pad during the operational period and the expected life of the well facilities.

**Findings:**

The permittee has not met the minimum requirements of this section. Prior to approval, the permittee must address the following R645 Coal Rules:

**R645-301-512**, The surface facilities map must be certified by a qualified, registered, professional engineer or land surveyor.

**R645-301-521.180**, The permittee must submit a description, plan, and drawings for each support facilities to be constructed, used, or maintained within the proposed permit area.

**R645-731**, The applicant shall provide a clear description of the use and life of the facilities during the operational period. The applicant shall describe all facilities that will be on the pad during the operational period and the expected life of the well facilities.

**EXISTING STRUCTURES:**

Regulatory Reference: 30 CFR 784.12; R645-301-526.

**Analysis:**

There will be no existing structure near MW-02 degas well. The existing structure map will be changed. This information is in the MRP.

**Findings:**

The permittee has met the minimum requirements of this section.

**PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES**

Regulatory Reference: 30 CFR 784.17; R645-301-411.

**Analysis:**

A cultural resource evaluation was conducted in July of 1998 at well MW-02, when this area was labeled well DCH-5 during previous coal exploration. The conclusion is that no significant cultural resource sites will be adversely impacted during the development of the exploration holes.

**Findings:**

The permittee has met the minimum requirements of this section.

**RELOCATION OR USE OF PUBLIC ROADS**

Regulatory Reference: 30 CFR 784.18; R645-301-521, -301-526.

**Analysis:**

There are no public roads accessing the MW-02 degas hole. An existing road will be used to develop the MW-02 degas hole. This is a private road owned by Canyon Fuel Company.

**Findings:**

The permittee has met the minimum requirements of this section.

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### AIR POLLUTION CONTROL PLAN

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

#### Analysis:

The permittee will use water or chemical treatment for this area when mobile equipment is operating on unpaved areas.

#### Findings:

The permittee has met the minimum requirements of this section.

### FISH AND WILDLIFE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

#### Analysis:

##### Protection and Enhancement Plan

The plan, as presented, includes fencing of the mud pits (Section 358.500), but does not even mark perimeters for the site (Section 521.200). The proposed disturbed area must be marked before disturbance. The entire site should be fenced to eliminate wildlife access during operations and after reclamation until the site is successfully revegetated.

Section 333.300 of the approved MRP indicates that all personnel will receive annual awareness and protection training for all employees.

The protection plan (Section 333.300) indicates that surveys for raptor nests will be conducted before mining activity and for two seasons after mining has ceased. The location of this well MW-02 must be added to the UDWR flight pattern during their annual raptor survey flights.

#### Findings:

The information provided does not meet the minimum requirements of the Operation Plan, Fish and Wildlife Information. Prior to approval, the Permittee must provide the following in accordance with:

## OPERATION PLAN

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**R645-301-333.300**, Section 333.300 of the submittal must indicate (1) that the perimeter of the site will be marked and that entire site will be fenced (2) that the location of this well MW-02 will be added to the UDWR flight pattern during their annual raptor survey flights from this point forward until two seasons after mining operations cease.

### TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

#### Analysis:

##### Topsoil Removal and Storage

Rocks will be removed to the perimeter of the disturbed area (Section 232.600) to be used to create wildlife habitat during reclamation.

A professional soil scientist will supervise the soil salvage operations (Section 232.100). Approximately 472 cu yds of topsoil will be salvaged from the site. **That equates to a salvage depth of 2 inches over the site (Section 222.400).** The stockpile will be 200 feet X 20 feet X 3.19 feet high (Section 231.400). A berm or silt fence will be constructed around the stockpile (Section 234.200).

Section 232.300 indicates, "the topsoil will be removed with the immediately underlying unconsolidated materials." But this statement is contradicted by Section 232.500, which indicates, "the B and C soils horizons will not be removed and stockpiled."

The submittal indicates in Section 232.400 that topsoil will not be removed where construction will result in minor disturbance to the site and where vegetation will not be impacted. Such statements must not be included in the plan unless there are specific areas being contemplated for disturbance without topsoil removal. The Division requires that areas where topsoil is not to be removed must be outlined on a map, prior to approval.

Section 234.300 includes information on "Host Site" and "Topsoil Suitability" that is nullified by the preceding statement that the Division will approve any modification of the topsoil stockpile location. The Division reserves its right to review information before approving any modifications and requests that information included under the Host Site and Topsoil Suitability headings of the amendment is removed.

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The submittal outlines two inches of topsoil will be salvaged. Attachment 2-1 indicates that there is between two and six inches of soil available for salvage and that topsoil has been removed from the present pad and pushed to the sides. The submittal must quantify the amount of available topsoil on the sides of the disturbance and commit to the salvage of six inches of soil from the disturbed site.

Soils were not analyzed during the topsoil survey (Section 243). At a minimum, the stored topsoil and salvaged disturbed soils of MW-02 should be analyzed for the following parameters immediately after soil salvage: pH, Electrical Conductivity, Sodium Adsorption Ratio, percent CaCO<sub>3</sub>, plant available Nitrogen, Potassium, and Phosphorus.

**Findings:**

The information provided does not meet the minimum requirements of the Operation Plan, Topsoil and Subsoil removal. Prior to approval, the Permittee must provide the following in accordance with:

- R645-301-224**, The application must include a commitment to analyze the stored topsoil and salvaged disturbed soils of MW-02 for the following parameters immediately after salvage: pH, Electrical Conductivity, Sodium Adsorption Ratio, percent CaCO<sub>3</sub>, plant available Nitrogen, Potassium, and Phosphorus.
- R645-301-232.200 and -232.300**, Clearly indicate that six inches of soil will be removed and stored for use as substitute topsoil from the disturbed site and eliminate contradictions in the narrative between Section 232.300 and 232.500 concerning the depth of soil salvage.
- R645-301-234.300**, The Division reserves its right to review information before approving any modifications and requests that information included under the Host Site and Topsoil Suitability headings of the amendment is removed.
- R645-301-232.400**, Remove the statements such as those found in R634-301-232.400 from the operating plan, unless there are specific areas being contemplated for disturbance without topsoil removal and outline those areas where topsoil is not to be removed on a map.
- R645-301-234.230**, The application should describe surface pitting of the stockpile.
- R645-301-231.100**, The application should describe topsoil handling plans including the equipment to be used and moisture content below which soils will not be handled.

## **VEGETATION**

Regulatory Reference: R645-301-330, -301-331, -301-332.

### **Analysis:**

The application indicates that vegetation will be grubbed and moved to the perimeter of the disturbed area (Section 232.600) to be used to create piles of brush as wildlife habitat during reclamation. However, the site contains little vegetation to grub. Most of the vegetation on the site should be included with the soil salvage and contained within the substitute topsoil storage pile for added organic matter. Areas that expand from the currently disturbed area into vegetated areas should be shown on a map.

### **Findings:**

The information provided does not meet the minimum requirements of the Operation Plan, Vegetation. Show disturbed and undisturbed areas on a map of the proposed affected area, see deficiency listed under R645-301-521.

## **ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES**

Regulatory Reference: 30 CFR Sec. 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

### **Analysis:**

#### **Road Classification System**

The permittee has classified the road leading to MW-02 degas hole as an ancillary road. This road is a pre-existing road but will be used to access the degas hole. A justification will need to determine the ancillary classification of road.

#### **Plans and Drawings**

The permittee has submitted a typical cross-section of the existing road. Once the MW-02 degas well is constructed, this road will have minimal use. The intent of the site is to deliberate methane from the underground workings. The road activity is similar to road activity at the main fan at some mine sites.

## OPERATION PLAN

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### Findings:

The permittee has not met the minimum requirements of this section. Prior to approval, the permittee must address the following R645 Coal Rule:

**R645-301-527.100**, The permittee must justify the ancillary road status.

## SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

### Analysis:

#### Disposal Of Noncoal Mine Wastes

No spoil and waste material will be developed.

#### Coal Mine Waste

There will be no coal waste developed in this area.

### Findings:

The permittee has met the minimum requirements of this section.

## HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

### Analysis:

#### Groundwater Monitoring

The well will be cased to create a continuous column from the Blackhawk Formation to the surface. During drilling of the wells, the groundwater could be affected. Once drilling is completed, the well will be cased and grouted. This will seal any groundwater movement between stratigraphic units.

**Surface-water monitoring**

No surface water monitoring is proposed for the drilling site. No surface water will be encountered other than that produced directly on the site. No discharges will occur from the disturbed area.

**Acid- and Toxic-Forming Materials and Underground Development Waste**

Sample the mud pit for chemical characteristics.

**Diversions: General**

No permanent diversions are planned. Only runoff above the drilling pad will be diverted around the pad via the protection berm.

**Stream Buffer Zones**

No streams are in the vicinity of the pad.

**Sediment Control Measures**

Sediment control measures will be implemented to contain all disturbed area runoff on site. It is unclear exactly how operational drainage control will function. Calculations were presented in Attachment 7-1 for well site silt fences; however, the "Typical Beam (sic) Design" drawing shows a berm with a water lever lying adjacent to it. A surface map for operational conditions is not provided.

**Siltation Structures: General**

Silt fences will be used on the pad site to control sediment.

**Siltation Structures: Sedimentation Ponds**

No sedimentation pond is proposed for the site.

**Siltation Structures: Other Treatment Facilities**

Treatment facilities will consist of silt fences, berms, and straw bales.

**Siltation Structures: Exemptions**

No exemptions have been requested.

## OPERATION PLAN

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### **Discharge Structures**

No discharge structures are proposed.

### **Impoundments**

No impoundments are proposed other than the berm that surrounds the gas well pad.

### **Casing and sealing of wells**

Wells will be sealed as identified in Sections 551 and 748 of the MRP. Permanent sealing method is described in Section 542.700 of the MRP. Sealing of the well will be in accordance with the Division of Water Rights, R645-4-12.

### **Findings:**

The information provided is not adequate for the purposes of the Regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-731.311**, The application must indicate that the slurry in the mud pit will be sampled for acid/toxic forming characteristics as described in Table 6 of the Division's Topsoil and Overburden Guidelines.

**R645-741**, The applicant should submit an operational surface map showing the area of the methane degasification well pad, including a detailed drawing of surface features. The map should depict all sediment control features (silt fences, berms and straw bales), slope of the pad, area of runoff storage, and all operational structures. The map should be a scale of at least 1 inch = 50 feet.

## **SIGNS AND MARKERS**

Regulatory Reference: 30 CFR Sec. 817.11; R645-301-521.

### **Analysis:**

The permittee will display a permit identification site for MW-02. This is not needed because the road is private and a public road cannot access MW-02.

### **Findings:**

The permittee has met the minimum requirements of this section.

## **MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS**

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

### **Analysis:**

#### **Affected Area Maps**

The affected area is identified as the well drilling pad that is identified in Figure 5-1 and the access road illustrated in Figure 1. Runoff controls for the road are described in the MRP under Section 534 of the MRP.

#### **Mining Facilities Maps**

Operational facilities and hydrologic controls well defined or illustrated.

#### **Mine Workings Maps**

This map will not change.

#### **Certification Requirements**

This has been addressed in other sections of this document.

### **Findings:**

Refer to Maps, Plans and Cross Sections of Mining Operations deficiency.

## RECLAMATION PLAN

# RECLAMATION PLAN

## GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

### Analysis:

The applicant has indicated that the well site will be reclaimed according to Section 540 in the MRP. A statement under Section 542.600 indicates that the roads will be left "since it is a pre-existing road; however, under Section 762, the applicant indicates the road will not be reclaimed as per Page 5-13 in the amendment.

### Findings:

The information provided in the amendment is considered adequate to meet the minimum requirements of this section of the coal rules.

## POSTMINING LAND USES

Regulatory Reference: 30 CFR Sec. 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

### Analysis:

The MW-2 degas well area is now wildlife habitat and livestock grazing. The post-mining land use will return to wildlife habitat and livestock grazing.

The terrain is a relatively flat-lying area and reclamation will seal the well, and rip, pock, and seed the disturbed area.

### Findings:

The permittee has met the minimum requirements of this section.

## PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES

Regulatory Reference: 30 CFR Sec. 817.97; R645-301-333, -301-342, -301-358.

### Analysis:

Low productivity of the reclamation on DCH-5 appears to be due to the drought and grazing pressure. The reclamation plan should include fencing the site until vegetation is established.

The access road will require some improvement (Section 527.200). The access road will not be reclaimed (Section 542.600). The road should be reduced in size to comply with the commitment made elsewhere in the plan to limit disturbance in order to minimize the impacts to wildlife.

### Findings:

The information provided does not meet the minimum requirements of the Reclamation Protection of Fish Wildlife and Related Environmental Values Regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-333**, (1) The application must indicate that the 1500 foot access road will be reduced in size during final reclamation to comply with the commitment to minimize disturbance and reclaim disturbed areas when no longer needed given in Section 333 of the approved MRP. (2) The reclamation plan should include fencing the site until vegetation is established.

## APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

### Analysis:

The permittee will reclaim this area to the approximate original contour. This is stated on Page 5-14 of the submittal.

### Findings:

The permittee has met the minimum requirements of this section.

## RECLAMATION PLAN

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### BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

#### Analysis:

##### General

The topsoil will be removed from well MW-02 degas area. The only other earthwork to be done is to construct a small Mud pit during the drilling process.

#### Findings:

The permittee has met the minimum requirements of this section.

### TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

#### Analysis:

##### Redistribution

The site will be ripped to a depth of eight inches (Section 242.100 and 341.200). This is not an adequate ripping depth. Where possible, the site should be ripped from 18 inches to 24 inches deep.

Front-end loaders will be used to transport and dump the two inches of topsoil. To prevent topsoil compaction, equipment will refrain from unnecessary travel over the topsoil.

Soils will be analyzed before being redistributed to determine if amendments are needed (Section 243). Some explanation of what soils will be sampled and what analysis will take place is required. The Division is of the opinion that organic matter must be introduced to the soils to alleviate the hard pan formed by the accumulation of calcium carbonate.

The incised mud pit will be covered with four feet of stored soil that will be compacted to minimize settling (Section 542.500). The plan must indicate a method to reduce compaction in the mud pit. The plan should indicate some mixing of the cover material with the clays of the mud pit to avoid creating an abrupt boundary between the layers.

## RECLAMATION PLAN

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### Findings:

The information provided does not meet the minimum requirements of the Reclamation Topsoil Redistribution Regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-243**, Clearly indicate what soils will be sampled and what analysis will take place to ensure that there is an adequate rooting depth and rooting medium for revegetation and the plan must contemplate the addition of organic matter to enhance the soils.

**R645-301-242.120**, (1) The plan must indicate that the site will be ripped to a depth of 18 – 24 inches where possible and the bonding information for the site should reflect this reclamation step. (2) The plan must indicate a method to reduce compaction in the mud pit. The plan should indicate some mixing of the cover material with the clays of the mud pit to avoid creating an abrupt boundary between the layers.

## ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 701.5, 784.24, 817.150, 817.151; R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

### Analysis:

#### Reclamation

No roads will be reclaimed since the permittee will be using existing roads that are currently being used for cattle grazing.

#### Retention

The permittee will be using existing roads.

### Findings:

The permittee has met the minimum requirements of this section.

**RECLAMATION PLAN**

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**HYDROLOGIC INFORMATION**

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

**Analysis:**

A Reclamation Plan is provided in Section 540 of the MRP.

**Ground-water monitoring**

Not required for this application.

**Surface-water monitoring**

Not required during the reclamation period for this application; however, the applicant will have to show that there are no excess contributions of settleable solids for Phase III bond release.

**Acid and toxic-forming materials**

Acid and toxic-forming materials are not expected.

**Transfer of wells**

No transfer of wells is planned.

**Water quality standards and effluent limitations**

The applicant plans for total containment of runoff and sediments.

**Diversions**

The berm keeping undisturbed drainage away from the disturbed area and all disturbed area runoff from leaving the site will be reclaimed.

**Siltation structures**

All siltation structures will be removed.

**Sedimentation ponds**

No sedimentation ponds are planned.

**Ponds, Impoundments, Banks, Dams, and Embankments**

All hydrologic structures will be removed, regraded, or reclaimed after mining stops.

**Casing and sealing of wells**

Wells will be sealed as identified in Sections 551 and 748 of the MRP. Permanent sealing method is described in Section 542.700 of the MRP. Sealing of the well will be in accordance with the Division of Water Rights, R645-4-12.

**Findings:**

The applicant has submitted sufficient Hydrologic Information to meet minimum requirement of the regulations.

**CONTEMPORANEOUS RECLAMATION**

Regulatory Reference: 30 CFR Sec. 785.18, 817.100; R645-301-352, -301-553, -302-280, -302-281, -302-282, -302-283, -302-284.

**Analysis:**

**General**

The mud pit and other areas of the site will be reclaimed in the same season as the well is drilled. A radius of 50 feet will be maintained around the fan blower that is not reclaimed until the fan is turned off and the well is plugged (Section 529). Although this plan will likely require that some of the area is redisturbed during final reclamation, the concept of immediately stabilizing the site is sound.

**Findings:**

The information provided is adequate for the purposes of the regulations.

## RECLAMATION PLAN

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### REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

#### Analysis:

##### **Revegetation: General Requirements**

Seed mix to be used is described in Chapter 3 Section 352 (page 2-3, Section 231.300).

The plan indicates first that vegetative cover will be reestablished to be at least equal to what is presently at the site (Section 353.100) and second that the site will be restored to the limits presented by the E.I.S inventory (Section 356.200). This survey provided in Attachment 3-1 did not follow the Division's Vegetation Guidelines for sample size.

Attachment 3-1 indicates that the site is in very poor range condition. This assessment was confirmed by the OSM Evaluation Team Exploration Reclamation Success team report (see discussion under Environmental Resources Vegetation information. In fact that team recommended that the site must be reclaimed according to the coal rules if the methane degas well is approved. The Division will require that an undisturbed reference area is evaluated for comparison with the site.

According to Attachment 3-1, low productivity of the reclamation on DCH-5 appears to be due to the drought and grazing pressure. The reclamation plan should include fencing the site until vegetation is established.

The Division will require further information from the Permittee concerning the undisturbed vegetation of the area, before consulting with the DWR on shrub stocking requirements.

##### **Revegetation: Timing**

Reclamation will occur after methane venting is completed (page 2-3, Section 231.300). Figure 5.4 is the reclamation timetable. This timetable shows three steps: plugging the well, spreading the topsoil, and seeding/mulching. This timetable does not indicate topsoil/subsoil sampling, ripping subsoil, straw mulch application, gouging, and creation of brush and rock piles.

### **Revegetation: Mulching and Other Soil Stabilizing Practices**

The reclamation plan should also include a means to mimic the one to two inch layer of litter found on the undisturbed areas of this ridge. (As described in Attachment 2-1, Soil Survey for the area.)

### **Revegetation: Standards For Success**

Standards for success are described in Section 356.100 as including criteria representative of undisturbed lands in the area. But no such information is presented with the application. The application must include a discussion and survey of the existing undisturbed vegetation on the ridge. When conducting these surveys, the Division's Vegetation Guidelines for sample size should be followed. Division does not agree that the standards for success should be the existing site condition. The seasonality of the seed mix (Section 353.200) and the indigenous nature of the seed (Section 353.100) cannot be evaluated until the species in adjacent undisturbed areas are described.

### **Findings:**

The information provided does not meet the minimum requirements of the Reclamation Revegetation requirements of the Regulations. Prior to approval, the Permittee must provide the following in accordance with:

- R645-301-354**, The application in Figure 5.4 does not indicate topsoil/subsoil sampling, ripping subsoil, straw mulch application, gouging, and creation of brush and rock piles in the timetable.
- R645-301-356.200**, The application must describe a method to exclude grazing animals from the site during operations and reclamation.
- R645-301-355**, The plan must describe efforts to re-establish a layer of litter 1 – 2 inches deep on the surface of the reclaimed site.
- R645-301-356.100**, Provide further information on the vegetation existing in the undisturbed areas around the site so that a vegetation success standard can be established, woody plant density standards can be determined, a reference area can be chosen and seed mix can be evaluated. Vegetation surveys must follow the Division's Vegetation Guidelines.

## RECLAMATION PLAN

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### STABILIZATION OF SURFACE AREAS

Regulatory Reference: 30 CFR Sec. 817.95; R645-301-244.

#### Analysis:

Erosion control measures will include silt fences, berms, seeding, and mulching of the soils. Disruptive gullies (greater than nine inches) will be reseeded (244.300). Surfaces will be left rough. Mulch will be applied at 2,000 lbs/ac and left in a roughened state (Section 341.200).

#### Findings:

The information provided is adequate for the purposes of the regulations.

### MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

#### Analysis:

##### Final Surface Configuration Maps

The permittee has not given the surface configuration of this area. Three cross-sections of the MW-02 degas area are needed. These cross-sections are a) pre-disturbance, b) during operation, and c) final reclamation. Pre-disturbance means the cross-section prior to the degas hole MW-02 not prior to exploration.

#### Findings:

The permittee has not met the minimum requirements of this section. Prior to approval the permittee must address the following R645 Coal Rule:

**R645-301-542.310**, The permittee must supply final surface configuration of the affected area. Cross section of pre-disturbance, operational, and final reclamation will be required.

### BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

**Analysis:**

**Determination of Bond Amount**

Currently, the Division holds a reclamation bond for \$3,682,000 for the Dugout Mine. The Division has reduced the reclamation cost estimate during the review of other amendments.

The reclamation amount for the methane degassing well is minor in comparison to the current bond amount. The Division determined the reclamation cost estimate for the Dugout Mine to be \$1,821,000 in year 2007 dollars on October 4, 2002. Since the current bond exceeds the current reclamation cost estimate, no further action need be taken in regards to the bond. See attached summary sheet for details.

**Findings:**

The information provided in the application meets the minimum requirements for bonding and insurance as required by the Utah Coal Rules.

# **CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT (CHIA)**

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

The information presented in the amendment should not change the PHC significantly, and therefore, the CHIA should not have to be changed.

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