

# TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

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August 25, 2005

TO: Internal File

THRU: Peter H. Hess, Environmental Scientist III/Engineering, Team Lead

FROM: Jerriann Ernstsens, Ph. D., Environmental Specialist, Biologist

RE: Degassification Wells G8, G9, and G10, Canyon Fuel Company, LLC., Dugout Canyon, C/007/039, Task ID #2280

## **SUMMARY:**

The Division received an amendment that addresses the drilling of G8-G10 degassification wells at the Dugout Canyon Mine on July 8, 2005. This project will add to the G1-7 wells series previously approved. The Division reviewed the submittal for the G1-G3 wells in 2003, G4-G6 wells in 2004, and G7 in spring 2005. This memo reviews the biology and archeology information for the amendment. Direct references to figures, tables, or appendices apply to the MRP volume: *Degas Methane Amendment G1-G10*. References to records from the primary MRP are noted as such.

The Dugout Mine G8-G10 drill project is in Carbon County, Utah, in Township 13 South and Ranges 12 and 13 East Section 24 and 20, respectively (Pine Canyon 7.5 Minute Quadrangle map).

## **TECHNICAL ANALYSIS:**

## **GENERAL CONTENTS**

### **PERMIT APPLICATION FORMAT AND CONTENTS**

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

#### **Analysis:**

The degassification well amendment meets the requirements of R645-301-121.100 and R645-301-121.200 for the biology chapter and archeology section because the information is generally current, clear, and concise.

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The MRP includes many different volumes, including the following “stand-alone” volumes (as of September 2005):

- “Dugout Canyon Mine – Leach Field Addendum A-1” (LFA, March 2001)
- “Refuse Pile Amendment – Dugout Canyon Mine” (RPA, January 2003)
- “Methane Degassification Amendment” (MDA, 2003/2004).

The “stand-alone” volumes provide exclusive information, supporting documents, and maps for each proposed project.

The current degassification well project is an amendment for the stand-alone volume MDA 2003/2004.

### **Findings:**

Information provided in the plan meets the minimum Permit Application Format and Contents in General Contents requirements of the regulations.

## **REPORTING OF TECHNICAL DATA**

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

### **Analysis:**

The degassification well amendment meets the requirements of R645-301-130 because qualified professionals conducted or directed the surveys and analysis for the supporting biological and archeological resource-related documents.

### **Findings:**

Information provided in the plan meets the minimum requirements of the regulations for the Reporting of Technical Data in the General Contents section.

## **ENVIRONMENTAL RESOURCE INFORMATION**

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

## **HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION**

[Sheila Mo1]

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

**Analysis:**

The degassification well amendment meets the requirements of R645-301-411 that pertains to historic resources. The MRP (Vol. 3, App. 4-1; see Confidential Binder) includes numerous evaluations of historic resources that focus on the permit area. It also includes narratives and maps of historic resources that may be included in or eligible for inclusion in the National Register. There is proof of previous coordination efforts with the SHPO. The Division, in consultation with SHPO, considers that this degassification wells project will have “no effect” to historic resources.

The Permittee provided a Class I survey (literature search) for the G7 and G8 drill sites (Spring 2005). The summary showed that none of the Class III surveys was positive for historic resources near the G8 site (Section 24).

The Permittee provided a Class III survey (ground survey) for the proposed degas wells G9 and G10 as well as for future wells G11-G13. The results showed that there was one historic resource (42CB2435) within or adjacent to the project area. Senulis (2005) considers this site in poor condition and not eligible for the NRHP.

**Findings:**

Information provided in the plan meets the minimum Environmental - Historic and Archeological Resource Information requirements of the regulations.

**VEGETATION RESOURCE INFORMATION**<sub>[Sheila Mo2]</sub>

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

**Analysis:**

The degassification well amendment meets the requirements of R645-301-321 because there is adequate discussion of plant communities observed within the project area. The MRP contains many supporting documents on vegetation for the project and permit area. The baseline vegetation information is adequate for assessing reclamation potential and success as well as productivity values for the surface area affected by mining operations.

The MRP includes a vegetation survey for the G8-G10 degassification well project (Vol. Methane Degassification Amendment, Att. 3-1; Dr. Patrick Collins 2005). The survey results cover the well sites (~200 x 300 feet) and associated reference sites. The Permittee will use a reference area for G8 and a separate reference area for G9 and G10.

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The areas of the G1, G4, G6, G8-G10 well sites have been previously disturbed from historic logging and other operations.

NRCS provides productivity values and condition evaluations for the degas well sites (Vol. Methane Degassification Amendment, Att. 3-1; June 2005)

**Findings:**

Information provided in the plan meets the minimum Environmental - Vegetation Resource Information requirements of the regulations.

**FISH AND WILDLIFE RESOURCE INFORMATION**[Sheila Mo3]

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

**Analysis:**

GENERAL WILDLIFE

The degassification well amendment meets the requirements of R645-301-322 because the MRP or amendment provides adequate narrative, supporting documentation, or maps on wildlife within or adjacent to the project area.

The Division, in consultation with DWR and USFWS, considers that the degassification drilling project will not likely impact ungulate or raptor habitat. The Permittee will drill G8-G10 outside of exclusionary periods for ungulates and raptors.

*Ungulates*

Plate 3-2 (Confidential Binder) illustrates that the G1-G10 degassification wells are in elk high value yearlong range and deer critical summer range. The exclusionary periods for deer are December 1 through April 15 and May 15 through July 5.

*Raptors*

The Annual Reports (Confidential Incoming) provide the results and maps for the most current helicopter raptor survey. The MRP provides other results for tree-dwelling raptor species. The general exclusionary periods for raptor (eagles and hawks) nesting are January 15 through July 15 and February 1 through July 15 for nests below and above 6,000', respectively.

The 2005 raptor survey results showed that there were two golden eagle nests (9 and 10) within or adjacent to the drill site G8. The Permittee will initiate drilling of G8-G10 after the

raptor exclusionary period. The 2005 raptor survey results showed that there were no nests within the 0.5-mile buffer zone for drill sites G9 and G10.

#### THREATENED, ENDANGERED, AND SENSITIVE ANIMAL/PLANT SPECIES

The degassification well amendment meets the requirements of R645-301-322 because the MRP or amendment provides adequate discussion, supporting documentation, or maps on threatened, endangered, and sensitive (TES) species that could occur within or adjacent to the project area. All supporting documents on TES plant and animal species show that there were no observations of threatened or endangered species. The Division considers that this drilling project will have “no effect” on TE species or their habitat.

##### *TES Plants*

The Permittee provides the results of a literature search on TES plant species for the degassification well amendment (Vol. Methane Degassification Amendment, Att. 3-1; Collins 2005). The results show that the area includes suitable habitat for canyon sweetvetch (*Hedysarum occidentale* var. *canone*). The Division knows that the permit area also provides suitable habitat for three other Carbon County listed species (Tufted crypthantha, Helenium hymenoxys, or Graham beardtongue; Environmental and Engineering Consultants 2002). Dr. Collins ground-truthed (June 2005) for TES plant species and did not observe TES species growing at any of the degas well sites or reference areas.

##### *TES Animals*

The supporting documents in the MRP or amendment show there have been no observations of TE plant or animal species, but there may be suitable habitat for the bald eagle, black-footed ferret, and MSO. The DWR overflight surveys have not shown bald eagle nests within or adjacent to the permit area. This species may use the area during the winter months, but the area is not considered critical habitat even as wintering range (DWR, 2005). For the black-footed ferret, there have been no confirmed sightings within or adjacent to the project area (DWR, 2005).

The supporting documents also show that there may be suitable habitat for the following sensitive animal species: peregrine falcon and loggerhead shrike. The supporting documentation shows no observations for these species.

##### *Mexican Spotted Owl (MSO)*

The Permittee provides supporting documents for the Mexican spotted owl (MSO) surveys for G1-G6 degas well sites (2003). The Division accepts the MSO surveys for the G8-G10 degassification well amendment because of proximity and similarity in topography and habitat as the G1-G6 well sites.

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The Permittee conducted a two-year calling survey (Vol. 3, App. 3-3; EIS, 2003/2004) for drill holes G1-G6 as well as a short reach along Pace Creek. The results for both surveys were negative for MSO individuals, but show there were northern saw-whet and great horned owls. The Division accepts the MSO calling survey for the G8-G10 degassification well amendment because of proximity and similarity in MSO habitat to the G1-G6 sites.

**Findings:**

Information provided in the plan meets the minimum Environmental - Fish and Wildlife Resource Information requirements of the regulations.

**MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION**<sup>[Sheila Mo4]</sup>

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

**Analysis:**

**Archeological Site Maps**<sup>[Sheila Mo5]</sup>

The degassification well amendment meets the requirements of R645-301-411.141 because the MRP or amendment provides archeological maps showing known resource locations within the project area. These maps are in the Confidential Binder.

**Vegetation Reference Area Maps**<sup>[Sheila Mo6]</sup>

The degassification well amendment meets the requirements of R645-301-323.100 because vegetation maps (Vol. Methane Degassification Amendment, Figs. 3-1 and 3-2, and Att. 3-1) illustrate community types within the disturbed and reference areas as well as illustrate the location of reference areas for G1-G10 wells.

**Findings:**

Information provided in the plan meets the minimum Environmental - Maps, Plans, and Cross Section Resource Information requirements of the regulations.

**OPERATION PLAN**

## PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES<sup>[Sheila Mo7]</sup>

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

### Analysis:

There are no known public parks or historic places within the project area.

### Findings:

Information provided in the plan meets the minimum Operations - Protection of Public Parks and Historic Places requirements of the regulations.

## FISH AND WILDLIFE INFORMATION

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

### Analysis:

The degassification well amendment meets the requirements of R645-301-333, R645-301-342, or R645-301-358 because the MRP or amendment provide information on TES and discussion concerning protection and enhancement during construction and reclamation phases.

The Permittee states that they limit impact to wildlife by minimizing areas of disturbance. The G8 well disturbance area is 0.9 acres. While the G9 and G10 well disturbance areas are 2.2 and 1.7 acres, respectively.

### Protection and Enhancement Plan <sup>[Sheila Mo8]</sup>

#### *Ungulates*

The G8-G10 degassification wells are in elk high value yearlong range and deer critical summer range. The Permittee must comply with exclusionary periods during construction and reclamation phases. The general exclusionary periods are December 1 through April 15 and May 15 through July 5.

#### *Raptors*

The Permittee will conduct annual over-flight raptor surveys to obtain baseline data prior to mining disturbances. (See discussion above in the Environmental section of this memo).

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The Permittee will conduct ground surveys for goshawks and northern saw-whet owls in areas with suitable habitat and areas planned for mining facilities. The G8-G10 site is not within dense canopy habitat for the goshawk or within Douglas fir, mixed conifer habitat for Northern saw whet owl (NSO). Furthermore, DWR considers the 2004 NSO mitigation project adequate for enhancing the area.

**Endangered and Threatened Species** [Sheila Mo9]

*Colorado River Fish*

The February 2005 estimated annual water budget is a net gain of 303.1 acre-ft.. The value includes the Pace fan and SITLA projects, but not the G8-G10 well project. The Division accepts the water budget estimate for the degassification well amendment because the project size is relatively small and should not significantly change the estimated value.

**Bald and Golden Eagles** [Sheila Mo10]

There were two golden eagle nests (9 and 10) within or adjacent to the drill site G8. The Permittee will initiate drilling of G8-G10 after the raptor exclusionary period. The 2005 raptor survey results showed that there were no nests within the 0.5-mile buffer zone for drill sites G9 and G10.

**Wetlands and Habitats of Unusually High Value for Fish and Wildlife**[Sheila Mo11]

There are no wetlands near the G1-G10 degassification wells.

**Findings:**

Information provided in the plan meets the minimum Operations - Fish and Wildlife Information requirements of the regulations.

**VEGETATION**[Sheila Mo12]

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

**Analysis:**

The degassification well amendment meets the requirements of R645-301-330, R645-301-331, and R645-301-332 because the Permittee will disturb the smallest area as possible and apply contemporaneous reclamation practices when applicable.

**Findings:**

Information provided in the plan meets the minimum Operations - Vegetation requirements of the regulations.

## **RECLAMATION PLAN**

### **GENERAL REQUIREMENTS**[Sheila Mo13]

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:**

There are discussions throughout the MRP on ripping, gouging, and the incorporation of hay during gouging, or mulching. Areas recommended for fertilizer application will receive fertilizer by cyclone spreader, hydroseeded, or other equipment. The reclamation plan does not include irrigation. The Division does not anticipate the necessity to irrigate as long as the Permittee uses water-harvesting methods, such as gouging.

**Findings:**

Information provided in the plan meets the minimum Reclamation - General Requirements of the regulations.

### **POSTMINING LAND USES**[Sheila Mo14]

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.

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**Analysis:**

The postmining land uses are livestock and wildlife grazing and reestablishment of preexisting roads.

**Findings:**

Information provided in the plan meets the minimum Reclamation - Postmining Land Uses requirements of the regulations.

**PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES**<sub>[Sheila Mo15]</sub>

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

**Analysis:**

The degassification well amendment meets the requirements of R645-301-342 and R645-301-358 because the MRP or amendment provides adequate enhancement and protection measures for fish, wildlife, and habitat during the reclamation or postmine phases.

The Permittee considers that reclamation of the well sites will enhance wildlife habitat for the area because these sites have been previously disturbed. The seed mix will provide some of the same species as those in adjacent, undisturbed areas.

**Findings:**

Information provided in the plan meets the minimum Reclamation - Protection of Fish, Wildlife, and Related Environmental Values requirements of the regulations.

**CONTEMPORANEOUS RECLAMATION**<sub>[Sheila Mo16]</sub>

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:**

Within the constraints of seasonal weather, the Permittee will reclaim the well sites in two phases: Phase I - Contemporaneous reclamation (described in the reclamation section) and Phase II - Final reclamation.

## Findings:

Information provided in the plan meets the minimum Reclamation - Contemporaneous Reclamation requirements of the regulations.

## 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<sup>[Sheila Mo17]</sup>

The degassification well amendment meets the requirements of R645-301-330, R645-301-331, and R645-301-332 because the Permittee provides an adequate reclamation plan or discussion of how reclamation measures will meet the performance standards.

The Permittee will reclaim the well sites in two phases.

- Phase I - Contemporaneous reclamation: Apply final reclamation procedures to site-specific areas no longer needed for operations.
  - ◆ Grade.
  - ◆ Rip to 18-24”.
  - ◆ Apply topsoil and leave in roughened state by gouging.
  - ◆ Hydroseed the final seed mix.
  - ◆ Apply wood fiber mulch.
- Phase II - Final reclamation: Apply final reclamation procedures to the remaining disturbed areas no longer needed for operations.
  - ◆ Plug the wells.
  - ◆ Prepare the site.
  - ◆ Hydroseed.

Reclamation for the well sites includes hydroseeding with a slurry that contains a small amount of fiber. The seed mix (Vol. Methane Degassification Amendment, Table 3-2) is the same for both Phase I and II for the well site reclamation. The vegetation survey results (Vol. Methane Degassification Amendment, Att. 3-1) were positive for *Bromus carinatus* (California brome), but not for *Bromus marginatus* (mountain brome). The Permittee may want to request California brome instead of mountain brome depending on availability and cost.

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The seed mix provides a vegetative cover composed of native species (Welsh considers Kentucky Bluegrass a native). The goals are to quickly stabilize the disturbed site and provide compatible browsable and foragable habitat for the post venting land use. The Permittee will fence the well sites to prevent grazing until bond release.

**Revegetation: Timing**[Sheila Mo18]

The Permittee will seed the prepared areas most likely in the fall.

**Revegetation: Mulching and Other Soil Stabilizing Practices**[Sheila Mo19]

Reclamation includes ripping the area to a roughened state and applying wood fiber mulch at a rate of 2,000 pounds per acre and tackifier at a rate recommended by the manufacturer.

**Revegetation: Standards For Success**[Sheila Mo20]

The Permittee will follow the sampling requirements and analysis identified in the Division's "Vegetation Information and Monitoring Guidelines". The Permittee will use reference areas for the standards of success for the degas well sites.

The Permittee will use husbandry practices approved by the Division as needed.

**Findings:**

Information provided in the plan meets the minimum Reclamation - Revegetation requirements of the regulations.

**RECOMMENDATIONS:**

Approve the amendment.