

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

May 10, 2005

TO: Internal File

THRU: Pamela Grubaugh-Littig, Permit Supervisor

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

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

RE: Degassification Wells G1, G2, G3, G4, G5, G6, and G7, Canyon Fuel Company, Dugout Canyon, C/007/0039, Task ID #2178

SUMMARY:

The Division received an amendment that addresses the drilling of the G7 degassification well (1.25 acre) at the Dugout Canyon Mine on March 11, 2005. This project makes it the seventh in a series of methane degassification wells (G1-G7). The Division reviewed the submittal for the G1-G3 wells in 2003 and G4-G6 wells in 2004. This memo reviews the biology and archeology information in the amendment. Direct references to figures, tables, or appendices apply to the *Degas Methane Amendment G1-G7*, stand-alone document. References to records from the MRP are noted as such.

TECHNICAL ANALYSIS:

GENERAL CONTENTS

PERMIT APPLICATION FORMAT AND CONTENTS

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

Analysis:

The G7 degasification 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” documents (as of January 2005):

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

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

The current G7 degassification well project is an amendment for is the stand-alone document 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 G7 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.

The Permittee provides supporting documents for vegetation, raptor, and Mexican spotted owl (MSO) surveys for G1, G2, G3, G4, G5, and G6 degas well sites. The vegetation and MSO survey results do not specifically include the nearby G7 site. The Division, however, accepts the three surveys for the G7 degassification well amendment because of proximity and similarity in topography and vegetation of G7 to the G2, G3, and G5 sites.

Findings:

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

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 G7 degassification well amendment meets the requirements of R645-301-411 regulations pertaining to historic resources. The MRP (Vol. 3, App. 4-1; see Confidential Files in Division PIC room after June 2005) 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 and clearances from the SHPO.

The Permittee provides a Class I survey (literature search) for the G7 project. The results show that none of the Class III surveys report that historic resources are near the G7 site (Section 24). (Confidential Files in Division PIC room after June 2005).

Findings:

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

VEGETATION RESOURCE INFORMATION [Sheila Mo2]

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

Analysis:

The G7 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 G1-G6 degassification well project (Vol. Methane Degassification Amendment, Att. 3-1; Dr. Patrick Collins 2004). The survey results covers the six well sites (~200 x 300 feet) and two-associated reference sites. The Permittee will use reference area A (sagebrush/snowberry/grass community) for G7 as well as for G2, G3, and G5. Additionally, the Permittee will use reference area B (aspen/Douglas fir community) for G1, G4, and G6. The Division accepts the Collins survey for the G7 degassification well amendment because of proximity and similarity in topography and vegetation of G7 to the G2, G3, and G5 sites.

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The areas of the G2, G3, G5, and G7 well sites have not been previously disturbed from historic mining.

NRCS estimates productivity for the G7 degas well (Vol. Methane Degassification Amendment, Att. 3-1; November 2004) at 1,000 to 1,100 lbs/acre using the 1988 Carbon County Soil Survey. For G1-G6 well sites, Stacy states that both the aspen/Douglas fir and sage/snowberry communities are experiencing changes in productivity values with a decrease in herbaceous values and an increase in woody plant values. Stacy attributes the lack of proper land management practices to the decline in productivity. The Division considers that this assessment is also applicable for G7.

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 G7 degassification well amendment meets the requirements of R645-301-322 because the MRP or amendment provide adequate narrative, supporting documentation, or maps on wildlife within or adjacent to the project area.

Ungulates

Plate 3-2 (Confidential Files) illustrates that the G1-G7 degassification wells are in elk high value yearlong range and deer critical summer range.

Raptors

The Annual Reports provide the results and maps for the most current helicopter raptor survey. The MRP provides other results for tree-dwelling raptor species.

THREATENED, ENDANGERED, AND SENSITIVE ANIMAL/PLANT SPECIES

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The G7 degassification well amendment meets the requirements of R645-301-322 because the MRP or amendment provides adequate discussion, supporting documentation, and 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.

TES Plants

The Permittee provides the results of a literature search on TES plant species for the G1-G6 degassification well amendment (Vol. Methane Degassification Amendment, Att. 3-1; Collins 2004). 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 cryptantha, Helenium hymenoxys, or Graham beardtongue; Environmental and Engineering Consultants 2002). Dr. Collins ground-truthed (June 2003) for TES plant species and did not observe TES species growing at any of the degas well sites or reference areas. The Division accepts the Collins survey for the G7 degassification well amendment because of proximity and similarity in topography and vegetation of G7 to the G2, G3, and G5 sites.

TES Animals

TES supporting documents show that the permit area supports habitat for the following TES animals: MSO, black-footed ferret, bald eagle, loggerhead shrike, as well as peregrine falcon. There are no confirmed sightings of black-footed ferrets that have occurred within Carbon County during 1995, 1996, and the first quarter of 1997 (DWR, Sec. 322.200).

Mexican Spotted Owl (MSO)

The MRP provides results for 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 G7 degassification well amendment because of proximity and similarity in MSO habitat of G7 to the G2, G3, and G5 sites.

Findings:

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

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MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION_[Sheila Mo4]

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_[Sheila Mo5]

The G7 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 Files (Division PIC room after June 2005).

Vegetation Reference Area Maps_[Sheila Mo6]

The G7 degassification well amendment meets the requirements of R645-301-323.100 because vegetation maps (Vol. Methane Degassification Amendment, Figs. 1 and 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-G7 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_[Sheila Mo7]

Regulatory Reference: 30 CFR784.17; 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 G7 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. G2 and 7 well disturbance areas are 1.21 and 1.25 acres, respectively; the rest of the wells disturbance areas are less than 1 acre.

Protection and Enhancement Plan [Sheila Mo8]

Ungulates

The G1-G7 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 May 1 - July 1 for calving and November 1 – May 15 for wintering. The Division, in consultation with DWR, waives this requirement for the drilling of the G7 degas hole.

Raptors

The Permittee will conduct annual over-flight raptor surveys to obtain baseline data prior to mining disturbances. The 2004-raptor survey shows that G7 is not within the 0.5-buffer zone for cliff-dwelling raptors, specifically nest 9. This nest was tended in 2003, but not tended or active in 2004.

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 G7 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 G7 well project. The Division

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accepts the water budget estimate for the G7 degassification well amendment because of the size of the project is relatively small and will most likely not significantly change the estimate.

Bald and Golden Eagles [Sheila Mo10]

There is one golden eagle nest less than a mile, but more than a half-mile of the G7 project site. There is no need to protect the golden nest for the G7 project because it is outside the 0.5 buffer zone.

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

There are no wetlands near the G7 degassification well.

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 G7 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, -

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Analysis:

There are discussions throughout the MRP on ripping, gouging, incorporating 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.

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^[Sheila Mo15]

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

Analysis:

The G7 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.

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The Permittee considers that reclamation of the G1-G7 well sites will enhance wildlife habitat for the area because three of the seven well sites had been previously disturbed. The seed mix will provide some of the same species as those in adjacent, undisturbed areas. The Permittee predicts establishment of young vegetation may help “break up” or replace the large blocks of decadent sagebrush communities (“monoculture”) near G2 and G3.

Findings:

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

CONTEMPORANEOUS RECLAMATION_[Sheila Mo16]

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 G1-7 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_[Sheila Mo17]

The G7 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 G1-G7 well sites in two phases.

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- 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 G1-G7 sites includes hydroseeding with 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 G1-G7 well site reclamation. The vegetation survey results for G1-6 (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.

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 forgeable habitat for the postmine 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 G1-G7 well sites.

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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.