

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

May 11, 2007

TO: Internal File

THRU: Wayne Western, Team Lead *WHW*

FROM: Priscilla Burton, CPSSc, Environmental Scientist III *PWB byan*

RE: Revised Appendix X - GVH #10 Thru #17, UtahAmerican Energy, Inc., Centennial Project, C/007/0019, Task ID #2803

SUMMARY:

The application to revise Appendix X to include gob vent drill holes above longwall panel #8 was received March 16, 2007. Fig. 1-1 shows proposed and alternate locations for GVH drill sites 10 through 17. These GVH holes will be approximately 800 ft. apart along the length of the mine panel. Bruce Chessler, Soil Scientist, surveyed the area in 2006. The soil survey and information in the application meets the requirements for Division approval of these gob vent holes.

Five holes were drilled in 2005: (GVH #1, 3, 4, 5, & 6. Four additional holes were drilled in 2006: GVH#5A, 7, 8, and 9. Sites GVH 5B, 7A, and 8A were approved in the fall of 2006. All existing gob vent holes are located within the permit boundary on privately held surface in T. 12 S., R. 11 E. in Sections 1, 31, and 36 (Sec. 110). Locations are shown on Figure 1-1 of Appendix X. The well sites, the underground mining panels and the surface ownership are illustrated on Figure 1-1.

TECHNICAL MEMO

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

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

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

Analysis:

The MRP meets the requirements of R645-301-220, because the Permittee provides a description of the pre-mining or pre-existing soil resources.

The gob vent holes are located within the permit boundary on privately held surface at the intersection of Township 12 and 13 South and Range 10 and 11 East (Sec 110 and Fig. 1-1). The terrain is shown on the Deadman Canyon 7.5 minute Quadrangle map. Carbon County Soil Survey information indicates that vent holes fall within Map Units 7 (Beje – Trag Complex), 63 (Midfork Family – Podo Association), 117 (Trag - Beje – Senchert complex) and 105 (Senchert family-Senchert complex). Attachment 2-1 provides Order 3 level information from the 1988 Carbon County Soil Survey.

The degas wells are located on the tops of ridges, on concave slopes, at the bottoms of draws, at elevations of 8,200 ft. to 8500 ft. The variability in terrain translates to variability in soil genesis. The surveys describe each location in detail. Some have well-developed, dark colored, base-rich topsoil horizons. Some have no developed topsoil at all. Vegetation includes snowberry, sagebrush, rabbitbrush, flax, grasses, vetch, lupin, quaken aspen. Site-specific Order 1 descriptions and laboratory analysis of the representative pedons is found in Attachment 2-1 and 2-2. The information provided in the application meets the requirements for baseline soil survey, description, laboratory analysis, and productivity information. [04252007]

The NRCS projects that in a normal year production from such High Mountain Range sites is between 1,200 and 1,500-lbs/ac dry weight. In a favorable year the productivity would be expected to increase to 2,000-lbs/ac dry wt. Attachment 3-1 provides more specific information for the gob vent hole productivity. [03242006]

Findings:

Information provided meets the requirements of Environmental Resources -Soils.

PRIME FARMLAND

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

Analysis:

The site is undeveloped rangeland at an elevation over 8,000 ft., with no developed water resources. There is no prime farmland at this location.

Findings:

The Division finds that there is no prime farmland at the location of the gob vent holes.

OPERATION PLAN

AIR POLLUTION CONTROL PLAN

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

Analysis:

The MRP Section 420 mentions an Air Quality Approval Order for 1.5 million tons annual production. The Permittee should provide a copy of the most current Air Quality Approval Order or at a minimum, the DAQE number for this order must be provided so that the Division can obtain a copy of the AO.

Appendix X Chapter 4, page 4-3, section 424, Fugitive Dust Control Plan states that dust will be controlled by water application. Watering of the access roads (both the private surface roads as well as the portions to be constructed) will be of sufficient frequency and quantity to maintain the surface material in a damp/moist condition unless the weather is below freezing.

Findings:

Appendix X meets the minimum regulatory requirements of this section.

TECHNICAL MEMO

TOPSOIL AND SUBSOIL

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

Analysis:

The MRP meets the requirements of R645-301-230, because the Permittee provides a soil salvage and storage plan. [03242006]

Topsoil Removal and Storage

Gob Hole Vent Amendment X

Table 2 of Attachment 2-1 provides a listing of the range of thickness of the topsoils at gob vent sites 5 - 9. Table 3 in Appendix 2-2 provides the average topsoil depth for GVH sites 11 - 17. These latter sites are not uniform in topsoil availability. Of note are sites 12 and 15B which have thin soils and only six inches of topsoil available for salvage. The soil survey does note that substitute topsoil is available at sites 13A, 14 and 15A, to make up any deficit.

The plan indicates that a qualified person will be on site to ensure that the surface topsoil will be salvaged and placed in a topsoil stockpile. For most sites, the surface topsoil (18 inches) will be removed and stockpiled. A six inch subsoil layer may be removed and utilized in berms surrounding the site and the topsoil stockpiles. Thus, up to 24 inches of surface soil may be stockpiled at each gob hole vent site: for every acre, according to depth of the surface horizon (see Table 3 in Appendix 2-2 for 2007 construction). Appendix X, Table 2-1 provides estimated topsoil volumes. Approximately 2400 yds³ will be stored in a stockpile and 30 yds³ in berms. Topsoil will be removed in a single layer using a dozer. Topsoil stockpile dimensions are provided in Appendix X, Table 2-2.

Appendix X, Section 231.400 describes the temporary stockpiling of topsoil at 1:1 slopes. During the contemporaneous reclamation of the drill pad described in Section 242.100, the stockpile will be reduced to a 2h:1v slope until the degas wells are decommissioned and reclaimed. Soil stockpiled at 2h:1v will be seeded with the grasses listed in the reclamation seed mix (p-3-21, MRP). Soil storage in berms, as described in Section 232.500, will surround the pile and the perimeter of the site. The site will be fenced.

At the time of salvage, soils will be sampled for the parameters described in Section 243 to provide baseline information and to determine whether nutritive amendments are required at the time of reclamation.

Mud pit development will require further excavation as described in Section 231. Should bedrock be encountered before 15 ft, then multiple pits will be developed on the site or a portable mud pit will be employed.

Findings:

The information provided meets the requirements of R645-301-230 for topsoil and subsoil salvage.

RECLAMATION PLAN

TOPSOIL AND SUBSOIL

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

The MRP meets the soil redistribution requirements of R645-301-240, because the Permittee provides a soil redistribution plan in Section R645-301-240. [03242006]

Redistribution

Job Vent Holes Amendment X

Section 341.200 indicates an 18 – 24 inch depth of ripping over the regraded site followed by topsoil replacement for contemporaneous and final reclamation (Section 242). Appendix X, Table 2-3 indicates replacement depth and is based upon pre-disturbance conditions. The topsoil will be left roughened in preparation of seeding.

The mud pits will be filled with a mixture of cuttings and subsoil. The cuttings will be covered with a minimum of four feet of soil. The drilling method is by air and will produce little volume of liquid, however, foam will be used. (MSDS sheets on the foam are provided in Appendix X-1.)

Findings:

The information provided meets the requirements for topsoil and subsoil replacement.

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.

TECHNICAL MEMO

Analysis:

Appendix X, Table 1-2 itemizes 4.87 acres of existing degas well disturbance, down from the original 8.39 acres. The reduction in disturbed area reflects the contemporaneous reclamation work completed to date. The "As-Constructed" drawings for GVH 1, 3, 4, 5, 5A, and 7, 7A, and 8A are provided in Figures 5-7 through 5-16.

The timetable for contemporaneous reclamation of gob vent hole sites is provided in Figure 5-6. Mud pits will be dried and cuttings will be mixed with excavated soils. The mixture of cuttings will be covered with four feet of soil, including the 18 inches of topsoil (Section 231.100). Section 341.200 describes the methods of surface reclamation.

Findings:

The information provided meets the requirements for contemporaneous reclamation (R645-301-352) and sediment control as described in R645-301-532.

STABILIZATION OF SURFACE AREAS

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

Analysis:

The MRP meets R645-301-244, because the Permittee provides a soil stabilization plan in Sec. 234.200, Section 242, Sec. 527.100, and Section 244.300. [03242006]

The topsoil stockpile will be left in a roughened state and seeded with the grasses found in the seed mix (Sec. 234.200). The seed mix on page 3-21 of the MRP lists great basin wildrye, bluebunch wheatgrass, slender wheatgrass, mountain brome (*Bromus inermis*), Indian ricegrass, and Sandberg bluegrass. According to the Carbon Co. Soil Survey, the above list of grasses parallels the grass species that are prevalent in soils map units 105 and 117.

For contemporaneous and final reclamation areas, the site will be roughened and the complete mix of grasses, forbes, and woody species given on page 3-21 of the MRP will be applied. The Permittee will apply wood fiber mulch at 2,000 pounds per acre to all reclaimed areas.

If the grasses listed on page 3-21 of the MRP seed mix are not available, then the Permittee could substitute from the following list derived from the Carbon County Soil Survey for Map Unit 117:

- Stipa (including Letterman needlegrass (*Stipa lettermanii*), needle and thread grass (*Stipa comata*), Columbia needlegrass (*Stipa columbiana*))
- Koeleria cristata* or Prairie junegrass
- Festuca thurberi* or thurber fescue
- Elymus glaucus* or blue wildrye)

Outslopes of gob vent access roads will be protected with vegetation and silt fences (Section 242 and Section 527.100). Rills and gullies will be repaired as described in section 244.300.

Findings:

The information provided in the application meets the requirements of R645-301-244 for soil stabilization.

RECOMMENDATIONS:

Approval is recommended.