



State of Utah

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DIVISION OF OIL, GAS AND MINING

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September 30, 1998

To: File

Thru: Joe Helfrich, Permit Supervisor-Compliance *JH*

From: Peter Hess, Reclamation Specialist III *PH*

RE: Five Degassification Boreholes, Cyprus Plateau Mining Company, Willow Creek Mine, ACT/007/038-98D, Folder #2, Carbon County, Utah

SUMMARY:

Cyprus is proposing to permit five additional Degassification boreholes at the Willow Creek Mine to attempt to control the level of combustible gases within the gob and bleeder areas of the D seam longwall panels. Approximately 3600 feet of new road will need to be constructed in Sections 25 and 30. Degas hole #98-25-5-DG (which is the new hole) will provide improved ventilation of the longwall gob (in conjunction with 97-30-5-DG, approved in ACT/007/038-97K) which is currently being extracted, (longwall panel D-1).

- New Hole #98-30-8-DG and #97-30-2A-DG (amendment 97K) will provide improved ventilation of the D-2 panel gob.
- New Hole #98-30-9-DG and new hole 99-30-10-DG will ventilate the D-3 panel.
- New hole #99-30-11-DG will intercept the bleeder entries NW of panel D-4.

The interception of poor quality crude oil in the D seam workings and the combustible vapors liberated by it, plus the methane gas inherent in the coal has elevated the combined level of combustible gases underground to the point that mining is stopped due to safety concerns and Federal law. The characteristics of these combustible gases are such that they are affected by the mine ambient air temperature, barometric pressure, etc. These additional boreholes are considered to be critical to provide improved ventilation of the gob areas, which in turn will dilute these gases to safe levels, allowing active mining to resume. The current production situation at the Mine is critical, due to the liberation and accumulation of the combustible gases underground with the current ventilation system design.

The surface management agency for Sections 25 and 30 where the five holes are located is the U. S. Department of Interior, Bureau of Land Management, Price Field Office. Amendment 98D is currently under review by that agency.



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TECHNICAL ANALYSIS:

OPERATION PLAN

COAL EXPLORATION CATEGORIES

Regulatory Reference: R645-200-122. Minor Coal Exploration

Analysis:

The purpose of the five boreholes is to improve the dilution capabilities of the in-mine ventilation system such that dangerous levels of combustible gases will not accumulate within the gob and bleeder areas. Any geologic information which is obtained during the drilling process is a bonus; the holes will not be plugged post-drilling, as their intent is to bleed off the combustible gases within the mine, improving safety conditions and mining productivity. All holes should intercept and core through the E seam; all holes will be stopped approximately 50 feet above the D seam, with the exception of #99-30-11-DG. Less than 250 tons of coal will be recovered. Anticipated life/usage of the Degassification holes is projected to be five years.

Findings:

Amendment 98D qualifies as a minor coal exploration permit.

COAL EXPLORATION: COMPLIANCE DUTIES

Regulatory Reference: R645-202-230. Operational Standards.
R645-202-231. Habitats of Endangered Species

Analysis:

To the best of my knowledge, this area is considered to be prime elk winter range, but there are no threatened or endangered species in this area.

Findings:

This regulation is not applicable.

Regulatory Reference: R645-202-232. Exploration Roads

Analysis:

All roads to the degassification wells will be ancillary; approximately 3600 feet of new road will be cut to access degas boreholes #98-25-5-DG, #98-30-8-DG and #98-30-9-DG. As noted above, the expected life of the degas boreholes will be at least five years; these roads will remain until final reclamation of the boreholes, and will be reclaimed as the reclamation of the boreholes is completed.

Findings:

The classification of these exploration roads as ancillary meets the minimum regulatory requirements of R645-202-232.

Regulatory Reference: R645-202-233. Topsoil Removal, Storage, and Redistribution

Analysis:

Topsoil removal during the construction of the exploration roads will be accomplished by side casting the material with the grubbed vegetation. Disturbance at the borehole locations will be limited to an area having a radius of 20 feet full-circle about the hole. This equates to .03 acres per hole. The applicant is assuming an average topsoil thickness of .5 feet; approximately 24 yards of topsoil will be recovered and stored at each well site for the reclamation of same.

Findings:

The side casting of topsoils having minimum depths during exploration road construction is accepted by the USBLM as a standard construction method. Storage of topsoils recovered during drill site pad construction will be used for both the initial and final reclamation phases of these sites. This meets the minimum regulatory requirements of the R645 rules.

R645-202-234. Diverting Overland Flows; Ephemeral, Perennial, Intermittent Streams

Analysis:

The boreholes are located on high ridges in Sections 25 and 30. 99-30-10-DG and 99-30-11-DG are on a narrow rocky ridge road; the remaining boreholes (98-25-5-DG, 98-30-8-DG and 98-30-9-DG) are on steep slopes that vary from 1:1 to 2:1. Hence, the diversion of overland flows will be accomplished by the construction of silt fences uphill from the cut bank. These cut banks will be created during the construction of the drill pad areas. The cut banks generate fill to level the downhill portion of each pad. There are no ephemeral, perennial or intermittent drainages in the area.

Findings:

The minimum requirements of the R645 rules have been met.

R645-202-235. Exploration Effect on the Hydrological Balance

Regulatory Reference-R645-301-356.300 Maintenance of Siltation Structures Until Removal Authorized
by DOGM

Analysis:

Page 4.5-47 of the submittal indicates that "The degassification wells and their access roads will have alternative sediment controls consisting of roughening of the ground surface and vegetative cover for the well site. Silt fences will be used as necessary to control erosion." The permittee is obligated to maintain all sediment control structures until sufficient vegetation has been re-established on the well sites and their associated access roads as determined by a vegetation cover analysis which indicates that the new vegetation equals or exceeds that which exists in the undisturbed area.

Findings:

The minimum regulatory requirements have been met.

Regulatory Reference- R645-301-356.400 Revegetation of the Disturbed Area in Accordance with the
Approved Reclamation Plan

Analysis:

The submittal commits to the complete reclamation of the well sites and their associated access roads upon the end of their usable life. Anticipated life is not stated in this submittal, but has been determined in previous submittals to be at least five years. This is an estimate, and may be plus or minus a few years, depending on the in-mine need for ventilation of gob areas.

Findings:

The minimum regulatory requirements of the R645 rules have been met.

Regulatory Reference: R645-301-512.240 P.E. Certification of Impoundment Design
301-513.200 MSHA Pond Requirements
301-514.300 Impoundments
301-515.200 Impoundment Hazard Notification

Analysis:

The aforementioned regulations are not applicable. There are no impoundments associated with the drilling of any of the five degassification boreholes.
Five Degassification Boreholes

Findings:

The aforementioned regulations are not applicable.

Regulatory Reference: R645-301-532 Sediment Control

Analysis:

This regulation has been previously addressed; the well sites and their associated access roads will use surface roughening, vegetation, and silt fences to control erosion. The well sites are considered to be alternative sediment control areas.

Findings:

The minimum regulatory requirements have been met.

Regulatory Reference: R645-301-533.100 thru 533.600 Impoundments

Analysis:

These regulations are not applicable; there are no impoundments associated with the drilling of any of the five degassification boreholes.

Findings:

These regulations are not applicable.

Regulatory Reference: R645-301-731.100 thru 731.522 Protection of the Hydrologic Balance/Surface and Ground Monitoring Requirements

Analysis:

The boreholes are degassification wells associated with the dilution of combustible gases in the Mine. Dilution and venting are the primary methods used to render harmless the combustible gases liberated by hydrocarbons and methane gas which is inherent in the various coal seams. The aforementioned regulations are not applicable.

Findings:

The aforementioned regulations are not applicable.

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Regulatory Reference: R645-301-731.800: Water Rights and Replacement

Analysis:

These degassification boreholes will be used to vent combustible gases only, and not for the removal of ground water.

Findings:

This regulation is not applicable.

Regulatory Reference: R645-301-733.220 thru 733.240 Impoundment Requirements

Analysis:

There are no impoundments associated with the five degassification wells.

Findings:

These regulations are not applicable.

Regulatory Reference: R645-301-742.100 thru 742.125 General Requirements for Sediment Control

Analysis:

Sediment control will be achieved through surface roughening, vegetation, and silt fences. Surface flows on the steep slopes associated with the boreholes will be diverted using berms, silt fences, etc. Sediment control on the drill pad will be controlled with the use of berms and water bars during the drilling cycle; post drilling control will be achieved through surface roughening and vegetation.

Findings:

The minimum regulatory requirements have been addressed.

Regulatory Reference: R645-301-742.200 thru 742.300. Requirements for Siltation Structures

Analysis:

There are no siltation structures associated with the five degassification boreholes.

Five Degassification Boreholes

Findings:

The aforementioned regulations are not applicable.

Regulatory Reference: R645-301-743: Impoundments

Analysis:

There are no impoundments associated with the drilling or operational use of the five degassification boreholes.

Findings:

These regulations are not applicable.

Regulatory Reference: R645-301-744.100 and 744.200 Discharge Structures

Analysis:

There are no discharge structures associated with the five degassification boreholes.

Findings:

These regulations are not applicable.

Regulatory Reference: R645-301-751 Discharges Must Meet Applicable Water Quality Standards and Effluent Limitations

Analysis and Findings:

There should be no discharges from the degassification drill sites or their associated access roads. This regulation is not applicable.

Regulatory Reference: R645-301-752: Design and Maintenance of Sediment Control Structures

Analysis and Findings:

Sediment control at the drill sites will be accomplished through surface roughening, berms and silt fences. There will be no sediment control structures, per se.

This regulation is not applicable.

Regulatory Reference: R645-301-753: Maintenance of Impoundments and Discharge Structures

Analysis and Findings:

There are no impoundments or discharge structures associated with this submittal. This regulation is not applicable.

Regulatory Reference: r645-301-763. Siltation Structures

Analysis and Findings:

There are no siltation structures associated with this submittal. This regulation is not applicable.

Regulatory Reference: R645-202-236. Acid and Toxic Forming Materials

Analysis:

Page 4.1-10, paragraph 4.1.3.6, **Handling of Acid or Toxic Forming Materials** of the Willow Creek Mine mining and reclamation plan addresses the requirements of this R645 regulation. Quoting the MRP, "Any potentially acid or toxic forming materials encountered or exposed by exploration and related activities will be handled and disposed of in compliance with the applicable regulatory provisions of R645-301-731.110 and 300, and R645-301-553.260 and any additional measures specified by the UDOGM. Generally, the quantity of any potentially acid or toxic forming material which may be exposed by the proposed future exploration activities (exploration drilling) will be so small as to have no significant potential for adverse surface water, ground water, or vegetation impacts."

Findings:

The minimum regulatory requirements for R645-202-236 have been adequately addressed.

R645-202-240. **RECLAMATION STANDARDS**

Regulatory Reference: 202-241. Return of Exploration Sites to Approximate Original Contour

Analysis:

Page 4.2-3 of the submittal commits to complete reclamation of the borehole sites, although the return of the pads to AOC may not be able to be accomplished until the life of the vents has been used. Reclamation bond estimates have been adjusted accordingly to compensate for the reclamation costs encountered to return same to AOC.

Findings:

This meets the minimum regulatory requirements of the R645 rules.

Regulatory Reference: 202-242, 202-242.100 and 200. Prompt Revegetation of all Areas Disturbed by Exploration Activities

Analysis:

Page 4.2-3a, paragraph 4, makes the statement that "After installation of the well and wellhead topsoil will be redistributed on the drill sites to provide for revegetation and stabilization. The drill sites will be seeded during the first available season after reclamation. Final reclamation of the well sites will be completed as addressed in Section 5.4."

It needs to be pointed out that the return of the drill sites to approximate original contour and final revegetation of same cannot be accomplished until the life of the vent holes has been ended. As such, the pads will need to be revegetated twice to prevent erosion in these areas.

The seed mix which will be used to accomplish revegetation will be the mix which has already been approved in the mining and reclamation plan, with any changes necessary as approved by the USBLM.

Findings:

The minimum regulatory requirements of the R645 rules have been met.

Regulatory Reference: 202-243. Reclamation of Wells, or Boreholes

Analysis:

On page 4.2-3A of the submittal, the applicant commits to reclamation of most of the borehole disturbance upon completion of the drilling activities and the installation of the well heads, vacuum pumps, and the associated fences around each borehole. Page 4.2-4, Table 4.2-1, Soil Recovery and Storage Plans also indicates that an area approximately 15 feet by 20 feet (well head) will be reclaimed at the end of the well's use. This does not meet the requirements of R645-202-241. Return to AOC cannot be accomplished until final reclamation is accomplished as committed to in Section 5.4. In order to return the pads to AOC, it will be necessary to once again remove any topsoil that was redistributed during initial reclamation, final contouring, final redistribution of topsoil, and final revegetation can then take place.

Findings:

This meets the minimum regulatory requirements of the R645 rules for reclamation of minor exploration activities.

Regulatory Reference: R645-202-244. Removal of Facilities and Equipment.

Analysis:

Drilling of the five degassification holes will terminate 30 to 50 feet above the "D" coal seam. At that time, all drilling related machinery will be removed from the site(s). A wellhead, (which will include a gate valve, flame arrestor, check valve, and possibly a vacuum pump to assist in pulling the combustible gases from the Mine) will be installed. A fence will then be installed around the well head to protect it from unauthorized tampering. The Division has the authority to allow the retention of this type of apparatus on site under R645-244.100 and 244.300.

The submittal indicates that if sufficient quantity and quality are obtained from the venting, a commercial gas company may permit these wells through the DOGM for the utilization of this resource. If this is the case, final reclamation of the sites may not take place for many years.

BONDING AND INSURANCE REQUIREMENTS:

Regulatory Reference: R645-301-800, et seq.

Analysis:

The reclamation bond figures, as submitted, have been forwarded to Mr. Wayne Western of the SLO-DOGM on 9/29/98. Mr. Western informed me on 9/30/98 that based on his review of same, the figures are acceptable.

Findings:

The minimum regulatory requirements for meeting reclamation bond costs are acceptable.

CONCLUSIONS AND RECOMMENDATIONS:

The interception of hydrocarbon oils and their associated combustible vapors in the "D" seam mine workings at the Willow Creek Mine, plus the methane gas which is inherent in coal has presented the permittee with an extremely dangerous condition in-mine. The permitting of these five degassification boreholes is an attempt to improve the effectiveness of the Mine's ventilation system to the point that levels of combustible gases in the gob areas and bleeder areas of the Mine are equal to or less than those

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levels which the US Department of Labor, Mine Safety and Health Administration has determined can be sufficient cause to cease mining activities. The reduction of these gas levels is critical to the continued operation of the Mine.

The submittal, as received lacks some detail with regard to the timeline of the reclamation of the borehole sites. However, through several telephone calls with the US Bureau of Land Management, (who is the surface management agency ultimately responsible for all activities in Sections 25 and 30), the lacking details have been worked out to the point that all of the requirements of the R645 rules for minor coal exploration activities have been met.

It is recommended that this submittal, ACT/007/038-98D, which will permit the installation of five degassification boreholes at the Willow Creek Mine in Sections 25, Township 12 South, Range 9 East and Section 30, Township 12 South, Range 9 East be approved, in conjunction with approval from the USBLM, Price Field Office.

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