



State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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May 22, 1998

Paige B. Beville, Manager
Environmental, Health and Safety
ARCO Coal Company
555 17th Street, Suite 2170
Denver, CO 80202

Re: Final Bond Release, Mountain Coal Company, Gordon Creek #3 and #6 Mines, ACT/007/017,
Folder #3, Carbon County, Utah

Paige
Dear Ms. Beville:

The Utah Division of Oil, Gas, and Mining has found that Mountain Coal Company has met the requirements for final bond release for the Gordon Creek #3 and #6 Mines, Permit ACT/007/017. Mountain Coal Company has successfully completed all surface coal mining and reclamation operations and met all applicable requirements of the Act and the permit. Supporting findings made by the Division are in attached "Decision Document, Phase III Bond Release, Gordon Creek #3 and #6 Mine, ACT/007/017."

The perimeter markers at this mine are the fence line and will remain after the bond has been released, due to the request of the landowner. Per a telephone conversation with Dan Guy, Blackhawk Engineering, and Pamela Grubaugh-Littig on May 21, 1998, the mine identification sign is the only remaining marker to be removed and will be removed upon receipt of this letter.

Achieving final bond release under the Utah Coal Regulatory Program is a significant achievement. Mountain Coal Company is to be commended for their genuine interest in making coal mine reclamation successful in Utah.

Sincerely,

Lowell P. Braxton
Lowell P. Braxton
Acting Director

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Enclosure

cc: Carbon County Planning (Certified Return Receipt)
Richard Pick, Canyon Fuel Company, LLC

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DECISION DOCUMENT
PHASE III BOND RELEASE
GORDON CREEK #3 & #6 MINES
ACT/007/017
May 22, 1998

SUMMARY OF BOND RELEASES AT GORDON CREEK #3 AND #6 MINE

The Gordon Creek #3 & #6 Mines is a reclaimed underground coal mine located in Coal Canyon, approximately 20 road miles northwest of Price, Utah. The Gordon Creek #3 & #6 Mines shared common surface facilities, except conveyors and stockpiles. The Gordon Creek #3 & #6 was opened in 1969 and was continuously operated until September 1983. Three underground operations were located within a short distance of the Gordon Creek #3 Mine, - Sweets, National, and Consumers Mine which were active in the 1940's, but are now closed. The Gordon Creek #6 Mine, located 160 feet above the #3 Mine was opened in 1978, although the construction and disturbance was created in 1969 (the same time as the #3 opened), and was operated until November 1980, when it closed due to economic and safety factors. Portals were sealed for both mines in September 1983.

The permit area is located on the eastern edge of the Wasatch Plateau and is characterized by a steep, narrow canyon containing conspicuous sandstone cliffs. The elevation of the area lies between 7,550 and 7,850 feet above sea level. Vegetation types adjacent to the mine area were oak-shrubland and sagebrush-grassland communities. The permit area cover 668 acres with the disturbed area of about 28 acres. The mine permit area is located on mostly privately-owned land, with some state lands. Coal was mined from fee, state, county, and federal leases.

Mine site reclamation included portal seals, structural removal, coal waste removal, backfilling, fading and revegetation. The Gordon Creek #3 & #6 mines completed Phase I reclamation during the period of September 15, 1985 through November 30, 1986. The original bond posted for this property was \$346,000. The Division approved a 60% bond release (\$216,062) on June 26, 1987.

Mountain Coal Company submitted a Phase II bond release application to the Division for this mine on December 13, 1994. The bond release inspection was conducted on May 18, 1994. A ten-day notice was issued by OSM-AFO due to "the failure to eliminate highwalls." The Division's response resulted in an inappropriate response by OSM-AFO that led to an informal appeal by the Division to OSM in Washington, D.C. The Division requested an on-site visit to this mine site by personnel from OSM in Washington, D.C. to review this situation. Based on this on-site visit, OSM-Washington, D.C. reversed the decision by OSM-AFO and the bond release action continued forward.

Based on Division findings that: 1) vegetation had been established pursuant to R645-301-880.320, and 2) no reclaimed lands at the Gordon Creek #3 and #6 Mines are contributing additional suspended solids to streamflow or runoff outside the permit area in excess of the requirements set by UCA 40-10-17 (j) of the Act and by R645-301-751, the Division released

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Gordon Creek #3 and #6 Mines
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\$85,429 on January 9, 1995 as part of the phase II bond release. The remaining \$52,971 represented the amount of bond retained for the revegetated area which would be sufficient to cover the cost of reestablishing revegetation if completed by a third party.

The phase III bond release application was received on September 23, 1996. A Division deficiency letter was sent on October 24, 1996. The response to the deficiencies were received on August 11, 1997. On January 15, 1998, the Division sent a letter to Mountain Coal Company stating that all of the requirements for bond release had been met but did require more samples to demonstrate that the disturbed area runoff does not contaminate receiving streams.

Samples were taken by Mountain Coal Company on April 21, 1998 and results were submitted to the Division on May 18, 1998. These samples identify water quality data from the disturbed site, Coal Creek and Gordon Creek and the results demonstrate that the runoff levels of suspended solids, major ions and metals are far less from the disturbed area than are in the receiving stream.

Therefore, with this finding, the Division released the remaining bond at the Gordon Creek #3 and #6 Mine.

FINDINGS FOR PHASE III BOND RELEASE
GORDON CREEK #3 & #6 MINES
ACT/007/017

Public Notice for Phase III Bond Release

In accordance with R645-301-880.120 and 200, the Mountain Coal Company published the newspaper advertisement for the Phase III bond release in the Sun Advocate on September 24, October 1, 8, and 15, 1996. The Division scheduled the Phase III bond release inspection for October 23, 1997 by sending letters on September 8, 1997. OSM-WRCC, the landowner Cal Jacobs, Utah Power and Light Company and State Institutional Trust Land Administration were invited to this bond release inspection but declined.

The Phase III bond release inspection was conducted on October 23, 1997 with the following attendees:

DOG M: Lowell Braxton, Pamela Grubaugh- Littig, Susan White, Jesse Kelley, Bob Davidson, Dave Darby.

Mountain Coal Co: Paige Beville and Dan Guy (Blackhawk Engineering)

Findings for Established Vegetation and Vegetation Date for Phase III Bond Release

The Application for Phase III Bond Release presented information from vegetation sampling in 1995 and 1996. Vegetative cover, production, diversity, and shrub densities were sampled as required by the permit and Division's Vegetation Information Guidelines. Minimum samples size were met when sampling for vegetative cover. The regulations, for areas previously disturbed by mining that were not reclaimed, are that the vegetative ground cover will be not less than the ground cover existing before redisturbance and will be adequate to control erosion and achieve the approved postmining land use. The Division's current interpretation is that continuously mined sites also apply to this standard. R645-301-357 states that the vegetation parameters will equal or exceed the approved success standard during the growing seasons for the last two years of the responsibility period and that, in areas of less than 26 inches or less average annual precipitation, the period will be for not less than ten full years.

The Gordon Creek Nos. 3 and 6 Mines were continuously mined. The site has been reseeded and has met the 10-year period of responsibility requirement. The operator has also sampled the agreed vegetation parameters for the last two years of the growing season, 1995 and 1996. The permit states (page 3-67a) that the reclamation will be considered successful if the reclaimed area compares to the sagebrush-grass reference area and has 37 percent vegetative cover, 640 pound per acre production, and 1000 shrubs per acre.

No diversity standard was proposed in the permit. The bond release application proposed to use the MacArthur Index. The MacArthur Index ($1/\sum p_i^2$) integrates the number of species and the degree to which frequency of occurrence was equitably distributed among those species.

Table 1: Success standard comparisons for the reclaimed area and the sagebrush-grass reference area at the Gordon Creek Nos. 3 and 6 Mines.

	Cover (%)	Production (lbs./acre)	Density (#/acre)	Diversity ($1/\sum p_i^2$)
Reclaimed 1995	51	1100	1945	11.11
Reference 1995	43	408	7966	5.58
Reclaimed 1996	60	823	1814	9.09
Reference 1996	47	366	7318	6.25

The 1995 and 1996 cover data meets the requirements of the permit and the regulations. Total vegetation cover in 1995 of the reclaimed area was 51 percent and in 1996, 60 percent. The sagebrush-grass reference area had a total vegetative cover of 43 percent and 47 percent in 1995 and 1996, respectively.

The production of the reclaimed area in 1995 (1100 lbs./acre) and 1996 (823 lbs./acre) was significantly greater than the total annual biomass from the associated reference area in 1995 (408 lbs./acre) and 1996 (366 lbs./acre). The minimum sample size requirements were only met for the reference area in 1995 and the reclaimed area in 1996. However, the regulations do not require previously mined sites to meet a production standard. A demonstration of meeting and exceeding the undisturbed vegetative productivity is an indication of the site conditions meeting the postmining land use.

The reclaimed site woody plant density meets the requirements of the permit and the regulations. Woody species densities were less on the reclaimed area in 1995 (1945 plants/acre) and 1996 (1814 plants/acre) than in the associated reference area in 1995 (7966 plants/acre) and 1996 (7318 plants/acre). However, the technical standard of 1000 shrubs per acre was met in 1995 and 1996. Minimum sample size was not obtained in the 1995 sampling, however, the regulations do not require a previously mined site to meet a shrub density standard. Meeting and exceeding the technical standard for woody plant density is a demonstration of meeting the postmining land use for wildlife habitat.

The MacArthur's diversity index indicates that diversity is greater in the reclaimed area for both 1995 and 1996 (11.11 and 9.09, respectively) than in the reference area for 1995 and 1996

(5.58 and 6.25, respectively).

A site inspection was conducted by the Division on October 23, 1997 to assess the site for the Phase III bond release. The site appeared to be meeting the post mining land use of grazing and wildlife. Vegetation was established on the disturbed and affected areas. Musk thistle and field bindweed were observed growing on the upper pad area. These are listed as noxious weeds in Utah. The Operator stated that the area had been recently treated for noxious weeds. Over the years the areas infected have remained somewhat constant and noxious weeds appear to be under control although not eradicated. Noxious weed control is expected to continue since the county also requires land owners to control noxious weeds.

The post mining land use for the site is wildlife habitat and livestock grazing. Use of the area by elk, deer, horse, and sheep was apparent inside the fenced site. Heavy use of the permit area by sheep was apparent. The upper cell of the two cell sediment pond contained water.

Findings:

Information provided in the bond release application meets the minimum regulatory requirements for Phase III bond release.

RECOMMENDATION:

Approve Phase III bond release for the Gordon Creeks Nos 3 and 6 Mines.

Findings and Supporting Documentation of No Pollution for Surface and Subsurface Water

Surface Water

All applicable data collected by the mine was reviewed and evaluated. The applicant summarized the surface water information, but did not draw statistical conclusions on the data. There is a paucity of values due to the ephemeral nature of the site. Any flows that may have taken place at intervals between sampling were not recorded.

- The operator monitored Site 3-1-W a total of 37 times during the last ten years. No data was collected on three occasions because the site was inaccessible. The site was dry 33 times, and no values were collected for water quality. One sample was taken on June 1, 1991 at a flow of 2.7 gallons per minute, and water quality parameters fell within normal guidelines.

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Gordon Creek #3 and #6 Mines
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- Since reclamation, there has been no surface water discharges leaving the Gordon Creek #3 and #6 permit area.
- Three monitoring sites in Coal Canyon, one above the reclamation site, one below the reclamation site (above the sedimentation pond) and the spillway of the sedimentation pond.
- The sedimentation pond will be left on site in accordance with the post mining land use for cattle and wildlife. The spillway is sized to transmit flows in excess of the 100 year- 6 hour runoff event.

Ground Water

- There is only one groundwater monitoring site, 3-3-W, on the permit area. The site was established in January 1980 when mine workings intersected a fault which was the southern edge of a graben. The mine installed a 600 gpm sump pump and a 6 inch discharge pipe to pump the inflows to the two celled sedimentation pond. In January 1982 as retreat mining backed out across the fault the pumps were turned off and no more discharges occurred. Discontinuous monthly flow data shows discharges could range from 25,000 to 266,000 gpd.
- No water is currently discharged from the Gordon Creek #3 and #6 mine portals.
- No seeps or springs were monitored on the permit area. The applicant identified only four small seeps that appeared as a result of snowmelt.
- No wells were established on or adjacent to the permit area.
- The Gordon Creek #3 mine workings are about 3500 feet from Beaver Creek, and the #6 mine workings lie approximately 5500 feet from Beaver Creek.

Beaver Creek

In 1994 Steve Stamatakis sent a letter to the Division expressing concerns that the a spring area at the mouth of Coal Canyon was discharging larger flows, which drowned a group of trees and caused sloughing of the river embankment along Gordon Creek.

During an on site visit on October 3, 1997, Steve Stamatakis pointed out a stand of aspen trees at the mouth of Coal Canyon, the same canyon in which the Gordon Creek #3 and #6 mine portals are located . A stand of aspen, all similar in age and occupying the valley floor, apparently

died catastrophically. Steve Stamatakis claims that the ground surrounding the trees became saturated with groundwater produced as a result of mining, killing the trees. He proposed that the water issuing from the seeps came from Beaver Creek, reducing the flows in Beaver Creek and increasing the flow of Gordon Creek.

Dan Guy discussed mining activities in the Gordon Creek #3 & #6 mining operations. Groundwater was contacted in the Gordon Creek #3 mine after mining through a 14 foot fault (graben). The mine had to pump water from the mine daily. The mine workings are located in a fault block, the south side of the block and limit of mining lies against a 40 foot fault. This fault block is part of the down thrown block of the Fish Creek graben (Figures 6-1 and 6-2, Horizon MRP). The National Mine workings were developed on the adjacent side of the fault. Some of the National Mine workings extend across the fault and lie west of the Gordon Creek #3 Mine workings. Dan mentioned that a couple times during the development, Gordon Creek #3 Mine operations broke into the National Mine workings, but were sealed off. The fault intersects the creek in Coal Canyon at about the 7400 ft level.

On October 3, 1993 a group of people hiked up the west side of the canyon mouth to observe the stand of dead trees and to determine where the water saturating the canyon was issuing. An evaluation of the geologic features (on site and in the office) reveals a potential connection for transmitting ground water from the National/Gordon Creek #6 Mines and the spring area. It is difficult to establish a connection from Beaver Creek to the National/ Gordon Creek #3 and #6 Mines. The National Mine had mined in the graben block west of the Gordon Creek Mines (in the Hiawatha seam, Plate 1-3, Gordon Creek #3 and #6 Mines MRP). A possibility of any connection between the mines and the spring would be if water was intercepted at the faults bordering of the graben and transmitted via the mines to the spring. This scenario lacks the data to show the faults and mines transmit groundwater.

The spring area appears to be located at the interface between the Star Point Sandstone and the Mancos Shale. Similar springs exist in the Wasatch Plateau in relationship to the Star Point Sandstone. Water emanates from both sides of the creek and in the bottom of the canyon even though the creek cuts through the eastern side of the canyon. This fact leads to the assumption that water is moving horizontally along the contact than from a particular source. The sandstone units of the Star Point Sandstone contain higher porosities that hold and transmit groundwater more readily than the fine grains of the Mancos Shale. When water hits the Mancos Shale it tends to move laterally sometimes coming in contact with the surface as a spring. The flow appears to follow the parabolic shape of the canyon mouth where the Star Point sandstone intersects Coal Canyon. More water flows from the north and west side of the canyon than the east side, however seepage was noticed on the east side of the creek and road, alluding to the theory that the flow comes from a deeper source such as a formation supplied from the fault or overlying strata.

Voids created by mining could hold water more readily and transmit it to adjacent areas. This scenario has not been shown to be taking place at the National/Gordon Creek #3 and #6 Mines.

The spring existed prior to development of the Gordon Creek #3 and #6 Mines. This is known because the miners noticed the meadow area and trees. Some have reported that the trees were killed when beaver built a large dam across the marshy meadow. This theory for the dead trees has been expressed by several people who has worked in the area, including Mel Coonrod and Pat Axelsen. They indicate the cause of the dead aspen are the result of large beaver ponds built by a pair of beaver. Young trees are once again growing at marshy meadow above the dead trees. Beaver are no longer at the site.

Findings:

Information submitted May 18, 1998, allows the Division to make the finding under R645-301-880.210 regarding occurrence and potential for water pollution, that pollution is not taking place from the reclaimed mine site.

Surface Water

Surface runoff information was collected over the Phase I and Phase II reclamation period. The monitoring data show that runoff from the reclamation site and stream flow exhibit ephemeral characteristics. One water quality sample was taken during the reclamation interim and upon request by the Division for further sampling, took more samples from the disturbed site, Coal Creek and Gordon Creek. These samples showed that runoff levels of suspended solids, major ions and metals are far less from the disturbed area than are in the receiving stream.. One sample does not present a viable statistical summary for measuring runoff quality for future impacts.

Ground Water

Ground water data was collected according to the mining and reclamation permit. There are no known exceedences of effluent limitation from mine water, and no current mine discharges.

Individuals have expressed concern that springs below the mine site in Coal Canyon have increased, and could be related to the Gordon Creek #3 and #6 mining activity. Information has been reviewed in regard to the potential impacts from mining. No data has been submitted revealing diminution or changes in groundwater. Specifically no evidence indicates that the spring at the mouth of Coal Canyon had changed due to mining or showing that the spring is related to the Gordon Creek #3 and #6 Mines. Evaluation of the ground water indicate no impacts have

occurred or will occur on the site.

The operation meets groundwater standards for Phase III Bond Release.

RECOMMENDATION:

Phase III Bond release is recommended for approval.

Finding of No Subsidence Damage

This finding discusses three components of the final reclamation of the site, the conformance of which with the R645 rules and the compatibility of which with the postmining land use are necessary for the granting of Phase III bond release: Approximate Original Contour (AOC) restoration; roads; and subsidence.

Approximate Original Contour (AOC) restoration. The site was reclaimed and restored to its approximate original contour, except the portal highwalls, in 1986.

In the 1986 final technical analysis (TA), the Division, in accordance with UMC 817.101, approved the retention of the highwalls at the #3 and #6 portal areas because the area had originally been disturbed in 1975 and no fill material had been salvaged. In addition, the landowner had approved the proposed surface configuration because it enhanced the postmining land use of livestock grazing by providing level staging areas.

The Mountain Coal Company submitted a Phase II bond release application to the Division for the Gordon Creek #3 & #6 Mines on December 13, 1994. The Phase II bond release inspection was conducted on May 18, 1994 with personnel from the Division, OSM-Albuquerque Field Office, OSM- Western Regional Support Center, and Mountain Coal Company in attendance.

On June 20, 1994 TDN X94-020-179-002 TV3 was received at the Division citing: 1) "Failed to demonstrate in writing to the Division that there was insufficient spoil to backfill face-up at #6 Mine", 2) "Failed to use all reasonably available spoil to backfill the face-up at #6 Mine", and 3) "Failed to eliminate all highwalls at face-up at #3 Mine", as a result of the May 18, 1994 Phase II Bond Release inspection. The Division submitted a response to OSM-AFO for this TDN on June 30, 1994.

On July 18, 1994, TDN #94-020-179-002 TV1 was issued as a result of TDN X94-020-179-001 TV3 being withdrawn and read: "Failed to eliminate all highwalls at Mines #3 and #6". The Division responded on July 28, 1994, but this response was found inappropriate by OSM-AFO on August 18, 1994.

On August 28, 1994, the Division responded to the August 18, 1994 OSM-AFO finding by letter to Ed Kay, Deputy Director of OSM in Washington requesting an informal review of the TDN, i.e. review of the documentation during the TDN issue.

On July 20, 1994, the Albuquerque Field Office (AFO) of the Office of Surface Mining (OSM) took exception to the Division's having approved the retained highwalls and issued Ten Day Notice (TDN) X94-020-179-001 TV3 and, later, X94-020-179-002 TV1. The Division responded to these TDNs, respectively, on June 30, 1994 and July 28, 1994, but AFO found these responses inappropriate on August 18, 1994. Representatives from the Washington, D.C. office of OSM visited the site on October 24, 1994 and subsequently reversed AFO's August 18 decision, upholding the Division's decision to allow the retention of these highwalls.

Thus, the final contour of the site conforms to the requirements of the R645 rules and is compatible with the postmining land use of grazing and wildlife habitat.

Roads. There are two designated roads: the coal haul road and the mine access road. The coal haul road extends approximately 5,000 feet from the Carbon County road in Gordon Creek Canyon to the base of the #6 area fill. The mine access road goes approximately 2,400 feet from the end of the coal haul road to the upper #6 area.

In the 1986 final technical analysis (TA), the Division, in accordance with UMC 817.150 and UMC 817.160, approved the retention of both roads as permanent roads due to the request of the landowner. Both are located on private land and the landowner requested that both be left in place to provide access to the Coal Canyon area, the upper #6 area, and the Utah Power & Light power line that traverses the area. Both roads were designed and constructed according to the standards of the UMC rules and both were maintained through the bond liability period in accordance with the requirements of R645-301-534.

Thus, the roads are in accordance with the requirements of the R645 rules and are compatible with the postmining land use of grazing and wildlife habitat.

Subsidence. A network of subsidence monitoring points was established in 1986 and has been monitored annually since then. The surface above the mined out area has also been checked for visible signs of cracks or other subsidence damage.

The maximum total subsidence recorded at any monitoring point since 1986 has been just under 0.40 feet and there has been no measurable subsidence since 1993. In addition, neither the permittee nor the Division engineer who ground-truthed this site, Jess Kelley, in on-the-ground inspections of the surface above the mined out area, observed any visible subsidence damage.

Thus, due to the review of the subsidence reports and inspections, there has been no

discernible diminution of the value of the surface area to the postmining land use of grazing and wildlife habitat due to subsidence.

RECOMMENDATION(S):

The Division finds that this site conforms to the regulatory requirements for Phase III bond release and is compatible with the postmining land use of grazing and wildlife habitat. It is recommended that the permittee be granted Phase III bond release.

DECISION FOR PHASE III BOND RELEASE

Based on the document findings, it is determined that: 1) All surface coal mining and reclamation operations have been successfully completed, and 2) all reclamation requirements of the Act and the permit have been fully met.

Therefore, the Division proposes to release the reclamation bond for the Gordon Creek #3 and #6 Mines in full. (Surety Bond #U-629895 - in the amount of \$52,971 issued by United Pacific Insurance Company.)