

# TECHNICAL MEMORANDUM

## Utah Coal Regulatory Program

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September 29, 2006

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TO: Internal File

THRU: Pamela Grubaugh-Littig, Permit Supervisor *agl*  
Wayne H. Western, Team Lead *HW*

FROM: David Darby, Environmental Scientist, Hydro/Geologist *DD*

RE: Phase II Bond Release, Arch Western Bituminous Group (Arch), LLC, Gordon Creek 2, 7, & 8 Mines, C/007/0016, Task ID #2591

### SUMMARY:

Arch submitted an updated version of the Phase II bond release application. It was received on July 28, 2006. A previous submittal (Task 2384) received on December 12, 2005 was found deficient. The bonded reclaimed area consist of the #2 mine located in the lower half of the disturbed area and the #7 and #8 mines located up the canyon. The bond area encompasses 34.88 acres of reclaimed mine disturbance. The Division granted the Sweet's Pond area Phase III bond release on October 9, 2003. Sweet's Pond is on an area of 0.73 acres. The sediment pond is on an area of 1.63 acres. Phase II bond release is requested on all reclaimed areas (32.52 acres) except the pond sites. Since the Sweet's Pond are has been given Phase III bond release that area could be removed from the permit area.

A Phase II bond release field inspection was conducted on September 28, 2006. During the field review Chris Hansen mentioned that Arch was considering a request by the landowner to petition for a post mining land use change, which would leave the sedimentation ponds intact. The staff responded by telling Chris that Arch would first have to contact the Utah Division of Water Rights (DWRi) to petition for a water right and check to see if DWRi has any rules against leaving ponds in a stream channel. The team also mentioned that any post mining land changes would require an amendment to the MRP.

This memo evaluates the hydrologic and geologic issues for Phase II bond release.

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**TECHNICAL ANALYSIS:**

**RECLAMATION PLAN**

**GENERAL REQUIREMENTS**

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:**

The Permittee has met the requirements of this section by supplying a reclamation plan in the MRP. Backfilling and grading work was completed in 1991. Two ponds remain on the permit area, a stock-watering pond located midway up the canyon and a sedimentation pond. Minor stream channel repairs were completed on the lower channels after a severe rainstorm. A logging company operating in Beaver Creek regarded the county road, directing a large volume of mud and debris into the canyon above the minesite. Several feet of mud and debris accumulated in the canyon and still washes down through the lower tributary channel and into sedimentation pond.

**Findings:**

The Permittee has met the minimum requirements of the General Requirements section of the Regulations.

**HYDROLOGIC INFORMATION**

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

**Analysis:**

**Hydrologic Reclamation Plan**

The procedure of surface roughening by gouging then seeded, controlling erosion and reducing sediment loading downstream. Silt fences were installed at the edges of disturbed areas to contain runoff that wasn't trapped in the gouges.

**Ground-water monitoring.**

There are no groundwater monitoring sites on the permit area.

**Surface-water monitoring.**

The Permittee continues to monitor surface water sites. They are shown on Plate 7-2. The sites will be monitored throughout the reclamation program.

**Acid and toxic-forming materials.**

No acid or toxic material is exposed or treated on the permit area.

**Transfer of wells.**

No wells have been transferred.

**Discharges into an underground mine.**

All mines are sealed. There is no discharge into underground mines.

**Gravity discharges.**

There is no gravity discharge from the mine.

**Water quality standards and effluent limitations.**

Arch has been monitoring the UPDES site at the sedimentation pond. There were only two discharges from the sedimentation pond since 1991, 120 gpm on April 28, 1993 and 4 gpm on May 22, 1997. Pond discharges have been monitored monthly except when snow depths prevented access. Monitoring information is reported to the DOGM Water Quality Database.

**Diversions.**

A system of undisturbed stream channels directed all flow to the main channel, and the main channel directs flow to the sedimentation pond. The pond is built for total containment of the drainage area. The Main channel and six tributaries appeared intact and stable.

**Sediment control measures.**

The area appeared very stable in most areas of the reclaimed site. The technique of gouging is thought to be a major factor in controlling runoff while the vegetation to root and

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added to the stability. There is a high percent of alfalfa on the site that covered a lot of the surface area. Hydrologically the abundant alfalfa a very good plant to help prevent erosion. The plant grows tall with a lot of stems and leaves. As the stems grow longer they bend over providing cover in between the plants, forming a mat like protection. Any heavy rainfall is cushioned, preventing impact to the soil and advanced erosion.

Several cattle had appeared on the site from a preliminary visit a couple weeks before. They had cropped the tops off a good portion of the plants. It is thought that if the cattle were restricted from the site the vegetation mat would be protected.

**Other treatment facilities.**

The Permittee will use gouging, mulch and reseeding, to establish vegetation, to control erosion and contribution of sediment to stream channels during and after reclamation.

**Findings:**

The information provided in the MRP and the Phase II Bond release site visit meets the minimum requirements of Hydrology Information section of the Reclamation Regulations.

## **CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT (CHIA)**

Regulatory Reference: 30 CFR Sec. 784.14; R645-301-730.

**Analysis:**

The Division has written the CHIA, dated June 7, 2005.

**Findings:**

The field review revealed the information provided by the Phase II Bond Release applicant in the PHC, Geology and Hydrology sections of the MRP meet the minimum requirements for the Cumulative Hydrologic Impact Assessment section of the Regulations.

**RECOMMENDATIONS:**

It is recommended that the hydrologic section of the Phase II bond application be approved.