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November 27, 2000

TO: Internal File

THRU: Paul B. Baker, Reclamation Biologist and Project Team Lead *PBB*

FROM: Gregg A. Galecki, Reclamation Specialist *GAA*

RE: Phase I Bond Release, Castle Gate Holding Company, Castle Gate Mine,
C007/004-BR00B

SUMMARY:

The following analysis addresses primarily State regulation R645-301-880 'Requirements to Release Performance Bonds' for fulfilling Phase I bond release at the Castle Gate Hardscrabble Mine. The evaluation considers... 'whether pollution of surface and subsurface water is occurring, the probability of future occurrence of such pollution and the estimated cost of abating such pollution.' The Hardscrabble site is comprised of approximately 39 acres, of which 38.5 acres were reclaimed in 1996. A total of 1.19 acres were reclaimed in the Goose Island portion of the site in 1999. With the available hydrologic information, the evaluation determined there is minimal probability of current or future occurrence of hydrologic pollution. An appropriate bond adjustment should be considered.

TECHNICAL ANALYSIS:

RECLAMATION PLAN

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.

TECHNICAL MEMO

Analysis:

Ground-water monitoring

No ground-water monitoring wells exist in the vicinity of the Hardscrabble area of disturbance. Data was collected at down-dip wells B-41 and B-42 from 1980 through 1983. These wells are located approximately 12,000 ft NW and 10,000 ft NNW respectively, and are located too far away to adequately monitor the site. In the absence of ground-water monitoring, the evaluation of the reclamation, subsurface pollution, and the probability of future subsurface pollution is speculative. The documented reclamation practices used at the site indicate there should not be any potential subsurface pollution.

Surface-water monitoring

A total of two surface-water monitoring sites exist in Hardscrabble Canyon. Sites B-12 and B-11 are located upstream and downstream of the surface disturbance area, respectively. Although these two sites have been monitored regularly since 1980 and 1977 respectively, site B-12 has never recorded any flow and site B-11 has documented flow only ten times. The highest flow was recorded in May 1978 at 44.88 gpm. Since reconstruction of the stream channel in 1996, no flows have been documented. It was observed that a majority of the flows were recorded while the mine was active, indicating ephemeral flow that was recorded while personnel was available on site. As an example, in 1978, flow was documented six times from March through October.

A thorough inspection of the Hardscrabble site on November 21, 2000, indicated very little flow has occurred in the main channel and its tributaries since reclamation. Significant deep-gouging exists on all reclaimed areas which retains moisture and reduces surface erosion. All operational culverts, temporary berms and diversions and silt fences have been removed. The design standards set for the reconstruction of Hardscrabble Creek have been met. One straw-bale dike still remains immediately downstream of site B-11 at the southern end of the property. The dike is still fully-functional, and showed very little retention of sediment since its installment in 1996.

Water quality standards and effluent limitations

The desilting ponds have been reclaimed and no further UPDES monitoring is required. Due to the ephemeral nature of the stream in Hardscrabble Creek, no water quality data has been collected at site B-11 since October 1980 and never at site B-12. Although Total Suspended Solids does not appear to be a problem at the site, a water quality sample to check other parameters would be beneficial. To collect a water sample, a concerted effort needs to be made to collect a sample immediately following any substantial storm event, or at least document the effort prior to final bond release.

Findings:

The site currently meets the requirements for Phase I bond reduction, but prior to final bond release every effort needs to be made to collect surface-water samples from sites B-11 and B-12. An automatic sampling device or regular visits during and immediately following substantial storm events may be necessary.

RECOMMENDATIONS:

The site currently meets the requirements for Phase I bond reduction. For Final Bond release, every effort needs to be made to collect surface-water samples from sites B-11 and B-12. An automatic sampling device or regular visits during and immediately following substantial storm events may be necessary.

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