

August 15, 2011

South Dakota Board of Minerals and Environment
and
Steven M. Pirner, P.E.
Department Secretary
South Dakota Department of Environment & Natural Resources
Joe Foss Building
523 E Capitol Ave
Pierre SD 57501

Dear Members of the Board of Minerals and Environment and Department Secretary Pirner,

Re: Comments on the Wharf Expansion Project Mine Permit Application

Thank you for the opportunity to comment on the proposed Wharf Expansion Project Mine permit application. With this letter, I am also petitioning to be an intervenor in the contested case hearing.

I am interested in the proposed Wharf Expansion Project because of concerns related to water quality, fish and wildlife, and recreation. I have travelled to the Black Hills on many occasions to enjoy the area's high quality streams, fish and wildlife, and natural beauty, and I intend to do so again in the future. I have visited the Wharf mine, and I have submitted comments on other mining issues in the region, with respect to water quality concerns.¹

I am concerned that there are significant water quality issues related to the existing mine operations, which have not been addressed by the existing operations or the company's proposed plans for expansion.

1. Water quality data indicates that the existing mine operation is releasing cyanide into surface water without an MPDES permit, and in violation of its existing operating permit.

It has come to my attention from reviewing the State's water quality data that cyanide (WAD) concentrations in Annie Creek are consistently above the chronic aquatic life standard of 5.2 parts per billion (ppb). The data shows cyanide WAD levels above 5.2 ppb in most of the samples taken from August 19, 2008 to November 28, 2010 – the most recent data made available.

¹ Letter to South Dakota DENR, re: Comment on the Surface Water Discharge Permit submitted by Homestake Mining Company, November 5, 2003.

Water Quality Data for Annie Creek Station 46MN31		
Date	Cyanide (WAD) ppb	Cyanide (Total) ppb
8/19/2008	9	20
11/18/2008	No sample	No sample
2/23/2009	12	29
5/18/2009	Non Detect	Non Detect
8/18/2009	8	18
11/09/2009	11	22
2/2/2010	10	73
5/4/2010	Non Detect	Non Detect
8/16/2010	16	20
11/28/2010	12	46

This appears to be a violation of the South Dakota Water Pollution Control Act 34A-2-21, which states that “No person may cause pollution of any waters of the state, or place or cause to be placed any wastes in a location where they are likely to cause pollution of any waters of the state,” and the federal Clean Water Act, which makes it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained.

Wharf’s discharge permit requires compliance with state water quality standards at compliance point 005.² According to an inquiry of Kelli Buscher of the State’s Surface Water Quality department, the Annie Creek monitoring station (46MN31) is located directly downstream from this compliance point.

It also appears to be a violation of the mine’s existing operating permit, which includes the following requirements:

Condition No. 2 to Mine Permit No. 356 states: *There shall not be any loss or release of cyanide or any other toxic element associated with the gold recovery process to the surface environment outside the project fence or to any surface or subsurface waters.*

Condition No. 1 under Water Quality states: *Leachate discharge or surface water runoff from the site shall not cause South Dakota Groundwater Discharge Permit requirements, South Dakota Surface Water Discharge permit requirements or ground and surface water quality standards to be violated. There shall not be any unauthorized loss or release of cyanide or any other toxic element associated with the gold recovery process to the surface environment outside the permit boundary.*

² Permit Number SD 0025852, page 11.

I understand that the State responded to our earlier letter on this issue by initiating an investigation, and it is currently undertaking additional sampling in Annie Creek.

2. Water quality data indicates that the permit application for Wharf's expansion plans does not meet legal requirements, and should be deemed incomplete until additional information and analysis is done.

A. The baseline water quality monitoring report is incomplete, and does not meet the legal requirements as specified in SDCL 45-6B-7(9), which states that the reclamation plan shall include: "The baseline water quality and water level of all areas of aquifers potentially affected by the proposed mining operation."

The permit applicant's report, entitled "Surface Water Characterization Study of the Wharf Expansion Project Area," states that, "The purpose of this report is to summarize the condition of the surface water environment near the proposed mining operation based on available water-quality data."³ Yet, the baseline data incorporated in the report only provides information for Annie Creek at the USGS station. It doesn't include readily available data from a water quality monitoring station in Annie Creek that's much closer to the mine, and within the area potentially affected by the proposed mine expansion operation.

As described on the previous page of comments, cyanide concentrations above chronic aquatic life standards have repeatedly been measured in Annie Creek station 46MN31. This is not described in the company's baseline data report. If the baseline data is only intended to represent conditions unaffected by mining operations, then this is understandable. However, the existing conditions in Annie Creek aren't incorporated into the surface water or aquatic resource sections either.

B. ARM 74:29:02:11 requires the application to include information on the effect of mine operations on hydrologic balance and on surface water and groundwater. The proposed expansion plan does not address the existing or potential effect of expanded mine operation on surface water in Annie Creek.⁴ It doesn't include readily available information from monitoring station 46MN31. It doesn't include any analysis of the source of cyanide in Annie Creek, or the potential impacts to Annie Creek associated with the proposed expansion.

The State cannot adequately evaluate the effect of the mine's expansion on surface and ground water until it has determined the source of the cyanide in Annie Creek. If the source of the cyanide is a leaking leach pad or processing ponds, or spent ore disposal, then remediation of these issues should be incorporated into the mine's permit application for expansion of operations. The existing permit application does

³ Surface Water Characterization Study of the Wharf Expansion Project Area, page 7.

⁴ Section 3.4 of Wharf Expansion Project Mine Permit Application, Revision 1.0, June 2011.

not incorporate any consideration of these issues, and therefore should be deemed incomplete.

C. The characterization of aquatic resources in Annie Creek is incomplete. Section 3.8 of the proposed mine expansion plan describes the company's fish sampling efforts in Annie Creek as such:

Mountain suckers were collected in low densities from the middle Annie Creek site in most years; a single mountain sucker was observed in 2010. Currently, mountain suckers are not considered a species of concern by the state of South Dakota but do appear on the state's list of rare species.

There does not appear to be any upstream sources of these fish, and movement of fish from the most downstream reach of Annie Creek is barred by Annie Creek falls. Both brook trout and brown trout maintain populations at the downstream Annie Creek site; brook trout density has increased at the site since 2001 while brown trout density has decreased. Between 1995 and 2010, only one mountain sucker was collected at the downstream Annie Creek site in June 2008 [GEI Consultants, Inc., 2010].

This description fails to include the mine's considerable impacts to Annie Creek water quality and fish population from numerous violations over the last decade. Three of the most severe examples include:⁵

October 1995: From August 21 to 28, 1995, discharged inadequately treated cyanide solution into Ross Valley and subsequently into Annie Creek. Approximately 300 fish were killed as a result of the discharge. The discharge caused several violations of mining and water pollution control laws. Two Notices of Violation were issued, one under mining, and one under the water pollution control laws.

December 1997: Surface water compliance points below Wharf's Reliance waste rock depository in the headwaters of Annie Creek (compliance Point 001) and below Wharf's spent rock ore depository in Ross Valley (compliance point 002), and the instream sampling point in Annie Creek (compliance point 005) has exceeded the total cyanide limit of 0.02 mg/L numerous times since March 1, 1994. Monitoring well GWAC-6 is in the alluvium of Annie Creek approximately 450 feet upstream of its confluence with Spearfish Creek exceeded the 10 ppm groundwater for nitrate during 1996 and 1997. These violations caused numerous violations of mine pollution control laws, surface water quality standards and groundwater quality standards.

⁵ Mike Cepak, DENR, Violation History, Updated: July 2008.

April 2008 NOV: Wharf violated its surface water discharge permit with the release of biomass from its water treatment plant during the summer of 2007. The discharge affected fish populations in Annie Creek. The biomass discharge was inspected in November 2007 and evidence of a biomass spill in Ross Valley was also found. Wharf also violated its SWD Permit limits for ammonia two times, limits for WAD cyanide 6 times, limits for five-day biochemical oxygen demand 11 times, the limit for arsenic one time, the limit for pH one time, the limit for dissolved oxygen two times, and the acute whole effluent toxicity limit was violated one time.

According to the aquatic assessment resulting from the 2008 Notice of Violation,⁶ Mountain suckers had previously been abundant in the early 1990's, but had been present at low density following the 1995 release of ammonia and cyanide into Annie Creek via Ross Valley (CEC 1996b). The density of mountain suckers in Annie Creek (site 06) was estimated at 1534/ha in 1995, but from 2001 to 2004 no mountain suckers were collected.⁷

The report describes further impacts from the 2007 biomass spill, "The absence of mountain suckers at Site AC-2-BIO during sampling in August 2007 may have been related to the high flow event that occurred in June 2007, the low dissolved oxygen in Annie Creek from the release of high BOD water in 2007 by Wharf, or both.

The 2008 aquatic assessment report, states that a mountain sucker population still exists in this reach of Annie Creek, although at low density. The 2010 mine expansion report says that only one mountain sucker was found in middle Annie Creek. There is no discussion of cyanide concentrations exceeding chronic aquatic life standards in Annie Creek from 2008-2010, and the likely impacts of these water quality conditions to the fishery.

In South Dakota, the mountain sucker is found only in the Black Hills, and the U.S. Forest Service has identified the mountain sucker as a management indicator species (MIS) for the Black Hills because of its affinity for cold clear mountain streams.

According to the SDNHP, the State of South Dakota identifies the mountain sucker as a rare species, a species of greatest conservation need and lists the mountain sucker as S3, indicating that it is very rare and local throughout its range, found locally in a restricted range, or vulnerable to extinction throughout its range due to other factors.⁸

⁶ Geotechnical Water Resources Environmental and Ecological Services, Memo to Ron Waterland, Wharf Resources, Inc., "Fish, benthic invertebrate, and periphyton evaluation," June 2008.

⁷ Steve Hirzel, Black Hills National Forest USDA Forest Service Region 2 Mountain Sucker MIS Protocol Final, January 2008.

⁸ <http://gfp.sd.gov/wildlife/threatened-endangered/rare-animal.aspx>

Although the Wharf expansion report indicates that only 1 mountain sucker was found in Annie Creek in 2010, it provides no information on the mine's impacts to this population of rare fish, no analysis on the impacts of ongoing cyanide releases in Annie Creek from 2008-2010, no plans for recovering the Annie Creek population, nor any consideration of potential impacts from mine expansion.

D. SDCL 45-6B-92(2) requires the mine plan to include a description of all critical resources potentially affected by the mining operation and plans for mitigating potential impacts to such critical resources. Critical resources include aquatic resources (cold water fish life propagation water). Furthermore, ARSD 74:51:03:01 states that all streams in South Dakota are listed as having the beneficial use as fish wildlife propagation, and as such must maintain water-quality standards for such use.

Furthermore, §§ 45-6B-37(7) requires a description of how the reclamation plan will rehabilitate the affected land. This description shall include, but not be limited to, natural vegetation, wildlife, water, air, and soil.

Once again, there is no information in the plan to address the mine's impacts to the Annie Creek fishery, which dropped from an estimated density of 1500/ha in the 1990s to only one reported fish in 2010. It doesn't provide a plan for recovery of the fishery, or consideration of the implications of mine expansion.

E. 74:29:02:08. Reclamation costs. For SDCL [45-6B-7\(12\)](#), estimated reclamation costs must be submitted for each component of the affected land; for example, the mine pit, waste dumps, heaps, and ponds. A cost analysis for each activity to be conducted in implementing reclamation of the components of the proposed operation must be included. The method for calculating estimated reclamation costs must be described in detail. If an applicant intends to propose phased bonding based on the estimated land to be affected at any one time, a similar analysis is required for each phase.

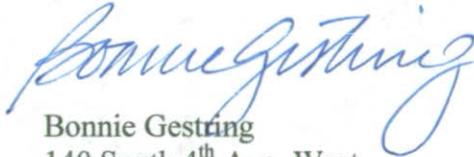
The company's proposed reclamation costs do not address the potential for additional remediation of mine activities or water treatment costs to address the ongoing release of cyanide, or the cost of recovering the Annie Creek fish population. I would also like to reference the comments submitted by David Chambers, Center for Science in Public Participation, with regard to these issues.

On July 18, 2011, the department determined the mine permit application was complete and filed. Based on the company's failure to meet the requirements as specified in South Dakota state law and regulations, it is my contention that this permit application is incomplete, and I ask the state to require the following:

- 1) Additional surface and groundwater monitoring sufficient to identify the source for the cyanide concentrations that have been regularly measured in Annie Creek over the last two years.
- 2) Development and implementation of a plan to address the source of the cyanide, prior to approval of the company's plans for expansion.
- 3) Development and implementation of plans to recover the Annie Creek fishery prior to approval of the company's plans for expansion.
- 4) A new discharge permit to address these discharges, incorporating a compliance and monitoring plan that ensures compliance with water quality standards throughout the Annie Creek watershed.
- 5) Increased reclamation bond to cover these costs.

Thank you again for your consideration of these comments.

Sincerely,



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MINERALS & MINING PROGRAM

CERTIFICATE OF FILING AND SERVICE

I, BONNIE GESTRING, do hereby certify that on the 15th day of August, 2011, I sent by first class U.S. mail the original of the foregoing to:

Minerals and Mining Program
SD Department of Environment and Natural Resources
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and a full, true and complete copy of the same to be served upon the following named persons at their last known post office addresses as follows:

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by depositing the same in the United States Mail in MISSOULA MT, with first class postage thereon prepaid, in envelopes as above.


Bonnie Gestring