

# CENTER for SCIENCE in PUBLIC PARTICIPATION

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"Technical Support for Grassroots Public Interest Groups"



August 18, 2011

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

RECEIVED  
AUG 18 2011  
MINERALS & MINING PROGRAM

## Re: Comments on Wharf Expansion Project Mine Permit Application

Dear Mr. Pirner;

The Center for Science in Public Participation provides technical advice to public interest groups, non-governmental organizations, regulatory agencies, mining companies, and indigenous communities on the environmental impacts of mining. CSP2 specializes in hard rock mining, especially with those issues related to water quality impacts and reclamation bonding.

### Comments on Application Sections:

#### **3.1.3.6.2 Standard Blending Procedure of Mined Material**

It should be noted that blending has not proven to be a successful method of preventing acid drainage. Blending will not be effective in preventing the mobilization of Neutral Drainage contaminants arsenic and selenium.

There should be a "backup" plan/approach in place in case blending does not work as planned, and acid or neutral drainage from the waste becomes an issue.

#### **6.2.1 General Reclamation Type Requirements**

On page 114 it is stated:

*"Spoil topsoil or unconsolidated material will not be pushed or placed within 10 feet of any perennial or intermittent streams."*

Placing waste rock 10 feet from a stream will most probably lead to contamination of that stream, especially since Neutral Drainage could lead to the mobilization of arsenic and/or selenium.

#### **6.10.1 Estimated Bond Calculations**

Bond calculations notations in this section, and in the spreadsheet 2011 BOND UPDATE FOR PERMIT.xlsx, provided by the South Dakota Minerals and Mining Program, were reviewed by CSP2.

##### **Direct Bond Cost Estimates**

A cursory examination of the direct cost calculations for reclamation shows that these have been done to the level of detail required and in accordance with generally accepted practices.

The one direct cost detail noted that might be revised by the Minerals and Mining Program is the price of fuel used in the estimate - \$3.00 per gallon. The current price of fuel is considerably higher, and is likely to remain so.

**Indirect Bond Cost Estimates**

Indirect costs are an important part of the bond/financial surety (bond) estimate because it must be assumed, for the purpose of making this estimate, that the mine operator will not be able to conduct the planned reclamation and closure, and that this activity must be managed by the responsible regulatory agency.

The table below summarizes the indirect costs calculated in the estimate for Wharf-Golden Reward bond/financial surety (2011 BOND UPDATE FOR PERMIT.xlsx – Aug11).

**INDIRECT COST GUIDELINES**

	<i>Percentage of contract costs</i>			
	<u>CSP2*</u>	<u>USFS**</u>		<u>Wharf</u>
	<u>Recommended</u>	<u>Recommended</u>		<u>Bond</u>
		Minimum	Maximum	
Scope Contingency	10%	6%	20%	4%
Bid Contingency		10%	20%	
Mobilization / Demobilization	10%	0%	10%	5%
Engineering Redesign & Construction Management	8%	2%	10%	3%
Contractor Overhead	15%	15%	30%	8%
Contractor Profit	10%			10%
Performance & Payment Bonds	-	3%	3%	1%
Estimated Tax	-	0%	5%	2%
Agency Administration	10%	2%	7%	10%
Inflation /yr	3%	0%	2.6%	2.5%
	=====	=====	=====	=====
<b>TOTAL</b>	<b>66%</b>	<b>38%</b>	<b>107.6%</b>	<b>45.5%</b>

References:

\* Hardrock Reclamation Bonding Practices in the Western United States, James R. Kuipers, PE, Center for Science in Public Participation, February 2000.

\*\* Training Guide for Reclamation Bond Estimation and Administration, For Mineral Plans of Operation Authorized and Administered Under 36 CFR 228A, USDA Forest Service, Minerals and Geology Management, April 2004.

As can be seen from the table the South Dakota Minerals and Mining Program calculations are within the bounds of the recommendations of the Guide for Reclamation Bond Estimation and Administration published by the US Forest Service, but on the low end of those recommendations. Some of the South Dakota Minerals and Mining Program calculations are significantly less than the indirect cost calculations recommended by CSP2.

***Recommendation: South Dakota Minerals and Mining Program should consider increasing the percentage estimates for Engineering Redesign & Construction Management, Scope/Bid Contingency, with perhaps marginal increases in Mobilization / Demobilization and Contractor Overhead/Profit.***

These increases would lessen the chance that the State would be required to provide taxpayer monies if a bankruptcy occurred and the State was required to perform/manage reclamation and closure of the mine.

## **Inflation Adjustments**

The South Dakota Minerals and Mining Program has applied a 2.5% inflation factor to the calculated costs. While the amount of the inflation factor applied, 2.5%, is within the bounds of that recommended by the US Forest Service (0 - 2.6%) and slightly less than recommended by CSP2 (3%), the way that the inflation factor is applied to the bond calculation can lead to a significant underestimate of the bond/financial surety.

Inflation factors need to be applied so that the bond/financial surety reflects a net present value, not a one-time inflation calculation. This is most graphically demonstrated in the calculation for water treatment, a cost that would not be incurred until the end of mine life. If the bond were to be called by the State at the end of the proposed 7 year mine-life extension, then the amount of additional money needed to perform the 30 year water treatment alone would be an additional \$1.5 million based on a compounded interest of 2.5%, instead of the \$364,699 one-time interest calculated in the draft bond estimate.

***Recommendation: South Dakota Minerals and Mining Program should calculate inflation on an annual basis. This means either revisiting the bond/financial surety each year, OR calculating compound interest on the bond/financial surety for the entire period (until the next bond review) of the bond/financial surety.***

The basis for using 30 years as the period for water treatment is not explained/justified in the Application or bond estimate. If water treatment were required for more than 30 years, the cost would increase significantly.

***Recommendation: If water treatment could be required "indefinitely" then the treatment cost calculations should be run to determine the period needed to make the interest added due to the next increment of time insignificant. In our experience the period of time required to make the next increment of interest in the calculation insignificant is approximately 200 years.***

### **6.10.2.8 Postclosure Surety**

It is noted on page 142:

*"After release of the reclamation bond by the state, a portion of the reclamation surety will be dedicated to the postclosure bond. Before the release of the reclamation bond, a detailed bond calculation for postclosure activities will be submitted to the state of South Dakota for approval."*

Because a bond is calculated on the assumption that the mine operator will no longer have the financial ability to perform the closure (and postclosure) requirements,

***Recommendation: A postclosure surety needs to be in place before mining in case of company default.***

Thank you for the opportunity to comment on this application.

Sincerely:



David M. Chambers, Ph.D.