



**A POSITION PAPER  
ON  
PERPETUAL WATER TREATMENT FOR MINES**

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**Background**

Various federal, state and provincial agencies have the responsibility of issuing permits for the discharge of water and contaminants from mines. Today these agencies routinely grant permits for mining discharges that will require passive, and sometimes active, treatment of the effluent long after the mines have ceased to operate and have been permanently reclaimed. The source of the long lasting contaminants in the discharge is usually related to acid rock drainage, but can also be due to a process called metals leaching where contaminants like arsenic, selenium and antimony can leach from exposed rock under neutral or high pH conditions.

Agencies issuing permits for these long-term, and often perpetual, discharges typically, but not always, require a bond from the mine operator to cover the long term treatment costs of these discharges. However, the financial risk to the public involved with permitting a mine that calls for treatment of water in perpetuity is poor public policy.

**Bonding**

There are several inherent problems with the bonding for perpetual treatment, even if the bonding procedure is rigorously and diligently applied.

**First:**

There is significant risk in estimating the amount to be covered by the bond. It is difficult to estimate replacement and operating costs for a present-day industrial facility. Attempting to estimate these costs in perpetuity puts the public at significant risk of underestimating the amount of money needed to operate and replace the water treatment facility. If the bond is insufficient to meet the costs of operating and maintaining the treatment facility, it will almost certainly be the public that is obligated to meet the deficit, or to bear the cost of degraded water quality if treatment is discontinued or degraded.

There is also a potential burden on the mine operator in that if the amount bonded is overestimated, the profitability of the mine can be negatively affected.

When bonds are established, an agency not only makes assumptions about the long term replacement and operating costs of a treatment plant, but the agency must also make assumptions about the average inflation over the period of time covered by the bond and the average return-on-investment the bond amount will generate over its lifetime. As anyone who follows the financial markets knows too well, there is a considerable amount of instability and risk in both of these assumptions. Typically, changing either the inflation rate or the rate for return-on-investment by a single percentage point will cause a huge change on the required bond amount. With a bond for perpetual treatment, it is ultimately the public that bears the risk of these assumptions.

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Perpetuity is long time. Predicting what costs might be, what other problems might arise, and whether the vehicle chosen to provide financial assurance all involve a considerable amount of uncertainty.

**Second:**

There is risk that the financial vehicle used for the bond may not be available or viable when it is required for treatment. Financial institutions, and even government institutions, have a finite life. If these institutions change significantly, or fail, the potential for damage (i.e. water pollution) is still there, but the means to meet this need now falls on an institution that was not responsible for the problem.

There may also be potential problems in identifying a responsible party, even if a bond is still technically in-force. Corporate mergers, spin-offs, or the consolidation of financial institutions, can complicate the accountability for a financial guarantee. In addition, a party responsible for a large bond may find it more financially expedient to litigate a multi-million dollar bond claim than to pay it off. The cost of potential litigation, and the environmental and management costs of a significant delay in accessing bond money, is never considered in calculating a bond amount.

**Recommendation**

The best policy for an agency with the responsibility for water protection is to deny any application for a mine that includes a requirement for long-term water treatment. Mining-regulatory agencies in at least two states, New Mexico and Michigan, currently ban perpetual water treatment.<sup>2</sup> If a prediction of an end date on which treatment will no longer be required cannot be made with a reasonable degree of certainty, then a discharge should not be allowed to begin. The long-term risk to the public, who is the ultimate guarantor for any long-term cleanup, is too great.

It is possible to design most mines to preclude conditions that will require long-term water treatment. Accomplishing this is primarily related to designing adequate reclamation of the mine, but may also be related to decisions about the design of the operating mine to minimize the contamination of water. If it is not possible to design preventative measures into the mine, then the mine should not be permitted to open.

Federal land managers like the Forest Service and Bureau of Land Management, the Environmental Protection Agency, state agencies issuing permits delegated under the Clean Water Act, and provincial land managers should make it clear in their regulations that the risk of long-term water treatment is too great to the public. Permits issued by these agencies should be denied if long-term water treatment is required to meet the applicable discharge standards.

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<sup>2</sup> See the New Mexico Mining Act at Chapter 69 - Mines, Article 36 Section 69-36-12-B; and, Michigan's Non-Ferrous Mining Statute and Rule (Part 632). Part 632 consists of Sections 63201 to 63223 (the "Act") and Parts 1 to 6 of the promulgated rules (the "Rules") R. 425.409(b)