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By

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The legacy of mining is often considered less than favorable, overshadowing the many benefits and products the industry provides throughout the world. Much of this negative view and resistance to mining is tied to the manner in which it has historically dealt with closure. In the past societies as a whole did not focus on mine closure and its associated long term environmental and economic impacts. Governments often did not regulate closure or require proper bonding. Thousands of abandoned mine sites now exist throughout the world posing many varied concerns including visual impacts, dam and tailings stability, open pits lakes, underground workings, waste rock disposal, and most importantly acid rock drainage.

Acid rock drainage gives rise to severe environmental impacts resulting from long term water quality deterioration and economic impacts resulting from long term water treatment capital and operating costs. These impacts are the most serious facing the mining industry globally today. In some instances mining companies shirked their financial obligations and responsibilities in dealing with closure of their operations. In some cases, companies simply did not plan properly for closure and went bankrupt leaving the remediation to the public. The approach and attitude of the mining industry toward environmental protection and sustainable development has improved dramatically over the past twenty years through better planning and proper bonding.

Nonetheless, the need to remediate existing abandoned mine sites still exists. In several countries, the federal government has made a concerted effort to deal with this long term issue. One such government is Canada which has committed hundreds of millions of dollars to remediate abandoned mine sites on Native Lands.

Even private companies such as Tiffany's are adopting a green approach by supporting remediation of abandoned mine sites. However, most of the technical approaches toward mine site remediation focus on traditional reclamation techniques such as earthen covers, backfilling, revegetation, or long term water treatment. The overall costs of these approaches are often quite high reaching hundreds of millions of dollars per site in some instances. Unfortunately, there are limited options for innovation and development of novel approaches for existing sites. But presently with the dramatic rise in the prices of and demand for base and precious metals over the past decade there should be renewed interest for reprocessing wastes and tailings for secondary recovery once considered non-economic.

This approach is already being followed with energy through revitalization of the oil sands industry in Canada. A significant portion of the reprocessing costs for secondary metals recovery have already been realized since the mining, crushing, and grinding phases have previously been partially or fully completed. In the United States there is movement toward enacting Good Samaritan laws to encourage remediation of mine sites without being subjected to excessive regulation and potential litigation. This is an excellent approach that promotes environmental stewardship and aids in improving the overall image of the mining industry. In the past "mining your own business" was the driving theme that led to the current situation. However, the thought process should be shifting to remembering a "mine is a terrible thing to waste".