Case Study

Innovative Suboxic Design for a Mined Rock Stockpile (MRS)

Elk Valley, BC, Canada

> Background

Okane was engaged to lead the modelling, design, and performance monitoring of a Mined Rock Stockpile (MRS)in the Elk Valley for suboxic conditions. The goal was to substantially improve source term control and water quality for selenium, sulphate, nitrate and other contaminants of interest (COIs).

> Approach

Okane's approach integrated modelling, design, and performance monitoring in an iterative process to produce an oxygen limiting landform design (i.e., suboxic design). Significant add-ins and model development were achieved to create a fully integrated model that linked hydrology, oxygen conditions, material properties, MRS structure and climate to produce final seepage water quality predictions. As mining progresses, the design and construction of suboxic landforms for COIs management will continue, a demonstration of true adaptive management for the site.

> Client Benefit

Source term control of COIs in an MRS is a cutting-edge practice. It demonstrates a significant commitment to minimizing water quality impact in the region to both regulators and stakeholders. It is viewed as a superior proactive approach compared to building water treatment plants, or passively treating water after water quality issues already exist. The approach also decreases the risk of poor water quality and associated treatment costs at closure.

> ***Improving mine water quality through suboxic MRS construction – A cutting edge approach within the mining industry.***

Integrated Mine Closure and Relinquishment Solutions

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