

Whitehorse - Tuesday, September 11, 2018

Session #1 - Long term planning

Time 855am-915am

Topic **The Faro Mine Legacy - 70 million tonnes of tailings and 320 million tonnes of waste rock**

Abstract The Faro Mine site is located outside of the Town of Faro at 62'N latitude in a mountainous subarctic region of Yukon, Canada. The open pit mine, which operated for roughly 30 years, was once one of the largest producers of lead and zinc in the world. In 1998, the last owner declared bankruptcy. Today, the Government of Yukon and the Government of Canada are co-proponents in the management and closure planning of one of the most complex abandoned mine clean-up projects in Canada.

In its current condition, the site presents a significant risk to human health and the environment. The mining footprint, which spans approximately 2500 hectares, includes an estimated 70 million tonnes of tailings and 320 million tonnes of waste rock. A significant amount of the waste has an acid generating potential that exceeds its acid neutralization capability, meaning that in the absence of closure there has been significant degradation of water quality over time. Heavy metals (including iron, manganese, zinc and cadmium) are contaminants of concern, with uncertainties relating to geochemical weathering and reactive transport of weathering products presenting challenges for long term site management

Using a deterministic load-type model for assessing future conditions for a range of assumed chemical loadings, a closure plan is being developed for the site. The proposed 'Stabilize in Place' approach to remediation will rely on diverting clean water away from potentially contaminated surface water, groundwater and seepages; collecting and treating contaminated water using state-of the art technology; reducing seepage through acid generating material by stabilizing and covering waste rock and tailings; and adaptively managing unacceptable levels of contamination in the downstream environment. A seepage interception system will form a last line of defence for protecting the receiving environment. All aspects of the closure will consider complex cold regions phenomena, including seasonally and permanently frozen ground, ground freezing and ground ice formation, ground thawing and associated settlement, and freeze/thaw cycling. Implementation of the Closure Plan is expected to start in 2022 and take approximately 15 years to complete.

This presentation will summarize select 30% Conceptual Engineering Designs.

Presenter(s) Dylan McGregor, SRK Consulting

Bio(s) N/A