Case Study

A Cover System Model for Dry Stack Tailings

A Gold and Silver Mine, Atacama region of Chile

> Background

A dry stack tailings storage facility (TSF) was a source of acid mine drainage (AMD) and other heavy metals up until 2013 when remedial activities were undertaken. The Atacama region has a unique climate with very little natural precipitation.

> Approach

Okane performed a seepage modelling analysis which included several long-term simulations including scenarios of continued placement of tailings and continuation/discontinuation of irrigation to manage wind erosion on the crest. Observations from cover system design studies included identification of the need for a cover system to minimize wind erosion and decrease infiltration of fluids. An effective cover system would allow for discontinuation of irrigation (dust control) which was a contributor to water usage on site and the seepage rates through the dry stack tailings structure.

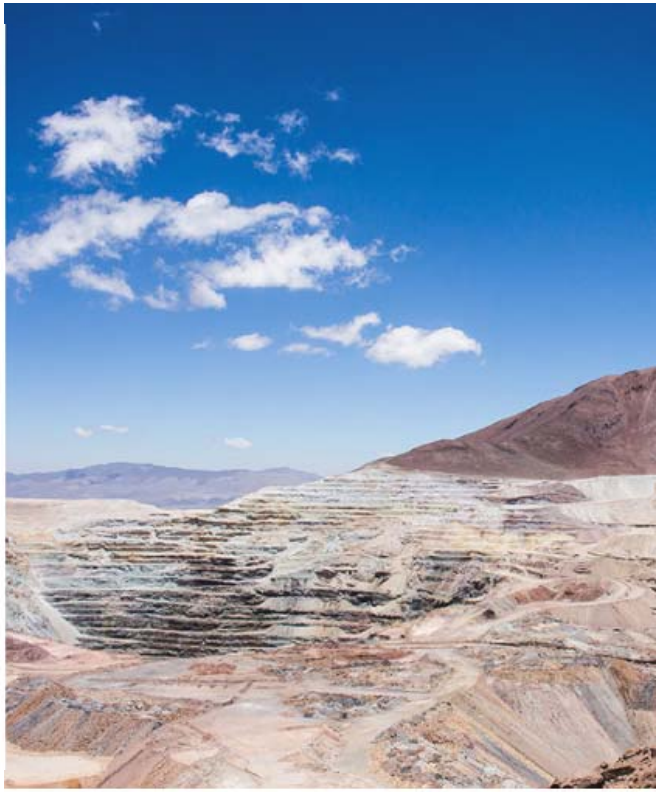
> Client Benefit

With the aid of instrumentation data, the site model was calibrated to the real-world conditions. This improved the confidence in the model result and demonstrated the clear outcomes for differing cover systems and operations scenarios. Okane's calibrated site-specific model supported informed decisions about irrigation, dust control, erosion management and tailings placement.

> **An accurate model to simulate the cover system and tailings materials and site-specific climate.**

Integrated Mine Closure and Relinquishment Solutions

okane 25 YEARS



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