Case Study

Covering for the Future

Boliden, Kevitsa
Poly-Metallic Open Pit Mine, Finland

> *Challenge*

One of the largest open pit mines in Finland required a long-term solution to water quality and seepage from their Waste Rock Storage Facility (WRSF) and their Tailings Storage Facility (TSF). A combination of high sulphur tailings and waste rock prone to metalliferous leaching, created a challenge for the site when planning for future operations and closure.

> *Approach*

Okane collaborated with Boliden and additional subject matter experts to develop a comprehensive site water and water quality management approach. Predictive cover system modelling in several time scales varying from short term (~10 years), medium term (10 to 70 years), to long term (>70 years) was coupled with prediction of water quality. Through detailed, post-closure drain down analysis, Boliden's collaborative group was able to recommend a cover system and landform design to optimize site water management for current conditions and future site scenarios. Several different cover systems were employed across the site's landforms, customized for seasonal conditions, localised waste components, facility contouring, and revegetation potential.

> *Client Benefit*

The inclusion of clean water diversion and strategically placed decant ponds will allow the mine site to manage overall solute balance through progressive isolation of contact waters and bioremediation within the open pit at closure. The addition of the cover systems will significantly reduce the volume of water requiring long term treatment post closure and progressively manage the assimilation of seepage water into the naturally surrounding watershed.

"Okane's comprehensive site-wide approach supported the mine site to optimize the existing landforms and water storage facilities.

Integrated Mine Closure and Relinquishment Solutions

okane 25 YEARS

(2017). Kevitsa Mine, a poly-metallic open pit mine in Lapland, Finland. NS Energy.