

PROJECT DESCRIPTION

Björkdalsgruvan AB
Mandalay resources

Björkdal

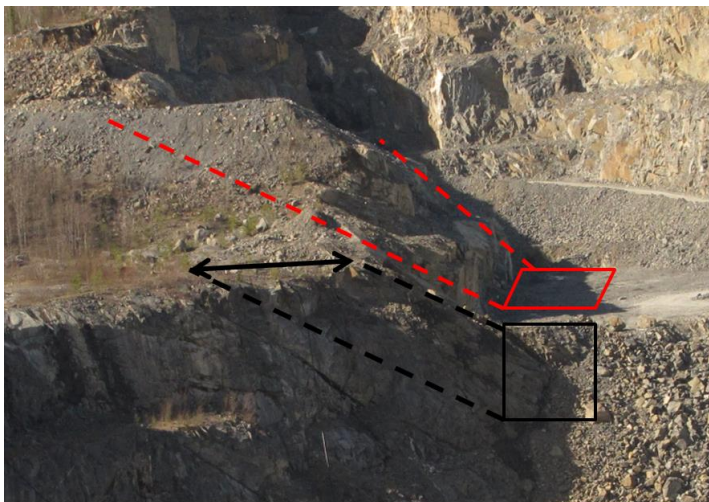
The Björkdal mine ("Björkdalsgruvan"), located 28 km northwest of the town of Skellefteå, is a gold mine with the mineralization typified by Au-quartz veins located within a metamorphic package. The Björkdal mine is operating with both open pit- and underground mining. During spring 2016 the mine experienced local slope instability at one of the open pit walls. The concern was how it would affect safety for the mine workers and future mining, but also if it was safe to remove loose rock mass without endangering workers or interrupt any mining activities.

ITASCA'S ROLE

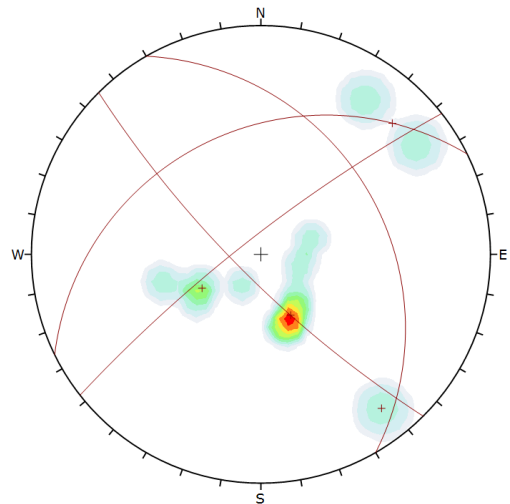
Itasca Consultants AB supported the mine with rock mechanics advice for the bench stability issue. Itasca visually inspected the site for stability assessment and provided an extraction sequence in order to ensure safe working conditions in the area. Itasca evaluated if different types of failure could occur within the slope, and concluded that the most likely failure was planar.

PROJECTS RESULTS

The work resulted, primarily, in advice on how to safely remove the loose material to ensure safe working conditions for personal down in the pit. The planar failure intersected the upper bench and the conclusion was that the joint causing the planar failure only will affect the upper part of the slope (i.e., the top 1-2 benches). It was also concluded that the overburden above the benches had to be stripped in order to ensure safe working conditions in the pit. The removal of the loose material went successfully and mining has continued in the area.



Area where the failure occurred.



Stereographic projection showing joints in the area.