

CASE STUDY

Kemess South Mine

Safe production through risk management



“The Slope Stability Radar provided early warning of at least two impending failures.

These early warnings enabled us to ensure personnel and equipment were not in the areas of concern at failure time.”

Craig Tomlinson,
Mine Superintendent

Northgate Minerals Corporation's Kemess South mine is located in north-central British Columbia, Canada, 430 km northwest of Prince George. The Kemess South gold-copper deposit contains proven reserves of 51.8 million tonnes as Jan 08. It is one of the lowest cost gold mines in the world; in 2008 the mine produced 185,162 ounces of gold and 51.9 million pounds of copper. Kemess' current mining capacity is approximately 50 million tonnes/year, 19 million tonnes of which is ore. Kemess South uses a conventional mine plan with 15 meter benches and 27° – 51° wall angles.

Employee and equipment safety has always been the top priority at Kemess South and it was the most important factor in the decision to lease a Slope Stability Radar. Mine personnel needed an early warning system that would assist in mitigating risk to personnel and equipment in the event of a slope failure.

Prior to hiring the radar system in late 2008, Kemess South employed dozens of prisms and a laser system to monitor slope stability. They considered the radar to be a complimentary tool that would not be bound by the limitations of those technologies (such as adverse weather and dust) and could provide continuous 24 hour highly accurate readings.

The Slope Stability Radar was initially deployed to monitor a creeping failure composed of epiclastic rock. Geotechnical staff required technology that could not only monitor changes between a steady rate of movement and acceleration toward failure, but could return that information in a relatively short period of time. Depending on the size of their scan area, the radar could return useful data in five to twenty-five minutes with continual updates.

In addition to these important safety benefits, Kemess South mine:

- Improved operator confidence;
- Gave mine management the ability to make informed production decisions based on quantitative geological hazard data;
- Reduced overall operation risk and provided early warnings of impending failures, ensuring safety of people and equipment.

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