

## Monitoring tailings dams

Mine sites around the world are successfully employing Maptek™ Sentry systems as an integral part of their tailings dam management and monitoring regimes.



One operation that originally rented three Maptek™ Sentry systems for continuous monitoring has now implemented five continuous systems alongside another Sentry system for periodic monitoring.

Sentry is used in conjunction with seismic sensors, geodimeters and visual inspections. Using multiple sensors provides confidence that any movement will be registered.

Sentry combines a Maptek laser scanner with sophisticated software and allows operations to cost-effectively monitor, analyse and report on rapid and gradual movements on tailings dams.

Heatmaps coloured by displacement or velocity clearly show movement. Alarms are triggered when movement exceeds set thresholds

Sentry handles 24/7 continuous monitoring and is available in a custom trailer with a power and communications module, and cellular and wifi networking. Periodic monitoring uses the laser scanner set up on a tripod or bollard.

Early in the site implementation, a third-party was engaged to supply alarm thresholds, and Sentry operates within these parameters.

Deploying additional mobile systems gave the operation greater continuous coverage across the walls. The site is now looking to acquire a further system to extend monitoring applications.

Maptek has implemented automatic data backups to a network server as well as the sending of alarms to the site control room. Notification of movement to a dedicated centre avoids the risk of mobile or email alerts being missed.

Sentry data is retained and can be used to identify long-term trends or for back-analysis of any failures.

Sentry's simple setup and mobility make it easy for the site to alter monitoring frequency and change location between highwalls, tailings dams and underground sites.

Continuous monitoring to identify movement relating to subsidence and convergence helps manage underground risk. Remote control is vital where personnel access is prohibited or limited.

All Sentry settings can be controlled remotely, including starting and stopping, setting zones and alarms, and archiving data. Real-time data can be streamed to any location on a network for analysis.

The same Maptek laser technology can be deployed for mine and stockpile survey, geotechnical analysis and inter-ramp compliance reporting, making this a cost-effective solution.