



PRISM AND PRISMLESS MONITORING

PRISM AND PRISMLESS MONITORING IN AN OPEN-CUT GOLD OPERATION. *UPDATE.*

OVERVIEW

Due to the loss of a significant number of physical prisms through vandalism, the onsite geotechnical team from Filminera Resources Corporation's Masbate Gold Project, an open-cut gold mine in the Philippines, required a solution to effectively manage the mine's safety, including their ability to detect and measure deformation.

CHALLENGE

The challenge to GroundProbe was to provide a flexible, reliable, long-term, total monitoring solution that could cover a broad-area open-cut gold operation, using both prisms and virtual points.

SOLUTION

GroundProbe immediately recommended the installation of **GMS-Dual** (Geotech Monitoring Station) - a long-term, background monitoring tool designed to track and monitor both

prisms and virtual points. The system uses prisms to measure areas that are difficult, dangerous, or even impossible to reach. It specialises in monitoring open-cut pits and highly vegetated slopes and detecting and measuring deformation on tailings dams, dumps and cuttings.

Complimenting the advanced hardware offering - GroundProbe's intuitive visualisation software **SSR-Viewer**.

RESULTS

"The GMS-Dual was selected due to its unique prismless monitoring functionality. Users can detect deformation across the slope by placing virtual points anywhere on the wall within SSR-Viewer, our geotechnical monitoring and analysis software." - Fernanda Carrea, Head of Product Development, GroundProbe.

“The GMS-Dual is then able to reflect its laser signal directly off the rock, corresponding to the precise location and placement of the virtual points in SSR-Viewer, allowing it to detect hotspots of movement across the area of interest,” said Ms Carrea.

Using SSR-Viewer’s intuitive visualisation tools, the geotechnical team could pinpoint movement hotspots across the pit, represented visually through a colour gradient heatmap draped over the top of a photographic representation of the area.

The GMS-Dual was easily deployed in just minutes and positioned looking down to one of the mine’s main pits, where hundreds of virtual points were digitally placed on the slope.

“Within days of monitoring, the GMS-Dual provided extensive practical data on the overall stability of the pit. It also proved its competency in detecting and tracking positive and negative deformation trends across the different types of points; Prism Points, Pixel Points and Precision Points,” said Mr Harymurty who deployed the system.

The GMS-Dual monitored continuously and without interruption, its high accuracy and precision successfully detecting sub-millimetre movement.

“The data gathered enabled the onsite geotechnical team to identify areas with differentiated geotechnical deformation trends; for example, some zones featured no movement while others presented noticeable linear or regressive deformation trends,” said Mr. Harymurty.

To provide geotechnical peace of mind, blasting activity in the lower benches of the pit was also monitored using virtual points.

Using SSR-Viewer’s intuitive visualisation tools, the geotechnical team could perform a velocity analysis and even conduct remote inspections of the areas of interest in real-time using the GMS-Dual’s built-in telescopic camera.

Additionally, the system’s ability to monitor both prism and virtual prism points allowed the geotechnical team to monitor the remaining prisms installed on the pit walls, providing real-time three-dimensional displacement data of these points.

“Thanks to the GMS-Dual and its prismless monitoring, we have been able to counteract the lack of continuous, real-time slope monitoring caused by intruders’ unauthorised removal and vandalism of physical prisms.

Moving forward, our geotechnical team is excited to incorporate the system into our permanent onsite monitoring processes and procedures thanks to its easy setup, user-friendliness and intelligent data capture.

We are eager to continue using the GMS-Dual to effectively monitor slope stability, allowing us to better manage risk without delay or rely solely on physical prisms.”
– Peter Alip, Chief Geotechnical Geologist, Masbate Gold Project.



Image 1. GroundProbe's GMS-Dual

GroundProbe is proud to share its world-class expertise with Masbate in providing real-time solutions for measuring and monitoring geohazards to restore onsite mine safety.

GroundProbe is the most trusted brand for real-time geohazard monitoring.

With a track record that speaks for itself, our fleet of cutting-edge technologies deliver the most precise and valuable data.

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