



CASE STUDY: Samarco Mine

MAKING MINING SAFER

RISK REDUCTION STRATEGY INCORPORATES TAILINGS DAM MONITORING AT SAMARCO MINE

Tailings storage facilities or dams can represent a significant environmental and financial liability for mining operations as a breach or failure of a dam can have catastrophic physical, social and economic impacts.

Following a tailings dam failure in November 2015, the Samarco Mineração S.A owned mine, located in Mariana in Brazil, has begun implementing a complete risk reduction strategy to reduce the possibility of another failure occurring in the future.

This strategy is an industry-leading solution designed to constantly assess changing conditions and developing risks across tailings facilities in order to mitigate hazards as soon as they arise.

A key component of this complete risk reduction strategy is the implementation of an effective slope stability monitoring solution specifically tailored to Samarco's mine.

On GroundProbe's recommendation, Samarco have incorporated the use of five Slope Stability Radars into their new tailings dam monitoring strategy.



These radars are currently being utilised to detect any movement or instability at Santarém and Germano dams; with GroundProbe supplying two targeted, safety-critical, mobile systems (SSR-XT's) and three long-range, high resolution, fixed-deployment systems (SSR-SARx's).

This complete, tailor-made monitoring solution of Real Aperture Radar (RAR) and Synthetic Aperture Radar (SAR) technologies ensures the right mix of technology is being employed for the specific needs of Samarco's mine, ensuring its monitoring requirements are met.

“When monitoring tailings dams, typically the SSR-XT systems are placed closed to the dam wall in order to monitor the stability of targeted, safety-critical locations, such as tailing facilities or areas where known hazards have been identified.”

Antonio Rocha, Business Manager for Brazil, Peru and Colombia, GroundProbe.



“In addition, the SSR-SARx systems are used to detect any gradual deformation of the dams over extended periods of time,” said Mr Rocha.

“Since the release of the SSR-SARx system in 2015, GroundProbe is the only company in the world that offers all slope stability radar technologies; making us truly radar technology agnostic,” said Lachlan Campbell, GroundProbe’s VP of Marketing and Technology.

“Linked by our common software solution, SSR-Viewer, our complete suite of radar technologies allows us to generate tailored monitoring solutions which meet the needs of any customer or site-specific application.”

Samarco Mineração S.A Geologist, Samuel Ricardo Carvalho

Carneiro, said that Samarco’s risk reduction strategy reflects the site’s commitment to safety and best practice in terms of monitoring.

“We have invested heavily in the continued monitoring of the project, employing a wide range of monitoring solutions to ensure the stability of the dams,” said Mr Carneiro.

“Our radar operators unanimously agree... that GroundProbe’s high quality software solution, SSR-Viewer, [is]... unparalleled in terms of analysis and interpretation of slope monitoring data.

“GroundProbe is not just a provider, but a partner,” said Mr Carneiro.