



Client
Knight Piesold Consulting



Location
Navachab Gold Mine
Karibib, Namibia



Period
July - August 2022

Navachab Gold Mine, Karibib, Namibia – Seismic Cone Penetration Testing & Mostap Sampling

Knight Piésold Consulting contracted PMI for the execution of SCPTu & Mostap Sampling at Navachab Gold Mine in Namibia.

PMI subsequently mobilised across the border between South Africa and Namibia and executed the contract Scope of Works.

The Scope of Work included

- 5 No SCPTu - total depth 235.85m
- 22.81 hours of Dissipation testing
- 95 No SCPTu
- 15 No Mostap Samples

PMI Resources on Site

- PMI 200kN hydraulic CPT truck mounted rig
- LDV for crew mobilising

Methodology

CPTu

The PMI CPT machine is a 20 ton push capacity rig manufactured by Geomil with a 20 ton capacity Hydraulic Ram set. The whole assembly is mounted on a heavy duty trailer fitted with 4 outriggers used for

levelling. The assembly also has a system which is used to install 4 ground anchors to hold it place during the testing operation.

The tests were performed using the piezocone cone manufactured by Geomil. The piezocone has a 60° cone tip of surface area 1500mm², and a friction sleeve of surface area of 22500mm² and same diameter as the cone. Pore pressure filter is located at the U2 position.

Seismic Testing

To conduct an SCPTu, a normal CPTu is performed which is paused at regular intervals to generate a seismic waveform at the surface, a shear wave. The seismic waveform travels through the ground and is detected by the accelerometers in the Seismic Piezocone.

Mostap Sampling

Mostap samples were conducted using the same rig as the piezocone testing. The piezocone and electronic cabling was exchanged for a sampling cone fitted at the end of the rod string. The cone was inserted into the ground and advanced using the rig hydraulics to the start of the desired sampling depth. Once at the desired sampling depth, a wire string and hook were inserted down the rod string, until the hook latched on to the cone tip lock.

A sharp pull on the wire string disengaged the cone tip lock. Thereafter, the rod string was advanced a further 500mm, where a sample was collected within a plastic liner. The rod

string was retrieved and the plastic liner, containing the sample was extracted. End caps were placed on the ends of the sample tube and presented to the client.

Conclusion

The contract was executed within budget and on time.

