

PROJECT MANAGEMENT

Project Management

International

Cone Penetration Testing (CPT) at Wassa Mine

Client: Knight Piésold Ghana Limited
Location: Wassa Mine - Ghana
Period: October 2010

Cone Penetration Testing (CPT) at Wassa Mine

Knight Piésold Geotechnical Consulting Engineers were tasked with evaluating the embankment raising possibilities at a tailings storage facility for Wassa Mines Ltd.

In order to evaluate the options available for raising the facility and to gain the Environmental Protection Agency's approval, Knight Piésold engaged PMI to conduct a site investigation campaign consisting of cone penetration testing.

Scope of Works

The scope of works comprised the execution of 8 Electric Piezocone Penetration Tests (CPT's) to a maximum depth of 30m or refusal.

The Works

The tests were executed on the crest of the embankment, as near as possible to the downstream edge of the crest.

A 200KN Geomil penetrometer was used to carry out the tests. The rig is skid-mounted and equipped for being towed or pushed into position by bulldozer.

The procedure at every test location is as follows:

- A stable platform is prepared for the rig to be established on;
- The equipment is levelled for the commencement of testing;



- Rods are added in 1m lengths and advanced under hydraulic power at approximately 2 metres per second.



The electronic Piezocone fitted to the head of the rod string records a continuous log of the following parameters, with depth:

- Resistance of penetration of the cone tip (q_c)
- The frictional sleeve resistance (f_s)
- The pore water pressure (u_c)

Specialised software processes the electronic information to present geotechnical properties of the soils probed. Detailed CPT logs, including some interpretation, are generated for the client.

Conclusion

The CPT equipment was demobilised after successfully completing the campaign.