

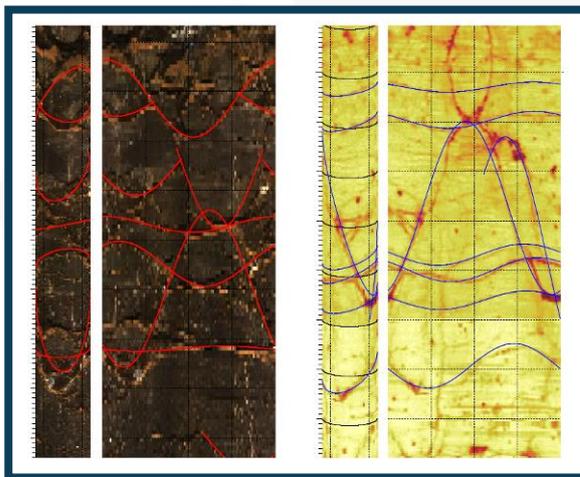
Ground Investigation

A31 Magherafelt Bypass

Causeway Geotech were appointed by the Central Procurement Directorate on the behalf of Transport NI to complete a Phase 3 Ground Investigation along the route of the proposed A31 Bypass to the east of Magherafelt.

The scope of the works included forty-two cable percussion boreholes, half of which were extended using rotary drilling techniques. The methods used on site, in combination with a range of laboratory analyses carried out in-house, allowed the detailed characterisation of ground conditions across the site, including:

- Sequence of alluvial and glacial deposits
- Properties/strength/compressibility of soils
- Nature of weathering through rock profile
- Strength/excavability of rock
- Stability of existing slopes
- Presence (or otherwise) of contamination



DOWNHOLE OPTICAL AND ACOUSTIC GEOPHYSICAL
SURVEYS CARRIED OUT BY BOREHOLE LOGGING
SOLUTIONS LTD



TRACK-MOUNTED COMACCHIO 405 ROTARY DRILLING
RIG

The site is a 6km route through undulating countryside, crossing several roads. Due to the low lying and soft nature of much of the site, Causeway Geotech employed a range of tracked and low ground bearing drilling equipment.

Works were carried out under the supervision of a Site Engineer from Causeway Geotech who liaised with the Client's Representative.

All forty-two boreholes were put down by Dando 2000 or 3000 light cable percussion soil boring rigs. Half of the boreholes were subsequently taken to completion through rock strata by rotary drilling. Geobor S coring was employed along with conventional coring methods.

Project Overview

- Geotechnical ground investigation completed over February to March 2015
- 42 no. cable percussion boreholes
- 21 no. rotary boreholes with standpipe installations
- Geotechnical and environmental sampling and testing
- Factual Reporting
- Zero incidents



UNDULATING TERRAIN WITH TOPSOIL STRIPPED REQUIRED
VERSATILE ALL-TERRAIN VEHICLES

Project Summary

The site operations were carried out under the supervision of a Site Engineer from Causeway Geotech who directed the experienced drilling crews on site. The works were conducted across a 6km long site with several different access points requiring regular movements of plant.

Superficial deposits across most of the site consisted glacial tills, with localised areas of alluvial clay, silt and sand identified by the drilling. The underlying bedrock in the area is the Antrim Lava Formation which consists of a sequence of basaltic lava flows. The strength and weathering of the basalt varies widely, from very weak highly weathered amygdaloidal basalt to strong unweathered homogenous basalt. Layers of palaeo-soils between the laterite are also common and can be several metres thick (as was found at one part of this site).

These variable strata are unpredictable and can only be delineated by a programme of accurate drilling, logging and testing of core such as that carried out by Causeway Geotech at Magherafelt.

The subsequent reporting phase, comprising a factual report, was also completed on schedule, thus completing another successful contract to the Client's satisfaction.



100% RECOVERY OF GLACIAL TILL USING GEOBOR S CORING