CASE STUDY
Eden Brows

The Contract

The site is situated on a landslip above the River Eden and below the Settle to Carlisle Railway Line at Eden Brows near Armathwaite, Cumbria. The site is underlain by Devensian Till overlying the Penrith Sandstone Formation and the Pennine Lower Coal Measures Formation. Boreholes were urgently required on the active slope failure to provide quality site data for the design of remediation measures to enable the re-opening of the railway line as soon as possible.

The Challenge

Eleven boreholes were required to be formed on the steeply sloping hillside between the river and the railway which contributed to the overall and vast amount of ground investigation works ongoing on site. The boreholes were to be installed with standpipes, piezometers and inclinometers. The ground conditions were very difficult with very soft access to the base of the slope. To facilitate access Storey Contracting constructed a substantial purpose built trackway comprising timber covered with Terram matting and imported roadstone. Once on the slope the conditions were again challenging being both wet and soft, and covered with branches and tree stumps.

The Solution

Geotechnical Engineering Ltd provided an award winning P60 slope climbing rig to safely and efficiently form the required boreholes. Due to the active nature of the landslip and poor ground conditions the rig was secured using plate anchors. The P60 rig provided quality dynamically samples and rotary core, along with carrying out insitu SPT testing to BS EN ISO 22476-3:2005+A1:2011 and Class 1 UT100 samples. The recovered samples and core provided quality material for detailed logging by an experienced engineering geologist.

The Result

By utilising the P60 rig the ground investigation successfully delivered quality data for remediation design. The use of the P60 slope climbing rig avoided the need for any other costly and time consuming access methods such as scaffolding. The recovered samples allowed detailed logging and quality material for high end geotechnical laboratory testing including ring shear, Young's modulus, Poisson's ratio and shear strength by direct shear.

Project Overview

Project Name:

Eden Brows

Project Type:

Rail – slope instability

Client Name:

Network Rail and Story Contracting

Date/Duration:

April 2016

CS0057

For further details, please contact: lyndon.barton@geoeng.co.uk
Or visit our website www.geoeng.co.uk

Geotechnical Engineering Limited, Centurion House, Olympus Park, Quedgeley, Gloucester. GL2 4NF
Tel: 01452 527743