



CASE STUDY

M60 J15-J16 Depression MP25/8

The Contract:

A depression of approximately 7m by 5m had been observed in the carriageway of the M60 motorway north east of Manchester. The settlement may have been caused by settlement of the embankment materials, mineshaft collapse or a crown hole from any shallow workings. The area is underlain by the Pennine Middle Coal Measures where there are six coal seams at shallow depth beneath the site.

A site investigation was required to determine the cause of the depression.

The Challenge:

Safety was paramount during this investigation, particularly due to the intrusive investigation into the Pennine Middle Coal Measures. An integrated site investigation was required to co-ordinate the works which initially comprised a Ground Penetrating Radar (GPR) survey to provide a targeted area to identify the final locations for the boreholes, quickly followed by a borehole investigation. The work was carried out during night time shifts within carriageway closures and included surveying to accurately locate the investigation positions, detailed logging of borehole samples to produce an accurate representation of the strata encountered, and geotechnical laboratory testing.

The Solution:

At tender stage Geotechnical Engineering carried out a risk assessment to determine the hazards associated with this work. Mitigation methods and procedures were then allowed for and used during the site investigation. A Coal Authority permit was provided by the Client permitting intrusive investigation into the Coal Measures Strata. The drilling work was carried out using a Pioneer rig capable of dynamic sampling and rotary coring using water flush. The rig was fitted with portable alarms to monitor for any escape of ground gases. Once operational on site the crew were harnessed to the permanent infrastructure using lanyards and fall arrestors in case there was a sudden ground collapse.

The project was completed to the satisfaction of the Client and Engineer.

Project Overview

Project Name:

M60 Depression

Project Type:

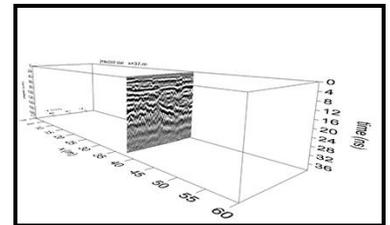
Road

Client Name:

Highways England & BBMMJV

Date/Duration:

June 2016



CS0064

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