

CCG-C-25-15207

**GROUND STABILITY ASSESSMENT
FOR LAND AT THE FORMER
PRESCOT POLICE STATION
DERBY STREET
PRESCOT
MERSEYSIDE
L34
MARCH 2025**

Prepared for:

PRIMA GROUP

Telephone: 07921 814 416

By:

CC GEOTECHNICAL LIMITED

Unit 1

Deltic Way

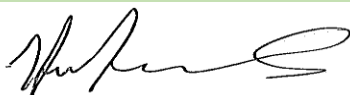
Knowsley Industrial Estate

L33 7BA

Telephone: 0151 545 2750

Facsimile: 0151 548 7892

DOCUMENT CONTROL FORM

Client:	Prima group
Project Title:	Ground Stability Assessment for land at the former Prescott Police Station, Derby Street, Prescott, Merseyside, L34
Reference Number:	CCG-C-25-15207
Main Author:	Anthony Gerrard BSc (Hons) MSc FGS
Signature:	
Reviewed by:	Chris Bolan CEng MICE CEnv
Signature:	
Approved for Issue by:	Chris Bolan CEng MICE CEnv
Signature	
For and behalf of CC GEOTECHNICAL LTD	
Date:	March 2025
Revision Number:	03
Comments:	
Status:	Final
Distribution:	Prima group

This document has been prepared by *CC GEOTECHNICAL LTD* within the terms of the contract, scope of work, and resources agreed in writing with the client. The limitations of liability of *CC GEOTECHNICAL LTD* for the contents of this document have been agreed with the Client, as set out in the terms and conditions of offer and related contract documentation.

This document is intended for the sole use of the client indicated above and *CC GEOTECHNICAL LTD* accepts no responsibility of whatever nature to third parties to whom this document or any part of this document is made known. Any such party relies upon that information at their own risk.

The findings and opinions provided in this document are made in good faith and are subject to the limitations imposed by employing site assessment methods and techniques, appropriate to the time of investigation and within the limitations and constraints defined in this document. The findings and opinions are relevant to the dates when the assessment was undertaken but should not necessarily be relied upon to represent conditions at a substantially later date. In particular, seasonal groundwater levels, with the effects of precipitation, may affect the conditions found during the investigation. The report should be read in conjunction with the Notes on Limitations included in Appendix J.

Where opinions expressed in this report are based on current available guidance and legislation, no liability can be accepted by *CC GEOTECHNICAL LTD* for the effects of any future changes to such guidelines and legislation. Additional information, improved practices, new guidance, changes in legislation, or amendments to design proposals, may necessitate this report having to be reviewed in whole or in part after that date.

Factual data has largely been obtained from enquiries with third parties, the results of which are relied on unless indicated to be inaccurate by contradictory information. Further assessment, investigation, construction activities, could not have been taken into account in the preparation of the report. Where such information might impact upon stated opinions, *CC GEOTECHNICAL LTD* reserves the right to modify such opinions expressed herein.

The findings and opinions conveyed, via this report, are based on information obtained from a variety of sources as detailed in this report, and which *CC GEOTECHNICAL LTD* assumes to be reliable, but has not been independently confirmed. Therefore, *CC GEOTECHNICAL LTD* cannot and does not guarantee the authenticity or reliability of third party information it has referred to.

CC GEOTECHNICAL LTD possesses a non-exclusive and non-transferable Ordnance Survey Licence, but does not possess any right to sub-license any of the rights granted by this licence to any party. Under the terms of *CC GEOTECHNICAL LTD*'s Ordnance Survey Licence, copying of figures containing Ordnance Survey data or using figures for any purpose other than as part of this report is not permitted.

1.0 INTRODUCTION

CC GEOTECHNICAL LIMITED (CCG) is providing consultancy services to **PRIMA GROUP** (the *Client*) in connection with the proposed redevelopment of land at the former Prescott Police Station, Derby Street, Prescott, Merseyside, L34.

It is understood that the former Police Station building fronting on to Derby Street is to be retained and modified / converted for residential use.

It is further proposed that the land to the rear of the Police Station is to be developed by the construction of 6nr x 2.5-storey town houses constructed in traditional brick elevations under pitched roofs. The development will incorporate an access road, off-road car parking facilities and private gardens.

The existing and proposed site layouts are shown on **KWL Architects** architectural drawings contained herein.

The site lies within the administrative jurisdiction of **KNOWSLEY METROPOLITAN BOROUGH COUNCIL**.

It is known that the site is situated within a historical coal mining area where it is believed shallow deposits of coal (<30mbgl) may have been extracted in the past using underground mining methods. Hence the aims of this ground investigation are to probe the underlying bed rock formations for the presence of historical shallow mine workings and to assess the physical characteristics of the underlying ground, and to provide suitable remedial recommendations, if required.

2.0 SITE LOCATION

The site is located immediately to the north of Derby Street, Prescott, L34 3LG as shown on **CCG** Drawing No. CCG-C-25-15207-1 contained herein.

The **ORDNANCE SURVEY** coordinates for the approximate site centre are 346312 392867.

It stands at an approximate elevation of c.72m Ordnance Datum.

3.0 PREVIOUS STUDIES

The development was the subject of the following reports:

1. Phase I Geoenvironmental Report, prepared by **CCG** under Report Reference No. CCG-C-21-12516, dated September 2021
2. Phase II Geoenvironmental Report, prepared by **CCG** under Report Reference No. CCG-C-21-12518, dated September 2021
3. Coal Mine Risk Assessment Report (CMRA), prepared by **CCG** under Report Reference No. CCG-C-21-12517, dated September 2021

The above referenced Phase I Desk Study and CMRA Reports states that the site and the surroundings area are within an area where it is believed that shallow underground coal mining may have occurred in the past.

With regard to the above referenced Phase II Geoenvironmental Report, fieldworks associated with this report comprised the sinking of 6nr light dynamic sampling boreholes using a Dando Terrier 2000 rig and associated tools and the installation of gas – groundwater monitoring standpipes at 3nr borehole positions.

The site investigation confirmed the presence of bituminous paving and associated sub-base overlying made ground deposits generally comprising grey / brown clayey sands and gravel extending to depths varying between 0.15m - 0.7mbgl. The sequence thereafter continues in natural drift deposits comprising loose silty, locally gravelly, sands and soft becoming firm brown / grey clay deposits extending to depths varying between 1.5m – 2mbgl. Thereafter, the sequence continued in grey weathered mudstone locally interbedded with thin intact coal, recovered as firm becoming stiff clay and locally as dense sands and gravel, proven to 3mbgl.

A gas monitoring programme comprising 6nr rounds over a 3-month period confirmed a gas screening value of 0.0001/hr for CO₂, and <0.0001/hr for CH₄. and hence the site complies with Characteristic Situation 1 (CS1) and based on this classification gas protection measures are not required.

With regard to the CMRA (Ref 3 above), a **COAL AUTHORITY (CA)** Consultants Mining Report (Report Reference No. 51002654128001, dated September 2021) appended within the CMRA contains records regarding the presence of an historical mine shaft (**CA** Reference No. 346392-008) within a 50m radius of the site. The **CA** coordinates for this feature are 346350, 392892. It is not known if the shaft was ever treated, and/or capped off, in the past.

After entering the above shaft coordinates in recognised computer aided design (CAD) software programme, it was calculated that the shaft is located c. 15.47m to the east of the site, and within the footprint of an unspecified outbuilding placed within the rear garden area at No 7 Stanley Crescent.

Taking into account the potential for the presence of shallow (<30mbgl) underground coal mining activities, the CMRA concluded that a ground stability assessment should be undertaken at the site using rotary boring methods to probe for the presence / absence of mine related voids, broken ground and mine related gases, and to determine the consequent risks of surface instability.

It must be borne in mind that the discussions presented hereunder should be read in conjunction with the above referenced reports and with **CCG** Notes on Limitations contained within Appendix E.

4.0 DOCUMENTED GEOLOGY & HYDROGEOLOGY

4.1 Introduction

The geology of the site is summarised on **BRITISH GEOLOGICAL SURVEY (BGS)** Sheet No.097 Runcorn (2007): 1:50000 Scale: Solid and Drift Editions.

4.2 Solid & Drift Geology.

The **BGS** drift mapping data indicates that the site is devoid of natural drift cover. However, given the presence of natural drift deposits comprising impermeable diamicton (boulder clay) of glacial origin (*Late-Quaternary Epoch - Devensian Age*) within the local area, there is a potential for the presence of a thin veneer of unrecorded drift deposits to be present at this site.

The documented solid geology comprises the Pennine Lower Coal Measures Formation (*formerly the Lower Coal Measures*) of the Pennine Coal Measures Group comprising interbedded argillaceous mudstone, siltstones, fluvial sandstones, and productive coal measure, of the Upper Carboniferous Period (*Silesian: Westphalian A: Langsettian Age*).

The study site is located within an area where ancient earth movements have caused significant displacements and miss-alignments of the underlying country rock and nearby associated coal seams. Hence the general dip of the solid geology within the surrounding area is seen on the **BGS** mapping data is seen to vary between 8° -30° in a south / south-westerly direction.

There are numerous geological lines of weakness (*i.e. faults, coal seams, etc.*) within the surrounding area, the nearest being geological fault which extends on a north – south alignment immediately to the east of the study site. its downthrow is seen to be within a southwesterly direction.

4.3 Radon

The '*Indicative Atlas of Radon in England and Wales*' (Miles. J.C.H *et.al*, 2007) Map 13 '*Northern Welsh Marches and Liverpool*', shows the site to be situated within an area where it is believed that less than 1% of the properties within the area are affected by Radon and therefore no Radon Protection Measures will be required for new structures in contact with the ground.

Notwithstanding the above radon classification, current radon mapping (<https://www.ukradon.org>) (accessed February 2025) shows the site to be within an area where it is believed that between 3-5%.of the properties within the area are affected by Radon, consequently Basic Radon protective measures are required for all new buildings in contact with the ground.

5.0 MINING INVESTIGATION FIELDWORK

5.1 Introduction

The primary objective of this investigation was to probe for the presence of mining related underground workings which could give rise to surface instability. The fieldwork was undertaken in March 2025 and was planned in accordance with BS10175: 2011, EuroCode 7: Part 2, and carried out in accordance with BS10175: 2011 and BS5930: 2015 insofar as they related to the scope of the investigation.

Prior to undertaking the below scope of works, a **CA** permit granting permission to drill, was obtained by **CCG** (Permit Reference No. 29536, dated February 2025, presented in Appendix B).

The scope of works comprised the following:

- The manual excavation of 3nr service avoidance pits
- The advancement of each borehole starter pit using rotary open-hole drilling methods deploying water flush in the bedrock (coal bearing) strata, each extending to 35mbgl
- The monitoring of boreholes for mine gas emissions during drilling
- The grouting of boreholes on completion of works

The locations of the exploratory borehole positions are as annotated on **CCG** Drawing No. CCG-C-25-15207-3 '*Site Location Plan*' contained within Appendix A.

5.2 Borehole Drilling

Rotary open hole drilling was carried out using a track mounted '*Mazzenza MI3*' rotary drilling rig deploying 90mm diameter drilling equipment and water flush. Rate of drilling progress and flush returns were continuously monitored for evidence of voids or loose/broken ground.

Borehole logs annotated with observed ground conditions are presented in Appendix C.

Each borehole was continuously monitored for mine gas emissions (O₂, CH₄, and CO₂) at regular depth increments during the site investigation using a GA2000 gas analyser, the calibration certificate of which is contained in Appendix D.

6.0 OBSERVED STRATIGRAPHY

Ground conditions encountered during this investigation are as follows:

Bituminous paving and associated sub-base extending typically to 0.4mbgl

Overlying

Natural drift deposits comprising brown slightly gravelly slightly sandy silty clay, proven to 0.8m > 1.5mbg

Overlying

Local (BH3) thin surface coal (150mm) on brown varying to grey weathered becoming competent mudstone proven to 25.1m > 26.1m

Black intact coal deposits were encountered at depths varying between 26m > 27.8mbgl. Thereafter the sequence

continued in black becoming grey mudstone with occasional thin siltstone horizons, proven to 35mbgl

No loss of flush was encountered at any borehole position, and hence no mine related voids and/or broken ground detected.

No mine gas emissions were recorded at any borehole location.

Slight ingress of groundwater recorded at depths varying between 2.5m – 12mbgl.

7.0 **DISCUSSION & CONCLUSIONS**

7.1 **Risk of Surface Instability Associated with Shallow Mining**

The assessment of the risk of surface instability is commonly based on the application of the so called 10:1 rule, where the risk of collapse is considered negligible if the ratio of the thickness of competent rock cover to the thickness of any collapsible section is greater than 10. The presence of any deep, competent, deposits of natural drift cover may also be considered in the assessment.

This investigation has proven the presence of shallow natural clay deposits extending to 0.8m > 1.5mbgl, overlying the weathered becoming competent bed rock formations comprising brown varying to grey mudstone to 25.1m > 26.1m, which is locally overlain by thin (150mm thick) highly weather coal deposits at borehole BH03, Thereafter black intact coal deposits were encountered at depths varying between 26m > 27.8mbgl before continuing in black becoming grey mudstone with occasional thin siltstone horizons, proven to 35mbgl

No loss of flush was encountered at any borehole position, and hence no mine related voids and/or broken ground detected.

No mine gas emissions were recorded at any borehole location.

Using CIRIA guidance, the evidence of the investigation is that there is sufficient intact bedrock to prevent any upward migration of any future collapses below 35mbgl. This investigation has not detected any voided and/or broken ground within 35m of existing ground levels, and for void migration (Hv) to rockhead level from a theoretical collapse at >35m below rockhead level arising from a conical collapse mode, the required collapsible void thickness may be calculated by:

$$N, bH_v = nt / (B-1)$$

Where

n = 3 for a conical collapse mode

t = extracted seam thickness

B = bulking factor – assumed 1.3 for rock

In this case, a collapse of a void of 3m thickness at depth 30mbgl or 4m thickness at 40mbgl would be required, and this is discounted as a conceivable possibility, hence it is

therefore concluded that the site is safe for development in respect of coal mining related risks.

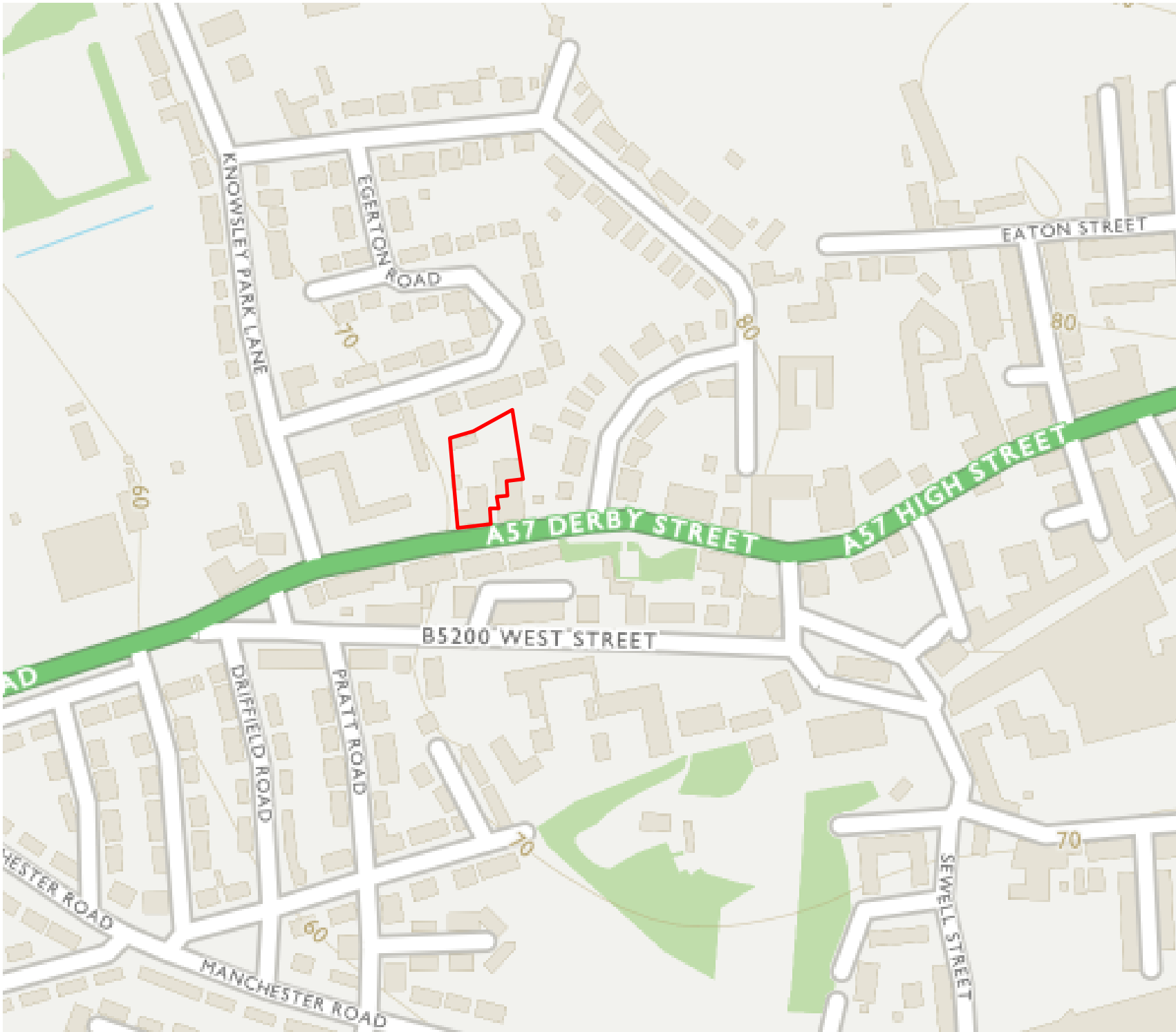
7.2

Risk of Instability Associated with Nearby Mine Shaft

With regards to the proximity of the shaft to the eastern site boundary and its potential zone of influence, after a review of the above referenced calculations, site plans etc. and in accepting the CA coordinates, then in accordance with Ciria C758D 'Abandoned Mine Workings Manual' (2019) Section 5.2.3, Figure 5.1, for a theoretical collapse at the surface of an un-capped / untreated shaft with c. 4.5m of natural drift cover overlying competent bedrock, a zone of influence for a hypothetical collapse at the shaft surface is calculated to be in the order of 5.75m. Thus, and as illustrated on CCG Drawing No. CCG-C-25-15207-3, this would place the western edge of an exclusion, or no build zone, c. 9.7m away from the eastern site boundary and wholly within the grounds of No 7 Stanley Crescent.

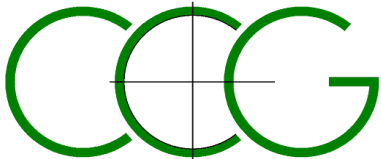
In addition to the above, and as a precautionary measure, since the shaft is recorded from historical sources and that its actual location has not been physically identified, after applying a potential error radius of 10m (±) to its recorded location, the western edge of the 10m radius when applied still places the zone of influence c. 5.5m outside the eastern site boundary, thus, based on this assessment, it is concluded that the risk of this feature impacting on the eastern section of the site is Low.

APPENDIX A: DRAWINGS



DO NOT SCALE

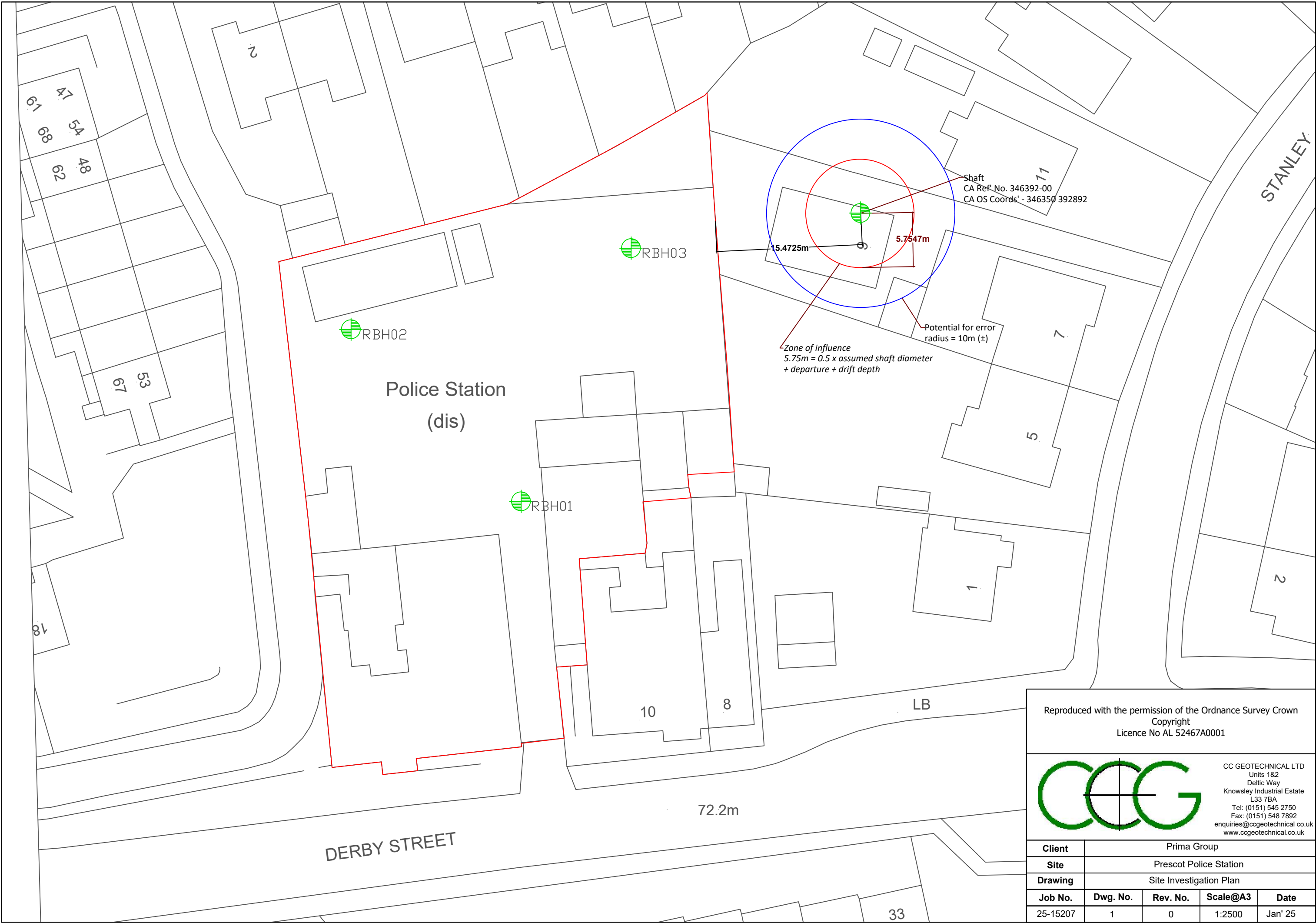
Notes: Study Site



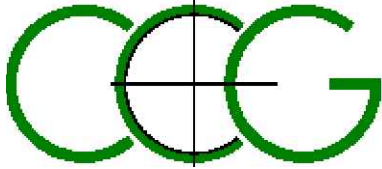
CC GEOTECHNICAL LIMITED
UNIT 1 DELTIC WAY
KNOWSLEY INDUSTRIAL ESTATE
LIVERPOOL
L33 7BA
0151 545 2750

Client: Prima Group	
Project: Former Prescott Police Station, Derby Road	
Title: Aerial Photograph	
Scale: NTS	Issue: 01
Drawn by: DG	Date: March 2025
Project No. CCG-C-25-15207	Drawing No. 01

© CC GEOTECHNICAL LIMITED



Reproduced with the permission of the Ordnance Survey Crown Copyright
Licence No AL 52467A0001

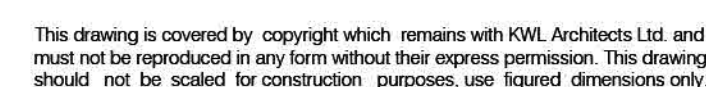
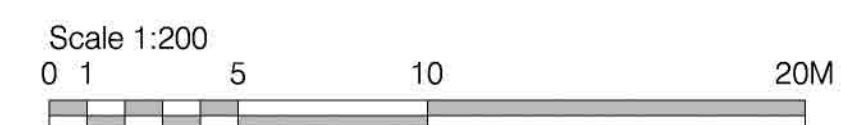


CC GEOTECHNICAL LTD
Units 1&2
Deltic Way
Knowsley Industrial Estate
L33 7BA
Tel: (0151) 545 2750
Fax: (0151) 548 7892
enquiries@ccgeotechnical.co.uk
www.ccgeotechnical.co.uk

Client	Prima Group				
Site	Prescot Police Station				
Drawing	Site Investigation Plan				
Job No.	Dwg. No.	Rev. No.	Scale@A3	Date	
25-15207	1	0	1:2500	Jan' 25	



- Scale 1:200
- 0 1 5 10 20M
-



Client		PRIMA	
Project		FORMER PRESCOT POLICE STATION, DERBY STREET, PRESCOT	
Drawing		PROPOSED SITE PLAN	
Scale	Date	Drawn	Checked
1:200 @ A1	14.02.2023	JT	RJS
Job No.	Dwg No.	Revision	Status
5388	PL10		



APPENDIX B: PERMIT TO DRILL



Mining
Remediation
Authority

Permit to Enter or Disturb Mining Remediation Authority Interests

Permit 29536

Name and Address of Permit Holder:

*Prima Group
8 Columbus Quay
Liverpool
Merseyside
L3 4DB*

Site Location:

*Former Prescott Police Station
Derby Street
Prescot
L34 3LG*

This certificate hereby grants the above named Permit Holder a Permit to carry out:-

Ground investigation by three boreholes to 40m within the Authority's interests at the identified site location above as shown on the Grant Permit Boundary (overleaf) for the period of **12 months** from the granted date shown below. *The granting of this Permit does not constitute advice given by the Authority in relation to the proposed operations. It is the Permit Holder's responsibility to obtain appropriate health, safety, environmental, technical and legal advice.*

Conditions:

- *Manned entry (i.e.) into mine entries/workings) is strictly prohibited.*
- *Water flush*
- *Gas Monitoring CO, CH₄, CO₂, O₂, H₂S at borehole and rig*
- *Operators undertaking the work must be in possession of this certificate and the Permit boundary plan at the time of works*
- *Appropriate borehole sealing without delay and to withstand site level changes*

Signed: David Wilson Granted Date: 28th February 2025

For and on behalf of the Mining Remediation Authority

Nominated Representative: David Wilson, Permitting Manager;

Mining Remediation Authority, Permitting Office, 200 Lichfield Lane, Mansfield, Notts, NG18 4RG

Tel: 01623 637450; E-Mail: permissions@coal.gov.uk

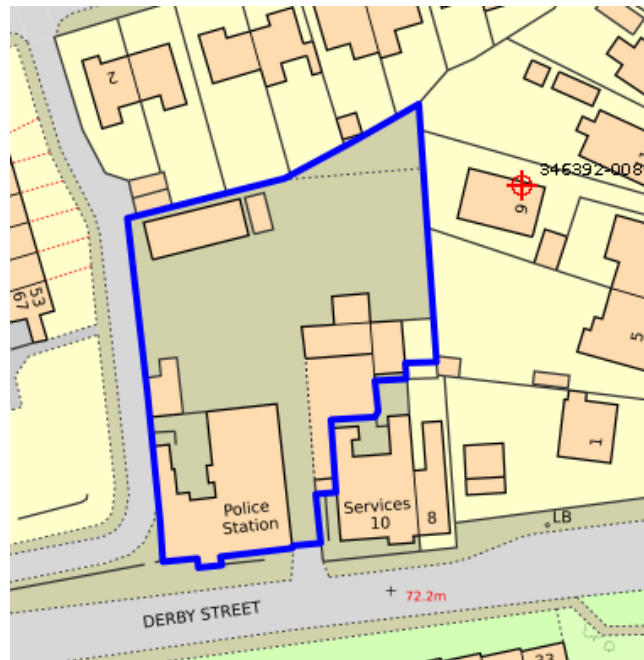


Mining
Remediation
Authority

Granted Permit Boundary

Permit Ref: 29536

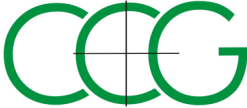
Permit Boundary:



These maps are reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationary Office. © Crown Copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Mining Remediation Authority. Licence No: AC0000820577. [216]

The Mining Remediation Authority is the trading name of the Coal Authority ('TCA') established pursuant to Section 1 of the Coal Industry Act 1994, of 200 Lichfield Lane, Berry Hill, Mansfield, Nottinghamshire, NG18 4RG. The Coal Authority remains the legal name of the Authority

APPENDIX C: BOREHOLE LOGS

	Contract Name: Prescot Police Station				Client: Prima Group				Borehole ID: BH01				
	Contract Number: CCG-C-25-15207		Date Started: 18/03/2025		Logged By: TG		Checked By: CB		Status: FINAL				
	Easting: 346313.9		Northing: 392861.4		Ground Level: 71.30mAOD		Plant Used: Mazzenza MI3		Rig Crew: PC/AS				
Rotary Open Drilling Log										Sheet 1 of 4			
										Scale: 1:50			
Weather: Dry				Termination:									
Samples & In Situ Testing						Strata Details						Groundwater	
Depth	TCR	SCR	RQD	Fracture Spacing	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation
						71.23	0.07		TARMAC paving Grey slightly silty sandy GRAVEL (sub-base). Gravel is fine to coarse angular to subangular of limestone and sandstone (MADE GROUND) Brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to coarse of various angularities and lithologies			1	
						70.80	0.50						
							(1.00)						
						69.80	1.50		Brown weathered MUDSTONE			2	
							(3.00)						
						66.80	4.50		Hard grey MUDSTONE with occasional thin (<100mm) bands of black carbonaceous shale			5	
												3	
												4	
												6	
												7	
												8	
												9	
												10	
Continued next sheet													
Start & End of Shift Observations						Borehole Diameter		Casing Diameter		Remarks:			
Date	Time	Depth (m)	Casing (m)	Water (m)		Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1hr hand digging CAT scanning borehole starter pit GL-1.2mbgl No flush loss / No disturbed ground encountered			
						35.00	90	35.00	90				
Flush Information						Water Strikes							
						Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks		
Top (m)	Base (m)	Flush Type	Return	Flush Colour		3.20	3.20		0		Slow ingress		
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %													
CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com													



Contract Name:	Prescot Police Station
----------------	------------------------

Client:	Prima Group
---------	-------------

Borehole ID:	BH01
--------------	------

Contract Number:
CCG C 25 15307

Date Started: 18/03/2025

Logged By:	TG
------------	----

Checked By:	CB
-------------	----

Status:	FINAL
---------	-------

Sheet 2 of 4

Rotary Open
Drilling Log

Easting:	346313 9
----------	----------

Northings:	392861 4
------------	----------

Ground Level:	71.30mAOD
---------------	-----------

Plant Used:	Mazzenza MI3
-------------	--------------

Rig Crew:	PC/AS
-----------	-------

Scale: 1:50

Weather: Dry

Termination:

Samples & In Situ Testing

Strata Details

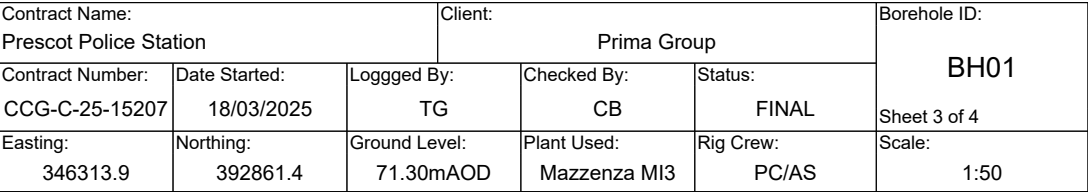
Groundwater

Depth	TCR	SCR	RQD	Fracture Spacing	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
									Hard grey MUDSTONE with occasional thin (<100mm) bands of black carbonaceous shale		
										11	
										12	
										13	
										14	
							(21.20)			15	
										16	
										17	
										18	
										19	
										20	
									Continued next sheet		

Continued next sheet

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)		
					35.00	90	35.00	90		
									1hr hand digging CAT scanning borehole starter pit GL-1.2mbgl No flush loss / No disturbed ground encountered	
									Water Strikes	
					Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
					3.20	3.20		0		Slow ingress
Flush Information										
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Interval	Type	Use (m)	
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %										
CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com										

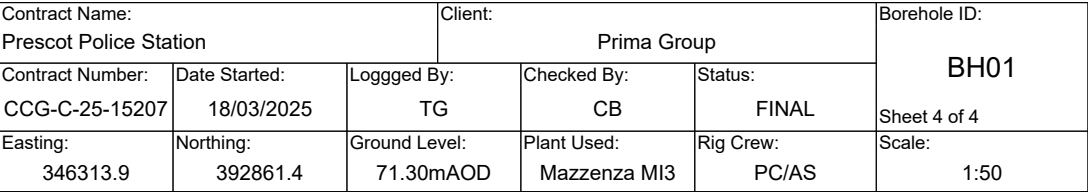
CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com



Termination:

Samples & In Situ Testing						Strata Details						Groundwater	
Depth	TCR	SCR	RQD	Fracture Spacing	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation
									Hard grey MUDSTONE with occasional thin (<100mm) bands of black carbonaceous shale				

[illegible]



Termination:

[illegible]

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1hr hand digging CAT scanning borehole starter pit GL-1.2mbgl No flush loss / No disturbed ground encountered					
					35.00	90	35.00	90						
									Water Strikes					
									Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
									3.20	3.20		0		Slow ingress
Flush Information					Top (m) Base (m) Flush Type Return Flush Colour Top (m) Base (m) Seepage Type Dis (mm)									
									Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %					
CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com														



Contract Name:	Prescot Police Station
----------------	------------------------

Client:	Prima Group
---------	-------------

Borehole ID:	BH02
--------------	------

Contract Number:
CCG-C-25-15207

Date Started: 17/03/2025

Logged By:	TG
------------	----

Checked By:
CB

Status:	FINAL
---------	-------

Sheet 1 of 4

Rotary Open
Drilling Log

Easting:	346295.9
----------	----------

Northing:	392879.6
-----------	----------

Ground Level:	70.87mAOD
---------------	-----------

Plant Used:	Mazzenza MI3
-------------	--------------

Rig Crew:	PC
-----------	----

Scale: 1:50

Weather: Dry

Termination:

Samples & In Situ Testing

Strata Details

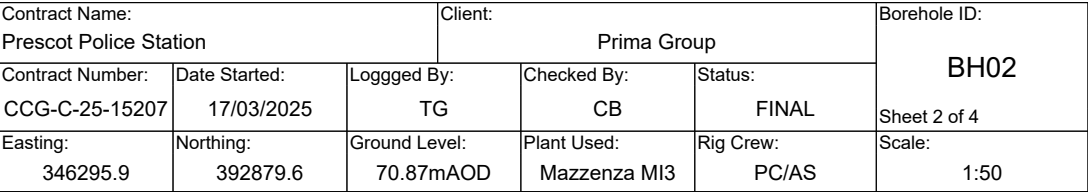
Groundwater

Depth	TCR	SCR	RQD	Fracture Spacing	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
						70.67	0.20		TARMAC paving		
						70.47	0.40		Grey slightly silty sandy GRAVEL (sub-base). Gravel is fine to coarse angular to subangular of limestone and sandstone		
							(0.40)		(MADE GROUND)		
						70.07	0.80		Brown slightly gravelly sandy silty CLAY. Gravel is fine to coarse of various angularities and lithologies		
									Weathered brown varying to grey MUDSTONE	1	
										2	
										3	
										4	
						66.77	4.10		Hard grey locally dark grey MUDSTONE with occasional thin siltstone horizons	5	
										6	
										7	
										8	
										9	
										10	
									Continued next sheet		

Continued next sheet

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)		
					35.00	90	35.00	90		
									1hr hand digging CAT scanning borehole starter pit GL-1.2mbgl No flush loss / No disturbed ground encountered	
					Water Strikes					
					Strike (m)	Casing (m)	Sealed (m)	Time (mins)		Rose to (m)
					12.00	12.00		0		Slight ingress
Flush Information										
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Sealed (m)	Time (mins)		
					Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %					
					CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com					

CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com



Termination:

Samples & In Situ Testing						Strata Details				Groundwater	
Depth	TCR	SCR	RQD	Fracture Spacing	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
							(21.00)		Hard grey locally dark grey MUDSTONE with occasional thin siltstone horizons		
										11	
										12	
										13	
										14	
										15	
										16	
										17	
										18	
										19	
										20	
Continued next sheet											

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1hr hand digging CAT scanning borehole starter pit GL-1.2mbgl No flush loss / No disturbed ground encountered					
					35.00	90	35.00	90						
									Water Strikes					
									Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
									12.00	12.00		0		Slight ingress
Flush Information					Top (m) Base (m) Flush Type Return Flush Colour Top (m) Base (m) Seepage Type Dis (mm)									
									Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %					
CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com														



Contract Name:	Prescot Police Station
----------------	------------------------

Client:	Prima Group
---------	-------------

Borehole ID:	BH02
--------------	------

Contract Number:
CCG-C-25-15207

Date Started: 17/03/2025

Logged By:	TG
------------	----

Checked By:	CB
-------------	----

Status:	FINAL
---------	-------

Sheet 3 of 4

Rotary Open
Drilling Log

Easting:	346295.9
----------	----------

Northing:	392879.6
-----------	----------

Ground Level:	70.87mAOD
---------------	-----------

Plant Used:	Mazzenza MI3
-------------	--------------

Rig Crew:	PC/AS
-----------	-------

Scale: 1:50

Weather: Dry

Termination:

Samples & In Situ Testing

Strata Details

Groundwater

Depth	TCR	SCR	RQD	Fracture Spacing	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
									Hard grey locally dark grey MUDSTONE with occasional thin siltstone horizons		
										21	
										22	
										23	
										24	
						45.77	25.10		Black intact COAL	25	
							(0.90)				
						44.87	26.00		Hard black becoming grey MUDSTONE	26	
										27	
										28	
										29	
										30	
									Continued next sheet		

Continued next sheet

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)		
					35.00	90	35.00	90		
Flush Information					Water Strikes					
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
					12.00	12.00		0		Slight ingress
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %										
CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com										

CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com



Contract Name:	Prescot Police Station
----------------	------------------------

Client:	Prima Group
---------	-------------

Borehole ID:	BH02
--------------	------

Contract Number:
CCG-C-25-15207

Date Started: 17/03/2025

Logged By:	TG
------------	----

Checked By:	CB
-------------	----

Status:	FINAL
---------	-------

Sheet 4 of 4

Rotary Open
Drilling Log

Easting:	346295.9
----------	----------

Northings:	392879.6
------------	----------

Ground Level:	70.87mAOD
---------------	-----------

Plant Used:	Mazzenza MI3
-------------	--------------

Rig Crew:	PC/AS
-----------	-------

Scale: 1:50

Weather: Dry

Termination:

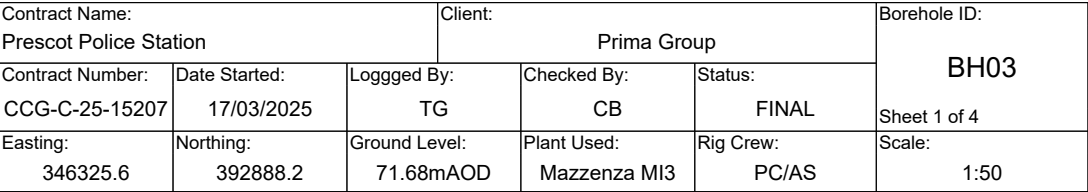
Samples & In Situ Testing

Strata Details

Groundwater

[illegible]

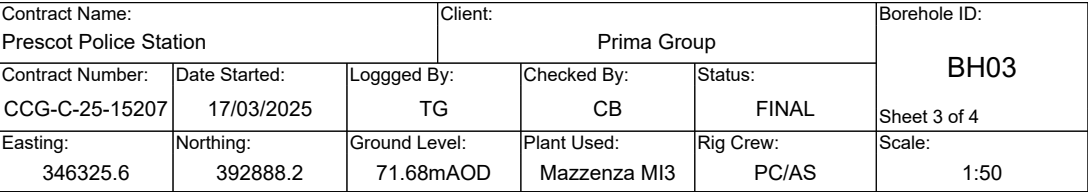
Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1hr hand digging CAT scanning borehole starter pit GL-1.2mbgl No flush loss / No disturbed ground encountered					
					35.00	90	35.00	90						
					Water Strikes									
					Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks				
					12.00	12.00		0		Slight ingress				
Flush Information					Top (m)		Base (m)		Flush Type		Return		Flush Colour	
Top (m)	Base (m)	Flush Type	Return	Flush Colour										
										Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %				
CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com														



Termination:

Samples & In Situ Testing						Strata Details				Groundwater	
Depth	TCR	SCR	RQD	Fracture Spacing	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
									TARMAC paving	1	
						71.28	(0.80)				
						70.88	0.80		Grey slightly silty sandy GRAVEL (sub-base). Gravel is fine to coarse angular to subangular of limestone and sandstone (MADE GROUND)		
							(0.90)		Brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to coarse of various angularities and lithologies		
						69.98	1.70		Weathered black intact COAL		
						69.73	1.95		Weathered grey MUDSTONE		
									2		
										3	
										4	
										5	
										6	
										7	
										8	
										9	
										10	
									Continued next sheet		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks: 1hr hand digging CAT scanning borehole starter pit GL-1.2mbgl No flush loss / No disturbed ground encountered Water Strikes Strike (m) Casing (m) Sealed (m) Time (mins) Rose to (m) Remarks 2.50 2.50 0 Slow ingress Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in % CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	
					35.00	90	35.00	90	
Flush Information					Top (m)	Base (m)	Interval (m)	Type	Dia (mm)
Top (m)	Base (m)	Flush Type	Return	Flush Colour					



Termination:

Samples & In Situ Testing						Strata Details				Groundwater	
Depth	TCR	SCR	RQD	Fracture Spacing	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
									Hard grey locally black MUDSTONE with occasional thin (<100mm) bands of black carbonaceous shale		
										21	
										22	
										23	
										24	
										25	
						45.58	26.10		Black intact COAL	26	
							(1.70)			27	
						43.88	27.80		Black becoming grey, locally brown MUDSTONE with occasional thin siltstone horizons	28	
										29	
									Continued next sheet	30	

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:		
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)			
					35.00	90	35.00	90			
Flush Information					Water Strikes				1hr hand digging CAT scanning borehole starter pit GL-1.2mbgl No flush loss / No disturbed ground encountered		
					Strike (m)	Casing (m)	Sealed (m)	Time (mins)		Rose to (m)	Remarks
					2.50	2.50		0			Slow ingress
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Ingress Type	Dia (mm)			
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %											
CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com											



Contract Name:	Prescot Police Station
----------------	------------------------

Client:	Prima Group
---------	-------------

Borehole ID:	BH03
--------------	------

Contract Number:
CCG-C-25-15207

Date Started:
17/03/2025

Logged By:	TG
------------	----

Checked By:	CB
-------------	----

Status:	FINAL
---------	-------

Sheet 4 of 4

Rotary Open
Drilling Log

Easting:	346325.6
----------	----------

Northings:	392888.2
------------	----------

Ground Level:	71.68mAOD
---------------	-----------

Plant Used:	Mazzenza MI3
-------------	--------------

Rig Crew:	PC/AS
-----------	-------

Scale: 1:50

Weather: Dry

Termination:

Samples & In Situ Testing

Strata Details

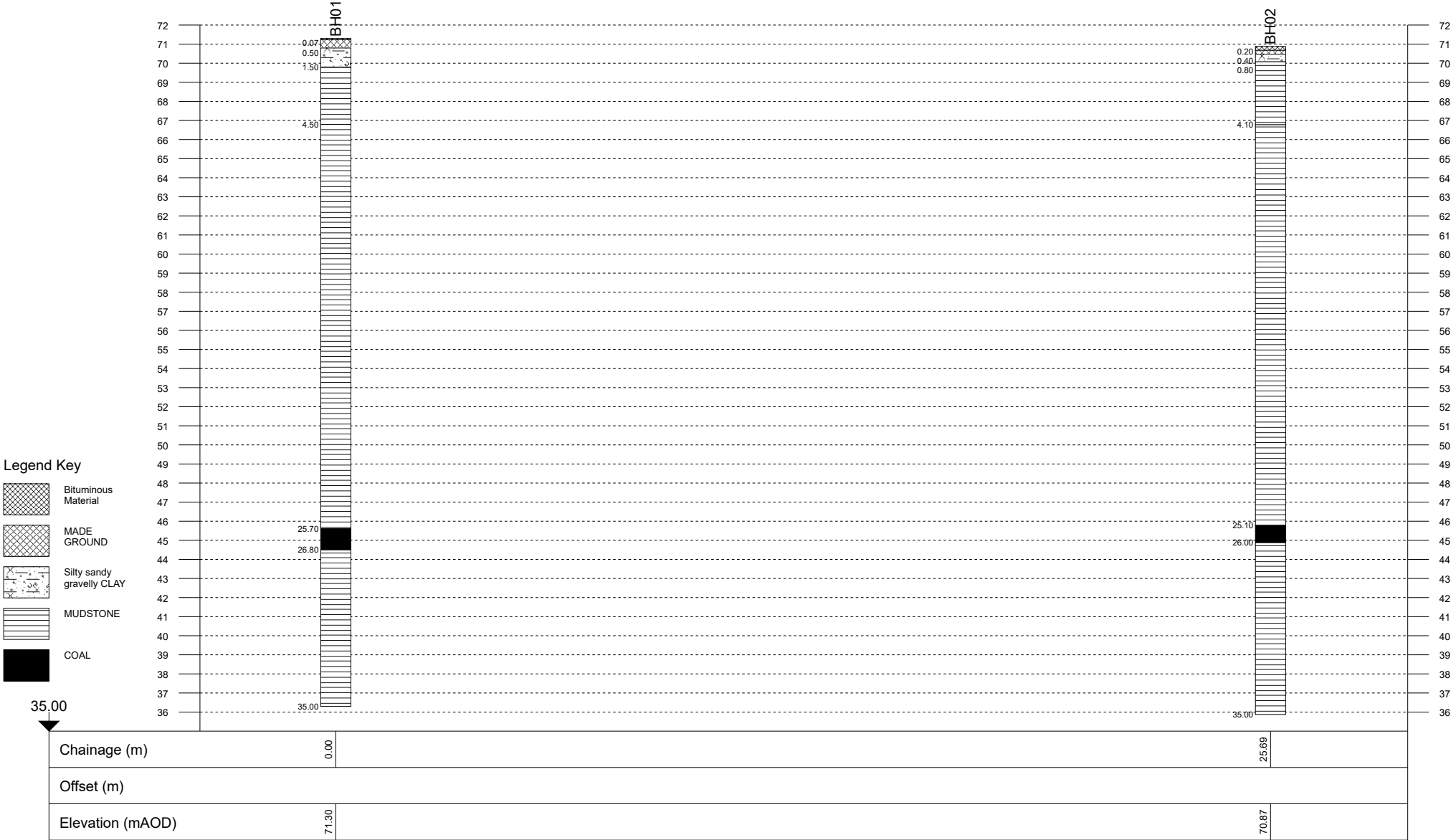
Groundwater

[illegible]

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)		
					35.00	90	35.00	90		
					Water Strikes					
					Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
					2.50	2.50		0		Slow ingress
Flush Information										
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Interval	Type	Use (m)	
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %										
CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com										

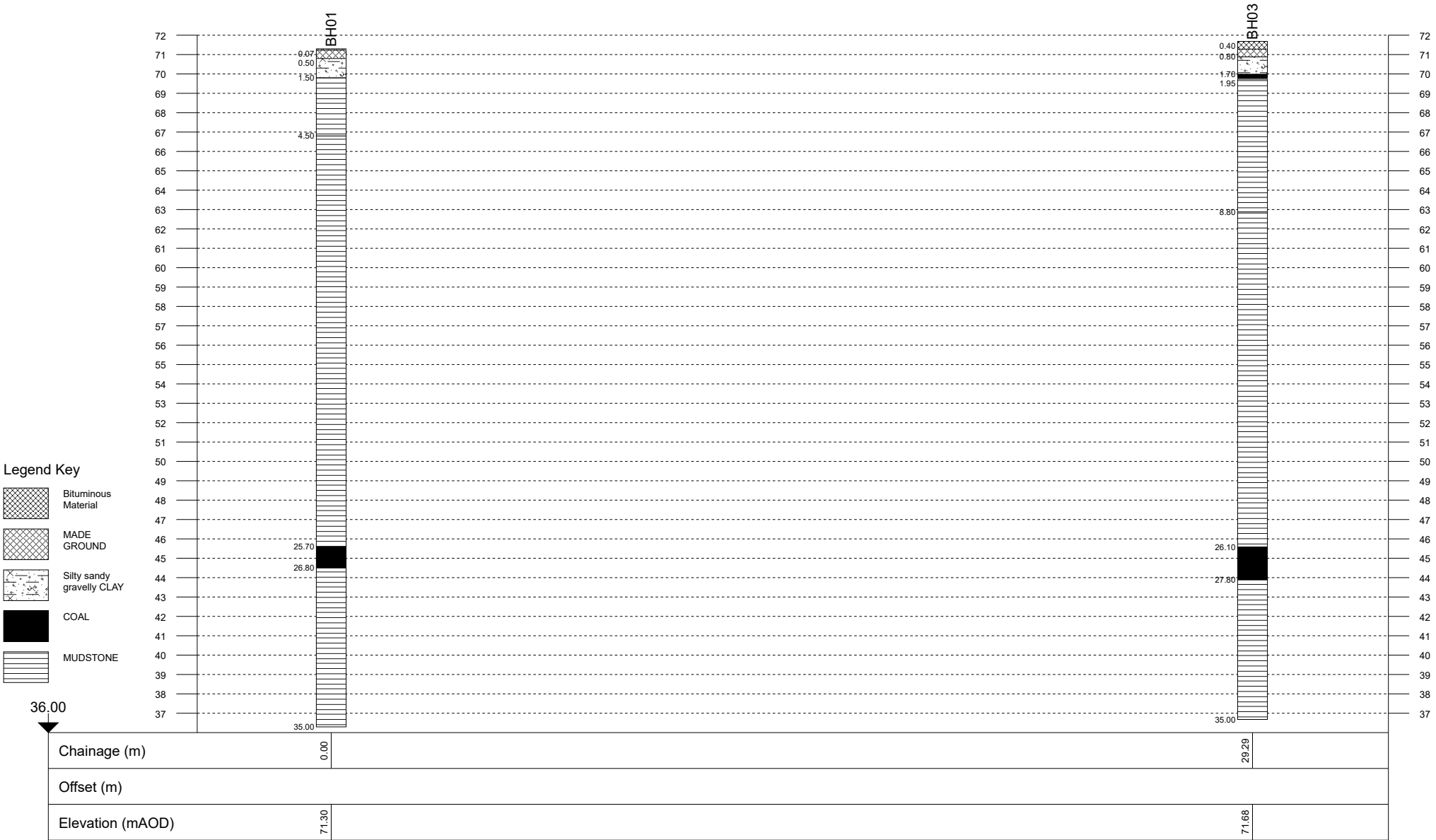
Project Id: CCG-C-25-15207
Project Title: Prescott Police Station
Location: Prescott Police Station
Client: Prima Group

Title: Section Line
Vertical Scale: 1:284
Horizontal Scale: 1:149
Engineer: Tony Gerrard



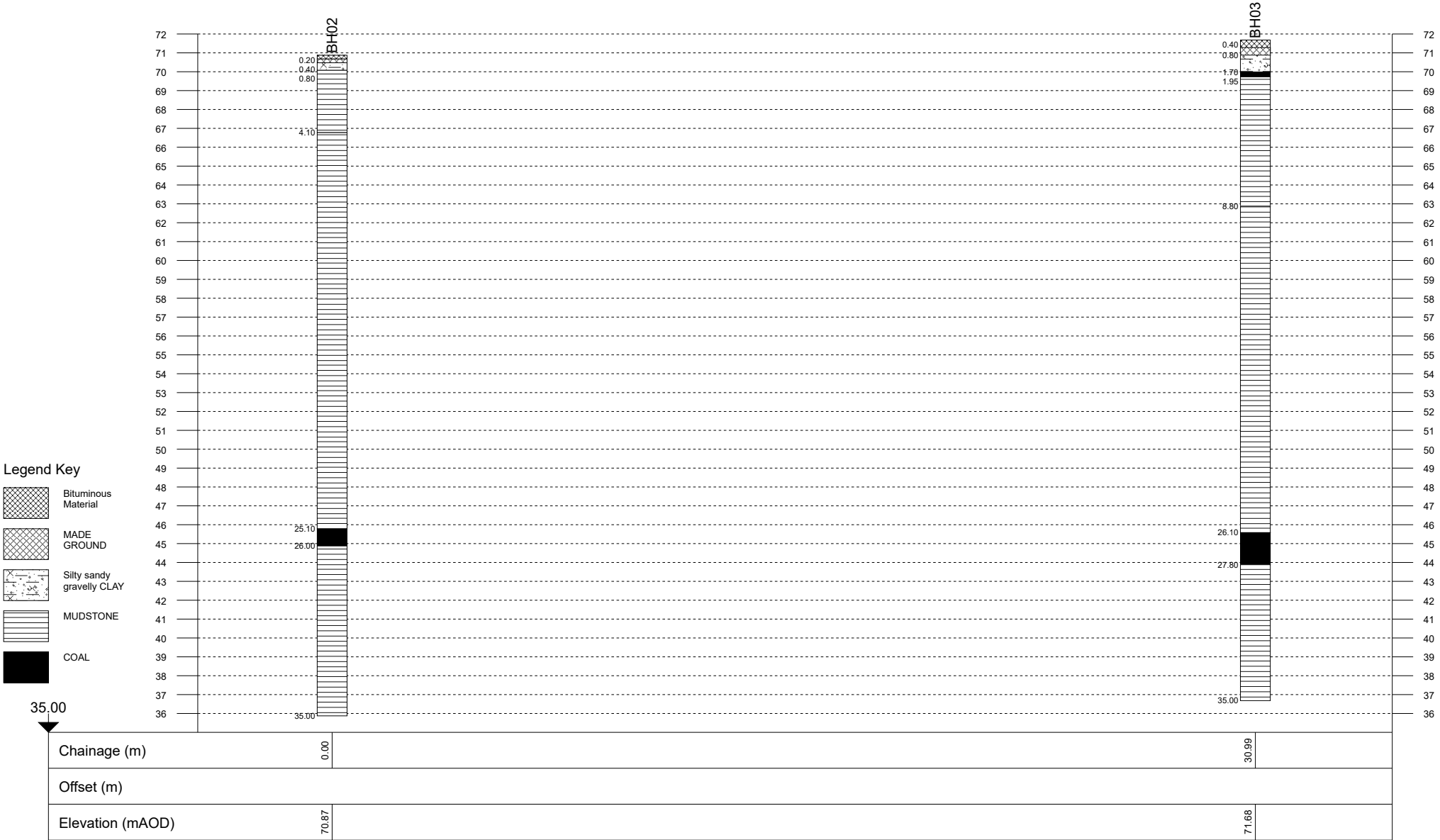
Project Id: CCG-C-25-15207
Project Title: Prescott Police Station
Location: Prescott Police Station
Client: Prima Group

Title: Section Line
Vertical Scale: 1:276
Horizontal Scale: 1:170
Engineer: Tony Gerrard



Project Id: CCG-C-25-15207
Project Title: Prescott Police Station
Location: Prescott Police Station
Client: Prima Group

Title: Section Line
Vertical Scale: 1:284
Horizontal Scale: 1:180
Engineer: Tony Gerrard



APPENDIX D: GAS MONITOR CALIBRATION CERTIFICATION

TEST DATE AND CONDITIONS			
Date		07/02/2025	
Atmospheric Pressure Ambient Temperature EnviroNics Serial No.		1011	mB
		21.3	°C
		5089	

**GFM436 Final Inspection & Calibration
Check Certificate**

GAS DATA LTD

Unit D

Earlplace Business Park

Fletchamstead Highway

Coventry

CV4 9XL

Tel 02476303311

Fax 02476307711



GAS DATA
LISTEN • ANALYSE • INFORM

Customer	C C Geotechnical
Certificate Number	125962
Order Number	341091

Serial Number	12667
Software Version	G436-00.0027/0010

Recalibration DUE Date
07/02/26

Instrument Checks					
Keyboard	✓		Display Contrast	✓	
Pump Flow In	400	Accept > 200 cc/min	Pump Flow @ -200mB	300	Accept > 200 cc/min
Clock Set / Running	✓		Labels Fitted	✓	

Gas Checks						
Sensor	CH ₄		CO ₂		O ₂	
	Instrument Gas	True Gas Value %	Instrument Gas	True Gas Value %	Instrument Gas	True Gas Value %
	Readings %		Readings %		Readings %	
	60.0	60	39.9	40	20.9	20.9
	Accept ±3.0		Accept ±3.0		Accept ±0.5	
	4.9	5	5.0	5	6.0	6
	Accept ±0.3		Accept ±0.3		Accept ±0.3	
Zero Reading 100% N ₂	0.0	0	0.0	0	0.0	0
	Accept ±0.0		Accept ±0.0		Accept ±0.1	

Optional Gas Checks						
Applied Gas & Range		Concentration Tested @ (ppm)	Instrument Readings (ppm)			
Gas Type	Range (ppm)		Zero Reading		Instrument Gas Reading	
H ₂ S	5000	1500	0	Accept ±0.0	1500	Accept ±5.0%
CO	2000	1000	0	Accept ±0.0	998	Accept ±5.0%
Hexane	2.0%	2.0%	0	Accept ±0.0	1.99	Accept ±10.0%

Cross Gas Effects									
Applied Gas (ppm)		Instrument Readings (ppm)							
Gas Type	Concentration	Toxic 1:	H2S	Toxic 2:	CO	Toxic 3:	HEX		
H2S	1500	1500		0		0			
CO	1000	70		998		0			
Hexane	2.0%	0		0		1.99			

Pressure Checks			
Atmospheric Pressure [AP] (mB)			
Current Atmospheric Pressure (mB)		Instrument Atmospheric Pressure Reading (mB)	
AP Open Ports		1011	Accept ± 2.0
AP Port (Internal)	+800 mB	800	Accept ± 5.0
	+1200mb	1200	Accept ± 5.0

Flow Checks					
Borehole Flow			Differential Pressure		
Applied Reading (l/h)	Instrument Reading (l/h)		Applied Pressure (Pa)	Instrument Reading (Pa)	
-30	-30.0	Accept ± 3.0	-435	-436	Accept ± 50
-3	-3.1	Accept ± 1.0	-17	-17	Accept ± 6.0
0	0.0	Accept ± 0.0	0	0	Accept ± 0.5
3	3.1	Accept ± 0.5	14	14	Accept ± 3.0
30	29.8	Accept ± 3.0	316	311	Accept ± 50
60	59.3	Accept ± 6.0	968	943	Accept ± 130
90	89.5	Accept ± 9.0	1920	1927	Accept ± 250

Temperature Checks		
Calibration Temperature	Instrument Temperature Reading $^{\circ}\text{C}$	
Applied Temperature $^{\circ}\text{C}$		
-10	-10.0	Accept ± 2.0
0	0.0	Accept ± 1.0
30	30.0	Accept ± 1.0
60	60.0	Accept ± 1.0
100	100.0	Accept ± 1.0

Technician:
<i>Jack Rutland</i>

Date Tested:
07/02/2025

The instrument identified by the serial number stated above has been tested by Gas Data personnel for calibration accuracy on the date and under the ambient conditions stated. Gas Data Ltd internal BS EN ISO9001:2015, BS EN ISO14001:2015, BS EN ISO45001:2018 compliant workshop procedures were followed to apply known calibration test gases, gas flow rates, pressures and temperatures of the values stated.

The results displayed on the instrument at each stage are recorded above.

Gas Data Ltd is certified to BS EN ISO9001:2015, BS EN ISO14001:2015, BS EN ISO45001:2018.

APPENDIX E: NOTES ON LIMITATIONS

Notes on Limitations For Geoenvironmental and Geotechnical Consultancy Services

General

This document has been prepared by CC GEOTECHNICAL LTD within the terms of the contract, scope of work, and resources agreed in writing with the client. The limitations of liability of CC GEOTECHNICAL LTD for the contents of this document have been agreed with the Client, as set out in the terms and conditions of offer and related contract documentation.

This document is intended for the sole use of the client indicated above and CC GEOTECHNICAL LTD accepts no responsibility of whatever nature to third parties to whom this document or any part of this document is made known. Any such party relies upon that information at their own risk.

The findings and opinions provided in this document are made in good faith and are subject to the limitations imposed by employing site assessment methods and techniques, appropriate to the time of investigation and within the limitations and constraints defined in this document.

The findings and opinions are relevant to the dates when the assessment was undertaken, but should not necessarily be relied upon to represent conditions at a substantially later date. In particular, seasonal groundwater levels, with the effects of precipitation, may affect the conditions found during the investigation. The report should be read in conjunction with the further Notes on Limitations included in Appendix A.

Where opinions expressed in this report are based on current available guidance and legislation, no liability can be accepted by CC GEOTECHNICAL LTD for the effects of any future changes to such guidelines and legislation. Additional information, improved practices, new guidance, changes in legislation, or amendments to design proposals, may necessitate this report having to be reviewed in whole or in part after that date. Opinions and interpretations are not accredited by UKAS.

Factual data contained in this report may have been obtained from enquiries with reputable third parties, the results of which are relied on unless indicated to be inaccurate by contradictory information.

CC GEOTECHNICAL LTD possesses a non-exclusive and non-transferable Ordnance Survey Licence but does not possess any right to sub-license any of the rights granted by this licence to any party. Under the terms of CC GEOTECHNICAL LTD's Ordnance Survey Licence, copying of figures containing Ordnance Survey data or using figures for any purpose other than as part of this report is not permitted.

CC GEOTECHNICAL LTD has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from CC GEOTECHNICAL LTD, and a charge may be levied against such approval.

CC GEOTECHNICAL LTD accepts no responsibility or liability for:

1. the consequences of this document being used for any purpose or project other than for which it was commissioned
and/or
2. the consequences of use of this document by any party with whom an agreement has not been executed.

Phase I Environmental Audits / Desk Studies

The work undertaken to provide the basis of a Phase 1 Desk Study report comprises a study of available documented information from a variety of sources (including the client), together with (where appropriate) a brief walk over inspection of the site and meetings and discussions with relevant authorities and other interested parties. The opinions given in a Desk Study report have been dictated by finite data on which they are based and are relevant only to the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in the report, CC GEOTECHNICAL LTD reserves the right to review such information and to modify the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Factual Ground Investigations

The investigation of the site has been carried out in accordance with the scope and specification instructed by the Client. No interpretations of the data generated by the investigation have been provided or implied. The exploratory holes undertaken in this commission, investigate only a small volume of the ground in relation to the size of the site, and can only provide a general indication of site conditions. Conditions may exist on the site which have not been detected by the works undertaken. Furthermore, the number of sampling points and the methods of sampling and testing do not preclude the existence of localised "hotspots" or more widespread contamination where concentrations may be significantly higher than those actually encountered.

Interpretative Phase II Environmental Audits

The investigation of the site has been carried out with the intention of providing sufficient information concerning the type and degree of contamination, and ground and groundwater conditions to allow a reasonable risk assessment to be made. The objectives of the investigation have been limited to establishing the risks associated to potential human targets, building materials, the environment (including adjacent land), and surface and groundwater.

The amount of exploratory work and chemical testing undertaken may have been restricted by factors including inter alia the Clients budget, the available timescale, access to all parts of the site, the existence of buried services etc., and where this is the case, a more comprehensive investigation may be required if the site is to be redeveloped, since a number of important engineering and environmental issues may need further assessment.

For those reasons, if costs have been included in relation to site remediation these must be considered as tentative only and must, in any event, be confirmed by a qualified quantity surveyor.

It must be borne in mind, that the exploratory holes undertaken, investigate only a small volume of the ground in relation to the size of the site, and can only provide a general indication of site conditions. The opinions provided and recommendations given in this report are based on the ground conditions apparent at the site of each of the exploratory holes. There may be ground conditions present on the site which have not been disclosed by this investigation, and which have therefore not been taken into account in this report. The number of sampling points and the methods of sampling and testing do not preclude the existence of localised "hotspots" or more widespread contamination where concentrations may be significantly higher than those actually encountered. The findings of the investigation are valid for the time of investigation and the passage of time may result in changes to the contamination status of the site, and a reassessment of the site may be required where significant time has elapsed.

Geoenvironmental Ground Investigations

The investigation of the site has been carried out within the constraints of Client budget, available timeframe, access to all parts of the site, the existence of buried services and a more comprehensive investigation may be required to provide sufficient information regarding the type and degree of contamination, geotechnical characteristics, and ground and groundwater conditions, to formulate a reasonable assessment of the environmental risks together with engineering and development implications.

If costs have been included in relation to the site remediation, these must be confirmed by a qualified quantity surveyor.

The exploratory holes undertaken, investigate only a small volume of the ground in relation to the size of the site, and can only provide a general indication of the site conditions. The opinions provided and recommendations given in this report are based on the ground conditions apparent at the site of each of the exploratory holes. There may be ground conditions present on the site which have not been disclosed by this investigation, and which have therefore not been taken into account in this report. The findings of the investigation are valid for the time of investigation and the passage of time may result in changes to the contamination status of the site, and a reassessment of the site may be required where significant time has elapsed.

The comments made on groundwater conditions are based on observations made at the time that site work was carried out. It should be noted that groundwater levels will vary owing to seasonal, tidal, weather, or other effects.

The risk assessment and opinions provided, inter alia, take into consideration currently available guidance relating to acceptable contamination concentrations and no liability can be accepted for the retrospective effects of any future changes or amendments to these values.