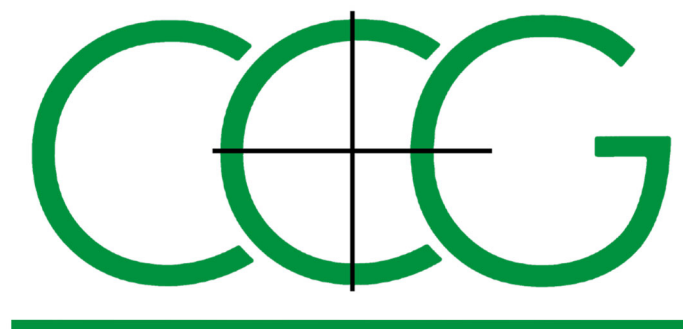




CCG-C-23-14178

GROUND INVESTIGATION AT

HUYTON TOWN CENTRE

JANUARY 2024

FACTUAL REPORT



Prepared by:

CC GEOTECHNICAL LTD

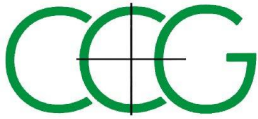
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**DOCUMENT CONTROL FORM**

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FOR AND ON BEHALF OF CC GEOTECHNICAL LTD

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1.0 INTRODUCTION

CC GEOTECHNICAL LIMITED (CCG) was commissioned by **GENR8 DEVELOPMENTS LLP** (the Client) to provide geotechnical and geoenvironmental fieldwork investigation, laboratory testing, and monitoring services in connection with the redevelopment of Huyton Town Centre, Knowsley, Merseyside.

The proposed development includes an initial phase of enabling works involving the demolition of three buildings and creating suitable platforms for development. Following the demolition phase, the proposals include development of new build elements including offices, a hotel, residential units, council HQ and a multistorey car park.

Works relating to the investigation of the proposed multistorey car park site were de-scoped by the Client prior to commencement.

In order to inform the works design, **BURO HAPPOLD** (the Engineer), proposed the scope of geotechnical and geoenvironmental investigations detailed herein.

2.0 LOCATION

Huyton is a Town in the Metropolitan Borough of Knowsley, Merseyside. The Town Centre, is located centrally within Huyton, approximately 50m northeast of Huyton Railway Station.

The site of the proposed redevelopment currently comprises single-storey and multi-storey buildings, serving as a library, a municipal building and council offices, several active car parks, roadways and hard and soft landscaped areas.

The location of the site is as shown on **CCG** Drawing No. CCG-C-23-14178-1 presented in Appendix A.

3.0 PURPOSE OF THE INVESTIGATION

The purpose of the ground investigation was to provide geotechnical and geo-environmental information on ground conditions underlying the site, collating factual data on the engineering and chemical properties of the soils, and providing information pertinent to the design of the proposed town centre redevelopment works. This document is a factual compilation of the data obtained and no interpretations have been placed on the findings.

The data contained herein should be read in conjunction with the Notes on Limitations, presented in Appendix O.

4.0 DOCUMENTED GEOLOGY

The geology of the site was researched by reference to the **British Geological Survey** online geology viewer. It is anticipated that made ground deposits associated with the historic development and redevelopment of the site are underlain by drift deposits of Till, Devensian - Diamicton. The bedrock formation is understood to vary across the site according to the position of a fault line which is recorded to strike the site from east to west. To the north of this fault line the bedrock geology is recorded as Sandstone of the Chester Formation, and to the south the bedrock is recorded as Sandstone of the Wilmslow Sandstone Formation.



5.0 FIELDWORK

5.1 Introduction

The fieldwork associated with this intrusive investigation was specified by **Buro Happold** (the Engineer). Intrusive works were carried out in September - October 2023, followed by a period of instrument monitoring carried out October – December 2023. Works undertaken comprised the following:

- Pre and post investigation surveying of borehole locations for OS coordinates and elevation (m AOD)
- The scanning of exploratory locations by Cable Avoidance Tool to confirm the absence of buried services
- The manual excavation of 1.2m deep service clearance pits at all exploratory borehole locations
- The sinking of 12nr boreholes to depths of up to 6.5mbgl by cable percussive methods (BH01-BH12)
- The further advancement of all 12r cable percussion boreholes below rockhead by rotary coring to depths of up to 20mbgl (BH01-BH12)
- The sinking of 14nr boreholes to depths of up to 5.0mbgl by windowless dynamic sampling methods (WS01-WS11 and WS15-WS17)
- The installation of 19mm or 50mm HDPE plain and slotted well-tube complete with filter pack response zones, bentonite seals and associated headworks at selected borehole positions (BH01-BH04, BH06-BH12 and WS01, WS06, WS07, WS11, WS15 and WS16)
- The performance of 7nr in-situ determinations of CBR by the Dynamic Cone Penetrometer (DCP) test method, testing commencing from ground level/pavement underside to a depth of 1mbgl at positions WS01, WS06, WS07, WS09, WS11, WS15 and WS16
- The manual excavation of 2nr foundation inspection pits to depths of up to 1.4mbgl (FIP01 and FIP02)
- The mechanical excavation of 4nr trial pit excavations to depths of up to 4.0mbgl (TP01-TP04)
- The performance of soakaway testing in accordance with the BRE365 methodology at 2 of the 4nr mechanical trial pit excavations (TP01 and TP02)
- The subsampling of soil arisings for soil contamination / geotechnical engineering testing
- Periodic monitoring of installations for the purposes of determining groundwater levels
- The recovery of low-flow groundwater samples from selected installations for the purposes of chemical laboratory analysis

At the BH borehole locations, the methodology of borehole advancement in superficial deposits was amended from dynamic sampling to cable percussion (as described herein) following agreement with the Engineer. This change was made in response to sub-artesian conditions encountered at BH12 and associated drilling difficulties including boring through rising sands.

The fieldwork was carried out in accordance with the UK Specification for Ground Investigation: 3rd Edition: 2022, and BS10175: 2011+A2:2017, BS5930: 2015+A1:2020, BS EN 1997 and BS EN ISO 14688, BS EN ISO 14689, insofar as they related to the scope of the investigation.

The locations of the exploratory positions were instructed by **BURO HAPPOLD** (the Engineer) and agreed with **KNOWSLEY MBC** (the Landowner) on site. All locations were set out to OS coordinates using a Leica GS15 GNSS RTK rover with a tolerance of +/- 30mm. Selected positions were relocated on site as instructed by **BURO HAPPOLD** and **KNOWSLEY MBC** to ensure continued

operational access through the site and to avoid encountering buried services. On completion all 'as built' positions were again surveyed to confirm OS coordinates and elevation in OD.

The layout of the investigation is as annotated on the Exploratory Hole Location Plan on CCG Drawing No. CCG-C-23-14178-2 provided in Appendix A.

5.2 Cable Percussion Boreholes

A total of 12nr boreholes (BH01-BH12) were sunk through made ground and drift deposits by cable percussion methods using a Dando 3000 drilling rig.

Prior to the commencement of boring, all borehole locations were cleared for services by Cable Avoidance Tool scanning and the manual excavation of a service clearance excavation. The geological sequence exposed within the excavation was logged and small disturbed, bulk disturbed and environmental samples were recovered from excavation arisings. Where encountered, hard pavements were first removed by hydraulic breaker.

Photographs of the service excavation and arisings are provided at Appendix B.

Following the excavation of a manual service clearance excavation, cable percussion boreholes were each advanced through the full depth of the made ground and into the natural drift deposits. Boreholes were advanced to a termination depth of up to 6.5mbgl and terminated within the sandstone bedrock.

Standard Penetration Tests were carried out at regular depth increments throughout the cable percussion boring, and within the weathered bedrock where encountered.

Small disturbed, bulk disturbed and UT100 undisturbed samples were recovered at regular incremental depths throughout the made ground and drift soils. Environmental samples were additionally recovered at incremental throughout the made ground deposits and into the underlying natural drift soils.

Logs of the cable percussion boreholes annotated with SPT`N` values, sampling details, and standpipe installation details and are provided at Appendix C.

5.3 Rotary Boreholes

In accordance with the specified scope of works, all 12nr cable percussion boreholes BH01-BH12, were advanced into the bedrock by rotary coring.

Rotary works were undertaken using a Apageo Apafor 450 rig deploying conventional 100mm diameter coring equipment and an air/mist flush.

Core runs were carried out in lengths of up to 1.5m, to a depth of up to 20.0mbgl.

Logs of the rotary boreholes, annotated with TCR, SCR, RQD and FI values are given in Appendix C.

Photographs of the rock core recovery are contained at Appendix D.

5.4 Dynamic Sampling Boreholes

A total of 14nr dynamic sampling boreholes (WS01-WS16) were sunk by light dynamic sampling methods using a Dando Terrier MkII light dynamic sampling rig, the boreholes being advanced to termination depths of up to 5mbgl. Proposed locations WS12 and WS13 were cancelled by the Client prior to fieldworks commencement.

Prior to the commencement of dynamic sampling, all borehole locations were cleared for services by Cable Avoidance Tool scanning and by the manual excavation of a service clearance excavation. The geological sequences exposed within the excavations were logged and small disturbed, bulk disturbed and environmental samples were recovered from excavation arisings. Where encountered, hard pavements were first removed by hydraulic breaker.

Photographs of the service excavation and arisings are provided at Appendix B.

In this method of investigation, relatively undisturbed samples of the subsoils are recovered by the driving of a series of reducing diameter steel tubes, each one carrying a Perspex liner. The liners are extracted from the steel casing and split, logged and subsampled to recover small disturbed, bulk disturbed and environmental samples as required.

Standard Penetration Tests were carried out at regular depth increments throughout the dynamic sampling boreholes.

Upon completion all boreholes were either fitted with a 50mm gas/groundwater monitoring standpipe or sealed with a cementitious bentonite grout to pavement/ground level. Pavements were reinstated to match existing. Boring tools were then decontaminated between positional moves.

Logs of the dynamic sampling boreholes annotated with SPT`N` values, sampling details, and standpipe installation details and are provided at Appendix E.

Photographs of the soil recovery obtained by the dynamic sampling boreholes are provided at Appendix F.

5.5 Trial Pit Excavation

Mechanical Trial pit excavations (TP01-TP02) were undertaken by a 5t tracked excavator and advanced to a depth of up to 4.0mbgl.

All trial pit excavations were carefully logged for exposed stratigraphy. Environmental samples (ES), small disturbed samples (D), and bulk disturbed samples (B) of soils were recovered at regular incremental depths as instructed by the engineer. Upon completion, all arisings were then returned to the excavations in the reverse sequence of their excavation to preserve, insofar as was possible, the original lithology.

Logs of the trial pit excavations annotated with details of sampling are provided in Appendix G.

Photographs of the trial pit exposures are provided in Appendix H.

5.6 Foundation Inspection Excavations

External foundation inspection excavations were undertaken at a total of 2nr locations (FEP1 and FEP2).

Excavations were undertaken by manual methods to a safe termination depth of up to 1.4mbgl.

The exposed structural form was dimensioned, photographed and sketched, and soil arisings were carefully logged and then returned to the excavations in the reverse sequence of their excavation to preserve, insofar as was possible, the original lithology.

Sketches and photographs of the foundation inspection observations are given in Appendix I.

5.7 Soakaway Testing

Excavations undertaken at TP01 and TP02 were subjected to soakaway testing for the purpose of assessing suitability of soils for the adoption of sustainable drainage systems.

Soakaway tests were undertaken in accordance with the methodology set out in BRE 365 and commenced by the charging of excavations with water from a water bowser. In each instance the soakaway test was terminated after a period of 4hrs without any discernible drop in water level. A soil infiltration rate thus could not be calculated.

Results of the soakaway excavations are given in Appendix J.

5.8 Dynamic Cone Penetrometer Testing

Dynamic Cone Penetrometer (DCP) testing was undertaken at a total of 7nr locations coincident with dynamic sampling boreholes WS01, WS06, WS07, WS09, WS11, WS15 and WS16.

Following the removal of pavement hardstanding, DCP were performed commencing from pavement underside level to a termination depth of 1mbgl. At location WS15, sited within an area of soft landscaping, the DCP test commenced at ground level before terminating at 1mbgl.

The DCP test was undertaken using a manually operated Single Mass Dynamic Penetrometer. The apparatus is set up over the test location with the instrument cone fixed to the base of a drive rod(s) resting at the test surface. A sliding hammer assembled above the test rod, is lifted and allowed to fall and strike an anvil at the top of the drive rod imparting a blow of known energy to the rod string and cone. The depth of cone penetration per blow applied is recorded until the instructed test depth is achieved.

Logs of the DCP tests including a correlated CBR value are provided at Appendix K.

5.9 Monitoring Installations

A total of 17nr 19mm or 50mm diameter monitoring standpipes were installed within boreholes BH01-BH04, BH06-BH12, WS01, WS06, WS07, WS11, WS15 and WS16.

Standpipes comprised of HDPE well pipe, each with a discrete perforated and geosock wrapped section set in a filter pack response zone. Seals above and below the response zone were made in bentonite grout.

Standpipe response details are as tabulated hereunder:

Table 1: Standpipe Response Zones

BH Number	Standpipe Diameter	Standpipe Response Zone
BH01	19mm	5.00-15.00mbgl
BH02	19mm	5.00-20.00mbgl
BH03	19mm	5.00-20.70mbgl
BH04	19mm	3.00-10.00mbgl
BH06	19mm	5.00-20.00mbgl
BH07	19mm	5.00-20.00mbgl
BH08	19mm	6.00-19.70mbgl
BH09	19mm	5.00-20.00mbgl
BH10	19mm	1.50-5.00mbgl
BH11	19mm	1.50-5.50mbgl
BH12	19mm	7.00-20.00mbgl
WS01	50mm	1.30-3.30mbgl
WS06	50mm	1.50-4.00mbgl
WS07	50mm	1.50-4.00mbgl
WS11	50mm	1.20-4.50mbgl
WS15	50mm	1.00-2.50mbgl
WS16	50mm	1.50-3.00mbgl

Headworks at each installation comprised of a bung and gas tap, protected by either a flush or riser heavy-duty cover set in concrete.

Details of the monitoring installations are provided on the borehole logs contained in the relevant appendices.

The standpipe installations were periodically monitored for flow rate and composition of ground gas using a Geotechnical Instruments GFM436 infra-red analyser. The installations were also monitored for volatile vapours using a handheld PID monitor, and for standing water levels with an electronic dipmeter.

The results of the ground gas, vapour and groundwater monitoring, together with calibration certificates of the instruments used are given in Appendix L.

6.0 LABORATORY TESTING

6.1 Soil and Rock Engineering testing

A programme of soil and rock engineering testing was undertaken. The programme comprised the following determinations:

- 21nr samples were subjected to the determination of Moisture Content in accordance with BS 1377: Part 2: 1990
- 15nr soil samples were subjected to the determination of Particle Size Distribution by wet sieve in accordance with BS 1377: Part 2: 1990
- 14nr soil samples were subjected to the determination of Particle Size Distribution by hydrometer in accordance with BS 1377: Part 2: 1990
- 18nr soil samples were subjected to the determination of Liquid Limit, Plastic Limit, and Plasticity Index in accordance with BS 1377: Part 2: 1990
- 15nr soil samples were subjected to the determination of Optimum Moisture Content / Maximum Dry Density Relationship in accordance with BS 1377: Part 4: 1990

- 7nr soil samples were subjected to Unconsolidated Undrained Triaxial Compression in accordance with BS 1377: Part 7: 1990
- 5nr soil samples were subjected to the Laboratory Determination of California Bearing Ratio in accordance with BS 1377: Part 4: 1990
- 18nr rock specimen samples were subjected to the determination of Uniaxial Compressive Strength of rock in accordance with ISRM Vol 16 No 2, pp135-40 (1979)
- 96nr rock specimen samples were subjected to the determination of Point Load strength of rock in accordance with ISRM 1985: Suggested Method

The soil and rock engineering test results are presented in Appendix M.

6.2 Chemical Testing

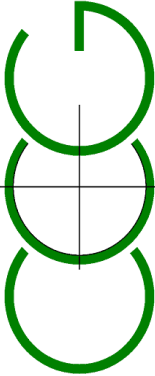
A chemical analysis programme was undertaken at a UKAS / MCERTS accredited laboratory and comprised the analysis of soil, and groundwater to suites of contaminants, as specified by *The Engineer*.

The results of the chemical analyses are presented along with UKAS / MCERTS test accreditation certification in Appendix N.

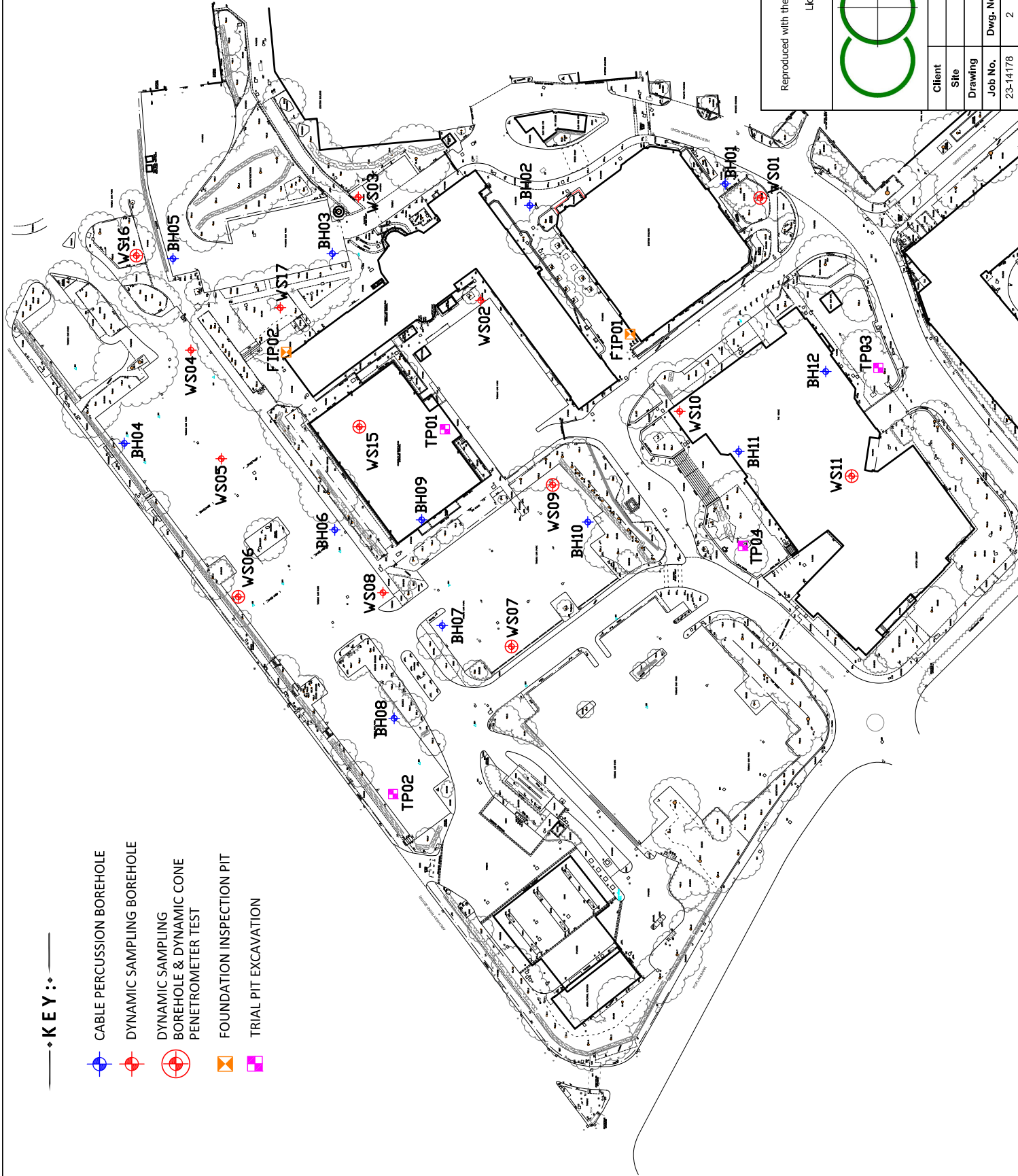


APPENDIX A

DRAWINGS

DO NOT SCALE		 CC GEOTECHNICAL LIMITED UNIT 1 DELTIC WAY KNOWSLEY INDUSTRIAL ESTATE LIVERPOOL L33 7BA 0151 545 2750		Client: Genr8	Project: Huyton Town centre	Title: Site Location—Aerial Photograph	Scale: NTS	Issue: 01	Drawn by: PMC	Date: December 2023	Project No. CCG-C-23-14178	Drawing No. 01	© CC GEOTECHNICAL LIMITED
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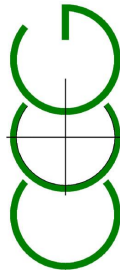




• KEY : •

- CABLE PERCUSSION BOREHOLE
- DYNAMIC SAMPLING BOREHOLE
- DYNAMIC SAMPLING BOREHOLE & DYNAMIC CONE PENETROMETER TEST
- FOUNDATION INSPECTION PIT
- TRIAL PIT EXCAVATION

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Client	GENR8		
Site	HUYTON TOWN CENTRE		
Drawing	SITE INVESTIGATION LAYOUT		
Job No.	Dwg. No.	Rev. No.	Scale@A3
23-14178	2	1	NTS
			Date
			JAN 2024



CC GEOTECHNICAL LIMITED

Consulting Geotechnical and Geoenvironmental Engineers

APPENDIX B

SERVICE CLEARANCE EXCAVATION PHOTOGRAPHS





























APPENDIX C

CABLE PERCUSSION / ROTARY BOREHOLE LOGS

Cable Percussion Borehole Log	Contract Name: Huyton Town Centre, Liverpool				Client: Genr8			Borehole ID: BH01						
	Contract Number: CCG-C-23-14178		Date Started: 22/09/2023		Logged By: HF	Checked By: CB	Status: FINAL	Sheet 1 of 3						
	Easting: 344241.1		Northing: 390792.6		Ground Level: 37.26mAOD	Plant Used: DANDO 2000	Rig Crew: CB & CMC	Scale: 1:50						
Weather:			Termination: Instructed depth			SPT Hammer: CCG1 Energy Ratio: 66%								
Samples & In Situ Testing					Strata Details					Groundwater				
Depth	Sample ID	Test Result			Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		Water Strike	Backfill/ Installation			
0.20	B	PID 0.25m, 0.1ppm			37.16	0.19		BLOCK PAVING						
0.20	D	PID 0.40m, 0.1ppm			37.11	0.30		Yellowish brown fine to medium SAND (MADE GROUND)						
0.25	ES				36.96	(0.50)		Grey very sandy slightly silty GRAVEL. Gravel is fine to coarse subrounded to subangular brick, limestone and concrete. (MADE GROUND)						
0.40	ES													
0.50	B				36.46	0.80		Brown slightly gravelly sandy silty CLAY. Gravel is fine to coarse subangular concrete and sandstone. (MADE GROUND)	1					
0.60	D	PID 1.00m, 0.1ppm				(0.60)		Soft brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular sandstone.						
1.00	ES				35.86	1.40		Brown gravelly silty SAND. Gravel is fine to coarse subangular to subrounded sandstone.						
1.10	B					(0.30)								
1.20	D	PID 1.50m, 0.1ppm			35.56	1.70		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand	2					
1.20	UT													
1.50	ES													
1.60	B	SPT(S)N=89												
1.60	D	(8,8/19,22,27,21)												
1.80	D													
2.00	B					(1.54)								
2.50	D	SPT(S)100 (25 for 85mm/100 for 265mm)												
		SPT(S)100 (25 for 85mm/100 for 255mm)												
2.80 - 4.30	89	59	9	NR	34.02	3.24		NO RECOVERY - 2.80-2.97mbgl	3					
				NI										
				17										
				NI										
				13										
				15										
				13				Extremely weak to weak reddish brown fine to medium grained SANDSTONE. Moderately weathered. Recovered locally as sandy gravel. Discontinuities are very close to medium spaced, horizontal, clean, rough and tight to wide						
				NR				NON-INTACT, RECOVERED AS SANDY GRAVEL - 3.36-3.46mbgl						
				13				NON-INTACT, RECOVERED AS GRAVEL - 3.54-3.59mbgl	4					
				NR				NON-INTACT, RECOVERED AS GRAVEL - 3.72-3.74mbgl						
4.30 - 5.80	85	67	67	NR				NO RECOVERY - 4.30-4.52mbgl						
				NI				NON-INTACT, RECOVERED AS GRAVEL - 4.52-4.79mbgl						
				6		(4.66)			5					
5.80 - 7.30	96	89	71	NR				NO RECOVERY - 5.80-5.86mbgl						
				NI				NON-INTACT, RECOVERED AS GRAVEL - 5.95-6.00mbgl	6					
				8										
7.30 - 8.80	95	92	75	NR	29.36	7.90			7					
				10										
				3				Weak brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are very close to medium spaced, generally horizontal occasionally sub-vertical (drilling induced), clean, rough and tight to wide	8					
8.80 - 10.30	98	98	90	NR		(3.90)		NON-INTACT, RECOVERED AS GRAVEL - 8.74-8.80mbgl						
				NR				NO RECOVERY - 8.80-8.83mbgl	9					
				5										
	TCR	SCR	RQD	FI	Water									
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)						
22-09-2023	16:00	2.80	2.80						1hr removing and replacing surface paving					
26-09-2023	08:30	2.80	2.80						1hr hand excavating 1.20mbgl service avoidance pit					
26-09-2023	16:00	16.30	2.80	6.80					Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids					
27-09-2023	08:30	16.30	2.80	6.80										
27-09-2023	16:00	20.00	2.80	6.80										
Chiselling					No. cuts		Time		Water Strikes					
From (m)	To (m)	Duration	Remarks		No. cuts		Time		Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
2.50	2.80	01:00			0.00	5.00	PLAIN SLOTTED	19						
					5.00	15.00		19						
CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com														

Rotary Core Drilling Log						Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH01					
						Contract Number: CCG-C-23-14178		Date Started: 22/09/2023		Logged By: HF		Checked By: CB		Status: FINAL		Sheet 2 of 3			
						Easting: 344241.1		Northing: 390792.6		Ground Level: 37.26mAOD		Plant Used: DANDO 2000		Rig Crew: CB & CMC					
Weather:						Termination: Instructed depth						SPT Hammer: CCG1 Energy Ratio: 66%							
Samples & In Situ Testing						Strata Details										Groundwater			
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description					Water Strike	Backfill/ Installation				
				NR		25.46	11.80		Weak brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are very close to medium spaced, generally horizontal occasionally sub-vertical (drilling induced), clean, rough and tight to wide <u>NO RECOVERY - 10.30-10.32mbgl</u>					10					
10.30 - 11.80	99	99	89	6										11					
				NR NI		20.96	(4.50)		Weak light brown/grey fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are very close to medium spaced, generally horizontal occasionally vertical, clean, rough and tight to wide <u>NO RECOVERY - 11.80-11.85mbgl</u> <u>NON-INTACT. RECOVERED AS GRAVEL - 11.85-11.98mbgl</u>					12					
11.80 - 13.30	97	89	64	9										13					
				NR		(3.70)			<u>NO RECOVERY - 13.30-13.48mbgl</u>					14					
13.30 - 14.80	88	88	83	6										15					
				NR NI		20.96	16.30		<u>NO RECOVERY - 14.80-14.82mbgl</u> <u>NON-INTACT. RECOVERED AS VERY SANDY GRAVEL - 14.82-14.94mbgl</u>					16					
14.80 - 16.30	99	89	76	5										17					
				NI					<u>NON-INTACT. RECOVERED AS GRAVEL - 15.76-15.80mbgl</u>					18					
				8										19					
				NR					Very weak light brown fine to medium grained SANDSTONE. Moderately weathered. Recovered locally as gravel. Discontinuities are very close to medium spaced, horizontal and vertical, clean, rough and tight to wide <u>NO RECOVERY - 16.30-16.38mbgl</u>					17					
16.30 - 17.80	95	93	75	6										18					
				NR					<u>NO RECOVERY - 17.80-17.789mbgl</u>					19					
				12															
				NI					<u>NON-INTACT. RECOVERED AS GRAVEL - 18.14-18.19mbgl</u>										
				10															
				NI					<u>NON-INTACT. RECOVERED AS GRAVEL - 18.59-18.63mbgl</u>										
				6															
				NR					<u>NO RECOVERY - 19.30-19.32mbgl</u>										
				4															
19.30 - 20.00	97	97	87																
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 removing and replacing surface paving									
22-09-2023	16:00	2.80	2.80							1hr hand excavating 1.20mbgl service avoidance pit									
26-09-2023	08:30	2.80	2.80							Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant									
26-09-2023	16:00	16.30	2.80	6.80						loss of drilling resistance. No voids									
27-09-2023	08:30	16.30	2.80	6.80															
27-09-2023	16:00	20.00	2.80	6.80															
Flush Information						Flow rate		Flow rate		Water Strikes									
Top (m)	Base (m)	Flush Type	Return	Flush Colour		Flow rate	Flow rate	Type	Flow rate	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks				
2.80	20.00		90%-100%	BROWN		0.00	5.00	PLAIN	19										
						5.00	15.00	SLOTTED	19										
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %																			
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Rotary Core Drilling Log	Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH01				
	Contract Number: CCG-C-23-14178		Date Started: 22/09/2023		Logged By: HF		Checked By: CB		Status: FINAL				
	Easting: 344241.1		Northing: 390792.6		Ground Level: 37.26mAOD		Plant Used: DANDO 2000		Rig Crew: CB & CMC				
Weather:					Termination: Instructed depth				SPT Hammer: CCG1 Energy Ratio: 66%				
Samples & In Situ Testing						Strata Details						Groundwater	
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation
						17.26	20.00		Very weak light brown fine to medium grained SANDSTONE. Moderately weathered. Recovered locally as gravel. Discontinuities are very close to medium spaced, horizontal and vertical, clean, rough and tight to wide			20	
												21	
												22	
												23	
												24	
												25	
												26	
												27	
												28	
												29	
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 removing and replacing surface paving 1hr hand excavating 1.20mbgl service avoidance pit Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids				
22-09-2023	16:00	2.80	2.80						Water Strikes				
26-09-2023	08:30	2.80	2.80										
26-09-2023	16:00	16.30	2.80	6.80									
27-09-2023	08:30	16.30	2.80	6.80									
27-09-2023	16:00	20.00	2.80	6.80					Strike (m) Casing (m) Sealed (m) Time (mins) Rose to (m) Remarks				
Flush Information						Top (m) 0.00 Base (m) 5.00		Diameter 5.00 15.00		Type PLAIN SLOTTED		Dia (mm) 19 19	
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 %								
2.80	20.00		90%-100%	BROWN	CCGEOTECHNICAL LTD 0151 545 2750 www.ccgteotechnical.com								

				Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH02															
				Contract Number: CCG-C-23-14178		Date Started: 28/09/2023		Logged By: HF		Checked By: CB		Status: FINAL		Sheet 1 of 3													
Cable Percussion Borehole Log				Easting: 344235.9		Northing: 390839.6		Ground Level: 36.78mAOD		Plant Used: DANDO 2000		Rig Crew: AR & CMC CB/ CMC		Scale: 1:50													
Weather:						Termination: Instructed depth						SPT Hammer: CCG1 Energy Ratio: 66%															
Samples & In Situ Testing						Strata Details						Groundwater															
Depth		Sample ID		Test Result		Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description					Water Strike	Backfill/ Installation												
0.20		ES		PID 0.20m, 0.6ppm		36.68	0.18		BLOCK PAVING																		
0.30		B				36.63	(0.35)		Yellowish brown fine to medium SAND (MADE GROUND)																		
0.40		D		PID 0.55m, 0.1ppm		36.28	0.50		Brown slightly silty sandy fine to coarse GRAVEL. Gravel is fine to coarse angular to subangular limestone. (MADE GROUND)																		
0.55		ES				36.13	0.65		Brown very sandy slightly clayey silty GRAVEL. Gravel is fine to coarse subangular brick, cinders, sandstone and limestone (MADE GROUND)					1													
0.60		B							Brown very clayey slightly gravelly fine to medium SAND with frequent pockets of clay. Gravel is fine to medium subrounded																		
1.00		ES		PID 1.00m, 0.0ppm		35.58	1.20																				
1.10		B		SPT(S)50 (10,15/50 for 260mm)			(0.40)																				
1.15		D		PID 1.50m, 0.0ppm		35.18	1.60		sandstone.																		
1.50 - 3.00		93		90		85		5		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand					2												
										Weak reddish brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are close to medium spaced, horizontal, clean, rough and tight to partly open																	
										NO RECOVERY - 1.50-1.80mbgl																	
3.00 - 4.50		85		43		33		6		Weak reddish brown fine to medium grained SANDSTONE. Moderately weathered. Recovered locally as gravel. Discontinuities are very close to medium spaced, horizontal, clean, rough and tight to partly open					3												
										NO RECOVERY - 3.00-3.22mbgl																	
										NON-INTACT, RECOVERED AS GRAVEL - 3.40-3.58mbgl																	
4.50 - 6.00		99		96		71		8		Weak to moderately weak reddish brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are very close to widely spaced, generally horizontal occasionally sub-vertical, clean, rough and tight to partly open					5												
										NO RECOVERY - 4.50-4.51mbgl																	
										NON-INTACT, RECOVERED AS GRAVEL - 4.58-4.64mbgl																	
6.00 - 7.50		98		98		59		8							6												
										NO RECOVERY - 6.00-6.03mbgl																	
7.50 - 9.00		100		95		80		8							7												
9.00 - 10.50		94		92		83		4							8												
		TCR		SCR		RQD		FI		Water																	
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)											
28-09-2023		11:00		1.50		1.50		1.30										1hr removing and replacing surface paving									
28-09-2023		13:00		1.50		1.50												1hr hand excavating 1.20mbgl service avoidance pit									
28-09-2023		18:00		20.00		1.50		6.80										Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids									
Chiselling						From (m)		To (m)		Duration		Remarks		Water Strikes													
						0.00		5.00		PLAIN		SLOTTED		Strike (m)		Casing (m)		Sealed (m)		Time (mins)		Rose (to m)		Remarks			
						1.20		1.50		01:00		BEDROCK															
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Rotary Core Drilling Log	Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH02					
	Contract Number: CCG-C-23-14178		Date Started: 28/09/2023		Logged By: HF		Checked By: CB		Status: FINAL					
	Easting: 344235.9		Northing: 390839.6		Ground Level: 36.78mAOD		Plant Used: DANDO 2000		Rig Crew: AR & CMC CB/ CMC					
Weather:					Termination: Instructed depth					SPT Hammer: CCG1 Energy Ratio: 66%				
Samples & In Situ Testing						Strata Details						Groundwater		
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation	
									Weak to moderately weak reddish brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are very close to widely spaced, generally horizontal occasionally sub-vertical, clean, rough and tight to partly open			10		
				NR					NO RECOVERY - 10.50-10.53mbgl					
10.50 - 12.00	98	98	92	11								11		
				2										
				NR		24.78	12.00		Weak to moderately weak grey/reddish brown/light brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are very close to medium spaced, horizontal, clean, rough and tight to partly open			12		
12.00 - 13.50	93	89	61	12					NO RECOVERY - 12.00-12.10mbgl					
				NI			(1.94)		NON-INTACT, RECOVERED AS GRAVEL - 12.67-12.73mbgl			13		
				4		22.84	13.94		Very weak to moderately weak light brown becoming grey fine to medium grained SANDSTONE, Slightly weathered. Discontinuities are very close to medium spaced, generally horizontal occasionally sub-vertical, clean, rough and tight to partly open			14		
13.50 - 15.00	100	100	97									15		
				NR					NO RECOVERY - 15.00-15.03mbgl					
15.00 - 16.50	98	98	98	4								16		
				NR					NO RECOVERY - 16.50-16.52mbgl					
16.50 - 18.00	99	99	94	4			(6.06)					17		
				NR					NO RECOVERY - 18.00-18.09mbgl			18		
18.00 - 19.50	94	88	79	8								19		
19.50 - 20.00	100	100	68											
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 removing and replacing surface paving					
28-09-2023	11:00	1.50	1.50	1.30					1hr hand excavating 1.20mbgl service avoidance pit					
28-09-2023	13:00	1.50	1.50						Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant					
28-09-2023	18:00	20.00	1.50	6.80					loss of drilling resistance. No voids					
						Water Strikes								
						Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks			
Flush Information						Top (m)	Base (m)	Flushing	Type	Top (m)				
Top (m)	Base (m)	Flush Type	Return	Flush Colour	0.00	5.00	PLAIN	19						
1.50	20.00		90%-100%	BROWN	5.00	20.00	SLOTTED	19						
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %														
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Rotary Core Drilling Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH02					
		Contract Number: CCG-C-23-14178		Date Started: 28/09/2023		Logged By: HF		Checked By: CB		Status: FINAL					
		Easting: 344235.9		Northing: 390839.6		Ground Level: 36.78mAOD		Plant Used: DANDO 2000		Rig Crew: AR & CMC CB/ CMC					
Weather:						Termination: Instructed depth				SPT Hammer: CCG1 Energy Ratio: 66%					
Samples & In Situ Testing						Strata Details						Groundwater			
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation		
						16.78	20.00		Very weak to moderately weak light brown becoming grey fine to medium grained SANDSTONE, Slightly weathered. Discontinuities are very close to medium spaced, generally horizontal occasionally sub-vertical, clean, rough and tight to partly open			20			
												21			
												22			
												23			
												24			
												25			
												26			
												27			
												28			
												29			
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 removing and replacing surface paving 1hr hand excavating 1.20mbgl service avoidance pit Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids						
28-09-2023	11:00	1.50	1.50	1.30											
28-09-2023	13:00	1.50	1.50												
28-09-2023	18:00	20.00	1.50	6.80											
Flush Information						Borehole Diameter		Casing Diameter		Water Strikes					
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Diameter	Type	Top (m)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
1.50	20.00		90%-100%	BROWN	0.00	5.00	20.00	PLAIN SLOTTED	19						
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %															
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Contract Name: Huyton Town Centre, Liverpool						Client: Genr8						Borehole ID: BH03															
																		Contract Number: CCG-C-23-14178		Date Started: 20/09/2023		Logged By:		Checked By: CB		Status: FINAL	
Cable Percussion Borehole Log						Easting: 344224.3		Northing: 390887.1		Ground Level: 36.45mAOD								Plant Used: Dando 2000		Rig Crew: PC/AS CJB/CMC		Sheet 1 of 3 Scale: 1:50					
Weather:						Termination: Instructed depth						SPT Hammer: CCG1 Energy Ratio: 66%															
Samples & In Situ Testing						Strata Details										Groundwater											
Depth		Sample ID		Test Result		Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description					Water Strike	Backfill/ Installation												
0.20		ES		PID 0.20m, 0.1ppm		36.39	0.06		BLOCK PAVING Yellowish brown fine to medium SAND (MADE GROUND) Grey slightly silty very sandy GRAVEL. Gravel is fine to coarse subangular to subrounded of limestone, sandstone and concrete (MADE GROUND) Firm to stiff brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular to subrounded sandstone																		
0.25		B				36.30	0.15																				
0.25		D		PID 0.50m, 0.1ppm		36.15	0.30																				
0.40		B		HVP=65																							
0.50		ES																									
0.60		D		PID 1.00m, 0.0ppm			(1.50)							1													
1.00		B																									
1.00		ES		SPT(S)N=13 (2,3/3,3,3,4)																							
1.20		D																									
1.50		ES		PID 1.50m, 0.1ppm																							
1.90		B				34.65	1.80		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand					2													
2.00		D		SPT(S)100 (25 for 95mm/100 for 60mm)																							
2.50		B																									
2.70 - 4.20		33		22		15		NR		NO RECOVERY - 2.70-3.70mbgl					3												
								NI																			
								13																			
4.20 - 5.70		93		93		87		5		Weak reddish brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are very close to medium spaced, generally sub-vertical occasionally horizontal (drilling induced), clean, rough and tight NON-INTACT, RECOVERED AS GRAVEL - 3.70-3.89mbgl NO RECOVERY - 4.20-4.30mbgl SPT @ 4.20mbgl *N* = 100 (25 for 50mm / 100 for 115mm)					5												
								NR																			
								3																			
5.70 - 7.20		97		87		82		6		NON-INTACT, RECOVERED AS GRAVEL - 6.43-6.49mbgl					6												
								NI																			
								6																			
7.20 - 8.70		93		91		60		9		NO RECOVERY - 7.20-7.31mbgl					7												
								NR																			
8.70 - 10.20		97		97		71		6		NO RECOVERY - 8.70-8.75mbgl					8												
								NR																			
		TCR		SCR		RQD		FI		Water																	
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 removing and replacing surface paving 1hr hand excavating 1.20mbgl service avoidance pit Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids									
20-09-2023		16:00		2.70		2.70																					
22-09-2023		00:00		2.70		2.70																					
22-09-2023		16:00		20.70		2.70		10.10																			
Chiselling						No. of		No. of		Type		No. of		Water Strikes													
From (m)		To (m)		Duration		Remarks		0.00		5.00		PLAIN		19		Strike (m)		Casing (m)		Sealed (m)		Time (mins)		Rose to (m)		Remarks	
1.80		2.70		01:00		Bedrock		5.00		20.70		SLOTTED		19													
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Rotary Core Drilling Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH03				
		Contract Number: CCG-C-23-14178		Date Started: 20/09/2023		Logged By:		Checked By: CB		Status: FINAL				
		Easting: 344224.3		Northing: 390887.1		Ground Level: 36.45mAOD		Plant Used: Dando 2000		Rig Crew: PC/AS CJB/CMC				
		Weather:				Termination: Instructed depth				SPT Hammer: CCG1 Energy Ratio: 66%				
Samples & In Situ Testing						Strata Details						Groundwater		
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		Water Strike	Backfill/ Installation		
				NR					Weak grey occasionally light brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are very close to medium spaced, generally sub-vertical occasionally horizontal (drilling induced), clean, rough and tight	10				
10.20 - 11.70	93	85	76	3					NO RECOVERY - 10.20-10.30mbgl					
				NI					NON-INTACT. RECOVERED AS SANDY GRAVEL - 11.28-11.39mbgl	11				
				10										
				NR					NO RECOVERY - 11.70-11.79mbgl					
11.70 - 13.20	94	89	69	5						12				
				NR					NO RECOVERY - 13.20-13.30mbgl					
13.20 - 14.70	93	83	60	4						14				
				NI					NON-INTACT. RECOVERED AS GRAVEL - 14.09-14.28mbgl					
				10										
				NR					NO RECOVERY - 14.70-14.78mbgl					
14.70 - 16.20	95	85	77	3			(11.70)			15				
				9										
				NR					NO RECOVERY - 16.20-16.28mbgl					
16.20 - 17.70	95	95	89	5						17				
				NR					NO RECOVERY - 17.70-17.71mbgl					
17.70 - 19.20	99	97	82	8						18				
				NR										
				NI					NON-INTACT. RECOVERED AS GRAVEL - 19.03-19.07mbgl	19				
				NR					NO RECOVERY - 19.20-19.21mbgl					
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 removing and replacing surface paving 1hr hand excavating 1.20mbgl service avoidance pit Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids					
20-09-2023	16:00	2.70	2.70											
22-09-2023	00:00	2.70	2.70											
22-09-2023	16:00	20.70	2.70	10.10										
Flush Information						Borehole Diameter		Casing Diameter		Water Strikes				
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Flush Type	Top (m)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
2.70	20.70		90%-100%	BROWN	0.00	5.00	PLAIN	19						
						5.00		20.70	SLOTTED					
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %														
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Rotary Core Drilling Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH03							
		Contract Number: CCG-C-23-14178		Date Started: 20/09/2023		Logged By:		Checked By: CB		Status: FINAL		Sheet 3 of 3					
		Easting: 344224.3		Northing: 390887.1		Ground Level: 36.45mAOD		Plant Used: Dando 2000		Rig Crew: PC/AS CJB/CMC		Scale: 1:50					
Weather:						Termination: Instructed depth						SPT Hammer: CCG1 Energy Ratio: 66%					
Samples & In Situ Testing						Strata Details						Groundwater					
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description				Water Strike	Backfill/ Installation			
19.20 - 20.70	99	99	87	6		15.75	20.70		Weak grey occasionally light brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are very close to medium spaced, generally sub-vertical occasionally horizontal (drilling induced), clean, rough and tight				20				
													21				
													22				
													23				
													24				
													25				
													26				
													27				
													28				
													29				
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 removing and replacing surface paving 1hr hand excavating 1.20mbgl service avoidance pit Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids								
20-09-2023	16:00	2.70	2.70														
22-09-2023	00:00	2.70	2.70														
22-09-2023	16:00	20.70	2.70	10.10													
Flush Information						Borehole Diameter		Casing Diameter		Water Strikes							
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Diameter	Type	Top (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks		
2.70	20.70		90%-100%	BROWN	0.00 5.00	5.00 20.70		PLAIN SLOTTED	19 19								
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %																	
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Cable Percussion Borehole Log	Contract Name: Huyton Town Centre, Liverpool				Client: Genr8			Borehole ID: BH04										
	Contract Number: CCG-C-23-14178		Date Started: 28/09/2023		Logged By: HF	Checked By: CB	Status: FINAL	Sheet 1 of 3										
	Easting: 344178.7		Northing: 390937.1		Ground Level: 35.33mAOD	Plant Used: DANDO 2000	Rig Crew: AR & CMC CB & CMC											
Weather:			Termination: Instructed depth			SPT Hammer: CCG1 Energy Ratio: 66%												
Samples & In Situ Testing					Strata Details					Groundwater								
Depth	Sample ID	Test Result			Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		Water Strike	Backfill/ Installation							
					35.23	0.10		FLEXIBLE PAVEMENT										
0.20	ES	PID 0.20m, 0.0ppm			34.93	(0.30)		Grey slightly silty sandy fine to coarse GRAVEL. Gravel is subrounded mudstone and brick. Firm to stiff brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular to subrounded sandstone.		1								
0.30	B					0.40												
0.35	D	PID 0.50m, 0.0ppm																
0.50	ES	HVP=58																
0.60	B																	
0.70	D																	
1.00	ES	PID 1.00m, 0.1ppm																
1.10	B																	
1.20	D																	
1.20	UT	PID 1.50m, 0.0ppm																
1.50	ES				(2.60)	3.00		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand		3								
1.60	D																	
2.00	D	SPT(S)N=12 (2,3/3,3,3,3)																
2.50	B																	
3.00	D	SPT(S)50 (8,16/50 for 275mm)																
3.50	B																	
3.60	D																	
SPT(C)100 (25 for 135mm/100 for 150mm)												31.36	3.97	Very weak to weak reddish brown fine to medium grained SANDSTONE. Moderately weathered and recovered locally as sandy gravel. Discontinuities are extremely close to closely spaced, generally horizontal, occasionally sub vertical, clean, rough, tight to wide.		4		
3.70 - 5.20	82	43	8	50														
				NI														
				25														
				NI														
				29														
				NI														
				21														
				NR														
				16														
				5.20 - 6.70	95	57	18	34										
NR																		
NI																		
9																		
NR																		
11																		
NI																		
13																		
NR																		
6.70 - 8.20	94	80	38					11										
				NR														
				13														
				NR														
				4														
				NR														
				4														
				NR														
				4														
				8.20 - 9.70	96	96	96	4										
NR																		
4																		
NR																		
4																		
NR																		
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4																		
								4										
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				NR														
				4														
				NR														
				4														
				NR														
				4														
				TCR SCR RQD FI Water					27.13	8.20	Very weak to weak reddish brown becoming brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are very close to medium spaced, horizontal, clean, rough, tight to wide.		9					
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 cutting and breaking out surface hardstanding 1hr hand excavating 1.20mbgl service avoidance pit Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids									
28-09-2023	08:30	3.70	3.00															
28-09-2023	16:00	20.00	3.00	6.90														
Chiselling					Sieve Analysis		Type		Water Strikes									
From (m)	To (m)	Duration	Remarks		0.00	3.00	PLAIN	19	Strike (m) Casing (m) Sealed (m) Time (mins) Rose to (m) Remarks									
3.30	3.70	01:00			3.00	10.00	SLOTTED	19										
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Rotary Core Drilling Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH04			
		Contract Number: CCG-C-23-14178		Date Started: 28/09/2023		Logged By: HF		Checked By: CB		Status: FINAL			
		Easting: 344178.7		Northing: 390937.1		Ground Level: 35.33mAOD		Plant Used: DANDO 2000		Rig Crew: AR & CMC CB & CMC			
		Weather:				Termination: Instructed depth				SPT Hammer: CCG1 Energy Ratio: 66%			
Samples & In Situ Testing						Strata Details						Groundwater	
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation
9.70 - 11.20	97	91	79	NI		24.13	11.20		Very weak to weak reddish brown becoming brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are very close to medium spaced, horizontal, clean, rough, tight to wide. NON-INTACT, RECOVERED AS SANDY GRAVEL - 9.99-10.09mbgl			10	
11.20 - 12.70	95	73	62	NR		22.63	(1.50)		Very weak to weak greyish brown fine to medium grained SANDSTONE. Moderately weathered and recovered locally as sandy gravel. Discontinuities are very close to medium spaced, horizontal, clean, rough, tight to wide. NO RECOVERY - 11.20-11.27mbgl NON-INTACT, RECOVERED AS SANDY GRAVEL - 12.24-12.35mbgl NON-INTACT, RECOVERED AS VERY SANDY GRAVEL - 12.46-12.70mbgl			11	
12.70 - 14.20	89	83	66	8		18.48	16.85		Very weak to weak reddish brown fine to medium grained SANDSTONE. Fresh. Discontinuities are very close to medium spaced, horizontal, clean, rough, tight to wide. NO RECOVERY - 12.70-12.86mbgl NON-INTACT, RECOVERED AS GRAVEL - 14.09-14.20mbgl NO RECOVERY - 14.20-14.30mbgl			12	
14.20 - 15.70	93	93	91	NI		16.63	18.70		Very weak to weak grey/reddish brown/light brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are close to medium spaced, horizontal, clean, rough, tight to wide. NO RECOVERY - 17.20-17.25mbgl			13	
15.70 - 17.20	100	100	65	8			(4.15)		Weak grey/light brown fine to medium grained SANDSTONE. Moderately weathered and recovered locally as gravel. Discontinuities are close to medium spaced, generally horizontal, occasionally sub vertical, clean, rough, tight to partly open. NO RECOVERY - 18.70-18.71mbgl NON-INTACT, RECOVERED AS SANDY GRAVEL - 19.12-19.24mbgl NON-INTACT, RECOVERED AS GRAVEL - 19.71-19.74mbgl			14	
17.20 - 18.70	97	91	85	2			(1.85)					15	
18.70 - 20.00	99	70	57	NR			(1.30)					16	
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 cutting and breaking out surface hardstanding 1hr hand excavating 1.20mbgl service avoidance pit Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids				
28-09-2023	08:30	3.70	3.00										
28-09-2023	16:00	20.00	3.00	6.90									
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	Top (m)	Base (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks			
3.70	20.00		90%-100%	BROWN	0.00 3.00	3.00 10.00	PLAIN SLOTTED	19 19			Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %		
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Rotary Core Drilling Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH04					
		Contract Number: CCG-C-23-14178		Date Started: 28/09/2023		Logged By: HF		Checked By: CB		Status: FINAL					
		Easting: 344178.7		Northing: 390937.1		Ground Level: 35.33mAOD		Plant Used: DANDO 2000		Rig Crew: AR & CMC CB & CMC					
Weather:						Termination: Instructed depth				SPT Hammer: CCG1 Energy Ratio: 66%					
Samples & In Situ Testing						Strata Details						Groundwater			
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation		
						15.33	20.00		Weak grey/light brown fine to medium grained SANDSTONE. Moderately weathered and recovered locally as gravel. Discontinuities are close to medium spaced, generally horizontal, occasionally sub vertical, clean, rough, tight to partly open.			20			
												21			
												22			
												23			
												24			
												25			
												26			
												27			
												28			
												29			
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 cutting and breaking out surface hardstanding						
28-09-2023	08:30	3.70	3.00						1hr hand excavating 1.20mbgl service avoidance pit						
28-09-2023	16:00	20.00	3.00	6.90					Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids						
Flush Information						Water Strikes									
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Depth (m)	Type	Top (m)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
3.70	20.00		90%-100%	BROWN	0.00	3.00	10.00	PLAIN SLOTTED	19						
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %															
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					Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH05			
					Contract Number: CCG-C-23-14178		Date Started: 21/09/2023		Logged By: HF		Checked By: CB		Status: FINAL		Sheet 1 of 1	
Cable Percussion Borehole Log					Easting: 344223.1		Northing: 390925.4		Ground Level: 36.71mAOD		Plant Used: DANDO 2000		Rig Crew: CB & CMC		Scale: 1:50	
Weather:							Termination: Instructed depth					SPT Hammer: CCG1 Energy Ratio: 66%				
Samples & In Situ Testing							Strata Details							Groundwater		
Depth	Sample ID	Test Result			Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description					Water Strike	Backfill/ Installation		
0.25	B	PID 0.30m, 0.0ppm			36.61	0.10		BLOCK PAVING								
0.30	ES				36.51	0.20		Yellowish brown fine to medium SAND (MADE GROUND)								
0.40	D					(0.45)		Grey very sandy slightly silty GRAVEL. Gravel is fine to coarse subangular to subrounded limestone. (MADE GROUND)								
0.70	B	PID 0.80m, 0.1ppm			36.06	0.65		Greyish brown slightly clayey silty SAND & GRAVEL. Gravel is fine to coarse subangular sandstone, mudstone, concrete and brick. (MADE GROUND)								
0.75	D	PID 1.00m, 0.1ppm			35.86	0.85		Firm to stiff brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular to subrounded sandstone.					1			
0.80	ES															
1.00	ES	PID 1.50m, 0.1ppm														
1.10	B															
1.15	D					(1.45)										
1.20	UT															
1.50	ES															
1.60	B															
1.70	D	SPT(S)N=26 (2,3/5,5,9,7)											2			
2.40	B				34.41	2.30		Light brown SANDSTONE. Highly weathered and recovered as gravelly sand.								
2.80	D	SPT(S)N=100 (4,10/100 for 230mm)														
3.00	B					(1.40)							3			
3.40	D	SPT(C)100 (25 for 90mm/100 for 295mm)														
3.70 - 5.20	93	15	0	SPT(C)100 (25 for 90mm/100 for 295mm)		33.01	3.70		Extremely weak to very weak light brown fine to medium grained SANDSTONE. Highly weathered. Non-intact and recovered as sandy gravel					4		
				NI			NO RECOVERY - 3.70-3.80mbgl									
				13												
				NI												
5.20 - 6.70	97	91	79	NI		31.60	5.11		Very weak to weak light brown occasionally brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are close to medium spaced, horizontal, clean, rough and tight to partly open					5		
				13					NO RECOVERY - 5.20-5.25mbgl							
				NI					NON-INTACT. RECOVERED AS GRAVEL - 6.22-6.29mbgl							
				NR					NO RECOVERY - 6.70-6.77mbgl							
6.70 - 8.20	95	84	73	6		(4.59)								6		
				NI					NO RECOVERY - 6.70-6.77mbgl							
				5												
				NR					NO RECOVERY - 6.70-6.77mbgl							
8.20 - 9.70	97	97	80	7					NON-INTACT. RECOVERED AS GRAVEL - 7.44-7.47mbgl					7		
				NI					NON-INTACT. RECOVERED AS GRAVEL - 7.82-8.05mbgl							
				9					NO RECOVERY - 8.20-88.25mbgl							
				NI					NON-INTACT. RECOVERED AS GRAVEL - 9.39-9.49mbgl							
				7		27.01	9.70							8		
				NR												
				NI												
				5												
		TCR	SCR	RQD	FI	Water										
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 removing and replacing surface paving							
21-09-2023	16:00	3.70	3.70						1hr hand excavating 1.20mbgl service avoidance pit							
24-09-2023	08:30	3.70	3.70						Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids							
24-09-2023	16:00	9.70	3.70													
Chiselling							Penetration		Type		Water Strikes					
From (m)	To (m)	Duration	Remarks		Top (m)	Base (m)	Type	Dia (mm)		Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks	
2.80	3.70	01:00														
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Cable Percussion Borehole Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8		Borehole ID: BH06							
		Contract Number: CCG-C-23-14178		Date Started: 26/09/2023		Logged By: HF		Checked By: CB		Status: FINAL		Sheet 1 of 3			
		Easting: 344157.9		Northing: 390886.5		Ground Level: 34.90mAOD		Plant Used: DANDO 2000		Rig Crew: AR & CMC		Scale: 1:50			
Weather:				Termination: Instructed depth				SPT Hammer: CCG1 Energy Ratio: 66%							
Samples & In Situ Testing					Strata Details							Groundwater			
Depth	Sample ID	Test Result			Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description					Water Strike	Backfill/ Installation	
0.30 0.35 0.40 0.60 0.65 0.80 0.90 1.00 1.40 1.50	ES B D ES B D B ES D ES	PID 0.30m, 0.0ppm PID 0.60m, 0.1ppm PID 1.00m, 0.1ppm SPT(S)N=11 (2,3/3,2,3,3) PID 1.50m, 0.2ppm			34.65 34.20 33.00 31.90	0.25 (0.45) 0.70 1.90 3.00		FLEXIBLE PAVEMENT Brown slightly silty gravelly SAND. High cobble content. Gravel is fine to coarse angular to subangular sandstone, brick and cinders with inclusions of wood. (MADE GROUND) Medium dense brown very clayey fine to medium SAND with frequent pockets of clay. Firm to stiff brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular to subrounded sandstone and mudstone. Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand					1 2 3		
3.50 - 5.00	95	61	0	NR NI 30 NI 12 NI 22 NI 25 NI 28 NR	31.32	3.58		NO RECOVERY - 3.50-3.58mbgl Very weak to weak reddish brown fine to medium grained SANDSTONE. Moderately weathered and recovered locally as gravel. Discontinuities are very close to closely spaced, horizontal, clean, rough, tight to wide. NON-INTACT, RECOVERED AS SANDY GRAVEL - 3.50-3.58mbgl NON-INTACT, RECOVERED AS GRAVEL - 3.85-3.90mbgl NON-INTACT, RECOVERED AS GRAVEL - 4.31-4.38mbgl NON-INTACT, RECOVERED AS GRAVEL - 4.47-4.62mbgl NON-INTACT, RECOVERED AS GRAVEL - 4.78-4.93mbgl					4		
5.00 - 6.50	97	97	80	17 5	29.90	5.00		Very weak to moderately weak reddish brown fine to medium grained SANDSTONE. Slightly weathered, Discontinuities are very close to widely spaced, horizontal, clean, rough, tight to wide. NO RECOVERY - 5.00-5.05mbgl					5 6		
6.50 - 8.00	91	77	60	NR NI 9 NI 10 NR				NO RECOVERY 6.50-6.63mbgl NON-INTACT, RECOVERED AS GRAVEL - 9.63-6.69mbgl NON-INTACT, RECOVERED AS SANDY GRAVEL - 7.59-7.62mbgl NON-INTACT, RECOVERED AS SANDY GRAVEL - 7.91-8.00mbgl NO RECOVERY - 8.00-8.03mbgl					7 8		
8.00 - 9.50	98	98	82	7 NR NI				NO RECOVERY - 9.50-9.52mbgl NON-INTACT, RECOVERED AS GRAVELLY SAND - 9.59-9.62mbgl					9		
TCR SCR RQD FI Water															
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 cutting and breaking out surface hardstanding 1hr hand excavating 1.20mbgl service avoidance pit Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids						
26-09-2023	16:00	3.50	3.00												
27-10-2023	08:30	3.50	3.00	3.30											
27-10-2023	16:00	20.00	3.00	7.60											
Chiselling					0.00 5.00		19 19		Water Strikes						
From (m)	To (m)	Duration	Remarks		PLAIN SLOTTED		Strike (m)		Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks		
3.30	3.50	01:00	Sandstone								0				
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Rotary Core Drilling Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH06					
		Contract Number: CCG-C-23-14178		Date Started: 26/09/2023		Logged By: HF		Checked By: CB		Status: FINAL					
		Easting: 344157.9		Northing: 390886.5		Ground Level: 34.90mAOD		Plant Used: DANDO 2000		Rig Crew: AR & CMC					
						Termination: Instructed depth				SPT Hammer: CCG1 Energy Ratio: 66%					
Samples & In Situ Testing						Strata Details						Groundwater			
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation		
9.50 - 11.00	99	94	67	7					Very weak to moderately weak reddish brown fine to medium grained SANDSTONE. Slightly weathered, Discontinuities are very close to widely spaced, horizontal, clean, rough, tight to wide.			10			
				NR					NO RECOVERY - 11.00-11.09mbgl			11			
11.00 - 12.50	94	94	86	4								12			
				NR					NO RECOVERY - 12.50-12.54mbgl			13			
12.50 - 14.00	97	97	88	6								14			
				NR					NO RECOVERY - 14.00-14.07mbgl			15			
14.00 - 15.50	95	95	95	4			(15.00)					16			
				NR					NO RECOVERY - 15.50-15.58mbgl			17			
15.50 - 17.00	95	92	77	7								18			
				NI					NON-INTACT, RECOVERED AS GRAVEL - 17.10-17.14mbgl			19			
17.00 - 18.50	100	95	79	7											
				NR					NO RECOVERY - 18.50-18.51mbgl						
18.50 - 20.00	99	95	71	7											
				NI					NON-INTACT, RECOVERED AS GRAVEL - 19.79-19.85mbgl						
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 cutting and breaking out surface hardstanding						
26-09-2023	16:00	3.50	3.00						1hr hand excavating 1.20mbgl service avoidance pit						
27-10-2023	08:30	3.50	3.00	3.30					Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids						
27-10-2023	16:00	20.00	3.00	7.60											
Flush Information						Water Strikes									
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Volume	Type	Top (m)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
3.50	20.00		90%-100%	BROWN	0.00	5.00	20.00	PLAIN SLOTTED	19				0		
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %															
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Rotary Core Drilling Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH06					
		Contract Number: CCG-C-23-14178		Date Started: 26/09/2023		Logged By: HF		Checked By: CB		Status: FINAL					
		Easting: 344157.9		Northing: 390886.5		Ground Level: 34.90mAOD		Plant Used: DANDO 2000		Rig Crew: AR & CMC					
Weather:						Termination: Instructed depth				SPT Hammer: CCG1 Energy Ratio: 66%					
Samples & In Situ Testing						Strata Details						Groundwater			
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		Water Strike	Backfill/ Installation			
				7		14.90	20.00		Very weak to moderately weak reddish brown fine to medium grained SANDSTONE. Slightly weathered, Discontinuities are very close to widely spaced, horizontal, clean, rough, tight to wide.		20				
											21				
											22				
											23				
											24				
											25				
											26				
											27				
											28				
											29				
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 cutting and breaking out surface hardstanding 1hr hand excavating 1.20mbgl service avoidance pit Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids						
26-09-2023	16:00	3.50	3.00												
27-10-2023	08:30	3.50	3.00	3.30											
27-10-2023	16:00	20.00	3.00	7.60											
Flush Information						Borehole Diameter		Casing Diameter		Water Strikes					
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Diameter	Type	Top (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
3.50	20.00		90%-100%	BROWN	0.00	5.00	20.00	PLAIN SLOTTED	19				0		
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %															
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Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH07													
Contract Number: CCG-C-23-14178		Date Started: 12/09/2023		Logged By: PMC		Checked By: CB		Status: FINAL		Sheet 1 of 3											
Cable Percussion Borehole Log		Easting: 344134.9		Northing: 390860.7		Ground Level: 34.59mAO		Plant Used: Dando 2000						Rig Crew: AR/CMC		Scale: 1:50					
Weather:				Termination: Instructed depth				SPT Hammer: CCG1 Energy Ratio: 66%													
Samples & In Situ Testing						Strata Details						Groundwater									
Depth		Sample ID		Test Result		Level (mAO)	Depth (m) (Thickness)	Legend	Strata Description				Water Strike	Backfill/ Installation							
0.20 0.30 0.35 0.50 0.70		ES B D ES D		PID 0.20m, 0.2ppm PID 0.50m, 0.1ppm HVP=55		34.42 34.14	0.17 0.45		FLEXIBLE PAVEMENT Brown very sandy silty GRAVEL. Gravel is fine to coarse angular to subangular of limestone and cinders (MADE GROUND) Firm to stiff becoming stiff brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular to subrounded sandstone				1								
1.00 1.00 1.00 - 1.45		B ES UT		PID 1.00m, 0.0ppm																	
1.50 1.50		D ES		PID 1.50m, 0.0ppm																	
2.00		B		SPT(S)N=12 (1,3/3,3,3)			(3.15)						2								
2.50		D																			
3.00 3.00 - 3.45		B UT											3								
3.50 3.80 4.00		D D D		SPT(S)N=50 (10,13/50 for 265mm) SPT(C)100 (25 for 70mm/100 for 210mm)		30.99	3.60 (0.76)		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand				4								
4.00 - 5.50		76		45		25		30.23	4.36		NO RECOVERY - 4.00-4.36mbgl Very weak to weak reddish brown fine to medium grained SANDSTONE. Moderately weathered. Recovered locally as gravel. Discontinuities are very close to medium spaced, horizontal occasionally sub-vertical, clean, rough and tight to wide NON-INTACT, RECOVERED AS GRAVEL - 4.36-4.45mbgl NON-INTACT, RECOVERED AS GRAVEL - 4.53-4.84mbgl NON-INTACT, RECOVERED AS GRAVEL - 5.09-5.13mbgl				5						
5.50 - 7.00		89		79		55				(5.64)	SPT @ 5.50mbgl "N" = 100 (25 for 30mm / 100 for 95mm) NO RECOVERY - 5.50-5.67mbgl NON-INTACT, RECOVERED AS GRAVEL - 5.67-5.74mbgl				6						
7.00 - 8.50		83		74		37					NO RECOVERY - 7.00-7.25mbgl NON-INTACT, RECOVERED AS GRAVEL - 7.80-7.83mbgl NON-INTACT, RECOVERED AS GRAVELLY SAND - 8.04-8.14mbgl				7						
8.50 - 10.00		89		77		16					NO RECOVERY - 8.50-8.67mbgl NON-INTACT, RECOVERED AS GRAVEL - 8.87-9.12mbgl				8						
															9						
		TCR		SCR		RQD		FI		Water											
Start & End of Shift Observations						Borehole Diameter		Casing Diameter		Remarks:											
Date		Time		Depth (m)		Casing (m)		Water (m)		Depth (m)		Dia (mm)									
12-09-2023		16:00		4.00		4.00		3.90						1hr cutting and breaking out surface hardstanding							
13-09-2023		08:00		4.00		4.00		3.90						1hr hand excavating 1.00mbgl service avoidance pit							
														Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids							
										Water Strikes											
										Strike (m)		Casing (m)		Sealed (m)		Time (mins)		Rose to (m)		Remarks	
From (m)		To (m)		Duration		Remarks															
3.70		4.00		01:00		Sandstone															
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Contract Name: Huyton Town Centre, Liverpool						Client: Genr8						Borehole ID: BH07															
Contract Number: CCG-C-23-14178			Date Started: 12/09/2023			Logged By: PMC			Checked By: CB			Status: FINAL			Sheet 2 of 3												
Rotary Core Drilling Log						Easting: 344134.9			Northing: 390860.7			Ground Level: 34.59mAOD			Plant Used: Dando 2000			Rig Crew: AR/CMC			Scale: 1:50						
Weather:						Termination: Instructed depth									SPT Hammer: CCG1 Energy Ratio: 66%												
Samples & In Situ Testing												Strata Details												Groundwater			
Depth		TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description								Water Strike	Backfill/ Installation								
							24.59	10.00		Very weak to weak reddish brown fine to medium grained SANDSTONE. Moderately weathered. Recovered locally as gravel. Discontinuities are very close to medium spaced, horizontal occasionally sub-vertical, clean, rough and tight to wide								-10									
10.00 - 11.50		52	0	0	NR			(1.50)		Extremely weak to very weak reddish brown fine to medium grained SANDSTONE. Highly weathered. Recovered as very sandy gravel <u>NO RECOVERY - 10.00-10.72mbgl</u>								-11									
11.50 - 13.00		91	71	43	NR NI NI NI NI NI		23.09	11.50		Very weak to weak reddish brown fine to medium grained SANDSTONE. Moderately weathered. Recovered locally as gravel. Discontinuities are very close to medium spaced, horizontal, clean, rough and tight to partly open <u>SPT @ 11.50mbgl "N" = 100 (25 for 25mm / 100 for 85mm)</u> <u>NO RECOVERY - 11.50-11.63mbgl</u> <u>NON-INTACT, RECOVERED AS GRAVEL - 11.65-11.69mbgl</u> <u>NON-INTACT, RECOVERED AS VERY SANDY GRAVEL - 11.80-11.97mbgl</u> <u>NON-INTACT, RECOVERED AS GRAVELLY SAND - 12.08-12.11mbgl</u> <u>NON-INTACT, RECOVERED AS GRAVELLY SAND - 12.20-12.25mbgl</u>								-12									
13.00 - 14.50		95	68	37	NR NI 8 NI 12 NI 15 NI 8			(6.58)		<u>NO RECOVERY - 13.00-13.08mbgl</u> <u>NON-INTACT, RECOVERED AS GRAVEL - 13.08-13.23mbgl</u> <u>NON-INTACT, RECOVERED AS SANDY GRAVEL - 13.35-13.44mbgl</u> <u>NON-INTACT, RECOVERED AS GRAVEL - 13.85-13.96mbgl</u> <u>NON-INTACT, RECOVERED AS GRAVEL - 14.23-14.26mbgl</u>								-13									
14.50 - 16.00		89	83	49	NR NI					<u>NO RECOVERY - 14.50-14.67mbgl</u> <u>NON-INTACT, RECOVERED AS GRAVEL - 14.67-14.73mbgl</u>								-15									
16.00 - 17.50		89	77	34	NR 11 NI 15 NI 10					<u>NO RECOVERY - 16.00-16.17mbgl</u> <u>NON-INTACT, RECOVERED AS GRAVEL - 16.70-16.72mbgl</u> <u>NON-INTACT, RECOVERED AS GRAVEL - 17.05-17.21mbgl</u>								-16									
17.50 - 19.00		95	56	7	NR NI NI NI 10		16.51	18.08		<u>NO RECOVERY - 17.50-17.57mbgl</u> <u>NON-INTACT, RECOVERED AS GRAVEL - 17.57-17.60mbgl</u> <u>NON-INTACT, RECOVERED AS GRAVEL - 17.66-17.80mbgl</u> <u>NON-INTACT, RECOVERED AS GRAVEL - 17.86-17.98mbgl</u>								-18									
19.00 - 20.00		98	89	45	7 NI 13		16.11	18.48		Very weak reddish brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are extremely close to very close, clean, rough and tight to partly open Very weak reddish brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are very close to closely spaced, horizontal, clean, rough and tight to partly open <u>NON-INTACT, RECOVERED AS GRAVEL - 18.93-19.00mbgl</u> <u>NO RECOVERY - 19.00-19.02mbgl</u> <u>NON-INTACT, RECOVERED AS SANDY GRAVEL - 19.60-19.64mbgl</u>								-19									
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 cutting and breaking out surface hardstanding 1hr hand excavating 1.00mbgl service avoidance pit Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids									
12-09-2023		16:00		4.00		4.00		3.90																			
13-09-2023		08:00		4.00		4.00		3.90																			
Flush Information												Top dia				Base dia				Type				Dia (mm)			
Top (m)		Base (m)		Flush Type		Return		Flush Colour		0.00		5.00		PLAIN													
4.00		20.00				90%-100%		BROWN		5.00		20.00		SLOTTED		19											
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %																				CCGEOTECHNICAL LTD 0151 545 2750 www.ccgteotechnical.com							

Rotary Core Drilling Log	Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH07					
	Contract Number: CCG-C-23-14178		Date Started: 12/09/2023		Loggged By: PMC		Checked By: CB		Status: FINAL					
	Easting: 344134.9		Northing: 390860.7		Ground Level: 34.59mAOD		Plant Used: Dando 2000		Rig Crew: AR/CMC					
Weather:					Termination: Instructed depth					SPT Hammer: CCG1 Energy Ratio: 66%				
Samples & In Situ Testing						Strata Details						Groundwater		
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation	
				NI		14.59	20.00		Very weak reddish brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are very close to closely spaced, horizontal, clean, rough and tight to partly open NON-INTACT. RECOVERED AS SANDY GRAVEL - 19.94-20.00mbgl			20		
												21		
												22		
												23		
												24		
												25		
												26		
												27		
												28		
												29		
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 cutting and breaking out surface hardstanding 1hr hand excavating 1.00mbgl service avoidance pit Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids					
12-09-2023	16:00	4.00	4.00	3.90										
13-09-2023	08:00	4.00	4.00	3.90										
Flush Information						Borehole Diameter		Casing Diameter		Water Strikes				
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Flush Type	Top (m)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
4.00	20.00		90%-100%	BROWN	0.00 5.00	5.00 20.00	PLAIN SLOTTED	19 19						
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %														
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Cable Percussion Borehole Log	Contract Name: Huyton Town Centre, Liverpool				Client: Genr8			Borehole ID: BH08			
	Contract Number: CCG-C-23-14178		Date Started: 17/09/2023		Logged By: HF	Checked By: CB	Status: FINAL	Sheet 1 of 2			
	Easting: 344112.6		Northing: 390872.2		Ground Level: 33.72mAOD	Plant Used: DANDO 2000	Rig Crew: CB & AW	Scale: 1:50			
Weather:			Termination: Instructed depth			SPT Hammer: CCG1 Energy Ratio: 66%					
Samples & In Situ Testing					Strata Details					Groundwater	
Depth	Sample ID	Test Result			Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		Water Strike	Backfill/ Installation
0.15	D	PID 0.20m, 0.0ppm			33.60	0.12		FLEXIBLE PAVEMENT			
0.20	ES				33.42	0.30		Greyish brown very sandy slightly silty GRAVEL. Gravel is fine to medium subrounded to subangular limestone, brick and concrete. (MADE GROUND)			
0.25	B	PID 0.50m, 0.0ppm				(0.40)					
0.40	B				33.02	0.70		Brown very gravelly silty SAND. Gravel is fine to coarse subangular brick, concrete and sandstone. (MADE GROUND)			
0.50	ES	PID 0.80m, 0.0ppm						Stiff brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subrounded sandstone.		1	
0.60	D										
0.80	ES										
0.90	D										
1.20	UT										
1.50	ES	PID 1.50m, 0.1ppm									
1.60	B										
2.00	D	SPT(S)N=18 (2,3/3,5,4,6)								2	
2.50	B					(4.00)					
3.00	D										
3.00	UT									3	
3.50	B										
4.00	D	SPT(S)N=22 (2,5/4,5,5,8)								4	
4.50	B										
4.80	D	SPT(S)N=100 (5,5/100 for 235mm)			29.02	4.70		Reddish brown SANDSTONE. Highly weathered and recovered as very gravelly sand.		5	
5.00	B					(1.55)					
5.50	D	SPT(S)N=100 (25 for 105mm/100 for 285mm)						NO RECOVERY - 5.50-5.53mbgl			
5.50 - 6.50	97	0	0	NI	27.47	6.25				6	
				NI	27.22	6.50		Extremely weak to very weak reddish brown fine to medium grained SANDSTONE. Highly weathered and recovered as gravel			
				NR				Very weak to weak reddish brown fine to medium grained SANDSTONE. Fresh. Discontinuities are very close to medium spaced, horizontal, clean, rough and tight to wide		7	
				NI				NO RECOVERY - 6.50-6.57mbgl NON-INTACT, RECOVERED AS GRAVEL - 6.68-6.71mbgl			
6.50 - 8.00	95	93	91	6		(2.83)					
				NR				NO RECOVERY - 8.00-8.15mbgl		8	
				8							
8.00 - 9.20	88	78	50	NI				NON-INTACT, RECOVERED AS GRAVEL - 8.53-8.63mbgl			
				9						9	
				NR	24.39	9.33		NO RECOVERY - 9.20-9.22mbgl			
				10				Very weak to weak reddish brown fine to medium grained SANDSTONE. Moderately weathered. Recovered locally as sandy gravel. Discontinuities are extremely close to closely spaced, horizontal, clean, rough and tight to wide			
				NI							
				13							
				NI							
				14							
				NI							
	TCR	SCR	RQD	FI	Water						
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)			
17-09-2023	16:00	5.50	5.50						1hr cutting and breaking out surface hardstanding		
18-09-2023	08:30	5.50	5.50						1hr hand excavating 1.20mbgl service avoidance pit		
18-09-2023	16:00	16.70	5.50	6.40					Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids		
19-09-2023	08:30	16.70	5.50	6.40							
19-09-2023	16:00	19.70	5.50	6.40							
Chiselling					No. cuts		No. cuts		Water Strikes		
From (m)	To (m)	Duration	Remarks		0.00	6.00	PLAIN	19	Strike (m)	Casing (m)	Sealed (m)
4.70	5.50	01:00			6.00	19.70	SLOTTED	19	Time (mins)	Rose to (m)	Remarks
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Rotary Core Drilling Log					Contract Name: Huyton Town Centre, Liverpool			Client: Genr8			Borehole ID: BH08					
					Contract Number: CCG-C-23-14178	Date Started: 17/09/2023	Logged By: HF	Checked By: CB	Status: FINAL	Sheet 2 of 2						
					Easting: 344112.6	Northing: 390872.2	Ground Level: 33.72mAOD	Plant Used: DANDO 2000	Rig Crew: CB & AW	Scale: 1:50						
Weather:					Termination: Instructed depth					SPT Hammer: CCG1 Energy Ratio: 66%						
Samples & In Situ Testing						Strata Details						Groundwater				
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation			
9.20 - 10.70	99	77	39	14		21.52	(2.87)		Very weak to weak reddish brown fine to medium grained SANDSTONE. Moderately weathered. Recovered locally as sandy gravel. Discontinuities are extremely close to closely spaced, horizontal, clean, rough and tight to wide	10						
				13												
				8												
				NI												
				11												
10.70 - 12.20	93	45	16	NR									NON-INTACT. RECOVERED AS SANDY GRAVEL - 9.43-9.47mbgl NON-INTACT. RECOVERED AS SANDY GRAVEL - 9.62-9.66mbgl NON-INTACT. RECOVERED AS SANDY GRAVEL - 9.80-9.87mbgl NON-INTACT. RECOVERED AS GRAVELLY SAND - 9.94-9.98mbgl NON-INTACT. RECOVERED AS GRAVEL - 10.06-10.11mbgl NON-INTACT. RECOVERED AS SANDY GRAVEL - 10.48-10.52mbgl NO RECOVERY - 10.70-10.81mbgl	11		
				23												
				NI												
				17												
				NI												
12.20 - 13.70	95	95	51	8									Very weak to weak reddish brown fine to medium grained SANDSTONE. Fresh. Discontinuities are closely spaced, horizontal, clean, rough and tight to wide	12		
				NI												
				8												
				NI												
				NR												
13.70 - 15.20	91	48	9	9									Very weak to weak reddish brown fine to medium grained SANDSTONE. Moderately weathered. Recovered locally as gravel. Discontinuities are very close to closely spaced, horizontal, clean, rough and tight to wide	13		
				NR												
				17												
				NR												
				12												
15.20 - 16.70	82	64	27	NI				NON RECOVERY - 13.70-13.84mbgl NON-INTACT. RECOVERED AS GRAVEL - 14.02-14.07mbgl NON-INTACT. RECOVERED AS GRAVEL - 14.14-14.45mbgl NON-INTACT. RECOVERED AS GRAVEL - 14.53-14.64mbgl NON-INTACT. RECOVERED AS GRAVEL - 14.72-14.87mbgl	14							
				13												
				NI												
				13												
				NI												
16.70 - 18.20	93	48	0	9				NON-INTACT. RECOVERED AS GRAVEL - 15.20-15.47mbgl NON-INTACT. RECOVERED AS GRAVEL - 15.61-15.74mbgl NON-INTACT. RECOVERED AS GRAVEL - 15.90-16.04mbgl	15							
				NR												
				7												
				NI												
				13												
18.20 - 19.70	95	93	40	NI				NON-INTACT. RECOVERED AS GRAVEL - 16.70-16.81mbgl NON-INTACT. RECOVERED AS GRAVEL - 16.81-16.91mbgl NON-INTACT. RECOVERED AS GRAVEL - 16.93-16.96mbgl NON-INTACT. RECOVERED AS SANDY GRAVEL - 17.37-17.45mbgl NON-INTACT. RECOVERED AS GRAVEL - 17.65-17.78mbgl NON-INTACT. RECOVERED AS GRAVEL - 17.83-17.90mbgl NON-INTACT. RECOVERED AS GRAVEL - 17.94-18.02mbgl NON-INTACT. RECOVERED AS SANDY GRAVEL - 18.11-18.14mbgl NO RECOVERY - 18.20-18.28mbgl NON-INTACT. RECOVERED AS GRAVEL - 18.33-18.37mbgl	16							
				11												
				NR												
				NI												
				17												
				20				Weak reddish brown fine to medium grained SANDSTONE. Fresh. Discontinuities are extremely close to closely spaced, horizontal, clean, rough and tight to wide	17							
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Contract Name: Huyton Town Centre, Liverpool						Client: Genr8						Borehole ID: BH09																									
Contract Number: CCG-C-23-14178						Date Started: 15/09/2023				Logged By: HF				Checked By: CB				Status: FINAL				Sheet 1 of 3															
Cable Percussion Borehole Log						Easting: 344160.3				Northing: 390865.6				Ground Level: 35.29mAOD				Plant Used: DANDO 2000										Rig Crew: AR & CMC CB & PC				Scale: 1:50					
Weather:												Termination: Instructed depth												SPT Hammer: CCG1 Energy Ratio: 66%													
Samples & In Situ Testing												Strata Details												Groundwater													
Depth		Sample ID		Test Result		Level (mAOD)		Depth (m) (Thickness)		Legend		Strata Description								Water Strike		Backfill/ Installation															
0.20 0.30 0.35 0.50 0.60 0.70 1.00 1.00 1.20 1.50		ES B D ES B D ES D ES		PID 0.20m, 3.8ppm PID 0.50m, 0.0ppm PID 1.00m, 0.0ppm SPT(S)N=10 (1,2/2,2,3,3) PID 1.50m, 0.1ppm		35.19 33.99		0.10 1.30				Brown slightly gravelly silty SAND. Gravel is fine subangular to subrounded sandstone. (TOPSOIL) Dark brown very gravelly silty SAND. Gravel is fine to medium angular to subangular brick, concrete and mortar with inclusions of metal and plastic. (MADE GROUND) Dark brown slightly gravelly silty fine to medium SAND with frequent pockets of slightly gravelly sandy silty clay. Gravel is fine to medium subangular to subrounded sandstone. <i>INCREASINGLY CLAYEY WITH DEPTH</i>								1																	
1.90 2.00 2.00		D B UT				32.99		(1.00) 2.30				Firm becoming stiff brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular to subrounded sandstone.								2																	
2.80		D		SPT(S)50 (25 for 115mm/50 for 125mm)				(1.14)				Reddish brown SANDSTONE. Highly weathered and recovered as slightly gravelly sand.																									
3.00 3.00		B D		SPT(C)100 (25 for 130mm/100 for 255mm)		31.85		3.44				NO RECOVERY - 3.00-3.44mbgl								3																	
3.00 - 4.50		71		49		23						Very weak to weak reddish brown fine to medium grained SANDSTONE. Moderately weathered. Recovered locally as sandy gravel. Discontinuities are very close to closely spaced, generally horizontal occasionally sub-vertical, clean, rough and tight to wide								4																	
												NON-INTEGRITY RECOVERED AS GRAVEL - 3.44-3.58mbgl NON-INTEGRITY RECOVERED AS GRAVEL - 4.11-4.21mbgl																									
												NON-INTEGRITY RECOVERED AS GRAVEL - 4.47-4.50mbgl NO RECOVERY - 4.50-4.62mbgl																									
												NON-INTEGRITY RECOVERED AS GRAVEL - 4.67-4.70mbgl NON-INTEGRITY RECOVERED AS SANDY GRAVEL - 4.78-5.10mbgl																									
4.50 - 6.00		92		56		28						NON-INTEGRITY RECOVERED AS SANDY GRAVEL - 5.16-5.33mbgl								5																	
												NON-INTEGRITY RECOVERED AS SANDY GRAVEL - 5.63-5.67mbgl																									
6.00 - 7.50		93		91		73		(7.06)				NO RECOVERY - 6.00-6.10mbgl								6																	
												NON-INTEGRITY RECOVERED AS GRAVEL - 6.80-6.84mbgl								7																	
7.50 - 9.00		94		81		77						NO RECOVERY - 7.50-7.59mbgl								8																	
												NON-INTEGRITY RECOVERED AS SANDY GRAVEL - 8.35-8.48mbgl																									
9.00 - 10.50		93		85		23						NON-INTEGRITY RECOVERED AS GRAVEL - 8.70-8.77mbgl								9																	
												NO RECOVERY - 9.00-9.11mbgl																									
												NON-INTEGRITY RECOVERED AS SANDY GRAVEL - 9.40-9.44mbgl																									
		TCR		SCR		RQD		FI		Water																											
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)																					
15-09-2023		16:00		3.00		3.00		2.90										1hr hand excavating 1.20mbgl service avoidance pit																			
16-09-2023		08:30		3.00		3.00												Rotary coring with air/mist flush. Flush returns maintained without																			
16-09-2023		16:00		20.00		3.00		7.20										notable loss. No significant loss of drilling resistance. No voids																			
Chiselling												Tip Size		Blow Count		Penetration		Face		Drift (mm)		Water Strikes															
From (m)		To (m)		Duration		Remarks		0.00		5.00		PLAIN		19		Strike (m)												Casing (m)		Sealed (m)		Time (mins)		Rose to (m)		Remarks	
2.30		3.00		01:30				5.00		20.00		SLOTTED		19																							
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Rotary Core Drilling Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH09					
		Contract Number: CCG-C-23-14178		Date Started: 15/09/2023		Logged By: HF		Checked By: CB		Status: FINAL					
		Easting: 344160.3		Northing: 390865.6		Ground Level: 35.29mAOD		Plant Used: DANDO 2000		Rig Crew: AR & CMC CB & PC					
		Weather:				Termination: Instructed depth				SPT Hammer: CCG1 Energy Ratio: 66%					
Samples & In Situ Testing						Strata Details						Groundwater			
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/Installation		
				NI		24.79	10.50		Very weak to weak reddish brown fine to medium grained SANDSTONE. Moderately weathered. Recovered locally as sandy gravel. Discontinuities are very close to closely spaced, generally horizontal occasionally sub-vertical, clean, rough and tight to wide			10			
				10						NON-INTACT, RECOVERED AS SANDY GRAVEL - 10.26-10.32mbgl					
10.50 - 12.00	100	97	87	6					Weak to moderately weak reddish brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are close to widely spaced, horizontal, clean, rough and tight to partly open			11			
									NON-INTACT, RECOVERED AS GRAVEL - 10.61-10.67mbgl						
				NR					NO RECOVERY - 12.00-12.04mbgl			12			
12.00 - 13.50	97	97	91	5								13			
				NR					NO RECOVERY - 13.50-13.59mbgl						
				NI					NON-INTACT, RECOVERED AS GRAVEL - 13.59-13.71mbgl			14			
13.50 - 15.00	94	85	69	5								15			
				NR					NO RECOVERY - 15.00-15.07mbgl			16			
15.00 - 16.50	95	95	82	6			(9.50)					17			
				NR					NO RECOVERY - 16.50-16.61mbgl			18			
16.50 - 18.00	93	90	87	4								19			
				NI					NON-INTACT, RECOVERED AS SANDY GRAVEL - 17.70-17.75mbgl						
				8											
				NR					NO RECOVERY - 18.00-18.09mbgl						
18.00 - 19.50	94	91	83	5											
				NI					NON-INTACT, RECOVERED AS GRAVEL - 19.35-19.39mbgl						
				NR					NO RECOVERY - 19.50-19.52mbgl						
19.50 - 20.00	96	96	46	8											
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 excavating 1.20mbgl service avoidance pit						
15-09-2023	16:00	3.00	3.00	2.90					Rotary coring with air/mist flush. Flush returns maintained without						
16-09-2023	08:30	3.00	3.00						notable loss. No significant loss of drilling resistance. No voids						
16-09-2023	16:00	20.00	3.00	7.20											
Flush Information						Water Strikes									
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Depth (m)	Type	Top (m)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
3.00	20.00		90%-100%	BROWN	0.00	5.00	20.00	PLAIN SLOTTED	19						
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %															
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Rotary Core Drilling Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH09				
		Contract Number: CCG-C-23-14178		Date Started: 15/09/2023		Logged By: HF		Checked By: CB		Status: FINAL				
		Easting: 344160.3		Northing: 390865.6		Ground Level: 35.29mAOD		Plant Used: DANDO 2000		Rig Crew: AR & CMC CB & PC				
Weather:						Termination: Instructed depth				SPT Hammer: CCG1 Energy Ratio: 66%				
Samples & In Situ Testing						Strata Details						Groundwater		
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation	
						15.29	20.00		Weak to moderately weak reddish brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are close to widely spaced, horizontal, clean, rough and tight to partly open			20		
												21		
												22		
												23		
												24		
												25		
												26		
												27		
												28		
												29		
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 excavating 1.20mbgl service avoidance pit					
15-09-2023	16:00	3.00	3.00	2.90					Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids					
16-09-2023	08:30	3.00	3.00											
16-09-2023	16:00	20.00	3.00	7.20										
Flush Information						Borehole Diameter		Casing Diameter		Water Strikes				
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Top (m)	Base (m)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
3.00	20.00		90%-100%	BROWN	0.00 5.00	5.00 20.00	PLAIN SLOTTED	19 19						
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %														
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Cable Percussion Borehole Log	Contract Name: Huyton Town Centre, Liverpool				Client: Genr8			Borehole ID: BH10			
	Contract Number: CCG-C-23-14178		Date Started: 12/09/2023		Logged By: PMC	Checked By: CB	Status: FINAL	Sheet 1 of 2			
	Easting: 344159.8		Northing: 390825.7		Ground Level: 35.99mAOD	Plant Used: Dando 2000	Rig Crew: AR/CMC	Scale: 1:50			
Weather:			Termination: Instructed depth			SPT Hammer: CCG1 Energy Ratio: 66%					
Samples & In Situ Testing					Strata Details					Groundwater	
Depth	Sample ID	Test Result			Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		Water Strike	Backfill/ Installation
0.15	B	PID 0.20m, 0.2ppm			35.90	0.10		FLEXIBLE PAVEMENT	1		
0.20	D				35.74	0.25		Greyish brown slightly silty sandy GRAVEL. Gravel is fine to coarse angular limestone (MADE GROUND)			
0.20	ES	PID 0.50m, 0.1ppm			35.54	0.45		Greyish brown slightly silty sandy GRAVEL. Gravel is fine to coarse angular to subangular of limestone with inclusions of concrete and brick (MADE GROUND)			
0.30	B							Dark grey silty gravelly SAND. Gravel is fine to medium subangular to subrounded of sandstone with occasional inclusions of brick (MADE GROUND)			
0.40	D					(0.85)					
0.50	ES										
0.60	B	SPT(S)N=11 (2,3/3,2,3,3)									
0.70	D	PID 1.00m, 0.1ppm									
1.00	ES				34.70	1.30		Firm brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular to subrounded sandstone			
1.10	B										
1.50	D	PID 1.50m, 0.0ppm									
1.50	ES										
2.00	B	SPT(S)N=11 (1,2/2,3,3,3)				(1.40)			2		
2.50	D										
					33.30	2.70					
3.00	B					(0.60)		Stiff to very stiff brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular to subrounded sandstone	3		
3.00 - 3.45	UT				32.70	3.30					
3.10	D										
3.50	D							Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand			
4.00	B	SPT(S)N=50 (7,9/50 for 260mm)				(1.90)			4		
4.50	D										
		SPT(C)100 (25 for 70mm/100 for 165mm)						SPT @ 4.60mbgl "N" = 100 (25 for 30mm / 59.4' for 70mm) NO RECOVERY - 4.60-5.20mbgl	5		
4.60 - 6.10	60	24	0	NR	30.80	5.20					
				NI		(0.50)		Extremely weak reddish brown fine to medium grained SANDSTONE. Highly weathered. Non-intact and recovered as very sandy gravel			
				NR							
				35	30.30	5.70		Very weak to weak reddish brown fine to medium grained SANDSTONE. Moderately weathered. Recovered locally as gravel. Discontinuities are extremely close to very closely spaced, horizontal, clean, rough and tight to wide	6		
				34				NON-INTACT, RECOVERED AS GRAVEL - 5.85-5.88mbgl			
				30				NON-INTACT, RECOVERED AS GRAVEL - 5.98-6.06mbgl			
				20				NO RECOVERY - 6.10-6.24mbgl			
				NR		(1.00)		NON-INTACT, RECOVERED AS GRAVEL - 6.24-6.70mbgl			
6.10 - 7.60	91	57	45	13	29.30	6.70		Very weak to weak reddish brown fine to medium grained SANDSTONE. Moderately weathered. Recovered locally as gravel. Discontinuities are very close to medium spaced, horizontal, clean, rough and tight to wide	7		
				NI				NON-INTACT, RECOVERED AS GRAVEL - 6.94-6.97mbgl			
				8							
				NR							
				11				NO RECOVERY - 7.60-7.66mbgl	8		
7.60 - 9.10	96	90	16	NI							
				16				NON-INTACT, RECOVERED AS SANDY GRAVEL - 8.53-8.61mbgl			
				NR					9		
9.10 - 10.60	89	86	14	16				NO RECOVERY - 9.10-9.26mbgl			
				NI				NON-INTACT, RECOVERED AS GRAVEL - 9.81-9.86mbgl			
	TCR	SCR	RQD	FI	Water						
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 cutting and breaking out surface hardstanding		
12-09-2023	16:00	4.60	4.60	4.40					1hr hand excavating 1.00mbgl service avoidance pit		
13-09-2023	08:00	4.60	4.60	4.40					Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids		
13-09-2023	16:00	19.60	4.60	12.10							
									Water Strikes		
									Strike (m) Casing (m) Sealed (m) Time (mins) Rose (m) Remarks		
Chiselling					No. cuts		Time				
From (m)	To (m)	Duration	Remarks		0.00	1.50	PLAIN	50			
4.00	4.60	01:00			1.50	5.00	SLOTTED	50			
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Rotary Core Drilling Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH10					
		Contract Number: CCG-C-23-14178		Date Started: 12/09/2023		Logged By: PMC		Checked By: CB		Status: FINAL					
		Easting: 344159.8		Northing: 390825.7		Ground Level: 35.99mAOD		Plant Used: Dando 2000		Rig Crew: AR/CMC					
Weather:				Termination: Instructed depth				SPT Hammer: CCG1 Energy Ratio: 66%							
Samples & In Situ Testing						Strata Details						Groundwater			
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		Water Strike	Backfill/ Installation			
10.60 - 12.10	93	87	58	13					Very weak to weak reddish brown fine to medium grained SANDSTONE. Moderately weathered. Recovered locally as gravel. Discontinuities are very close to medium spaced, horizontal, clean, rough and tight to wide	10					
				NI											
				11											
				NI											
				NR											
				29											
				4											
				13											
				NI											
				10											
12.10 - 13.60	97	84	47	NR					NON-INTACT. RECOVERED AS GRAVEL - 11.50-11.59mbgl	11					
				9											
				NI											
				7											
				NI											
				10											
				NI											
				NR											
				NR											
				12											
13.60 - 15.10	98	72	51	NR					NO RECOVERY - 12.10-12.15mbgl	12					
				9											
				NI											
				7											
				NI											
				10											
				NI											
				NR											
				NR											
				13											
15.10 - 16.60	92	81	15	NR					NON-INTACT. RECOVERED AS GRAVEL - 12.71-12.76mbgl	13					
				13											
				NI											
				14											
				NI											
				13											
				NI											
				NR											
				NR											
				14											
16.60 - 18.10	95	85	65	NR					NON-INTACT. RECOVERED AS GRAVEL - 13.35-13.43mbgl	15					
				13											
				NI											
				14											
				NI											
				NR											
				NR											
				NR											
				NR											
				16											
18.10 - 19.60	94	90	21	NR					NON-INTACT. RECOVERED AS GRAVEL - 13.46-13.50mbgl	17					
				13											
				NI											
				14											
				NI											
				NR											
				NR											
				NR											
				NR											
				17											
				NR					NO RECOVERY - 13.60-13.63mbgl	18					
				13											
				NI											
				14											
				NI											
				NR											
				NR											
				NR											
				NR											
				18											
				NR					NON-INTACT. RECOVERED AS GRAVEL - 13.70-13.97mbgl	19					
				13											
				NI											
				14											
				NI											
				NR											
				NR											
				NR											
				NR											
				19											
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 cutting and breaking out surface hardstanding						
12-09-2023	16:00	4.60	4.60	4.40					1hr hand excavating 1.00mbgl service avoidance pit						
13-09-2023	08:00	4.60	4.60	4.40					Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids						
13-09-2023	16:00	19.60	4.60	12.10					Water Strikes						
										Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
Flush Information						Top (m)		Base (m)		Type		Remarks			
						0.00		1.50		PLAIN		Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %			
						1.50		5.00		SLOTTED		CCGEOTECHNICAL LTD 0151 545 2750 www.ccgteotechnical.com			

				Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH11					
				Contract Number: CCG-C-23-14178		Date Started: 06/09/2023		Logged By: PMC/DK		Checked By: CB		Status: FINAL		Sheet 1 of 3			
Cable Percussion Borehole Log				Easting: 344176.7		Northing: 390789.4		Ground Level: 37.89mAOD		Plant Used: Dando 2000		Rig Crew: AR/CMC AR/CJB		Scale: 1:50			
Weather:						Termination: Instructed depth						SPT Hammer: CCG1 Energy Ratio: 66%					
Samples & In Situ Testing						Strata Details						Groundwater					
Depth		Sample ID		Test Result		Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description				Water Strike	Backfill/ Installation			
0.15		D		PID 0.20m, 0.1ppm		37.79	0.10		FLEXIBLE PAVEMENT								
0.20		ES							Greyish brown very sandy silty clayey GRAVEL. Gravel is fine to coarse angular to subangular sandstone, brick and concrete (MADE GROUND)								
0.30		B		PID 0.50m, 0.1ppm			(0.70)										
0.50		ES															
0.60		D				37.09	0.80										
0.70		B		PID 0.90m, 0.1ppm		36.89	1.00		Grey slightly gravelly sandy silty CLAY. Gravel is fine to coarse angular to subangular brick and coal (MADE GROUND)				1				
0.85		D		PID 1.10m, 0.0ppm					Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone								
0.90		B		SPT(S)N=10 (2,2/2,2,3,3)													
0.90		ES															
1.10		B															
1.10		ES															
1.20		D															
2.00		B											2				
2.00 - 2.45		UT															
2.50		D															
3.00		B		SPT(S)N=13 (1,3/3,3,3,4)									3				
3.50		D					(4.90)										
4.00		B											4				
4.00 - 4.45		UT															
4.50		D															
5.00		B		SPT(S)N=15 (2,4/3,4,4,4)									5				
5.50		D															
6.00		B		SPT(S)50 (25 for 85mm/50 for 100mm)		31.99	5.90		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand and sandy gravel				6				
6.50		D		SPT(C)100 (25 for 60mm/100 for 95mm)					NO RECOVERY - 6.50-7.27mbgl								
6.50 - 8.00		0		9		49		NR	30.62	7.27			7				
								25									
								25									
								NI									
									(0.81)								
								NR									
								NI									
								13	29.56	8.33			8				
								NI									
								16		(0.52)							
								NI									
								14									
								NI									
										8.85			9				

Rotary Core Drilling Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH11				
		Contract Number: CCG-C-23-14178		Date Started: 06/09/2023		Logged By: PMC/DK		Checked By: CB		Status: FINAL				
		Easting: 344176.7		Northing: 390789.4		Ground Level: 37.89mAOD		Plant Used: Dando 2000		Rig Crew: AR/CMC AR/CJB				
		Weather:				Termination: Instructed depth				SPT Hammer: CCG1 Energy Ratio: 66%				
Samples & In Situ Testing						Strata Details						Groundwater		
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/Installation	
9.50 - 11.00	29	29	15	NR					Very weak to weak reddish brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are very close to closely spaced, horizontal, clean, rough and tight to wide NON-INTACT RECOVERED AS SANDY GRAVEL - 9.37-9.43mbgl SPT @ 9.50mbgl "N" = 100 (25 for 30mm / 100 for 100mm) NO RECOVERY - 9.50-10.57mbgl			10		
				14										
11.00 - 12.50	77	74	26	NR					SPT @ 11.00mbgl "N" = 100 (25 for 25mm / 100 for 95mm) NO RECOVERY - 11.00-11.35mbgl NON-INTACT RECOVERED AS SANDY GRAVEL - 11.40-11.44mbgl			11		
				40										
				33										
				10										
12.50 - 14.00	96	93	59	NR					SPT @ 12.50mbgl "N" = 100 (25 for 25mm / 100 for 85mm) NO RECOVERY - 12.50-12.56mbgl NON-INTACT RECOVERED AS GRAVELLY SAND - 13.74-13.78mbgl			13		
				8										
				NI										
				14										
14.00 - 15.50	87	87	41	NR					NO RECOVERY - 14.00-14.19mbgl			14		
				11										
15.50 - 17.00	89	87	59	NR					NO RECOVERY - 15.50-15.66mbgl			16		
				9										
17.00 - 18.50	60	49	41	NR					NO RECOVERY - 17.00-17.60mbgl NON-INTACT RECOVERED AS GRAVEL - 17.92-17.99mbgl			18		
				9										
				NI										
				8										
18.50 - 20.00	75	73	7	NR					SPT @ 18.50mbgl "N" = 100 (25 for 15mm / 69, 31 for 20mm) NO RECOVERY - 18.50-18.87mbgl NON-INTACT RECOVERED AS GRAVEL - 18.87-18.91mbgl			19		
				NI										
				40										
				11										
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 cutting and breaking out surface hardstanding 1hr hand excavating 1.20mbgl service avoidance pit Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids					
06-09-2023	16:00	1.20	1.20											
09-09-2023	16:00	6.50	6.50	6.40										
11-09-2023	08:00	12.50	6.50	12.40										
11-09-2023	16:00	20.00	6.50	10.60										
Flush Information						Borehole Diameter		Casing Diameter		Water Strikes				
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Flush Type	Top (m)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
6.50	20.00		90%-100%	BROWN	0.00	1.50	PLAIN SLOTTED	19	4.40	4.40		0		Minor ingress
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %														
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Rotary Core Drilling Log	Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH11						
	Contract Number: CCG-C-23-14178		Date Started: 06/09/2023		Logged By: PMC/DK		Checked By: CB		Status: FINAL						
	Easting: 344176.7		Northing: 390789.4		Ground Level: 37.89mAOD		Plant Used: Dando 2000		Rig Crew: AR/CMC AR/CJB						
Weather:					Termination: Instructed depth					SPT Hammer: CCG1 Energy Ratio: 66%					
Samples & In Situ Testing						Strata Details						Groundwater			
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation		
						17.89	20.00		Very weak to weak reddish brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are very close to closely spaced, horizontal, clean, rough and tight to wide			20			
												21			
												22			
												23			
												24			
												25			
												26			
												27			
												28			
												29			
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 cutting and breaking out surface hardstanding 1hr hand excavating 1.20mbgl service avoidance pit Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids						
06-09-2023	16:00	1.20	1.20						Water Strikes						
09-09-2023	16:00	6.50	6.50	6.40											
11-09-2023	08:00	12.50	6.50	12.40											
11-09-2023	16:00	20.00	6.50	10.60					Strike (m) Casing (m) Sealed (m) Time (mins) Rose to (m) Remarks						
Flush Information						Top (m) 0.00		Base (m) 1.50		Diameter		Type		Dia (mm)	
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Diameter	Type	Dia (mm)	4.40 4.40 0 0 Minor ingress					
6.50	20.00		90%-100%	BROWN	1.50	5.50	PLAIN	SLOTTED	19	Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %					
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Dynamic Sampling Borehole Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8		Borehole ID: BH12						
		Contract Number: CCG-C-23-14178		Date Started: 05/09/2023		Logged By: PMC/DK				Checked By: CB		Status: FINAL		
		Easting: 344196.0		Northing: 390768.5		Ground Level: 37.83mAOD				Plant Used: Apageo Apafor 450		Rig Crew: AR/CMC		
		Scale: 1:50												
Weather:						Termination: Instructed depth				SPT Hammer: CCG1 Energy Ratio: 66%				
Samples & In Situ Testing						Strata Details						Groundwater		
Depth	Sample ID	Test Result				Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description				Water Strike	Backfill/ Installation
0.20	ES	PID 0.20m, 0.0ppm				37.78	0.05		FLEXIBLE PAVEMENT Brown silty sandy GRAVEL. Gravel is fine to coarse sub-angular sandstone, concrete, brick and mortar with inclusions of metal fragments (MADE GROUND)				1	
0.30	B					37.48	(0.30)							
0.30	D	PID 0.50m, 0.0ppm					0.35		Brown very gravelly silty fine to medium grained SAND with rare small pockets of clay. Gravel is fine to coarse sub-angular to sub-rounded brick and concrete (MADE GROUND)				2	
0.50	ES					37.03	(0.45)							
0.60	D						0.80		Firm brown slightly gravelly sandy silty CLAY with pocket of sandstone gravel at 1.65mbgl. Gravel is fine to medium sub-angular sandstone				3	
0.70	B	PID 1.00m, 0.2ppm					(0.95)							
1.00	B	SPT(S)N=9 (1,2/2,3,2,2)							Medium dense reddish brown slightly silty fine to medium grained SAND				4	
1.00	ES	PID 1.40m, 0.0ppm				36.08	1.75							
1.10	B	HVP=52					(0.70)		Soft to firm brown sandy silty CLAY				5	
1.30	D	SPT(S)N=11 (2,3/3,2,3,3)				35.38	2.45							
1.40	ES	PID 2.20m, 0.0ppm				35.23	2.60		Medium dense reddish brown slightly silty slightly gravelly fine to medium gained SAND. Gravel is fine to medium sub-rounded sandstone, mudstone and quartz. Water bearing and under sub-artesian pressure.				6	
1.60	B	HVP=40												
2.00	D	SPT(S)N=11 (1,2/3,2,3,3)					(1.20)		Sands under sub-artesian pressure - unable to dynamic sample below 3.50mbgl due to sands rising up casing (to c. 2.50mbgl). Borehole advanced >3.50mbgl by cable percussion methods				7	
2.20	ES	PID 3.20m, 0.0ppm				34.03	3.80							
2.30	B								Brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subrounded sandstone				8	
2.50	D						(2.00)							
4.00 - 4.45	UT								Recovered as gravelly sand NO RECOVERY - 6.00-6.73mbgl				9	
4.20	ES	PID 4.20m, 0.1ppm												
4.50	D								Very weak reddish brown fine to medium grained SANDSTONE. Highly weathered. Recovered locally as sandy gravel NON-INTACT, RECOVERED AS SANDY GRAVEL - 6.75-7.13mbgl NON-INTACT, RECOVERED AS SANDY GRAVEL - 7.24-7.43mbgl				10	
5.00	B	SPT(S)N=13 (1,3/3,3,3,4)												
5.50	D	PID 5.40m, 0.1ppm							Weak reddish brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are very close to medium spaced, generally horizontal occasionally sub-vertical (drilling induced), clean, rough and tight to partly open NO RECOVERY - 7.50-7.56mbgl SPT(C) 7.50m, 100 (25 for 30mm/100 for 95mm) NON-INTACT, RECOVERED AS GRAVEL - 7.59-7.68mbgl				11	
5.90	D					32.03	5.80							
6.00	B								NO RECOVERY - 9.00-9.09mbgl				12	
6.00 - 7.50	51	15	0	NR		(0.93)								
				50					NO RECOVERY - 7.50-7.56mbgl SPT(C) 7.50m, 100 (25 for 30mm/100 for 95mm) NON-INTACT, RECOVERED AS GRAVEL - 7.59-7.68mbgl				13	
				NI		(0.77)								
				36					NO RECOVERY - 9.00-9.09mbgl				14	
				NI										
				29					NO RECOVERY - 9.00-9.09mbgl				15	
				NI										
7.50 - 9.00	96	85	33	11					NO RECOVERY - 9.00-9.09mbgl				16	
9.00 - 10.50	94	91	48	9					NO RECOVERY - 9.00-9.09mbgl				17	
	TCR	SCR	RQD	FI	Water				NO RECOVERY - 9.00-9.09mbgl				18	
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 cutting and breaking out surface hardstanding 1hr hand excavating 1.20mbgl service avoidance pit Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids					
05-09-2023	16:00	3.00	3.00	1.40			6.00	150						
06-09-2023	04:00	4.50	4.50	4.30										
06-09-2023	08:00	3.00	3.00	1.40										
07-09-2023	11:00	6.00	6.00	5.40										
08-09-2023	08:00	20.00	6.00	9.50										
Chiselling					Installation				Water Strikes					
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks	
5.80	6.00	01:00	Bedrock	0.00	7.00	PLAIN	19	1.75	1.75	3.80	20	1.40	Significant ingress	
				7.00	20.00	SLOTTED	19							
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Rotary Core Drilling Log	Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH12				
	Contract Number: CCG-C-23-14178		Date Started: 05/09/2023		Logged By: PMC/DK		Checked By: CB		Status: FINAL		Sheet 2 of 3		
	Easting: 344196.0		Northing: 390768.5		Ground Level: 37.83mAOD		Plant Used: Apageo Apafor 450		Rig Crew: AR/CMC		Scale: 1:50		
Weather:				Termination: Instructed depth				SPT Hammer: CCG1 Energy Ratio: 66%					
Samples & In Situ Testing						Strata Details						Groundwater	
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation
				NI					Weak reddish brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are very close to medium spaced, generally horizontal occasionally sub-vertical (drilling induced), clean, rough and tight to partly open NON-INTACT, RECOVERED AS GRAVEL - 10.18-10.23mbgl NO RECOVERY - 10.50-10.59mbgl			10	
				11									
				NR									
10.50 - 12.00	94	94	69	9			(6.00)						
				NR					NO RECOVERY - 12.00-12.20mbgl			11	
				6									
				NI									
				6									
12.00 - 13.50	87	84	65						NON-INTACT, RECOVERED AS GRAVEL - 12.52-12.55mbgl				
				NR					Weak reddish brown fine to medium grained SANDSTONE. Highly weathered. Recovered locally as gravel NO RECOVERY - 13.50-14.23mbgl			12	
				6									
				NI									
				6									
13.50 - 15.00	51	11	8				(1.50)		NON-INTACT, RECOVERED AS GRAVEL - 14.23-14.57mbgl				
				NR					NON-INTACT, RECOVERED AS GRAVEL - 14.76-15.00mbgl			13	
				NI									
				11									
				NI									
15.00 - 16.50	73	65	11				22.83	15.00	Very weak to weak reddish brown fine to medium grained SANDSTONE. Fresh. Discontinuities are very close to medium spaced, horizontal, clean, rough and tight to wide SPT(C) 15.00m, 100 (25 for 25mm/100 for 89mm) NO RECOVERY - 15.00-15.40mbgl NON-INTACT, RECOVERED AS GRAVEL - 15.40-15.52mbgl				
				NR					SPT(C) 16.50m, 100 (25 for 20mm/100 for 90mm)				

NO RECOVERY - 16.50-16.70mbgl 14 | || NI |
| 10 |
| 10 |
| 16.50 - 18.00 | 87 | 87 | 69 | | | | (5.00) | | | | | | |
| | | | | NR | | | | | NO RECOVERY - 18.00-18.22mbgl | | | 15 | |
| 7 |
| NR |
| 10 |
| 18.00 - 19.50 | 85 | 85 | 51 | | | | | | | | | | |
| | | | | NR | | | | | NO RECOVERY - 19.50-19.57mbgl | | | 16 | |
| 10 |
| 10 |
19.50 - 20.00	86	86	0	12											
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 cutting and breaking out surface hardstanding						
05-09-2023	16:00	3.00	3.00	1.40			6.00	150	1hr hand excavating 1.20mbgl service avoidance pit						
06-09-2023	04:00	4.50	4.50	4.30					Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids						
06-09-2023	08:00	3.00	3.00	1.40											
07-09-2023	11:00	6.00	6.00	5.40											
08-09-2023	08:00	20.00	6.00	9.50											
Flush Information						SPT (C)		SPT (C)		Water Strikes					
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks	
6.00	20.00		90%-100%	BROWN	0.00	7.00	7.00	20.00	PLAIN	1.75	1.75	3.80	20	1.40	Significant ingress
						7.00		20.00		SLOTTED		19		19	
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %															
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Rotary Core Drilling Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: BH12				
		Contract Number: CCG-C-23-14178		Date Started: 05/09/2023		Logged By: PMC/DK		Checked By: CB		Status: FINAL				
		Easting: 344196.0		Northing: 390768.5		Ground Level: 37.83mAOD		Plant Used: Apageo Apafor 450		Rig Crew: AR/CMC				
Weather:				Termination: Instructed depth				SPT Hammer: CCG1 Energy Ratio: 66%						
Samples & In Situ Testing						Strata Details						Groundwater		
Depth	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		Water Strike	Backfill/ Installation		
						17.83	20.00		Very weak to weak reddish brown fine to medium grained SANDSTONE. Fresh. Discontinuities are very close to medium spaced, horizontal, clean, rough and tight to wide		20			
											21			
											22			
											23			
											24			
											25			
											26			
											27			
											28			
											29			
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 cutting and breaking out surface hardstanding 1hr hand excavating 1.20mbgl service avoidance pit Rotary coring with air/mist flush. Flush returns maintained without notable loss. No significant loss of drilling resistance. No voids					
05-09-2023	16:00	3.00	3.00	1.40			6.00	150						
06-09-2023	04:00	4.50	4.50	4.30										
06-09-2023	08:00	3.00	3.00	1.40										
07-09-2023	11:00	6.00	6.00	5.40										
08-09-2023	08:00	20.00	6.00	9.50										
Flush Information						Borehole Diameter		Casing Diameter		Water Strikes				
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Top (m)	Base (m)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
6.00	20.00		90%-100%	BROWN	0.00 7.00	7.00 20.00			1.75	1.75	3.80	20	1.40	Significant ingress
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %														
CCGEOTECHNICAL LTD 0151 545 2750 www.ccgteotechnical.com														

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING UK LTD
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref: CCG1
Test Date: 06/01/2023
Report Date: 06/01/2023
File Name: CCG1.spt
Test Operator: JL

Instrumented Rod Data

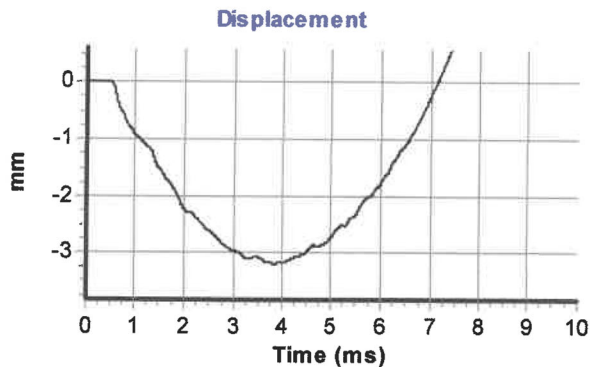
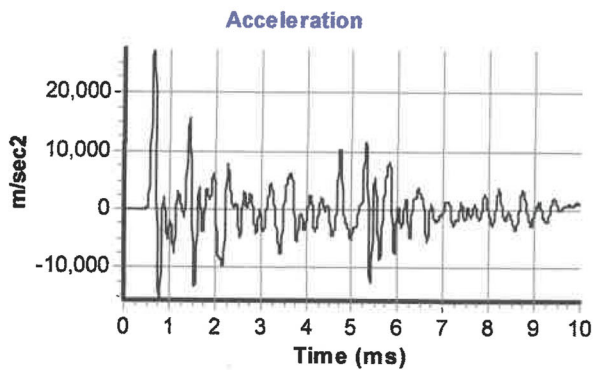
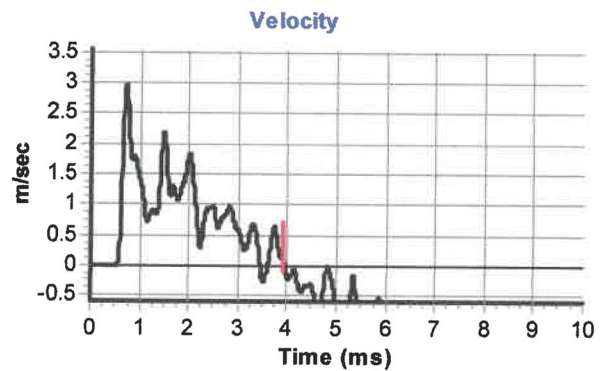
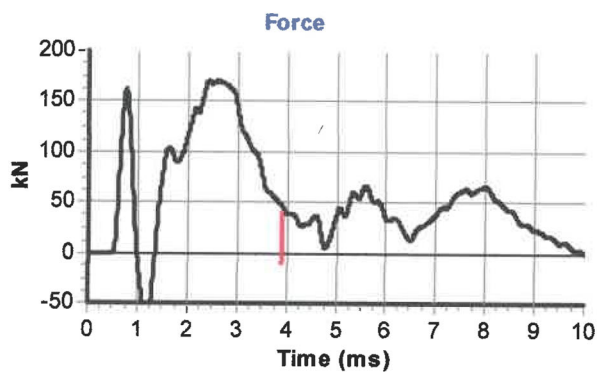
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.5
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 72572
Accelerometer No.2: 72757

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 10.0

Comments / Location

CC GEOTECHNICAL LTD - 83227



Calculations

Area of Rod A (mm^2): 970
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 310

Energy Ratio E_r (%):

66

Signed: J.LOCK

Title: FITTER



APPENDIX D

ROTARY CORE PHOTOGRAPHS

REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH01 2.8-5.8m



2.8

4.3



4.3

5.8



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH01 5.8-8.8m



5.8

7.3

7.3

8.8



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH01 8.8-11.8m



8.8

10.3

10.3

11.8

E10

E02

E03

E04

E05

E06

E07

E08

E09

E10

E11

E12

E13

E14

E15

REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH01 11.8-14.8m

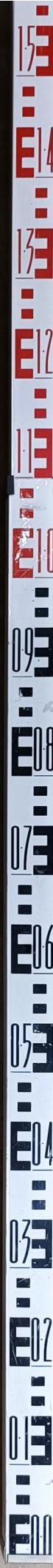


11.8

13.3

13.3

14.8



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH01 14.8-17.8m



14.8

16.3

16.3

17.8

E01

E02

E03

E04

E05

E06

E07

E08

E09

E10

E11

E12

E13

E14

E15

E16

E17

E18

E19

E20

REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH01 17.8-20.0m



17.8

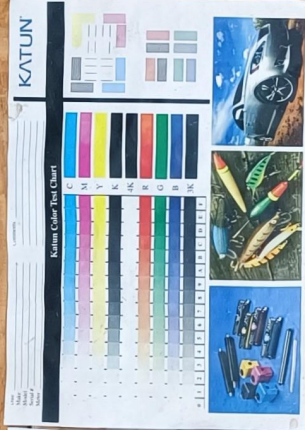
19.3

19.3

20.0

E00 E01 E02 E03 E04 E05 E06 E07 E08 E09 E10 E11 E12 E13 E14 E15

REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH02 1.5-4.5m



1.5

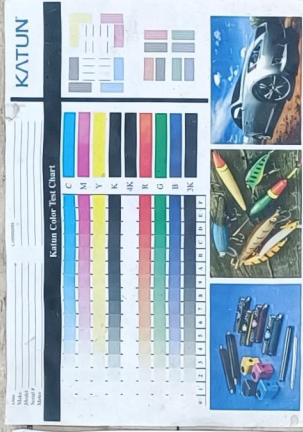
3.0

3.0

4.5

E00 E01 E02 E03 E04 E05 E06 E07 E08 E09 E10 E11 E12 E13 E14 E15

REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH02 4.5-7.5m



4.5

6.0

6.0

7.5



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH02 7.5-10.5m



7.5

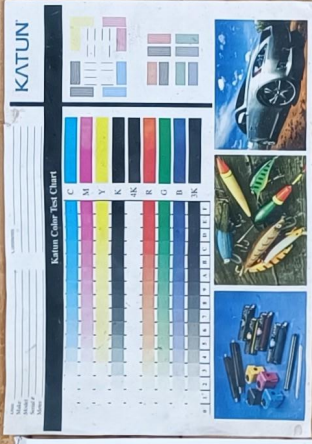
9.0

9.0

10.5



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH02 10.5-13.5m



10.5

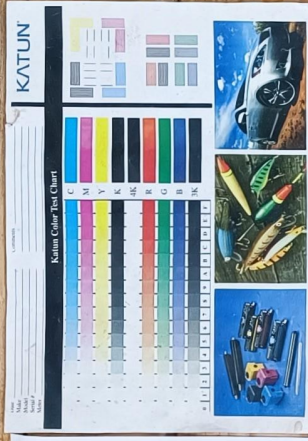
12.0

12.0

13.5



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH02 13.5-16.5m



13.5

15.0

15.0

16.5



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH02 16.5-19.5m

KATJUN

Katjun Color Set Chart



16.5

18.0

18.0

19.5

E00 E01 E02 E03 E04 E05 E06 E07 E08 E09 E10 E11 E12 E13 E14 E15

REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH02 19.5-20.0m



19.5

20.0



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH03 2.7-5.7m

KATUN

Katun Color Test Chart

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----



NO RECOVERY 2.70-3.70mbgl

5.7
E15
E14
E13
E12
E11
E10
E09
E08
E07
E06
E05
E04
E03
E02
E01
E00

REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH03 5.7-8.7m



5.7

7.2

7.2

8.7



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH03 8.7-11.7m

KATJUN

Katjun Color Test Chart

C	M	Y	R	B	G	P	W	Black
1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27
28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54
55	56	57	58	59	60	61	62	63
64	65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80	81
82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99
100	101	102	103	104	105	106	107	108
109	110	111	112	113	114	115	116	117
118	119	120	121	122	123	124	125	126
127	128	129	130	131	132	133	134	135
136	137	138	139	140	141	142	143	144
145	146	147	148	149	150	151	152	153
154	155	156	157	158	159	160	161	162
163	164	165	166	167	168	169	170	171
172	173	174	175	176	177	178	179	180
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199	200	201	202	203	204	205	206	207
208	209	210	211	212	213	214	215	216
217	218	219	220	221	222	223	224	225
226	227	228	229	230	231	232	233	234
235	236	237	238	239	240	241	242	243
244	245	246	247	248	249	250	251	252
253	254	255	256	257	258	259	260	261
262	263	264	265	266	267	268	269	270
271	272	273	274	275	276	277	278	279
280	281	282	283	284	285	286	287	288
289	290	291	292	293	294	295	296	297
298	299	300	301	302	303	304	305	306
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523	524	525	526	527	528	529	530	531
532	533	534	535	536	537	538	539	540
541	542	543	544	545	546	547	548	549
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568	569	570	571	572	573	574	575	576
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757	758	759	760	761	762	763	764	765
766	767	768	769	770	771	772	773	774
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793	794	795	796	797	798	799	800	801
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856	857	858	859	860	861	862	863	864
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892	893	894	895	896	897	898	899	900
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910	911	912	913	914	915	916	917	918
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946	947	948	949	950	951	952	953	954
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1180	1181	1182	1183	1184	1185	1186	1187	1188
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1207	1208	1209	1210	1211	1212	1213	1214	1215
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REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH03 11.7-14.7m



11.7

13.2

13.2

14.7

E00

013

E04

053

E06

073

E08

093

E10

113

E12

133

E14

153

REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH03 14.7-17.7m



16.2

14.7

17.7

16.2



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH03 17.7-20.7m



17.7

19.2

19.2

20.7

E00

E01

E02

E03

E04

E05

E06

E07

E08

E09

E10

E11

E12

E13

E14

E15



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH04 3.7-6.7m

5.2

3.7

6.7

5.2



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH04 6.7-9.7m



8.2

8.2



8.2

9.7



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH04 9.7-12.7m



9.7

11.2

11.2

12.7



[illegible]

14.2

157

15E14
 13E12
 11E10
 09E08
 07E06
 05E04
 03E02
 01E00



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH04 15.7-18.7m

15.7

17.2

17.2

18.7



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH04 18.7-20.0m



18.7

20.0



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH05 3.7-6.7m



3.7

5.2

5.2

6.7



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH05 6.7-9.7m



6.7

8.2



8.2

9.7



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH06 3.5-6.5m



3.5

5.0

5.0

6.5

E00

E01

E02

E03

E04

E05

E06

E07

E08

E09

E10

E11

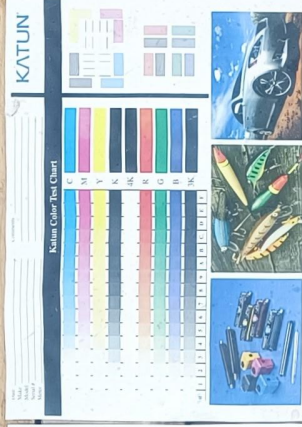
E12

E13

E14

E15

REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH06 6.5-9.5m



6.5

8.0

8.0

9.5

E00

01E

E02

03E

E04

05E

E06

07E

E08

09E

E10

11E

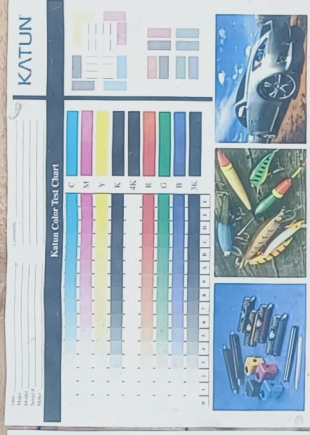
E12

13E

E14

15E

REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH06 9.5-12.5m



9.5

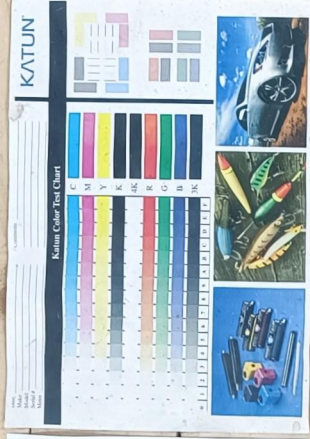
11.0

11.0

12.5

E00 E01 E02 E03 E04 E05 E06 E07 E08 E09 E10 E11 E12 E13 E14 E15

REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH06 12.5-15.5m



12.5

14.0

14.0

15.5



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH06 15.5-18.5m



15.5

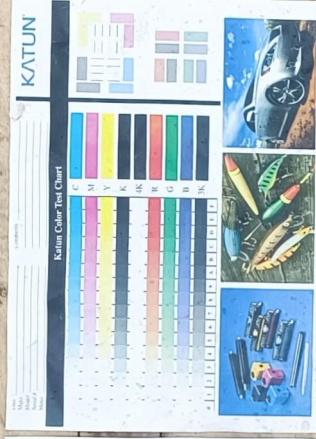
17.0

17.0

18.5



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH06 18.5-20.0m



18.5

20.0

013

E02

033

E04

053

E06

073

E08

093

E10

113

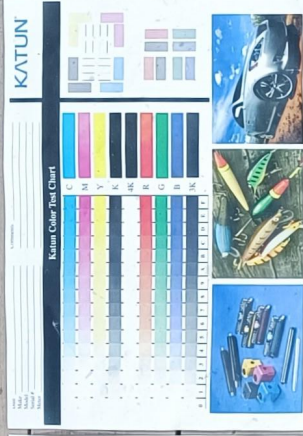
E12

133

E14

153

REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH07 4.0-7.0m



4.0

5.5



5.5

7.0



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH07 7.0-10.0m



7.0

8.5

8.5

10.0

E00

01E

E02

03E

E04

05E

E06

07E

E08

09E

E10

11E

E12

13E

E14

15E

REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH07 10.0-13.0m



10.0

11.5

11.5

13.0

E00

E01

E02

E03

E04

E05

E06

E07

E08

E09

E10

E11

E12

E13

E14

E15

REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH07 13.0-16.0m



13.0

14.5

14.5

16.0

E00 E01 E02 E03 E04 E05 E06 E07 E08 E09 E10 E11 E12 E14 E15

REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH07 16.0-19.0m



16.0

17.5

17.5

19.0



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH07 19.0-20.0m



19.0

20.0



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH08 5.5-8.0m



5.5

6.5



6.5

8.0



9.2

107

15

REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH08 10.7-13.7m



10.7

12.2



12.2

13.7



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH08 13.7-16.7m



13.7

15.2

15.2

16.7

E00

01E

E02

03E

E04

05E

E06

07E

E08

09E

E10

11E

E12

13E

E14

15E

REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH08 16.7-19.7m



16.7

18.2

18.2

19.7

E00

01E

E02

03E

E04

05E

E06

07E

E08

09E

E10

11E

E12

13E

E14

15E

REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH09 3.0-6.0m



3.0

4.5



4.5

6.0



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH09 6.0-9.0m



6.0

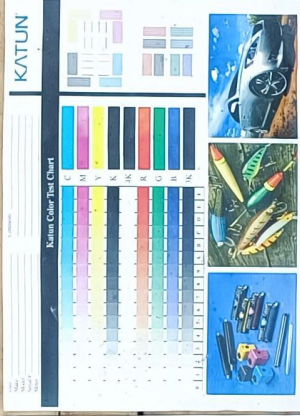
7.5

7.5

9.0



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH09 9.0-12.0m



9.0

10.5

10.5

12.0



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH09 12.0-15.0m



12.0

13.5

13.5

15.0



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH09 15.0-18.0m



16.5

15.0

18.0

16.5



KATJUN

Katjun Color Test Chart

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH09 18.0-20.0m

19.5

18.0

19.5

20.0

15.3
E14
13.3
E12
11.3
E10
09.3
E08
07.3
E06
05.3
E04
03.3
E02
01.3
E00

REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH10 4.6-7.6m



4.6

6.1



6.1

7.6



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH10 7.6-10.6m



7.6

9.1



9.1

10.6



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH10 10.6-13.6m



10.6

12.1

12.1

13.6



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH10 13.6-16.6m



13.6

15.1

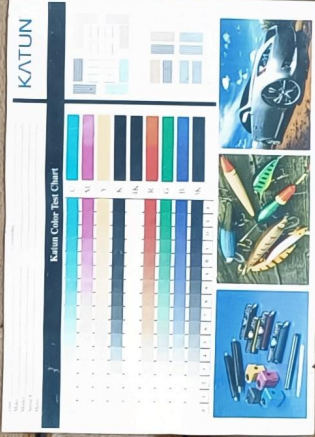


15.1

16.6



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH10 16.6-19.6m



16.6

18.1

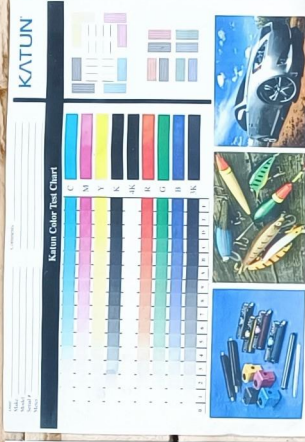


18.1

19.6



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH11 6.5-9.5m



6.5

8.0

8.0

9.5

E00

E01

E02

E03

E04

E05

E06

E07

E08

E09

E10

E11

E12

E13

E14

E15

REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH11 9.5-12.5m



11.0

11.0

11.0

12.5



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH11 12.5-15.5m



12.5

14.0

14.0

15.5

E00

01E

E02

03E

E04

05E

E06

07E

E08

09E

E10

11E

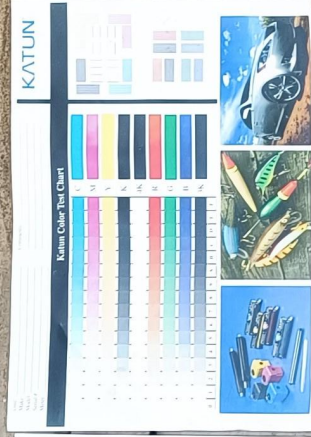
E12

13E

E14

15E

REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH11 15.5-18.5m



15.5

17.0

17.0

18.5

E00
01
E02
03
E04
05
E06
07
E08
09
E10
11
E12
13
E14
15

KATUN

Katun Color Test Chart

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

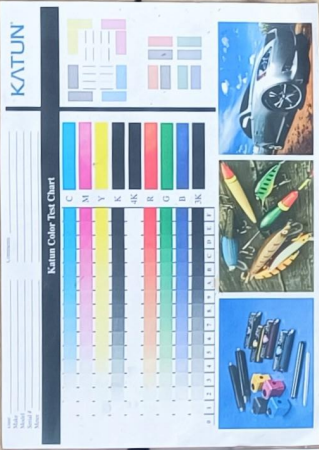


REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH11 18.5-20.0m

20.0

18.5





REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH12 6.0-7.5m

6.0

7.5



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH12 7.5-9.0m



7.5

9.0



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH12 9.0-12.0m



9.0

10.5

10.5

12.0

E10

E09

E08

E07

E06

E05

E04

E03

E02

E01

E00

E11

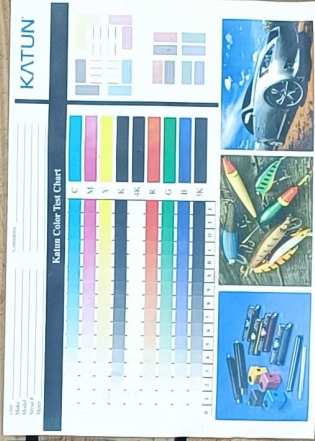
E12

E13

E14

E15

REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
BH12 12.0-15.0m



12.0

13.5



13.5

15.0





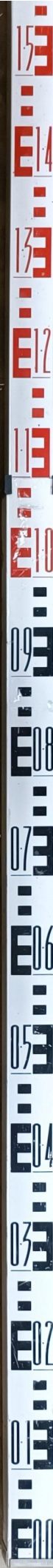
REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH12 15.0-18.0m

15.0

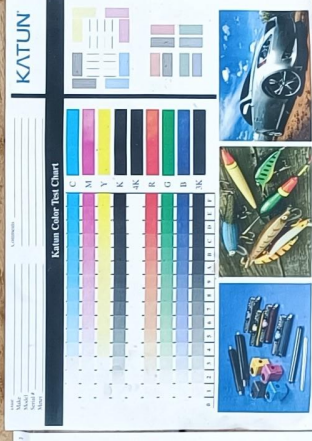
16.5

16.5

18.0



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
BH12 18.0-20.0m



18.0

19.5

19.5

20.0





APPENDIX E

DYNAMIC SAMPLING BOREHOLE LOGS

Contract Name: Huyton Town Centre, Liverpool		Client: Genr8		Borehole ID: WS01									
Contract Number: CCG-C-23-14178		Date Started: 14/09/2023		Logged By: HF/DK		Checked By: CB		Status: FINAL		Sheet 1 of 1			
Dynamic Sampling Borehole Log		Easting: 344237.7		Northing: 390784.2		Ground Level: 37.72mAOD		Plant Used: ARCHWAY COMPETITOR		Rig Crew: LN & JG		Scale: 1:25	
Weather: DRY				Termination: Sampling refusal				SPT Hammer: CCG-022/Dart438 Energy Ratio: 68%					
Samples & In Situ Testing				Strata Details						Groundwater			
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description						Water Strike	Backfill/ Installation
0.10	D	PID 0.20m, 0.0ppm	37.67	0.05		Dark brown slightly gravelly silty clayey organic SAND. Gravel is fine to medium subangular to subrounded sandstone. Frequent rootlets and grassed at surface. (TOPSOIL)							
0.20	ES												
0.30	B												
0.40	B												
0.50	ES												
0.55	D	PID 0.50m, 0.0ppm	37.37	0.35		Dark brown silty gravelly SAND with frequent inclusions of rootlets. High organic content. Gravel is fine to coarse sub-rounded sandstone (MADE GROUND)							
0.60	D												
0.65	D												
0.70	D												
0.75	D												
0.80	B	PID 1.00m, 0.0ppm	37.17	0.55		Brown very gravelly slightly silty SAND. Gravel is fine to coarse angular to sub-rounded brick, concrete and sandstone (MADE GROUND)							
0.85	D												
0.90	D												
0.95	D												
1.00	D												
1.00	ES	PID 1.30m, 0.0ppm	37.07	0.65		SANDSTONE PAVING FLAG							
1.05	ES												
1.10	ES												
1.15	ES												
1.20	ES												
1.30	ES	SPT(S)N=7 (1,1/2,1,2,2)	36.52	1.20		Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-angular to sub-rounded sandstone							
1.40	D												
1.50	B												
1.60	B												
1.70	B												
1.80	B	HVP=60											
1.90	B												
2.00	B												
2.10	B												
2.20	B												
2.30	B	HVP=60											
2.40	B												
2.50	B												
2.60	B												
2.70	B												
2.80	B	SPT(S)N=11 (1,2/2,3,3,3)											
2.90	B												
3.00	B												
3.10	B												
3.20	B												
3.30	B	HVP=100											
3.40	B												
3.50	B												
3.60	B												
3.70	B												
3.80	B	SPT(S)N=20 (2,3/3,5,6,6)											
3.90	B												
4.00	B												
4.10	B												
4.20	B												
4.30	B	HVP=100											
4.40	B												
4.50	B												
4.60	B												
4.70	B												
4.80	B	SPT(S)100 (25 for 40mm/100 for 95mm)											
4.90	B												
5.00	B												
5.10	B												
5.20	B												
5.30	B	End of Borehole at 3.60m											
5.40	B												
5.50	B												
5.60	B												
5.70	B												
5.80	B												
5.90	B												
6.00	B												
6.10	B												
6.20	B												
6.30	B												
6.40	B												
6.50	B												
6.60	B												
6.70	B												
6.80	B												
6.90	B												
7.00	B												
7.10	B												
7.20	B												
7.30	B												
7.40	B												
7.50	B												
7.60	B												
7.70	B												
7.80	B												
7.90	B												
8.00	B												
8.10	B												
8.20	B												
8.30	B												
8.40	B												
8.50	B												
8.60	B												
8.70	B												
8.80	B												
8.90	B												
9.00	B												
9.10	B												
9.20	B												
9.30	B												
9.40	B												
9.50	B												
9.60	B												
9.70	B												
9.80	B												
9.90	B												
10.00	B												
10.10	B												
10.20	B												
10.30	B												
10.40													

Dynamic Sampling Borehole Log	Contract Name: Huyton Town Centre, Liverpool				Client: Genr8			Borehole ID: WS02					
	Contract Number: CCG-C-23-14178		Date Started: 14/09/2023		Logged By: HF/DK	Checked By: CB	Status: FINAL	Sheet 1 of 1					
	Easting: 344213.1		Northing: 390851.4		Ground Level: 36.74mAOD	Plant Used: ARCHWAY COMPETITOR	Rig Crew: LN & JG	Scale: 1:25					
Weather: DRY				Termination: Sampling refusal			SPT Hammer: CCG-022/Dart438 Energy Ratio: 68%						
Samples & In Situ Testing				Strata Details					Groundwater				
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation			
0.20 0.30 0.35 0.50 0.60	ES B D ES D	PID 0.30m, 0.0ppm	36.67	0.07		CONCRETE PAVING FLAG			1				
			36.59	0.15		Yellow slightly gravelly SAND. Gravel is fine to medium subrounded sandstone (MADE GROUND)							
				(0.30)		Dark brown very silty slightly gravelly SAND. Gravel is fine to coarse sub-angular sandstone							
			36.29	0.45		Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-rounded sandstone. (MADE GROUND)							
				(0.30)									
0.70 0.80 0.90 1.00	B D B ES	PID 0.70m, 0.1ppm PID 0.90m, 0.0ppm	35.99	0.75		Soft to firm becoming firm to stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-rounded sandstone			2				
1.30 1.50 1.60	ES D B	SPT(S)N=6 (1,1/2,1,1,2) PID 1.30m, 0.0ppm HVP=70		(1.05)					3				
1.85	D	SPT(S)100 (25 for 80mm/100 for 105mm)	34.94	1.80		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand.			4				
			34.84	1.90		End of Borehole at 1.90m							
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 removing and replacing surface paving 1hr hand excavating 1.00mbgl service avoidance pit				
Chiselling						Installation		Water Strikes					
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
											0		Dry
CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com													

Dynamic Sampling Borehole Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: WS03			
		Contract Number: CCG-C-23-14178		Date Started: 13/09/2023		Logged By: PMC/DK		Checked By: CB		Status: FINAL			
		Easting: 344237.9		Northing: 390880.8		Ground Level: 36.46mAOD		Plant Used: Archway Competitor		Rig Crew: LN/JG			
		Weather:				Termination: Sampling refusal				SPT Hammer: CCG-022/Dart438 Energy Ratio: 68%			
Samples & In Situ Testing						Strata Details						Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description				Water Strike	Backfill/ Installation		
0.10	B	PID 0.20m, 0.0ppm	36.39	0.07		CONCRETE PAVING FLAG				1			
0.15	D					Light brown/grey slightly silty very sandy GRAVEL. Gravel is fine to coarse subangular limestone (MADE GROUND)							
0.20	ES			36.21	0.25								
0.30	D												
0.40	B	PID 0.50m, 0.0ppm		(0.35)		Dark brown gravelly silty SAND. Occasional pockets of clay. Gravel is fine to coarse angular to sub-angular brick, coal, cinders, concrete, limestone and sandstone (MADE GROUND)							
0.50	ES			35.86	0.60		Brown slightly gravelly very sandy silty CLAY. Gravel is fine to medium angular to subangular of brick, concrete, sandstone, coal and cinders (MADE GROUND)						
0.80	B				(0.50)								
0.90	D												
1.00	ES	SPT(S)N=21 (1,1/2,4,7,8) PID 1.00m, 0.0ppm	35.36	1.10		Stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded of sandstone						2	
1.20	ES	PID 1.20m, 0.0ppm		(0.30)									
1.30	D												
1.40	B		35.06	1.40		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand							
1.55	D	SPT(C)100 (6,17/100 for 200mm)	34.86	1.60		End of Borehole at 1.60m							
										3			
										4			
										5			
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 removing and replacing surface paving 1hr hand excavating 1.00mbgl service avoidance pit Dynamic probe attempted at base of sampling to prove bedrock - no advancement below 1.6mbgl				
13-09-2023	16:00	1.60	1.60										
Chiselling					Installation				Water Strikes				
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
											0		
CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com													

[illegible]

[illegible]

Dynamic Sampling Borehole Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: WS06				
		Contract Number: CCG-C-23-14178		Date Started: 20/09/2023		Logged By: PMC/DK		Checked By: CB		Status: FINAL				
		Easting: 344141.8		Northing: 390909.7		Ground Level: 34.20mAOD		Plant Used: ARCHWAY COMPETITOR		Rig Crew: LN/JG				
		Weather:				Termination: Sampling refusal				SPT Hammer: CCG-022/Dart438 Energy Ratio: 68%				
Samples & In Situ Testing						Strata Details						Groundwater		
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description				Water Strike	Backfill/ Installation			
0.15 0.20 0.30	D ES B	PID 0.20m, 0.1ppm	34.10	0.10 (0.50)		BITUMINOUS SURFACING Dark greyish brown silty sandy GRAVEL. Gravel is fine to coarse angular to subangular limestone, brick, sandstone, concrete (MADE GROUND)				1				
0.50 0.65 0.70 0.80 0.90 1.00	ES D B D B ES	PID 0.50m, 0.3ppm PID 1.00m, 0.0ppm	33.60	0.60 (0.60)		Brown silty gravelly SAND. Gravel is fine to coarse angular to subangular brick, concrete and cinders (MADE GROUND)								
1.50 1.60 1.80	ES D B	PID 1.50m, 0.0ppm HVP=70 HVP=72 SPT(S)N=10 (1,2/2,2,3,3)	33.00	1.20		Firm to stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded of sandstone								
2.20	D													
2.80	B	HVP=60		(3.00)		Frequent bands of SAND at 2.6-3.3mbgl								
3.20	D													
3.80	B													
4.10	D	HVP=100 SPT(S)N=36 (2,2/3,7,11,15)	30.00	4.20		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand								
4.30	D		29.80	4.40		End of Borehole at 4.40m								
		SPT(C)100 (25 for 95mm/100 for 90mm)									5			
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 cutting and breaking out surface hardstanding 1hr hand excavating 1.20mbgl service avoidance pit Where a HSV result of 110kPa is reported, this is the instrument limit					
20-09-2023	14:30	4.40	4.00	3.00										
									Water Strikes					
									Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
									3.00	3.00		0		Seepage
Chiselling					Installation									
From (m)	To (m)	Duration	Remarks		Top (m)	Base (m)	Type	Dia (mm)						
					0.00	1.50	PLAIN	50						
					1.50	4.00	SLOTTED	50						
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Dynamic Sampling Borehole Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: WS07			
		Contract Number: CCG-C-23-14178		Date Started: 12/09/2023		Logged By: PMC/DK		Checked By: CB		Status: FINAL			
		Easting: 344129.9		Northing: 390844.8		Ground Level: 34.90mAOD		Plant Used: Archway Competitor		Rig Crew: LN/JG			
		Weather:				Termination: Sampling refusal				SPT Hammer: CCG-022/Dart438 Energy Ratio: 68%			
Samples & In Situ Testing						Strata Details						Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description				Water Strike	Backfill/Installation		
0.15	D	PID 0.20m, 0.2ppm	34.80	0.10		BITUMINOUS SURFACING				1			
0.20	ES			(0.30)		Dark grey slightly silty sandy GRAVEL. Gravel is fine to coarse angular to sub-angular limestone and brick (MADE GROUND)							
0.30	B												
0.45	B	PID 0.50m, 0.3ppm	34.50	0.40		Greyish brown very sandy slightly silty GRAVEL. Gravel is fine to coarse angular to sub-angular brick, concrete and sandstone (MADE GROUND)							
0.50	ES			(0.30)									
0.60	D												
0.80	D	PID 1.00m, 0.0ppm	34.20	0.70		Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-angular brick, sandstone and coal (MADE GROUND)							
0.90	B			(0.35)									
1.00	ES												
		SPT(S)N=9 (2,2/2,2,2,3)	33.85	1.05		Stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular to sub-rounded sandstone				2			
1.30	D												
1.50	ES												
		HVP=80								3			
1.70	B												
		HVP=60								4			
		SPT(S)N=12 (1,2/3,3,2,4)								5			
2.30	D												
		HVP=110											
2.70	B												
		HVP=100		(3.25)									
		SPT(S)N=21 (1,2/3,4,6,8)											
3.30	D												
		HVP=110											
3.70	B												
		HVP=110											
		SPT(S)N=22 (3,3/3,3,7,9)											
4.20	D												
		HVP=90	30.60	4.30									
4.40	B												
				(0.50)		Reddish brown weathered SANDSTONE. Recovered as gravelly sand							
4.70	D												
		SPT(C)100 (25 for 85mm/100 for 160mm)	30.10	4.80		End of Borehole at 4.80m							
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 cutting and breaking out surface hardstanding 1hr hand excavating 1.20mbgl service avoidance pit Where a HSV result of 110kPa is reported, this is the instrument limit				
12-09-2023	14:00	4.80	4.80										
Chiselling						Installation		Water Strikes					
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
				0.00	1.50	PLAIN	50	3.00			0		Minor seepage
				1.50	4.00	SLOTTED	50						
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Dynamic Sampling Borehole Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: WS08	
		Contract Number: CCG-C-23-14178		Date Started: 21/09/2023		Logged By: HF/DK		Checked By: CB		Status: FINAL	
		Easting: 344142.8		Northing: 390874.9		Ground Level: 34.54mAOD		Plant Used: ARCHWAY COMPETITOR		Rig Crew: JG & JG	
		Termination: Sampling refusal				SPT Hammer: CCG-022/Dart438 Energy Ratio: 68%					
Samples & In Situ Testing				Strata Details						Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description				Water Strike	Backfill/ Installation
0.20	ES	PID 0.20m, 0.3ppm	34.44	0.10		Bituminous ASPHALT					
0.30	D		34.40	0.15		Dark grey sandy GRAVEL. Gravel is fine to coarse angular limestone. Possible road planings (MADE GROUND)					
0.40	B					Dark brown very gravelly clayey SAND. Gravel is fine to coarse angular to subangular brick, cinders and sandstone. (MADE GROUND)					
0.50	ES	PID 0.50m, 0.2ppm		(0.65)							
0.60	D										
0.70	B										
0.80	ES		33.74	0.80		Firm to stiff becoming stiff slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse subangular to subrounded sandstone.				1	
0.90	D										
1.00	B	PID 1.00m, 1.0ppm									
		SPT(S)N=9 (1,1/2,2,3,2)									
1.50	ES	PID 1.50m, 0.4ppm									
1.60	D										
1.70	B	HVP=70									
		HVP=70 SPT(S)N=10 (2,2/2,2,3,3)								2	
2.50	D										
2.60	B	HVP=80									
		HVP=100 SPT(S)N=15 (2,3/3,3,4,5)		(3.80)							
3.50	D										
3.60	B	HVP=110									
		HVP=110 SPT(S)N=37 (2,3/4,5,12,16)								4	
4.40	D										
4.50	B	HVP=110	29.94	4.60							
		SPT(S)100 (25 for 125mm/100 for 245mm)	29.74	4.80		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand.					
4.90	B					End of Borehole at 4.80m					
										5	
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 cutting and breaking out surface hardstanding 1hr hand excavating 1.20mbgl service avoidance pit Where a HSV result of 110kPa is reported, this is the instrument limit		
21-09-2023	16:00	4.80	4.00								
									Water Strikes		
Chiselling					Installation		Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)
From (m)	To (m)	Duration	Remarks		Top (m)	Base (m)	Type	Dia (mm)	0.30		0
											SEEPAGE
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Dynamic Sampling Borehole Log	Contract Name: Huyton Town Centre, Liverpool				Client: Genr8			Borehole ID: WS09					
	Contract Number: CCG-C-23-14178		Date Started: 11/09/2023		Logged By: PMC/DK	Checked By: CB	Status: FINAL	Sheet 1 of 1					
	Easting: 344168.7		Northing: 390834.1		Ground Level: 36.04mAOD	Plant Used: Archway Competitor	Rig Crew: LN/RB	Scale: 1:25					
Weather:			Termination: Sampling refusal			SPT Hammer: CCG-022/Dart438 Energy Ratio: 68%							
Samples & In Situ Testing				Strata Details					Groundwater				
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation			
						BITUMINOUS SURFACING							
0.20	ES	PID 0.20m, 0.0ppm	35.89	0.15		Light grey/brown very sandy GRAVEL. Gravel is fine to coarse angular to sub-angular limestone (MADE GROUND)							
0.25	D												
0.30	B		35.69	0.35									
0.50	ES	PID 0.50m, 0.0ppm				Reddish brown very gravelly SAND with inclusions of roots. High cobble content. Gravel is fine to coarse angular to sub-rounded brick, concrete and mudstone with occasional inclusions of plastic (MADE GROUND)							
0.60	B			(0.55)									
0.70	D												
			35.14	0.90		Stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-angular sandstone. Locally friable			1				
1.00	D	SPT(S)N=15 (2,3/3,4,4,4)											
1.00	ES	PID 1.00m, 0.0ppm											
1.10	B												
1.20	D	PID 1.20m, 0.0ppm											
1.20	ES												
1.40	D	HVP=110											
		HVP=110											
1.80	B												
		SPT(S)N=27 (3,4/5,6,8,8)							2				
2.20	D	HVP=110		(2.85)									
		HVP=110											
2.80	B												
		SPT(S)N=42 (6,7/7,11,12,12)							3				
3.20	D	HVP=110											
3.60	B	HVP=110											
3.80	D	SPT(S)100 (25 for 70mm/100 for 145mm)	32.29 32.24	3.75 3.80		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand. Limited recovery obtained from SPT split spoon			4				
						End of Borehole at 3.80m							
									5				
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 cutting and breaking out surface hardstanding 1hr hand excavating 1.20mbgl service avoidance pit Where a HSV result of 110kPa is reported, this is the instrument limit				
11-09-2023	13:30	3.80	3.80										
Chiselling					Installation				Water Strikes				
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
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Dynamic Sampling Borehole Log	Contract Name: Huyton Town Centre, Liverpool				Client: Genr8			Borehole ID: WS10									
	Contract Number: CCG-C-23-14178		Date Started: 08/09/2023		Logged By: PMC/DK	Checked By: CB	Status: FINAL	Sheet 1 of 1									
	Easting: 344186.4		Northing: 390803.5		Ground Level: 37.77mAOD	Plant Used: Archway Competitor	Rig Crew: JG/RE	Scale: 1:25									
Weather:			Termination: Instructed depth			SPT Hammer: CCG-022/Dart438 Energy Ratio: 68%											
Samples & In Situ Testing				Strata Details					Groundwater								
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation							
0.10	D	PID 0.25m, 0.0ppm	37.57	0.20		Dark brown slightly gravelly silty clayey organic SAND. Gravel is fine to medium sub-angular to sub-rounded sandstone. Frequent rootlets and grassed at surface (TOPSOIL)			1								
0.25	ES			(0.60)			Greyish brown slightly silty SAND and GRAVEL. Low cobble content. Gravel is fine to coarse angular to sub-angular brick, concrete, sandstone and limestone (MADE GROUND)										
0.30	B																
0.40	D																
0.50	ES	PID 0.50m, 0.0ppm	36.97	0.80		Dark brown very gravelly silty clayey SAND. Gravel is fine to coarse angular to sub-angular sandstone and brick (MADE GROUND)			2								
0.60	B																
0.85	D	PID 0.90m, 0.0ppm															
0.90	ES																
1.10	B		SPT(S)N=9 (2,2/2,2,3,2)														
1.30	ES																
1.40	B	PID 1.30m, 0.0ppm															
1.50	D																
1.70	D		36.17	1.60		Firm to stiff brown slightly gravelly sandy silty CLAY. Gravel is fine to coarse sub-angular sandstone											
1.90	B						(0.40)										
2.30	D	SPT(S)N=7 (1,1/2,2,2,1)						35.77	2.00		Loose brown slightly gravelly silty SAND. Gravel is fine to medium sub-angular to sub-rounded sandstone <u>Limited recovery 2.0-2.1mbgl</u>						
												(1.25)					
			2.80	B	SPT(S)N=8 (2,2/1,2,3,2)	34.52							3.25		Stiff brown slightly silty slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular to subrounded sandstone		
							(0.75)										
3.15	D	HVP=90						33.77	4.00		Medium dense brown slightly gravelly slightly silty fine to medium SAND. Gravel is fine to medium sub-angular to subrounded sandstone						
												3.40				D	SPT(S)N=11 (2,3/2,2,3,4)
			3.70	B	(1.00)												
						4.20	D										
4.70	B	SPT(S)N=26 (4,5/5,8,7,6)						32.77	5.00		End of Borehole at 5.00m						
												5					
			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 excavating 1.20mbgl service avoidance pit								
Water Strikes																	
Strike (m) Casing (m) Sealed (m) Time (mins) Rose to (m) Remarks																	
0																	
EOS BH DRY																	
CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com																	

Contract Name: Huyton Town Centre, Liverpool		Client: Genr8		Borehole ID: WS11									
Contract Number: CCG-C-23-14178		Date Started: 06/09/2023		Logged By: PMC/DK		Checked By: CB		Status: FINAL		Sheet 1 of 1			
Dynamic Sampling Borehole Log		Easting: 344170.8		Northing: 390762.2		Ground Level: 37.95mAOD		Plant Used: Archway Competitor		Rig Crew: JG/RE		Scale: 1:25	
Weather:				Termination: Instructed depth				SPT Hammer: CCG-022/Dart438 Energy Ratio: 68%					
Samples & In Situ Testing				Strata Details						Groundwater			
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description				Water Strike	Backfill/ Installation		
0.15	D	PID 0.20m, 0.2ppm	37.85	0.10		BITUMINOUS SURFACING							
0.20	B		37.70	0.25		Grey sandy GRAVEL. Gravel is fine to coarse angular limestone (MADE GROUND - SUB-BASE)							
0.20	ES					Brownish grey sandy GRAVEL. Gravel is fine to coarse sub-angular concrete with rare inclusions of sandstone and ceramic (MADE GROUND)							
0.30	B												
0.50	ES	PID 0.50m, 0.3ppm	37.45	0.50	(0.50)	Brown gravelly slightly sandy silty CLAY. Gravel is fine to coarse sub-angular brick, sandstone and concrete (MADE GROUND)							
0.60	D	PID 0.90m, 0.0ppm	36.95	1.00		Brown slightly gravelly sandy silty CLAY. Gravel is fine to coarse subangular sandstone with rare inclusions of brick and ceramic (MADE GROUND)							
0.70	B												
0.80	D												
0.90	ES				PID 1.20m, 0.0ppm	36.30	1.65	Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-angular sandstone with rare inclusions of brick (MADE GROUND)					
1.10	B	35.75	2.20	Firm to stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-angular to sub-rounded sandstone and mudstone									
1.20	D												
1.20	ES												
1.20 - 1.65	UT			SPT(S)N=12 (1,2/3,3,3,3)	(0.65)					1			
1.80	B	(0.55)											
1.90	ES												
2.00	D												
2.50	D		HVP=70	(2.80)					2				
2.70	ES	PID 2.70m, 0.0ppm HVP=55											
2.90	D	SPT(S)N=9 (1,2/2,2,2,3)											
3.30	B												
3.50	D												
3.80	D		HVP=65										
4.20	B	SPT(S)N=11 (2,3/2,3,3,3)	32.95	5.00					3				
4.50	D	HVP=80											
4.60	D												
SPT(S)N=13 (2,3/3,3,3,4)					End of Borehole at 5.00m						5		
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 cutting and breaking out surface hardstanding 1hr hand excavating 1.20mbgl service avoidance pit				
06-09-2023	16:00	1.20	1.20	4.90									
07-09-2023	16:00	5.00	5.00										
Chiselling					Installation				Water Strikes				
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
				0.00	1.20	PLAIN	50	1.40			0		Seepage
				1.20	4.50	SLOTTED	50						
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Contract Name: Huyton Town Centre, Liverpool		Client: Genr8		Borehole ID: WS15									
Contract Number: CCG-C-23-14178		Date Started: 08/09/2023		Logged By: PMC/DK		Checked By: CB		Status: FINAL		Sheet 1 of 1			
Dynamic Sampling Borehole Log		Easting: 344182.7		Northing: 390880.6		Ground Level: 35.79mAOD		Plant Used: ARCHWAY COMPETITOR		Rig Crew: JG/LN		Scale: 1:25	
Weather: DRY				Termination: Sampling refusal				SPT Hammer: CCG-022/Dart438 Energy Ratio: 68%					
Samples & In Situ Testing				Strata Details						Groundwater			
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description				Water Strike	Backfill/ Installation		
0.10	D	PID 0.20m, 0.0ppm	35.39	(0.40)		Dark brown slightly gravelly silty clayey organic SAND. Gravel is fine to coarse sandstone with inclusions of limestone and brick. Frequent rootlets and grassed at surface (TOPSOIL - RECYCLED)							
0.20	ES												
0.30	B												
0.50	ES	PID 0.50m, 0.0ppm		0.40		Dark brown slightly gravelly silty clayey SAND. Medium cobble content. Gravel is fine to coarse sub-angular brick, concrete and sandstone with inclusions of gypsum (MADE GROUND)							
0.60	B												
0.70	D												
1.00	B	PID 1.10m, 0.3ppm SPT(S)N=8 (1,1/2,2,2,2) PID 1.30m, 0.0ppm HVP=70	34.89	0.90		Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular to subrounded sandstone				1			
1.10	ES												
1.20	D												
1.30	ES												
1.40	D												
1.50	B	HVP=90 SPT(S)N=10 (1,2/2,2,3,3)		(1.60)						2			
2.10	D												
2.30	B												
2.55	D	HVP=70 SPT(S)100 (25 for 105mm/100 for 100mm)	33.29 33.19	2.50		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand.							
				2.60		End of Borehole at 2.60m							
												3	
												4	
												5	
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 excavating 1.20mbgl service avoidance pit				
									Water Strikes				
Chiselling					Installation		Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks	
From (m)	To (m)	Duration	Remarks		Top (m)	Base (m)	Type	Dia (mm)		0		Dry	
					0.00	1.00	PLAIN	50					
					1.00	2.50	SLOTTED	50					
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Dynamic Sampling Borehole Log		Contract Name: Huyton Town Centre, Liverpool				Client: Genr8				Borehole ID: WS16			
		Contract Number: CCG-C-23-14178		Date Started: 13/09/2023		Logged By:		Checked By: CB		Status: FINAL			
		Easting: 344223.9		Northing: 390934.2		Ground Level: 36.51mAOD		Plant Used: Dando Terrier Rig		Rig Crew: LN/JG			
		Weather:				Termination: Sampling refusal				SPT Hammer: CCG-022/Dart438 Energy Ratio: 68%			
Samples & In Situ Testing						Strata Details						Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description				Water Strike	Backfill/Installation		
0.10	B	PID 0.20m, 0.0ppm PID 0.50m, 0.0ppm	36.46	0.05		Dark brown slightly gravelly clayey organic SAND. Gravel is fine to medium subangular to subrounded sandstone. Grassed at surface (TOPSOIL) Dark brown slightly silty gravelly organic SAND. Gravel is fine to coarse angular limestone and brick. frequent inclusions of roots (MADE GROUND) Brown slightly gravelly very silty SAND. Gravel is fine to coarse angular to sub-angular concrete, brick, coal, cinders, limestone and sandstone (MADE GROUND)				1			
0.20	ES		(0.30)										
0.30	D												
0.40	D												
0.50	ES												
0.60	B	PID 1.00m, 0.0ppm SPT(S)N=8 (1,1/2,2,2,2)	36.16	0.35		Locally firm becoming stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium subrounded sandstone				2			
0.80	D		(0.75)										
0.90	B												
1.00	ES												
1.40	ES	PID 1.40m, 0.0ppm HVP=110	35.41	1.10		Light yellowish brown SANDSTONE. Highly weathered and recovered as gravelly sand				3			
1.60	D												
1.80	B	HVP=110 SPT(S)N=10 (1,3/2,2,3,3)											
2.20	D		(2.10)										
2.60	B	HVP=110											
3.00	D	HVP=110 SPT(S)N=100 (2,3/100 for 275mm)	33.31	3.20		End of Borehole at 3.40m				4			
3.20	D	SPT(C)100 (25 for 30mm/100 for 25mm)	33.11	3.40									
										5			
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 removing and reinstating fence rail 1hr hand excavating 1.20mbgl service avoidance pit Where a HSV result of 110kPa is reported, this is the instrument limit				
13-09-2023	00:00	3.40	3.40										
Chiselling						Installation		Water Strikes					
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
				0.00	1.50	PLAIN	50						
				1.50	3.00	SLOTTED	50						
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						Contract Name: Huyton Town Centre, Liverpool			Client: Genr8			Borehole ID:					
						Contract Number: CCG-C-23-14178		Date Started: 04/09/2023		Logged By: PMC/DK		Checked By: CB		Status: FINAL		WS17	
Dynamic Sampling Borehole Log						Easting: 344211.3		Northing: 390899.6		Ground Level: 36.55mAOD		Plant Used: Archway Competitor		Rig Crew: JG/RE		Sheet 1 of 1	
						Termination: Sampling refusal						SPT Hammer: CCG-022/Dart438 Energy Ratio: 68%					
Samples & In Situ Testing						Strata Details								Groundwater			
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description								Water Strike	Backfill/ Installation		
0.10 0.20 0.20	D B ES	PID 0.20m, 0.0ppm	36.25	(0.30)		Brown slightly gravelly silty fine to medium SAND with frequent inclusions of roots. Gravel is fine to coarse sub-angular sandstone and mudstone. Grassed at surface (TOPSOIL)								1			
0.50 0.60 0.70	ES D B	PID 0.50m, 0.0ppm		(0.55)		Brown very gravelly silty fine to medium SAND. Gravel is fine to coarse sub-angular brick, concrete, sandstone with occasional inclusions of ceramics (MADE GROUND)											
1.00 1.10 1.20	ES D B	PID 1.00m, 0.2ppm SPT(S)N=8 (2,2/2,1,2,3)	35.70	0.85		Brown very silty gravelly fine to medium grained SAND. Gravel is fine to coarse sub-angular to rounded mudstone, quartz and sandstone								2			
1.40 1.50	ES D	PID 1.40m, 0.0ppm HVP=100		(0.45)		Firm to stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-angular to sub-rounded sandstone											
1.80 2.10	B D	SPT(S)N=10 (2,2/2,2,3,3)	35.25	1.30		Yellow weathered SANDSTONE. Recovered as slightly silty slightly gravelly fine to medium grained SAND. Gravel is fine to medium sub-angular sandstone								3			
2.40 2.50	ES B	PID 2.40m, 0.0ppm HVP=75		(0.80)		End of Borehole at 3.50m											
2.90 3.00 3.20	ES D B	PID 2.90m, 0.0ppm SPT(S)50 (25 for 95mm/50 for 190mm) SPT(C)55 (25 for 112mm/55 for 0mm)	33.85	2.70										4			
			33.05	3.50													
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 excavating 1.20mbgl service avoidance pit								
04-09-2023	16:00	3.50	3.50														
										Water Strikes							
Chiselling						Installation		Strike (m) Casing (m) Sealed (m) Time (mins) Rose to (m) Remarks									
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)										
										CC GEOTECHNICAL LTD 0151 545 2750 www.ccgteotechnical.com							

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING (UK) LTD
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref: DART438
Test Date: 18/08/2023
Report Date: 18/08/2023
File Name: DART438.spt
Test Operator: MT

HEAVY

CCG - 022

Instrumented Rod Data

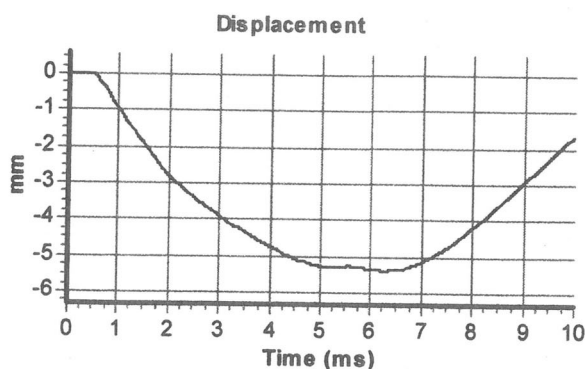
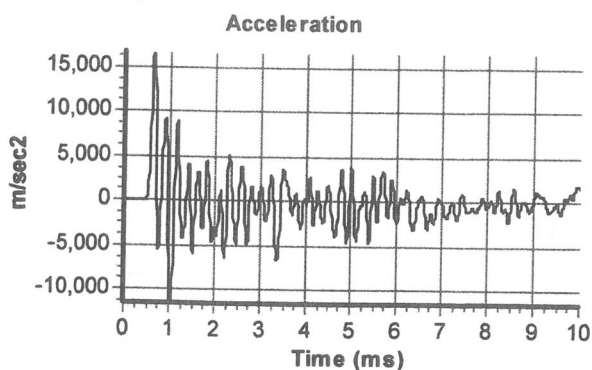
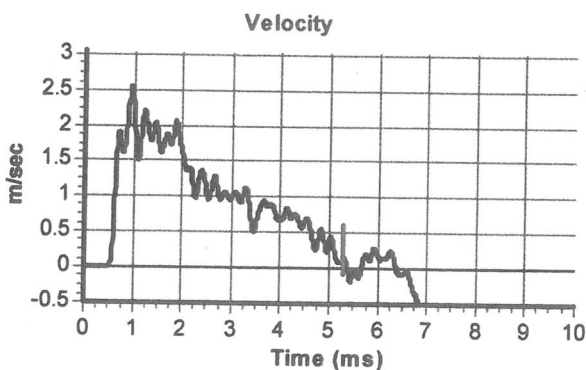
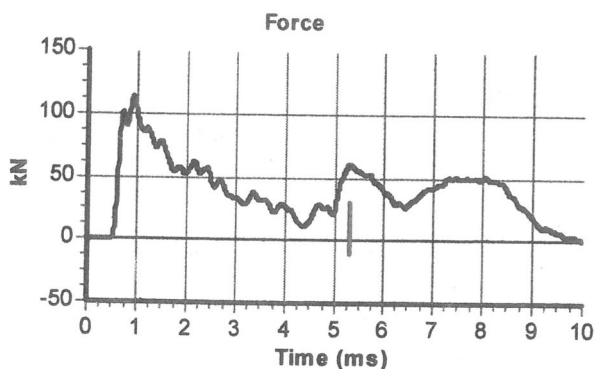
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.5
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 72572
Accelerometer No.2: 72757

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 10.0

Comments / Location

CC GEOTECHNICAL LTD - 86120



Calculations

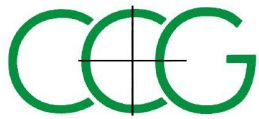
Area of Rod A (mm^2): 970
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 322

Energy Ratio E_r (%): **68**

Signed: M.TONER

Title: FITTER

The recommended calibration interval is 12 months



APPENDIX F

DYNAMIC SAMPLING BOREHOLE SOIL RECOVERY PHOTOGRAPHS

1.2

2.0

2.0

3.0

3.0

3.6

E01 E02 E03 E04 E05 E06 E07 E08 E09 E10

REF: CCG-C-23-14178

SITE: HUYN TOWN
CENTRE

CLIENT: GENR8

WS01 1.2-3.6m

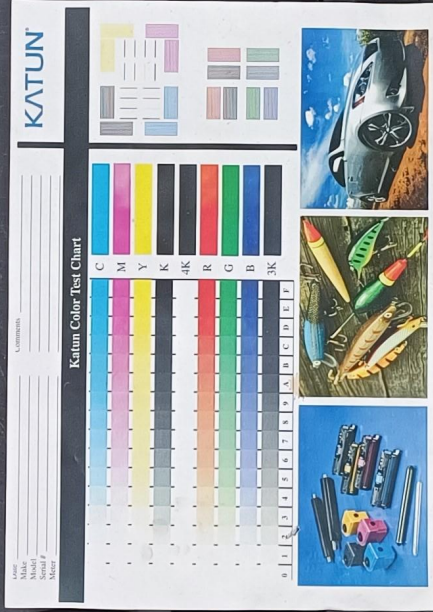


1.2

1.9

E00 E01 E02 E03 E04 E05 E06 E07 E08 E09

REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
WS02 1.2-1.9m



1.0

1.6



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
WS03 1.0-1.6m



1.0

2.0



2.0

3.0



3.0

3.1



E00

E01

E02

E03

E04

E05

E06

E07

E08

E09

E10

REF: CCG-C-23-14178

SITE: HUXTON TOWN

CENTRE

CLIENT: GENR8

WS04 1.0-3.1m



1.2

2.0

2.0

3.0

3.0

3.4

E00

E01

E02

E03

E04

E05

E06

E07

E08

E09

E10

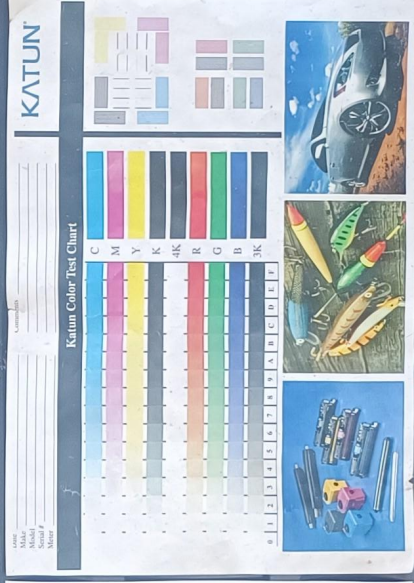
REF: CCG-C-23-14178

SITE: HUYTON TOWN

CENTRE

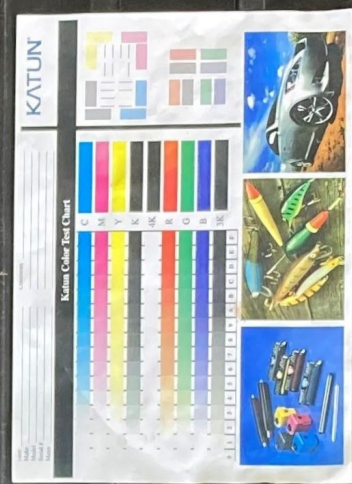
CLIENT: GENR8

WS05 1.2-3.4m

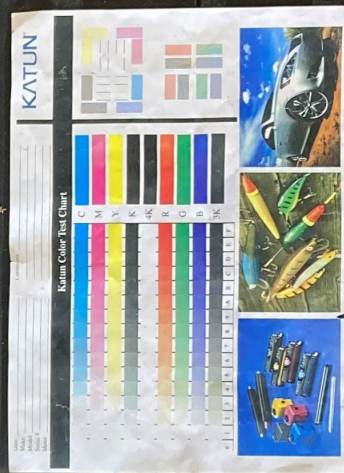




REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
WS06 1.2-4.4m



REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
WS07 1.2-4.8m



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
WS08 1.2-4.8m

2.0

1.2

3.0

2.0

3.0

3.8



REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
WS09 1.2-3.8m

1.2

2.0

2.0

3.0

3.0

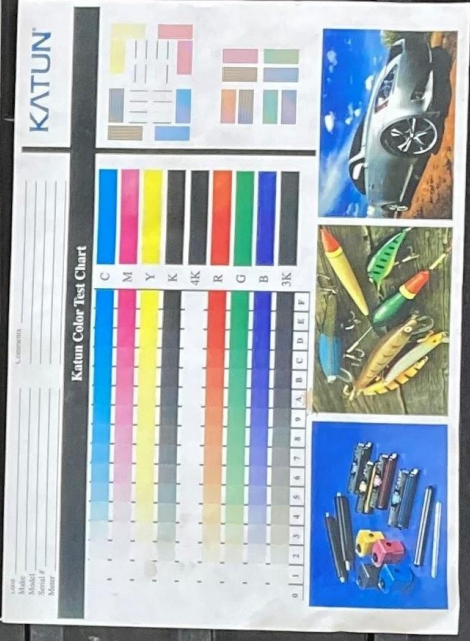
4.0

4.0

5.0

E00 E01 E02 E03 E04 E05 E06 E07 E08 E09

REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
WS10 1.2-5.0m



1.2

2.0

UT100 1-2-1-65mbgl

2.0

3.0

2m → 3m

419/83

3.0

4.0

4.0

5.0



REF: CCG-C-23-14178

SITE: HUYTON TOWN
CENTRE

CLIENT: GENER8

WS11 1.2-5.0m



1.2

2.0

2.0

2.6

E01

E03

E02

E04

E05

E06

E07

E08

E09

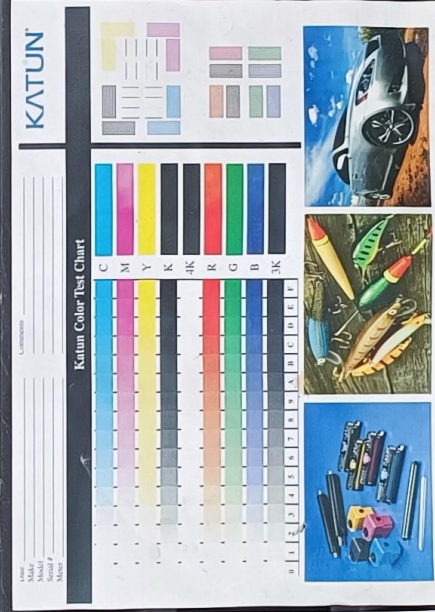
E10

REF: CCG-C-23-14178

SITE: HUYN TOWN
CENTRE

CLIENT: GENR8

WS15 1.2-2.6m



1.0

2.0

2.0

3.0

3.0

3.4

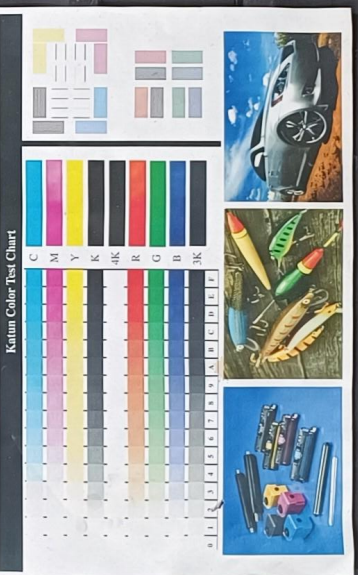
E01 E02 E03 E04 E05 E06 E07 E08 E09 E10

REF: CCG-C-23-14178
SITE: HUYTON TOWN
CENTRE
CLIENT: GENR8
WS16 1.0-3.4m

KATUN

Katun Color Test Chart

C	M	Y	K	R	G	B	JK
1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88
89	90	91	92	93	94	95	96
97	98	99	100	101	102	103	104
105	106	107	108	109	110	111	112
113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128
129	130	131	132	133	134	135	136
137	138	139	140	141	142	143	144
145	146	147	148	149	150	151	152
153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168
169	170	171	172	173	174	175	176
177	178	179	180	181	182	183	184
185	186	187	188	189	190	191	192
193	194	195	196	197	198	199	200



1.2

2.0

2.0

3.0

3.0

3.5

24/12/2017
141333

E01 E02 E03 E04 E05 E06 E08 E09

REF: CCG-C-23-14178
SITE: HUYN TOWN
CENTRE
CLIENT: GENR8
WS17 1.2-3.5m

KATJUN

Katjun Color Test Chart

C	M	Y	K	R	G	B	W
1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88
89	90	91	92	93	94	95	96
97	98	99	100	101	102	103	104
105	106	107	108	109	110	111	112
113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128
129	130	131	132	133	134	135	136
137	138	139	140	141	142	143	144
145	146	147	148	149	150	151	152
153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168
169	170	171	172	173	174	175	176
177	178	179	180	181	182	183	184
185	186	187	188	189	190	191	192
193	194	195	196	197	198	199	200





APPENDIX G

TRIAL PIT EXCAVATION LOGS

Trial Pit Log	Contract Name: Huyton Town Centre, Liverpool			Client: Genr8			Trial Pit ID: TP01				
	Contract Number: CCG-C-23-14178	Date Started: 15/09/2023	Logged By: KH	Checked By: CB	Status: FINAL	Sheet 1 of 1					
	Easting: 344182.1	Northing: 390860.0	Ground Level: 36.09mAOD	Plant Used: 5t tracked excavator	Date Printed: 21/01/2024	Scale: 1:30					
Weather: Dry		Hole Termination: Excavation refusal - toothless bucket			Stability: Stable						
Samples & In Situ Testing			Strata Details					Water	Backfill		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description					
0.05	B	PID 0.05m, 0.0ppm	35.99	0.10		Dark brown slightly gravelly silty clayey organic SAND. Gravel is fine to coarse sandstone. Rare inclusions of glass and brick. Frequent rootlets and grassed at surface (TOPSOIL - RECYCLED)		1			
0.05	D										
0.05	ES	PID 0.20m, 0.3ppm									
0.20	ES				(0.40)						
0.30	D										
0.40	B	PID 0.50m, 0.1ppm	35.59	0.50		Brown very gravelly silty SAND. Medium cobble content. Gravel is fine to medium subangular to angular sandstone and brick (MADE GROUND)		2			
0.60	ES										
0.70	B										
0.80	D				(0.70)						
1.00	ES	PID 1.00m, 0.1ppm									
1.10	B		34.89	1.20		Stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone		3			
1.40	D										
1.50	ES	HVP=110kPa									
1.60	B	PID 1.50m, 0.1ppm			(1.05)						
2.00	B	HVP=110kPa									
2.10	D		33.84	2.25		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand		4			
2.30	B	PID 2.30m, 0.2ppm									
2.30	ES				2.40						
2.40	D										
End of Trial Pit at 2.40m											
Dimensions:						General Remarks:					
Final Depth: 2.40m						Mechanical trial pit excavation Soakaway Test undertaken - see results TP01-SA					
← Length (m) → 1.80m ↑ Width (m) ↓ 0.50m Orientation: ° ←											
Inclination: °											
						Water Strikes					
						Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
									0		Dry
						CC GEOTECHNICAL LTD 0151 545 2750 www.cogeotechnical.com					

Trial Pit Log	Contract Name: Huyton Town Centre, Liverpool			Client: Genr8			Trial Pit ID: TP02														
	Contract Number: CCG-C-23-14178	Date Started: 18/09/2023	Logged By: KH	Checked By: CB	Status: FINAL	Sheet 1 of 1															
	Easting: 344094.4	Northing: 390872.5	Ground Level: 33.11mAOD	Plant Used: 5t tracked excavator	Date Printed: 21/01/2024	Scale: 1:30															
Weather: Rain			Hole Termination: Instructed depth			Stability: Stable															
Samples & In Situ Testing			Strata Details					Water	Backfill												
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description															
						BITUMINOUS SURFACING															
0.25	B	PID 0.30m, 0.3ppm	32.96	0.15		Dark grey sandy silty GRAVEL. Gravel is fine to coarse angular limestone (MADE GROUND) Dark greyish/brown slightly clayey very gravelly SAND. High cobble content. Gravel is fine to coarse angular to subangular of brick and sandstone Firm to stiff becoming stiff brown/dark brown slightly gravelly sandy silty CLAY. Gravel is fine to coarse subrounded to subangular sandstone		1													
0.30	ES		32.91	0.20																	
0.35	B																				
0.50	ES	PID 0.50m, 0.1ppm	32.66	0.45																	
0.60	D																				
0.70	B																				
1.00	ES	HVP=60kPa																			
1.20	D																				
1.50	B	PID 1.50m, 0.0ppm																			
				(2.85)																	
2.00	ES	HVP=75kPa PID 2.00m, 0.0ppm						2													
2.20	D																				
2.50	B																				
		HVP=110kPa						3													
3.40	ES	PID 3.40m, 0.0ppm	29.81	3.30		Stiff reddish brown very sandy slightly gravelly CLAY. Gravel is fine to coarse subangular to subrounded sandstone															
3.50	D																				
3.70	B			(0.70)																	
			29.11	4.00		----- End of Trial Pit at 4.00m		4													
Dimensions:					General Remarks:																
Final Depth: 4.00m					Mechanical trial pit excavation Soakaway Test undertaken - see results TP02-SA																
← Length (m) → 2.00m ↑ Width (m) ↓ 0.70m Orientation: ° ←																					
					Water Strikes																
					<table><tr><td>Strike (m)</td><td>Casing (m)</td><td>Sealed (m)</td><td>Time (mins)</td><td>Rose to (m)</td><td>Remarks</td></tr><tr><td></td><td></td><td></td><td>0</td><td></td><td>Dry</td></tr></table>					Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks				0		Dry
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks																
			0		Dry																
Inclination: °					CC GEOTECHNICAL LTD 0151 545 2750 www.cogeotechnical.com																

		Contract Name: Huyton Town Centre, Liverpool			Client: Genr8			Trial Pit ID: TP03																			
		Contract Number: CCG-C-23-14178	Date Started: 08/09/2023	Logged By: PMC	Checked By: CB	Status: FINAL	Sheet 1 of 1																				
Trial Pit Log		Easting: 344196.9	Northing: 390755.8	Ground Level: 38.06mAOD	Plant Used: 5t rubber tracked excavator	Date Printed: 21/01/2024	Scale: 1:30																				
Weather:			Hole Termination: Intact structure/buried services			Stability: Unstable																					
Samples & In Situ Testing		Strata Details						Water	Backfill																		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description																					
0.10 0.15 0.20	B D ES	PID 0.20m, 0.0ppm	37.81	0.25		Brown slightly gravelly silty clayey organic SAND. Gravel is fine to medium sandstone and mudstone. Frequent significant roots and grassed at surface (TOPSOIL)																					
0.40 0.50 0.60	B ES D	PID 0.50m, 0.0ppm		(0.85)		Greyish brown slightly silty very gravelly SAND. Gravel is fine to coarse angular of brick, sandstone, tile and metal fragments. High cobble content. Low cobble content. Cobbles are of broken and whole brick. Boulder is of sandstone c.0.8x0.3m. Possible demolition rubble. (MADE GROUND) Brick walling to west face of excavation 0.50-1.40mbgl. Underside not proven	1																				
0.90 1.00 1.00	D B ES	PID 1.00m, 0.0ppm	36.96	1.10		INTACT BRICK STRUCTURE - POSSIBLE CELLAR BASE. Line of flagstone to northern half of excavation at 1.1mbgl. Power detection on CAT and electrical warning tape within northern sidewall of excavation at 0.9mbgl.																					
			36.66	1.40		Excavation terminated due to risk of encountering buried services ----- End of Trial Pit at 1.40m	2																				
							3																				
							4																				
Dimensions:					General Remarks:																						
Final Depth: 1.40m					Mechanical trial pit excavation																						
← Length (m) → 3.00m ↑ Width (m) ↓ 1.00m Orientation: ° ←																											
Inclination: °																											
					<table><tr><th colspan="6">Water Strikes</th></tr><tr><th>Strike (m)</th><th>Casing (m)</th><th>Sealed (m)</th><th>Time (mins)</th><th>Rose to (m)</th><th>Remarks</th></tr><tr><td></td><td></td><td></td><td>0</td><td></td><td>TP DRY</td></tr></table>					Water Strikes						Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks				0		TP DRY
Water Strikes																											
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks																						
			0		TP DRY																						
					CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com																						

Trial Pit Log	Contract Name: Huyton Town Centre, Liverpool			Client: Genr8			Trial Pit ID: TP04																
	Contract Number: CCG-C-23-14178	Date Started: 08/09/2023	Logged By: PMC	Checked By: CB	Status: FINAL	Sheet 1 of 1																	
	Easting: 344154.1	Northing: 390788.4	Ground Level: 37.21mAOD	Plant Used: 5t rubber tracked excavator	Date Printed: 21/01/2024	Scale: 1:30																	
Weather:		Hole Termination: Instructed depth			Stability: Unstable > 2.10mbgl																		
Samples & In Situ Testing									Strata Details				Water	Backfill									
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description																	
0.10 0.20 0.30	D ES B	PID 0.20m, 0.0ppm	36.86	(0.35)		Brown slightly gravelly silty clayey organic SAND. Gravel is fine to medium sandstone and mudstone. Frequent rootlets and grassed at surface (TOPSOIL)			1														
0.50 0.60	ES D	PID 0.50m, 0.0ppm		0.35		Sandstone structure encountered at northern end of excavation at 0.3 - 1.0mbgl Dark brown gravelly silty SAND. Gravel is fine to coarse angular to subangular of brick, sandstone and coal. Low cobble content. Cobbles are whole and broken brick (MADE GROUND)																	
0.80 1.00	B ES	PID 1.00m, 0.0ppm		(0.95)																			
1.35 1.40 1.50	D ES B	PID 1.40m, 0.0ppm	35.91	1.30 (0.30)		Light brown slightly gravelly sandy silty CLAY. Gravel is fine to coarse angular of brick (MADE GROUND)			2														
1.70 1.80	ES B	PID 1.70m, 0.0ppm HVP=54kPa	35.61	1.60 (0.50)		Firm brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to coarse subangular to subrounded of sandstone (POSSIBLY REWORKED)																	
2.00 2.20 2.40	D B D	HVP=20kPa	35.11	2.10 (0.80)		Soft/very soft dark grey sandy peaty organic SILT/CLAY. Peat inclusions are pseudo fibrous																	
2.60	ES	PID 2.60m, 0.1ppm	34.31	2.90		6" drain observed at southern end of excavation - intact Firm brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular to subrounded sandstone and mudstone			3														
3.00 3.10 3.20	ES B D	PID 3.00m, 0.1ppm HVP=55kPa		(0.50)																			
				33.81	3.40		End of Trial Pit at 3.40m																
												4											
Dimensions:						General Remarks:																	
Final Depth: 3.40m						Mechanical trial pit excavation																	
← Length (m) → 3.00m ↑ Width (m) ↓ 0.60m Orientation: ° ←																							
						Water Strikes																	
						<table><tr><td>Strike (m)</td><td>Casing (m)</td><td>Sealed (m)</td><td>Time (mins)</td><td>Rose to (m)</td><td>Remarks</td></tr><tr><td>2.30</td><td></td><td></td><td>0</td><td></td><td>Minor seepage</td></tr></table>						Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks	2.30			0		Minor seepage
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks																		
2.30			0		Minor seepage																		
Inclination: °						CC GEOTECHNICAL LTD 0151 545 2750 www.cogeotechnical.com																	



APPENDIX H

TRIAL PIT EXCAVATION PHOTOGRAPHS



















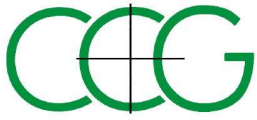






CCG-C-23-14178: Huyton Town Centre

Trial Pit Excavation - TP04



APPENDIX I

FOUNDATION EXPOSURE INSPECTION EXCAVATION SKETCHES AND PHOTOGRAPHS



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

Client:

Genr8

Project:

Huyton Town Centre

Title:

Foundation Inspection Pit

Scale:

As shown

Issue:

1

Drawn by:

PMC

Approved by:

CB

Project No:

CCG-C-23-14178

Date:

19.09.2023

Drawing No:

14178-FIP01

SINGLE STOREY OFFICE BUILDING



STEEL COLUMN

200

180

BRICK WALL

BRICK PLINTH

BRICK PLINTH

PLAN VIEW - EXCAVATION
FIP01. SEE SECTION
A-A.

ALL DIMENSIONS
GIVEN IN MM
UNLESS STATED

BLACK
PAVING

EXTENT
OF EXCAVATION
FIP01

CONCRETE

CONCRETE

CONCRETE

COLUMN
CENTRELINE

150

400

600

250



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

Client:

Gen8

Project:

Huyton Town Centre

Title:

Foundation Inspection Pit

Scale:

As shown

Issue:

1

Drawn by:

PMC

Approved by:

CB

Project No:

CCG-C-23-14178

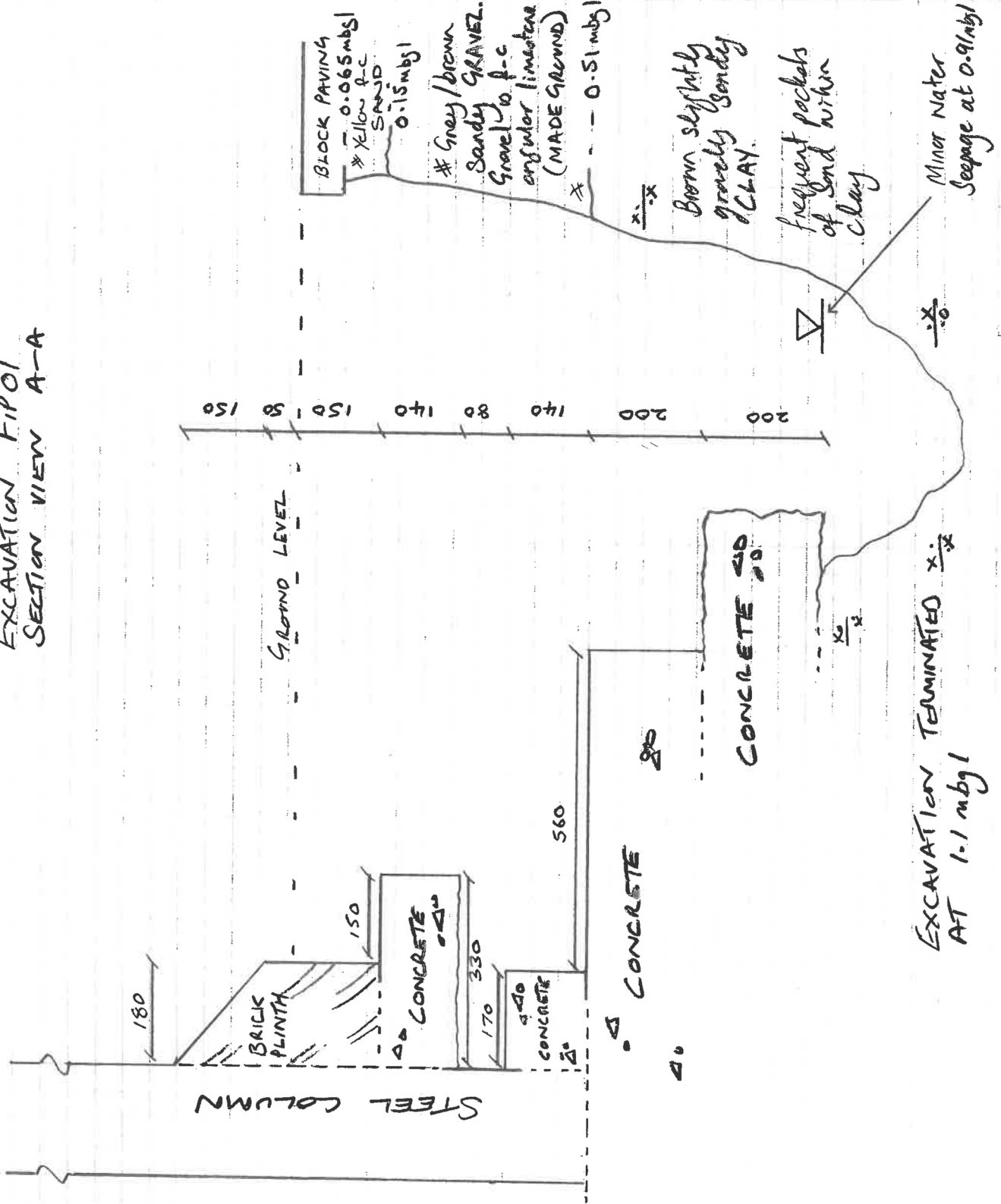
Date:

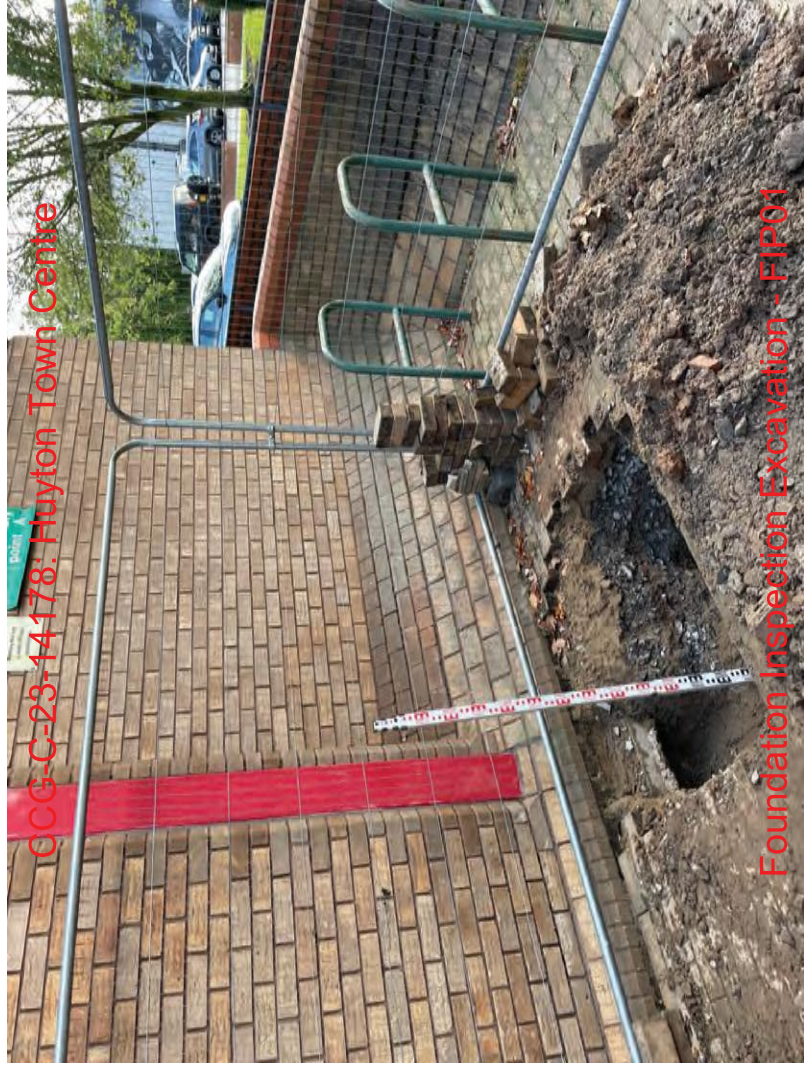
19.09.2023

Drawing No:

14178-FIP01

EXCAVATION FIP01 SECTION VIEW A-A





CCG-C-23-44178: Huyton Town Centre

Foundation Inspection Excavation - FIP01



CCG-C-23-44178: Huyton Town Centre

Foundation Inspection Excavation - FIP01



CCG-C-23-14178: Huyton Town Centre

Foundation Inspection Excavation - FIP01



CCG-C-23-14178: Huyton Town Centre

Foundation Inspection Excavation - FIP01

CCG-C-23-14178: Huyton Town Centre



Foundation Inspection Excavation - FIP01

CCG-C-23-14178: Huyton Town Centre



Foundation Inspection Excavation - FIP01





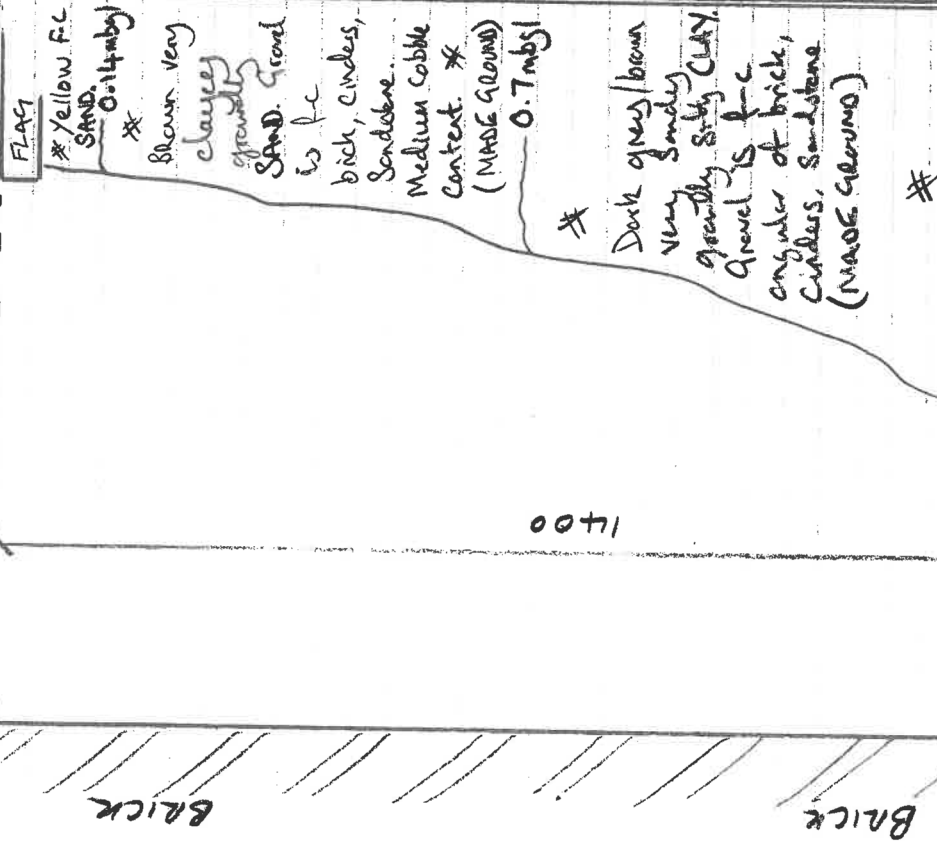
CCG-C-23-14178- Huyton Town Centre

Foundation Inspection Excavation - FIP01

EXCAVATION FIPO2 SECTION VIEW A-A

ALL DIMENSIONS GIVEN IN MM
UNLESS STATED OTHERWISE

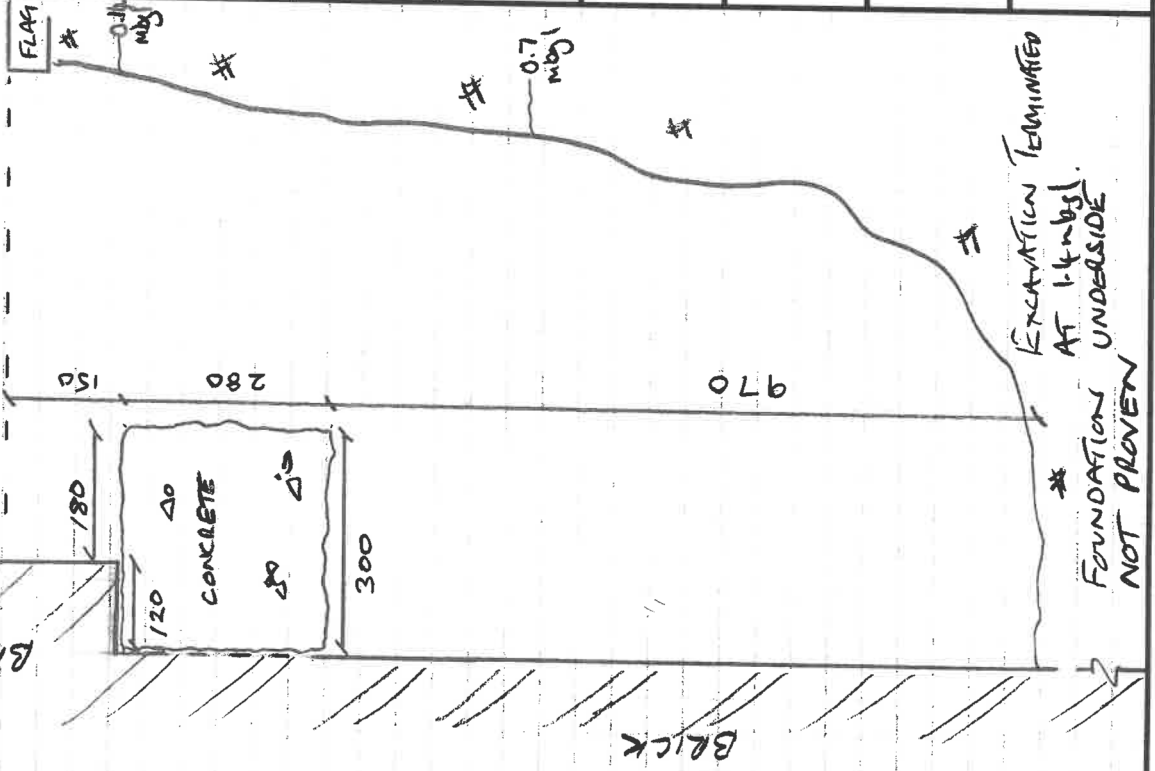
GROUND LEVEL



EXCAVATION FIPO2 SECTION VIEW B-B

ALL DIMENSIONS GIVEN IN MM
UNLESS STATED OTHERWISE

GROUND LEVEL



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

Client:

Genr8

Project:

Huyton Town Centre

Title:

Foundation Inspection Pit

Scale:

As shown

Issue:

1

Drawn by:

PMC

Approved by:

CB

Project No:

CCG-C-23-14178

Date:

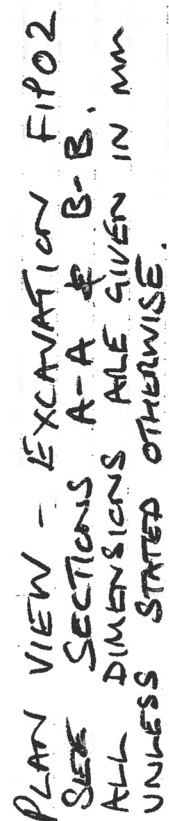
19.09.2023

Drawing No:

14178-FIPO2



4178-FIP02





CCG-C-23-14178; Huyton Town Centre

Foundation Inspection Excavation - FIP02



CCG-C-23-14178; Huyton Town Centre

Foundation Inspection Excavation - FIP02





CCG-C-23-14178: Hlyton Town Centre

Foundation Inspection Excavation - FIP02



CCG-C-23-14178: Hlyton Town Centre

Foundation Inspection Excavation - FIP02

CCG-C-23-14178: Huyton Town Centre



Foundation Inspection Excavation - FIP02



APPENDIX J

SOAKAWAY TEST RESULTS

CC GEOTECHNICAL LTD 0151 545 2750

CCG

Revision0

Job No: CCG-C-23-14178

Page: 1 OF 1

Section: HUYTON, LIVERPOOL - TP01

Prepared By: KH

Date: 06/10/2023

SOIL INFILTRATION DATA

allowance for infiltration through soakaway base: 100%

available on-site infiltration test results: ☒ Yes ☐ No

use soakage trial pit table below

internal surface area of trial pit 'a_{p50}' [m²] = 4.05

storage volume between 75-25% 'V_p' [m³] = 0.62

time for water to fall from 75-25% 't_p' [min] = #DIV/0!

soil infiltration rate 'r' [m/s] = #DIV/0!

Soil Description

See TP01

SOAKAGE TRIAL PIT DATA

soakage trial pit width 'W_t' [m] = 0.50

soakage trial pit length 'L_t' [m] = 1.80

total depth from ground level 'D_{tb}' [m] = 2.40

depth to pipe invert level 'D_{tp}' [m] = 1.03

soakage trial pit effective depth 'D_{teff}' [m] = 1.37

free volume in infill aggregate [%] = 100

NOTE: faces of excavation assumed to be vertical

SOAKAGE TRIAL PIT INFILTRATION TEST RESULTS																				
water level measurement N ^o :		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Soakage Trial 1	time [min] =	0	1	2	3	4	5	10	15	20	30	40	50	60	90	120	150	180	210	240
	depth to water [m] =	1.03	1.04	1.04	1.05	1.05	1.05	1.06	1.07	1.09	1.11	1.12	1.14	1.15	1.18	1.20	1.22	1.24	1.26	1.28
Soakage Trial 2	time [min] =	0	1	2	3	4	5	10	15	20	25	30	40	50	60	90	120	150	180	210
	depth to water [m] =																			
Soakage Trial 3	time [min] =	0	1	2	3	4	5	10	15	20	25	30	40	50	60	90	120	150	180	300
	depth to water [m] =																			

calculations are based on BRE Guidelines (Digest 365)

CC GEOTECHNICAL LTD 0151 545 2750

CCG

Revision0

Job No: CCG-C-23-14178

Page: 1 OF 1

Section: HUYN, LIVERPOOL - TP02

Prepared By: KH

Date: 06/10/2023

SOIL INFILTRATION DATA

allowance for infiltration through soakaway base: 100%

available on-site infiltration test results: ☒ Yes ☐ No

use soakage trial pit table below

internal surface area of trial pit 'a_{p50}' [m²] = 6.77

storage volume between 75-25% 'V_p' [m³] = 1.39

time for water to fall from 75-25% 't_p' [min] = #DIV/0!

soil infiltration rate 'r' [m/s] = #DIV/0!

Soil Description

See TP02

SOAKAGE TRIAL PIT DATA

soakage trial pit width 'W_t' [m] = 0.70

soakage trial pit length 'L_t' [m] = 2.00

total depth from ground level 'D_{tb}' [m] = 4.00

depth to pipe invert level 'D_{tp}' [m] = 2.01

soakage trial pit effective depth 'D_{teff}' [m] = 1.99

free volume in infill aggregate [%] = 100

NOTE: faces of excavation assumed to be vertical

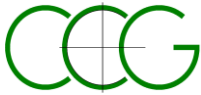
SOAKAGE TRIAL PIT INFILTRATION TEST RESULTS																				
water level measurement N°:		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Soakage Trial 1	time [min] =	0	1	2	3	4	5	10	15	20	30	40	50	60	90	120	150	180	210	240
	depth to water [m] =	2.01	2.02	2.03	2.03	2.04	2.05	2.06	2.07	2.07	2.08	2.10	2.11	2.14	2.17	2.20	2.22	2.23	2.24	2.25
Soakage Trial 2	time [min] =	0	1	2	3	4	5	10	15	20	25	30	40	50	60	90	120	150	180	210
	depth to water [m] =																			
Soakage Trial 3	time [min] =	0	1	2	3	4	5	10	15	20	25	30	40	50	60	90	120	150	180	300
	depth to water [m] =																			

calculations are based on BRE Guidelines (Digest 365)



APPENDIX K

DCP TEST RESULTS



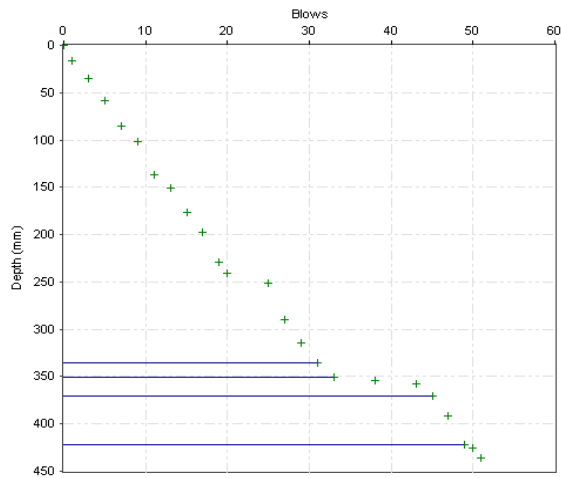
Dynamic Cone Penetrometer Strength Analysis Report

Site: HUYTON TOWN CENTRE
 Location: WS01 DCP (commenced at 0.0mbgl)
 Cone Angle: 60 degrees
 Zero Error: 114
 Test Date: 14/09/2023

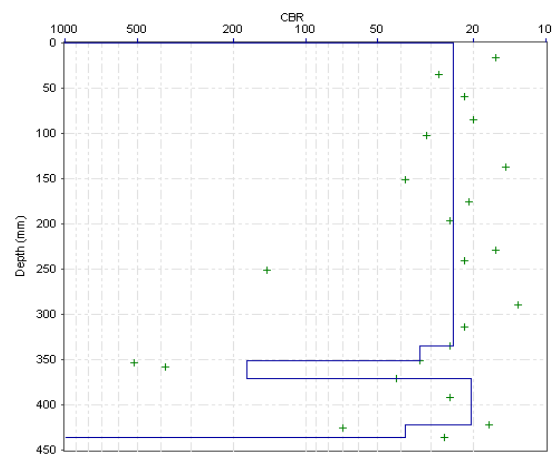
Job Number: CCG-C-23-14178
 Surface Type: -
 Thickness (mm): -

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)	No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)
1	0	0	114	0	21	2	47	506	10.5
2	1	1	130	16.0	22	2	49	536	15.0
3	2	3	149	9.5	23	1	50	540	4.0
4	2	5	173	12.0	24	1	51	550	10.0
5	2	7	199	13.0					
6	2	9	216	8.5					
7	2	11	251	17.5					
8	2	13	265	7.0					
9	2	15	290	12.5					
10	2	17	311	10.5					
11	2	19	343	16.0					
12	1	20	355	12.0					
13	5	25	365	2.0					
14	2	27	404	19.5					
15	2	29	428	12.0					
16	2	31	449	10.5					
17	2	33	465	8.0					
18	5	38	468	0.6					
19	5	43	472	0.8					
20	2	45	485	6.5					

Layer Boundaries: Chainage 1.100



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	CBR value	Thickness	Depth	Depth (mmbgl)	Strength Coefficient
1	24	335	335	449	
2	34	16	351	465	
3	176	20	371	485	
4	20	51	422	536	
5	39	14	436	550	

CBR Derived by TDR equation

$$\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{penetration rate})$$

Remarks Surface material description: Grassed TOPSOIL



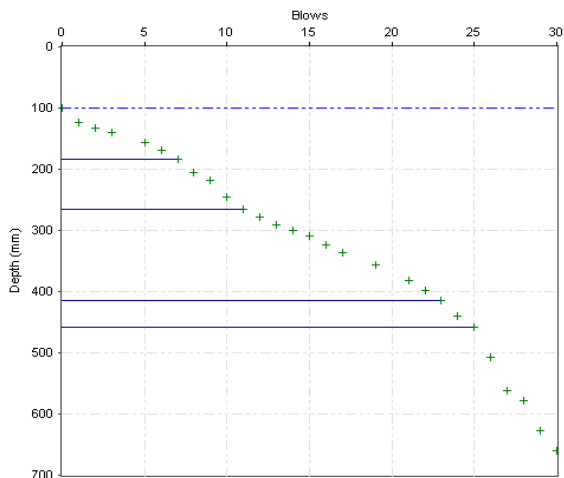
Dynamic Cone Penetrometer Strength Analysis Report

Site: HUYTON TOWN CENTRE
 Location: WS06 DCP
 Cone Angle: 60 degrees
 Zero Error: 164
 Test Date: 14/09/2023

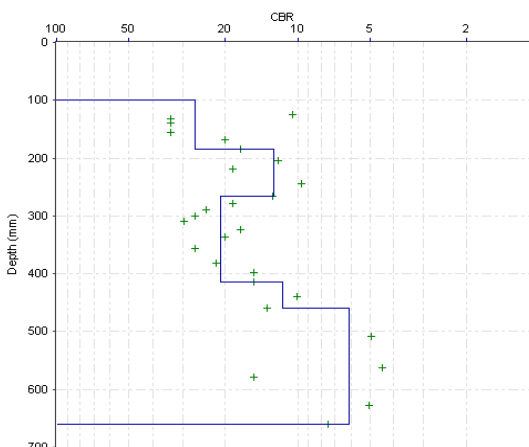
Job Number: CCG-C-23-14178
 Surface Type: BITUMINOUS SURFACING
 Thickness (mm): 100

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)	No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)
1	0	0	264	0	21	1	23	579	17.0
2	1	1	288	24.0	22	1	24	604	25.0
3	1	2	296	8.0	23	1	25	623	19.0
4	1	3	304	8.0	24	1	26	672	49.0
5	2	5	320	8.0	25	1	27	726	54.0
6	1	6	333	13.0	26	1	28	743	17.0
7	1	7	348	15.0	27	1	29	791	48.0
8	1	8	369	21.0	28	1	30	824	33.0
9	1	9	383	14.0					
10	1	10	409	26.0					
11	1	11	429	20.0					
12	1	12	443	14.0					
13	1	13	454	11.0					
14	1	14	464	10.0					
15	1	15	473	9.0					
16	1	16	488	15.0					
17	1	17	501	13.0					
18	2	19	521	10.0					
19	2	21	545	12.0					
20	1	22	562	17.0					

Layer Boundaries: Chainage 6.000



Layer Boundaries Chart



CBR Chart

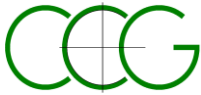
Layer Properties

No.	CBR value	Thickness	Depth	Depth (mmbgl)	Strength Coefficient
1	26	84	184	448	
2	13	81	265	529	
3	21	150	415	679	
4	12	44	459	723	
5	6	201	660	924	

CBR Derived by TDR equation

$$\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{penetration rate})$$

Remarks Surface material description: Bituminous surfacing



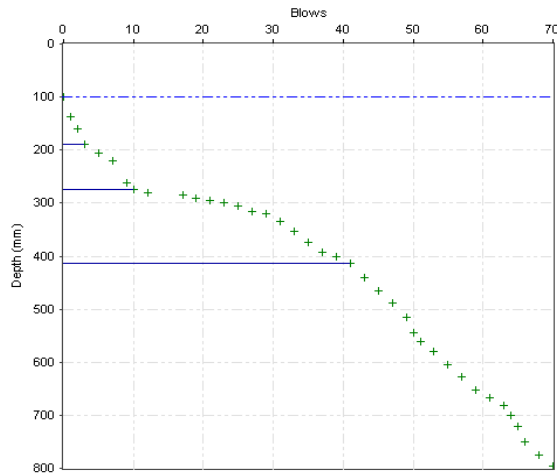
Dynamic Cone Penetrometer Strength Analysis Report

Site: HUYTON TOWN CENTRE
Location: WS07 DCP
Cone Angle: 60 degrees
Zero Error: 50
Test Date: 12/09/2023

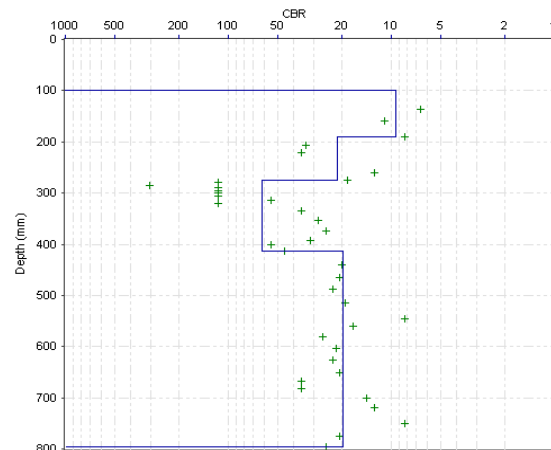
Job Number: CCG-C-23-14178
Surface Type: BITUMINOUS SURFACING
Thickness (mm): 100

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)	No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)
1	0	0	150	0	21	2	39	452	5.0
2	1	1	187	37.0	22	2	41	464	6.0
3	1	2	210	23.0	23	2	43	490	13.0
4	1	3	240	30.0	24	2	45	515	12.5
5	2	5	256	8.0	25	2	47	538	11.5
6	2	7	271	7.5	26	2	49	565	13.5
7	2	9	311	20.0	27	1	50	595	30.0
8	1	10	325	14.0	28	1	51	610	15.0
9	2	12	330	2.5	29	2	53	630	10.0
10	5	17	335	1.0	30	2	55	654	12
11	2	19	340	2.5	31	2	57	677	11.5
12	2	21	345	2.5	32	2	59	702	12.5
13	2	23	350	2.5	33	2	61	717	7.5
14	2	25	355	2.5	34	2	63	732	7.5
15	2	27	365	5.0	35	1	64	750	18
16	2	29	370	2.5	36	1	65	770	20
17	2	31	385	7.5	37	1	66	800	30
18	2	33	404	9.5	38	2	68	825	12.5
19	2	35	425	10.5	39	2	70	846	10.5
20	2	37	442	8.5					

Layer Boundaries: Chainage 7.000



Layer Boundaries Chart



CBR Chart

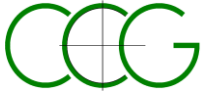
Layer Properties

No.	CBR value	Thickness	Depth	Depth (mmbgl)	Strength Coefficient
1	9	90	190	340	
2	22	85	275	425	
3	62	139	414	564	
4	20	382	796	946	

CBR Derived by TDR equation

$$\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{penetration rate})$$

Remarks Surface material description: Bituminous surfacing



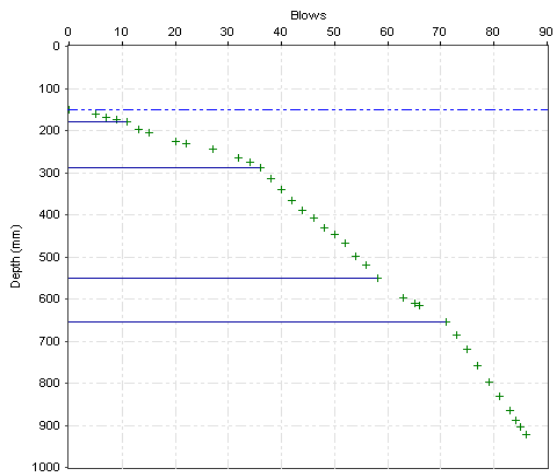
Dynamic Cone Penetrometer Strength Analysis Report

Site: HUYTON TOWN CENTRE
Location: WS09 DCP (commenced at 0.0mbgl)
Cone Angle: 60 degrees
Zero Error: 60
Test Date: 13/11/2023

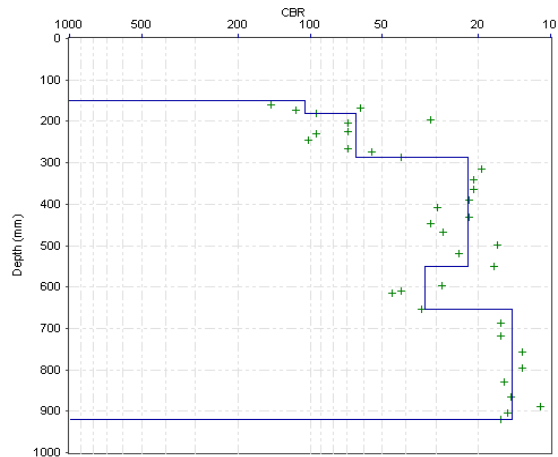
Job Number: CCG-C-23-14178
Surface Type: Bituminous surfacing
Thickness (mm): 150

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)	No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)
1	0	0	210	0	21	2	52	527	9.5
2	5	5	220	2.0	22	2	54	558	15.5
3	2	7	229	4.5	23	2	56	580	11.0
4	2	9	234	2.5	24	2	58	610	15.0
5	2	11	240	3.0	25	5	63	657	9.4
6	2	13	257	8.5	26	2	65	670	6.5
7	2	15	265	4.0	27	1	66	676	6.0
8	5	20	285	4.0	28	5	71	715	7.8
9	2	22	291	3.0	29	2	73	747	16.0
10	5	27	305	2.8	30	2	75	779	16
11	5	32	325	4.0	31	2	77	818	19.5
12	2	34	335	5.0	32	2	79	857	19.5
13	2	36	348	6.5	33	2	81	890	16.5
14	2	38	375	13.5	34	2	83	925	17.5
15	2	40	400	12.5	35	1	84	948	23
16	2	42	425	12.5	36	1	85	965	17
17	2	44	449	12.0	37	1	86	981	16
18	2	46	467	9.0					
19	2	48	491	12.0					
20	2	50	508	8.5					

Layer Boundaries: Chainage 9.000



Layer Boundaries Chart



CBR Chart

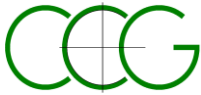
Layer Properties

No.	CBR value	Thickness	Depth	Depth (mmbgl)	Strength Coefficient
1	105	30	180	240	
2	64	108	288	348	
3	22	262	550	610	
4	33	105	655	705	
5	14	226	921	981	

CBR Derived by TDR equation

$$\text{Log}_{10}(\text{CBR}) = 2.48 - 1.057 \times \text{Log}_{10}(\text{penetration rate})$$

Remarks Surface material description: Bituminous surfacing



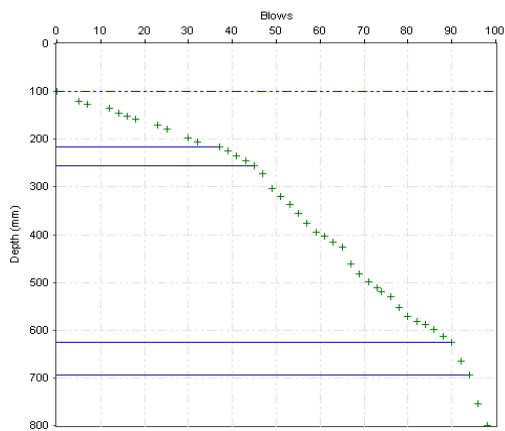
Dynamic Cone Penetrometer Strength Analysis Report

Site: HUYTON TOWN CENTRE
 Location: WS11 DCP
 Cone Angle: 60 degrees
 Zero Error: 85
 Test Date: 06/09/2023

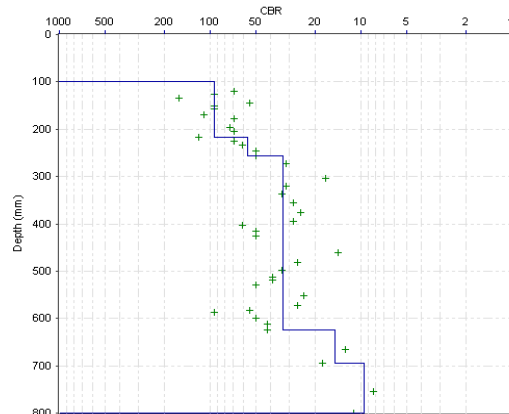
Job Number: CCG-C-23-14178
 Surface Type: BITUMINOUS SURFACING
 Thickness (mm): 100

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)	No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)
1	0	0	185	0	23	2	59	480	9.5
2	5	5	205	4.0	24	2	61	489	4.5
3	2	7	211	3.0	25	2	63	500	5.5
4	5	12	220	1.8	26	2	65	511	5.5
5	2	14	230	5.0	27	2	67	547	18.0
6	2	16	236	3.0	28	2	69	567	10.0
7	2	18	242	3.0	29	2	71	583	8.0
8	5	23	255	2.6	30	2	73	597	7.0
9	2	25	263	4.0	31	1	74	604	7.0
10	5	30	282	3.8	32	2	76	615	5.5
11	2	32	290	4.0	33	2	78	637	11
12	5	37	302	2.4	34	2	80	657	10
13	2	39	310	4.0	35	2	82	667	5
14	2	41	319	4.5	36	2	84	673	3
15	2	43	330	5.5	37	2	86	684	5.5
16	2	45	341	5.5	38	2	88	697	6.5
17	2	47	358	8.5	39	2	90	710	6.5
18	2	49	388	15.0	40	2	92	750	20
19	2	51	405	8.5	41	2	94	779	14.5
20	2	53	421	8.0	42	2	96	839	30
21	2	55	440	9.5	43	2	98	884	22.5
22	2	57	461	10.5					

Layer Boundaries: Chainage 11.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	CBR value	Thickness	Depth	Depth (mmbgl)	Strength Coefficient
1	94	117	217	402	
2	57	39	256	441	
3	33	369	625	810	
4	15	69	694	897	
5	10	105	799	984	

CBR Derived by TDR equation

$$\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{penetration rate})$$

Remarks Surface material description: Bituminous surfacing



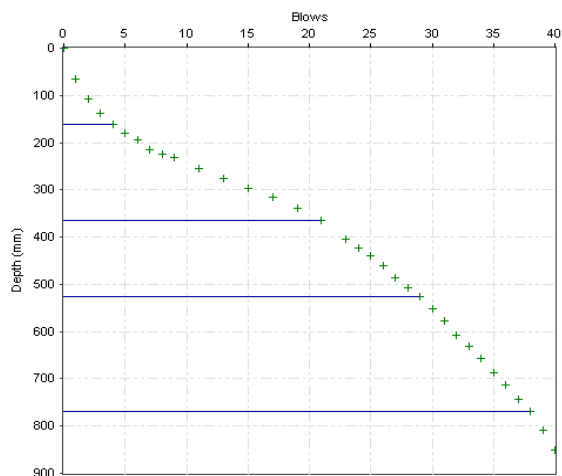
Dynamic Cone Penetrometer Strength Analysis Report

Site: HUYTON TOWN CENTRE
 Location: WS15 DCP
 Cone Angle: 60 degrees
 Zero Error: 104
 Test Date: 12/09/2023

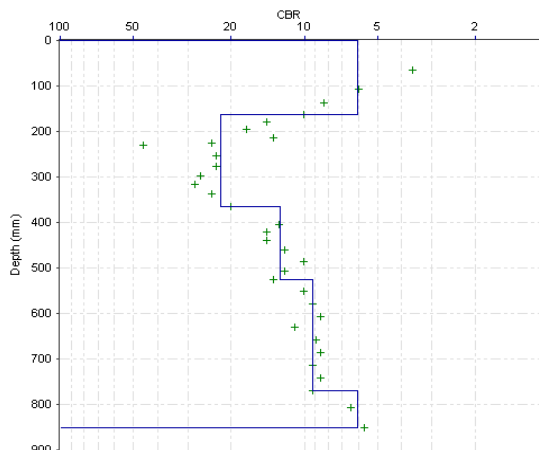
Job Number: CCG-C-23-14178
 Surface Type: -
 Thickness (mm): -

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)	No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)
1	0	0	104	0	21	1	27	590	25.0
2	1	1	170	66.0	22	1	28	611	21.0
3	1	2	211	41.0	23	1	29	630	19.0
4	1	3	241	30.0	24	1	30	655	25.0
5	1	4	266	25.0	25	1	31	682	27.0
6	1	5	284	18.0	26	1	32	711	29.0
7	1	6	299	15.0	27	1	33	734	23.0
8	1	7	318	19.0	28	1	34	762	28.0
9	1	8	329	11.0	29	1	35	791	29.0
10	1	9	335	6.0	30	1	36	818	27
11	2	11	358	11.5	31	1	37	847	29
12	2	13	381	11.5	32	1	38	874	27
13	2	15	401	10.0	33	1	39	912	38
14	2	17	420	9.5	34	1	40	955	43
15	2	19	442	11.0					
16	2	21	468	13.0					
17	2	23	508	20.0					
18	1	24	526	18.0					
19	1	25	544	18.0					
20	1	26	565	21.0					

Layer Boundaries: Chainage 15.000



Layer Boundaries Chart



CBR Chart

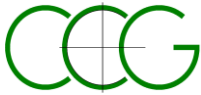
Layer Properties

No.	CBR value	Thickness	Depth	Depth (mmbgl)	Strength Coefficient
1	6	162	162	266	
2	22	202	364	468	
3	13	162	526	630	
4	9	244	770	874	
5	6	81	851	955	

CBR Derived by TDR equation

$$\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{penetration rate})$$

Remarks Surface material description: Grassed TOPSOIL



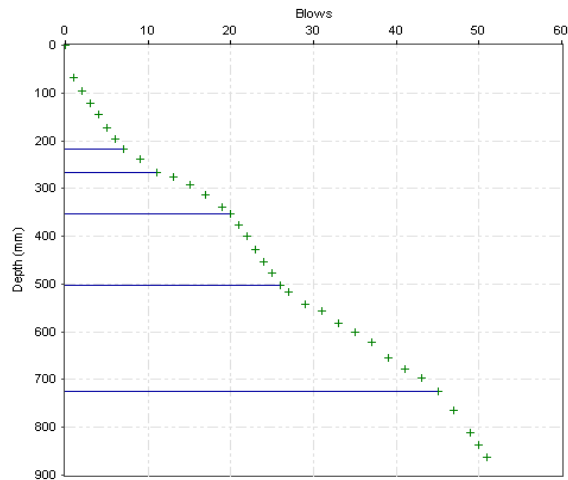
Dynamic Cone Penetrometer Strength Analysis Report

Site: HUYTON TOWN CENTRE
Location: WS16 DCP
Cone Angle: 60 degrees
Zero Error: 123
Test Date: 13/09/2023

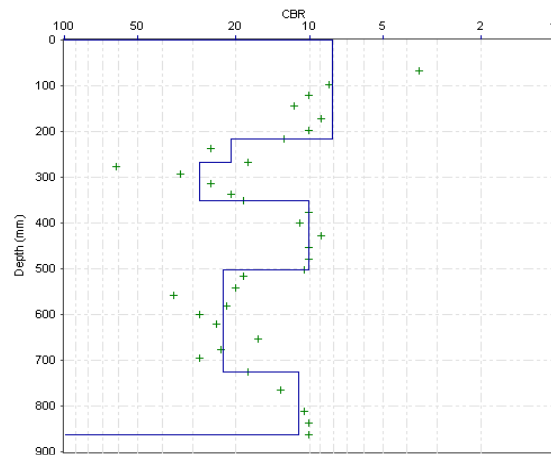
Job Number: CCG-C-23-14178
Surface Type: -
Thickness (mm): -

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)	No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)
1	0	0	123	0	21	1	26	625	24.0
2	1	1	190	67.0	22	1	27	639	14.0
3	1	2	220	30.0	23	2	29	665	13.0
4	1	3	245	25.0	24	2	31	680	7.5
5	1	4	267	22.0	25	2	33	704	12.0
6	1	5	295	28.0	26	2	35	723	9.5
7	1	6	320	25.0	27	2	37	745	11.0
8	1	7	340	20.0	28	2	39	777	16.0
9	2	9	361	10.5	29	2	41	800	11.5
10	2	11	390	14.5	30	2	43	819	9.5
11	2	13	399	4.5	31	2	45	848	14.5
12	2	15	415	8.0	32	2	47	887	19.5
13	2	17	436	10.5	33	2	49	935	24
14	2	19	461	12.5	34	1	50	960	25
15	1	20	475	14.0	35	1	51	985	25
16	1	21	500	25.0					
17	1	22	523	23.0					
18	1	23	551	28.0					
19	1	24	576	25.0					
20	1	25	601	25.0					

Layer Boundaries: Chainage 16.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	CBR value	Thickness	Depth	Depth (mmbgl)	Strength Coefficient
1	8	217	217	340	
2	21	50	267	390	
3	28	85	352	475	
4	10	150	502	625	
5	22	223	725	848	
6	11	137	862	985	

CBR Derived by TDR equation

$$\text{Log}_{10}(\text{CBR}) = 2.48 - 1.057 \times \text{Log}_{10}(\text{penetration rate})$$

Remarks Surface material description: Grassed TOPSOIL



APPENDIX L

GAS & GROUNDWATER MONITORING RECORDS

GAS AND GROUNDWATER MONITORING RESULTS



	Date:		05-Oct-23	29-Oct-23	12-Nov-23	26-Nov-23	10-Dec-23	22-Dec-23				
	Visit Number		1	2	3	4	5	6				
WS01	Atmos Press mb		1016	980	998	1012	999	1006				
	Pressure Trend		Falling	Rising	Falling	Falling	Falling	Steady				
	Air Temp °C		13	11	6	4	6	10				
	Cloud cover		Overcast	Overcast	Overcast	Clear	Clear	Overcast				
	Wind velocity		Light breeze	Light breeze	Light breeze	Light breeze	Light breeze	Strong wind				
	Precipitation		Rain	Dry	Rain	Dry	Dry	Rain				
	State of Ground		Wet	Dry	Wet	Dry	Dry	Wet				
	CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO2 (%):		0.1	Nil	0.1	0.1	0.1	0.1				
	O2 (%):		20.4	20.0	19.5	19.5	19.7	19.9				
WS06	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):		Dry	Dry	Dry	Dry	Dry	Dry				
	CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO2 (%):		0.5	0.6	1.2	0.8	0.6	0.7				
WS07	O2 (%):		18.6	18.8	17.4	17.3	17.5	17.4				
	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):		2.41	1.08	2.05	2.28	2.20	2.07				
	CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
WS11	CO2 (%):		3.10	4.1	3.5	0.7	0.5	0.3				
	O2 (%):		15.7	8.8	8.9	18.3	18.8	19.1				
	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):		3.49	3.53	2.56	2.29	2.24	2.16				
WS15	CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO2 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	O2 (%):		20.3	20.0	19.5	19.5	19.7	19.9				
	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):		1.03	1.07	1.02	1.08	1.01	0.97				
	CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO2 (%):		Nil	0.8	4.2	3.1	2.8	3.0				
	O2 (%):		20.5	19.3	16.1	16.5	16.9	16.6				
	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):		Dry	Dry	Dry	Dry	Dry	Dry				
	CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO2 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	O2 (%):		20.5	19.3	16.1	16.5	16.9	16.6				
	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):		Dry	Dry	Dry	Dry	Dry	Dry				
	CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO2 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	O2 (%):		20.5	19.3	16.1	16.5	16.9	16.6				
	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):		Dry	Dry	Dry	Dry	Dry	Dry				
	CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO2 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	O2 (%):		20.5	19.3	16.1	16.5	16.9	16.6				
	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):		Dry	Dry	Dry	Dry	Dry	Dry				
	CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO2 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	O2 (%):		20.5	19.3	16.1	16.5	16.9	16.6				
	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):		Dry	Dry	Dry	Dry	Dry	Dry				
	CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO2 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	O2 (%):		20.5	19.3	16.1	16.5	16.9	16.6				
	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):		Dry	Dry	Dry	Dry	Dry	Dry				
CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil					
	CO2 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	O2 (%):		20.5	19.3	16.1	16.5	16.9	16.6				
	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):		Dry	Dry	Dry	Dry	Dry	Dry				
CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil					
	CO2 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	O2 (%):		20.5	19.3	16.1	16.5	16.9	16.6				
	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):		Dry	Dry	Dry	Dry	Dry	Dry				
CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil					
	CO2 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	O2 (%):		20.5	19.3	16.1	16.5	16.9	16.6				
	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):		Dry	Dry	Dry	Dry	Dry	Dry				
CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil					
	CO2 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	O2 (%):		20.5	19.3	16.1	16.5	16.9	16.6				
	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):		Dry	Dry	Dry	Dry	Dry	Dry				
CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil					
	CO2 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	O2 (%):		20.5	19.3	16.1	16.5	16.9	16.6				
	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):		Dry	Dry	Dry	Dry	Dry	Dry				
CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil					
	CO2 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	O2 (%):		20.5	19.3	16.1	16.5	16.9	16.6				
	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):		Dry	Dry	Dry	Dry	Dry	Dry				
CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil					
	CO2 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	O2 (%):		20.5	19.3	16.1	16.5	16.9	16.6				
	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):		Dry	Dry	Dry	Dry	Dry	Dry				
CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil					
	CO2 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	O2 (%):		20.5	19.3	16.1	16.5	16.9	16.6				
	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):		Dry	Dry	Dry	Dry	Dry	Dry				
CH4 (%):		Nil	Nil	Nil	Nil	Nil	Nil					
	CO2 (%):		Nil	Nil	Nil	Nil	Nil	Nil				
	O2 (%):		20.5	19.3	16.1	16.5	16.9	16.6				
	H2S (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):		Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):		0.0	0.0	0.0	0.0	0.0	0				

GAS AND GROUNDWATER MONITORING RESULTS



	Date:												
	05-Oct-23	29-Oct-23	12-Nov-23	26-Nov-23	10-Dec-23	22-Dec-23	1	2	3	4	5	6	
	Visit Number	1	2	3	4	5	6						
	Atmos Press mb	1016	980	998	1012	999	1006						
	Pressure Trend	Falling	Rising	Falling	Falling	Falling	Steady						
	Air Temp °C	13	11	6	4	6	10						
	Cloud cover	Overcast	Overcast	Overcast	Clear	Clear	Overcast						
	Wind velocity	Light breeze	Light breeze	Light breeze	Light breeze	Light breeze	Strong wind						
	Precipitation	Rain	Dry	Rain	Dry	Dry	Rain						
	State of Ground	Wet	Dry	Wet	Dry	Dry	Wet						
	CH ₄ (%):	Nil	Nil	Nil	Nil	Nil	Nil						
	CO ₂ (%):	0.7	Nil	8.6	4.9	4.4	4.5						
WS16	O ₂ (%):	19.8	20.4	17.8	13.8	14.1	13.8						
	H ₂ S (ppm):	Nil	Nil	Nil	Nil	Nil	Nil						
	CO (ppm):	Nil	Nil	Nil	Nil	Nil	Nil						
	PID (ppm):	0.0	0.0	0.0	0.0	0.0	0.0						
	Flow (l/hr):	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1						
	Water Level (mbgl):	Dry	Dry	Dry	Dry	Dry	Dry						
	CH ₄ (%):	Nil	Nil	Nil	Nil	Nil	Nil						
	CO ₂ (%):	Nil	Nil	Nil	0.1	0.1	0.1						
	O ₂ (%):	20.5	20.2	20.1	19.6	19.8	19.9						
	H ₂ S (ppm):	Nil	Nil	Nil	Nil	Nil	Nil						
BH01	CO (ppm):	Nil	Nil	Nil	Nil	Nil	Nil						
	PID (ppm):	0.0	0.0	0.0	0.0	0.0	0.0						
	Flow (l/hr):	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1						
	Water Level (mbgl):	6.73	7.22	5.42	6.23	6.17	6.10						
	CH ₄ (%):	Nil	Nil	Nil	Nil	Nil	Nil						
	CO ₂ (%):	0.1	0.4	0.2	Nil	Nil	Nil						
	O ₂ (%):	20.0	19.8	19.9	19.8	19.9	20.0						
	H ₂ S (ppm):	Nil	Nil	Nil	Nil	Nil	Nil						
	CO (ppm):	Nil	Nil	Nil	Nil	Nil	Nil						
	PID (ppm):	0.0	0.0	0.0	0.0	0.0	0.0						
BH02	Flow (l/hr):	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1						
	Water Level (mbgl):	7.54	6.90	7.48	5.10	5.01	4.93						
	CH ₄ (%):	Nil	Nil	Nil	Nil	Nil	Nil						
	CO ₂ (%):	Nil	Nil	0.1	2.9	3.0	3.3						
	O ₂ (%):	20.5	20.3	20.0	16.5	16.0	15.8						
	H ₂ S (ppm):	Nil	Nil	Nil	Nil	Nil	Nil						
	CO (ppm):	Nil	Nil	Nil	Nil	Nil	Nil						
	PID (ppm):	0.0	0.0	0.0	0.0	0.0	0.0						
	Flow (l/hr):	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1						
	Water Level (mbgl):	7.57	7.48	7.62	7.31	7.22	7.16						
BH03	CH ₄ (%):	Nil	Nil	Nil	Nil	Nil	Nil						
	CO ₂ (%):	Nil	4.6	4.2	4.0	3.6	3.7						
	O ₂ (%):	19.0	14.7	15.1	14.7	15.4	15.1						
	H ₂ S (ppm):	Nil	Nil	Nil	Nil	Nil	Nil						
	CO (ppm):	Nil	Nil	Nil	Nil	Nil	Nil						
	PID (ppm):	0.0	0.0	0.0	0.0	0.0	0.0						
	Flow (l/hr):	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1						
	Water Level (mbgl):	6.70	6.59	6.52	6.48	6.40	6.33						
	CH ₄ (%):	Nil	Nil	Nil	Nil	Nil	Nil						
	CO ₂ (%):	Nil	4.6	4.2	4.0	3.6	3.7						
BH04	O ₂ (%):	19.0	14.7	15.1	14.7	15.4	15.1						
	H ₂ S (ppm):	Nil	Nil	Nil	Nil	Nil	Nil						
	CO (ppm):	Nil	Nil	Nil	Nil	Nil	Nil						
	PID (ppm):	0.0	0.0	0.0	0.0	0.0	0.0						
	Flow (l/hr):	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1						
	Water Level (mbgl):	6.70	6.59	6.52	6.48	6.40	6.33						
	CH ₄ (%):	Nil	Nil	Nil	Nil	Nil	Nil						
	CO ₂ (%):	Nil	4.6	4.2	4.0	3.6	3.7						
	O ₂ (%):	19.0	14.7	15.1	14.7	15.4	15.1						
	H ₂ S (ppm):	Nil	Nil	Nil	Nil	Nil	Nil						

GAS AND GROUNDWATER MONITORING RESULTS



	Date:										
	05-Oct-23	29-Oct-23	12-Nov-23	26-Nov-23	10-Dec-23	22-Dec-23	1	2	3	4	
	Visit Number	1	2	3	4	5	6				
	Atmos Press mb	1016	980	998	1012	999	1006				
	Pressure Trend	Falling	Rising	Falling	Falling	Falling	Steady				
	Air Temp °C	13	11	6	4	6	10				
	Cloud cover	Overcast	Overcast	Overcast	Clear	Clear	Overcast				
	Wind velocity	Light breeze	Light breeze	Light breeze	Light breeze	Light breeze	Strong wind				
	Precipitation	Rain	Dry	Rain	Dry	Dry	Rain				
	State of Ground	Wet	Dry	Wet	Dry	Dry	Wet				
	CH ₄ (%):	Nil	Nil	Nil	Nil	Nil	Nil				
	CO ₂ (%):	3.1	5.2	5.4	7.3	7.1	7.3				
BH06	O ₂ (%):	16.6	14.4	14.2	13.9	15.2	12.9				
	H ₂ S (ppm):	Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):	Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):	0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):	6.70	6.59	6.54	6.48	6.77	6.59				
	CH ₄ (%):	Nil	*	Nil	Nil	Nil	Nil				
	CO ₂ (%):	0.8	*	0.6	3.6	4.4	4.5				
	O ₂ (%):	19.1	*	18.9	11.3	11.6	11.3				
	H ₂ S (ppm):	Nil	*	Nil	Nil	Nil	Nil				
BH07	CO (ppm):	Nil	*	Nil	Nil	Nil	Nil				
	PID (ppm):	0.0	*	0.0	0.0	0.0	0.0				
	Flow (l/hr):	<0.1	*	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):	6.72	*	6.58	6.52	6.48	6.40				
	CH ₄ (%):	Nil	Nil	Nil	Nil	Nil	Nil				
	CO ₂ (%):	0.4	0.9	0.5	0.3	0.3	0.4				
	O ₂ (%):	19.8	19.5	19.9	18.5	18.7	18.4				
	H ₂ S (ppm):	Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):	Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):	0.0	0.0	0.0	0.0	0.0	0.0				
BH08	Flow (l/hr):	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):	5.92	5.80	8.18	8.20	5.90	5.55				
	CH ₄ (%):	Nil	Nil	Nil	Nil	Nil	Nil				
	CO ₂ (%):	4.2	3.6	3.3	5.0	4.8	5.0				
	O ₂ (%):	15.0	14.7	14.4	13.5	13.9	13.3				
	H ₂ S (ppm):	Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):	Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):	0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):	7.20	6.87	6.83	6.79	6.51	6.46				
BH09	CH ₄ (%):	Nil	0.8	Nil	Nil	Nil	Nil				
	CO ₂ (%):	3.9	5.0	5.4	3.0	2.6	2.7				
	O ₂ (%):	9.6	1.6	4.0	14.0	14.8	14.4				
	H ₂ S (ppm):	Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):	Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):	0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):	7.20	6.87	6.83	6.79	6.51	6.46				
	CH ₄ (%):	Nil	0.8	Nil	Nil	Nil	Nil				
	CO ₂ (%):	3.9	5.0	5.4	3.0	2.6	2.7				
BH10	O ₂ (%):	9.6	1.6	4.0	14.0	14.8	14.4				
	H ₂ S (ppm):	Nil	Nil	Nil	Nil	Nil	Nil				
	CO (ppm):	Nil	Nil	Nil	Nil	Nil	Nil				
	PID (ppm):	0.0	0.0	0.0	0.0	0.0	0.0				
	Flow (l/hr):	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
	Water Level (mbgl):	4.27	4.15	4.05	3.99	3.90	3.81				
	CH ₄ (%):	Nil	0.8	Nil	Nil	Nil	Nil				
	CO ₂ (%):	3.9	5.0	5.4	3.0	2.6	2.7				
	O ₂ (%):	9.6	1.6	4.0	14.0	14.8	14.4				
	H ₂ S (ppm):	Nil	Nil	Nil	Nil	Nil	Nil				

GAS AND GROUNDWATER MONITORING RESULTS



Date:		05-Oct-23	29-Oct-23	12-Nov-23	26-Nov-23	10-Dec-23	22-Dec-23		
Visit Number	1	2	3	4	5	6			
Atmos Press mb	1016	980	998	1012	999	1006			
Pressure Trend	Falling	Rising	Falling	Falling	Falling	Steady			
Air Temp °C	13	11	6	4	6	10			
Cloud cover	Overcast	Overcast	Overcast	Clear	Clear	Overcast			
Wind velocity	Light breeze	Light breeze	Light breeze	Light breeze	Light breeze	Strong wind			
Precipitation	Rain	Dry	Rain	Dry	Dry	Rain			
State of Ground	Wet	Dry	Wet	Dry	Dry	Wet			
BH11	CH ₄ (%)	Nil	Nil	Nil	Nil	Nil			
	CO ₂ (%)	Nil	Nil	Nil	1.0	2.7	2.9		
	O ₂ (%)	20.1	20.1	20.0	17.7	14.7	14.3		
	H ₂ S (ppm)	Nil	Nil	Nil	Nil	Nil	Nil		
	CO (ppm)	Nil	Nil	Nil	Nil	Nil	Nil		
	PID (ppm)	0.0	0.0	0.0	0.0	0.0	0.0		
	Flow (l/hr)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		
BH12	Water Level (mbgl)	Dry	Dry	Dry	Dry	Dry	Dry		
	CH ₄ (%)	Nil	Nil	Nil	Nil	Nil	Nil		
	CO ₂ (%)	0.2	0.1	Nil	Nil	0.8	1.0		
	O ₂ (%)	20.1	20.3	20.0	19.4	8.0	8.7		
	H ₂ S (ppm)	Nil	Nil	Nil	Nil	Nil	Nil		
	CO (ppm)	Nil	Nil	Nil	Nil	Nil	Nil		
	PID (ppm)	0.0	0.0	0.0	0.0	0.0	0.0		
Water Level (mbgl)		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		
Flow (l/hr)		9.38	9.30	9.26	9.35	9.26	9.16		

CCG-CMS-FQ-129		Instrument: GFM436 MiniRae 3000	
Issue 2	Job No: CCG-C-23-14178	Site: Huyton Town Centre	

* = Not monitored due to no access

TEST DATE AND CONDITIONS			
Date		13/02/2023	
Atmospheric Pressure		1013	mB
Ambient Temperature		19.7	°C
EnviroNics Serial No.		5089	

**GFM436 Final Inspection & Calibration
Check Certificate**

GAS DATA LTD	
Unit 4, Fairfield Court	
Seven Stars Estate	
Wheler Rd	
Coventry	
CV3 4LJ	
Tel 02476303311	Fax 02476307711



GAS DATA
LISTEN • ANALYSE • INFORM

Customer	C C Geotechnical
Certificate Number	123929
Order Number	333366

Serial Number	12667
Software Version	G436-00.0027/0010

Recalibration DUE Date
13/02/24

Instrument Checks					
Keyboard	✓		Display Contrast	✓	
Pump Flow In	450	Accept > 200 cc/min	Pump Flow @ -200mB	250	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 %	
	60.2	60	40.2	40	20.9	20.9
	Accept ±3.0		Accept ±3.0		Accept ±0.5	
	4.9	5	4.9	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	1000	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		1000		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		1013	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	-30.6	Accept ± 3.0	-423	-435	Accept ± 50
-3	-3.0	Accept ± 1.0	-17	-18	Accept ± 6.0
0	0.0	Accept ± 0.0	0	0	Accept ± 0.5
3	3.0	Accept ± 0.5	14	13	Accept ± 3.0
30	30.4	Accept ± 3.0	318	325	Accept ± 50
60	59.6	Accept ± 6.0	968	955	Accept ± 130
90	90.1	Accept ± 9.0	1925	1956	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:
13/02/2023

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.



Certificate of Calibration

Customer: CC Geotechnical

Instrument: Minirae 3000

Job: Service, Test & Calibration

Serial number: 592-917504

Fleet Number: -

Certificate no: 917504/052723

Next calibration due date: 05.JUL.2024

Tested on: 05.JUL.2023

Calibrated for: Isobutylene

<u>Applied Gas Concentration:</u>	<u>Cylinder Reference:</u>	<u>Final Sensor Reading</u>	<u>Accuracy Limits</u>	<u>Pass / Fail</u>
Isobutylene 100ppm	63098/1423	100ppm	±10%	Pass

The instrument has been calibrated after re-zeroing and introducing span calibration gas, using gas that is traceable to national standards and has been prepared in accordance with BS EN ISO 6145-6:2017

Calibration Engineer: *DAN JACQUES*

Sign:

Quality Assessed by (Print):	<i>C.S.</i>	Sign:	
---------------------------------	-------------	-------	--

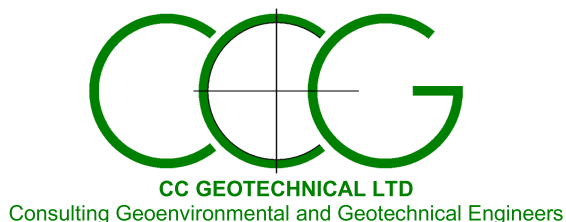


APPENDIX M

SOIL AND ROCK ENGINEERING TEST DATA

Units 1 & 2
Deltic Place
Deltic Way
Knowsley Industrial Estate
Liverpool
L33 7BU

Telephone: (0151) 545 2750
Fax: (0151) 548 7892
Email: enquiries@ccgeotechnical.com
www.ccgeotechnical.com



LABORATORY REPORT

CONTRACT NUMBER: CCG-C-23-14178

CONTRACT TITLE: HUYTON TOWN CENTRE

CLIENT: GENR8 / BURO HAPPOLD / KMBC

DATE RECEIVED: 02/10/23
DATE COMMENCED: 03/10/23
DATE COMPLETED: 28/10/23
REPORT DATE: 01/11/23

Test Description	Qty
Determination of Moisture Content BS 1377-2:1990 (a)	21
Determination of Liquid & Plastic Limits BS 1377-2:1990 (a)	18
Particle Size Distribution BS 1377-2:1990 (a)	15
Sedimentation by Hydrometer BS1377-2:1990 (#)	14
Unconsolidated Undrained Triaxial Compression BS1377-7:1990 (a)	7
Laboratory Determination of California Bearing Ratio BS1377-4:1990 (#)	5
Optimum Moisture Content / Maximum Dry Density Relationship BS1377-4:1990 (#)	15
Uniaxial Compressive Strength ISRM Vol 16 No 2, pp 135-140 (1979) (#)	18
Point Load Test ISRM 1985: Suggested Method (a)	96

Notes: Observations and interpretations are not accredited by UKAS
All testing undertaken at laboratory permanent facilities
denotes non-accredited test
a denotes UKAS accredited test
s denotes test undertaken by approved subcontractor
Test results only relate to the samples tested

This report is issued in accordance with the requirements of the United Kingdom Accreditation Services and EN ISO/IEC 17025:2017. The results reported herein relate only to the material supplied to the laboratory. This report shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved Signatories: Chris Bolan (Managing Director) – Daniel Kerfoot (Laboratory Manager)

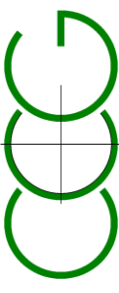
SUMMARY OF LABORATORY SOIL TEST RESULTS

BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Shear Strength (kN/m ²)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425mm (%)	Soil Classification	UKAS accredited test (Y/N)	Description / Test Method Samples described in accordance with BS EN ISO 14688-2 2004
BH01	D	0.60	0.60	19	-	-	-	29	14	15	76	CL	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular sandstone. (BS1377Pt2:3.2,4,4,5)
BH01	B	1.10	1.10	-	-	-	-	-	-	-	-	-	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular sandstone. (BS1377Pt2:9,2,9,5)
BH01	D	1.20	1.20	21	-	-	-	30	15	15	82	CL	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular sandstone. (BS1377Pt2:3.2,4,4,5)
BH01	UT	1.20	1.65	19	2.20	1.85	25	-	-	-	-	-	Y	Brown sandy silty CLAY of low undrained shear strength. Frequent pockets of sand. (BS1377Pt2:3.2, Pt7:8)

SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)

CLIENT: GENR8 / BURO HAPPOLD / KMBC

DATE: 24.10.23

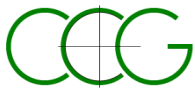


Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample

CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = Non-plastic

(* Denotes Hand Shear Vane test result)

Sample description not accredited by UKAS



CC Geotechnical Ltd
Tel: 0151 545 2750
e: lab@ccgeotechnical.com

PARTICLE SIZE DISTRIBUTION

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH01

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Specimen
Description

Brown sandy slightly gravelly silty CLAY

Depth, m

1.10

Specimen
Reference

Specimen
Depth

m

Sample Type

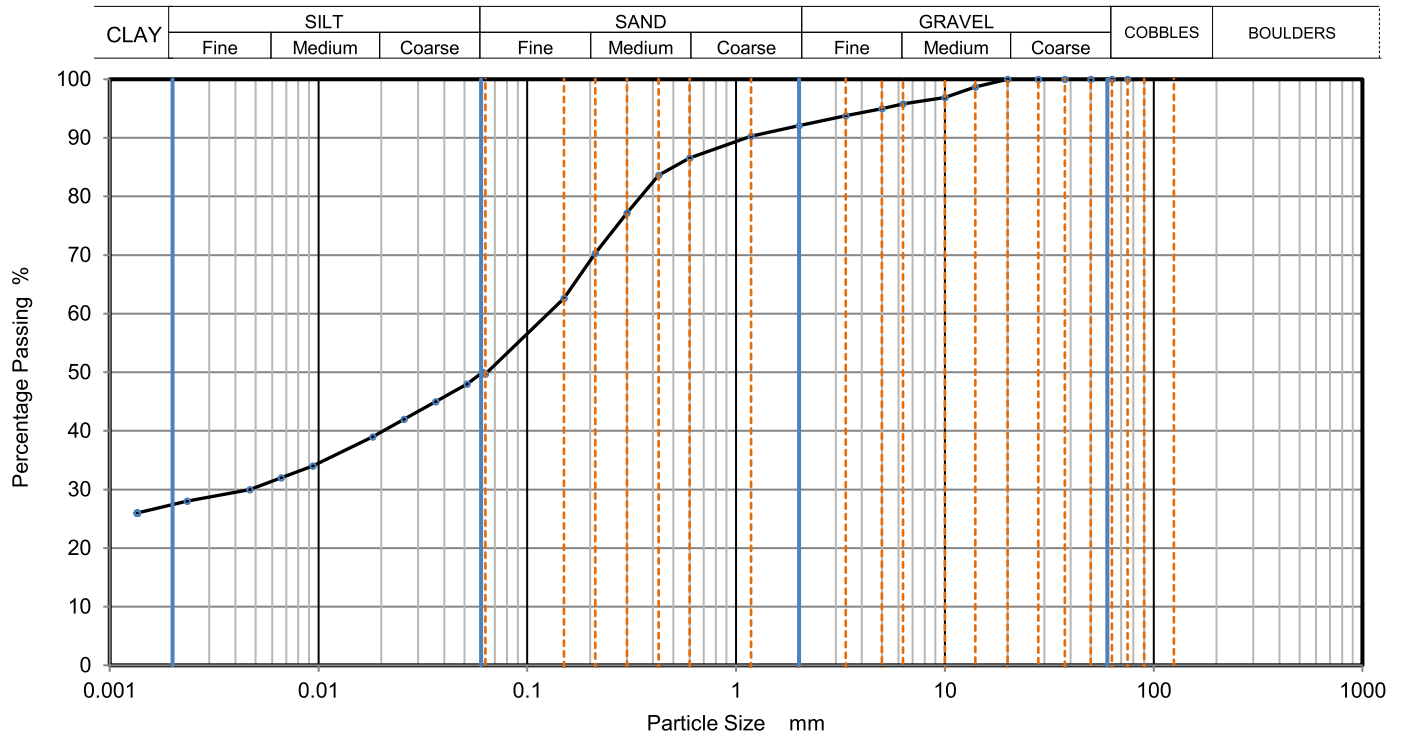
B

Test Method

BS1377:Part 2:1990, clauses 9.2 and 9.5

KeyLAB ID

CCGL2023101816



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
		0.0612	50
		0.0514	48
75	100	0.0364	45
63	100	0.0257	42
50	100	0.0182	39
37.5	100	0.0094	34
28	100	0.0066	32
20	100	0.0047	30
14	99	0.0023	28
10	97	0.0014	26
6.3	96		
5	95		
3.35	94		
2	92		
1.18	90		
0.6	87	Particle density (assumed) 2.65 Mg/m3	
0.425	84		
0.3	77		
0.212	70		
0.15	63		
0.063	50		

Dry Mass of sample, g

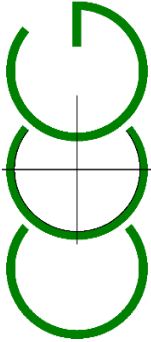
Sample Proportions	% dry mass
Very coarse	0
Gravel	8
Sand	42
Silt	22
Clay	28

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

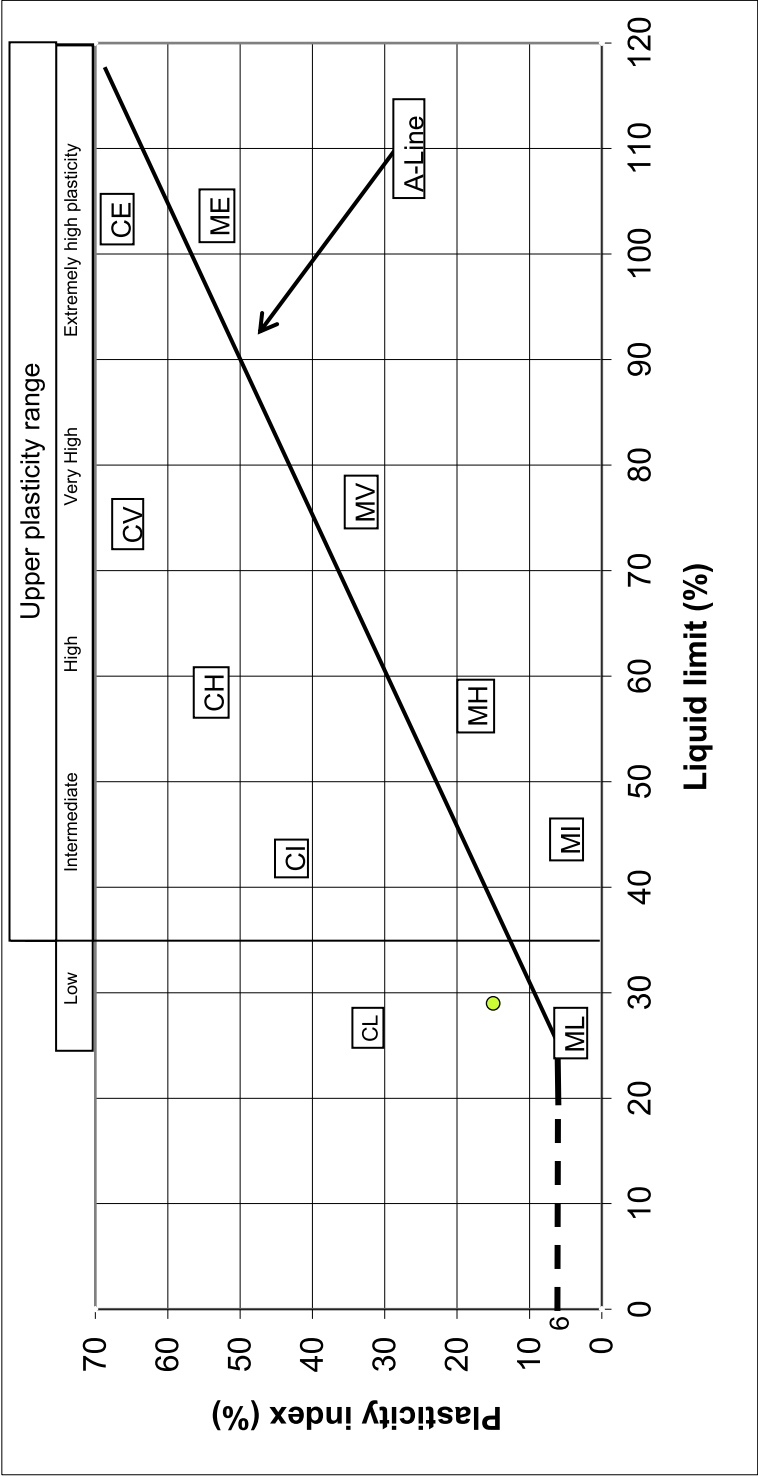
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1 Sheet
JE	DK	DK	24/10/2023 10:46	



ATTERBERG TEST RESULT SHEET
BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line, CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.

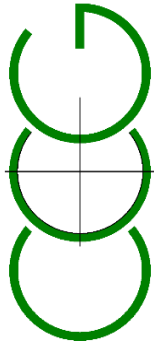


BH	Sample Depth	Liquid limit	Plasticity index
BH01	0.60	29.0	15.0



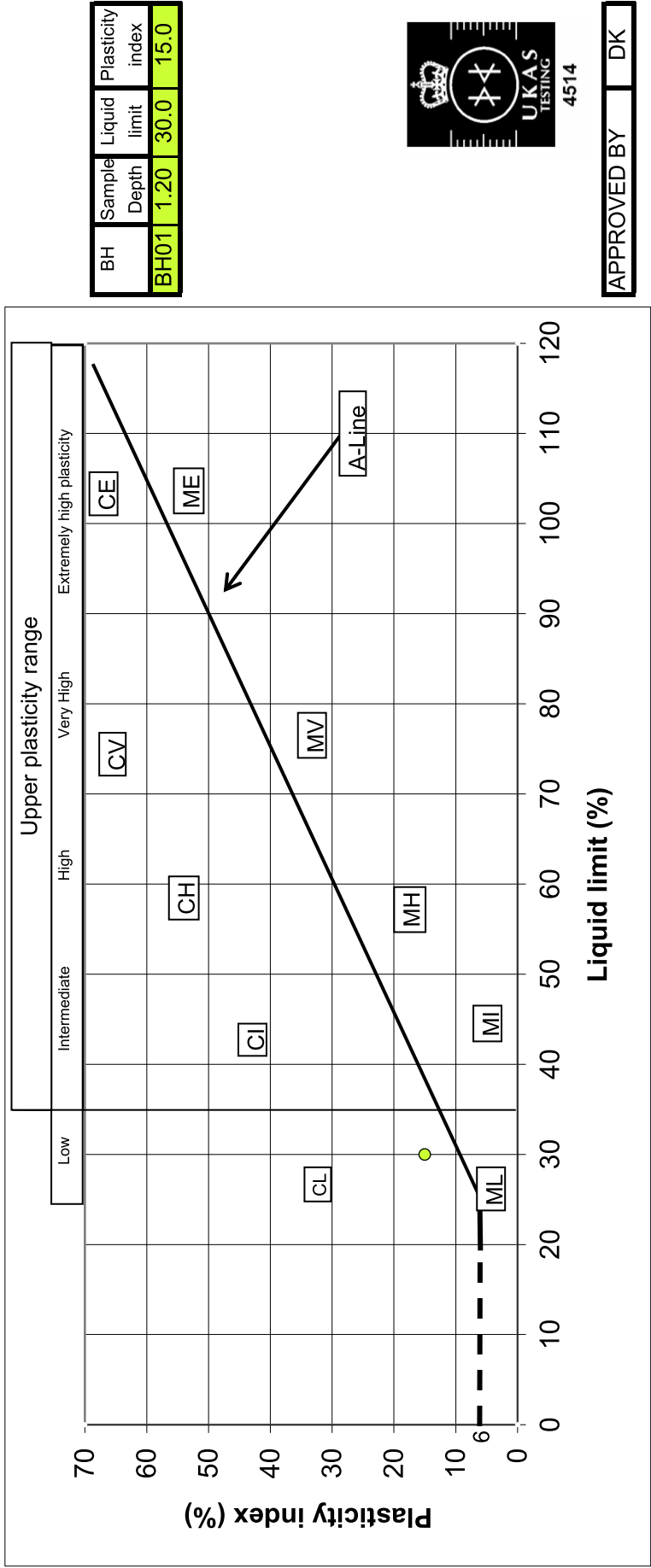
APPROVED BY	DK
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CLIENT: GENR8 / BURO HAPPOLD / KMBC	SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
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ATTERBERG TEST RESULT SHEET
BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line, CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.



CLIENT: GENR8 / BURO HAPPOLD / KMBC SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)



CC Geotechnical Ltd
Tel: 0151 545 2750
e: lab@ccgeotechnical.com

Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH01

Sample No.

1

Depth

1.20

Sample Type

UT

Date of test

11/10/2023

Site Name

HUYTON TOWN CENTRE

Soil Description

Specimen Reference

Specimen
Depth

m

Specimen Description

Brown sandy silty CLAY with frequent pockets of sand

Test Method

BS1377 : Part 7 : 1990, clause 8, single specimen



4514

Test Number

1

Length

199.1

mm

Diameter

103.5

mm

Bulk Density

2.20

Mg/m³

Moisture Content

18.8

%

Dry Density

1.85

Mg/m³

Rate of Strain

2.0

%/min

Cell Pressure

21

kPa

At failure

Axial Strain

9.0

%

Deviator Stress, ($\sigma_1 - \sigma_3$)f

51

kPa

Undrained Shear Strength, cu

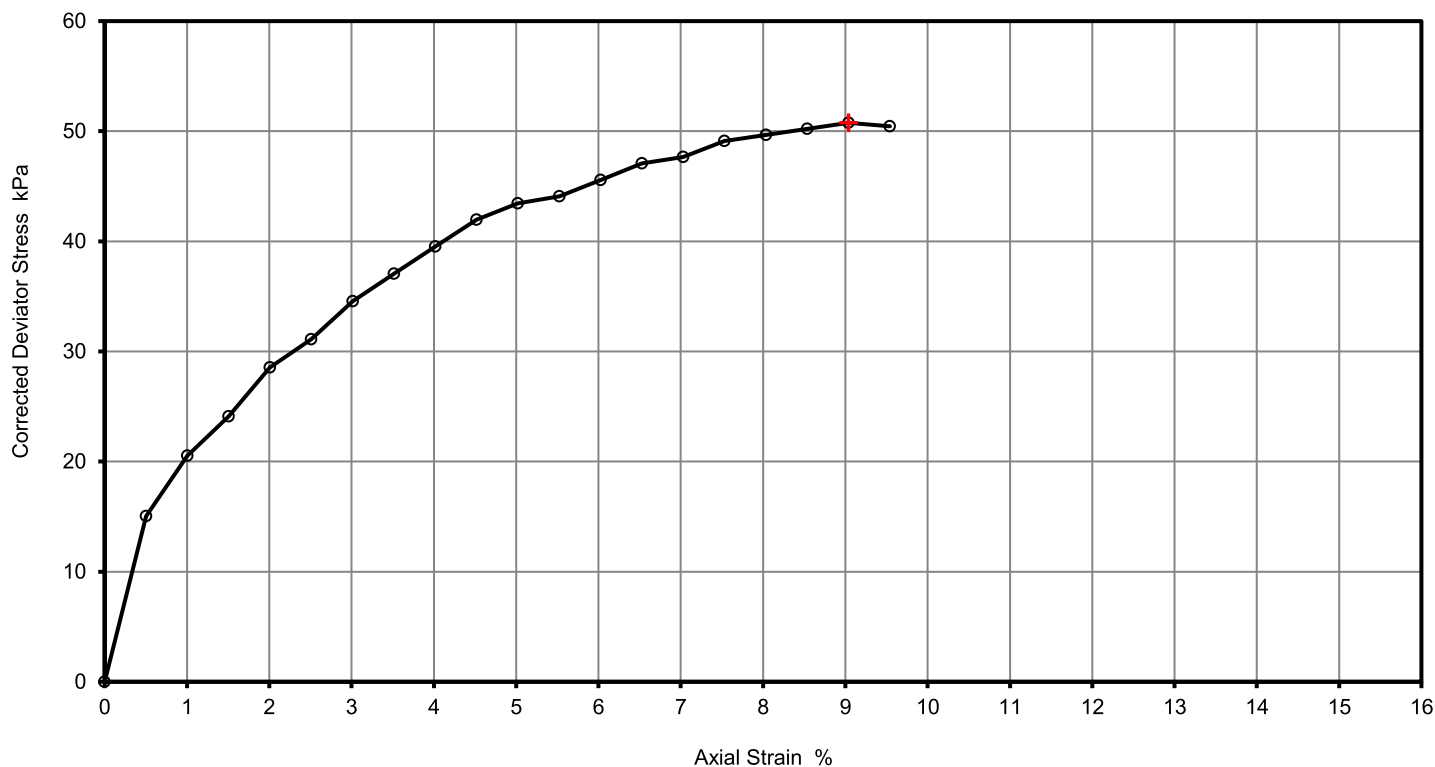
25

kPa $\frac{1}{2}(\sigma_1 - \sigma_3)$ f

Mode of Failure

Brittle

Deviator Stress v Axial Strain



Remarks

0.5mm membrane, correction factor = 1.04

Approved

DanielKerfoot

Printed

18/10/2023 12:16

Fig. No.

1

Sheet

1



Dry Density / Moisture Content Relationship Heavy Compaction

Job Ref

CCG-C-23-14178

Borehole / Pit No

BH01

Site Name

HUYTON TOWN CENTRE

Sample No

1

Soil Description

Grey very sandy slightly silty GRAVEL

Depth

0.50 m

Specimen Ref.

Specimen Depth

m

Sample Type

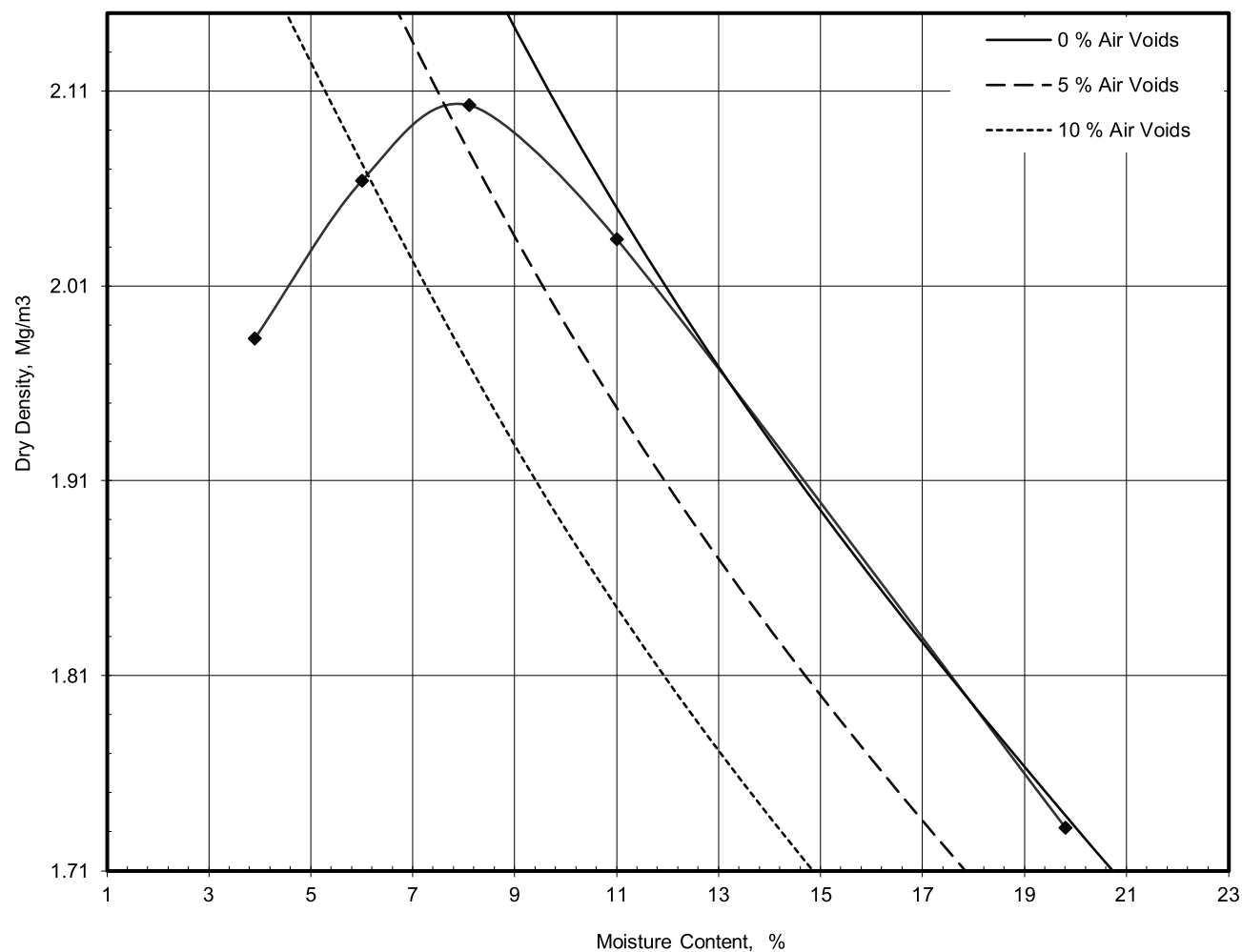
B

Test Method

BS1377:1990:Part 4 3.5.4.1

Keylab ID

Compaction Test Reference/No.



Preparation	
Mould Type	CBR
Samples Used	1
Material Retained on 37.5 mm Sieve	%0
Material Retained on 20.0 mm Sieve	%12
Particle Density -	Mg/m³2.65
Maximum Dry Density	Mg/m³2.10
Optimum Moisture Content	%8.1

Operator

Checked

Approved

Remarks

Fig

MH

DK

DK

Sheet 1 of 1



Dry Density / Moisture Content Relationship Heavy Compaction

Job Ref

CCG-C-23-14178

Borehole / Pit No

BH01

Site Name

HUYTON TOWN CENTRE

Sample No

1

Soil Description

Brown silty gravelly fine to medium SAND

Depth

1.60 m

Specimen Ref.

Specimen Depth

m

Sample Type

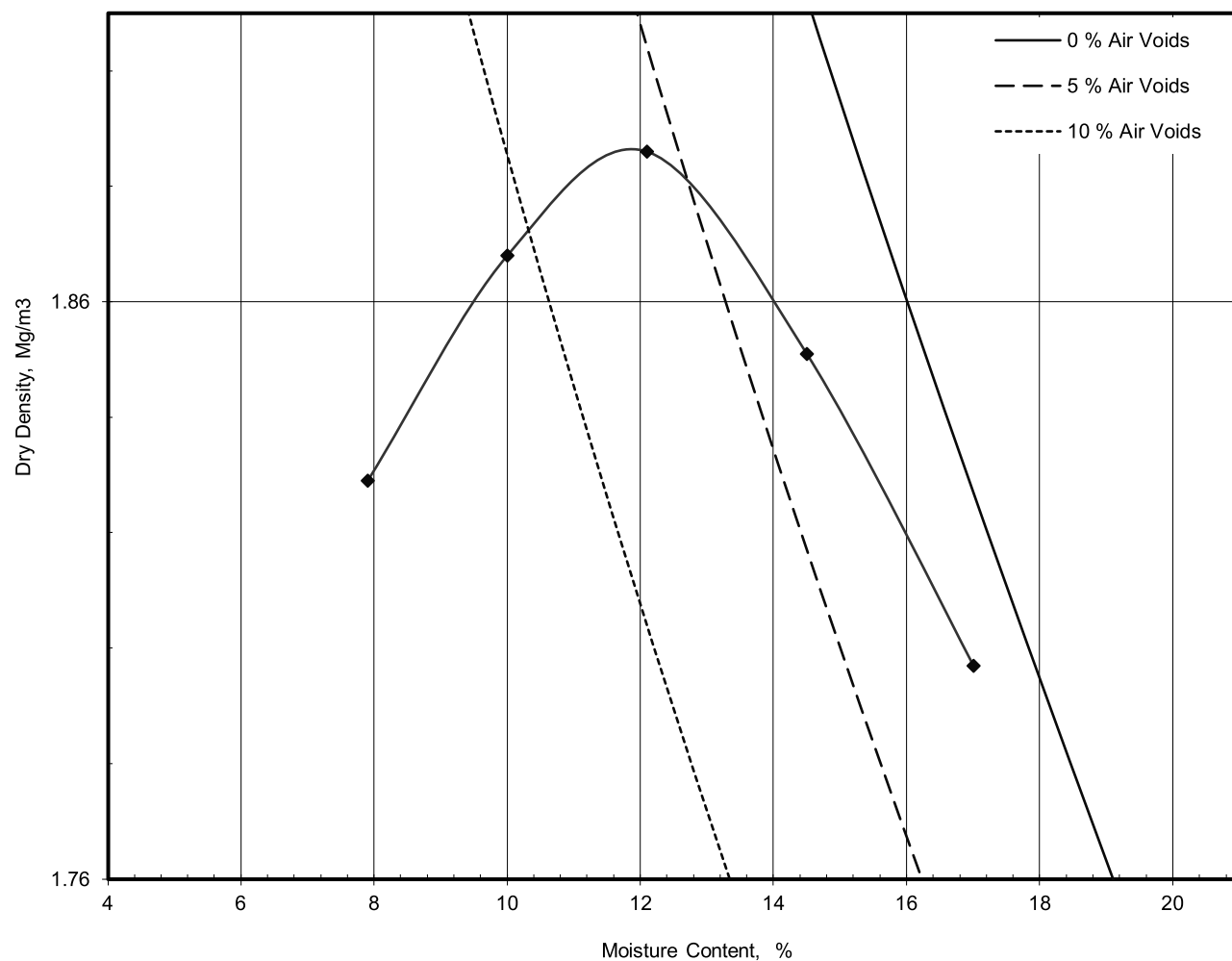
B

Test Method

BS1377:1990:Part 4 3.5.4.1

Keylab ID

Compaction Test Reference/No.



Preparation	
Mould Type	1 litre
Samples Used	5
Material Retained on 37.5 mm Sieve	% 0
Material Retained on 20.0 mm Sieve	% 7
Particle Density -	Mg/m³ 2.65
Maximum Dry Density	Mg/m³ 1.89
Optimum Moisture Content	% 12

Operator

Checked

Approved

Remarks

Fig

MH

DK

DK

Sheet 1 of 1



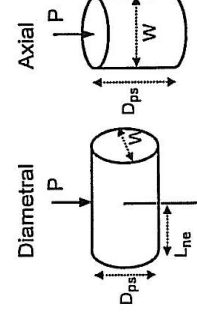
POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

17.10.23

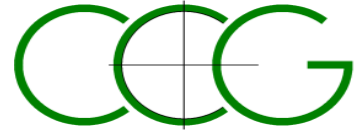
* NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)

L_{ne} = length from platens to nearest free end



TESTED BY: MH

TEST REPORT



UNIAXIAL COMPRESSIVE STRENGTH

In accordance with ISRM Vol 16 No 2, pp 135-140 (1979)

PROJECT: HUYTON TOWN CENTRE
CLIENT: GENR8 / BURO HAPPOLD / KMBC
CCG REF: CCG-C-23-14178

Sample ref: BH01 5.00mbgl
Date of coring: 26/09/2023
Sampled by: CB / CMC
Sample description: SANDSTONE

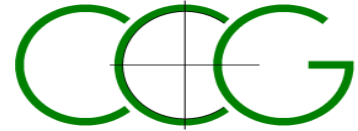
TEST DATA

Specimen Height (mm): 202
Specimen Diameter (mm): 100
L/D ratio: 2:1
Mode of failure: Axial
Test duration: 1m 51sec

Maximum load at failure (kN): 133.7
Compressive strength (N/mm²): **17.0**

Test date: 17/10/2023
Tested by: **MH**
Report prepared by: **DK**
Report approved by: **DK**

TEST REPORT



UNIAXIAL COMPRESSIVE STRENGTH

In accordance with ISRM Vol 16 No 2, pp 135-140 (1979)

PROJECT: HUYTON TOWN CENTRE
CLIENT: GENR8 / BURO HAPPOLD / KMBC
CCG REF: CCG-C-23-14178

Sample ref: BH01 13.10mbgl
Date of coring: 26/09/2023
Sampled by: CB / CMC
Sample description: SANDSTONE

TEST DATA

Specimen Height (mm): 202
Specimen Diameter (mm): 100
L/D ratio: 2:1
Mode of failure: Axial
Test duration: 2m 16sec

Maximum load at failure (kN): 137.9
Compressive strength (N/mm²): **17.6**

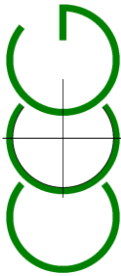
Test date: 17/10/2023
Tested by: **MH**
Report prepared by: **DK**
Report approved by: **DK**

SUMMARY OF LABORATORY SOIL TEST RESULTS

BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m³)	Dry Density (Mg/m³)	Shear Strength (kN/m²)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425mm (%)	Soil Classification	UKAS accredited test (Y/N)	Description / Test Method
BH02	D	0.40	0.40	11	-	-	-	-	-	-	-	-	Y	Samples described in accordance with BS EN ISO 14688-2 2004
BH02	B	0.60	0.60	18	-	-	-	-	-	-	-	-	Y	Greyish brown sandy slightly silty GRAVEL. Gravel is fine to coarse subangular limestone. (MADE GROUND) (BS1377P2:3.2)
														Brown very sandy silty slightly clayey GRAVEL. Gravel is fine to coarse subangular sandstone, brick, limestone, cinders. (MADE GROUND) (BS1377P2:9.2,9.5)

SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
CLIENT: GENR8 / BURO HAPPOLD / KMBC

DATE: 24.10.23



Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample
CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = Non-plastic
(* Denotes Hand Shear Vane test result)
Sample description not accredited by UKAS



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PARTICLE SIZE DISTRIBUTION

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH02

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Specimen Description

Brown very sandy silty slightly clayey GRAVEL

Depth, m

0.60

Specimen Reference

Specimen Depth

m

Sample Type

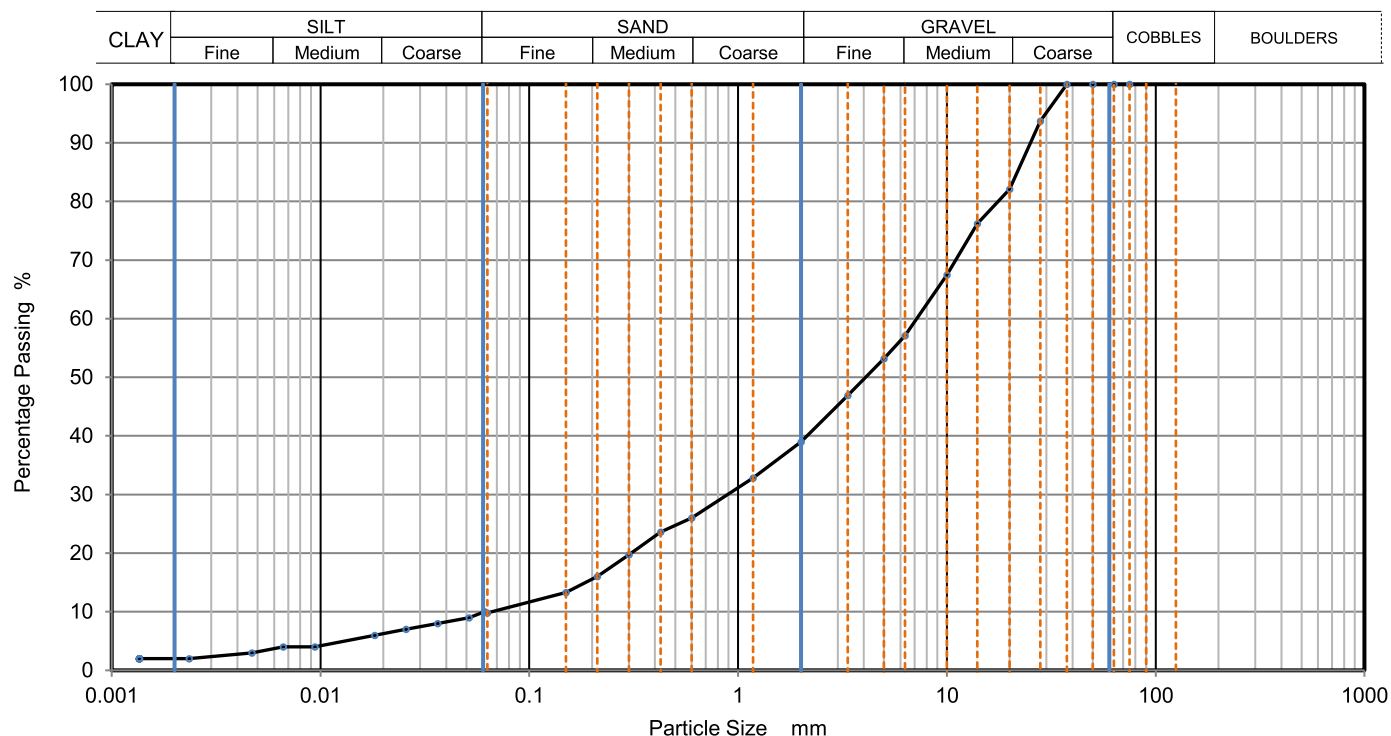
B

Test Method

BS1377:Part 2:1990, clauses 9.2 and 9.5

KeyLAB ID

CCGL2023102020



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
		0.0612	10
		0.0514	9
75	100	0.0364	8
63	100	0.0257	7
50	100	0.0182	6
37.5	100	0.0094	4
28	94	0.0066	4
20	82	0.0047	3
14	76	0.0023	2
10	68	0.0014	2
6.3	57		
5	53		
3.35	47		
2	39		
1.18	33		
0.6	26	Particle density (assumed) 2.65 Mg/m3	
0.425	24		
0.3	20		
0.212	16		
0.15	13		
0.063	10		

Dry Mass of sample, g

Sample Proportions	% dry mass
Very coarse	0
Gravel	61
Sand	29
Silt	8
Clay	2

Grading Analysis		
D100	mm	
D60	mm	7.17
D30	mm	0.893
D10	mm	0.0667
Uniformity Coefficient		110
Curvature Coefficient		1.7

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1
JE	DK	DK	20/10/2023 15:09	
				Sheet



Dry Density / Moisture Content Relationship Heavy Compaction

Job Ref

CCG-C-23-14178

Borehole / Pit No

BH02

Site Name

HUYTON TOWN CENTRE

Sample No

1

Soil Description

Greyish brown sandy slightly silty GRAVEL

Depth

0.30 m

Specimen Ref.

Specimen Depth

m

Sample Type

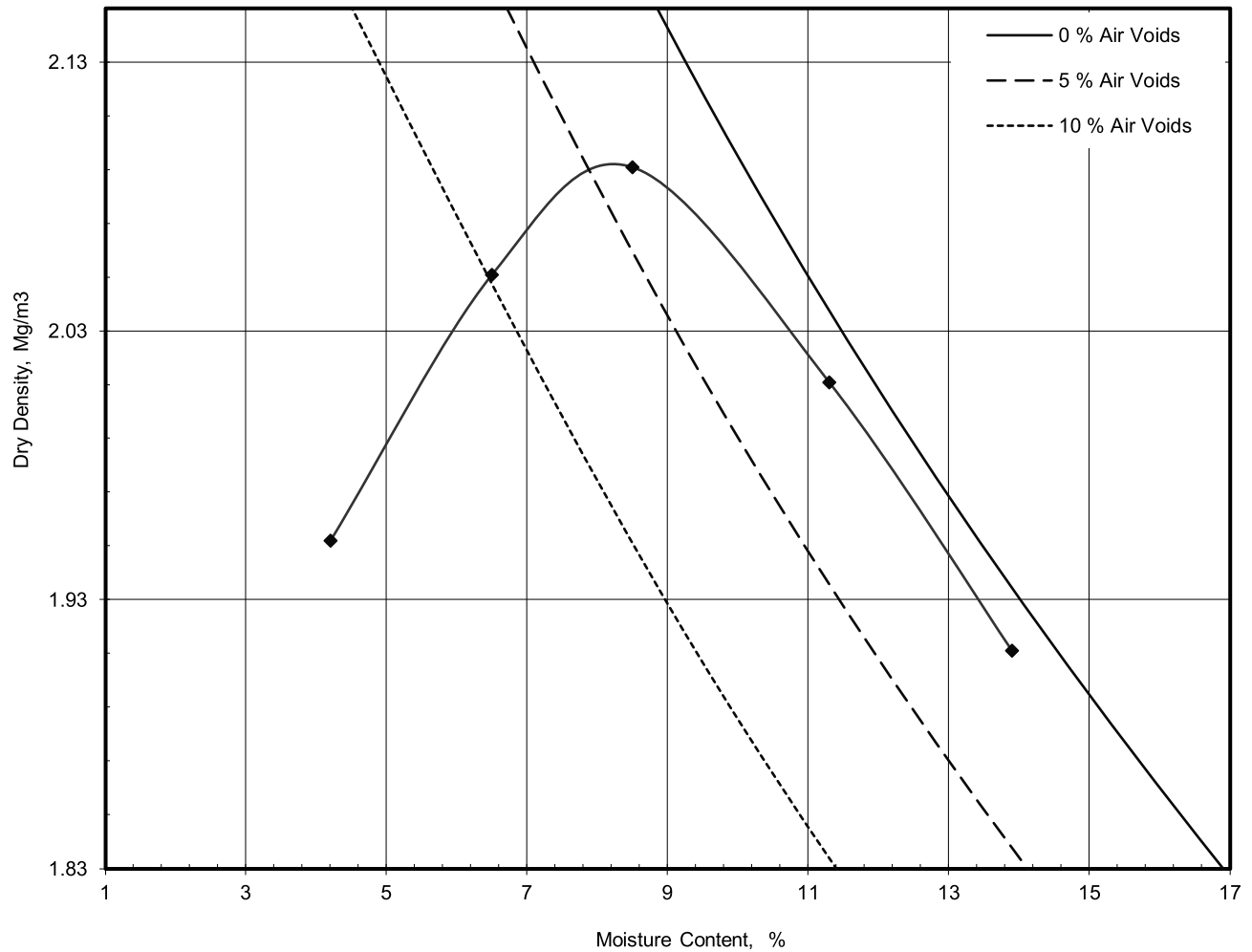
B

Test Method

BS1377:1990:Part 4 3.6.4.1

Keylab ID

Compaction Test Reference/No.



Preparation	
Mould Type	CBR
Samples Used	1
Material Retained on 37.5 mm Sieve	% 0
Material Retained on 20.0 mm Sieve	% 26
Particle Density -	Mg/m³ 2.65

Maximum Dry Density	Mg/m³	2.09
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Optimum Moisture Content	%	8.5
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Operator

Checked

Approved

Remarks

Fig

MH

DK

DK

Sheet 1 of 1



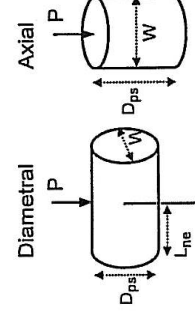
POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

DATE:

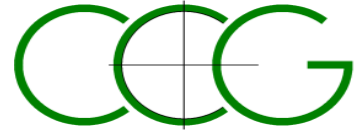
* NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)

L_{ne} = length from platens to nearest free end



TESTED BY: MH

TEST REPORT



UNIAXIAL COMPRESSIVE STRENGTH

In accordance with ISRM Vol 16 No 2, pp 135-140 (1979)

PROJECT: HUYTON TOWN CENTRE
CLIENT: GENR8 / BURO HAPPOLD / KMBC
CCG REF: CCG-C-23-14178

Sample ref: BH02 8.20mbgl
Date of coring: 28/09/2023
Sampled by: CB / CMC
Sample description: SANDSTONE

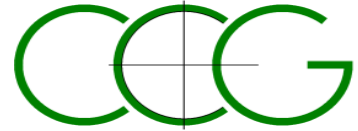
TEST DATA

Specimen Height (mm): 202
Specimen Diameter (mm): 100
L/D ratio: 2:1
Mode of failure: Axial
Test duration: 1m 56sec

Maximum load at failure (kN): 129.7
Compressive strength (N/mm²): **16.5**

Test date: 16/10/2023
Tested by: **MH**
Report prepared by: **DK**
Report approved by: **DK**

TEST REPORT



UNIAXIAL COMPRESSIVE STRENGTH

In accordance with ISRM Vol 16 No 2, pp 135-140 (1979)

PROJECT: HUYTON TOWN CENTRE
CLIENT: GENR8 / BURO HAPPOLD / KMBC
CCG REF: CCG-C-23-14178

Sample ref: BH02 17.80mbgl
Date of coring: 28/09/2023
Sampled by: CB / CMC
Sample description: SANDSTONE

TEST DATA

Specimen Height (mm): 202
Specimen Diameter (mm): 100
L/D ratio: 2:1
Mode of failure: Axial
Test duration: 1m 25sec

Maximum load at failure (kN): 111.0
Compressive strength (N/mm²): **14.1**

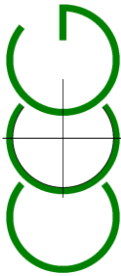
Test date: 16/10/2023
Tested by: **MH**
Report prepared by: **DK**
Report approved by: **DK**

SUMMARY OF LABORATORY SOIL TEST RESULTS

BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m³)	Dry Density (Mg/m³)	Shear Strength (kN/m²)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425mm (%)	Soil Classification	UKAS accredited test (Y/N)	Description / Test Method Samples described in accordance with BS EN ISO 14688-2 2004
BH03	B	0.40	0.40	-	-	-	-	-	-	-	-	-	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone. (BS1377Pt2:9.2,9.5)
BH03	D	0.60	0.60	25	-	-	-	34	16	18	89	CL	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone. (BS1377Pt2:3.2,4.4,5)

SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
CLIENT: GENR8 / BURO HAPPOLD / KMBC

DATE: 24.10.23



Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample
CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = Non-plastic
(* Denotes Hand Shear Vane test result)
Sample description not accredited by UKAS



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PARTICLE SIZE DISTRIBUTION

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH03

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Specimen
Description

Brown sandy slightly gravelly silty CLAY

Depth, m

0.40

Specimen
Reference

Specimen
Depth

m

Sample Type

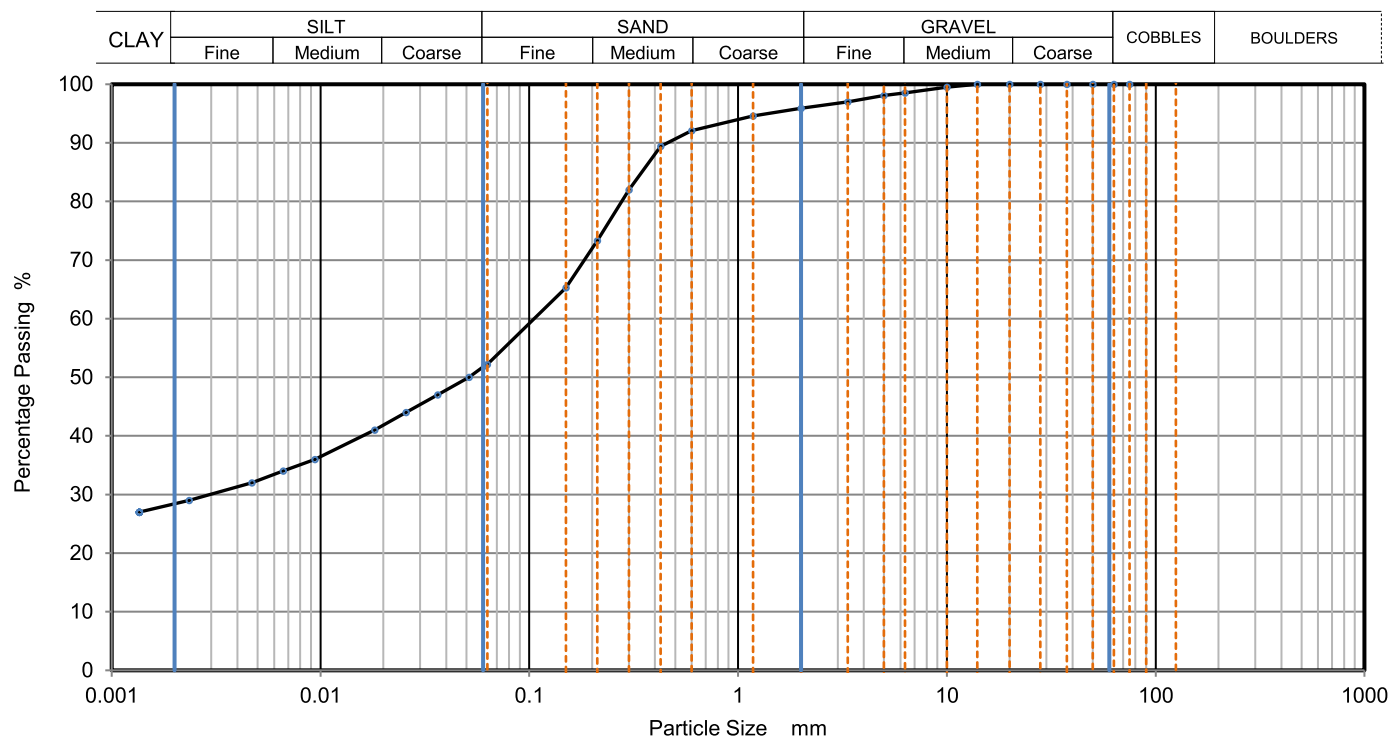
B

Test Method

BS1377:Part 2:1990, clauses 9.2 and 9.5

KeyLAB ID

CCGL202310242



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
		0.0612	52
		0.0514	50
75	100	0.0364	47
63	100	0.0257	44
50	100	0.0182	41
37.5	100	0.0094	36
28	100	0.0066	34
20	100	0.0047	32
14	100	0.0023	29
10	100	0.0014	27
6.3	99		
5	98		
3.35	97		
2	96		
1.18	95		
0.6	92	Particle density (assumed) 2.65 Mg/m3	
0.425	89		
0.3	82		
0.212	73		
0.15	65		
0.063	52		

Dry Mass of sample, g

Sample Proportions	% dry mass
Very coarse	0
Gravel	4
Sand	44
Silt	24
Clay	28

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator

Checked

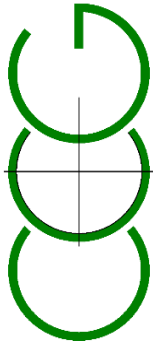
Approved

Sheet printed

24/10/2023 10:01

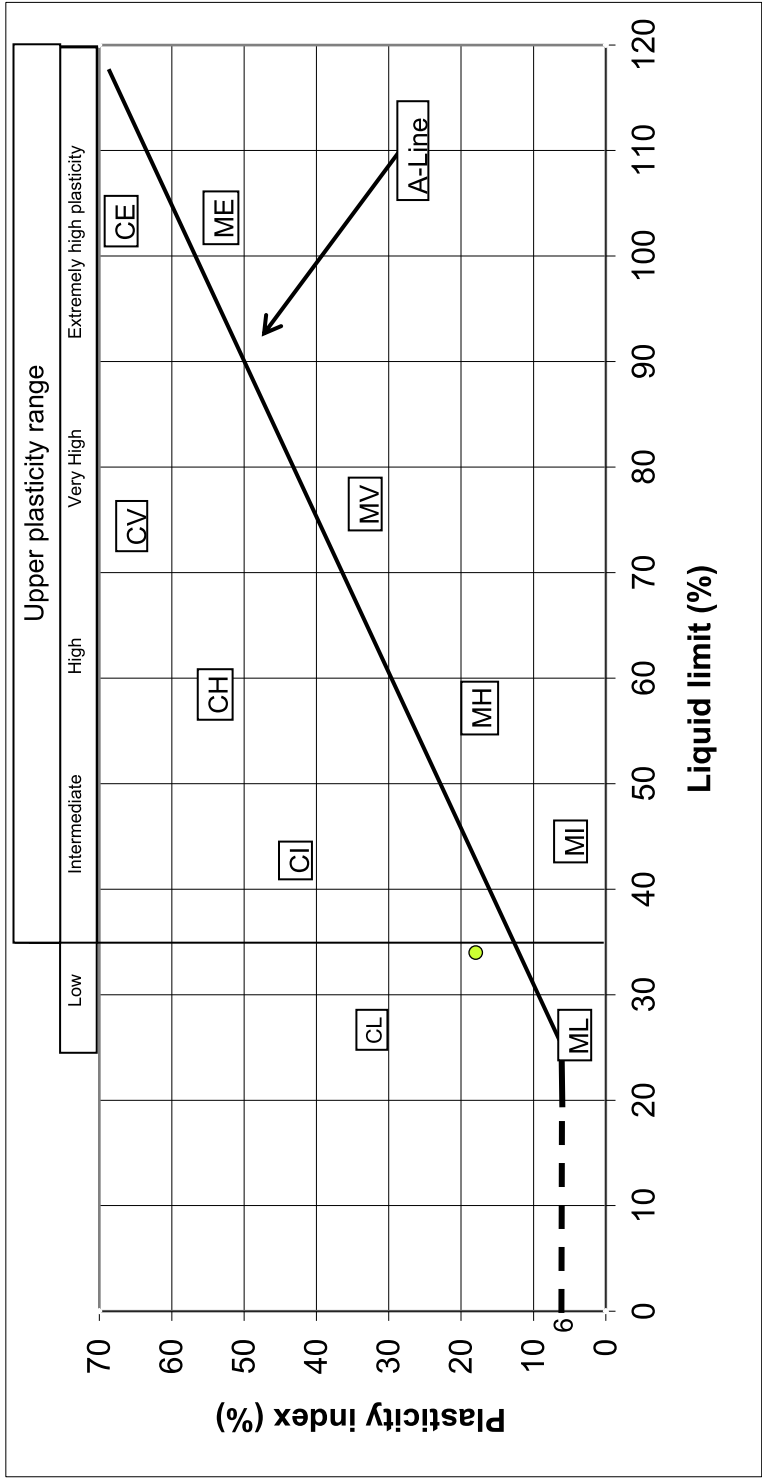
Fig 1

Sheet



ATTERBERG TEST RESULT SHEET
BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line, CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.



BH	Sample Depth	Liquid limit	Plasticity index
BH03	0.60	34.0	18.0



APPROVED BY	DK
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CLIENT: GNR8 / BURO HAPPOLD / KMBC	SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
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Dry Density / Moisture Content Relationship Heavy Compaction

Job Ref

CCG-C-23-14178

Borehole / Pit No

BH03

Site Name

HUYTON TOWN CENTRE

Sample No

1

Soil Description

Brown sandy slightly gravelly silty CLAY

Depth

1.00 m

Specimen Ref.

Specimen Depth

m

Sample Type

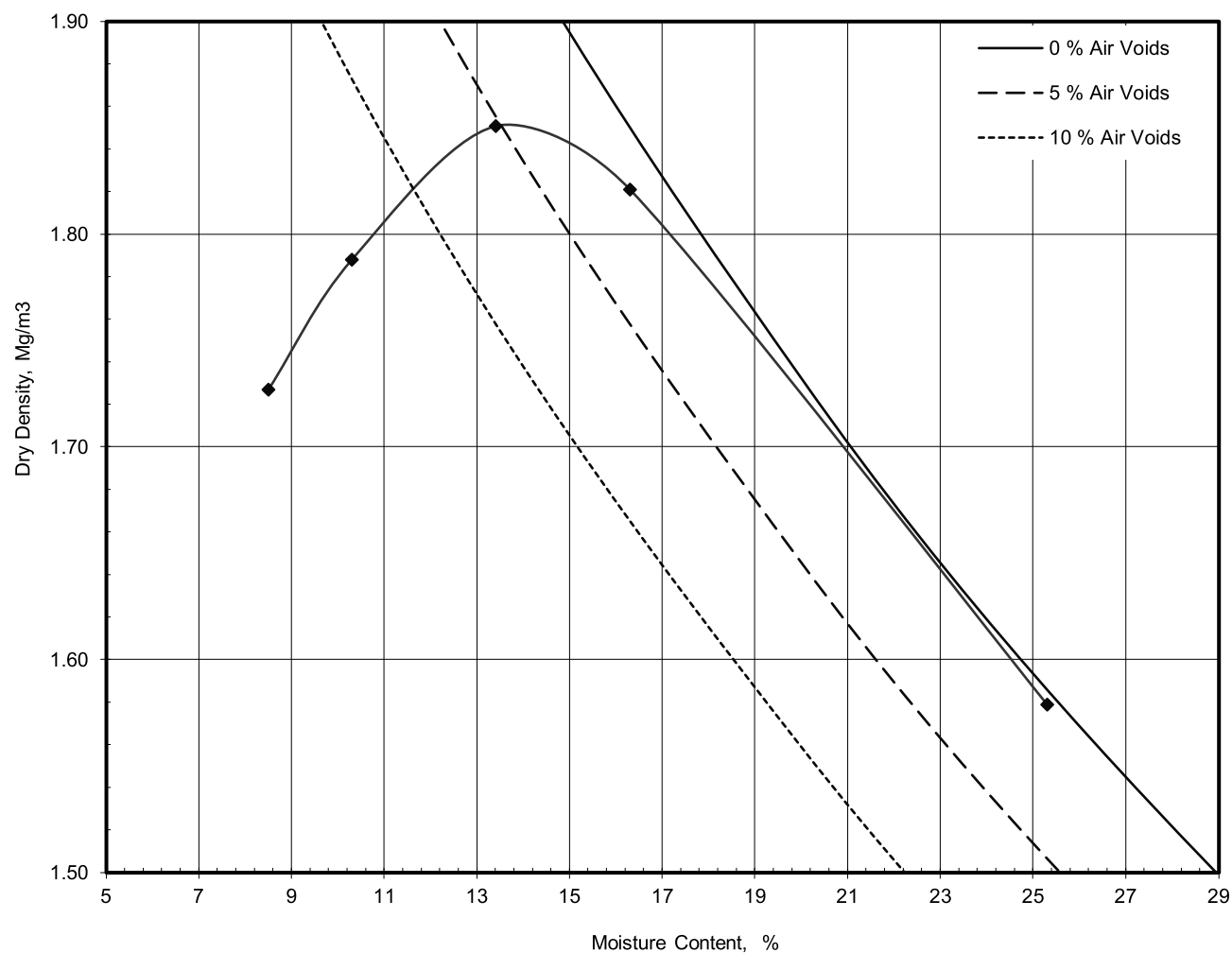
B

Test Method

BS1377:1990:Part 4 3.5.4.1

Keylab ID

Compaction Test Reference/No.



Preparation	
Mould Type	1 litre
Samples Used	5
Material Retained on 37.5 mm Sieve	% 0
Material Retained on 20.0 mm Sieve	% 0
Particle Density -	Mg/m³ 2.65

Maximum Dry Density	Mg/m³	1.85
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Optimum Moisture Content	%	13
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Operator

Checked

Approved

Remarks

MH

DK

DK

Fig

Sheet 1 of 1



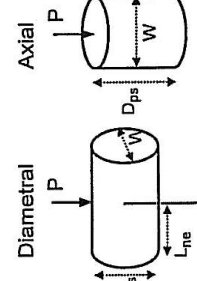
POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

DATE:

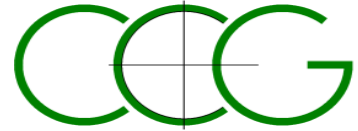
* NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)

L_{ne} = length from platens to nearest free end



TESTED BY: MH

TEST REPORT



UNIAXIAL COMPRESSIVE STRENGTH

In accordance with ISRM Vol 16 No 2, pp 135-140 (1979)

PROJECT: HUYTON TOWN CENTRE
CLIENT: GENR8 / BURO HAPPOLD / KMBC
CCG REF: CCG-C-23-14178

Sample ref: BH03 9.30mbgl
Date of coring: 20/09/2023
Sampled by: CB / CMC
Sample description: SANDSTONE

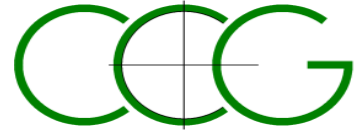
TEST DATA

Specimen Height (mm): 203
Specimen Diameter (mm): 100
L/D ratio: 2:1
Mode of failure: Axial
Test duration: 1m 6sec

Maximum load at failure (kN): 63.4
Compressive strength (N/mm²): **8.1**

Test date: 17/10/2023
Tested by: **MH**
Report prepared by: **DK**
Report approved by: **DK**

TEST REPORT



UNIAXIAL COMPRESSIVE STRENGTH

In accordance with ISRM Vol 16 No 2, pp 135-140 (1979)

PROJECT: HUYTON TOWN CENTRE
CLIENT: GENR8 / BURO HAPPOLD / KMBC
CCG REF: CCG-C-23-14178

Sample ref: BH03 13.00mbgl
Date of coring: 20/09/2023
Sampled by: CB / CMC
Sample description: SANDSTONE

TEST DATA

Specimen Height (mm): 200
Specimen Diameter (mm): 100
L/D ratio: 2:1
Mode of failure: Axial
Test duration: 1m 26sec

Maximum load at failure (kN): 85.8
Compressive strength (N/mm²): **10.9**

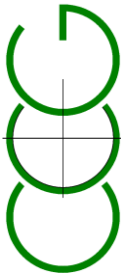
Test date: 17/10/2023
Tested by: **MH**
Report prepared by: **DK**
Report approved by: **DK**

SUMMARY OF LABORATORY SOIL TEST RESULTS

BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m³)	Dry Density (Mg/m³)	Shear Strength (kN/m²)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425mm (%)	Soil Classification	UKAS accredited test (Y/N)	Description / Test Method Samples described in accordance with BS EN ISO 14688-2 2004
BH04	D	1.20	1.20	19	-	-	-	34	14	20	91	CL	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone. (BS1377P2:3.2,4,4,5)
BH04	D	2.00	2.00	20	-	-	-	30	13	17	88	CL	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone. (BS1377P2:3.2,4,4,5)
BH04	B	2.50	2.50	-	-	-	-	-	-	-	-	-	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone. (BS1377P2:9.2,9.5)

SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
CLIENT: GENR8 / BURO HAPPOLD / KMBC

DATE: 24.10.23



Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample
CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = Non-plastic
(* Denotes Hand Shear Vane test result)
Sample description not accredited by UKAS



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PARTICLE SIZE DISTRIBUTION

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH04

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Specimen Description

Brown sandy slightly gravelly silty CLAY

Depth, m

2.50

Specimen Reference

Specimen Depth

m

Sample Type

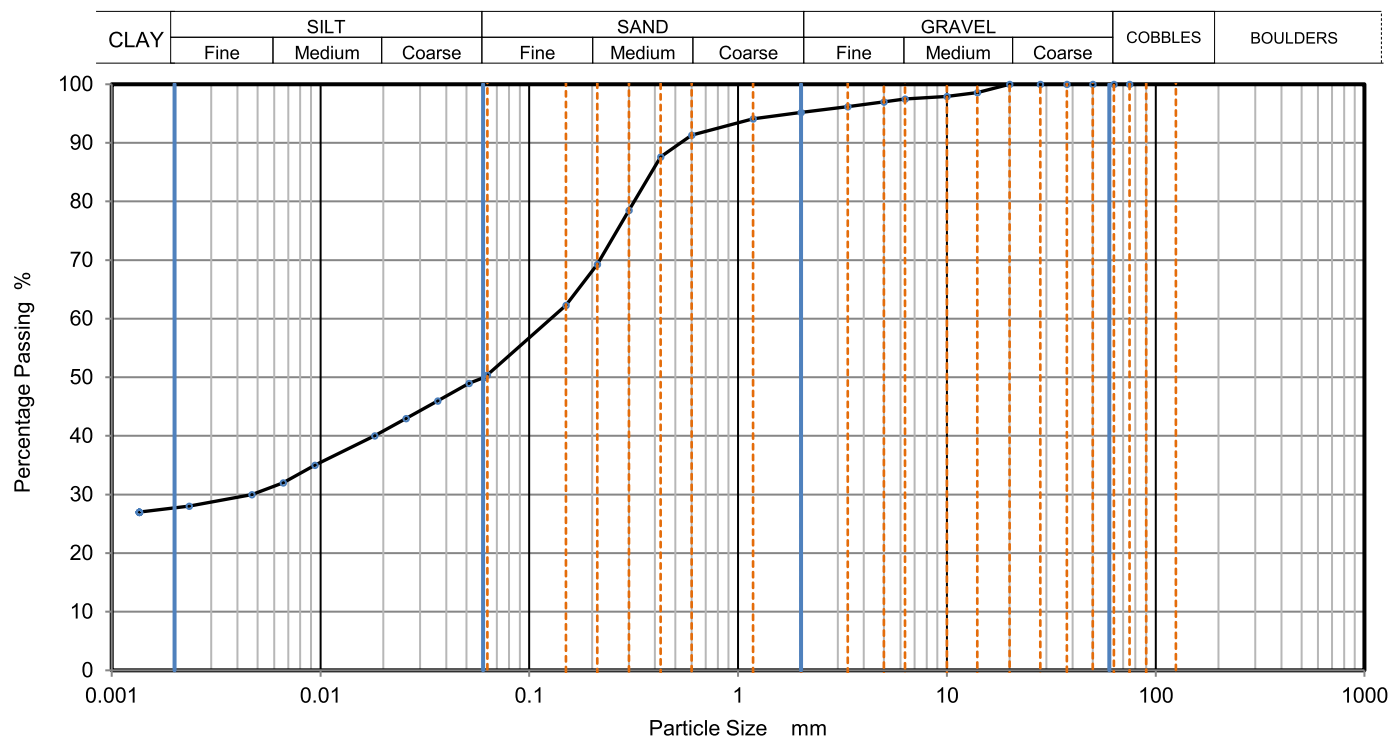
B

Test Method

BS1377:Part 2:1990, clauses 9.2 and 9.5

KeyLAB ID

CCGL202310243



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
		0.0612	50
		0.0514	49
75	100	0.0364	46
63	100	0.0257	43
50	100	0.0182	40
37.5	100	0.0094	35
28	100	0.0066	32
20	100	0.0047	30
14	99	0.0023	28
10	98	0.0014	27
6.3	98		
5	97		
3.35	96		
2	95		
1.18	94		
0.6	91	Particle density (assumed) 2.65 Mg/m3	
0.425	88		
0.3	79		
0.212	69		
0.15	62		
0.063	50		

Dry Mass of sample, g

Sample Proportions	% dry mass
Very coarse	0
Gravel	5
Sand	45
Silt	22
Clay	28

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator

Checked

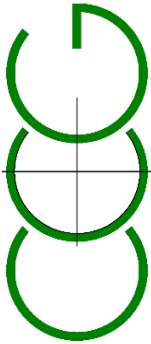
Approved

Sheet printed

24/10/2023 10:40

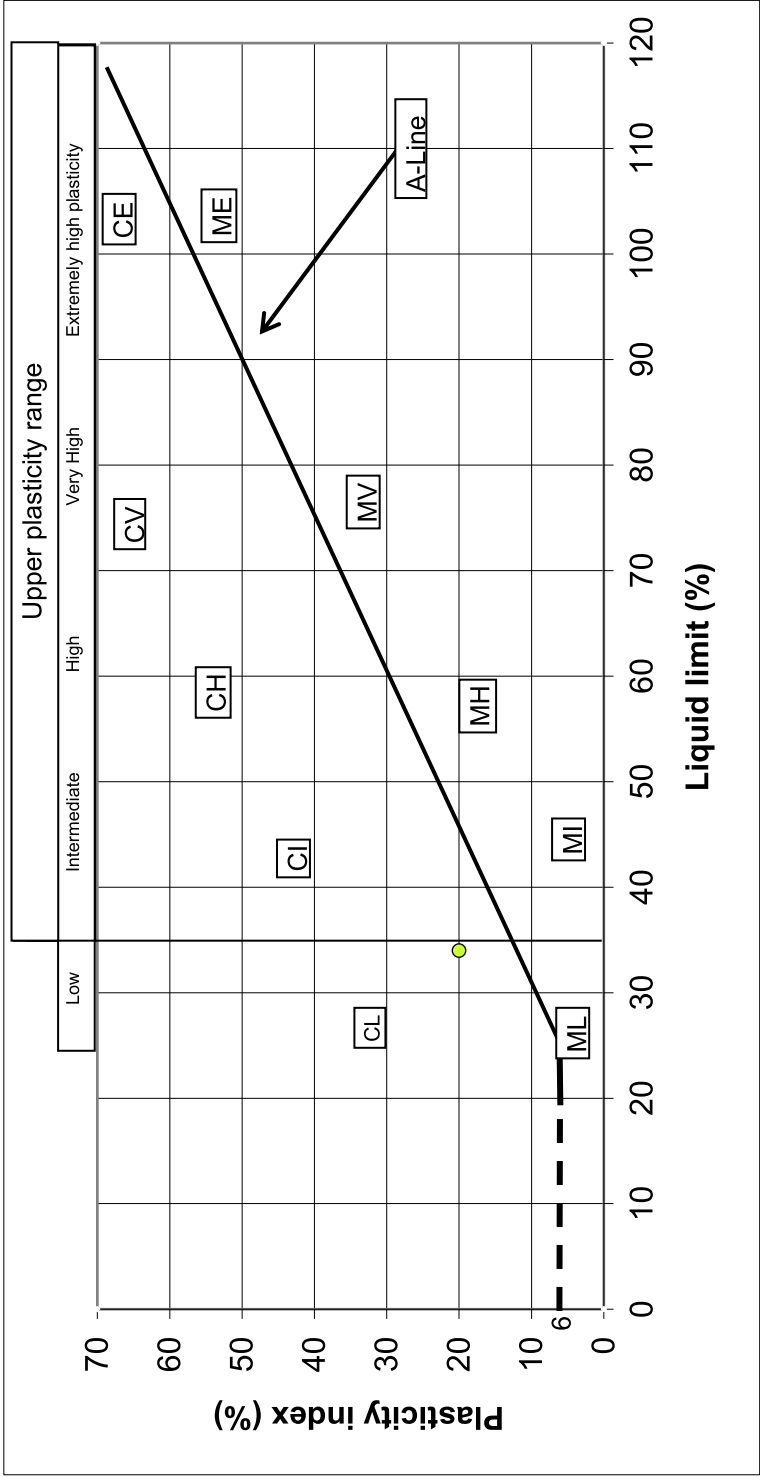
Fig 1

Sheet



ATTERBERG TEST RESULT SHEET
BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line, CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.

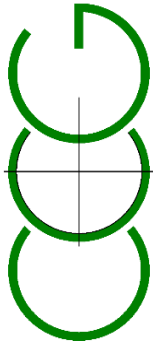


BH	Sample Depth	Liquid limit	Plasticity index
BH04	1.20	34.0	20.0



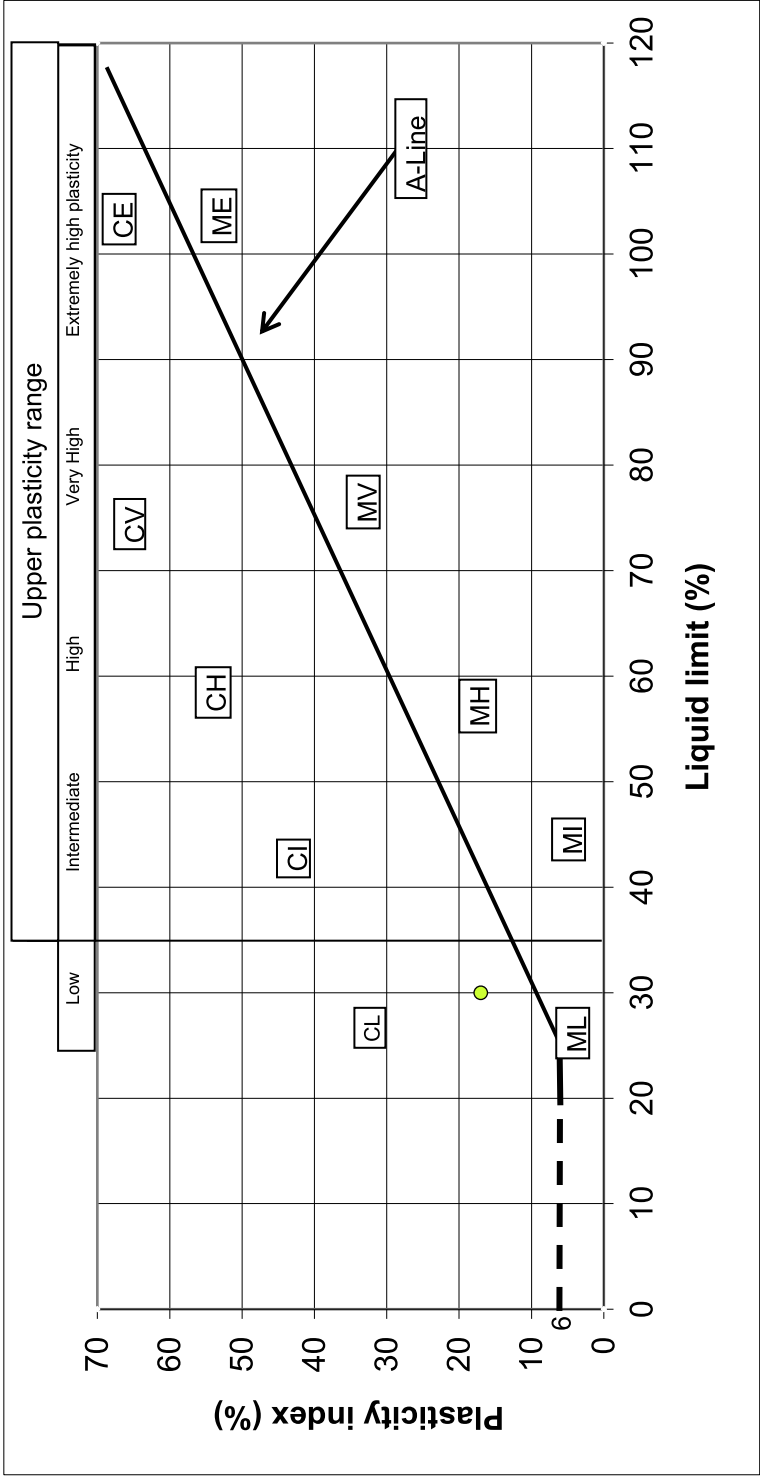
APPROVED BY	DK
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CLIENT: GENR8 / BURO HAPPOLD / KMBC	SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
-------------------------------------	---



ATTERBERG TEST RESULT SHEET
BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line, CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.



BH	Sample Depth	Liquid limit	Plasticity index
BH04	2.00	30.0	17.0



APPROVED BY	DK
-------------	----

CLIENT: GNR8 / BURO HAPPOLD / KMBC	SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
------------------------------------	---



Dry Density / Moisture Content Relationship Heavy Compaction

Job Ref

CCG-C-23-14178

Borehole / Pit No

BH04

Site Name

HUYTON TOWN CENTRE

Sample No

1

Soil Description

Brown sandy slightly gravelly silty CLAY

Depth

1.10 m

Specimen Ref.

Specimen Depth

m

Sample Type

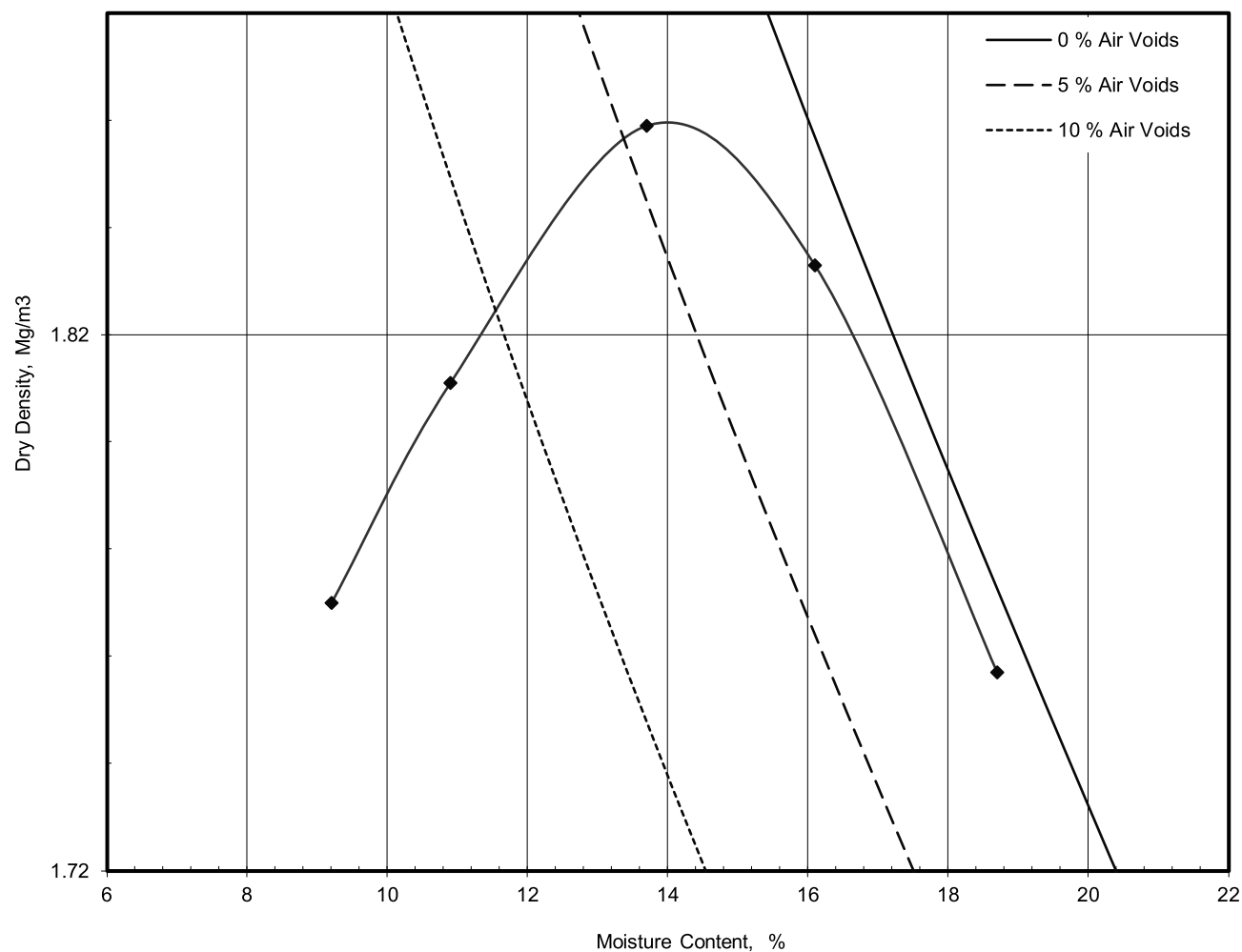
B

Test Method

BS1377:1990:Part 4 3.5.4.1

Keylab ID

Compaction Test Reference/No.



Preparation	
Mould Type	1 litre
Samples Used	5
Material Retained on 37.5 mm Sieve	% 0
Material Retained on 20.0 mm Sieve	% 0
Particle Density -	Mg/m³ 2.65
Maximum Dry Density	Mg/m³ 1.86
Optimum Moisture Content	% 14

Operator

Checked

Approved

Remarks

MH

DK

DK

Fig

Sheet 1 of 1



Laboratory Determination of California Bearing Ratio

B.S. 1377 (1990) : Part 4 : Clause 7

PROJECT No.: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8 / BURO HAPPOLD / KMBC

BH / TP : BH04 DEPTH: 0.6 m

Proving ring No. 1155-8-15135

Division interval 0.0079745 kN/division

Surcharge 2 kg

Seating Load 10 N

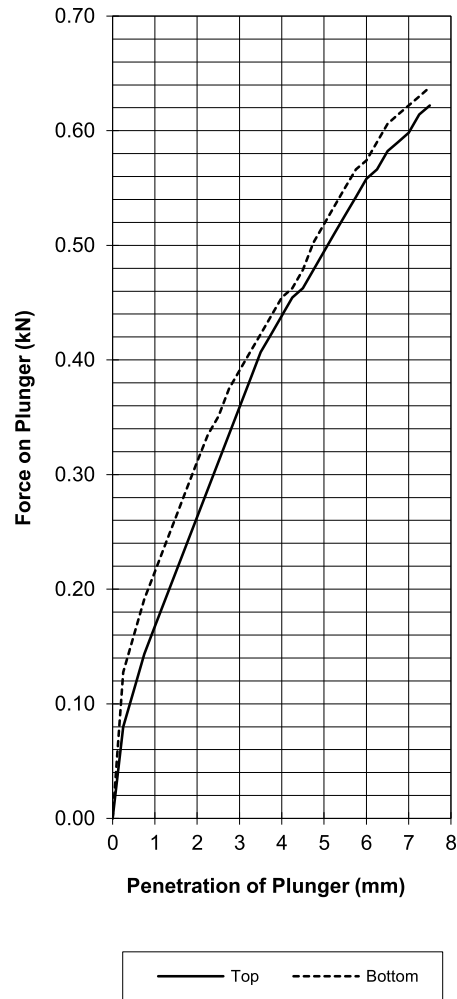
MATERIAL DESCRIPTION

Brown sandy slightly gravelly silty CLAY

Mass of mould 4928 g
Mass of mould & compacted soil 9786 g
Mass retained on 20mm sieve 0 %
Soaked / Unsoaked Unsoaked

Depth of mould 127 mm
Diameter of mould 152 mm

Penetration of plunger mm	TOP		BOTTOM	
	kN	Load Gauge	kN	Load Gauge
0.00	0.00	0.00	0.00	0.00
0.25	0.08	10.00	0.13	16.00
0.50	0.11	14.00	0.16	20.00
0.75	0.14	18.00	0.19	24.00
1.00	0.17	21.00	0.22	27.00
1.25	0.19	24.00	0.24	30.00
1.50	0.22	27.00	0.26	33.00
1.75	0.24	30.00	0.29	36.00
2.00	0.26	33.00	0.31	39.00
2.25	0.29	36.00	0.33	42.00
2.50	0.31	39.00	0.35	44.00
2.75	0.33	42.00	0.37	47.00
3.00	0.36	45.00	0.39	49.00
3.25	0.38	48.00	0.41	51.00
3.50	0.41	51.00	0.42	53.00
3.75	0.42	53.00	0.44	55.00
4.00	0.44	55.00	0.45	57.00
4.25	0.45	57.00	0.46	58.00
4.50	0.46	58.00	0.48	60.00
4.75	0.48	60.00	0.50	63.00
5.00	0.49	62.00	0.52	65.00
5.25	0.51	64.00	0.53	67.00
5.50	0.53	66.00	0.55	69.00
5.75	0.54	68.00	0.57	71.00
6.00	0.56	70.00	0.57	72.00
6.25	0.57	71.00	0.59	74.00
6.50	0.58	73.00	0.61	76.00
6.75	0.59	74.00	0.61	77.00
7.00	0.60	75.00	0.62	78.00
7.25	0.61	77.00	0.63	79.00
7.50	0.62	78.00	0.64	80.00



RESULTS

Penetration (mm)	Force		Standard Force (kN)	CBR	
	Top (kN)	Bottom (kN)		Top (%)	Bottom (%)
2.50	0.31	0.35	13.2	2.4	2.7
5.00	0.49	0.52	20	2.5	2.6

Mass of compacted soil 4858 g

Volume of mould 2305 cm³

M/C of sample 16.1 %

Bulk density of compacted specimen 2.108 Mg/m³

Dry density of compacted specimen 1.816 Mg/m³

CBR Values 2.5 2.7 %

CBR result 2.7 %



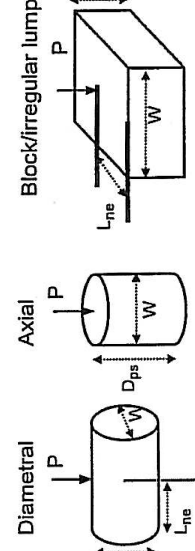
POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

16.10.23

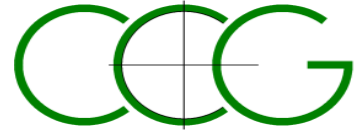
* NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)

L_{ne} = length from platens to nearest free end



TESTED BY: MH

TEST REPORT



UNIAXIAL COMPRESSIVE STRENGTH

In accordance with ISRM Vol 16 No 2, pp 135-140 (1979)

PROJECT: HUYTON TOWN CENTRE
CLIENT: GENR8 / BURO HAPPOLD / KMBC
CCG REF: CCG-C-23-14178

Sample ref: BH04 8.30mbgl
Date of coring: 29/09/2023
Sampled by: AR / CMC
Sample description: SANDSTONE

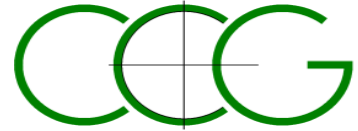
TEST DATA

Specimen Height (mm): 201
Specimen Diameter (mm): 100
L/D ratio: 2:1
Mode of failure: Axial
Test duration: 1m 26sec

Maximum load at failure (kN): 66.7
Compressive strength (N/mm²): 8.5

Test date: 16/10/2023
Tested by: MH
Report prepared by: DK
Report approved by: DK

TEST REPORT



UNIAXIAL COMPRESSIVE STRENGTH

In accordance with ISRM Vol 16 No 2, pp 135-140 (1979)

PROJECT: HUYTON TOWN CENTRE
CLIENT: GENR8 / BURO HAPPOLD / KMBC
CCG REF: CCG-C-23-14178

Sample ref: BH04 14.00mbgl
Date of coring: 29/09/2023
Sampled by: AR / CMC
Sample description: SANDSTONE

TEST DATA

Specimen Height (mm): 200
Specimen Diameter (mm): 100
L/D ratio: 2:1
Mode of failure: Shear
Test duration: 1m 4 sec

Maximum load at failure (kN): 32.3
Compressive strength (N/mm²): **4.1**

Test date: 16/10/2023
Tested by: **MH**
Report prepared by: **DK**
Report approved by: **DK**



DATE: 20.10.23

Sample description not accredited by UKAS



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e: lab@ccgeotechnical.com

PARTICLE SIZE DISTRIBUTION

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH05

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Specimen
Description

Grey silty slightly clayey SAND & GRAVEL

Depth, m

0.70

Specimen
Reference

Specimen
Depth

m

Sample Type

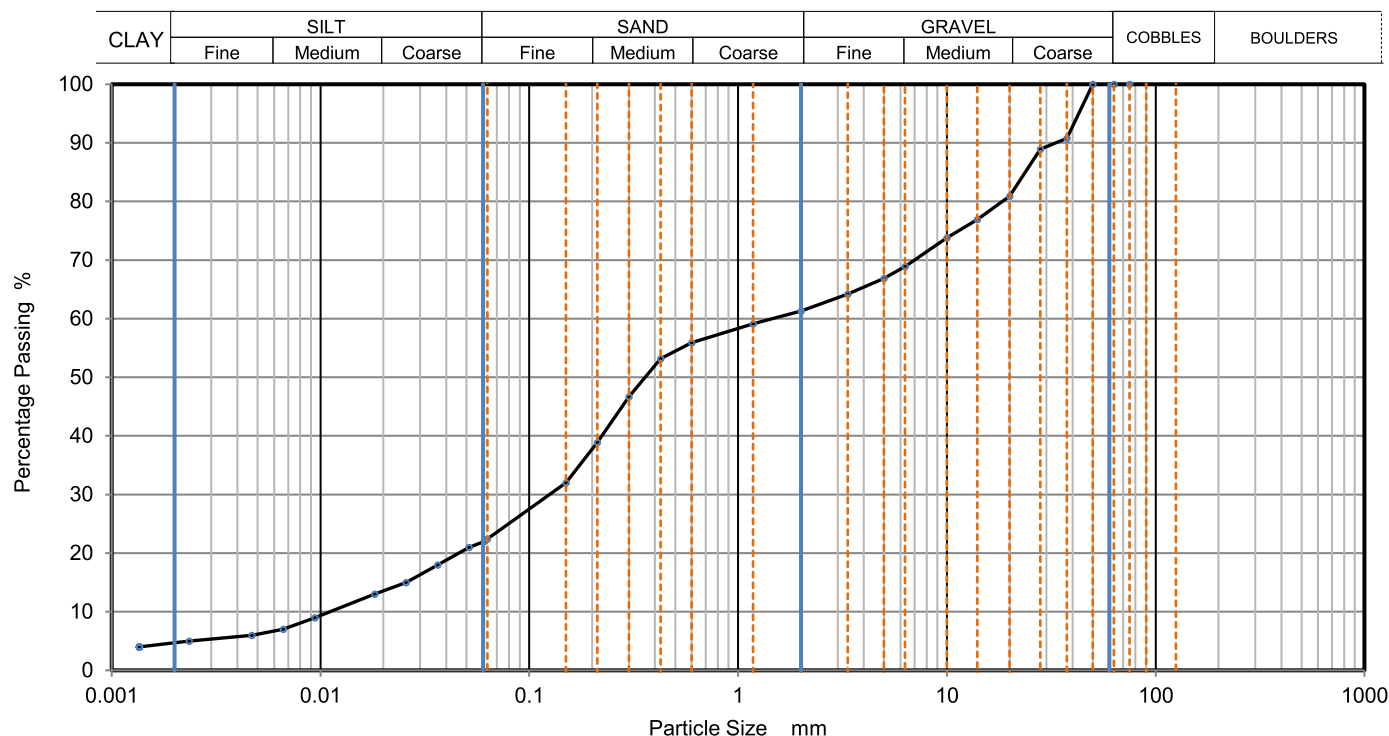
B

Test Method

BS1377:Part 2:1990, clauses 9.2 and 9.5

KeyLAB ID

CCGL2023102021



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
		0.0612	22
		0.0514	21
75	100	0.0364	18
63	100	0.0257	15
50	100	0.0182	13
37.5	91	0.0094	9
28	89	0.0066	7
20	81	0.0047	6
14	77	0.0023	5
10	74	0.0014	4
6.3	69		
5	67		
3.35	64		
2	61		
1.18	59		
0.6	56	Particle density (assumed) 2.65 Mg/m3	
0.425	53		
0.3	47		
0.212	39		
0.15	32		
0.063	22		

Dry Mass of sample, g

Sample Proportions	% dry mass
Very coarse	0
Gravel	39
Sand	39
Silt	18
Clay	4

Grading Analysis		
D100	mm	
D60	mm	1.48
D30	mm	0.125
D10	mm	0.0111
Uniformity Coefficient		130
Curvature Coefficient		0.96

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator

Checked

Approved

Sheet printed

Fig 1

20/10/2023 15:58

Sheet

JE

DK

DK



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PARTICLE SIZE DISTRIBUTION

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH05

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Specimen
Description

Brown sandy slightly gravelly silty CLAY

Depth, m

1.10

Specimen
Reference

Specimen
Depth

m

Sample Type

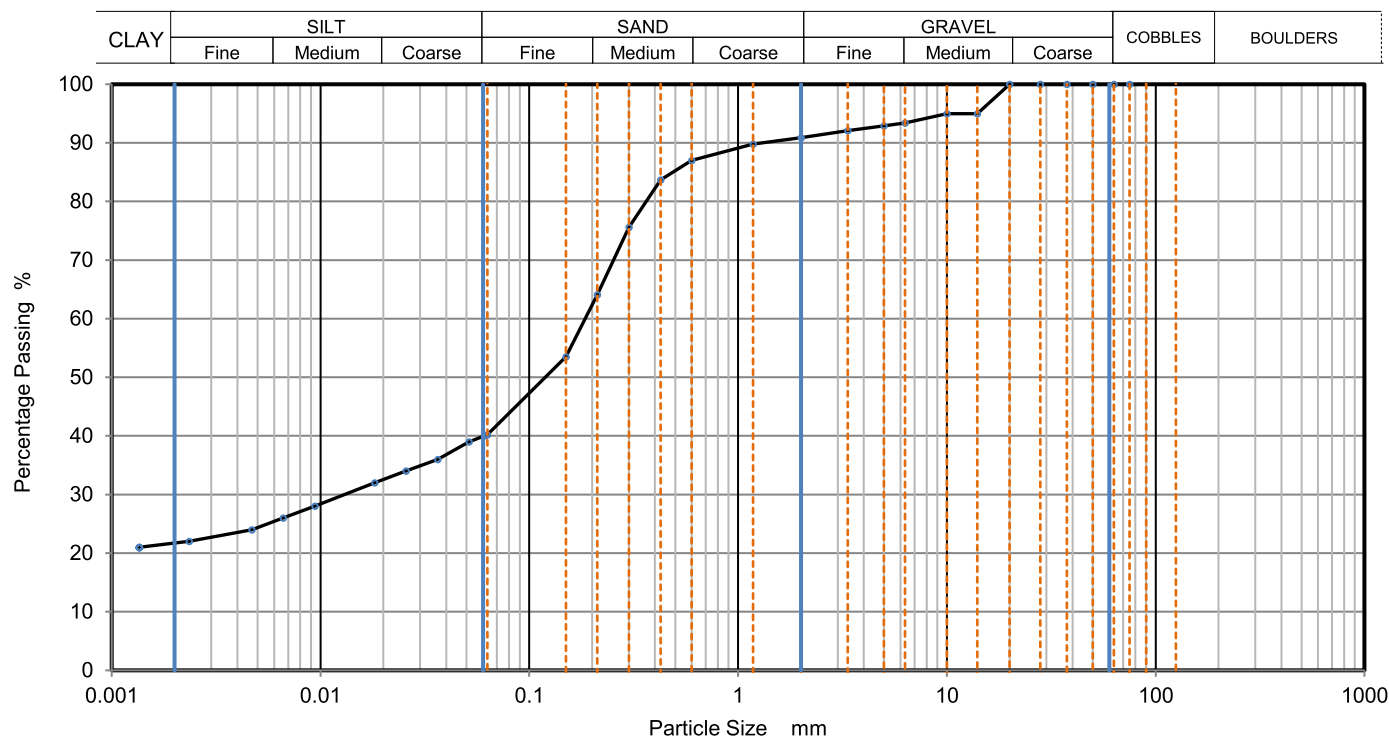
B

Test Method

BS1377:Part 2:1990, clauses 9.2 and 9.5

KeyLAB ID

CCGL2023102022



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
		0.0612	40
		0.0514	39
75	100	0.0364	36
63	100	0.0257	34
50	100	0.0182	32
37.5	100	0.0094	28
28	100	0.0066	26
20	100	0.0047	24
14	95	0.0023	22
10	95	0.0014	21
6.3	93		
5	93		
3.35	92		
2	91		
1.18	90		
0.6	87	Particle density (assumed) 2.65 Mg/m3	
0.425	84		
0.3	76		
0.212	64		
0.15	54		
0.063	40		

Dry Mass of sample, g

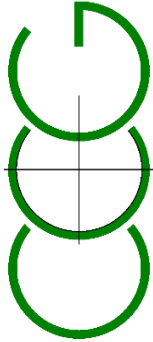
Sample Proportions	% dry mass
Very coarse	0
Gravel	9
Sand	51
Silt	18
Clay	22

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

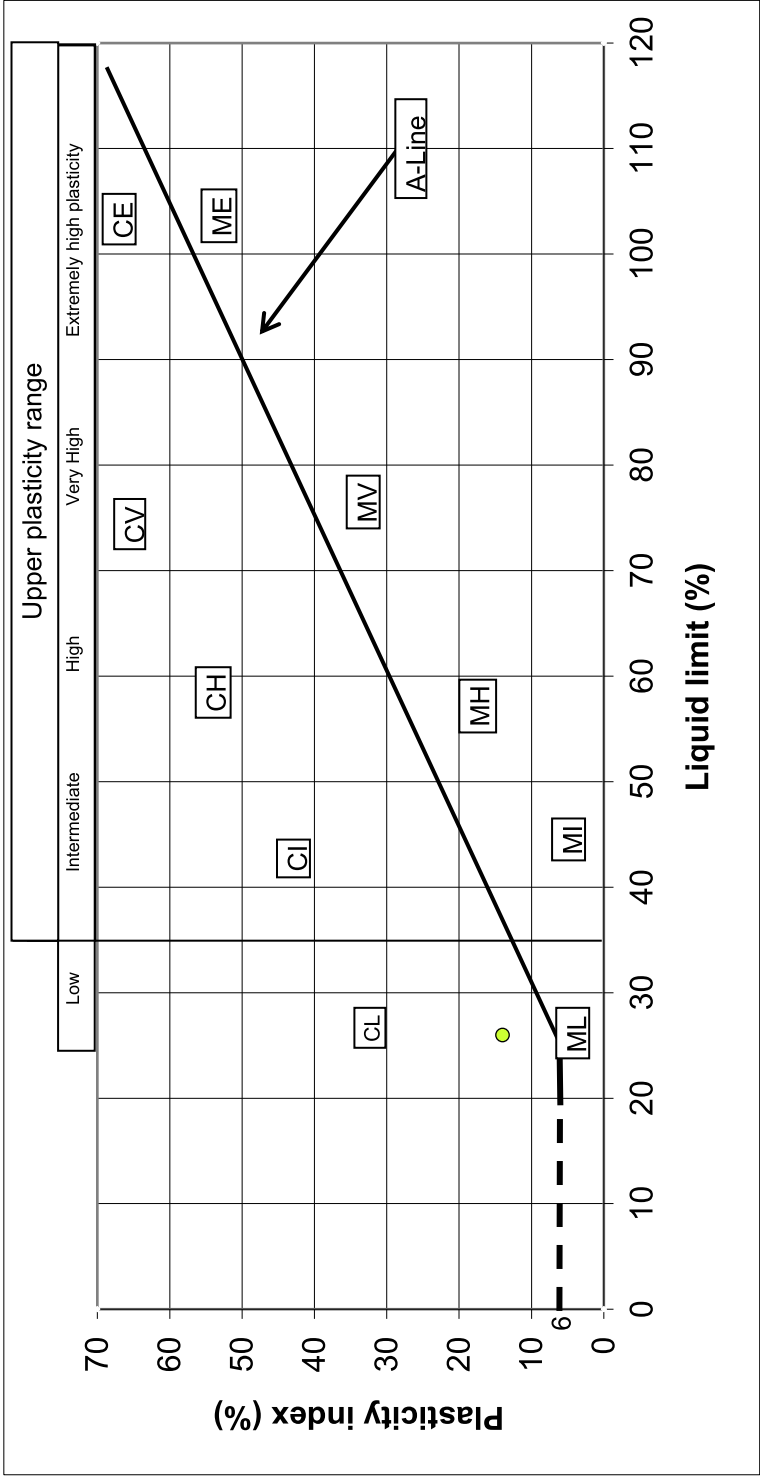
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig
JE	DK	DK	20/10/2023 15:58	1
				Sheet



ATTERBERG TEST RESULT SHEET
BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line, CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.



BH	Sample Depth	Liquid limit	Plasticity index
BH05	1.15	26.0	14.0



APPROVED BY	DK
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CLIENT: GENS8 / BURO HAPPOLD / KMBC	SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
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Dry Density / Moisture Content Relationship Heavy Compaction

Job Ref

CCG-C-23-14178

Borehole / Pit No

BH05

Site Name

HUYTON TOWN CENTRE

Sample No

1

Soil Description

Brown sandy slightly gravelly sity CLAY

Depth

1.60 m

Specimen Ref.

Specimen Depth

m

Sample Type

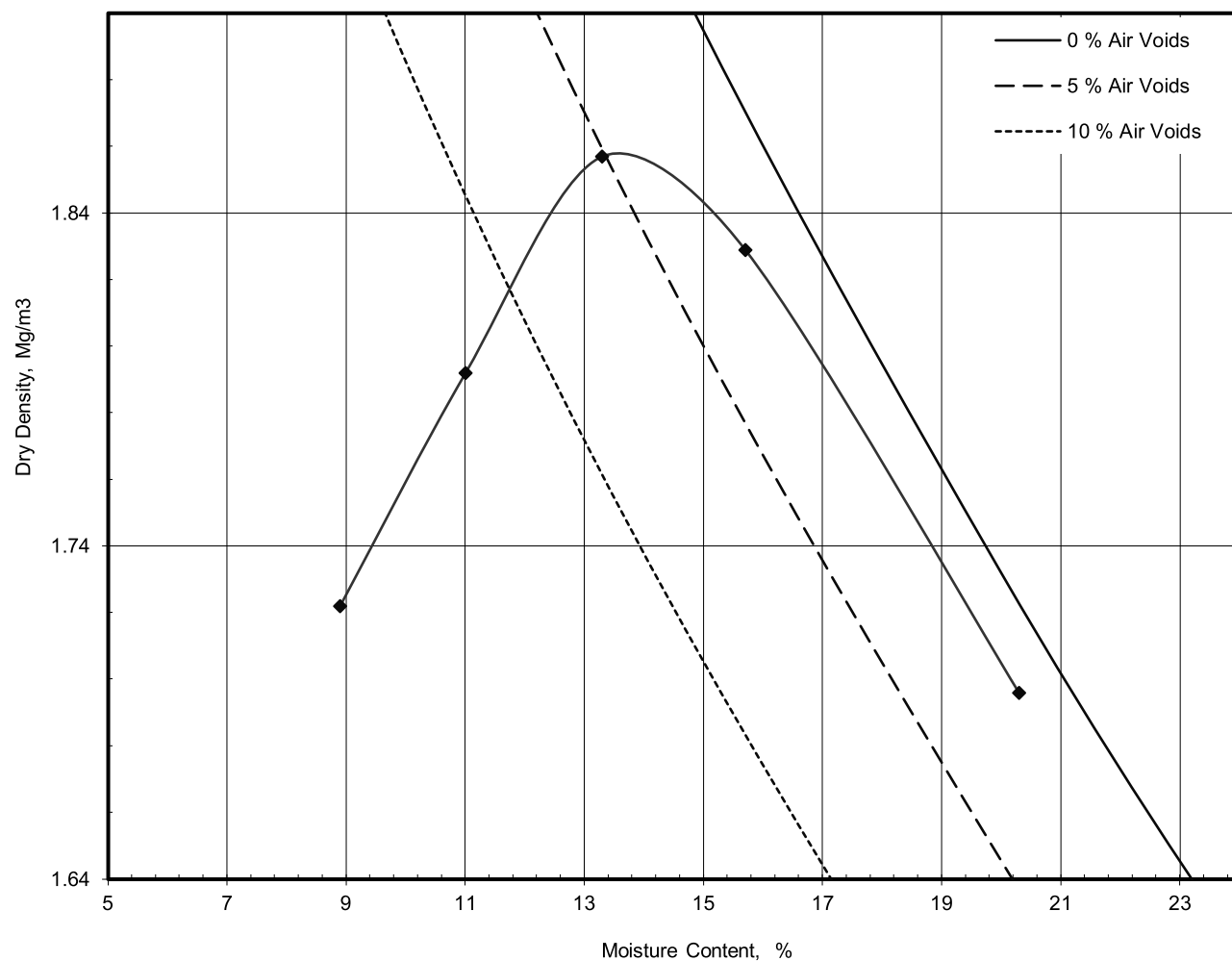
B

Test Method

BS1377:1990:Part 4 3.5.4.1

Keylab ID

Compaction Test Reference/No.



Preparation	
Mould Type	1 litre
Samples Used	1
Material Retained on 37.5 mm Sieve	% 0
Material Retained on 20.0 mm Sieve	% 0
Particle Density -	Mg/m³ 2.65
Maximum Dry Density	Mg/m³ 1.86
Optimum Moisture Content	% 13

Operator

Checked

Approved

Remarks

Fig

MH

DK

DK

Sheet 1 of 1



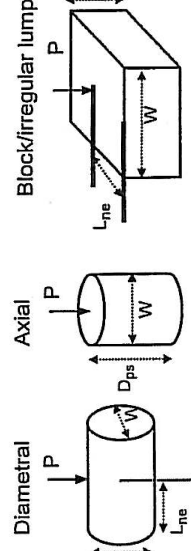
POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

16.10.23

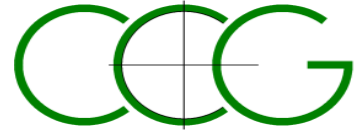
* NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)

L_{ne} = length from platens to nearest free end



TESTED BY: MH

TEST REPORT



UNIAXIAL COMPRESSIVE STRENGTH

In accordance with ISRM Vol 16 No 2, pp 135-140 (1979)

PROJECT: HUYTON TOWN CENTRE
CLIENT: GENR8 / BURO HAPPOLD / KMBC
CCG REF: CCG-C-23-14178

Sample ref: BH05 5.90mbgl
Date of coring: 21/09/2023
Sampled by: CB / CMC
Sample description: SANDSTONE

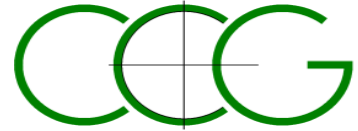
TEST DATA

Specimen Height (mm): 200
Specimen Diameter (mm): 100
L/D ratio: 2:1
Mode of failure: Axial
Test duration: 1m 20sec

Maximum load at failure (kN): 42.0
Compressive strength (N/mm²): 5.4

Test date: 16/10/2023
Tested by: MH
Report prepared by: DK
Report approved by: DK

TEST REPORT



UNIAXIAL COMPRESSIVE STRENGTH

In accordance with ISRM Vol 16 No 2, pp 135-140 (1979)

PROJECT: HUYTON TOWN CENTRE
CLIENT: GENR8 / BURO HAPPOLD / KMBC
CCG REF: CCG-C-23-14178

Sample ref: BH05 6.40mbgl
Date of coring: 21/09/2023
Sampled by: CB / CMC
Sample description: SANDSTONE

TEST DATA

Specimen Height (mm): 198
Specimen Diameter (mm): 100
L/D ratio: 2:1
Mode of failure: Axial
Test duration: 1m 34sec

Maximum load at failure (kN): 52.6
Compressive strength (N/mm²): **6.7**

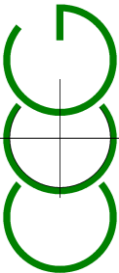
Test date: 16/10/2023
Tested by: MH
Report prepared by: DK
Report approved by: DK

SUMMARY OF LABORATORY SOIL TEST RESULTS

BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m³)	Dry Density (Mg/m³)	Shear Strength (kN/m²)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425mm (%)	Soil Classification	UKAS accredited test (Y/N)	Description / Test Method Samples described in accordance with BS EN ISO 14688-2 2004
BH06	D	2.10	2.10	16	-	-	-	27	13	14	90	CL	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone and mudstone. (BS1377Pt2:3,2,4,4,5)
BH06	B	2.50	2.50	-	-	-	-	-	-	-	-	-	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone and mudstone. (BS1377Pt2:9,2,9,5)

SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
CLIENT: GENR8 / BURO HAPPOLD / KMBC

DATE: 24.10.23



Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample
CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = Non-plastic
(* Denotes Hand Shear Vane test result)
Sample description not accredited by UKAS



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PARTICLE SIZE DISTRIBUTION

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH06

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Specimen
Description

Brown sandy slightly gravelly silty CLAY

Depth, m

2.50

Specimen
Reference

Specimen
Depth

m

Sample Type

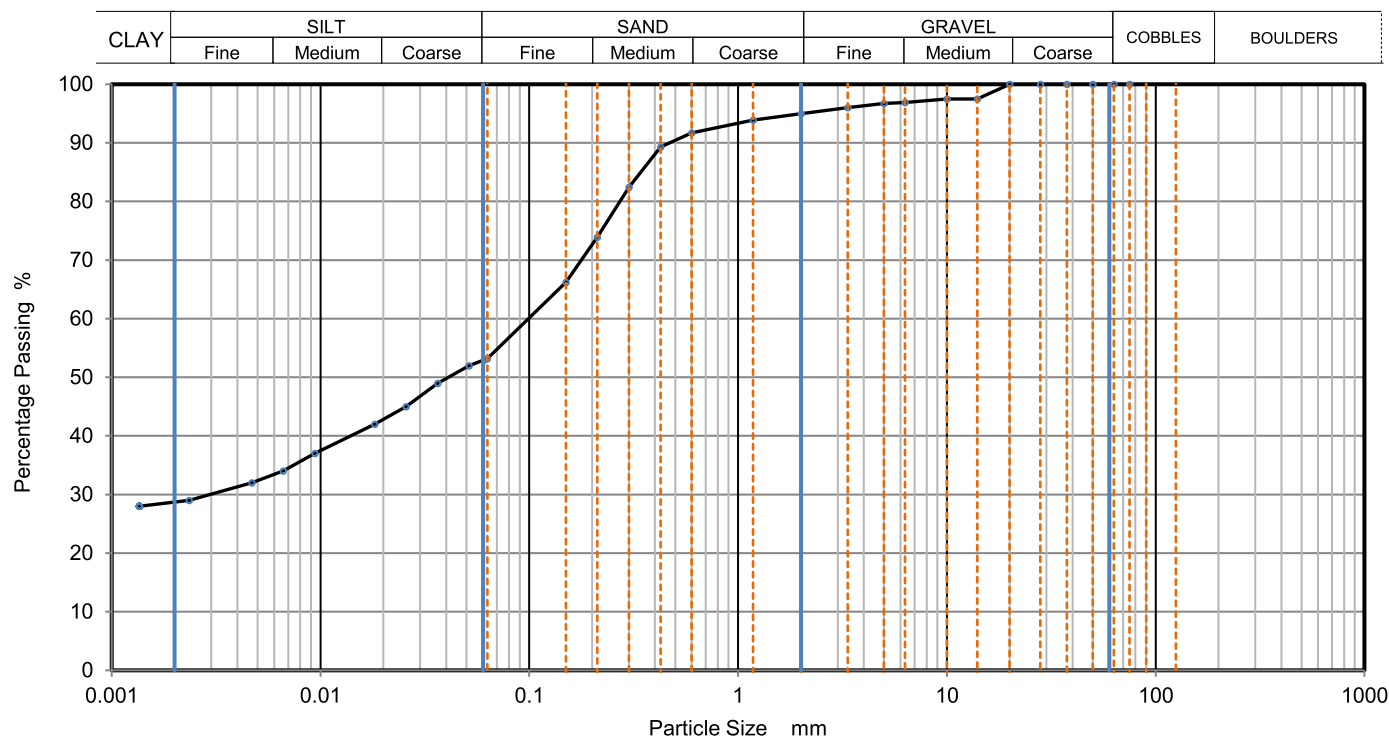
B

Test Method

BS1377:Part 2:1990, clauses 9.2 and 9.5

KeyLAB ID

CCGL2023102023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
		0.0612	53
		0.0514	52
75	100	0.0364	49
63	100	0.0257	45
50	100	0.0182	42
37.5	100	0.0094	37
28	100	0.0066	34
20	100	0.0047	32
14	98	0.0023	29
10	98	0.0014	28
6.3	97		
5	97		
3.35	96		
2	95		
1.18	94		
0.6	92	Particle density (assumed) 2.65 Mg/m ³	
0.425	89		
0.3	82		
0.212	74		
0.15	66		
0.063	53		

Dry Mass of sample, g

Sample Proportions	% dry mass
Very coarse	0
Gravel	5
Sand	42
Silt	24
Clay	29

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator

Checked

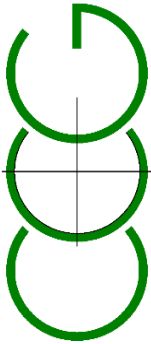
Approved

Sheet printed

20/10/2023 16:17

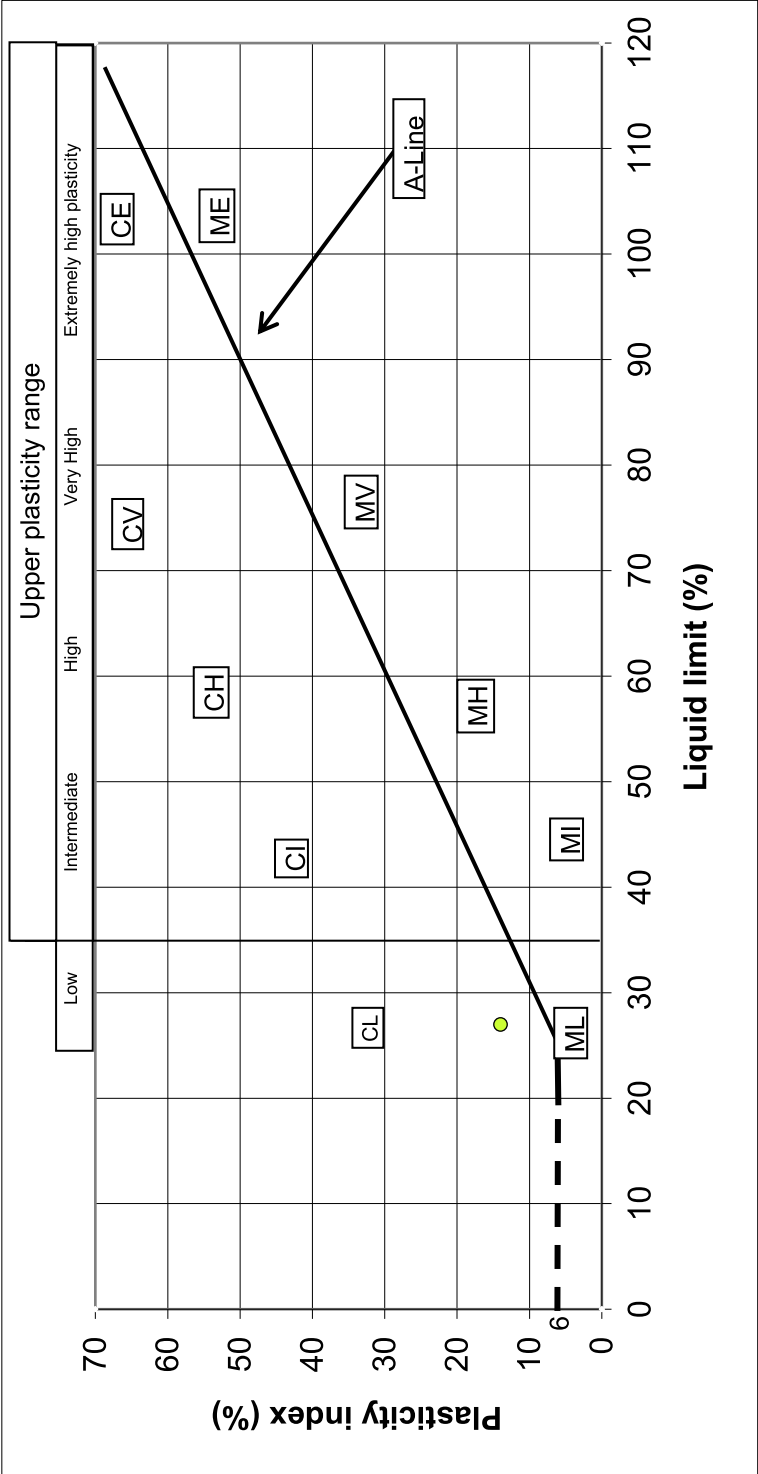
Fig 1

Sheet



ATTERBERG TEST RESULT SHEET
BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line, CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.



BH	Sample Depth	Liquid limit	Plasticity index
BH06	2.10	27.0	14.0



APPROVED BY	DK
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CLIENT: GENS8 / BURO HAPPOLD / KMBC	SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
-------------------------------------	---



Dry Density / Moisture Content Relationship Heavy Compaction

Job Ref

CCG-C-23-14178

Borehole / Pit No

BH06

Site Name

HUYTON TOWN CENTRE

Sample No

1

Soil Description

Brown sandy slightly gravelly silty CLAY

Depth

0.90 m

Specimen Ref.

Specimen Depth

m

Sample Type

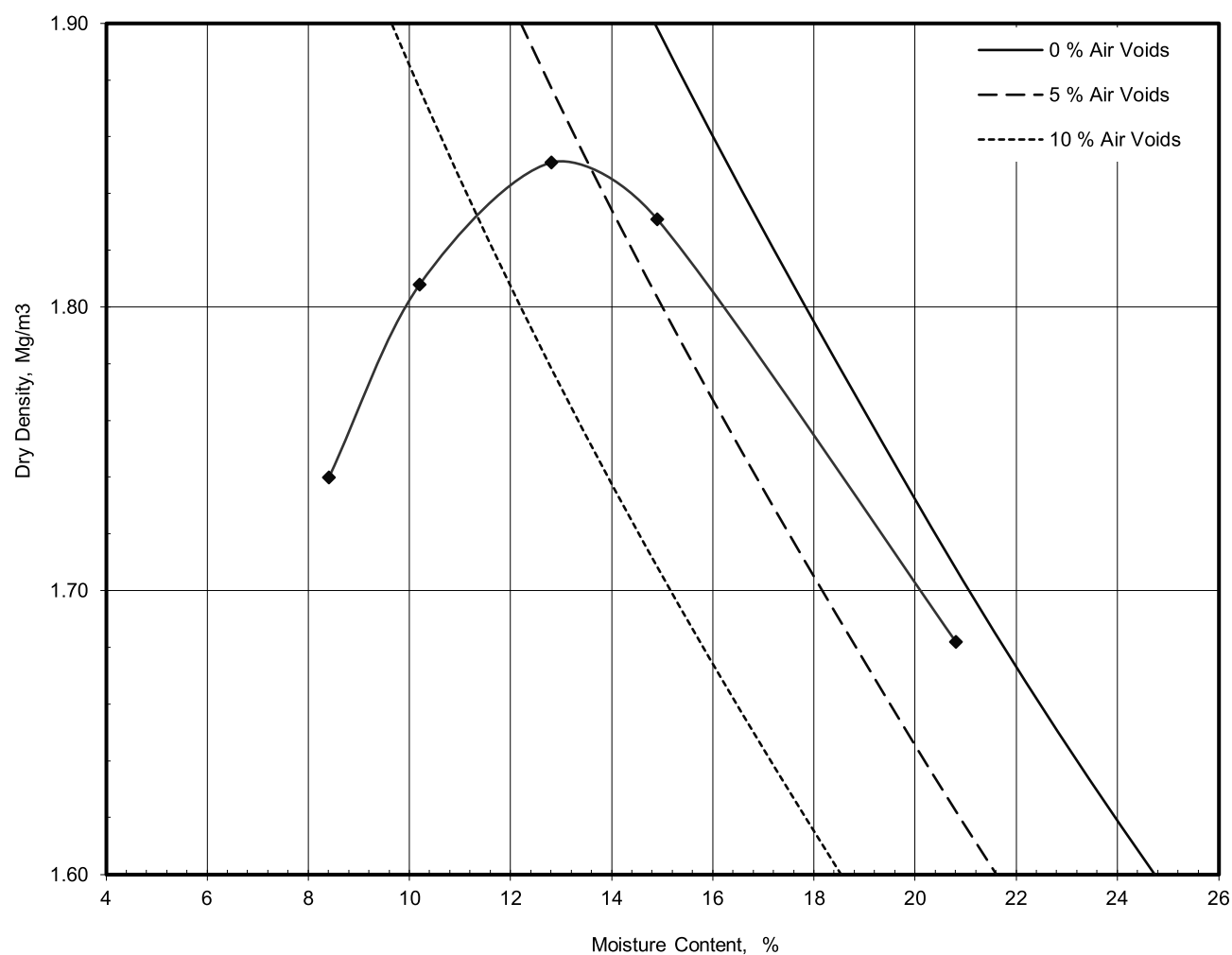
B

Test Method

BS1377:1990:Part 4 3.5.4.1

Keylab ID

Compaction Test Reference/No.



Preparation	
Mould Type	1 litre
Samples Used	5
Material Retained on 37.5 mm Sieve	% 2
Material Retained on 20.0 mm Sieve	% 2
Particle Density -	Mg/m³ 2.65
Maximum Dry Density	Mg/m³ 1.85
Optimum Moisture Content	% 13

Operator

Checked

Approved

Remarks

MH

DK

DK

Fig

Sheet 1 of 1



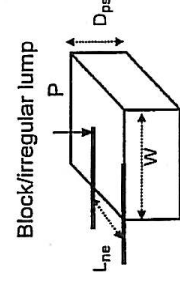
POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

17.10.23

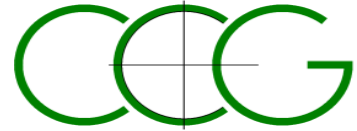
* NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)

L_{ne} = length from platens to nearest free end



TESTED BY: MH

TEST REPORT



UNIAXIAL COMPRESSIVE STRENGTH

In accordance with ISRM Vol 16 No 2, pp 135-140 (1979)

PROJECT: HUYTON TOWN CENTRE
CLIENT: GENR8 / BURO HAPPOLD / KMBC
CCG REF: CCG-C-23-14178

Sample ref: BH06 10.40mbgl
Date of coring: 27/09/2023
Sampled by: AR / CMC
Sample description: SANDSTONE

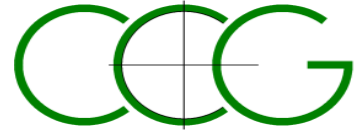
TEST DATA

Specimen Height (mm): 201
Specimen Diameter (mm): 100
L/D ratio: 2:1
Mode of failure: Shear
Test duration: 1m 3sec

Maximum load at failure (kN): 48.4
Compressive strength (N/mm²): 6.2

Test date: 17/10/2023
Tested by: MH
Report prepared by: DK
Report approved by: DK

TEST REPORT



UNIAXIAL COMPRESSIVE STRENGTH

In accordance with ISRM Vol 16 No 2, pp 135-140 (1979)

PROJECT: HUYTON TOWN CENTRE
CLIENT: GENR8 / BURO HAPPOLD / KMBC
CCG REF: CCG-C-23-14178

Sample ref: BH06 18.80mbgl
Date of coring: 27/09/2023
Sampled by: AR / CMC
Sample description: SANDSTONE

TEST DATA

Specimen Height (mm): 199
Specimen Diameter (mm): 100
L/D ratio: 2:1
Mode of failure: Axial
Test duration: 1m 33sec

Maximum load at failure (kN): 94.8
Compressive strength (N/mm²): **12.1**

Test date: 17/10/2023
Tested by: MH
Report prepared by: DK
Report approved by: DK

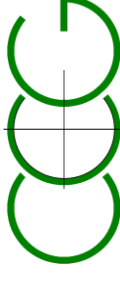
SUMMARY OF LABORATORY SOIL TEST RESULTS

BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Shear Strength (kN/m ²)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425mm (%)	Soil Classification	UKAS accredited test (Y/N)	Description / Test Method Samples described in accordance with BS EN ISO 14688-2 2004
BH07	UT	1.00	1.45	17	2.09	1.79	107	-	-	-	-	-	Y	Brown sandy slightly gravelly silty CLAY of high undrained shear strength. Gravel is fine to medium subrounded sandstone. (BS1377Pt2:3.2,Pt7:8)
BH07	D	1.50	1.50	18	-	-	-	34	16	18	91	CL	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone. (BS1377Pt2:3.2,4.4,5)
BH07	B	2.00	2.00	-	-	-	-	-	-	-	-	-	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone. (BS1377Pt2:9.2,9.5)
BH07	D	2.50	2.50	19	-	-	-	33	15	18	90	CL	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone. (BS1377Pt2:3.2,4.4,5)
BH07	UT	3.00	3.45	13	2.31	2.05	208	-	-	-	-	-	Y	Brown sandy slightly gravelly silty CLAY of very high undrained shear strength. Gravel is fine to coarse subangular to subrounded sandstone. (BS1377Pt2:3.2,Pt7:8)

SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)

CLIENT: GENR8 / BURO HAPPOLD / KMBC

DATE: 20.10.23



Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample

CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = Non-plastic

(* Denotes Hand Shear Vane test result)

Sample description not accredited by UKAS



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Tel: 0151 545 2750
e: lab@ccgeotechnical.com

PARTICLE SIZE DISTRIBUTION

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH07

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Specimen Description

Brown sandy slightly gravelly silty CLAY

Depth, m

2.00

Specimen Reference

Specimen Depth

m

Sample Type

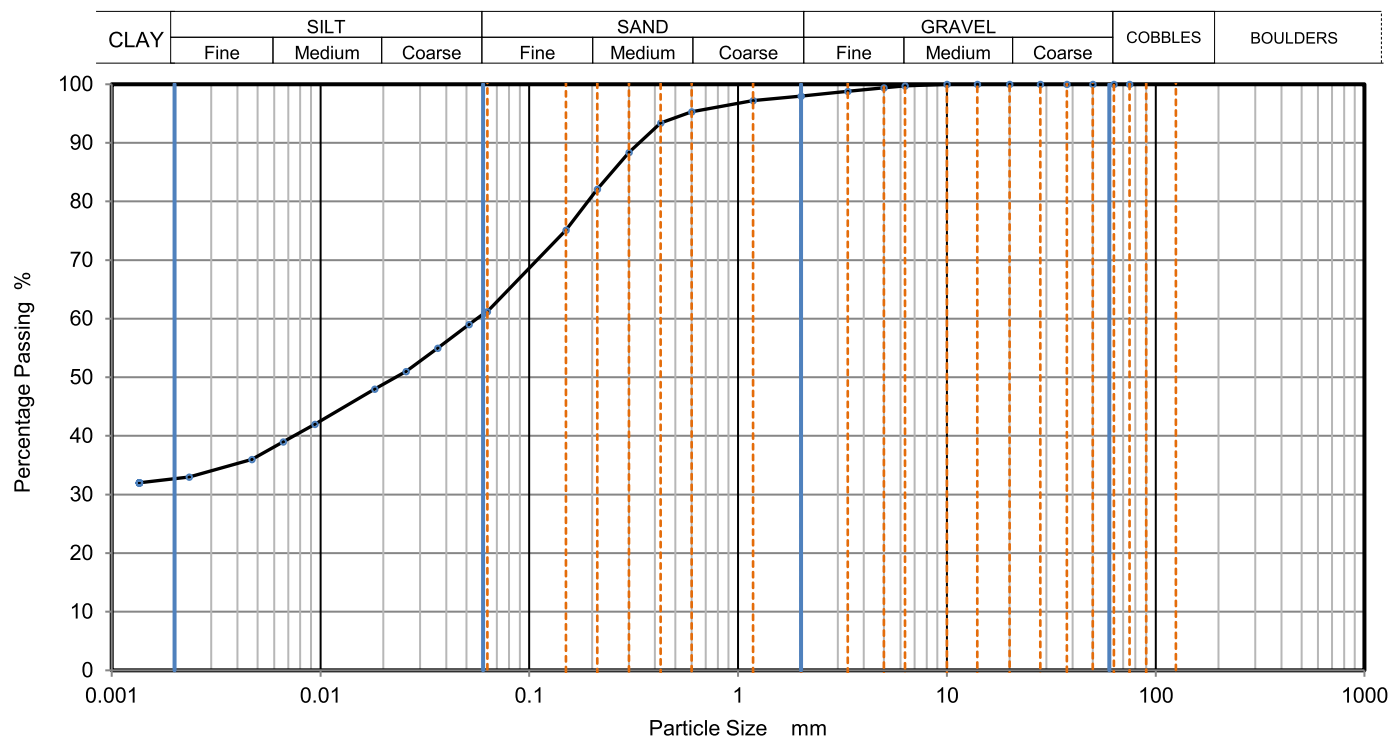
B

Test Method

BS1377:Part 2:1990, clauses 9.2 and 9.5

KeyLAB ID

CCGL2023101819



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
		0.0612	61
		0.0514	59
75	100	0.0364	55
63	100	0.0257	51
50	100	0.0182	48
37.5	100	0.0094	42
28	100	0.0066	39
20	100	0.0047	36
14	100	0.0023	33
10	100	0.0014	32
6.3	100		
5	99		
3.35	99		
2	98		
1.18	97		
0.6	95	Particle density (assumed) 2.65 Mg/m3	
0.425	93		
0.3	88		
0.212	82		
0.15	75		
0.063	61		

Dry Mass of sample, g

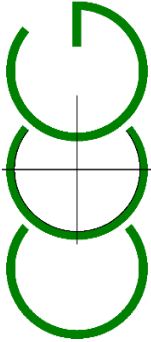
Sample Proportions	% dry mass
Very coarse	0
Gravel	2
Sand	37
Silt	28
Clay	33

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

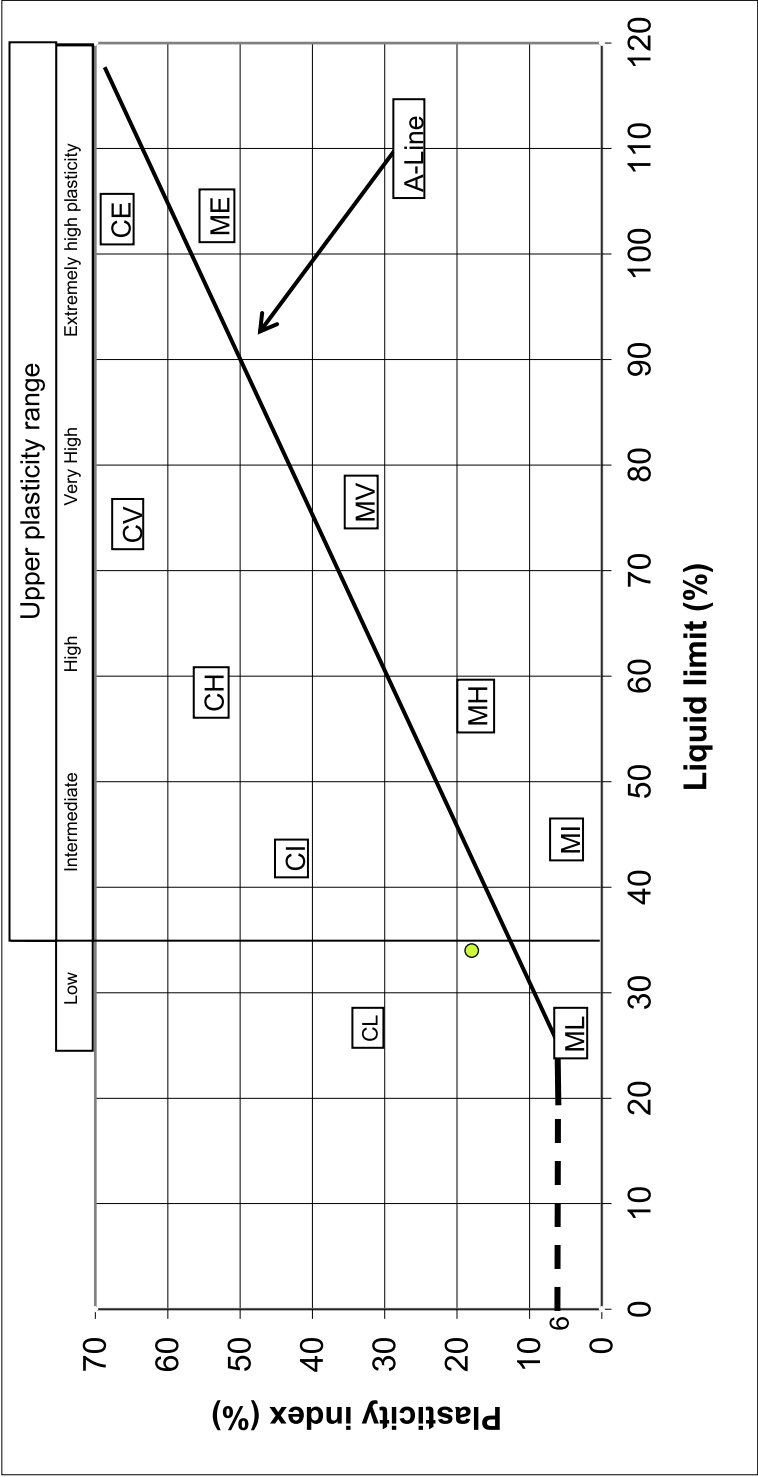
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig
JE	DK	DK	20/10/2023 16:30	1
				Sheet



ATTERBERG TEST RESULT SHEET
BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line, CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.

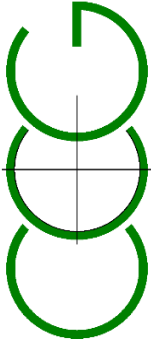


BH	Sample Depth	Liquid limit	Plasticity index
BH07	1.50	34.0	18.0



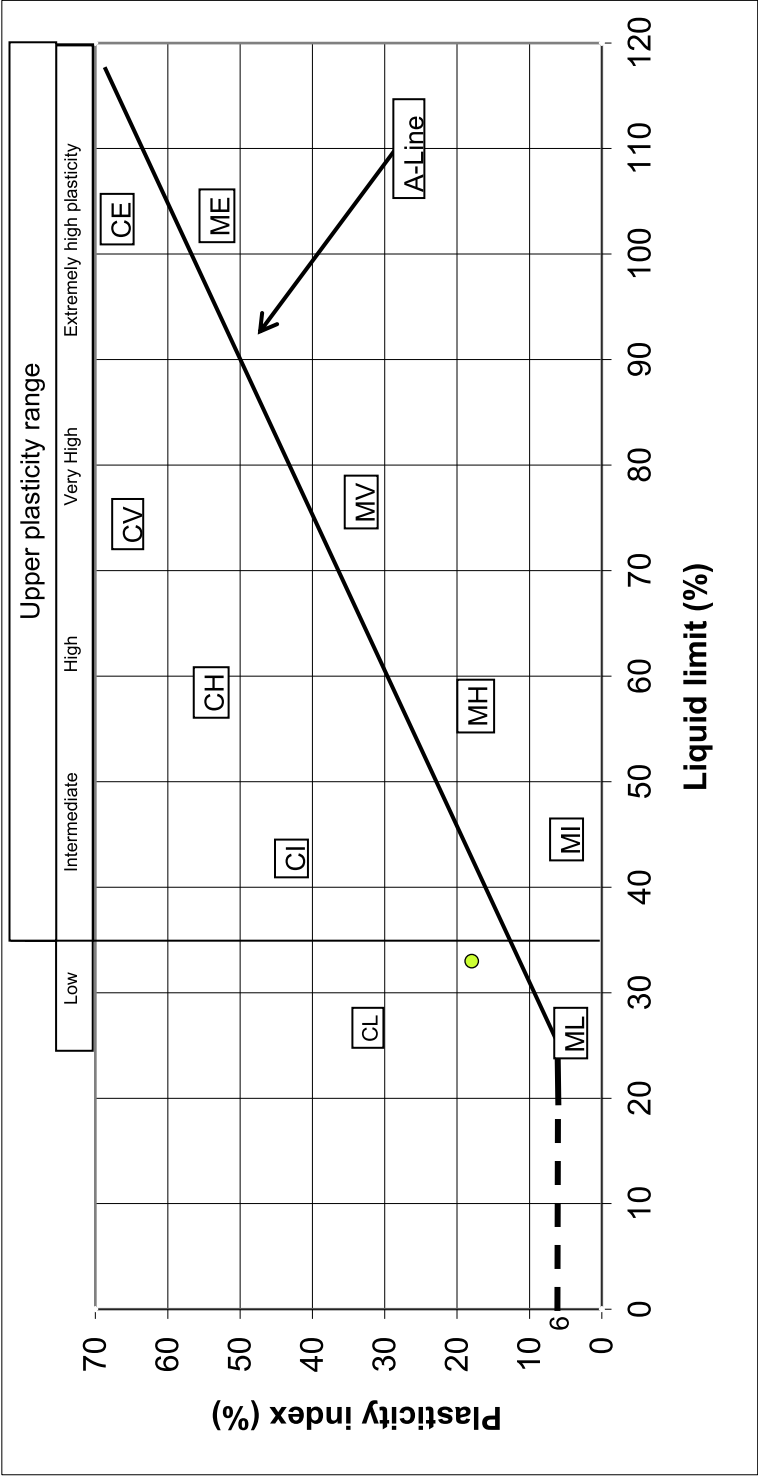
APPROVED BY	DK
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CLIENT: GENS8 / BURO HAPPOLD / KMBC	SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
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ATTERBERG TEST RESULT SHEET
BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line, CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.



BH	Sample Depth	Liquid limit	Plasticity index
BH07	2.50	33.0	18.0



APPROVED BY	DK
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CLIENT: GENR8 / BURO HAPPOLD / KMBC	SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
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Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

Job Ref CCG-C-23-14178

Borehole/Pit No. BH07

Site Name HUYTON TOWN CENTRE

Sample No. 1

Soil Description

Depth 1.00

Specimen Reference

Specimen
Depth

m

Sample Type

UT

Specimen Description Brown sandy slightly gravelly silty CLAY

Date of test

11/10/2023

Test Method

BS1377 : Part 7 : 1990, clause 8, single specimen



4514

Test Number

1

Length

203.0

mm

Diameter

103.2

mm

Bulk Density

2.09

Mg/m³

Moisture Content

16.8

%

Dry Density

1.79

Mg/m³

Rate of Strain

2.0

%/min

Cell Pressure

18

kPa

At failure

9.4

%

Axial Strain

213

kPa

Deviator Stress, ($\sigma_1 - \sigma_3$)_f

107

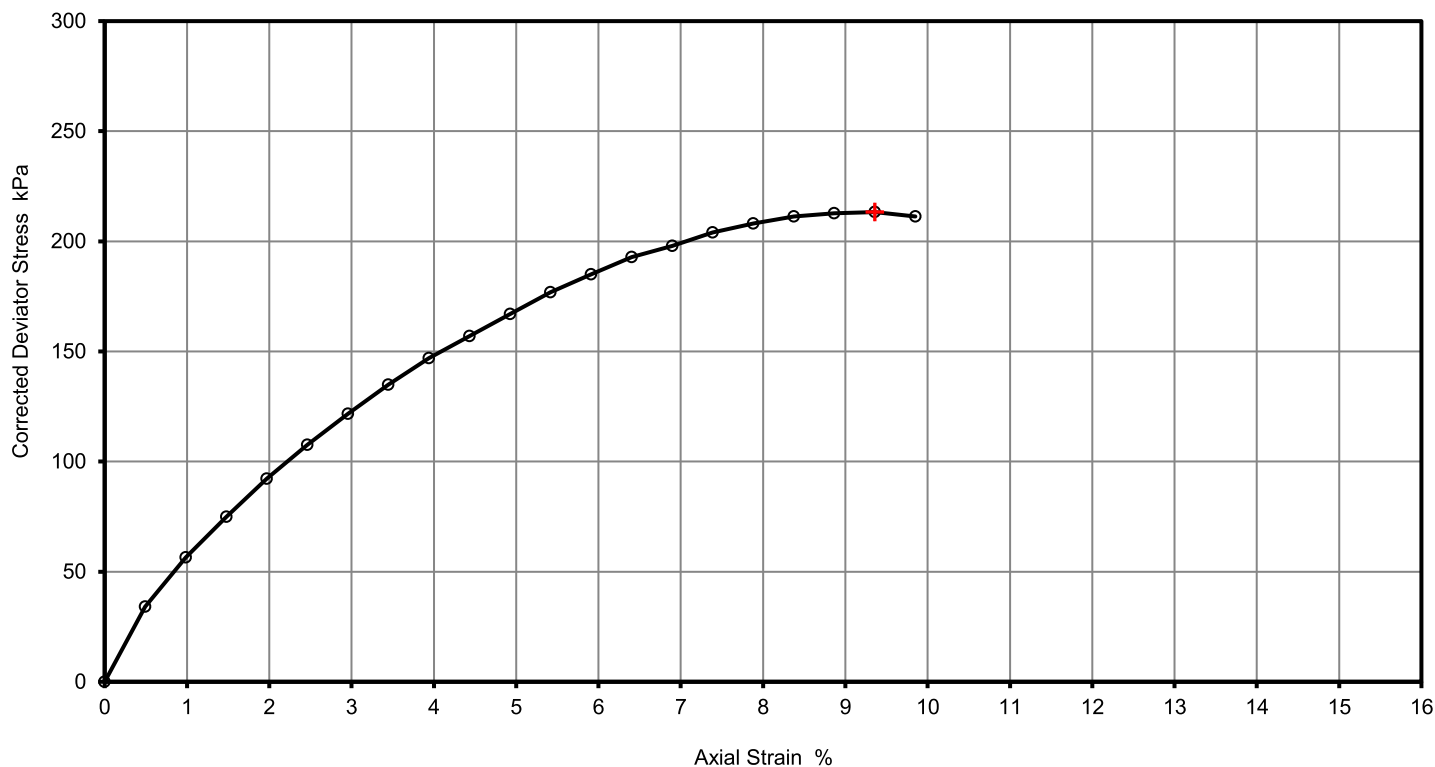
kPa $\frac{1}{2}(\sigma_1 - \sigma_3)$ _f

Undrained Shear Strength, cu

Plastic

Mode of Failure

Deviator Stress v Axial Strain



Remarks

0.5mm membrane, correction factor = 1.07

Approved

DanielKerfoot

Printed

18/10/2023 12:29

Fig. No.

1

Sheet

1



CC Geotechnical Ltd
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e: lab@ccgeotechnical.com

Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH07

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Soil Description

Depth

3.00

Specimen Reference

Specimen
Depth

m

Sample Type

UT

Specimen Description

Brown sandy slightly gravelly silty CLAY

Date of test

11/10/2023

Test Method

BS1377 : Part 7 : 1990, clause 8, single specimen



4514

Test Number

1

Length

202.2

mm

Diameter

102.7

mm

Bulk Density

2.31

Mg/m3

Moisture Content

13.0

%

Dry Density

2.05

Mg/m3

Rate of Strain

2.0

%/min

Cell Pressure

54

kPa

At failure

Axial Strain

17.8

%

Deviator Stress, $(\sigma_1 - \sigma_3)_f$

415

kPa

Undrained Shear Strength, c_u

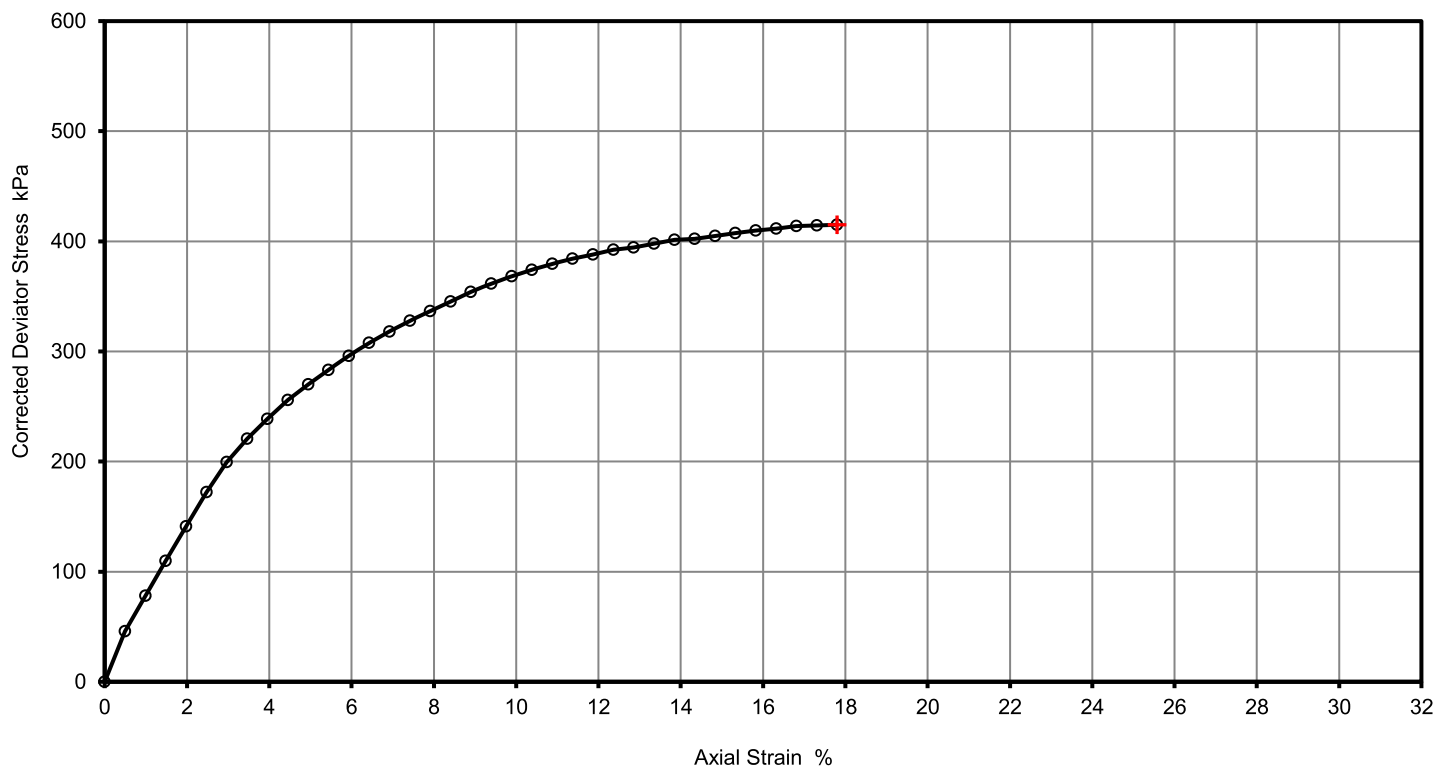
208

kPa $\frac{1}{2}(\sigma_1 - \sigma_3)_f$

Mode of Failure

Plastic

Deviator Stress v Axial Strain



Remarks

0.5mm membrane, correction factor = 1.70

Approved

DanielKerfoot

Printed

18/10/2023 12:29

Fig. No.

1

Sheet

2



Dry Density / Moisture Content Relationship Heavy Compaction

Job Ref

CCG-C-23-14178

Borehole / Pit No

BH07

Site Name

HUYTON TOWN CENTRE

Sample No

1

Soil Description

Brown sandy slightly gravelly silty CLAY

Depth

1.00 m

Specimen Ref.

Specimen Depth

m

Sample Type

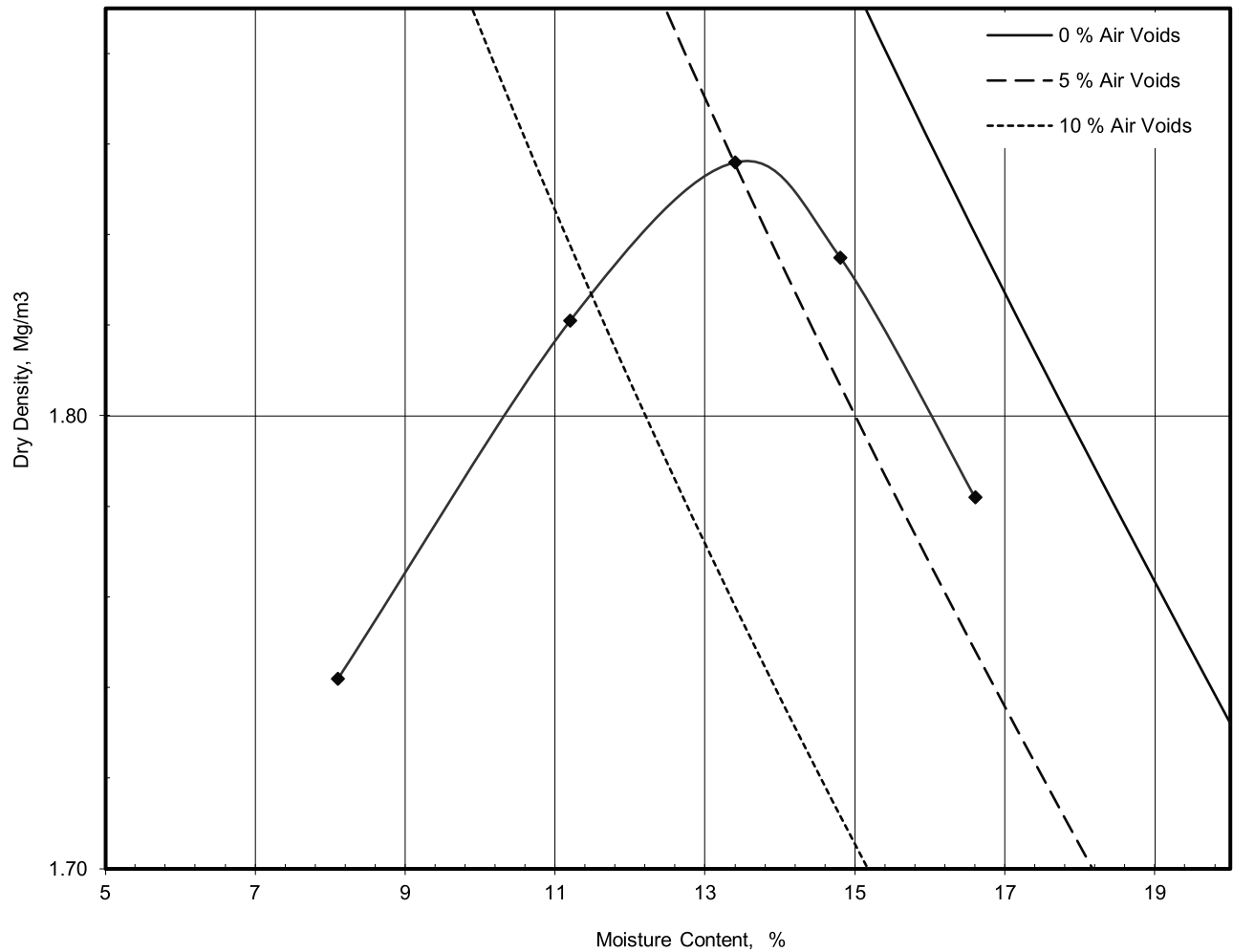
B

Test Method

BS1377:1990:Part 4 3.5.4.1

Keylab ID

Compaction Test Reference/No.



Preparation	
Mould Type	1 litre
Samples Used	5
Material Retained on 37.5 mm Sieve	% 0
Material Retained on 20.0 mm Sieve	% 0
Particle Density -	Mg/m³ 2.65

Maximum Dry Density	Mg/m³	1.86
---------------------	-------	------

Optimum Moisture Content	%	13
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Operator

Checked

Approved

Remarks

Fig

MH

DK

DK

Sheet 1 of 1



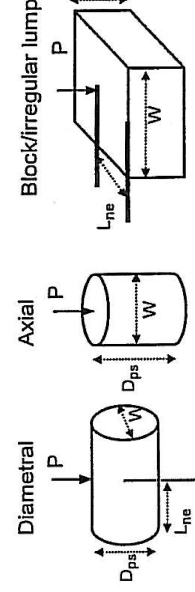
POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

DATE:

* NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)

Lne = length from platens to nearest free end



TESTED BY: MH

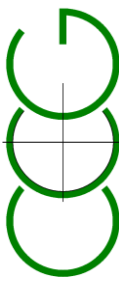
SUMMARY OF LABORATORY SOIL TEST RESULTS

BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Shear Strength (kN/m ²)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425mm (%)	Soil Classification	UKAS accredited test (Y/N)	Description / Test Method Samples described in accordance with BS EN ISO 14688-2 2004
BH08	D	2.00	2.00	17	-	-	-	32	16	16	90	CL	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subrounded sandstone. (BS1377Pt2:3.2.4.4,5)
BH08	B	2.50	2.50	-	-	-	-	-	-	-	-	-	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subrounded sandstone. (BS1377Pt2:9.2.9,5)
BH08	UT	3.00	3.45	16	2.22	1.92	118	-	-	-	-	-	Y	Brown sandy slightly gravelly silty CLAY of high undrained shear strength. Gravel is fine to medium subrounded sandstone. (BS1377Pt2:3.2,Pt7:8)
BH08	D	4.00	4.00	20	-	-	-	33	15	18	89	CL	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subrounded sandstone. (BS1377Pt2:3.2.4.4,5)

SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)

CLIENT: GENR8 / BURO HAPPOLD / KMBC

DATE: 24.10.23



Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample

CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = Non-plastic

(* Denotes Hand Shear Vane test result)

Sample description not accredited by UKAS



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PARTICLE SIZE DISTRIBUTION

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH08

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Specimen
Description

Brown sandy slightly gravelly silty CLAY

Depth, m

2.50

Specimen
Reference

Specimen
Depth

m

Sample Type

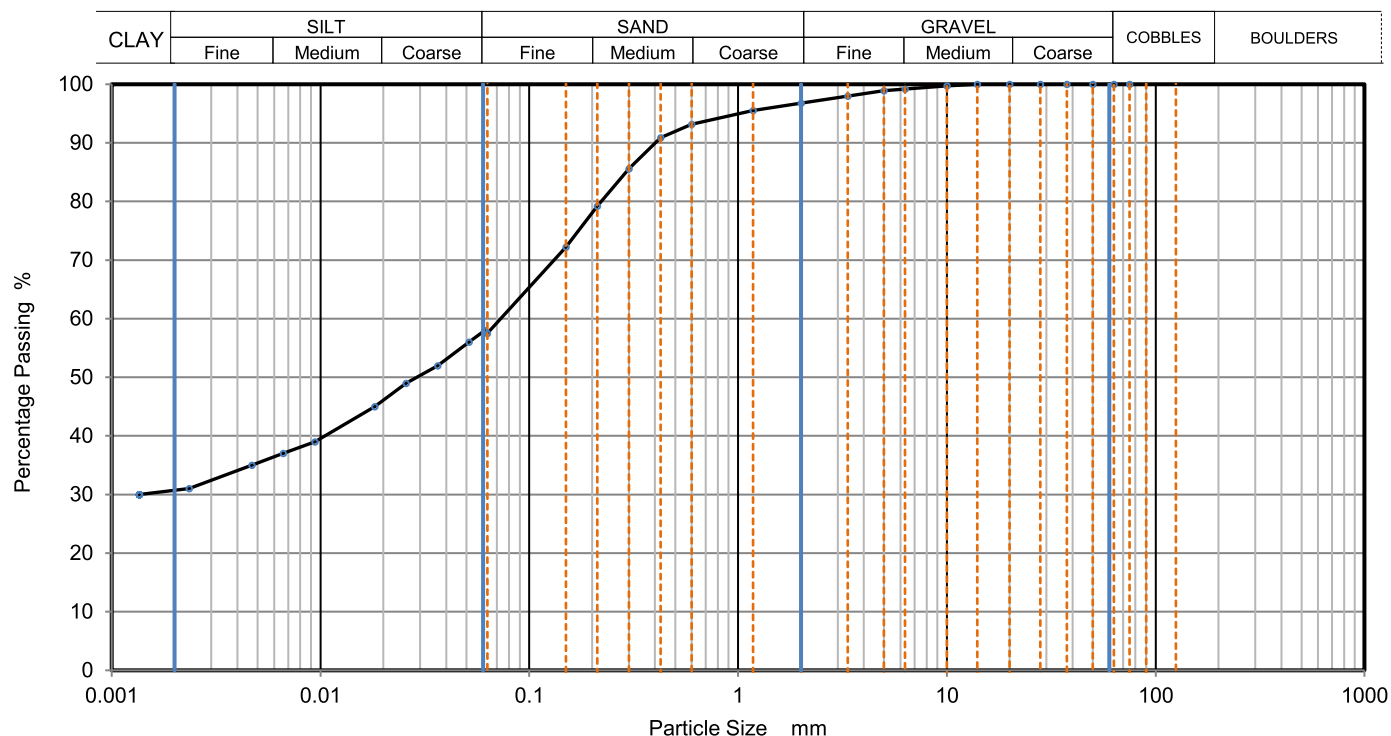
B

Test Method

BS1377:Part 2:1990, clauses 9.2 and 9.5

KeyLAB ID

CCGL2023101828



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
		0.0612	58
		0.0514	56
75	100	0.0364	52
63	100	0.0257	49
50	100	0.0182	45
37.5	100	0.0094	39
28	100	0.0066	37
20	100	0.0047	35
14	100	0.0023	31
10	100	0.0014	30
6.3	99		
5	99		
3.35	98		
2	97		
1.18	96		
0.6	93	Particle density (assumed) 2.65 Mg/m3	
0.425	91		
0.3	86		
0.212	79		
0.15	72		
0.063	58		

Dry Mass of sample, g

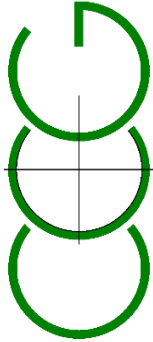
Sample Proportions	% dry mass
Very coarse	0
Gravel	3
Sand	39
Silt	27
Clay	31

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

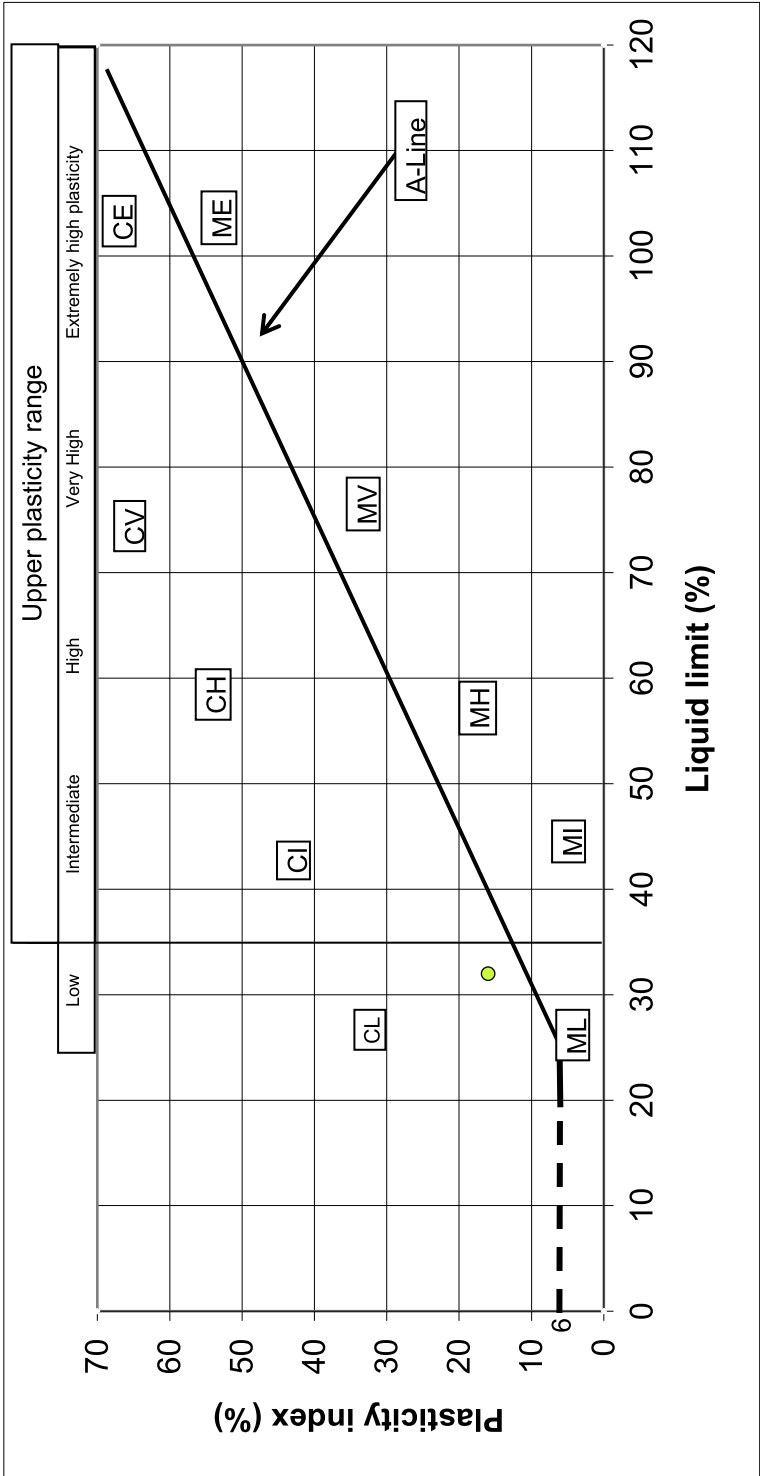
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1 Sheet
JE	DK	DK	24/10/2023 09:04	



ATTERBERG TEST RESULT SHEET
BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line, CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.

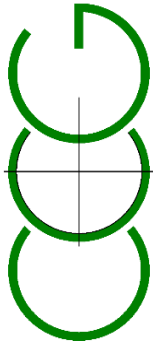


BH	Sample Depth	Liquid limit	Plasticity index
BH08	2.00	32.0	16.0



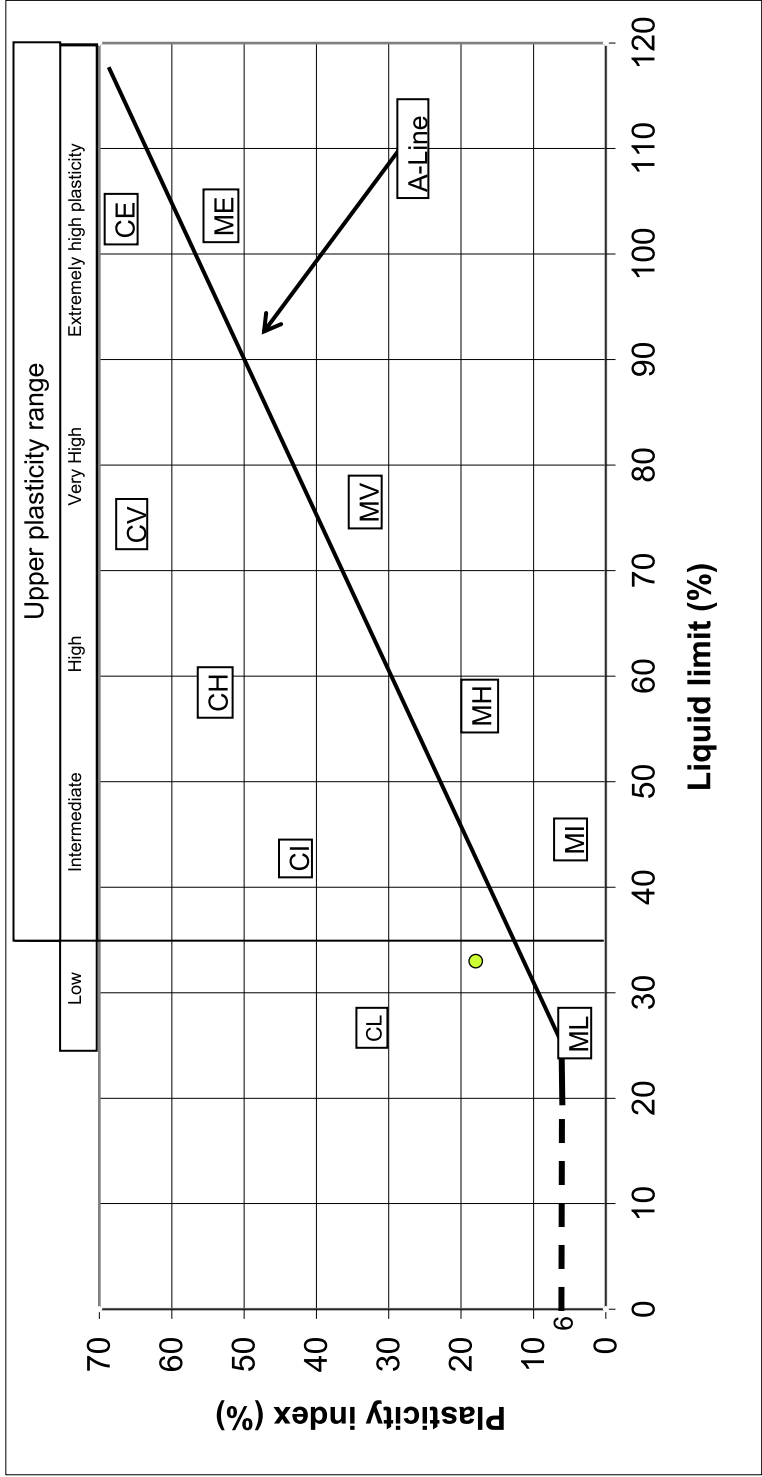
APPROVED BY	DK
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CLIENT: GNR8 / BURO HAPPOLD / KMBC	SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
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ATTERBERG TEST RESULT SHEET
BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line, CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.



BH	Sample Depth	Liquid limit	Plasticity index
BH08	4.00	33.0	18.0



APPROVED BY	DK
-------------	----

CLIENT: GENS8 / BURO HAPPOLD / KMBC	SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
-------------------------------------	---



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Tel: 0151 545 2750
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Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH08

Sample No.

1

Depth

3.00

Sample Type

UT

Date of test

11/10/2023

Site Name

HUYTON TOWN CENTRE

Soil Description

Specimen Reference

Specimen
Depth

m

Specimen Description

Brown sandy slightly gravelly silty CLAY

Test Method

BS1377 : Part 7 : 1990, clause 8, single specimen



4514

Test Number

Length

Diameter

Bulk Density

Moisture Content

Dry Density

Rate of Strain

Cell Pressure

At failure

Axial Strain

Deviator Stress, $(\sigma_1 - \sigma_3)_f$

Undrained Shear Strength, c_u

Mode of Failure

1

203.0

mm

102.3

mm

2.22

Mg/m³

16.0

%

1.92

Mg/m³

2.0

%/min

54

kPa

13.3

%

237

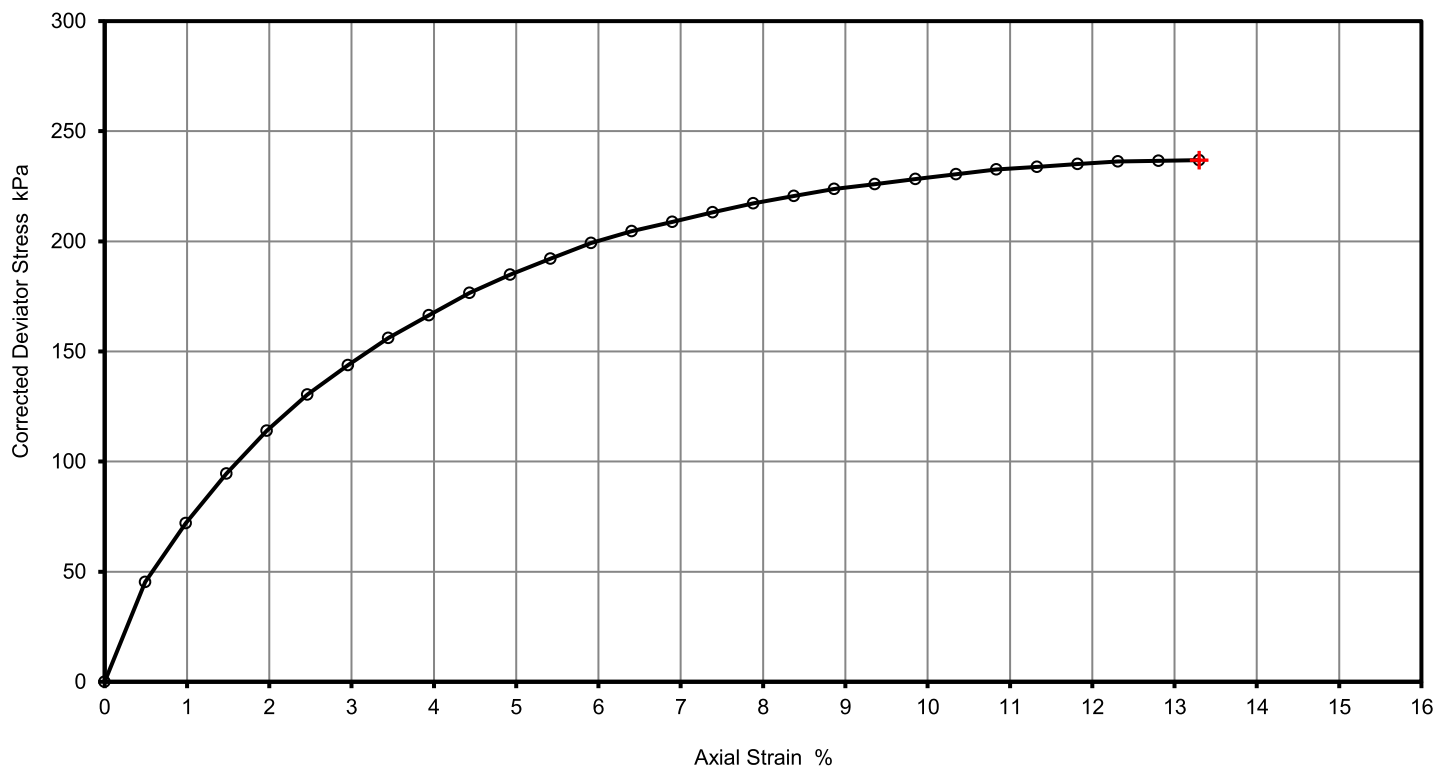
kPa

118

kPa $\frac{1}{2}(\sigma_1 - \sigma_3)_f$

Plastic

Deviator Stress v Axial Strain



Remarks

0.5mm membrane, correction factor = 1.35

Approved

DanielKerfoot

Printed

19/10/2023 08:23

Fig. No.

1

Sheet

1



Dry Density / Moisture Content Relationship Heavy Compaction

Job Ref

CCG-C-23-14178

Borehole / Pit No

BH08

Site Name

HUYTON TOWN CENTRE

Sample No

1

Soil Description

Brown very gravelly silty fine to medium SAND

Depth

0.40 m

Specimen Ref.

Specimen Depth

m

Sample Type

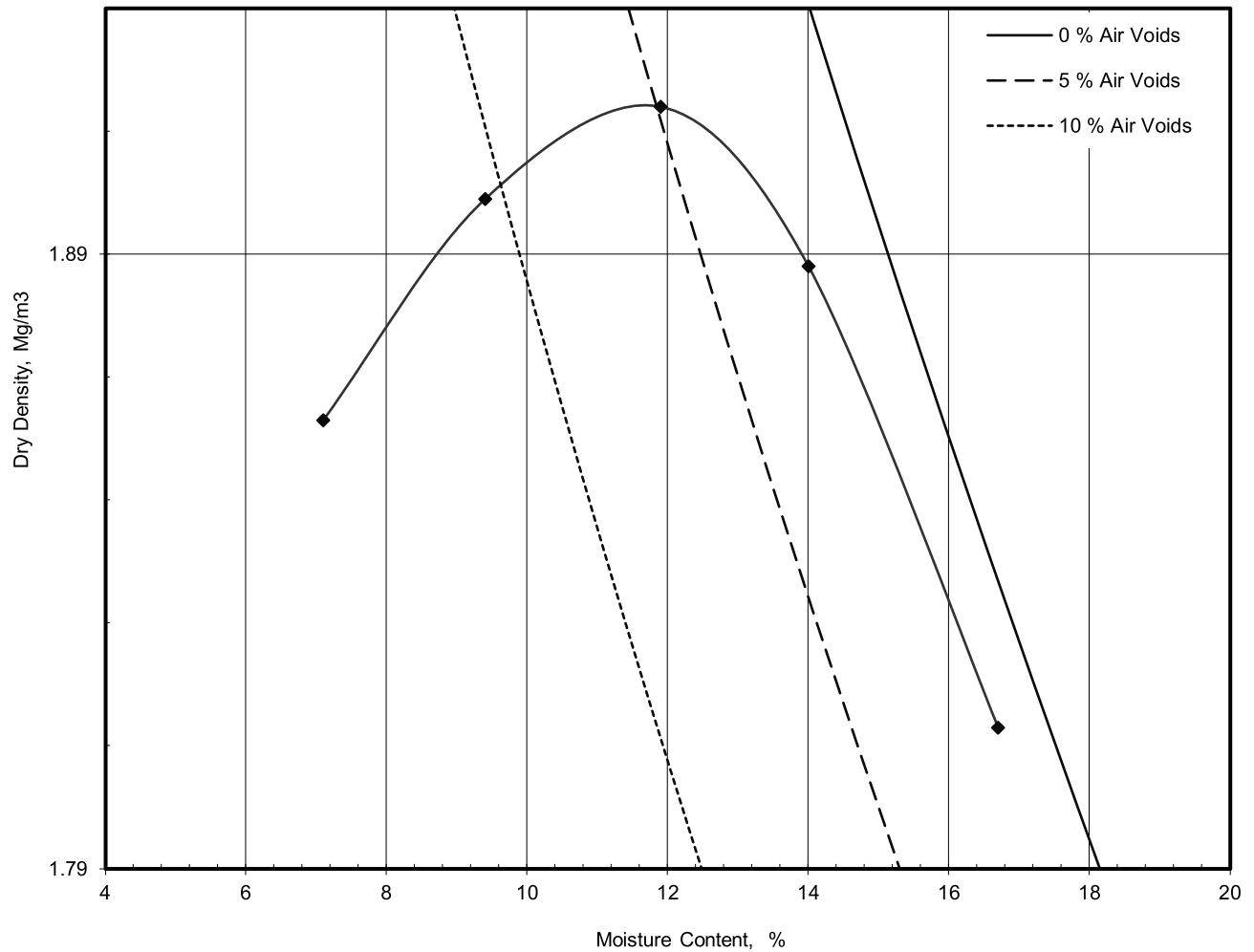
B

Test Method

BS1377:1990:Part 4 3.6.4.1

Keylab ID

Compaction Test Reference/No.



Preparation	
Mould Type	CBR
Samples Used	5
Material Retained on 37.5 mm Sieve	% 0
Material Retained on 20.0 mm Sieve	% 18
Particle Density -	Mg/m³ 2.65

Maximum Dry Density	Mg/m³	1.91
---------------------	-------	------

Optimum Moisture Content	%	12
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Operator

Checked

Approved

Remarks

Fig

MH

DK

DK

Sheet 1 of 1



Dry Density / Moisture Content Relationship Heavy Compaction

Job Ref

CCG-C-23-14178

Borehole / Pit No

BH08

Site Name

HUYTON TOWN CENTRE

Sample No

1

Soil Description

Brown sandy slightly gravelly silty CLAY

Depth

1.60 m

Specimen Ref.

Specimen Depth

m

Sample Type

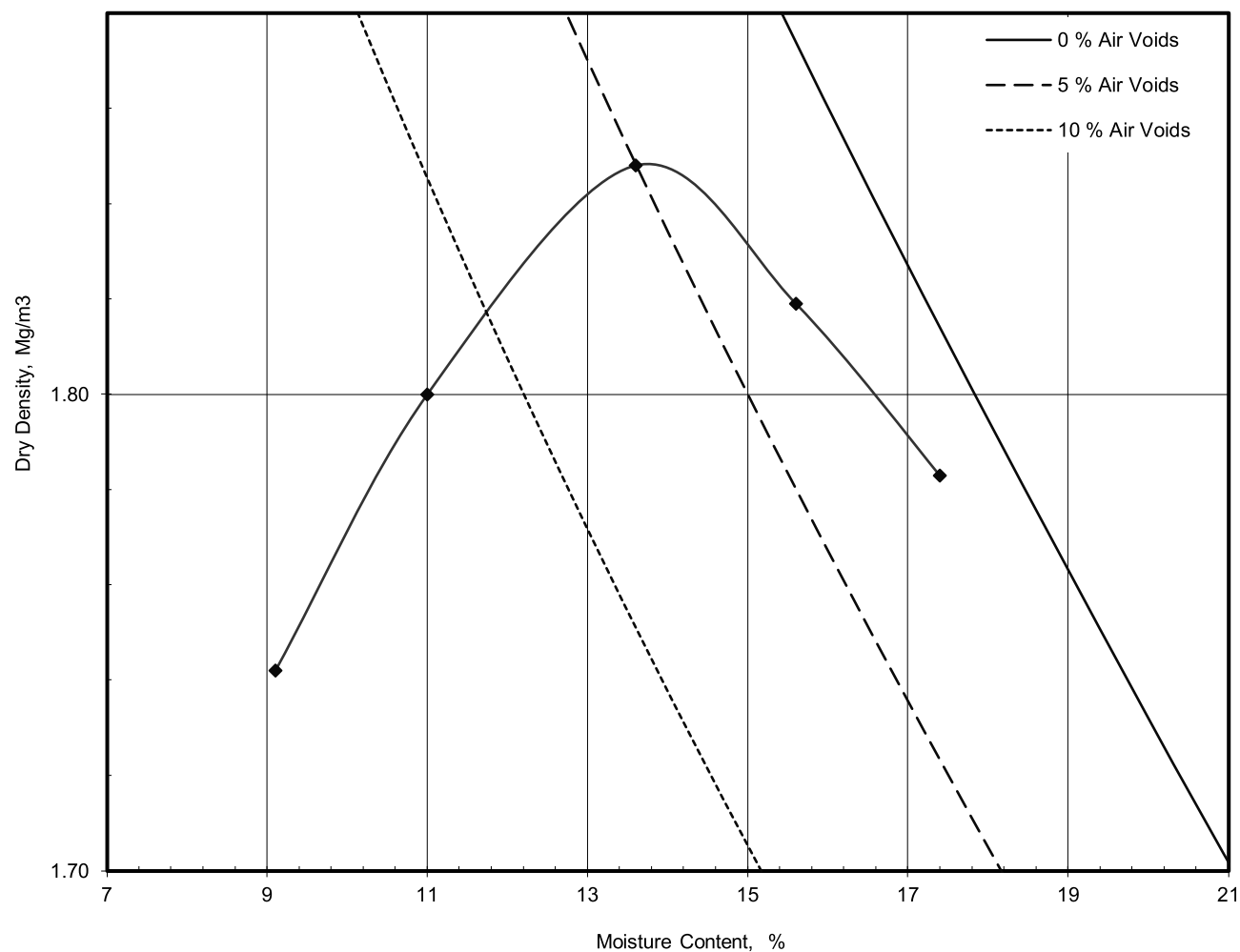
B

Test Method

BS1377:1990:Part 4 3.5.4.1

Keylab ID

Compaction Test Reference/No.



Preparation	
Mould Type	1 litre
Samples Used	5
Material Retained on 37.5 mm Sieve	% 0
Material Retained on 20.0 mm Sieve	% 0
Particle Density -	Mg/m ³ 2.65

Maximum Dry Density	Mg/m ³ 1.85
---------------------	------------------------

Optimum Moisture Content	% 14
--------------------------	------

Operator

Checked

Approved

Remarks

Fig

MH

DK

DK

Sheet 1 of 1



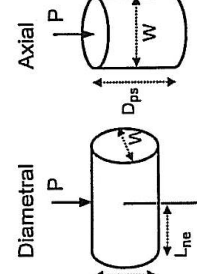
POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

16.10.23

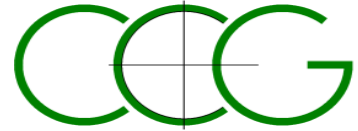
* NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)

L_{ne} = length from platens to nearest free end



TESTED BY: MH

TEST REPORT



UNIAXIAL COMPRESSIVE STRENGTH

In accordance with ISRM Vol 16 No 2, pp 135-140 (1979)

PROJECT: HUYTON TOWN CENTRE
CLIENT: GENR8 / BURO HAPPOLD / KMBC
CCG REF: CCG-C-23-14178

Sample ref: BH08 7.70mbgl
Date of coring: 17/09/2023
Sampled by: CB / AW
Sample description: SANDSTONE

TEST DATA

Specimen Height (mm): 200
Specimen Diameter (mm): 100
L/D ratio: 2:1
Mode of failure: Axial
Test duration: 0m 58sec

Maximum load at failure (kN): 63.3
Compressive strength (N/mm²): **8.1**

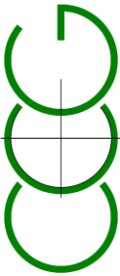
Test date: 18/10/2023
Tested by: MH
Report prepared by: DK
Report approved by: DK

SUMMARY OF LABORATORY SOIL TEST RESULTS

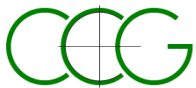
BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m³)	Dry Density (Mg/m³)	Shear Strength (kN/m²)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425mm (%)	Soil Classification	UKAS accredited test (Y/N)	Description / Test Method Samples described in accordance with BS EN ISO 14688-2 2004
BH09	B	1.00	1.00	-	-	-	-	-	-	-	-	-	Y	Dark brown sandy slightly gravelly silty CLAY recovered as very silty gravelly sand with frequent pockets of clay. Gravel is fine to medium subangular to subrounded sandstone. (BS1377P2:9.2,9.5)
BH09	D	1.90	1.90	18	-	-	-	35	17	18	88	CL / CI	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone. (BS1377P2:3.2,4,4.5)
BH09	UT	2.00	2.45	19	2.21	1.86	82	-	-	-	-	-	Y	Brown slightly sandy slightly gravelly silty CLAY of high undrained shear strength. Gravel is fine to medium subangular to subrounded sandstone. (BS1377P2:3.2,P17:8)
BH09	B	2.00	2.00	-	-	-	-	-	-	-	-	-	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone. (BS1377P2:9.2,9.5)

SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
CLIENT: GENR8 / BURO HAPPOLD / KMBC

DATE: 24.10.23



Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample
CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = Non-plastic
(* Denotes Hand Shear Vane test result)
Sample description not accredited by UKAS



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Tel: 0151 545 2750
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PARTICLE SIZE DISTRIBUTION

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH09

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Specimen
Description

Dark brown sandy slightly gravelly silty CLAY recovered as very silty gravelly sand with frequent pockets of clay

Depth, m

1.00

Specimen
Reference

Specimen
Depth

m

Sample Type

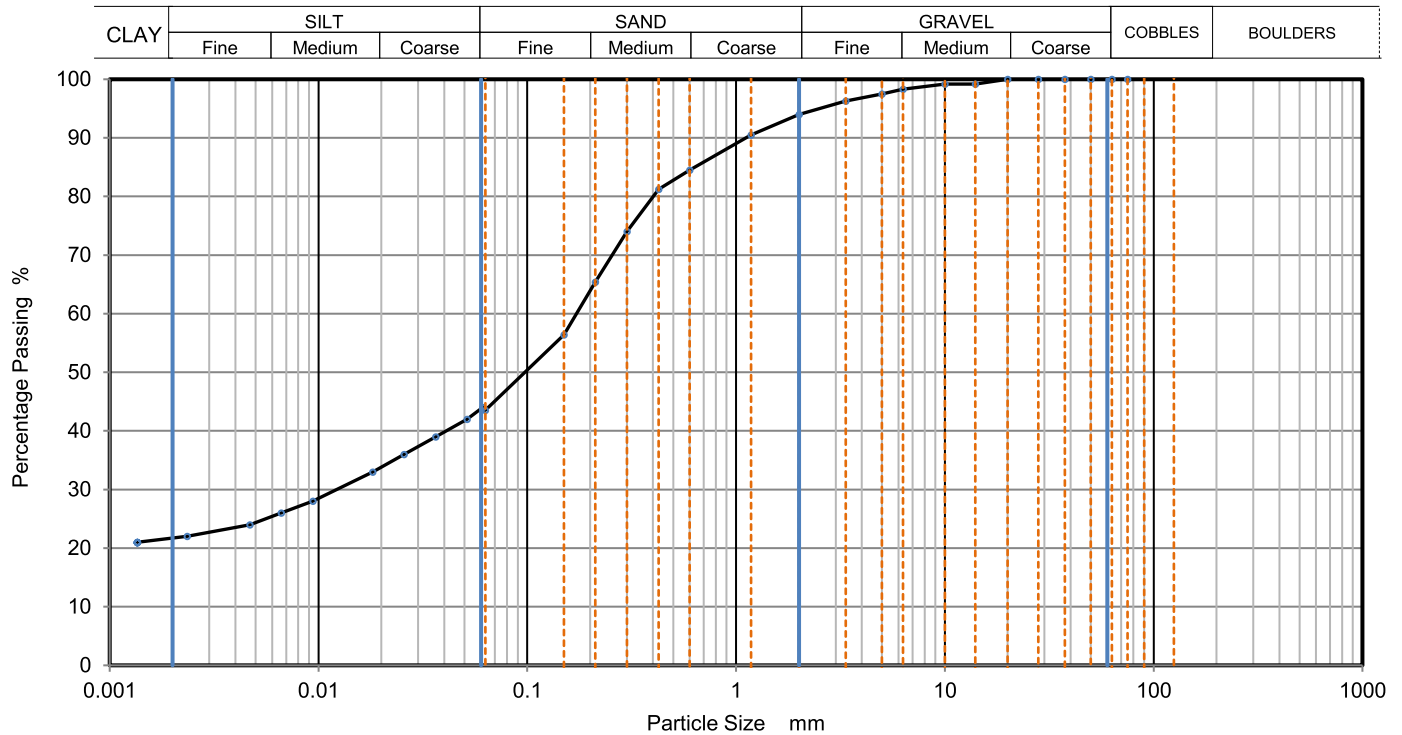
B

Test Method

BS1377:Part 2:1990, clauses 9.2 and 9.5

KeyLAB ID

CCGL202310193



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
		0.0612	44
		0.0514	42
75	100	0.0364	39
63	100	0.0257	36
50	100	0.0182	33
37.5	100	0.0094	28
28	100	0.0066	26
20	100	0.0047	24
14	99	0.0023	22
10	99	0.0014	21
6.3	98		
5	98		
3.35	96		
2	94		
1.18	91		
0.6	85	Particle density (assumed) 2.65 Mg/m3	
0.425	81		
0.3	74		
0.212	65		
0.15	56		
0.063	44		

Dry Mass of sample, g

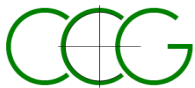
Sample Proportions	% dry mass
Very coarse	0
Gravel	6
Sand	50
Silt	22
Clay	22

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1 Sheet
JE	DK	DK	24/10/2023 09:29	



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Tel: 0151 545 2750
e: lab@ccgeotechnical.com

PARTICLE SIZE DISTRIBUTION

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH09

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Specimen
Description

Brown sandy slightly gravelly silty CLAY

Depth, m

2.00

Specimen
Reference

Specimen
Depth

m

Sample Type

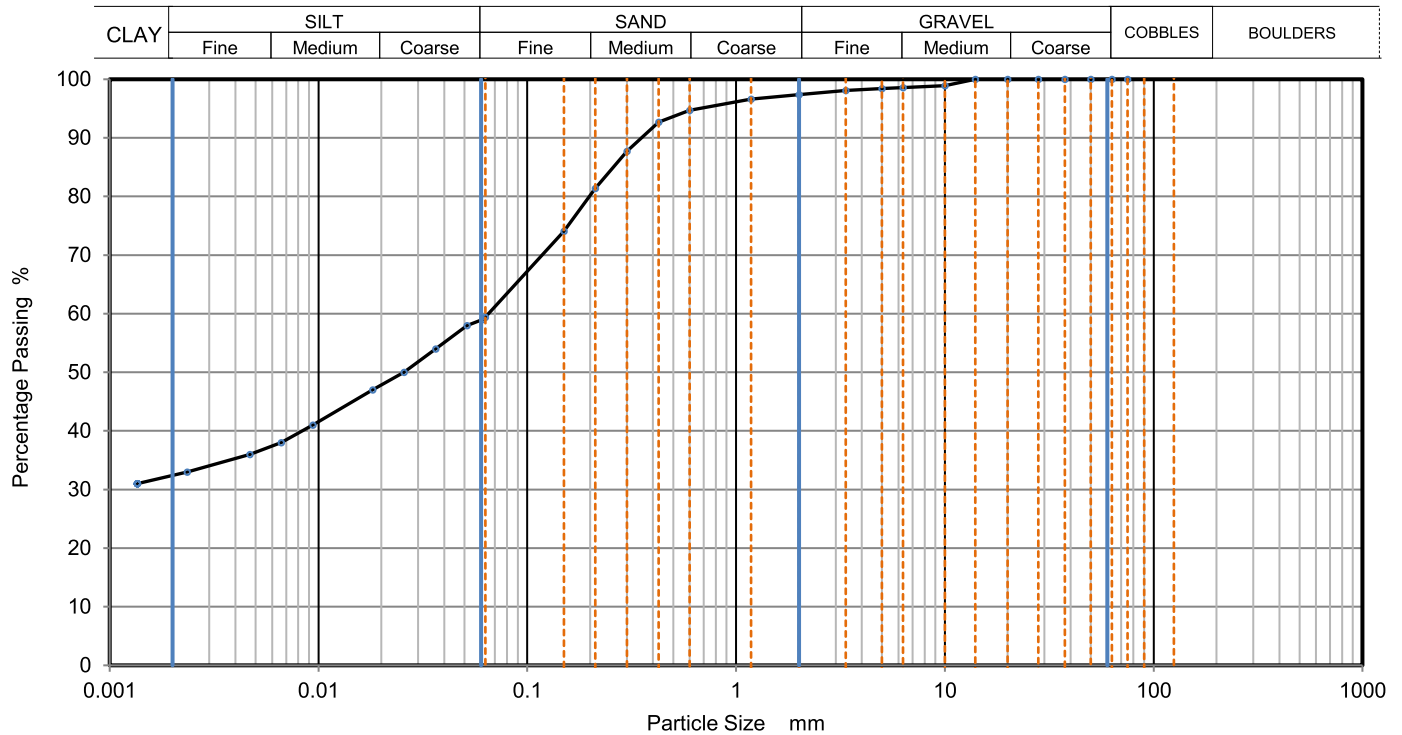
B

Test Method

BS1377:Part 2:1990, clauses 9.2 and 9.5

KeyLAB ID

CCGL202310195



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
		0.0612	59
		0.0514	58
75	100	0.0364	54
63	100	0.0257	50
50	100	0.0182	47
37.5	100	0.0094	41
28	100	0.0066	38
20	100	0.0047	36
14	100	0.0023	33
10	99	0.0014	31
6.3	99		
5	98		
3.35	98		
2	97		
1.18	97		
0.6	95	Particle density (assumed) 2.65 Mg/m3	
0.425	93		
0.3	88		
0.212	81		
0.15	74		
0.063	59		

Dry Mass of sample, g

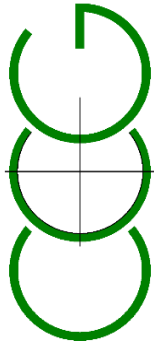
Sample Proportions	% dry mass
Very coarse	0
Gravel	3
Sand	38
Silt	27
Clay	32

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

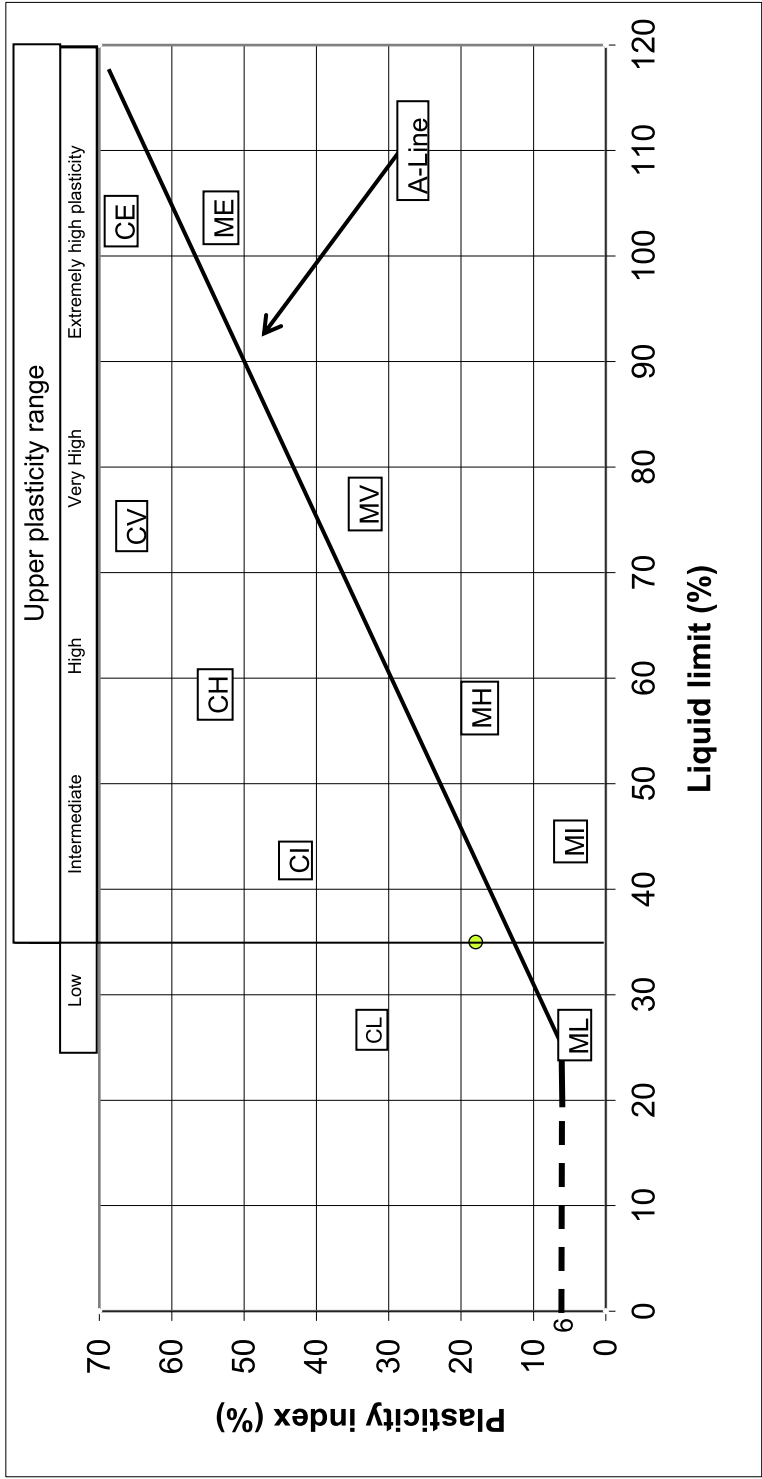
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1 Sheet
JE	DK	DK	24/10/2023 09:29	



ATTERBERG TEST RESULT SHEET
BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line, CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.



BH	Sample Depth	Liquid limit	Plasticity index
BH09	1.90	35.0	18.0



APPROVED BY	DK
-------------	----

CLIENT: GENS8 / BURO HAPPOLD / KMBC	SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
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CC Geotechnical Ltd
Tel: 0151 545 2750
e: lab@ccgeotechnical.com

Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH09

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Soil Description

Depth

2.00

Specimen Reference

Specimen
Depth

m

Sample Type

UT

Specimen Description

Brown sandy slightly gravelly silty CLAY

Date of test

11/10/2023

Test Method

BS1377 : Part 7 : 1990, clause 8, single specimen



4514

Test Number

1

Length

202.0

mm

Diameter

102.8

mm

Bulk Density

2.21

Mg/m³

Moisture Content

18.7

%

Dry Density

1.86

Mg/m³

Rate of Strain

2.0

%/min

Cell Pressure

36

kPa

At failure

13.4

%

Axial Strain

164

kPa

Deviator Stress, ($\sigma_1 - \sigma_3$)_f

82

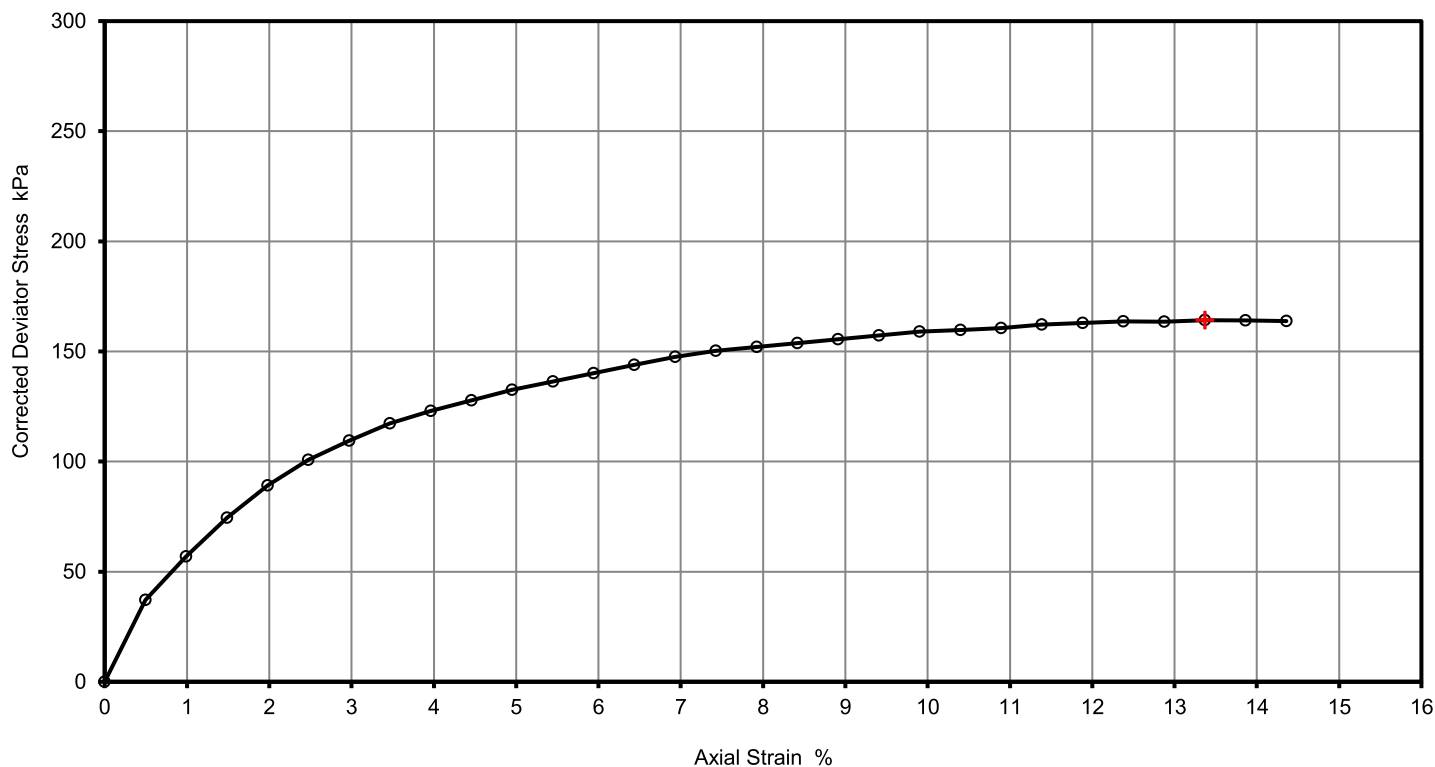
kPa $\frac{1}{2}(\sigma_1 - \sigma_3)$ _f

Undrained Shear Strength, cu

Plastic

Mode of Failure

Deviator Stress v Axial Strain



Remarks

0.5mm membrane, correction factor = 1.43

Approved

DanielKerfoot

Printed

19/10/2023 15:36

Fig. No.

1

Sheet

1



Dry Density / Moisture Content Relationship Heavy Compaction

Job Ref

CCG-C-23-14178

Borehole / Pit No

BH09

Site Name

HUYTON TOWN CENTRE

Sample No

1

Soil Description

Dark brown sandy slightly gravelly silty CLAY recovered as very silty gravelly sand with frequent pockets of clay

Depth

0.60 m

Specimen Ref.

Specimen Depth

m

Sample Type

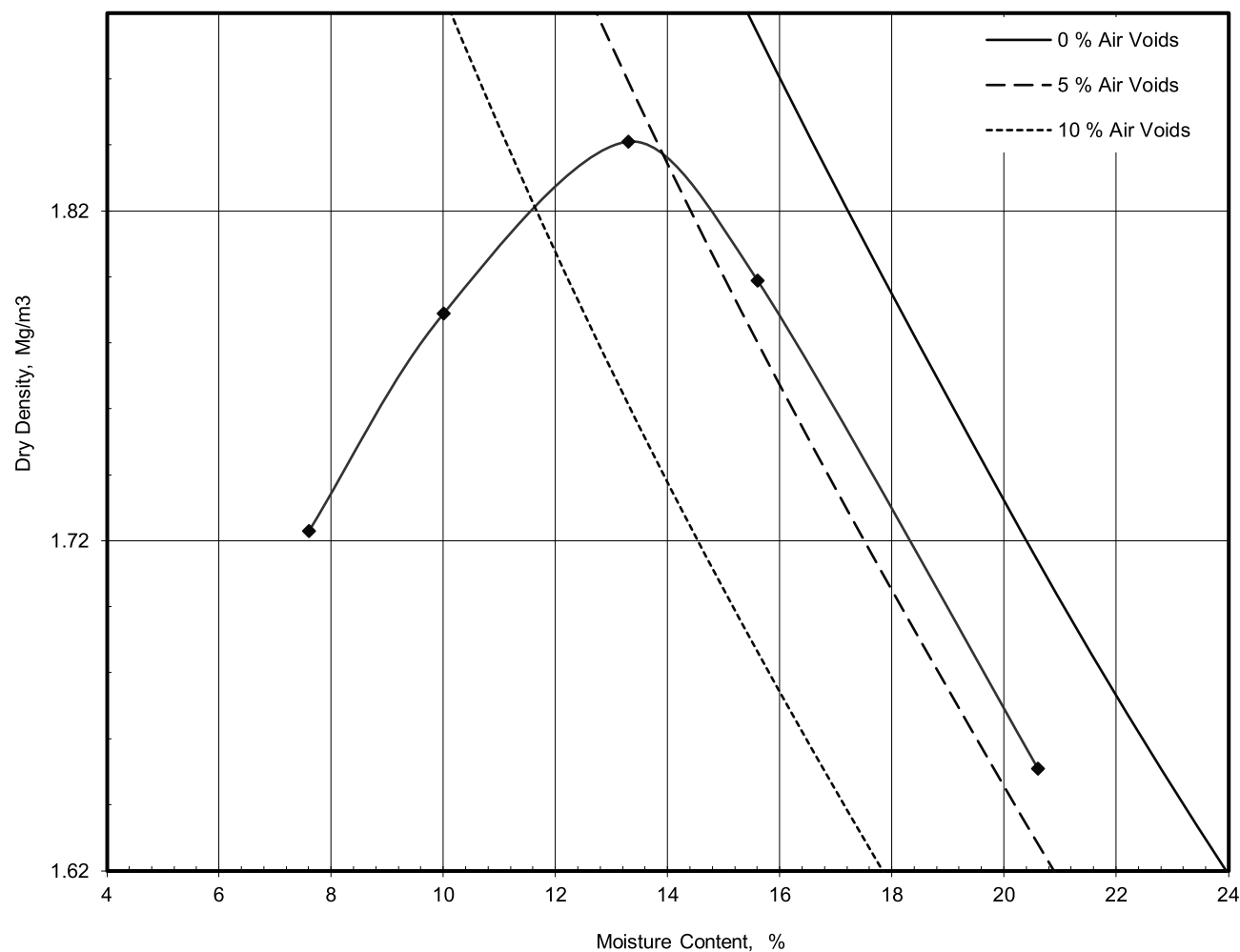
B

Test Method

BS1377:1990:Part 4 3.5.4.1

Keylab ID

Compaction Test Reference/No.



Preparation	
Mould Type	1 litre
Samples Used	5
Material Retained on 37.5 mm Sieve	% 0
Material Retained on 20.0 mm Sieve	% 0
Particle Density -	Mg/m³ 2.65
Maximum Dry Density	Mg/m³ 1.84
Optimum Moisture Content	% 13

Operator

Checked

Approved

Remarks

MH

DK

DK

Fig

Sheet 1 of 1



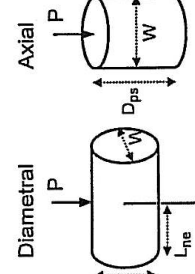
POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

17.10.23

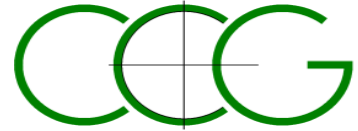
* NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)

L_{ne} = length from platens to nearest free end



TESTED BY: MH

TEST REPORT



UNIAXIAL COMPRESSIVE STRENGTH

In accordance with ISRM Vol 16 No 2, pp 135-140 (1979)

PROJECT: HUYTON TOWN CENTRE
CLIENT: GENR8 / BURO HAPPOLD / KMBC
CCG REF: CCG-C-23-14178

Sample ref: BH09 11.00mbgl
Date of coring: 16/09/2023
Sampled by: CB / PC
Sample description: SANDSTONE

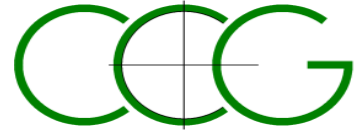
TEST DATA

Specimen Height (mm): 200
Specimen Diameter (mm): 100
L/D ratio: 2:1
Mode of failure: Axial
Test duration: 1m 20sec

Maximum load at failure (kN): 89.0
Compressive strength (N/mm²): **11.3**

Test date: 17/10/2023
Tested by: **MH**
Report prepared by: **DK**
Report approved by: **DK**

TEST REPORT



UNIAXIAL COMPRESSIVE STRENGTH

In accordance with ISRM Vol 16 No 2, pp 135-140 (1979)

PROJECT: HUYTON TOWN CENTRE
CLIENT: GENR8 / BURO HAPPOLD / KMBC
CCG REF: CCG-C-23-14178

Sample ref: BH09 15.80mbgl
Date of coring: 16/09/2023
Sampled by: CB / PC
Sample description: SANDSTONE

TEST DATA

Specimen Height (mm): 201
Specimen Diameter (mm): 100
L/D ratio: 2:1
Mode of failure: Axial
Test duration: 1m 40sec

Maximum load at failure (kN): 96.0
Compressive strength (N/mm²): **12.2**

Test date: 17/10/2023
Tested by: **MH**
Report prepared by: **DK**
Report approved by: **DK**

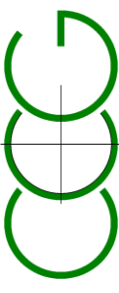
SUMMARY OF LABORATORY SOIL TEST RESULTS

BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Shear Strength (kN/m ²)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425mm (%)	Soil Classification	UKAS accredited test (Y/N)	Description / Test Method Samples described in accordance with BS EN ISO 14688-2 2004
BH10	B	0.30	0.30	-	-	-	-	-	-	-	-	-	Y	Greyish brown sandy slightly silty GRAVEL. Gravel is fine to coarse subangular limestone. (MADE GROUND) (BS1377Pt2:9.2)
BH10	D	1.50	1.50	21	-	-	-	30	14	16	85	CL	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone. (BS1377Pt2:3.2,4.4,5)
BH10	UT	3.00	3.45	15	2.26	1.96	156	-	-	-	-	-	Y	Brown sandy slightly gravelly silty CLAY of very high undrained shear strength. Gravel is fine to coarse subangular to subrounded sandstone. (BS1377Pt2:3.2,Pt7:8)
BH10	D	3.10	3.10	17	-	-	-	33	16	17	91	CL	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone. (BS1377Pt2:3.2,4.4,5)

SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)

CLIENT: GENR8 / BURO HAPPOLD / KMBC

DATE: 24.10.23



Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample

CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = Non-plastic

(* Denotes Hand Shear Vane test result)

Sample description not accredited by UKAS



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PARTICLE SIZE DISTRIBUTION

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH10

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Specimen
Description

Greyish brown sandy slightly silty GRAVEL

Depth, m

0.30

Specimen
Reference

Specimen
Depth

m

Sample Type

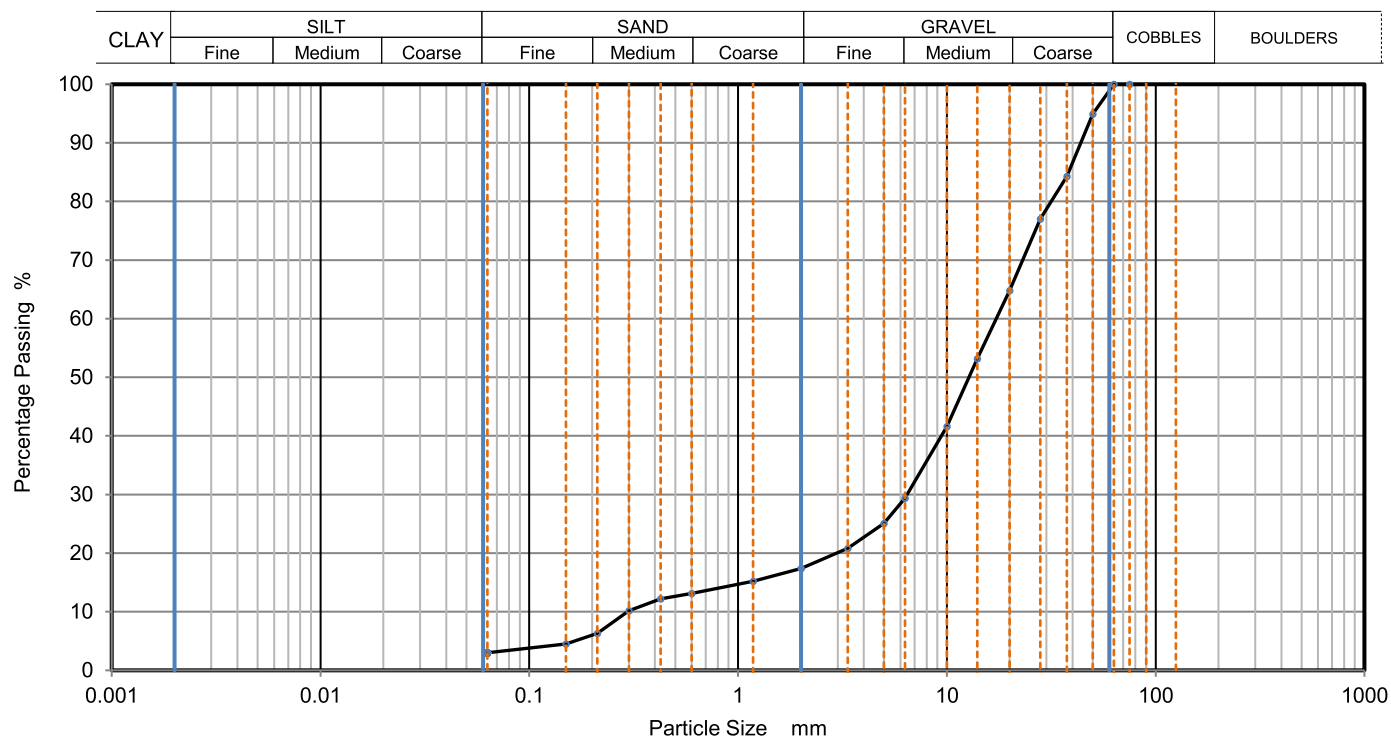
B

Test Method

BS1377:Part 2:1990, clause 9.2

KeyLAB ID

CCGL202310196



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100		
63	100		
50	95		
37.5	84		
28	77		
20	65		
14	53		
10	42		
6.3	29		
5	25		
3.35	21		
2	17		
1.18	15		
0.6	13		
0.425	12		
0.3	10		
0.212	6		
0.15	5		
0.063	3		

Dry Mass of sample, g

Sample Proportions	% dry mass
Very coarse	0
Gravel	83
Sand	14
Fines <0.063mm	3

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator

Checked

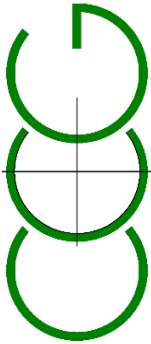
Approved

Sheet printed

Fig 1

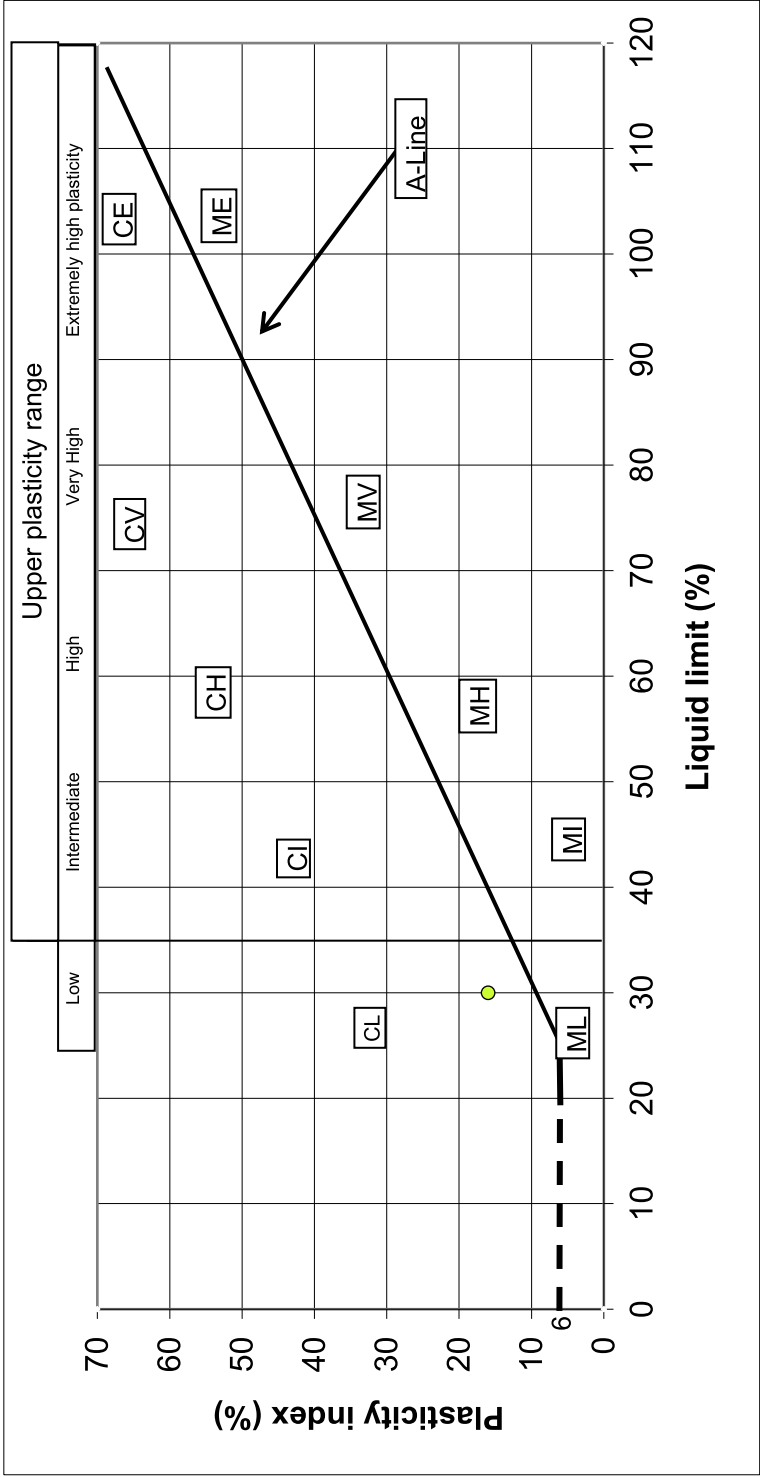
24/10/2023 11:10

Sheet



ATTERBERG TEST RESULT SHEET
BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line, CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.

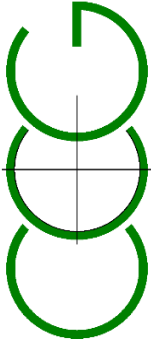


BH	Sample Depth	Liquid limit	Plasticity index
BH10	1.50	30.0	16.0



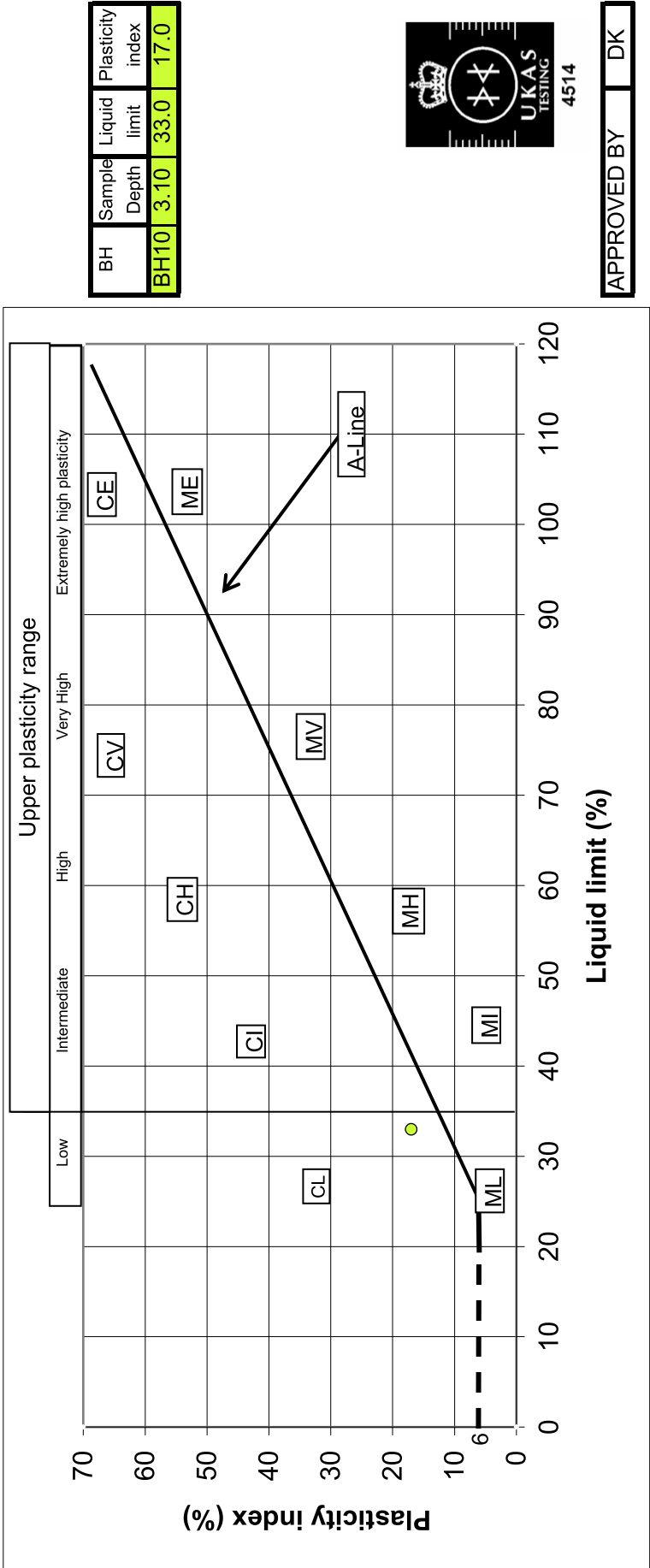
APPROVED BY	DK
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CLIENT: GENS8 / BURO HAPPOLD / KMBC	SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
-------------------------------------	---



ATTERBERG TEST RESULT SHEET
BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line, CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.





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Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH10

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Soil Description

Depth

3.00

Specimen Reference

Specimen
Depth

m

Sample Type

UT

Specimen Description

Brown sandy slightly gravelly silty CLAY

Date of test

11/10/2023

Test Method

BS1377 : Part 7 : 1990, clause 8, single specimen



4514

Test Number

1

Length

203.2

mm

Diameter

103.2

mm

Bulk Density

2.26

Mg/m³

Moisture Content

15.0

%

Dry Density

1.96

Mg/m³

Rate of Strain

2.0

%/min

Cell Pressure

54

kPa

At failure

11.8

%

Axial Strain

312

kPa

Deviator Stress, ($\sigma_1 - \sigma_3$)_f

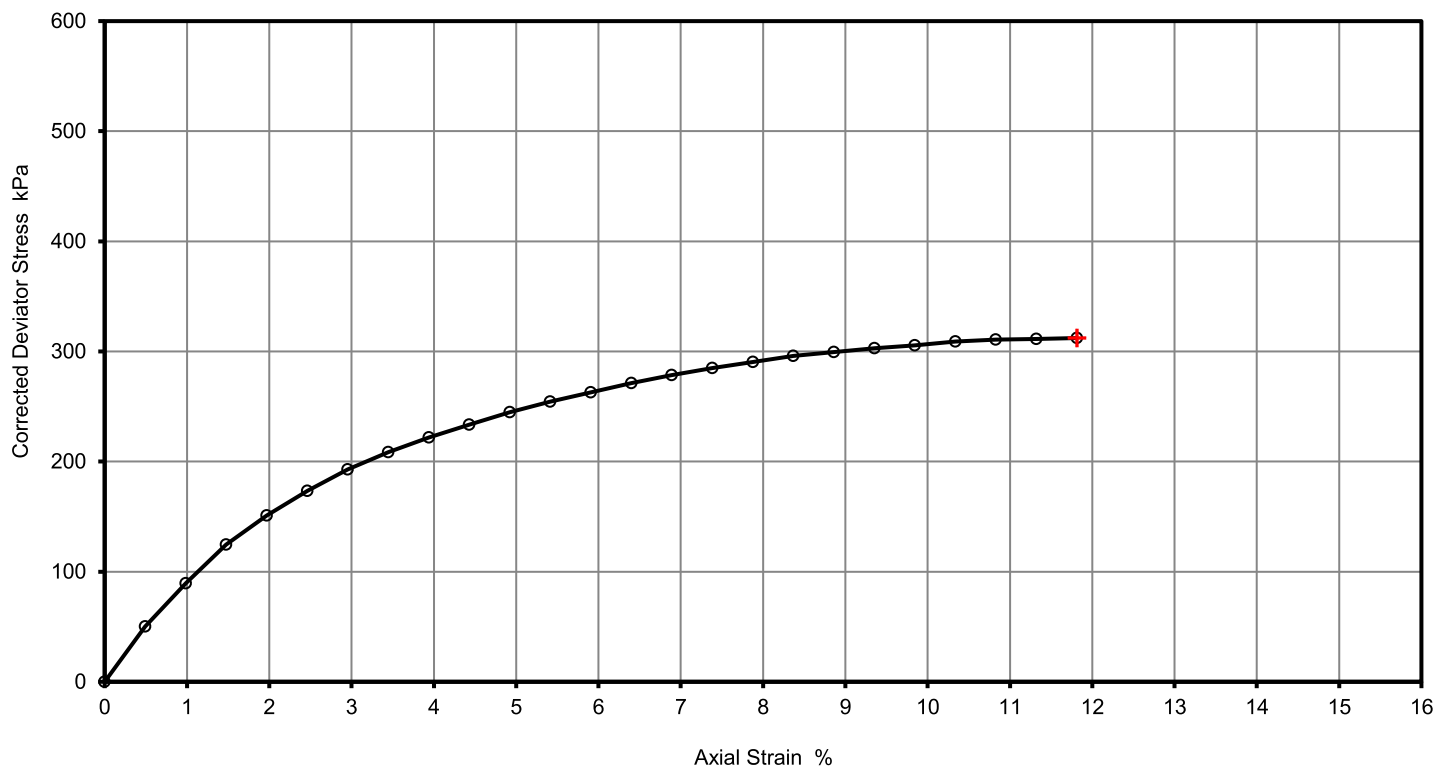
156

kPa $\frac{1}{2}(\sigma_1 - \sigma_3)$ _f

Mode of Failure

Plastic

Deviator Stress v Axial Strain



Remarks

0.5mm membrane, correction factor = 1.22

Approved

DanielKerfoot

Printed

19/10/2023 15:44

Fig. No.

1

Sheet

1



Dry Density / Moisture Content Relationship Heavy Compaction

Job Ref

CCG-C-23-14178

Borehole / Pit No

BH10

Site Name

HUYTON TOWN CENTRE

Sample No

1

Soil Description

Dark greyish brown very clayey gravelly organic fine to medium SAND

Depth

0.60 m

Specimen Ref.

Specimen Depth

m

Sample Type

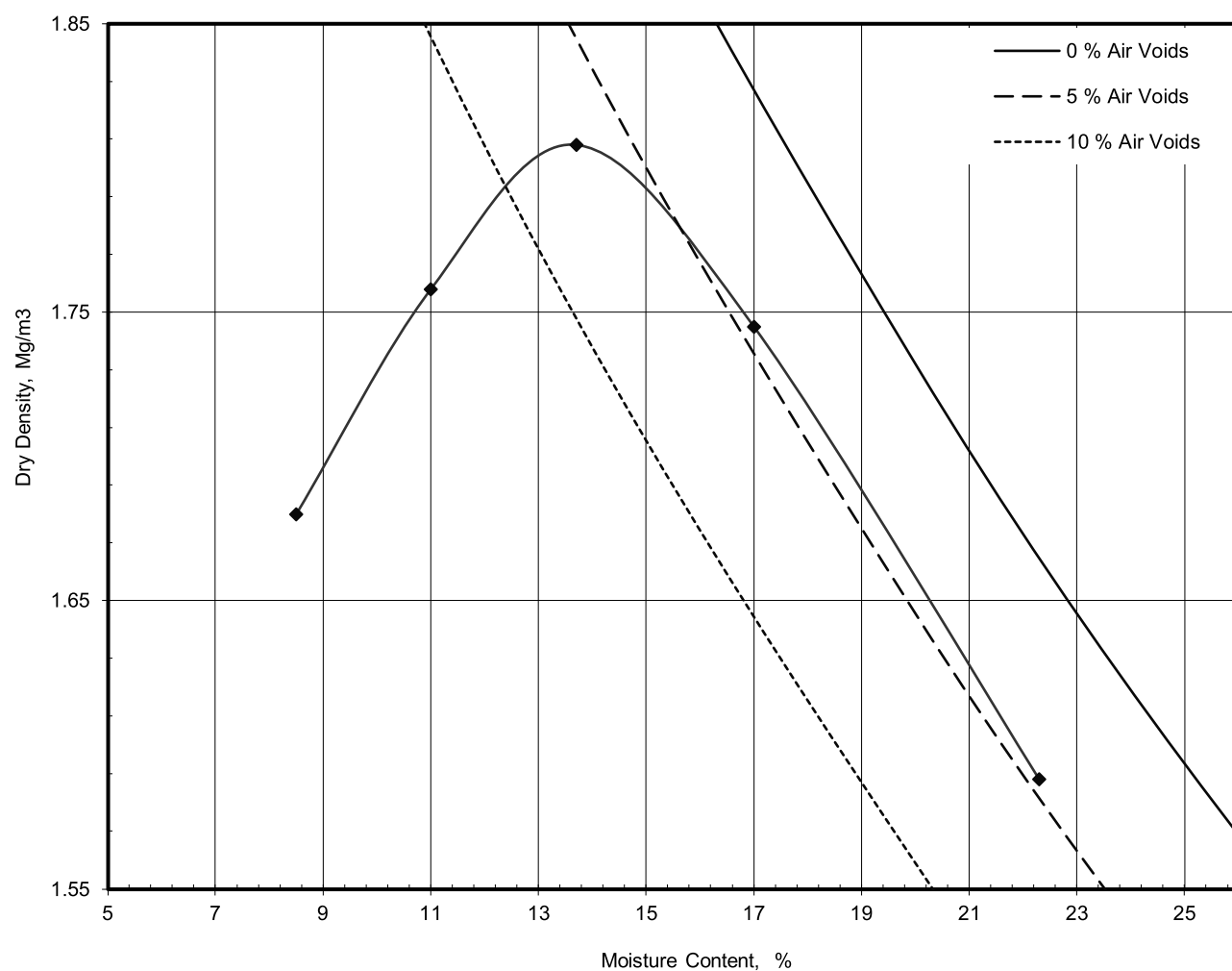
B

Test Method

BS1377:1990:Part 4 3.5.4.1

Keylab ID

Compaction Test Reference/No.



Preparation	
Mould Type	1 litre
Samples Used	5
Material Retained on 37.5 mm Sieve	% 0
Material Retained on 20.0 mm Sieve	% 3
Particle Density -	Mg/m³ 2.65
Maximum Dry Density	Mg/m³ 1.81
Optimum Moisture Content	% 14

Operator

Checked

Approved

Remarks

Fig

MH

DK

DK

Sheet 1 of 1



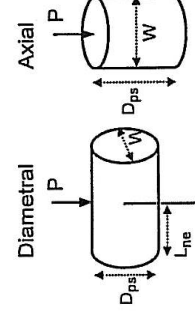
POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

16.10.23

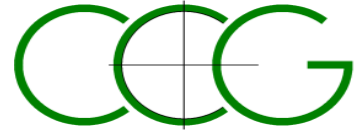
* NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)

L_{ne} = length from platens to nearest free end



TESTED BY: MH

TEST REPORT



UNIAXIAL COMPRESSIVE STRENGTH

In accordance with ISRM Vol 16 No 2, pp 135-140 (1979)

PROJECT: HUYTON TOWN CENTRE
CLIENT: GENR8 / BURO HAPPOLD / KMBC
CCG REF: CCG-C-23-14178

Sample ref: BH10 11.10mbgl
Date of coring: 14/09/2023
Sampled by: AR / CMC
Sample description: SANDSTONE

TEST DATA

Specimen Height (mm): 200
Specimen Diameter (mm): 100
L/D ratio: 2:1
Mode of failure: Axial
Test duration: 1m 44sec

Maximum load at failure (kN): 89.2
Compressive strength (N/mm²): **11.4**

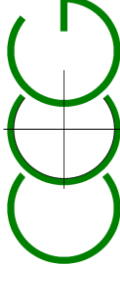
Test date: 16/10/2023
Tested by: **MH**
Report prepared by: **DK**
Report approved by: **DK**

SUMMARY OF LABORATORY SOIL TEST RESULTS

BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Shear Strength (kN/m ²)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425mm (%)	Soil Classification	UKAS accredited test (Y/N)	Description / Test Method Samples described in accordance with BS EN ISO 14688-2 2004
BH11	B	0.70	0.70	-	-	-	-	-	-	-	-	-	Y	Greyish brown very sandy silty clayey GRAVEL. Gravel is fine to coarse subangular sandstone, brick, concrete. (MADE GROUND) (BS1377Pt2:9.2,9.5)
BH11	D	0.85	0.85	18	-	-	-	29	14	15	81	CL	Y	Grey sandy slightly gravelly silty CLAY. Gravel is fine to coarse angular to subangular brick and coal. (MADE GROUND) (BS1377Pt2:3.2,4.4,5)
BH11	UT	4.00	4.45	15	-	-	>110*	-	-	-	-	-	Y	Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone. (BS1377Pt2:3.2)
BH11	B	5.00	5.00	-	-	-	-	-	-	-	-	-	Y	Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone. (BS1377Pt2:9.2,9.5)
BH11	D	5.50	5.50	17	-	-	-	32	15	17	92	CL	Y	Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone. (BS1377Pt2:3.2,4.4,5)

SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
CLIENT: GENR8 / BURO HAPPOLD / KMBC

DATE: 25.10.23

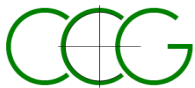


Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample

CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = Non-plastic

(* Denotes Hand Shear Vane test result)

Sample description not accredited by UKAS



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e: lab@ccgeotechnical.com

PARTICLE SIZE DISTRIBUTION

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH11

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Specimen
Description

Greyish brown very sandy silty clayey GRAVEL

Depth, m

0.70

Specimen
Reference

Specimen
Depth

m

Sample Type

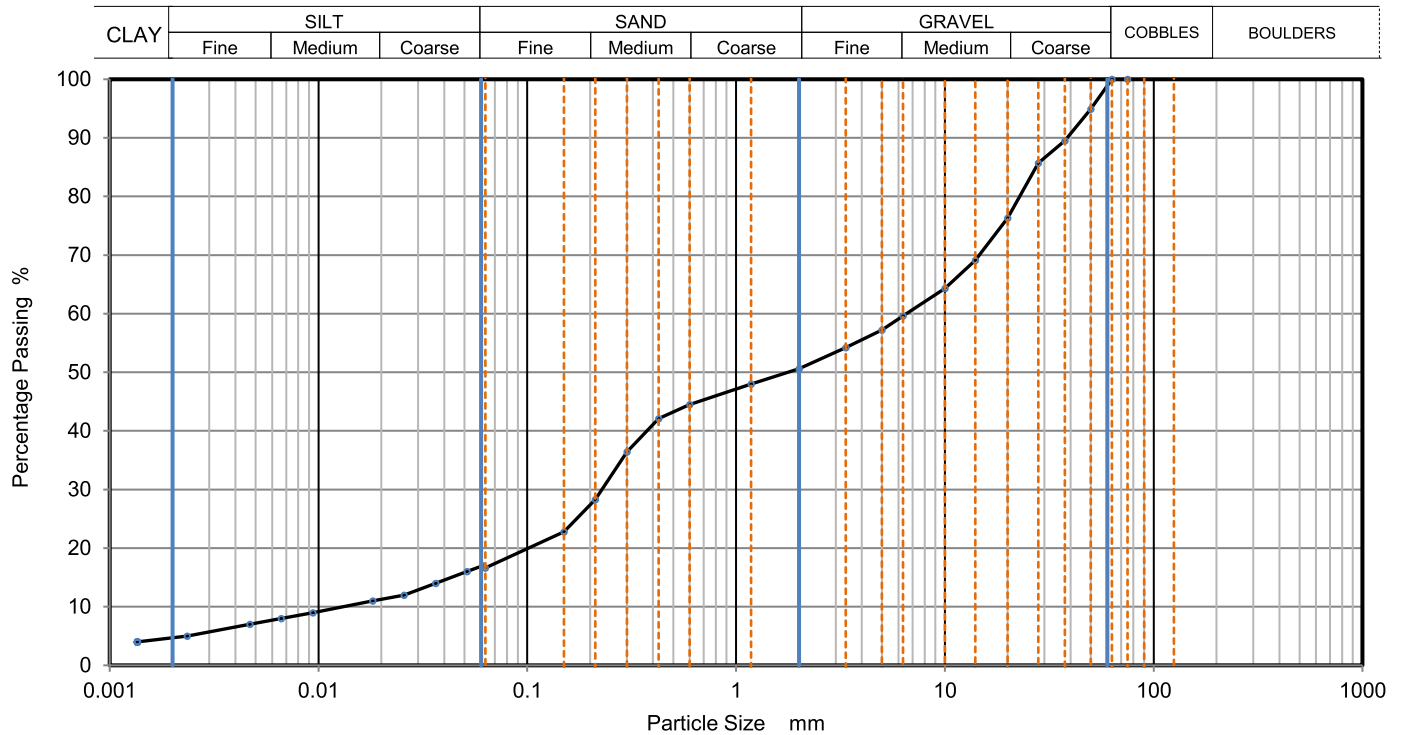
B

Test Method

BS1377:Part 2:1990, clauses 9.2 and 9.5

KeyLAB ID

CCGL202310240



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
		0.0612	17
		0.0514	16
75	100	0.0364	14
63	100	0.0257	12
50	95	0.0182	11
37.5	90	0.0094	9
28	86	0.0066	8
20	76	0.0047	7
14	69	0.0023	5
10	64	0.0014	4
6.3	60		
5	57		
3.35	54		
2	51		
1.18	48		
0.6	45	Particle density (assumed) 2.65 Mg/m ³	
0.425	42		
0.3	36		
0.212	28		
0.15	23		
0.063	17		

Dry Mass of sample, g

Sample Proportions	% dry mass
Very coarse	0
Gravel	49
Sand	34
Silt	12
Clay	5

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1 Sheet
JE	DK	DK	24/10/2023 10:57	



CC Geotechnical Ltd
Tel: 0151 545 2750
e: lab@ccgeotechnical.com

PARTICLE SIZE DISTRIBUTION

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH11

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Specimen
Description

Brown slightly sandy slightly gravelly silty CLAY

Depth, m

5.00

Specimen
Reference

Specimen
Depth

m

Sample Type

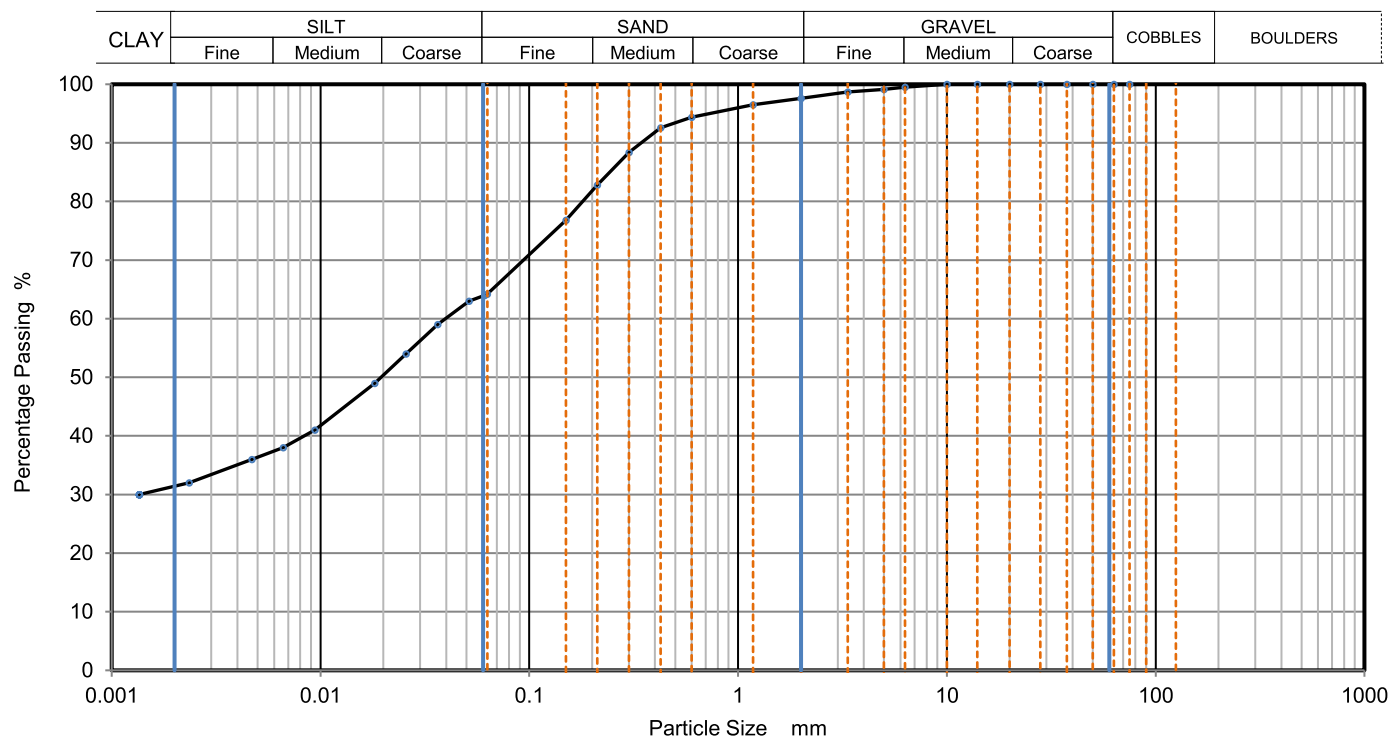
B

Test Method

BS1377:Part 2:1990, clauses 9.2 and 9.5

KeyLAB ID

CCGL202310241



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
		0.0612	64
		0.0514	63
75	100	0.0364	59
63	100	0.0257	54
50	100	0.0182	49
37.5	100	0.0094	41
28	100	0.0066	38
20	100	0.0047	36
14	100	0.0023	32
10	100	0.0014	30
6.3	100		
5	99		
3.35	99		
2	98		
1.18	97		
0.6	94	Particle density (assumed) 2.65 Mg/m3	
0.425	93		
0.3	88		
0.212	83		
0.15	77		
0.063	64		

Dry Mass of sample, g

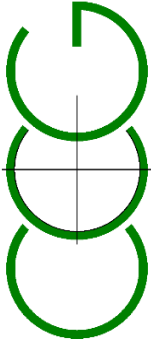
Sample Proportions	% dry mass
Very coarse	0
Gravel	2
Sand	34
Silt	32
Clay	32

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

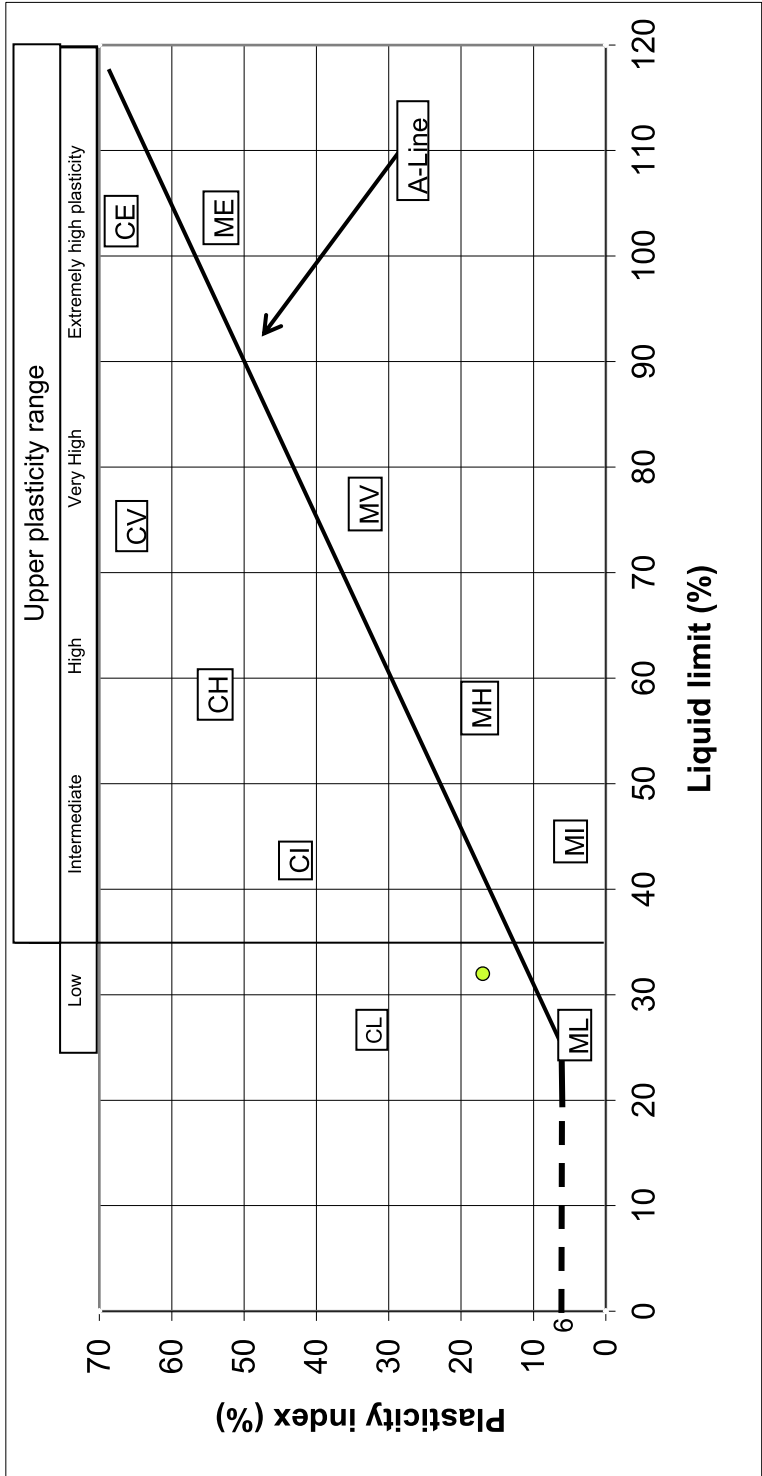
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1 Sheet
JE	DK	DK	24/10/2023 10:58	



ATTERBERG TEST RESULT SHEET
BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line, CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.



BH	Sample Depth	Liquid limit	Plasticity index
BH11	5.50	32.0	17.0



APPROVED BY	DK
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CLIENT: GENS8 / BURO HAPPOLD / KMBC	SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
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Dry Density / Moisture Content Relationship Heavy Compaction

Job Ref

CCG-C-23-14178

Borehole / Pit No

BH11

Site Name

HUYTON TOWN CENTRE

Sample No

1

Soil Description

Greyish brown very sandy silty GRAVEL

Depth

0.30 m

Specimen Ref.

Specimen Depth

m

Sample Type

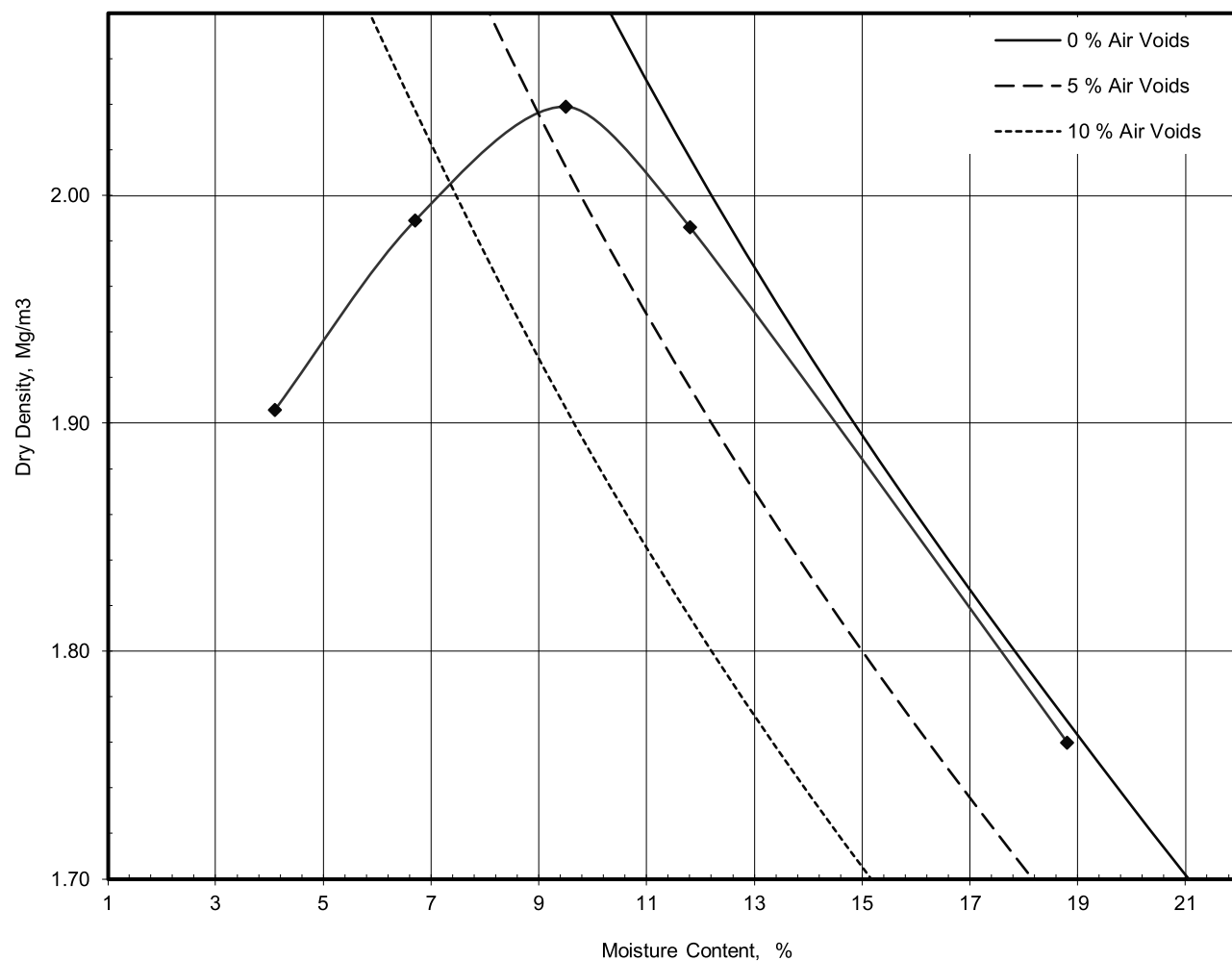
B

Test Method

BS1377:1990:Part 4 3.6.4.1

Keylab ID

Compaction Test Reference/No.



Preparation	
Mould Type	CBR
Samples Used	1
Material Retained on 37.5 mm Sieve	% 10
Material Retained on 20.0 mm Sieve	% 14
Particle Density -	Mg/m³ 2.65
Maximum Dry Density	Mg/m³ 2.04
Optimum Moisture Content	% 9.5

Operator

Checked

Approved

Remarks

Fig

MH

DK

DK

Sheet 1 of 1



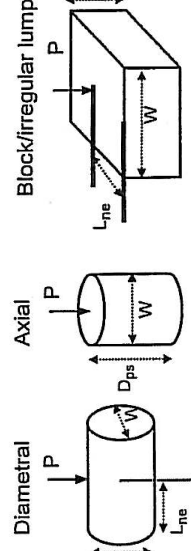
POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

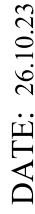
16.10.23

* NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)

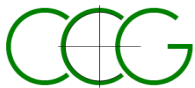
L_{ne} = length from platens to nearest free end



TESTED BY: MH



Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample
CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = N
(* Denotes Hand Shear Vane test result)
Sample description not accredited by UKAS



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PARTICLE SIZE DISTRIBUTION

Job Ref

CCG-C-23-14178

Borehole/Pit No.

BH12

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Specimen
Description

Brown sandy slightly gravelly silty CLAY

Depth, m

1.10

Specimen
Reference

Specimen
Depth

m

Sample Type

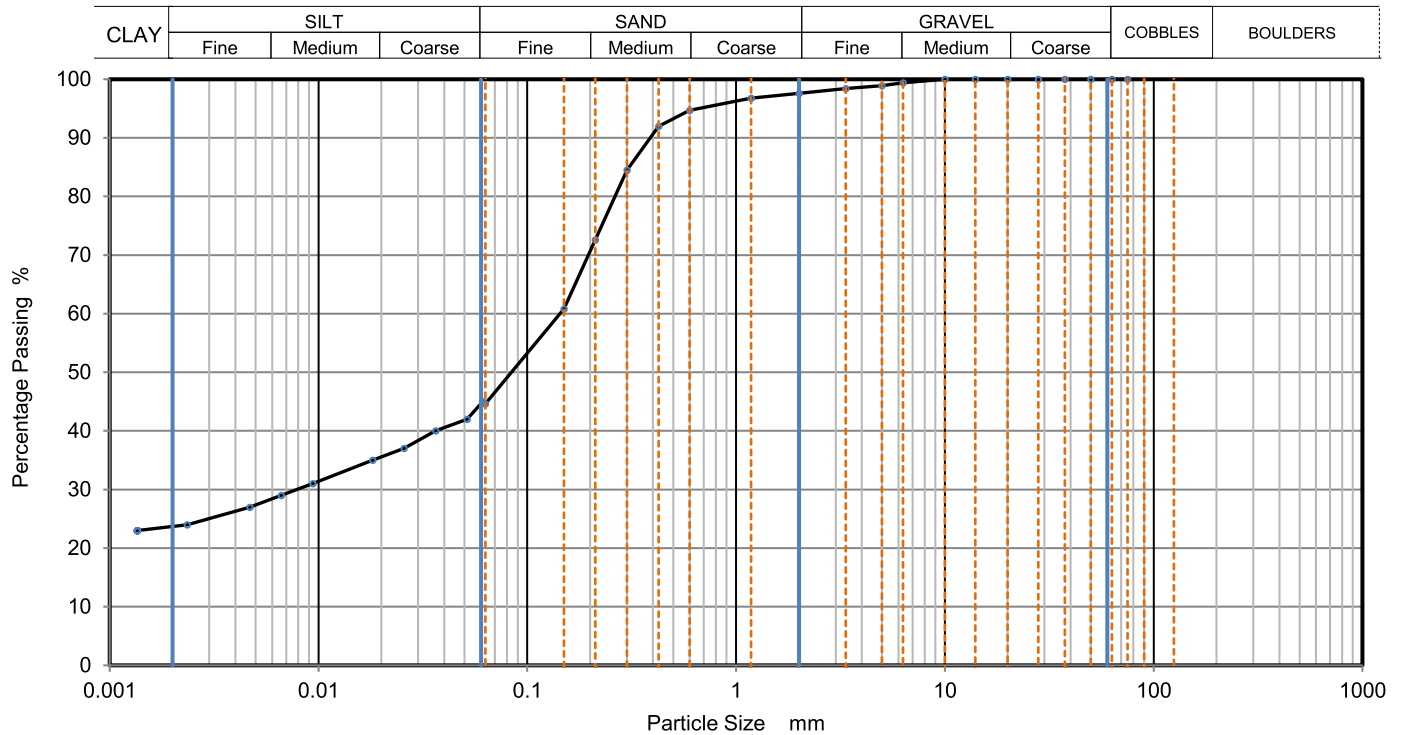
B

Test Method

BS1377:Part 2:1990, clauses 9.2 and 9.5

KeyLAB ID

CCGL202310260



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
		0.0612	45
		0.0514	42
75	100	0.0364	40
63	100	0.0257	37
50	100	0.0182	35
37.5	100	0.0094	31
28	100	0.0066	29
20	100	0.0047	27
14	100	0.0023	24
10	100	0.0014	23
6.3	99		
5	99		
3.35	98		
2	98		
1.18	97		
0.6	95	Particle density (assumed) 2.65 Mg/m ³	
0.425	92		
0.3	85		
0.212	73		
0.15	61		
0.063	45		

Dry Mass of sample, g

Sample Proportions	% dry mass
Very coarse	0
Gravel	2
Sand	53
Silt	21
Clay	24

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1 Sheet
JE	DK	DK	26/10/2023 16:25	



Plasticity index (%)

Liquid limit (%)

Upper plasticity range

Low	Intermediate	High	Very High	Extremely high plasticity
CL	CI	CH	CV	CE
ML	MI	MH	MV	ME
				A-Line

Plasticity index (%)

Liquid limit (%)

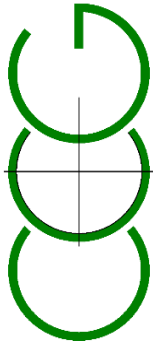
Upper plasticity range

Low	Intermediate	High	Very High	Extremely high plasticity
CL	CI	CH	CV	CE
ML	MI	MH	MV	ME
				A-Line



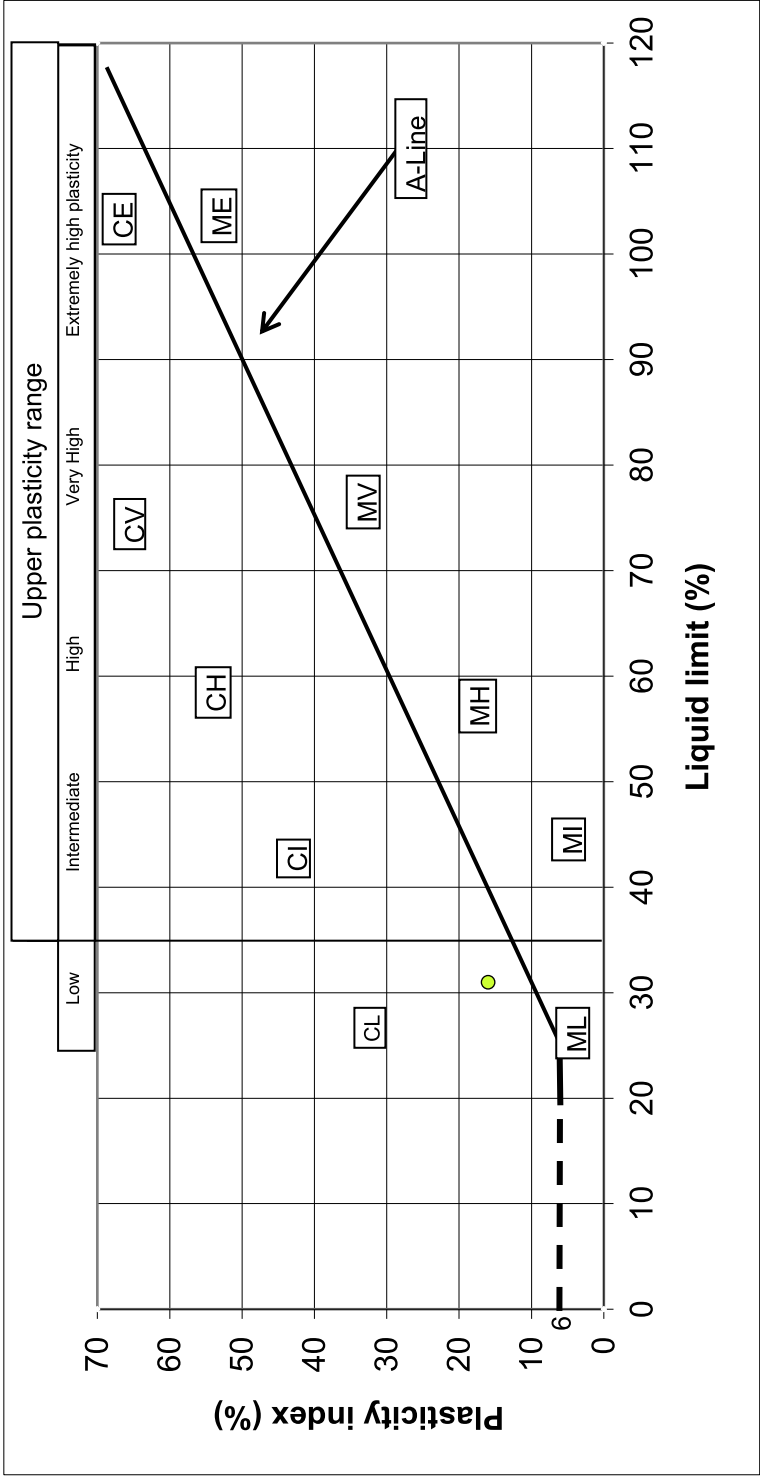
CLIENT: GENR8 / BURO HAPPOLD / KMBC

SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)



ATTERBERG TEST RESULT SHEET
BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line, CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.



BH	Sample Depth	Liquid limit	Plasticity index
BH12	5.50	31.0	16.0



APPROVED BY	DK
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CLIENT: GENR8 / BURO HAPPOLD / KMBC	SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)
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Dry Density / Moisture Content Relationship Heavy Compaction

Job Ref

CCG-C-23-14178

Borehole / Pit No

BH12

Site Name

HUYTON TOWN CENTRE

Sample No

1

Soil Description

Dark brown very silty very sandy GRAVEL

Depth

0.30 m

Specimen Ref.

Specimen Depth

m

Sample Type

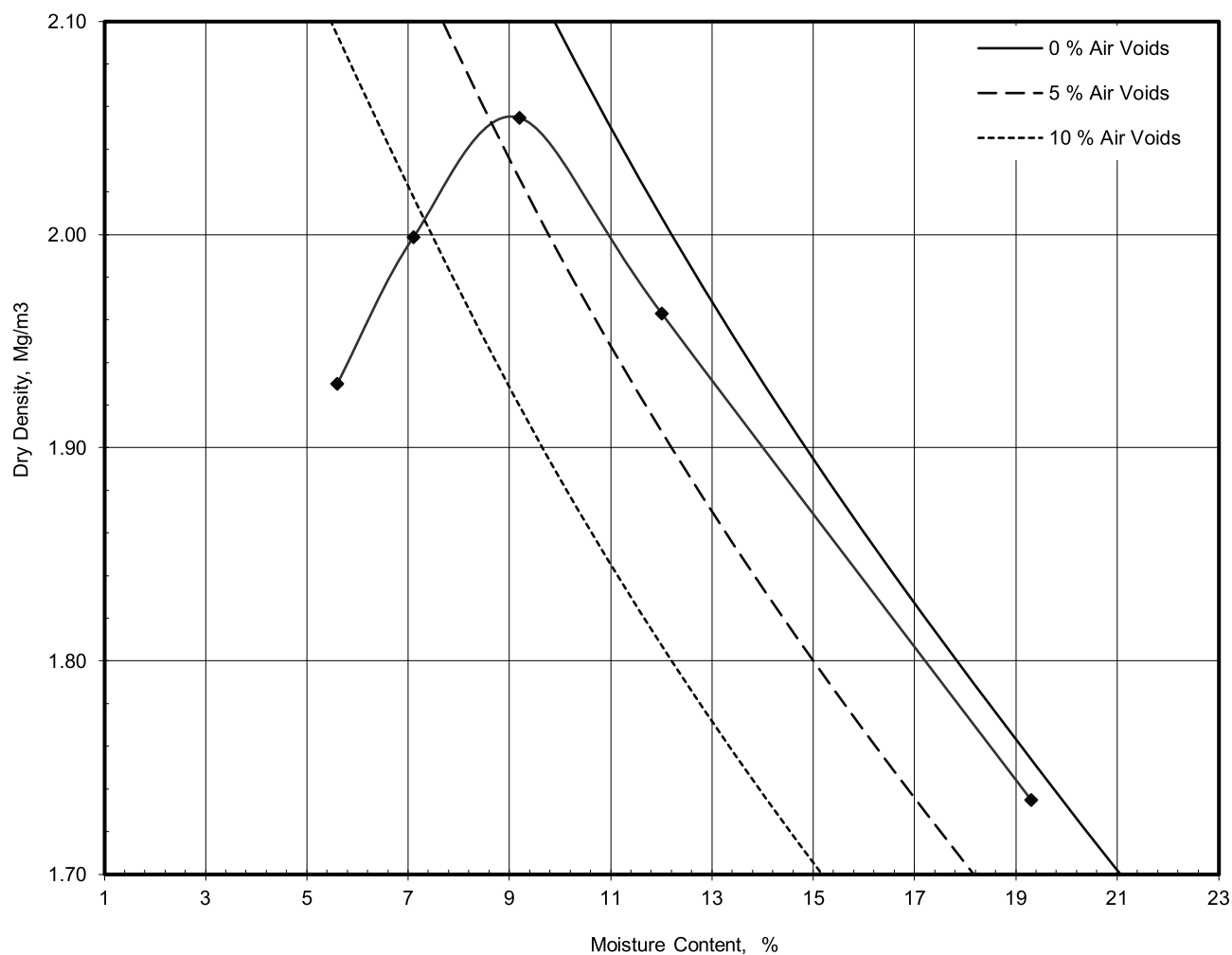
B

Test Method

BS1377:1990:Part 4 3.6.4.1

Keylab ID

Compaction Test Reference/No.



Preparation	
Mould Type	CBR
Samples Used	1
Material Retained on 37.5 mm Sieve	% 8
Material Retained on 20.0 mm Sieve	% 29
Particle Density -	Mg/m³ 2.65
Maximum Dry Density	Mg/m³ 2.01
Optimum Moisture Content	% 9.2

Operator

Checked

Approved

Remarks

Grading Zone X - test not applicable

Fig

MH

DK

DK

Sheet 1 of 1



Dry Density / Moisture Content Relationship Heavy Compaction

Job Ref

CCG-C-23-14178

Borehole / Pit No

BH12

Site Name

HUYTON TOWN CENTRE

Sample No

1

Soil Description

Brown sandy slightly gravelly silty CLAY

Depth

1.00 m

Specimen Ref.

Specimen Depth

m

Sample Type

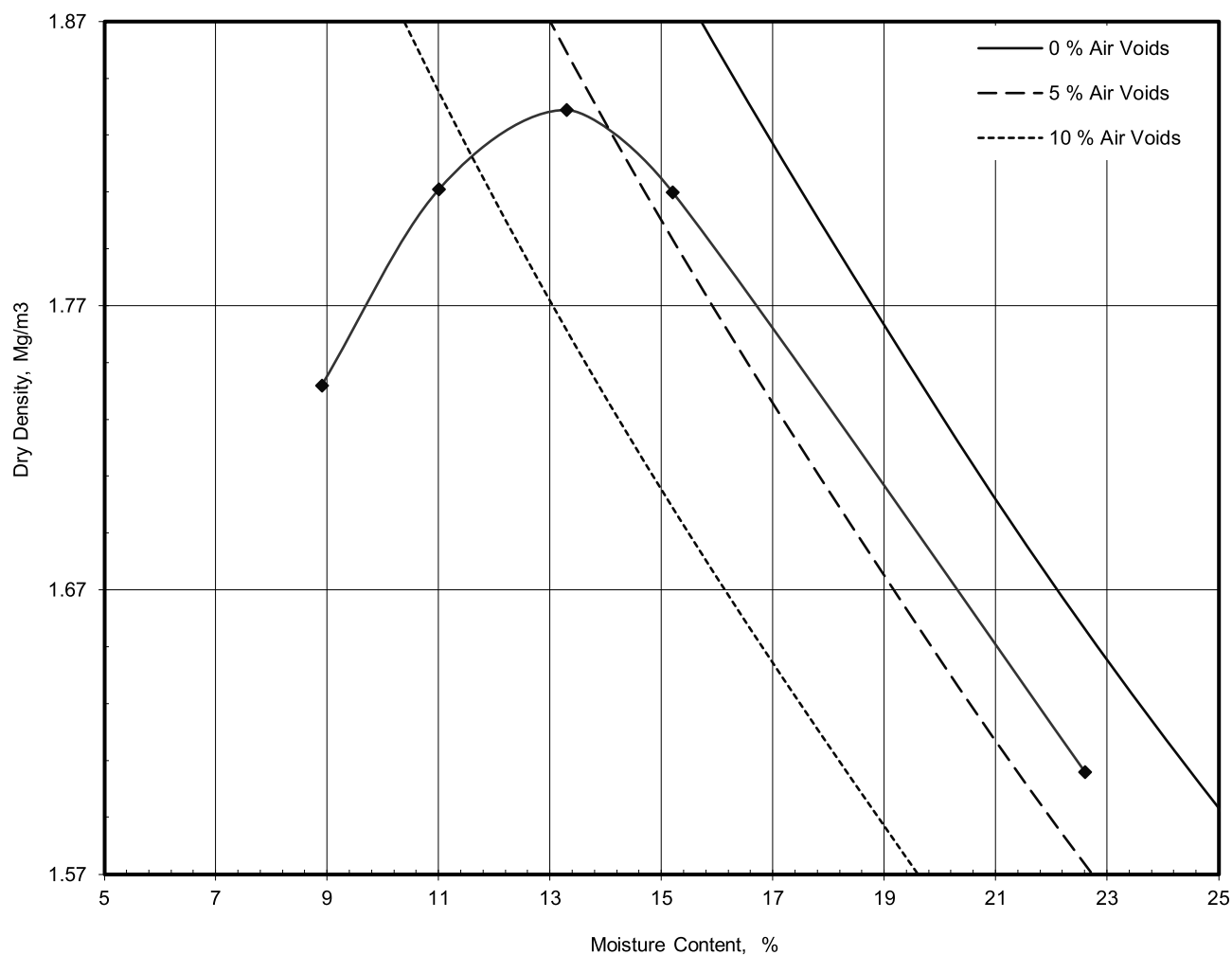
B

Test Method

BS1377:1990:Part 4 3.5.4.1

Keylab ID

Compaction Test Reference/No.



Preparation	
Mould Type	1 litre
Samples Used	5
Material Retained on 37.5 mm Sieve	% 0
Material Retained on 20.0 mm Sieve	% 0
Particle Density -	Mg/m³ 2.65
Maximum Dry Density	Mg/m³ 1.84
Optimum Moisture Content	% 13

Operator

Checked

Approved

Remarks

Fig

MH

DK

DK

Sheet 1 of 1



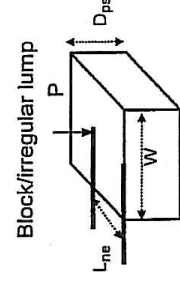
POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

17.10.23

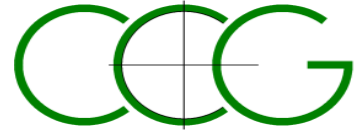
* NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)

L_{ne} = length from platens to nearest free end



TESTED BY: MH

TEST REPORT



UNIAXIAL COMPRESSIVE STRENGTH

In accordance with ISRM Vol 16 No 2, pp 135-140 (1979)

PROJECT: HUYTON TOWN CENTRE
CLIENT: GENR8 / BURO HAPPOLD / KMBC
CCG REF: CCG-C-23-14178

Sample ref: BH12 11.70mbgl
Date of coring: 07/09/2023
Sampled by: AR / CMC
Sample description: SANDSTONE

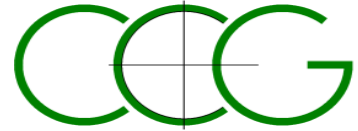
TEST DATA

Specimen Height (mm): 200
Specimen Diameter (mm): 100
L/D ratio: 2:1
Mode of failure: Axial
Test duration: 0m 57sec

Maximum load at failure (kN): 50.0
Compressive strength (N/mm²): **6.4**

Test date: 17/10/2023
Tested by: MH
Report prepared by: DK
Report approved by: DK

TEST REPORT



UNIAXIAL COMPRESSIVE STRENGTH

In accordance with ISRM Vol 16 No 2, pp 135-140 (1979)

PROJECT: HUYTON TOWN CENTRE
CLIENT: GENR8 / BURO HAPPOLD / KMBC
CCG REF: CCG-C-23-14178

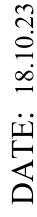
Sample ref: BH12 17.40mbgl
Date of coring: 07/09/2023
Sampled by: AR / CMC
Sample description: SANDSTONE

TEST DATA

Specimen Height (mm): 200
Specimen Diameter (mm): 100
L/D ratio: 2:1
Mode of failure: Axial
Test duration: 0m 49sec

Maximum load at failure (kN): 48.1
Compressive strength (N/mm²): **6.1**

Test date: 17/10/2023
Tested by: **MH**
Report prepared by: **DK**
Report approved by: **DK**



Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample
CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = Non-plastic
(* Denotes Hand Shear Vane test result)
Sample description not accredited by UKAS



CC Geotechnical Ltd
Tel: 0151 545 2750
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Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

Job Ref

CCG-C-23-14178

Borehole/Pit No.

WS11

Site Name

HUYTON TOWN CENTRE

Sample No.

1

Soil Description

Depth

1.20

Specimen Reference

Specimen
Depth

m

Sample Type

UT

Specimen Description

Brown sandy slightly gravelly silty CLAY

Date of test

11/10/2023

Test Method

BS1377 : Part 7 : 1990, clause 8, single specimen



4514

Test Number

1

Length

203.2

mm

Diameter

102.3

mm

Bulk Density

2.17

Mg/m³

Moisture Content

19.5

%

Dry Density

1.82

Mg/m³

Rate of Strain

2.0

%/min

Cell Pressure

21

kPa

At failure

15.8

%

Axial Strain

80

kPa

Deviator Stress, ($\sigma_1 - \sigma_3$)f

40

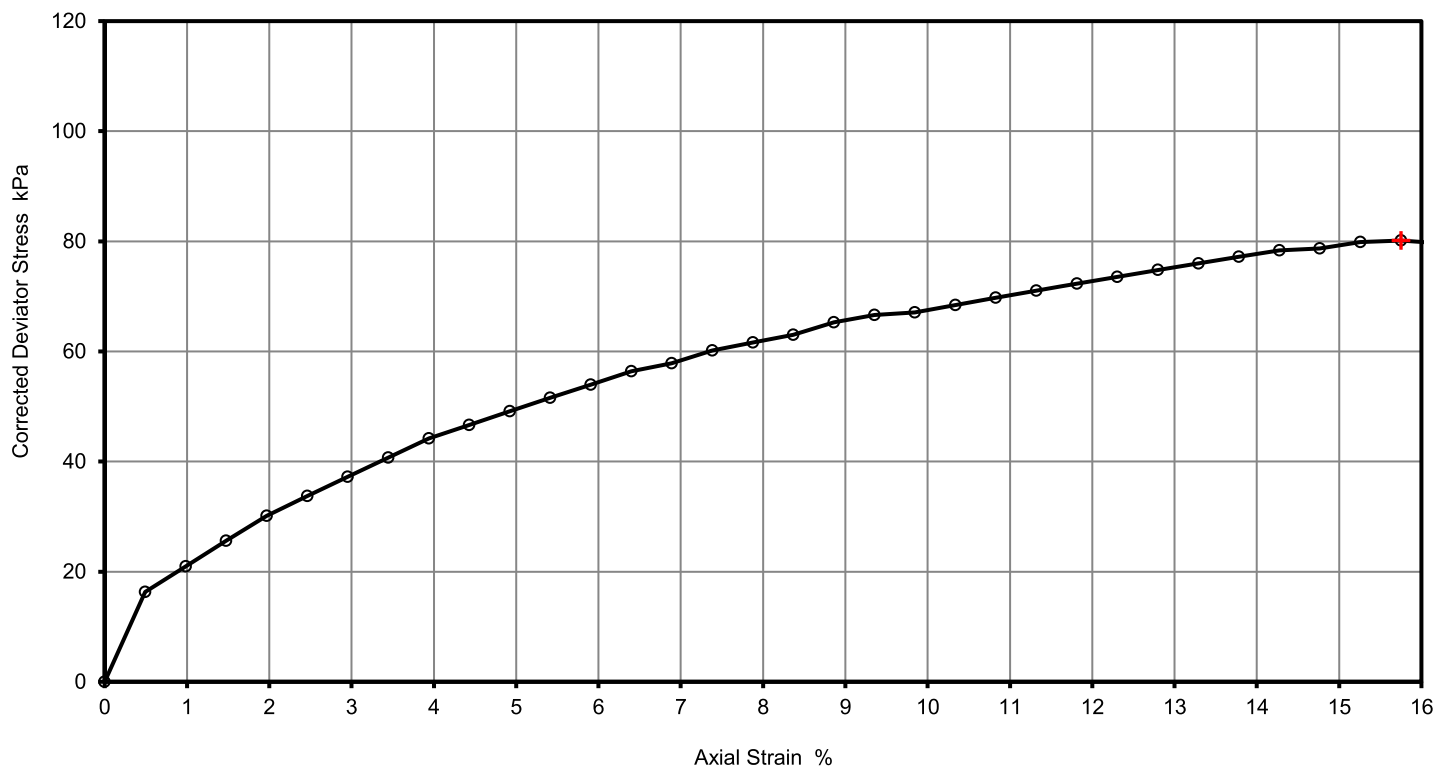
kPa $\frac{1}{2}(\sigma_1 - \sigma_3)$ f

Undrained Shear Strength, cu

Plastic

Mode of Failure

Deviator Stress v Axial Strain



Remarks

0.5mm membrane, correction factor = 1.58

Approved

DanielKerfoot

Printed

18/10/2023 11:55

Fig. No.

1

Sheet

1



Laboratory Determination of California Bearing Ratio

B.S. 1377 (1990) : Part 4 : Clause 7

PROJECT No.: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8 / BURO HAPPOLD / KMBC

BH / TP : TP01 DEPTH: 0.4 m

Proving ring No. 1155-8-15135

Division interval 0.0079745 kN/division

Surcharge 2 kg

Seating Load 10 N

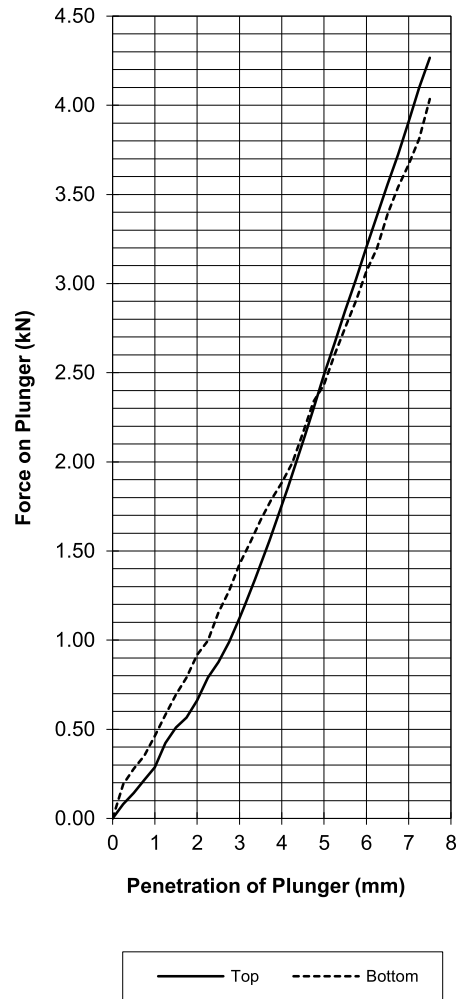
MATERIAL DESCRIPTION

Brown very gravelly silty SAND (MADE GROUND)

Mass of mould 4928 g
Mass of mould & compacted soil 9880 g
Mass retained on 20mm sieve 17 %
Soaked / Unsoaked Unsoaked

Depth of mould 127 mm
Diameter of mould 152 mm

Penetration of plunger mm	TOP		BOTTOM	
	kN	Load Gauge	kN	Load Gauge
0.00	0.00	0.00	0.00	0.00
0.25	0.08	10.00	0.19	24.00
0.50	0.14	18.00	0.28	35.00
0.75	0.22	27.00	0.35	44.00
1.00	0.29	36.00	0.46	58.00
1.25	0.42	53.00	0.58	73.00
1.50	0.51	64.00	0.69	87.00
1.75	0.57	71.00	0.79	99.00
2.00	0.66	83.00	0.92	115.00
2.25	0.79	99.00	1.00	125.00
2.50	0.88	110.00	1.16	145.00
2.75	0.99	124.00	1.28	160.00
3.00	1.12	141.00	1.43	179.00
3.25	1.27	159.00	1.55	194.00
3.50	1.43	179.00	1.67	210.00
3.75	1.59	199.00	1.79	224.00
4.00	1.75	220.00	1.88	236.00
4.25	1.93	242.00	1.99	250.00
4.50	2.11	265.00	2.16	271.00
4.75	2.30	288.00	2.34	293.00
5.00	2.49	312.00	2.43	305.00
5.25	2.66	334.00	2.60	326.00
5.50	2.85	357.00	2.75	345.00
5.75	3.02	379.00	2.90	364.00
6.00	3.21	402.00	3.07	385.00
6.25	3.38	424.00	3.20	401.00
6.50	3.56	446.00	3.39	425.00
6.75	3.72	467.00	3.54	444.00
7.00	3.91	490.00	3.67	460.00
7.25	4.10	514.00	3.81	478.00
7.50	4.27	535.00	4.04	506.00



RESULTS

Penetration (mm)	Force		Standard Force (kN)	CBR	
	Top (kN)	Bottom (kN)		Top (%)	Bottom (%)
2.50	0.88	1.16	13.2	6.6	8.8
5.00	2.49	2.43	20	12.4	12.2

Mass of compacted soil 4952 g

Volume of mould 2305 cm³

M/C of sample 10.9 %

Bulk density of compacted specimen 2.149 Mg/m³

Dry density of compacted specimen 1.938 Mg/m³

CBR Values 12.0 12.0 %

CBR result 12 %



Laboratory Determination of California Bearing Ratio

B.S. 1377 (1990) : Part 4 : Clause 7

PROJECT No.: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8 / BURO HAPPOLD / KMBC

BH / TP : TP02 DEPTH: 0.7 m

Proving ring No. 1155-8-15135

Division interval 0.0079745 kN/division

Surcharge 2 kg

Seating Load 10 N

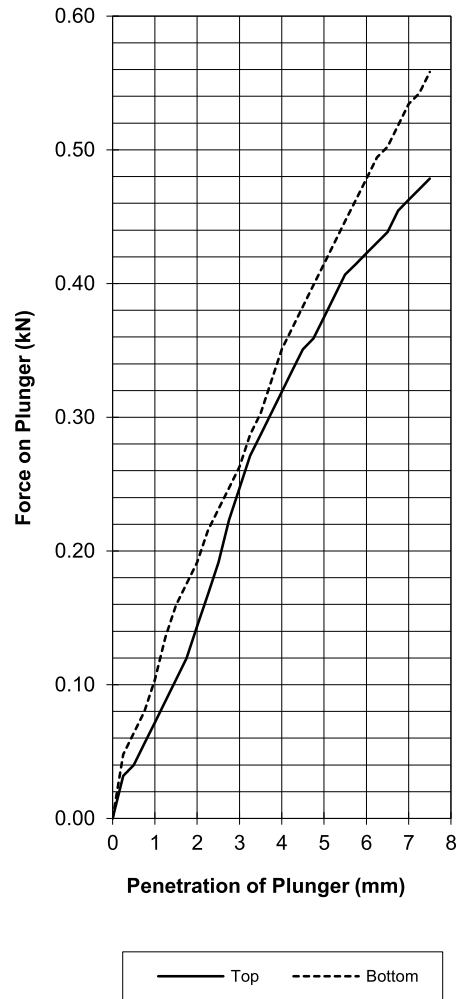
MATERIAL DESCRIPTION

Dark brown sandy slightly gravelly silty CLAY

Mass of mould 4928 g
Mass of mould & compacted soil 9750 g
Mass retained on 20mm sieve 0 %
Soaked / Unsoaked Unsoaked

Depth of mould 127 mm
Diameter of mould 152 mm

Penetration of plunger mm	TOP		BOTTOM	
	kN	Load Gauge	kN	Load Gauge
0.00	0.00	0.00	0.00	0.00
0.25	0.03	4.00	0.05	6.00
0.50	0.04	5.00	0.06	8.00
0.75	0.06	7.00	0.08	10.00
1.00	0.07	9.00	0.10	13.00
1.25	0.09	11.00	0.14	17.00
1.50	0.10	13.00	0.16	20.00
1.75	0.12	15.00	0.18	22.00
2.00	0.14	18.00	0.19	24.00
2.25	0.17	21.00	0.22	27.00
2.50	0.19	24.00	0.23	29.00
2.75	0.22	28.00	0.25	31.00
3.00	0.25	31.00	0.26	33.00
3.25	0.27	34.00	0.29	36.00
3.50	0.29	36.00	0.30	38.00
3.75	0.30	38.00	0.33	41.00
4.00	0.32	40.00	0.35	44.00
4.25	0.33	42.00	0.37	46.00
4.50	0.35	44.00	0.38	48.00
4.75	0.36	45.00	0.40	50.00
5.00	0.37	47.00	0.41	52.00
5.25	0.39	49.00	0.43	54.00
5.50	0.41	51.00	0.45	56.00
5.75	0.41	52.00	0.46	58.00
6.00	0.42	53.00	0.48	60.00
6.25	0.43	54.00	0.49	62.00
6.50	0.44	55.00	0.50	63.00
6.75	0.45	57.00	0.52	65.00
7.00	0.46	58.00	0.53	67.00
7.25	0.47	59.00	0.54	68.00
7.50	0.48	60.00	0.56	70.00



RESULTS

Penetration (mm)	Force		Standard Force (kN)	CBR	
	Top (kN)	Bottom (kN)		Top (%)	Bottom (%)
2.50	0.19	0.23	13.2	1.4	1.8
5.00	0.37	0.41	20	1.9	2.1

Mass of compacted soil 4822 g

Volume of mould 2305 cm³

M/C of sample 14.7 %

Bulk density of compacted specimen 2.092 Mg/m³

Dry density of compacted specimen 1.824 Mg/m³

CBR Values 1.9 2.1 %

CBR result 2.1 %



Laboratory Determination of California Bearing Ratio

B.S. 1377 (1990) : Part 4 : Clause 7

PROJECT No.: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8 / BURO HAPPOLD / KMBC

BH / TP : TP03 DEPTH: 0.4 m

Proving ring No. 1155-8-15135

Division interval 0.0079745 kN/division

Surcharge 2 kg

Seating Load 10 N

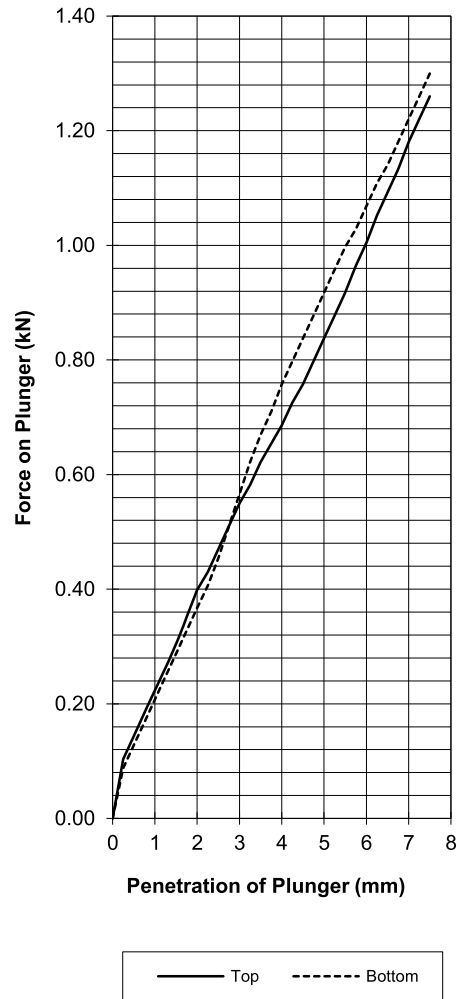
MATERIAL DESCRIPTION

Greyish brown very gravelly silty SAND (MADE GROUND)

Mass of mould 4928 g
Mass of mould & compacted soil 9602 g
Mass retained on 20mm sieve 20 %
Soaked / Unsoaked Unsoaked

Depth of mould 127 mm
Diameter of mould 152 mm

Penetration of plunger mm	TOP		BOTTOM	
	kN	Load Gauge	kN	Load Gauge
0.00	0.00	0.00	0.00	0.00
0.25	0.10	13.00	0.09	11.00
0.50	0.14	18.00	0.13	16.00
0.75	0.18	23.00	0.17	21.00
1.00	0.22	28.00	0.21	26.00
1.25	0.26	33.00	0.25	31.00
1.50	0.30	38.00	0.29	36.00
1.75	0.35	44.00	0.33	41.00
2.00	0.40	50.00	0.37	46.00
2.25	0.43	54.00	0.41	51.00
2.50	0.47	59.00	0.45	57.00
2.75	0.51	64.00	0.51	64.00
3.00	0.55	69.00	0.57	71.00
3.25	0.58	73.00	0.62	78.00
3.50	0.62	78.00	0.67	84.00
3.75	0.65	82.00	0.71	89.00
4.00	0.69	86.00	0.76	95.00
4.25	0.73	91.00	0.80	100.00
4.50	0.76	95.00	0.84	105.00
4.75	0.80	100.00	0.88	110.00
5.00	0.84	105.00	0.92	115.00
5.25	0.88	110.00	0.96	120.00
5.50	0.92	115.00	1.00	125.00
5.75	0.96	121.00	1.03	129.00
6.00	1.00	126.00	1.07	134.00
6.25	1.05	132.00	1.11	139.00
6.50	1.09	137.00	1.14	143.00
6.75	1.13	142.00	1.18	148.00
7.00	1.18	148.00	1.22	153.00
7.25	1.22	153.00	1.26	158.00
7.50	1.26	158.00	1.30	163.00



RESULTS

Penetration (mm)	Force		Standard Force (kN)	CBR	
	Top (kN)	Bottom (kN)		Top (%)	Bottom (%)
2.50	0.47	0.45	13.2	3.6	3.4
5.00	0.84	0.92	20	4.2	4.6

Mass of compacted soil 4674 g

Volume of mould 2305 cm³

M/C of sample 14.5 %

Bulk density of compacted specimen 2.028 Mg/m³

Dry density of compacted specimen 1.771 Mg/m³

CBR Values 4.2 4.6 %

CBR result 4.6 %



Laboratory Determination of California Bearing Ratio

B.S. 1377 (1990) : Part 4 : Clause 7

PROJECT No.: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8 / BURO HAPPOLD / KMBC

BH / TP : TP04 DEPTH: 1.5 m

Proving ring No. 1155-8-15135

Division interval 0.0079745 kN/division

Surcharge 2 kg

Seating Load 10 N

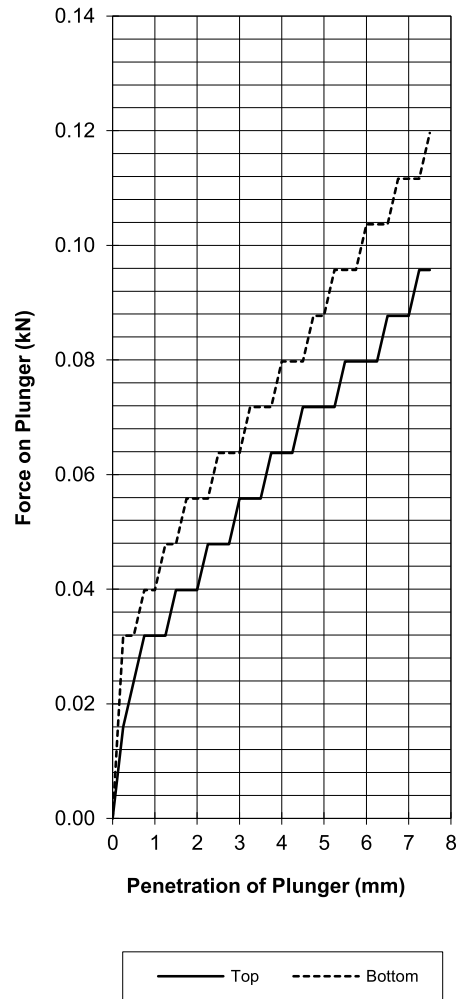
MATERIAL DESCRIPTION

Brown sandy slightly gravelly silty CLAY

Mass of mould 4928 g
Mass of mould & compacted soil 9616 g
Mass retained on 20mm sieve 0 %
Soaked / Unsoaked Unsoaked

Depth of mould 127 mm
Diameter of mould 152 mm

Penetration of plunger mm	TOP		BOTTOM	
	kN	Load Gauge	kN	Load Gauge
0.00	0.00	0.00	0.00	0.00
0.25	0.02	2.00	0.03	4.00
0.50	0.02	3.00	0.03	4.00
0.75	0.03	4.00	0.04	5.00
1.00	0.03	4.00	0.04	5.00
1.25	0.03	4.00	0.05	6.00
1.50	0.04	5.00	0.05	6.00
1.75	0.04	5.00	0.06	7.00
2.00	0.04	5.00	0.06	7.00
2.25	0.05	6.00	0.06	7.00
2.50	0.05	6.00	0.06	8.00
2.75	0.05	6.00	0.06	8.00
3.00	0.06	7.00	0.06	8.00
3.25	0.06	7.00	0.07	9.00
3.50	0.06	7.00	0.07	9.00
3.75	0.06	8.00	0.07	9.00
4.00	0.06	8.00	0.08	10.00
4.25	0.06	8.00	0.08	10.00
4.50	0.07	9.00	0.08	10.00
4.75	0.07	9.00	0.09	11.00
5.00	0.07	9.00	0.09	11.00
5.25	0.07	9.00	0.10	12.00
5.50	0.08	10.00	0.10	12.00
5.75	0.08	10.00	0.10	12.00
6.00	0.08	10.00	0.10	13.00
6.25	0.08	10.00	0.10	13.00
6.50	0.09	11.00	0.10	13.00
6.75	0.09	11.00	0.11	14.00
7.00	0.09	11.00	0.11	14.00
7.25	0.10	12.00	0.11	14.00
7.50	0.10	12.00	0.12	15.00



RESULTS

Penetration (mm)	Force		Standard Force (kN)	CBR	
	Top (kN)	Bottom (kN)		Top (%)	Bottom (%)
2.50	0.05	0.06	13.2	0.4	0.5
5.00	0.07	0.09	20	0.4	0.4

Mass of compacted soil 4688 g

Volume of mould 2305 cm³

M/C of sample 22.8 %

Bulk density of compacted specimen 2.034 Mg/m³

Dry density of compacted specimen 1.657 Mg/m³

CBR Values 0.4 0.5 %

CBR result 0.5 %



APPENDIX N

CHEMICAL TEST DATA



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Combined Report - Huyton Town Centre - 2

Additional analysis undertaken.
Results for samples nos.2892307 - 2892314 added as per client's request.

Project / Site name:	Huyton Town Centre	Samples received on:	06/09/2023
Your job number:	CCG-C-23-14178	Samples instructed on/ Analysis started on:	11/09/2023
Your order number:	CCG-PO-15330	Analysis completed by:	13/09/2023
Report Issue Number:	2	Report issued on:	29/11/2023
Samples Analysed:	61 Soil Samples - 16 Water Samples - 10 10:1 WAC - 5 Leachate Samples		

Signed:

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2802267	2806615	2806616	2807285	2809317
Sample Reference				WS17	BH12	BH12	BH11	TP04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	1.00	0.90	1.40
Date Sampled				04/09/2023	05/09/2023	05/09/2023	06/09/2023	08/09/2023
Time Taken				1600	1600	1600	1600	1900
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	7.8	10	15	13	11
Total mass of sample received	kg	0.001	NONE	1	1.3	0.9	1.2	0.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Crocidolite	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	SPU	MJN	MJN	WEM	IJZ

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9	9.2	7.5	9.1	7.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	-	-
Water Soluble Sulphate (Soil Equivalent)	g/kg	0.0025	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	98	-	-	1000	110
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.049	-	-	0.505	0.0527
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	49	-	-	505	52.7
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-	0.29	0.03	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-	580	60	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	-	290	30	-	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphur	%	0.005	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	2.3	1.8	1.8	2.2	1.4

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.22	0.07	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.27	0.09	< 0.05	0.09	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.16	0.07	< 0.05	0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	2.1	0.9	< 0.05	1.5	0.28
Anthracene	mg/kg	0.05	MCERTS	0.43	0.14	< 0.05	0.19	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	2.7	1.5	< 0.05	2.2	0.19
Pyrene	mg/kg	0.05	MCERTS	2.6	1.5	< 0.05	2.1	0.19
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1	0.68	< 0.05	0.9	0.08
Chrysene	mg/kg	0.05	MCERTS	1.2	0.85	< 0.05	1.3	0.11
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	1.3	1	< 0.05	0.93	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.54	0.35	< 0.05	0.63	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.1	0.8	< 0.05	0.88	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.61	0.46	< 0.05	0.47	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.18	0.14	< 0.05	0.13	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.74	0.5	< 0.05	0.56	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	15.1	9.17	< 0.80	11.8	0.85
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	9.3	7.5	14	6
Barium (aqua regia extractable)	mg/kg	1	MCERTS	120	91	55	210	45
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.85	0.66	0.62	0.87	0.5

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2802267	2806615	2806616	2807285	2809317
Sample Reference				WS17	BH12	BH12	BH11	TP04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	1.00	0.90	1.40
Date Sampled				04/09/2023	05/09/2023	05/09/2023	06/09/2023	08/09/2023
Time Taken				1600	1600	1600	1600	1900
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	0.9	0.8	1	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.7	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23	20	24	18	21
Copper (aqua regia extractable)	mg/kg	1	MCERTS	43	28	25	55	11
Lead (aqua regia extractable)	mg/kg	1	MCERTS	110	160	39	460	14
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	0.5	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22	17	20	20	16
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	31	25	27	28	25
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	150	85	37	160	24

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0 #	< 5.0 #	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 #
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	2.8	2.2	4	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	18	15	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	12	25	23	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	2	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	11	10	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	19	14	< 10	18	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2809319	2810027	2814755	2815697	2815699
Sample Reference				TP03	WS10	WS09	WS16	BH07
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.25	0.20	0.50	0.50
Date Sampled				08/09/2023	08/09/2023	11/09/2023	13/09/2023	12/09/2023
Time Taken				1730	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	54	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	8.1	5.7	2.8	13	11
Total mass of sample received	kg	0.001	NONE	0.7	0.5	1.5	1.1	1

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	< 0.001	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	< 0.001	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	I2J	ASE	SPU	I2J	SSZ

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.9	10.4	8.9	7.9	8.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	-	-
Water Soluble Sulphate (Soil Equivalent)	g/kg	0.0025	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	2500	640	-	25	39
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	1.23	0.321	-	0.0126	0.0197
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	1230	321	-	12.6	19.7
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-	-	0.016	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-	-	32	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	-	-	15.9	-	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphur	%	0.005	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	4.7	1.3	0.8	3.6	1.1

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.07	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.3	0.36	< 0.05	0.09	0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.08	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.46	0.85	0.09	0.46	0.07
Pyrene	mg/kg	0.05	MCERTS	0.45	0.88	0.09	0.44	0.07
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.25	0.45	0.06	0.32	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.33	0.49	0.05	0.3	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.29	0.53	0.05	0.48	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.17	0.2	< 0.05	0.17	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.21	0.36	0.05	0.39	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.14	0.28	< 0.05	0.23	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.09	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.21	0.34	< 0.05	0.27	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	2.88	4.91	< 0.80	3.15	< 0.80
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.4	9.1	2.7	20	5.1
Barium (aqua regia extractable)	mg/kg	1	MCERTS	67	94	360	82	48
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.32	0.46	0.44	0.79	0.45

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2809319	2810027	2814755	2815697	2815699
Sample Reference				TP03	WS10	WS09	WS16	BH07
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.25	0.20	0.50	0.50
Date Sampled				08/09/2023	08/09/2023	11/09/2023	13/09/2023	12/09/2023
Time Taken				1730	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Boron (water soluble)	mg/kg	0.2	MCERTS	1.8	0.5	< 0.2	0.4	1.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	0.3
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	10	16	9.4	23	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	33	33	8.4	32	12
Lead (aqua regia extractable)	mg/kg	1	MCERTS	150	85	47	82	320
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	9.1	13	6.6	20	11
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	13	21	22	29	16
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	80	57	45	91	48

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0 ##	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0 ##	< 5.0	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	9	27	44	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	30	53	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	5.3	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	16	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	20	< 10	74	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	27	< 10	96	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2815703	2815704	2815708	2817921	2818237
Sample Reference				BH10	WS07	WS03	WS02	BH08
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	1.50	1.00	0.50	0.50
Date Sampled				12/09/2023	12/09/2023	13/09/2023	14/09/2023	17/09/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	12	17	15	11
Total mass of sample received	kg	0.001	NONE	1.1	2	0.8	1.1	1.1

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	IZJ	SSZ	SSZ	WEM	WEM

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.6	7.2	7.8	7.9	8.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	-	-
Water Soluble Sulphate (Soil Equivalent)	g/kg	0.0025	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	110	380	58	59	68
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0534	0.189	0.0292	0.0295	0.0339
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	53.4	189	29.2	29.5	33.9
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	-	-	-	-	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphur	%	0.005	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	3.5	0.4	1.7	0.6	1.2

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.12
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.08	< 0.05	0.55
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.05	< 0.05	0.81
Phenanthrene	mg/kg	0.05	MCERTS	0.11	< 0.05	0.46	< 0.05	9.9
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.07	< 0.05	2.7
Fluoranthene	mg/kg	0.05	MCERTS	0.2	< 0.05	0.36	< 0.05	11
Pyrene	mg/kg	0.05	MCERTS	0.19	< 0.05	0.35	< 0.05	8.8
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.11	< 0.05	0.14	< 0.05	4.2
Chrysene	mg/kg	0.05	MCERTS	0.12	< 0.05	0.28	< 0.05	4
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.16	< 0.05	0.19	< 0.05	4.3
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.05	< 0.05	0.1	< 0.05	1.6
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.12	< 0.05	0.17	< 0.05	3.7
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.08	< 0.05	0.11	< 0.05	2
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.06	< 0.05	0.5
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.09	< 0.05	0.14	< 0.05	1.9

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	1.23	< 0.80	2.56	< 0.80	56.4
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	20	9.2	14	8.7	11
Barium (aqua regia extractable)	mg/kg	1	MCERTS	100	85	100	75	110
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1	0.87	1	0.66	0.5

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2815703	2815704	2815708	2817921	2818237
Sample Reference				BH10	WS07	WS03	WS02	BH08
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	1.50	1.00	0.50	0.50
Date Sampled				12/09/2023	12/09/2023	13/09/2023	14/09/2023	17/09/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	0.5	0.9	0.6	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24	36	35	37	22
Copper (aqua regia extractable)	mg/kg	1	MCERTS	71	21	34	18	56
Lead (aqua regia extractable)	mg/kg	1	MCERTS	190	9.8	50	37	140
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.4	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	21	35	36	23	15
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	33	37	38	39	29
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	79	45	66	73	59

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	8.1
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	32
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	41
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	< 10	< 10	< 10	81

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2819780	2824650	2826611	2830661	2830662
Sample Reference				WS04	WS06	BH01	WS01	WS02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	0.40	0.70	1.50
Date Sampled				15/09/2023	20/09/2023	22/09/2023	14/09/2023	14/09/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	6.7	16	13	13	15
Total mass of sample received	kg	0.001	NONE	0.7	1.4	0.8	0.5	1.2

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	WEM	IZJ	SPU	N/A	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.3	9.3	8.7	8.8	7.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-	-	240	98
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	-	-
Water Soluble Sulphate (Soil Equivalent)	g/kg	0.0025	MCERTS	-	-	-	0.11	0.053
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	25	1300	52	110	53
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0123	0.635	0.0259	0.0558	0.0263
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	12.3	635	25.9	55.8	26.3
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	-	-	-	-	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	110	53
Total Sulphur	%	0.005	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	0.5	5	0.2	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	1.3	< 0.05	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.55	< 0.05	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	15	< 0.05	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	11	< 0.05	-	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	100	< 0.05	-	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	28	< 0.05	-	-
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	140	< 0.05	-	-
Pyrene	mg/kg	0.05	MCERTS	< 0.05	110	< 0.05	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	48	< 0.05	-	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	46	< 0.05	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	54	< 0.05	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	21	< 0.05	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	41	< 0.05	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	20	< 0.05	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	4.6	< 0.05	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	23	< 0.05	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	665	< 0.80	-	-
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.5	20	7.5	-	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	160	280	85	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.99	1.8	0.79	-	-

Analytical Report Number: Huyton Town Centre
Project / Site name: Huyton Town Centre
Your Order No: CCG-PO-15330

Lab Sample Number				2819780	2824650	2826611	2830661	2830662
Sample Reference				WS04	WS06	BH01	WS01	WS02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	0.40	0.70	1.50
Date Sampled				15/09/2023	20/09/2023	22/09/2023	14/09/2023	14/09/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	1.6	< 0.2	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.8	< 0.2	< 0.2	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	25	23	37	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	33	74	23	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	28	340	21	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	44	23	34	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	31	38	38	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	73	260	46	-	-

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_ID_AL}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
TPH-CWG - Aliphatic >EC7 - EC8 _{HS_ID_AL}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_ID_AL}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_ID_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_ID_AL}	mg/kg	2	MCERTS	< 2.0	3.3	< 2.0	-	-
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	< 8.0	13	< 8.0	-	-
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	< 8.0	51	< 8.0	-	-
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	< 10	67	< 10	-	-

TPH-CWG - Aromatic >EC5 - EC7 _{HS_ID_AR}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
TPH-CWG - Aromatic >EC7 - EC8 _{HS_ID_AR}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
TPH-CWG - Aromatic >EC8 - EC10 _{HS_ID_AR}	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_ID_AR}	mg/kg	1	MCERTS	< 1.0	1.9	< 1.0	-	-
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_ID_AR}	mg/kg	2	MCERTS	< 2.0	84	< 2.0	-	-
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	< 10	530	< 10	-	-
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	< 10	690	< 10	-	-
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_ID_AR}	mg/kg	10	NONE	< 10	1300	< 10	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2830663	2830664	2830665	2831930	2831931
Sample Reference				WS03	WS04	WS05	TP01	TP02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	2.70	1.60	0.30	3.50
Date Sampled				13/09/2023	15/09/2023	20/09/2023	15/09/2023	18/09/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	17	11	14	7.8	15
Total mass of sample received	kg	0.001	NONE	0.9	1.5	1.5	0.8	0.7

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.2	8.6	8	11.2	8.8
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	160	310	420	-	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	0.43	0.028
Water Soluble Sulphate (Soil Equivalent)	g/kg	0.0025	MCERTS	0.045	0.16	0.33	1.1	0.1
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	45	160	330	1100	100
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0225	0.0775	0.166	0.53	0.0511
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	22.5	77.5	166	530	51.1
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	-	-	-	-	-
Total Sulphur	mg/kg	50	MCERTS	140	120	150	-	-
Total Sulphur	%	0.005	MCERTS	-	-	-	0.242	0.011
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	-	-
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-	-	-

Analytical Report Number: Huyton Town Centre
Project / Site name: Huyton Town Centre
Your Order No: CCG-PO-15330

Lab Sample Number				2830663	2830664	2830665	2831930	2831931
Sample Reference				WS03	WS04	WS05	TP01	TP02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	2.70	1.60	0.30	3.50
Date Sampled				13/09/2023	15/09/2023	20/09/2023	15/09/2023	18/09/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	5	MCERTS	-	-	-	-	-
o-xylene	µg/kg	5	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_ID_AL}	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_ID_AL}	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	-	-	-	-	-

TPH-CWG - Aromatic >EC5 - EC7 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_ID_AR}	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_ID_AR}	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_ID_AR}	mg/kg	10	NONE	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2831932	2831933	2831951	2831952	2831953
Sample Reference				TP03	TP04	WS06	WS07	WS08
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	2.40	0.70	3.30	1.60
Date Sampled				08/09/2023	08/09/2023	20/09/2023	12/09/2023	21/09/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	34	12	8.4	13
Total mass of sample received	kg	0.001	NONE	1.2	1.3	0.8	1.2	1.1

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.6	7.4	11	8.6	7.6
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Total Sulphate as SO4	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphate as SO4	%	0.005	MCERTS	0.298	0.144	0.289	0.036	0.014
Water Soluble Sulphate (Soil Equivalent)	g/kg	0.0025	MCERTS	1.3	0.77	0.84	0.12	0.094
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	1300	770	840	120	94
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.661	0.385	0.422	0.062	0.047
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	661	385	422	62	47
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-	-	-	-	-
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	-	-	-	-	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphur	%	0.005	MCERTS	0.118	0.166	0.148	0.013	0.007
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	-	-
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-	-	-

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2831932	2831933	2831951	2831952	2831953
Sample Reference				TP03	TP04	WS06	WS07	WS08
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	2.40	0.70	3.30	1.60
Date Sampled				08/09/2023	08/09/2023	20/09/2023	12/09/2023	21/09/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	5	MCERTS	-	-	-	-	-
o-xylene	µg/kg	5	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_ID_AL}	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_ID_AL}	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	-	-	-	-	-

TPH-CWG - Aromatic >EC5 - EC7 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_ID_AR}	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_ID_AR}	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_ID_AR}	mg/kg	10	NONE	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2831954	2831955	2831956	2831957	2831958
Sample Reference				WS09	WS10	WS11	WS15	WS16
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70	2.30	2.00	1.20	3.20
Date Sampled				11/09/2023	08/09/2023	06/09/2023	08/09/2023	13/09/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	4.5	11	12	11	6
Total mass of sample received	kg	0.001	NONE	1	1.4	0.9	1.3	1.4

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.7	8.7	8.6	7.3	8.8
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphate as SO ₄	%	0.005	MCERTS	0.102	0.007	0.019	0.021	< 0.005
Water Soluble Sulphate (Soil Equivalent)	g/kg	0.0025	MCERTS	0.17	0.032	0.055	0.13	0.021
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	170	32	55	130	21
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0861	0.0161	0.0276	0.067	0.0106
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	86.1	16.1	27.6	67	10.6
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	-	-	-	-	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphur	%	0.005	MCERTS	0.042	< 0.005	0.009	0.009	< 0.005
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	-	-
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-	-	-

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2831954	2831955	2831956	2831957	2831958
Sample Reference				WS09	WS10	WS11	WS15	WS16
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70	2.30	2.00	1.20	3.20
Date Sampled				11/09/2023	08/09/2023	06/09/2023	08/09/2023	13/09/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	5	MCERTS	-	-	-	-	-
o-xylene	µg/kg	5	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_ID_AL}	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_ID_AL}	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_ID_AR}	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_ID_AR}	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_ID_AR}	mg/kg	10	NONE	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2831959	2833038	2833039	2833104	2833105
Sample Reference				WS17	BH02	BH04	BH01	BH03
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.10	1.15	1.60	1.80	2.00
Date Sampled				04/09/2023	28/09/2023	28/09/2023	22/09/2023	20/09/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	15	15	15	15	19
Total mass of sample received	kg	0.001	NONE	1	0.8	0.6	0.8	0.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.8	7.6	7.2	9	8.4
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphate as SO ₄	%	0.005	MCERTS	0.009	0.017	0.019	0.005	0.007
Water Soluble Sulphate (Soil Equivalent)	g/kg	0.0025	MCERTS	0.049	0.12	0.15	0.012	0.043
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	49	120	150	12	43
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0243	0.059	0.073	0.006	0.0213
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	24.3	59	73	6	21.3
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	-	-	-	-	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphur	%	0.005	MCERTS	0.005	0.007	0.008	< 0.005	< 0.005
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	-	-
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-	-	-

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2831959	2833038	2833039	2833104	2833105
Sample Reference				WS17	BH02	BH04	BH01	BH03
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.10	1.15	1.60	1.80	2.00
Date Sampled				04/09/2023	28/09/2023	28/09/2023	22/09/2023	20/09/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	5	MCERTS	-	-	-	-	-
o-xylene	µg/kg	5	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_ID_AL}	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_ID_AL}	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	-	-	-	-	-

TPH-CWG - Aromatic >EC5 - EC7 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_ID_AR}	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_ID_AR}	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_ID_AR}	mg/kg	10	NONE	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2833106	2833107	2833108	2833109	2833110
Sample Reference				BH05	BH06	BH07	BH08	BH11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.75	0.40	3.80	4.00	1.20
Date Sampled				21/09/2023	26/09/2023	12/09/2023	17/09/2023	06/09/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	15	18	19	15	19
Total mass of sample received	kg	0.001	NONE	0.8	0.6	0.6	0.5	0.6

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.6	7.9	9.1	8.1	7.9
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphate as SO ₄	%	0.005	MCERTS	0.051	0.106	< 0.005	0.016	0.03
Water Soluble Sulphate (Soil Equivalent)	g/kg	0.0025	MCERTS	0.53	0.99	0.0092	0.13	0.26
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	530	990	9.2	130	260
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.266	0.497	0.0046	0.0649	0.128
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	266	497	4.6	64.9	128
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	-	-	-	-	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphur	%	0.005	MCERTS	0.069	0.128	< 0.005	0.007	0.015
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	-	-
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-	-	-

Analytical Report Number: Huyton Town Centre
Project / Site name: Huyton Town Centre
Your Order No: CCG-PO-15330

Lab Sample Number				2833106	2833107	2833108	2833109	2833110
Sample Reference				BH05	BH06	BH07	BH08	BH11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.75	0.40	3.80	4.00	1.20
Date Sampled				21/09/2023	26/09/2023	12/09/2023	17/09/2023	06/09/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	5	MCERTS	-	-	-	-	-
o-xylene	µg/kg	5	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_ID_AL}	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_ID_AL}	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	-	-	-	-	-

TPH-CWG - Aromatic >EC5 - EC7 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_ID_AR}	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_ID_AR}	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_ID_AR}	mg/kg	10	NONE	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2834615	2834616	2834617	2846902	2846903
Sample Reference				BH09	BH10	BH12	BH01	BH02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.80	0.20	0.60	9.20	2.50
Date Sampled				15/09/2023	12/09/2023	05/09/2023	12/10/2023	12/10/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	77	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	5.3	17	3.7	7.1
Total mass of sample received	kg	0.001	NONE	0.5	0.5	0.5	0.4	0.5

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.3	11	8.4	8.2	8.4
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphate as SO ₄	%	0.005	MCERTS	0.007	0.14	0.095	0.007	0.006
Water Soluble Sulphate (Soil Equivalent)	g/kg	0.0025	MCERTS	0.023	0.61	0.48	0.014	0.015
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	23	610	480	14	15
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0113	0.306	0.24	0.0068	0.0075
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	11.3	306	240	6.8	7.5
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	-	-	-	-	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphur	%	0.005	MCERTS	< 0.005	0.058	0.062	< 0.005	< 0.005
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	-	-
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-	-	-

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2834615	2834616	2834617	2846902	2846903
Sample Reference				BH09	BH10	BH12	BH01	BH02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.80	0.20	0.60	9.20	2.50
Date Sampled				15/09/2023	12/09/2023	05/09/2023	12/10/2023	12/10/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	5	MCERTS	-	-	-	-	-
o-xylene	µg/kg	5	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_ID_AL}	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_ID_AL}	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_ID_AR}	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_ID_AR}	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_ID_AR}	mg/kg	10	NONE	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: Huyton Town Centre
Project / Site name: Huyton Town Centre
Your Order No: CCG-PO-15330

Lab Sample Number				2846904	2846905	2846906	2846907	2846908
Sample Reference				BH03	BH04	BH05	BH06	BH07
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				5.60	18.30	7.55	14.40	9.90
Date Sampled				12/10/2023	12/10/2023	12/10/2023	12/10/2023	12/10/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	5.5	10	9	10	6.9
Total mass of sample received	kg	0.001	NONE	0.5	0.4	0.5	0.7	0.6

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.4	7.2	8.7	8.6	8.7
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Total Sulphate as SO4	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphate as SO4	%	0.005	MCERTS	0.006	0.007	0.006	0.007	0.009
Water Soluble Sulphate (Soil Equivalent)	g/kg	0.0025	MCERTS	0.0097	0.019	0.0093	0.014	0.026
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	9.7	19	9.3	14	26
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0049	0.0097	0.0046	0.0068	0.0131
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	4.9	9.7	4.6	6.8	13.1
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-	-	-	-	-
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	-	-	-	-	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphur	%	0.005	MCERTS	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	-	-
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-	-	-

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2846904	2846905	2846906	2846907	2846908
Sample Reference				BH03	BH04	BH05	BH06	BH07
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				5.60	18.30	7.55	14.40	9.90
Date Sampled				12/10/2023	12/10/2023	12/10/2023	12/10/2023	12/10/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	5	MCERTS	-	-	-	-	-
o-xylene	µg/kg	5	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_ID_AL}	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_ID_AL}	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	-	-	-	-	-

TPH-CWG - Aromatic >EC5 - EC7 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_ID_AR}	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_ID_AR}	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_ID_AR}	mg/kg	10	NONE	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: Huyton Town Centre
Project / Site name: Huyton Town Centre
Your Order No: CCG-PO-15330

Lab Sample Number				2846909	2846910	2846911	2846912	2846913
Sample Reference				BH08	BH09	BH10	BH11	BH12
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				7.00	3.70	17.00	12.10	8.00
Date Sampled				12/10/2023	12/10/2023	12/10/2023	12/10/2023	12/10/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	7.8	6.6	6.7	8.6	4.3
Total mass of sample received	kg	0.001	NONE	0.5	0.4	0.6	0.4	0.6

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.3	8.1	8	8.3	8.1
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphate as SO ₄	%	0.005	MCERTS	0.008	0.009	0.007	0.007	0.007
Water Soluble Sulphate (Soil Equivalent)	g/kg	0.0025	MCERTS	0.014	0.039	0.02	0.02	0.02
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	14	39	20	20	20
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0069	0.0194	0.0101	0.0102	0.0099
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	6.9	19.4	10.1	10.2	9.9
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	-	-	-	-	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphur	%	0.005	MCERTS	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	-	-
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-	-	-

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2846909	2846910	2846911	2846912	2846913
Sample Reference				BH08	BH09	BH10	BH11	BH12
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				7.00	3.70	17.00	12.10	8.00
Date Sampled				12/10/2023	12/10/2023	12/10/2023	12/10/2023	12/10/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	5	MCERTS	-	-	-	-	-
o-xylene	µg/kg	5	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_ID_AL}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_ID_AL}	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_ID_AL}	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	-	-	-	-	-

TPH-CWG - Aromatic >EC5 - EC7 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 _{HS_ID_AR}	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_ID_AR}	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_ID_AR}	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_ID_AR}	mg/kg	10	NONE	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: Huyton Town Centre

Project / Site name: Huyton Town Centre

Your Order No: CCG-PO-15330

Lab Sample Number				2859339
Sample Reference				WS15
Sample Number				None Supplied
Depth (m)				0.50
Date Sampled				08/09/2023
Time Taken				1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	12
Total mass of sample received	kg	0.001	NONE	0.3

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-
Asbestos Quantification Total	%	0.001	ISO 17025	-
Asbestos Analyst ID	N/A	N/A	N/A	EWS

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-
Water Soluble Sulphate (Soil Equivalent)	g/kg	0.0025	MCERTS	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	610
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.305
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	305
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	-
Total Sulphur	mg/kg	50	MCERTS	-
Total Sulphur	%	0.005	MCERTS	-
Organic Matter (automated)	%	0.1	MCERTS	1.4

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.09
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.13
Pyrene	mg/kg	0.05	MCERTS	0.13
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.07
Chrysene	mg/kg	0.05	MCERTS	0.08
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.09
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.07
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.6
Barium (aqua regia extractable)	mg/kg	1	MCERTS	73
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.69

Analytical Report Number: Huyton Town Centre
 Project / Site name: Huyton Town Centre
 Your Order No: CCG-PO-15330

Lab Sample Number				2859339
Sample Reference				WS15
Sample Number				None Supplied
Depth (m)				0.50
Date Sampled				08/09/2023
Time Taken				1600
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Boron (water soluble)	mg/kg	0.2	MCERTS	0.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	31
Lead (aqua regia extractable)	mg/kg	1	MCERTS	80
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	21
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	31
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	63

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.1	NONE	< 0.020
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.1	NONE	< 0.020
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.1	NONE	< 0.050
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.1	NONE	< 0.010
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.1	NONE	< 0.010
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.1	NONE	< 0.050
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

**Combined Report - Huyton Town Centre****Project / Site name:** Huyton Town Centre**Your Order No:** CCG-PO-15330

Certificate of Analysis - Asbestos Quantification

Methods:**Qualitative Analysis**

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
2802267	WS17	0.50	197	Loose Fibres	Crocidolite	< 0.001	< 0.001
2810027	WS10	0.25	158	Loose Fibres	Chrysotile	< 0.001	< 0.001

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.



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Combined Report - Huyton Town Centre
Project / Site name: Huyton Town Centre

Your Order No: CCG-PO-15330

Lab Sample Number				2862975	2862976	2862977	2862978	2862979
Sample Reference				BH01	BH02	BH03	BH04	BH06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				6.45	6.90	7.48	6.59	6.59
Date Sampled				29/10/2023	29/10/2023	29/10/2023	29/10/2023	29/10/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status		

General Inorganics

pH (L099)	pH Units	N/A	ISO 17025	7.6	7.1	7.2	8.2	7.4
Total Cyanide	µg/l	10	ISO 17025	< 10	-	< 10	-	-
Sulphate as SO4	µg/l	45	ISO 17025	-	82600	-	U/S^^	67500
Total Sulphur	µg/l	15	NONE	-	28000	-	U/S^^	23000
Chloride	mg/l	0.15	ISO 17025	-	310	-	110	130
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	-	35	-	42	< 15
Nitrate as N	mg/l	0.01	ISO 17025	-	2.39	-	0.8	4.65
Nitrate as NO3	mg/l	0.05	ISO 17025	-	10.6	-	3.54	20.6

Hardness - Total	mgCaCO3/l	1	ISO 17025	164	-	172	-	-
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Fluorene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Anthracene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Pyrene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Chrysene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	-	< 0.16	-	-
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Heavy Metals / Metalloids

Boron (dissolved)	µg/l	10	ISO 17025	38	-	45	-	-
Calcium (dissolved)	mg/l	0.012	ISO 17025	50	-	41	-	-
Magnesium (dissolved)	mg/l	0.005	ISO 17025	9.5	64	17	U/S^^	34

Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.36	-	0.23	-	-
Barium (dissolved)	µg/l	0.06	ISO 17025	68	-	88	-	-
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	-	< 0.1	-	-
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.04	-	0.02	-	-
Chromium (dissolved)	µg/l	0.2	ISO 17025	2.8	-	0.8	-	-
Copper (dissolved)	µg/l	0.5	ISO 17025	1.5	-	2.3	-	-
Lead (dissolved)	µg/l	0.2	ISO 17025	0.2	-	< 0.2	-	-
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	-	< 0.05	-	-
Nickel (dissolved)	µg/l	0.5	ISO 17025	1.7	-	1.4	-	-
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.7	-	< 0.6	-	-
Vanadium (dissolved)	µg/l	0.2	ISO 17025	1.1	-	0.3	-	-
Zinc (dissolved)	µg/l	0.5	ISO 17025	3.7	-	5.1	-	-

Monoaromatics & Oxygenates

Benzene	µg/l	3	ISO 17025	< 3.0	-	< 3.0	-	-
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Environmental Science

Combined Report - Huyton Town Centre
Project / Site name: Huyton Town Centre

Your Order No: CCG-PO-15330

Lab Sample Number				2862975	2862976	2862977	2862978	2862979
Sample Reference				BH01	BH02	BH03	BH04	BH06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				6.45	6.90	7.48	6.59	6.59
Date Sampled				29/10/2023	29/10/2023	29/10/2023	29/10/2023	29/10/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					
Toluene	µg/l	3	ISO 17025	< 3.0	-	< 3.0	-	-
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	-	< 3.0	-	-
p & m-xylene	µg/l	3	ISO 17025	< 3.0	-	< 3.0	-	-
o-xylene	µg/l	3	ISO 17025	< 3.0	-	< 3.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	-	< 3.0	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	-	< 1.0	-	-
TPH-CWG - Aliphatic >C6 - C8 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	-	< 1.0	-	-
TPH-CWG - Aliphatic >C8 - C10 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	-	< 1.0	-	-

Aliphatic >C10 - C12 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-
Aliphatic >C12 - C16 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-
Aliphatic >C16 - C21 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-
Aliphatic >C21 - C35 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-
Aliphatic >C10 - C35 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-

TPH-CWG - Aromatic >C5 - C7 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	-	< 1.0	-	-
TPH-CWG - Aromatic >C7 - C8 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	-	< 1.0	-	-
TPH-CWG - Aromatic >C8 - C10 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	-	< 1.0	-	-

Aromatic >C10 - C12 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-
Aromatic >C12 - C16 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-
Aromatic >C16 - C21 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-
Aromatic >C21 - C35 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-
Aromatic >C10 - C35 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



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Environmental Science

Combined Report - Huyton Town Centre
Project / Site name: Huyton Town Centre

Your Order No: CCG-PO-15330

Lab Sample Number				2862980	2862981	2862982	2892307	2892308
Sample Reference				BH08	BH10	WS07	BH01	BH02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				5.80	4.15	3.53	6.23	5.10
Date Sampled				29/10/2023	29/10/2023	29/10/2023	26/11/2023	26/11/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status		

General Inorganics

pH (L099)	pH Units	N/A	ISO 17025	7.2	6.9	7	7.5	7.9
Total Cyanide	µg/l	10	ISO 17025	< 10	-	-	< 10	-
Sulphate as SO ₄	µg/l	45	ISO 17025	-	38500	434000	-	92700
Total Sulphur	µg/l	15	NONE	-	13000	140000	-	31000
Chloride	mg/l	0.15	ISO 17025	-	130	940	-	230
Ammoniacal Nitrogen as NH ₄	µg/l	15	ISO 17025	-	17	20	-	97
Nitrate as N	mg/l	0.01	ISO 17025	-	0.46	0.01	-	1.96
Nitrate as NO ₃	mg/l	0.05	ISO 17025	-	2.05	0.05	-	8.68

Hardness - Total	mgCaCO ₃ /l	1	ISO 17025	573	-	-	141	-
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	-
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	-
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	-
Fluorene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	-
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	-
Anthracene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	-
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	-
Pyrene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	-
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	-
Chrysene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	-
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	-
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	-
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	-
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	-
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	-
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	-

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	-	-	< 0.16	-
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Heavy Metals / Metalloids

Boron (dissolved)	µg/l	10	ISO 17025	120	-	-	31	-
Calcium (dissolved)	mg/l	0.012	ISO 17025	130	-	-	42	-
Magnesium (dissolved)	mg/l	0.005	ISO 17025	59	6	150	8.9	41

Arsenic (dissolved)	µg/l	0.15	ISO 17025	< 0.15	-	-	0.28	-
Barium (dissolved)	µg/l	0.06	ISO 17025	51	-	-	71	-
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	-	-	< 0.1	-
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.17	-	-	0.07	-
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.3	-	-	0.2	-
Copper (dissolved)	µg/l	0.5	ISO 17025	1.9	-	-	1.6	-
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	-	-	< 0.2	-
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	-	-	< 0.05	-
Nickel (dissolved)	µg/l	0.5	ISO 17025	1.5	-	-	1.8	-
Selenium (dissolved)	µg/l	0.6	ISO 17025	< 0.6	-	-	1.9	-
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	-	-	0.5	-
Zinc (dissolved)	µg/l	0.5	ISO 17025	8.1	-	-	2.3	-

Monoaromatics & Oxygenates

Benzene	µg/l	3	ISO 17025	< 3.0	-	-	< 3.0	-
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Combined Report - Huyton Town Centre
Project / Site name: Huyton Town Centre

Your Order No: CCG-PO-15330

Lab Sample Number				2862980	2862981	2862982	2892307	2892308
Sample Reference				BH08	BH10	WS07	BH01	BH02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				5.80	4.15	3.53	6.23	5.10
Date Sampled				29/10/2023	29/10/2023	29/10/2023	26/11/2023	26/11/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					
Toluene	µg/l	3	ISO 17025	< 3.0	-	-	< 3.0	-
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	-	-	< 3.0	-
p & m-xylene	µg/l	3	ISO 17025	< 3.0	-	-	< 3.0	-
o-xylene	µg/l	3	ISO 17025	< 3.0	-	-	< 3.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	-	-	< 3.0	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	-
TPH-CWG - Aliphatic >C6 - C8 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	-
TPH-CWG - Aliphatic >C8 - C10 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	-

Aliphatic >C10 - C12 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	-	-	< 10	-
Aliphatic >C12 - C16 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	-	-	< 10	-
Aliphatic >C16 - C21 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	-	-	< 10	-
Aliphatic >C21 - C35 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	-	-	< 10	-
Aliphatic >C10 - C35 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	-	-	< 10	-

TPH-CWG - Aromatic >C5 - C7 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	-
TPH-CWG - Aromatic >C7 - C8 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	-
TPH-CWG - Aromatic >C8 - C10 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	-

Aromatic >C10 - C12 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	-	-	< 10	-
Aromatic >C12 - C16 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	-	-	< 10	-
Aromatic >C16 - C21 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	-	-	< 10	-
Aromatic >C21 - C35 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	-	-	< 10	-
Aromatic >C10 - C35 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	-	-	< 10	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



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Environmental Science

Combined Report - Huyton Town Centre
Project / Site name: Huyton Town Centre

Your Order No: CCG-PO-15330

Lab Sample Number				2892309	2892310	2892311	2892312	2892313
Sample Reference				BH03	BH06	BH07	BH09	BH12
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				7.31	6.48	6.52	6.79	9.35
Date Sampled				26/11/2023	26/11/2023	26/11/2023	26/11/2023	26/11/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status		

General Inorganics

pH (L099)	pH Units	N/A	ISO 17025	7.2	7.2	7.4	7.1	6.6
Total Cyanide	µg/l	10	ISO 17025	< 10	-	< 10	-	-
Sulphate as SO ₄	µg/l	45	ISO 17025	-	66300	-	285000	278000
Total Sulphur	µg/l	15	NONE	-	22000	-	95000	93000
Chloride	mg/l	0.15	ISO 17025	-	120	-	150	130
Ammoniacal Nitrogen as NH ₄	µg/l	15	ISO 17025	-	15	-	17	160
Nitrate as N	mg/l	0.01	ISO 17025	-	4.08	-	9.23	0.58
Nitrate as NO ₃	mg/l	0.05	ISO 17025	-	18.1	-	40.9	2.57

Hardness - Total	mgCaCO ₃ /l	1	ISO 17025	196	-	253	-	-
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Fluorene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Anthracene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Pyrene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Chrysene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-	-

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	-	< 0.16	-	-
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Heavy Metals / Metalloids

Boron (dissolved)	µg/l	10	ISO 17025	41	-	72	-	-
Calcium (dissolved)	mg/l	0.012	ISO 17025	46	-	64	-	-
Magnesium (dissolved)	mg/l	0.005	ISO 17025	20	28	23	66	55

Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.38	-	0.25	-	-
Barium (dissolved)	µg/l	0.06	ISO 17025	78	-	60	-	-
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	-	< 0.1	-	-
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.03	-	0.05	-	-
Chromium (dissolved)	µg/l	0.2	ISO 17025	1.1	-	0.4	-	-
Copper (dissolved)	µg/l	0.5	ISO 17025	27	-	0.6	-	-
Lead (dissolved)	µg/l	0.2	ISO 17025	0.3	-	< 0.2	-	-
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	-	< 0.05	-	-
Nickel (dissolved)	µg/l	0.5	ISO 17025	5.8	-	1.2	-	-
Selenium (dissolved)	µg/l	0.6	ISO 17025	< 0.6	-	1.7	-	-
Vanadium (dissolved)	µg/l	0.2	ISO 17025	1.3	-	1.5	-	-
Zinc (dissolved)	µg/l	0.5	ISO 17025	34	-	1.8	-	-

Monoaromatics & Oxygenates

Benzene	µg/l	3	ISO 17025	< 3.0	-	< 3.0	-	-
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Environmental Science

Combined Report - Huyton Town Centre
Project / Site name: Huyton Town Centre

Your Order No: CCG-PO-15330

Lab Sample Number				2892309	2892310	2892311	2892312	2892313
Sample Reference				BH03	BH06	BH07	BH09	BH12
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				7.31	6.48	6.52	6.79	9.35
Date Sampled				26/11/2023	26/11/2023	26/11/2023	26/11/2023	26/11/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					
Toluene	µg/l	3	ISO 17025	< 3.0	-	< 3.0	-	-
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	-	< 3.0	-	-
p & m-xylene	µg/l	3	ISO 17025	< 3.0	-	< 3.0	-	-
o-xylene	µg/l	3	ISO 17025	< 3.0	-	< 3.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	-	< 3.0	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	-	< 1.0	-	-
TPH-CWG - Aliphatic >C6 - C8 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	-	< 1.0	-	-
TPH-CWG - Aliphatic >C8 - C10 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	-	< 1.0	-	-

Aliphatic >C10 - C12 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-
Aliphatic >C12 - C16 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-
Aliphatic >C16 - C21 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-
Aliphatic >C21 - C35 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-
Aliphatic >C10 - C35 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-

TPH-CWG - Aromatic >C5 - C7 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	-	< 1.0	-	-
TPH-CWG - Aromatic >C7 - C8 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	-	< 1.0	-	-
TPH-CWG - Aromatic >C8 - C10 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	-	< 1.0	-	-

Aromatic >C10 - C12 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-
Aromatic >C12 - C16 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-
Aromatic >C16 - C21 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-
Aromatic >C21 - C35 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-
Aromatic >C10 - C35 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	-	< 10	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



Combined Report - Huyton Town Centre
Project / Site name: Huyton Town Centre

Your Order No: CCG-PO-15330

Lab Sample Number				2892314
Sample Reference				WS11
Sample Number				None Supplied
Depth (m)				1.08
Date Sampled				26/11/2023
Time Taken				1600
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status	

General Inorganics

pH (L099)	pH Units	N/A	ISO 17025	11.2
Total Cyanide	µg/l	10	ISO 17025	-
Sulphate as SO4	µg/l	45	ISO 17025	50600
Total Sulphur	µg/l	15	NONE	17000
Chloride	mg/l	0.15	ISO 17025	33
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	110
Nitrate as N	mg/l	0.01	ISO 17025	0.55
Nitrate as NO3	mg/l	0.05	ISO 17025	2.41

Hardness - Total	mgCaCO3/l	1	ISO 17025	-
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	-
Acenaphthylene	µg/l	0.01	ISO 17025	-
Acenaphthene	µg/l	0.01	ISO 17025	-
Fluorene	µg/l	0.01	ISO 17025	-
Phenanthrene	µg/l	0.01	ISO 17025	-
Anthracene	µg/l	0.01	ISO 17025	-
Fluoranthene	µg/l	0.01	ISO 17025	-
Pyrene	µg/l	0.01	ISO 17025	-
Benzo(a)anthracene	µg/l	0.01	ISO 17025	-
Chrysene	µg/l	0.01	ISO 17025	-
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	-
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	-
Benzo(a)pyrene	µg/l	0.01	ISO 17025	-
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	-
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	-
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	-

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	-
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Heavy Metals / Metalloids

Boron (dissolved)	µg/l	10	ISO 17025	-
Calcium (dissolved)	mg/l	0.012	ISO 17025	-
Magnesium (dissolved)	mg/l	0.005	ISO 17025	0.16

Arsenic (dissolved)	µg/l	0.15	ISO 17025	-
Barium (dissolved)	µg/l	0.06	ISO 17025	-
Beryllium (dissolved)	µg/l	0.1	ISO 17025	-
Cadmium (dissolved)	µg/l	0.02	ISO 17025	-
Chromium (dissolved)	µg/l	0.2	ISO 17025	-
Copper (dissolved)	µg/l	0.5	ISO 17025	-
Lead (dissolved)	µg/l	0.2	ISO 17025	-
Mercury (dissolved)	µg/l	0.05	ISO 17025	-
Nickel (dissolved)	µg/l	0.5	ISO 17025	-
Selenium (dissolved)	µg/l	0.6	ISO 17025	-
Vanadium (dissolved)	µg/l	0.2	ISO 17025	-
Zinc (dissolved)	µg/l	0.5	ISO 17025	-

Monoaromatics & Oxygenates

Benzene	µg/l	3	ISO 17025	-
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Combined Report - Huyton Town Centre
Project / Site name: Huyton Town Centre

Your Order No: CCG-PO-15330

Lab Sample Number				2892314
Sample Reference				WS11
Sample Number				None Supplied
Depth (m)				1.08
Date Sampled				26/11/2023
Time Taken				1600
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status	
Toluene	µg/l	3	ISO 17025	-
Ethylbenzene	µg/l	3	ISO 17025	-
p & m-xylene	µg/l	3	ISO 17025	-
o-xylene	µg/l	3	ISO 17025	-
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6 _{HS_1D_AL}	µg/l	1	ISO 17025	-
TPH-CWG - Aliphatic >C6 - C8 _{HS_1D_AL}	µg/l	1	ISO 17025	-
TPH-CWG - Aliphatic >C8 - C10 _{HS_1D_AL}	µg/l	1	ISO 17025	-

Aliphatic >C10 - C12 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	-
Aliphatic >C12 - C16 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	-
Aliphatic >C16 - C21 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	-
Aliphatic >C21 - C35 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	-
Aliphatic >C10 - C35 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	-

TPH-CWG - Aromatic >C5 - C7 _{HS_1D_AR}	µg/l	1	ISO 17025	-
TPH-CWG - Aromatic >C7 - C8 _{HS_1D_AR}	µg/l	1	ISO 17025	-
TPH-CWG - Aromatic >C8 - C10 _{HS_1D_AR}	µg/l	1	ISO 17025	-

Aromatic >C10 - C12 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	-
Aromatic >C12 - C16 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	-
Aromatic >C16 - C21 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	-
Aromatic >C21 - C35 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	-
Aromatic >C10 - C35 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

i2 Analytical

7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS

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Waste Acceptance Criteria Analytical Results							
Report No:	Combined Report - Huyton Town Centre						
					Client: CCGEO		
Location	Huyton Town Centre						
Lab Reference (Sample Number)	2809323 / 2809324				Landfill Waste Acceptance Criteria		
Sampling Date	08/09/2023				Inert Waste Landfill	Limits	
Sample ID	TP03					Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Depth (m)	0.50						
Solid Waste Analysis							
TOC (%)**	2.5				3%	5%	6%
Loss on Ignition (%) **	4.5				--	--	10%
BTEX (µg/kg) #	< 5.0				6000	--	--
Sum of PCBs (mg/kg)**	< 0.007				1	--	--
Mineral Oil (mg/kg) BH_ID_CU_AL	29				500	--	--
Total PAH (WAC-17) (mg/kg)	3.44				100	--	--
pH (units)**	7.3				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	3.2				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0030			0.0295	0.5	2	25
Barium *	0.0691			0.691	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0007			0.0069	0.5	10	70
Copper *	0.017			0.17	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0013			0.0131	0.5	10	30
Nickel *	0.0017			0.017	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	0.0023			0.023	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.019			0.19	4	50	200
Chloride *	0.78			7.8	800	15000	25000
Fluoride*	0.45			4.5	10	150	500
Sulphate *	870			8700	1000	20000	50000
TDS*	770			7700	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	7.66			76.6	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.2						
Dry Matter (%)	92						
Moisture (%)	7.8						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation							
** = UKAS accredited (liquid eluate analysis only)							
** = MCERTS accredited							

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

i2 Analytical

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Croxley Green Business Park
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Waste Acceptance Criteria Analytical Results							
Report No:	Combined Report - Huyton Town Centre						
					Client: CCGEO		
Location	Huyton Town Centre						
Lab Reference (Sample Number)	2815701 / 2815702				Landfill Waste Acceptance Criteria		
Sampling Date	13/09/2023				Limits		
Sample ID	WS16				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Depth (m)	1.00						
Solid Waste Analysis							
TOC (%)**	1.1				3%	5%	6%
Loss on Ignition (%) **	2.9				--	--	10%
BTEX (µg/kg)**	< 5.0				6000	--	--
Sum of PCBs (mg/kg)**	< 0.007				1	--	--
Mineral Oil (mg/kg) BH_ID_CU_AL	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	8.0				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	1.5				--	To be evaluated	To be evaluated
Eluate Analysis		10:1		10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)		mg/l		mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0029			0.0293	0.5	2	25
Barium *	0.0079			0.0786	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0007			0.0074	0.5	10	70
Copper *	0.018			0.18	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0102			0.102	0.5	10	30
Nickel *	0.0094			0.094	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0038			0.038	4	50	200
Chloride *	0.70			7.0	800	15000	25000
Fluoride*	1.0			10	10	150	500
Sulphate *	3.1			31	1000	20000	50000
TDS*	61			610	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	15.0			150	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.1						
Dry Matter (%)	89						
Moisture (%)	11						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation							
** = UKAS accredited (liquid eluate analysis only)							
** = MCERTS accredited							

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Waste Acceptance Criteria Analytical Results								
Report No:		Combined Report - Huyton Town Centre						
						Client: CCGEO		
Location		Huyton Town Centre						
Lab Reference (Sample Number)		2815711 / 2815712				Landfill Waste Acceptance Criteria		
Sampling Date		13/09/2023				Limits		
Sample ID		WS03				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Depth (m)		0.50						
Solid Waste Analysis								
TOC (%)**		1.0				3%	5%	6%
Loss on Ignition (%) **		2.2				--	--	10%
BTEX (µg/kg)**##		< 5.0				6000	--	--
Sum of PCBs (mg/kg)**		< 0.007				1	--	--
Mineral Oil (mg/kg) BH,LD,CU,AL		< 10				500	--	--
Total PAH (WAC-17) (mg/kg)		1.73				100	--	--
pH (units)**		6.7				--	>6	--
Acid Neutralisation Capacity (mmol / kg)		-1.1				--	To be evaluated	To be evaluated
Eluate Analysis		10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)		mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *		0.0022			0.0218	0.5	2	25
Barium *		0.0085			0.0851	20	100	300
Cadmium *		< 0.0001			< 0.0008	0.04	1	5
Chromium *		0.0006			0.0057	0.5	10	70
Copper *		0.011			0.11	2	50	100
Mercury *		< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *		0.0111			0.111	0.5	10	30
Nickel *		0.0007			0.0067	0.4	10	40
Lead *		0.0013			0.013	0.5	10	50
Antimony *		< 0.0017			< 0.017	0.06	0.7	5
Selenium *		< 0.0040			< 0.040	0.1	0.5	7
Zinc *		0.0019			0.019	4	50	200
Chloride *		1.0			10	800	15000	25000
Fluoride*		0.97			9.7	10	150	500
Sulphate *		2.7			27	1000	20000	50000
TDS*		57			570	4000	60000	100000
Phenol Index (Monohydric Phenols) *		< 0.010			< 0.10	1	-	-
DOC		16.2			162	500	800	1000
Leach Test Information								
Stone Content (%)		< 0.1						
Sample Mass (kg)		1.0						
Dry Matter (%)		90						
Moisture (%)		9.6						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.								
Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation								
** = UKAS accredited (liquid eluate analysis only)								
** = MCEETS accredited								

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Waste Acceptance Criteria Analytical Results							
Report No:	Combined Report - Huyton Town Centre						
					Client: CCGEO		
Location	Huyton Town Centre						
Lab Reference (Sample Number)	2818227 / 2818228				Landfill Waste Acceptance Criteria		
Sampling Date	15/09/2023				Inert Waste Landfill	Limits	
Sample ID	BH09					Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Depth (m)	0.20						
Solid Waste Analysis							
TOC (%)**	0.8				3%	5%	6%
Loss on Ignition (%) **	3.0				--	--	10%
BTEX (µg/kg)**	< 5.0				6000	--	--
Sum of PCBs (mg/kg)**	< 0.007				1	--	--
Mineral Oil (mg/kg) BH_ID_CU_AL	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	25.5				100	--	--
pH (units)**	11.9				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	160				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0012			0.0119	0.5	2	25
Barium *	0.151			1.51	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.039			0.39	0.5	10	70
Copper *	0.086			0.86	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0053			0.0532	0.5	10	30
Nickel *	0.0074			0.074	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0039			0.039	4	50	200
Chloride *	2.2			22	800	15000	25000
Fluoride*	0.16			1.6	10	150	500
Sulphate *	5.5			55	1000	20000	50000
TDS*	1500			15000	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	29.6			296	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.2						
Dry Matter (%)	88						
Moisture (%)	12						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.					* = UKAS accredited (liquid eluate analysis only)		
Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation					** = MCERTS accredited		

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Waste Acceptance Criteria Analytical Results							
Report No:	Combined Report - Huyton Town Centre						
					Client: CCGEO		
Location	Huton Town Centre						
Lab Reference (Sample Number)	2818241 / 2818242				Landfill Waste Acceptance Criteria		
Sampling Date	17/09/2023				Inert Waste Landfill	Limits	
Sample ID	BH08					Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Depth (m)	0.20						
Solid Waste Analysis							
TOC (%)**	1.9				3%	5%	6%
Loss on Ignition (%) **	3.6				--	--	10%
BTEX (µg/kg)**	< 5.0				6000	--	--
Sum of PCBs (mg/kg)**	< 0.007				1	--	--
Mineral Oil (mg/kg) BH_ID_CU_AL	120				500	--	--
Total PAH (WAC-17) (mg/kg)	1.85				100	--	--
pH (units)**	7.7				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	3.4				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0103			0.103	0.5	2	25
Barium *	0.0097			0.0965	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0013			0.013	0.5	10	70
Copper *	0.011			0.11	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0069			0.0693	0.5	10	30
Nickel *	0.0014			0.014	0.4	10	40
Lead *	0.0020			0.020	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0068			0.068	4	50	200
Chloride *	3.1			31	800	15000	25000
Fluoride*	0.52			5.2	10	150	500
Sulphate *	3.9			39	1000	20000	50000
TDS*	62			620	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	6.65			66.5	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.2						
Dry Matter (%)	92						
Moisture (%)	8.2						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation							
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Waste Acceptance Criteria Analytical Results								
Report No:		Combined Report - Huyton Town Centre						
						Client: CCGEO		
Location		Huyton Town Centre						
Lab Reference (Sample Number)		2824651 / 2824652				Landfill Waste Acceptance Criteria		
						Limits		
Sampling Date		20/09/2023				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID		WS06						
Depth (m)		1.00						
Solid Waste Analysis								
TOC (%)**		0.8				3%	5%	6%
Loss on Ignition (%) **		2.6				--	--	10%
BTEX (µg/kg)**		< 5.0				6000	--	--
Sum of PCBs (mg/kg)**		< 0.007				1	--	--
Mineral Oil (mg/kg) EN 10 CU AL		< 10				500	--	--
Total PAH (WAC-17) (mg/kg)		4.51				100	--	--
pH (units)**		7.7				--	>6	--
Acid Neutralisation Capacity (mmol / kg)		3.9				--	To be evaluated	To be evaluated
Eluate Analysis		10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)		mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *		< 0.0010			< 0.0100	0.5	2	25
Barium *		0.0047			0.0473	20	100	300
Cadmium *		< 0.0001			< 0.0008	0.04	1	5
Chromium *		0.0009			0.0090	0.5	10	70
Copper *		0.017			0.17	2	50	100
Mercury *		< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *		0.0007			0.0066	0.5	10	30
Nickel *		0.0012			0.012	0.4	10	40
Lead *		< 0.0010			< 0.010	0.5	10	50
Antimony *		< 0.0017			< 0.017	0.06	0.7	5
Selenium *		< 0.0040			< 0.040	0.1	0.5	7
Zinc *		0.0088			0.088	4	50	200
Chloride *		0.95			9.5	800	15000	25000
Fluoride*		0.43			4.3	10	150	500
Sulphate *		18			180	1000	20000	50000
TDS*		88			880	4000	60000	100000
Phenol Index (Monohydric Phenols) *		< 0.010			< 0.10	1	-	-
DOC		19.3			193	500	800	1000
Leach Test Information								
Stone Content (%)		< 0.1						
Sample Mass (kg)		1.2						
Dry Matter (%)		87						
Moisture (%)		13						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.								
Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation								
** - MCERTS accredited								

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Waste Acceptance Criteria Analytical Results									
Report No:		Combined Report - Huyton Town Centre							
		Client: CCGEO							
Location		Huyton Town Centre							
Lab Reference (Sample Number)		2824653 / 2824654							
Sampling Date		20/09/2023							
Sample ID		BH03							
Depth (m)		0.20							
Solid Waste Analysis									
TOC (%)**		0.2				3%	5%	6%	
Loss on Ignition (%) **		0.7				--	--	10%	
BTEx (µg/kg)**		< 5.0				6000	--	--	
Sum of PCBs (mg/kg)**		< 0.007				1	--	--	
Mineral Oil (mg/kg) EN 10 CU AL		29				500	--	--	
Total PAH (WAC-17) (mg/kg)		2.49				100	--	--	
pH (units)**		9.3				--	>6	--	
Acid Neutralisation Capacity (mmol / kg)		22				--	To be evaluated	To be evaluated	
Eluate Analysis		10:1			10:1	Limit values for compliance leaching test			
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)		mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)			
Arsenic *		0.0031			0.0308	0.5	2	25	
Barium *		0.0115			0.115	20	100	300	
Cadmium *		< 0.0001			< 0.0008	0.04	1	5	
Chromium *		0.0031			0.031	0.5	10	70	
Copper *		0.011			0.11	2	50	100	
Mercury *		< 0.0005			< 0.0050	0.01	0.2	2	
Molybdenum *		< 0.0004			< 0.0040	0.5	10	30	
Nickel *		< 0.0003			< 0.0030	0.4	10	40	
Lead *		0.0015			0.015	0.5	10	50	
Antimony *		< 0.0017			< 0.017	0.06	0.7	5	
Selenium *		< 0.0040			< 0.040	0.1	0.5	7	
Zinc *		0.0041			0.041	4	50	200	
Chloride *		0.45			4.5	800	15000	25000	
Fluoride*		0.52			5.2	10	150	500	
Sulphate *		42			420	1000	20000	50000	
TDS*		100			1000	4000	60000	100000	
Phenol Index (Monohydric Phenols) *		< 0.010			< 0.10	1	-	-	
DOC		4.00			40.0	500	800	1000	
Leach Test Information									
Stone Content (%)		52							
Sample Mass (kg)		1.5							
Dry Matter (%)		91							
Moisture (%)		8.6							
Results are expressed on a dry weight basis, after correction for moisture content where applicable.									
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation									
* = UKAS accredited (liquid eluate analysis only) ** = MCERTS accredited									

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Waste Acceptance Criteria Analytical Results							
Report No:		Combined Report - Huyton Town Centre					
					Client: CCGEO		
Location		Huyton Town Centre					
Lab Reference (Sample Number)		2826201 / 2826202			Landfill Waste Acceptance Criteria		
Sampling Date		21/09/2023			Limits		
Sample ID		BH05			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Depth (m)		1.50					
Solid Waste Analysis							
TOC (%)**	0.1				3%	5%	6%
Loss on Ignition (%) **	1.7				--	--	10%
BTEX (µg/kg)**	< 5.0				6000	--	--
Sum of PCBs (mg/kg)**	< 0.007				1	--	--
Mineral Oil (mg/kg) BH_ID_CU_AL	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	7.9				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	5.9				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0014			0.0141	0.5	2	25
Barium *	0.0046			0.0462	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0012			0.012	0.5	10	70
Copper *	0.0040			0.040	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0035			0.0351	0.5	10	30
Nickel *	0.0014			0.015	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0029			0.029	4	50	200
Chloride *	3.2			32	800	15000	25000
Fluoride*	0.68			6.8	10	150	500
Sulphate *	5.5			55	1000	20000	50000
TDS*	37			370	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	9.63			96.3	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.80						
Dry Matter (%)	88						
Moisture (%)	12						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation							
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** = MCERTS accredited							

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Waste Acceptance Criteria Analytical Results									
Report No:		Combined Report - Huyton Town Centre							
		Client: CCGEO							
Location		Huyton Town Centre							
Lab Reference (Sample Number)		2831664 / 2831665							
Sampling Date		26/09/2023							
Sample ID		BH06							
Depth (m)		1.50							
Solid Waste Analysis									
TOC (%)**		0.1				3%	5%	6%	
Loss on Ignition (%) **		2.2				--	--	10%	
BTEx (µg/kg)** ##		< 5.0				6000	--	--	
Sum of PCBs (mg/kg)**		< 0.007				1	--	--	
Mineral Oil (mg/kg) EN 10 CU AL		< 10				500	--	--	
Total PAH (WAC-17) (mg/kg)		< 0.85				100	--	--	
pH (units)**		7.4				--	>6	--	
Acid Neutralisation Capacity (mmol / kg)		7.2				--	To be evaluated	To be evaluated	
Eluate Analysis		10:1			10:1	Limit values for compliance leaching test			
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)		mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)			
Arsenic *		< 0.0010			< 0.0100	0.5	2	25	
Barium *		0.0079			0.0794	20	100	300	
Cadmium *		< 0.0001			< 0.0008	0.04	1	5	
Chromium *		0.0005			0.0047	0.5	10	70	
Copper *		0.013			0.13	2	50	100	
Mercury *		< 0.0005			< 0.0050	0.01	0.2	2	
Molybdenum *		0.0008			0.0076	0.5	10	30	
Nickel *		0.0014			0.014	0.4	10	40	
Lead *		< 0.0010			< 0.010	0.5	10	50	
Antimony *		< 0.0017			< 0.017	0.06	0.7	5	
Selenium *		< 0.0040			< 0.040	0.1	0.5	7	
Zinc *		0.016			0.16	4	50	200	
Chloride *		14			140	800	15000	25000	
Fluoride*		0.61			6.1	10	150	500	
Sulphate *		18			180	1000	20000	50000	
TDS*		75			750	4000	60000	100000	
Phenol Index (Monohydric Phenols) *		< 0.010			< 0.10	1	-	-	
DOC		11.6			116	500	800	1000	
Leach Test Information									
Stone Content (%)		< 0.1							
Sample Mass (kg)		1.2							
Dry Matter (%)		87							
Moisture (%)		13							
Results are expressed on a dry weight basis, after correction for moisture content where applicable.									
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation									
* = UKAS accredited (liquid eluate analysis only)									
** = MCERTS accredited									

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

i2 Analytical

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Waste Acceptance Criteria Analytical Results							
Report No:	Combined Report - Huyton Town Centre						
					Client: CCGEO		
Location	Huyton Town Centre						
Lab Reference (Sample Number)	2831910 / 2831911				Landfill Waste Acceptance Criteria		
Sampling Date	28/09/2023				Limits		
Sample ID	BH04				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Depth (m)	0.50						
Solid Waste Analysis							
TOC (%)**	0.4				3%	5%	6%
Loss on Ignition (%) **	3.0				--	--	10%
BTEX (µg/kg)** ##	< 5.0				6000	--	--
Sum of PCBs (mg/kg)**	< 0.007				1	--	--
Mineral Oil (mg/kg) BH_ID_CU_AL	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	7.6				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	2.7				--	To be evaluated	To be evaluated
Eluate Analysis		10:1		10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)		mg/l		mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	< 0.0010			< 0.0100	0.5	2	25
Barium *	0.0045			0.0452	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0013			0.013	0.5	10	70
Copper *	0.032			0.32	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0065			0.0651	0.5	10	30
Nickel *	0.0019			0.019	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0091			0.091	4	50	200
Chloride *	16			160	800	15000	25000
Fluoride*	1.6			16	10	150	500
Sulphate *	3.6			36	1000	20000	50000
TDS*	80			800	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	30.2			302	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.7						
Dry Matter (%)	84						
Moisture (%)	16						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation							
** = UKAS accredited (liquid eluate analysis only)							
** = MCERTS accredited							

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Combined Report - Huyton Town Centre
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Your Order No: CCG-PO-15330

Lab Sample Number				2806617	2815698	2815705	2815709	2818238
Sample Reference				BH12	WS16	WS07	WS03	BH08
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	1.50	1.00	0.50
Date Sampled				05/09/2023	13/09/2023	12/09/2023	13/09/2023	17/09/2023
Time Taken				1600	1600	1600	1600	1600
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					

Speciated PAHs

Naphthalene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1	ISO 17025	13	3.4	1.9	2.1	5.4
Barium (dissolved)	µg/l	0.05	ISO 17025	9.5	9.9	7.6	8.3	7.2
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Boron (dissolved)	µg/l	10	ISO 17025	55	< 10	17	17	< 10
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	0.9	0.9	1.7	0.8	0.5
Copper (dissolved)	µg/l	0.7	ISO 17025	28	24	17	18	7
Lead (dissolved)	µg/l	1	ISO 17025	1.8	< 1.0	7.3	1.3	< 1.0
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.3	1.7	1.9	1.5	4.4
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Vanadium (dissolved)	µg/l	1.7	ISO 17025	30	< 1.7	4.4	4	9.2
Zinc (dissolved)	µg/l	0.4	ISO 17025	24	13	13	2.8	5.1

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



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* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2802267	WS17	None Supplied	0.5	Brown loam with gravel and vegetation.
2806615	BH12	None Supplied	0.5	Brown clay and sand with gravel and brick.
2806616	BH12	None Supplied	1	Brown clay and sand with gravel.
2807285	BH11	None Supplied	0.9	Brown clay and sand with gravel and brick.
2809317	TP04	None Supplied	1.4	Brown clay and sand with gravel.
2809319	TP03	None Supplied	0.2	Brown loam and sand with gravel and vegetation.
2809323	TP03	None Supplied	0.5	Brown loam and sand with gravel and vegetation.
2810027	WS10	None Supplied	0.25	Brown loam and sand with gravel and vegetation.
2814755	WS09	None Supplied	0.2	Brown sandy loam with gravel and stones.
2815697	WS16	None Supplied	0.5	Brown loam and clay with gravel and vegetation.
2815699	BH07	None Supplied	0.5	Brown clay and sand with gravel.
2815701	WS16	None Supplied	1	Brown loam and clay with gravel and vegetation.
2815703	BH10	None Supplied	1	Brown loam and clay with gravel and vegetation.
2815704	WS07	None Supplied	1.5	Brown clay and sand with gravel.
2815708	WS03	None Supplied	1	Brown clay and sand with gravel.
2815711	WS03	None Supplied	0.5	Brown loam and sand with gravel.
2817921	WS02	None Supplied	0.5	Brown clay and sand with gravel.
2818227	BH09	None Supplied	0.2	Brown sand with gravel and chalk.
2818237	BH08	None Supplied	0.5	Brown clay and sand with gravel.
2818241	BH08	None Supplied	0.2	Brown sand with gravel.
2819780	WS04	None Supplied	0.5	Brown sandy loam with gravel and brick.
2824650	WS06	None Supplied	0.5	Brown loam and sand with gravel and vegetation.
2824651	WS06	None Supplied	1	Brown loam and sand with gravel and vegetation.
2824653	BH03	None Supplied	0.2	Brown sand with gravel and stones.
2826201	BH05	None Supplied	1.5	Brown clay.
2826611	BH01	None Supplied	0.4	Brown clay and sand with gravel.
2830661	WS01	None Supplied	0.7	Brown clay.
2830662	WS02	None Supplied	1.5	Brown clay.
2830663	WS03	None Supplied	0.9	Brown clay.
2830664	WS04	None Supplied	2.7	Brown clay.
2830665	WS05	None Supplied	1.6	Brown clay.
2831664	BH06	None Supplied	1.5	Light brown clay and sand.
2831910	BH04	None Supplied	0.5	Light brown clay and sand.
2831930	TP01	None Supplied	0.3	Brown sand with gravel and rubble.
2831931	TP02	None Supplied	3.5	Light brown clay.
2831932	TP03	None Supplied	0.6	Brown sand with gravel and rubble.
2831933	TP04	None Supplied	2.4	Brown clay.
2831951	WS06	None Supplied	0.7	Brown clay with gravel and rubble.
2831952	WS07	None Supplied	3.3	Light brown clay.
2831953	WS08	None Supplied	1.6	Brown clay.
2831954	WS09	None Supplied	0.7	Light brown sand with gravel and rubble.
2831955	WS10	None Supplied	2.3	Light brown sand.
2831956	WS11	None Supplied	2	Brown clay.
2831957	WS15	None Supplied	1.2	Brown clay and sand with gravel.
2831958	WS16	None Supplied	3.2	Beige sand.
2831959	WS17	None Supplied	2.1	Brown clay.
2833038	BH02	None Supplied	1.15	Brown sandy clay with vegetation.
2833039	BH04	None Supplied	1.6	Brown clay.
2833104	BH01	None Supplied	1.8	Brown sand.
2833105	BH03	None Supplied	2	Brown sandy clay.
2833106	BH05	None Supplied	0.75	Brown clay and loam with gravel and vegetation.
2833107	BH06	None Supplied	0.4	Brown clay and loam with gravel and vegetation.
2833108	BH07	None Supplied	3.8	Brown sand.
2833109	BH08	None Supplied	4	Brown clay.
2833110	BH11	None Supplied	1.2	Brown clay.
2834615	BH09	None Supplied	2.8	Brown sand.
2834616	BH10	None Supplied	0.2	Brown gravelly sand with stones.
2834617	BH12	None Supplied	0.6	Brown clay and sand with gravel and brick.
2846902	BH01	None Supplied	9.2	Brown sand.
2846903	BH02	None Supplied	2.5	Brown sand.
2846904	BH03	None Supplied	5.6	Brown sand.

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Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2846905	BH04	None Supplied	18.3	Brown sand.
2846906	BH05	None Supplied	7.55	Light brown sand.
2846907	BH06	None Supplied	14.4	Brown sand.
2846908	BH07	None Supplied	9.9	Brown sand.
2846909	BH08	None Supplied	7	Brown sand.
2846910	BH09	None Supplied	3.7	Brown sand.
2846911	BH10	None Supplied	17	Brown sand.
2846912	BH11	None Supplied	12.1	Brown sand.
2846913	BH12	None Supplied	8	Brown sand.
2859339	WS15	None Supplied	0.5	Brown loam and clay with gravel and vegetation.

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Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
NRA Leachate Prep	10:1 extract with de-ionised water shaken for 24 hours then filtered.	In-house method based on National Rivers Authority	L020-PL	W	NONE
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance"	L046-PL	W	NONE
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium. Accredited Matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	ISO 17025
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Mineral Oil (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025

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Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L102B-PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. Refer to CoA for analyte specific accreditation.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270.	L064-PL	D	MCERTS
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
pH at 20oC in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In house method.	L005-PL	W	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil TM	L039-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	ISO 17025
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073B-PL	W	MCERTS

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Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L0738-PL	W	MCERTS
TPH C10-C35 by GCxGC-FID	Determination of total petroleum hydrocarbons in water by GC x GC FID with carbon banding aliphatic and aromatic C10-C35. Accredited Matrices SW, GW, PW.	In-house method	L1018-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L0738-PL	W	ISO 17025
Ammonium as NH4 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. Refer to CoA for band specific accreditation.	In-house method with silica gel split/clean up.	L088/76-PL	D	MCERTS
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Total BTEX in soil (Poland)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073-PL	W	MCERTS
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS
Chloride in water	Determination of Chloride (dissolved) colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082-PL	W	ISO 17025
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil"	L039-PL	W	ISO 17025

Combined Report - Huyton Town Centre
Project / Site name: Huyton Town Centre

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L0338-PL	W	ISO 17025
Sulphate 10:1 WAC	Determination of sulphate in leachate by ICP-OES	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	ISO 17025
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by EC probe using a factor of 0.6.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025

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Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Dissolved organic carbon 10:1 WAC	Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
-	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

- Data reported unaccredited due to quality control parameter failure associated with this result; other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

- Quality control parameter has a high recovery (outside of limit); however the associated result is below the reporting limit, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

^^U/S - Unsuitable for analysis due to sample matrix

Sample Deviation Report



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This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
WS09	None Supplied	S	2814755	c	Total cyanide in soil	L080-PL	c
WS17	None Supplied	S	2831959	c	pH in soil (automated)	L099-PL	c
BH12	None Supplied	S	2834617	c	pH in soil (automated)	L099-PL	c
WS15	None Supplied	S	2859339	c	BTEX and MTBE in soil	L073B-PL	c
WS15	None Supplied	S	2859339	c	Organic matter (Autor)	L009-PL	c
WS15	None Supplied	S	2859339	c	Speciated EPA-16 PAH	L064-PL	c
WS15	None Supplied	S	2859339	c	TPHCWG (Soil)	L088/76-PL	c
WS15	None Supplied	S	2859339	c	Total cyanide in soil	L080-PL	c
WS15	None Supplied	S	2859339	c	pH in soil (automated)	L099-PL	c



APPENDIX O

NOTES ON LIMITATIONS

Notes on Limitations For Geoenvironmental and Geotechnical Consultancy Services

General

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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.

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1. the consequences of this document being used for any purpose or project other than for which it was commissioned and/or
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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.

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 the timescale available, and the locations of the exploratory holes may have been restricted to areas unoccupied by the building(s) on the site, and further restricted by the existence of buried services. A more comprehensive investigation may be required if the site is to be redeveloped as, in addition to risk assessment, a number of important engineering and environmental issues may need to be resolved.

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.

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 number of sampling points and the methods of sampling and testing do not preclude the existence of localised "hotspots" of contamination where concentrations may be significantly higher than those actually encountered.

Geoenvironmental Ground Investigations

The investigation of the site has been carried out to provide sufficient information within the agreed scope of the investigation, under the general headings of type and degree of contamination, geotechnical characteristics, and ground and groundwater conditions, to provide 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 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; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.