CCG-C-23-14178

GROUND INVESTIGATION AT

HUYTON TOWN CENTRE

JANUARY 2024

FACTUAL REPORT



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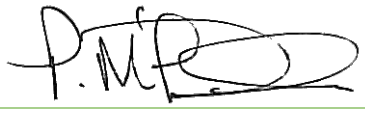
Signature:	
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1.0 INTRODUCTION

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.

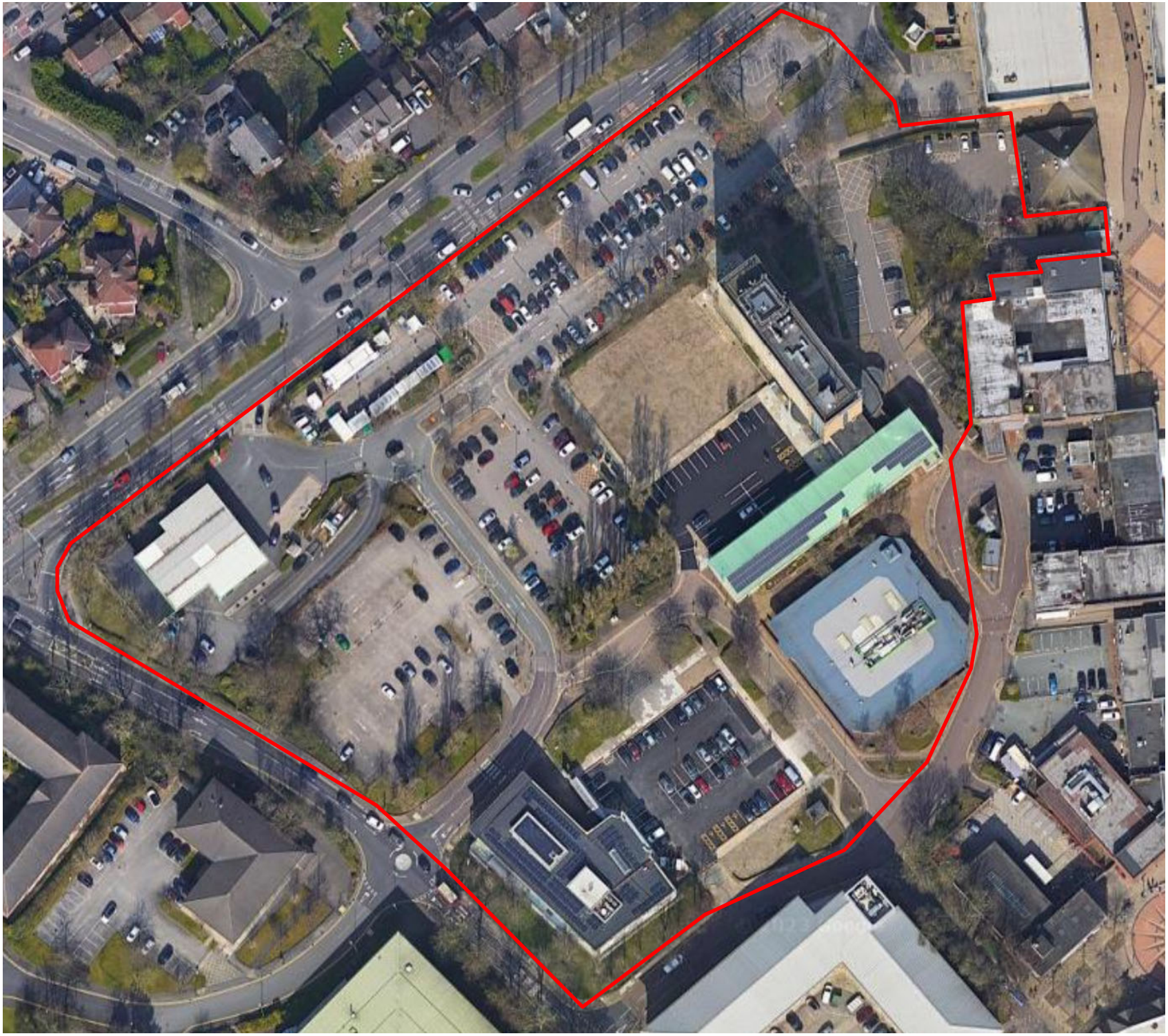
6.2 Chemical Testing

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

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Client:
Genr8

Project:
Huyton Town centre

Title:
Site Location—Aerial Photograph

Scale:	Issue:
NTS	01
Drawn by:	Date:
PMC	December 2023
Project No.	Drawing No.
CCG-C-23-14178	01

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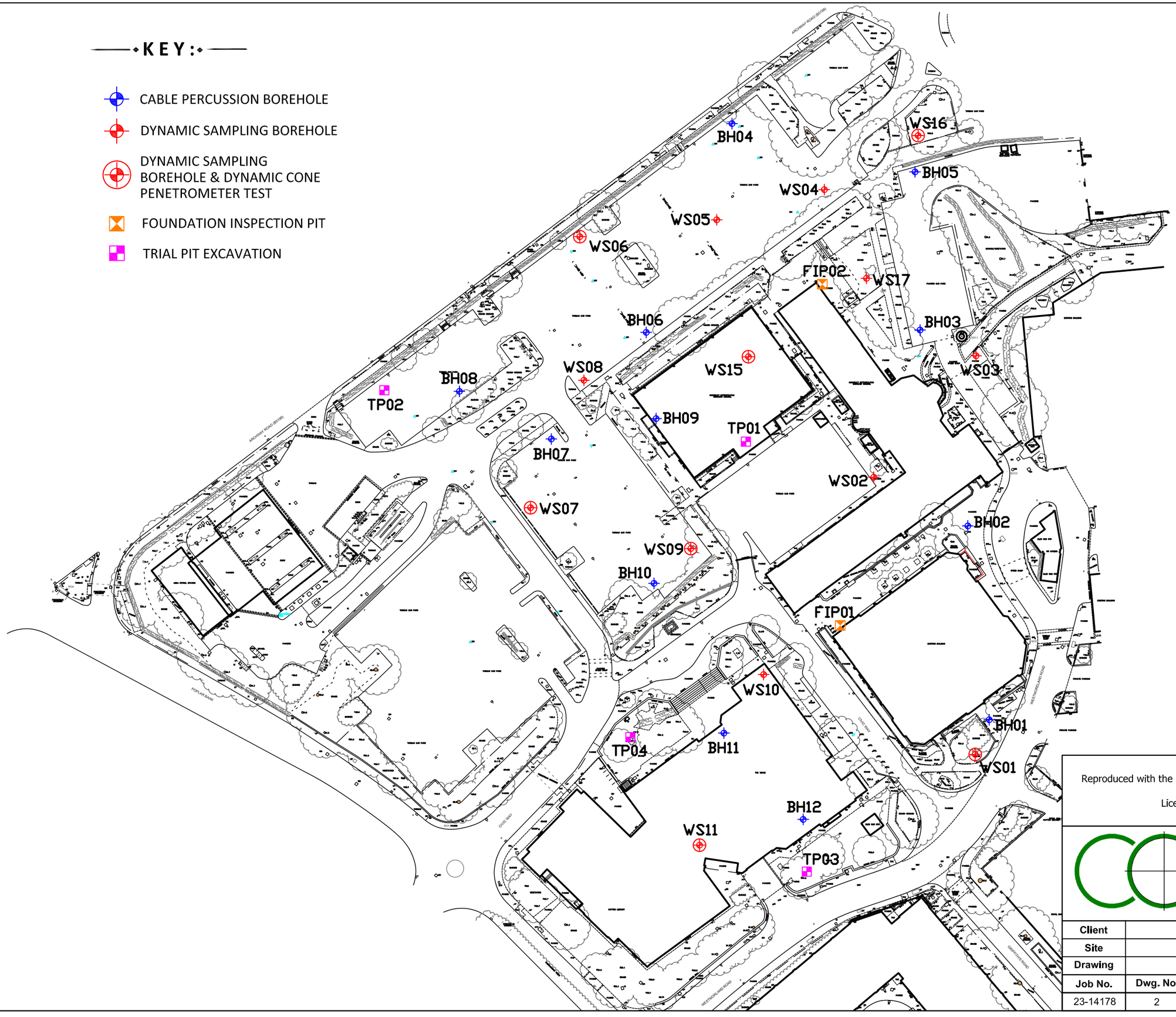
KEY :

- 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	Date
23-14178	2	1	NTS	JAN 2024

APPENDIX B

SERVICE CLEARANCE EXCAVATION PHOTOGRAPHS


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - BH01


CCG-C-23-14178: Huyton Town Centre
BH02
Service clearance excavation - BH02


CCG-C-23-14178: Huyton Town Centre
BH02
Service clearance excavation - BH02


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - BH03


CCG-C-23-14178: Huyton Town Centre
BH
Service clearance excavation - BH04


CCG-C-23-14178: Huyton Town Centre
BH4
Service clearance excavation - BH04


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - BH05


CCG-C-23-14178: Huyton Town Centre
BH6
Service clearance excavation - BH06


CCG-C-23-14178: Huyton Town Centre
BH07
Service clearance excavation - BH07


CCG-C-23-14178: Huyton Town Centre
BH09
Service clearance excavation - BH09


CCG-C-23-14178: Huyton Town Centre
BH08
Service clearance excavation - BH08


CCG-C-23-14178: Huyton Town Centre
10
Service clearance excavation - BH10


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - BH10


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - BH11


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - BH11


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - BH11


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - BH12


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - BH12


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - BH12


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - BH01


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS01


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS02


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS02


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS03


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS03


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS05


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS06


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS06


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS07


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS08


CCG-C-23-14178: Huyton Town Centre
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CCG-C-23-14178: Huyton Town Centre
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CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS09


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS09


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS09


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS10


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS10


CCG-C-23-14178: Huyton Town Centre


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS10


CCG-C-23-14178: Huyton Town Centre
WS
11
Service clearance excavation - WS11


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS11


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS11


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS11


Service clearance excavation - WS13


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS15


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS16


CCG-C-23-14178: Huyton Town Centre
14178
Huyton
WS16
Service clearance excavation - WS15


CCG-C-23-14178: Huyton Town Centre
14178
Huyton
WS16
Service clearance excavation - WS16


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS17


CCG-C-23-14178: Huyton Town Centre
Service clearance excavation - WS17

APPENDIX C

CABLE PERCUSSION / ROTARY BOREHOLE LOGS

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
Cable Percussion Borehole Log	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	TCR	SCR	RQD	FI	Water	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.20	B							37.16	0.10		BLOCK PAVING		
0.20	D	PID 0.25m, 0.1ppm						37.11	0.15		Yellowish brown fine to medium SAND (MADE GROUND)		
0.25	ES	PID 0.40m, 0.1ppm						36.96	0.30		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)				
0.50	B							36.46	0.80		Brown slightly gravelly sandy silty CLAY. Gravel is fine to coarse subangular concrete and sandstone. (MADE GROUND)		
0.60	D												
1.00	ES	PID 1.00m, 0.1ppm							(0.60)				
1.10	B										Soft brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular sandstone.		
1.20	D							35.86	1.40				
1.20	UT	PID 1.50m, 0.1ppm							(0.30)		Brown gravelly silty SAND. Gravel is fine to coarse subangular to subrounded sandstone.		
1.50	ES							35.56	1.70				
1.60	B	SPT(S)N=89 (8,8/19,22,27,21)									Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand		
1.60	D												
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)											
						NR					*NO RECOVERY - 2.80-2.97mbgl*		
						NI							
						17		34.02	3.24				
						NI					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		
2.80 - 4.30	89	59	9	13		NI					*NON-INTACT. RECOVERED AS SANDY GRAVEL - 3.36-3.46mbgl*		
						15					*NON-INTACT. RECOVERED AS GRAVEL - 3.54-3.59mbgl*		
						NI					*NON-INTACT. RECOVERED AS GRAVEL - 3.72-3.74mbgl*		
						13							
						NR					*NO RECOVERY - 4.30-4.52mbgl*		
						NI					*NON-INTACT. RECOVERED AS GRAVEL - 4.52-4.79mbgl*		
4.30 - 5.80	85	67	67	6					(4.66)				
						NR					*NO RECOVERY - 5.80-5.86mbgl*		
						NI					*NON-INTACT. RECOVERED AS GRAVEL - 5.95-6.00mbgl*		
5.80 - 7.30	96	89	71	8									
						NR					*NO RECOVERY - 7.30-7.37mbgl*		
						10							
7.30 - 8.80	95	92	75	3				29.36	7.90		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		
						NI					*NON-INTACT. RECOVERED AS GRAVEL - 8.74-8.80mbgl*		
						NR			(3.90)		*NO RECOVERY - 8.80-8.83mbgl*		
8.80 - 10.30	98	98	90	5									

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
22-09-2023	16:00	2.80	2.80	
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

Chiselling

From (m)	To (m)	Duration	Remarks
2.50	2.80	01:00	

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	5.00	PLAIN	19
5.00	15.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Contract Name: Huyton Town Centre, Liverpool			Client: Genr8		Borehole ID: **BH01**
Contract Number: CCG-C-23-14178	Date Started: 22/09/2023	Loggged By: HF	Checked By: CB	Status: FINAL	Sheet 2 of 3
Rotary Core Drilling Log	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	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
				NR					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		
10.30 - 11.80	99	99	89	6					NO RECOVERY - 10.30-10.32mbgl		
				NR		25.46	11.80		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		
11.80 - 13.30	97	89	64	NI 9					NO RECOVERY - 11.80-11.85mbgl NON-INTACT. RECOVERED AS GRAVEL - 11.85-11.98mbgl		
				NR					NO RECOVERY - 13.30-13.48mbgl		
13.30 - 14.80	88	88	83	6			(4.50)				
				NR					NO RECOVERY - 14.80-14.82mbgl NON-INTACT. RECOVERED AS VERY SANDY GRAVEL - 14.82-14.94mbgl		
14.80 - 16.30	99	89	76	NI 5 NI 8					NON-INTACT. RECOVERED AS GRAVEL - 15.76-15.80mbgl		
				NR		20.96	16.30		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		
16.30 - 17.80	95	93	75	6					NO RECOVERY - 16.30-16.38mbgl		
				NR					NO RECOVERY - 17.80-17-789mbgl		
17.80 - 19.30	94	78	49	12 NI 10 NI 6			(3.70)		NON-INTACT. RECOVERED AS GRAVEL - 18.14-18.19mbgl NON-INTACT. RECOVERED AS GRAVEL - 18.59-18.63mbgl		
				NR					NO RECOVERY - 19.30-19.32mbgl		
19.30 - 20.00	97	97	87	4							

10 11 12 13 14 15 16 17 18 19

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
22-09-2023	16:00	2.80	2.80	
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

Flush Information

Top (m)	Base (m)	Flush Type	Return	Flush Colour
2.80	20.00		90%-100%	BROWN

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	5.00	PLAIN	19
5.00	15.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %

	Contract Name: Huyton Town Centre, Liverpool		Client: Genr8		Borehole ID: **BH01**
	Contract Number: CCG-C-23-14178	Date Started: 22/09/2023	Loggged By: HF	Checked By: CB	Status: FINAL
					Sheet 3 of 3
Rotary Core Drilling Log	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	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

Date	Time	Depth (m)	Casing (m)	Water (m)
22-09-2023	16:00	2.80	2.80	
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

Flush Information

Top (m)	Base (m)	Flush Type	Return	Flush Colour
2.80	20.00		90%-100%	BROWN

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	5.00	PLAIN	19
5.00	15.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %

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	TCR	SCR	RQD	Test Result / FI	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		Water Strike	Backfill/ Installation
0.20	ES				PID 0.20m, 0.6ppm	36.68	0.10		BLOCK PAVING			
0.30	B					36.63	0.15		Yellowish brown fine to medium SAND (MADE GROUND)			
0.40	D				PID 0.55m, 0.1ppm		(0.35)		Brown slightly silty sandy fine to coarse GRAVEL. Gravel is fine to coarse angular to subangular limestone. (MADE GROUND)			
0.55	ES					36.28	0.50					
0.60	B					36.13	0.65		Brown very sandy slightly clayey silty GRAVEL. Gravel is fine to coarse subangular brick, cinders, sandstone and limestone (MADE GROUND)			
1.00	ES				PID 1.00m, 0.0ppm		(0.55)			1		
1.10	B											
1.15	D				SPT(S)50 (10,15/50 for 260mm)	35.58	1.20		Brown very clayey slightly gravelly fine to medium SAND with frequent pockets of clay. Gravel is fine to medium subrounded			
					PID 1.50m, 0.0ppm		(0.40)					
					NR	35.18	1.60		sandstone.			
					5				Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand			
									NO RECOVERY - 1.50-1.60mbgl			
1.50 - 3.00	93	90	85		NI		(1.40)		Weak reddish brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are close to medium spaced, horizontal, clean, rough and tight to partly open	2		
					6				NON-INTACT. RECOVERED AS SANDY GRAVEL - 2.44-2.49mbgl			
					NR	33.78	3.00		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		
					11				NO RECOVERY - 3.00-3.22mbgl			
					NI				NON-INTACT. RECOVERED AS GRAVEL - 3.40-3.58mbgl			
3.00 - 4.50	85	43	33		6		(1.50)					
					NI				NON-INTACT. RECOVERED AS GRAVEL - 3.92-4.30mbgl	4		
					10							
					NR				NON-INTACT. RECOVERED AS GRAVEL - 4.40-4.45mbgl			
					NR	32.28	4.50		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		
					NI				NO RECOVERY - 4.50-4.51mbgl			
4.50 - 6.00	99	96	71		8				NON-INTACT. RECOVERED AS GRAVEL - 4.59-4.64mbgl			
					NR				NO RECOVERY - 6.00-6.03mbgl	6		
6.00 - 7.50	98	98	59		8		(7.50)			7		
7.50 - 9.00	100	95	80							8		
					NR				NO RECOVERY - 9.00-9.09mbgl	9		
9.00 - 10.50	94	92	83		4							

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
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				
28-09-2023	13:00	1.50	1.50					
28-09-2023	18:00	20.00	1.50	6.80				

Chiselling			
From (m)	To (m)	Duration	Remarks
1.20	1.50	01:00	BEDROCK

Installation			
Top (m)	Base (m)	Type	Dia (mm)
0.00	5.00	PLAIN	19
5.00	20.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Contract Name: Huyton Town Centre, Liverpool			Client: Genr8		Borehole ID: **BH02**
Contract Number: CCG-C-23-14178	Date Started: 28/09/2023	Loggged By: HF	Checked By: CB	Status: FINAL	Sheet 2 of 3
Rotary Core Drilling 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	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		
				NR					*NO RECOVERY - 10.50-10.53mbgl*		
10.50 - 12.00	98	98	92	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		
									NO RECOVERY - 12.00-12.10mbgl		
12.00 - 13.50	93	89	61	12 NI			(1.94)		*NON-INTACT. RECOVERED AS GRAVEL - 12.67-12.73mbgl*		
13.50 - 15.00	100	100	97	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		
				NR					*NO RECOVERY - 15.00-15.03mbgl*		
15.00 - 16.50	98	98	98	4							
				NR					*NO RECOVERY - 16.50-16.52mbgl*		
16.50 - 18.00	99	99	94	4			(6.06)				
				NR					*NO RECOVERY - 18.00-18.09mbgl*		
18.00 - 19.50	94	88	79	8							
19.50 - 20.00	100	100	68								

10 11 12 13 14 15 16 17 18 19

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
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

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Flush Information

Top (m)	Base (m)	Flush Type	Return	Flush Colour
1.50	20.00		90%-100%	BROWN

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	5.00	PLAIN	19
5.00	20.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %

	Contract Name: Huyton Town Centre, Liverpool		Client: Genr8		Borehole ID: **BH02**
	Contract Number: CCG-C-23-14178	Date Started: 28/09/2023	Loggged By: HF	Checked By: CB	Status: FINAL
Rotary Core Drilling Log	Easting: 344235.9	Northing: 390839.6	Ground Level: 36.78mAOD	Plant Used: DANDO 2000	Rig Crew: AR & CMC CB/ CMC
					Sheet 3 of 3
					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
						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

Date	Time	Depth (m)	Casing (m)	Water (m)
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

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Flush Information

Top (m)	Base (m)	Flush Type	Return	Flush Colour
1.50	20.00		90%-100%	BROWN

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	5.00	PLAIN	19
5.00	20.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %

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 1 of 3
Cable Percussion Borehole Log	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	Sample ID	Test Result	TCR	SCR	RQD	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		
0.25	B					36.30	0.15		Yellowish brown fine to medium SAND (MADE GROUND)		
0.25	D	PID 0.50m, 0.1ppm				36.15	0.30		Grey slightly silty very sandy GRAVEL. Gravel is fine to coarse subangular to subrounded of limestone, sandstone and concrete (MADE GROUND)		
0.40	B	HVP=65							Firm to stiff brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular to subrounded sandstone		
0.50	ES										
0.60	D										
1.00	B	PID 1.00m, 0.0ppm					(1.50)				
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		
2.00	D	SPT(S)100 (25 for 95mm/100 for 60mm)									
2.50	B										
		SPT(C)100 (25 for 40mm/100 for 40mm)							NO RECOVERY - 2.70-3.70mbgl		
2.70 - 4.20	33	NR	22	15			(1.90)				
		NI				32.75	3.70		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		
		13							NON-INTACT. RECOVERED AS GRAVEL - 3.70-3.89mbgl		
		NR							NO RECOVERY - 4.20-4.30mbgl		
4.20 - 5.70	93	5	93	87					SPT @ 4.20mbgl. "N" = 100 (25 for 50mm / 100 for 115mm)		
		NR							NO RECOVERY - 5.70-5.74mbgl		
		3					(5.30)				
5.70 - 7.20	97	NI	87	82					NON-INTACT. RECOVERED AS GRAVEL - 6.43-6.49mbgl		
		6									
		NR							NO RECOVERY - 7.20-7.31mbgl		
7.20 - 8.70	93	9	91	60							
		NR							NO RECOVERY - 8.70-8.75mbgl		
8.70 - 10.20	97	6	97	71		27.45	9.00		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		

Start & End of Shift Observations				
Date	Time	Depth (m)	Casing (m)	Water (m)
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

Borehole Diameter		Casing Diameter	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:

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

Chiselling

From (m)	To (m)	Duration	Remarks
1.80	2.70	01:00	Bedrock

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	5.00	PLAIN	19
5.00	20.70	SLOTTED	19

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

	Contract Name: Huyton Town Centre, Liverpool		Client: Genr8		Borehole ID: **BH03**
	Contract Number: CCG-C-23-14178	Date Started: 20/09/2023	Loggged By:	Checked By: CB	Status: FINAL
					Sheet 2 of 3
Rotary Core Drilling Log	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
10.20 - 11.70	93	85	76	NR 3 NI 10			(11.70)		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 *NO RECOVERY - 10.20-10.30mbgl* *NON-INTACT. RECOVERED AS SANDY GRAVLE - 11.28-11.39mbgl* *NO RECOVERY - 11.70-11.79mbgl* *NO RECOVERY - 13.20-13.30mbgl* *NON-INTACT. RECOVERED AS GRAVEL - 14.08-14.28mbgl* *NO RECOVERY - 14.70-14.78mbgl* *NO RECOVERY - 16.20-16.28mbgl* *NO RECOVERY - 17.70-17.71mbgl* *NON-INTACT. RECOVERED AS GRAVEL - 19.03-19.07mbgl* *NO RECOVERY - 19.20-19.21mbgl*		
11.70 - 13.20	94	89	69	NR 5							
13.20 - 14.70	93	83	60	NR 4 NI 10							
14.70 - 16.20	95	85	77	NR 3 9							
16.20 - 17.70	95	95	89	NR 5							
17.70 - 19.20	99	97	82	NR 8 NI 8 NR							

10 11 12 13 14 15 16 17 18 19

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
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

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Flush Information

Top (m)	Base (m)	Flush Type	Return	Flush Colour
2.70	20.70		90%-100%	BROWN

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	5.00	PLAIN	19
5.00	20.70	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %

Contract Name: Huyton Town Centre, Liverpool		Client: Genr8		Borehole ID: **BH03**
Contract Number: CCG-C-23-14178	Date Started: 20/09/2023	Loggged By:	Checked By: CB	Status: FINAL
Rotary Core Drilling Log	Easting: 344224.3	Northing: 390887.1	Ground Level: 36.45mAOD	Plant Used: Dando 2000
Rig Crew: PC/AS CJB/CMC	Scale: 1:50			Sheet 3 of 3
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

Date	Time	Depth (m)	Casing (m)	Water (m)
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

Top (m)	Base (m)	Flush Type	Return	Flush Colour
2.70	20.70		90%-100%	BROWN

Borehole Diameter		Casing Diameter	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Installation			
Top (m)	Base (m)	Type	Dia (mm)
0.00	5.00	PLAIN	19
5.00	20.70	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %

Contract Name:	Client:	Borehole ID:
Huyton Town Centre, Liverpool	Genr8	**BH04**

Contract Number:	Date Started:	Logged By:	Checked By:	Status:	Sheet 1 of 3
CCG-C-23-14178	28/09/2023	HF	CB	FINAL	

Cable Percussion Borehole Log	Easting:	Northing:	Ground Level:	Plant Used:	Rig Crew:	Scale:
	344178.7	390937.1	35.33mAOD	DANDO 2000	AR & CMC CB & CMC	1:50

Weather: | Termination: Instructed depth | SPT Hammer: CCG1 Energy Ratio: 66%

Samples & In Situ Testing						Strata Details				Groundwater	
Depth	Sample ID	Test Result	TCR	SCR	RQD	FI	Water	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.20	ES	PID 0.20m, 0.0ppm						35.23	0.10		FLEXIBLE PAVEMENT		
0.30	B								(0.30)		Grey slightly silty sandy fine to coarse GRAVEL. Gravel is subrounded mudstone and brick.		
0.35	D	PID 0.50m, 0.0ppm						34.93	0.40		Firm to stiff brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular to subrounded sandstone.		
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												
1.60	D								(2.60)				
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)						32.33	3.00		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand		
3.50	B								(0.97)				
3.60	D	SPT(C)100 (25 for 135mm/100 for 265mm)									NO RECOVERY - 3.70-3.97mbgl		
3.70 - 5.20	82		43	8		50 NI 25 NI 29 NI 11 NI 29 NI 21		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. NON-INTACT. RECOVERED AS SANDY GRAVEL - 4.01-4.18mbgl NON-INTACT. RECOVERED AS GRAVEL - 4.26-4.35mbgl NON-INTACT. RECOVERED AS GRAVEL - 4.44-4.49mbgl NON-INTACT. RECOVERED AS SAND - 4.58-4.61mbgl NON-INTACT. RECOVERED AS GRAVEL - 4.85-5.06mbgl		
5.20 - 6.70	95		57	18		NR 16 NI 35 NI 9			(4.23)		NO RECOVERY - 5.20-5.28mbgl NON-INTACT. RECOVERED AS SAND - 6.01-6.07mbgl NON-INTACT. RECOVERED AS GRAVEL - 6.10-6.48mbgl NO RECOVERY - 6.70-6.79mbgl		
6.70 - 8.20	94		80	38		NR 11 NI 13					NON-INTACT. RECOVERED AS GRAVEL - 6.97-7.09mbgl		
8.20 - 9.70	96		96	96		NR 4		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. NO RECOVERY - 8.20-8.26mbgl		
						NR 4			(3.00)		NO RECOVERY - 9.70-9.74mbgl		

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
28-09-2023	08:30	3.70	3.00	
28-09-2023	16:00	20.00	3.00	6.90

Chiselling

From (m)	To (m)	Duration	Remarks
3.30	3.70	01:00	

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	3.00	PLAIN	19
3.00	10.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Contract Name: Huyton Town Centre, Liverpool			Client: Genr8		Borehole ID: **BH04**
Contract Number: CCG-C-23-14178	Date Started: 28/09/2023	Loggged By: HF	Checked By: CB	Status: FINAL	Sheet 2 of 3
Rotary Core Drilling Log	Easting: 344178.7	Northing: 390937.1	Ground Level: 35.33mAOD	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	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 8					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*		
11.20 - 12.70	95	73	62	NR 8 NI 9 NI		24.13	11.20 (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*		
12.70 - 14.20	89	83	66	NR 8 NI		22.63	12.70		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*		
14.20 - 15.70	93	93	91	NR 2 67 3			(4.15)				
15.70 - 17.20	100	100	65	8							
17.20 - 18.70	97	91	85	NR 5		18.48	16.85 (1.85)		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*		
18.70 - 20.00	99	70	57	NR 10 NI 6 NI 8		16.63	18.70 (1.30)		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*		

Start & End of Shift Observations				
Date	Time	Depth (m)	Casing (m)	Water (m)
28-09-2023	08:30	3.70	3.00	
28-09-2023	16:00	20.00	3.00	6.90

Borehole Diameter		Casing Diameter	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Flush Information				
Top (m)	Base (m)	Flush Type	Return	Flush Colour
3.70	20.00		90%-100%	BROWN

Installation			
Top (m)	Base (m)	Type	Dia (mm)
0.00	3.00	PLAIN	19
3.00	10.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %

	Contract Name: Huyton Town Centre, Liverpool		Client: Genr8		Borehole ID: **BH04**
	Contract Number: CCG-C-23-14178	Date Started: 28/09/2023	Loggged By: HF	Checked By: CB	Status: FINAL
					Sheet 3 of 3
Rotary Core Drilling Log	Easting: 344178.7	Northing: 390937.1	Ground Level: 35.33mAOD	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	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

Date	Time	Depth (m)	Casing (m)	Water (m)
28-09-2023	08:30	3.70	3.00	
28-09-2023	16:00	20.00	3.00	6.90

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Flush Information

Top (m)	Base (m)	Flush Type	Return	Flush Colour
3.70	20.00		90%-100%	BROWN

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	3.00	PLAIN	19
3.00	10.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %

	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	TCR	SCR	RQD	FI	Water	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
								36.61	0.10		BLOCK PAVING		
0.25	B							36.51	0.20		Yellowish brown fine to medium SAND (MADE GROUND)		
0.30	ES	PID 0.30m, 0.0ppm							(0.45)		Grey very sandy slightly silty GRAVEL. Gravel is fine to coarse subangular to subrounded limestone. (MADE GROUND)		
0.40	D							36.06	0.65				
0.70	B							35.86	0.85		Greyish brown slightly clayey silty SAND & GRAVEL. Gravel is fine to coarse subangular sandstone, mudstone, concrete and brick. (MADE GROUND)		
0.75	D	PID 0.80m, 0.1ppm											
0.80	ES	PID 1.00m, 0.1ppm											
1.00	ES												
1.10	B										Firm to stiff brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular to subrounded sandstone.		
1.15	D												
1.20	UT	PID 1.50m, 0.1ppm							(1.45)				
1.50	ES												
1.60	B												
1.70	D	SPT(S)N=26 (2,3/5,5,9,7)											
								34.41	2.30		Light brown SANDSTONE. Highly weathered and recovered as gravelly sand.		
2.40	B												
2.80	D	SPT(S)N=100 (4,10/100 for 230mm)											
3.00	B								(1.40)				
3.40	D	SPT(C)100 (25 for 90mm/100 for 295mm)											
		SPT(C)100 (25 for 125mm/100 for 285mm)						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		
						NR					NO RECOVERY - 3.70-3.80mbgl		
3.70 - 5.20	93		15	0		NI 13 NI 13 NI 11			(1.41)				
						NR		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		
											NO RECOVERY - 5.20-5.25mbgl		
5.20 - 6.70	97		91	79		6 NI 5					NON-INTACT. RECOVERED AS GRAVEL - 6.22-6.29mbgl		
						NR					NO RECOVERY - 6.70-6.77mbgl		
6.70 - 8.20	95		84	73		7 NI 9 NI 7			(4.59)		NON-INTACT. RECOVERED AS GRAVEL - 7.44-7.47mbgl NON-INTACT. RECOVERED AS GRAVEL - 7.82-8.05mbgl		
						NR					NO RECOVERY - 8.20-88.25mbgl		
8.20 - 9.70	97		97	80		7 NI 5					NON-INTACT. RECOVERED AS GRAVEL - 9.39-9.49mbgl		
								27.01	9.70				

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
21-09-2023	16:00	3.70	3.70					
24-09-2023	08:30	3.70	3.70					
24-09-2023	16:00	9.70	3.70					

Chiselling			
From (m)	To (m)	Duration	Remarks
2.80	3.70	01:00	

Installation				
Top (m)	Base (m)	Type	Dia (mm)	

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Contract Name:	Client:	Borehole ID:
Huyton Town Centre, Liverpool	Genr8	**BH06**

Contract Number:	Date Started:	Logged By:	Checked By:	Status:	Sheet 1 of 3
CCG-C-23-14178	26/09/2023	HF	CB	FINAL	

Cable Percussion Borehole Log	Easting:	Northing:	Ground Level:	Plant Used:	Rig Crew:	Scale:
	344157.9	390886.5	34.90mAOD	DANDO 2000	AR & CMC	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	ES	PID 0.30m, 0.0ppm	34.65	0.25		FLEXIBLE PAVEMENT		
0.35	B			(0.45)		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)		
0.40	D	PID 0.60m, 0.1ppm	34.20	0.70				
0.60	ES					Medium dense brown very clayey fine to medium SAND with frequent pockets of clay.		
0.65	B							
0.80	D	PID 1.00m, 0.1ppm						
0.90	B	SPT(S)N=11 (2,3/3,2,3,3)						
1.00	ES			(1.20)				
1.40	D							
1.50	ES	PID 1.50m, 0.2ppm						
2.00	B	SPT(S)N=10 (1,3/2,3,2,3)	33.00	1.90		Firm to stiff brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular to subrounded sandstone and mudstone.		
2.10	D							
2.50	B			(1.10)				
2.60	D							
3.20	B	SPT(S)52 (6,15/52 for 125mm)	31.90	3.00		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand		
				(0.58)				
3.50 - 5.00	95	TCR 61, SCR 0, RQD NR, NI, 30, NI, 12, NI, 22, NI, 25, NI, 14	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		
				(1.42)				
5.00 - 6.50	97	TCR 97, SCR 80, RQD NR, 17, 5	29.90	5.00		NON-INTACT. RECOVERED AS GRAVEL - 4.47-4.62mbgl NON-INTACT. RECOVERED AS GRAVEL - 4.78-4.93mbgl 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		
6.50 - 8.00	91	TCR 77, SCR 60, RQD NR, NI, 9, NI, 10, NI, 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		
8.00 - 9.50	98	TCR 98, SCR 82, RQD 7				NO RECOVERY - 8.00-8.03mbgl		
		NR, NI				NO RECOVERY - 9.50-9.52mbgl NON-INTACT. RECOVERED AS GRAVELLY SAND - 9.59-9.62mbgl		

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
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

From (m)	To (m)	Duration	Remarks
3.30	3.50	01:00	Sandstone

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	5.00	PLAIN	19
5.00	20.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
			0		

Contract Name: Huyton Town Centre, Liverpool			Client: Genr8		Borehole ID: **BH06**
Contract Number: CCG-C-23-14178	Date Started: 26/09/2023	Loggged By: HF	Checked By: CB	Status: FINAL	Sheet 2 of 3
Rotary Core Drilling Log	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	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.		
				NR					*NO RECOVERY - 11.00-11.09mbgl*		
11.00 - 12.50	94	94	86	4							
				NR					*NO RECOVERY - 12.50-12.54mbgl*		
12.50 - 14.00	97	97	88	6							
				NR					*NO RECOVERY - 14.00-14.07mbgl*		
14.00 - 15.50	95	95	95	4			(15.00)				
				NR					*NO RECOVERY - 15.50-15.58mbgl*		
15.50 - 17.00	95	92	77	7							
				NI					*NON-INTACT. RECOVERED AS GRAVEL - 17.10-17.14mbgl*		
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*		

10 11 12 13 14 15 16 17 18 19

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
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

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Flush Information

Top (m)	Base (m)	Flush Type	Return	Flush Colour
3.50	20.00		90%-100%	BROWN

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	5.00	PLAIN	19
5.00	20.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
			0		

Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %

	Contract Name: Huyton Town Centre, Liverpool		Client: Genr8		Borehole ID: **BH06**
	Contract Number: CCG-C-23-14178	Date Started: 26/09/2023	Loggged By: HF	Checked By: CB	Status: FINAL
					Sheet 3 of 3
Rotary Core Drilling Log	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	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

Date	Time	Depth (m)	Casing (m)	Water (m)
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

Top (m)	Base (m)	Flush Type	Return	Flush Colour
3.50	20.00		90%-100%	BROWN

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	5.00	PLAIN	19
5.00	20.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
			0		

Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %

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: 34.59mAOD	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	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.20	ES	PID 0.20m, 0.2ppm	34.42	0.17		FLEXIBLE PAVEMENT		
0.30	B		34.14	0.45		Brown very sandy silty GRAVEL. Gravel is fine to coarse angular to subangular of limestone and cinders (MADE GROUND)		
0.35	D	PID 0.50m, 0.1ppm				Firm to stiff becoming stiff brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular to subrounded sandstone		
0.50	ES	HVP=55						
0.70	D							
1.00	B	PID 1.00m, 0.0ppm						
1.00	ES							
1.00 - 1.45	UT							
1.50	D	PID 1.50m, 0.0ppm						
1.50	ES							
2.00	B	SPT(S)N=12 (1,3/3,3,3,3)		(3.15)				
2.50	D							
3.00	B							
3.00 - 3.45	UT							
3.50	D							
3.80	D	SPT(S)N=50 (10,13/50 for 265mm)	30.99	3.60		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand		
4.00	D	SPT(C)100 (25 for 70mm/100 for 210mm)		(0.76)				
4.00 - 5.50	76	TCR 45, SCR 25, RQD: NR, NI 25, NI, 12, NI, 5	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		
5.50 - 7.00	89	TCR 79, SCR 55, RQD: NR, NI, 9				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		
7.00 - 8.50	83	TCR 74, SCR 37, RQD: NR, 11, NI, 10, NI, 8		(5.64)		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		
8.50 - 10.00	89	TCR 77, SCR 16, RQD: NR, 17, NI, 10				NO RECOVERY - 8.50-8.67mbgl NON-INTACT. RECOVERED AS GRAVEL - 8.87-9.12mbgl		

Start & End of Shift Observations				
Date	Time	Depth (m)	Casing (m)	Water (m)
12-09-2023	16:00	4.00	4.00	3.90
13-09-2023	08:00	4.00	4.00	3.90

Borehole Diameter		Casing Diameter	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Chiselling			
From (m)	To (m)	Duration	Remarks
3.70	4.00	01:00	Sandstone

Installation			
Top (m)	Base (m)	Type	Dia (mm)
0.00	5.00	PLAIN	19
5.00	20.00	SLOTTED	19

Remarks:
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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

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	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		
10.00 - 11.50	52	0	0	NR NI			(1.50)		Extremely weak to very weak reddish brown fine to medium grained SANDSTONE. Highly weathered. Recovered as very sandy gravel NO RECOVERY - 10.00-10.72mbgl		
11.50 - 13.00	91	71	43	NR NI NI 7		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 SPT @ 11.50mbgl. "N" = 100 (25 for 25mm / 100 for 85mm) NO RECOVERY - 11.50-11.63mbgl NON-INTACT. RECOVERED AS GRAVEL - 11.65-11.69mbgl NON-INTACT. RECOVERED AS VERY SANDY GRAVEL - 11.80-11.97mbgl NON-INTACT. RECOVERED AS GRAVELLY SAND - 12.08-12.11mbgl NON-INTACT. RECOOVERED AS GRAVELLY SAND - 12.20-12.25mbgl		
13.00 - 14.50	95	68	37	NR NI 8 NI 12 NI 15 NI 8					NO RECOVERY - 13.00-13.08mbgl NON-INTACT. RECOVERED AS GRAVEL - 13.08-13.23mbgl NON-INTACT. RECOVERED AS SANDY GRAVEL - 13.35-13.44mbgl NON-INTACT. RECOVERED AS GRAVEL - 13.85-13.96mbgl NON-INTACT. RECOVERED AS GRAVEL - 14.23-14.26mbgl		
14.50 - 16.00	89	83	49	NR NI 9			(6.58)		NO RECOVERY - 14.50-14.67mbgl NON-INTACT. RECOVERED AS GRAVEL - 14.67-14.73mbgl		
16.00 - 17.50	89	77	34	NR 11 NI 15 NI 10					NO RECOVERY - 16.00-16.17mbgl NON-INTACT. RECOVERED AS GRAVEL - 16.70-16.72mbgl NON-INTACT. RECOVERED AS GRAVEL - 17.05-17.21mbgl		
17.50 - 19.00	95	56	7	NR NI 17 NI 10 35		16.51	18.08		NO RECOOVERY - 17.50-17.57mbgl NON-INTACT. RECOVERED AS GRAVEL - 17.57-17.60mbgl NON-INTACT. RECOVERED AS GRAVEL - 17.66-17.80mbgl NON-INTACT. RECOVERED AS GRAVEL - 17.86-17.98mbgl		
							(0.40)		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		
						16.11	18.48		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		
19.00 - 20.00	98	89	45	11 NR 7 NI 13			(1.52)		NON-INTACT. RECOVERED AS GRAVEL - 18.93-19.00mbgl NO RECOVERY - 19.00-19..02mbgl NON-INTACT. RECOVERED AS SANDY GRAVEL - 19.60-19.64mbgl		

Start & End of Shift Observations				
Date	Time	Depth (m)	Casing (m)	Water (m)
12-09-2023	16:00	4.00	4.00	3.90
13-09-2023	08:00	4.00	4.00	3.90

Borehole Diameter	
Depth (m)	Dia (mm)

Casing Diameter	
Depth (m)	Dia (mm)

Flush Information				
Top (m)	Base (m)	Flush Type	Return	Flush Colour
4.00	20.00		90%-100%	BROWN

Installation			
Top (m)	Base (m)	Type	Dia (mm)
0.00	5.00	PLAIN	19
5.00	20.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %

	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
					Sheet 3 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
				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

Date	Time	Depth (m)	Casing (m)	Water (m)
12-09-2023	16:00	4.00	4.00	3.90
13-09-2023	08:00	4.00	4.00	3.90

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Flush Information

Top (m)	Base (m)	Flush Type	Return	Flush Colour
4.00	20.00		90%-100%	BROWN

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	5.00	PLAIN	19
5.00	20.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %

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
Cable Percussion Borehole Log	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%		

Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
			33.60	0.12		FLEXIBLE PAVEMENT		
0.15	D					Greyish brown very sandy slightly silty GRAVEL. Gravel is fine to medium subrounded to subangular limestone, brick and concrete. (MADE GROUND)		
0.20	ES	PID 0.20m, 0.0ppm	33.42	0.30				
0.25	B			(0.40)				
0.40	B	PID 0.50m, 0.0ppm	33.02	0.70		Brown very gravelly silty SAND. Gravel is fine to coarse subangular brick, concrete and sandstone. (MADE GROUND)		
0.50	ES					Stiff brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subrounded sandstone.		
0.60	D	PID 0.80m, 0.0ppm						
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)						
2.50	B			(4.00)				
3.00	D							
3.00	UT							
3.50	B							
4.00	D	SPT(S)N=22 (2,5/4,5,5,8)						
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.		
5.00	B			(1.55)				
5.50	D	SPT(S)100 (25 for 105mm/100 for 285mm)				NO RECOVERY - 5.50-5.53mbgl		
5.50 - 6.50	97	0 / 0 / NR, NI, NI	27.47	6.25		Extremely weak to very weak reddish brown fine to medium grained SANDSTONE. Highly weathered and recovered as gravel		
			27.22	6.50		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		
6.50 - 8.00	95	93 / 91 / NR, 9, NI, 6				NO RECOVERY - 6.50-6.57mbgl NON-INTACT. RECOVERED AS GRAVEL - 6.68-6.71mbgl		
				(2.83)				
8.00 - 9.20	88	78 / 50 / NR, 8, NI, 9				NO RECOVERY - 8.00-8.15mbgl NON-INTACT. RECOVERED AS GRAVEL - 8.53-8.63mbgl		
			24.39	9.33		NO RECOVERY - 9.20-9.22mbgl		
		NR, 10, NI, 13, NI, 14, NI				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		
	TCR	SCR / RQD / FI					Water	

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
17-09-2023	16:00	5.50	5.50	
18-09-2023	08:30	5.50	5.50	
18-09-2023	16:00	16.70	5.50	6.40
19-09-2023	08:30	16.70	5.50	6.40
19-09-2023	16:00	19.70	5.50	6.40

Chiselling

From (m)	To (m)	Duration	Remarks
4.70	5.50	01:00	

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	6.00	PLAIN	19
6.00	19.70	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Contract Name: Huyton Town Centre, Liverpool			Client: Genr8		Borehole ID: **BH08**
Contract Number: CCG-C-23-14178	Date Started: 17/09/2023	Loggged By: HF	Checked By: CB	Status: FINAL	Sheet 2 of 2
Rotary Core Drilling Log	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	NR 8 NI 11					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 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		
10.70 - 12.20	93	45	16	NR 23 NI 17 NI 8 NI 8 NR			(2.87)		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 NON-INTACT. RECOVERED AS SANDY GRAVEL - 11.16-11.66mbgl NON-INTACT. RECOVERED AS SANDY GRAVEL - 11.72-11.85mbgl NON-INTACT. RECOVERED AS SANDY GRAVEL - 11.97-12.08mbgl		
12.20 - 13.70	95	95	51	9		21.52	12.20 (1.50)		Very weak to weak reddish brown fine to medium grained SANDSTONE. Fresh. Discontinuities are closely spaced, horizontal, clean, rough and tight to wide NO RECOVERY - 12.20-12.28mbgl		
13.70 - 15.20	91	48	9	NR 17 NR NI 13 NI 13 NI 9		20.02	13.70		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 NO 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		
15.20 - 16.70	82	64	27	NR 7 NI 13 NI 11			(4.67)		NO RECOVERY - 15.20-15.47mbgl NON-INTACT. RECOVERED AS GRAVEL - 15.61-15.74mbgl NON-INTACT. RECOVERED AS GRAVEL - 15.90-16.04mbgl		
16.70 - 18.20	93	48	0	NR NI 17 NI 20 NI 20 NR NI 22 NR 40					NO RECOVERY - 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		
18.20 - 19.70	95	93	40	10		15.35	18.37 (1.33)		NON-INTACT. RECOVERED AS GRAVEL - 18.33-18.37mbgl Weak reddish brown fine to medium grained SANDSTONE. Fresh. Discontinuities are extremely close to closely spaced, horizontal, clean, rough and tight to wide		
						14.02	19.70				

Start & End of Shift Observations				
Date	Time	Depth (m)	Casing (m)	Water (m)
17-09-2023	16:00	5.50	5.50	
18-09-2023	08:30	5.50	5.50	
18-09-2023	16:00	16.70	5.50	6.40
19-09-2023	08:30	16.70	5.50	6.40
19-09-2023	16:00	19.70	5.50	6.40

Flush Information				
Top (m)	Base (m)	Flush Type	Return	Flush Colour
5.50	19.70		90%-100%	BROWN

Borehole Diameter		Casing Diameter	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Installation			
Top (m)	Base (m)	Type	Dia (mm)
0.00	6.00	PLAIN	19
6.00	19.70	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %

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	ES	PID 0.20m, 3.8ppm				35.19	0.10		Brown slightly gravelly silty SAND. Gravel is fine subangular to subrounded sandstone. (TOPSOIL)		
0.30	B						(0.35)				
0.35	D	PID 0.50m, 0.0ppm				34.84	0.45		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)		
0.50	ES										
0.60	B						(0.85)		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.		
0.70	D										
1.00	B	PID 1.00m, 0.0ppm									
1.00	ES	SPT(S)N=10 (1,2/2,2,3,3)							*INCREASINGLY CLAYEY WITH DEPTH*		
1.20	D					33.99	1.30		Firm becoming stiff brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular to subrounded sandstone.		
1.50	ES	PID 1.50m, 0.1ppm									
							(1.00)				
1.90	D										
2.00	B										
2.00	UT										
						32.99	2.30		Reddish brown SANDSTONE. Highly weathered and recovered as slightly gravelly sand.		
2.80	D	SPT(S)50 (25 for 115mm/50 for 125mm)					(1.14)				
3.00	B	SPT(C)100 (25 for 130mm/100 for 255mm)									
3.00	D				NR				*NO RECOVERY - 3.00-3.44mbgl*		
					NI	31.85	3.44		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		
3.00 - 4.50	71	49	23		11						
					NI				*NON-INTACT. RECOVERED AS GRAVEL - 3.44-3.58mbgl*		
					8				*NON-INTACT. RECOVERED AS GRAVEL - 4.11-4.21mbgl*		
					NI				*NON-INTACT. RECOVERED AS GRAVEL - 4.47-4.50mbgl*		
					NR				*NO RECOVERY - 4.50-4.62mbgl*		
					NI				*NON-INTACT. RECOVERED AS GRAVEL - 4.67-4.70mbgl*		
					13				*NON-INTACT. RECOVERED AS SANDY GRAVEL - 4.78-5.10mbgl*		
4.50 - 6.00	92	56	28		NI						
					17						
					NI				*NON-INTACT. RECOVERED AS SANDY GRAVEL - 5.16-5.33mbgl*		
					10						
					NI				*NON-INTACT. RECOVERED AS SANDY GRAVEL - 5.63-5.67mbgl*		
					6						
					NR				*NO RECOVERY - 6.00-6.10mbgl*		
					9						
6.00 - 7.50	93	91	73		NI		(7.06)		*NON-INTACT. RECOVERED AS GRAVEL - 6.80-6.84mbgl*		
					8						
					NR				*NO RECOVERY - 7.50-7.59mbgl*		
					7						
7.50 - 9.00	94	81	77		NI				*NON-INTACT. RECOVERED AS SANDY GRAVEL - 8.35-8.48mbgl*		
					9						
					NI				*NON-INTACT. RECOVERED AS GRAVEL - 8.70-8.77mbgl*		
					9						
					NR				*NO RECOVERY - 9.00-9.11mbgl*		
					14						
9.00 - 10.50	93	85	23		NI				*NON-INTACT. RECOVERED AS SANDY GRAVEL - 9.40-9.44mbgl*		
					11						
	TCR	SCR	RQD	FI	Water						

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
15-09-2023	16:00	3.00	3.00	2.90
16-09-2023	08:30	3.00	3.00	
16-09-2023	16:00	20.00	3.00	7.20

Chiselling

From (m)	To (m)	Duration	Remarks
2.30	3.00	01:30	

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	5.00	PLAIN	19
5.00	20.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Contract Name: Huyton Town Centre, Liverpool			Client: Genr8		Borehole ID: **BH09**
Contract Number: CCG-C-23-14178	Date Started: 15/09/2023	Loggged By: HF	Checked By: CB	Status: FINAL	Sheet 2 of 3
Rotary Core Drilling 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	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
				NI 10 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		
10.50 - 12.00	100	97	87	6					NON-INTACT. RECOVERED AS SANDY GRAVEL - 10.26-10.32mbgl 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 NON-INTACT. RECOVERED AS GRAVEL - 10.61-10.67mbgl		
12.00 - 13.50	97	97	91	NR 5					NO RECOVERY - 12.00-12.04mbgl		
13.50 - 15.00	94	85	69	NR NI 5					NO RECOVERY - 13.50-13.59mbgl NON-INTACT. RECOVERED AS GRAVEL - 13.59-13.71mbgl		
15.00 - 16.50	95	95	82	NR 6			(9.50)		NO RECOVERY - 15.00-15.07mbgl		
16.50 - 18.00	93	90	87	NR 4 NI 8					NO RECOVERY - 16.50-16.61mbgl NON-INTACT. RECOVERED AS SANDY GRAVEL - 17.70-17.75mbgl		
18.00 - 19.50	94	91	83	NR 5 NI 9					NO RECOVERY - 18.00-18.09mbgl NON-INTACT. RECOVERED AS GRAVEL - 19.35-19.39mbgl		
19.50 - 20.00	96	96	46	NR 8					NO RECOVERY - 19.50-19.52mbgl		

10 11 12 13 14 15 16 17 18 19

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
15-09-2023	16:00	3.00	3.00	2.90
16-09-2023	08:30	3.00	3.00	
16-09-2023	16:00	20.00	3.00	7.20

Flush Information

Top (m)	Base (m)	Flush Type	Return	Flush Colour
3.00	20.00		90%-100%	BROWN

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	5.00	PLAIN	19
5.00	20.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %

	Contract Name: Huyton Town Centre, Liverpool		Client: Genr8		Borehole ID: **BH09**
	Contract Number: CCG-C-23-14178	Date Started: 15/09/2023	Loggged By: HF	Checked By: CB	Status: FINAL
Rotary Core Drilling Log	Easting: 344160.3	Northing: 390865.6	Ground Level: 35.29mAOD	Plant Used: DANDO 2000	Rig Crew: AR & CMC CB & PC
					Sheet 3 of 3
					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
						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

Date	Time	Depth (m)	Casing (m)	Water (m)
15-09-2023	16:00	3.00	3.00	2.90
16-09-2023	08:30	3.00	3.00	
16-09-2023	16:00	20.00	3.00	7.20

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Flush Information

Top (m)	Base (m)	Flush Type	Return	Flush Colour
3.00	20.00		90%-100%	BROWN

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	5.00	PLAIN	19
5.00	20.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %

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
Cable Percussion Borehole Log	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%		

Depth	Sample ID	Test Result	TCR	SCR	RQD	FI	Water	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.15	B							35.90	0.10		FLEXIBLE PAVEMENT		
0.20	D	PID 0.20m, 0.2ppm						35.74	0.25		Greyish brown slightly silty sandy GRAVEL. Gravel is fine to coarse angular limestone (MADE GROUND)		
0.20	ES							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	PID 0.50m, 0.1ppm											
0.40	D								(0.85)				
0.50	ES												
0.60	B	SPT(S)N=11 (2,3/3,2,3,3)									Dark grey silty gravelly SAND. Gravel is fine to medium subangular to subrounded of sandstone with occasional inclusions of brick (MADE GROUND)		
0.70	D	PID 1.00m, 0.1ppm											
1.00	ES							34.70	1.30				
1.10	B										Firm brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular to subrounded sandstone		
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)				
2.50	D												
								33.30	2.70		Stiff to very stiff brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular to subrounded sandstone		
3.00	B								(0.60)				
3.00 - 3.45	UT												
3.10	D							32.70	3.30		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand		
3.50	D												
4.00	B	SPT(S)N=50 (7,9/50 for 260mm)							(1.90)				
4.50	D	SPT(C)100 (25 for 70mm/100 for 165mm)									SPT @ 4.60mbgl, "N" = 100 (25 for 30mm / 59, 41 for 70mm)		
						NR					NO RECOVERY - 4.60-5.20mbgl		
4.60 - 6.10	60		24	0		NI 33 NI 35 NI 30 NI 40		30.80	5.20		Extremely weak reddish brown fine to medium grained SANDSTONE. Highly weathered. Non-intact and recovered as very sandy gravel		
									(0.50)				
								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		
						NR			(1.00)		NON-INTACT. RECOVERED AS GRAVEL - 5.86-5.88mbgl		
						NI					NON-INTACT. RECOVERED AS GRAVEL - 5.96-6.06mbgl		
											NO RECOVERY - 6.10-6.24mbgl		
											NON-INTACT. RECOVERED AS GRAVEL - 6.24-6.70mbgl		
6.10 - 7.60	91		57	45		13 NI 8		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		
											NON-INTACT. RECOVERED AS GRAVEL - 6.94-6.97mbgl		
						NR					NO RECOVERY - 7.60-7.66mbgl		
7.60 - 9.10	96		90	16		11 NI 16					NON-INTACT. RECOVERED AS SANDY GRAVEL - 8.53-8.61mbgl		
						NR					NO RECOVERY - 9.10-9.26mbgl		
9.10 - 10.60	89		86	14		16 NI					NON-INTACT. RECOVERED AS GRAVEL - 9.81-9.86mbgl		

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
12-09-2023	16:00	4.60	4.60	4.40
13-09-2023	08:00	4.60	4.60	4.40
13-09-2023	16:00	19.60	4.60	12.10

Chiselling

From (m)	To (m)	Duration	Remarks
4.00	4.60	01:00	

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	1.50	PLAIN	50
1.50	5.00	SLOTTED	50

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Contract Name: Huyton Town Centre, Liverpool			Client: Genr8		Borehole ID: **BH10**
Contract Number: CCG-C-23-14178	Date Started: 12/09/2023	Loggged By: PMC	Checked By: CB	Status: FINAL	Sheet 2 of 2
Rotary Core Drilling Log	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	TCR	SCR	RQD	FI	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
				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		
				NI					NON-INTACT. RECOVERED AS GRAVEL - 10.32-10.37mbgl		
				11					NON-INTACT. RECOVERED AS GRAVELLY SAND - 10.55-10.60mbgl		
				NI					NO RECOVERY - 10.60-10.70mbgl		
				NR					NON-INTACT. RECOVERED AS GRAVEL - 10.70-10.74mbgl		
				NI							
				29							
10.60 - 12.10	93	87	58	4							
				13							
				NI					NON-INTACT. RECOVERED AS GRAVEL - 11.50-11.59mbgl		
				10							
				NR					NO RECOVERY - 12.10-12.15mbgl		
				9							
				NI					NON-INTACT. RECOVERED AS GRAVEL - 12.71-12.76mbgl		
12.10 - 13.60	97	84	47	7							
				NI					NON-INTACT. RECOVERED AS GRAVEL - 12.90-12.94mbgl		
				10							
				NI					NON-INTACT. RECOVERED AS GRAVEL - 13.35-13.43mbgl		
				8					NON-INTACT. RECOVERED AS GRAVEL - 13.46-13.50mbgl		
				NR					NO RECOVERY - 13.60-13.63mbgl		
				14					NON-INTACT. RECOVERED AS GRAVEL - 13.70-13.97mbgl		
				NI							
				7							
13.60 - 15.10	98	72	51	NI					NON-INTACT. RECOVERED AS GRAVEL - 14.12-14.22mbgl		
				8			(12.90)				
				NR					NO RECOVERY - 15.10-15.22mbgl		
				13							
				NI					NON-INTACT. RECOVERED AS GRAVELLY SAND - 15.78-15.81mbgl		
15.10 - 16.60	92	81	15	14							
				NI					NON-INTACT. RECOVERED AS GRAVEL - 16.46-16.60mbgl		
				13							
				NI					NON-INTACT. RECOVERED AS GRAVEL - 16.68-16.73mbgl		
				8							
				NI					NON-INTACT. RECOVERED AS GRAVEL - 16.86-16.92mbgl		
16.60 - 18.10	95	85	65	8							
				NR					NO RECOVERY - 18.10-18.19mbgl		
18.10 - 19.60	94	90	21	11							
						16.40	19.60				

Start & End of Shift Observations				
Date	Time	Depth (m)	Casing (m)	Water (m)
12-09-2023	16:00	4.60	4.60	4.40
13-09-2023	08:00	4.60	4.60	4.40
13-09-2023	16:00	19.60	4.60	12.10

Borehole Diameter		Casing Diameter	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Flush Information				
Top (m)	Base (m)	Flush Type	Return	Flush Colour
4.60	19.60		90%-100%	BROWN

Installation			
Top (m)	Base (m)	Type	Dia (mm)
0.00	1.50	PLAIN	50
1.50	5.00	SLOTTED	50

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %

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%		

Depth	Sample ID	Test Result	TCR	SCR	RQD	FI	Water	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description
0.15	D							37.79	0.10		FLEXIBLE PAVEMENT
0.20	ES	PID 0.20m, 0.1ppm									Greyish brown very sandy silty clayey GRAVEL. Gravel is fine to coarse angular to subangular sandstone, brick and concrete (MADE GROUND)
0.30	B								(0.70)		
0.50	ES	PID 0.50m, 0.1ppm									
0.60	D										
0.70	B							37.09	0.80		Grey slightly gravelly sandy silty CLAY. Gravel is fine to coarse angular to subangular brick and coal (MADE GROUND)
0.85	D	PID 0.90m, 0.1ppm						36.89	1.00		
0.90	B	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	ES	SPT(S)N=10 (2,2/2,2,3,3)									
1.10	B										
1.10	ES										
1.20	D										
2.00	B										
2.00 - 2.45	UT										
2.50	D										
3.00	B	SPT(S)N=13 (1,3/3,3,3,4)									
3.50	D								(4.90)		
4.00	B										
4.00 - 4.45	UT										
4.50	D										
5.00	B	SPT(S)N=15 (2,4/3,4,4,4)									
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
6.50	D	SPT(C)100 (25 for 60mm/100 for 95mm)				NR					*NO RECOVERY - 6.50-7.27mbgl*
									(1.37)		
6.50 - 8.00	0		9	49		NI 25		30.62	7.27		Very weak reddish brown fine to medium grained SANDSTONE. Moderately weathered. Recovered locally as gravel. DIscontinuities are very closely spaced, sub-vertical, clean, rough and tight to wide
						25		30.37	7.52		*NON-INTACT. RECOVERED AS GRAVEL - 7.31-7.39mbgl*
						NI					
									(0.81)		Extremely weak reddish brown fine to medium grained SANDSTONE. Highly weathered. Recovered as very sandy gravel
						NR					*NON-INTACT. RECOVERED AS VERY SANDY GRAVEL - 7.52-8.00mbgl*
						NI		29.56	8.33		*SPT @ 8.00mbgl. "N" = 100 (25 for 40mm / 100 for 115mm)*
						13			(0.52)		*NO RECOVERY - 8.00-8.33mbgl*
8.00 - 9.50	78		68	17		NI		29.04	8.85		Very weak reddish brown fine to medium grained SANDSTONE. Slightly weathered. Discontinuities are very close to closely spaced, sub-vertical, clean, rough and tight to wide
						16					*NON-INTACT. RECOVERED AS SANDY GRAVEL - 8.33-8.38mbgl*
						NI 14					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 - 8.85-8.88mbgl

Groundwater: Water Strike ▼ at 4.40; Backfill/Installation: 0.00 to 1.50 PLAIN 19; 1.50 to 5.50 SLOTTED 19

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
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

Chiselling

From (m)	To (m)	Duration	Remarks
6.20	6.50	01:00	Sandstone

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
4.40	4.40		0		Minor ingress

Contract Name: Huyton Town Centre, Liverpool			Client: Genr8		Borehole ID: **BH11**
Contract Number: CCG-C-23-14178	Date Started: 06/09/2023	Loggged By: PMC/DK	Checked By: CB	Status: FINAL	Sheet 2 of 3
Rotary Core Drilling 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	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 14					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		
11.00 - 12.50	77	74	26	NR 40 NI 33 10					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		
12.50 - 14.00	96	93	59	NR 8 NI 14					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		
14.00 - 15.50	87	87	41	NR 11			(11.15)		NO RECOVERY - 14.00-14.19mbgl		
15.50 - 17.00	89	87	59	NR 9					NO RECOVERY - 15.50-15.66mbgl		
17.00 - 18.50	60	49	41	NR 9 NI 8					NO RECOVERY - 17.00-17.60mbgl NON-INTACT. RECOVERED AS GRAVEL - 17.92-17.99mbgl		
18.50 - 20.00	75	73	7	NR NI 40 11					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		

10 11 12 13 14 15 16 17 18 19

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
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

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Flush Information

Top (m)	Base (m)	Flush Type	Return	Flush Colour
6.50	20.00		90%-100%	BROWN

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	1.50	PLAIN	19
1.50	5.50	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
4.40	4.40		0		Minor ingress

Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %

	Contract Name: Huyton Town Centre, Liverpool		Client: Genr8		Borehole ID: **BH11**
	Contract Number: CCG-C-23-14178	Date Started: 06/09/2023	Loggged By: PMC/DK	Checked By: CB	Status: FINAL
Rotary Core Drilling Log	Easting: 344176.7	Northing: 390789.4	Ground Level: 37.89mAOD	Plant Used: Dando 2000	Rig Crew: AR/CMC AR/CJB
					Sheet 3 of 3
					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
						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

Date	Time	Depth (m)	Casing (m)	Water (m)
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

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Flush Information

Top (m)	Base (m)	Flush Type	Return	Flush Colour
6.50	20.00		90%-100%	BROWN

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	1.50	PLAIN	19
1.50	5.50	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
4.40	4.40		0		Minor ingress

Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %

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 1 of 3
Dynamic Sampling Borehole Log	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%		

Depth	Sample ID	Test Result	TCR	SCR	RQD	FI	Water	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
								37.78	0.05		FLEXIBLE PAVEMENT		
0.20	ES	PID 0.20m, 0.0ppm							(0.30)		Brown silty sandy GRAVEL. Gravel is fine to coarse sub-angular sandstone, concrete, brick and mortar with inclusions of metal fragments (MADE GROUND)		
0.30	B							37.48	0.35				
0.30	D	PID 0.50m, 0.0ppm							(0.45)		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)		
0.50	ES												
0.60	D							37.03	0.80				
0.70	B										Firm brown slightly gravelly sandy silty CLAY with pocket of sandstone gravel at 1.65mbgl. Gravel is fine to medium sub-angular sandstone		
1.00	B	PID 1.00m, 0.2ppm											
1.00	ES	SPT(S)N=9 (1,2/2,3,2,2)							(0.95)				
1.10	B	PID 1.40m, 0.0ppm											
1.10	D												
1.30	D	HVP=52											
1.40	ES							36.08	1.75				
1.60	B										Medium dense reddish brown slightly silty fine to medium grained SAND		
2.00	D	SPT(S)N=11 (2,3/3,2,3,3)							(0.70)				
2.20	ES	PID 2.20m, 0.0ppm											
2.30	B												
2.50	D	HVP=40						35.38	2.45		Soft to firm brown sandy silty CLAY		
								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.		
2.90	B												
		SPT(S)N=11 (1,2/3,2,3,3)							(1.20)				
3.20	ES	PID 3.20m, 0.0ppm											
3.40	D												
3.50	B										*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*		
								34.03	3.80				
4.00 - 4.45	UT										Brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subrounded sandstone		
4.20	ES	PID 4.20m, 0.1ppm											
4.50	D												
									(2.00)				
5.00	B	SPT(S)N=13 (1,3/3,3,3,4)											
5.50	D	PID 5.40m, 0.1ppm											
5.90	D							32.03	5.80				
6.00	B					NR			(0.93)		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand *NO RECOVERY - 6.00-6.73mbgl*		
6.00 - 7.50	51	15	0	50 NI 36 NI 29 NR NI				31.10	6.73		Very weak reddish brown fine to medium grained SANDSTONE. Highly weathered. Recovered locally as sandy gravel *NON-INTAC.T RECOVERED AS SANDY GRAVEL - 6.75-7.13mbgl* *NON-INTACT. RECOVERED AS SANDY GRAVEL - 7.24-7.43mbgl*		
									(0.77)				
7.50 - 9.00	96	85	33	11				30.33	7.50		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*		
						NR					*NO RECOVERY - 9.00-9.09mbgl*		
9.00 - 10.50	94	91	48	9									

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
05-09-2023	16:00	3.00	3.00	1.40
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

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)
6.00	150

Chiselling

From (m)	To (m)	Duration	Remarks
5.80	6.00	01:00	Bedrock

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	7.00	PLAIN	19
7.00	20.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
1.75	1.75	3.80	20	1.40	Significant ingress

Contract Name: Huyton Town Centre, Liverpool			Client: Genr8		Borehole ID: **BH12**
Contract Number: CCG-C-23-14178	Date Started: 05/09/2023	Loggged By: PMC/DK	Checked By: CB	Status: FINAL	Sheet 2 of 3
Rotary Core Drilling Log	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 11					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		
				NR					NON-INTACT. RECOVERED AS GRAVEL - 10.18-10.23mbgl		
10.50 - 12.00	94	94	69	9			(6.00)		NO RECOVERY - 10.50-10.59mbgl		
				NR					NO RECOVERY - 12.00-12.20mbgl		
				6							
12.00 - 13.50	87	84	65	NI 6					NON-INTACT. RECOVERED AS GRAVEL - 12.52-12.55mbgl		
				NR		24.33	13.50		Weak reddish brown fine to medium grained SANDSTONE. Highly weathered. Recovered locally as gravel		
									NO RECOVERY - 13.50-14.23mbgl		
13.50 - 15.00	51	11	8	NI			(1.50)		NON-INTACT. RECOVERED AS GRAVEL - 14.23-14.57mbgl		
				11							
				NI					NON-INTACT. RECOVERED AS GRAVEL - 14.76-15.00mbgl		
				NR		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		
				NI					SPT(C) 15.00m, 100 (25 for 25mm/100 for 85mm)		
									NO RECOVERY - 15.00-15.40mbgl		
15.00 - 16.50	73	65	11	10					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		
16.50 - 18.00	87	87	69	7			(5.00)				
				NR					NO RECOVERY - 18.00-18.22mbgl		
18.00 - 19.50	85	85	51	10							
				NR					NO RECOVERY - 19.50-19.57mbgl		
19.50 - 20.00	86	86	0	12							

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
05-09-2023	16:00	3.00	3.00	1.40
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

Top (m)	Base (m)	Flush Type	Return	Flush Colour
6.00	20.00		90%-100%	BROWN

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)
6.00	150

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	7.00	PLAIN	19
7.00	20.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
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 %

	Contract Name: Huyton Town Centre, Liverpool		Client: Genr8		Borehole ID: **BH12**
	Contract Number: CCG-C-23-14178	Date Started: 05/09/2023	Loggged By: PMC/DK	Checked By: CB	Status: FINAL
Rotary Core Drilling Log	Easting: 344196.0	Northing: 390768.5	Ground Level: 37.83mAOD	Plant Used: Apageo Apafor 450	Rig Crew: AR/CMC
					Sheet 3 of 3
					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
						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

Date	Time	Depth (m)	Casing (m)	Water (m)
05-09-2023	16:00	3.00	3.00	1.40
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

Top (m)	Base (m)	Flush Type	Return	Flush Colour
6.00	20.00		90%-100%	BROWN

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)
6.00	150

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	7.00	PLAIN	19
7.00	20.00	SLOTTED	19

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
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 %

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

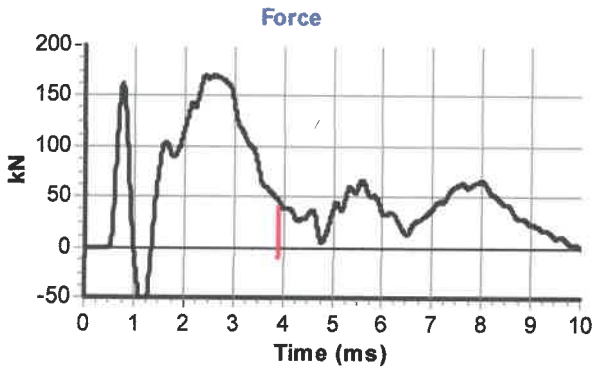
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.5
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	72572
Accelerometer No.2:	72757

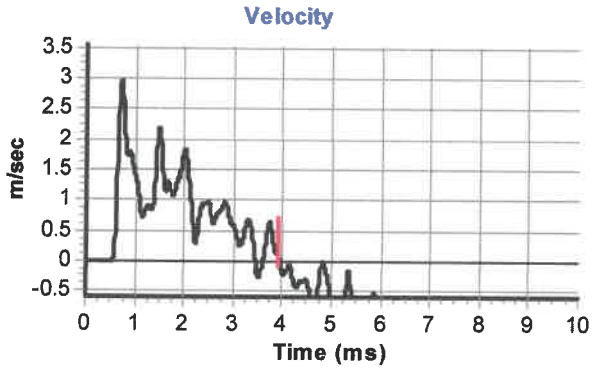
SPT Hammer Information

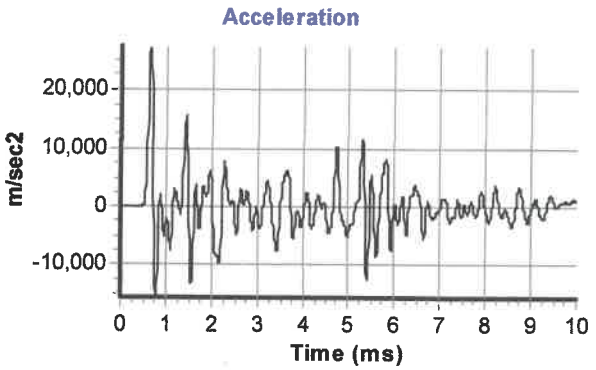
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	10.0

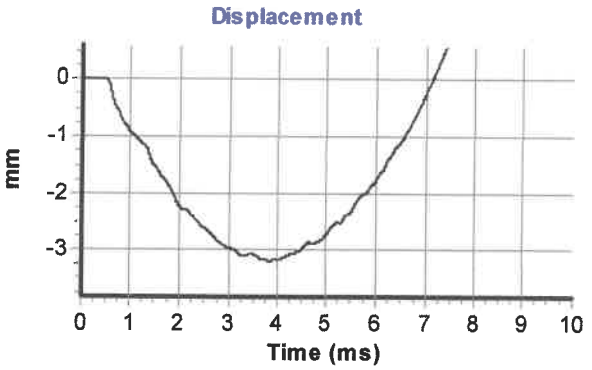
Comments / Location

CC GEOTECHNICAL LTD - 83227









Calculations

Area of Rod A (mm2):	970
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	310

Energy Ratio E_r (%): **66**

Signed: J.LOCK

Title: FITTER

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APPENDIX D

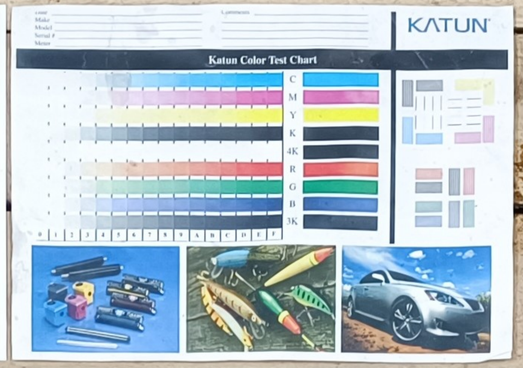
ROTARY CORE PHOTOGRAPHS

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

BH01 2.8-5.8m



2.8

4.3

4.3

5.8

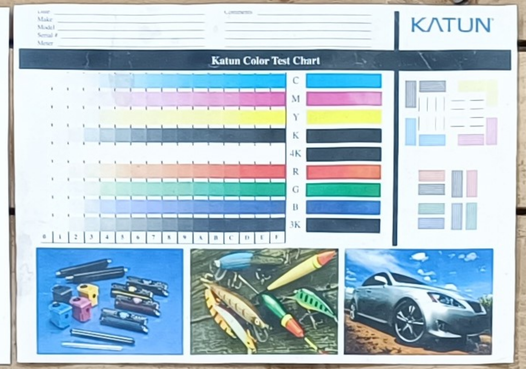

REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH01 5.8-8.8m
KATUN
Katun Color Test Chart
5.8
7.3
7.3
8.8

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

BH01 8.8-11.8m



8.8

10.3

10.3

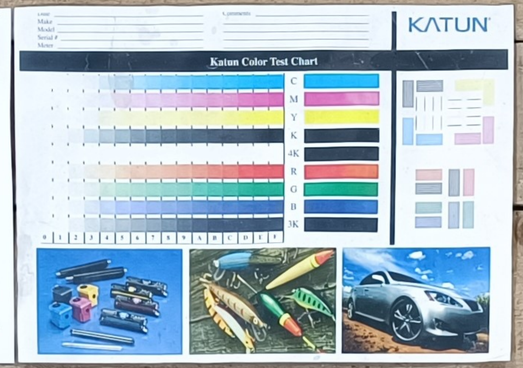
11.8

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: HUYTON TOWN CENTRE
CLIENT: GENR8
BH01 14.8-17.8m
KATUN
Katun Color Test Chart
14.8
16.3
16.3
17.8


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH01 17.8-20.0m
KATUN
Katun Color Test Chart
17.8
19.3
19.3
20.0


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH02 1.5-4.5m
KATUN
Katun Color Test Chart
1.5
3.0
3.0
4.5


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH02 4.5-7.5m
KATUN
Katun Color Test Chart
4.5
6.0
6.0
7.5

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

BH02 7.5-10.5m



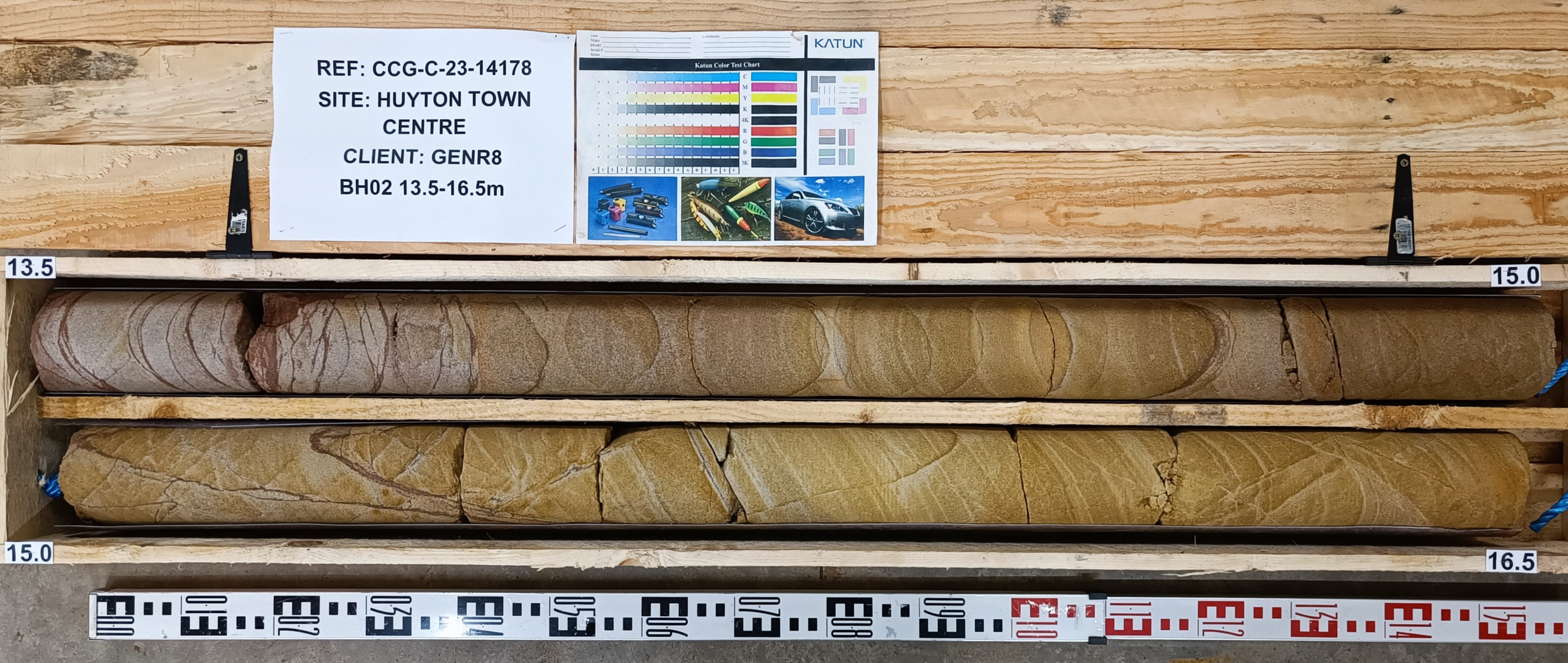
7.5

9.0

9.0

10.5


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH02 10.5-13.5m
KATUN
Katun Color Test Chart
10.5
12.0
12.0
13.5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SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH02 13.5-16.5m
KATUN
Katun Color Test Chart
13.5
15.0
15.0
16.5


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH02 16.5-19.5m
KATUN
Katun Color Test Chart
16.5
18.0
18.0
19.5


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH02 19.5-20.0m
KATUN
Katun Color Test Chart
19.5
20.0


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH03 2.7-5.7m
KATUN
Katun Color Test Chart
2.7
4.2
NO RECOVERY 2.70-3.70mbgl
4.2
5.7

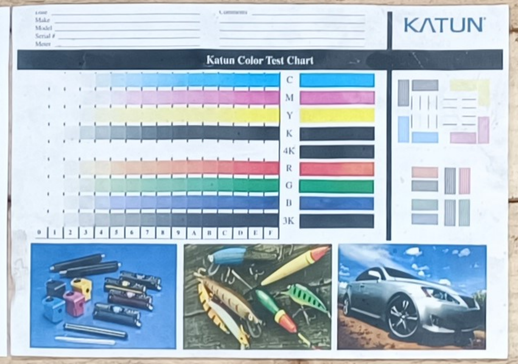

REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH03 5.7-8.7m
KATUN
Katun Color Test Chart
5.7
7.2
7.2
8.7

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

BH03 8.7-11.7m



8.7

10.2

10.2

11.7


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH03 11.7-14.7m
KATUN
Katun Color Test Chart
11.7
13.2
13.2
14.7

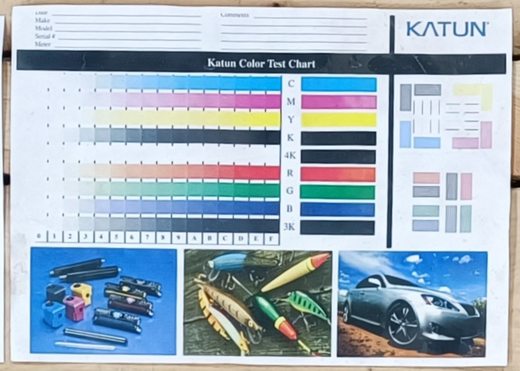

REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH03 14.7-17.7m
KATUN
Katun Color Test Chart
14.7
16.2
16.2
17.7

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

BH03 17.7-20.7m

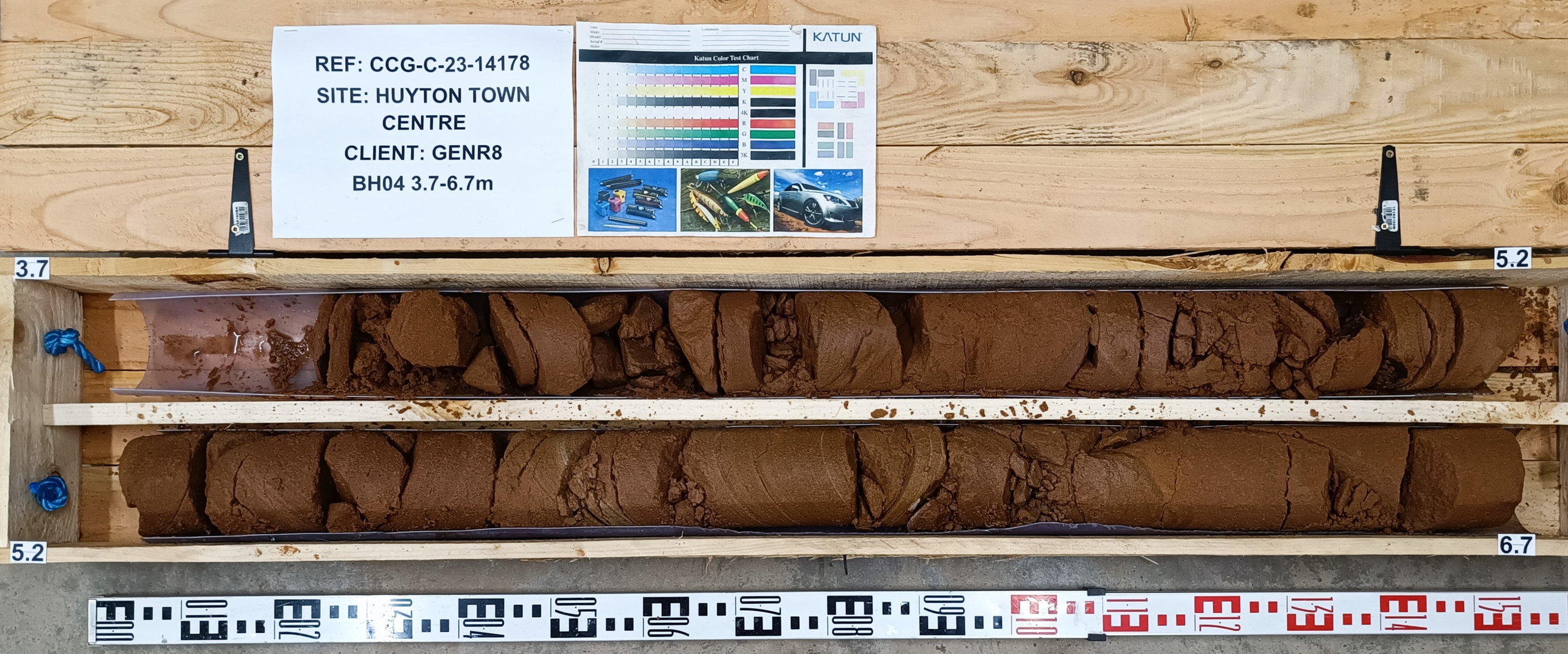


17.7

19.2

19.2

20.7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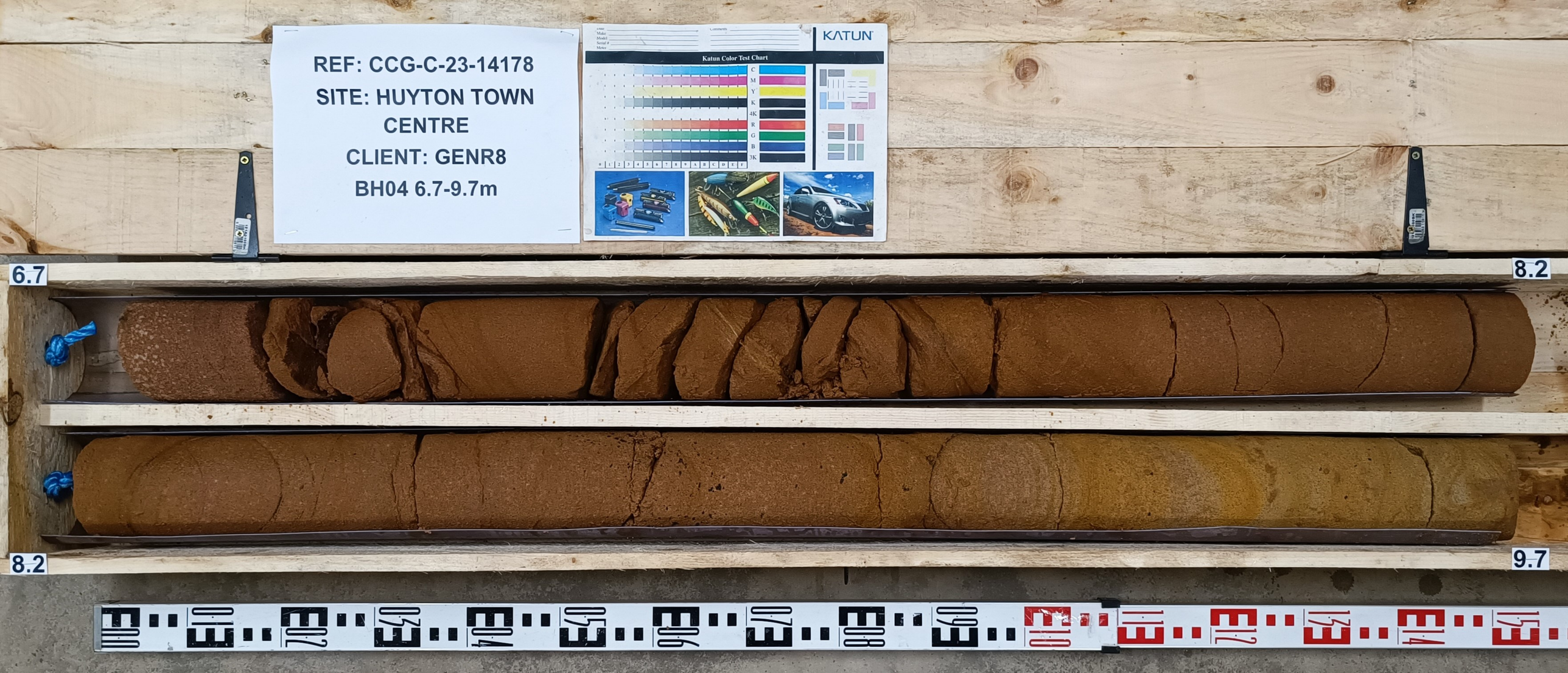
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH04 3.7-6.7m
KATUN
Katun Color Test Chart
3.7
5.2
5.2
6.7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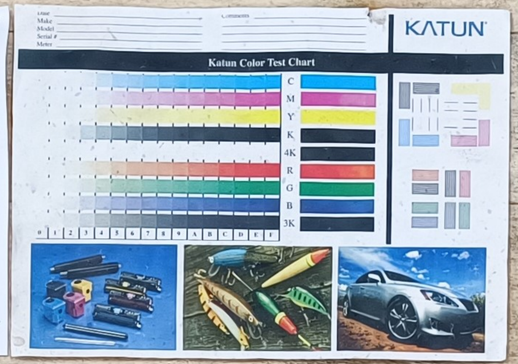
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH04 6.7-9.7m
KATUN
Katun Color Test Chart
6.7
8.2
8.2
9.7

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

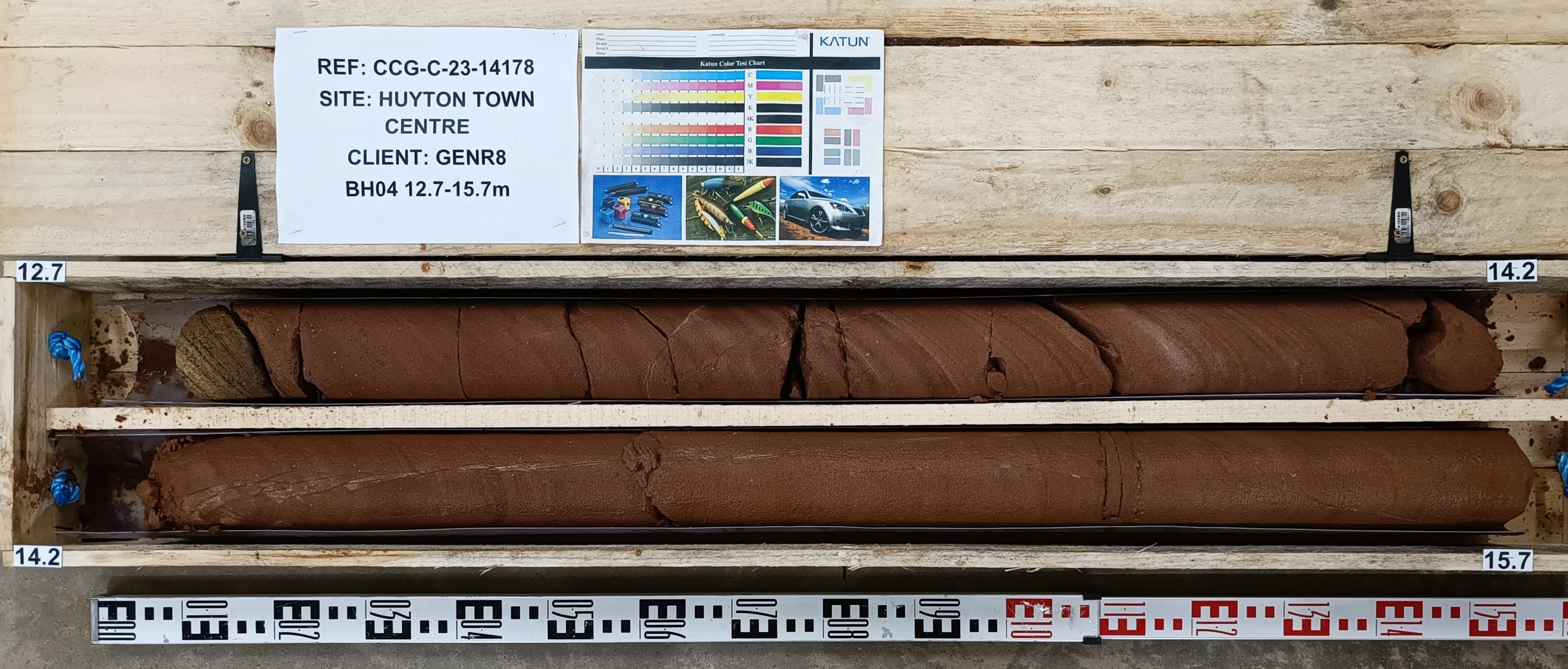


9.7

11.2

11.2

12.7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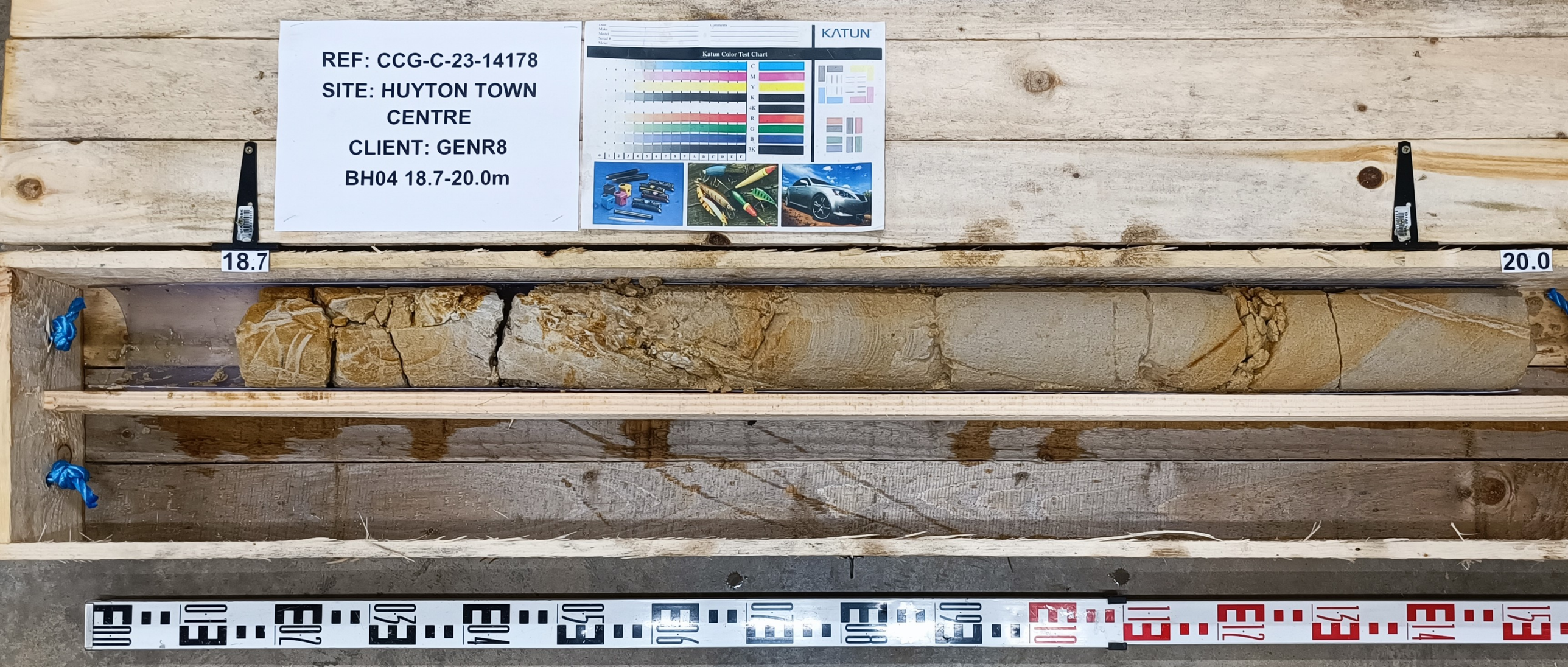
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH04 12.7-15.7m
KATUN
Katun Color Test Chart
12.7
14.2
14.2
15.7


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH04 15.7-18.7m
KATUN
Katun Color Test Chart
15.7
17.2
17.2
18.7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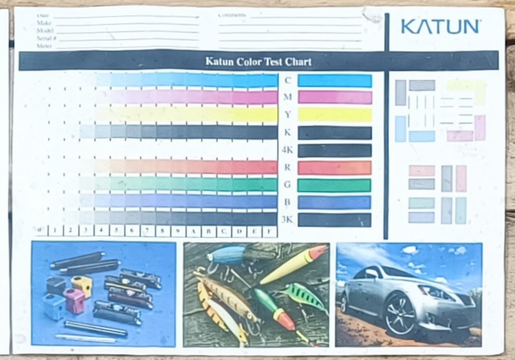
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH04 18.7-20.0m
KATUN
Katun Color Test Chart
18.7
20.0


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH05 3.7-6.7m
KATUN
Katun Color Test Chart
3.7
5.2
5.2
6.7


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH05 6.7-9.7m
KATUN
Katun Color Test Chart
6.7
8.2
8.2
9.7


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH06 3.5-6.5m
KATUN
Katun Color Test Chart
3.5
5.0
5.0
6.5

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



6.5

8.0

8.0

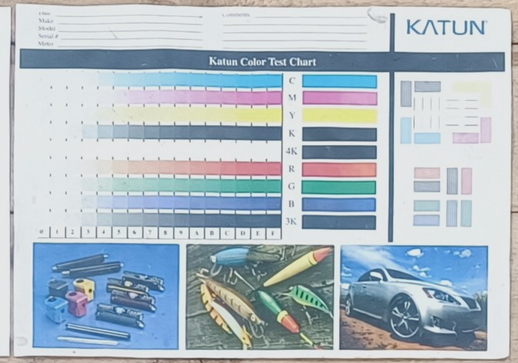
9.5

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

BH06 9.5-12.5m



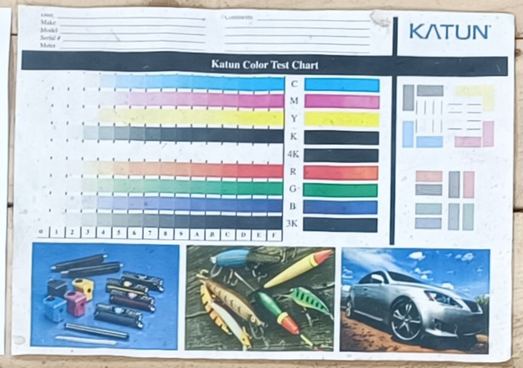
9.5

11.0

11.0

12.5

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



12.5

14.0

14.0

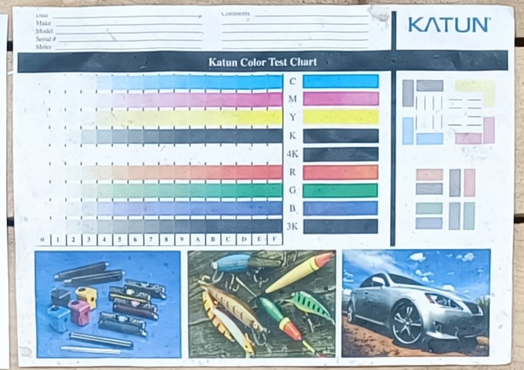
15.5

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

BH06 15.5-18.5m



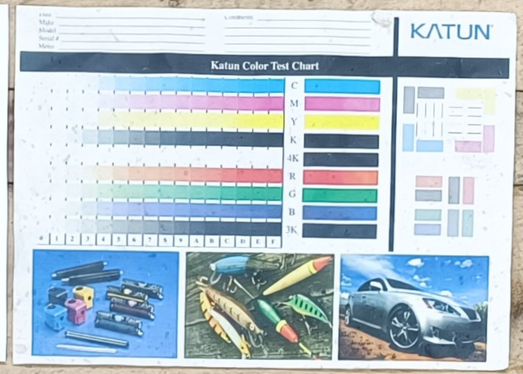
15.5

17.0

17.0

18.5

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



18.5

20.0


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH07 4.0-7.0m
KATUN
Katun Color Test Chart
4.0
5.5
5.5
7.0

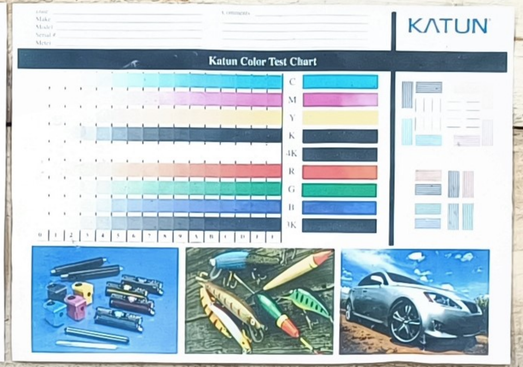

REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH07 7.0-10.0m
KATUN
Katun Color Test Chart
7.0
8.5
8.5
10.0

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

BH07 10.0-13.0m



10.0

11.5

11.5

13.0


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH07 13.0-16.0m
KATUN
Katun Color Test Chart
13.0
14.5
14.5
16.0

REF: CCG-C-23-14178

SITE: HUYTON 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
KATUN
Katun Color Test Chart
19.0
20.0

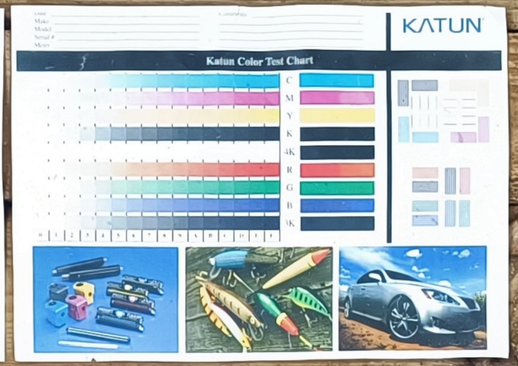

REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH08 5.5-8.0m
KATUN
Katun Color Test Chart
5.5
6.5
6.5
8.0

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

BH08 8.0-10.7m



8.0

9.2

9.2

10.7


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH08 10.7-13.7m
KATUN
Katun Color Test Chart
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

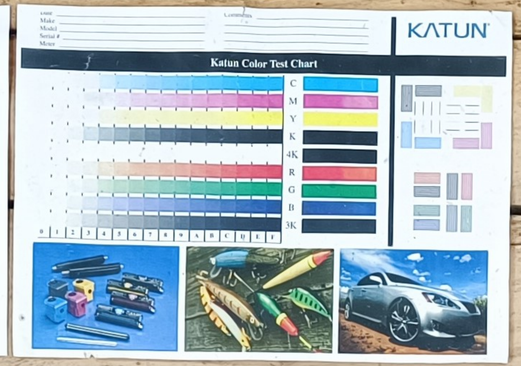
16.7

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

BH08 16.7-19.7m



16.7

18.2

18.2

19.7


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH09 3.0-6.0m
KATUN
Katun Color Test Chart
3.0
4.5
4.5
6.0


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH09 6.0-9.0m
KATUN
Katun Color Test Chart
6.0
7.5
7.5
9.0

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

BH09 9.0-12.0m



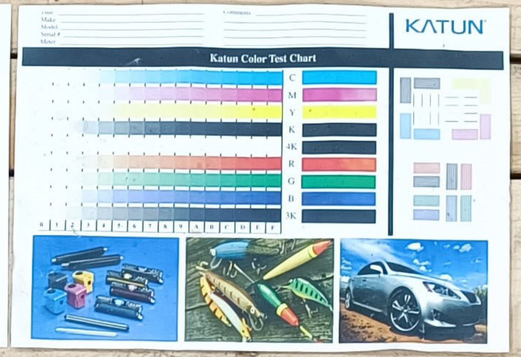
9.0

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
KATUN
Katun Color Test Chart
15.0
16.5
16.5
18.0

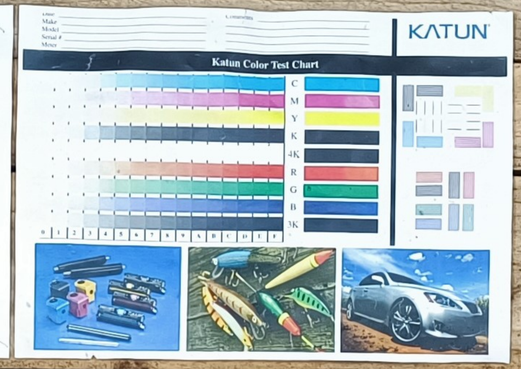

REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH09 18.0-20.0m
KATUN
Katun Color Test Chart
18.0
19.5
19.5
20.0

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

BH10 4.6-7.6m

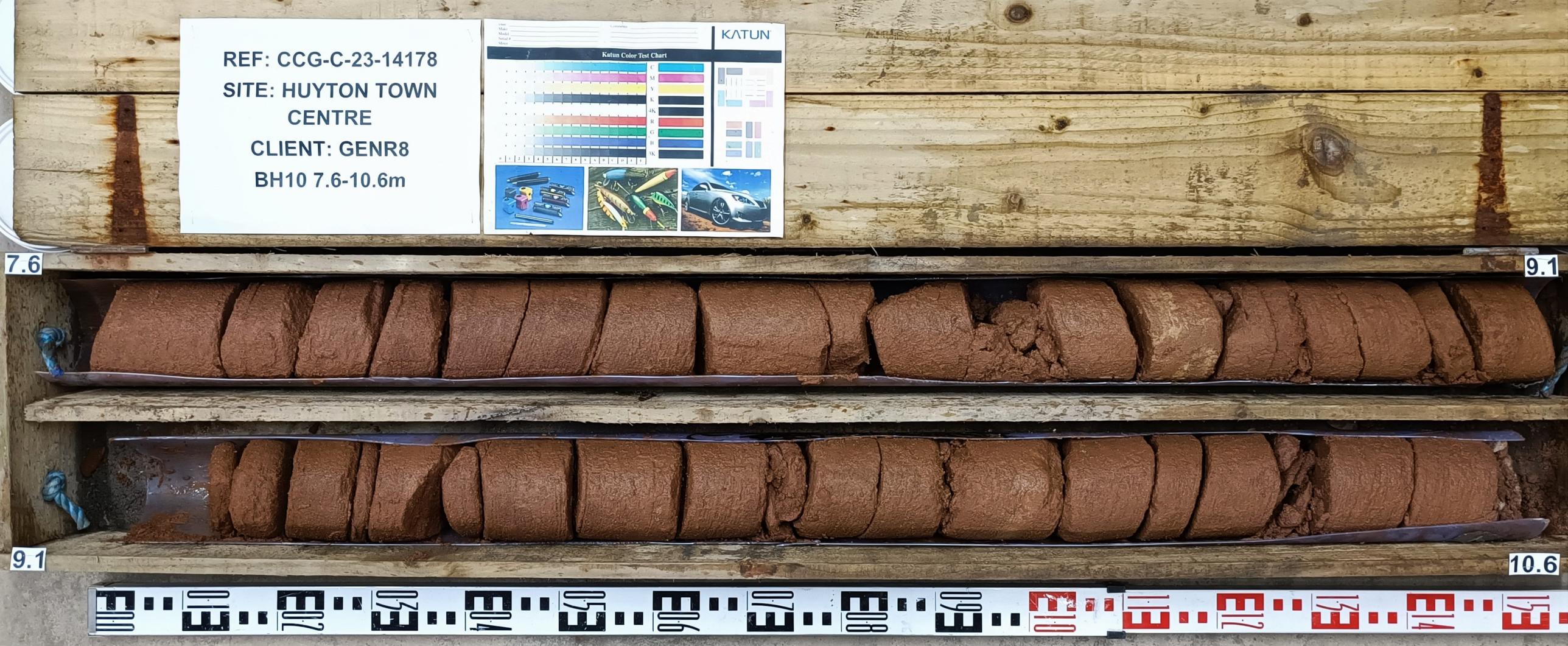


4.6

6.1

6.1

7.6


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH10 7.6-10.6m
KATUN
Katun Color Test Chart
7.6
9.1
9.1
10.6

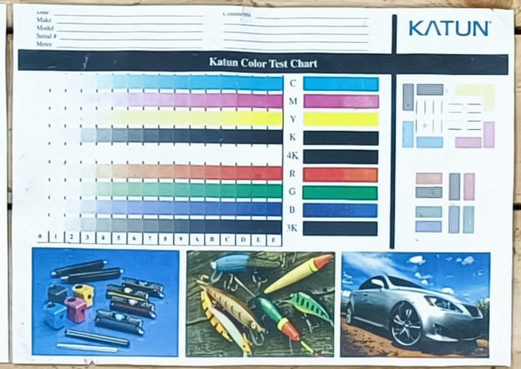

REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH10 10.6-13.6m
KATUN
Katun Color Test Chart
10.6
12.1
12.1
13.6

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

BH10 13.6-16.6m



13.6

15.1

15.1

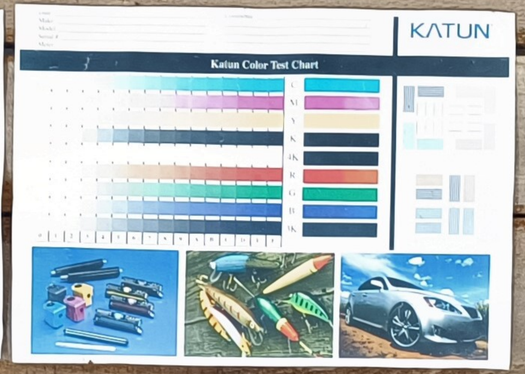
16.6

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

BH10 16.6-19.6m



16.6

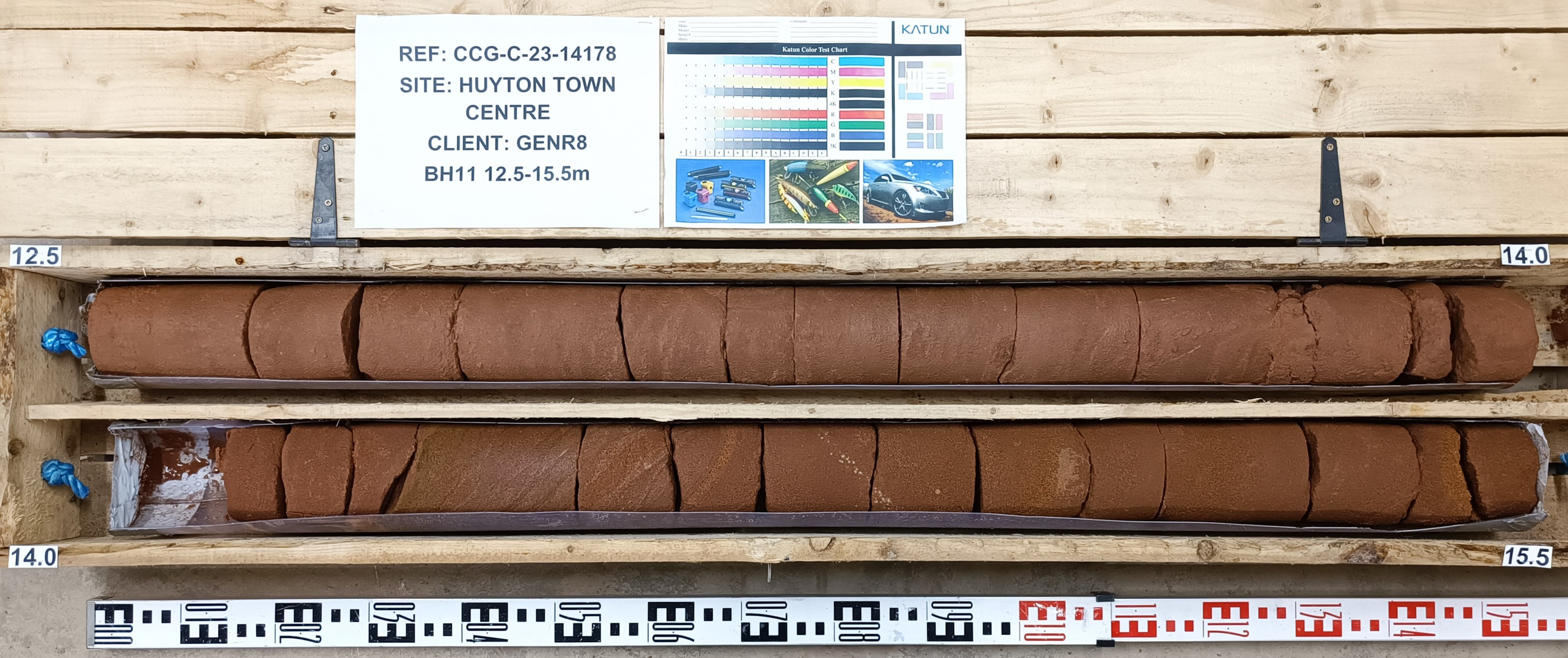
18.1

18.1

19.6


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH11 6.5-9.5m
KATUN
Katun Color Test Chart
6.5
8.0
8.0
9.5


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH11 9.5-12.5m
KATUN
Katun Color Test Chart
9.5
11.0
11.0
12.5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SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH11 12.5-15.5m
KATUN
Katun Color Test Chart
12.5
14.0
14.0
15.5


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH11 15.5-18.5m
KATUN
Katun Color Test Chart
15.5
17.0
17.0
18.5


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH11 18.5-20.0m
KATUN
Katun Color Test Chart
18.5
20.0


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH12 6.0-7.5m
KATUN
Katun Color Test Chart
6.0
7.5


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH12 7.5-9.0m
KATUN
Katun Color Test Chart
7.5
9.0


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH12 9.0-12.0m
KATUN
Katun Color Test Chart
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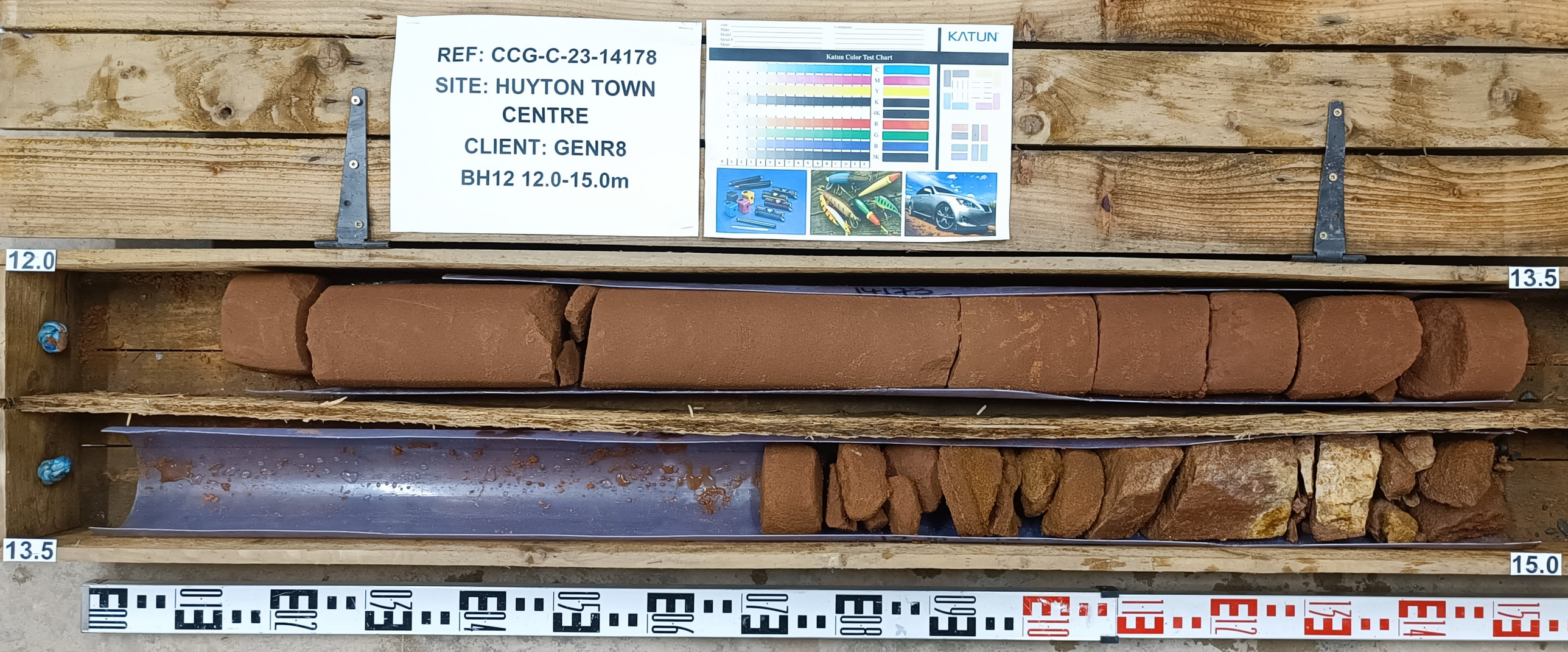
10.5
10.5
12.0

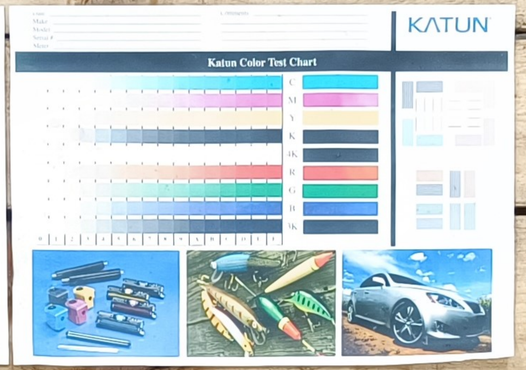

REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH12 12.0-15.0m
KATUN
Katun Color Test Chart
12.0
13.5
13.5
15.0

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

BH12 15.0-18.0m

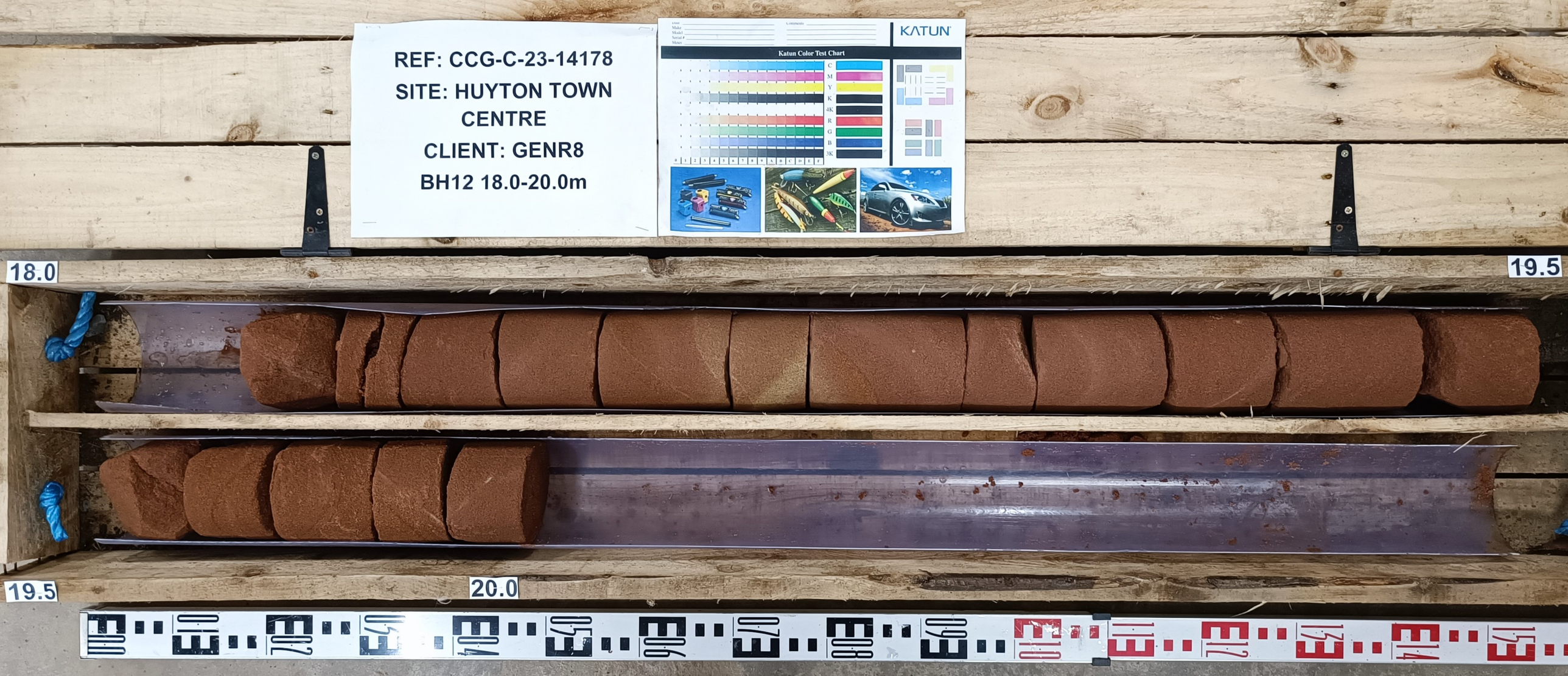


15.0

16.5

16.5

18.0


REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
BH12 18.0-20.0m
KATUN
Katun Color Test Chart
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		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	PID 0.20m, 0.0ppm		(0.30)				
0.30	B		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)		
0.40	B							
0.50	ES	PID 0.50m, 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)		
0.55	D		37.07	0.65		SANDSTONE PAVING FLAG		
0.70	D							
0.80	B					Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular brick and sandstone (MADE GROUND)		
1.00	ES	PID 1.00m, 0.0ppm		(0.55)				
		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		
1.30	ES	PID 1.30m, 0.0ppm						
1.40	D							
1.50	B							
		HVP=60						
		HVP=60						
		SPT(S)N=11 (1,2/2,3,3,3)						
				(2.20)				
2.40	D							
2.50	B	HVP=110						
		HVP=100						
		SPT(S)N=20 (2,3/3,5,6,6)						
3.20	B	HVP=100						
			34.32	3.40		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand.		
3.50	D							
		SPT(S)100 (25 for 40mm/100 for 95mm)	34.12	3.60		End of Borehole at 3.60m		

1 2 3 4 5

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
1hr hand excavating 1.20mbgl service avoidance pit

Chiselling			
From (m)	To (m)	Duration	Remarks

Installation			
Top (m)	Base (m)	Type	Dia (mm)
0.00	1.30	PLAIN	50
1.30	3.30	SLOTTED	50

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
			0		Dry

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
Dynamic Sampling Borehole Log	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
			36.67	0.07		CONCRETE PAVING FLAG		
			36.59	0.15		Yellow slightly gravelly SAND. Gravel is fine to medium subrounded sandstone (MADE GROUND)		
0.20	ES							
0.30	B	PID 0.30m, 0.0ppm		(0.30)		Dark brown very silty slightly gravelly SAND. Gravel is fine to coarse sub-angular sandstone		
0.35	D							
			36.29	0.45				
0.50	ES					Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-rounded sandstone. (MADE GROUND)		
0.60	D			(0.30)				
0.70	B	PID 0.70m, 0.1ppm						
			35.99	0.75				
0.80	D					Soft to firm becoming firm to stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-rounded sandstone		
0.90	B	PID 0.90m, 0.0ppm						
1.00	ES							
		SPT(S)N=6 (1,1/2,1,1,2)						
1.30	ES	PID 1.30m, 0.0ppm		(1.05)				
1.50	D							
1.60	B	HVP=70						
			34.94	1.80				
1.85	D					Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand.		
		SPT(S)100 (25 for 80mm/100 for 105mm)	34.84	1.90		End of Borehole at 1.90m		

1
2
3
4
5

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
1hr removing and replacing surface paving
1hr hand excavating 1.00mbgl service avoidance pit

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
			0		Dry

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	Sheet 1 of 1
Dynamic Sampling Borehole Log	Easting: 344237.9	Northing: 390880.8	Ground Level: 36.46mAOD	Plant Used: Archway Competitor	Rig Crew: LN/JG	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
			36.39	0.07		CONCRETE PAVING FLAG		
0.10	B					Light brown/grey slightly silty very sandy GRAVEL. Gravel is fine to coarse subangular limestone (MADE GROUND)		
0.15	D							
0.20	ES	PID 0.20m, 0.0ppm	36.21	0.25				
0.30	D					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)		
0.40	B			(0.35)				
0.50	ES	PID 0.50m, 0.0ppm						
			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							
0.90	D			(0.50)				
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		
1.20	ES	PID 1.20m, 0.0ppm						
1.30	D			(0.30)				
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		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
13-09-2023	16:00	1.60	1.60					

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Remarks:

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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
			0		

CCG	Contract Name: Huyton Town Centre, Liverpool		Client: Genr8		Borehole ID: **WS04**
	Contract Number: CCG-C-23-14178	Date Started: 15/09/2023	Logged By: HF/DK	Checked By: CB	Status: FINAL — Sheet 1 of 1
Dynamic Sampling Borehole Log	Easting: 344201.1	Northing: 390921.1	Ground Level: 36.10mAOD	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
			35.95	0.15		BITUMINOUS SURFACING		
0.20	ES	PID 0.20m, 0.0ppm				Grey silty sandy GRAVEL. Gravel is fine to coarse angular to subangular mudstone with occasional inclusions of sandstone.		
0.25	B		35.80	0.30				
0.25	D					Brown very sandy GRAVEL. Gravel is fine to coarse subangular brick. (MADE GROUND)		
0.40	B			(0.30)				
0.50	ES	PID 0.50m, 0.0ppm						
0.55	D		35.50	0.60				
0.70	B					Firm brown very sandy slightly gravelly silty CLAY varying to very clayey slightly gravelly silty SAND. Gravel is fine to medium subangular to subrounded sandstone.		
1.00	ES	SPT(S)N=11 (1,2/2,3,3,3)						
1.10	D	PID 1.00m, 0.0ppm		(0.95)				
1.20	B							
1.40	ES	PID 1.40m, 0.0ppm						
1.50	D		34.55	1.55				
		HVP=55				Firm to stiff becoming stiff brown sightly sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone and mudstone.		
1.80	D							
		HVP=60						
		SPT(S)N=24 (3,4/5,5,7,7)						
2.20	B			(1.45)				
		HVP=110						
2.70	D							
		HVP=110						
3.05	D	SPT(S)50 (25 for 145mm/50 for 210mm) SPT(S)100 (25 for 140mm/100 for 250mm)	33.10	3.00		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand.		
			33.00	3.10		End of Borehole at 3.10m		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
15-09-2023	16:00	3.10	3.10					

Remarks:
1hr cutting and breaking out surface hardstanding
1hr hand excavating 1.00mbgl service avoidance pit
Where a HSV result of 110kPa is reported, this is the instrument limit

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
			0		BH DRY

Contract Name: Huyton Town Centre, Liverpool			Client: Genr8	Borehole ID: **WS05**
Contract Number: CCG-C-23-14178	Date Started: 20/09/2023	Logged By: PMC/DK	Checked By: CB	Status: FINAL
Dynamic Sampling Borehole Log	Easting: 344175.0	Northing: 390913.8	Ground Level: 35.32mAOD	Plant Used: ARCHWAY COMPETITOR
Rig Crew: LN/JG	Scale: 1:25	Sheet 1 of 1		
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
			35.22	0.10		BITUMINOUS SURFACING		
0.20	ES	PID 0.20m, 0.3ppm	35.14	0.18		Dark grey sandy GRAVEL. Gravel is fine to coarse angular limestone. Possible road planings (MADE GROUND)		
0.30	B					Brown clayey gravelly SAND. Low cobble content. Gravel is fine to coarse angular to subangular of brick, limestone, cinders and concrete (MADE GROUND)		
0.40	D			(0.52)				
0.50	ES	PID 0.50m, 0.2ppm						
0.60	B							
			34.62	0.70				
0.75	D					Grey slightly gravelly sandy silty CLAY. Gravel is fine to coarse angular to subangular of sandstone with occasional inclusions of brick (MADE GROUND)		
0.85	B		34.42	0.90				
1.00	ES	PID 1.00m, 0.1ppm				Firm brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse subangular to subrounded of mudstone and sandstone		
1.10	B							
		SPT(S)N=8 (1,2/2,2,2,2)						
1.40	ES	PID 1.40m, 0.1ppm						
1.60	D							
1.80	B	HVP=50						
				(2.00)				
		SPT(S)N=9 (2,2/2,2,2,3)						
2.20	D							
		HVP=55						
2.80	B							
			32.42	2.90				
3.00	D	SPT(S)N=100 (2,3/100 for 265mm)				Firm brown slightly gravelly sandy silty CLAY. Gravel is fine to coarse subangular to subrounded of mudstone and sandstone		
3.20	B			(0.40)				
			32.02	3.30				
3.40	D	SPT(C)100 (25 for 20mm/100 for 15mm)	31.92	3.40		Reddish brown weathered SANDSTONE. highly weathered and recovered as gravelly sand		
						End of Borehole at 3.40m		

Start & End of Shift Observations				
Date	Time	Depth (m)	Casing (m)	Water (m)
20-09-2023	12:30	3.40	3.00	3.00

Borehole Diameter		Casing Diameter	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
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

Chiselling			
From (m)	To (m)	Duration	Remarks

Installation			
Top (m)	Base (m)	Type	Dia (mm)

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
2.00	2.00		0		Seepage

	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 — Sheet 1 of 1
Dynamic Sampling Borehole Log	Easting: 344141.8	Northing: 390909.7	Ground Level: 34.20mAOD	Plant Used: ARCHWAY COMPETITOR	Rig Crew: LN/JG — 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
			34.10	0.10		BITUMINOUS SURFACING		
0.15	D					Dark greyish brown silty sandy GRAVEL. Gravel is fine to coarse angular to subangular limestone, brick, sandstone, concrete (MADE GROUND)		
0.20	ES	PID 0.20m, 0.1ppm						
0.30	B			(0.50)				
0.50	ES	PID 0.50m, 0.3ppm	33.60	0.60				
0.65	D					Brown silty gravelly SAND. Gravel is fine to coarse angular to subangular brick, concrete and cinders (MADE GROUND)		
0.70	B							
0.80	D							
0.90	B			(0.60)				
1.00	ES	PID 1.00m, 0.0ppm						
		SPT(S)N=8 (1,1/2,2,2,2)	33.00	1.20		Firm to stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded of sandstone		
1.50	ES	PID 1.50m, 0.0ppm						
1.60	D							
		HVP=70						
1.80	B							
		HVP=72 SPT(S)N=10 (1,2/2,2,3,3)						
2.20	D							
		HVP=60				*Frequent bands of SAND at 2.6-3.3mbgl*		
				(3.00)				
2.80	B							
		HVP=54 SPT(S)N=7 (1,0/0,1,3,3)						
3.20	D							
		HVP=52						
3.80	B							
		HVP=100 SPT(S)N=36 (2,2/3,7,11,15)						
4.10	D							
			30.00	4.20		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand		
4.30	D							
		SPT(C)100 (25 for 95mm/100 for 90mm)	29.80	4.40		End of Borehole at 4.40m		

1 2 3 4 5

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
20-09-2023	14:30	4.40	4.00	3.00

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Remarks:

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

Chiselling

From (m)	To (m)	Duration	Remarks

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	1.50	PLAIN	50
1.50	4.00	SLOTTED	50

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
3.00	3.00		0		Seepage

CCG	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
					Sheet 1 of 1
Dynamic Sampling Borehole Log	Easting: 344129.9	Northing: 390844.8	Ground Level: 34.90mAOD	Plant Used: Archway Competitor	Rig Crew: LN/JG
					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
			34.80	0.10		BITUMINOUS SURFACING		
0.15	D					Dark grey slightly silty sandy GRAVEL. Gravel is fine to coarse angular to sub-angular limestone and brick (MADE GROUND)		
0.20	ES	PID 0.20m, 0.2ppm		(0.30)				
0.30	B		34.50	0.40				
0.45	B					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	PID 0.50m, 0.3ppm		(0.30)				
0.60	D		34.20	0.70				
0.80	D					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	PID 1.00m, 0.0ppm	33.85	1.05				
		SPT(S)N=9 (2,2/2,2,2,3)				Stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular to sub-rounded sandstone		
1.30	D							
1.50	ES	PID 1.50m, 0.0ppm						
		HVP=80						
1.70	B							
		HVP=60						
		SPT(S)N=12 (1,2/3,3,2,4)						
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)						
		HVP=90						
4.20	D							
			30.60	4.30		Reddish brown weathered SANDSTONE. Recovered as gravelly sand		
4.40	B							
				(0.50)				
4.70	D							
		SPT(C)100 (25 for 85mm/100 for 160mm)	30.10	4.80		End of Borehole at 4.80m		

1 2 3 4 5

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
12-09-2023	14:00	4.80	4.80					

Remarks:
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

Chiselling			
From (m)	To (m)	Duration	Remarks

Installation			
Top (m)	Base (m)	Type	Dia (mm)
0.00	1.50	PLAIN	50
1.50	4.00	SLOTTED	50

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
3.00			0		Minor seepage

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
Dynamic Sampling Borehole Log	Easting: 344142.8	Northing: 390874.9	Ground Level: 34.54mAOD	Plant Used: ARCHWAY COMPETITOR
Rig Crew: JG & JG	Scale: 1:25	Sheet 1 of 1		
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
			34.44	0.10		Bituminous ASPHALT		
0.20	ES	PID 0.20m, 0.3ppm	34.40	0.15		Dark grey sandy GRAVEL. Gravel is fine to coarse angular limestone. Possible road planings (MADE GROUND)		
0.30	D					Dark brown very gravelly clayey SAND. Gravel is fine to coarse angular to subangular brick, cinders and sandstone. (MADE GROUND)	▼	
0.40	B							
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.		
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)						
2.50	D							
2.60	B	HVP=80		(3.80)				
		HVP=100						
		SPT(S)N=15 (2,3/3,3,4,5)						
3.50	D							
3.60	B	HVP=110						
		HVP=110						
		SPT(S)N=37 (2,3/4,5,12,16)						
4.40	D							
4.50	B	HVP=110						
			29.94	4.60		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand.		
		SPT(S)100 (25 for 125mm/100 for 245mm)	29.74	4.80		End of Borehole at 4.80m		
4.90	B							

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
21-09-2023	16:00	4.80	4.00					

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Remarks:
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

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
0.30			0		SEEPAGE

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
Dynamic Sampling Borehole Log	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
			35.89	0.15		BITUMINOUS SURFACING		
0.20	ES	PID 0.20m, 0.0ppm				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				
1.00	D	SPT(S)N=15 (2,3/3,4,4,4)				Stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-angular sandstone. Locally friable		
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)						
2.20	D							
		HVP=110		(2.85)				
		HVP=110						
2.80	B							
		SPT(S)N=42 (6,7/7,11,12,12)						
3.20	D							
		HVP=110						
3.60	B							
		HVP=110						
			32.29	3.75				
3.80	D	SPT(S)100 (25 for 70mm/100 for 145mm)	32.24	3.80		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand. Limited recovery obtained from SPT split spoon		
						End of Borehole at 3.80m		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
11-09-2023	13:30	3.80	3.80					

Remarks:
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

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Water Strikes					
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

	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
Dynamic Sampling Borehole Log	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		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)		
0.25	ES	PID 0.25m, 0.0ppm						
0.30	B					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)		
0.40	D							
0.50	ES	PID 0.50m, 0.0ppm		(0.60)				
0.60	B							
0.85	D		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)		
0.90	ES	PID 0.90m, 0.0ppm						
				(0.40)				
1.10	B							
		SPT(S)N=9 (2,2/2,2,3,2)	36.57	1.20		Loose brown slightly gravelly silty fine to medium SAND. Gravel is fine to medium sub-angular to sub-rounded sandstone		
1.30	ES	PID 1.30m, 0.0ppm						
1.40	B			(0.40)				
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		
		HVP=72		(0.40)				
1.90	B							
		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		
						Limited recovery 2.0-2.1mbgl		
2.30	D							
				(1.25)				
2.80	B							
		SPT(S)N=8 (2,2/1,2,3,2)				*Limited recovery 3.0-3.1mbgl*		
3.15	D							
			34.52	3.25		Stiff brown slightly silty slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular to subrounded sandstone		
3.40	D							
		HVP=90		(0.75)				
3.70	B							
		SPT(S)N=11 (2,3/2,2,3,4)	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		
4.20	D							
				(1.00)				
4.70	B							
		SPT(S)N=26 (4,5/5,8,7,6)	32.77	5.00		End of Borehole at 5.00m		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
1hr hand excavating 1.20mbgl service avoidance pit

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
			0		EOS BH DRY

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
			37.85	0.10		BITUMINOUS SURFACING		
0.15	D					Grey sandy GRAVEL. Gravel is fine to coarse angular limestone (MADE GROUND - SUB-BASE)		
0.20	B	PID 0.20m, 0.2ppm	37.70	0.25				
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		Brown gravelly slightly sandy silty CLAY. Gravel is fine to coarse sub-angular brick, sandstone and concrete (MADE GROUND)		
0.60	D							
0.70	B			(0.50)				
0.80	D							
0.90	ES	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)		
1.10	B							
1.20	D	PID 1.20m, 0.0ppm						
1.20	ES							
1.20 - 1.65	UT			(0.65)				
			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)		
1.80	B							
1.90	ES	PID 1.90m, 0.0ppm		(0.55)				
2.00	D	SPT(S)N=12 (1,2/3,3,3,3)						
			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		
2.50	D	HVP=70						
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			(2.80)				
3.80	D	HVP=65						
		SPT(S)N=11 (2,3/2,3,3,3)						
4.20	B							
4.50	D							
4.60	D	HVP=80						
						Limited recovery		
		SPT(S)N=13 (2,3/3,3,3,4)	32.95	5.00		End of Borehole at 5.00m		

1 2 3 4 5

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
06-09-2023	16:00	1.20	1.20	
07-09-2023	16:00	5.00	5.00	4.90

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Remarks:

1hr cutting and breaking out surface hardstanding
1hr hand excavating 1.20mbgl service avoidance pit

Chiselling

From (m)	To (m)	Duration	Remarks

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	1.20	PLAIN	50
1.20	4.50	SLOTTED	50

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
1.40			0		Seepage

CCG	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					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	PID 0.20m, 0.0ppm		(0.40)				
0.30	B							
			35.39	0.40				
0.50	ES	PID 0.50m, 0.0ppm				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			(0.50)				
			34.89	0.90				
1.00	B					Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular to subrounded sandstone		
1.10	ES	PID 1.10m, 0.3ppm						
1.20	D	SPT(S)N=8 (1,1/2,2,2,2)						
1.30	ES	PID 1.30m, 0.0ppm						
1.40	D							
1.50	B	HVP=70						
				(1.60)				
		HVP=90						
		SPT(S)N=10 (1,2/2,2,3,3)						
2.10	D							
2.30	B							
		HVP=70	33.29	2.50				
2.55	D	SPT(S)100 (25 for 105mm/100 for 100mm)	33.19	2.60		Reddish brown SANDSTONE. Highly weathered and recovered as gravelly sand.		
						End of Borehole at 2.60m		

1 2 3 4 5

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
1hr hand excavating 1.20mbgl service avoidance pit

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)
				0.00	1.00	PLAIN	50
				1.00	2.50	SLOTTED	50

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
			0		Dry

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
Dynamic Sampling Borehole Log	Easting: 344223.9	Northing: 390934.2	Ground Level: 36.51mAOD	Plant Used: Dando Terrier Rig
Rig Crew: LN/JG	Scale: 1:25	Sheet 1 of 1		
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		36.46	0.05		Dark brown slightly gravelly clayey organic SAND. Gravel is fine to medium subangular to subrounded sandstone. Grassed at surface (TOPSOIL)		
0.20	ES	PID 0.20m, 0.0ppm		(0.30)		Dark brown slightly silty gravelly organic SAND. Gravel is fine to coarse angular limestone and brick. frequent inclusions of roots (MADE GROUND)		
0.30	D		36.16	0.35		Brown slightly gravelly very silty SAND. Gravel is fine to coarse angular to sub-angular concrete, brick, coal, cinders, limestone and sandstone (MADE GROUND)		
0.40	D							
0.50	ES	PID 0.50m, 0.0ppm						
0.60	B			(0.75)				
0.80	D							
0.90	B							
1.00	ES	PID 1.00m, 0.0ppm						
		SPT(S)N=8 (1,1/2,2,2,2)	35.41	1.10		Locally firm becoming stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium subrounded sandstone		
1.40	ES	PID 1.40m, 0.0ppm						
		HVP=110						
1.60	D							
1.80	B							
		HVP=110						
		SPT(S)N=10 (1,3/2,2,3,3)						
2.20	D			(2.10)				
		HVP=110						
2.60	B							
		HVP=110						
3.00	D	SPT(S)N=100 (2,3/100 for 275mm)						
3.20	D		33.31	3.20		Light yellowish brown SANDSTONE. Highly weathered and recovered as gravelly sand		
		SPT(C)100 (25 for 30mm/100 for 25mm)	33.11	3.40		End of Borehole at 3.40m		

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
13-09-2023	00:00	3.40	3.40	

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Remarks:

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

Chiselling

From (m)	To (m)	Duration	Remarks

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	1.50	PLAIN	50
1.50	3.00	SLOTTED	50

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Contract Name: Huyton Town Centre, Liverpool		Client: Genr8		Borehole ID: **WS17**
Contract Number: CCG-C-23-14178	Date Started: 04/09/2023	Logged By: PMC/DK	Checked By: CB	Status: FINAL — Sheet 1 of 1
Dynamic Sampling Borehole Log	Easting: 344211.3	Northing: 390899.6	Ground Level: 36.55mAOD	Plant Used: Archway Competitor — Rig Crew: JG/RE — 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
0.10	D			(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)		
0.20	B	PID 0.20m, 0.0ppm						
0.20	ES		36.25	0.30		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)		
0.50	ES	PID 0.50m, 0.0ppm						
0.60	D			(0.55)				
0.70	B							
			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		
1.00	ES	PID 1.00m, 0.2ppm						
1.10	D			(0.45)				
1.20	B	SPT(S)N=8 (2,2/2,1,2,3)						
			35.25	1.30		Firm to stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-angular to sub-rounded sandstone		
1.40	ES	PID 1.40m, 0.0ppm						
1.50	D	HVP=100						
1.80	B							
		SPT(S)N=10 (2,2/2,2,3,3)		(1.40)				
2.10	D							
2.40	ES	PID 2.40m, 0.0ppm						
2.50	B	HVP=75						
			33.85	2.70		Yellow weathered SANDSTONE. Recovered as slightly silty slightly gravelly fine to medium grained SAND. Gravel is fine to medium sub-angular sandstone		
2.90	ES	PID 2.90m, 0.0ppm						
3.00	D	SPT(S)50 (25 for 95mm/50 for 190mm)						
				(0.80)				
3.20	B							
		SPT(C)55 (25 for 112mm/55 for 0mm)	33.05	3.50		End of Borehole at 3.50m		

1 2 3 4 5

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
04-09-2023	16:00	3.50	3.50					

Remarks:
1hr hand excavating 1.20mbgl service avoidance pit

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

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 - 027

Instrumented Rod Data

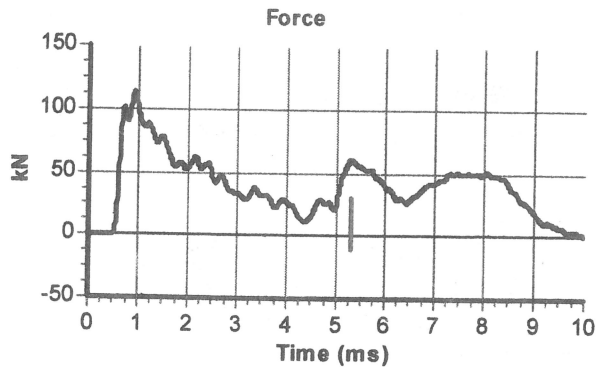
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.5
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	72572
Accelerometer No.2:	72757

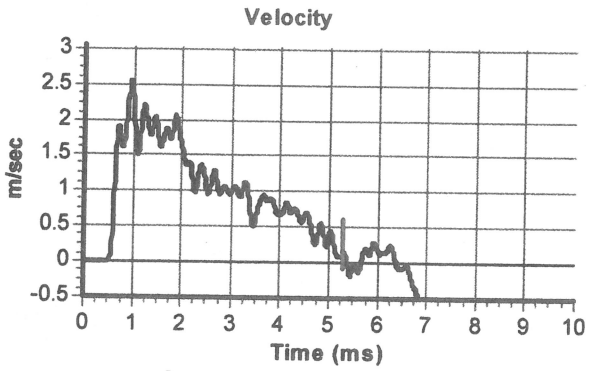
SPT Hammer Information

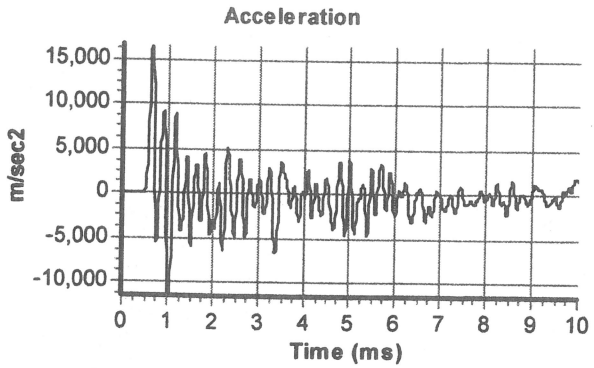
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	10.0

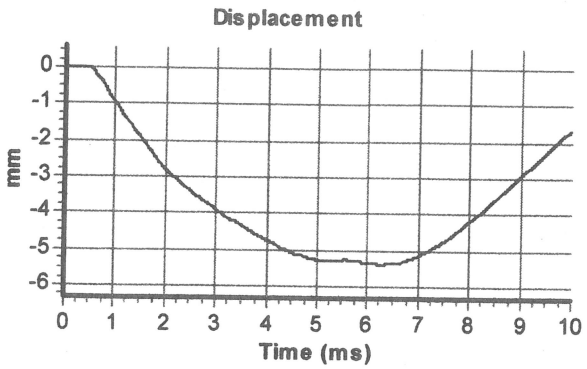
Comments / Location

CC GEOTECHNICAL LTD - 86120









Calculations

Area of Rod A (mm2):	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

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APPENDIX F

DYNAMIC SAMPLING BOREHOLE SOIL RECOVERY PHOTOGRAPHS

1.2

2.0

2.0

3.0

3.0

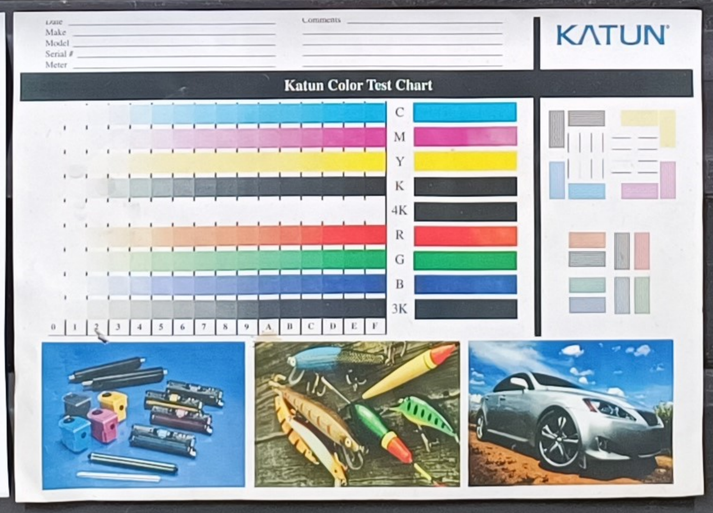
3.6

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

WS01 1.2-3.6m




1.2
1.9
REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
WS02 1.2-1.9m
Katun Color Test Chart
KATUN

1.0

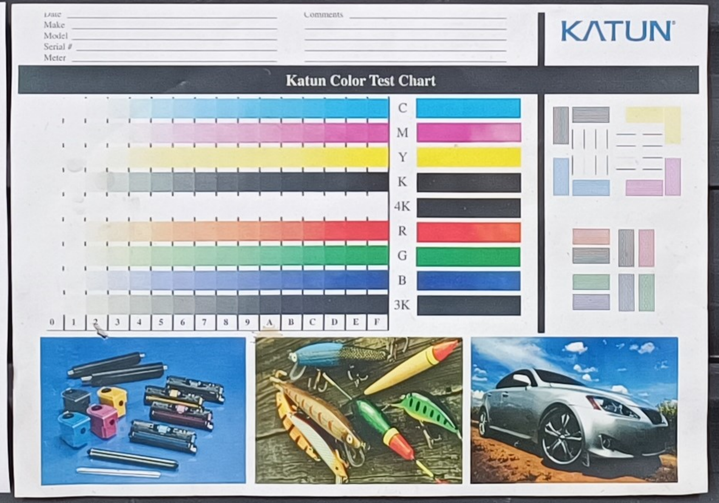
1.6

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

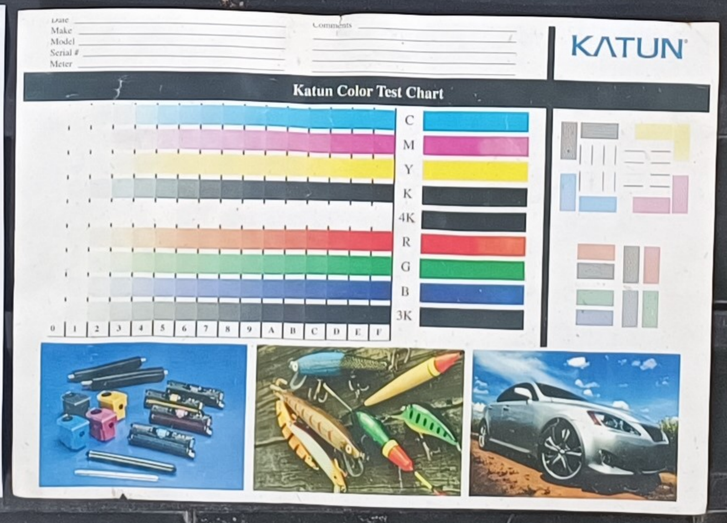
3.1

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

WS04 1.0-3.1m



1.2

2.0

2.0

3.0

3.0

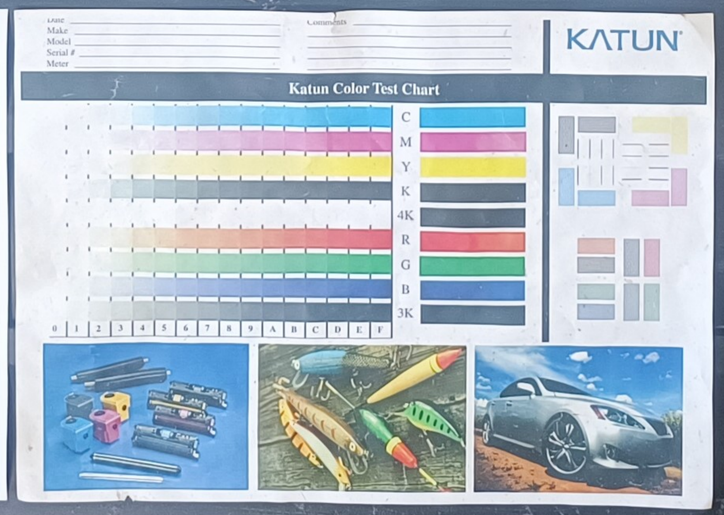
3.4

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

WS05 1.2-3.4m



1.2

2.0

2.0

3.0

3.0

4.0

4.0

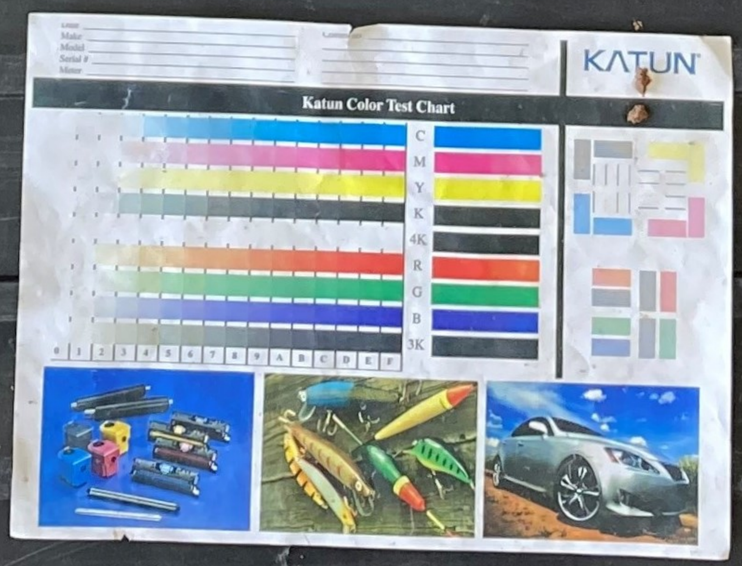
4.4

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

WS06 1.2-4.4m



1.2

2.0

2.0

3.0

3.0

4.0

4.0

4.8

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

WS07 1.2-4.8m



1.2

2.0

2.0

3.0

3.0

4.0

4.2

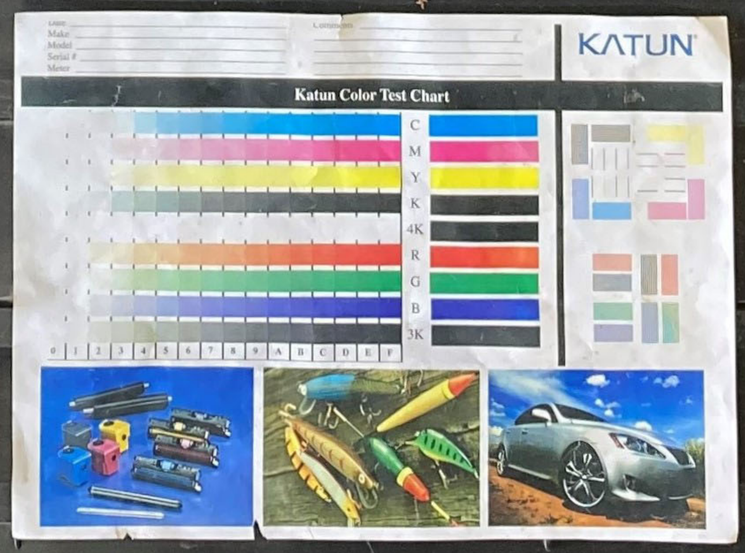
4.8

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

WS08 1.2-4.8m



1.2

2.0

2.0

3.0

3.0

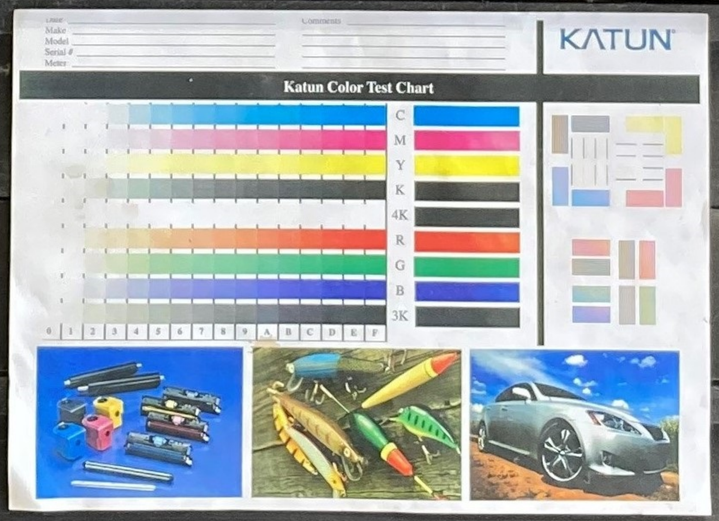
3.8

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

WS09 1.2-3.8m



1.2

2.0

2.0

3.0

3.0

4.0

4.0

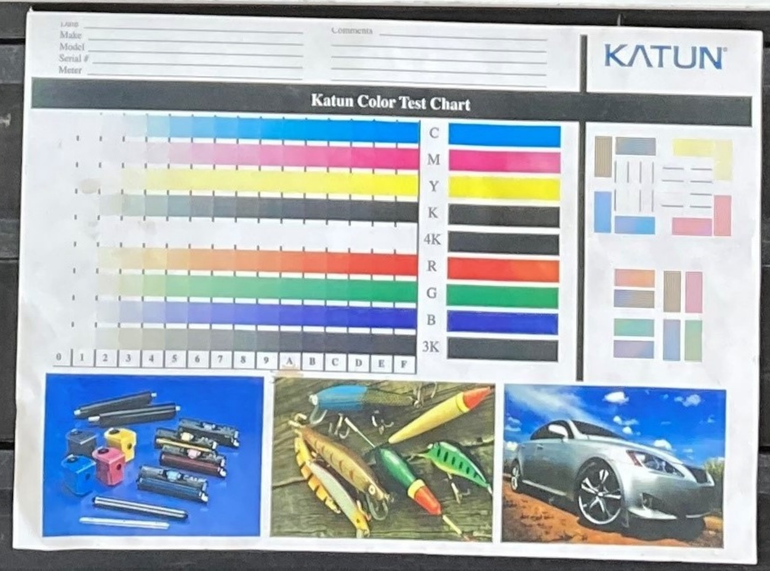
5.0

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

WS10 1.2-5.0m



1.2

2.0

UT100 1-2-1-65mbgl

2.0

3.0

2m → 3m

3.0

4.0

4.0

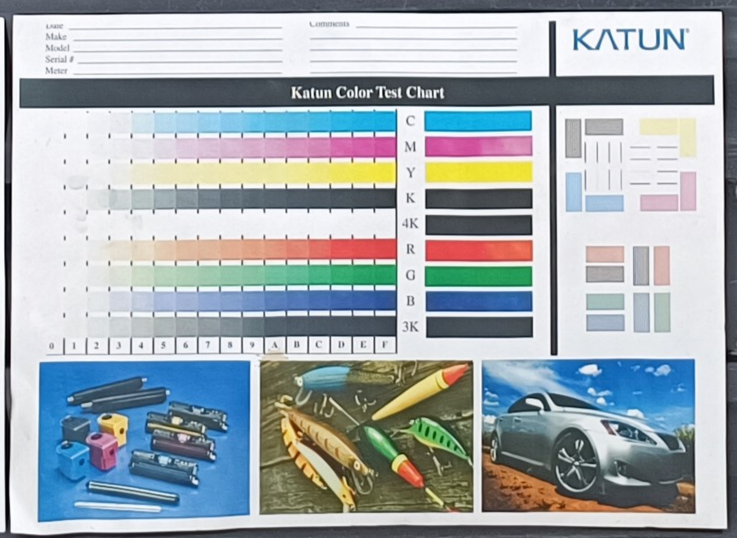
5.0

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENER8

WS11 1.2-5.0m



1.2

2.0

2.0

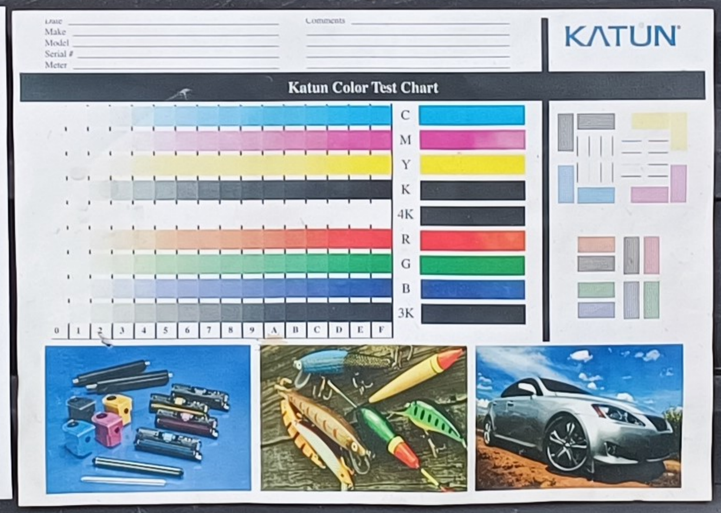
2.6

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

WS15 1.2-2.6m



1.0

2.0

2.0

3.0

3.0

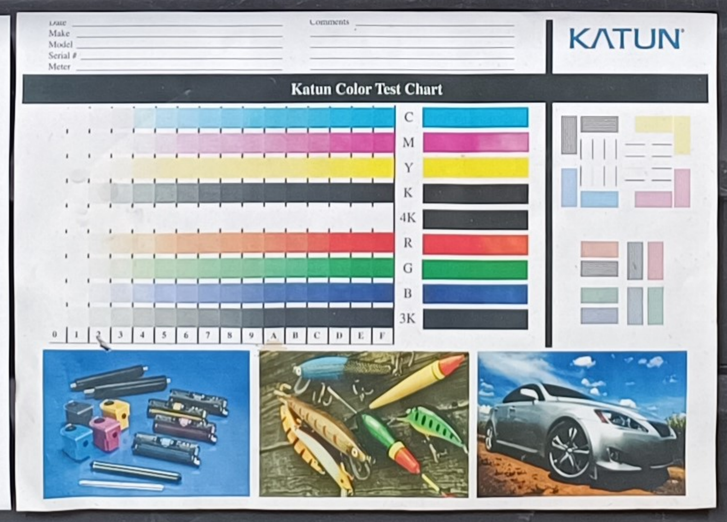
3.4

REF: CCG-C-23-14178

SITE: HUYTON TOWN CENTRE

CLIENT: GENR8

WS16 1.0-3.4m




1.2
2.0
2.0
3.0
3.0
3.5
REF: CCG-C-23-14178
SITE: HUYTON TOWN CENTRE
CLIENT: GENR8
WS17 1.2-3.5m
KATUN
Katun Color Test Chart

APPENDIX G

TRIAL PIT EXCAVATION LOGS

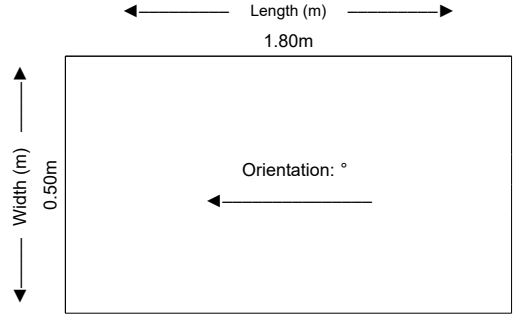
Contract Name: Huyton Town Centre, Liverpool			Client: Genr8		Trial Pit ID: TP01
Contract Number: CCG-C-23-14178	Date Started: 15/09/2023	Logged By: KH	Checked By: CB	Status: FINAL	Sheet 1 of 1
Trial Pit Log	Easting: 344182.1	Northing: 390860.0	Ground Level: 36.09mAOD	Plant Used: 5t tracked excavator	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)		
0.05	D							
0.05	ES	PID 0.20m, 0.3ppm		(0.40)				
0.20	ES							
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)		
0.60	ES					*CONCRETE - slab encountered at eastern end of excavation at depth of 0.3mgbl*		
0.70	B					Brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to coarse angular of brick, sandstone and glass with inclusions metal fragments. (MADE GROUND)		
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		
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		
2.30	B	PID 2.30m, 0.2ppm	33.69	2.40		End of Trial Pit at 2.40m		
2.30	ES							
2.40	D							

1 2 3 4

Dimensions:

Final Depth: 2.40m



Inclination: °

General Remarks:

Mechanical trial pit excavation
Soakaway Test undertaken - see results TP01-SA

Water Strikes

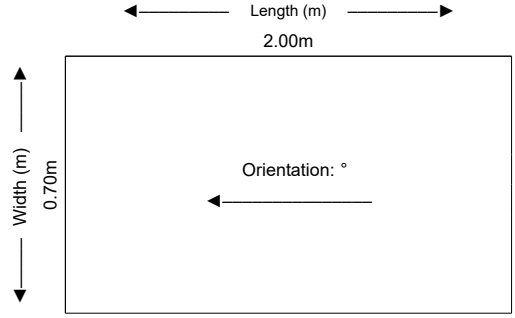
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
			0		Dry

	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
Trial Pit Log	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		
			32.96	0.15		BITUMINOUS SURFACING		
0.25	B		32.91	0.20		Dark grey sandy silty GRAVEL. Gravel is fine to coarse angular limestone (MADE GROUND)		
0.30	ES	PID 0.30m, 0.3ppm						
0.35	B		32.66	0.45		Dark greyish/brown slightly clayey very gravelly SAND. High cobble content. Gravel is fine to coarse angular to subangular of brick and sandstone		
0.50	ES	PID 0.50m, 0.1ppm						
0.60	D					Firm to stiff becoming stiff brown/dark brown slightly gravelly sandy silty CLAY. Gravel is fine to coarse subrounded to subangular sandstone		
0.70	B							
1.00	ES	HVP=60kPa						1
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
			29.81	3.30		Stiff reddish brown very sandy slightly gravelly CLAY. Gravel is fine to coarse subangular to subrounded sandstone		
3.40	ES	PID 3.40m, 0.0ppm						
3.50	D							
3.70	B			(0.70)				
			29.11	4.00		End of Trial Pit at 4.00m		4

Dimensions:

Final Depth: 4.00m



Inclination: °

General Remarks:

Mechanical trial pit excavation
Soakaway Test undertaken - see results TP02-SA

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
			0		Dry

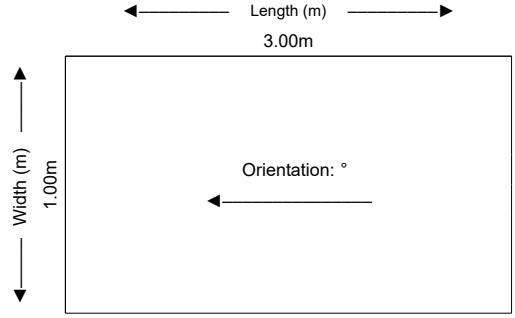
Contract Name: Huyton Town Centre, Liverpool			Client: Genr8		Trial Pit ID: TP03
Contract Number: CCG-C-23-14178	Date Started: 08/09/2023	Logged By: PMC	Checked By: CB	Status: FINAL	Sheet 1 of 1
Trial Pit Log	Easting: 344196.9	Northing: 390755.8	Ground Level: 38.06mAOD	Plant Used: 5t rubber tracked excavator	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*		
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. Excavation terminated due to risk of encountering buried services		
				(0.30)				
			36.66	1.40		End of Trial Pit at 1.40m		

1 2 3 4

Dimensions:

Final Depth: 1.40m



Inclination: °

General Remarks:

Mechanical trial pit excavation

Water Strikes

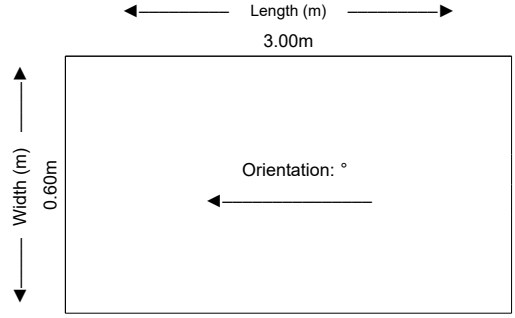
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
			0		TP DRY

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
Trial Pit Log	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	D					Brown slightly gravelly silty clayey organic SAND. Gravel is fine to medium sandstone and mudstone. Frequent rootlets and grassed at surface (TOPSOIL)		
0.20	ES	PID 0.20m, 0.0ppm		(0.35)				
0.30	B		36.86	0.35		*Sandstone structure encountered at northern end of excavation at 0.3 - 1.0mbgl*		
0.50	ES	PID 0.50m, 0.0ppm				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)		
0.60	D							
0.80	B			(0.95)				
1.00	ES	PID 1.00m, 0.0ppm					1	
1.35	D		35.91	1.30		Light brown slightly gravelly sandy silty CLAY. Gravel is fine to coarse angular of brick (MADE GROUND)		
1.40	ES	PID 1.40m, 0.0ppm		(0.30)				
1.50	B		35.61	1.60		Firm brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to coarse subangular to subrounded of sandstone (POSSIBLY REWORKED)		
1.70	ES	PID 1.70m, 0.0ppm						
1.80	B	HVP=54kPa		(0.50)				
2.00	D						2	
2.20	B	HVP=20kPa	35.11	2.10		Soft/very soft dark grey sandy peaty organic SILT/CLAY. Peat inclusions are pseudo fibrous		
2.40	D							
2.60	ES	PID 2.60m, 0.1ppm		(0.80)		*6" drain observed at southern end of excavation - intact*		
3.00	ES	PID 3.00m, 0.1ppm	34.31	2.90		Firm brown slightly gravelly sandy silty CLAY. Gravel is fine to medium subangular to subrounded sandstone and mudstone	3	
3.10	B							
3.20	D			(0.50)				
		HVP=55kPa	33.81	3.40		End of Trial Pit at 3.40m		
							4	

Dimensions:

Final Depth: 3.40m



Inclination: °

General Remarks:

Mechanical trial pit excavation

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
2.30			0		Minor seepage

APPENDIX H

TRIAL PIT EXCAVATION PHOTOGRAPHS


CCG-C-23-14178: Huyton Town Centre
TP01


CCG-C-23-14178: Huyton Town Centre
TP01


CCG-C-23-14178: Huyton Town Centre
TP01


CCG-C-23-14178: Huyton Town Centre
TP02


CCG-C-23-14178: Huyton Town Centre
TP02


CCG-C-23-14178: Huyton Town Centre
TP02


CCG-C-23-14178: Huyton Town Centre
TP02


CCG-C-23-14178. Huyton Town Centre
TP02


CCG-C-23-14178. Huyton Town Centre
TP02


CCG-C-23-14178: Huyton Town Centre
Trial Pit Excavation - TP03


CCG-C-23-14178: Huyton Town Centre
Trial Pit Excavation - TP03


CCG-C-23-14178: Huyton Town Centre
Trial Pit Excavation - TP02


CCG-C-23-14178: Huyton Town Centre
Trial Pit Excavation - TP03


CCG-C-23-14178: Huyton Town Centre
Trial Pit Excavation - TP03


CCG-C-23-14178: Huyton Town Centre
Trial Pit Excavation - TP03


CCG-C-23-14178: Huyton Town Centre
Trial Pit Excavation - TP04


CCG-C-23-14178: Huyton Town Centre
Trial Pit Excavation - TP04


CCG-C-23-14178: Huyton Town Centre
Trial Pit Excavation - TP04


CCG-C-23-14178: Huyton Town Centre
Trial Pit Excavation - TP04

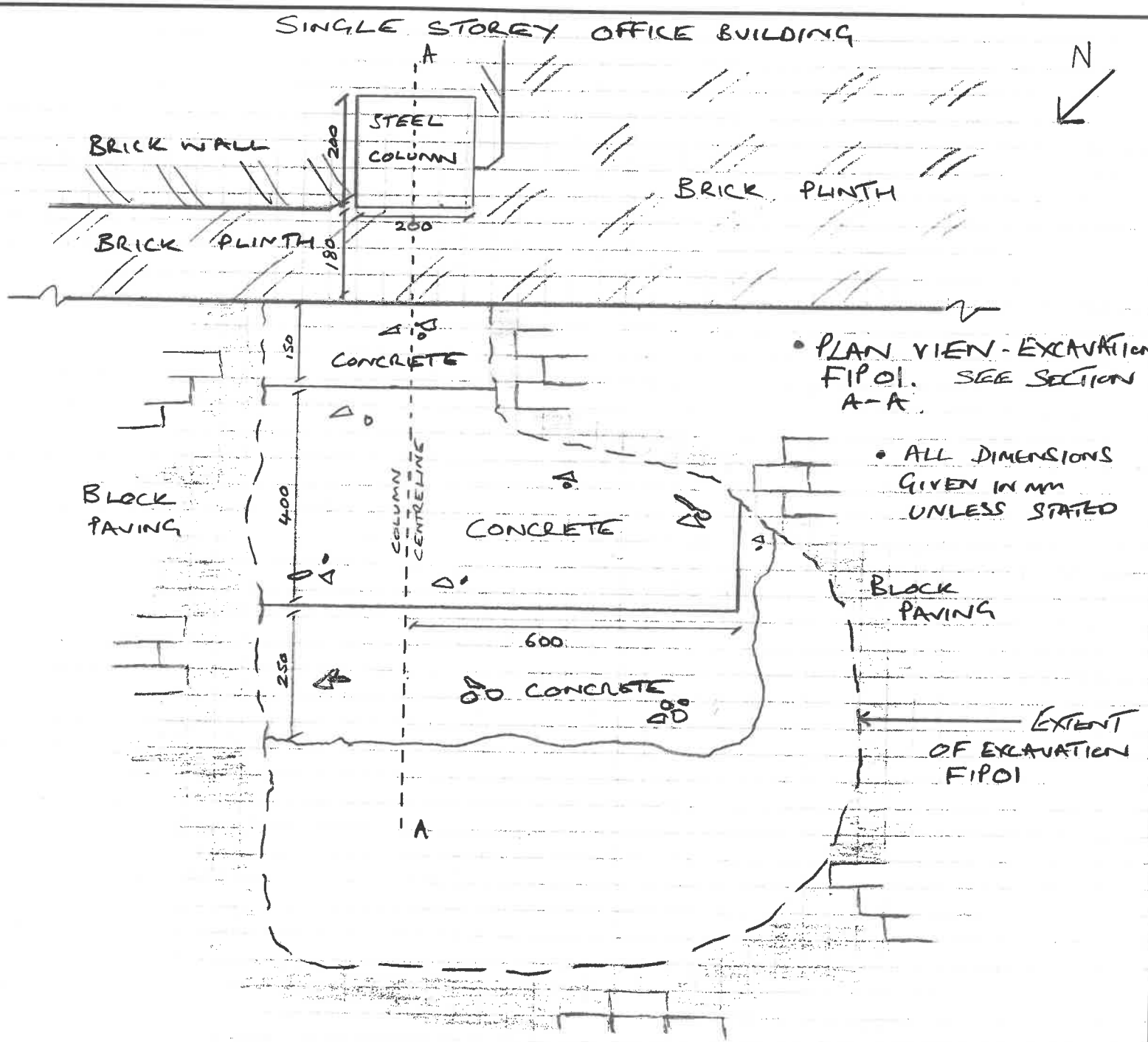

CCG-C-23-14178, Huyton Town Centre
Trial Pit Excavation - TP04


CCG-C-23-14178, Huyton Town Centre
Trial Pit Excavation - TP04


CCG-C-23-14178: Huyton Town Centre
Trial Pit Excavation - TP04

APPENDIX I

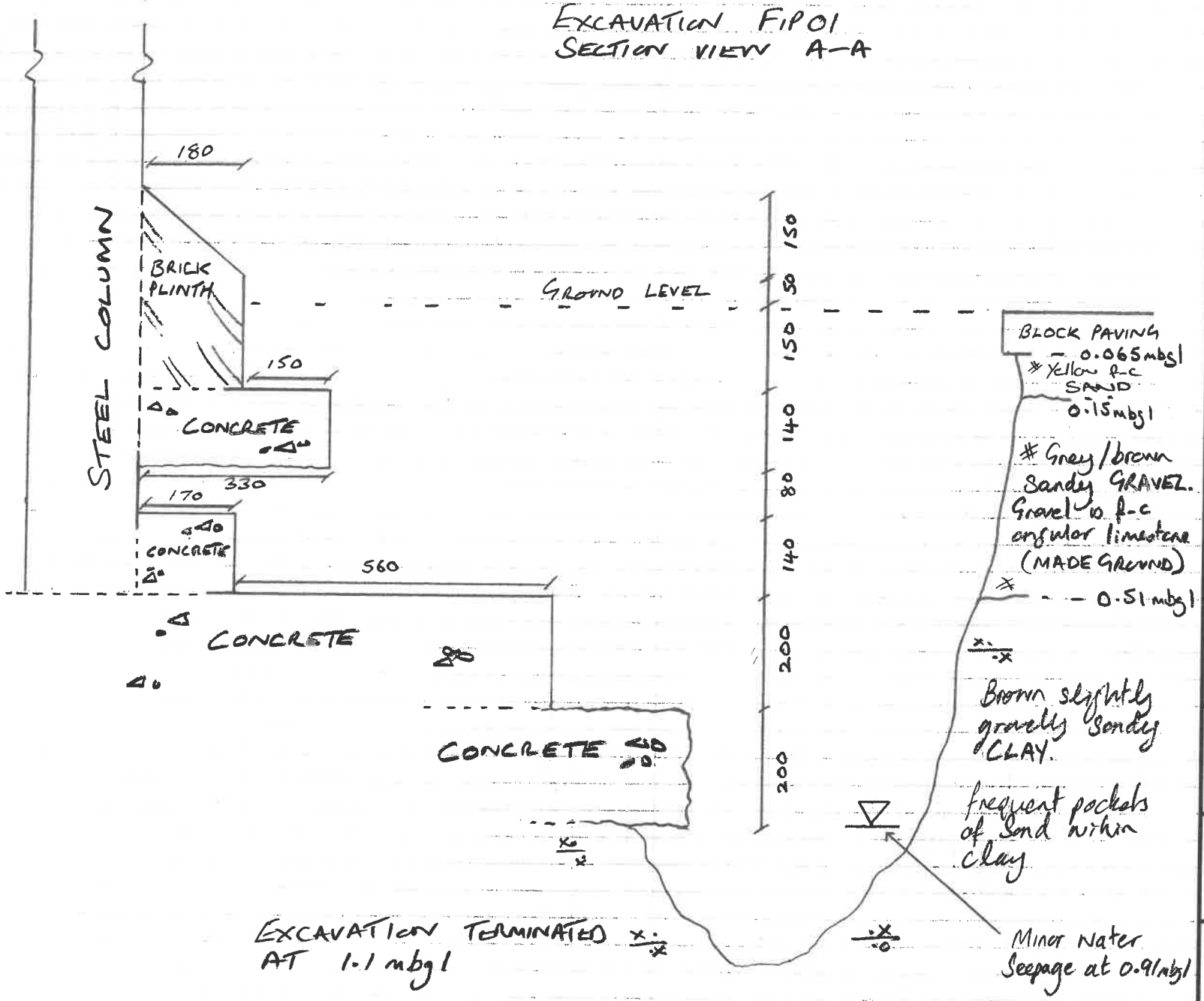
FOUNDATION EXPOSURE INSPECTION EXCAVATION SKETCHES AND PHOTOGRAPHS



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	

EXCAVATION FIP01
SECTION VIEW A–A



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	


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

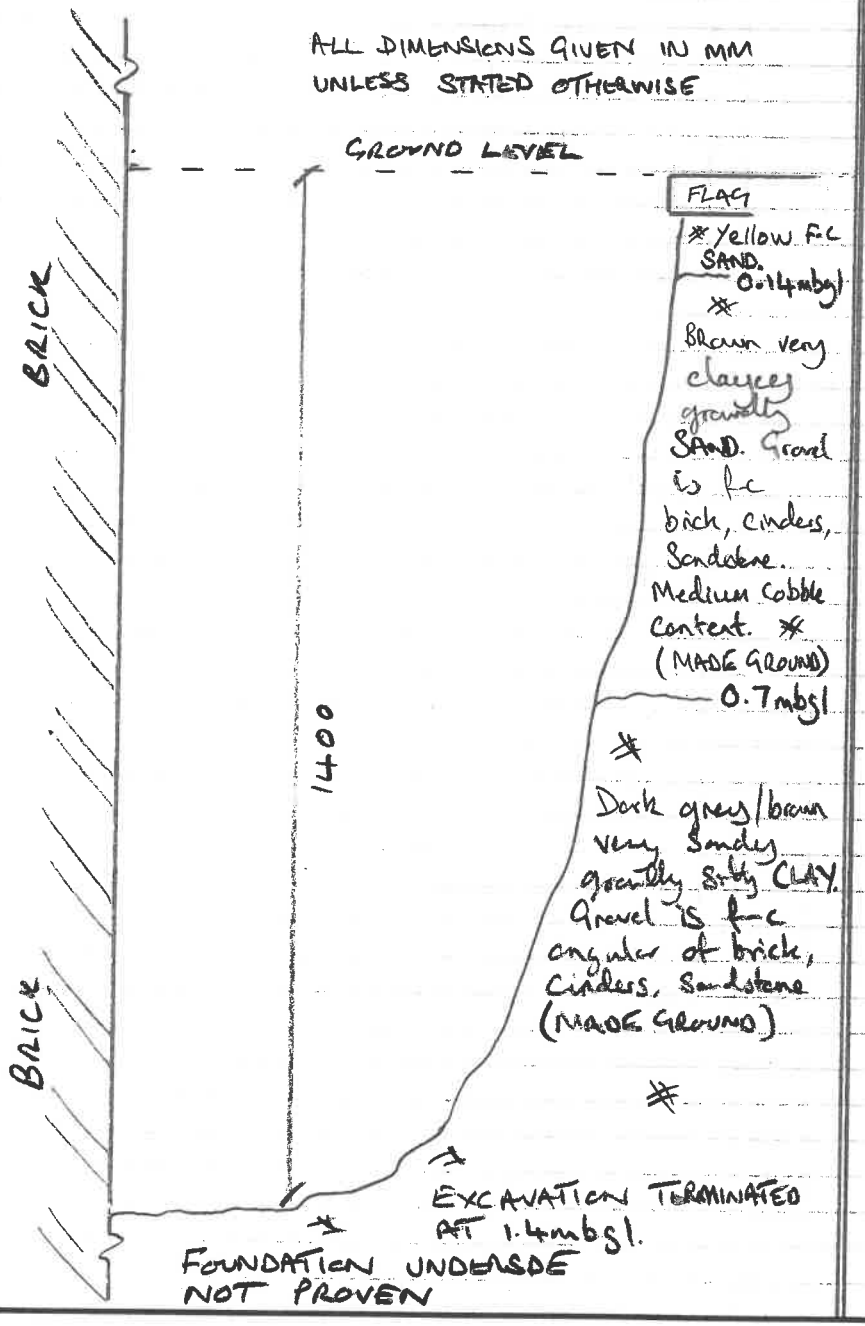

CCG-C-23-14178: Huyton Town Centre
Foundation Inspection Excavation - FIP01


CCG-C-23-14178: Huyton Town Centre
Foundation Inspection Excavation - FIP01

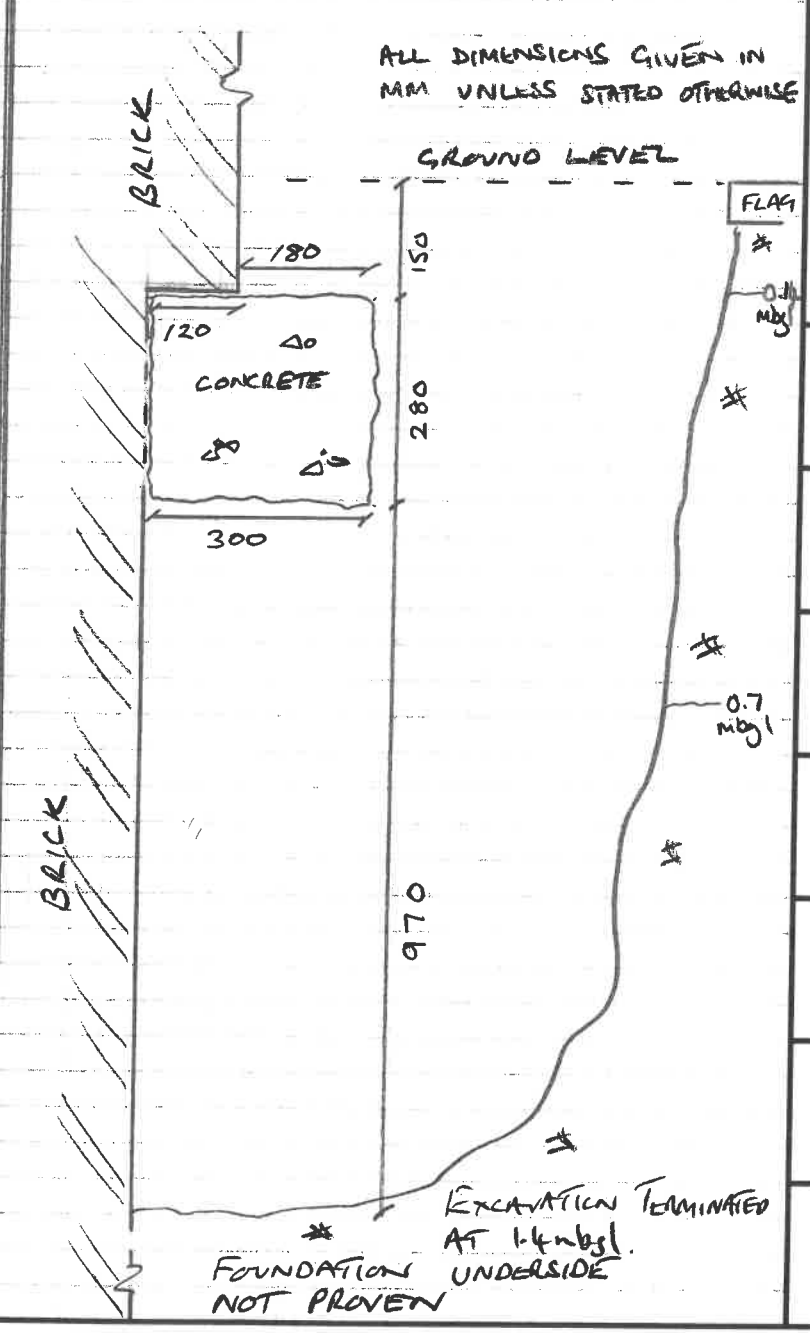

CCG-C-23-14178: Huyton Town Centre
Foundation Inspection Excavation - FIP01


CCG-C-23-14178: Huyton Town Centre
Foundation Inspection Excavation - FIP01

EXCAVATION FIP02
SECTION VIEW A-A

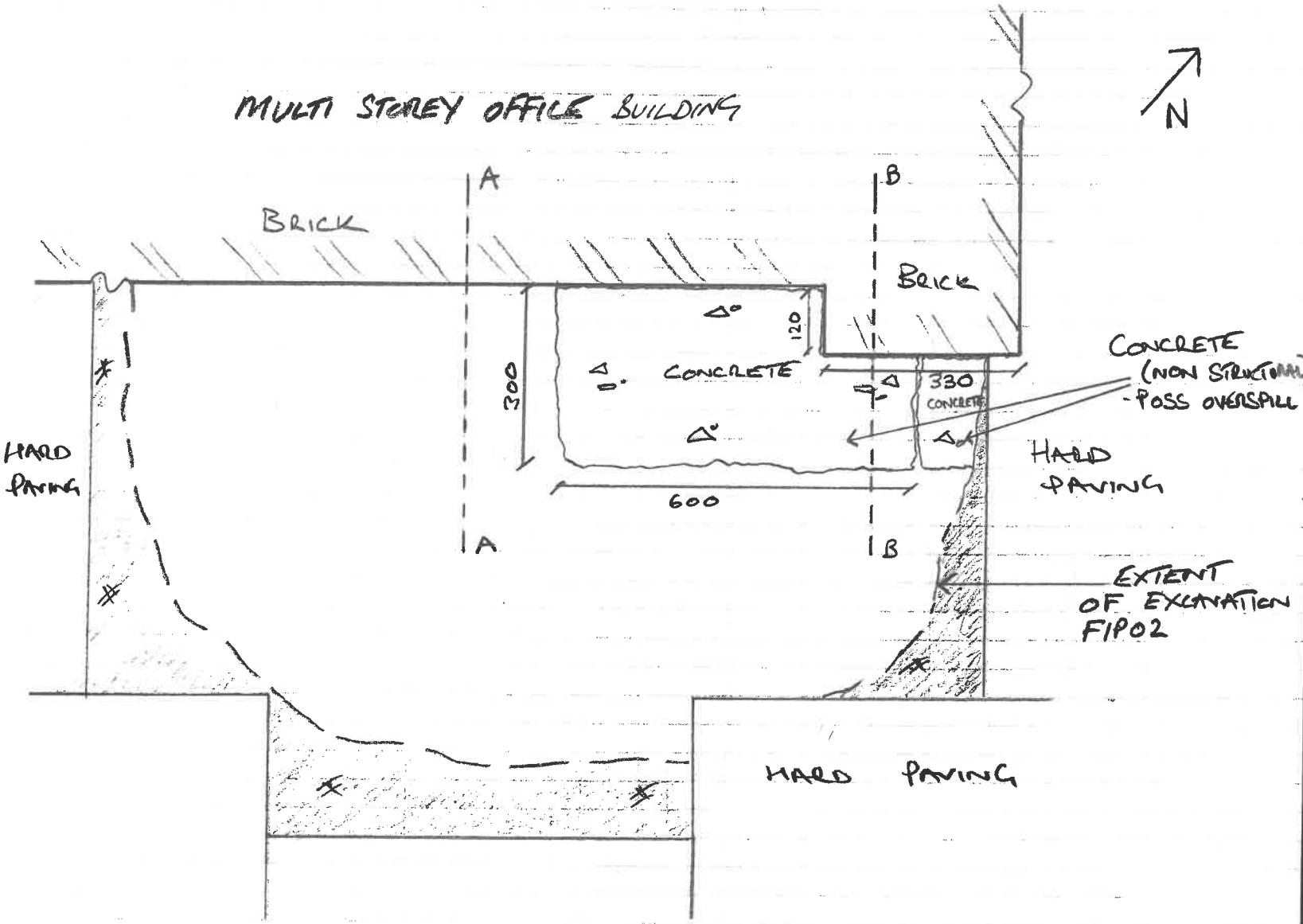


EXCAVATION FIP02
SECTION VIEW B-B



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-FIP02	



PLAN VIEW - EXCAVATION FIP02
SEE SECTIONS A-A & B-B.
ALL DIMENSIONS ARE GIVEN IN MM UNLESS STATED OTHERWISE.

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-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: Huyton Town Centre
Foundation Inspection Excavation - 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: Huyton 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				
			Revision	0
	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}' [m^2] =	4.05
storage volume between 75-25% 'V_p' [m^3] =	0.62
time for water to fall from 75-25% 't_p' [min] =	#DIV/0!
soil infiltration rate 'f' [m/s] =	#DIV/0!

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	

Soil Description

See TP01

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]* =	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				
			Revision	0
	Job No:	CCG-C-23-14178	Page:	1 OF 1
Section: HUYTON, 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}' [m^2] =	6.77
storage volume between 75-25% 'V_p' [m^3] =	1.39
time for water to fall from 75-25% 't_p' [min] =	#DIV/0!
soil infiltration rate 'f' [m/s] =	#DIV/0!

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	

Soil Description

See TP02

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

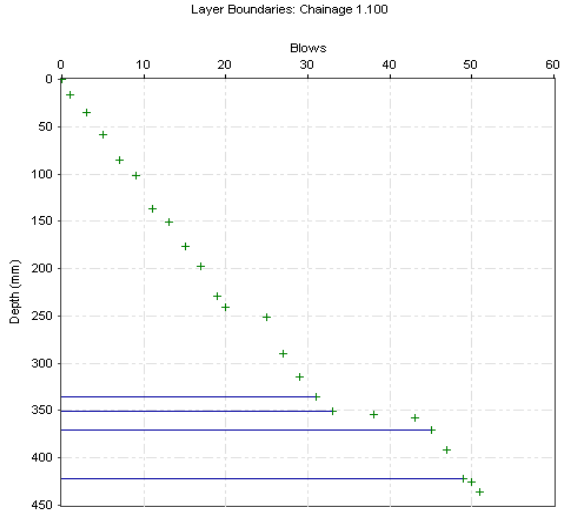
Dynamic Cone Penetrometer Strength Analysis Report

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

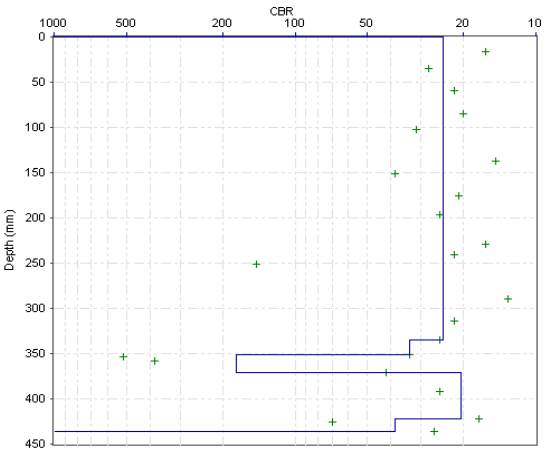
Job Number: CCG-C-23-14178
Surface Type: -
Thickness (mm): -

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)
1	0	0	114	0
2	1	1	130	16.0
3	2	3	149	9.5
4	2	5	173	12.0
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

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)
21	2	47	506	10.5
22	2	49	536	15.0
23	1	50	540	4.0
24	1	51	550	10.0



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

Remarks Surface material description: Grassed TOPSOIL

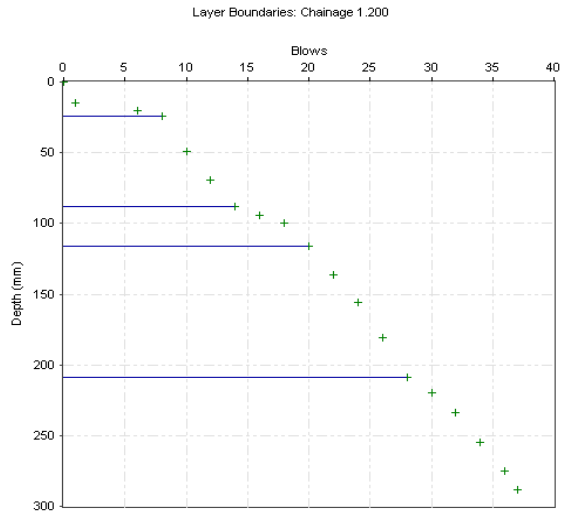
Dynamic Cone Penetrometer Strength Analysis Report

Site: HUYTON TOWN CENTRE
Location: WS01 DCP (commenced at 0.7mbgl)
Cone Angle: 60 degrees
Zero Error: 10
Test Date: 14/09/2023

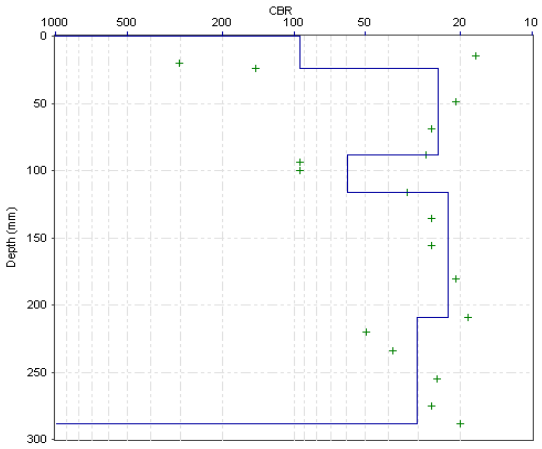
Job Number: CCG-C-23-14178
Surface Type: -
Thickness (mm): -

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)
1	0	0	10	0
2	1	1	25	15.0
3	5	6	30	1.0
4	2	8	34	2.0
5	2	10	59	12.5
6	2	12	79	10.0
7	2	14	98	9.5
8	2	16	104	3.0
9	2	18	110	3.0
10	2	20	126	8.0
11	2	22	146	10.0
12	2	24	166	10.0
13	2	26	191	12.5
14	2	28	219	14.0
15	2	30	230	5.5
16	2	32	244	7.0
17	2	34	265	10.5
18	2	36	285	10.0
19	1	37	298	13.0

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	CBR value	Thickness	Depth	Depth (mmbgl)	Strength Coefficient
1	**95**	24	24	**724**	
2	**25**	64	88	**788**	
3	**59**	28	116	**816**	
4	**23**	93	209	**909**	
5	**30**	79	288	**988**	

CBR Derived by TDR equation $Log_{10}(CBR)=2.48-1.057 \times Log_{10}(penetration\ rate)$

Remarks Surface material description: Brown slightly sandy slightly gravelly silty CLAY

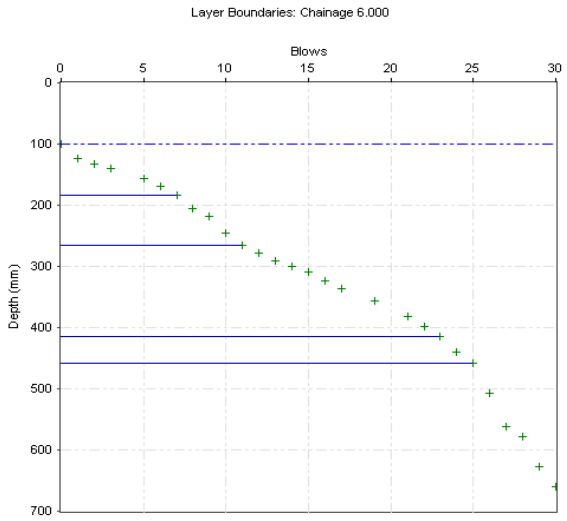
Dynamic Cone Penetrometer Strength Analysis Report

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

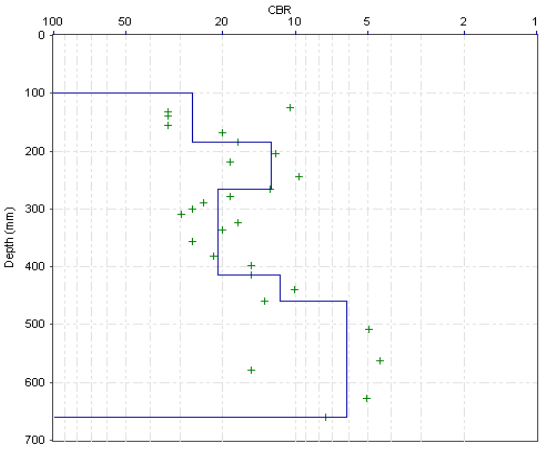
Job Number: CCG-C-23-14178
Surface Type: BITUMINOUS SURFACING
Thickness (mm): 100

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)
1	0	0	264	0
2	1	1	288	24.0
3	1	2	296	8.0
4	1	3	304	8.0
5	2	5	320	8.0
6	1	6	333	13.0
7	1	7	348	15.0
8	1	8	369	21.0
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

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)
21	1	23	579	17.0
22	1	24	604	25.0
23	1	25	623	19.0
24	1	26	672	49.0
25	1	27	726	54.0
26	1	28	743	17.0
27	1	29	791	48.0
28	1	30	824	33.0



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

Remarks Surface material description: Bituminous surfacing

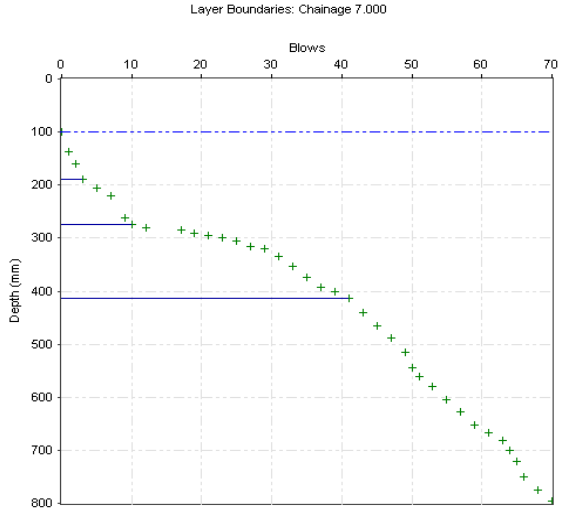
Dynamic Cone Penetrometer Strength Analysis Report

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

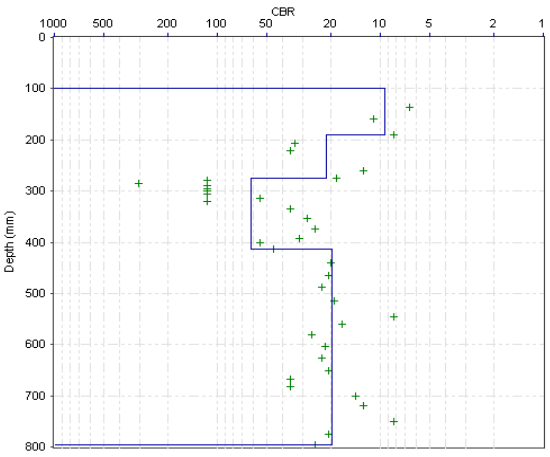
Job Number: CCG-C-23-14178
Surface Type: BITUMINOUS SURFACING
Thickness (mm): 100

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)
1	0	0	150	0
2	1	1	187	37.0
3	1	2	210	23.0
4	1	3	240	30.0
5	2	5	256	8.0
6	2	7	271	7.5
7	2	9	311	20.0
8	1	10	325	14.0
9	2	12	330	2.5
10	5	17	335	1.0
11	2	19	340	2.5
12	2	21	345	2.5
13	2	23	350	2.5
14	2	25	355	2.5
15	2	27	365	5.0
16	2	29	370	2.5
17	2	31	385	7.5
18	2	33	404	9.5
19	2	35	425	10.5
20	2	37	442	8.5

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)
21	2	39	452	5.0
22	2	41	464	6.0
23	2	43	490	13.0
24	2	45	515	12.5
25	2	47	538	11.5
26	2	49	565	13.5
27	1	50	595	30.0
28	1	51	610	15.0
29	2	53	630	10.0
30	2	55	654	12
31	2	57	677	11.5
32	2	59	702	12.5
33	2	61	717	7.5
34	2	63	732	7.5
35	1	64	750	18
36	1	65	770	20
37	1	66	800	30
38	2	68	825	12.5
39	2	70	846	10.5



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

Remarks Surface material description: Bituminous surfacing

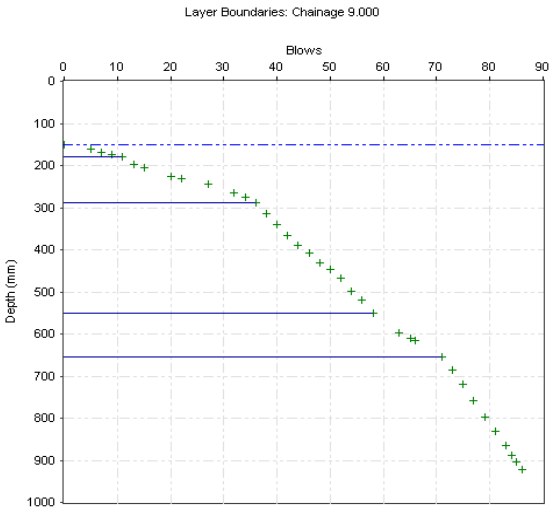
Dynamic Cone Penetrometer Strength Analysis Report

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

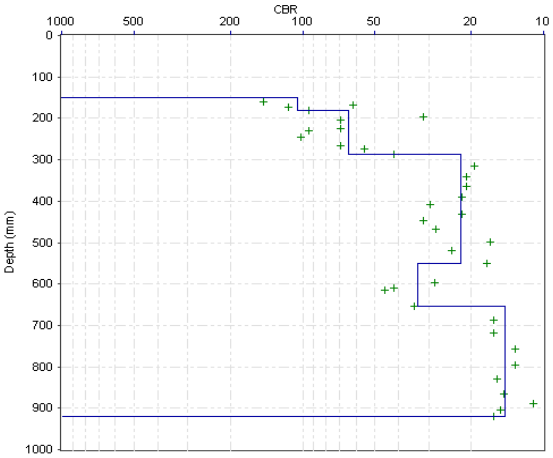
Job Number: CCG-C-23-14178
Surface Type: Bituminous surfacing
Thickness (mm): 150

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)
1	0	0	210	0
2	5	5	220	2.0
3	2	7	229	4.5
4	2	9	234	2.5
5	2	11	240	3.0
6	2	13	257	8.5
7	2	15	265	4.0
8	5	20	285	4.0
9	2	22	291	3.0
10	5	27	305	2.8
11	5	32	325	4.0
12	2	34	335	5.0
13	2	36	348	6.5
14	2	38	375	13.5
15	2	40	400	12.5
16	2	42	425	12.5
17	2	44	449	12.0
18	2	46	467	9.0
19	2	48	491	12.0
20	2	50	508	8.5

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)
21	2	52	527	9.5
22	2	54	558	15.5
23	2	56	580	11.0
24	2	58	610	15.0
25	5	63	657	9.4
26	2	65	670	6.5
27	1	66	676	6.0
28	5	71	715	7.8
29	2	73	747	16.0
30	2	75	779	16
31	2	77	818	19.5
32	2	79	857	19.5
33	2	81	890	16.5
34	2	83	925	17.5
35	1	84	948	23
36	1	85	965	17
37	1	86	981	16



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

Remarks Surface material description: Bituminous surfacing

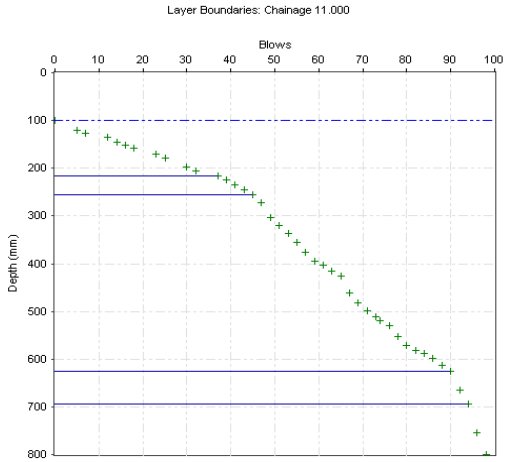
Dynamic Cone Penetrometer Strength Analysis Report

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

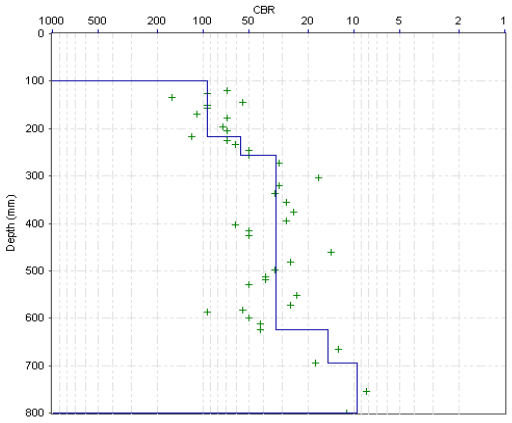
Job Number: CCG-C-23-14178
Surface Type: BITUMINOUS SURFACING
Thickness (mm): 100

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)
1	0	0	185	0
2	5	5	205	4.0
3	2	7	211	3.0
4	5	12	220	1.8
5	2	14	230	5.0
6	2	16	236	3.0
7	2	18	242	3.0
8	5	23	255	2.6
9	2	25	263	4.0
10	5	30	282	3.8
11	2	32	290	4.0
12	5	37	302	2.4
13	2	39	310	4.0
14	2	41	319	4.5
15	2	43	330	5.5
16	2	45	341	5.5
17	2	47	358	8.5
18	2	49	388	15.0
19	2	51	405	8.5
20	2	53	421	8.0
21	2	55	440	9.5
22	2	57	461	10.5

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/b)
23	2	59	480	9.5
24	2	61	489	4.5
25	2	63	500	5.5
26	2	65	511	5.5
27	2	67	547	18.0
28	2	69	567	10.0
29	2	71	583	8.0
30	2	73	597	7.0
31	1	74	604	7.0
32	2	76	615	5.5
33	2	78	637	11
34	2	80	657	10
35	2	82	667	5
36	2	84	673	3
37	2	86	684	5.5
38	2	88	697	6.5
39	2	90	710	6.5
40	2	92	750	20
41	2	94	779	14.5
42	2	96	839	30
43	2	98	884	22.5



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

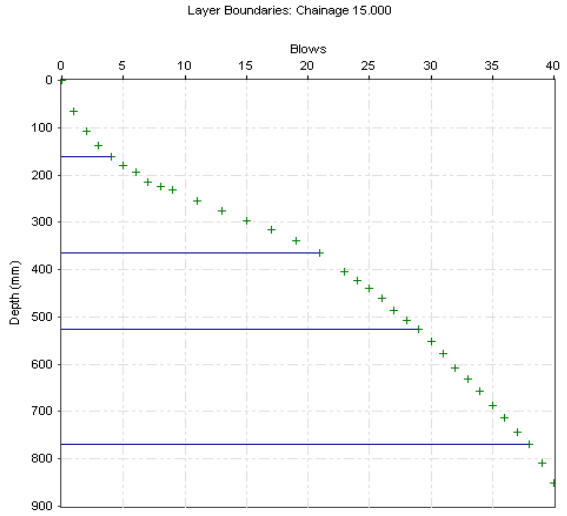
Remarks Surface material description: Bituminous surfacing

Dynamic Cone Penetrometer Strength Analysis Report

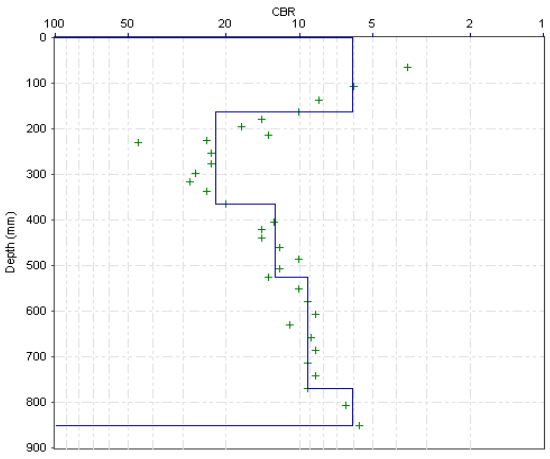
Site: HUYTON TOWN CENTRE
Location: WS15 DCP
Cone Angle: 60 degrees
Zero Error: 104
Test Date: 12/09/2023

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

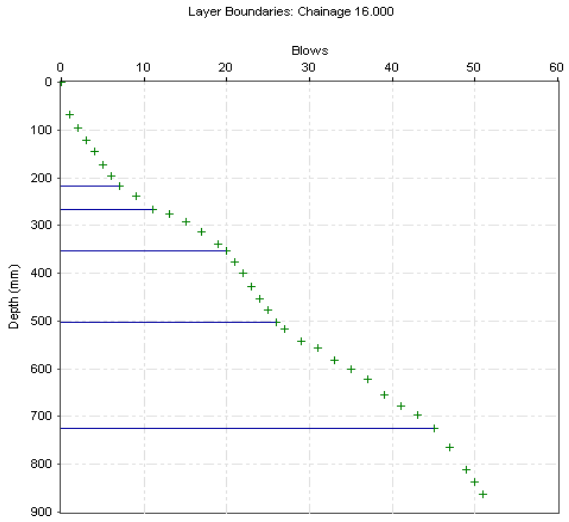
Remarks Surface material description: Grassed TOPSOIL

Dynamic Cone Penetrometer Strength Analysis Report

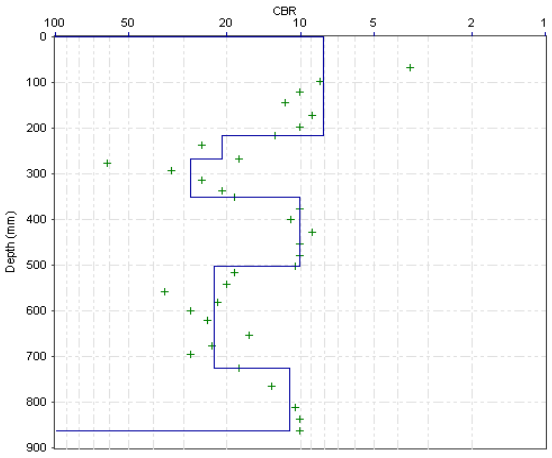
Site: HUYTON TOWN CENTRE
Location: WS16 DCP
Cone Angle: 60 degrees
Zero Error: 123
Test Date: 13/09/2023

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

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						
	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						
WS01	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						
	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						
WS06	CH_4 (%):	Nil	Nil	Nil	Nil	Nil	Nil						
	CO_2 (%):	0.5	0.6	1.2	0.8	0.6	0.7						
	O_2 (%):	18.6	18.8	17.4	17.3	17.5	17.4						
	H_2S (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						
WS07	CH4 (%):	Nil	Nil	Nil	Nil	Nil	Nil						
	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						
WS11	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						
WS15	CH_4 (%):	Nil	Nil	Nil	Nil	Nil	Nil						
	CO_2 (%):	Nil	0.8	4.2	3.1	2.8	3.0						
	O_2 (%):	20.5	19.3	16.1	16.5	16.9	16.6						
	H_2S (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						

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						
WS16	CH_4 (%):	Nil	Nil	Nil	Nil	Nil	Nil						
	CO_2 (%):	0.7	Nil	8.6	4.9	4.4	4.5						
	O_2 (%):	19.8	20.4	17.8	13.8	14.1	13.8						
	H_2S (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						
BH01	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_2S (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):	6.73	7.22	5.42	6.23	6.17	6.10						
BH02	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_2S (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):	7.54	6.90	7.48	5.10	5.01	4.93						
BH03	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_2S (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						
BH04	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_2S (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						

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						
BH06	CH_4 (%):	Nil	Nil	Nil	Nil	Nil	Nil						
	CO_2 (%):	3.1	5.2	5.4	7.3	7.1	7.3						
	O_2 (%):	16.6	14.4	14.2	13.9	15.2	12.9						
	H_2S (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						
BH07	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_2S (ppm):	Nil	*	Nil	Nil	Nil	Nil						
	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						
BH08	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_2S (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):	5.92	5.80	8.18	8.20	5.90	5.55						
BH09	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_2S (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						
BH10	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_2S (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						

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	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_2S (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						
BH12	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_2S (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):	9.38	9.30	9.26	9.35	9.26	9.16						

CCG-CMS-FO-129

Issue 2

Job No: CCG-C-23-14178

Site: Huyton Town Centre

Instrument: GFM436 MiniRae 3000

* = 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



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 Readings %	True Gas Value %	Instrument Gas Readings %	True Gas Value %	Instrument Gas Readings %	True Gas Value %
	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% N2	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)*			
			Zero Reading		Instrument Gas Reading	
Gas Type	Range *(ppm)*					
H2S	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 Applied Temperature ^{0}C	Instrument Temperature Reading ^{0}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:	Date Tested:
Jack Rutland	*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.

Ribble Enviro Ltd
www.ribble-enviro.co.uk



...everything gas detection

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

Applied Gas Concentration:	Cylinder Reference:	Final Sensor Reading	Accuracy Limits	Pass / Fail
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):	C.S.	Sign:	

Tel: 01200 445 804 **Fax**: 01200 445 809 **Email**: info@ribble-enviro.co.uk
Ribble Enviro Ltd. Unit 4, Gisburn Business Park, Gisburn, Nr Clitheroe, BB7 4JP, UK

Company Registered in England: 06140589 VAT No: GB 906 6241 34 EORI: GB906624134000

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

CC GEOTECHNICAL LTD
Consulting Geoenvironmental and Geotechnical Engineers

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/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
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) DATE: 24.10.23

CLIENT: GENR8 / BURO HAPPOLD / KMBC

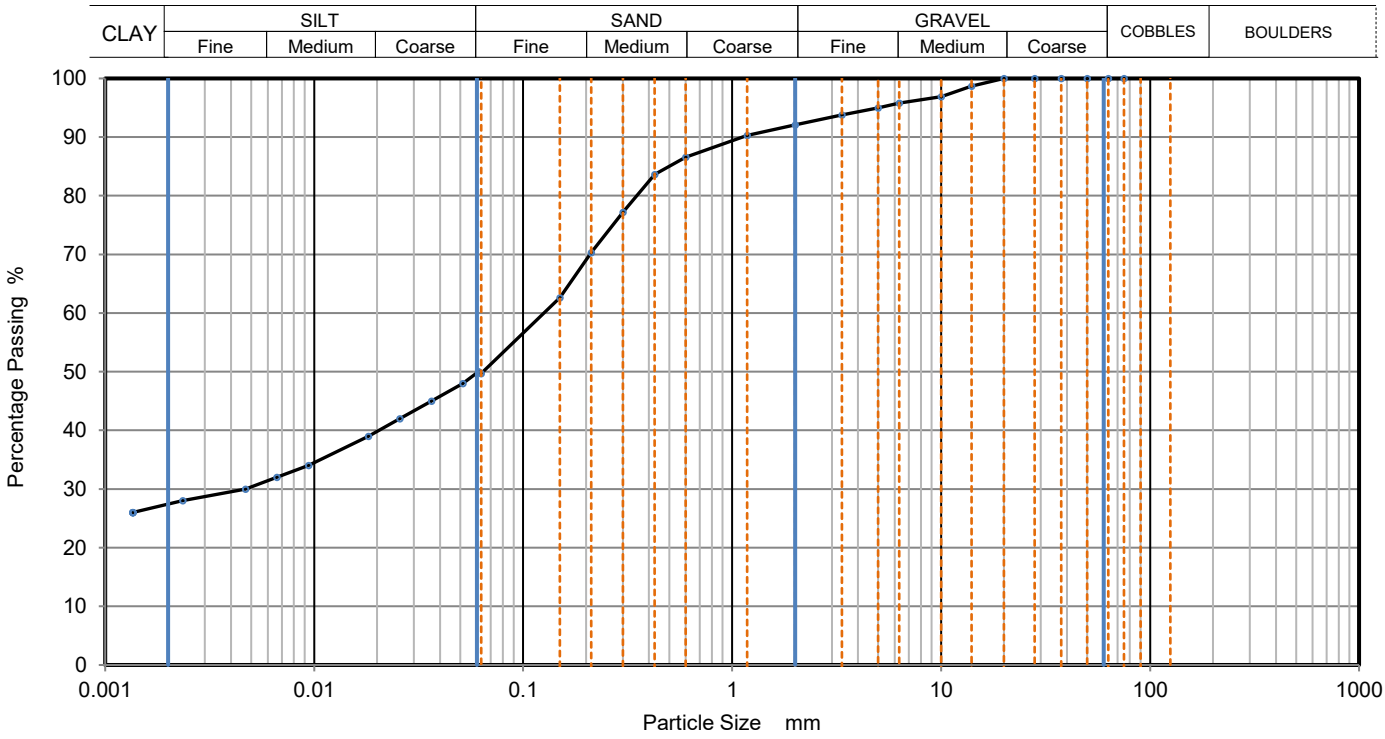
UKAS TESTING 4514

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)	
0.425	84	2.65	Mg/m3
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	0.126
D30	mm	0.0047
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

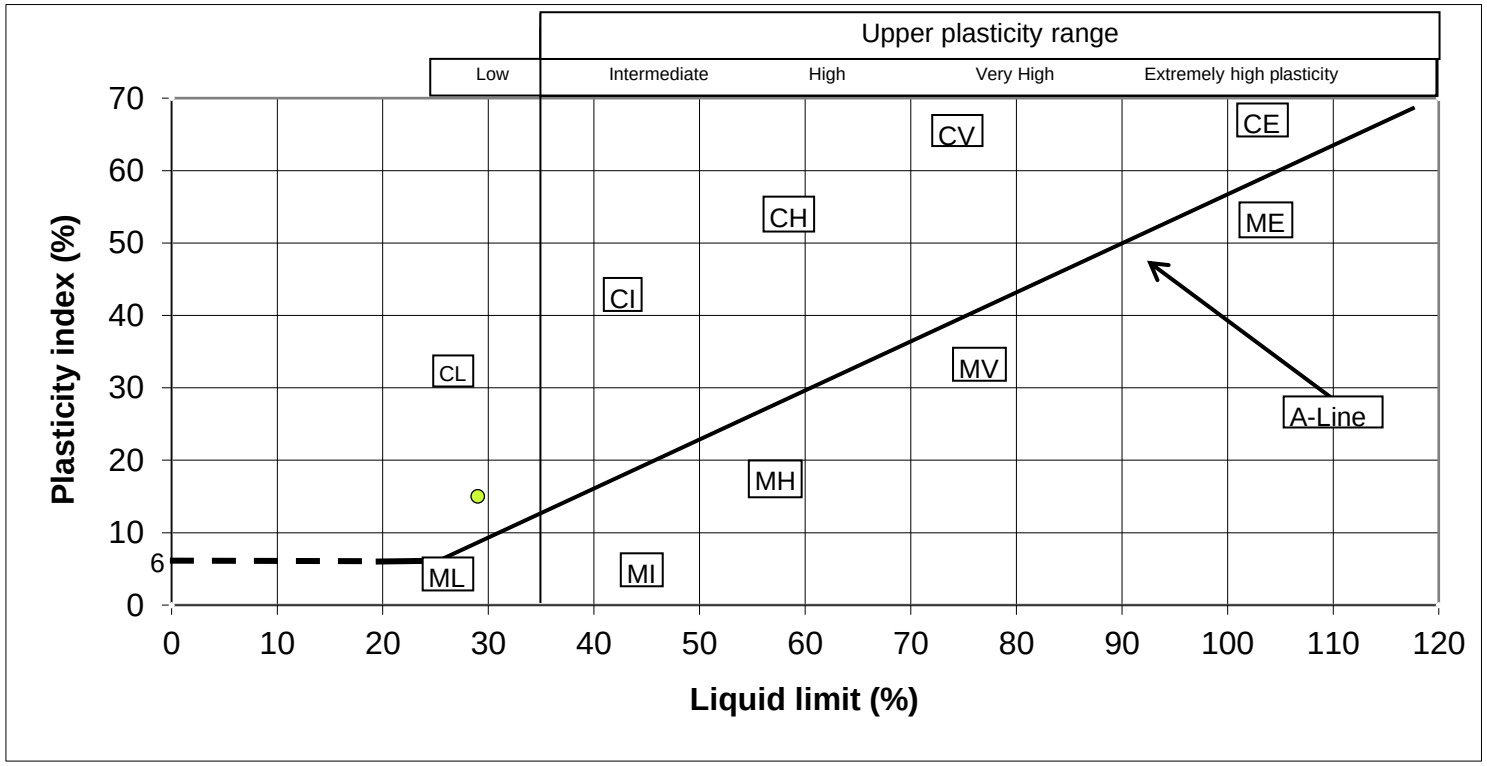
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1
JE	DK	DK	24/10/2023 10:46	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
BH01	0.60	29.0	15.0

UKAS TESTING
4514

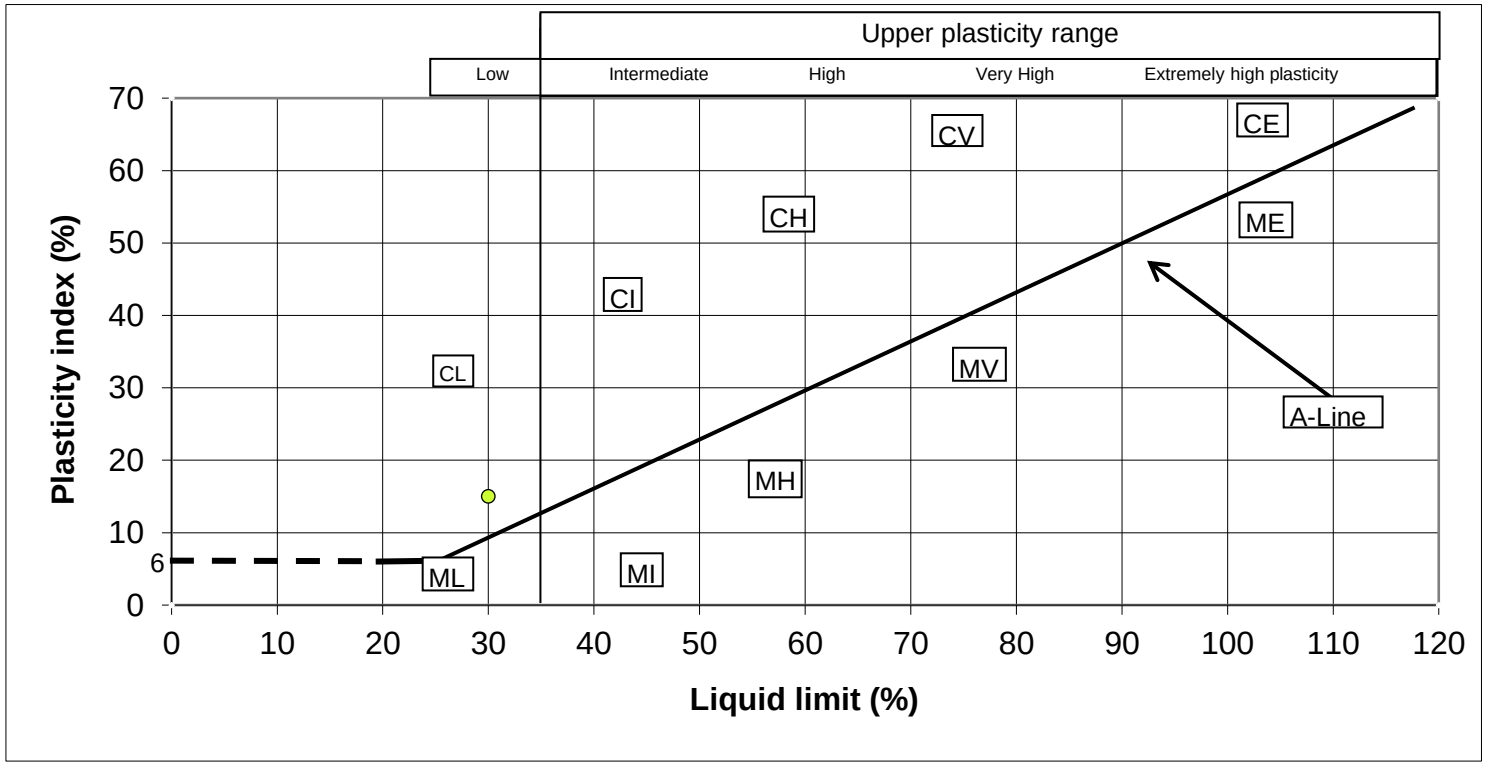
APPROVED BY	DK

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
BH01	1.20	30.0	15.0

UKAS TESTING
4514

APPROVED BY	DK

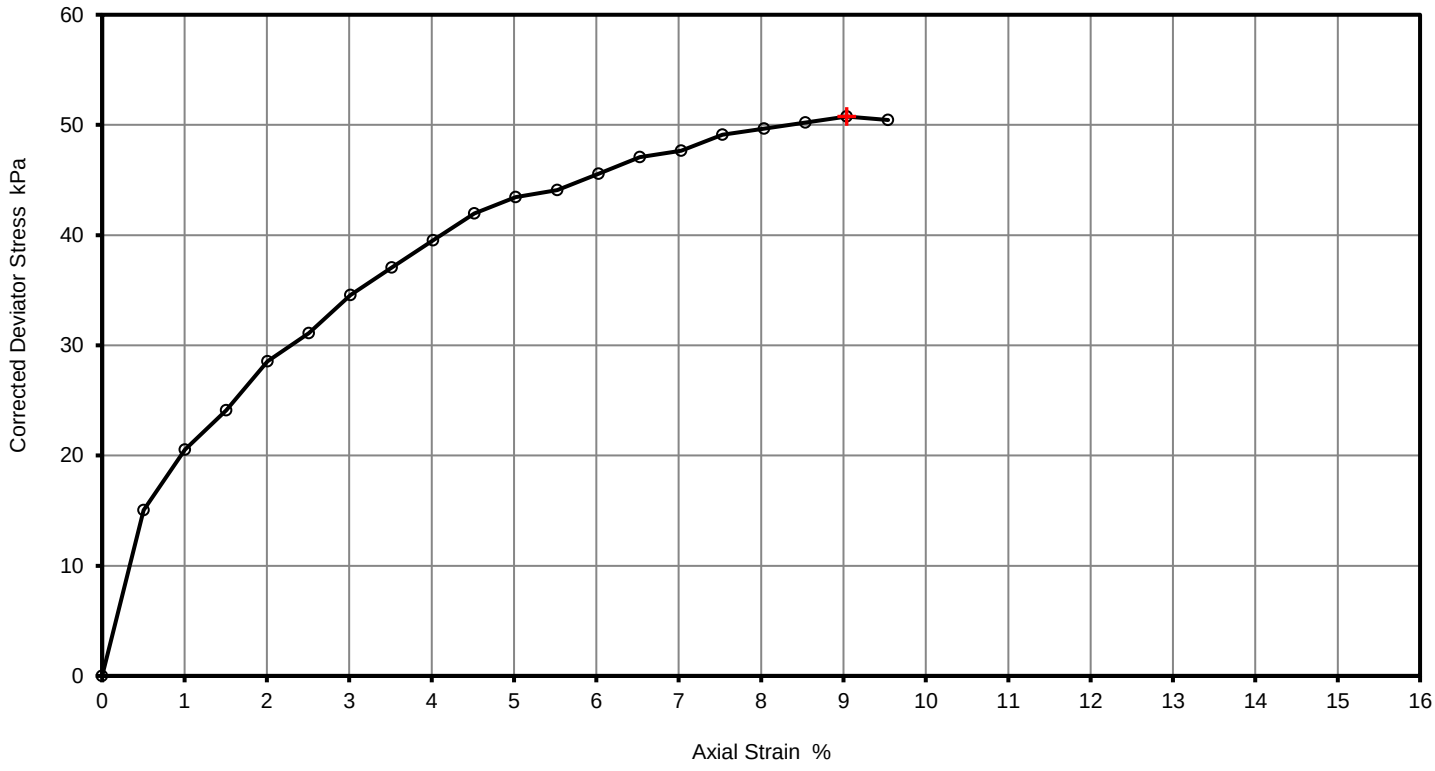
CLIENT: GENR8 / BURO HAPPOLD / KMBC	SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)

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
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 silty CLAY with frequent pockets of sand			Date of test	11/10/2023
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen				

UKAS TESTING 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, (σ1 - σ3)f	51	kPa
	Undrained Shear Strength, cu	25	kPa ½(σ1 - σ3)f
	Mode of Failure	Brittle	

Deviator Stress v Axial Strain



Remarks

0.5mm membrane, correction factor = 1.04

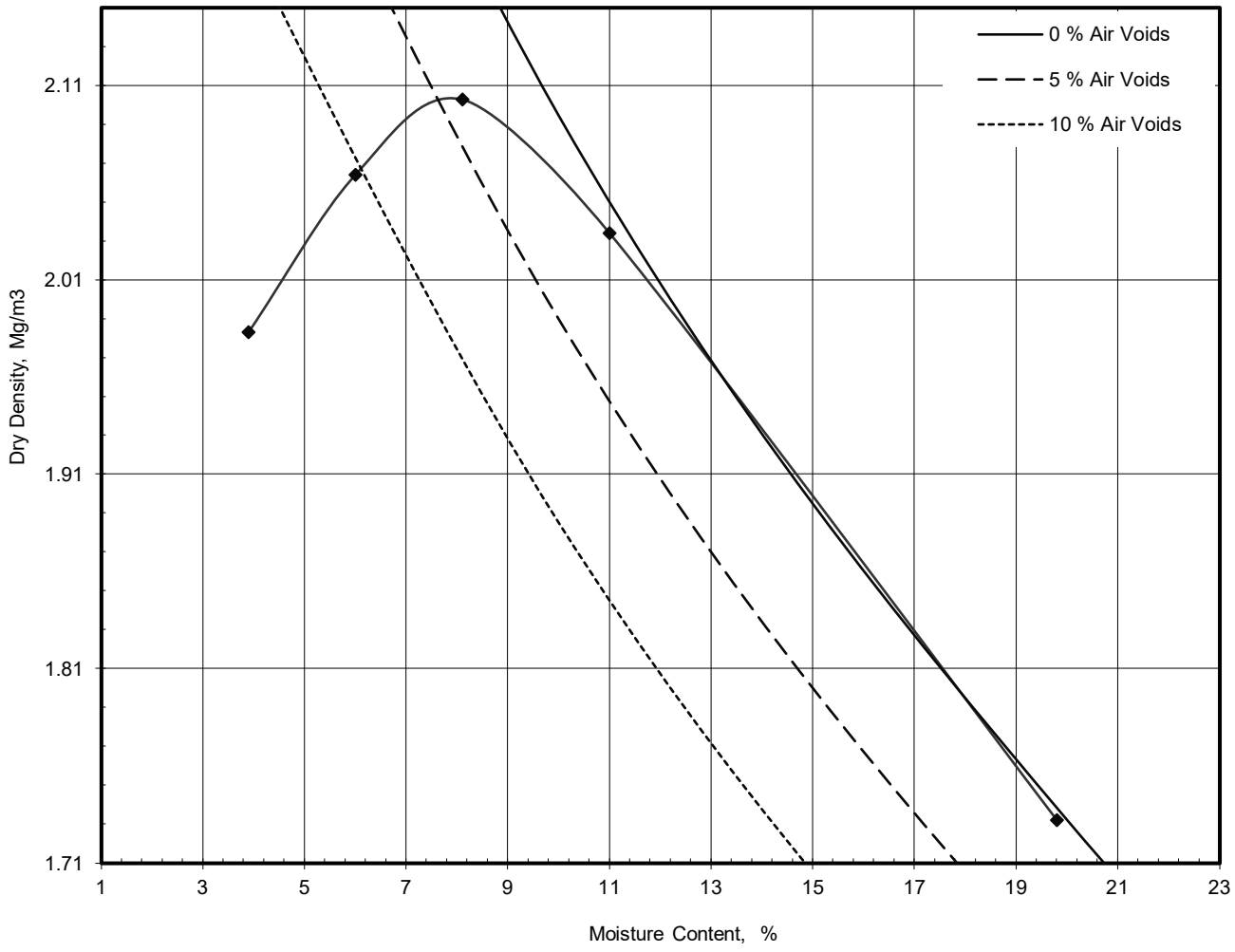
Approved: DanielKerfoot

Printed: 18/10/2023 12:16

Fig. No. 1

Sheet 1

CCG	**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.	

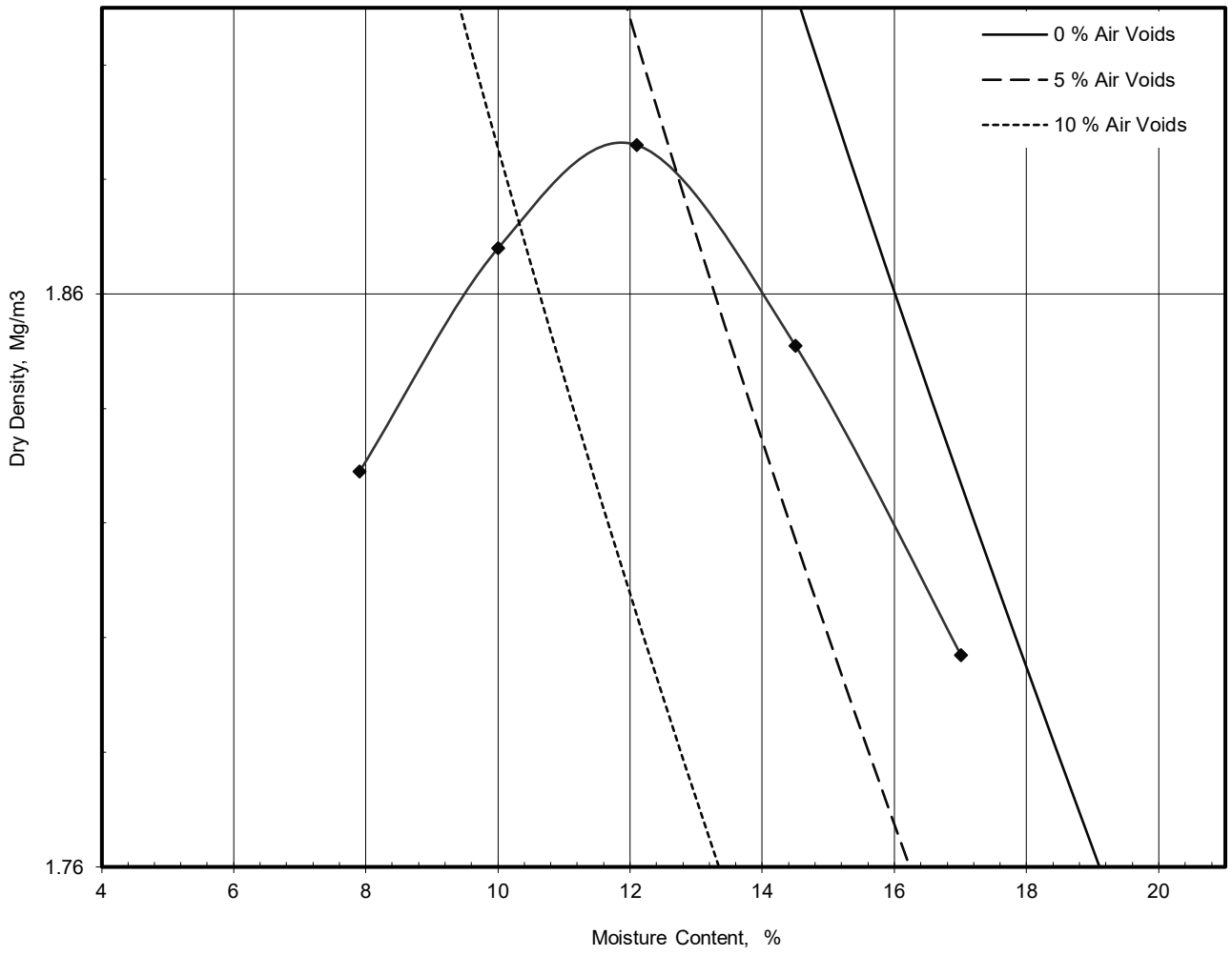


Preparation		
Mould Type		CBR
Samples Used		1
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	12
Particle Density -	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**2.10**
Optimum Moisture Content	%	**8.1**

Operator	Checked	Approved	Remarks	
MH	DK	DK		**Fig** Sheet 1 of 1

CCG	**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

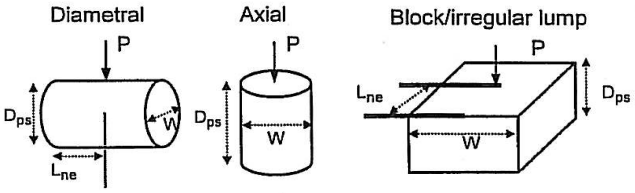
PROJECT No.:- CCG-C-23-14178 SITE:- HUYTON TOWN CENTRE DATE: 17.10.23

Borehole Number	Depth (m)	Type of Test* a	d	i	Width (W) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MPa)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MPa)	Estimated Uniaxial Compressive Strength (MPa)	Water Content (NAT/SAT)	Orientation to plane of weakness
BH01	3.25	a			100	79	0.20	100	0.02	1.37	0.03	0.54	NAT	p
BH01	5.20	a			100	56	3.80	84	0.53	1.27	0.67	13.49	NAT	p
BH01	5.40		d		61	100	2.70	-	0.27	1.37	0.37	7.38	NAT	l
BH01	6.70	a			100	68	3.20	93	0.37	1.32	0.49	9.78	NAT	p
BH01	10.80	a			100	70	4.50	94	0.50	1.33	0.67	13.44	NAT	p
BH01	12.80	a			100	90	5.60	107	0.49	1.41	0.69	13.77	NAT	p
BH01	13.60		d		103	100	4.20	-	0.42	1.37	0.57	11.47	NAT	l
BH01	18.90	a			100	94	0.90	109	0.08	1.42	0.11	2.14	NAT	p

*NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)
p = perpendicular; l = parallel, u = unkown

DIA. KEY- P = load ; Dps = platen seperation ;
W = width of shortest dimension perpendicular to load ;
Lne = length from platens to nearest free end

UKAS TESTING 4514



TESTED BY: MH 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 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 Samples described in accordance with BS EN ISO 14688-2 2004
BH02	D	0.40	0.40	11	-	-	-	-	-	-	-	-	Y	Greyish brown sandy slightly silty GRAVEL. Gravel is fine to coarse subangular limestone. (MADE GROUND) (BS1377Pt2:3.2)
BH02	B	0.60	0.60	18	-	-	-	-	-	-	-	-	Y	Brown very sandy silty slightly clayey GRAVEL. Gravel is fine to coarse subangular sandstone, brick, limestone, cinders. (MADE GROUND) (BS1377Pt2:9.2,9.5)

SITE: HUYTON TOWN CENTRE (CCG-C-23-14178) DATE: 24.10.23

CLIENT: GENR8 / BURO HAPPOLD / KMBC

UKAS TESTING 4514

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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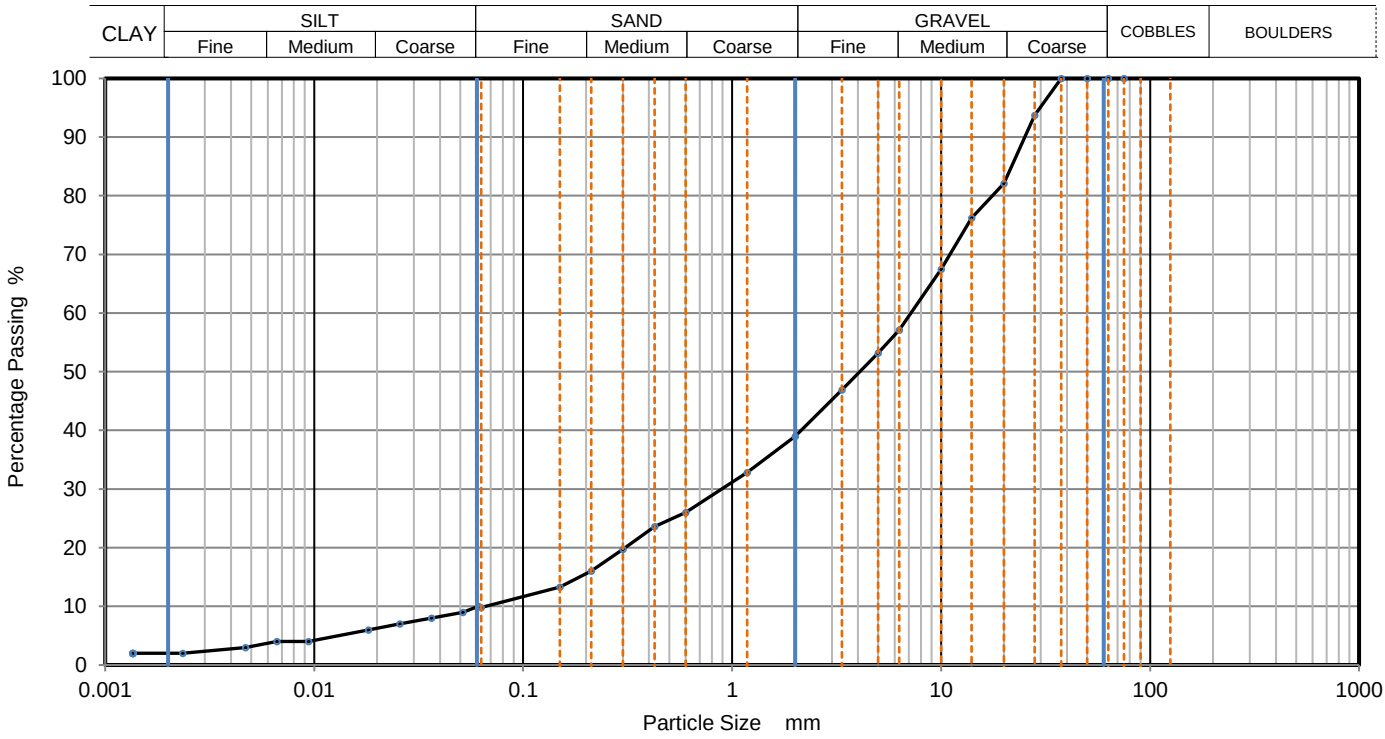
PARTICLE SIZE DISTRIBUTION

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)	
0.425	24	2.65	Mg/m3
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

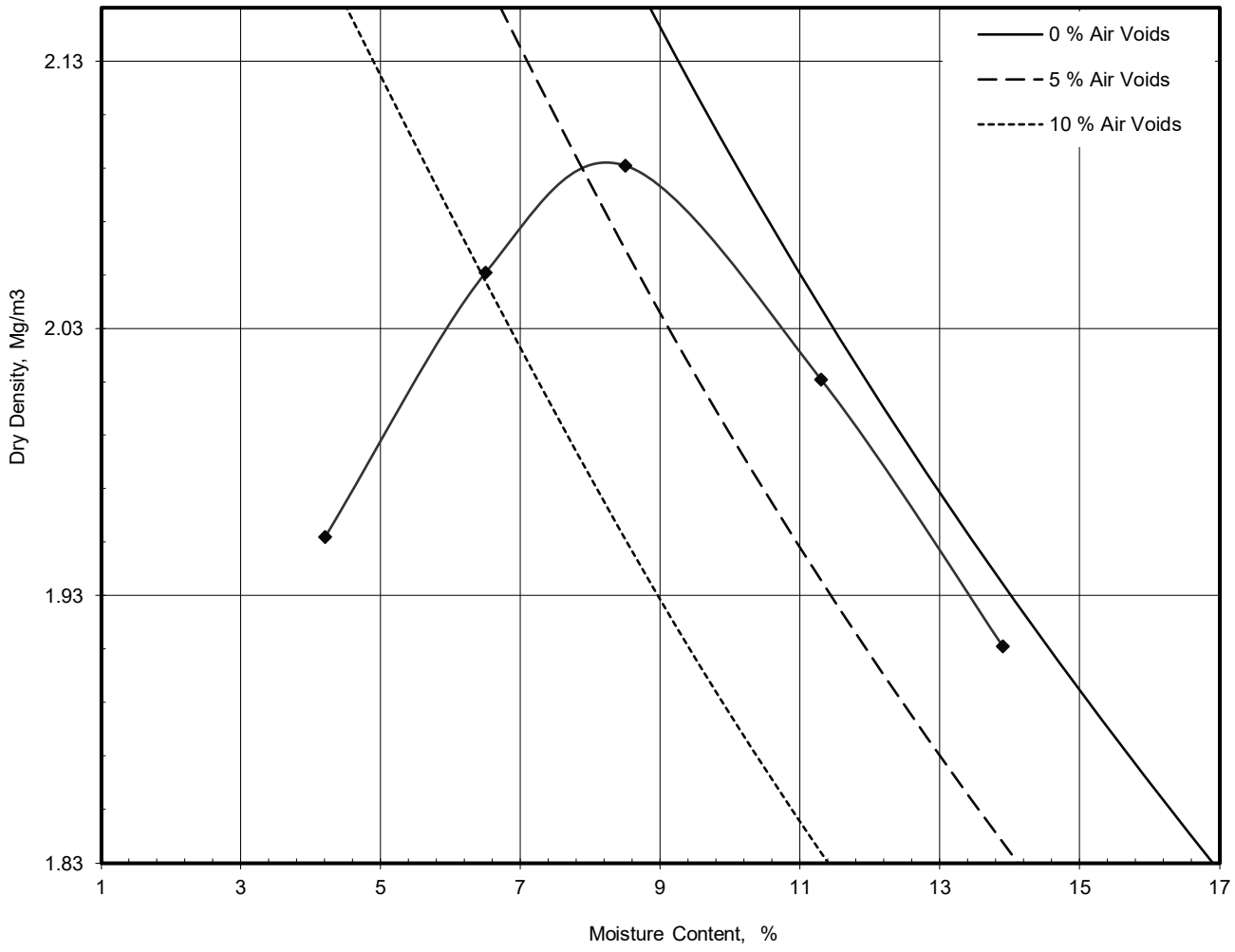
Grading Analysis		
D100	mm	
D60	mm	7.17
D30	mm	0.893
D10	mm	0.0667
Uniformity Coefficient		110
Curvature Coefficient		1.7

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

CCG	**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**
Optimum Moisture Content	%	**8.5**

Operator	Checked	Approved	Remarks	
MH	DK	DK		**Fig** Sheet 1 of 1

POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

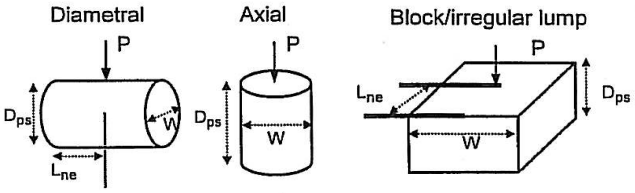
PROJECT No.:- CCG-C-23-14178 SITE:- HUYTON TOWN CENTRE DATE: 16.10.23

Borehole Number	Depth (m)	Type of Test* a	d	i	Width (W) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MPa)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MPa)	Estimated Uniaxial Compressive Strength (MPa)	Water Content (NAT/SAT)	Orientation to plane of weakness
BH02	1.70	a			100	86	3.00	105	0.27	1.39	0.38	7.64	NAT	p
BH02	5.90	a			100	61	5.00	88	0.64	1.29	0.83	16.62	NAT	p
BH02	8.00		d		64	100	2.70	-	0.27	1.37	0.37	7.38	NAT	l
BH02	8.90	a			100	66	4.60	92	0.55	1.31	0.72	14.38	NAT	p
BH02	14.30	a			100	75	4.70	98	0.49	1.35	0.67	13.31	NAT	p
BH02	17.40	a			100	70	4.00	94	0.45	1.33	0.60	11.95	NAT	p
BH02	18.20		d		69	100	2.60	-	0.26	1.37	0.36	7.10	NAT	l
BH02	19.95	a			100	81	1.30	102	0.13	1.38	0.17	3.47	NAT	p

*NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)
p = perpendicular; l = parallel, u = unkown

DIA. KEY- P = load ; Dps = platen seperation ;
W = width of shortest dimension perpendicular to load ;
Lne = length from platens to nearest free end

UKAS TESTING 4514



TESTED BY: MH 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 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) DATE: 24.10.23

CLIENT: GENR8 / BURO HAPPOLD / KMBC

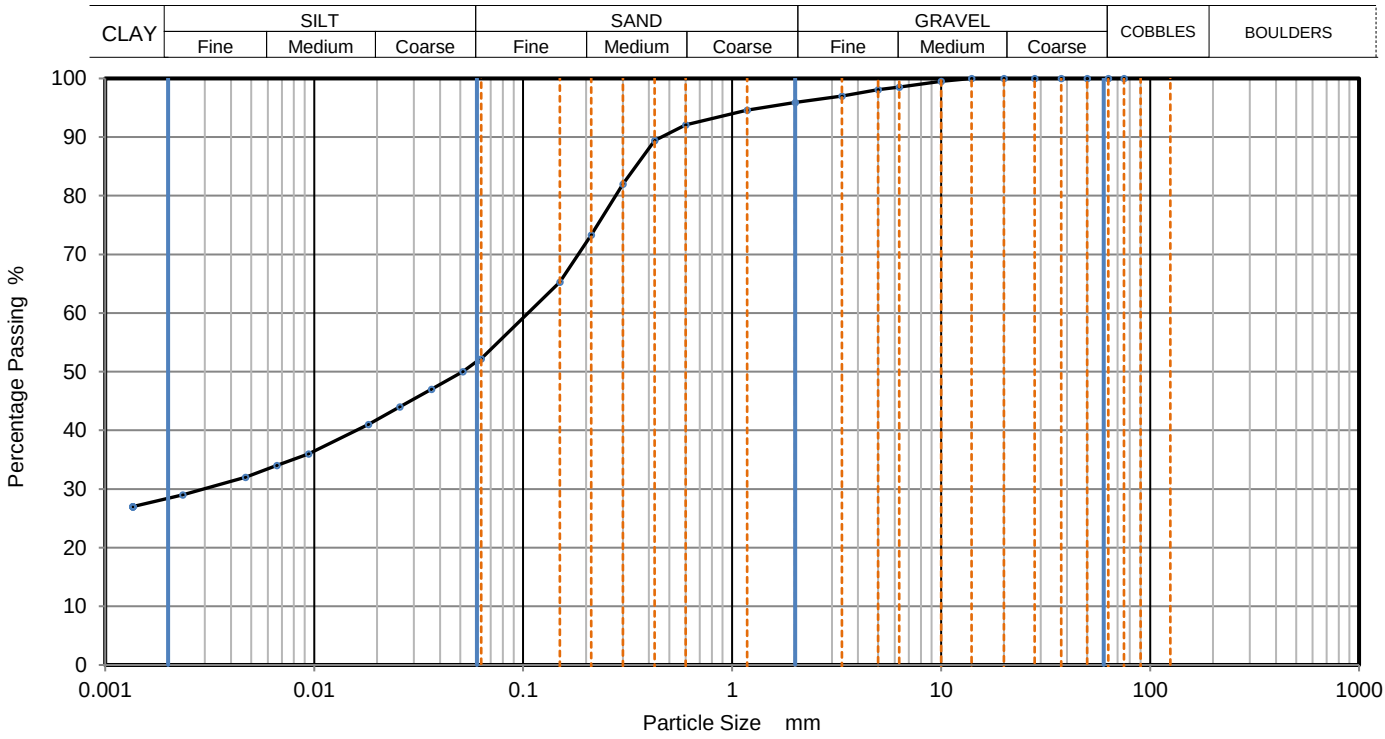
UKAS TESTING 4514

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.			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)	
0.425	89	2.65	Mg/m3
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	0.106
D30	mm	0.00319
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

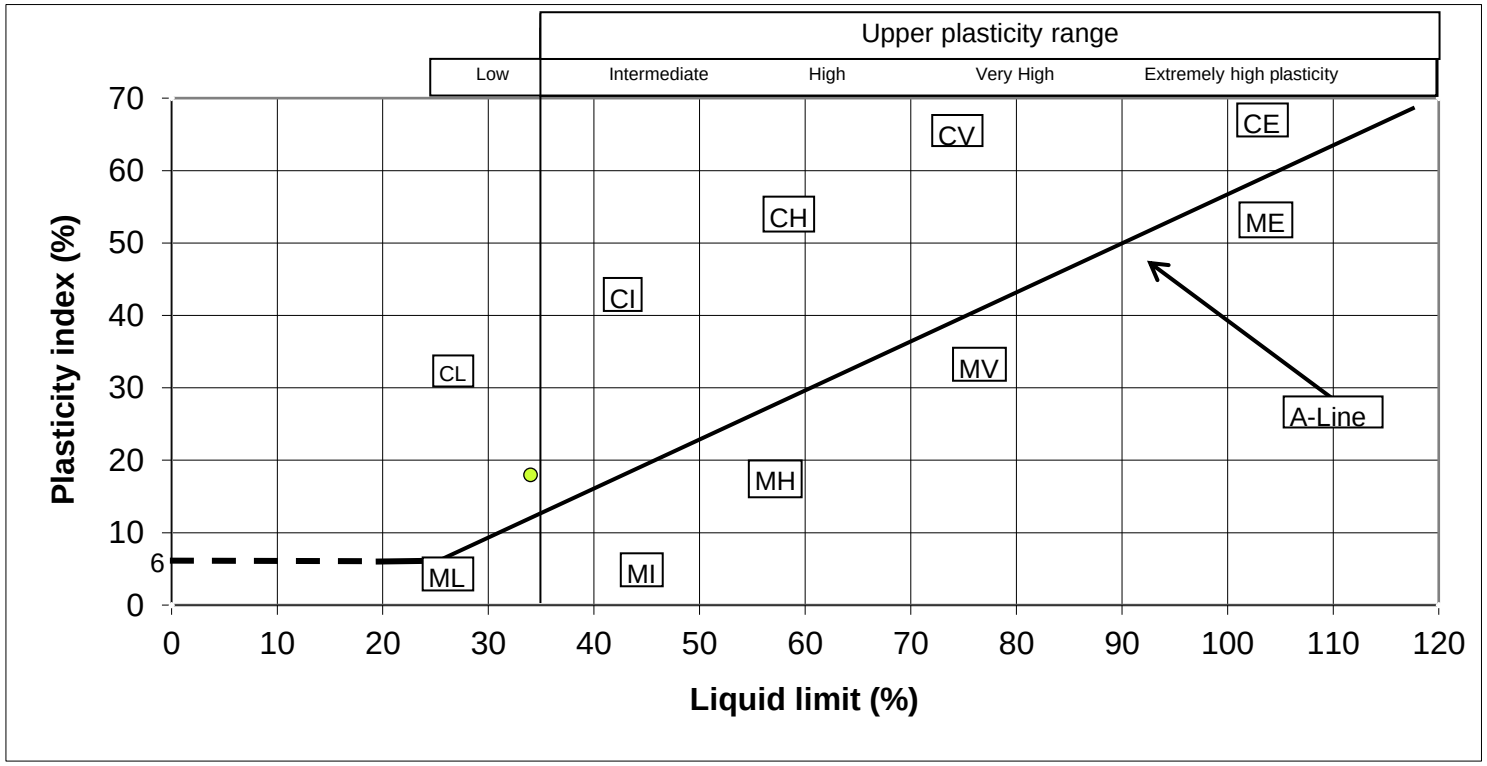
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1
JE	DK	DK	24/10/2023 10:01	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.



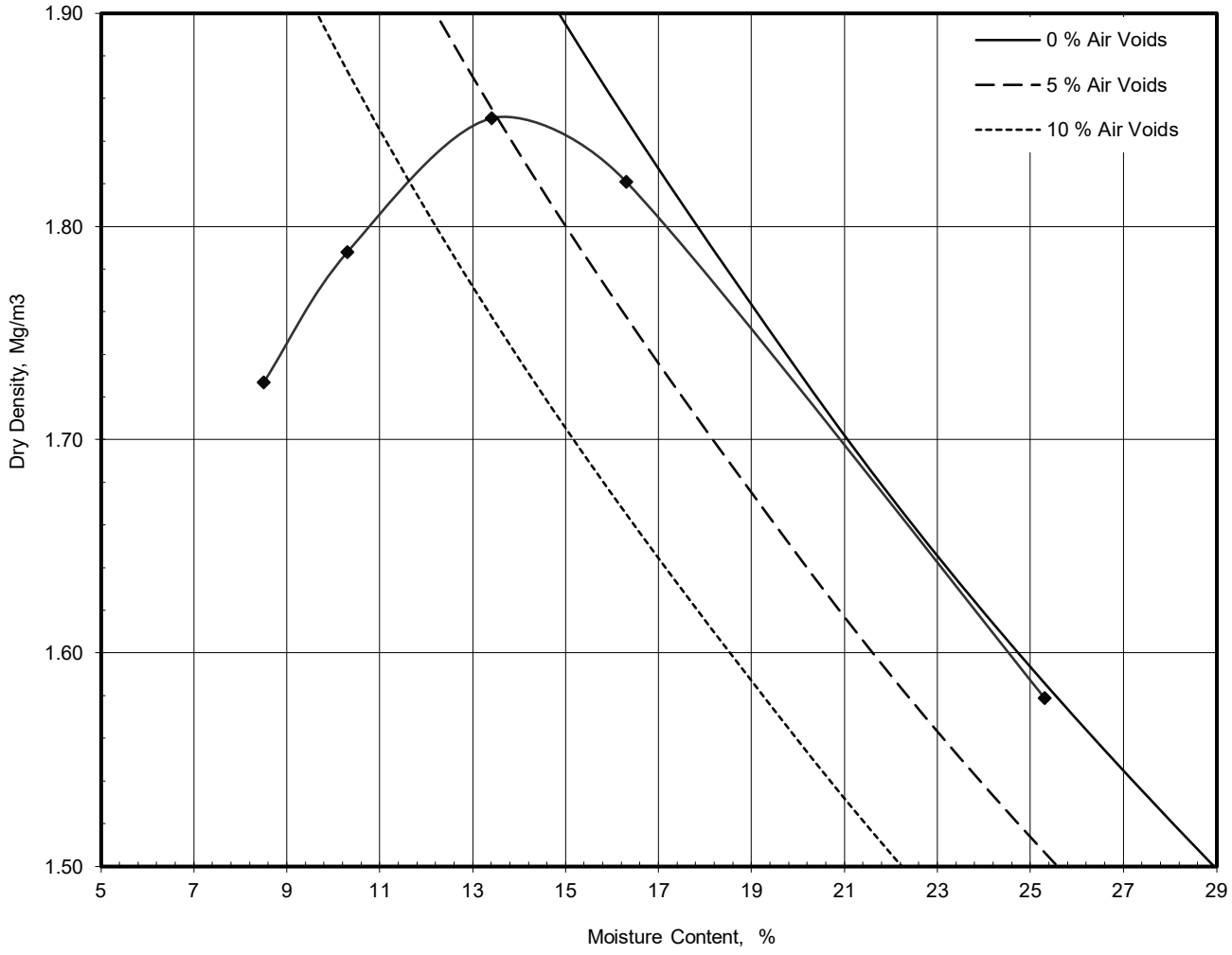
BH	Sample Depth	Liquid limit	Plasticity index
BH03	0.60	34.0	18.0

UKAS TESTING
4514

APPROVED BY	DK

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

CCG	**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**
Optimum Moisture Content	%	**13**

Operator	Checked	Approved	Remarks	Fig
MH	DK	DK		Sheet 1 of 1

POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

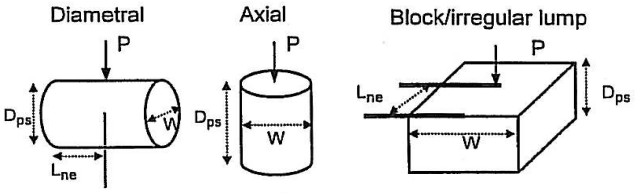
PROJECT No.:- CCG-C-23-14178 SITE:- HUYTON TOWN CENTRE DATE: 17.10.23

Borehole Number	Depth (m)	Type of Test* a	d	i	Width (W) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MPa)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MPa)	Estimated Uniaxial Compressive Strength (MPa)	Water Content (NAT/SAT)	Orientation to plane of weakness
BH03	4.00	a			100	81	2.50	102	0.24	1.38	0.33	6.67	NAT	p
BH03	7.20	a			100	96	3.80	111	0.31	1.43	0.44	8.89	NAT	p
BH03	8.90		d		101	100	2.90	-	0.29	1.37	0.40	7.92	NAT	l
BH03	9.80	a			100	92	2.40	108	0.20	1.42	0.29	5.80	NAT	p
BH03	12.40	a			100	82	2.00	102	0.19	1.38	0.26	5.28	NAT	p
BH03	13.40		d		111	100	2.80	-	0.28	1.37	0.38	7.65	NAT	l
BH03	15.90	a			100	64	3.00	90	0.37	1.30	0.48	9.61	NAT	p
BH03	19.10	a			100	79	3.40	100	0.34	1.37	0.46	9.25	NAT	p

*NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)
p = perpendicular; l = parallel, u = unkown

DIA. KEY- P = load ; Dps = platen seperation ;
W = width of shortest dimension perpendicular to load ;
Lne = length from platens to nearest free end

UKAS TESTING 4514



TESTED BY: MH 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 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/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
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. (BS1377Pt2:3.2,4.4,5)
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. (BS1377Pt2:3.2,4.4,5)
BH04	B	2.50	2.50	-	-	-	-	-	-	-	-	-	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone. (BS1377Pt2:9.2,9.5)

SITE: HUYTON TOWN CENTRE (CCG-C-23-14178) DATE: 24.10.23

CLIENT: GENR8 / BURO HAPPOLD / KMBC

UKAS TESTING 4514

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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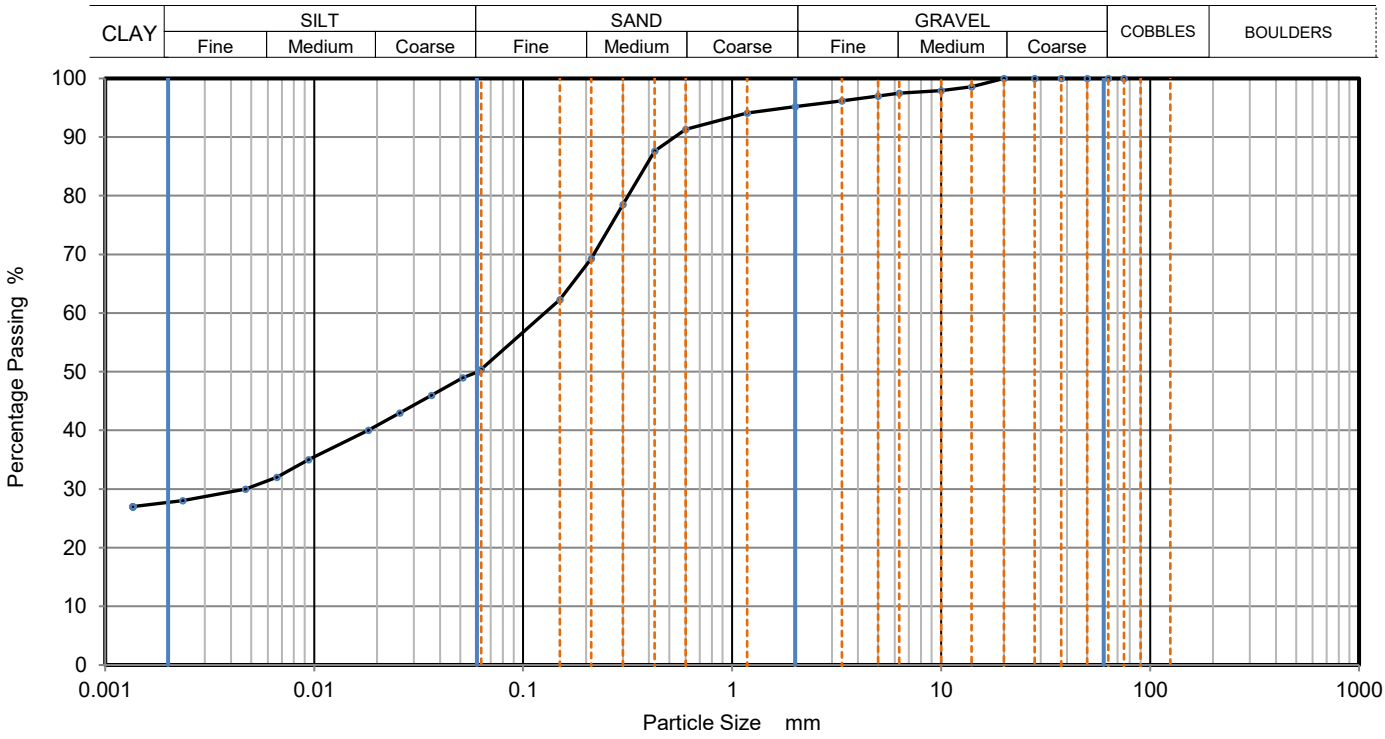
PARTICLE SIZE DISTRIBUTION

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)	
0.425	88	2.65	Mg/m3
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	0.127
D30	mm	0.00411
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

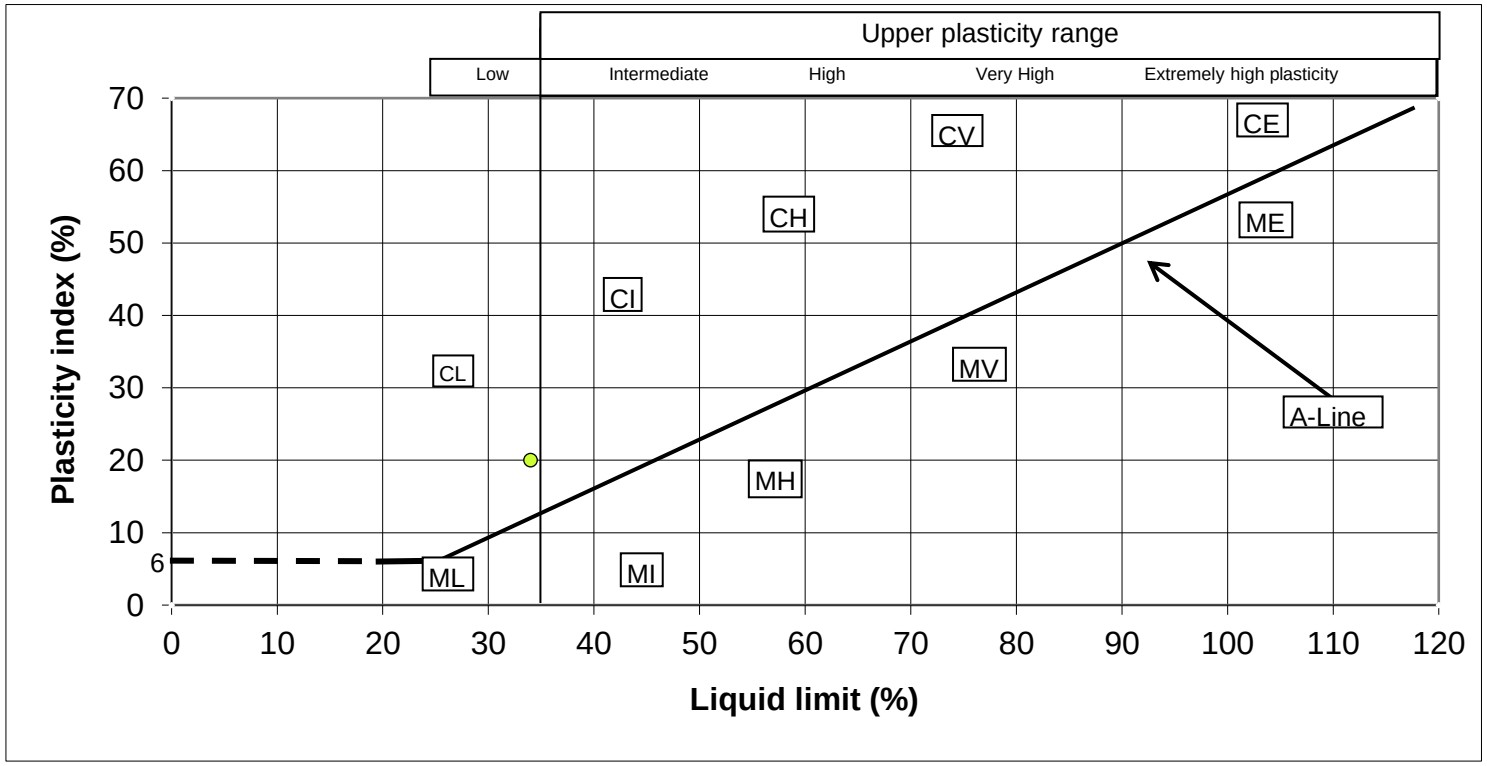
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1
JE	DK	DK	24/10/2023 10:40	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

UKAS TESTING
4514

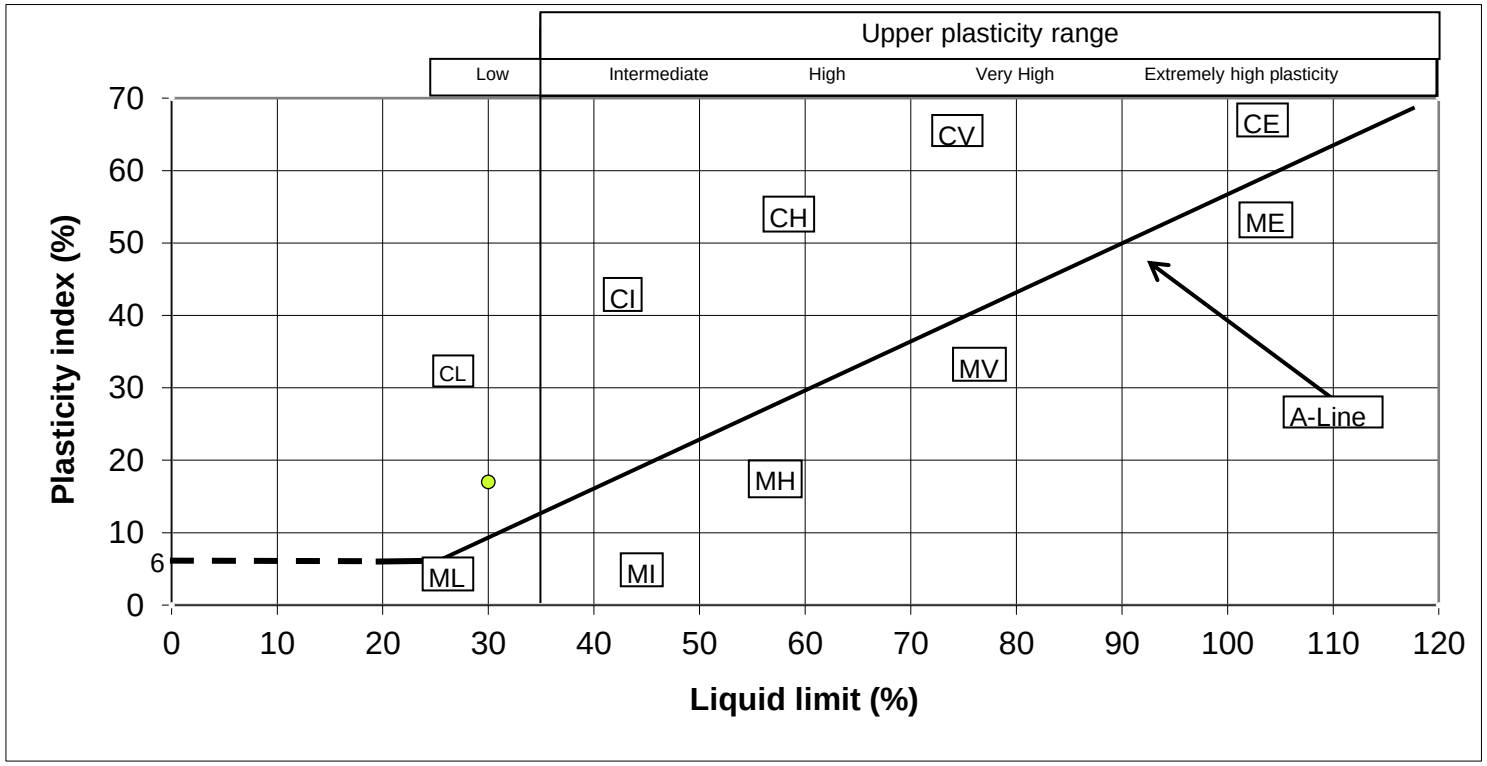
APPROVED BY	DK

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.



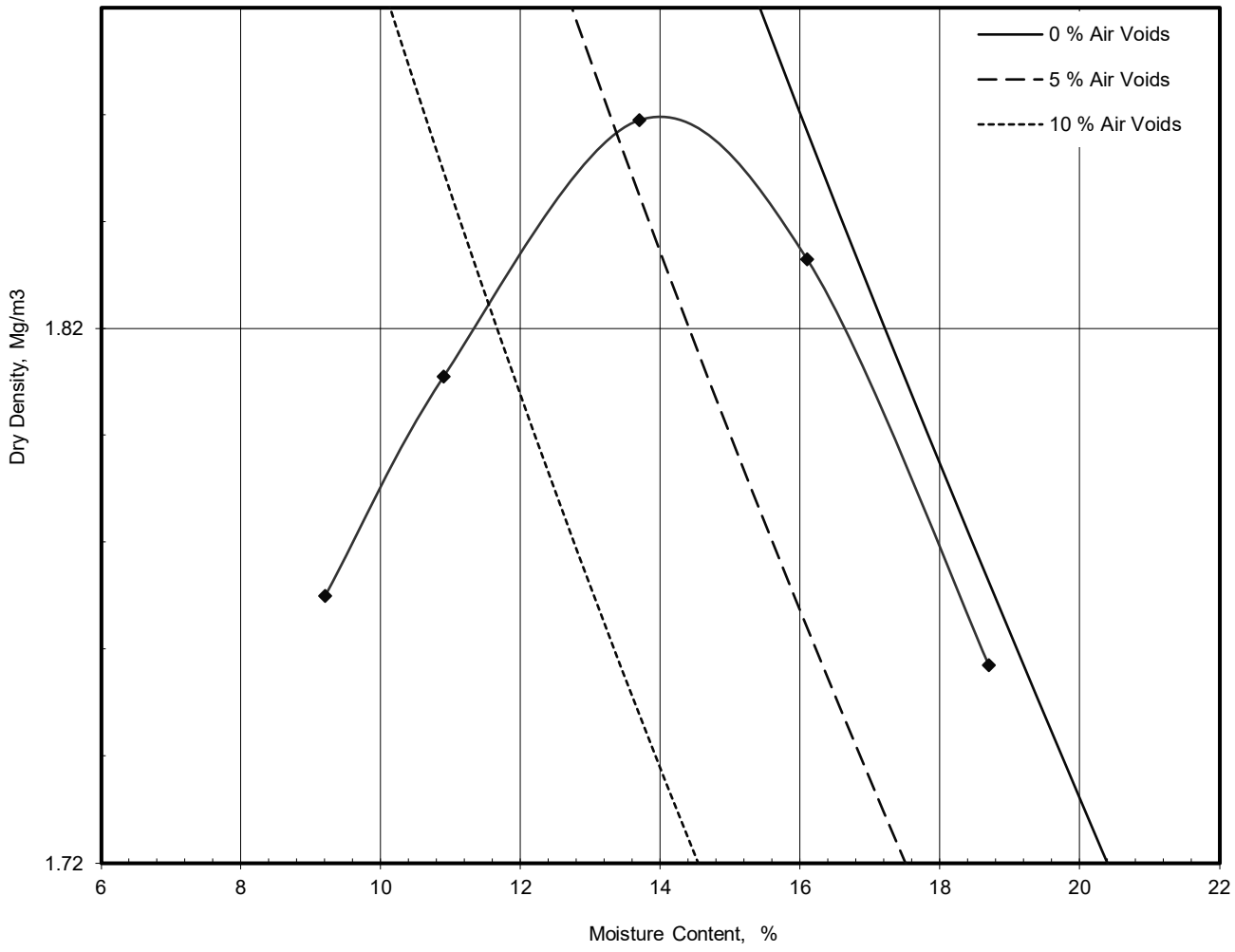
BH	Sample Depth	Liquid limit	Plasticity index
BH04	2.00	30.0	17.0

UKAS TESTING
4514

APPROVED BY	DK

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

CCG	**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

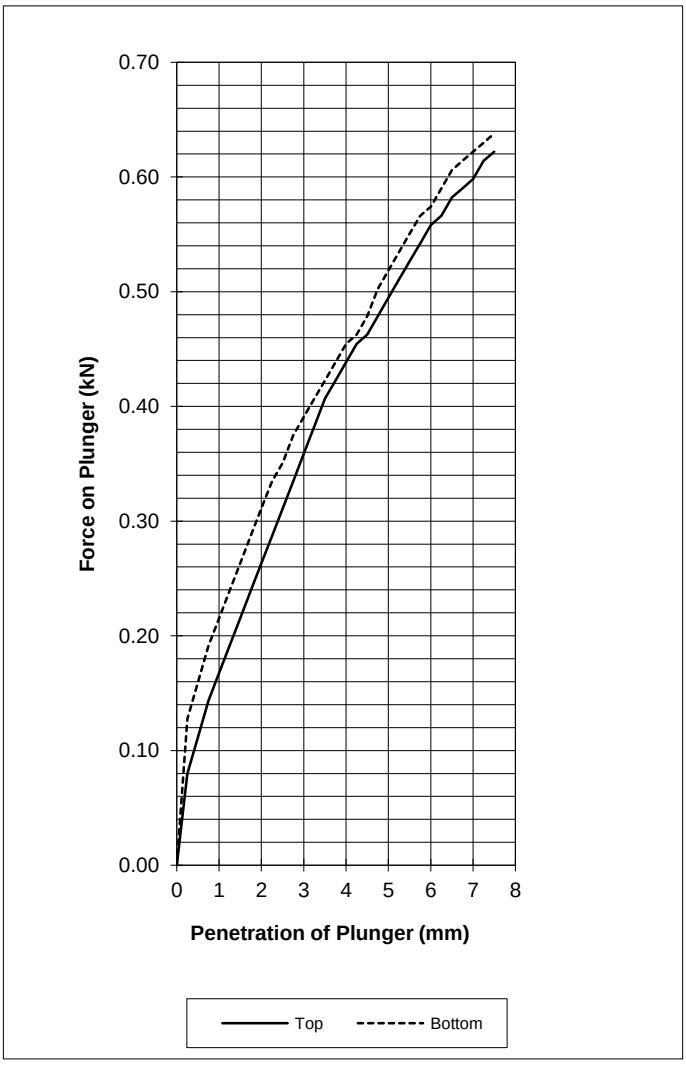
Laboratory Determination of California Bearing Ratio
B.S. 1377 (1990) : Part 4 : Clause 7

PROJECT No.:	CCG-C-23-14178	Proving ring No.	1155-8-15135
SITE:	HUYTON TOWN CENTRE	Division interval	0.0079745 kN/division
CLIENT:	GENR8 / BURO HAPPOLD / KMBC	Surcharge	2 kg
BH / TP :	BH04 DEPTH: 0.6 m	Seating Load	10 N

MATERIAL DESCRIPTION: Brown sandy slightly gravelly silty CLAY

Mass of mould	4928 g	Depth of mould	127 mm
Mass of mould & compacted soil	9786 g	Diameter of mould	152 mm
Mass retained on 20mm sieve	0 %		
Soaked / Unsoaked	Unsoaked		

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

CBR Values: **2.5** **2.7** %

CBR result: **2.7** %

Mass of compacted soil	4858	g
Volume of mould	2305	cm^3
M/C of sample	16.1	%
Bulk density of compacted specimen	2.108	Mg/m^3
Dry density of compacted specimen	1.816	Mg/m^3

POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

PROJECT No.:- CCG-C-23-14178 SITE:- HUYTON TOWN CENTRE DATE: 16.10.23

Borehole Number	Depth (m)	Type of Test* a	d	i	Width (W) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MPa)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MPa)	Estimated Uniaxial Compressive Strength (MPa)	Water Content (NAT/SAT)	Orientation to plane of weakness
BH04	5.60	a			100	77	2.80	99	0.29	1.36	0.39	7.77	NAT	p
BH04	8.10	a			100	85	2.60	104	0.24	1.39	0.33	6.68	NAT	p
BH04	8.70		d		92	100	1.40	-	0.14	1.37	0.19	3.82	NAT	l
BH04	10.45	a			100	90	4.50	107	0.39	1.41	0.55	11.06	NAT	p
BH04	13.60	a			100	74	1.10	97	0.12	1.35	0.16	3.15	NAT	p
BH04	14.50		d		104	100	0.80	-	0.08	1.37	0.11	2.19	NAT	l
BH04	16.40	a			100	91	3.00	108	0.26	1.41	0.37	7.31	NAT	p
BH04	19.80	a			100	79	2.30	100	0.23	1.37	0.31	6.26	NAT	p

*NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)
p = perpendicular; l = parallel, u = unkown

DIA. KEY- P = load ; Dps = platen seperation ;
W = width of shortest dimension perpendicular to load ;
Lne = length from platens to nearest free end

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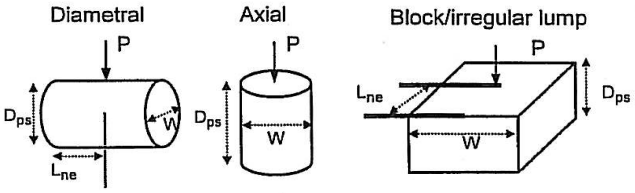

TESTED BY: MH APPROVED BY: DK

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 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**

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
BH05	B	0.70	0.70	-	-	-	-	-	-	-	-	-	Y	Grey silty slightly clayey SAND & GRAVEL. Gravel is fine to coarse subangular sandstone, mudstone, concrete, brick. (MADE GROUND) (BS1377Pt2:9.2,9.5)
BH05	B	1.10	1.10	-	-	-	-	-	-	-	-	-	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded sandstone. (BS1377Pt2:9.2,9.5)
BH05	D	1.15	1.15	20	-	-	-	26	12	14	86	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) DATE: 20.10.23

CLIENT: GENR8 / BURO HAPPOLD / KMBC

UKAS TESTING 4514

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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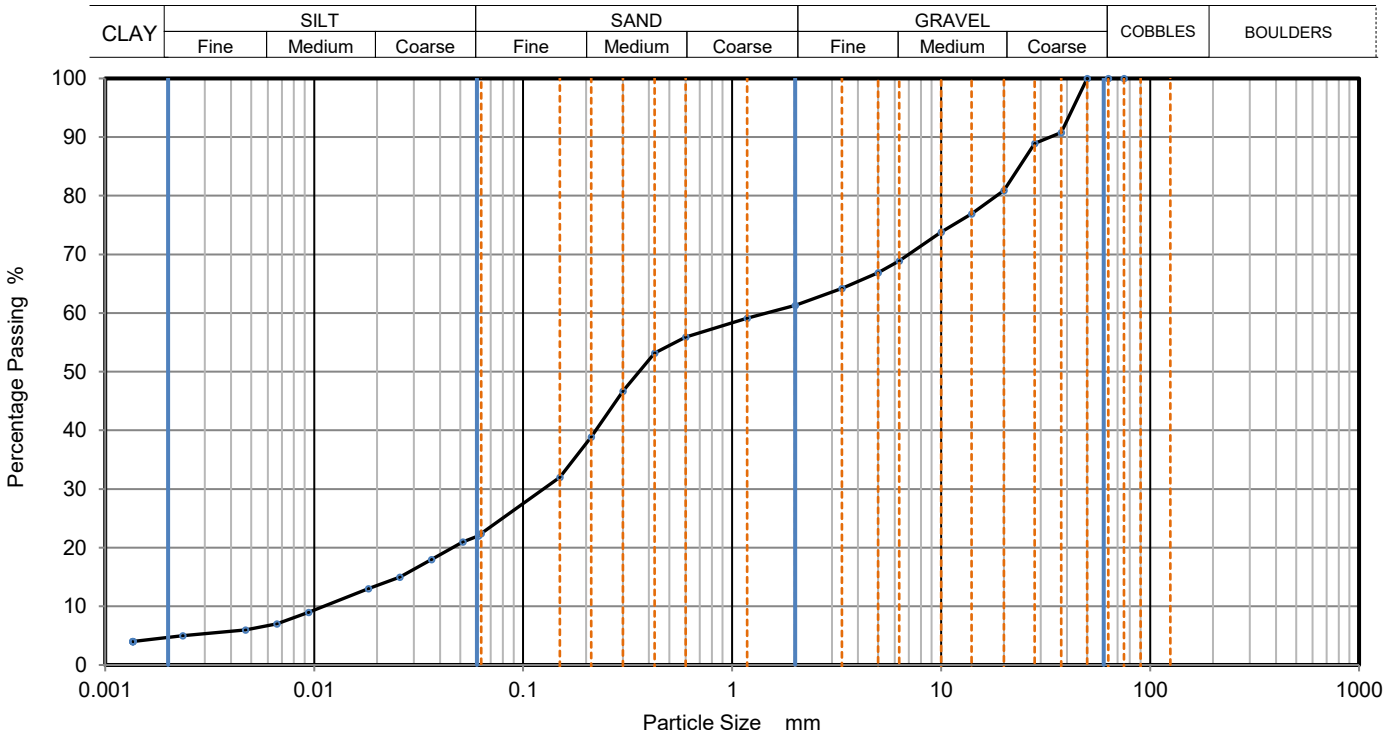
PARTICLE SIZE DISTRIBUTION

Job Ref	CCG-C-23-14178		
Borehole/Pit No.	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)	
0.425	53	2.65 Mg/m3	
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
JE	DK	DK	20/10/2023 15:58	Sheet

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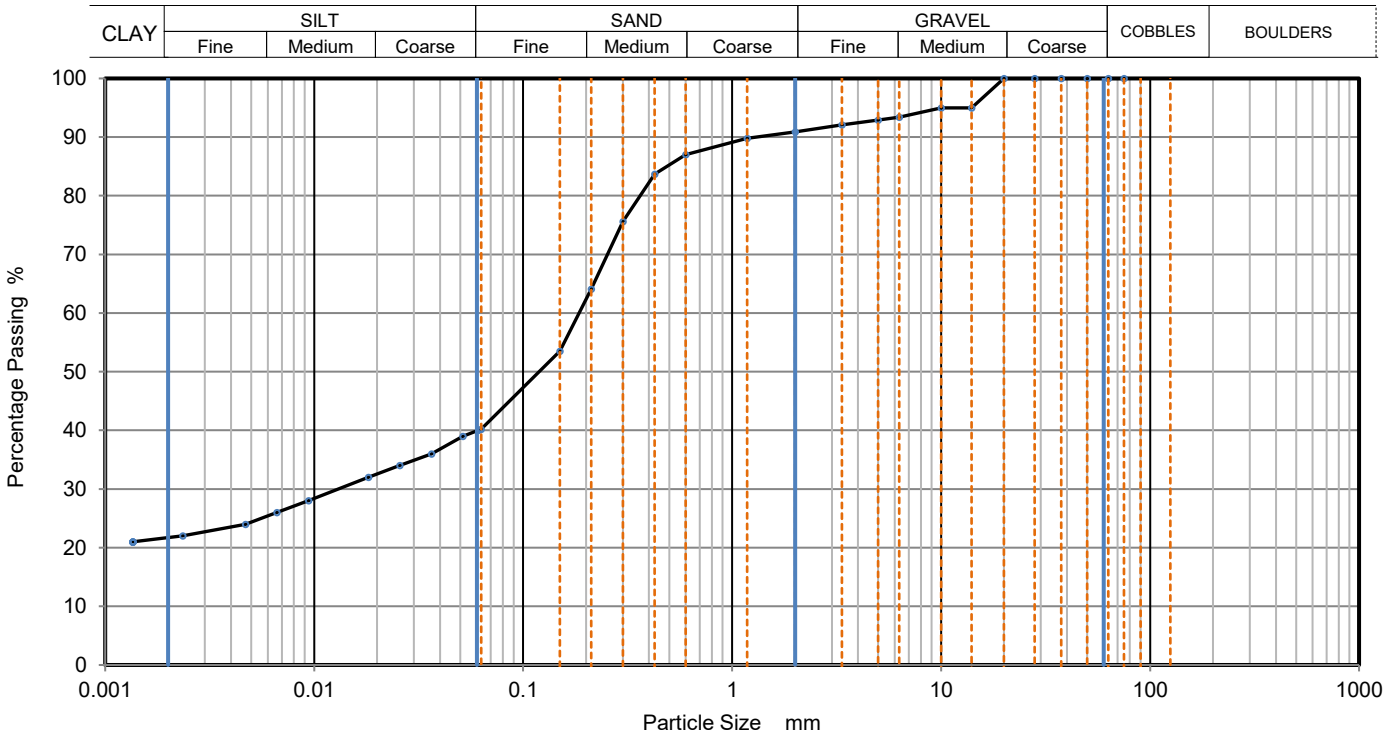
PARTICLE SIZE DISTRIBUTION

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)	
0.425	84	2.65 Mg/m3	
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	0.185
D30	mm	0.0141
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

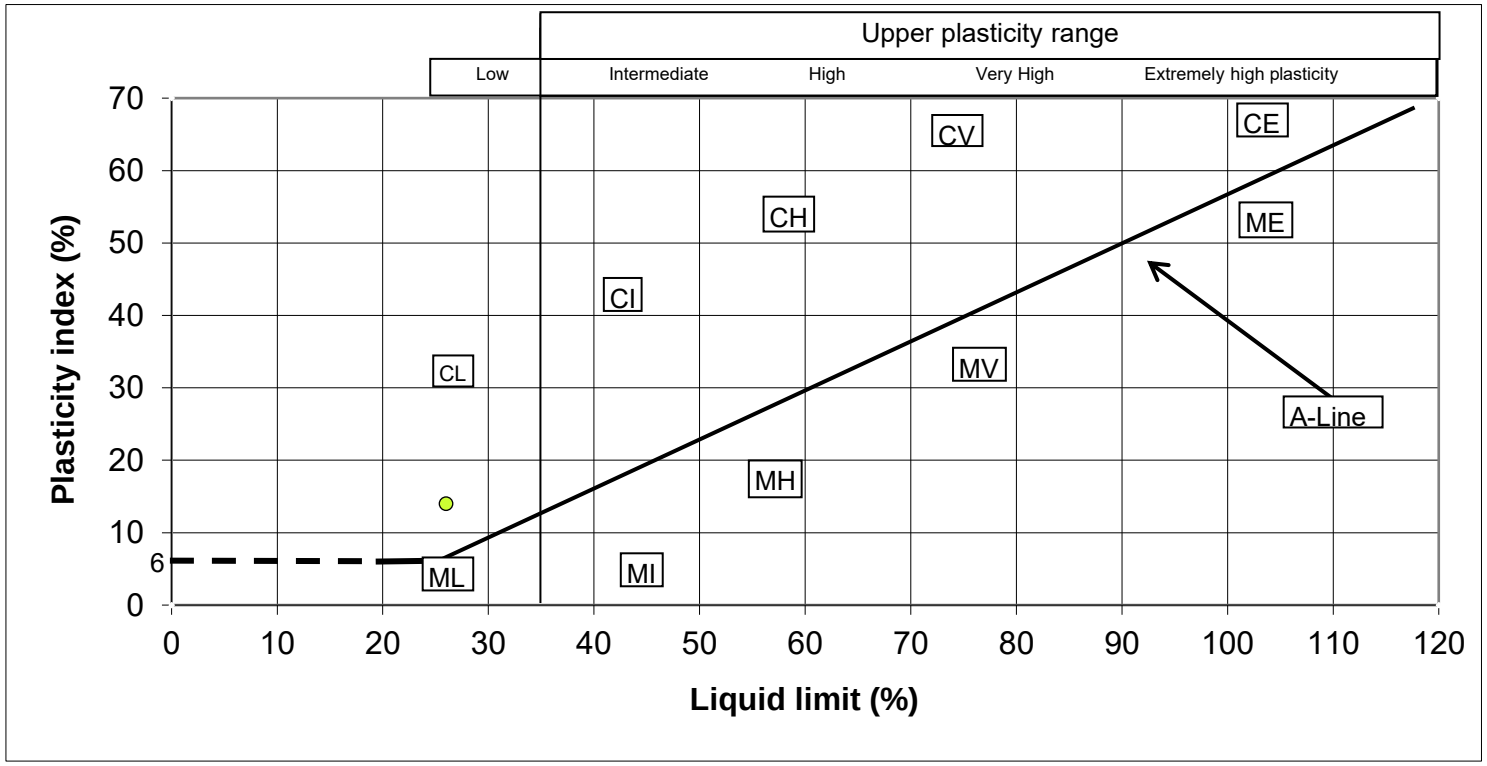
Remarks

Preparation and testing in accordance with BS1377 unless noted below

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



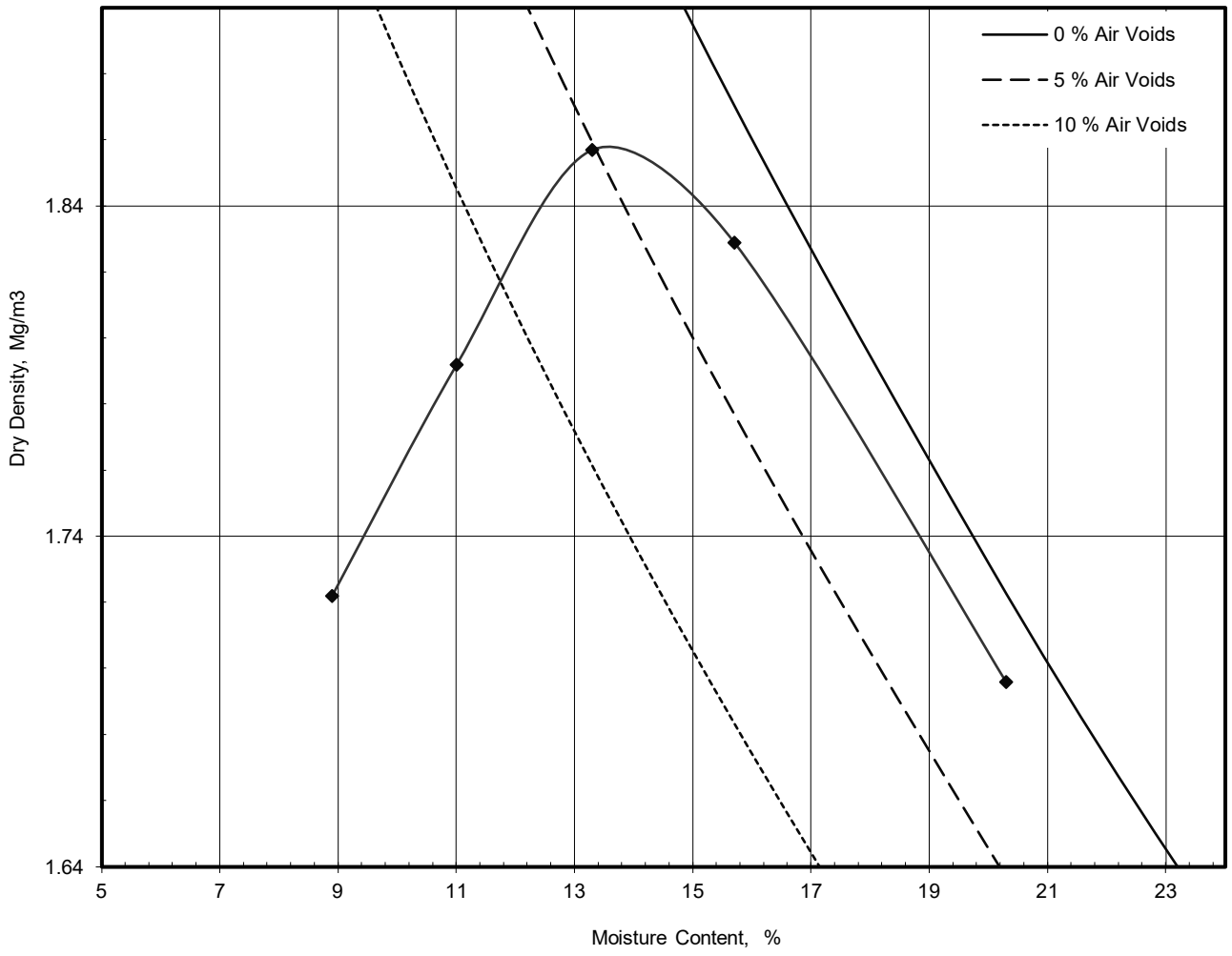
BH	Sample Depth	Liquid limit	Plasticity index
BH05	1.15	26.0	14.0

UKAS TESTING
4514

APPROVED BY	DK

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

CCG	**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	
MH	DK	DK		**Fig** Sheet 1 of 1

POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

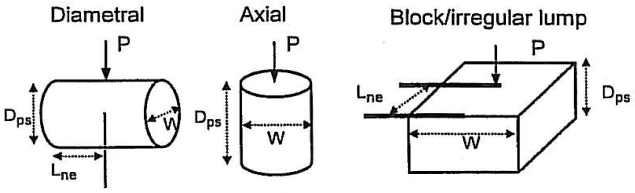
PROJECT No.:- CCG-C-23-14178 SITE:- HUYTON TOWN CENTRE DATE: 16.10.23

Borehole Number	Depth (m)	Type of Test* a	d	i	Width (W) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MPa)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MPa)	Estimated Uniaxial Compressive Strength (MPa)	Water Content (NAT/SAT)	Orientation to plane of weakness
BH05	4.95	a			100	86	0.60	105	0.05	1.39	0.08	1.53	NAT	p
BH05	5.60	a			100	67	1.60	92	0.19	1.32	0.25	4.94	NAT	p
BH05	6.10		d		61	100	1.50	-	0.15	1.37	0.20	4.10	NAT	l
BH05	7.00		d		83	100	1.70	-	0.17	1.37	0.23	4.64	NAT	l
BH05	7.20	a			100	84	3.00	103	0.28	1.39	0.39	7.78	NAT	p
BH05	8.10	a			100	74	1.90	97	0.20	1.35	0.27	5.44	NAT	p
BH05	8.90	a			100	85	2.10	104	0.19	1.39	0.27	5.40	NAT	p
BH05	9.30	a			100	88	3.00	106	0.27	1.40	0.38	7.50	NAT	p

*NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)
p = perpendicular; l = parallel, u = unkown

DIA. KEY- P = load ; Dps = platen seperation ;
W = width of shortest dimension perpendicular to load ;
Lne = length from platens to nearest free end

UKAS TESTING 4514



TESTED BY: MH 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 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) DATE: 24.10.23

CLIENT: GENR8 / BURO HAPPOLD / KMBC

UKAS TESTING 4514

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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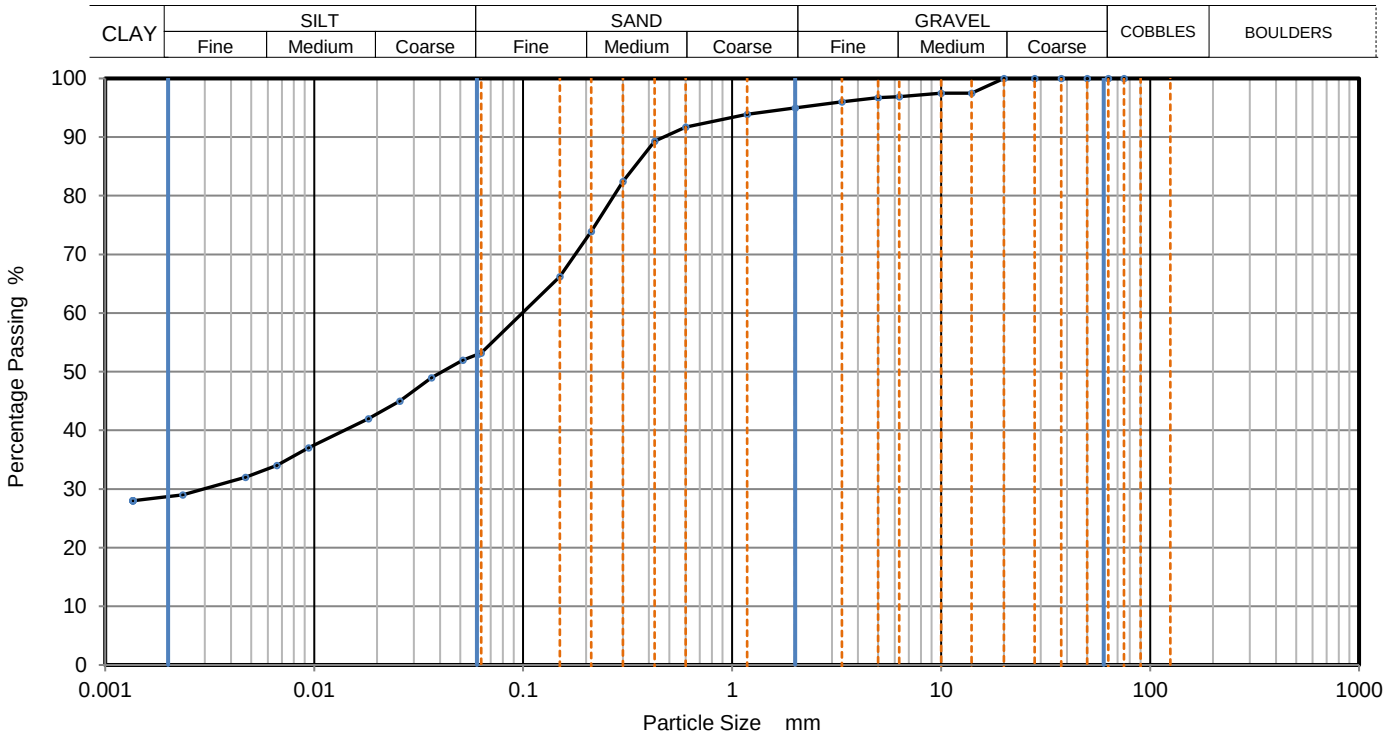
PARTICLE SIZE DISTRIBUTION

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)	
0.425	89	2.65 Mg/m3	
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	0.0993
D30	mm	0.00276
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

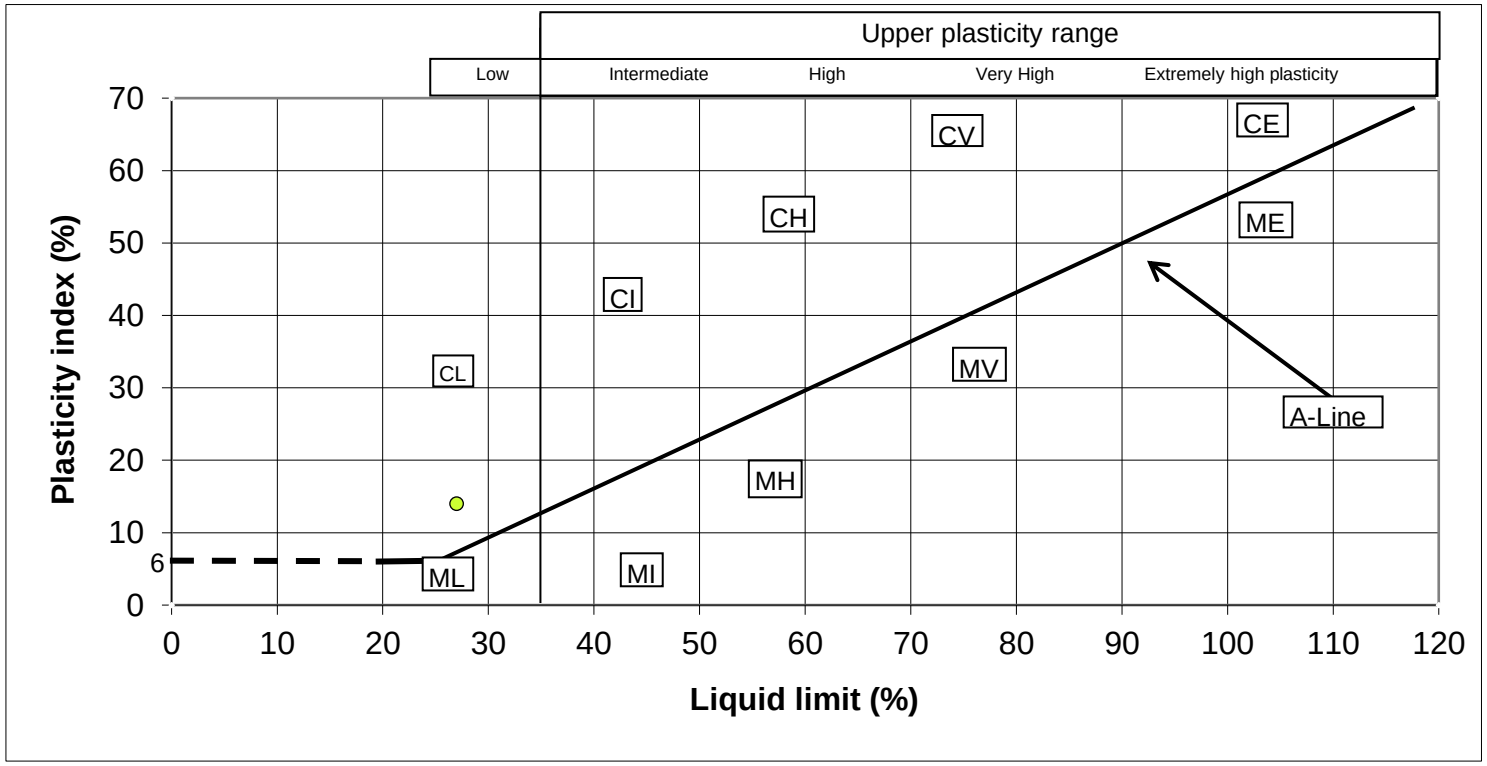
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1
JE	DK	DK	20/10/2023 16:17	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.



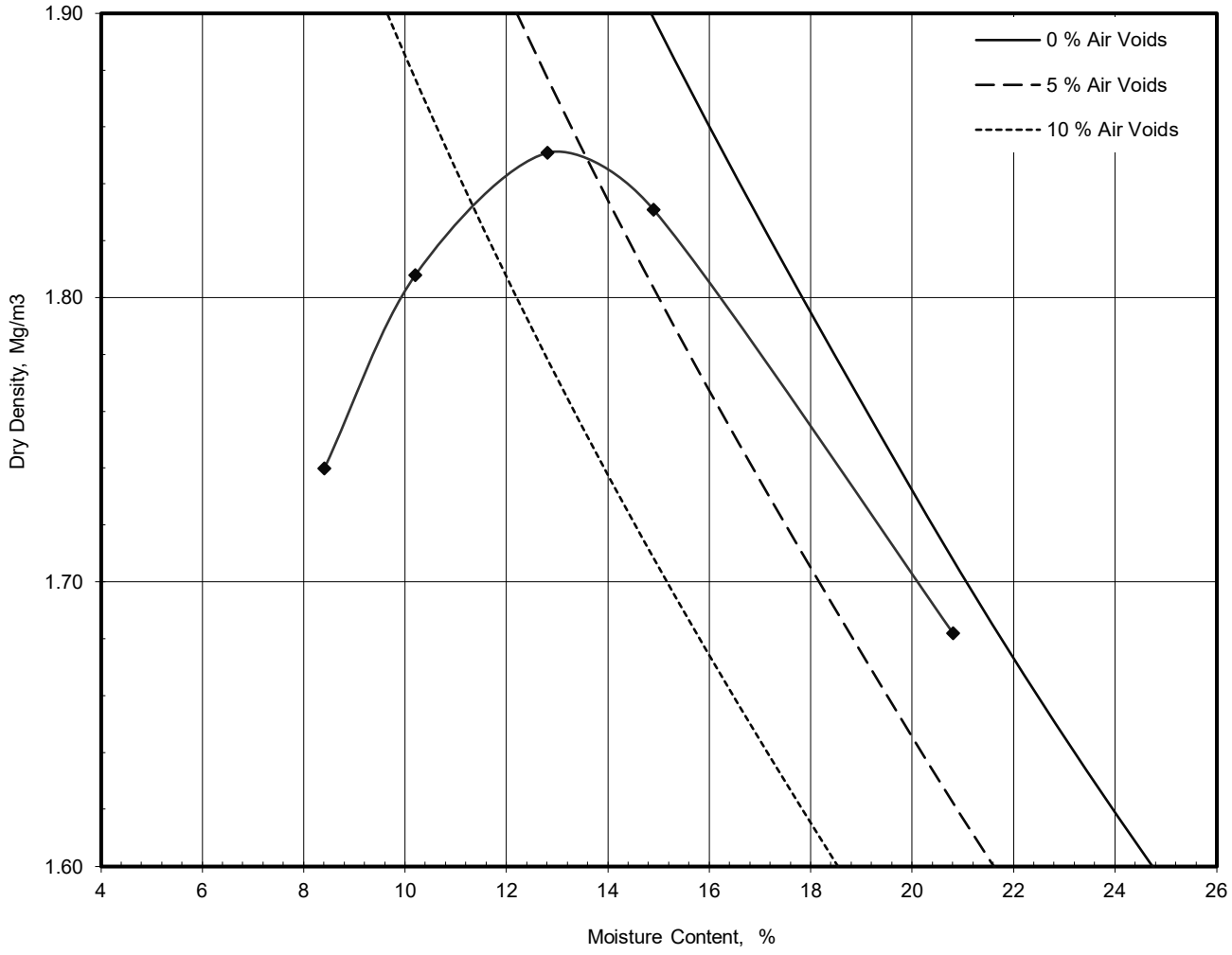
BH	Sample Depth	Liquid limit	Plasticity index
BH06	2.10	27.0	14.0

UKAS TESTING
4514

APPROVED BY	DK

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

CCG	**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

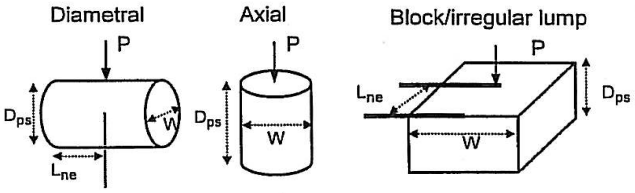
PROJECT No.:- CCG-C-23-14178 SITE:- HUYTON TOWN CENTRE DATE: 17.10.23

Borehole Number	Depth (m)	Type of Test* a	d	i	Width (W) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MPa)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MPa)	Estimated Uniaxial Compressive Strength (MPa)	Water Content (NAT/SAT)	Orientation to plane of weakness
BH06	4.95	a			100	66	3.00	92	0.36	1.31	0.47	9.38	NAT	p
BH06	6.70	a			100	73	4.20	96	0.45	1.34	0.61	12.14	NAT	p
BH06	10.10	a			100	74	3.70	97	0.39	1.35	0.53	10.59	NAT	p
BH06	10.80		d		135	100	3.10	-	0.31	1.37	0.42	8.47	NAT	l
BH06	12.60	a			100	72	5.20	96	0.57	1.34	0.76	15.20	NAT	p
BH06	16.70	a			100	78	3.60	100	0.36	1.36	0.49	9.89	NAT	p
BH06	18.40	a			100	64	2.30	90	0.28	1.30	0.37	7.36	NAT	p
BH06	19.20		d		103	100	1.60	-	0.16	1.37	0.22	4.37	NAT	l

*NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)
p = perpendicular; l = parallel, u = unkown

DIA. KEY- P = load ; Dps = platen seperation ;
W = width of shortest dimension perpendicular to load ;
Lne = length from platens to nearest free end

UKAS TESTING 4514



TESTED BY: MH 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 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) DATE: 20.10.23

CLIENT: GENR8 / BURO HAPPOLD / KMBC

UKAS TESTING 4514

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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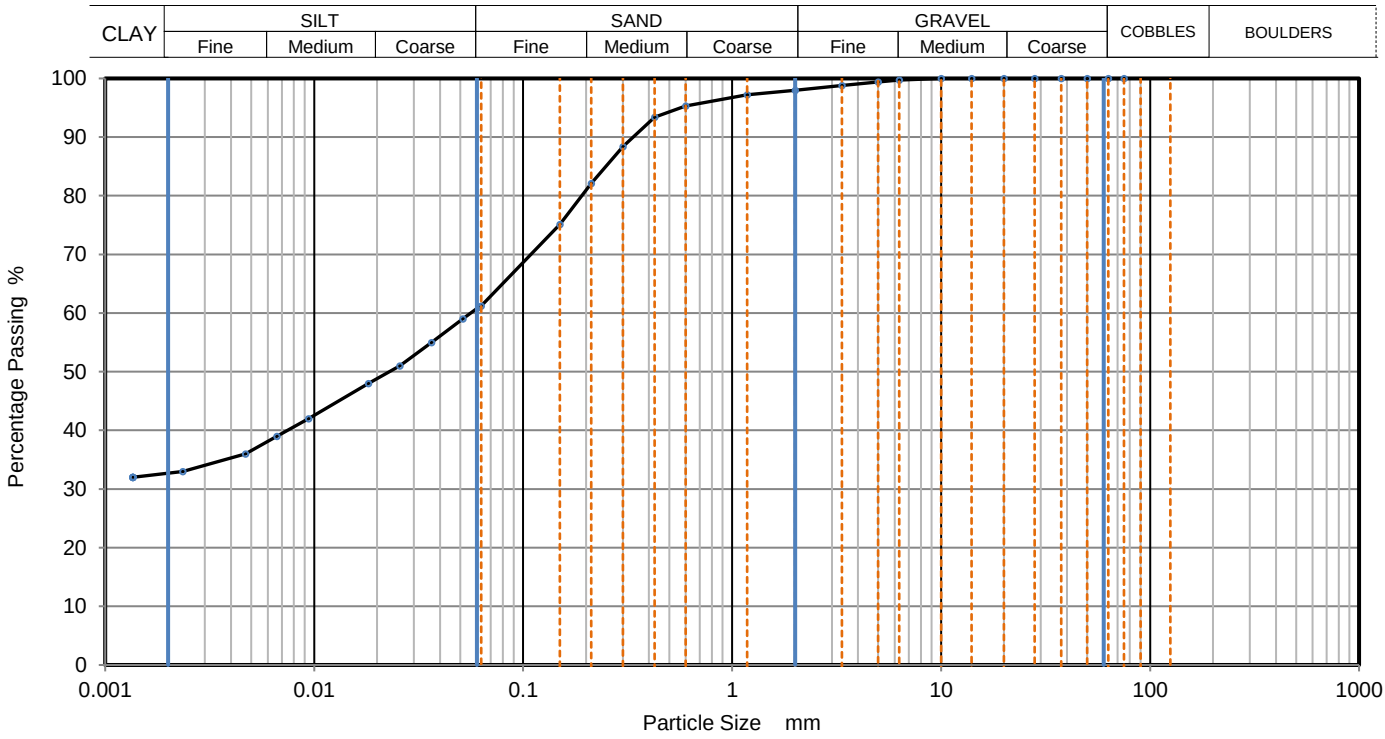
PARTICLE SIZE DISTRIBUTION

Job Ref			CCG-C-23-14178
Borehole/Pit No.			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)	
0.425	93	2.65 Mg/m3	
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	0.056
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

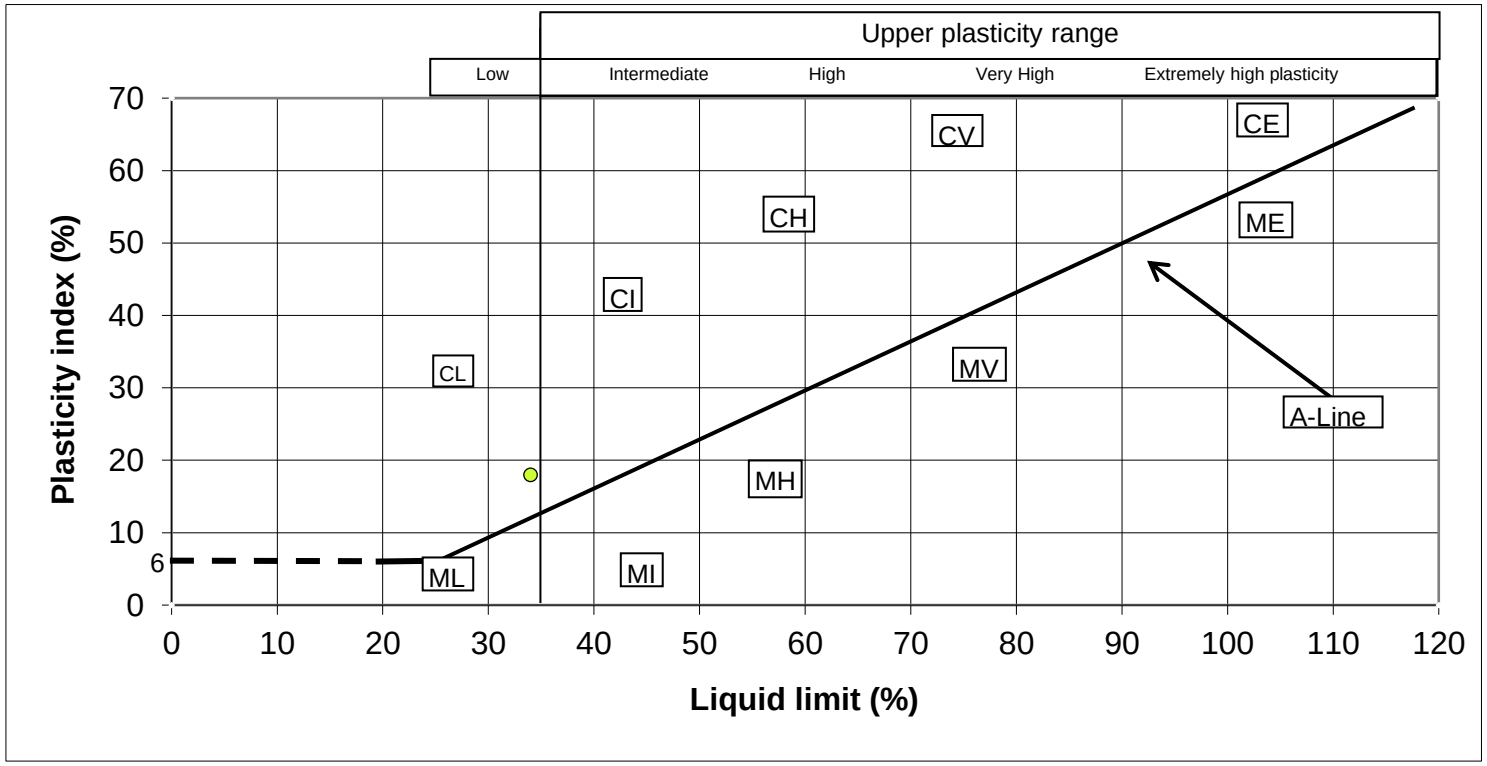
Preparation and testing in accordance with BS1377 unless noted below

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

UKAS TESTING
4514

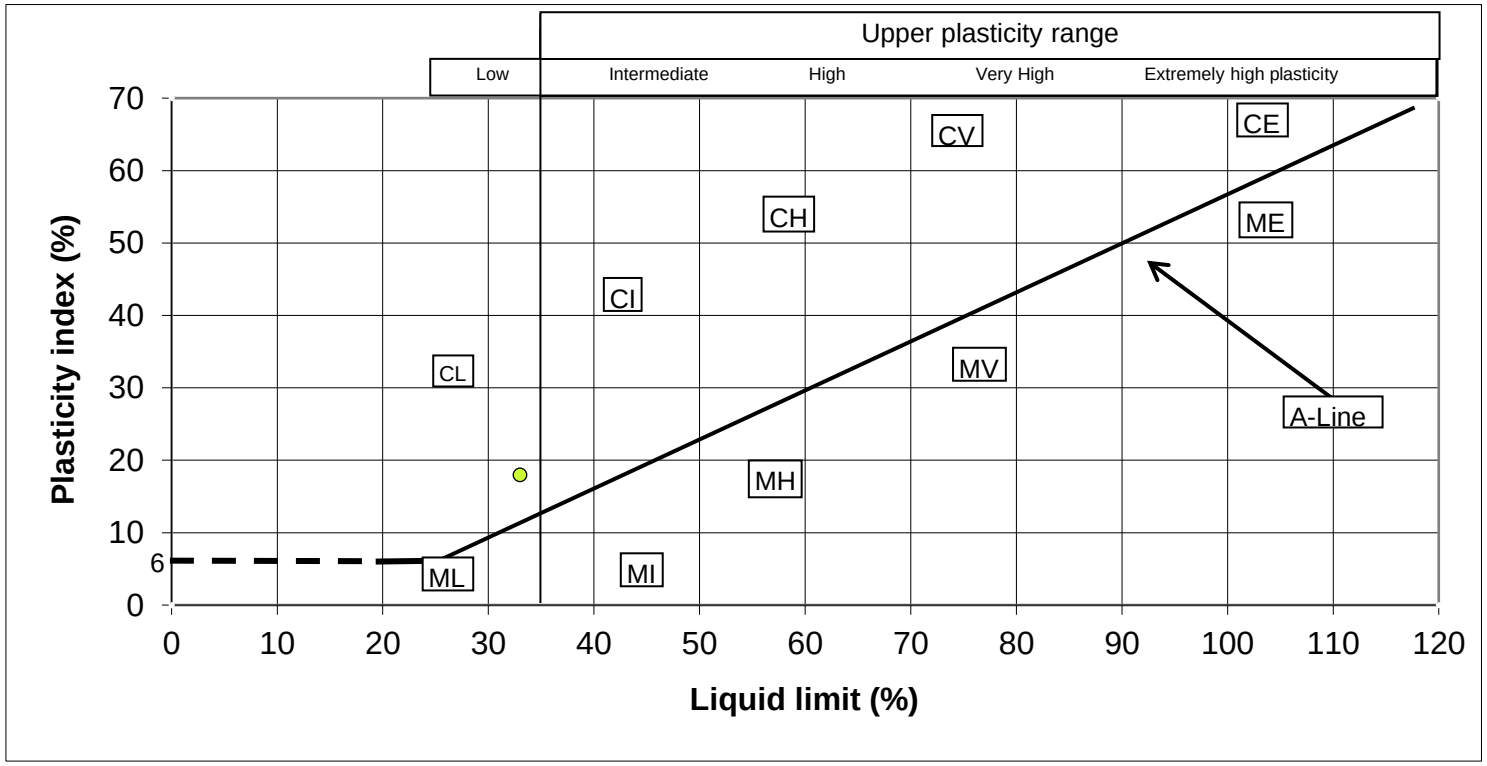
APPROVED BY	DK

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
BH07	2.50	33.0	18.0

UKAS TESTING
4514

APPROVED BY	DK

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

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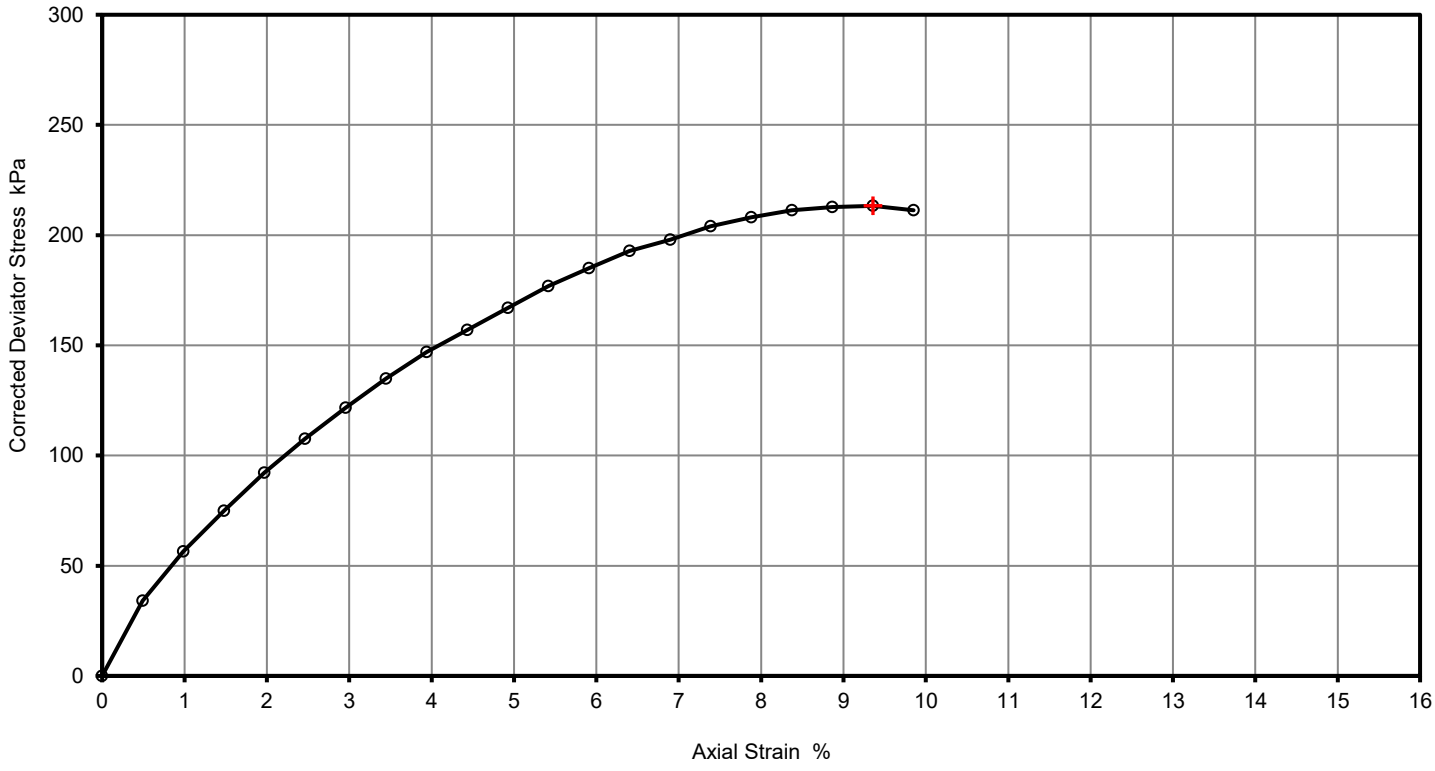
Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

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				

UKAS TESTING 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	Axial Strain	9.4	%
	Deviator Stress, (σ1 - σ3)f	213	kPa
	Undrained Shear Strength, cu	107	kPa ½(σ1 - σ3)f
	Mode of Failure	Plastic	

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

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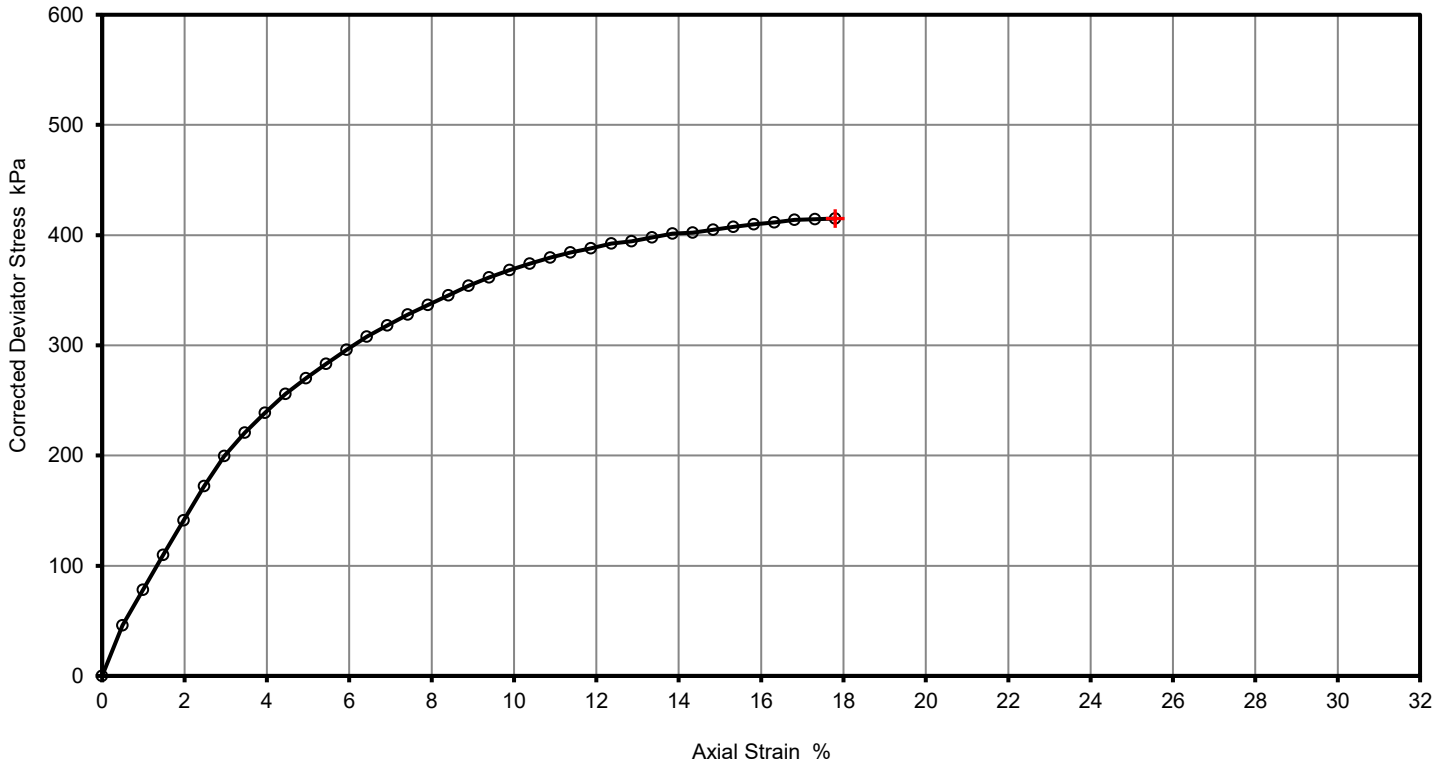
Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

Job Ref	CCG-C-23-14178				
Borehole/Pit No.	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				

UKAS TESTING 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, (σ1 - σ3)f	415	kPa
	Undrained Shear Strength, cu	208	kPa ½(σ1 - σ3)f
	Mode of Failure	Plastic	

Deviator Stress v Axial Strain



Remarks

0.5mm membrane, correction factor = 1.70

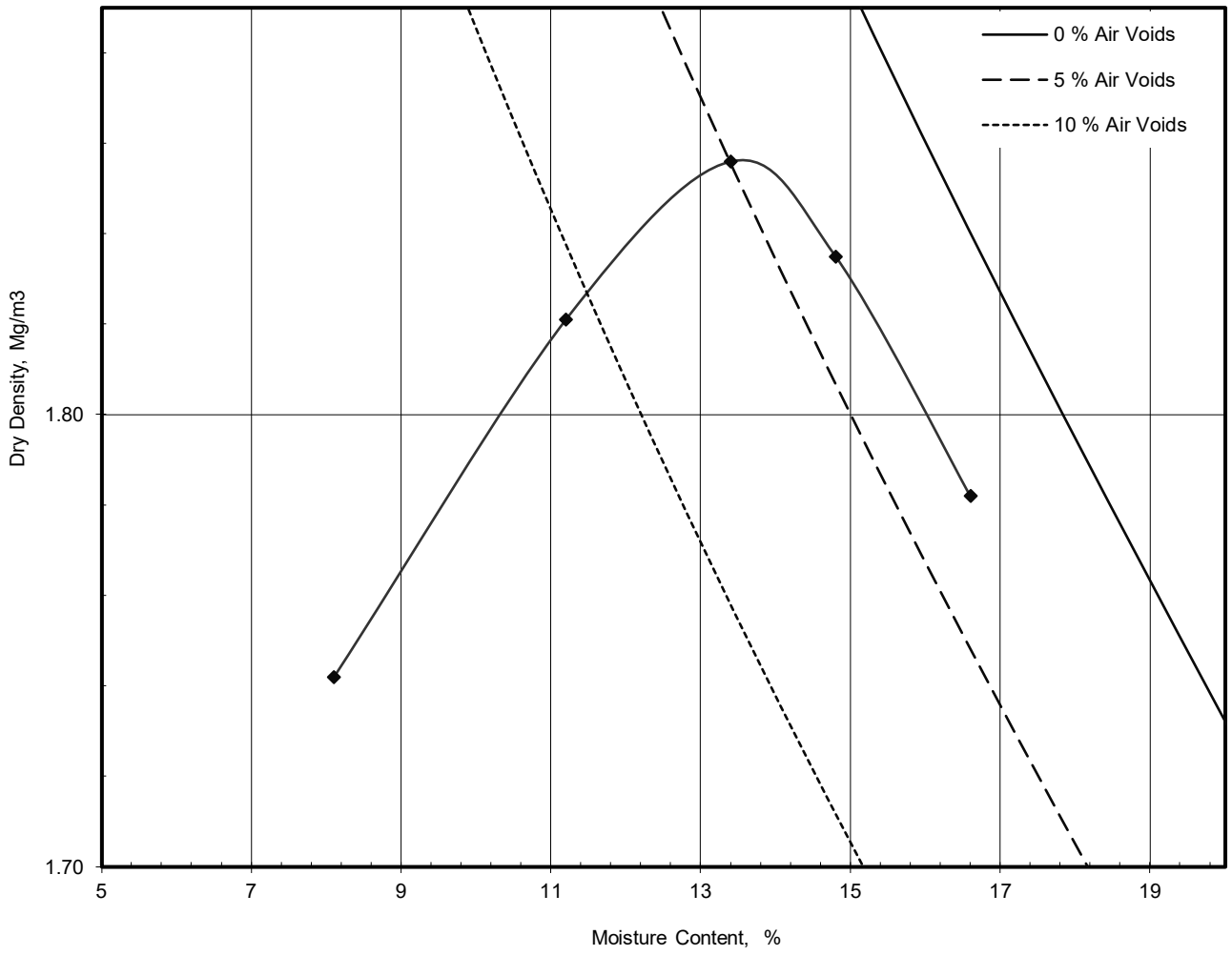
Approved: DanielKerfoot

Printed: 18/10/2023 12:29

Fig. No. 1

Sheet 2

CCG	**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**

Operator	Checked	Approved	Remarks	
MH	DK	DK		**Fig** Sheet 1 of 1

POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

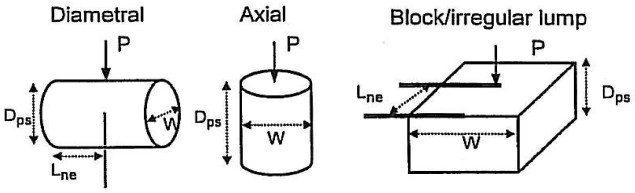
PROJECT No.:- CCG-C-23-14178 SITE:- HUYTON TOWN CENTRE DATE: 17.10.23

Borehole Number	Depth (m)	Type of Test* a	d	i	Width (W) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MPa)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MPa)	Estimated Uniaxial Compressive Strength (MPa)	Water Content (NAT/SAT)	Orientation to plane of weakness
BH07	4.90	a			100	84	3.00	103	0.28	1.39	0.39	7.78	NAT	p
BH07	6.00	a			100	71	2.00	95	0.22	1.34	0.30	5.91	NAT	p
BH07	6.90	a			100	75	1.60	98	0.17	1.35	0.23	4.53	NAT	p
BH07	8.40	a			100	82	1.70	102	0.16	1.38	0.22	4.49	NAT	p
BH07	9.90	a			100	98	1.90	112	0.15	1.44	0.22	4.37	NAT	p
BH07	13.25	a			100	85	2.70	104	0.25	1.39	0.35	6.94	NAT	p
BH07	14.90	a			100	70	2.00	94	0.22	1.33	0.30	5.97	NAT	p
BH07	16.60	a			100	73	1.50	96	0.16	1.34	0.22	4.34	NAT	p

*NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)
p = perpendicular; l = parallel, u = unkown

DIA. KEY- P = load ; Dps = platen seperation ;
W = width of shortest dimension perpendicular to load ;
Lne = length from platens to nearest free end

UKAS TESTING 4514



TESTED BY: MH 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
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) DATE: 24.10.23

CLIENT: GENR8 / BURO HAPPOLD / KMBC

UKAS TESTING 4514

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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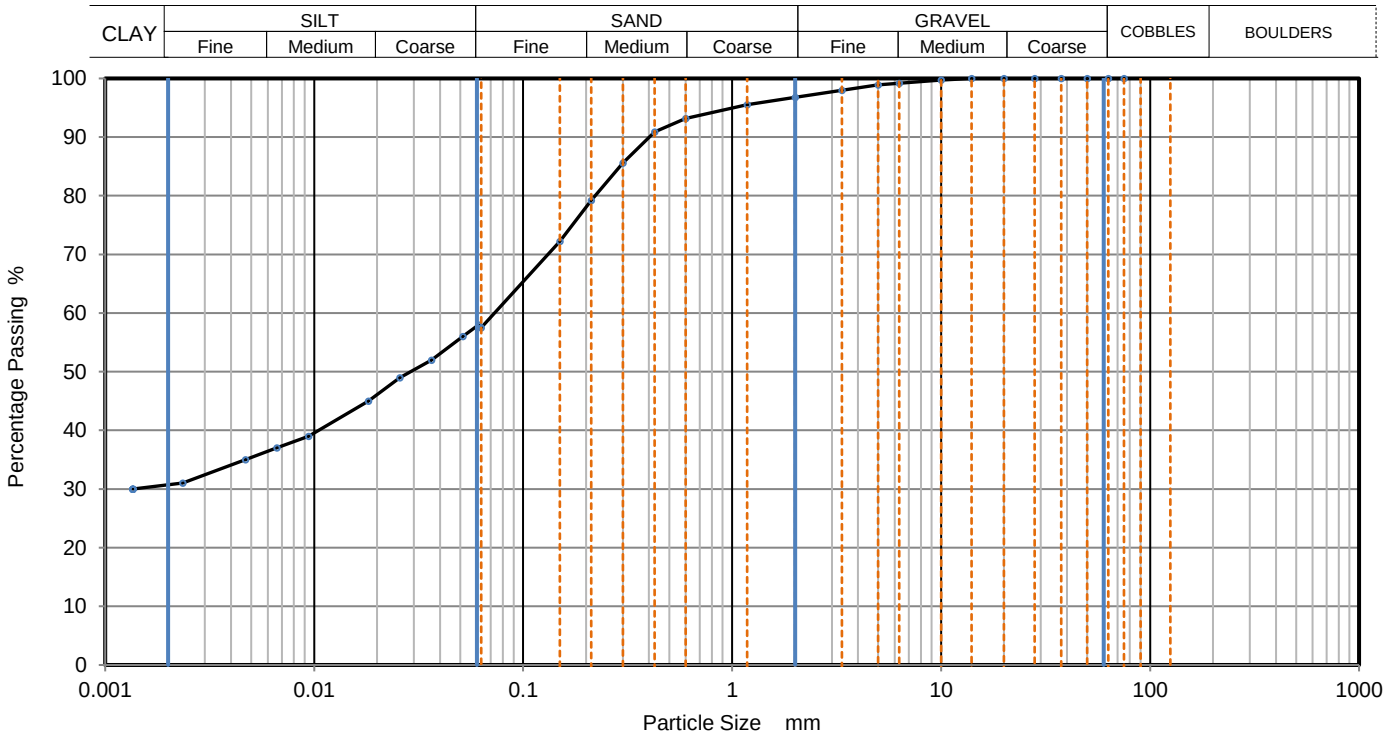
PARTICLE SIZE DISTRIBUTION

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)	
0.425	91	2.65	Mg/m3
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	0.0729
D30	mm	0.00149
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

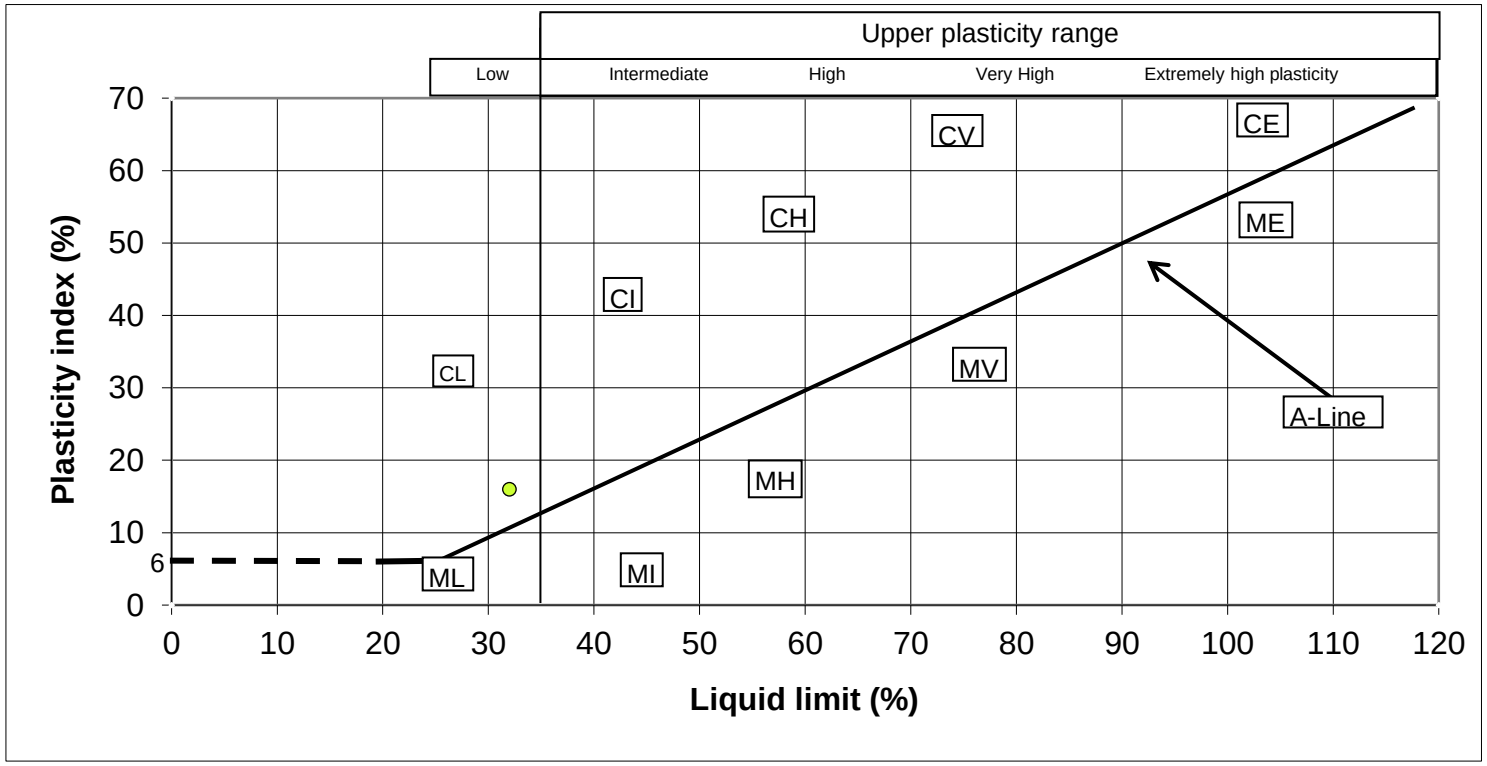
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1
JE	DK	DK	24/10/2023 09:04	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
BH08	2.00	32.0	16.0

UKAS TESTING
4514

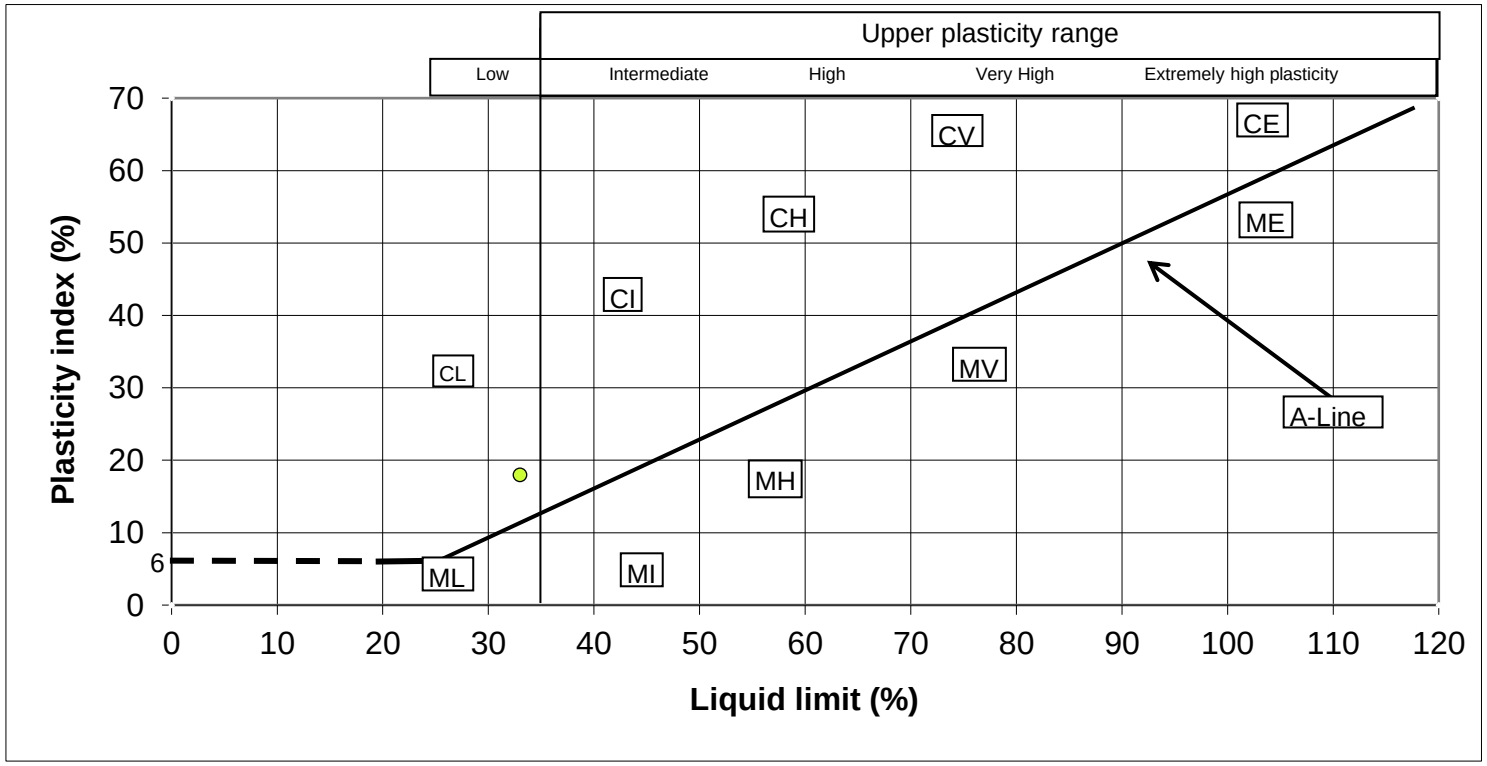
APPROVED BY	DK

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
BH08	4.00	33.0	18.0

UKAS TESTING
4514

APPROVED BY	DK

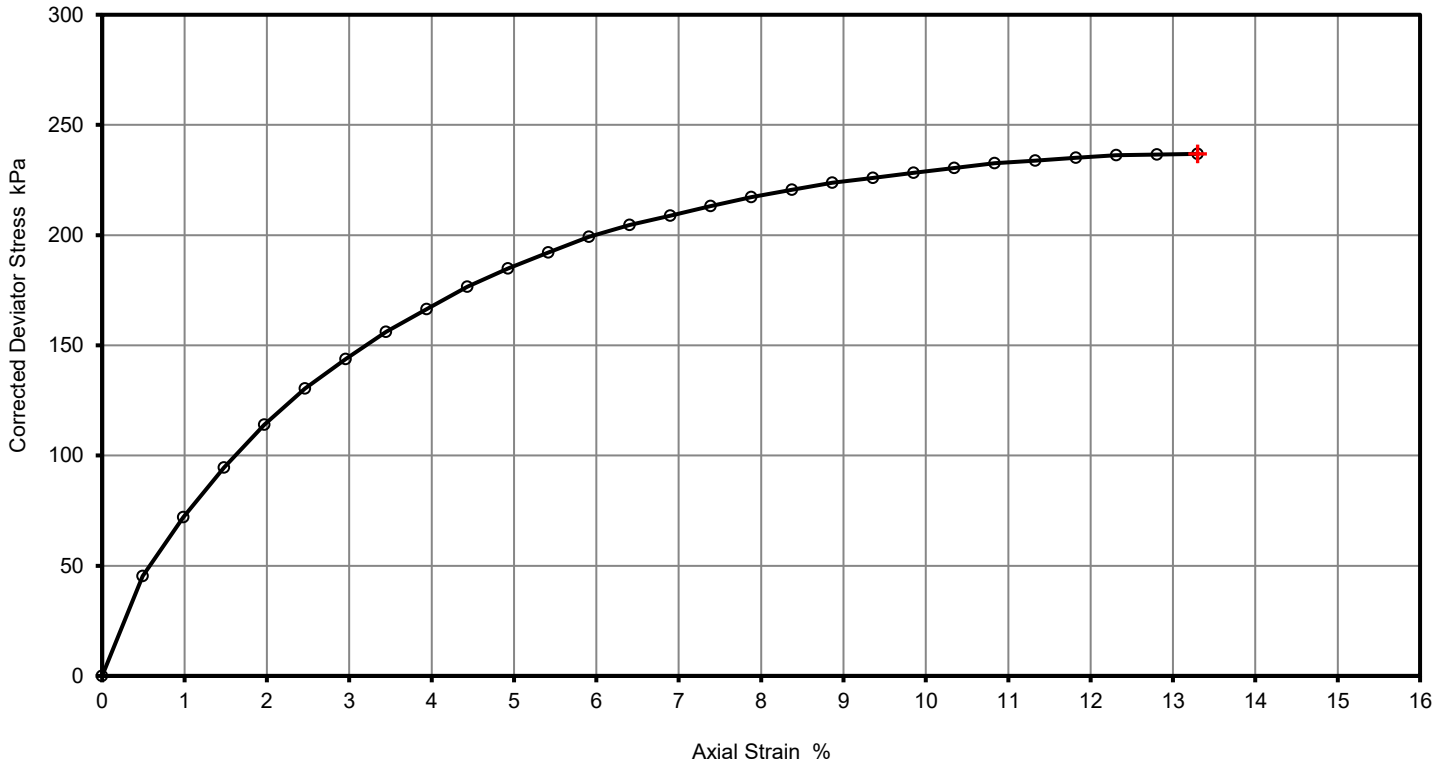
CLIENT: GENR8 / BURO HAPPOLD / KMBC	SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)

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.	BH08
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	
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			11/10/2023	

UKAS TESTING 4514

Test Number		1	
Length		203.0	mm
Diameter		102.3	mm
Bulk Density		2.22	Mg/m3
Moisture Content		16.0	%
Dry Density		1.92	Mg/m3
Rate of Strain		2.0	%/min
Cell Pressure		54	kPa
At failure	Axial Strain	13.3	%
	Deviator Stress, (σ1 - σ3)f	237	kPa
	Undrained Shear Strength, cu	118	kPa ½(σ1 - σ3)f
	Mode of Failure	Plastic	

Deviator Stress v Axial Strain



Remarks

0.5mm membrane, correction factor = 1.35

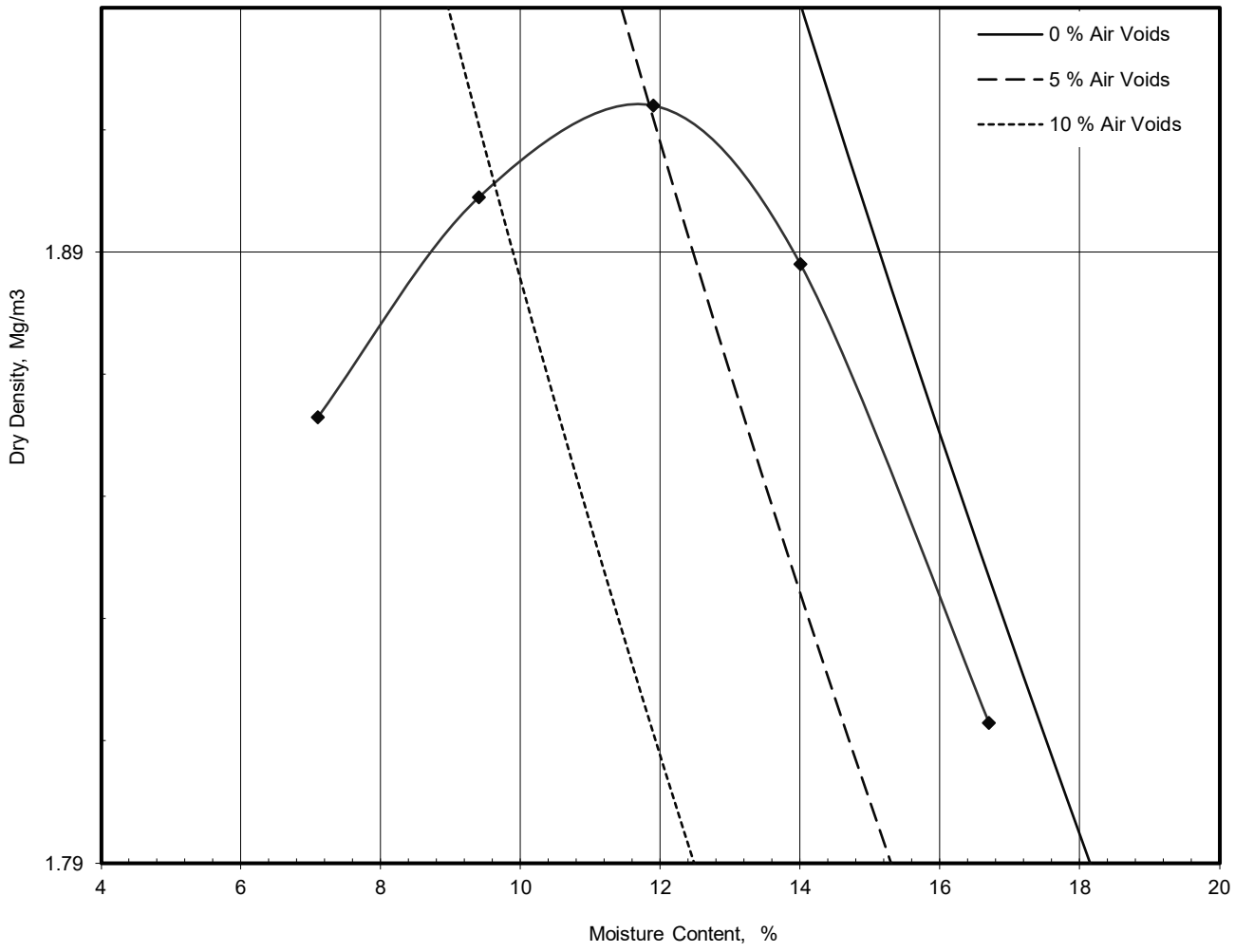
Approved: DanielKerfoot

Printed: 19/10/2023 08:23

Fig. No. 1

Sheet 1

CCG	**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.	

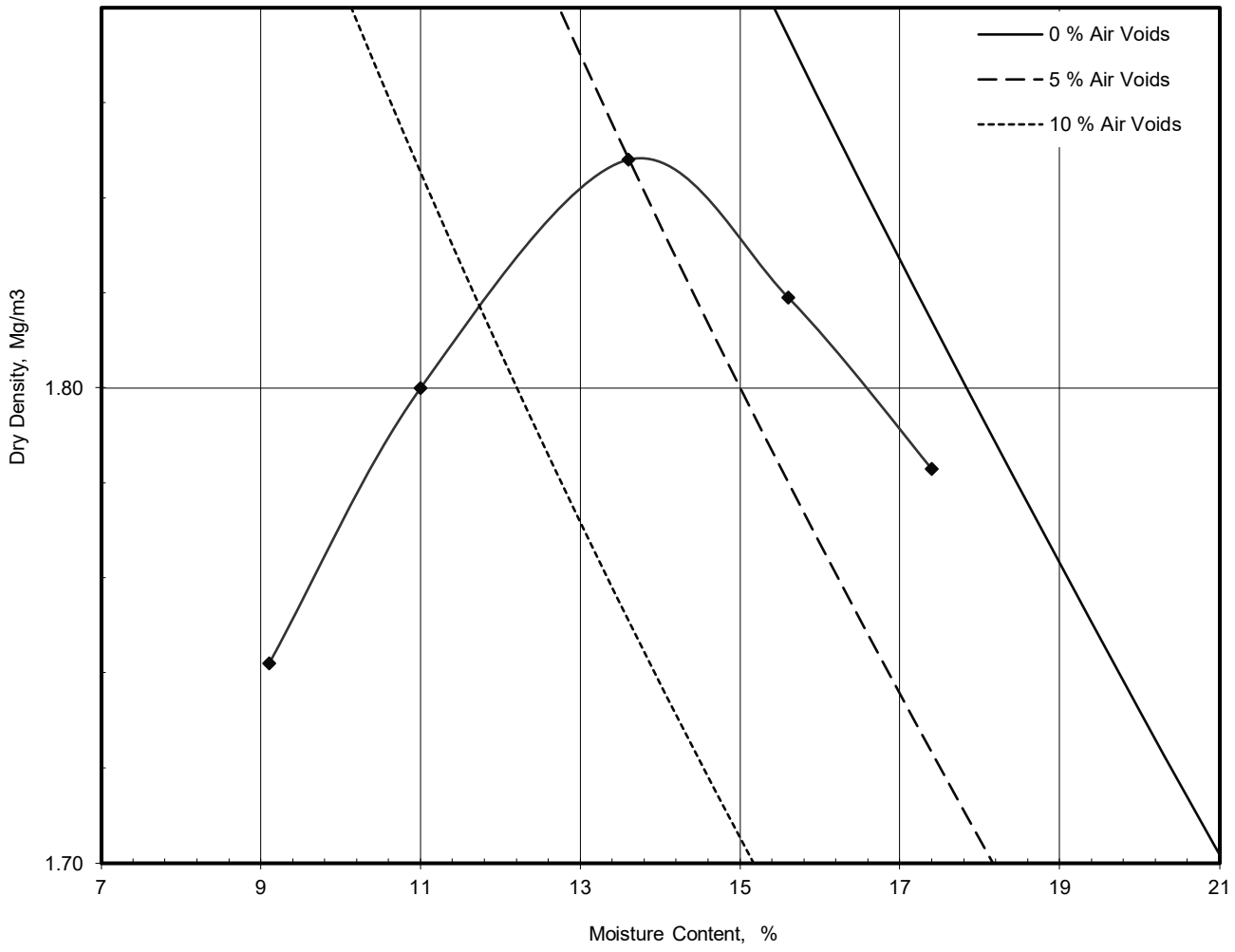


Preparation		
Mould Type		CBR
Samples Used		5
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	18
Particle Density -	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**1.91**
Optimum Moisture Content	%	**12**

Operator	Checked	Approved	Remarks	
MH	DK	DK		**Fig** Sheet 1 of 1

CCG	**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/m³	2.65

Maximum Dry Density	Mg/m³	**1.85**
Optimum Moisture Content	%	**14**

Operator	Checked	Approved	Remarks	
MH	DK	DK		**Fig** Sheet 1 of 1

POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

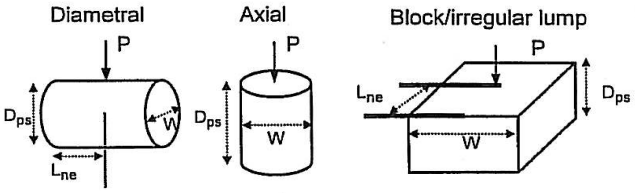
PROJECT No.:- CCG-C-23-14178 SITE:- HUYTON TOWN CENTRE DATE: 16.10.23

Borehole Number	Depth (m)	Type of Test* a	d	i	Width (W) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MPa)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MPa)	Estimated Uniaxial Compressive Strength (MPa)	Water Content (NAT/SAT)	Orientation to plane of weakness
BH08	6.60	a			100	82	4.30	102	0.41	1.38	0.57	11.36	NAT	p
BH08	7.30	a			100	95	3.00	110	0.25	1.43	0.35	7.07	NAT	p
BH08	7.90		d		56	100	0.90	-	0.09	1.37	0.12	2.46	NAT	l
BH08	9.00	a			100	80	2.40	101	0.24	1.37	0.32	6.46	NAT	p
BH08	10.90	a			100	64	2.60	90	0.32	1.30	0.42	8.32	NAT	p
BH08	13.20	a			100	75	1.90	98	0.20	1.35	0.27	5.38	NAT	p
BH08	15.50	a			100	91	2.00	108	0.17	1.41	0.24	4.87	NAT	p
BH08	17.00	a			100	40	1.30	71	0.26	1.17	0.30	5.99	NAT	p

*NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)
p = perpendicular; l = parallel, u = unkown

DIA. KEY- P = load ; Dps = platen seperation ;
W = width of shortest dimension perpendicular to load ;
Lne = length from platens to nearest free end

UKAS TESTING 4514



TESTED BY: MH 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:	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. (BS1377Pt2:9.2,9.5)
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. (BS1377Pt2:3.2,4.4,5)
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. (BS1377Pt2:3.2,Pt7:8)
BH09	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)

SITE: HUYTON TOWN CENTRE (CCG-C-23-14178) DATE: 24.10.23

CLIENT: GENR8 / BURO HAPPOLD / KMBC

UKAS TESTING 4514

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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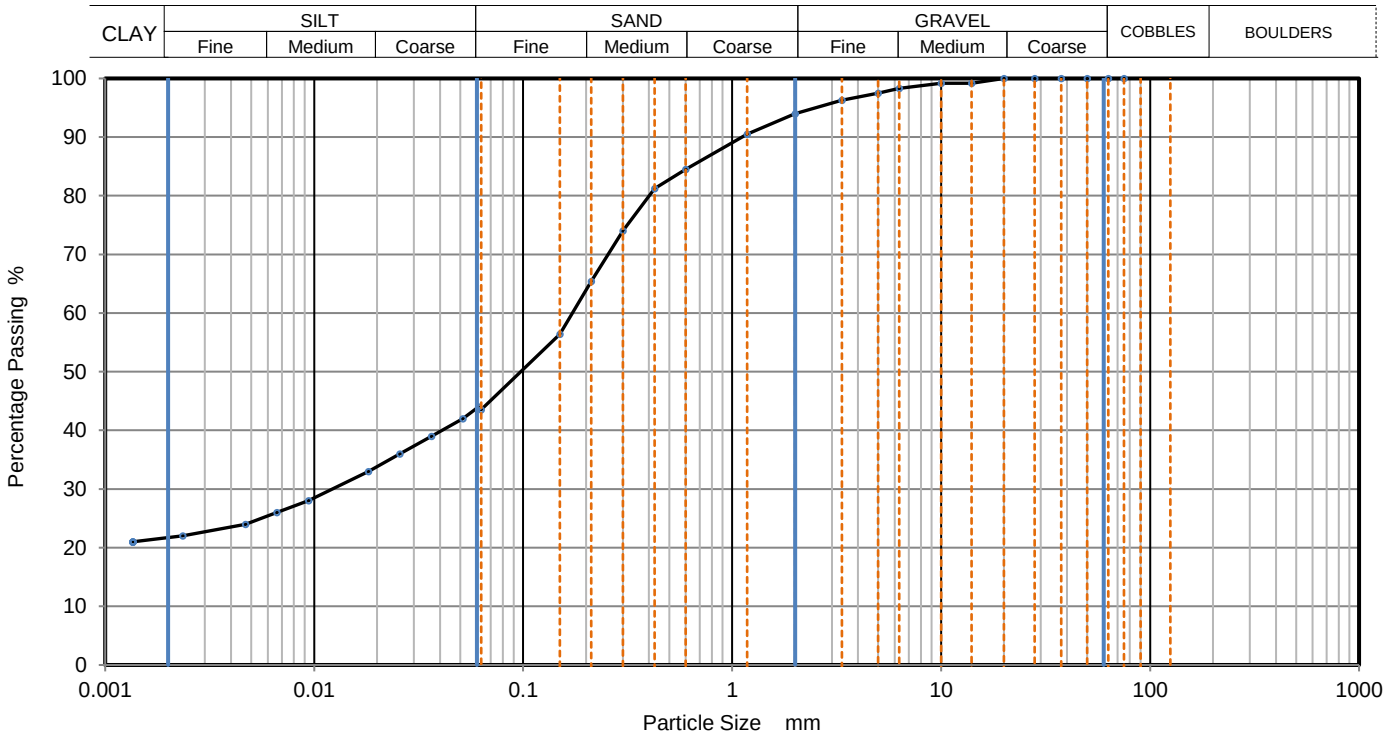
PARTICLE SIZE DISTRIBUTION

Job Ref	CCG-C-23-14178		
Borehole/Pit No.	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)	
0.425	81	2.65 Mg/m3	
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	0.172
D30	mm	0.0125
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS1377 unless noted below

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

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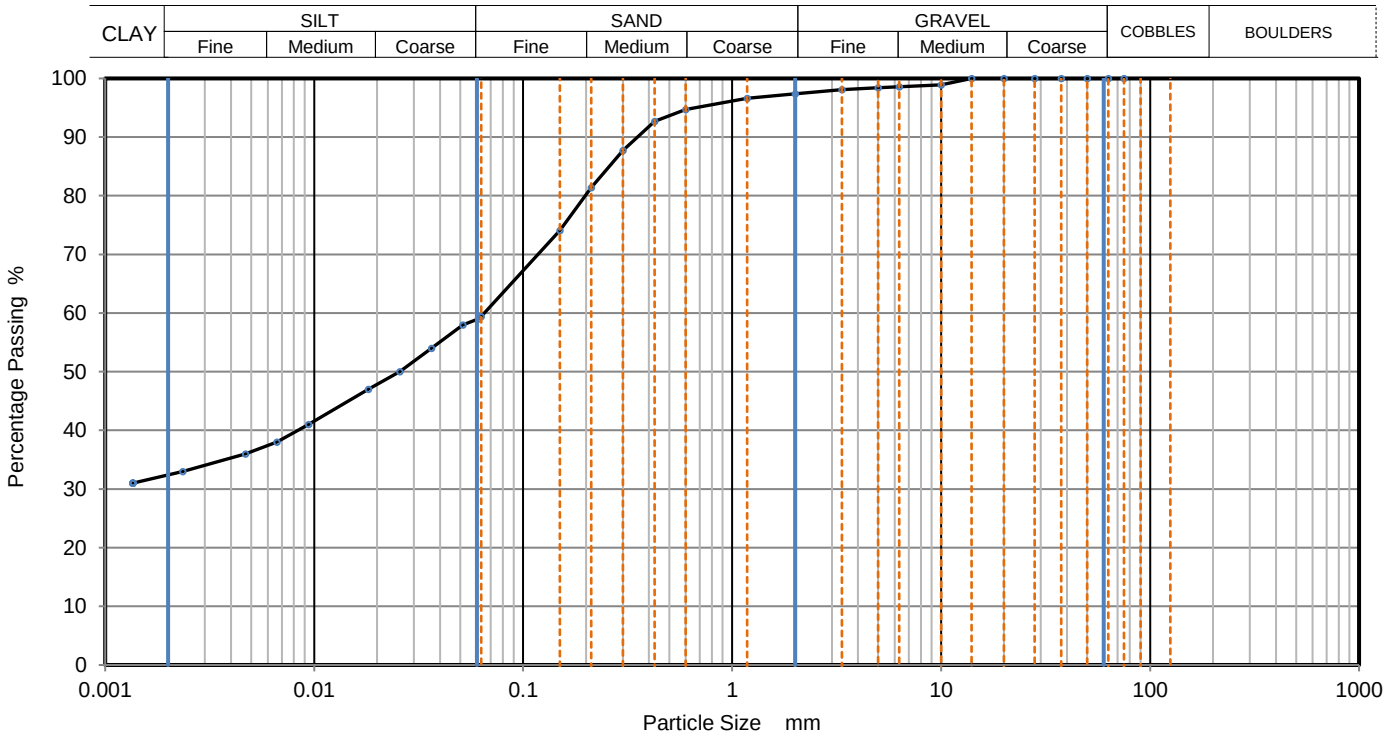
e: lab@ccgeotechnical.com

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)	
0.425	93	2.65 Mg/m3	
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	0.0652
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

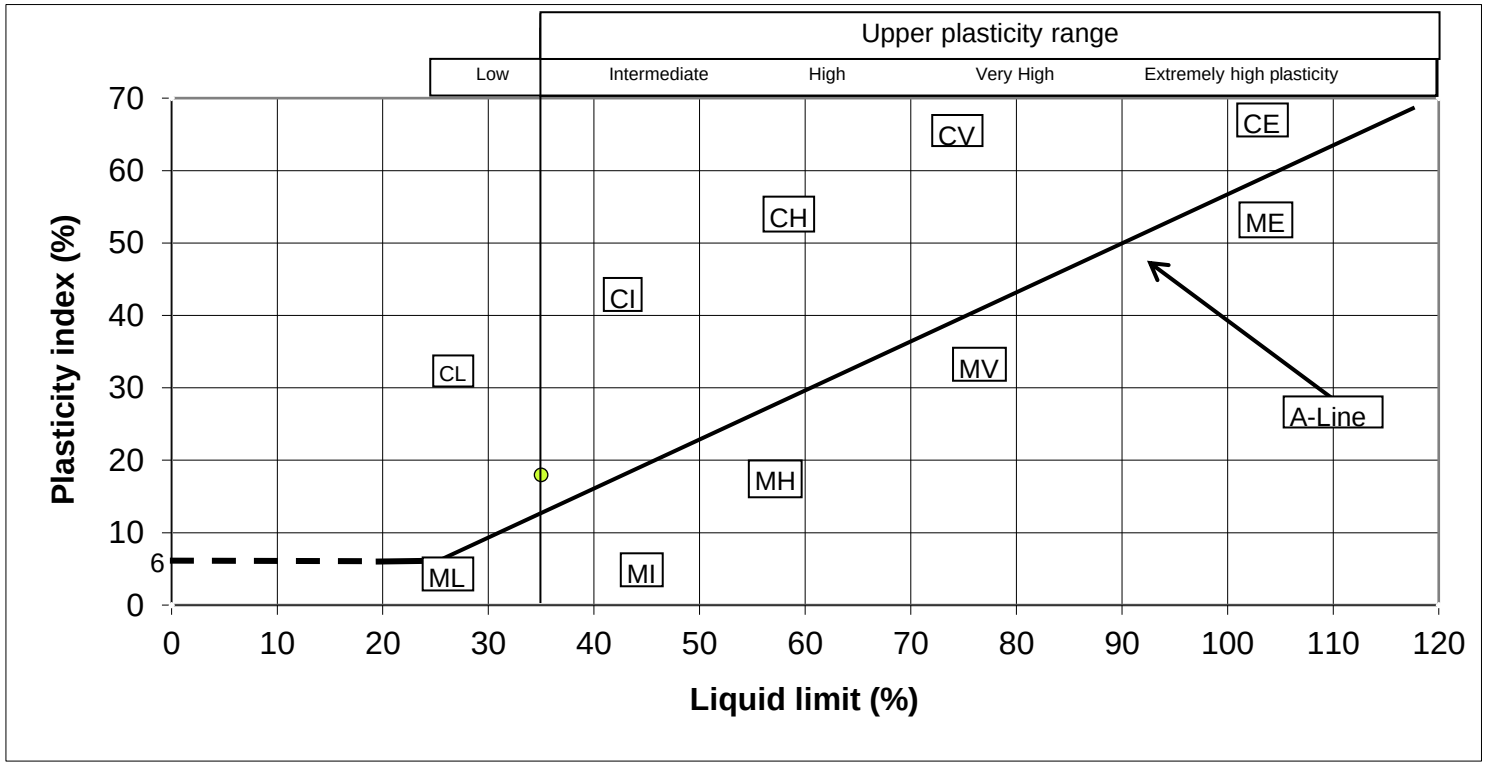
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1
JE	DK	DK	24/10/2023 09:29	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
BH09	1.90	35.0	18.0

UKAS TESTING
4514

APPROVED BY	DK

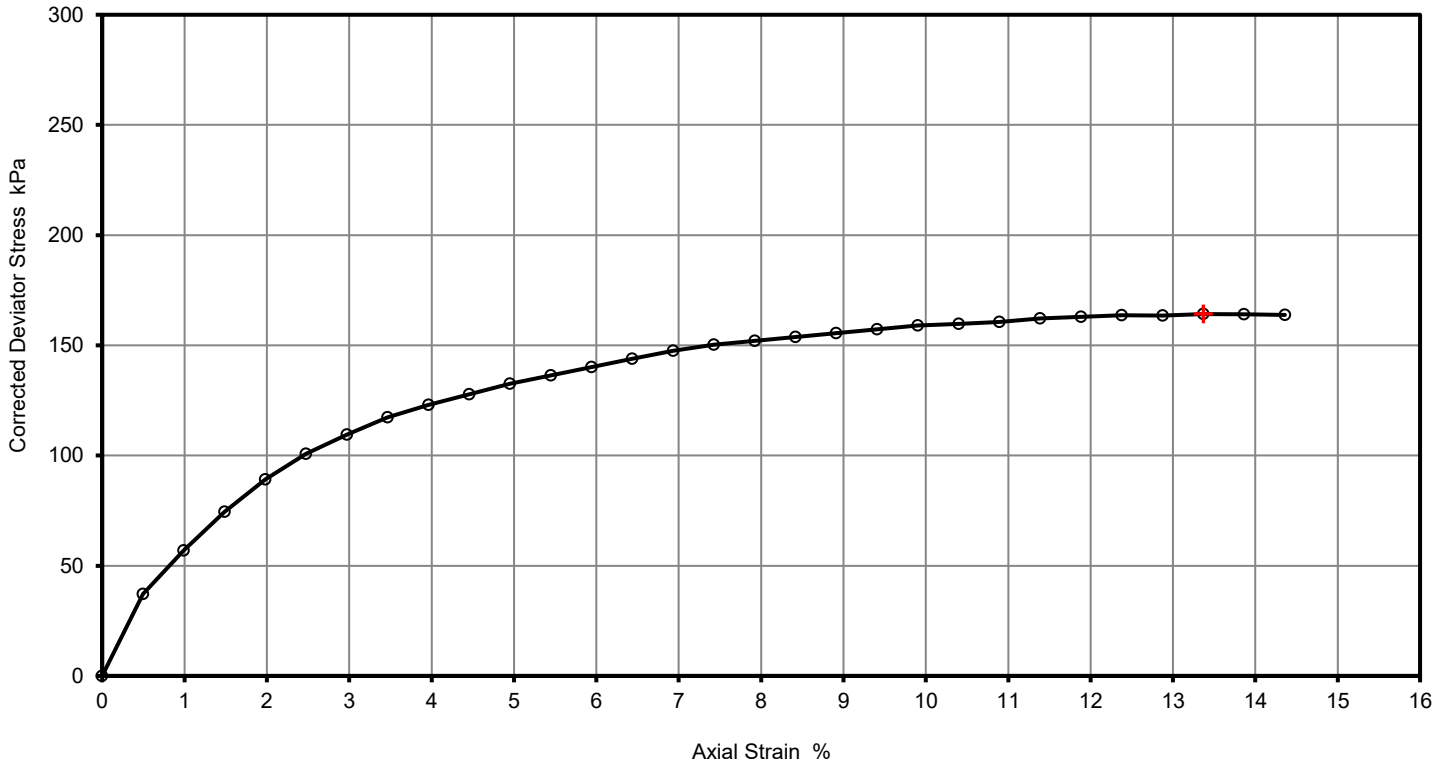
CLIENT: GENR8 / BURO HAPPOLD / KMBC	SITE: HUYTON TOWN CENTRE (CCG-C-23-14178)

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.	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				

UKAS TESTING 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	Axial Strain	13.4	%
	Deviator Stress, (σ1 - σ3)f	164	kPa
	Undrained Shear Strength, cu	82	kPa ½(σ1 - σ3)f
	Mode of Failure	Plastic	

Deviator Stress v Axial Strain



Remarks

0.5mm membrane, correction factor = 1.43

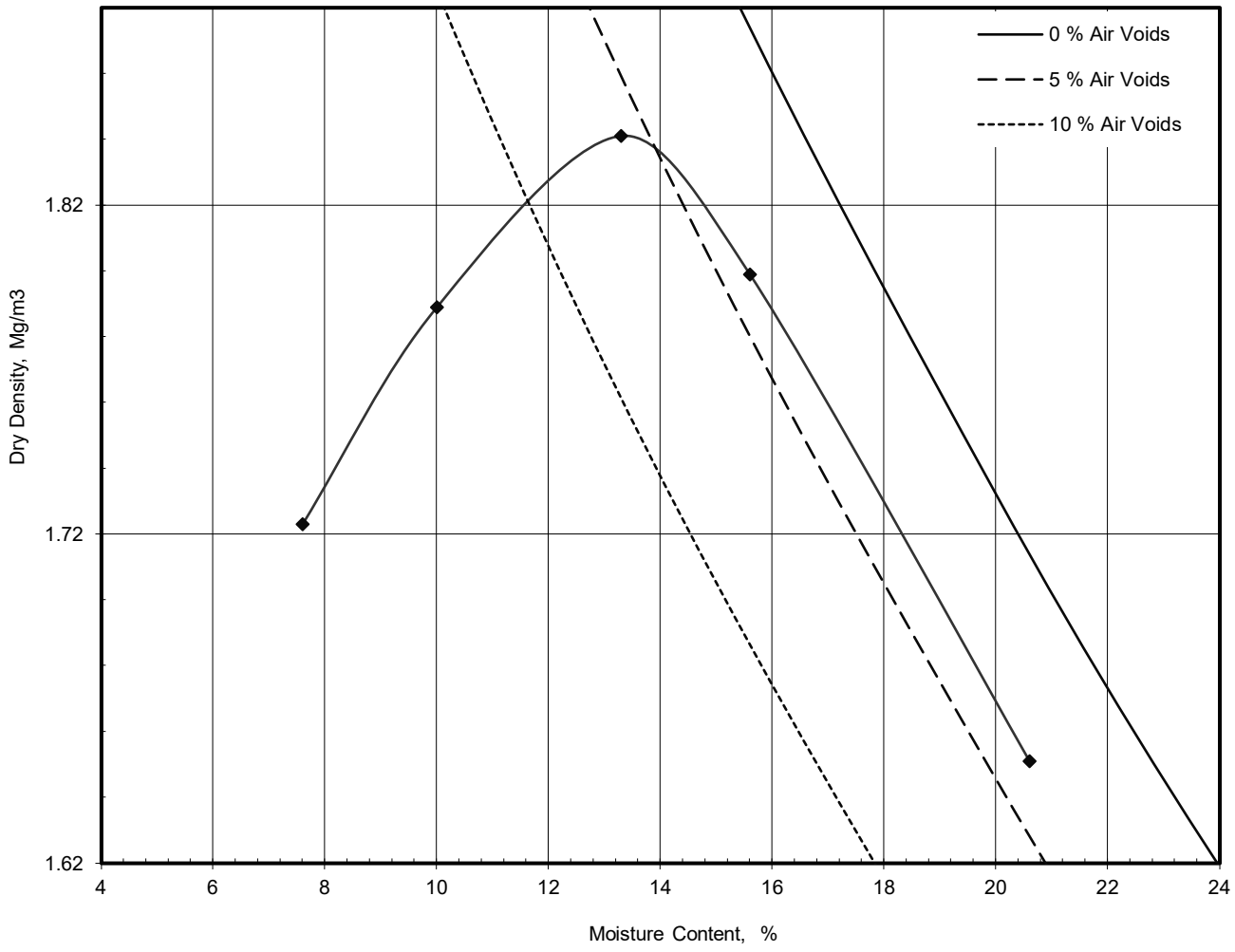
Approved: DanielKerfoot

Printed: 19/10/2023 15:36

Fig. No. 1

Sheet 1

CCG	**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	Fig
MH	DK	DK		Sheet 1 of 1

POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

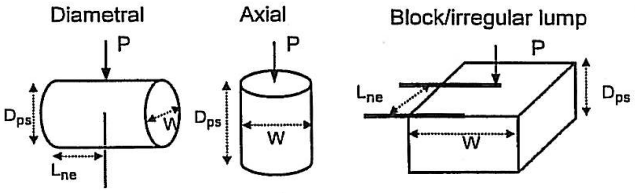
PROJECT No.:- CCG-C-23-14178 SITE:- HUYTON TOWN CENTRE DATE: 17.10.23

Borehole Number	Depth (m)	Type of Test* a	d	i	Width (W) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MPa)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MPa)	Estimated Uniaxial Compressive Strength (MPa)	Water Content (NAT/SAT)	Orientation to plane of weakness
BH09	3.80	a			100	71	1.40	95	0.15	1.34	0.21	4.14	NAT	p
BH09	6.90	a			100	92	3.10	108	0.26	1.42	0.37	7.49	NAT	p
BH09	10.80	a			101	96	4.80	111	0.39	1.43	0.56	11.14	NAT	p
BH09	11.30		d		76	100	2.70	-	0.27	1.37	0.37	7.38	NAT	l
BH09	13.10	a			100	74	4.60	97	0.49	1.35	0.66	13.16	NAT	p
BH09	15.50	a			100	81	3.70	102	0.36	1.38	0.49	9.87	NAT	p
BH09	16.00		d		65	100	2.40	-	0.24	1.37	0.33	6.56	NAT	l
BH09	19.85	a			100	66	4.70	92	0.56	1.31	0.73	14.69	NAT	p

*NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)
p = perpendicular; l = parallel, u = unkown

DIA. KEY- P = load ; Dps = platen seperation ;
W = width of shortest dimension perpendicular to load ;
Lne = length from platens to nearest free end

UKAS TESTING 4514



TESTED BY: MH 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 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/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
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) DATE: 24.10.23

CLIENT: GENR8 / BURO HAPPOLD / KMBC

UKAS TESTING 4514

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
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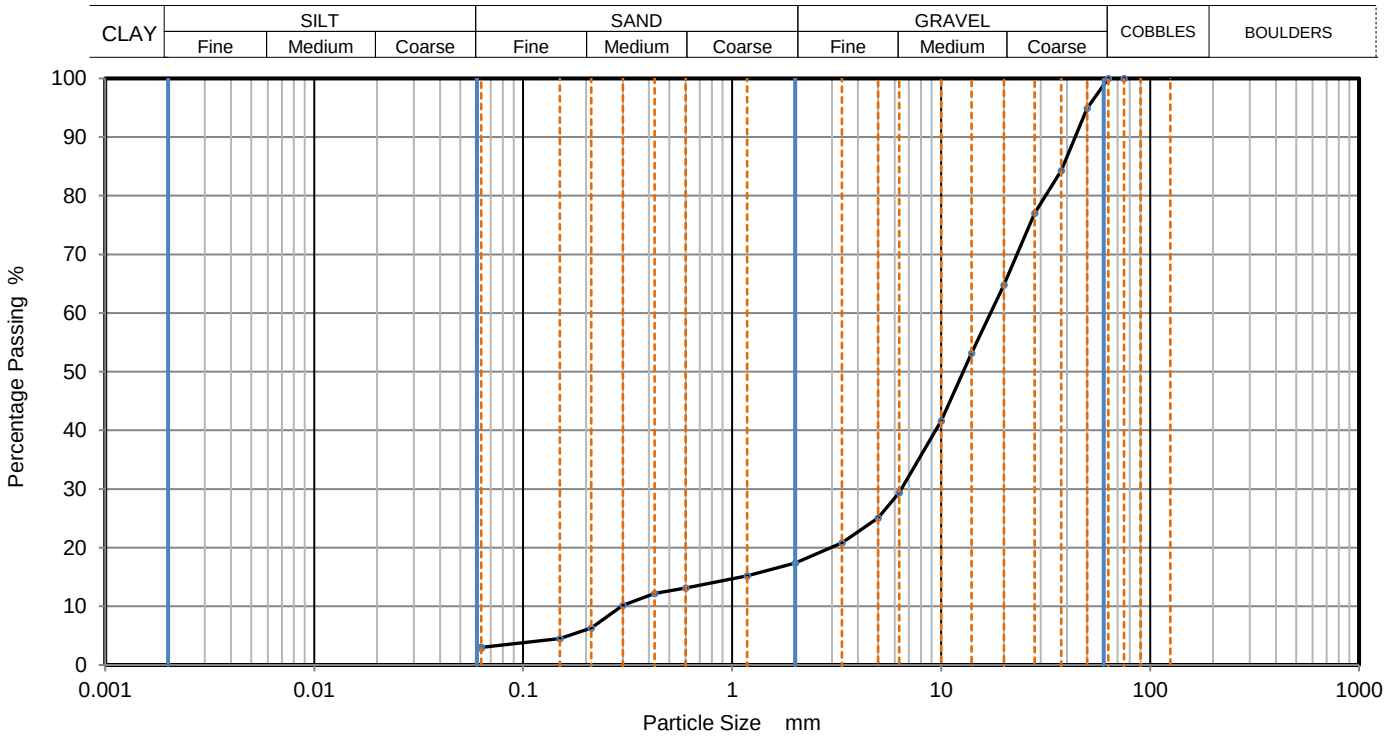
PARTICLE SIZE DISTRIBUTION

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	17.2
D30	mm	6.46
D10	mm	0.295
Uniformity Coefficient		58
Curvature Coefficient		8.2

Remarks

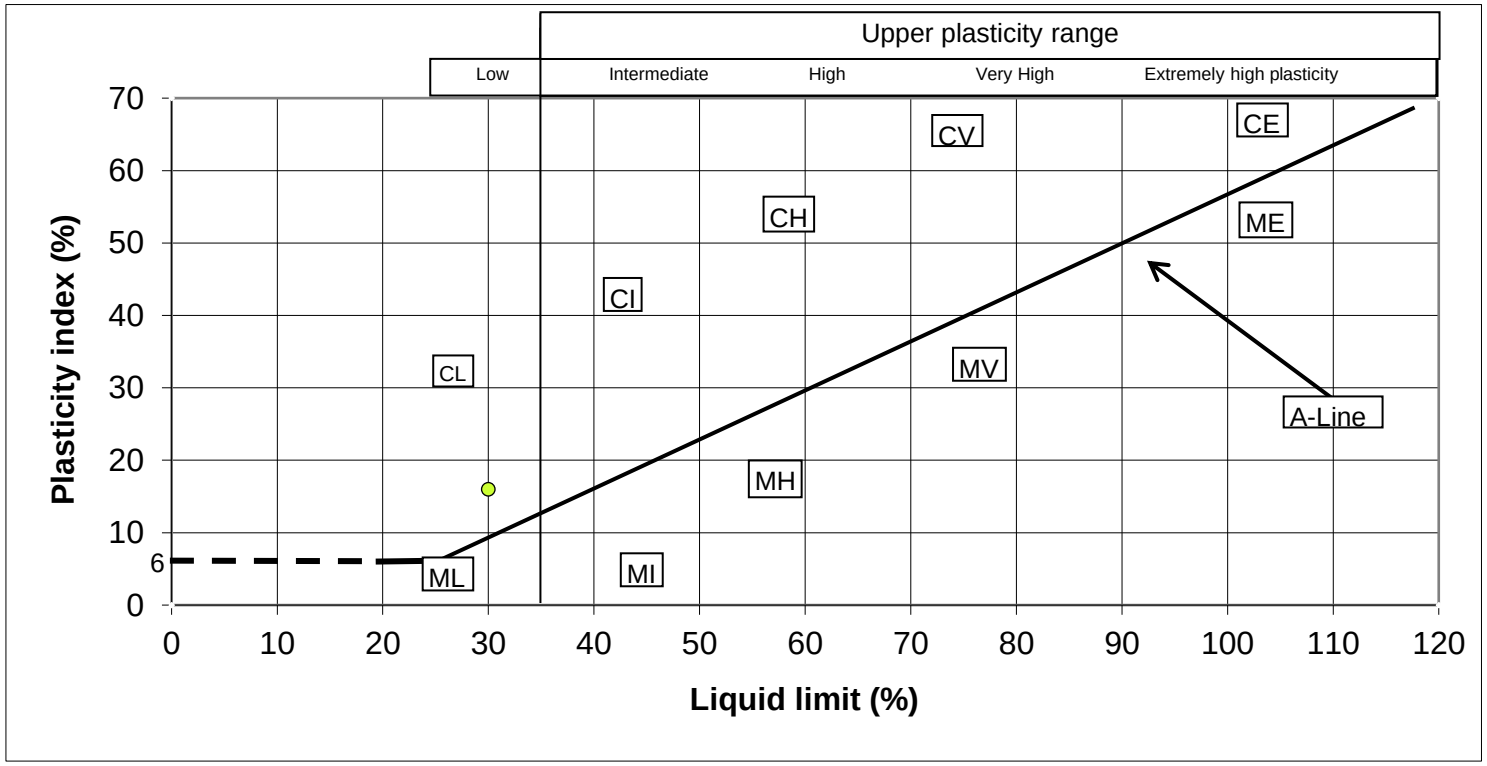
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1
JE	DK	DK	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

UKAS TESTING 4514

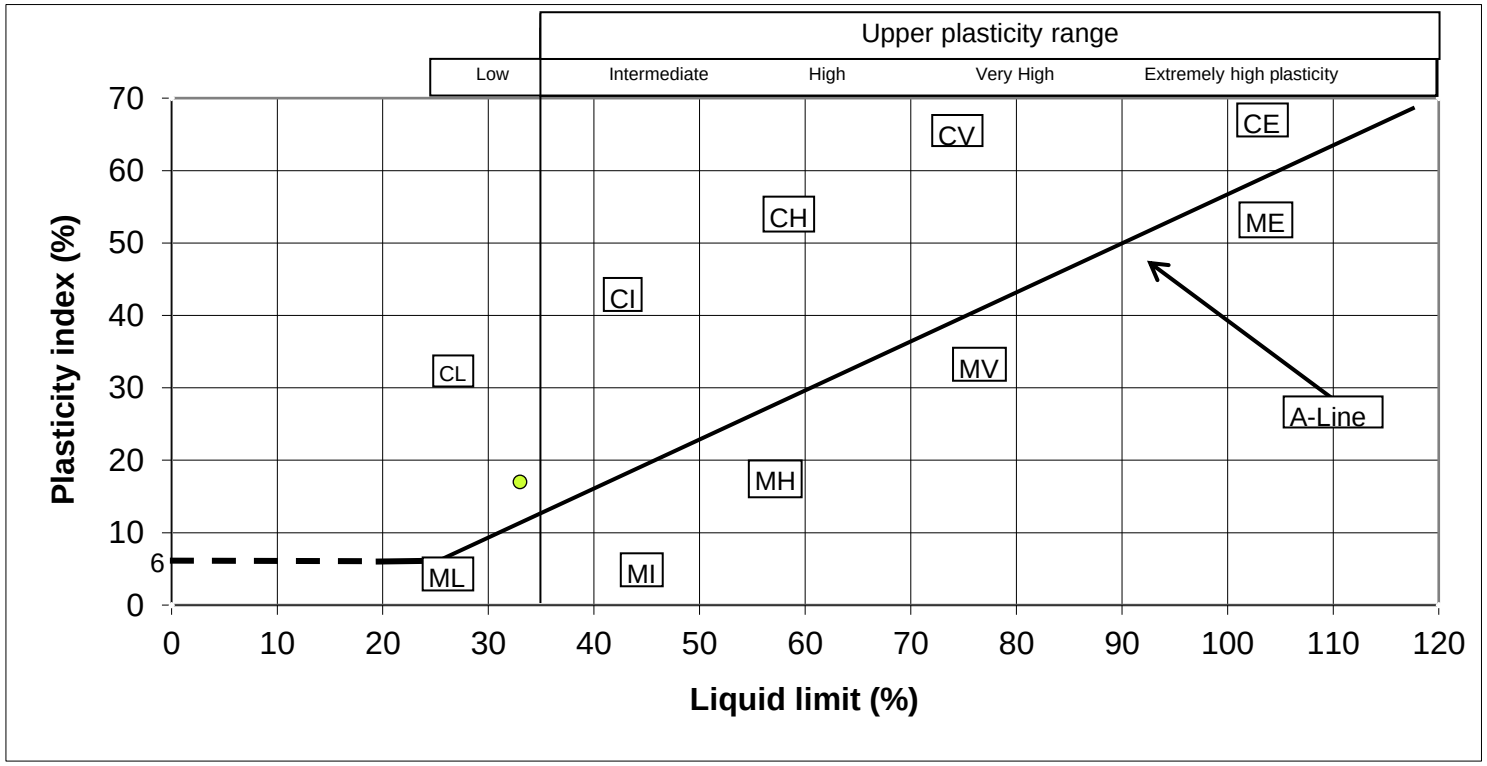
APPROVED BY	DK

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
BH10	3.10	33.0	17.0

UKAS TESTING
4514

APPROVED BY	DK

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

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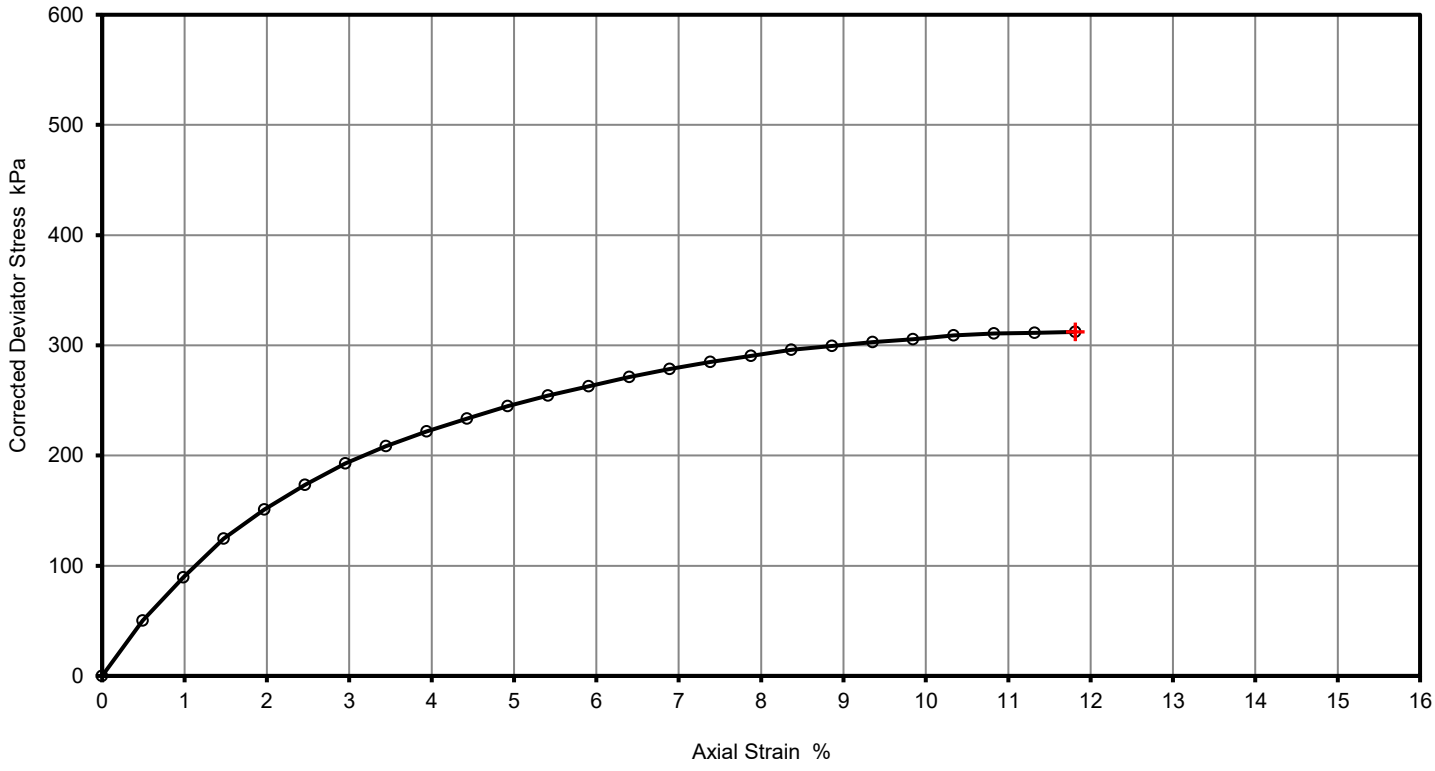
Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

				Job Ref	CCG-C-23-14178
				Borehole/Pit No.	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				

UKAS TESTING 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	Axial Strain	11.8	%
	Deviator Stress, (σ1 - σ3)f	312	kPa
	Undrained Shear Strength, cu	156	kPa ½(σ1 - σ3)f
	Mode of Failure	Plastic	

Deviator Stress v Axial Strain



Remarks

0.5mm membrane, correction factor = 1.22

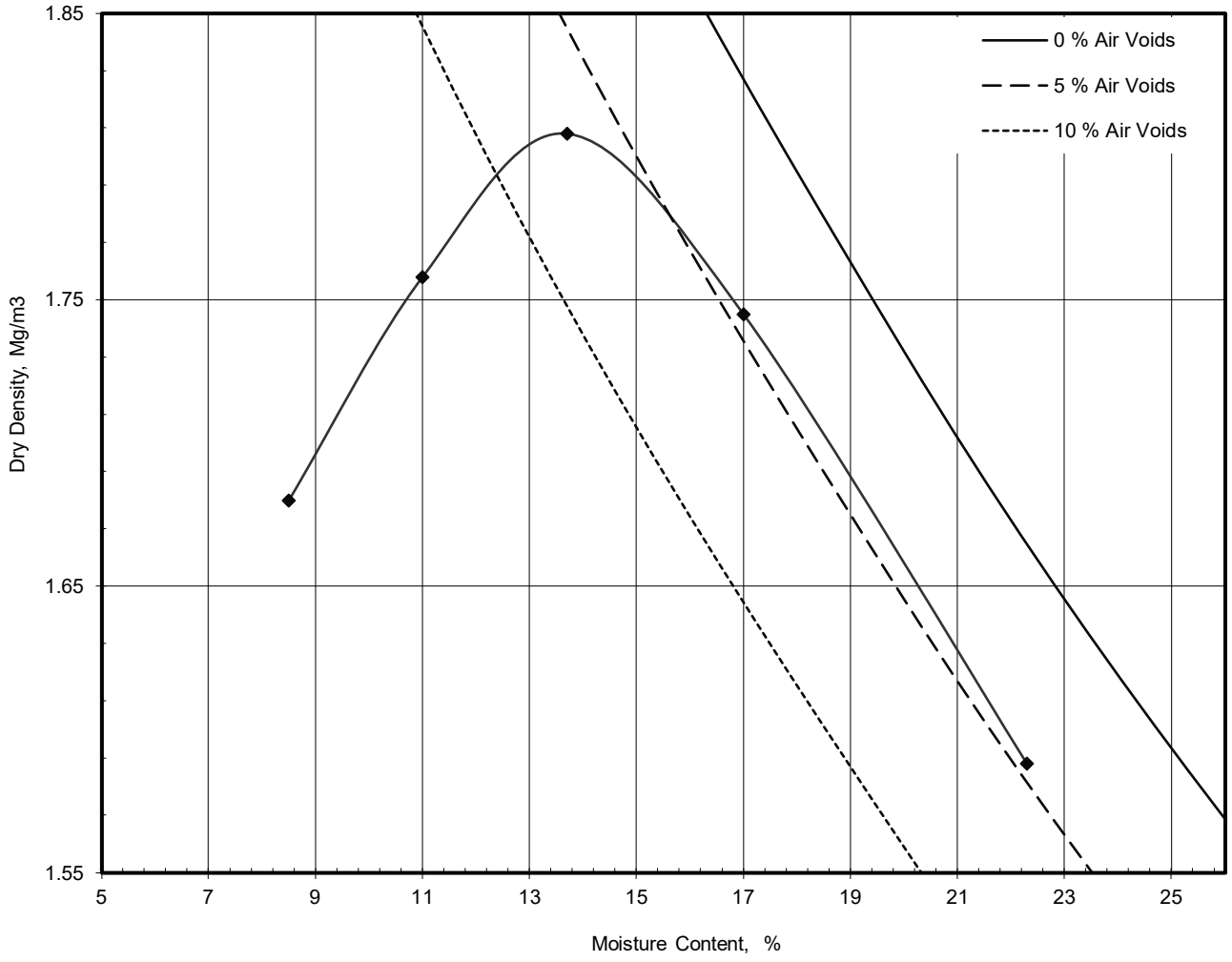
Approved: DanielKerfoot

Printed: 19/10/2023 15:44

Fig. No. 1

Sheet 1

CCG	**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

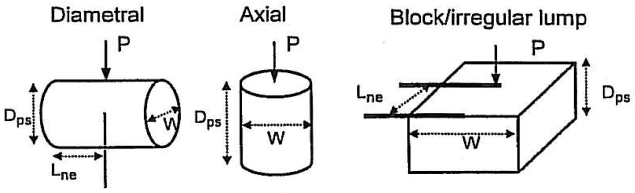
PROJECT No.:- CCG-C-23-14178 SITE:- HUYTON TOWN CENTRE DATE: 16.10.23

Borehole Number	Depth (m)	Type of Test* a	d	i	Width (W) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MPa)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MPa)	Estimated Uniaxial Compressive Strength (MPa)	Water Content (NAT/SAT)	Orientation to plane of weakness
BH10	5.85	a			100	43	1.70	74	0.31	1.19	0.37	7.41	NAT	p
BH10	8.30	a			100	86	2.60	105	0.24	1.39	0.33	6.62	NAT	p
BH10	9.90	a			100	61	1.80	88	0.23	1.29	0.30	5.98	NAT	p
BH10	10.90		d		74	100	1.40	-	0.14	1.37	0.19	3.82	NAT	l
BH10	11.35	a			100	78	4.50	100	0.45	1.36	0.62	12.36	NAT	p
BH10	13.55	a			100	87	2.90	105	0.26	1.40	0.37	7.32	NAT	p
BH10	15.60	a			100	68	1.60	93	0.18	1.32	0.24	4.89	NAT	p
BH10	17.80	a			100	71	2.70	95	0.30	1.34	0.40	7.98	NAT	p

*NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)
p = perpendicular; l = parallel, u = unkown

DIA. KEY- P = load ; Dps = platen seperation ;
W = width of shortest dimension perpendicular to load ;
Lne = length from platens to nearest free end

UKAS TESTING 4514



TESTED BY: MH 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:	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 angualr 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) DATE: 25.10.23

CLIENT: GENR8 / BURO HAPPOLD / KMBC

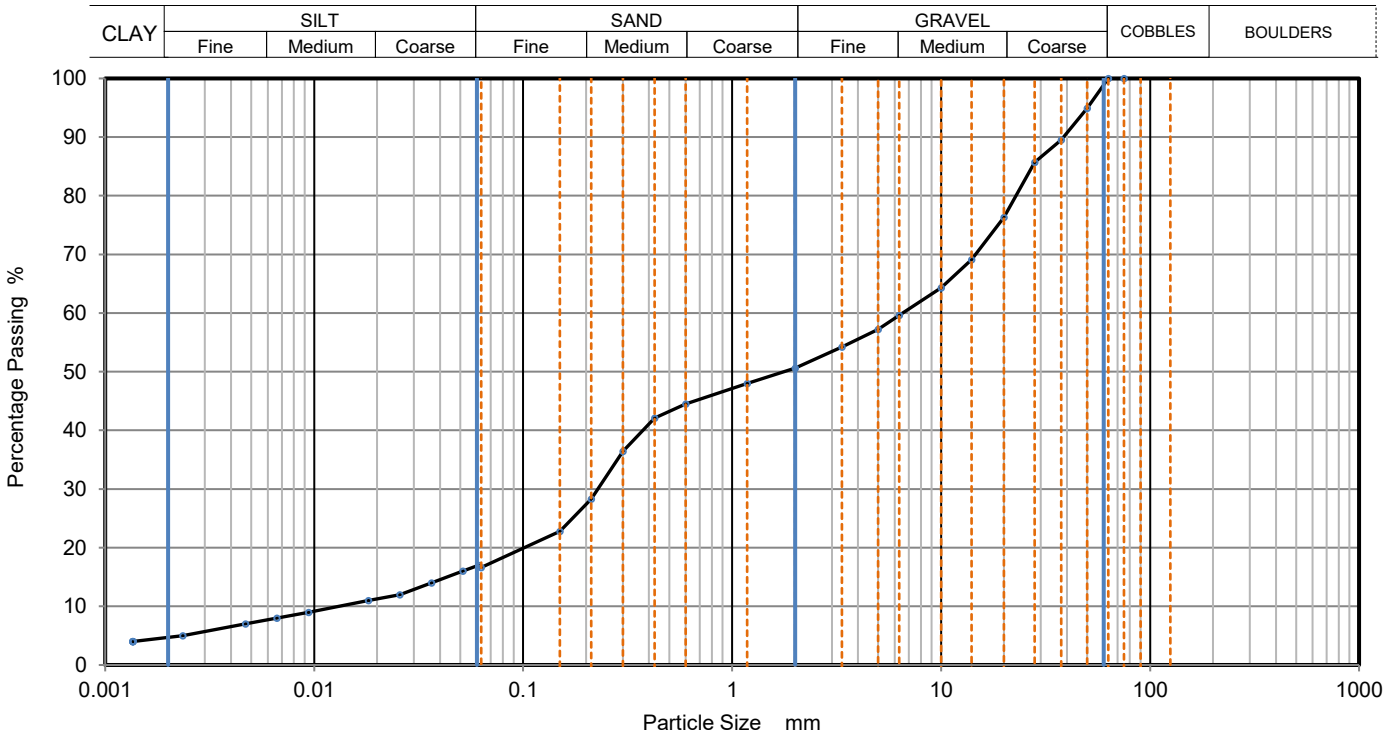
UKAS TESTING 4514

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.			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)	
0.425	42	2.65 Mg/m3	
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	6.58
D30	mm	0.228
D10	mm	0.0133
Uniformity Coefficient		490
Curvature Coefficient		0.59

Remarks

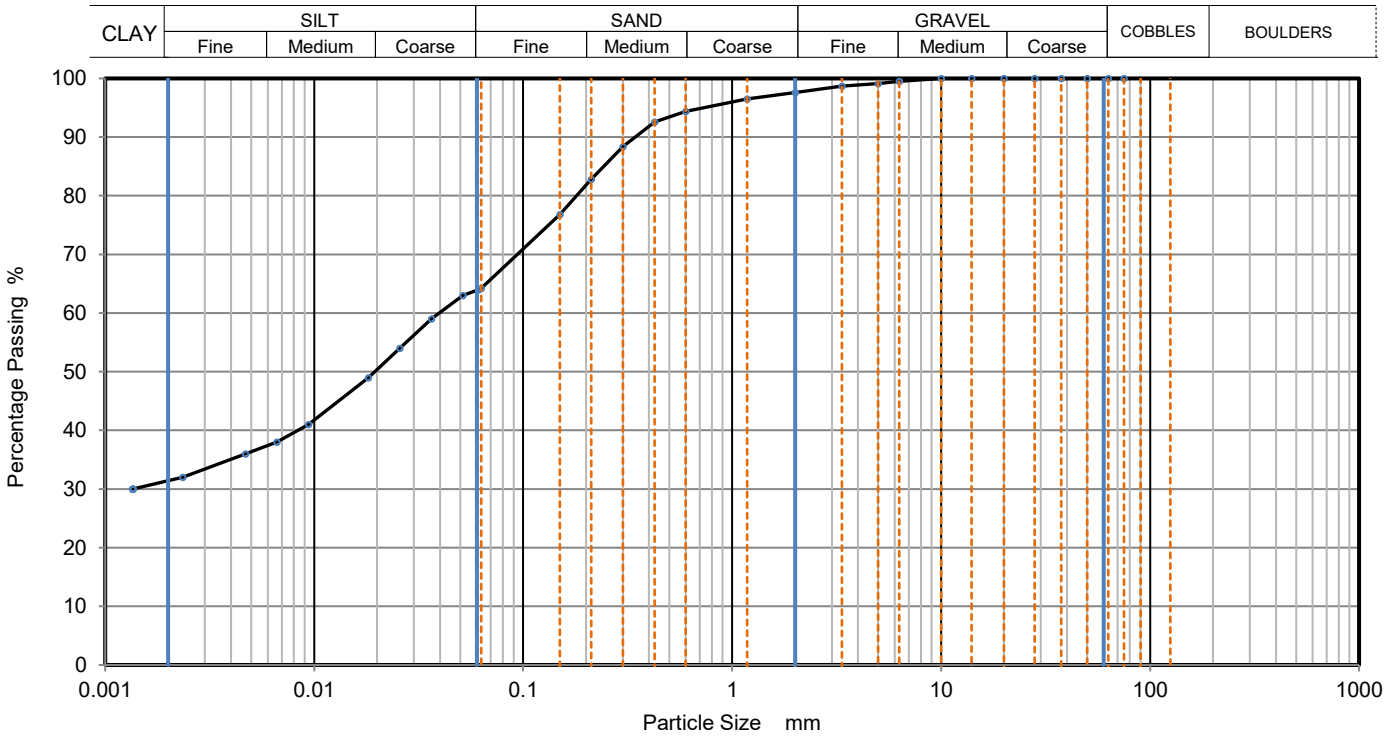
Preparation and testing in accordance with BS1377 unless noted below

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

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)	
0.425	93	2.65	Mg/m3
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	0.041
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

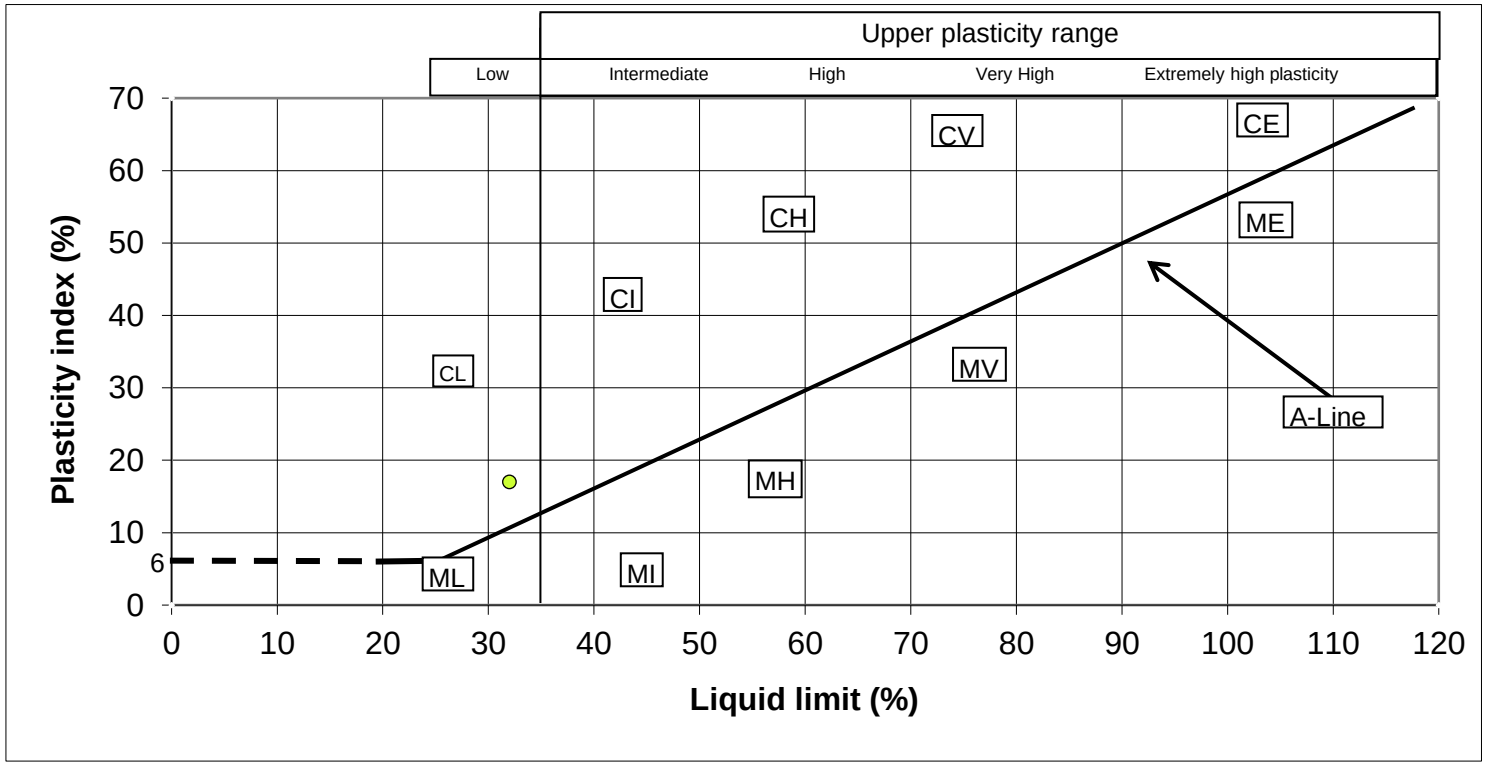
Preparation and testing in accordance with BS1377 unless noted below

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



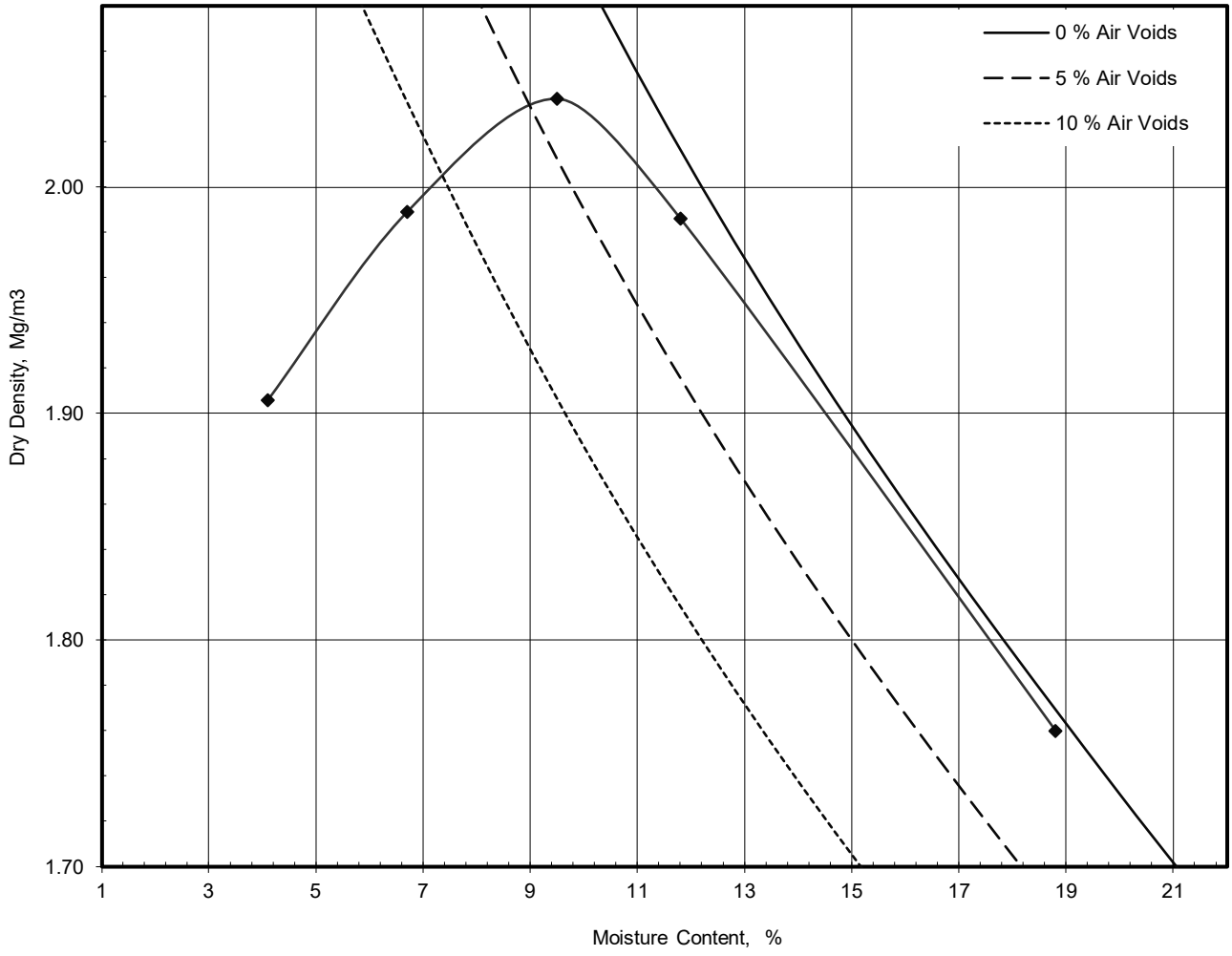
BH	Sample Depth	Liquid limit	Plasticity index
BH11	5.50	32.0	17.0

UKAS TESTING
4514

APPROVED BY	DK

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

CCG	**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	
MH	DK	DK		**Fig** Sheet 1 of 1

POINT LOAD TEST RESULTS

ISRM 1985: Suggested Method

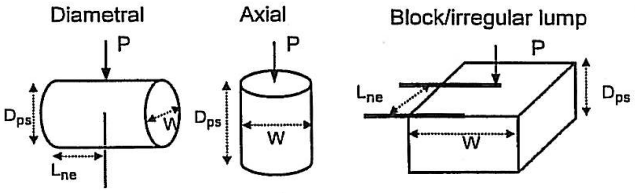
PROJECT No.:- CCG-C-23-14178 SITE:- HUYTON TOWN CENTRE DATE: 16.10.23

Borehole Number	Depth (m)	Type of Test* a	d	i	Width (W) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MPa)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MPa)	Estimated Uniaxial Compressive Strength (MPa)	Water Content (NAT/SAT)	Orientation to plane of weakness
BH11	8.50	a			100	53	1.10	82	0.16	1.25	0.20	4.08	NAT	p
BH11	11.70	a			100	64	1.30	90	0.16	1.30	0.21	4.16	NAT	p
BH11	12.75	a			100	92	1.90	108	0.16	1.42	0.23	4.59	NAT	p
BH11	14.25	a			100	51	1.80	81	0.28	1.24	0.34	6.87	NAT	p
BH11	15.05	a			100	93	1.80	109	0.15	1.42	0.22	4.31	NAT	p
BH11	16.70	a			100	66	2.10	92	0.25	1.31	0.33	6.57	NAT	p
BH11	19.30	a			100	98	1.80	112	0.14	1.44	0.21	4.14	NAT	p
BH11	19.65	a			100	95	1.50	110	0.12	1.43	0.18	3.54	NAT	p

*NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)
p = perpendicular; l = parallel, u = unkown

DIA. KEY- P = load ; Dps = platen seperation ;
W = width of shortest dimension perpendicular to load ;
Lne = length from platens to nearest free end

UKAS TESTING 4514



TESTED BY: MH 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
BH12	B	1.10	1.10	-	-	-	-	-	-	-	-	-	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subrounded sandstone. (BS1377Pt2:9.2,9.5)
BH12	D	1.10	1.10	23	-	-	-	29	14	15	92	CL	Y	Brown sandy slightly gravelly silty CLAY. Gravel is fine to medium subrounded sandstone. (BS1377Pt2:3.2,4.4,5)
BH12	D	5.50	5.50	20	-	-	-	31	15	16	88	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) DATE: 26.10.23

CLIENT: GENR8 / BURO HAPPOLD / KMBC

UKAS TESTING 4514

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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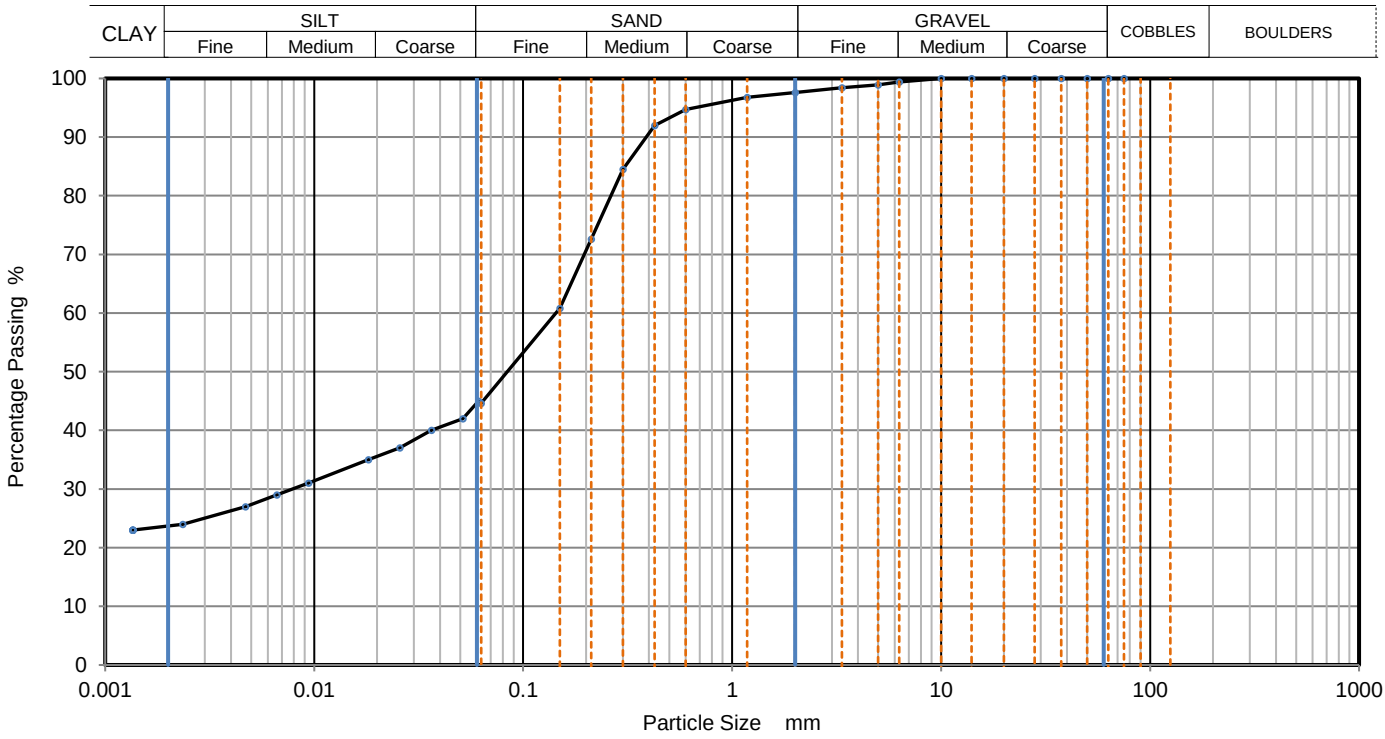
PARTICLE SIZE DISTRIBUTION

Job Ref	CCG-C-23-14178		
Borehole/Pit No.	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)	
0.425	92	2.65 Mg/m3	
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	0.144
D30	mm	0.00829
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

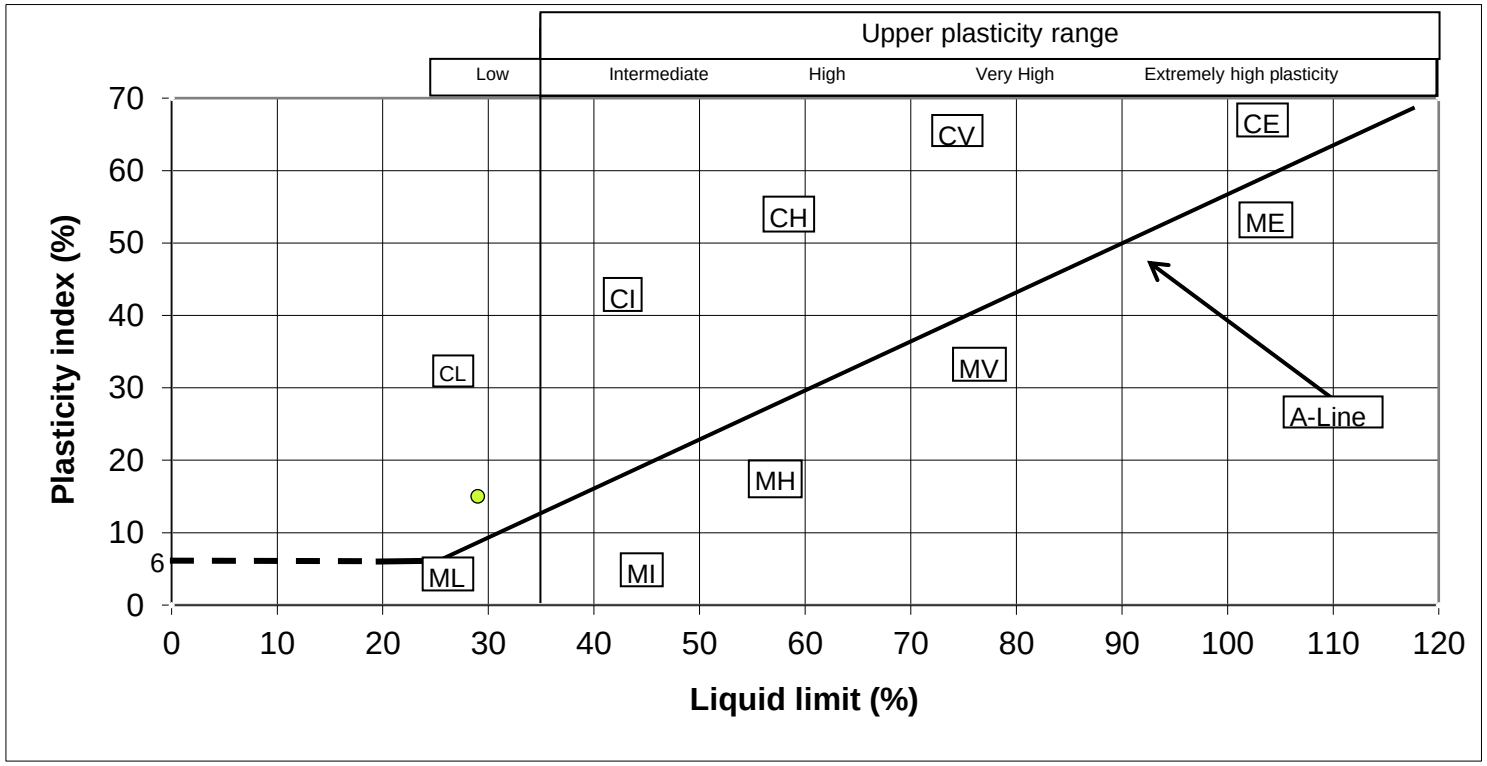
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1
JE	DK	DK	26/10/2023 16:25	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
BH12	1.10	29.0	15.0

UKAS TESTING
4514

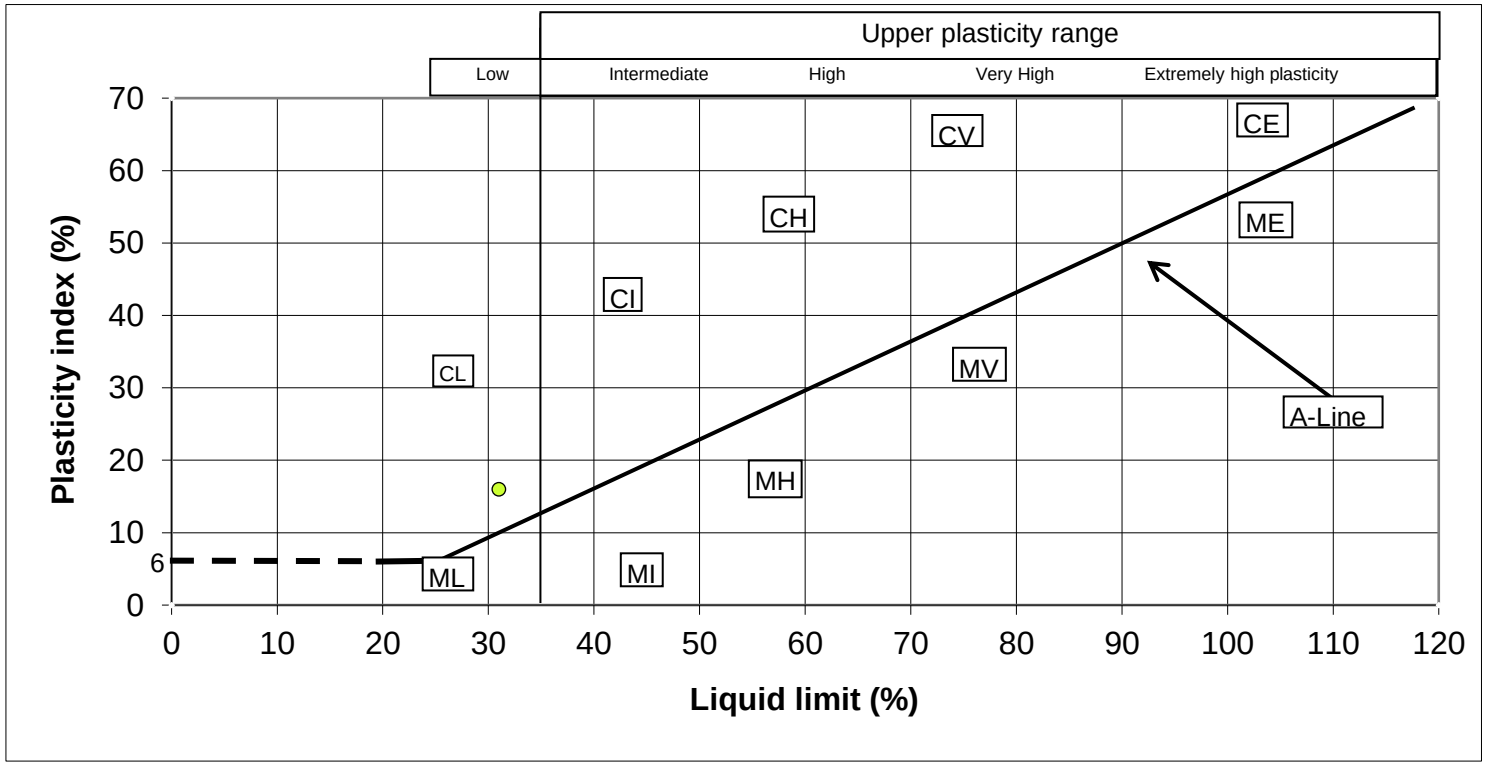
APPROVED BY	DK

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.



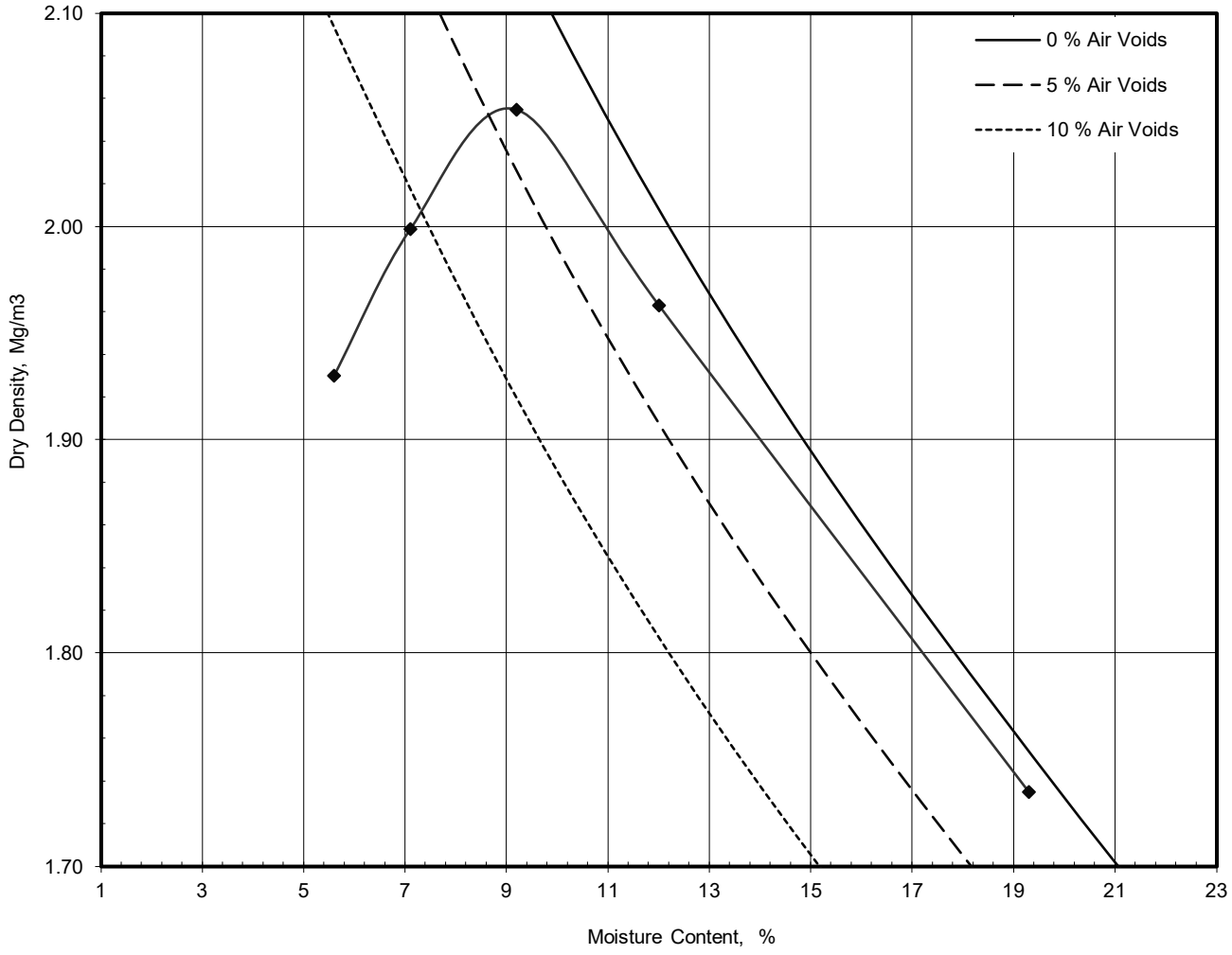
BH	Sample Depth	Liquid limit	Plasticity index
BH12	5.50	31.0	16.0

UKAS TESTING
4514

APPROVED BY	DK

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

CCG	**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.	

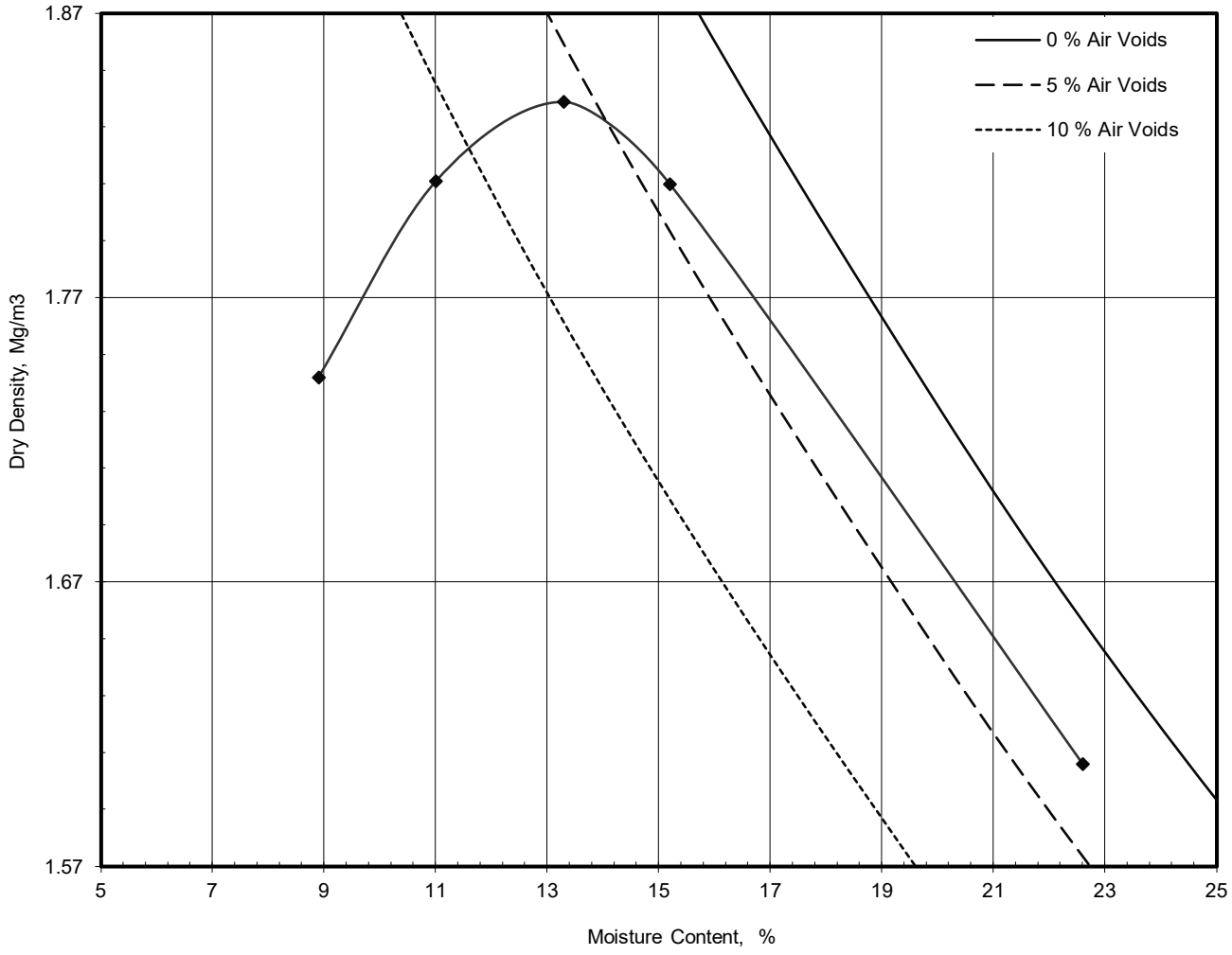


Preparation		
Mould Type		CBR
Samples Used		1
Material Retained on 37.5 mm Sieve	%	8
Material Retained on 20.0 mm Sieve	%	29
Particle Density -	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**2.01**
Optimum Moisture Content	%	**9.2**

Operator	Checked	Approved	Remarks	
MH	DK	DK	*Grading Zone X - test not applicable*	**Fig** Sheet 1 of 1

CCG	**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

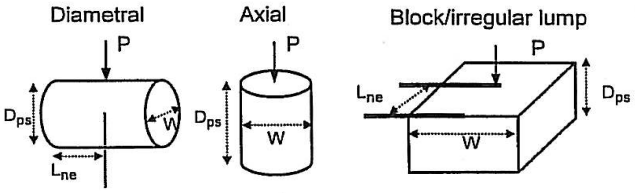
PROJECT No.:- CCG-C-23-14178 SITE:- HUYTON TOWN CENTRE DATE: 17.10.23

Borehole Number	Depth (m)	Type of Test* a	d	i	Width (W) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MPa)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MPa)	Estimated Uniaxial Compressive Strength (MPa)	Water Content (NAT/SAT)	Orientation to plane of weakness
BH12	7.70	a			100	46	2.00	77	0.34	1.21	0.41	8.27	NAT	p
BH12	9.20	a			100	80	2.40	101	0.24	1.37	0.32	6.46	NAT	p
BH12	11.40	a			100	75	2.20	98	0.23	1.35	0.31	6.23	NAT	p
BH12	12.40		d		117	100	2.40	-	0.24	1.37	0.33	6.56	NAT	l
BH12	16.20	a			100	81	0.70	102	0.07	1.38	0.09	1.87	NAT	p
BH12	17.20	a			100	90	0.90	107	0.08	1.41	0.11	2.21	NAT	p
BH12	17.90		d		72	100	1.60	-	0.16	1.37	0.22	4.37	NAT	l
BH12	19.05	a			100	70	1.80	94	0.20	1.33	0.27	5.38	NAT	p

*NOTE- a = axial ; d = diametral ; i = irregular lump or block (see diagrams, right, for details)
p = perpendicular; l = parallel, u = unkown

DIA. KEY- P = load ; Dps = platen seperation ;
W = width of shortest dimension perpendicular to load ;
Lne = length from platens to nearest free end

UKAS TESTING 4514



TESTED BY: MH 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 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**

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
WS11	UT	1.20	1.65	20	2.17	1.82	40	-	-	-	-	-	Y	Brown sandy slightly gravelly silty CLAY of low to medium undrained shear strength. Gravel is fine to coarse subangular sandstone, brick, ceramic. (MADE GROUND) (BS1377Pt2:3.2,Pt7:8)

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

DATE: 18.10.23

CLIENT: GENR8 / BURO HAPPOLD / KMBC

UKAS TESTING 4514

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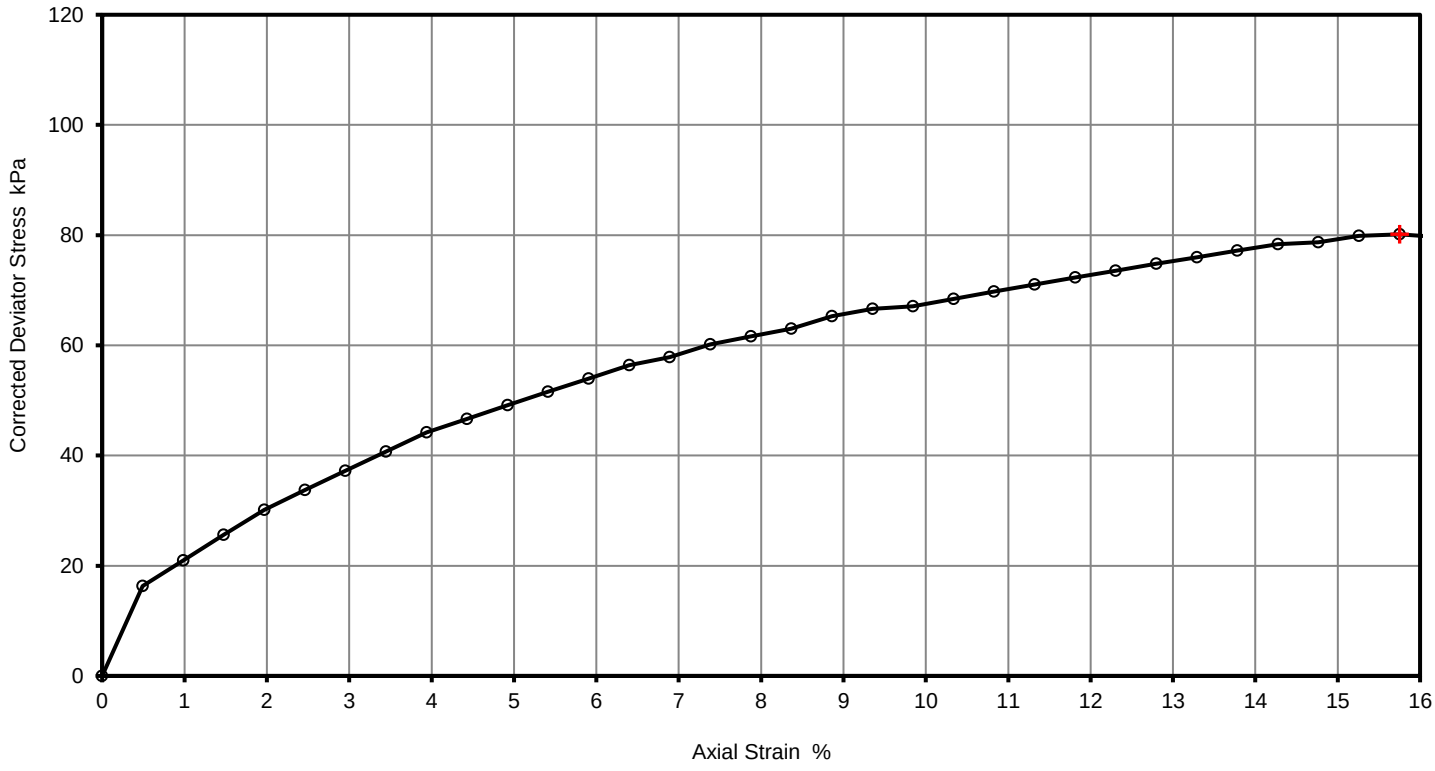
Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

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				

UKAS TESTING 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	Axial Strain	15.8	%
	Deviator Stress, (σ1 - σ3)f	80	kPa
	Undrained Shear Strength, cu	40	kPa ½(σ1 - σ3)f
	Mode of Failure	Plastic	

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

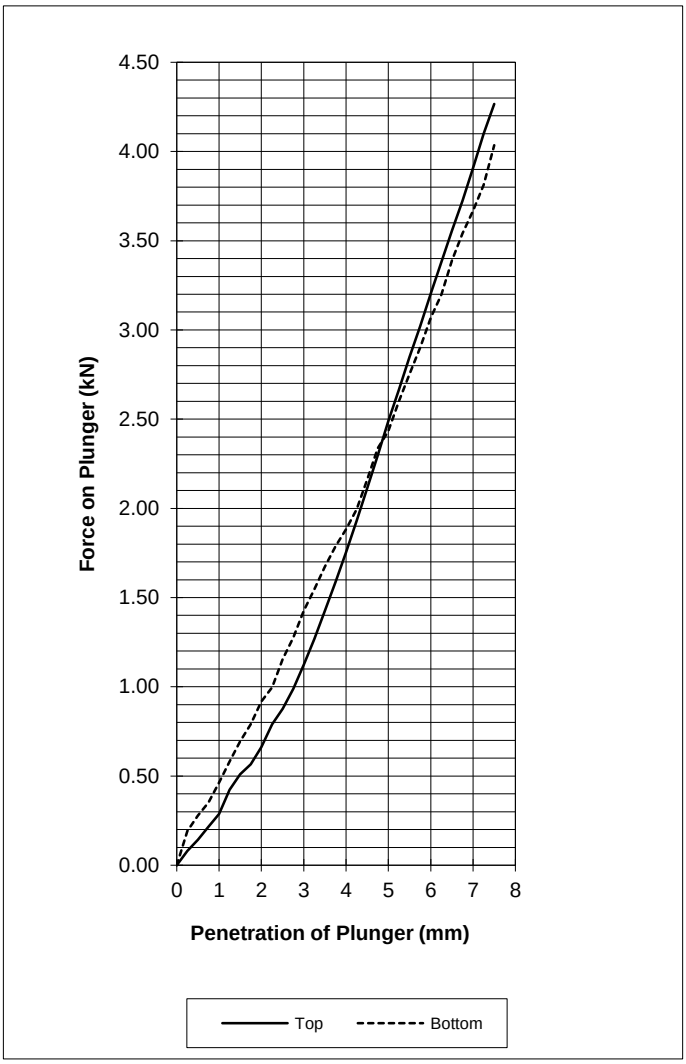
Laboratory Determination of California Bearing Ratio
B.S. 1377 (1990) : Part 4 : Clause 7

PROJECT No.:	CCG-C-23-14178	Proving ring No.	1155-8-15135
SITE:	HUYTON TOWN CENTRE	Division interval	0.0079745 kN/division
CLIENT:	GENR8 / BURO HAPPOLD / KMBC	Surcharge	2 kg
BH / TP :	TP01 DEPTH: 0.4 m	Seating Load	10 N

MATERIAL DESCRIPTION: Brown very gravelly silty SAND (MADE GROUND)

Mass of mould	4928 g	Depth of mould	127 mm
Mass of mould & compacted soil	9880 g	Diameter of mould	152 mm
Mass retained on 20mm sieve	17 %		
Soaked / Unsoaked	Unsoaked		

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

CBR Values: **12.0** **12.0** %

CBR result: **12** %

Mass of compacted soil	4952	g
Volume of mould	2305	cm^3
M/C of sample	10.9	%
Bulk density of compacted specimen	2.149	Mg/m^3
Dry density of compacted specimen	1.938	Mg/m^3

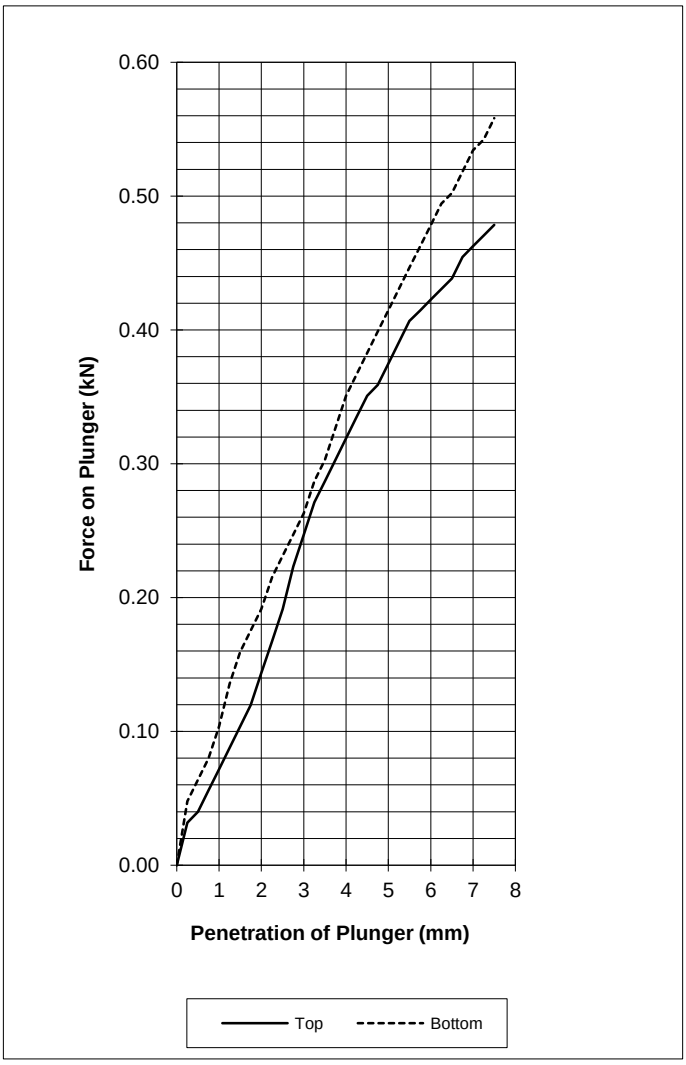
Laboratory Determination of California Bearing Ratio
B.S. 1377 (1990) : Part 4 : Clause 7

PROJECT No.:	CCG-C-23-14178	Proving ring No.	1155-8-15135
SITE:	HUYTON TOWN CENTRE	Division interval	0.0079745 kN/division
CLIENT:	GENR8 / BURO HAPPOLD / KMBC	Surcharge	2 kg
BH / TP :	TP02 DEPTH: 0.7 m	Seating Load	10 N

MATERIAL DESCRIPTION: Dark brown sandy slightly gravelly silty CLAY

Mass of mould	4928 g	Depth of mould	127 mm
Mass of mould & compacted soil	9750 g	Diameter of mould	152 mm
Mass retained on 20mm sieve	0 %		
Soaked / Unsoaked	Unsoaked		

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

CBR Values: **1.9** **2.1** %

CBR result: **2.1** %

Mass of compacted soil	4822	g
Volume of mould	2305	cm^3
M/C of sample	14.7	%
Bulk density of compacted specimen	2.092	Mg/m^3
Dry density of compacted specimen	1.824	Mg/m^3

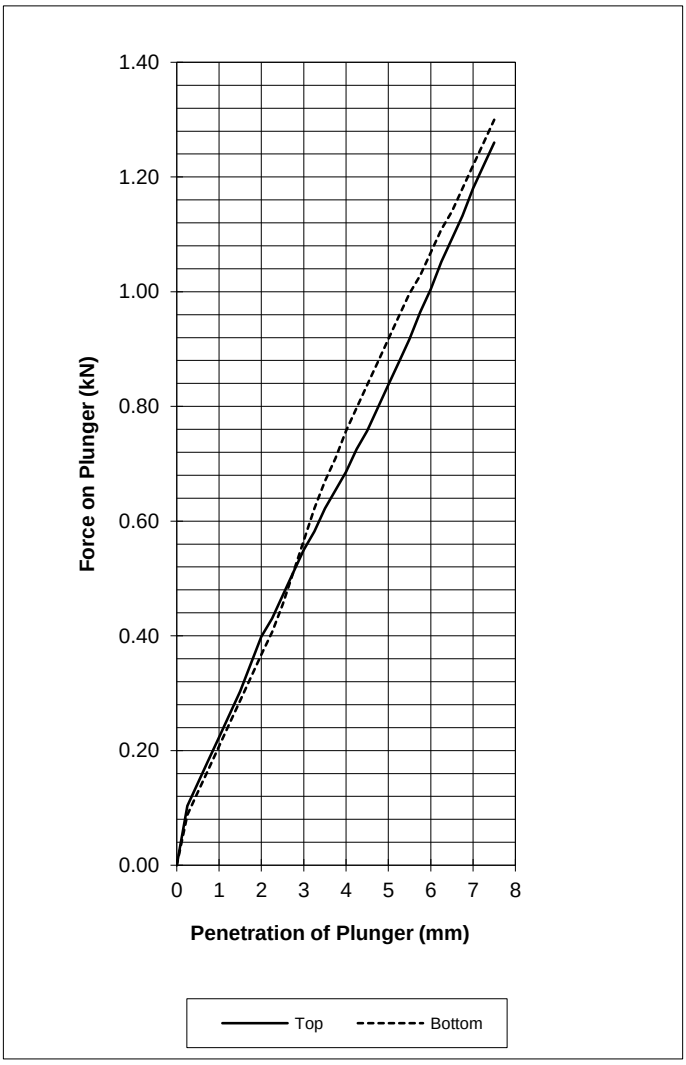
Laboratory Determination of California Bearing Ratio
B.S. 1377 (1990) : Part 4 : Clause 7

PROJECT No.:	CCG-C-23-14178	Proving ring No.	1155-8-15135
SITE:	HUYTON TOWN CENTRE	Division interval	0.0079745 kN/division
CLIENT:	GENR8 / BURO HAPPOLD / KMBC	Surcharge	2 kg
BH / TP :	TP03 DEPTH: 0.4 m	Seating Load	10 N

MATERIAL DESCRIPTION: Greyish brown very gravelly silty SAND (MADE GROUND)

Mass of mould	4928 g	Depth of mould	127 mm
Mass of mould & compacted soil	9602 g	Diameter of mould	152 mm
Mass retained on 20mm sieve	20 %		
Soaked / Unsoaked	Unsoaked		

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

CBR Values: **4.2** **4.6** %

CBR result: **4.6** %

Mass of compacted soil	4674	g
Volume of mould	2305	cm^3
M/C of sample	14.5	%
Bulk density of compacted specimen	2.028	Mg/m^3
Dry density of compacted specimen	1.771	Mg/m^3

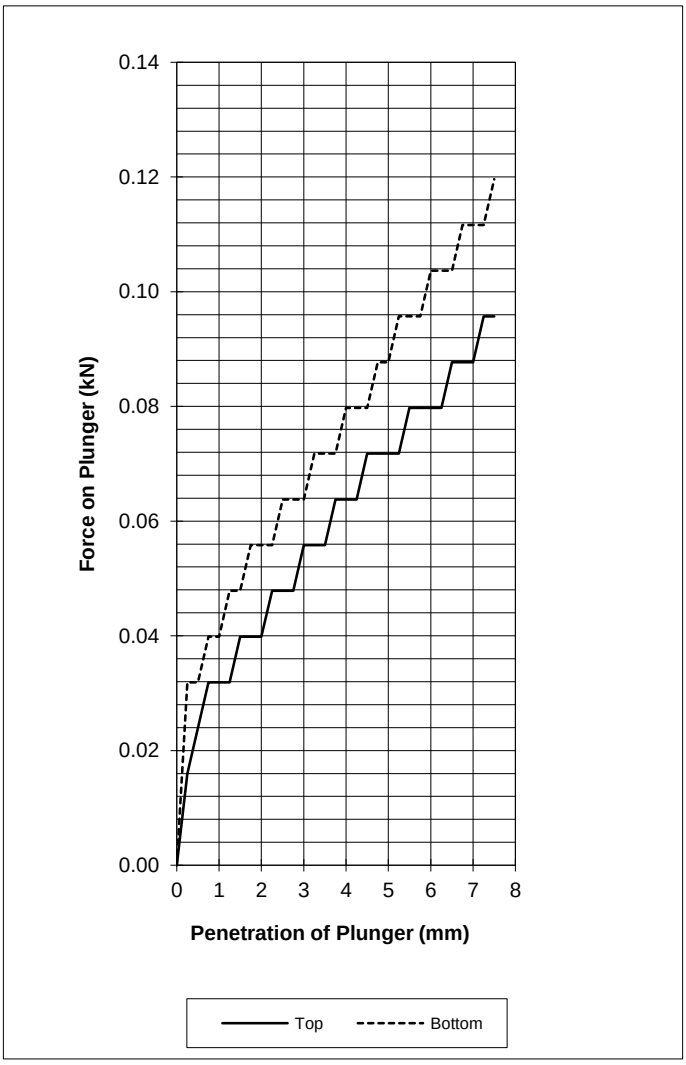
Laboratory Determination of California Bearing Ratio
B.S. 1377 (1990) : Part 4 : Clause 7

PROJECT No.:	CCG-C-23-14178	Proving ring No.	1155-8-15135
SITE:	HUYTON TOWN CENTRE	Division interval	0.0079745 kN/division
CLIENT:	GENR8 / BURO HAPPOLD / KMBC	Surcharge	2 kg
BH / TP :	TP04 DEPTH: 1.5 m	Seating Load	10 N

MATERIAL DESCRIPTION: Brown sandy slightly gravelly silty CLAY

Mass of mould	4928 g	Depth of mould	127 mm
Mass of mould & compacted soil	9616 g	Diameter of mould	152 mm
Mass retained on 20mm sieve	0 %		
Soaked / Unsoaked	Unsoaked		

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

CBR Values: **0.4** **0.5** %

CBR result: **0.5** %

Mass of compacted soil	4688	g
Volume of mould	2305	cm^3
M/C of sample	22.8	%
Bulk density of compacted specimen	2.034	Mg/m^3
Dry density of compacted specimen	1.657	Mg/m^3

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

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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.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

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	IZJ
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 SO4	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphate as SO4	%	0.005	MCERTS	-	-	-	-	-
Water Soluble Sulphate (Soil Equivalent)	g/kg	0.0025	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	98	-	-	1000	110
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.049	-	-	0.505	0.0527
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	49	-	-	505	52.7
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-	0.29	0.03	-	-
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-	580	60	-	-
Water Soluble SO4 (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
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

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The results included within the report relate only to the sample(s) submitted for testing.

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

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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	IZJ	ASE	SPU	IZJ	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 SO4	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphate as SO4	%	0.005	MCERTS	-	-	-	-	-
Water Soluble Sulphate (Soil Equivalent)	g/kg	0.0025	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	2500	640	-	25	39
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	1.23	0.321	-	0.0126	0.0197
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	1230	321	-	12.6	19.7
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-	-	0.016	-	-
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-	-	32	-	-
Water Soluble SO4 (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
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

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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

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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 SO4	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphate as SO4	%	0.005	MCERTS	-	-	-	-	-
Water Soluble Sulphate (Soil Equivalent)	g/kg	0.0025	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	110	380	58	59	68
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0534	0.189	0.0292	0.0295	0.0339
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	53.4	189	29.2	29.5	33.9
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	-	-	-	-	-
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
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

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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

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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 SO4	mg/kg	50	MCERTS	-	-	-	240	98
Total Sulphate as SO4	%	0.005	MCERTS	-	-	-	-	-
Water Soluble Sulphate (Soil Equivalent)	g/kg	0.0025	MCERTS	-	-	-	0.11	0.053
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	25	1300	52	110	53
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0123	0.635	0.0259	0.0558	0.0263
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	12.3	635	25.9	55.8	26.3
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	-	-	-	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	-	-
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	-	-

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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 $_{HS_1D_AL}$	mg/kg	0.1	NONE	< 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	-	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.1	NONE	< 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	-	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	< 2.0	3.3	< 2.0	-	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	< 8.0	13	< 8.0	-	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	< 8.0	51	< 8.0	-	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH_CU+HS_1D_AL}$	mg/kg	10	NONE	< 10	67	< 10	-	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.1	NONE	< 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	-	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	< 1.0	1.9	< 1.0	-	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	< 2.0	84	< 2.0	-	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	< 10	530	< 10	-	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	< 10	690	< 10	-	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH_CU+HS_1D_AR}$	mg/kg	10	NONE	< 10	1300	< 10	-	-

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

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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 SO4	mg/kg	50	MCERTS	160	310	420	-	-
Total Sulphate as SO4	%	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 SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	45	160	330	1100	100
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0225	0.0775	0.166	0.53	0.0511
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	22.5	77.5	166	530	51.1
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	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	-	-	-	-	-
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	-	-	-	-	-

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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 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH_CU+HS_1D_AL}$	mg/kg	10	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH_CU+HS_1D_AR}$	mg/kg	10	NONE	-	-	-	-	-

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

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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	-	-	-	-	-
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	-	-	-	-	-

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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 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH_CU+HS_1D_AL}$	mg/kg	10	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH_CU+HS_1D_AR}$	mg/kg	10	NONE	-	-	-	-	-

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

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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 SO4	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphate as SO4	%	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 SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	170	32	55	130	21
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0861	0.0161	0.0276	0.067	0.0106
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	86.1	16.1	27.6	67	10.6
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	0.042	< 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	-	-	-	-	-
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	-	-	-	-	-

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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 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH_CU+HS_1D_AL}$	mg/kg	10	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH_CU+HS_1D_AR}$	mg/kg	10	NONE	-	-	-	-	-

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

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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 SO4	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphate as SO4	%	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 SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	49	120	150	12	43
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0243	0.059	0.073	0.006	0.0213
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	24.3	59	73	6	21.3
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	0.007	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	-	-	-	-	-
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	-	-	-	-	-

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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 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH_CU+HS_1D_AL}$	mg/kg	10	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH_CU+HS_1D_AR}$	mg/kg	10	NONE	-	-	-	-	-

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

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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 SO4	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphate as SO4	%	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 SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	530	990	9.2	130	260
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.266	0.497	0.0046	0.0649	0.128
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	266	497	4.6	64.9	128
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	0.069	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	-	-	-	-	-
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	-	-	-	-	-

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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 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH_CU+HS_1D_AL}$	mg/kg	10	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH_CU+HS_1D_AR}$	mg/kg	10	NONE	-	-	-	-	-

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

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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 SO4	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphate as SO4	%	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 SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	23	610	480	14	15
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0113	0.306	0.24	0.0068	0.0075
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	11.3	306	240	6.8	7.5
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	0.058	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	-	-	-	-	-
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	-	-	-	-	-

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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 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH_CU+HS_1D_AL}$	mg/kg	10	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH_CU+HS_1D_AR}$	mg/kg	10	NONE	-	-	-	-	-

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

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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	-	-	-	-	-
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	-	-	-	-	-

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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 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH_CU+HS_1D_AL}$	mg/kg	10	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH_CU+HS_1D_AR}$	mg/kg	10	NONE	-	-	-	-	-

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

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The results included within the report relate only to the sample(s) submitted for testing.

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 SO4	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphate as SO4	%	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 SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	14	39	20	20	20
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0069	0.0194	0.0101	0.0102	0.0099
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	6.9	19.4	10.1	10.2	9.9
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	-	-	-	-	-
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	-	-	-	-	-

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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 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH_CU+HS_1D_AL}$	mg/kg	10	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.1	NONE	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH_CU+HS_1D_AR}$	mg/kg	10	NONE	-	-	-	-	-

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

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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 SO4	mg/kg	50	MCERTS	-
Total Sulphate as SO4	%	0.005	MCERTS	-
Water Soluble Sulphate (Soil Equivalent)	g/kg	0.0025	MCERTS	-
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	610
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.305
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	305
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	-
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

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

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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

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Combined Report - Huyton Tc
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.

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	-	-
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	-	-
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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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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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 SO4	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 NH4	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 NO3	mg/l	0.05	ISO 17025	-	2.05	0.05	-	8.68
Hardness - Total	mgCaCO3/l	1	ISO 17025	573	-	-	141	-
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	-
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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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 SO4	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 NH4	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 NO3	mg/l	0.05	ISO 17025	-	18.1	-	40.9	2.57
Hardness - Total	mgCaCO3/l	1	ISO 17025	196	-	253	-	-
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	-	-
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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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

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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	
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	-
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	-
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	-

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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 Limits		
Sampling Date	08/09/2023						
Sample ID	TP03				Inert Waste Landfill	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) EH_1D_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.

*= UKAS accredited (liquid eluate analysis only)

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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 Limits**		
Sampling Date	13/09/2023						
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) EH_1D_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.

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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 Limits		
Sampling Date	13/09/2023						
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) EH_1D_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.

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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 Limits		
Sampling Date	15/09/2023						
Sample ID	BH09				Inert Waste Landfill	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) EH_1D_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.

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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 Limits**		
Sampling Date	17/09/2023				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH08						
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) EH_1D_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						

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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						
Sample ID	WS06				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
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) EH_1D_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.

*= UKAS accredited (liquid eluate analysis only)

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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)	2824653 / 2824654				Landfill Waste Acceptance Criteria Limits		
Sampling Date	20/09/2023						
Sample ID	BH03				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
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) EH_1D_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.

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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 Limits		
Sampling Date	21/09/2023						
Sample ID	BH05						
Depth (m)	1.50				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
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) EH_1D_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.

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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				Landfill Waste Acceptance Criteria Limits		
Sampling Date	26/09/2023						
Sample ID	BH06				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 (%) **	2.2				--	--	10%
BTEX (µg/kg)** ##	< 5.0				6000	--	--
Sum of PCBs (mg/kg)**	< 0.007				1	--	--
Mineral Oil (mg/kg) EH_1D_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.

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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 Limits		
Sampling Date	28/09/2023						
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) EH_1D_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						

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

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

* 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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* 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 *
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 Wastewatern & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025

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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 SO4 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""	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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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	L073B-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	L101B-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	L073B-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 Wastewatern & 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 (diissolved) 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

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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"	L033B-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 30oC.
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

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Sample Deviation Report

Combined Report - Huyton Town Centre
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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 soi	L073B-PL	c
WS15	None Supplied	S	2859339	c	Organic matter (Auto	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

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

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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

2. the consequences of use of this document by any party with whom an agreement has not been executed.

Phase I Environmental Audits / Desk Studies

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

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

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.