SYDNEY AVENUE, MANCHESTER AIRPORT

Phase 2 Factual Geo-Environmental Investigation Report



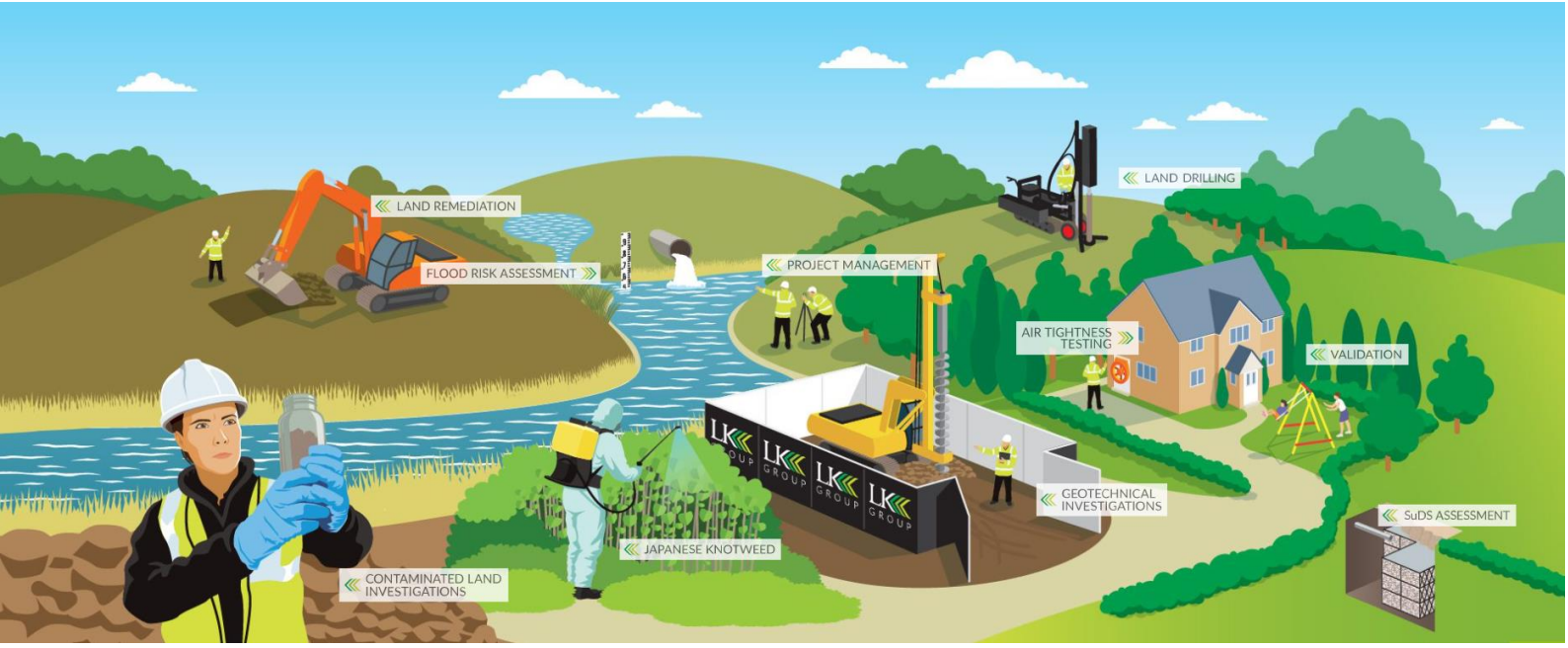
Job Number: LKC 23 1772

Date: February 2024

Client: R&M Developments Ltd

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Report Title	Phase 2 Factual Geo-Environmental Investigation Report
Job Number	LKC 23 1722
Client	R&M Developments Ltd

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Written By	JW		
Approved By	KR		

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EXECUTIVE SUMMARY

Site Details

Location	Sydney Avenue, Manchester Airport, WA15 8UL. Centred at approximate National Grid Reference 381083E, 386076N.
Topography	Ground level of the site gently inclining towards the east/northeast, with elevations ranging from 64 to 68 AOD. 2.0m high landscaping berm located above the airport's Staff West Car Park.
Current Site Use	Manchester Airport infrastructure, including roads, footpaths, carparking and soft landscaping.
Proposed Development	Proposed works encompass the design and construction of a Link Road from West End Roundabout to Thorley Lane, as well as improvements to Thorley Lane and Runger Lane including the closure of Sydney Avenue.

Ground Investigation Work Undertaken

Date of Investigation:	19th December 2023 - 18th of January 2024 (non-consecutive).
Intrusive Investigation Work Undertaken:	2no. sonic rotary boreholes. 7no. window sample boreholes. 5no. machine excavated trial pits. 9no. hand dug pits. 8no. Dynamic cone penetration tests. Contamination and geotechnical testing.

Ground Conditions

Made Ground	Ground level to 2.50mbgl at raised window sample locations, and all other locations between 0.00-1.20mbgl.
Superficial	Natural strata comprised predominantly clay, and to a maximum depth of 2.50mbgl at raised window sample locations and 3.80mbgl in all other locations.
Groundwater	No groundwater strikes observed.
Obstructions	Obstructions noted at 2no. Hand Pit locations and 3no. Trial Pit locations.
Visual and Olfactory Contamination	No visual / olfactory evidence of contamination was observed, except for anthropogenics within the made ground.

TABLE OF CONTENTS

1. INTRODUCTION 4
1.1. Background 4
2. GROUND INVESTIGATION 5
2.1. Site Investigation Design and Methodology 5
2.2. Sampling Protocol 5
2.3. In-situ Testing 6
3. GROUND CONDITIONS 7
3.1. Geology 7
3.2. Groundwater 7

FIGURES

Figure 1 – Site Location and Boundary Plan
Figure 2 – Site Investigation Location Plan

APPENDICES

Appendix A – Profile Logs
Appendix B – Certificates of Analysis (Soil)
Appendix C – Certificates of Analysis (Geotechnical)
Appendix E – Site Photograph Records
Appendix F – References

1. Introduction

1.1. Background

LK Consult Ltd (LKC) has been commissioned to carry out a Phase 2 Geo-Environmental Investigation for Sydney Avenue, Manchester Airport. The investigation was undertaken in support of new road design.

This investigation has been undertaken to confirm the ground conditions below the site and to allow a contamination and geotechnical assessment to be undertaken.

A summary of the site details is presented in Table 1-1. Figure 1 indicates the site location and boundary plan.

Location	Sydney Avenue, Manchester Airport, WA15 8UL. The site is approximately centred at approximate National Grid Reference 381083E, 386076N.
Topography	Ground level of the site gently inclining towards the east/northeast, with elevations ranging from 64 to 68 AOD. Between Thorley Lane, the northern boundary of the Manchester Airport West Staff West Car Park, there is an approximately 2.0m high landscaping berm, heavily vegetated with trees and bushes, with a public footpath running near its crest. The footpath can be accessed through the steps from both, Thorley Lane and Staff Car Park. The berm's width varies between approximately 10m and 20m.
Current Site Use	Site includes Manchester Airport infrastructure, including roads, footpaths, carparking and soft landscaping
Proposed Development	Proposed works encompass the design and construction of a Link Road from West End Roundabout to Thorley Lane, as well as improvements to Thorley Lane and Runger Lane including the closure of Sydney Avenue.

Table 1-1: Summary of site details.

2. Ground Investigation

2.1. Site Investigation Design and Methodology

The investigation was carried out, non-consecutively, between the 19th of December 2023 and the 18th of January 2024 and comprised the following:

- 2no. sonic rotary boreholes.
- 7no. window sample boreholes.
- 5no. machine excavated trial pits.
- 9no. hand dug pits.
- 8no. Dynamic cone penetration tests.

All site investigation locations are shown in Figure 2.

The locations were chosen by Jacobs to allow adequate assessment of ground conditions across the site as well as target areas of concern, within the relevant areas as described in their specification (ref. MT2RSYDN-MAN.LG.OO.RD-JAC-L-SP-XX-001 Rev.0), table S2, dated 23rd November 2023.

All profile logs are provided in Appendix A and are in line with BS14688-1[1] and BS5930[2].

2.2. Sampling Protocol

2.2.1. Soil Sampling (Contamination)

Sampling was undertaken in general accordance with the Jacobs specification.

Soil was collected for onsite testing for total volatile organic compounds (TVOCs) using a photoionisation detector (PID) fitted with a 10.6eV lamp and moisture trap. A plastic zip bag was half filled with soil allowing a suitably sized headspace. The bag was sealed and stored for at least 20 minutes before being tested. Results of the PID readings are presented on the profile logs (Appendix A). The on-site monitoring was carried out in line CIRIA C665[3] to aid in screening samples for volatile analysis.

Soil samples of approximately 500g were recovered in amber jars and plastic tubs. All the samples were sent to DETS laboratory for chemical testing.

Many of the contamination tests are UKAS or MCERTS accredited and further details are given in the Certificate of Analysis presented in Appendix C. Table 2-2 shows the soil testing undertaken.

Testing	No. Samples
LKC Suite 1 (Suite E1)	31
VOC Suite (Suite E2)	22
SVOC Suite (Suite E3)	3
LKC Suite 4 Leachate (Suite E4)	19

Table 2-1: Summary of Soil Testing.

Notes:

If asbestos present during screen identification and quantification will be undertaken.

2.2.2. Soil Sampling (Geotechnical)

Soil samples taken during the investigation were collected in tubs and bulk bags and sent to Murray Rix Laboratories / DETS for geotechnical testing, or if required undertaken in house.

Many of the tests are UKAS accredited and further details are given in the laboratory report presented in Appendix D. Table 2-3 shows the geotechnical testing undertaken.

Testing	No. Samples
Atterberg Limits	33
Moisture Content	33
Particle Size Distribution	27
BRE Suite D	12
Odometer	1
Single Stage Triaxial	4

Table 2-2: Summary of Geotechnical Testing Undertaken.

2.3. In-situ Testing

2.3.1. Geotechnical Testing

In-situ geotechnical tests were performed in the boreholes to further characterise the sub-soil conditions. The following tests were undertaken:

- Standard Penetration Tests (SPTs) were performed in the window sample boreholes at 1m intervals and sonic boreholes at appropriate depths chosen by the on-site engineer in consultation with Jacobs.
- Shear vane tests (giving undrained shear strength) were performed in the handpits and trial pits.

3. Ground Conditions

3.1. Geology

The ground conditions beneath the site are summarised below. Window sample descriptions are differentiated due to the raised area in which they were undertaken. Logs are provided in Appendix B.

3.1.1. Made Ground

Made ground was recorded in all window sample locations between 0.00-2.50mbgl, and all other locations between 0.00-1.20mbgl.

The made ground comprised horizons of tarmacadam, concrete, both cohesive and granular strata with anthropogenic material including clinker, ash, brick, plastic, concrete and metal. Other matierials noted within the made ground strata include limestone, sandstone, quartzite and mudstone.

3.1.2. Natural Strata

Superficial strata was observed from to a maximum depth of 2.50mbgl in the window sample locations and 3.80mbgl in all other locations. Natural strata comprised predominantly clay, with horizons of gravel, sand and silt. Minor cosntiuents within the strata include quartzite, mudstone and sandstone, quartzite and siltstone.

3.1.3. Solid Strata

Solid strata of mudstone was observed in all window sample locations at depths of 2.10-4.34mbgl. Mudstone bedrock was also noted in TP01B, TP02, BH01 and BH02 at depths of 1.80-3.18mbgl. These locations were terminated on refusal at bedrock.

3.1.4. Contamination

Other than the anthropogenic material encountered in the made ground (as described above), no visual / olfactory evidence of contamination was observed.

The PID recorded a maximum of 4.3ppm TVOC in the samples.

3.1.5. Obstructions

Other than bedrock (mudstone), the following obstructions were encountered:

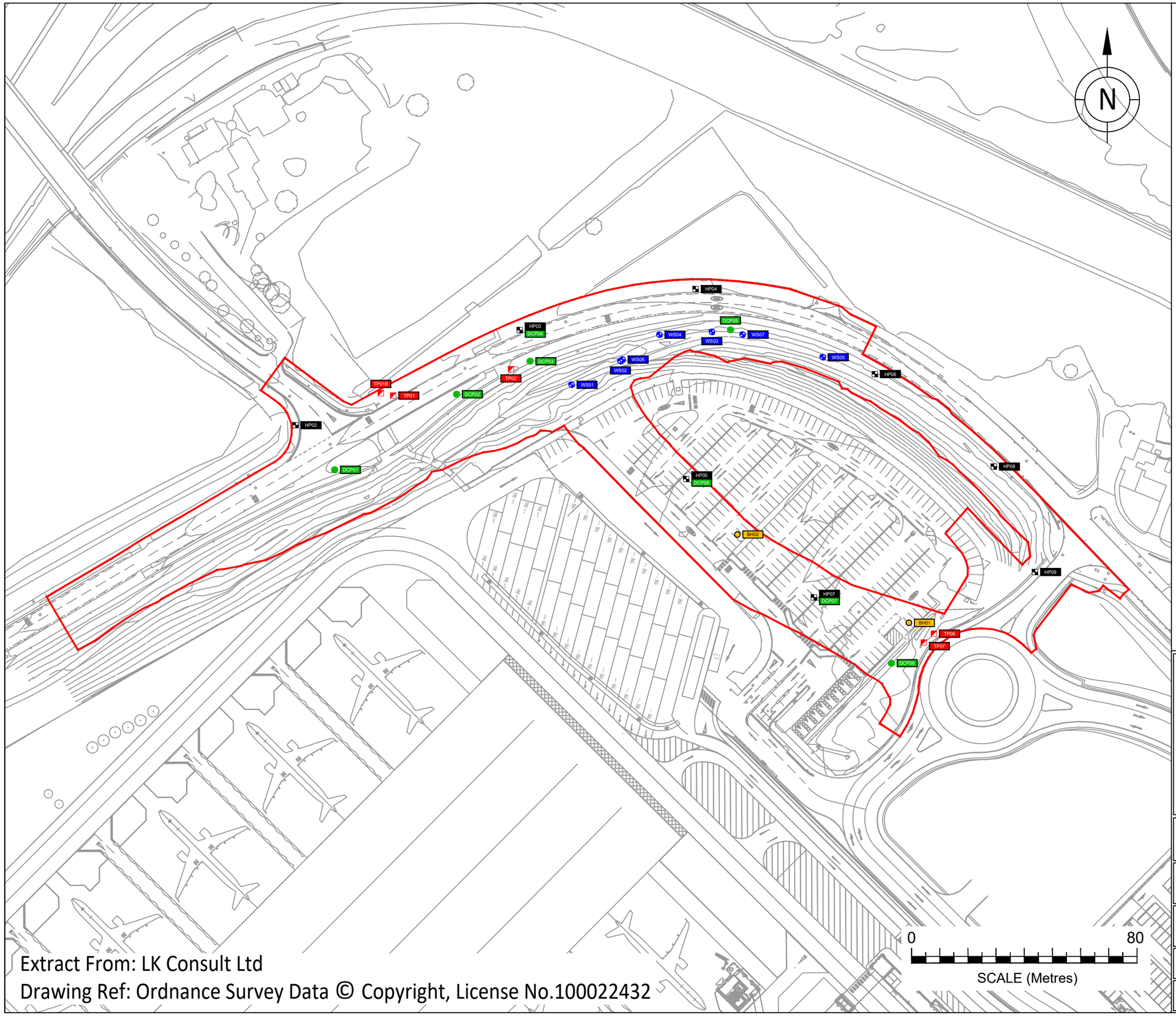
- HP01 – 0.60mbgl, unknown service.
- HP04 – 0.70mbgl, concrete slab.
- TP01 – 0.46mbgl, electricity service.
- TP06 – 1.10mbgl, made ground.
- TP07 – 1.20mbgl, made ground.

3.2. Groundwater

3.2.1. Groundwater Levels

No groundwater strikes were observed.

Figure 1 – Site Investigation Location Plan



KEY

- Site Boundary
- Window Sample Borehole (WS)
- Trial Pit (TP)
- Hand Dug Trial Pit (HP)
- Borehole (BH)
- Dynamic Cone Penetrometer Hole (DCP)

Sampling Locations and features annotated by LK Consult Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information.

LK CONSULT LIMITED

Client: R&M Developments Ltd

Site: Sydney Avenue, Manchester Airport

Title: Site Investigation Location Plan

Job No.:	Scale (See Scale Bar):	Figure:	Revision:
LKC 23 1722	See Scale Bar	1	

Drawn By:	Checked By:	Drawn:
AC	JW	Feb 2024

Appendix A – Profile Logs

Sonic Borehole Log

Location Number: **BH01**

Project Name: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 09/01/2024
Project ID:LKC 23 1722	Contractor: R&M Developments	Co-ords: E381121.45 N386036.16

Level	Logged By	Scale	Page Number
67.78m AoD	JW	1:25	Sheet 1 of 1

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
		0.10		TARMACADAM	67.68
0.20	D			MADE GROUND: Golden brown sandy slightly silty GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising limestone. Probable sub-base.	
0.20	ES	0.25			67.53
0.20	PID=0.2ppm			MADE GROUND: Dark grey sandy silty GRAVEL with frequent tarmacadam fragments. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising limestone.	
0.40	D				
0.40	ES	0.48			67.30
0.40	PID=0.4ppm			Firm to stiff consistency medium strength brown with grey mottling gravelly slightly sandy silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone and quartzite.	
0.60	D	0.65			67.13
0.60	ES				
0.60	SV=42.00kPa				
0.60	PID=0.2ppm			Firm consistency medium strength brown slightly gravelly slightly sandy silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone.	
1.00	SV=64.00kPa				1
1.20	C				
1.20	D				
1.20 - 1.50	ES				
1.20	PP=73.6kPa				
1.20	PID=0.2ppm				
1.50 - 2.00	U				
1.50	PP=54.0kPa				
		1.80		Weathered grey MUDSTONE. Recovered as a slightly clayey sandy GRAVEL. Sand is fine to coarse, Gravel is fine to coarse, subangular to subrounded, comprising sandstone and mudstone. Increase in gravel content with depth.	65.98
2.00	C				2
2.00	D				
2.00 - 3.00	SPT				
2.00	50 (25 for 115mm/50 for 190mm)				
2.20	PP=166.8kPa				
3.00	SPT				3
3.00	50 (25 for 30mm/50 for 10mm)	3.04		End of Borehole at 3.04m	64.74
					4
					5

Hole Diameter		Casing Diameter		Water Strike Details		Chiselling		
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	Time Elapsed (mins)	Depth Water (m)	Depth Top (m)	Depth Base (m)	Duration (hh:mm)

Remarks:
SPT refused at 3.04mbgl.

Sonic Borehole Log

Location Number: **BH02**

Project Name: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 09/01/2024
Project ID:LKC 23 1722	Contractor: R&M Developments	Co-ords: E381060.54 N386067.50

Level	Logged By	Scale	Page Number
67.16m AoD	JW	1:25	Sheet 1 of 1

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
		0.10		TARMACADAM.	67.06
0.20	D			MADE GROUND: Golden brown sandy slightly silty GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising limestone. Probable sub-base.	
0.20	ES	0.30			66.86
0.20	PID=0.2ppm			Stiff consistency medium strength brown gravelly CLAY. Gravel is fine to coarse, subangular to subrounded comprising quartzite and sandstone.	
0.40	D				
0.40	ES	0.50		95kpa	66.66
0.40	SV=48.00kPa			Brown slightly gravelly slightly sandy silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone and quartzite.	
0.40	PID=0.2ppm				
0.60	D	0.70		Stiff consistency medium strength dark brown with grey mottling slightly gravelly sandy silty CLAY. Gravel is fine to coarse, subangular to subrounded comprising sandstone and quartzite.	66.46
0.60	ES				
0.60	PID=0.3ppm				
1.00	D				
1.00	ES				
1.00	SV=82.00kPa				
1.00	PID=0.1ppm				
1.20 - 1.50	C				
1.20	PP=93.2kPa	1.35		Very soft to very stiff consistency extremely low to very high strength brown slightly gravelly sandy silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone and quartzite.	65.81
1.40	PP=44.1kPa			Firm consistency medium strength at 1.35-2.00mbgl.	
1.50 - 2.00	U			Very soft consistency extremely low strength and damp at 2.00-2.30mbgl.	
				Stiff to very stiff consistency medium to very high strength at 2.30-2.60mbgl.	
2.00	C				
2.00 - 3.00	D				
2.00	PP=4.9kPa				
2.35	PP=68.7kPa				
2.55	PP=157.0kPa				
		2.60		Weathered brown MUDSTONE. Recovered as a slightly clayey sandy GRAVEL. Sand is fine to coarse, Gravel is fine to coarse, subangular to subrounded, comprising sandstone and mudstone. Increase in gravel content with depth.	64.56
3.00	50 (25 for 145mm/50 for 35mm)				
		3.18		End of Borehole at 3.18m	63.98

Hole Diameter		Casing Diameter		Water Strike Details		Chiselling		
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	Time Elapsed (mins)	Depth Water (m)	Depth Top (m)	Depth Base (m)	Duration (hh:mm)

Remarks:
SPT refused at 3.18mbgl.

Window Sample Borehole Log

Location Number: **WS01**

Project Name: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 17/01/2024
Project No. : LKC 23 1722	Contractor: D&I Drilling	Co-ords: E381001.65 N386120.63

Level	Logged By	Scale	Page Number
68.39m AoD	JW	1:25	Sheet 1 of 1

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
0.10 0.10 0.10	D ES PID=4.3ppm	0.15		MADE GROUND: Light yellow sandy slightly silty GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising limestone. Underlain by fabric membrane.	68.24
0.50 0.50 0.50 0.65	D ES PID=1.5ppm SV=128.00kPa	0.60		MADE GROUND: Brown slightly gravelly silty clayey SAND. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone and quartzite.	67.79
1.00 1.00 1.00 1.00 1.20 1.20 - 1.65	D ES SV=78.00kPa PID=0.3ppm SPT N=15 (4,3/3,4,4,4)			MADE GROUND: Stiff consistency brown slightly gravelly sandy silty CLAY with occasional coal fragments and rare sandstone cobbles. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone. Cobbles are subangular to subrounded. Likely reworked material.	
1.70 1.80 1.80 1.80 2.00 2.00 2.00 - 2.45	D ES PP=78.5kPa PID=0.2ppm D SPT N=9 (3,2/2,2,2,3)				
		2.30			66.09
2.40 2.40 2.50	ES PID=0.2ppm PP=88.3kPa	2.40		Organic dark grey sandy SILT with occasional rootlets. Sand is fine to coarse. Moderate organic odour.	65.99
2.80	D			Stiff to very stiff consistency high to very high strength brown with grey mottling slightly gravelly slightly sandy slightly silty CLAY with occasional sand lenses. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone. Very stiff consistency at 2.80-3.50mbgl. Strata not sandy at 3.10-3.70mbgl.	
3.00 3.00 3.00 - 3.45	D PP=206.0kPa N=16 (3,3/3,3,4,6)				
3.50 3.50	D PP=142.2kPa				
		3.70		Extremely weak brown weathered MUDSTONE recovered at sandy GRAVEL. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising mudstone.	64.69
4.00 4.00 4.00	D SPT 50 (12,12/50 for 185mm)				
		4.34		NO RECOVERY (Dynamic Probe Test undertaken).	64.05
		4.85		End of Borehole at 4.85m	63.54

Remarks:

SPT refusal at 4.335mbgl.
DP refusal at 4.85mbgl.
Borehole dry and stable.

Window Sample Borehole Log

Location Number: **WS02**

Project Name: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 17/01/2024
Project No. : LKC 23 1722	Contractor: D&I Drilling	Co-ords: E381019.07 N386128.98

Level	Logged By	Scale	Page Number
68.09m AoD	JW	1:25	Sheet 1 of 1

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
0.10	ES	0.10		MADE GROUND: Light yellow sandy slightly silty GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising limestone. Underlain by fabric membrane.	67.99
0.10	ES				
0.10	PID=1.1ppm				
0.40	D			MADE GROUND: Brown slightly gravelly silty SAND. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone and quartzite.	
0.40	ES	0.45			67.64
0.40	PID=1.4ppm			MADE GROUND: Stiff to very stiff consistency brown slightly gravelly sandy silty CLAY with occasional coal fragments and rare sandstone cobbles. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone. Cobbles are subangular to subrounded. Likely reworked material.	
0.50	SV=140.00kPa				
1.00	D			Strata grey in colour at 1.50-1.70mbgl.	1
1.00	D				
1.00	ES			Slightly clayey SAND band at 2.05-2.30mbgl.	
1.00	SV=92.00kPa				
1.00	PID=0.1ppm				
1.20	SPT				
1.20 - 1.65	N=13 (3,4/3,4,3,3)				
1.80	D				
1.80	D				
1.90	ES				2
1.90	PID=0.2ppm				
2.00	D				
2.00	SPT				
2.00 - 2.45	N=12 (2,2/2,3,3,4)				
2.50	PID=0.1ppm	2.50		Organic dark grey slightly gravelly slightly sandy silty CLAY. Sand is fine to coarse. Moderate organic odour.	65.59
2.60	D				
2.75	ES	2.70		Stiff to very stiff consistency brown with grey mottling slightly gravelly slightly sandy CLAY with occasional sand lenses. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone.	65.39
		2.80			65.29
3.00	D			Stiff consistency organic brown and grey slightly gravelly slightly sandy silty CLAY with occasional sand lenses and rootlets. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone. Moderate organic odour.	3
3.00	SPT				
3.00 - 3.45	N=10 (2,2/2,2,2,4)				
3.50	D				
3.80	D	3.80		Extremely weak brown weathered MUDSTONE recovered at sandy GRAVEL. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising mudstone.	64.29
3.80	SPT				
3.80	50 (10,10/50 for 225mm)				4
		4.33		NO RECOVERY (Dynamic Probe Test undertaken).	63.76
		4.51		End of Borehole at 4.51m	63.58
					5

Remarks:

SPT refusal at 4.175mbgl.
DP refusal at 4.505mbgl.
Borehole dry and stable.

Window Sample Borehole Log

Location Number: **WS03**

Project Name: Sydney Avenue, Manchester Airport	Client: R&M Developments		Date: 17/01/2024
Project No. : LKC 23 1722	Contractor: D&I Drilling		Co-ords: E381051.49 N386139.36
	Level 67.65m AoD	Logged By JW	Scale 1:25	Page Number Sheet 1 of 1

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
0.10 0.10 0.10	D ES PID=0.4ppm	0.20		MADE GROUND: Dark brown and light yellow sandy silty GRAVEL. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising sandstone, quartzite and limestone.	67.45
0.50 0.50 0.50 0.50	D ES SV=62.00kPa PID=0.3ppm			MADE GROUND: Brown slightly gravelly silty SAND. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone and quartzite. Concrete block present at 0.70mbgl, 0.10m thick. Strata very sandy at 0.70-1.30mbgl. No shear vanes undertaken.	
1.00 1.00 1.00 1.20 1.20 - 1.65	D ES PID=0.3ppm SPT N=15 (4,4/4,3,3,5)				
1.70 1.70	ES PID=0.2ppm	1.85			65.80
1.90 2.00 2.00 2.00 - 2.45	D D SPT N=9 (3,2/2,3,3,1)			Stiff to very stiff consistency brown becoming reddish brown slightly gravelly slightly sandy CLAY with occasional sand lenses. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone.	
2.50	ES				
2.90 3.00 3.00 3.00 - 3.40	D D SPT N=50 (10,15/50 for 250mm)	3.00		Extremely weak brown weathered MUDSTONE recovered at sandy GRAVEL. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising mudstone.	64.65
		3.40		NO RECOVERY (Dynamic Probe Test undertaken).	64.25
		3.86		End of Borehole at 3.86m	63.79

Remarks:

SPT refusal at 3.400mbgl.
DP refusal at 3.86mbgl.
Borehole dry and stable.

Window Sample Borehole Log

Location Number: **WS04**

Project Name: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 18/01/2024
Project No. : LKC 23 1722	Contractor: D&I Drilling	Co-ords: E381062.89 N386138.38

Level	Logged By	Scale	Page Number
67.76m AoD	JW	1:25	Sheet 1 of 1

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
0.05	ES			MADE GROUND: Light yellow sandy slightly silty GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising limestone.	
0.05	PID=0.2ppm	0.10			67.66
0.15	ES	0.20		Underlain by fabric membrane.	67.56
0.15	PID=0.4ppm			MADE GROUND: Grey slightly gravelly silty SAND. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone and quartzite.	
0.40	SV=136.00kPa				
0.50	D			MADE GROUND: Stiff consistency brown slightly gravelly slightly sandy silty CLAY with occasional brick fragments, coal fragments and rare sandstone cobbles. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone. Cobbles are subangular to subrounded. Likely reworked material.	
0.50	ES				
0.50	PID=0.2ppm				
0.90	SV=46.00kPa				
1.00	D			Frequent tarmacadam fragments present at 0.60-1.00mbgl.	
1.00	ES				
1.00	PID=0.2ppm				
1.20	SPT				
1.20 - 1.65	N=17 (3,3/3,5,5,4)				
		1.60		Stiff consistency brown with grey mottling slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone.	66.16
1.70	ES				
1.70	PID=0.1ppm				
1.80	D				
2.00	D				
2.00	SPT				
2.00 - 2.45	N=11 (2,2/2,2,3,4)				
		2.20		Extremely weak brown weathered MUDSTONE recovered as a very clayey sandy GRAVEL. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising mudstone.	65.56
2.50	D			Strata becomes less clayey with depth.	
3.00	D				
3.00	SPT				
3.00	50 (8,12/50 for 200mm)				
		3.35		NO RECOVERY (Dynamic Probe Test undertaken).	64.41
		3.70		End of Borehole at 3.70m	64.06

Remarks:

SPT refusal at 3.350mbgl.
DP refusal at 3.702mbgl.
Borehole dry and stable.

Window Sample Borehole Log

Location Number: **WS05**

Project Name: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 17/01/2024
Project No. : LKC 23 1722	Contractor: D&I Drilling	Co-ords: E381090.86 N386130.39

Level	Logged By	Scale	Page Number
70.46m AoD	JW	1:25	Sheet 1 of 1

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
0.10	ES	0.10		MADE GROUND: Light yellow sandy slightly silty GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising limestone. Underlain by fabric membrane.	70.36
0.10	PID=0.2ppm				
0.20	ES	0.30		MADE GROUND: Grey slightly gravelly silty SAND. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone and quartzite.	70.17
0.20	PID=0.3ppm				
0.40	SV=92.00kPa				
0.50	D			MADE GROUND: Stiff consistency brown slightly gravelly sandy silty CLAY with occasional brick fragments, coal fragments and rare sandstone cobbles. Frequent tarmacadam fragments at 0.60-1.00mbgl. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone. Cobbles are subangular to subrounded. Likely reworked material.	
0.50	ES				
0.50	PID=0.2ppm				
0.90	SV=66.00kPa				
1.00	ES				
1.00	PID=0.1ppm				
1.20 - 1.65	N=10 (3,2/2,2,3,3)	1.20		Stiff consistency brown with grey mottling slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone. Strata becomes greenish grey in colour at 1.60-2.10mbgl.	69.26
1.70	ES				
1.70	PID=0.1ppm				
1.80	D				
2.00	D				
2.00 - 2.45	N=14 (3,3/3,4,4,3)	2.10		Extremely weak greenish grey weathered MUDSTONE recovered at a slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising mudstone.	68.36
2.50	D				
2.90	D	2.90		Extremely weak brown weathered MUDSTONE recovered at sandy GRAVEL. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising mudstone.	67.56
2.90 - 3.30	50 (25 for 125mm/50 for 130mm)				
		3.16		NO RECOVERY (Dynamic Probe Test undertaken).	67.31
		3.35		End of Borehole at 3.35m	67.11

1 2 3 4 5

Remarks:

SPT refusal at 3.155mbgl.
DP refusal at 3.35mbgl.
Borehole dry and stable.

Window Sample Borehole Log

Location Number: **WS06**

Project Name: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 18/01/2024
Project No. : LKC 23 1722	Contractor: D&I Drilling	Co-ords: E381019.80 N386129.56
	Level: 68.35m AoD / Logged By: JW / Scale: 1:25	Page Number: Sheet 1 of 1

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
		0.10		MADE GROUND: Light yellow sandy slightly silty GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising limestone. Underlain by fabric membrane.	68.25
0.30	D	0.30		MADE GROUND: Brown slightly gravelly silty SAND. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone and quartzite.	68.05
0.30	SV=150.00kPa				
0.55	SV=62.00kPa			MADE GROUND: Stiff to very stiff consistency brown slightly gravelly sandy silty CLAY with occasional coal fragments and rare sandstone cobbles. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone. Likely reworked material.	
0.70	D				
0.95	SV=94.00kPa				
1.20	D				
1.50 - 2.00	D				
1.50 - 2.00	UT				
2.00 - 3.00	U				
		2.50		Organic dark grey sandy SILT. Sand is fine to coarse.	65.85
		2.70		Stiff to very stiff consistency brown with grey mottling slightly gravelly slightly sandy CLAY with occasional sand lenses. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone.	65.65
		2.80		Soft to stiff consistency organic brown and grey slightly gravelly slightly sandy CLAY with occasional sand lenses. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone.	65.55
3.00 - 3.80	U				
		3.70		Extremely weak brown weathered MUDSTONE recovered at sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising mudstone.	64.65
		3.80		End of Borehole at 3.80m	64.55

Remarks:

Sampler refusal at 3.80mbgl.
Borehole dry and stable.
Unable to accurately log below 1.50mbgl due to U samples undertaken (logs generally based on WS02).

Window Sample Borehole Log

Location Number: **WS07**

Project Name: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 18/01/2024
Project No. : LKC 23 1722	Contractor: D&I Drilling	Co-ords: E381062.42 N386138.43

Level	Logged By	Scale	Page Number
67.80m AoD	JW	1:25	Sheet 1 of 1

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
0.00	PID=0.2ppm			MADE GROUND: Light yellow sightly silty sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising limestone.	
0.05	PID=0.4ppm	0.10			67.70
0.15		0.20		Underlain by fabric membrane.	67.60
				MADE GROUND: Grey slightly gravelly silty SAND. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone and quartzite.	
0.40	SV=150.00kPa				
0.50	D				
0.50	PID=0.2ppm			MADE GROUND: Stiff consistency brown slightly gravelly sandy silty CLAY with occasional brick fragments, coal fragments and rare sandstone cobbles. Frequent tarmacadam fragments at 0.6 to 1.0mbgl. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone. Cobbles are subangular to subrounded. Likely reworked material.	
1.00	D				
1.00	PID=0.2ppm				
1.20 - 2.00	U				
		1.60		Stiff consistency brown with grey mottling slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone.	66.20
1.70	PID=0.1ppm				
2.00 - 2.50	UT				
		2.20		Extremely weathered brown weathered MUDSTONE recovered as a very clayey sandy GRAVEL. Strata becomes less clayey with depth.	65.60
2.50	D				
		2.60		End of Borehole at 2.60m	65.20

Remarks:

Borehole dry and stable.
Unable to accurately log below 1.20mbgl, due to U samples undertaken (logs generally based on WS04).

Trial Pit Log

Location Number: **TP01**

Project: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 19/12/2023
Project No. : LKC 23 1722	Contractor: R&M Developments	Co-ords: E380938.38 N386116.79
Equipment: 9 Tonne Tracked Excavator	Level: 66.35m AoD / Logged By: JW / Scale: 1:25	Page Number: Sheet 1 of 1

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
0.20 0.20 0.20 0.20	B D ES PID=0.2ppm	0.40		MADE GROUND: Dark brown gravelly slightly sandy SILT with frequent brick fragments, rootlets, occasional coal fragments, ash, clinker and rare plastic fragments. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising sandstone and mudstone.	65.95
		0.50		MADE GROUND: Brown slightly gravelly very sandy silty CLAY with occasional brick fragments, coal fragments, rare clinker and plastic fragments. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising sandstone and mudstone. Electricity service encountered at 0.46mbgl. Pit terminated. End of Trial Pit at 0.50m	65.85

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0



Pit Dimensions			Pit Stability
Length (m)	Width (m)	Depth (m)	Stable
1.20	0.40	0.50	

Remarks:

Machine excavated trial pit to 0.50mbgl.
Machine excavated trial pit dry.
Electricity service encountered at 0.46mbgl. Excavation terminated.

Trial Pit Log

Location Number: **TP01B**

Project: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 10/01/2024
Project No. : LKC 23 1722	Contractor: R&M Developments	Co-ords: E380933.98 N386117.65
Equipment: 9 Tonne Tracked Exavator	Level: 66.42m AoD / Logged By: JW / Scale: 1:25	Page Number: Sheet 1 of 1

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
0.20	D			MADE GROUND: Dark brown slightly gravelly sandy SILT with frequent rootlets and occasional coal fragments. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone and quartzite.	
0.20	ES	0.30			66.12
0.50	D			MADE GROUND: Dark brown sandy slightly silty GRAVEL with frequent tarmacadam fragments, brick fragments, occasional clay lenses and coal fragments. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone, quartzite and limestone.	
0.50	ES	0.55			65.87
0.70	D			Dark brown slightly gravelly slightly sandy silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone.	
0.70	ES	0.80			65.62
1.00	D			Stiff to very stiff consistency high strength light brown with grey mottling slightly gravelly slightly sandy silty CLAY with occasional sand lenses. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone.	
1.00	ES				
1.00	SV=88.00kPa				
1.50	D				
1.50	SV=84.00kPa				
1.70	D	1.70			64.72
1.70	ES			Very stiff consistency high to very high strength reddish brown with grey mottling slightly slightly gravelly sandy silty CLAY with occasional sand lenses. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone.	
1.80	SV=113.00kPa				
2.20	D				
2.20	SV=138.00kPa				
2.50	D				
2.50	SV=150.00kPa	2.55			63.87
2.60	D	2.65		Extremely weak grey and reddish brown weathered MUDSTONE recovered at sandy GRAVEL. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising mudstone.	63.77
				End of Trial Pit at 2.65m	



Pit Dimensions			Pit Stability
Length (m)	Width (m)	Depth (m)	Stable
2.10	0.40	2.65	

Remarks:

Machine excavated trial pit to 2.65mbgl.
Machine excavated trial pit dry.

Trial Pit Log

Location Number: **TP02**

Project: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 19/12/2023
Project No. : LKC 23 1722	Contractor: R&M Developments	Co-ords: E380980.17 N386126.14
Equipment: 9 tone tracked excavator	Level 66.54m AoD / Logged By JW / Scale 1:25	Page Number Sheet 1 of 1

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
0.10	D			MADE GROUND: Dark brown slightly gravelly slightly sandy SILT with frequent rootlets, occasional coal fragments and rare plastic fragments. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising sandstone and mudstone.	
0.10	ES	0.20			66.34
0.10	PID=0.2ppm				
0.30	D			MADE GROUND: Dark grey sandy GRAVEL with frequent ash and clinker. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising limestone.	
0.30	ES	0.45			66.09
0.30	PID=0.3ppm				0.5
0.50	B			Stiff to very stiff consistency high strength brown slightly gravelly sandy silty CLAY with frequent rootlets. Sand is fine to coarse. Moderate organic odour.	
0.50	D				
0.50	ES	0.70			65.84
0.50	SV=94.00kPa			Stiff to very stiff consistency medium to high strength brown slightly gravelly slightly sandy silty CLAY with occasional bands of sand below 1.20mbgl. Sand is fine to coarse.	
0.50	PID=0.3ppm				
1.00	B			Strata is friable below c. 1.80mbgl. No shear vane readings undertaken.	1.0
1.00	D				
1.00	ES				
1.00	SV=68.00kPa				
1.00	PID=0.2ppm				
1.50	SV=92.00kPa				1.5
2.00	B				2.0
2.00	D				
					2.5
		2.70			63.84
2.80	B	2.80		Extremely weak brown and grey weathered MUDSTONE recovered at sandy GRAVEL. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising mudstone.	63.74
2.80	D			End of Trial Pit at 2.80m	3.0
					3.5
					4.0
					4.5
					5.0



Pit Dimensions			Pit Stability
Length (m)	Width (m)	Depth (m)	Stable
2.20	0.45	3.50	

Remarks:

Machine excavated trial pit to 2.80mbgl.
Pit terminated due to bedrock encountered at 2.70mbgl.
Machine excavated trial pit stable.
No groundwater strikes but some minor water inflow into trial pit from sand bands within clay strata.

Trial Pit Log

Location Number: **TP06**

Project: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 10/01/2024
Project No. : LKC 23 1722	Contractor: R&M Developments	Co-ords: E381130.34 N386032.31
Equipment: 9 Tonne Tracked Excavator	Level 68.53m AoD / Logged By JW / Scale 1:25	Page Number Sheet 1 of 1

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
0.20 0.20	D ES	0.30		MADE GROUND: Brown slightly sandy silty clayey GRAVEL with occasional brick fragments, plastic fragments, concrete fragments and rare rebar. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone, quartzite and mudstone.	68.23
0.50 0.50	D ES			MADE GROUND: Brown gravelly slightly sandy CLAY with occasional brick fragments and rare wood fragments and concrete cobbles. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone and mudstone.	
0.95 0.95 1.05 1.05	D ES D ES	0.90 1.00 1.10		MADE GROUND: Golden yellow sandy slightly silty GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising limestone. Probable sub-base. MADE GROUND: Brown sandy silty GRAVEL with frequent brick fragments and rare timber fragments. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone, quartzite and limestone. Probable 6F5. End of Trial Pit at 1.10m	67.63 67.53 67.43

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0



Pit Dimensions			Pit Stability
Length (m)	Width (m)	Depth (m)	Stable
0.80	0.40	1.10	

Remarks:

Machine excavated trial pit to 1.10mbgl.
Machine excavated trial pit dry.
Refusal at 1.10mbgl on made ground (probable 6F5).

Trial Pit Log

Location Number: **TP07**

Project: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 10/01/2024
Project No. : LKC 23 1722	Contractor: R&M Developments	Co-ords: E381126.77 N386029.19
Equipment: 9 Tonne Tracked Excavator	Level 68.83m AoD / Logged By JW / Scale 1:25	Page Number Sheet 1 of 1

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
0.20 0.20	D ES	0.30		MADE GROUND: Brown gravelly slightly sandy silty CLAY with occasional brick fragments, plastic fragments, concrete fragments and rare rebar. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone, quartzite and mudstone.	68.53
0.50 0.50	D ES			MADE GROUND: Brown slightly gravelly slightly sandy silty CLAY with occasional brick fragments and rare wood. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone and mudstone.	
1.05 1.05 1.15 1.15	D ES D ES	1.00 1.10 1.20		MADE GROUND: Golden yellow sandy slightly silty GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising limestone. Probable sub-base. MADE GROUND: Brown sandy silty GRAVEL with frequent brick fragments and rare timber fragments. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone, quartzite and limestone. Probable 6F5. End of Trial Pit at 1.20m	67.83 67.73 67.63

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0



Pit Dimensions			Pit Stability
Length (m)	Width (m)	Depth (m)	Stable
0.80	0.40	1.20	

Remarks:

Machine excavated trial pit to 1.20mbgl.
Machine excavated trial pit dry.
Refusal at 1.10mbgl on made ground (probable 6F5).

Trial Pit Log

Location Number: **HP01**

Project: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 19/12/2023
Project No. : LKC 23 1722	Contractor: R&M Developments	Co-ords: E386106.29 N386045.69
Equipment: Hand Digging Tools	Level 65.40m AoD / Logged By LGD / Scale 1:10 / Page Number Sheet 1 of 1	

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
0.00 0.00 0.00	D ES PID=0.1ppm			MADE GROUND: Dark brown sandy silty GRAVEL with frequent rootlets, rare brick fragments and clinker. Sand is fine to coarse. Gravel fine to coarse, sub-angular to sub-rounded comprising limestone.	
0.20 0.20 0.20	D ES PID=0.1ppm	0.20		MADE GROUND: Brown sandy clayey GRAVEL with occasional rootlets. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising limestone.	65.20
		0.60		End of Trial Pit at 0.60m	64.80

0.5
1.0
1.5
2.0



Pit Dimensions			Pit Stability
Length (m)	Width (m)	Depth (m)	Stable
0.20	0.20	0.60	

Remarks:

Hand excavated trial pit to 0.60mbgl. Trial pit terminated due to unknown service at 0.60mbgl.

Pit dry.

Trial Pit Log

Location Number: **HP02**

Project: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 19/12/2023
Project No. : LKC 23 1722	Contractor: R&M Developments	Co-ords: E380903.69 N386106.29
Equipment: Hand Digging Tools	Level 65.95m AoD / Logged By LGD / Scale 1:10	Page Number Sheet 1 of 1

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
0.00 0.00 0.00	D ES PID=0.1ppm			MADE GOUND: Dark brown slightly gravelly sandy SILT with frequent rootlets, rare brick fragments and clinker. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising sandstone.	
0.10 0.10 0.10	D ES PID=0.2ppm	0.10		MADE GROUND: Brown slightly gravelly SAND with occasional rootlets. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising sandstone.	65.85
0.15 0.15 0.15	D ES PID=0.1ppm	0.15		MADE GROUND: Dark brown greyish sandy GRAVEL with occasional rootlets, brick fragments and concrete fragments. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising limestone ballast.	65.80
0.45 0.45 0.45	D ES PID=0.1ppm	0.45		Firm consistency medium strength slightly gravely sandy silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising mudstone	65.50
0.60	SV=50.00kPa			Clay becomes light brown at 1.00mbgl.	
1.20	SV=50.00kPa	1.20		End of Trial Pit at 1.20m	64.75

0.5 1.0 1.5 2.0



Pit Dimensions			Pit Stability
Length (m)	Width (m)	Depth (m)	Stable
0.20	0.20	1.20	

Remarks:

Hand excavated trial pit to 1.20mbgl.

Pit dry.

Trial Pit Log

Location Number: **HP03**

Project: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 05/01/2024
Project No. : LKC 23 1722	Contractor: R&M Developments	Co-ords: E380983.28 N386140.02
Equipment: Hand Digging Tools	Level 66.78m AoD / Logged By JW / Scale 1:10	Page Number Sheet 1 of 1

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
0.05 0.05 0.05 0.12 0.12 0.12 0.20 0.20 0.20	D ES PID=0.0ppm D ES PID=0.0ppm D ES PID=0.1ppm			MADE GROUND: Dark brown sandy SILT with frequent rootlets. Sand is fine to coarse.	
		0.10		MADE GROUND: Brown SAND. Sand is fine to coarse.	66.68
		0.15		MADE GROUND: Dark brown sandy slightly silty GRAVEL with occasional tarmacadam fragments and rare brick fragments. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising limestone.	66.64
		0.25		MADE GROUND: Dark grey silty sandy GRAVEL with occasional ash, clinker and tarmacadam fragments. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising limestone.	66.54
0.50 0.50 0.50	D ES PID=0.3ppm				
		0.60		Firm consistency brown and grey sandy silty CLAY. Sand is fine to coarse.	66.18
1.00 1.00 1.00	D ES PID=0.1ppm				
		1.20		End of Trial Pit at 1.20m	65.58



Pit Dimensions			Pit Stability
Length (m)	Width (m)	Depth (m)	Stable
0.40	0.60	1.20	

Remarks:

Service encountered at 0.52mbgl.

Trial Pit Log

Location Number: **HP04**

Project: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 05/01/2024
Project No. : LKC 23 1722	Contractor: R&M Developments	Co-ords: E381045.72 N386154.57
Equipment: Hand Digging Tools	Level 67.39m AoD / Logged By JW / Scale 1:10 / Page Number Sheet 1 of 1	

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
0.10	D			MADE GROUND: Dark brown sandy SILT with frequent rootlets. Sand is fine to coarse.	
0.10	PID=0.0ppm	0.15			67.24
0.20	D			MADE GROUND: Brown SAND. Sand is fine to coarse.	
0.20	ES				
0.20	ES	0.25			67.14
0.20	PID=0.0ppm			MADE GROUND: Dark brown sandy slightly silty GRAVEL with occasional tarmacadam fragments and rare brick fragments. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising limestone.	
0.30	D				
0.30	ES	0.35			67.04
0.30	PID=0.0ppm			MADE GROUND: Dark grey silty sandy GRAVEL with frequent tarmacadam fragments occasional concrete fragments ash, clinker and brick fragments. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising limestone.	
0.50	D				
0.50	ES				
0.50	PID=0.2ppm				
		0.70		End of Trial Pit at 0.70m	66.69

0.5
1.0
1.5
2.0



Pit Dimensions			Pit Stability
Length (m)	Width (m)	Depth (m)	Stable
0.40	0.60	0.70	

Remarks:

Service encountered at 0.54mbgl. Refusal on concrete at 0.70mbgl.

Trial Pit Log

Location Number: **HP05**

Project: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 04/01/2024
Project No. : LKC 23 1722	Contractor: R&M Developments	Co-ords: E381042.39 N386087.20
Equipment: Hand Digging Tools	Level 67.06m AoD / Logged By JW / Scale 1:10	Page Number Sheet 1 of 1

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
				TARMACADAM	
		0.10		MADE GROUND: Golden yellow sightly silty sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising limestone. Probable sub-base.	66.96
0.20	D				
0.20	ES				
0.20	PID=0.1ppm	0.25		MADE GROUND: Grey slightly silty sandy GRAVEL with occasional ash and clinker. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising sandstone.	66.81
0.30	D				
0.30	ES				
0.30	PID=0.3ppm	0.35		Brown silty clayey SAND. Sand is fine to coarse. Psd recommended.	66.71
0.50	D				
0.50	ES				
0.50	PID=0.0ppm				
		1.10		Soft consistency greenish brown sandy silty CLAY. Sand is fine to coarse. PSD recommended.	65.96
1.15	D				
		1.20		End of Trial Pit at 1.20m	65.86



Pit Dimensions			Pit Stability
Length (m)	Width (m)	Depth (m)	Stable
0.40	0.40	1.20	

Remarks:

Hand excavated trial pit dry and stable.

Trial Pit Log

Location Number: **HP06**

Project: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 19/12/2023
Project No. : LKC 23 1722	Contractor: R&M Developments	Co-ords: E381109.37 N386124.42
Equipment: Hand Digging Tools	Level 67.40m AoD / Logged By LGD / Scale 1:10 / Page Number Sheet 1 of 1	

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
0.00 0.00 0.00	D ES PID=0.2ppm			MADE GROUND: Dark brown very gravelly sandy SILT with frequent rootlets, occasional brick fragments, coal fragments and clinker. Sand is fine to coarse. Gravel is fine to coarse sub-angular to sub-rounded comprising sandstone.	
0.20 0.20 0.20	D ES PID=0.2ppm	0.20		MADE GROUND: Dark brown sandy silty GRAVEL with frequent brick fragments, occasional clinker, coal fragments and rare tarmacadam. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising sandstone. Band of ash at 0.80mbgl to 0.90mbgl.	67.20
0.90 0.90 0.90 1.00	D ES PID=0.1ppm SV=100.00kPa	0.90		Very stiff consistency high strength brownish grey slightly gravelly sandy silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising mudstone.	66.50
		1.20		End of Trial Pit at 1.20m	66.20

0.5
1.0
1.5
2.0



Pit Dimensions			Pit Stability
Length (m)	Width (m)	Depth (m)	Stable
0.20	0.00	1.20	

Remarks:

Hand excavated trial pit to 1.20mbgl.

Pit dry

Trial Pit Log

Location Number: **HP07**

Project: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 04/01/2024
Project No. : LKC 23 1722	Contractor: R&M Developments	Co-ords: E381087.74 N386045.18
Equipment: Hand Digging Tools	Level 67.46m AoD / Logged By JW / Scale 1:10 / Page Number Sheet 1 of 1	

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
				TARMACADAM	
		0.10			67.36
0.15	D			MADE GROUND: Golden yellow sightly silty sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising limestone. Probable sub-base.	
0.15	ES	0.18			67.28
0.15	PID=0.0ppm			MADE GROUND: Greyish brown silty sandy GRAVEL with occasional ash and clinker. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising sandstone.	
0.20	D				
0.20	ES				
0.20	PID=0.1ppm				
		0.35			67.10
0.40	D			MADE GROUND: Dark brown slightly silty slightly clayey sandy GRAVEL with occasional ash, clinker and brick fragments. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone and quartzite.	
0.40	ES				
0.40	PID=0.1ppm				
					0.5
		0.70			66.76
				Soft to firm consistency grey and brown slightly gravelly sandy silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising sandstone and quartzite.	
1.00	D				
1.00	ES				
1.00	PID=0.1ppm				
					1.0
		1.20		End of Trial Pit at 1.20m	66.26
					1.5
					2.0



Pit Dimensions			Pit Stability
Length (m)	Width (m)	Depth (m)	Stable
0.40	0.40	1.20	

Remarks:

Hand excavated trial pit dry and stable.

Trial Pit Log

Location Number: **HP08**

Project: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 19/12/2023
Project No. : LKC 23 1722	Contractor: R&M Developments	Co-ords: E381151.62 N386091.61
Equipment: Hand Digging Tools	Level 67.97m AoD / Logged By LGD / Scale 1:10 / Page Number Sheet 1 of 1	

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
0.00 0.00 0.00	D ES PID=0.2ppm			MADE GROUND: Brown very gravelly sandy SILT with frequent rootlets, rare coal fragments, clinker, plastic fragments and metal fragments. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising sandstone.	
0.20 0.20 0.20	D ES PID=0.1ppm	0.20		MADE GROUND: Dark brown very gravelly sandy silty CLAY with frequent brick fragments, occasional clinker, ash, tarmacadam and rare plastic fragments. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising mudstone and sandstone.	67.77
0.30 0.30 0.30	D ES PID=0.1ppm	0.30		MADE GROUND: Dark grey very sandy GRAVEL with frequent ash, occasional brick fragments, clinker and coal fragments. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising sandstone.	67.67
0.45 0.45 0.45	D ES PID=0.0ppm	0.45		MADE GROUND: Dark brown very gravelly sandy silty CLAY with occasional concrete fragments, rare brick fragments and coal fragments. Sand is fine to coarse. Gravel is fine to coarse sub-angular to sub-rounded comprising sandstone.	67.52
1.00 1.00 1.00	D ES PID=0.0ppm	1.00		Stiff consistency high strength gravelly sandy silty CLAY with rare coal fragments. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising mudstone.	66.97
1.20	SV=96.00kPa	1.20		End of Trial Pit at 1.20m	66.77

0.5
1.0
1.5
2.0



Pit Dimensions			Pit Stability
Length (m)	Width (m)	Depth (m)	Stable
0.20	0.20	1.20	

Remarks:

Hand excavated trial pit to 1.20mbgl.

Pit dry.

Trial Pit Log

Location Number: **HP09**

Project: Sydney Avenue, Manchester Airport	Client: R&M Developments	Date: 19/12/2023
Project No. : LKC 23 1722	Contractor: R&M Developments	Co-ords: E381166.25 N386054.18
Equipment: Hand Digging Tools	Level 68.14m AoD / Logged By LGD / Scale 1:10	Page Number Sheet 1 of 1

Depth (m)	Samples / Tests	Depth (m)	Legend	Stratum Description	Level (m)
0.00 0.00	ES			MADE GROUND: Dark brown gravelly sandy SILT with frequent rootlets, rare brick fragments, coal fragments, plastic fragments, clinker. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising sandstone.	
0.20 0.20	ES	0.20		Stiff consistency high strength grey gravelly sandy silty CLAY with occasional rootlets and rare coal fragments. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising mudstone. Clay becomes brown below c. 0.50mbgl. Light brown below c. 1.00mbgl. Sand content increases with depth to 1.20mbgl.	67.94
0.50 0.50	D SV=80.00kPa				
1.00	SV=98.00kPa				
1.20	D	1.20		End of Trial Pit at 1.20m	66.94



Pit Dimensions			Pit Stability
Length (m)	Width (m)	Depth (m)	Stable
0.20	0.20	1.20	

Remarks:

Hand excavated trial pit to 1.20mbgl.

Pit dry.

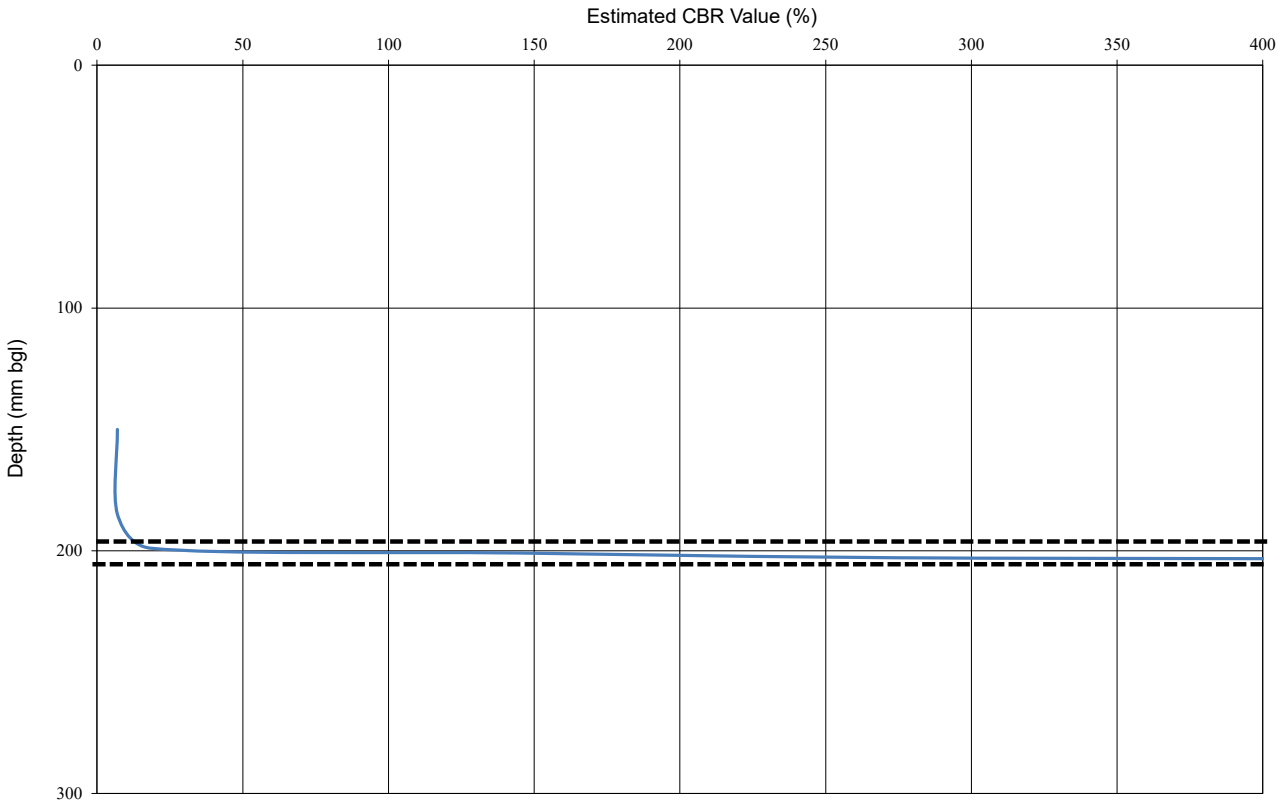
Appendix B – DCP TRL Results

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report 587(2003) and PR/INT/277/04

Site Name	Sydney Avenue, Manchester Airport	**Test Date:**	04/01/2024
Site Ref	LKC 23 1722	**Test Location:**	DCP01A
		NGR Coordinates:	380914.964E, 386086.106N
Initial Depth	150 mm	**Elevation:**	65.596m
Final Depth	203 mm	**Undertaken By:**	JW

Estimated California Bearing Ratio Graph



Start Depth (mm bgl)	Finish Depth (mm bgl)	No. of Blows	Blows Per Layer	DCP mm/Blows	Average CBR Value (%)
150	199	**2**	2	25	10
199	204	**8**	6	1	366

Comments

Refusal at 203 mm bgl.

Site Engineer:	Date:	Checked and Approved By:	Date:
Joe Walker	15/01/2024	Kris Rodway	15/01/2024

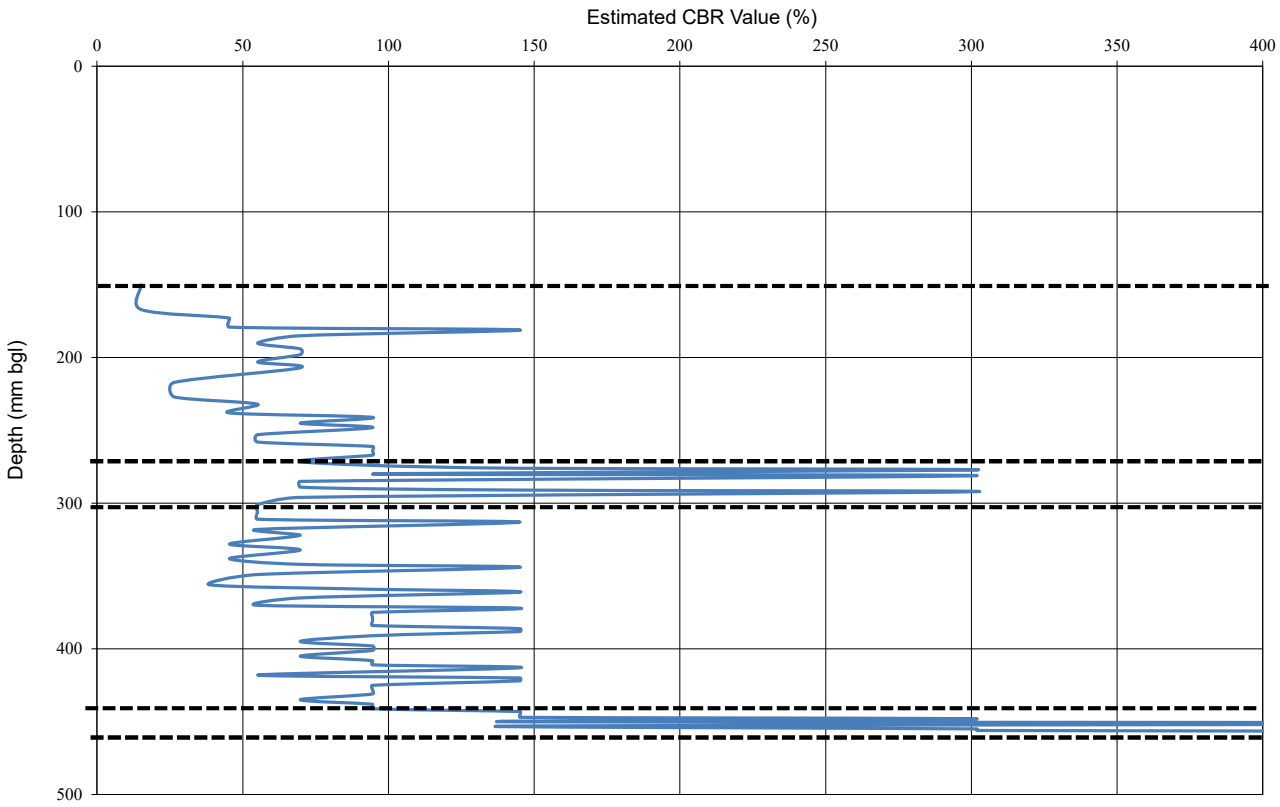
Location
DCP01A

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report 587(2003) and PR/INT/277/04

Site Name	Sydney Avenue, Manchester Airport	**Test Date:**	04/01/2024
Site Ref	LKC 23 1722	**Test Location:**	DCP01B
		NGR Coordinates:	380914.964E, 386086.106N
Initial Depth	150 mm	**Elevation:**	65.596m
Final Depth	458 mm	**Undertaken By:**	JW

Estimated California Bearing Ratio Graph



Start Depth (mm bgl)	Finish Depth (mm bgl)	No. of Blows	Blows Per Layer	DCP mm/Blows	Average CBR Value (%)
150	271	**23**	23	5	52
271	301	**34**	11	3	105
301	443	**75**	41	3	81
443	458	**90**	15	1	302

Comments

Refusal at 458 mm bgl.

Site Engineer:	Date:	Checked and Approved By:	Date:
Joe Walker	15/01/2024	Kris Rodway	15/01/2024

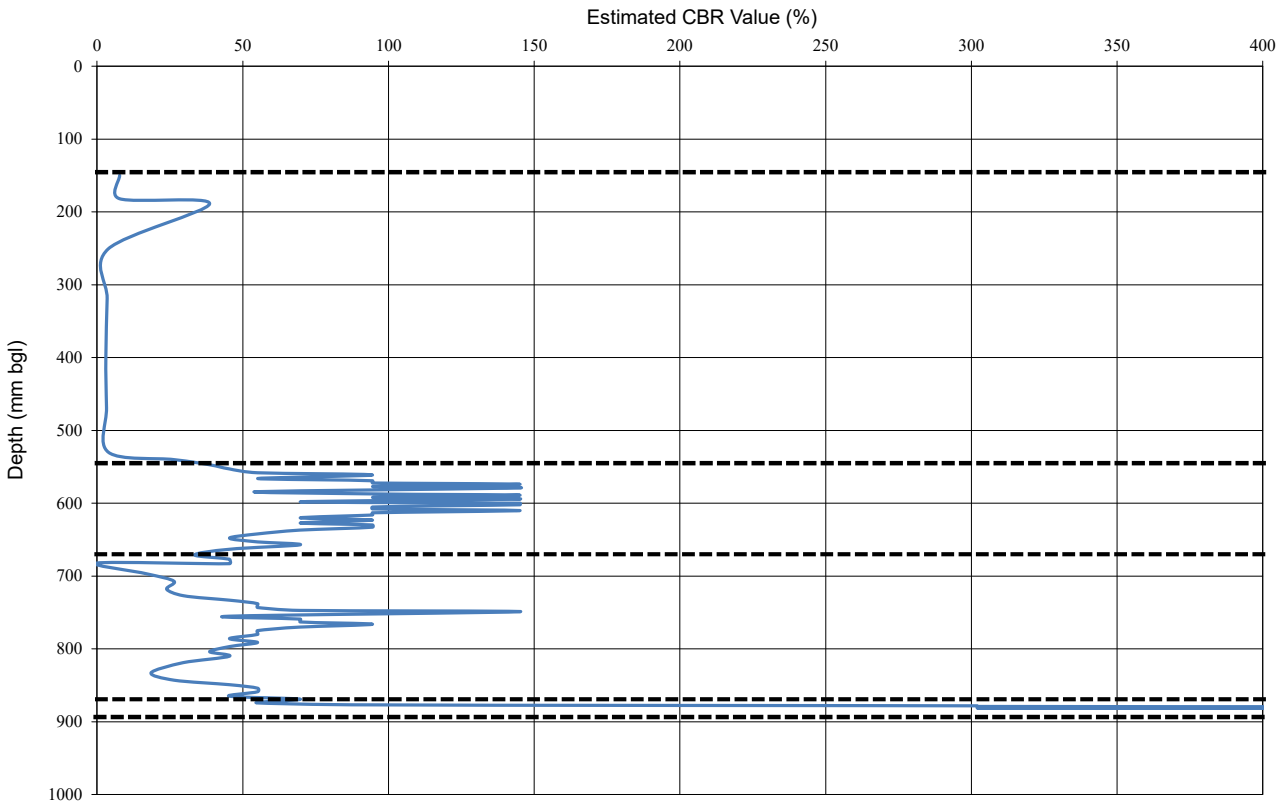
Location
DCP01B

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report 587(2003) and PR/INT/277/04

Site Name	Sydney Avenue, Manchester Airport	**Test Date:**	05/01/2024
Site Ref	LKC 23 1722	**Test Location:**	DCP01C
		NGR Coordinates:	380917.555E, 386090.445N.
Initial Depth	150 mm	**Elevation:**	66.086m
Final Depth	882 mm	**Undertaken By:**	JW

Estimated California Bearing Ratio Graph



Start Depth (mm bgl)	Finish Depth (mm bgl)	No. of Blows	Blows Per Layer	DCP mm/Blows	Average CBR Value (%)
150	547	**9**	9	44	6
547	671	**43**	34	4	77
671	874	**76**	33	6	44
874	882	**85**	9	1	342

Comments

DCP relocated from the location from DCP01A and DCP01B.
Refusal at 882 mm bgl.

Site Engineer:	Date:	Checked and Approved By:	Date:
Joe Walker	15/01/2024	Kris Rodway	15/01/2024

Location
DCP01C

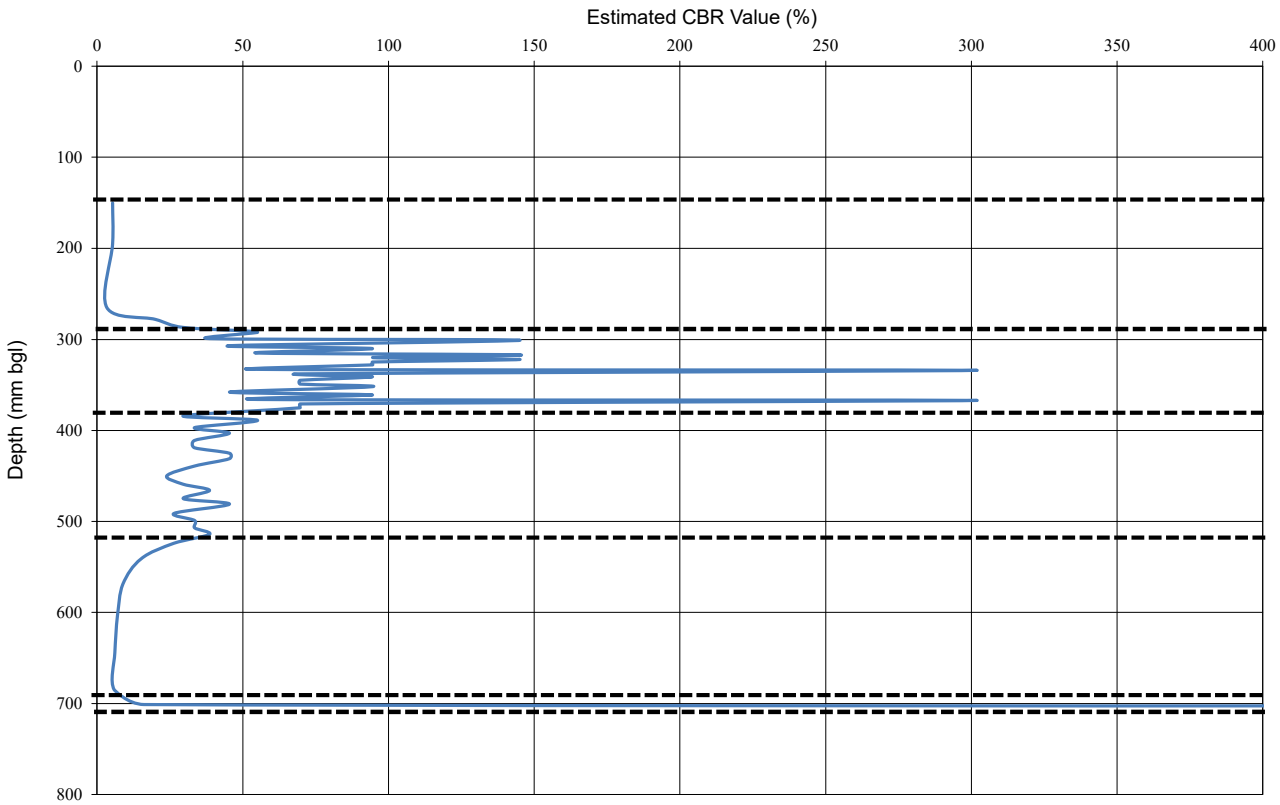
LK CONSULT

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report 587(2003) and PR/INT/277/04

Site Name	Sydney Avenue, Manchester Airport	**Test Date:**	04/01/2024
Site Ref	LKC 23 1722	**Test Location:**	DCP02A
		NGR Coordinates:	380960.866E, 386117.259N.
Initial Depth	150 mm	**Elevation:**	66.428m
Final Depth	702 mm	**Undertaken By:**	JW

Estimated California Bearing Ratio Graph



Start Depth (mm bgl)	Finish Depth (mm bgl)	No. of Blows	Blows Per Layer	DCP mm/Blows	Average CBR Value (%)
150	292	**5**	5	28	9
292	384	**29**	24	4	73
384	514	**46**	17	8	35
514	701	**53**	7	27	9
701	702	**56**	3	0	965

Comments

Refusal at 702 mm bgl.

Site Engineer:	Date:	Checked and Approved By:	Date:
Joe Walker	15/01/2024	Kris Rodway	15/01/2024

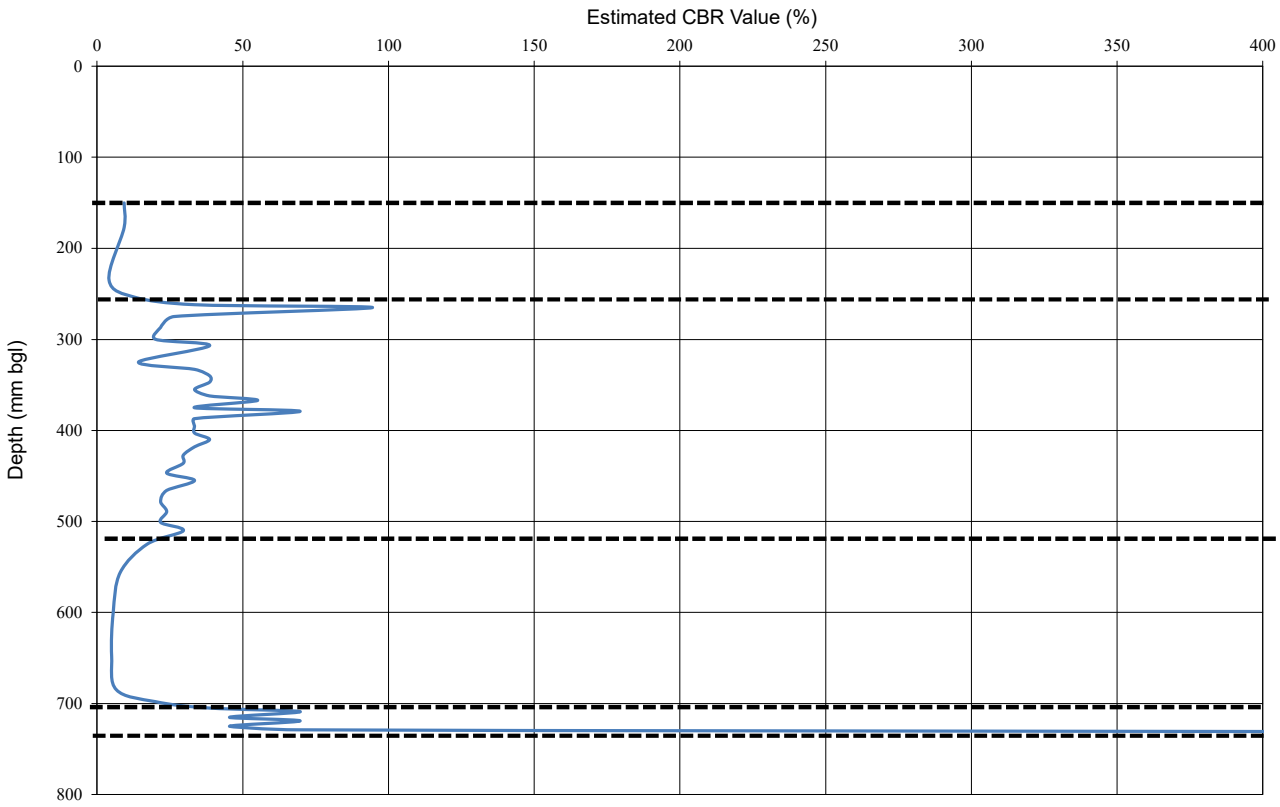
Location
DCP02A

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report 587(2003) and PR/INT/277/04

Site Name	Sydney Avenue, Manchester Airport	**Test Date:**	04/01/2024
Site Ref	LKC 23 1722	**Test Location:**	DCP02B
		NGR Coordinates:	380960.866E, 386117.259N.
Initial Depth	150 mm	**Elevation:**	66.428m
Final Depth	731 mm	**Undertaken By:**	JW

Estimated California Bearing Ratio Graph



Start Depth (mm bgl)	Finish Depth (mm bgl)	No. of Blows	Blows Per Layer	DCP mm/Blows	Average CBR Value (%)
150	262	**4**	4	28	9
262	510	**32**	28	9	30
510	715	**41**	9	23	11
715	731	**47**	6	3	107

Comments

Refusal at 731 mm bgl.

Site Engineer:	Date:	Checked and Approved By:	Date:
Joe Walker	15/01/2024	Kris Rodway	15/01/2024

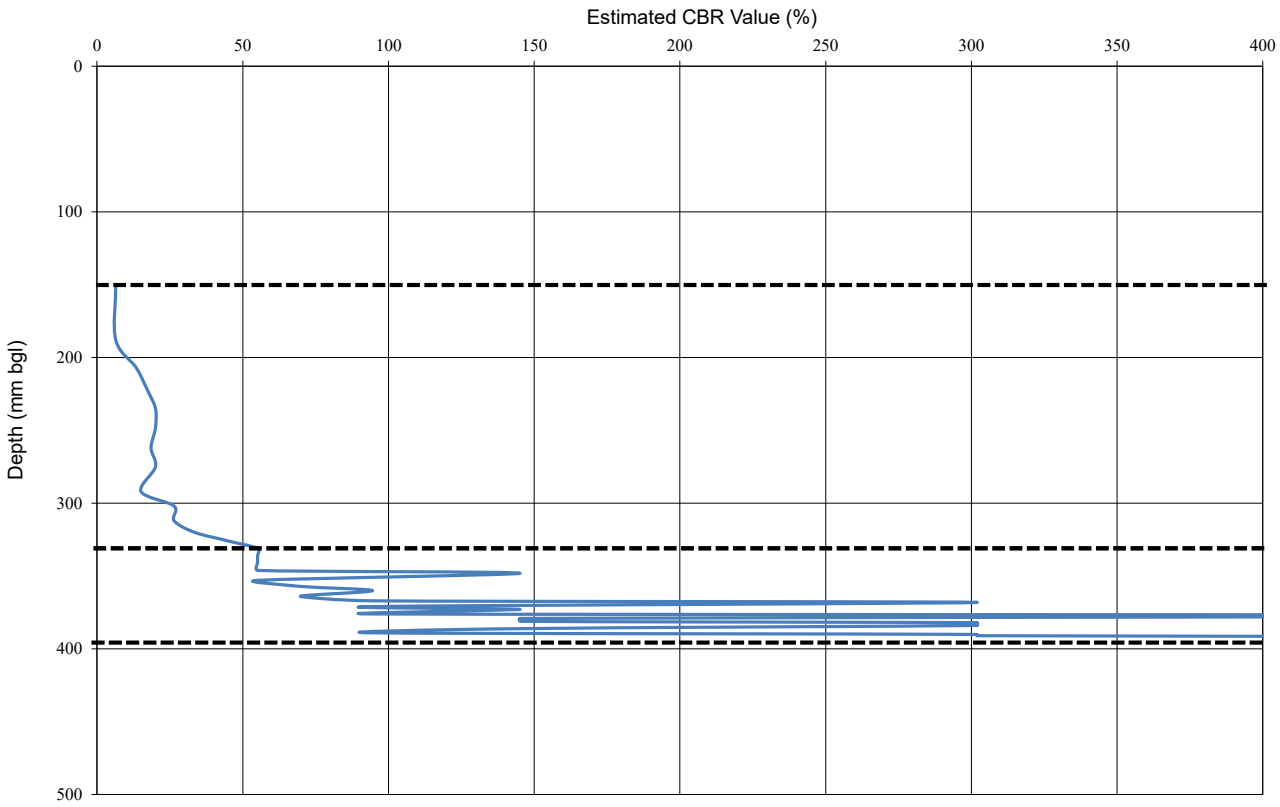
Location
DCP02B

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report 587(2003) and PR/INT/277/04

Site Name	Sydney Avenue, Manchester Airport	**Test Date:**	04/01/2024
Site Ref	LKC 23 1722	**Test Location:**	DCP03A
		NGR Coordinates:	380986.96E, 386128.981N.
Initial Depth	150 mm	**Elevation:**	66.563m
Final Depth	1370 mm	**Undertaken By:**	JW

Estimated California Bearing Ratio Graph



Start Depth (mm bgl)	Finish Depth (mm bgl)	No. of Blows	Blows Per Layer	DCP mm/Blows	Average CBR Value (%)
150	336	**14**	14	13	20
336	393	**42**	28	2	142

Comments

Refusal at 393 mm bgl.

Site Engineer:	Date:	Checked and Approved By:	Date:
Joe Walker	15/01/2024	Kris Rodway	15/01/2024

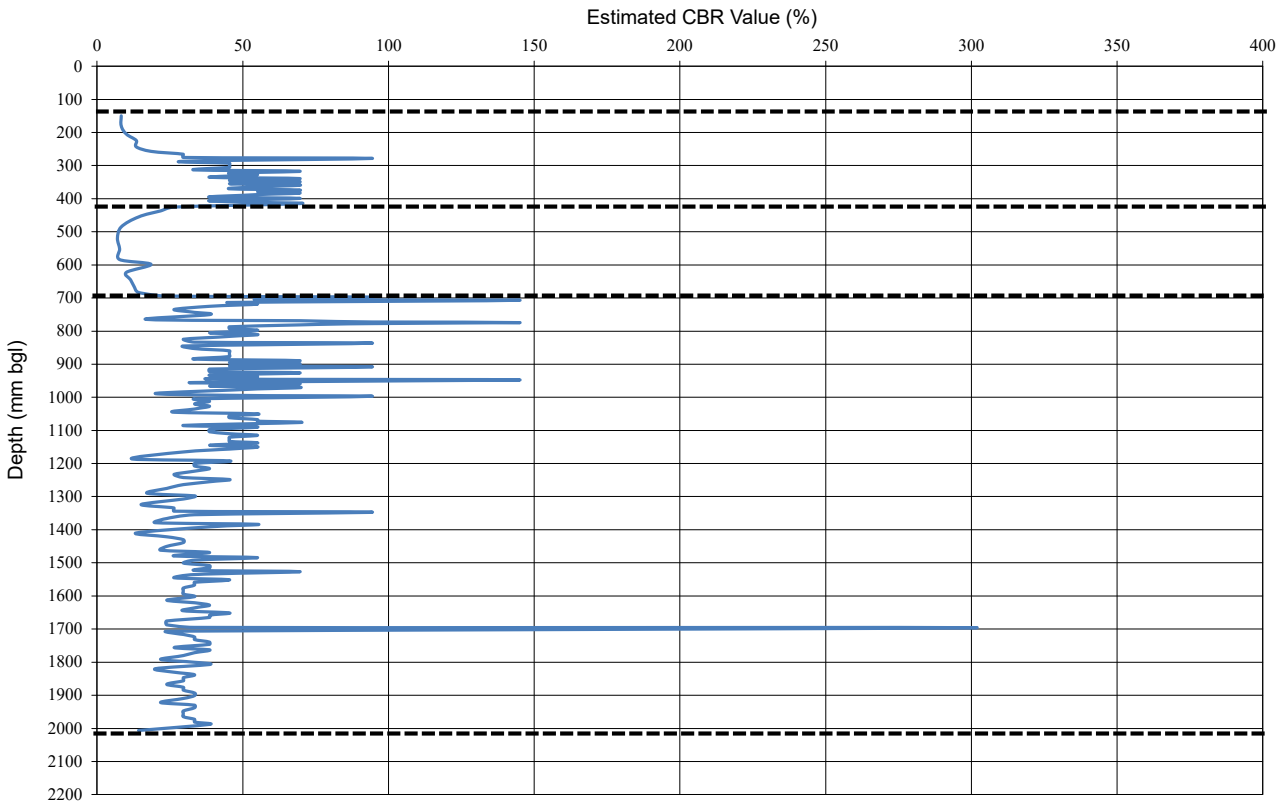
Location
DCP03A

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report 587(2003) and PR/INT/277/04

Site Name	Sydney Avenue, Manchester Airport	**Test Date:**	04/01/2024
Site Ref	LKC 23 1722	**Test Location:**	DCP03B
		NGR Coordinates:	380986.96E, 386128.981N.
Initial Depth	150 mm	**Elevation:**	66.563m
Final Depth	2006 mm	**Undertaken By:**	JW

Estimated California Bearing Ratio Graph



Start Depth (mm bgl)	Finish Depth (mm bgl)	No. of Blows	Blows Per Layer	DCP mm/Blows	Average CBR Value (%)
150	425	**34**	34	8	33
425	694	**46**	12	22	11
694	2006	**218**	172	8	35

Comments

Refusal at 1370 mm bgl.

Site Engineer:	Date:	Checked and Approved By:	Date:
Joe Walker	15/01/2024	Kris Rodway	15/01/2024

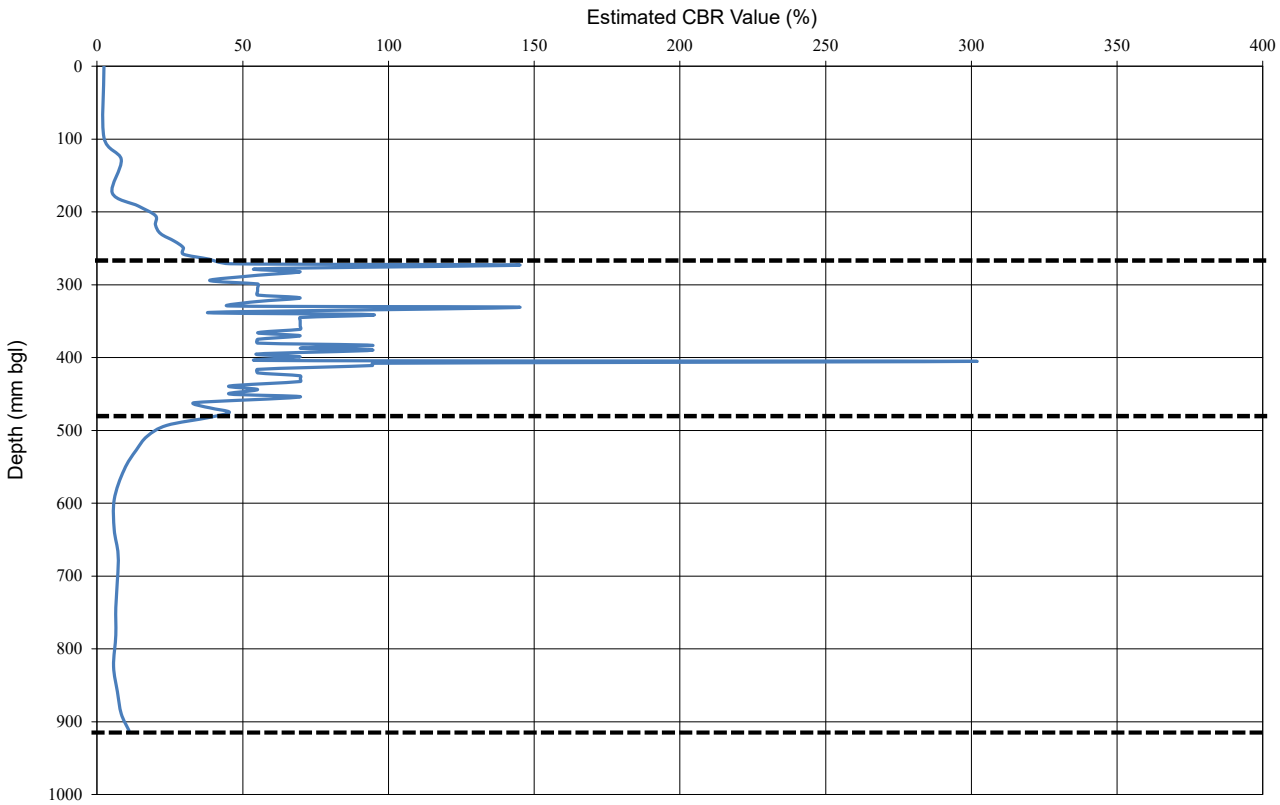
Location
DCP03B

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report 587(2003) and PR/INT/277/04

Site Name	Sydney Avenue, Manchester Airport	**Test Date:**	05/01/2024
Site Ref	LKC 23 1722	**Test Location:**	DCP04
		NGR Coordinates:	380983.278E, 386140.022N.
Initial Depth	0 mm	**Elevation:**	66.785m
Final Depth	912 mm	**Undertaken By:**	JW

Estimated California Bearing Ratio Graph



Start Depth (mm bgl)	Finish Depth (mm bgl)	No. of Blows	Blows Per Layer	DCP mm/Blows	Average CBR Value (%)
0	271	**12**	12	23	11
271	475	**57**	45	5	61
475	912	**72**	15	29	9

Comments

DCP undertaken adjacent to L-Trench at HP03.
Undertaken to a max depth of 1.00m due to the high quantitity of services present in the area.

Site Engineer:	Date:	Checked and Approved By:	Date:
Joe Walker	15/01/2024	Kris Rodway	15/01/2024

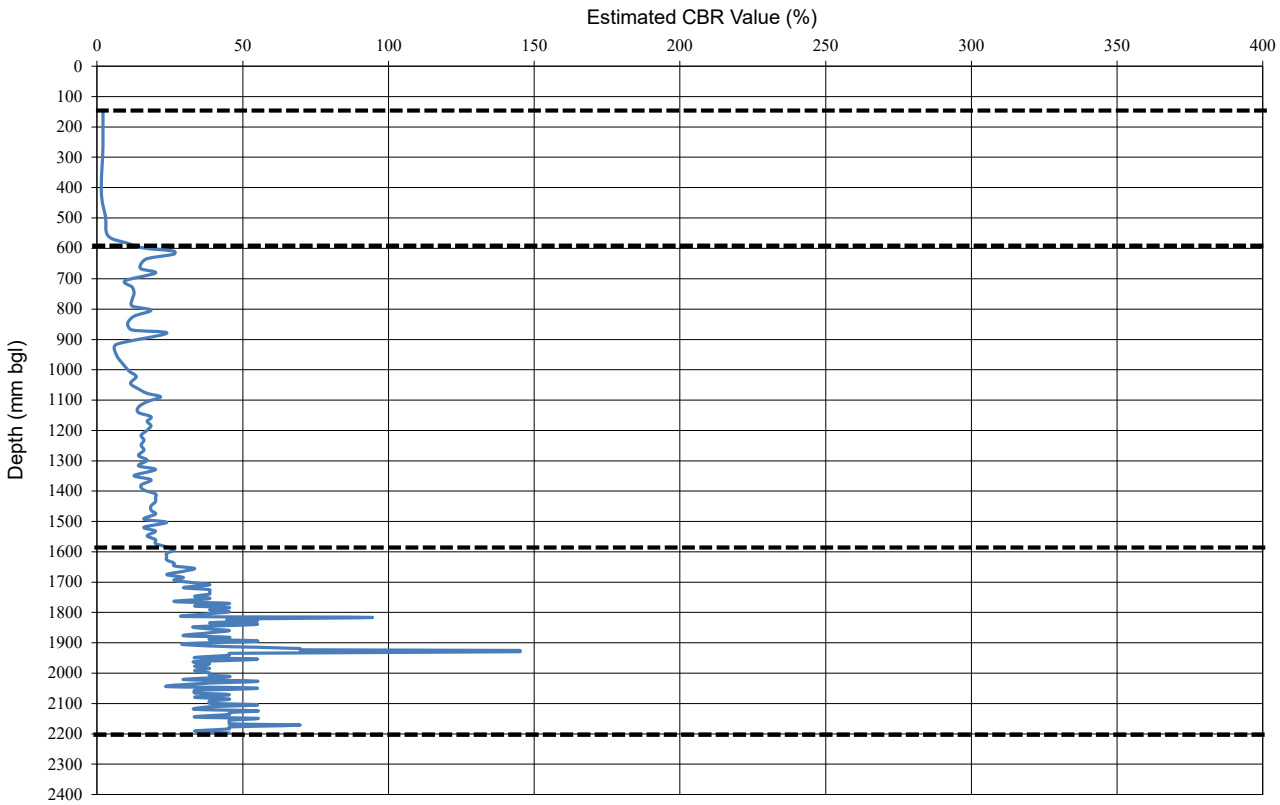
Location
DCP04

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report 587(2003) and PR/INT/277/04

Site Name	Sydney Avenue, Manchester Airport	**Test Date:**	04/01/2024
Site Ref	LKC 23 1722	**Test Location:**	DCP05
		NGR Coordinates:	381058.107E, 386140.127N.
Initial Depth	150 mm	**Elevation:**	67.484m
Final Depth	2197 mm	**Undertaken By:**	JW

Estimated California Bearing Ratio Graph



Start Depth (mm bgl)	Finish Depth (mm bgl)	No. of Blows	Blows Per Layer	DCP mm/Blows	Average CBR Value (%)
150	599	**6**	6	75	3
599	1594	**65**	59	17	15
1594	2197	**152**	87	7	39

Comments

Site Engineer:	Date:	Checked and Approved By:	Date:
Joe Walker	15/01/2024	Kris Rodway	15/01/2024

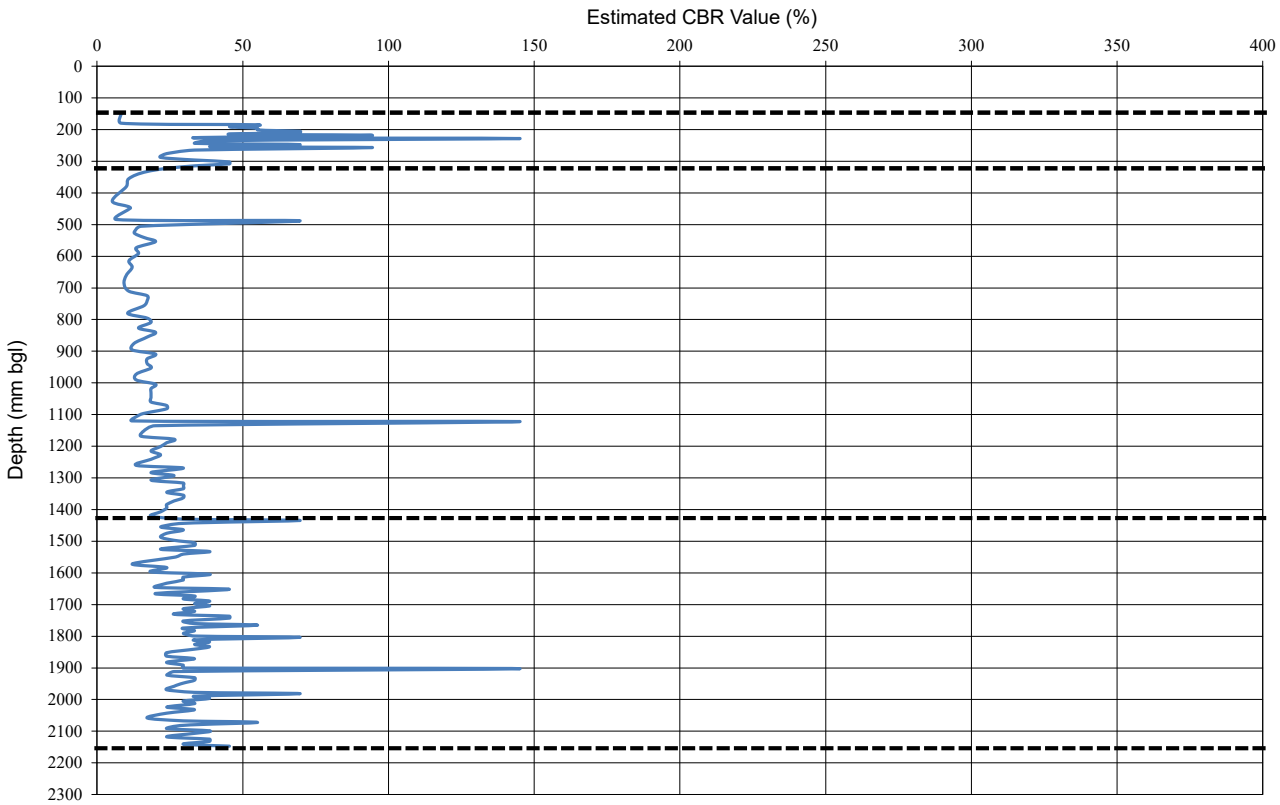
Location
DCP05

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report 587(2003) and PR/INT/277/04

Site Name	Sydney Avenue, Manchester Airport	**Test Date:**	04/01/2024
Site Ref	LKC 23 1722	**Test Location:**	DCP06
		NGR Coordinates:	381042.392E, 386087.201N.
Initial Depth	150 mm	**Elevation:**	67.063m
Final Depth	2147 mm	**Undertaken By:**	JW

Estimated California Bearing Ratio Graph



Start Depth (mm bgl)	Finish Depth (mm bgl)	No. of Blows	Blows Per Layer	DCP mm/Blows	Average CBR Value (%)
150	317	**23**	23	7	37
317	1407	**92**	69	16	16
1407	2147	**175**	83	9	30

Comments

Undertaken at location of HP05.

Site Engineer:	Date:	Checked and Approved By:	Date:
Joe Walker	15/01/2024	Kris Rodway	15/01/2024

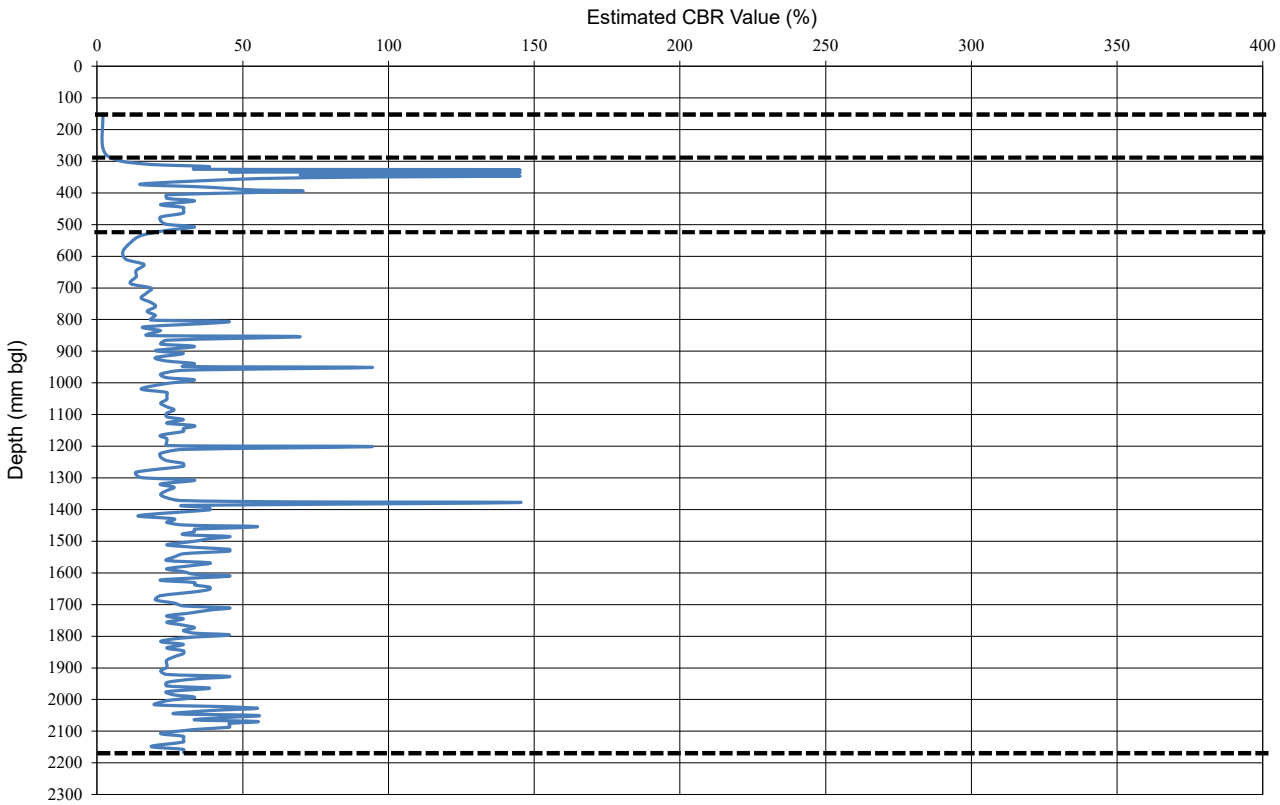
Location
DCP06

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report 587(2003) and PR/INT/277/04

Site Name	Sydney Avenue, Manchester Airport	**Test Date:**	04/01/2024
Site Ref	LKC 23 1722	**Test Location:**	DCP07
		NGR Coordinates:	381087.74E, 386045.175N.
Initial Depth	150 mm	**Elevation:**	67.455m
Final Depth	2166 mm	**Undertaken By:**	JW

Estimated California Bearing Ratio Graph



Start Depth (mm bgl)	Finish Depth (mm bgl)	No. of Blows	Blows Per Layer	DCP mm/Blows	Average CBR Value (%)
150	296	**2**	2	73	3
296	518	**31**	29	8	35
518	2166	**192**	161	10	26

Comments

Undertaken at location of HP07.

Site Engineer:	Date:	Checked and Approved By:	Date:
Joe Walker	15/01/2024	Kris Rodway	15/01/2024

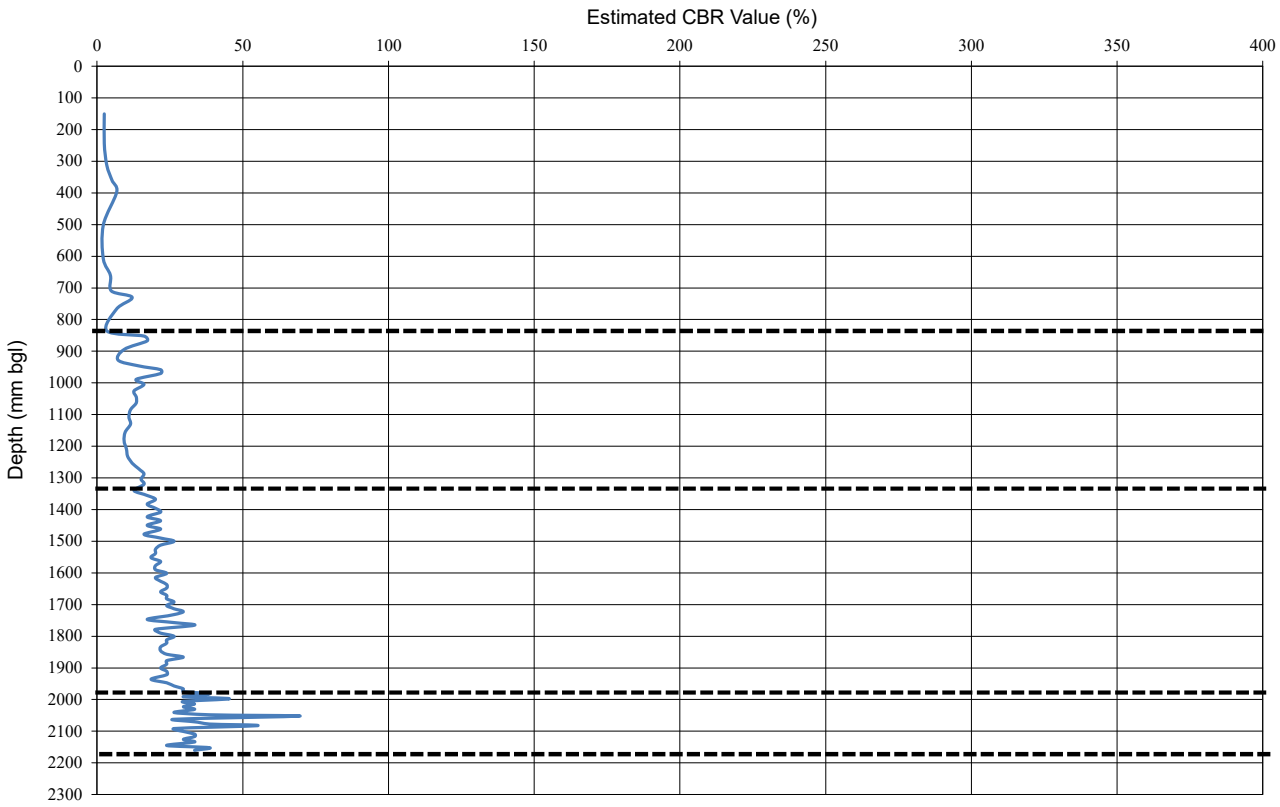
Location
DCP07

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report 587(2003) and PR/INT/277/04

Site Name	Sydney Avenue, Manchester Airport	**Test Date:**	04/01/2024
Site Ref	LKC 23 1722	**Test Location:**	DCP08
		NGR Coordinates:	381115.23E, 386021.84N.
Initial Depth	150 mm	**Elevation:**	68.011m
Final Depth	2160 mm	**Undertaken By:**	JW

Estimated California Bearing Ratio Graph



Start Depth (mm bgl)	Finish Depth (mm bgl)	No. of Blows	Blows Per Layer	DCP mm/Blows	Average CBR Value (%)
150	836	**11**	11	62	4
836	1340	**36**	25	20	13
1340	1975	**90**	54	12	22
1975	2160	**113**	23	8	33

Comments

Site Engineer:	Date:	Checked and Approved By:	Date:
Joe Walker	15/01/2024	Kris Rodway	15/01/2024

Location
DCP08

Appendix C – Certificates of Analysis (Soil)

Kris Rodway
LK Consult Limited
Unit 29 Eton Business Park
Eton Hill Road
Manchester
M26 2ZS

Derwentside Environmental Testing Services Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 24-00061

Site Reference:	Sydney Avenue, Manchester Airport
Project / Job Ref:	LKC 23 1722
Order No:	LKC231722-KR
Sample Receipt Date:	21/12/2023
Sample Scheduled Date:	04/01/2024
Report Issue Number:	1
Reporting Date:	10/01/2024

Authorised by:

Steve Knight
Customer Support Manager

Dates of laboratory activities for each tested analyte are available upon request.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Soil Analysis Certificate						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23	19/12/23	19/12/23
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP01	HP01	HP02	HP02	HP02
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.00	0.00	0.00	0.00	0.45
Reporting Date: 10/01/2024	**DETS Sample No**	692542	692543	692544	692545	692546

Determinand	Unit	RL	Accreditation					
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected		Not Detected		Not Detected
pH	pH Units	N/a	MCERTS	7.4		6.9		7.3
Total Cyanide	mg/kg	< 1	NONE	< 1		< 1		< 1
Free Cyanide	mg/kg	< 1	NONE	< 1		< 1		< 1
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	31		< 10		< 10
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.03		< 0.01		< 0.01
Organic Matter (SOM)	%	< 0.1	MCERTS	8.9		6.6		1.3
Arsenic (As)	mg/kg	< 2	MCERTS	2		4		8
W/S Boron	mg/kg	< 1	NONE	1.3		< 1		< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2		0.2		< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	7		9		14
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2		< 2		< 2
Copper (Cu)	mg/kg	< 4	MCERTS	11		17		11
Lead (Pb)	mg/kg	< 3	MCERTS	14		31		8
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1		< 1		< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	7		7		14
Selenium (Se)	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Vanadium (V)	mg/kg	< 1	MCERTS	7		9		20
Zinc (Zn)	mg/kg	< 3	MCERTS	31		47		20
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2		< 2		< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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4480

Soil Analysis Certificate						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23	19/12/23	19/12/23
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP06	HP06	HP06	HP08	HP08
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.20	0.20	0.90	0.30	0.30
Reporting Date: 10/01/2024	**DETS Sample No**	692547	692548	692549	692550	692551

Determinand	Unit	RL	Accreditation				(n)	
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected		Not Detected	Not Detected	
pH	pH Units	N/a	MCERTS	8.0		7.3	8.0	
Total Cyanide	mg/kg	< 1	NONE	< 1		< 1	< 1	
Free Cyanide	mg/kg	< 1	NONE	< 1		< 1	< 1	
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	23		33	26	
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.02		0.03	0.03	
Organic Matter (SOM)	%	< 0.1	MCERTS	5		0.8	12.3	
Arsenic (As)	mg/kg	< 2	MCERTS	7		7	5	
W/S Boron	mg/kg	< 1	NONE	< 1		< 1	< 1	
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2		< 0.2	0.2	
Chromium (Cr)	mg/kg	< 2	MCERTS	16		30	9	
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2		< 2	< 2	
Copper (Cu)	mg/kg	< 4	MCERTS	17		26	13	
Lead (Pb)	mg/kg	< 3	MCERTS	17		4	12	
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1		< 1	< 1	
Nickel (Ni)	mg/kg	< 3	MCERTS	18		37	12	
Selenium (Se)	mg/kg	< 2	MCERTS	< 2		< 2	< 2	
Vanadium (V)	mg/kg	< 1	MCERTS	23		33	22	
Zinc (Zn)	mg/kg	< 3	MCERTS	37		56	26	
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2		< 2	< 2	

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)

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Soil Analysis Certificate						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23	19/12/23	19/12/23
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP09	HP09	HP09	TP01	TP01
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.00	0.00	0.20	0.20	0.20
Reporting Date: 10/01/2024	**DETS Sample No**	692552	692553	692554	692555	692556

Determinand	**Unit**	**RL**	**Accreditation**					
Asbestos Screen (S)	N/a	N/a	**ISO17025**	Not Detected		Not Detected	Not Detected	
pH	pH Units	N/a	**MCERTS**	7.4		7.2	6.9	
Total Cyanide	mg/kg	< 1	NONE	< 1		< 1	< 1	
Free Cyanide	mg/kg	< 1	NONE	< 1		< 1	< 1	
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	**MCERTS**	14		51	< 10	
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	**MCERTS**	0.01		0.05	< 0.01	
Organic Matter (SOM)	%	< 0.1	**MCERTS**	8.2		1	3.4	
Arsenic (As)	mg/kg	< 2	**MCERTS**	3		7	10	
W/S Boron	mg/kg	< 1	NONE	< 1		< 1	< 1	
Cadmium (Cd)	mg/kg	< 0.2	**MCERTS**	< 0.2		< 0.2	0.5	
Chromium (Cr)	mg/kg	< 2	**MCERTS**	8		23	18	
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2		< 2	< 2	
Copper (Cu)	mg/kg	< 4	**MCERTS**	13		13	25	
Lead (Pb)	mg/kg	< 3	**MCERTS**	18		6	58	
Mercury (Hg)	mg/kg	< 1	**MCERTS**	< 1		< 1	< 1	
Nickel (Ni)	mg/kg	< 3	**MCERTS**	6		24	17	
Selenium (Se)	mg/kg	< 2	**MCERTS**	< 2		< 2	< 2	
Vanadium (V)	mg/kg	< 1	**MCERTS**	8		26	24	
Zinc (Zn)	mg/kg	< 3	**MCERTS**	39		45	84	
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2		< 2	< 2	

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)

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Soil Analysis Certificate						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23		
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied		
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	TP02	TP02	TPO02		
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied		
Order No: LKC231722-KR	**Depth (m)**	0.30	0.30	1.00		
Reporting Date: 10/01/2024	**DETS Sample No**	692557	692558	692559		

Determinand	Unit	RL	Accreditation	(n)				
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected		Not Detected		
pH	pH Units	N/a	MCERTS	7.6		6.5		
Total Cyanide	mg/kg	< 1	NONE	< 1		< 1		
Free Cyanide	mg/kg	< 1	NONE	< 1		< 1		
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	12		19		
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.01		0.02		
Organic Matter (SOM)	%	< 0.1	MCERTS	15.7		0.8		
Arsenic (As)	mg/kg	< 2	MCERTS	5		9		
W/S Boron	mg/kg	< 1	NONE	< 1		< 1		
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.3		< 0.2		
Chromium (Cr)	mg/kg	< 2	MCERTS	24		28		
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2		< 2		
Copper (Cu)	mg/kg	< 4	MCERTS	29		7		
Lead (Pb)	mg/kg	< 3	MCERTS	30		8		
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1		< 1		
Nickel (Ni)	mg/kg	< 3	MCERTS	20		48		
Selenium (Se)	mg/kg	< 2	MCERTS	< 2		< 2		
Vanadium (V)	mg/kg	< 1	MCERTS	54		31		
Zinc (Zn)	mg/kg	< 3	MCERTS	62		56		
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2		< 2		

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23	19/12/23	19/12/23
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP01	HP02	HP02	HP06	HP06
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.00	0.00	0.45	0.20	0.90
Reporting Date: 10/01/2024	**DETS Sample No**	692542	692544	692546	692547	692549

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	0.15	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	0.14	0.31	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.29	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	0.18	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	0.20	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.19	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.16	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23	19/12/23	19/12/23
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP08	HP09	HP09	TP01	TP02
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.30	0.00	0.20	0.20	0.30
Reporting Date: 10/01/2024	**DETS Sample No**	692550	692552	692554	692555	692557

Determinand	Unit	RL	Accreditation	(n)				(n)
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.30	0.33
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.22
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.15	< 0.1	0.37	1.24
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.15	< 0.1	0.36	1.42
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.19	0.88
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.20	0.79
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.19	2.06
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.62
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.16	2.11
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	1.44
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	1.62
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	1.8	12.7

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-00061	**Date Sampled**	19/12/23				
LK Consult Limited	**Time Sampled**	None Supplied				
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	TPO02				
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied				
Order No: LKC231722-KR	**Depth (m)**	1.00				
Reporting Date: 10/01/2024	**DETS Sample No**	692559				

Determinand	Unit	RL	Accreditation				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1			
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1			
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1			
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1			
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1			
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1			
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1			
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1			
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1			
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1			
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1			
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1			
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1			
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1			
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1			
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1			
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6			

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23	19/12/23	19/12/23
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP01	HP01	HP02	HP02	HP02
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.00	0.00	0.00	0.00	0.45
Reporting Date: 10/01/2024	**DETS Sample No**	692542	692543	692544	692545	692546

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01		< 0.01		< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05		< 0.05		< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	**MCERTS**	< 2		< 2		< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	**MCERTS**	< 2		< 2		< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	**MCERTS**	< 3		< 3		< 3
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	**MCERTS**	< 3		< 3		< 3
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	**MCERTS**	< 10		< 10		< 10
Aliphatic >C34 - C44	mg/kg	< 10	NONE	< 10		< 10		< 10
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21		< 21		< 21
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01		< 0.01		< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05		< 0.05		< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	**MCERTS**	< 2		< 2		< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	**MCERTS**	< 2		< 2		< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	**MCERTS**	< 2		< 2		< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	**MCERTS**	< 3		26		< 3
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	**MCERTS**	< 10		< 10		< 10
Aromatic >C35 - C44	mg/kg	< 10	NONE	< 10		< 10		< 10
Aromatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	< 21		26		< 21
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	< 42		< 42		< 42

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23	19/12/23	19/12/23
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP06	HP06	HP06	HP08	HP08
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.20	0.20	0.90	0.30	0.30
Reporting Date: 10/01/2024	**DETS Sample No**	692547	692548	692549	692550	692551

Determinand	Unit	RL	Accreditation					(n)
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01		< 0.01	< 0.01	
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05		< 0.05	< 0.05	
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2		< 2	< 2	
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2		< 2	< 2	
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3		< 3	4	
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	9		3	54	
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	205		55	931	
Aliphatic >C34 - C44	mg/kg	< 10	NONE	30		< 10	131	
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	244		58	1120	
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01		< 0.01	< 0.01	
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05		< 0.05	< 0.05	
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2	< 2	
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2	< 2	
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2	< 2	
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	7		< 3	59	
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	347		50	1599	
Aromatic >C35 - C44	mg/kg	< 10	NONE	70		< 10	455	
Aromatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	424		50	2113	
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	668		108	3232	

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23	19/12/23	19/12/23
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP09	HP09	HP09	TP01	TP01
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.00	0.00	0.20	0.20	0.20
Reporting Date: 10/01/2024	**DETS Sample No**	692552	692553	692554	692555	692556

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01		< 0.01	< 0.01	
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05		< 0.05	< 0.05	
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2		< 2	< 2	
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2		< 2	< 2	
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	4		< 3	< 3	
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3		< 3	< 3	
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	31		< 10	< 10	
Aliphatic >C34 - C44	mg/kg	< 10	NONE	< 10		< 10	< 10	
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	35		< 21	< 21	
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01		< 0.01	< 0.01	
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05		< 0.05	< 0.05	
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2	< 2	
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2	< 2	
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	5		< 2	< 2	
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	< 3		< 3	< 3	
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10		< 10	< 10	
Aromatic >C35 - C44	mg/kg	< 10	NONE	< 10		< 10	< 10	
Aromatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	< 21		< 21	< 21	
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	< 42		< 42	< 42	

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23		
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied		
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	TP02	TP02	TPO02		
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied		
Order No: LKC231722-KR	**Depth (m)**	0.30	0.30	1.00		
Reporting Date: 10/01/2024	**DETS Sample No**	692557	692558	692559		

Determinand	Unit	RL	Accreditation	(n)				
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01		< 0.01		
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05		< 0.05		
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2		< 2		
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2		< 2		
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3		< 3		
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	31		< 3		
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	301		< 10		
Aliphatic >C34 - C44	mg/kg	< 10	NONE	33		< 10		
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	366		< 21		
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01		< 0.01		
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05		< 0.05		
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2		
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2		
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	3		< 2		
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	69		< 3		
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	695		13		
Aromatic >C35 - C44	mg/kg	< 10	NONE	242		< 10		
Aromatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	1008		< 21		
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	1374		< 42		

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23	19/12/23	19/12/23
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP01	HP02	HP02	HP06	HP06
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.00	0.00	0.45	0.20	0.90
Reporting Date: 10/01/2024	**DETS Sample No**	692542	692544	692546	692547	692549

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23	19/12/23	19/12/23
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP08	HP09	HP09	TP01	TP02
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.30	0.00	0.20	0.20	0.30
Reporting Date: 10/01/2024	**DETS Sample No**	692550	692552	692554	692555	692557

Determinand	Unit	RL	Accreditation	(n)				(n)
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00061	**Date Sampled**	19/12/23				
LK Consult Limited	**Time Sampled**	None Supplied				
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	TPO02				
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied				
Order No: LKC231722-KR	**Depth (m)**	1.00				
Reporting Date: 10/01/2024	**DETS Sample No**	692559				

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2				
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5				
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2				
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2				
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2				
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5				

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Soil Analysis Certificate - Volatile Organic Compounds (VOC)						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23	19/12/23	19/12/23
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP01	HP02	HP06	HP08	HP09
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.00	0.00	0.20	0.30	0.00
Reporting Date: 10/01/2024	**DETS Sample No**	692542	692544	692547	692550	692552

Determinand	Unit	RL	Accreditation				(n)	
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chloromethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Chloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromomethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chloroform	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Trichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Dibromomethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
TAME	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethyl Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
m,p-Xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-Xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Styrene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromoform	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
2-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
4-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
,2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

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Soil Analysis Certificate - Volatile Organic Compounds (VOC)						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23			
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied			
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	TP01	TP02			
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied			
Order No: LKC231722-KR	**Depth (m)**	0.20	0.30			
Reporting Date: 10/01/2024	**DETS Sample No**	692555	692557			

Determinand	Unit	RL	Accreditation	(n)				
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5	< 5			
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5	< 5			
Chloromethane	ug/kg	< 10	MCERTS	< 10	< 10			
Chloroethane	ug/kg	< 5	MCERTS	< 5	< 5			
Bromomethane	ug/kg	< 10	MCERTS	< 10	< 10			
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5	< 5			
1,1-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5			
MTBE	ug/kg	< 5	MCERTS	< 5	< 5			
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5			
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5			
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5			
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5			
Chloroform	ug/kg	< 5	MCERTS	< 5	< 5			
Bromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5			
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5	< 5			
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10	< 10			
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5	< 5			
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5			
Benzene	ug/kg	< 2	MCERTS	< 2	< 2			
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5			
Trichloroethene	ug/kg	< 5	MCERTS	< 5	< 5			
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5	< 5			
Dibromomethane	ug/kg	< 5	MCERTS	< 5	< 5			
TAME	ug/kg	< 5	MCERTS	< 5	< 5			
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5			
Toluene	ug/kg	< 5	MCERTS	< 5	< 5			
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5			
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10	< 10			
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5			
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5	< 5			
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5			
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5	< 5			
Chlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5			
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5			
Ethyl Benzene	ug/kg	< 2	MCERTS	< 2	< 2			
m,p-Xylene	ug/kg	< 2	MCERTS	< 2	< 2			
o-Xylene	ug/kg	< 2	MCERTS	< 2	< 2			
Styrene	ug/kg	< 5	MCERTS	< 5	< 5			
Bromoform	ug/kg	< 10	MCERTS	< 10	< 10			
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5	< 5			
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5			
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5	< 5			
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5	< 5			
Bromobenzene	ug/kg	< 5	MCERTS	< 5	< 5			
2-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5			
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5			
4-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5			
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5			
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5			
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5			
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5	< 5			
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5			
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5			
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5			
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5			
,2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10	< 10			
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5	< 5			

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Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC)						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23			
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied			
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP08	TP02			
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied			
Order No: LKC231722-KR	**Depth (m)**	0.30	0.30			
Reporting Date: 10/01/2024	**DETS Sample No**	692550	692557			

Determinand	Unit	RL	Accreditation	(n)	(n)			
Phenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
1,2,4-Trichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1			
2-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Nitrobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
0-Cresol	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
bis(2-chloroethoxy)methane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
bis(2-chloroethyl)ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
2,4-Dichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
2-Chlorophenol	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1			
1,3-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1			
1,4-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1			
1,2-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1			
2,4-Dimethylphenol	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15			
Isophorone	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Hexachloroethane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
p-Cresol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15			
2,4,6-Trichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
2,4,5-Trichlorophenol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15			
2-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
4-Chloro-3-methylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
2-Methylnaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Hexachlorocyclopentadiene	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Hexachlorobutadiene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1			
2,6-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Dimethyl phthalate	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
2-Chloronaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
4-Chloroanaline	mg/kg	< 0.15	NONE	< 0.15	< 0.15			
4-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
4-Chlorophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
3-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
4-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
4-Bromophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Hexachlorobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
2,4-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Diethyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Dibenzofuran	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Azobenzene	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Dibutyl phthalate	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1			
Carbazole	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1			
bis(2-ethylhexyl)phthalate	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15			
Benzyl butyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Di-n-octyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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Leachate Analysis Certificate							
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23	19/12/23	19/12/23
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP01	HP01	HP02	HP02	HP02
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.00	0.00	0.00	0.00	0.45
Reporting Date: 10/01/2024	**DETS Sample No**	692542	692543	692544	692545	692546

Determinand	Unit	RL	Accreditation					
Total Organic Carbon (TOC)	mg/l	< 1	ISO17025		12.1		7.4	

Subcontracted analysis (S)
(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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Leachate Analysis Certificate						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23	19/12/23	19/12/23
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP06	HP06	HP06	HP08	HP08
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.20	0.20	0.90	0.30	0.30
Reporting Date: 10/01/2024	**DETS Sample No**	692547	692548	692549	692550	692551

Determinand	Unit	RL	Accreditation					
							(n)	
Total Organic Carbon (TOC)	mg/l	< 1	ISO17025		8.3			6.6

Subcontracted analysis (S)

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Leachate Analysis Certificate							
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23	19/12/23	19/12/23
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP09	HP09	HP09	TP01	TP01
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.00	0.00	0.20	0.20	0.20
Reporting Date: 10/01/2024	**DETS Sample No**	692552	692553	692554	692555	692556

Determinand	Unit	RL	Accreditation					
Total Organic Carbon (TOC)	mg/l	< 1	ISO17025		16.5			4.6

Subcontracted analysis (S)

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Leachate Analysis Certificate						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23		
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied		
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	TP02	TP02	TPO02		
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied		
Order No: LKC231722-KR	**Depth (m)**	0.30	0.30	1.00		
Reporting Date: 10/01/2024	**DETS Sample No**	692557	692558	692559		

Determinand	Unit	RL	Accreditation	(n)				
Total Organic Carbon (TOC)	mg/l	< 1	ISO17025		6.1			

Subcontracted analysis (S)

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Leachate Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23	19/12/23	19/12/23
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP01	HP02	HP06	HP08	HP09
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.00	0.00	0.20	0.30	0.00
Reporting Date: 10/01/2024	**DETS Sample No**	692543	692545	692548	692551	692553

Determinand	**Unit**	**RL**	**Accreditation**					
Aliphatic >C5 - C6 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aliphatic >C6 - C8 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aliphatic >C8 - C10 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aliphatic >C10 - C12 : EH_CU_1D_AL	ug/l	< 10	NONE	16	< 10	< 10	< 10	< 10
Aliphatic >C12 - C16 : EH_CU_1D_AL	ug/l	< 10	NONE	43	< 10	< 10	< 10	< 10
Aliphatic >C16 - C21 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aliphatic >C21 - C34 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic >C5 - C7 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic >C7 - C8 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic >C8 - C10 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic >C10 - C12 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic >C12 - C16 : EH_CU_1D_AR	ug/l	< 10	NONE	15	< 10	< 10	< 10	< 10
Aromatic >C16 - C21 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic >C21 - C35 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10

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Leachate Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23			
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied			
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	TP01	TP02			
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied			
Order No: LKC231722-KR	**Depth (m)**	0.20	0.30			
Reporting Date: 10/01/2024	**DETS Sample No**	692556	692558			

Determinand	**Unit**	**RL**	**Accreditation**					
Aliphatic >C5 - C6 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10	< 10			
Aliphatic >C6 - C8 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10	< 10			
Aliphatic >C8 - C10 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10			
Aliphatic >C10 - C12 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10			
Aliphatic >C12 - C16 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10			
Aliphatic >C16 - C21 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10			
Aliphatic >C21 - C34 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10			
Aromatic >C5 - C7 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10	< 10			
Aromatic >C7 - C8 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10	< 10			
Aromatic >C8 - C10 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10			
Aromatic >C10 - C12 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10			
Aromatic >C12 - C16 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10			
Aromatic >C16 - C21 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10			
Aromatic >C21 - C35 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10			

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Leachate Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23	19/12/23	19/12/23	19/12/23
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP01	HP02	HP06	HP08	HP09
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.00	0.00	0.20	0.30	0.00
Reporting Date: 10/01/2024	**DETS Sample No**	692543	692545	692548	692551	692553

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	ug/l	< 1	ISO17025	< 1	< 1	< 1	< 1	< 1
Toluene : HS_1D_MS	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Ethylbenzene : HS_1D_MS	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
p & m-xylene : HS_1D_MS	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
o-xylene : HS_1D_MS	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
MTBE : HS_1D_MS	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10

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Leachate Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00061	**Date Sampled**	19/12/23	19/12/23			
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied			
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	TP01	TP02			
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied			
Order No: LKC231722-KR	**Depth (m)**	0.20	0.30			
Reporting Date: 10/01/2024	**DETS Sample No**	692556	692558			

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	ug/l	< 1	ISO17025	< 1	< 1			
Toluene : HS_1D_MS	ug/l	< 5	ISO17025	< 5	< 5			
Ethylbenzene : HS_1D_MS	ug/l	< 5	ISO17025	< 5	< 5			
p & m-xylene : HS_1D_MS	ug/l	< 10	ISO17025	< 10	< 10			
o-xylene : HS_1D_MS	ug/l	< 5	ISO17025	< 5	< 5			
MTBE : HS_1D_MS	ug/l	< 10	ISO17025	< 10	< 10			

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Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 24-00061	
LK Consult Limited	
Site Reference: Sydney Avenue, Manchester Airport	
Project / Job Ref: LKC 23 1722	
Order No: LKC231722-KR	
Reporting Date: 10/01/2024	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
$ 692542	HP01	None Supplied	0.00	22	Brown loamy clay with stones and vegetation
$ 692544	HP02	None Supplied	0.00	20.6	Brown loamy clay with stones and vegetation
$ 692546	HP02	None Supplied	0.45	11.1	Brown sandy clay with stones
$ 692547	HP06	None Supplied	0.20	11	Brown sandy clay with stones
$ 692549	HP06	None Supplied	0.90	15.8	Brown clay
$ 692550	HP08	None Supplied	0.30	4.5	Brown sandy gravel with stones
$ 692552	HP09	None Supplied	0.00	20.6	Brown loamy clay with vegetation
$ 692554	HP09	None Supplied	0.20	12.5	Brown clay
$ 692555	TP01	None Supplied	0.20	16.3	Brown clay
$ 692557	TP02	None Supplied	0.30	8.7	Brown sandy gravel with stones
$ 692559	TPO02	None Supplied	1.00	14.2	Brown clay

Moisture content is part of procedure E003 & is not an accredited test
Insufficient Sample I/S
Unsuitable Sample U/S

$ samples exceeded recommended holding times

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Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 24-00061
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: LKC231722-KR
Reporting Date: 10/01/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

DETS Ltd
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UKAS TESTING
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Water Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 24-00061
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: LKC231722-KR
Reporting Date: 10/01/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	F	Ammoniacal Nitrogen	Determination of ammoniacal nitrogen by discrete analyser.	E126
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	UF	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR dete	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 – C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichlorometha	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	TPH CWG (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

Key

F Filtered
UF Unfiltered

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List of HWOL Acronyms and Operators
DETS Report No: 24-00061
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: LKC231722-KR
Reporting Date: 10/01/2024

Acronym	**Description**
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det - Acronym
Benzene - HS_1D_MS
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
TPH CWG - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH CWG - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH CWG - Aliphatic >C16 - C21 - EH_CU_1D_AL
TPH CWG - Aliphatic >C21 - C34 - EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH CWG - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH CWG - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH CWG - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH CWG - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH CWG - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH CWG - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH CWG - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH CWG - Total >C5 - C44 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

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DETS Report No: 24-00127

Site Reference:	Sydney Avenue, Manchester Airport
Project / Job Ref:	LKC 23 1722
Order No:	LKC231722-KR
Sample Receipt Date:	08/01/2024
Sample Scheduled Date:	08/01/2024
Report Issue Number:	1
Reporting Date:	12/01/2024

Authorised by:

Steve Knight
Customer Support Manager

Dates of laboratory activities for each tested analyte are available upon request.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

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Soil Analysis Certificate						
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	05/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP03	HP03	HP04	HP04	HP05
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.50	0.50	0.50	0.50	0.30
Reporting Date: 12/01/2024	**DETS Sample No**	692868	692869	692870	692871	692872

Determinand	Unit	RL	Accreditation	(n)		(n)		
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected		Not Detected		Not Detected
pH	pH Units	N/a	MCERTS	8.2		8.3		8.2
Total Cyanide	mg/kg	< 1	NONE	< 1		< 1		< 1
Free Cyanide	mg/kg	< 1	NONE	< 1		< 1		< 1
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	73		15		12
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.07		0.01		0.01
Organic Matter (SOM)	%	< 0.1	MCERTS	11.1		6.2		4
Arsenic (As)	mg/kg	< 2	MCERTS	4		2		5
W/S Boron	mg/kg	< 1	NONE	< 1		< 1		< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.4		< 0.2		0.6
Chromium (Cr)	mg/kg	< 2	MCERTS	10		8		16
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2		< 2		< 2
Copper (Cu)	mg/kg	< 4	MCERTS	18		6		14
Lead (Pb)	mg/kg	< 3	MCERTS	28		16		15
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1		< 1		< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	8		5		15
Selenium (Se)	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Vanadium (V)	mg/kg	< 1	MCERTS	19		14		23
Zinc (Zn)	mg/kg	< 3	MCERTS	43		25		93
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2		< 2		< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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Soil Analysis Certificate						
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	05/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP05	HP05	HP07	HP07	HP07
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.30	0.50	0.40	0.40	1.00
Reporting Date: 12/01/2024	**DETS Sample No**	692873	692874	692875	692876	692877

Determinand	Unit	RL	Accreditation					
Asbestos Screen (S)	N/a	N/a	ISO17025		Not Detected	Not Detected		Not Detected
pH	pH Units	N/a	MCERTS		7.3	7.6		7.2
Total Cyanide	mg/kg	< 1	NONE		< 1	< 1		< 1
Free Cyanide	mg/kg	< 1	NONE		< 1	< 1		< 1
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS		10	14		< 10
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS		0.01	0.01		< 0.01
Organic Matter (SOM)	%	< 0.1	MCERTS		0.8	2.6		0.6
Arsenic (As)	mg/kg	< 2	MCERTS		5	4		5
W/S Boron	mg/kg	< 1	NONE		< 1	< 1		< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS		< 0.2	0.6		< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS		33	16		28
Chromium (hexavalent)	mg/kg	< 2	NONE		< 2	< 2		< 2
Copper (Cu)	mg/kg	< 4	MCERTS		37	11		13
Lead (Pb)	mg/kg	< 3	MCERTS		5	10		6
Mercury (Hg)	mg/kg	< 1	MCERTS		< 1	< 1		< 1
Nickel (Ni)	mg/kg	< 3	MCERTS		28	15		23
Selenium (Se)	mg/kg	< 2	MCERTS		< 2	< 2		< 2
Vanadium (V)	mg/kg	< 1	MCERTS		35	19		29
Zinc (Zn)	mg/kg	< 3	MCERTS		71	93		55
Total Phenols (monohydric)	mg/kg	< 2	NONE		< 2	< 2		< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	05/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP03	HP04	HP05	HP05	HP07
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.50	0.50	0.30	0.50	0.40
Reporting Date: 12/01/2024	**DETS Sample No**	692868	692870	692872	692874	692875

Determinand	Unit	RL	Accreditation	(n)	(n)			
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.32	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	0.75	1.02	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	0.95	1.20	0.81	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.87	1.34	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	0.63	1.14	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	2.51	4.22	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.79	1.53	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	3.86	5.90	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	3.03	2.96	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.58	0.52	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	2.98	2.46	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	16.9	22.3	< 1.6	< 1.6	< 1.6

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-00127	**Date Sampled**	05/01/24				
LK Consult Limited	**Time Sampled**	None Supplied				
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP07				
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied				
Order No: LKC231722-KR	**Depth (m)**	1.00				
Reporting Date: 12/01/2024	**DETS Sample No**	692877				

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1				
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1				
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1				
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1				
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1				
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1				
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1				
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1				
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1				
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1				
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1				
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6				

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	05/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP03	HP03	HP04	HP04	HP05
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.50	0.50	0.50	0.50	0.30
Reporting Date: 12/01/2024	**DETS Sample No**	692868	692869	692870	692871	692872

Determinand	Unit	RL	Accreditation	(n)		(n)		
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01		< 0.01		< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05		< 0.05		< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3		< 3		5
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	19		10		32
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	684		341		608
Aliphatic >C34 - C44	mg/kg	< 10	NONE	197		187		395
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	900		538		1040
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01		< 0.01		< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05		< 0.05		< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	8		4		22
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	315		126		350
Aromatic >C35 - C44	mg/kg	< 10	NONE	58		< 10		76
Aromatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	382		130		448
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	1282		668		1489

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	05/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP05	HP05	HP07	HP07	HP07
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.30	0.50	0.40	0.40	1.00
Reporting Date: 12/01/2024	**DETS Sample No**	692873	692874	692875	692876	692877

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE		< 0.01	< 0.01		< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE		< 0.05	< 0.05		< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS		< 2	< 2		< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS		< 2	< 2		< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS		< 3	< 3		< 3
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS		< 3	16		< 3
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS		< 10	302		< 10
Aliphatic >C34 - C44	mg/kg	< 10	NONE		< 10	84		< 10
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE		< 21	401		< 21
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE		< 0.01	< 0.01		< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE		< 0.05	< 0.05		< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS		< 2	< 2		< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS		< 2	< 2		< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS		< 2	< 2		< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS		< 3	15		< 3
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS		< 10	219		< 10
Aromatic >C35 - C44	mg/kg	< 10	NONE		< 10	12		< 10
Aromatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE		< 21	246		< 21
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE		< 42	647		< 42

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	05/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP03	HP04	HP05	HP05	HP07
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.50	0.50	0.30	0.50	0.40
Reporting Date: 12/01/2024	**DETS Sample No**	692868	692870	692872	692874	692875

Determinand	Unit	RL	Accreditation					
				(n)	(n)			
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00127	**Date Sampled**	05/01/24				
LK Consult Limited	**Time Sampled**	None Supplied				
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP07				
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied				
Order No: LKC231722-KR	**Depth (m)**	1.00				
Reporting Date: 12/01/2024	**DETS Sample No**	692877				

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2				
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5				
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2				
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2				
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2				
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5				

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Soil Analysis Certificate - Volatile Organic Compounds (VOC)						
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP03	HP04	HP05	HP07	
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: LKC231722-KR	**Depth (m)**	0.50	0.50	0.30	0.40	
Reporting Date: 12/01/2024	**DETS Sample No**	692868	692870	692872	692875	

Determinand	Unit	RL	Accreditation	(n)	(n)			
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Chloromethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Chloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Bromomethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Chloroform	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Bromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Trichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Dibromomethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
TAME	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Chlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Ethyl Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
m,p-Xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
o-Xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Styrene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Bromoform	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Bromobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
2-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
4-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
,2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	

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UKAS TESTING
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Leachate Analysis Certificate							
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	05/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP03	HP03	HP04	HP04	HP05
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.50	0.50	0.50	0.50	0.30
Reporting Date: 12/01/2024	**DETS Sample No**	692868	692869	692870	692871	692872

Determinand	Unit	RL	Accreditation	(n)		(n)		
Total Organic Carbon (TOC)	mg/l	< 1	ISO17025				5.8	

Subcontracted analysis (S)
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Leachate Analysis Certificate							
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	05/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP05	HP05	HP07	HP07	HP07
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.30	0.50	0.40	0.40	1.00
Reporting Date: 12/01/2024	**DETS Sample No**	692873	692874	692875	692876	692877

Determinand	Unit	RL	Accreditation				
Total Organic Carbon (TOC)	mg/l	< 1	ISO17025	12.2			7	

Subcontracted analysis (S)

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Leachate Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP03	HP04	HP05	HP07	
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: LKC231722-KR	**Depth (m)**	0.50	0.50	0.30	0.40	
Reporting Date: 12/01/2024	**DETS Sample No**	692869	692871	692873	692876	

Determinand	**Unit**	**RL**	**Accreditation**					
Aliphatic >C5 - C6 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aliphatic >C6 - C8 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aliphatic >C8 - C10 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aliphatic >C10 - C12 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aliphatic >C12 - C16 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aliphatic >C16 - C21 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	10	< 10	
Aliphatic >C21 - C34 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	137	< 10	
Aromatic >C5 - C7 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aromatic >C7 - C8 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aromatic >C8 - C10 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aromatic >C10 - C12 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aromatic >C12 - C16 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aromatic >C16 - C21 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aromatic >C21 - C35 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	19	< 10	

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Leachate Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP03	HP04	HP05	HP07	
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: LKC231722-KR	**Depth (m)**	0.50	0.50	0.30	0.40	
Reporting Date: 12/01/2024	**DETS Sample No**	692869	692871	692873	692876	

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	ug/l	< 1	ISO17025	< 1	< 1	< 1	< 1	
Toluene : HS_1D_MS	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	
Ethylbenzene : HS_1D_MS	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	
p & m-xylene : HS_1D_MS	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	
o-xylene : HS_1D_MS	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	
MTBE : HS_1D_MS	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	

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Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 24-00127	
LK Consult Limited	
Site Reference: Sydney Avenue, Manchester Airport	
Project / Job Ref: LKC 23 1722	
Order No: LKC231722-KR	
Reporting Date: 12/01/2024	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
692868	HP03	None Supplied	0.50	4.2	Brown loamy gravel with stones and concrete
692870	HP04	None Supplied	0.50	4.5	Brown loamy gravel with stones and concrete
692872	HP05	None Supplied	0.30	5.9	Brown gravelly sand with stones and concrete
692874	HP05	None Supplied	0.50	12.6	Light brown sandy clay
692875	HP07	None Supplied	0.40	8.7	Brown sandy clay with stones and concrete
692877	HP07	None Supplied	1.00	13.3	Light brown sandy clay

Moisture content is part of procedure E003 & is not an accredited test
Insufficient Sample I/S
Unsuitable Sample U/S

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Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 24-00127
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: LKC231722-KR
Reporting Date: 12/01/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

DETS Ltd
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Water Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 24-00127
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: LKC231722-KR
Reporting Date: 12/01/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	F	Ammoniacal Nitrogen	Determination of ammoniacal nitrogen by discrete analyser.	E126
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	UF	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR dete	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 – C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichlorometha	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	TPH CWG (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

Key

F Filtered
UF Unfiltered

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List of HWOL Acronyms and Operators
DETS Report No: 24-00127
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: LKC231722-KR
Reporting Date: 12/01/2024

Acronym	**Description**
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det - Acronym
Benzene - HS_1D_MS
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
TPH CWG - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH CWG - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH CWG - Aliphatic >C16 - C21 - EH_CU_1D_AL
TPH CWG - Aliphatic >C21 - C34 - EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH CWG - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH CWG - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH CWG - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH CWG - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH CWG - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH CWG - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH CWG - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH CWG - Total >C5 - C44 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

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DETS Report No: 24-00127

Site Reference:	Sydney Avenue, Manchester Airport
Project / Job Ref:	LKC 23 1722
Order No:	LKC231722-KR
Sample Receipt Date:	08/01/2024
Sample Scheduled Date:	08/01/2024
Report Issue Number:	2
Reporting Date:	15/01/2024

Authorised by:

Dave Ashworth
Technical Manager

Dates of laboratory activities for each tested analyte are available upon request.
This report supersedes 24-00127, issue no.1.
Reason for reissue:

Job reported before results completed

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

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Soil Analysis Certificate						
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	05/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP03	HP03	HP04	HP04	HP05
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.50	0.50	0.50	0.50	0.30
Reporting Date: 15/01/2024	**DETS Sample No**	692868	692869	692870	692871	692872

Determinand	Unit	RL	Accreditation	(n)		(n)		
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected		Not Detected		Not Detected
pH	pH Units	N/a	MCERTS	8.2		8.3		8.2
Total Cyanide	mg/kg	< 1	NONE	< 1		< 1		< 1
Free Cyanide	mg/kg	< 1	NONE	< 1		< 1		< 1
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	73		15		12
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.07		0.01		0.01
Organic Matter (SOM)	%	< 0.1	MCERTS	11.1		6.2		4
Arsenic (As)	mg/kg	< 2	MCERTS	4		2		5
W/S Boron	mg/kg	< 1	NONE	< 1		< 1		< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.4		< 0.2		0.6
Chromium (Cr)	mg/kg	< 2	MCERTS	10		8		16
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2		< 2		< 2
Copper (Cu)	mg/kg	< 4	MCERTS	18		6		14
Lead (Pb)	mg/kg	< 3	MCERTS	28		16		15
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1		< 1		< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	8		5		15
Selenium (Se)	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Vanadium (V)	mg/kg	< 1	MCERTS	19		14		23
Zinc (Zn)	mg/kg	< 3	MCERTS	43		25		93
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2		< 2		< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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Soil Analysis Certificate						
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	05/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP05	HP05	HP07	HP07	HP07
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.30	0.50	0.40	0.40	1.00
Reporting Date: 15/01/2024	**DETS Sample No**	692873	692874	692875	692876	692877

Determinand	Unit	RL	Accreditation					
Asbestos Screen (S)	N/a	N/a	ISO17025		Not Detected	Not Detected		Not Detected
pH	pH Units	N/a	MCERTS		7.3	7.6		7.2
Total Cyanide	mg/kg	< 1	NONE		< 1	< 1		< 1
Free Cyanide	mg/kg	< 1	NONE		< 1	< 1		< 1
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS		10	14		< 10
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS		0.01	0.01		< 0.01
Organic Matter (SOM)	%	< 0.1	MCERTS		0.8	2.6		0.6
Arsenic (As)	mg/kg	< 2	MCERTS		5	4		5
W/S Boron	mg/kg	< 1	NONE		< 1	< 1		< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS		< 0.2	0.6		< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS		33	16		28
Chromium (hexavalent)	mg/kg	< 2	NONE		< 2	< 2		< 2
Copper (Cu)	mg/kg	< 4	MCERTS		37	11		13
Lead (Pb)	mg/kg	< 3	MCERTS		5	10		6
Mercury (Hg)	mg/kg	< 1	MCERTS		< 1	< 1		< 1
Nickel (Ni)	mg/kg	< 3	MCERTS		28	15		23
Selenium (Se)	mg/kg	< 2	MCERTS		< 2	< 2		< 2
Vanadium (V)	mg/kg	< 1	MCERTS		35	19		29
Zinc (Zn)	mg/kg	< 3	MCERTS		71	93		55
Total Phenols (monohydric)	mg/kg	< 2	NONE		< 2	< 2		< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	05/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP03	HP04	HP05	HP05	HP07
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.50	0.50	0.30	0.50	0.40
Reporting Date: 15/01/2024	**DETS Sample No**	692868	692870	692872	692874	692875

Determinand	Unit	RL	Accreditation	(n)	(n)			
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.32	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	0.75	1.02	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	0.95	1.20	0.81	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.87	1.34	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	0.63	1.14	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	2.51	4.22	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.79	1.53	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	3.86	5.90	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	3.03	2.96	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.58	0.52	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	2.98	2.46	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	16.9	22.3	< 1.6	< 1.6	< 1.6

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-00127	**Date Sampled**	05/01/24				
LK Consult Limited	**Time Sampled**	None Supplied				
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP07				
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied				
Order No: LKC231722-KR	**Depth (m)**	1.00				
Reporting Date: 15/01/2024	**DETS Sample No**	692877				

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1				
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1				
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1				
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1				
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1				
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1				
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1				
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1				
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1				
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1				
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1				
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6				

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	05/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP03	HP03	HP04	HP04	HP05
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.50	0.50	0.50	0.50	0.30
Reporting Date: 15/01/2024	**DETS Sample No**	692868	692869	692870	692871	692872

Determinand	Unit	RL	Accreditation	(n)		(n)		
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01		< 0.01		< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05		< 0.05		< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3		< 3		5
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	19		10		32
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	684		341		608
Aliphatic >C34 - C44	mg/kg	< 10	NONE	197		187		395
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	900		538		1040
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01		< 0.01		< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05		< 0.05		< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	8		4		22
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	315		126		350
Aromatic >C35 - C44	mg/kg	< 10	NONE	58		< 10		76
Aromatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	382		130		448
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	1282		668		1489

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	05/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP05	HP05	HP07	HP07	HP07
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.30	0.50	0.40	0.40	1.00
Reporting Date: 15/01/2024	**DETS Sample No**	692873	692874	692875	692876	692877

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE		< 0.01	< 0.01		< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE		< 0.05	< 0.05		< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS		< 2	< 2		< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS		< 2	< 2		< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS		< 3	< 3		< 3
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS		< 3	16		< 3
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS		< 10	302		< 10
Aliphatic >C34 - C44	mg/kg	< 10	NONE		< 10	84		< 10
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE		< 21	401		< 21
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE		< 0.01	< 0.01		< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE		< 0.05	< 0.05		< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS		< 2	< 2		< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS		< 2	< 2		< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS		< 2	< 2		< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS		< 3	15		< 3
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS		< 10	219		< 10
Aromatic >C35 - C44	mg/kg	< 10	NONE		< 10	12		< 10
Aromatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE		< 21	246		< 21
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE		< 42	647		< 42

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	05/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP03	HP04	HP05	HP05	HP07
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.50	0.50	0.30	0.50	0.40
Reporting Date: 15/01/2024	**DETS Sample No**	692868	692870	692872	692874	692875

Determinand	Unit	RL	Accreditation					
				(n)	(n)			
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00127	**Date Sampled**	05/01/24				
LK Consult Limited	**Time Sampled**	None Supplied				
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP07				
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied				
Order No: LKC231722-KR	**Depth (m)**	1.00				
Reporting Date: 15/01/2024	**DETS Sample No**	692877				

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2				
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5				
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2				
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2				
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2				
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5				

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Soil Analysis Certificate - Volatile Organic Compounds (VOC)						
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP03	HP04	HP05	HP07	
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: LKC231722-KR	**Depth (m)**	0.50	0.50	0.30	0.40	
Reporting Date: 15/01/2024	**DETS Sample No**	692868	692870	692872	692875	

Determinand	Unit	RL	Accreditation	(n)	(n)			
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Chloromethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Chloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Bromomethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Chloroform	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Bromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Trichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Dibromomethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
TAME	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Chlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Ethyl Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
m,p-Xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
o-Xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Styrene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Bromoform	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Bromobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
2-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
4-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
,2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	

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UKAS TESTING
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Leachate Analysis Certificate							
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	05/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP03	HP03	HP04	HP04	HP05
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.50	0.50	0.50	0.50	0.30
Reporting Date: 15/01/2024	**DETS Sample No**	692868	692869	692870	692871	692872

Determinand	Unit	RL	Accreditation	(n)		(n)		
Total Organic Carbon (TOC)	mg/l	< 1	ISO17025		5.7		5.8	

Subcontracted analysis (S)
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Leachate Analysis Certificate							
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	05/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP05	HP05	HP07	HP07	HP07
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.30	0.50	0.40	0.40	1.00
Reporting Date: 15/01/2024	**DETS Sample No**	692873	692874	692875	692876	692877

Determinand	Unit	RL	Accreditation				
Total Organic Carbon (TOC)	mg/l	< 1	ISO17025	12.2			7	

Subcontracted analysis (S)

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Leachate Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP03	HP04	HP05	HP07	
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: LKC231722-KR	**Depth (m)**	0.50	0.50	0.30	0.40	
Reporting Date: 15/01/2024	**DETS Sample No**	692869	692871	692873	692876	

Determinand	**Unit**	**RL**	**Accreditation**					
Aliphatic >C5 - C6 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aliphatic >C6 - C8 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aliphatic >C8 - C10 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aliphatic >C10 - C12 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aliphatic >C12 - C16 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aliphatic >C16 - C21 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	10	< 10	
Aliphatic >C21 - C34 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	137	< 10	
Aromatic >C5 - C7 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aromatic >C7 - C8 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aromatic >C8 - C10 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aromatic >C10 - C12 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aromatic >C12 - C16 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aromatic >C16 - C21 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	
Aromatic >C21 - C35 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	19	< 10	

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Leachate Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00127	**Date Sampled**	05/01/24	05/01/24	05/01/24	05/01/24	
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	HP03	HP04	HP05	HP07	
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: LKC231722-KR	**Depth (m)**	0.50	0.50	0.30	0.40	
Reporting Date: 15/01/2024	**DETS Sample No**	692869	692871	692873	692876	

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	ug/l	< 1	ISO17025	< 1	< 1	< 1	< 1	
Toluene : HS_1D_MS	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	
Ethylbenzene : HS_1D_MS	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	
p & m-xylene : HS_1D_MS	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	
o-xylene : HS_1D_MS	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	
MTBE : HS_1D_MS	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	

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Soil Analysis Certificate - Sample Descriptions
DETS Report No: 24-00127
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: LKC231722-KR
Reporting Date: 15/01/2024

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
692868	HP03	None Supplied	0.50	4.2	Brown loamy gravel with stones and concrete
692870	HP04	None Supplied	0.50	4.5	Brown loamy gravel with stones and concrete
692872	HP05	None Supplied	0.30	5.9	Brown gravelly sand with stones and concrete
692874	HP05	None Supplied	0.50	12.6	Light brown sandy clay
692875	HP07	None Supplied	0.40	8.7	Brown sandy clay with stones and concrete
692877	HP07	None Supplied	1.00	13.3	Light brown sandy clay

Moisture content is part of procedure E003 & is not an accredited test
Insufficient Sample I/S
Unsuitable Sample U/S

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Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 24-00127
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: LKC231722-KR
Reporting Date: 15/01/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

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UKAS TESTING
4480

Water Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 24-00127
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: LKC231722-KR
Reporting Date: 15/01/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	F	Ammoniacal Nitrogen	Determination of ammoniacal nitrogen by discrete analyser.	E126
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	UF	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR dete	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 – C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichlorometha	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	TPH CWG (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

Key

F Filtered
UF Unfiltered

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List of HWOL Acronyms and Operators
DETS Report No: 24-00127
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: LKC231722-KR
Reporting Date: 15/01/2024

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det - Acronym
Benzene - HS_1D_MS
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
TPH CWG - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH CWG - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH CWG - Aliphatic >C16 - C21 - EH_CU_1D_AL
TPH CWG - Aliphatic >C21 - C34 - EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH CWG - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH CWG - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH CWG - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH CWG - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH CWG - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH CWG - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH CWG - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH CWG - Total >C5 - C44 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

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DETS Report No: 24-00268

Site Reference:	Sydney Avenue, Manchester Airport
Project / Job Ref:	LKC 23 1722
Order No:	LKC231722-KR
Sample Receipt Date:	12/01/2024
Sample Scheduled Date:	12/01/2024
Report Issue Number:	1
Reporting Date:	18/01/2024

Authorised by:

Steve Knight
Customer Support Manager

Dates of laboratory activities for each tested analyte are available upon request.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

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4480

Soil Analysis Certificate						
DETS Report No: 24-00268	**Date Sampled**	09/01/24	09/01/24	09/01/24	09/01/24	
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	BH01	BH01	BH01	BH02	
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: LKC231722-KR	**Depth (m)**	0.40	0.40	0.60	0.20	
Reporting Date: 18/01/2024	**DETS Sample No**	693538	693539	693540	693541	

Determinand	Unit	RL	Accreditation					
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected		Not Detected	Not Detected	
pH	pH Units	N/a	MCERTS	8.4		7.6	8.2	
Total Cyanide	mg/kg	< 1	NONE	< 1		< 1	< 1	
Free Cyanide	mg/kg	< 1	NONE	< 1		< 1	< 1	
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	11		15	24	
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.01		0.01	0.02	
Organic Matter (SOM)	%	< 0.1	MCERTS	1.6		0.9	11.8	
Arsenic (As)	mg/kg	< 2	MCERTS	< 2		5	4	
W/S Boron	mg/kg	< 1	NONE	< 1		< 1	< 1	
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2		< 0.2	1.3	
Chromium (Cr)	mg/kg	< 2	MCERTS	< 2		31	8	
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2		< 2	< 2	
Copper (Cu)	mg/kg	< 4	MCERTS	< 4		84	15	
Lead (Pb)	mg/kg	< 3	MCERTS	< 3		8	30	
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1		< 1	< 1	
Nickel (Ni)	mg/kg	< 3	MCERTS	< 3		33	9	
Selenium (Se)	mg/kg	< 2	MCERTS	< 2		< 2	< 2	
Vanadium (V)	mg/kg	< 1	MCERTS	3		37	8	
Zinc (Zn)	mg/kg	< 3	MCERTS	4		82	87	
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2		< 2	< 2	

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-00268	**Date Sampled**	09/01/24	09/01/24	09/01/24		
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied		
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	BH01	BH01	BH02		
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied		
Order No: LKC231722-KR	**Depth (m)**	0.40	0.60	0.20		
Reporting Date: 18/01/2024	**DETS Sample No**	693538	693540	693541		

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	0.12	< 0.1	< 0.1		
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Phenanthrene	mg/kg	< 0.1	MCERTS	0.24	< 0.1	< 0.1		
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Fluoranthene	mg/kg	< 0.1	MCERTS	0.28	< 0.1	< 0.1		
Pyrene	mg/kg	< 0.1	MCERTS	0.40	< 0.1	< 0.1		
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6		

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00268	**Date Sampled**	09/01/24	09/01/24	09/01/24	09/01/24	
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	BH01	BH01	BH01	BH02	
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: LKC231722-KR	**Depth (m)**	0.40	0.40	0.60	0.20	
Reporting Date: 18/01/2024	**DETS Sample No**	693538	693539	693540	693541	

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01		< 0.01	< 0.01	
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05		< 0.05	< 0.05	
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2		< 2	< 2	
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2		< 2	< 2	
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	25		< 3	< 3	
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	118		4	< 3	
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	1166		79	56	
Aliphatic >C34 - C44	mg/kg	< 10	NONE	235		10	< 10	
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	1545		94	56	
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01		< 0.01	< 0.01	
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05		< 0.05	< 0.05	
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2	< 2	
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2	< 2	
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	10		< 2	< 2	
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	113		4	< 3	
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	1227		113	65	
Aromatic >C35 - C44	mg/kg	< 10	NONE	260		10	< 10	
Aromatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	1610		127	65	
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	3155		221	121	

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00268	**Date Sampled**	09/01/24	09/01/24	09/01/24		
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied		
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	BH01	BH01	BH02		
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied		
Order No: LKC231722-KR	**Depth (m)**	0.40	0.60	0.20		
Reporting Date: 18/01/2024	**DETS Sample No**	693538	693540	693541		

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2		
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5		
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2		
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2		
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2		
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5		

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4480

Soil Analysis Certificate - Volatile Organic Compounds (VOC)						
DETS Report No: 24-00268	**Date Sampled**	09/01/24				
LK Consult Limited	**Time Sampled**	None Supplied				
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	BH01				
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied				
Order No: LKC231722-KR	**Depth (m)**	0.40				
Reporting Date: 18/01/2024	**DETS Sample No**	693538				

Determinand	Unit	RL	Accreditation					
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5				
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5				
Chloromethane	ug/kg	< 10	MCERTS	< 10				
Chloroethane	ug/kg	< 5	MCERTS	< 5				
Bromomethane	ug/kg	< 10	MCERTS	< 10				
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5				
1,1-Dichloroethene	ug/kg	< 5	MCERTS	< 5				
MTBE	ug/kg	< 5	MCERTS	< 5				
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5				
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5				
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5				
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5				
Chloroform	ug/kg	< 5	MCERTS	< 5				
Bromochloromethane	ug/kg	< 5	MCERTS	< 5				
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5				
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10				
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5				
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5				
Benzene	ug/kg	< 2	MCERTS	< 2				
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5				
Trichloroethene	ug/kg	< 5	MCERTS	< 5				
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5				
Dibromomethane	ug/kg	< 5	MCERTS	< 5				
TAME	ug/kg	< 5	MCERTS	< 5				
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5				
Toluene	ug/kg	< 5	MCERTS	< 5				
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5				
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10				
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5				
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5				
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5				
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5				
Chlorobenzene	ug/kg	< 5	MCERTS	< 5				
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5				
Ethyl Benzene	ug/kg	< 2	MCERTS	< 2				
m,p-Xylene	ug/kg	< 2	MCERTS	< 2				
o-Xylene	ug/kg	< 2	MCERTS	< 2				
Styrene	ug/kg	< 5	MCERTS	< 5				
Bromoform	ug/kg	< 10	MCERTS	< 10				
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5				
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5				
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5				
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5				
Bromobenzene	ug/kg	< 5	MCERTS	< 5				
2-Chlorotoluene	ug/kg	< 5	MCERTS	< 5				
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5				
4-Chlorotoluene	ug/kg	< 5	MCERTS	< 5				
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5				
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5				
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5				
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5				
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5				
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5				
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5				
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5				
,2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10				
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5				

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Leachate Analysis Certificate						
DETS Report No: 24-00268	**Date Sampled**	09/01/24	09/01/24	09/01/24	09/01/24	
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	BH01	BH01	BH01	BH02	
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: LKC231722-KR	**Depth (m)**	0.40	0.40	0.60	0.20	
Reporting Date: 18/01/2024	**DETS Sample No**	693538	693539	693540	693541	

Determinand	Unit	RL	Accreditation					
Total Organic Carbon (TOC)	mg/l	< 1	ISO17025		5.8			

Subcontracted analysis (S)

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Leachate Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00268	**Date Sampled**	09/01/24				
LK Consult Limited	**Time Sampled**	None Supplied				
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	BH01				
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied				
Order No: LKC231722-KR	**Depth (m)**	0.40				
Reporting Date: 18/01/2024	**DETS Sample No**	693539				

Determinand	**Unit**	**RL**	**Accreditation**					
Aliphatic >C5 - C6 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10				
Aliphatic >C6 - C8 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10				
Aliphatic >C8 - C10 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10				
Aliphatic >C10 - C12 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10				
Aliphatic >C12 - C16 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10				
Aliphatic >C16 - C21 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10				
Aliphatic >C21 - C34 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10				
Aromatic >C5 - C7 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10				
Aromatic >C7 - C8 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10				
Aromatic >C8 - C10 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10				
Aromatic >C10 - C12 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10				
Aromatic >C12 - C16 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10				
Aromatic >C16 - C21 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10				
Aromatic >C21 - C35 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10				

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Leachate Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00268	**Date Sampled**	09/01/24				
LK Consult Limited	**Time Sampled**	None Supplied				
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	BH01				
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied				
Order No: LKC231722-KR	**Depth (m)**	0.40				
Reporting Date: 18/01/2024	**DETS Sample No**	693539				

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	ug/l	< 1	ISO17025	< 1				
Toluene : HS_1D_MS	ug/l	< 5	ISO17025	< 5				
Ethylbenzene : HS_1D_MS	ug/l	< 5	ISO17025	< 5				
p & m-xylene : HS_1D_MS	ug/l	< 10	ISO17025	< 10				
o-xylene : HS_1D_MS	ug/l	< 5	ISO17025	< 5				
MTBE : HS_1D_MS	ug/l	< 10	ISO17025	< 10				

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Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 24-00268	
LK Consult Limited	
Site Reference: Sydney Avenue, Manchester Airport	
Project / Job Ref: LKC 23 1722	
Order No: LKC231722-KR	
Reporting Date: 18/01/2024	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
693538	BH01	None Supplied	0.40	2.5	Brown gravelly sand with stones and concrete
693540	BH01	None Supplied	0.60	13	Grey sandy clay with stones
693541	BH02	None Supplied	0.20	1.9	Brown gravelly sand with stones

Moisture content is part of procedure E003 & is not an accredited test
Insufficient Sample I/S
Unsuitable Sample U/S

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Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 24-00268
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: LKC231722-KR
Reporting Date: 18/01/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

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Water Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 24-00268
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: LKC231722-KR
Reporting Date: 18/01/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	F	Ammoniacal Nitrogen	Determination of ammoniacal nitrogen by discrete analyser.	E126
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	UF	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR dete	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 – C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichlorometha	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	TPH CWG (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

Key

F Filtered
UF Unfiltered

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List of HWOL Acronyms and Operators
DETS Report No: 24-00268
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: LKC231722-KR
Reporting Date: 18/01/2024

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det - Acronym
Benzene - HS_1D_MS
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
TPH CWG - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH CWG - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH CWG - Aliphatic >C16 - C21 - EH_CU_1D_AL
TPH CWG - Aliphatic >C21 - C34 - EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH CWG - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH CWG - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH CWG - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH CWG - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH CWG - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH CWG - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH CWG - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH CWG - Total >C5 - C44 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

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DETS Report No: 24-00340

Site Reference:	Sydney Avenue, Manchester Airport
Project / Job Ref:	LKC 23 1722
Order No:	None Supplied
Sample Receipt Date:	15/01/2024
Sample Scheduled Date:	15/01/2024
Report Issue Number:	1
Reporting Date:	19/01/2024

Authorised by:

Steve Knight
Customer Support Manager

Dates of laboratory activities for each tested analyte are available upon request.

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Soil Analysis Certificate						
DETS Report No: 24-00340	**Date Sampled**	10/01/24	10/01/24	10/01/24	10/01/24	10/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	TP01B	TP06	TP06	TP06	TP07
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	**Depth (m)**	0.50	0.20	0.20	1.05	0.50
Reporting Date: 19/01/2024	**DETS Sample No**	693982	693983	693984	693985	693986

Determinand	Unit	RL	Accreditation	(n)	(n)		(n)	
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected	Not Detected		Not Detected	Not Detected
pH	pH Units	N/a	MCERTS	7.6	7.8		9.7	8.1
Total Cyanide	mg/kg	< 1	NONE	< 1	< 1		< 1	< 1
Free Cyanide	mg/kg	< 1	NONE	< 1	< 1		< 1	< 1
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	70	28		252	66
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.07	0.03		0.25	0.07
Organic Matter (SOM)	%	< 0.1	MCERTS	2.5	2.3		2.8	1.5
Arsenic (As)	mg/kg	< 2	MCERTS	11	6		6	7
W/S Boron	mg/kg	< 1	NONE	< 1	< 1		< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	0.2		0.5	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	16	17		14	22
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2		< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	13	17		31	13
Lead (Pb)	mg/kg	< 3	MCERTS	38	24		95	14
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1		< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	11	15		13	21
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2		< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	24	20		18	25
Zinc (Zn)	mg/kg	< 3	MCERTS	53	50		93	49
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2		< 2	< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-00340	**Date Sampled**	10/01/24	10/01/24	10/01/24	10/01/24	
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	TP01B	TP06	TP06	TP07	
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: None Supplied	**Depth (m)**	0.50	0.20	1.05	0.50	
Reporting Date: 19/01/2024	**DETS Sample No**	693982	693983	693985	693986	

Determinand	Unit	RL	Accreditation	(n)	(n)	(n)		
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.55	< 0.1	
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Acenaphthene	mg/kg	< 0.1	MCERTS	0.14	< 0.1	0.84	< 0.1	
Fluorene	mg/kg	< 0.1	MCERTS	0.16	< 0.1	0.63	< 0.1	
Phenanthrene	mg/kg	< 0.1	MCERTS	1.41	< 0.1	4.29	< 0.1	
Anthracene	mg/kg	< 0.1	MCERTS	0.43	< 0.1	1.09	< 0.1	
Fluoranthene	mg/kg	< 0.1	MCERTS	3.56	0.28	4.44	< 0.1	
Pyrene	mg/kg	< 0.1	MCERTS	3.32	0.28	3.98	< 0.1	
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	1.89	0.15	1.78	< 0.1	
Chrysene	mg/kg	< 0.1	MCERTS	1.73	0.15	1.66	< 0.1	
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	2.78	0.19	1.75	< 0.1	
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.90	< 0.1	0.59	< 0.1	
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	2.48	0.18	1.55	< 0.1	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	1.71	0.11	0.84	< 0.1	
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.34	< 0.1	0.19	< 0.1	
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	1.46	< 0.1	0.72	< 0.1	
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	22.3	< 1.6	24.9	< 1.6	

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00340	**Date Sampled**	10/01/24	10/01/24	10/01/24	10/01/24	10/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	TP01B	TP06	TP06	TP06	TP07
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	**Depth (m)**	0.50	0.20	0.20	1.05	0.50
Reporting Date: 19/01/2024	**DETS Sample No**	693982	693983	693984	693985	693986

Determinand	Unit	RL	Accreditation	(n)	(n)		(n)	
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01		< 0.01	< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05		< 0.05	< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2		< 2	< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2		< 2	< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3		< 3	< 3
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3		8	< 3
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10		49	< 10
Aliphatic >C34 - C44	mg/kg	< 10	NONE	< 10	< 10		< 10	< 10
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21		57	< 21
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01		< 0.01	< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05		< 0.05	< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2		< 2	< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2		< 2	< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2		5	< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	9	< 3		27	< 3
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	82	< 10		109	< 10
Aromatic >C35 - C44	mg/kg	< 10	NONE	< 10	< 10		10	< 10
Aromatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	91	< 21		152	< 21
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	91	< 42		209	< 42

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00340	**Date Sampled**	10/01/24	10/01/24	10/01/24	10/01/24	
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	TP01B	TP06	TP06	TP07	
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: None Supplied	**Depth (m)**	0.50	0.20	1.05	0.50	
Reporting Date: 19/01/2024	**DETS Sample No**	693982	693983	693985	693986	

Determinand	Unit	RL	Accreditation	(n)	(n)	(n)		
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	7	< 2	
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	6	< 2	
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	

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Soil Analysis Certificate - Volatile Organic Compounds (VOC)						
DETS Report No: 24-00340	**Date Sampled**	10/01/24	10/01/24	10/01/24	10/01/24	
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	TP01B	TP06	TP06	TP07	
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: None Supplied	**Depth (m)**	0.50	0.20	1.05	0.50	
Reporting Date: 19/01/2024	**DETS Sample No**	693982	693983	693985	693986	

Determinand	Unit	RL	Accreditation	(n)	(n)	(n)		
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Chloromethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Chloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Bromomethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Chloroform	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Bromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Trichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Dibromomethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
TAME	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Chlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Ethyl Benzene	ug/kg	< 2	MCERTS	< 2	< 2	7	< 2	
m,p-Xylene	ug/kg	< 2	MCERTS	< 2	< 2	6	< 2	
o-Xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Styrene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Bromoform	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Bromobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
2-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
4-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
,2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	

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UKAS TESTING
4480

Leachate Analysis Certificate							
DETS Report No: 24-00340	**Date Sampled**	10/01/24	10/01/24	10/01/24	10/01/24	10/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	TP01B	TP06	TP06	TP06	TP07
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	**Depth (m)**	0.50	0.20	0.20	1.05	0.50
Reporting Date: 19/01/2024	**DETS Sample No**	693982	693983	693984	693985	693986

Determinand	Unit	RL	Accreditation	(n)	(n)		(n)	
Total Organic Carbon (TOC)	mg/l	< 1	ISO17025			13.1		

Subcontracted analysis (S)
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Leachate Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00340	**Date Sampled**	10/01/24				
LK Consult Limited	**Time Sampled**	None Supplied				
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	TP06				
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied				
Order No: None Supplied	**Depth (m)**	0.20				
Reporting Date: 19/01/2024	**DETS Sample No**	693984				

Determinand	**Unit**	**RL**	**Accreditation**					
Aliphatic >C5 - C6 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10				
Aliphatic >C6 - C8 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10				
Aliphatic >C8 - C10 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10				
Aliphatic >C10 - C12 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10				
Aliphatic >C12 - C16 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10				
Aliphatic >C16 - C21 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10				
Aliphatic >C21 - C34 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10				
Aromatic >C5 - C7 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10				
Aromatic >C7 - C8 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10				
Aromatic >C8 - C10 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10				
Aromatic >C10 - C12 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10				
Aromatic >C12 - C16 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10				
Aromatic >C16 - C21 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10				
Aromatic >C21 - C35 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10				

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UKAS TESTING
4480

Leachate Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00340	**Date Sampled**	10/01/24				
LK Consult Limited	**Time Sampled**	None Supplied				
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	TP06				
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied				
Order No: None Supplied	**Depth (m)**	0.20				
Reporting Date: 19/01/2024	**DETS Sample No**	693984				

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	ug/l	< 1	ISO17025	< 1				
Toluene : HS_1D_MS	ug/l	< 5	ISO17025	< 5				
Ethylbenzene : HS_1D_MS	ug/l	< 5	ISO17025	< 5				
p & m-xylene : HS_1D_MS	ug/l	< 10	ISO17025	< 10				
o-xylene : HS_1D_MS	ug/l	< 5	ISO17025	< 5				
MTBE : HS_1D_MS	ug/l	< 10	ISO17025	< 10				

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Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 24-00340	
LK Consult Limited	
Site Reference: Sydney Avenue, Manchester Airport	
Project / Job Ref: LKC 23 1722	
Order No: None Supplied	
Reporting Date: 19/01/2024	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
693982	TP01B	None Supplied	0.50	5.7	Brown sandy gravel with stones and concrete
693983	TP06	None Supplied	0.20	9.2	Brown sandy gravel with stones and brick
693985	TP06	None Supplied	1.05	8.3	Brown sandy gravel with stones and concrete
693986	TP07	None Supplied	0.50	11.5	Brown sandy clay with stones

Moisture content is part of procedure E003 & is not an accredited test
Insufficient Sample I/S
Unsuitable Sample U/S

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Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 24-00340
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: None Supplied
Reporting Date: 19/01/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

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Water Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 24-00340
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: None Supplied
Reporting Date: 19/01/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	F	Ammoniacal Nitrogen	Determination of ammoniacal nitrogen by discrete analyser.	E126
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	UF	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR dete	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 – C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichlorometha	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	TPH CWG (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

Key

F Filtered
UF Unfiltered

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List of HWOL Acronyms and Operators
DETS Report No: 24-00340
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: None Supplied
Reporting Date: 19/01/2024

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det - Acronym
Benzene - HS_1D_MS
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
TPH CWG - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH CWG - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH CWG - Aliphatic >C16 - C21 - EH_CU_1D_AL
TPH CWG - Aliphatic >C21 - C34 - EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH CWG - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH CWG - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH CWG - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH CWG - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH CWG - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH CWG - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH CWG - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH CWG - Total >C5 - C44 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

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DETS Report No: 24-00553

Site Reference:	Sydney Avenue, Manchester Airport
Project / Job Ref:	LKC 23 1722
Order No:	LKC231722-KR
Sample Receipt Date:	22/01/2024
Sample Scheduled Date:	22/01/2024
Report Issue Number:	1
Reporting Date:	25/01/2024

Authorised by:

Steve Knight
Customer Support Manager

Dates of laboratory activities for each tested analyte are available upon request.

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Soil Analysis Certificate						
DETS Report No: 24-00553	**Date Sampled**	17/01/24	17/01/24	17/01/24	17/01/24	17/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS01	WS01	WS01	WS01	WS02
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.10	0.10	1.00	1.00	0.40
Reporting Date: 25/01/2024	**DETS Sample No**	694958	694959	694960	694961	694962

Determinand	Unit	RL	Accreditation					(n)
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected		Not Detected		Not Detected
pH	pH Units	N/a	MCERTS	8.0		7.8		8.1
Total Cyanide	mg/kg	< 1	NONE	< 1		< 1		< 1
Free Cyanide	mg/kg	< 1	NONE	< 1		< 1		< 1
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	25		32		< 10
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.02		0.03		< 0.01
Organic Matter (SOM)	%	< 0.1	MCERTS	6.9		1.6		2.9
Arsenic (As)	mg/kg	< 2	MCERTS	2		5		3
W/S Boron	mg/kg	< 1	NONE	< 1		< 1		< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.7		< 0.2		< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	6		12		11
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2		< 2		< 2
Copper (Cu)	mg/kg	< 4	MCERTS	12		6		8
Lead (Pb)	mg/kg	< 3	MCERTS	14		7		9
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1		< 1		< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	10		8		8
Selenium (Se)	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Vanadium (V)	mg/kg	< 1	MCERTS	8		16		15
Zinc (Zn)	mg/kg	< 3	MCERTS	42		17		22
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2		< 2		< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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Soil Analysis Certificate						
DETS Report No: 24-00553	**Date Sampled**	17/01/24	17/01/24	17/01/24	17/01/24	17/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS02	WS03	WS03	WS05	WS05
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.40	0.50	0.50	0.50	0.50
Reporting Date: 25/01/2024	**DETS Sample No**	694963	694964	694965	694966	694967

Determinand	Unit	RL	Accreditation				(n)	
Asbestos Screen (S)	N/a	N/a	ISO17025		Not Detected		Not Detected	
pH	pH Units	N/a	MCERTS		7.9		7.8	
Total Cyanide	mg/kg	< 1	NONE		< 1		< 1	
Free Cyanide	mg/kg	< 1	NONE		< 1		< 1	
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS		14		< 10	
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS		0.01		< 0.01	
Organic Matter (SOM)	%	< 0.1	MCERTS		1.8		6.1	
Arsenic (As)	mg/kg	< 2	MCERTS		5		5	
W/S Boron	mg/kg	< 1	NONE		< 1		< 1	
Cadmium (Cd)	mg/kg	< 0.2	MCERTS		< 0.2		0.2	
Chromium (Cr)	mg/kg	< 2	MCERTS		15		16	
Chromium (hexavalent)	mg/kg	< 2	NONE		< 2		< 2	
Copper (Cu)	mg/kg	< 4	MCERTS		14		17	
Lead (Pb)	mg/kg	< 3	MCERTS		12		26	
Mercury (Hg)	mg/kg	< 1	MCERTS		< 1		< 1	
Nickel (Ni)	mg/kg	< 3	MCERTS		14		19	
Selenium (Se)	mg/kg	< 2	MCERTS		< 2		< 2	
Vanadium (V)	mg/kg	< 1	MCERTS		18		23	
Zinc (Zn)	mg/kg	< 3	MCERTS		30		51	
Total Phenols (monohydric)	mg/kg	< 2	NONE		< 2		< 2	

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)

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Soil Analysis Certificate						
DETS Report No: 24-00553	**Date Sampled**	18/01/24	18/01/24	18/01/24		
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied		
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS04	WS04	WS04		
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied		
Order No: LKC231722-KR	**Depth (m)**	1.00	0.50	1.70		
Reporting Date: 25/01/2024	**DETS Sample No**	694968	694969	694970		

Determinand	Unit	RL	Accreditation					
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected		Not Detected		
pH	pH Units	N/a	MCERTS	7.9		7.5		
Total Cyanide	mg/kg	< 1	NONE	< 1		< 1		
Free Cyanide	mg/kg	< 1	NONE	< 1		< 1		
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	15		32		
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.01		0.03		
Organic Matter (SOM)	%	< 0.1	MCERTS	1.2		0.8		
Arsenic (As)	mg/kg	< 2	MCERTS	5		4		
W/S Boron	mg/kg	< 1	NONE	< 1		< 1		
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2		< 0.2		
Chromium (Cr)	mg/kg	< 2	MCERTS	20		27		
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2		< 2		
Copper (Cu)	mg/kg	< 4	MCERTS	8		12		
Lead (Pb)	mg/kg	< 3	MCERTS	8		3		
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1		< 1		
Nickel (Ni)	mg/kg	< 3	MCERTS	17		29		
Selenium (Se)	mg/kg	< 2	MCERTS	< 2		< 2		
Vanadium (V)	mg/kg	< 1	MCERTS	21		32		
Zinc (Zn)	mg/kg	< 3	MCERTS	34		53		
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2		< 2		

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-00553	**Date Sampled**	17/01/24	17/01/24	17/01/24	17/01/24	17/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS01	WS01	WS02	WS03	WS05
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.10	1.00	0.40	0.50	0.50
Reporting Date: 25/01/2024	**DETS Sample No**	694958	694960	694962	694964	694966

Determinand	Unit	RL	Accreditation			(n)		(n)
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.16
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.12	0.81
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.22
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.19	0.25	1.81
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.25	0.23	1.61
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.27	0.15	0.97
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.29	0.15	0.90
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.21	< 0.1	0.85	0.20	0.97
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.30	< 0.1	0.33
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.28	< 0.1	1.08	0.21	1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.24	< 0.1	0.78	0.17	0.72
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.17	< 0.1	0.13
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.32	< 0.1	0.90	0.16	0.61
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	5.1	1.6	10.3

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-00553	**Date Sampled**	18/01/24	18/01/24			
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied			
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS04	WS04			
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied			
Order No: LKC231722-KR	**Depth (m)**	1.00	1.70			
Reporting Date: 25/01/2024	**DETS Sample No**	694968	694970			

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6			

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Lenham Heath
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Tel : 01622 850410

Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00553	**Date Sampled**	17/01/24	17/01/24	17/01/24	17/01/24	17/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS01	WS01	WS01	WS01	WS02
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.10	0.10	1.00	1.00	0.40
Reporting Date: 25/01/2024	**DETS Sample No**	694958	694959	694960	694961	694962

Determinand	Unit	RL	Accreditation					(n)
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01		< 0.01		< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05		< 0.05		< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3		< 3		< 3
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3		< 3		< 3
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10		< 10		139
Aliphatic >C34 - C44	mg/kg	< 10	NONE	< 10		< 10		< 10
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21		< 21		139
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01		< 0.01		< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05		< 0.05		< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2		< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	< 3		< 3		10
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10		< 10		127
Aromatic >C35 - C44	mg/kg	< 10	NONE	< 10		< 10		12
Aromatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	< 21		< 21		150
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	< 42		< 42		289

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00553	**Date Sampled**	17/01/24	17/01/24	17/01/24	17/01/24	17/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS02	WS03	WS03	WS05	WS05
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.40	0.50	0.50	0.50	0.50
Reporting Date: 25/01/2024	**DETS Sample No**	694963	694964	694965	694966	694967

Determinand	Unit	RL	Accreditation				(n)	
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE		< 0.01		< 0.01	
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE		< 0.05		< 0.05	
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	**MCERTS**		< 2		< 2	
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	**MCERTS**		< 2		< 2	
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	**MCERTS**		< 3		< 3	
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	**MCERTS**		< 3		< 3	
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	**MCERTS**		< 10		< 10	
Aliphatic >C34 - C44	mg/kg	< 10	NONE		< 10		< 10	
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE		< 21		< 21	
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE		< 0.01		< 0.01	
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE		< 0.05		< 0.05	
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	**MCERTS**		< 2		< 2	
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	**MCERTS**		< 2		< 2	
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	**MCERTS**		< 2		< 2	
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	**MCERTS**		< 3		17	
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	**MCERTS**		< 10		14	
Aromatic >C35 - C44	mg/kg	< 10	NONE		< 10		< 10	
Aromatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE		< 21		31	
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE		< 42		< 42	

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00553	**Date Sampled**	18/01/24	18/01/24	18/01/24		
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied		
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS04	WS04	WS04		
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied		
Order No: LKC231722-KR	**Depth (m)**	1.00	0.50	1.70		
Reporting Date: 25/01/2024	**DETS Sample No**	694968	694969	694970		

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01		< 0.01		
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05		< 0.05		
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2		< 2		
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2		< 2		
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3		< 3		
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3		< 3		
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10		< 10		
Aliphatic >C34 - C44	mg/kg	< 10	NONE	< 10		< 10		
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21		< 21		
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01		< 0.01		
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05		< 0.05		
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2		
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2		
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2		
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	< 3		< 3		
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10		< 10		
Aromatic >C35 - C44	mg/kg	< 10	NONE	< 10		< 10		
Aromatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	< 21		< 21		
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	< 42		< 42		

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00553	**Date Sampled**	17/01/24	17/01/24	17/01/24	17/01/24	17/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS01	WS01	WS02	WS03	WS05
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.10	1.00	0.40	0.50	0.50
Reporting Date: 25/01/2024	**DETS Sample No**	694958	694960	694962	694964	694966

Determinand	Unit	RL	Accreditation					
						(n)		(n)
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00553	**Date Sampled**	18/01/24	18/01/24			
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied			
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS04	WS04			
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied			
Order No: LKC231722-KR	**Depth (m)**	1.00	1.70			
Reporting Date: 25/01/2024	**DETS Sample No**	694968	694970			

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2			
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5			
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2			
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2			
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2			
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5			

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Soil Analysis Certificate - Volatile Organic Compounds (VOC)						
DETS Report No: 24-00553	**Date Sampled**	17/01/24	17/01/24	17/01/24	17/01/24	17/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS01	WS01	WS02	WS03	WS05
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.10	1.00	0.40	0.50	0.50
Reporting Date: 25/01/2024	**DETS Sample No**	694958	694960	694962	694964	694966

Determinand	Unit	RL	Accreditation			(n)		(n)
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chloromethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Chloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromomethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chloroform	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Trichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Dibromomethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
TAME	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethyl Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
m,p-Xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-Xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Styrene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromoform	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
2-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	10	< 5	< 5	< 5	< 5
4-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	34	< 5	< 5	< 5	< 5
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
,2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

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Soil Analysis Certificate - Volatile Organic Compounds (VOC)						
DETS Report No: 24-00553	**Date Sampled**	18/01/24				
LK Consult Limited	**Time Sampled**	None Supplied				
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS04				
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied				
Order No: LKC231722-KR	**Depth (m)**	1.00				
Reporting Date: 25/01/2024	**DETS Sample No**	694968				

Determinand	Unit	RL	Accreditation					
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5				
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5				
Chloromethane	ug/kg	< 10	MCERTS	< 10				
Chloroethane	ug/kg	< 5	MCERTS	< 5				
Bromomethane	ug/kg	< 10	MCERTS	< 10				
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5				
1,1-Dichloroethene	ug/kg	< 5	MCERTS	< 5				
MTBE	ug/kg	< 5	MCERTS	< 5				
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5				
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5				
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5				
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5				
Chloroform	ug/kg	< 5	MCERTS	< 5				
Bromochloromethane	ug/kg	< 5	MCERTS	< 5				
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5				
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10				
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5				
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5				
Benzene	ug/kg	< 2	MCERTS	< 2				
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5				
Trichloroethene	ug/kg	< 5	MCERTS	< 5				
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5				
Dibromomethane	ug/kg	< 5	MCERTS	< 5				
TAME	ug/kg	< 5	MCERTS	< 5				
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5				
Toluene	ug/kg	< 5	MCERTS	< 5				
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5				
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10				
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5				
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5				
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5				
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5				
Chlorobenzene	ug/kg	< 5	MCERTS	< 5				
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5				
Ethyl Benzene	ug/kg	< 2	MCERTS	< 2				
m,p-Xylene	ug/kg	< 2	MCERTS	< 2				
o-Xylene	ug/kg	< 2	MCERTS	< 2				
Styrene	ug/kg	< 5	MCERTS	< 5				
Bromoform	ug/kg	< 10	MCERTS	< 10				
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5				
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5				
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5				
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5				
Bromobenzene	ug/kg	< 5	MCERTS	< 5				
2-Chlorotoluene	ug/kg	< 5	MCERTS	< 5				
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5				
4-Chlorotoluene	ug/kg	< 5	MCERTS	< 5				
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5				
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5				
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5				
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5				
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5				
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5				
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5				
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5				
,2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10				
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5				

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Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC)						
DETS Report No: 24-00553	**Date Sampled**	18/01/24				
LK Consult Limited	**Time Sampled**	None Supplied				
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS04				
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied				
Order No: LKC231722-KR	**Depth (m)**	1.00				
Reporting Date: 25/01/2024	**DETS Sample No**	694968				

Determinand	Unit	RL	Accreditation					
Phenol	mg/kg	< 0.1	NONE	< 0.1				
1,2,4-Trichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1				
2-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1				
Nitrobenzene	mg/kg	< 0.1	MCERTS	< 0.1				
0-Cresol	mg/kg	< 0.1	NONE	< 0.1				
bis(2-chloroethoxy)methane	mg/kg	< 0.1	MCERTS	< 0.1				
bis(2-chloroethyl)ether	mg/kg	< 0.1	MCERTS	< 0.1				
2,4-Dichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1				
2-Chlorophenol	mg/kg	< 0.1	ISO17025	< 0.1				
1,3-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1				
1,4-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1				
1,2-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1				
2,4-Dimethylphenol	mg/kg	< 0.15	ISO17025	< 0.15				
Isophorone	mg/kg	< 0.1	NONE	< 0.1				
Hexachloroethane	mg/kg	< 0.1	MCERTS	< 0.1				
p-Cresol	mg/kg	< 0.15	MCERTS	< 0.15				
2,4,6-Trichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1				
2,4,5-Trichlorophenol	mg/kg	< 0.15	MCERTS	< 0.15				
2-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1				
4-Chloro-3-methylphenol	mg/kg	< 0.1	NONE	< 0.1				
2-Methylnaphthalene	mg/kg	< 0.1	MCERTS	< 0.1				
Hexachlorocyclopentadiene	mg/kg	< 0.1	NONE	< 0.1				
Hexachlorobutadiene	mg/kg	< 0.1	ISO17025	< 0.1				
2,6-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1				
Dimethyl phthalate	mg/kg	< 0.1	NONE	< 0.1				
2-Chloronaphthalene	mg/kg	< 0.1	MCERTS	< 0.1				
4-Chloroanaline	mg/kg	< 0.15	NONE	< 0.15				
4-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1				
4-Chlorophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1				
3-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1				
4-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1				
4-Bromophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1				
Hexachlorobenzene	mg/kg	< 0.1	MCERTS	< 0.1				
2,4-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1				
Diethyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1				
Dibenzofuran	mg/kg	< 0.1	MCERTS	< 0.1				
Azobenzene	mg/kg	< 0.1	NONE	< 0.1				
Dibutyl phthalate	mg/kg	< 0.1	ISO17025	< 0.1				
Carbazole	mg/kg	< 0.1	ISO17025	< 0.1				
bis(2-ethylhexyl)phthalate	mg/kg	< 0.15	ISO17025	< 0.15				
Benzyl butyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1				
Di-n-octyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1				

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Leachate Analysis Certificate						
DETS Report No: 24-00553	**Date Sampled**	17/01/24	17/01/24	17/01/24	17/01/24	17/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS01	WS01	WS01	WS01	WS02
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.10	0.10	1.00	1.00	0.40
Reporting Date: 25/01/2024	**DETS Sample No**	694958	694959	694960	694961	694962

Determinand	Unit	RL	Accreditation					(n)
Total Organic Carbon (TOC)	mg/l	< 1	ISO17025		14.4		12.5	

Subcontracted analysis (S)
(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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Leachate Analysis Certificate							
DETS Report No: 24-00553	**Date Sampled**	17/01/24	17/01/24	17/01/24	17/01/24	17/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS02	WS03	WS03	WS05	WS05
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.40	0.50	0.50	0.50	0.50
Reporting Date: 25/01/2024	**DETS Sample No**	694963	694964	694965	694966	694967

Determinand	Unit	RL	Accreditation				(n)	
Total Organic Carbon (TOC)	mg/l	< 1	ISO17025	58.9		27.4		14.8

Subcontracted analysis (S)

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Leachate Analysis Certificate						
DETS Report No: 24-00553	**Date Sampled**	18/01/24	18/01/24	18/01/24		
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied		
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS04	WS04	WS04		
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied		
Order No: LKC231722-KR	**Depth (m)**	1.00	0.50	1.70		
Reporting Date: 25/01/2024	**DETS Sample No**	694968	694969	694970		

Determinand	Unit	RL	Accreditation					
Total Organic Carbon (TOC)	mg/l	< 1	ISO17025		15.8			

Subcontracted analysis (S)

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Leachate Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00553	**Date Sampled**	17/01/24	17/01/24	17/01/24	17/01/24	17/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS01	WS01	WS02	WS03	WS05
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.10	1.00	0.40	0.50	0.50
Reporting Date: 25/01/2024	**DETS Sample No**	694959	694961	694963	694965	694967

Determinand	**Unit**	**RL**	**Accreditation**					
Aliphatic >C5 - C6 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aliphatic >C6 - C8 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aliphatic >C8 - C10 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aliphatic >C10 - C12 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aliphatic >C12 - C16 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aliphatic >C16 - C21 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aliphatic >C21 - C34 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic >C5 - C7 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic >C7 - C8 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic >C8 - C10 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic >C10 - C12 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic >C12 - C16 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic >C16 - C21 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic >C21 - C35 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10

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Leachate Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-00553	**Date Sampled**	18/01/24				
LK Consult Limited	**Time Sampled**	None Supplied				
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS04				
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied				
Order No: LKC231722-KR	**Depth (m)**	0.50				
Reporting Date: 25/01/2024	**DETS Sample No**	694969				

Determinand	**Unit**	**RL**	**Accreditation**					
Aliphatic >C5 - C6 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10				
Aliphatic >C6 - C8 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10				
Aliphatic >C8 - C10 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10				
Aliphatic >C10 - C12 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10				
Aliphatic >C12 - C16 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10				
Aliphatic >C16 - C21 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10				
Aliphatic >C21 - C34 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10				
Aromatic >C5 - C7 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10				
Aromatic >C7 - C8 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10				
Aromatic >C8 - C10 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10				
Aromatic >C10 - C12 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10				
Aromatic >C12 - C16 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10				
Aromatic >C16 - C21 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10				
Aromatic >C21 - C35 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10				

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Leachate Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00553	**Date Sampled**	17/01/24	17/01/24	17/01/24	17/01/24	17/01/24
LK Consult Limited	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS01	WS01	WS02	WS03	WS05
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC231722-KR	**Depth (m)**	0.10	1.00	0.40	0.50	0.50
Reporting Date: 25/01/2024	**DETS Sample No**	694959	694961	694963	694965	694967

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	ug/l	< 1	ISO17025	< 1	< 1	< 1	< 1	< 1
Toluene : HS_1D_MS	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Ethylbenzene : HS_1D_MS	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
p & m-xylene : HS_1D_MS	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
o-xylene : HS_1D_MS	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
MTBE : HS_1D_MS	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10

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Leachate Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-00553	**Date Sampled**	18/01/24				
LK Consult Limited	**Time Sampled**	None Supplied				
Site Reference: Sydney Avenue, Manchester Airport	**TP / BH No**	WS04				
Project / Job Ref: LKC 23 1722	**Additional Refs**	None Supplied				
Order No: LKC231722-KR	**Depth (m)**	0.50				
Reporting Date: 25/01/2024	**DETS Sample No**	694969				

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	ug/l	< 1	ISO17025	< 1				
Toluene : HS_1D_MS	ug/l	< 5	ISO17025	< 5				
Ethylbenzene : HS_1D_MS	ug/l	< 5	ISO17025	< 5				
p & m-xylene : HS_1D_MS	ug/l	< 10	ISO17025	< 10				
o-xylene : HS_1D_MS	ug/l	< 5	ISO17025	< 5				
MTBE : HS_1D_MS	ug/l	< 10	ISO17025	< 10				

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Soil Analysis Certificate - Sample Descriptions
DETS Report No: 24-00553
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: LKC231722-KR
Reporting Date: 25/01/2024

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
694958	WS01	None Supplied	0.10	3.4	Light brown gravelly sand with stones
694960	WS01	None Supplied	1.00	12.4	Brown sandy clay with stones
694962	WS02	None Supplied	0.40	7.3	Brown sandy gravel with stones and concrete
694964	WS03	None Supplied	0.50	11.4	Brown sandy clay with stones
694966	WS05	None Supplied	0.50	6.5	Brown sandy gravel with stones and concrete
694968	WS04	None Supplied	1.00	10.6	Brown sandy clay with stones
694970	WS04	None Supplied	1.70	14.1	Light brown sandy clay with stones

Moisture content is part of procedure E003 & is not an accredited test
Insufficient Sample I/S
Unsuitable Sample U/S

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Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 24-00553
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: LKC231722-KR
Reporting Date: 25/01/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

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AR As Received

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Water Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 24-00553
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: LKC231722-KR
Reporting Date: 25/01/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	F	Ammoniacal Nitrogen	Determination of ammoniacal nitrogen by discrete analyser.	E126
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	UF	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR dete	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 – C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichlorometha	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	TPH CWG (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

Key

F Filtered
UF Unfiltered

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

List of HWOL Acronyms and Operators
DETS Report No: 24-00553
LK Consult Limited
Site Reference: Sydney Avenue, Manchester Airport
Project / Job Ref: LKC 23 1722
Order No: LKC231722-KR
Reporting Date: 25/01/2024

Acronym	**Description**
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det - Acronym
Benzene - HS_1D_MS
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
TPH CWG - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH CWG - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH CWG - Aliphatic >C16 - C21 - EH_CU_1D_AL
TPH CWG - Aliphatic >C21 - C34 - EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH CWG - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH CWG - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH CWG - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH CWG - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH CWG - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH CWG - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH CWG - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH CWG - Total >C5 - C44 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

Appendix D – Certificates of Analysis (Geotechnical)

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/00441
Issue Number: 1 **Date:** 23 January, 2024

Client:
Murray Rix (Northern) Ltd
Andrew House
Hadfield Street
Dukinfield
Dukinfield
SK16 4QX

Project Manager: Enquires/Michael White/Owain Davies
Project Name: LKC 23 1722 Sydney Avenue, Manchester Airport
Project Ref: Not specified
Order No: 24/025
Date Samples Received: 17/01/24
Date Instructions Received: 17/01/24
Date Analysis Completed: 23/01/24

Approved by:



Gemma Berrisford
Deputy Client Services Supervisor

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME
UKAS TESTING 1247

Envirolab Job Number: 24/00441

Client Project Name: LKC 23 1722 Sydney Avenue, Manchester Airport

Client Project Ref: Not specified

Lab Sample ID	24/00441/1							Units	Limit of Detection	Method ref
Client Sample No	400320									
Client Sample ID	TP02									
Depth to Top	1.00									
Depth To Bottom										
Date Sampled	19-Dec-23									
Sample Type	SOIL - D									
Sample Matrix Code	6A									
% Stones >10mm$_A$	<0.1							% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	7.55							pH	0.01	A-T-031s
Chloride BRE, SO4 equiv. (water sol 2:1)$_D$$^{M\#}$	<7							mg/l	7	A-T-026s
Nitrate BRE, SO4 equiv. (water sol 2:1)$_D$	<0.4							mg/l	0.4	A-T-026s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	24							mg/l	10	A-T-026s
Sulphate BRE (acid sol)$_D$$^{M\#}$	<0.02							% w/w	0.02	A-T-028s
Sulphur BRE (total)$_D$	<0.01							% w/w	0.01	A-T-024s
Magnesium BRE (water sol 2:1)$_D$	13							mg/l	1	A-T-SOLMETS

Report Notes

General
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The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Murray Rix (Northern) Ltd, Andrew House , Hadfield Street, Dukinfield , Dukinfield, SK16 4QX

Project: LKC 23 1722 Sydney Avenue, Manchester Airport

Clients Project No:

Project No: 24/00441

Date Received: 17/01/2024 (am)

Cool Box Temperatures (°C): 9.3

Lab Sample ID	24/00441/1
Client Sample No	400320
Client Sample ID/Depth	TP02 1.00m
Date Sampled	19/12/23
Deviation Code	
F	✓

Key
F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	24/00441/1
Client Sample No	400320
Client Sample ID/Depth	TP02 1.00m
Date Sampled	19/12/23
Sulphate BRE (acid sol)	✓
Sulphate BRE (water sol 2:1)	✓
Chloride BRE, SO4 equiv. (water sol 2:1)	✓
Nitrate BRE, SO4 equiv. (water sol 2:1)	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/00441/1
Client Sample No	400320
Client Sample ID/Depth	TP02 1.00m
Date Sampled	19/12/23
A-T-024s	22/01/2024
A-T-026s	22/01/2024
A-T-028s	22/01/2024
A-T-031s	23/01/2024
A-T-044	23/01/2024
A-T-SOLMETS	22/01/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/00586
Issue Number: 1 **Date:** 26 January, 2024

Client:
Murray Rix (Northern) Ltd
Andrew House
Hadfield Street
Dukinfield
Dukinfield
SK16 4QX

Project Manager: Enquires/Michael White/Owain Davies
Project Name: LKC 23 1722 Sydney Avenue, Manchester Airport
Project Ref: Not specified
Order No: 24/035
Date Samples Received: 22/01/24
Date Instructions Received: 22/01/24
Date Analysis Completed: 26/01/24

Approved by:



Gemma Berrisford
Deputy Client Services Supervisor

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME
UKAS TESTING 1247

Envirolab Job Number: 24/00586

Client Project Name: LKC 23 1722 Sydney Avenue, Manchester Airport

Client Project Ref: Not specified

Lab Sample ID	24/00586/1	24/00586/2	24/00586/3					Units	Limit of Detection	Method ref
Client Sample No	410103	410106	410110							
Client Sample ID	BH01 0.60	BH02 1.00	TP01B 1.50							
Depth to Top										
Depth To Bottom										
Date Sampled	09-Jan-24	09-Jan-24	10-Jan-24							
Sample Type	SOIL - D	SOIL - D	SOIL - D							
Sample Matrix Code	6A	6A	6A							
% Stones >10mm$_A$	<0.1	<0.1	<0.1					% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	7.78	7.46	5.87					pH	0.01	A-T-031s
Chloride BRE, SO4 equiv. (water sol 2:1)$_D$$^{M\#}$	81	88	9					mg/l	7	A-T-026s
Nitrate BRE, SO4 equiv. (water sol 2:1)$_D$	<0.4	0.4	<0.4					mg/l	0.4	A-T-026s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	15	14	17					mg/l	10	A-T-026s
Sulphate BRE (acid sol)$_D$$^{M\#}$	<0.02	<0.02	<0.02					% w/w	0.02	A-T-028s
Sulphur BRE (total)$_D$	<0.01	<0.01	<0.01					% w/w	0.01	A-T-024s
Magnesium BRE (water sol 2:1)$_D$	11	12	2					mg/l	1	A-T-SOLMETS

Report Notes

General
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The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Murray Rix (Northern) Ltd, Andrew House , Hadfield Street, Dukinfield , Dukinfield, SK16 4QX

Project: LKC 23 1722 Sydney Avenue, Manchester Airport

Clients Project No:

Project No: 24/00586

Date Received: 22/01/2024 (am)

Cool Box Temperatures (°C): 11.4

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/00586/1	24/00586/2	24/00586/3
Client Sample No	410103	410106	410110
Client Sample ID/Depth	BH01 0.60	BH02 1.00	TP01B 1.50
Date Sampled	09/01/24	09/01/24	10/01/24
A-T-024s	25/01/2024	25/01/2024	25/01/2024
A-T-026s	26/01/2024	26/01/2024	26/01/2024
A-T-028s	25/01/2024	25/01/2024	25/01/2024
A-T-031s	25/01/2024	25/01/2024	25/01/2024
A-T-044	24/01/2024	24/01/2024	24/01/2024
A-T-SOLMETS	26/01/2024	26/01/2024	26/01/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/01080
Issue Number: 1 **Date:** 08 February, 2024

Client:
Murray Rix (Northern) Ltd
Andrew House
Hadfield Street
Dukinfield
Dukinfield
SK16 4QX

Project Manager: Enquires/Michael White/Owain Davies
Project Name: LKC 23 1722 Sydney Avenue, Manchester Airport
Project Ref: Not specified
Order No: 24/050
Date Samples Received: 02/02/24
Date Instructions Received: 02/02/24
Date Analysis Completed: 08/02/24

Approved by:



Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/01080

Client Project Name: LKC 23 1722 Sydney Avenue, Manchester Airport

Client Project Ref: Not specified

Lab Sample ID	24/01080/1	24/01080/2	24/01080/3	24/01080/4	24/01080/5	24/01080/6	24/01080/7	Units	Limit of Detection	Method ref
Client Sample No	417303	417306	417312	417317	417327	417331	417332			
Client Sample ID	WS01	WS01	WS02	WS02	WS05	WS07	WS07			
Depth to Top	2.00	4.00	2.00	3.80	2.00	1.00	2.50			
Depth To Bottom										
Date Sampled	17-Jan-24	17-Jan-24	17-Jan-24	17-Jan-24	17-Jan-24	18-Jan-24	18-Jan-24			
Sample Type	SOIL - D	SOIL - D	SOIL - D	SOIL - D	SOIL - D	SOIL - D	SOIL - D			
Sample Matrix Code	5A	5A	5A	5A	3	5A	3			
% Stones >10mm$_A$	<0.1	<0.1	10.3	<0.1	<0.1	<0.1	4.1	% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	6.91	7.35	7.20	7.72	8.07	7.88	8.15	pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	80	11	14	15	61	<10	<10	mg/l	10	A-T-026s
Sulphate BRE (acid sol)$_D$$^{M\#}$	0.03	<0.02	<0.02	0.03	0.06	<0.02	<0.02	% w/w	0.02	A-T-028s
Sulphur BRE (total)$_D$	0.02	<0.01	<0.01	0.02	0.02	<0.01	<0.01	% w/w	0.01	A-T-024s

Envirolab Job Number: 24/01080

Client Project Name: LKC 23 1722 Sydney Avenue, Manchester Airport

Client Project Ref: Not specified

Lab Sample ID	24/01080/8							Units	Limit of Detection	Method ref
Client Sample No	417333									
Client Sample ID	WS03									
Depth to Top	1.20									
Depth To Bottom										
Date Sampled	17-Jan-24									
Sample Type	SOIL - D									
Sample Matrix Code	3									
% Stones >10mm$_A$	<0.1							% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	7.37							pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	31							mg/l	10	A-T-026s
Sulphate BRE (acid sol)$_D$$^{M\#}$	<0.02							% w/w	0.02	A-T-028s
Sulphur BRE (total)$_D$	<0.01							% w/w	0.01	A-T-024s

Report Notes

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Asbestos
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Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Murray Rix (Northern) Ltd, Andrew House , Hadfield Street, Dukinfield , Dukinfield, SK16 4QX

Project: LKC 23 1722 Sydney Avenue, Manchester Airport

Clients Project No:

Project No: 24/01080

Date Received: 02/02/2024 (am)

Cool Box Temperatures (°C): 13.2

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/01080/1	24/01080/2	24/01080/3	24/01080/4	24/01080/5	24/01080/6	24/01080/7	24/01080/8
Client Sample No	417303	417306	417312	417317	417327	417331	417332	417333
Client Sample ID/Depth	WS01 2.00m	WS01 4.00m	WS02 2.00m	WS02 3.80m	WS05 2.00m	WS07 1.00m	WS07 2.50m	WS03 1.20m
Date Sampled	17/01/24	17/01/24	17/01/24	17/01/24	17/01/24	18/01/24	18/01/24	17/01/24
A-T-024s	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024
A-T-026s	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024
A-T-028s	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024
A-T-031s	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024
A-T-044	06/02/2024	06/02/2024	06/02/2024	06/02/2024	06/02/2024	06/02/2024	06/02/2024	06/02/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

MURRAY RIX
CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING

TEST REPORT

Client LK Consult Ltd

Address Unit 29 Eton Business Park
Eton Hill Road
Radcliffe
Greater Manchester
M26 2ZS

Contract LKC 23 1722 -
Sydney Avenue, Manchester Airport

Job Number MRN 24076/2
Date of Issue 01 February 2024
Page 1 of 12

Approved Signatories

S J Hutchings, O P Davies

Notes

1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.

2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.

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

4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.

5 The results included within the report are representative of the samples submitted for analysis.

6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

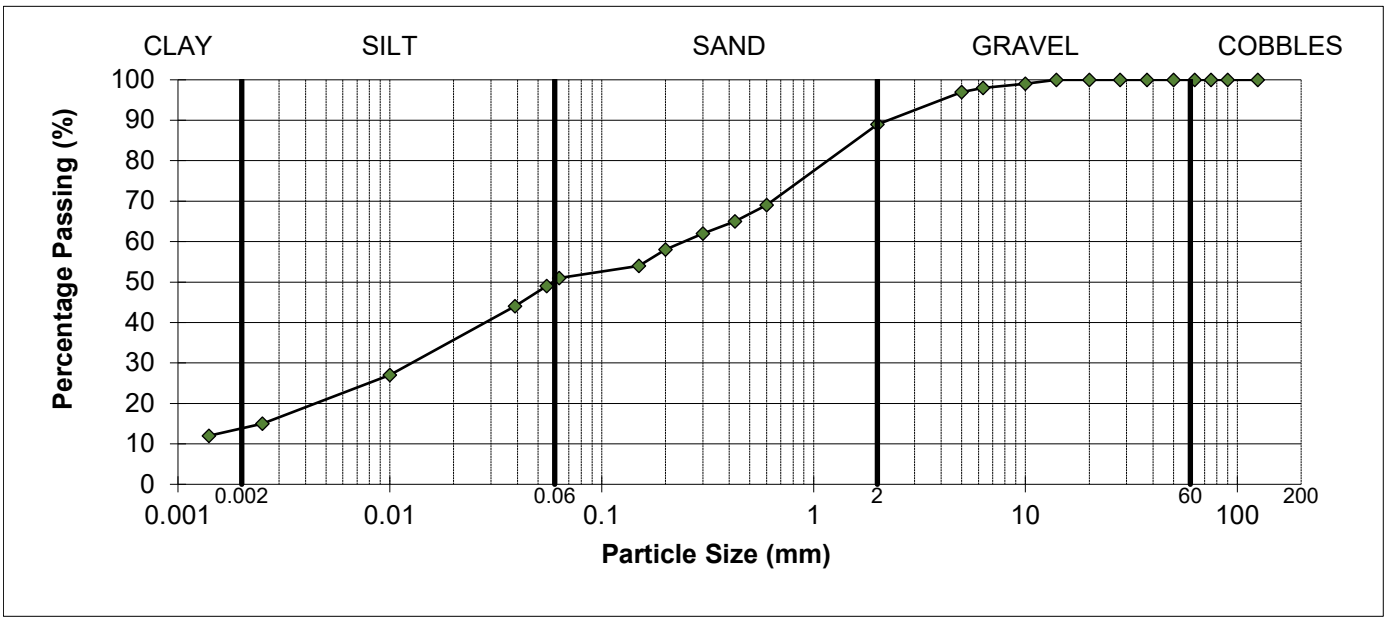
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/2

SAMPLE LABEL	TP02 0.5 B	DATE SAMPLED	19-Dec-23
LAB SAMPLE No	400324	DATE RECEIVED	21-Dec-23
DATE TESTED	16-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	89	
90	100		0.6	69	
75	100		0.425	65	
63	100		0.3	62	
50	100		0.2	58	
37.5	100		0.15	54	
28	100		0.063	51	
20	100		0.055	49	
14	100		0.039	44	
10	99		0.01	27	
6.3	98		0.0025	15	
5	97		0.0014	12	



REMARKS
As received water content = 17.9%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 01-Feb-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

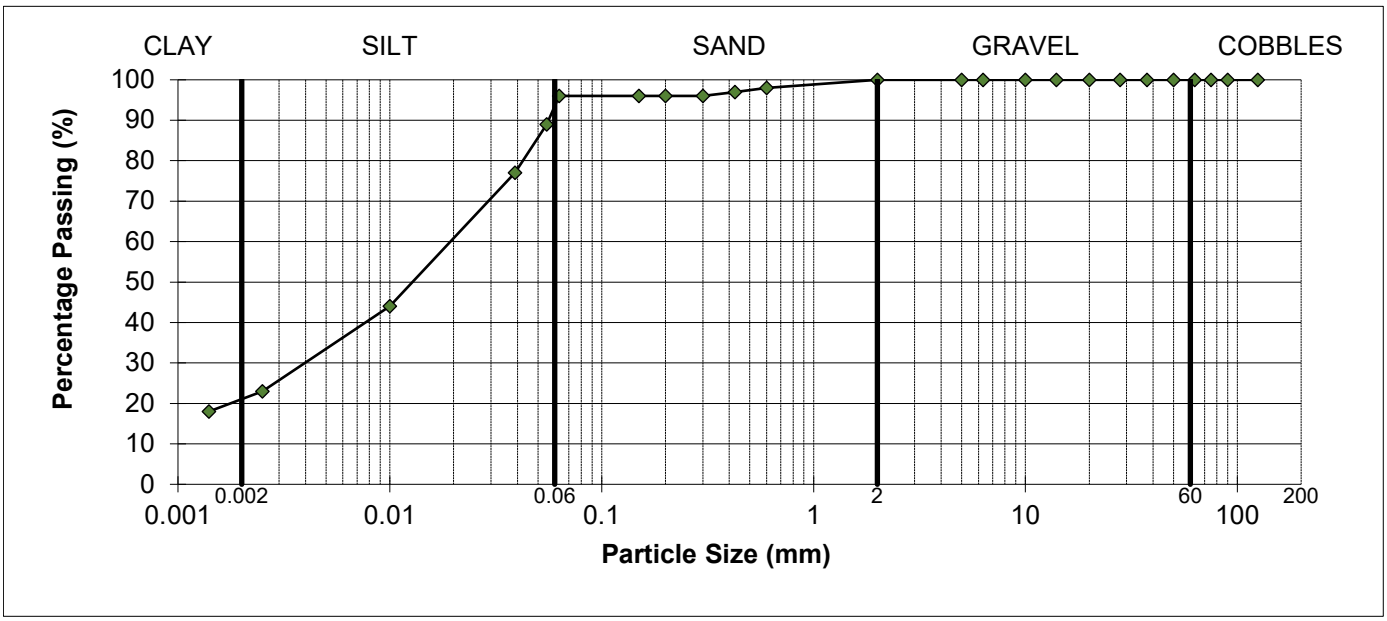
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/2

SAMPLE LABEL	TP02 1 B	DATE SAMPLED	19-Dec-23
LAB SAMPLE No	400325	DATE RECEIVED	21-Dec-23
DATE TESTED	16-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	100	
90	100		0.6	98	
75	100		0.425	97	
63	100		0.3	96	
50	100		0.2	96	
37.5	100		0.15	96	
28	100		0.063	96	
20	100		0.055	89	
14	100		0.039	77	
10	100		0.01	44	
6.3	100		0.0025	23	
5	100		0.0014	18	



REMARKS
As received water content = 19.6%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 01-Feb-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

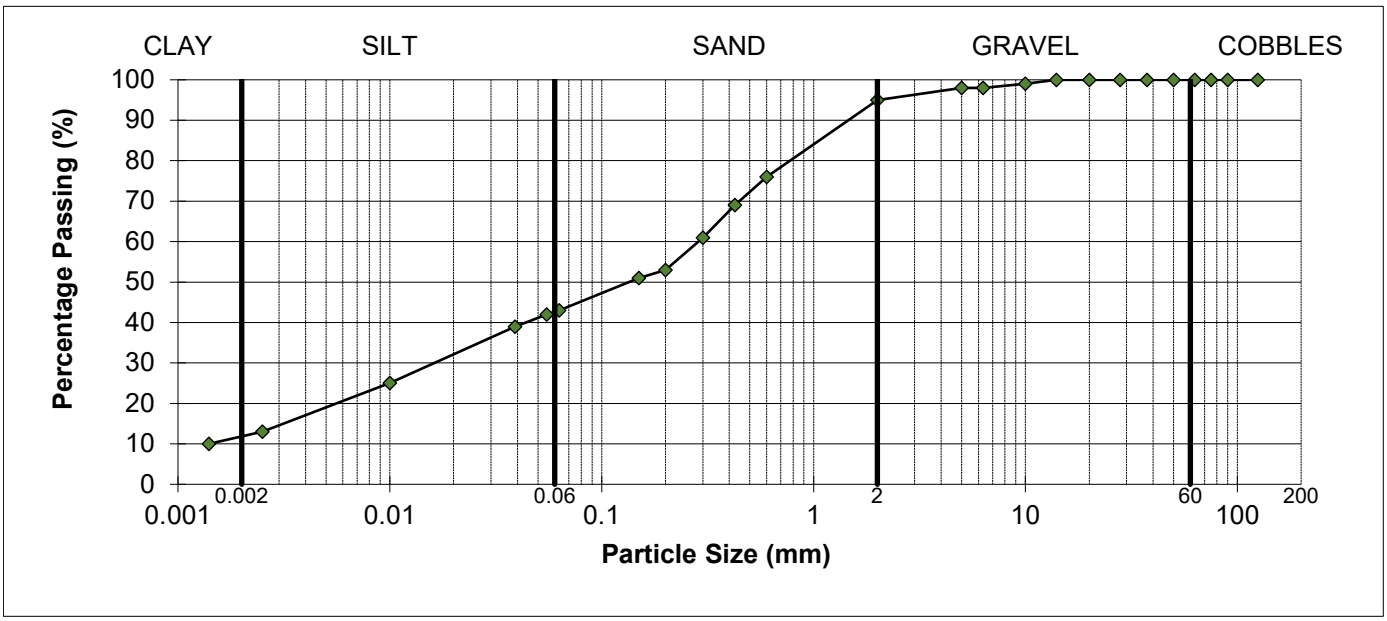
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/2

SAMPLE LABEL	TP02 2 B	DATE SAMPLED	19-Dec-23
LAB SAMPLE No	400326	DATE RECEIVED	21-Dec-23
DATE TESTED	16-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	95	
90	100		0.6	76	
75	100		0.425	69	
63	100		0.3	61	
50	100		0.2	53	
37.5	100		0.15	51	
28	100		0.063	43	
20	100		0.055	42	
14	100		0.039	39	
10	99		0.01	25	
6.3	98		0.0025	13	
5	98		0.0014	10	



REMARKS
As received water content = 15.8%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 01-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

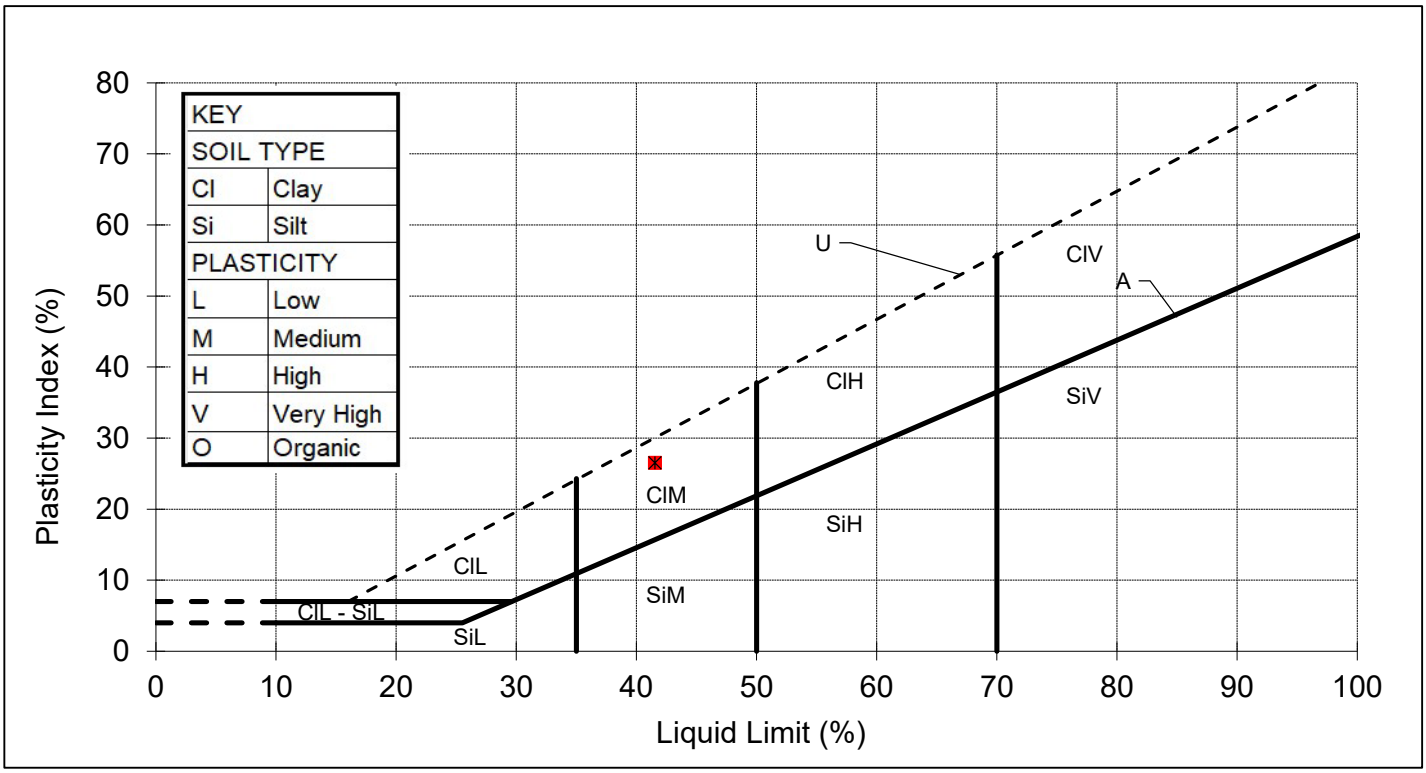
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/2

SAMPLE LABEL	TP02 0.5 D	DATE SAMPLED	19-Dec-23
SAMPLE No.	400319	DATE RECEIVED	19-Dec-23
DATE TESTED	16-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	16.7	39.5	1.056	
Determination 2 (avg)	16.5	39.2		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
18.4	42	15	27	65



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 01-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

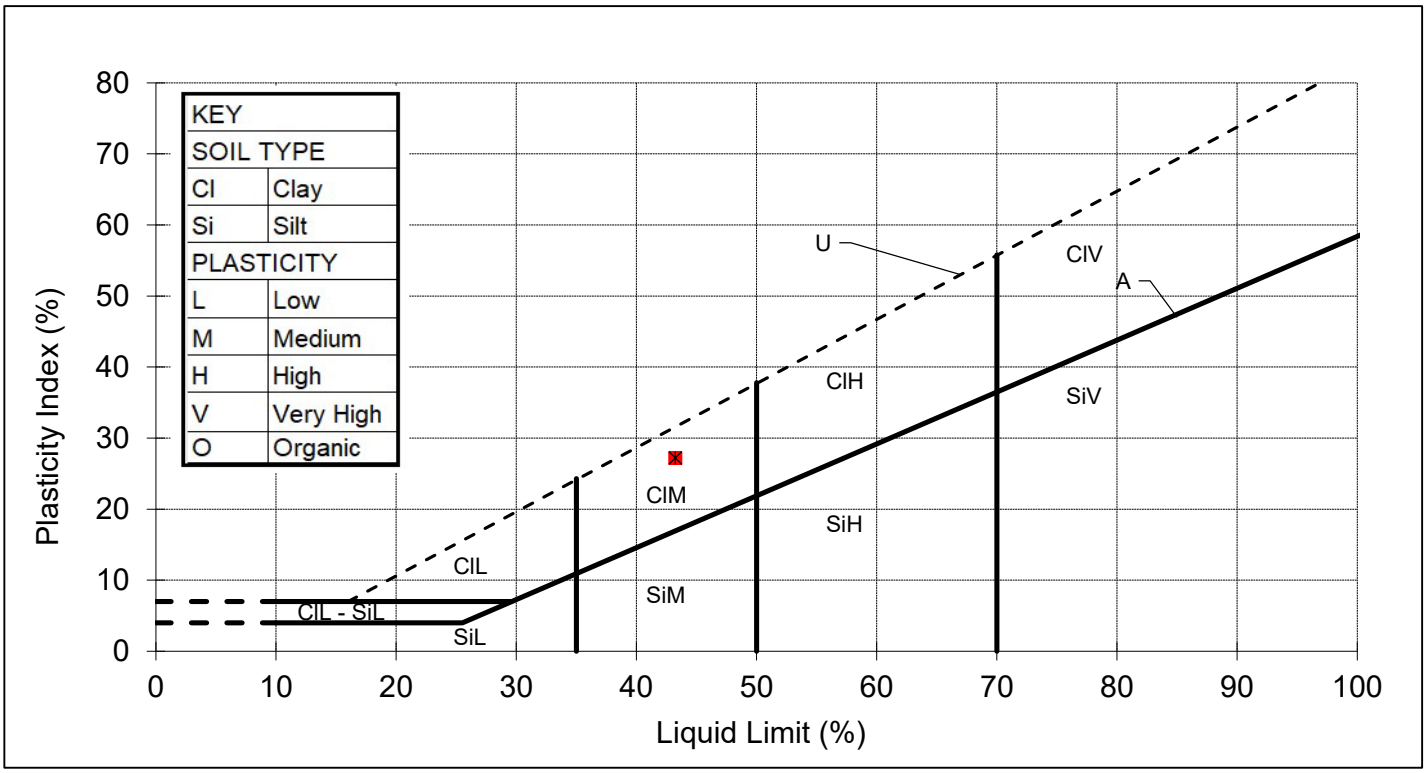
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/2

SAMPLE LABEL	TP02 1 D	DATE SAMPLED	19-Dec-23
SAMPLE No.	400320	DATE RECEIVED	19-Dec-23
DATE TESTED	16-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	18.2	41.7	1.037	
Determination 2 (avg)	18.0	41.7		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
19.0	43	16	27	97



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 01-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

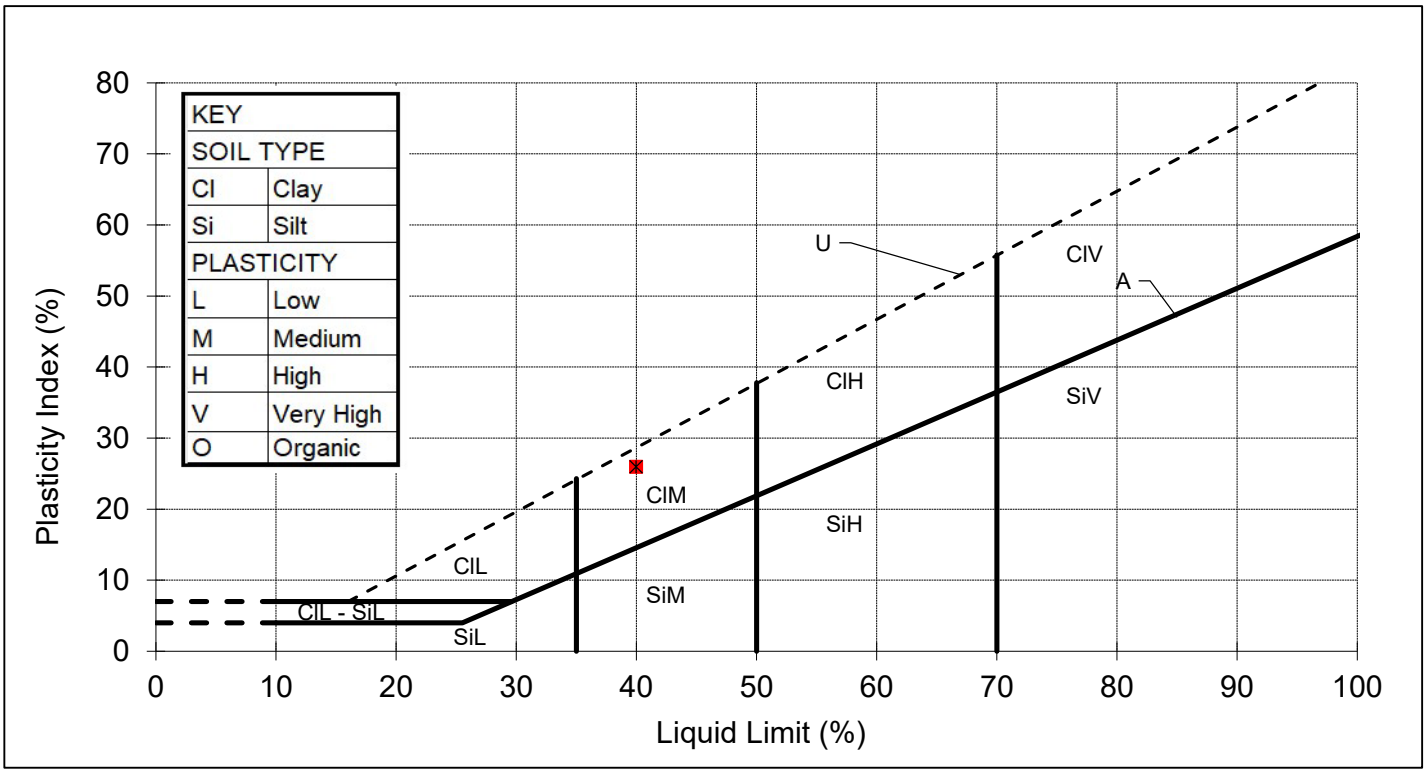
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/2

SAMPLE LABEL	TP02 2 D	DATE SAMPLED	19-Dec-23
SAMPLE No.	400321	DATE RECEIVED	19-Dec-23
DATE TESTED	16-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	20.0	40.0	0.999	
Determination 2 (avg)	20.2	40.0		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
15.9	40	14	26	69



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 01-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

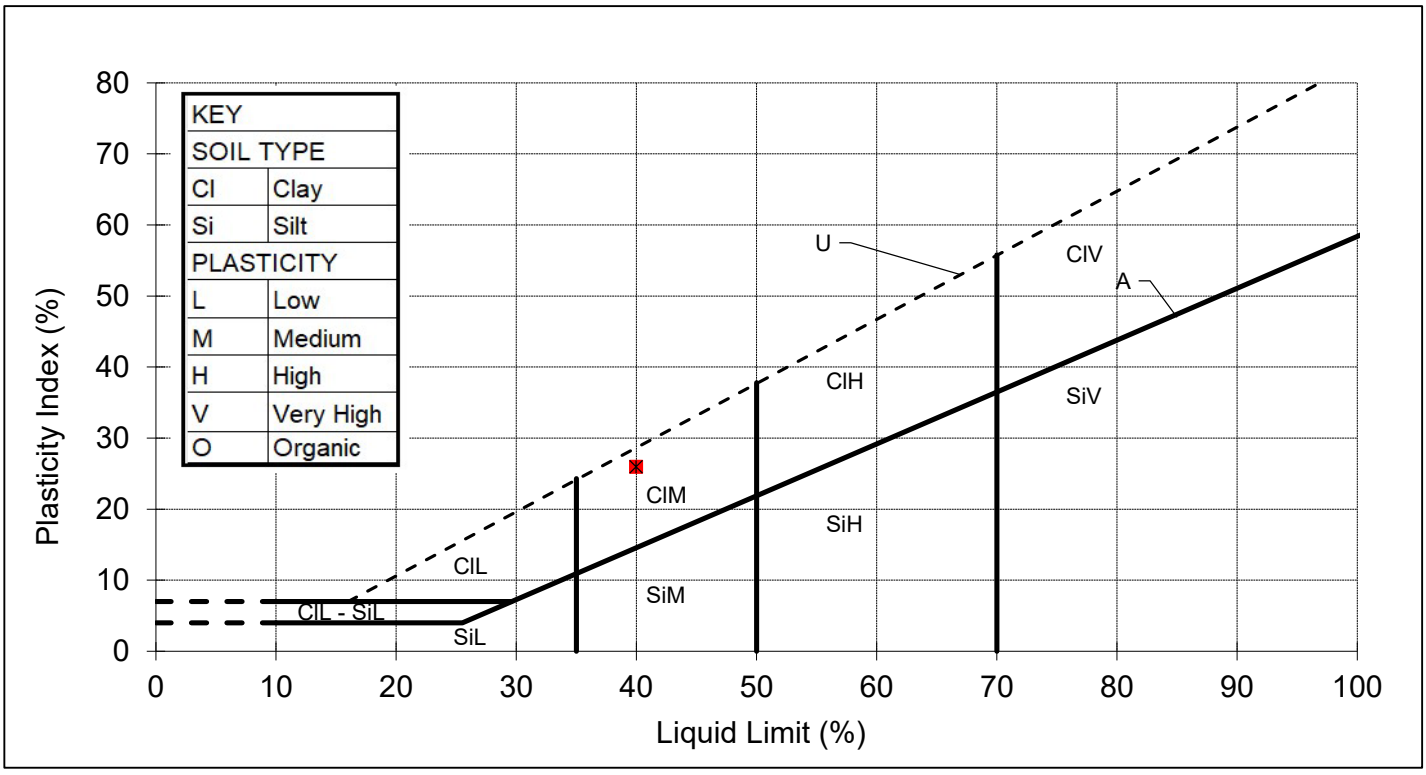
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/2

SAMPLE LABEL	TP02 2 D	DATE SAMPLED	19-Dec-23
SAMPLE No.	400321	DATE RECEIVED	19-Dec-23
DATE TESTED	16-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	20.0	40.0	0.999	
Determination 2 (avg)	20.2	40.0		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
15.9	40	14	26	69



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 01-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

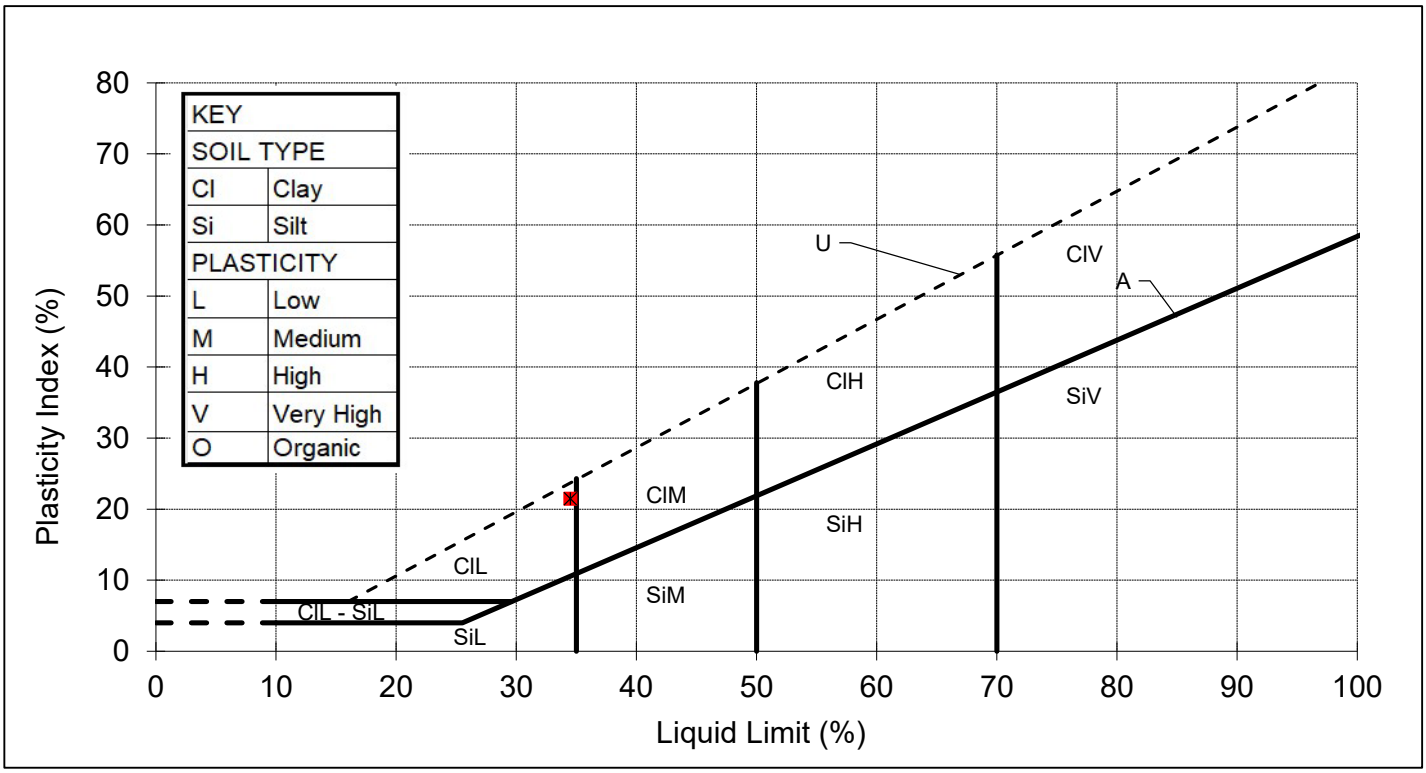
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/2

SAMPLE LABEL	HP02 0.45 D	DATE SAMPLED	19-Dec-23
SAMPLE No.	410001	DATE RECEIVED	19-Jan-24
DATE TESTED	22-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	19.5	34.3	1.008	
Determination 2 (avg)	19.5	34.2		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
16.1	35	13	22	78



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 01-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

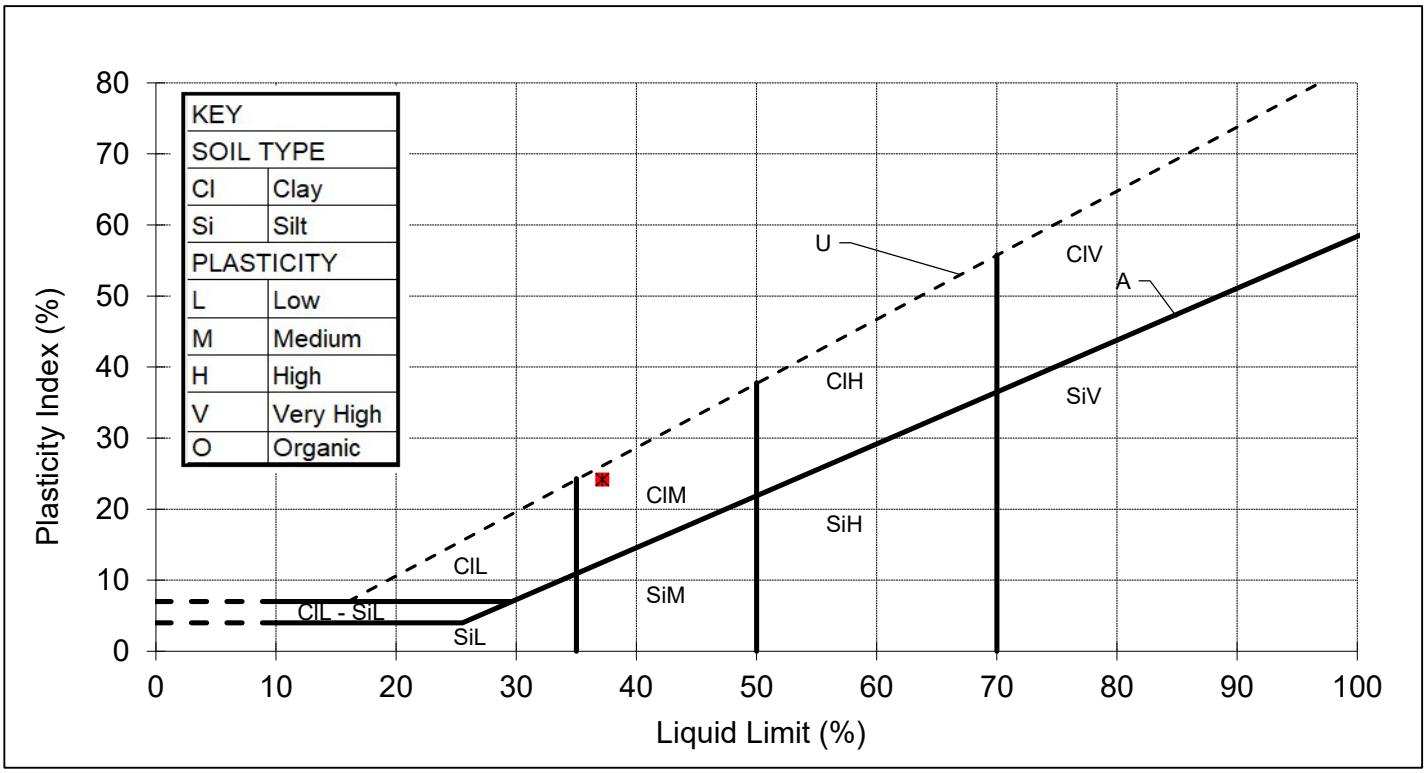
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/2

SAMPLE LABEL	HP06 0.9 D	DATE SAMPLED	19-Dec-23
SAMPLE No.	410002	DATE RECEIVED	19-Jan-24
DATE TESTED	22-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	18.6	36.2	1.029	
Determination 2 (avg)	18.2	36.0		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
11.7	37	13	24	59



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 01-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

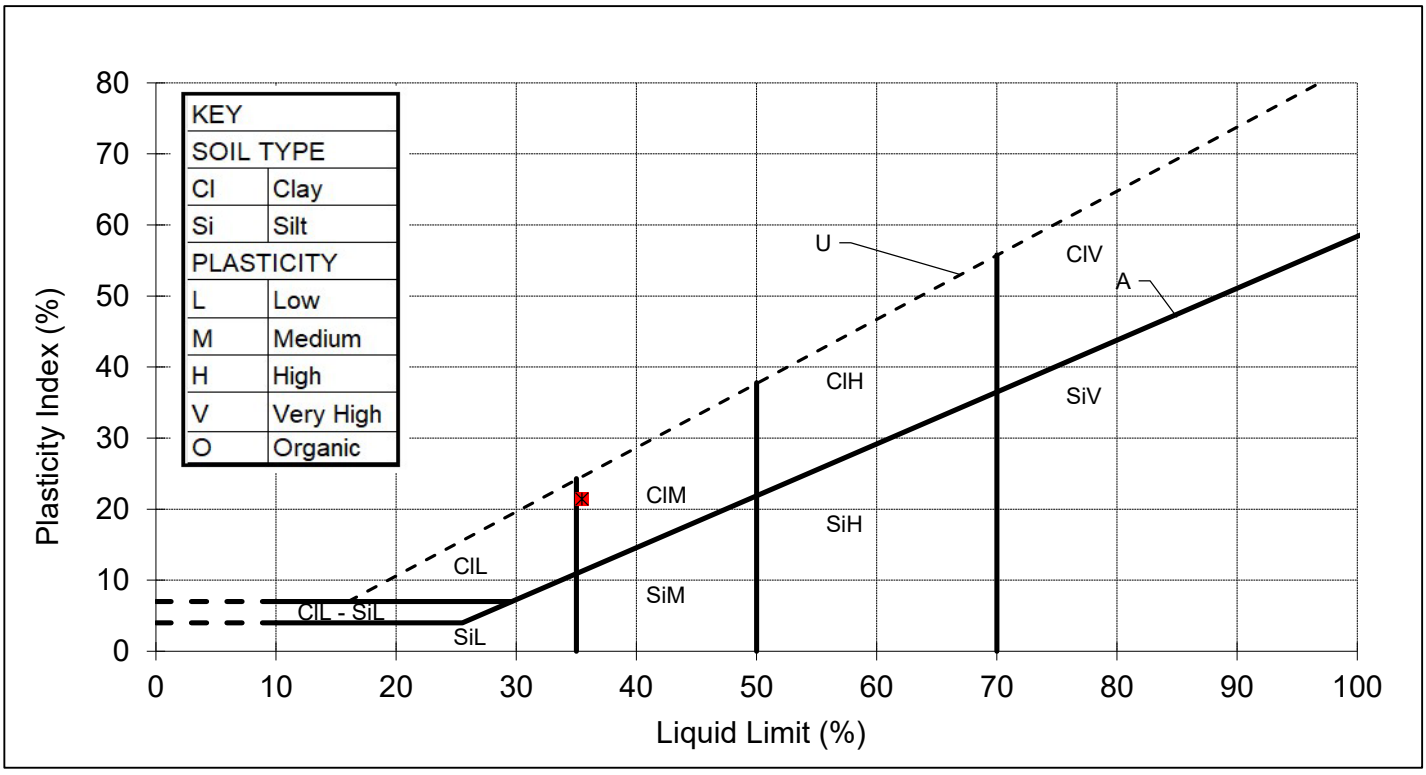
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/2

SAMPLE LABEL	HP08 1 D	DATE SAMPLED	19-Dec-23
SAMPLE No.	410003	DATE RECEIVED	19-Jan-24
DATE TESTED	22-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	19.5	35.0	1.013	
Determination 2 (avg)	19.2	35.0		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
15.3	35	14	21	71



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 01-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

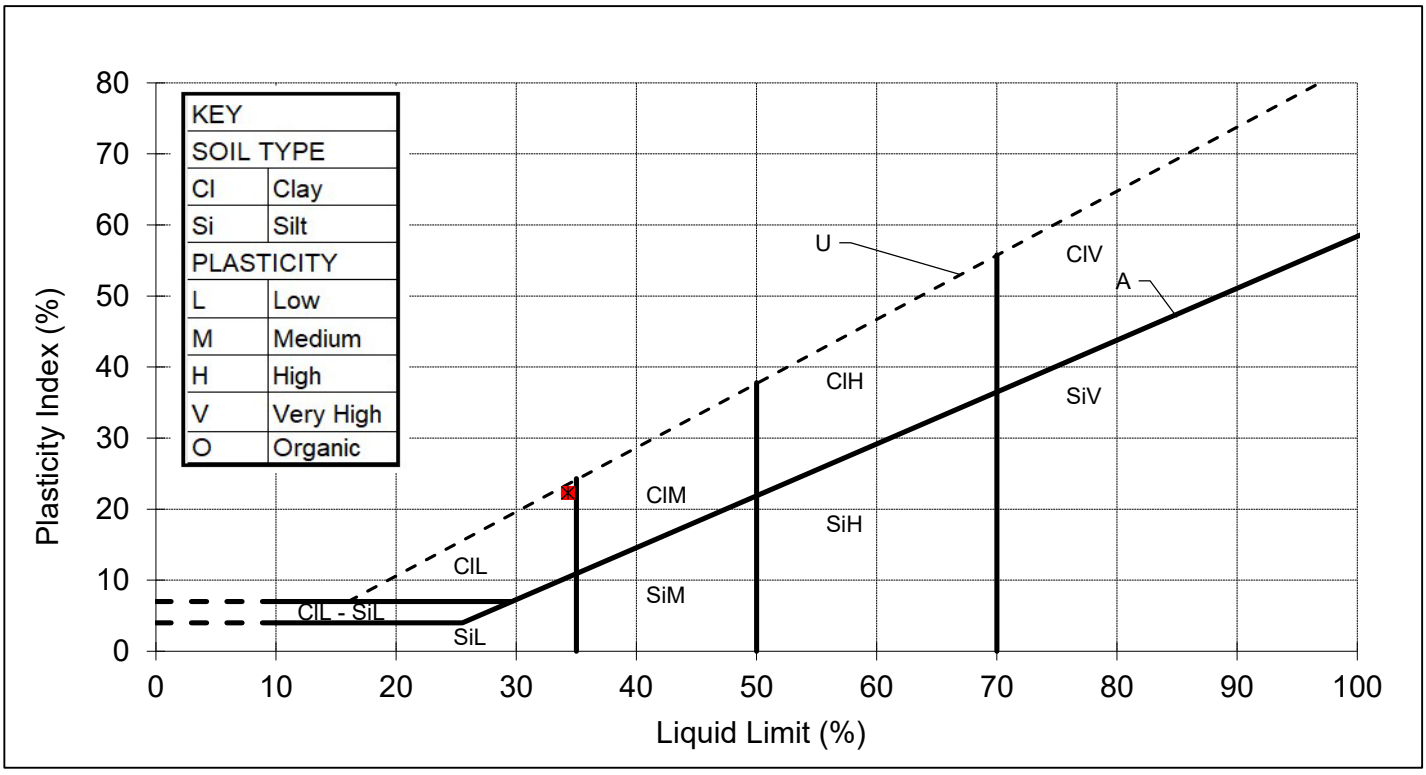
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/2

SAMPLE LABEL	HP09 1.2 D	DATE SAMPLED	19-Dec-23
SAMPLE No.	410004	DATE RECEIVED	19-Jan-24
DATE TESTED	22-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	16.5	32.8	1.047	
Determination 2 (avg)	16.5	32.7		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
20.6	34	12	22	88



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 01-Feb-24

MURRAY RIX
CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING

TEST REPORT

Client LK Consult Ltd

Address Unit 29 Eton Business Park
Eton Hill Road
Radcliffe
Greater Manchester
M26 2ZS

Contract LKC 23 1722 -
Sydney Avenue, Manchester Airport

Job Number MRN 24076/4
Date of Issue 13 February 2024
Page 1 of 21

Approved Signatories

S J Hutchings, O P Davies

Notes

1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.

2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.

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

4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.

5 The results included within the report are representative of the samples submitted for analysis.

6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.

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ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

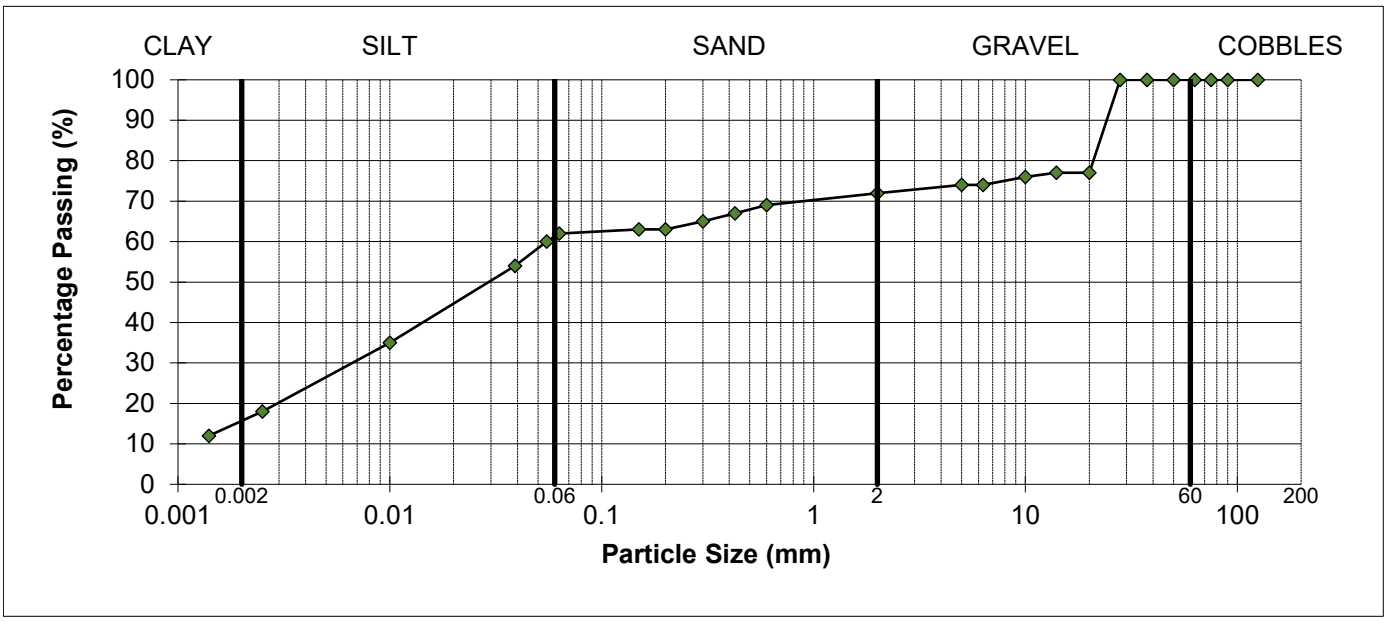
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH01 1.2 D	DATE SAMPLED	09-Jan-24
LAB SAMPLE No	410103	DATE RECEIVED	19-Jan-24
DATE TESTED	24-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	72	
90	100		0.6	69	
75	100		0.425	67	
63	100		0.3	65	
50	100		0.2	63	
37.5	100		0.15	63	
28	100		0.063	62	
20	77		0.055	60	
14	77		0.039	54	
10	76		0.01	35	
6.3	74		0.0025	18	
5	74		0.0014	12	



REMARKS
As received water content = 18.1%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

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ANDREW HOUSE, HADFIELD STREET,
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PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

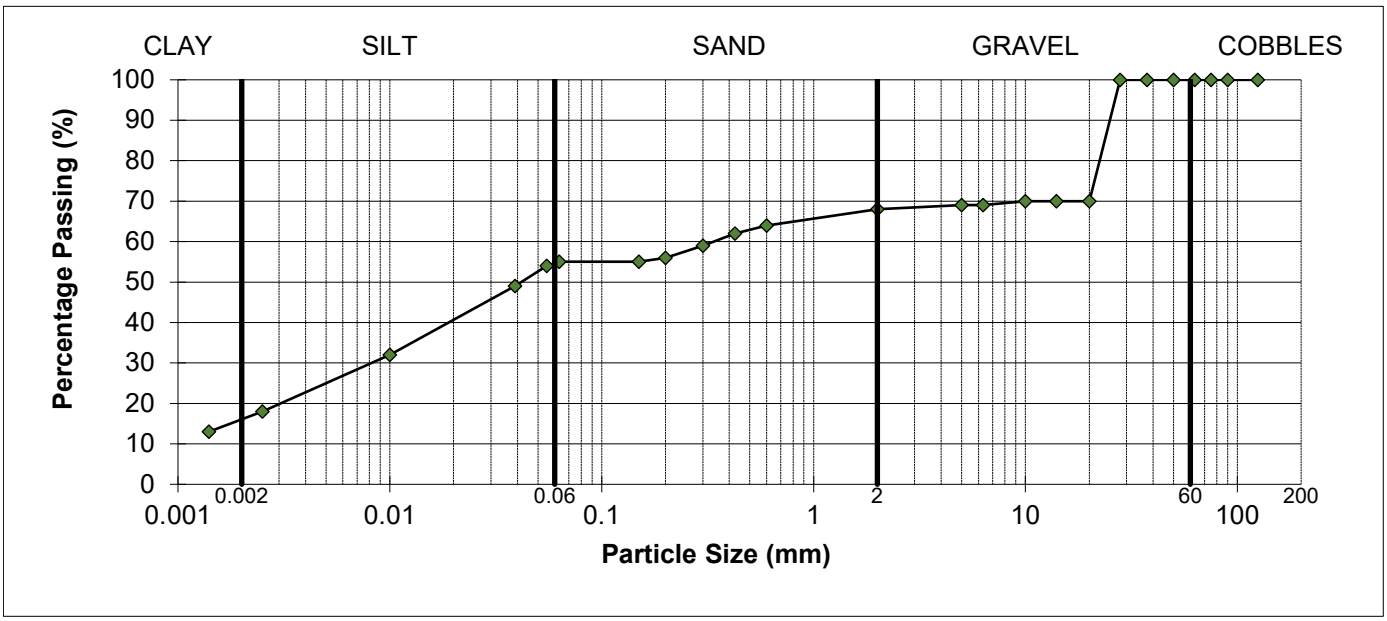
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH02 1 D	DATE SAMPLED	09-Jan-24
LAB SAMPLE No	410106	DATE RECEIVED	19-Jan-24
DATE TESTED	24-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	68	
90	100		0.6	64	
75	100		0.425	62	
63	100		0.3	59	
50	100		0.2	56	
37.5	100		0.15	55	
28	100		0.063	55	
20	70		0.055	54	
14	70		0.039	49	
10	70		0.01	32	
6.3	69		0.0025	18	
5	69		0.0014	13	



REMARKS
As received water content = 20.2%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

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PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

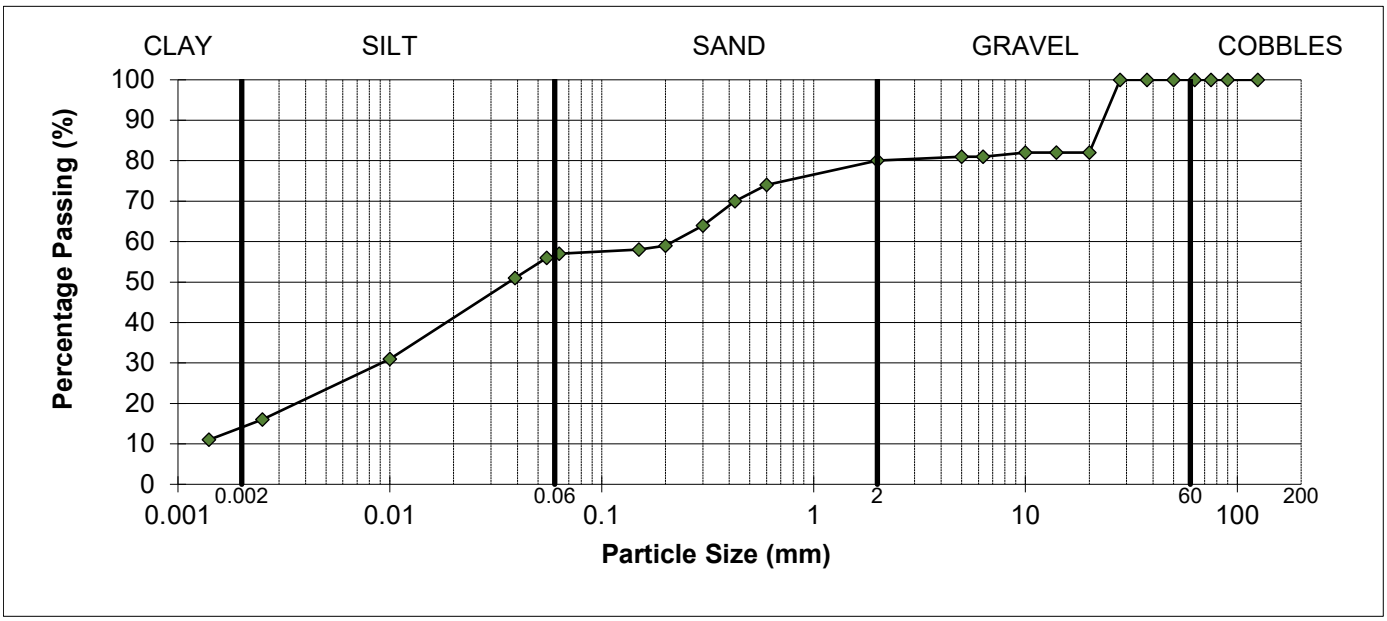
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH02 2 D	DATE SAMPLED	09-Jan-24
LAB SAMPLE No	410107	DATE RECEIVED	19-Jan-24
DATE TESTED	24-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	80	
90	100		0.6	74	
75	100		0.425	70	
63	100		0.3	64	
50	100		0.2	59	
37.5	100		0.15	58	
28	100		0.063	57	
20	82		0.055	56	
14	82		0.039	51	
10	82		0.01	31	
6.3	81		0.0025	16	
5	81		0.0014	11	



REMARKS
As received water content = 23.4%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

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PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

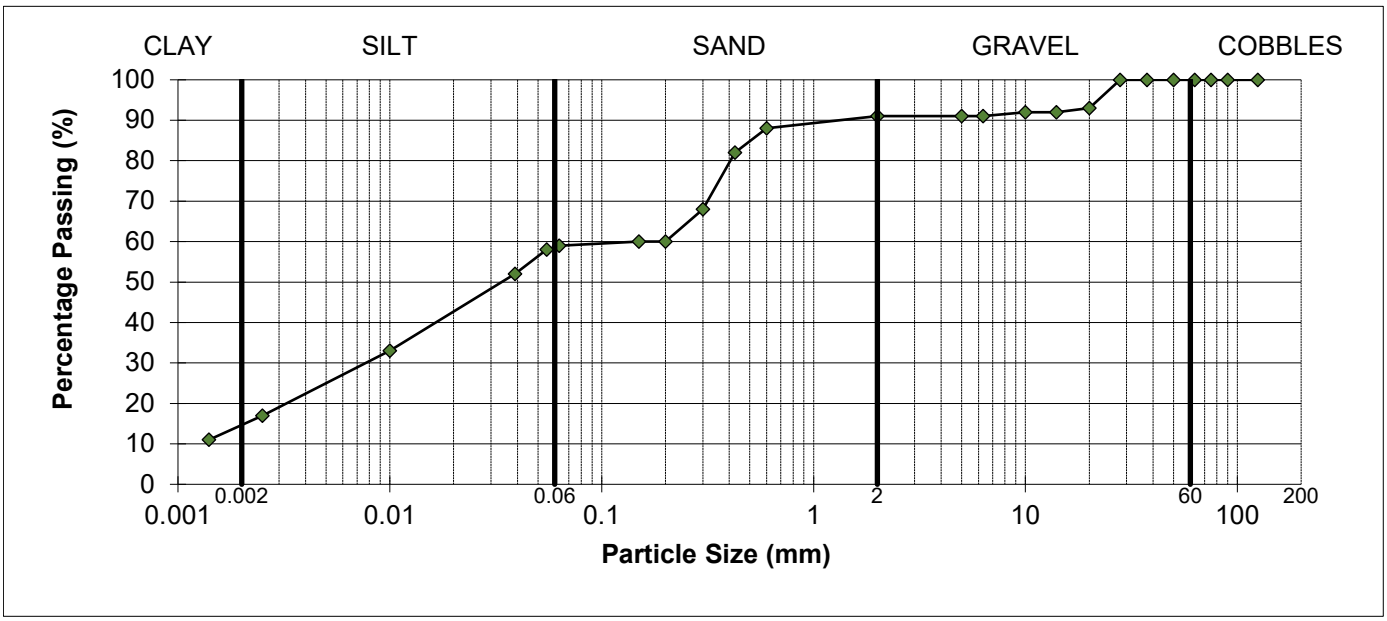
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	TP01B 1 D	DATE SAMPLED	10-Jan-24
LAB SAMPLE No	410109	DATE RECEIVED	19-Jan-24
DATE TESTED	24-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	91	
90	100		0.6	88	
75	100		0.425	82	
63	100		0.3	68	
50	100		0.2	60	
37.5	100		0.15	60	
28	100		0.063	59	
20	93		0.055	58	
14	92		0.039	52	
10	92		0.01	33	
6.3	91		0.0025	17	
5	91		0.0014	11	



REMARKS
As received water content = 16.0%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

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PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

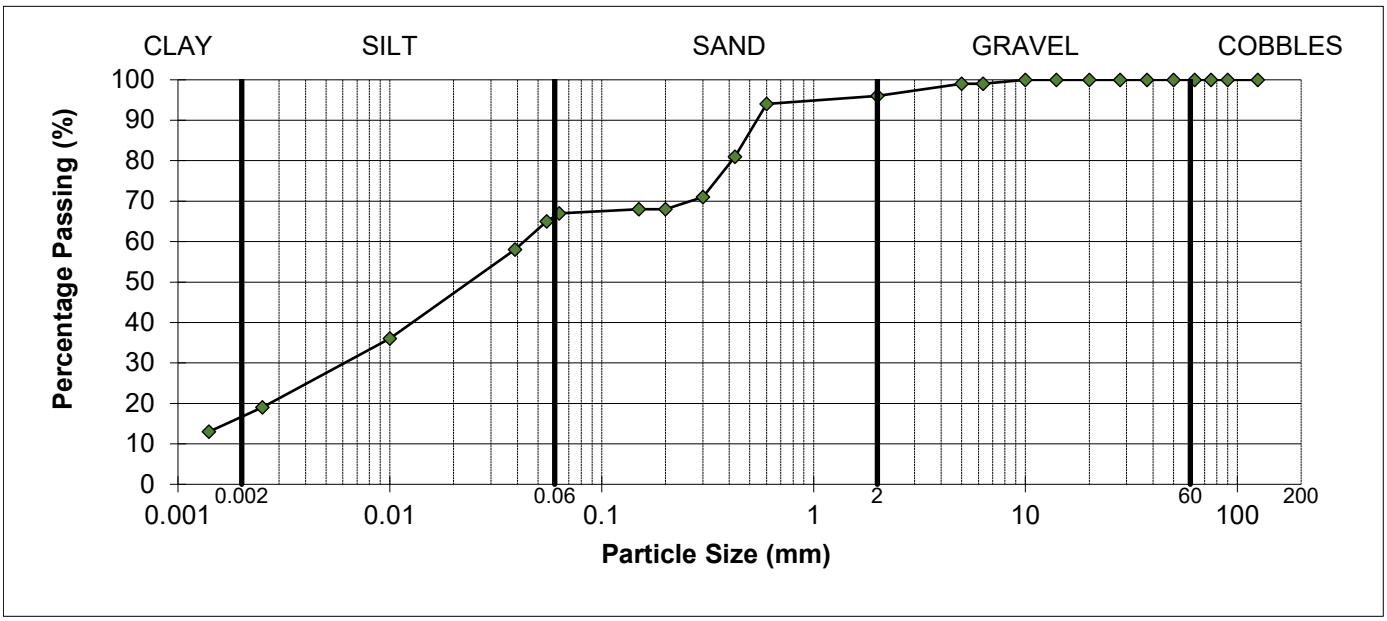
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	TP01B 1.7 D	DATE SAMPLED	10-Jan-24
LAB SAMPLE No	410111	DATE RECEIVED	19-Jan-24
DATE TESTED	24-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	96	
90	100		0.6	94	
75	100		0.425	81	
63	100		0.3	71	
50	100		0.2	68	
37.5	100		0.15	68	
28	100		0.063	67	
20	100		0.055	65	
14	100		0.039	58	
10	100		0.01	36	
6.3	99		0.0025	19	
5	99		0.0014	13	



REMARKS
As received water content = 16.4%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

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PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

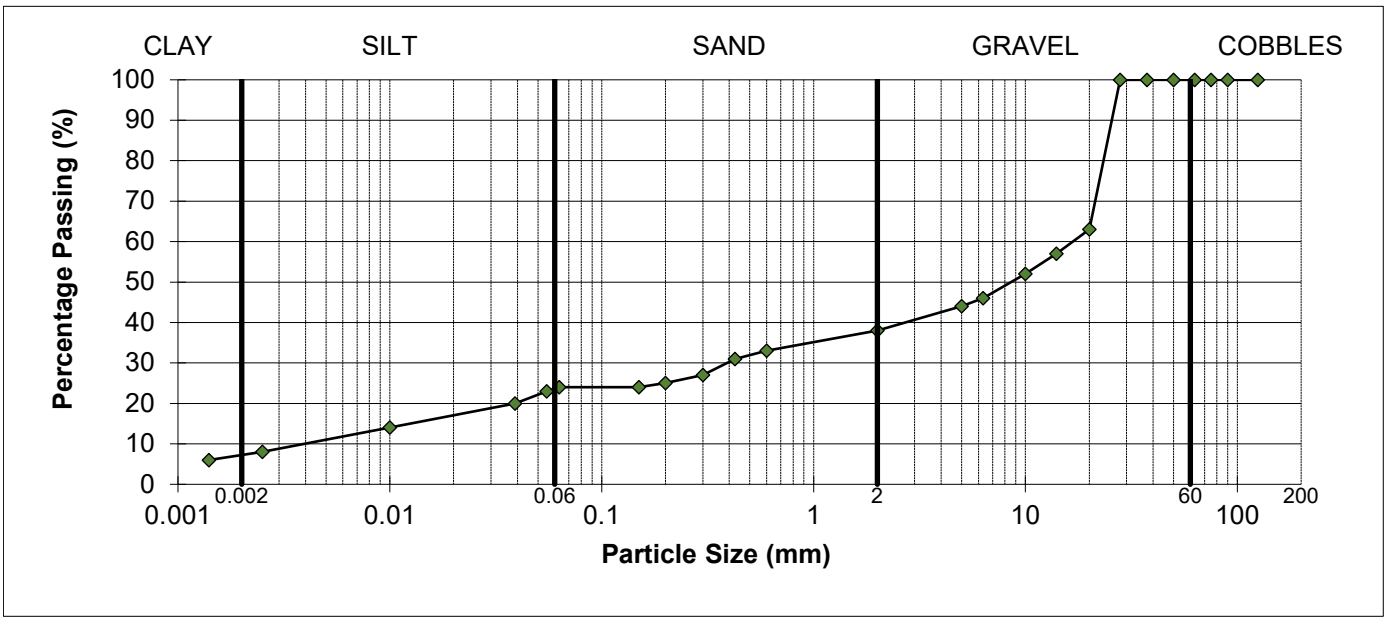
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	TP06 0.2 B	DATE SAMPLED	10-Jan-24
LAB SAMPLE No	410113	DATE RECEIVED	19-Jan-24
DATE TESTED	24-Jan-24	SAMPLED BY	Client

MATERIAL	Brown clay bound silty sandy GRAVEL
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	38	
90	100		0.6	33	
75	100		0.425	31	
63	100		0.3	27	
50	100		0.2	25	
37.5	100		0.15	24	
28	100		0.063	24	
20	63		0.055	23	
14	57		0.039	20	
10	52		0.01	14	
6.3	46		0.0025	8	
5	44		0.0014	6	



REMARKS
As received water content = 11.6%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

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PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

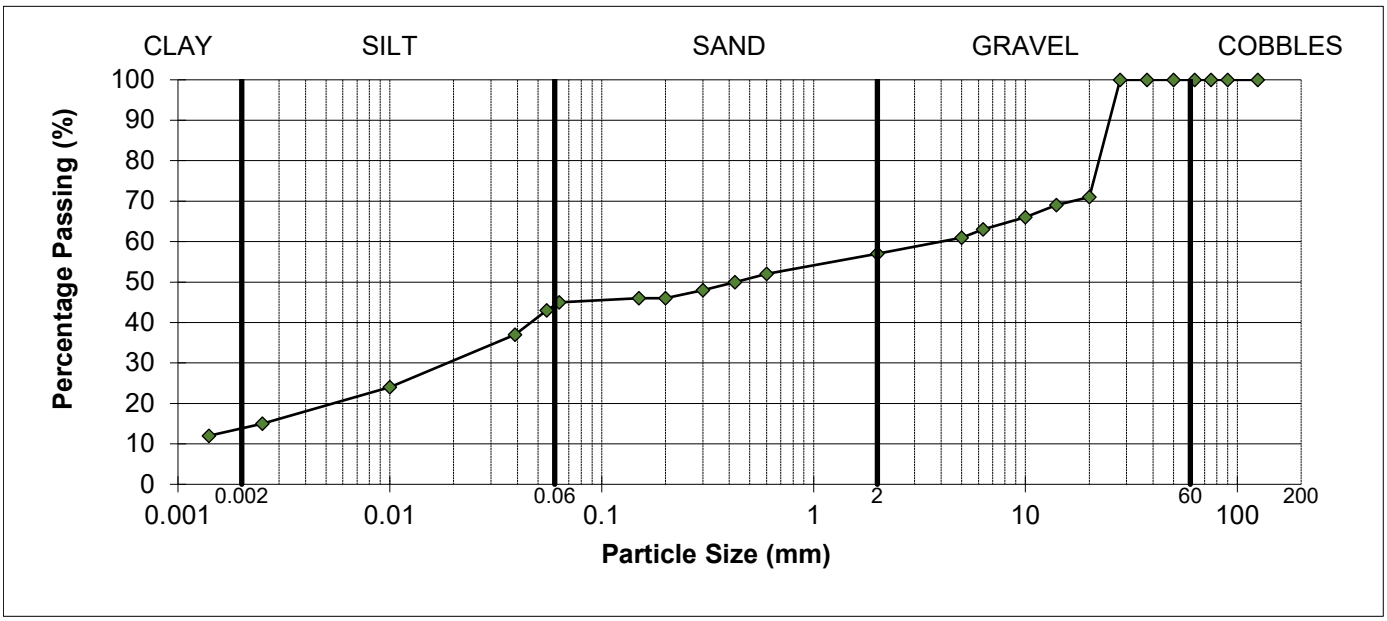
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	TP07 0.5 B	DATE SAMPLED	10-Jan-24
LAB SAMPLE No	410114	DATE RECEIVED	19-Jan-24
DATE TESTED	24-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	57	
90	100		0.6	52	
75	100		0.425	50	
63	100		0.3	48	
50	100		0.2	46	
37.5	100		0.15	46	
28	100		0.063	45	
20	71		0.055	43	
14	69		0.039	37	
10	66		0.01	24	
6.3	63		0.0025	15	
5	61		0.0014	12	



REMARKS
As received water content = 16.0%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

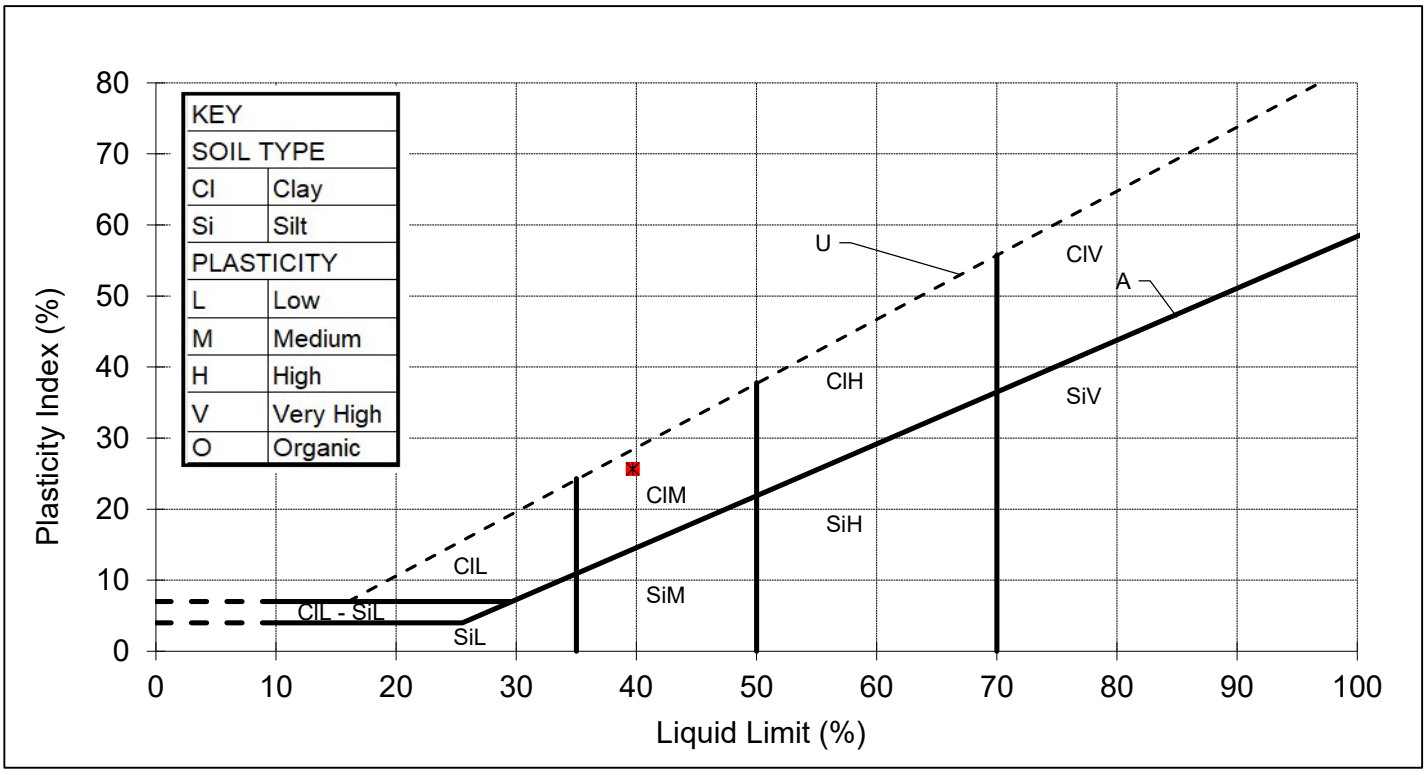
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH01 0.6 D	DATE SAMPLED	09-Jan-24
SAMPLE No.	410101	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	18.5	38.6	1.027	
Determination 2 (avg)	18.5	38.7		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
19.0	40	14	26	69



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

MURRAY RIX

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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

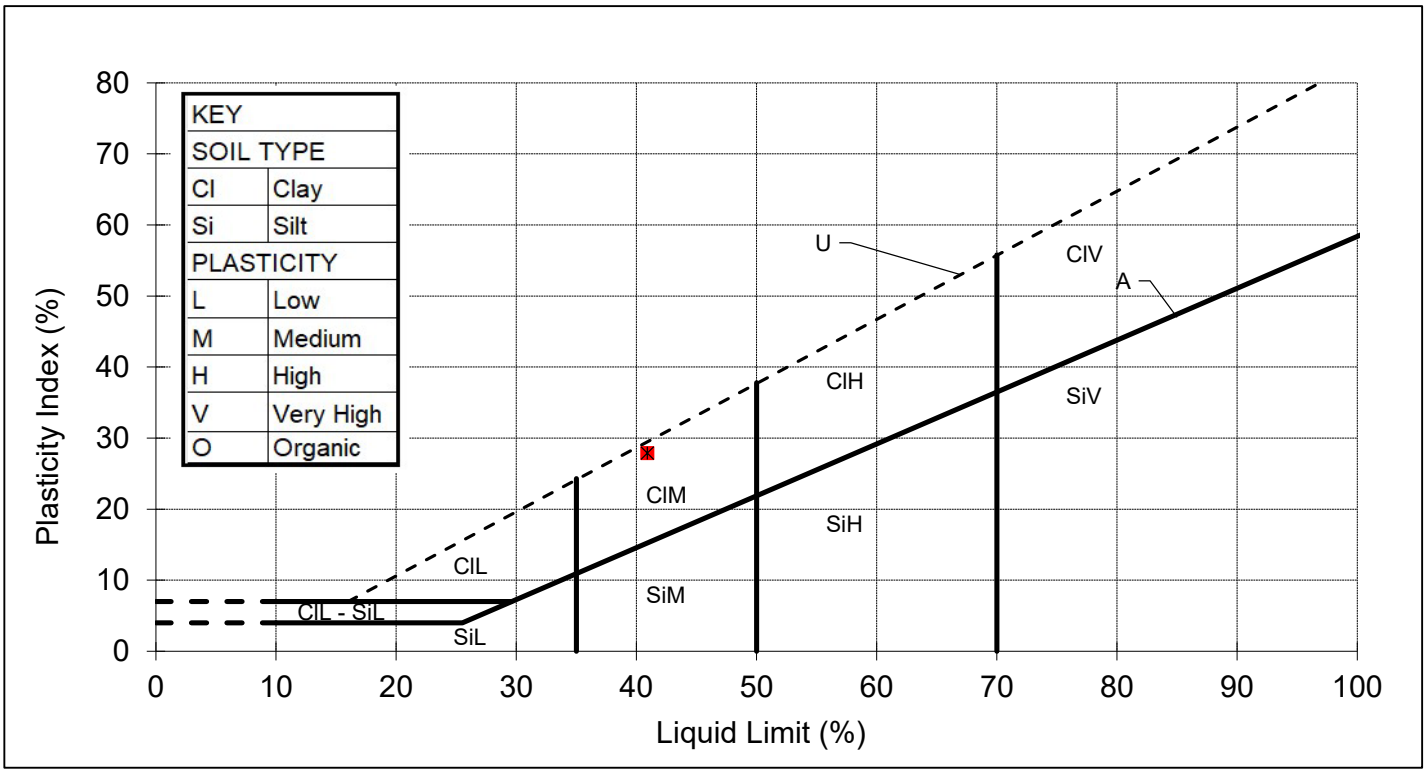
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH01 1.2 D	DATE SAMPLED	09-Jan-24
SAMPLE No.	410103	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	17.7	39.5	1.040	
Determination 2 (avg)	17.6	39.2		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
18.0	41	13	28	67



REMARKS

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NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

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TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

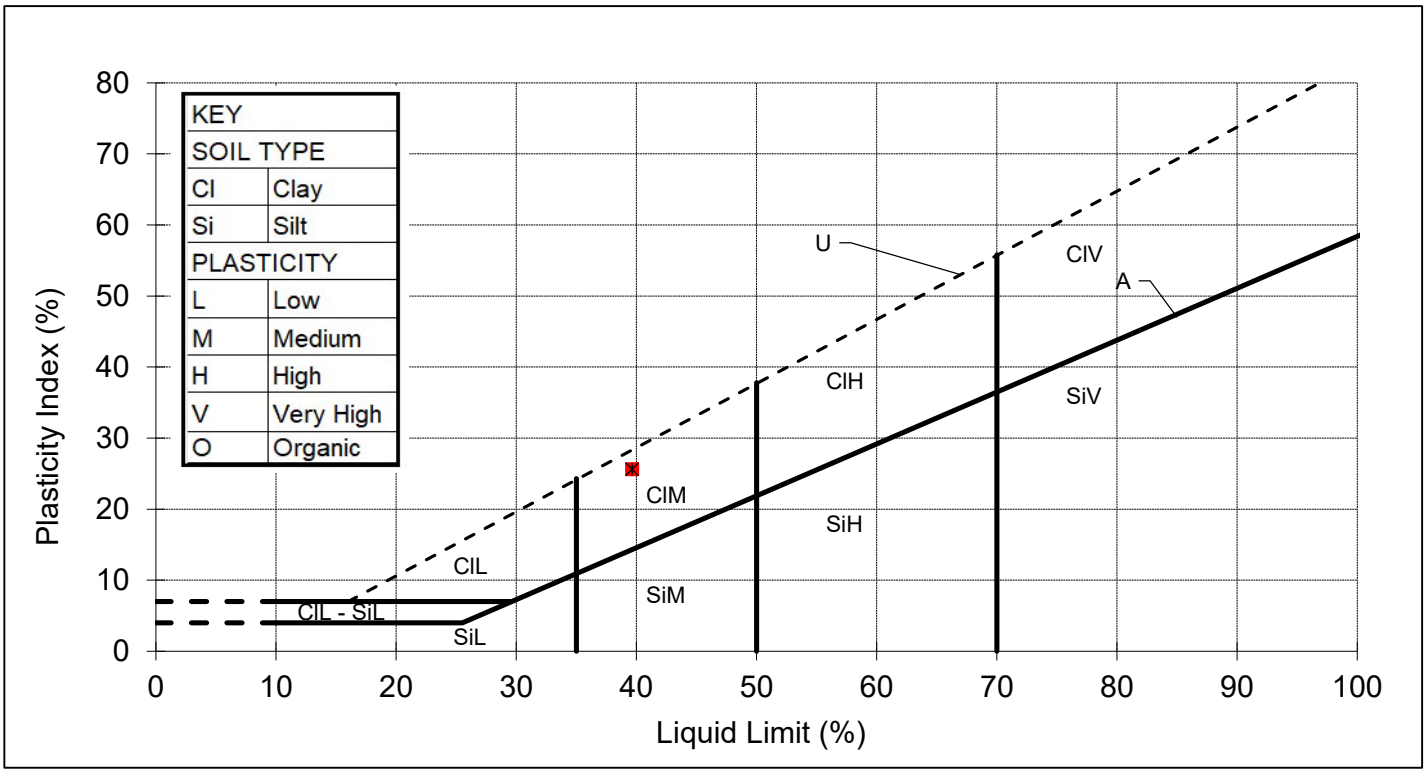
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH02 0.4 D	DATE SAMPLED	09-Jan-24
SAMPLE No.	410104	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	18.0	38.2	1.039	
Determination 2 (avg)	18.0	38.1		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
19.2	40	14	26	72



REMARKS

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NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

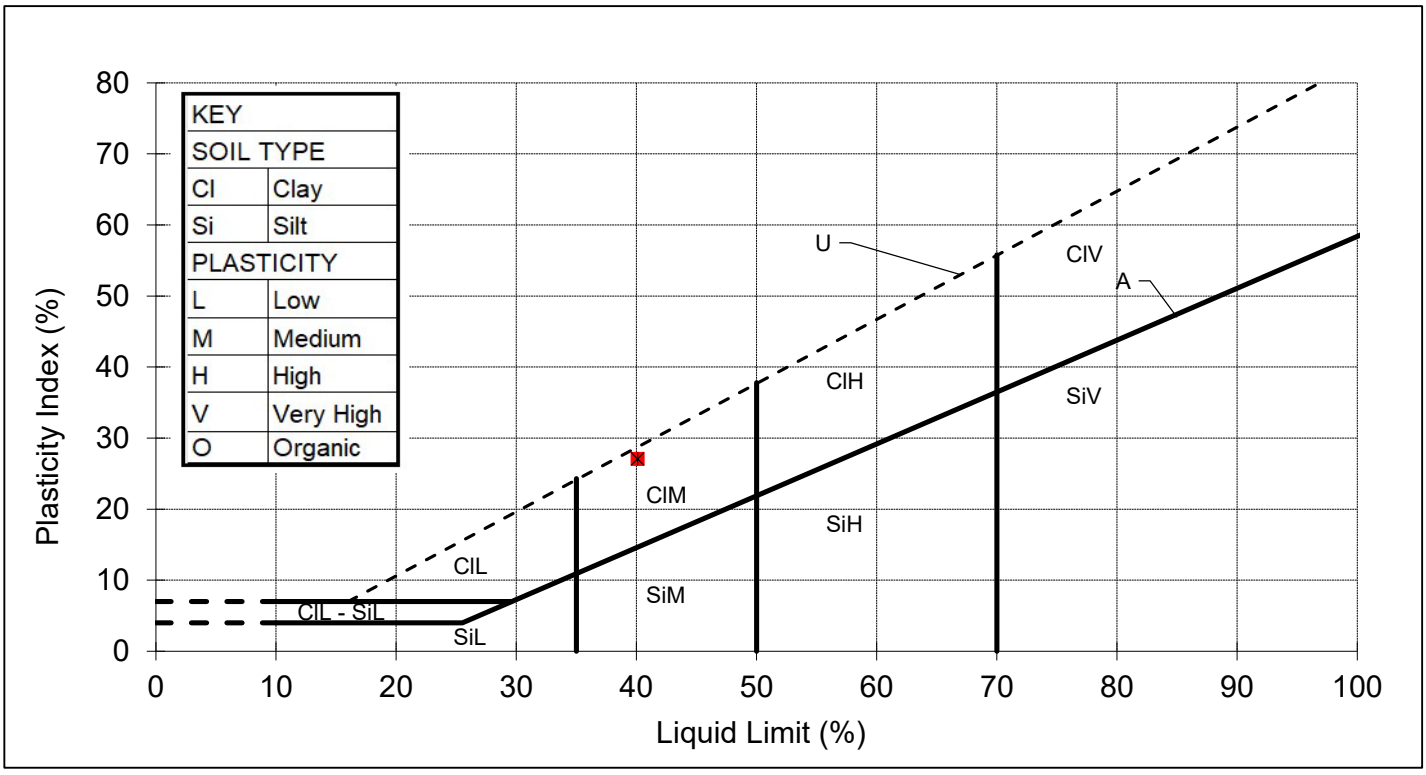
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH02 0.6 D	DATE SAMPLED	09-Jan-24
SAMPLE No.	410105	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	19.4	39.6	1.014	
Determination 2 (avg)	19.2	39.5		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
19.6	40	13	27	69



REMARKS

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NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

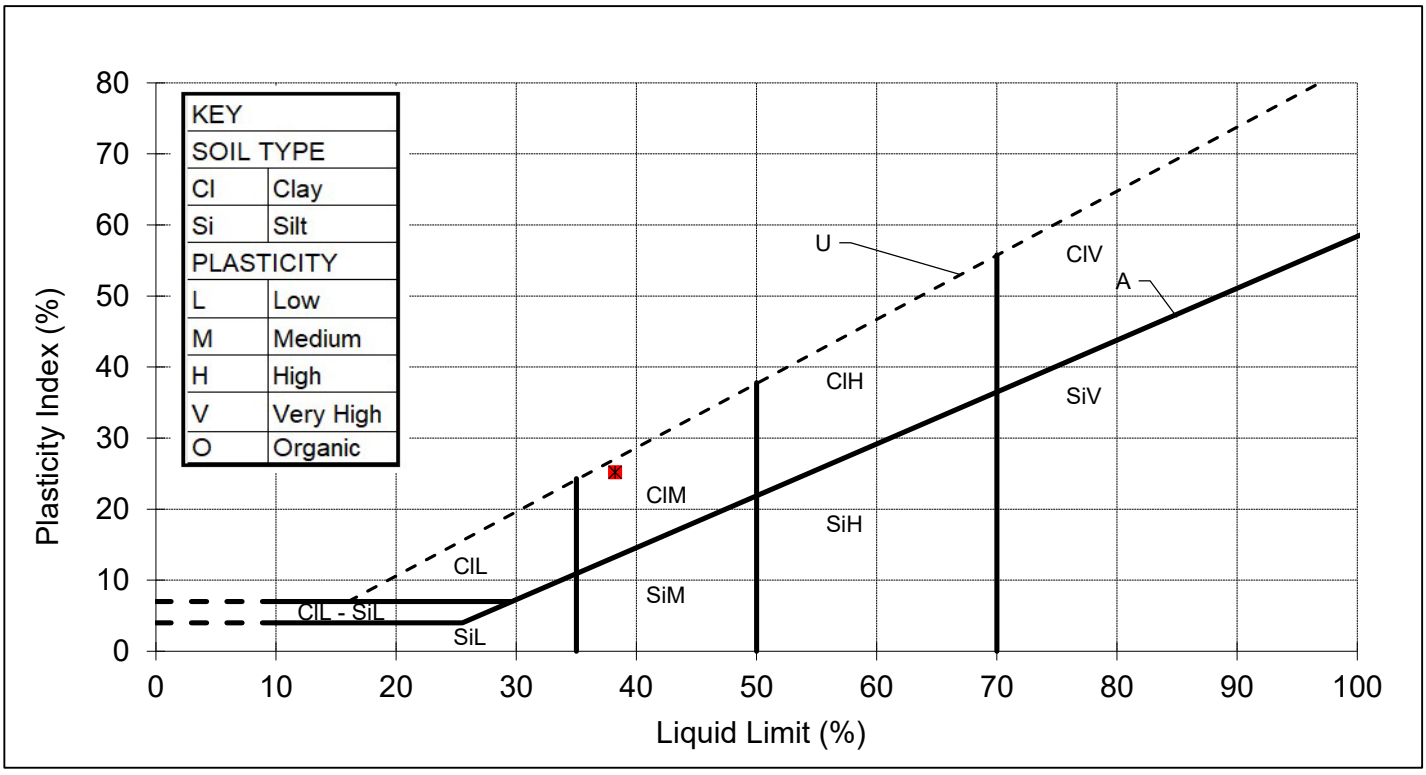
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH02 1 D	DATE SAMPLED	09-Jan-24
SAMPLE No.	410106	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	19.9	38.2	1.002	
Determination 2 (avg)	19.9	38.1		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
20.1	38	13	25	62



REMARKS

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NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

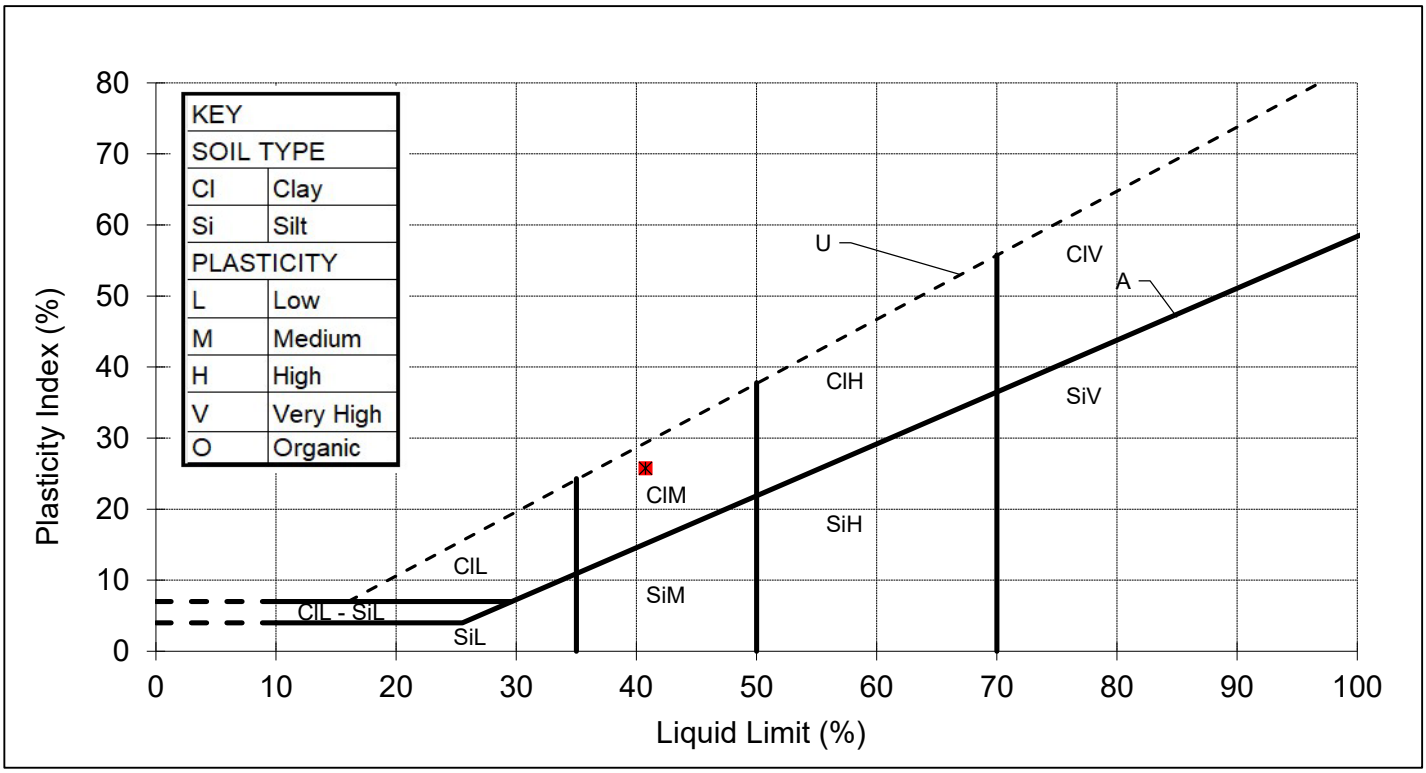
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH02 2 D	DATE SAMPLED	09-Jan-24
SAMPLE No.	410107	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	20.7	41.0	0.994	
Determination 2 (avg)	20.1	41.0		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
23.3	41	15	26	70



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

MURRAY RIX

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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

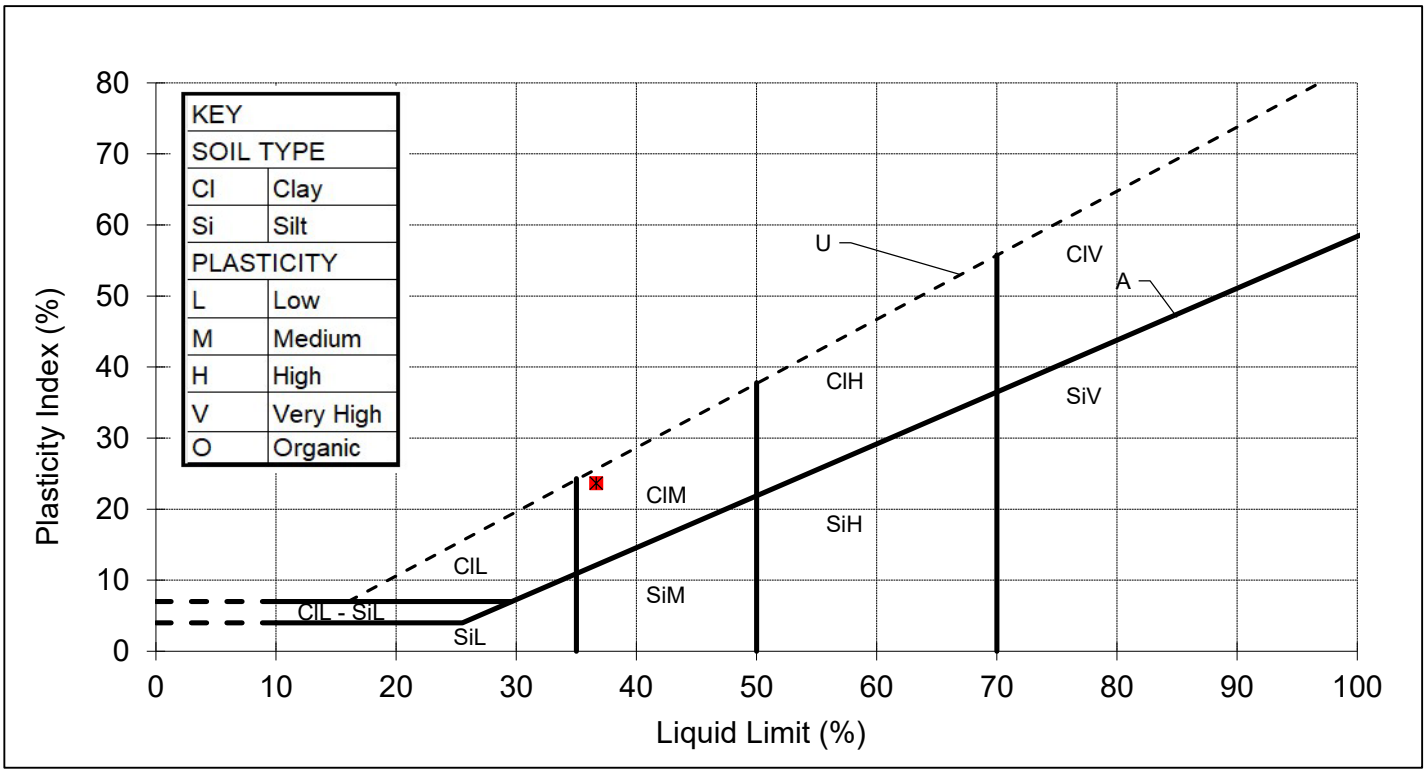
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	TP01B 0.7 D	DATE SAMPLED	10-Jan-24
SAMPLE No.	410108	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	20.2	36.8	0.998	
Determination 2 (avg)	20.2	36.7		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
17.2	37	13	24	80



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

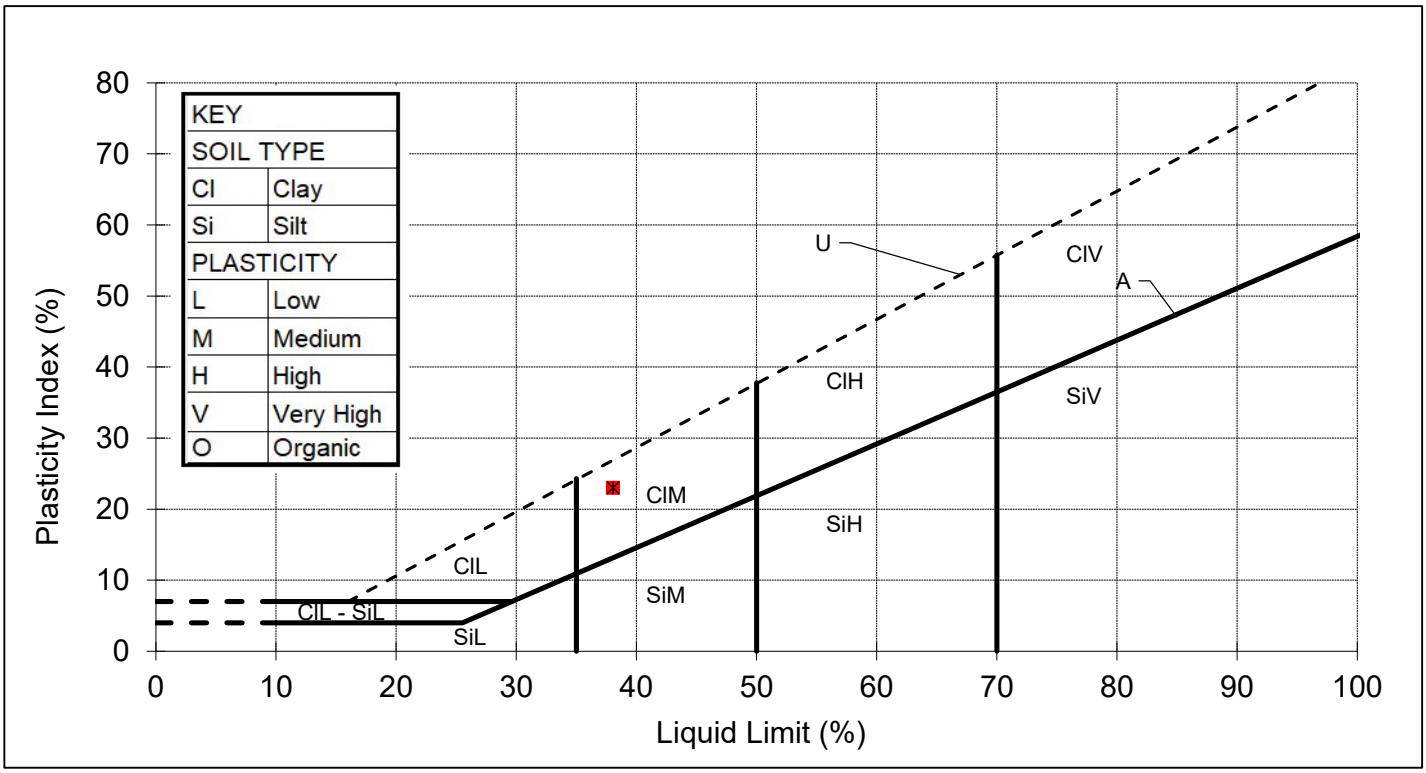
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	TP01 1.5 D	DATE SAMPLED	10-Jan-24
SAMPLE No.	410110	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	20.0	38.0	1.001	
Determination 2 (avg)	20.0	38.0		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
19.3	38	15	23	84



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

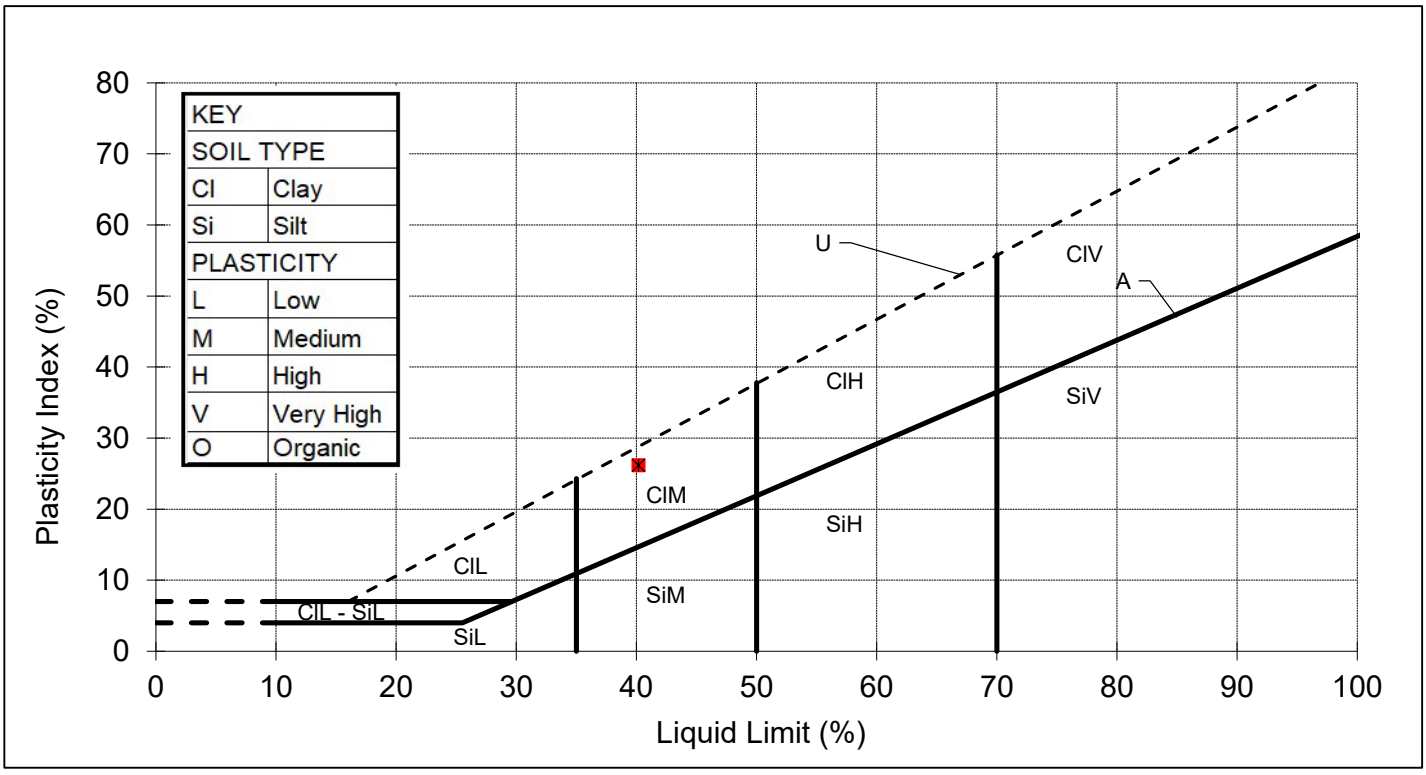
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	TP01 2.2 D	DATE SAMPLED	10-Jan-24
SAMPLE No.	410112	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	16.2	37.7	1.066	
Determination 2 (avg)	16.4	37.7		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
20.6	40	14	26	77



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

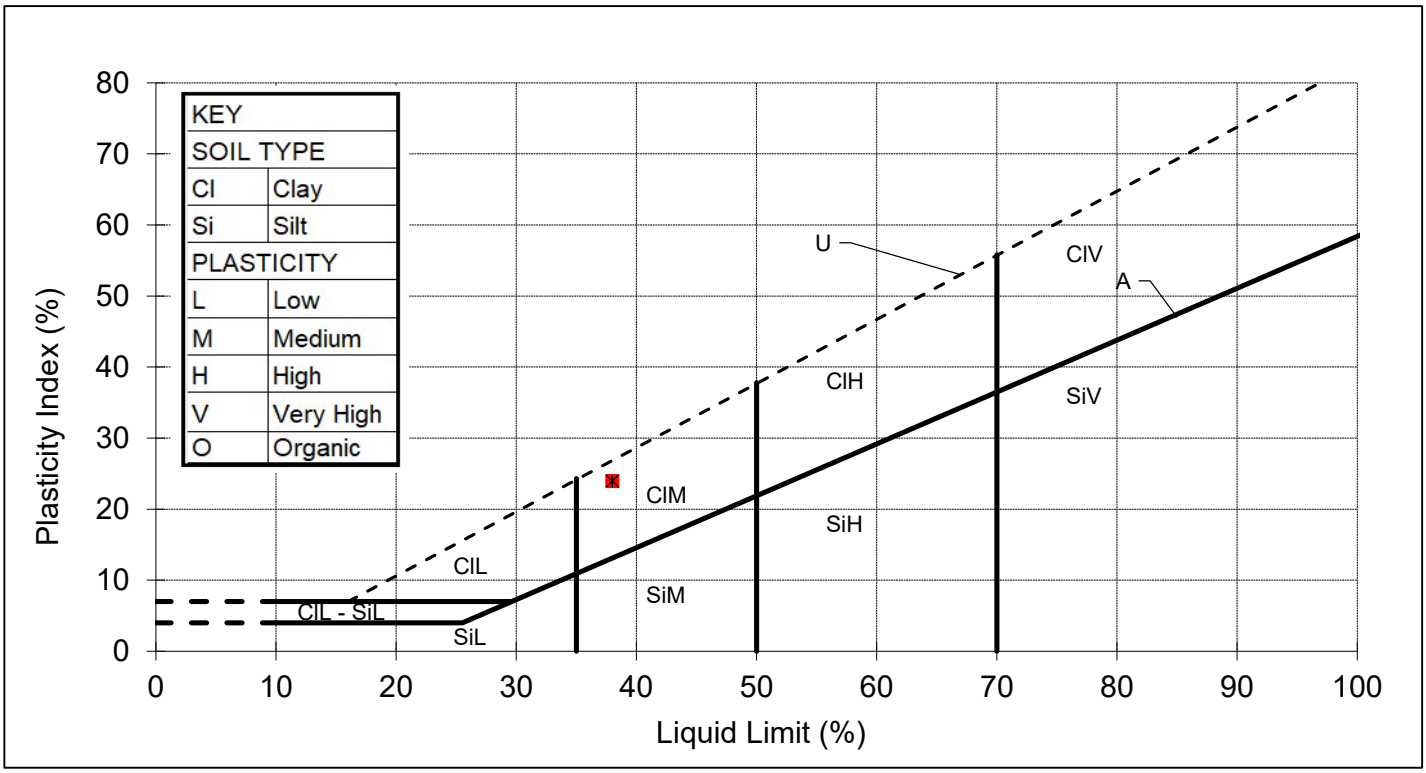
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	TP06 0.2 B	DATE SAMPLED	10-Jan-24
SAMPLE No.	410113	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown clay bound silty sandy GRAVEL		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	16.0	35.4	1.076	
Determination 2 (avg)	16.0	35.2		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
11.5	38	14	24	31



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
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TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

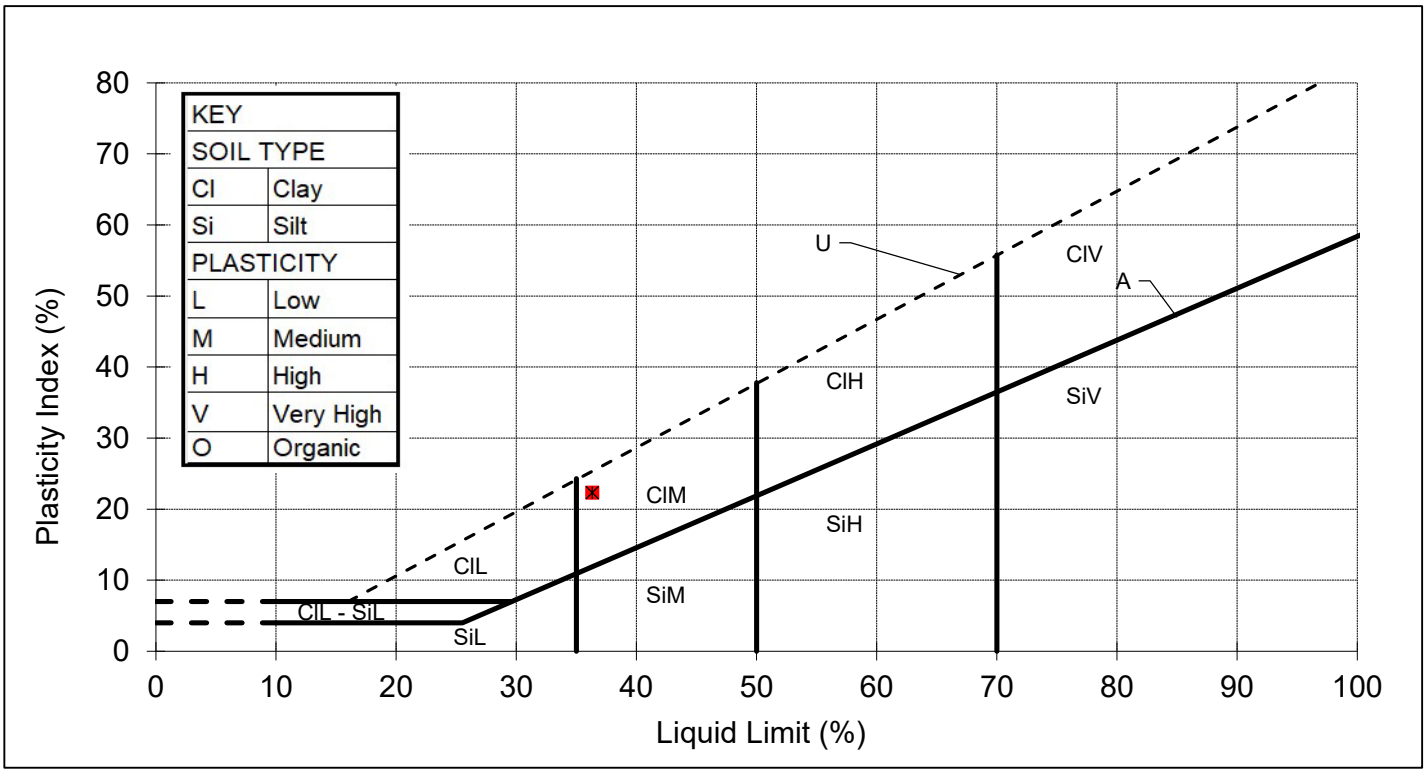
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	TP07 0.5 B	DATE SAMPLED	10-Jan-24
SAMPLE No.	410114	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	19.6	36.0	1.009	
Determination 2 (avg)	19.5	36.0		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
16.0	36	14	22	50



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

BS EN ISO 17892-8:2018

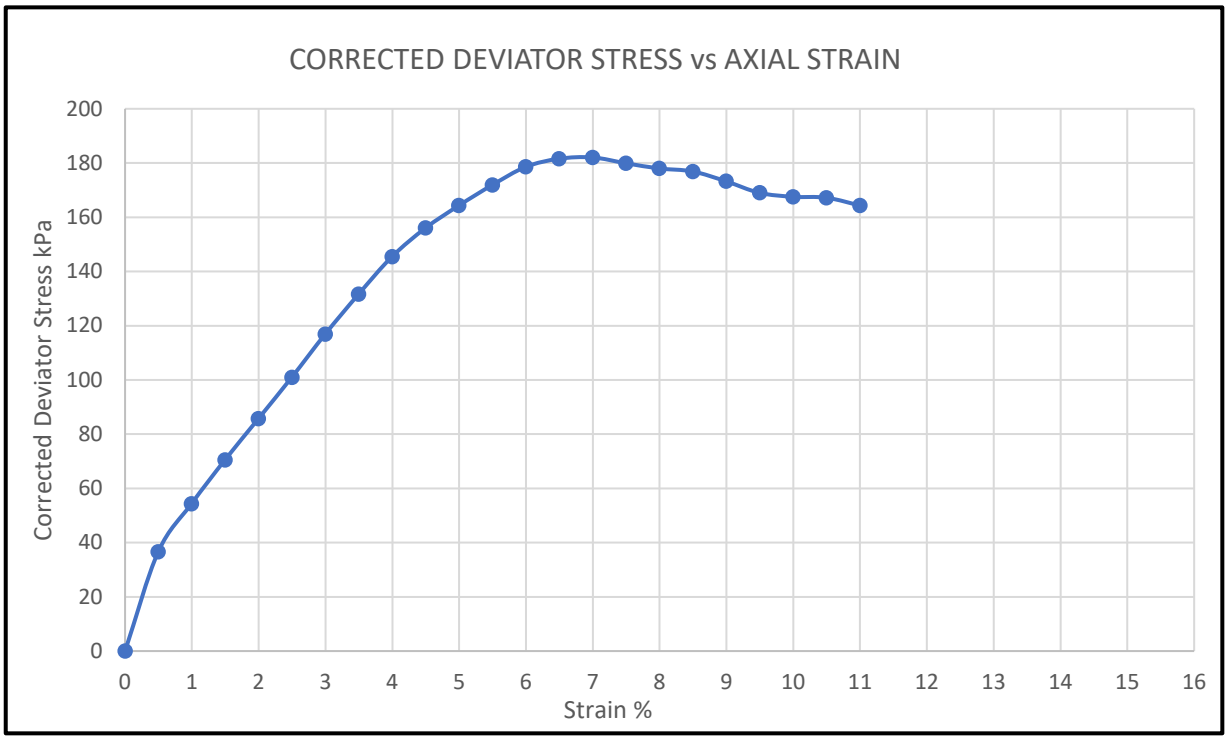
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH01 1.5-2 U	**DATE SAMPLED**	09-Jan-24
LAB SAMPLE No.	410115	**DATE RECEIVED**	19-Jan-24
DATE TESTED	22-Jan-24	**SAMPLED BY**	Client
MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

INITIAL CONDITIONS

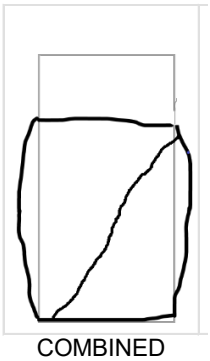
Specimen Location

Sample Length (mm)	345	Specimen depth from top of Sample (mm)	30
Sample Orientation	Vertical	Specimen Condition	Undisturbed
Specimen Length (mm)	203	Specimen Water Content (%)	20.6
Specimen Diameter (mm)	102	Specimen Bulk Density (Mg/m3)	2.16
Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.79
Membrane Correction	3.38		



TEST TYPE
SINGLE STAGE

SKETCH OF SPECIMEN AT FAILURE



COMBINED

Cell Pressure (kPa)	Failure Strain (%)	Rate of Strain (%/min)	Corrected Deviator Stress (kPa)	Shear Strength Cu (kPa)
30	7.0	2.0	182	91

Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed Date 13 February 2024

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

INCREMENTAL LOADING OEDOMETER TEST
BS EN ISO 17892-5:2017

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH02 1.5-2 U	**DATE SAMPLED**	09-Jan-24
LAB SAMPLE No.	410116	**DATE RECEIVED**	19-Jan-24
DATE TESTED	23-Jan-24	**SAMPLED BY**	Client
MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

Specimen Location 

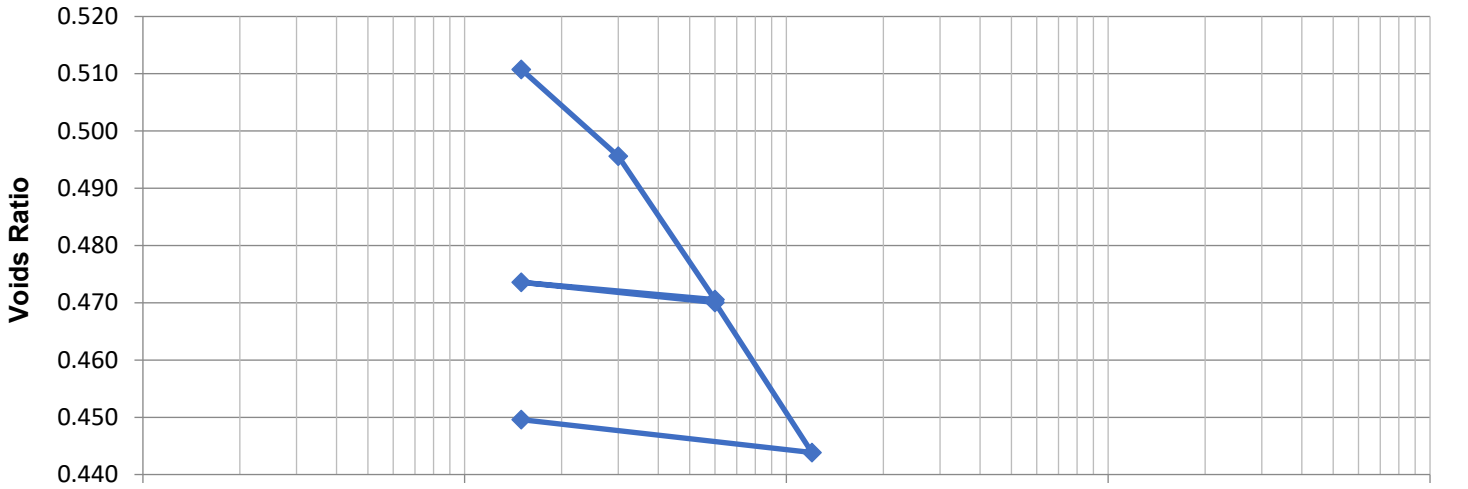
Sample Length (mm)	450	Specimen depth from top of Sample (mm)	40
Sample Orientation	Vertical	Specimen Condition	Undisturbed

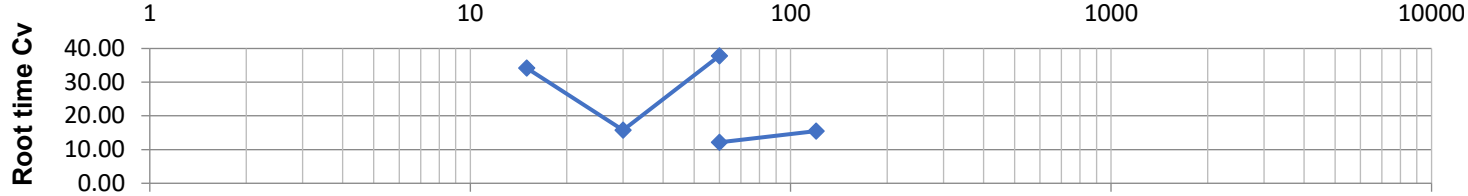
INITIAL CONDITIONS

Height	20.1	mm	Particle density	2.65	Ass
Diameter	70.1	mm	Initial void ratio	0.54	
Weight wet	155.8	g	Deg. of sat.	83	%
Water cont.*	16.8	%	Swell. press.	1	kN/m^2
Bulk Density	2.02	Mg/m^3	Dry density	1.73	Mg/m^3

*determined from specimen trimmings

Load No.	Applied Pressure kPa	Sample Height mm	Void Ratio	Mv m^2/MN	Temp °C	Cv t90 root m^2/yr	Cv t50 log m^2/yr
1	15	19.73	0.511	1.09	20	34.17	34.31
2	30	19.53	0.496	0.67	20	15.81	15.42
3	60	19.21	0.471	0.56	20	37.85	37.52
4	15	19.25	0.474	0.05	20		
5	60	19.20	0.470	0.05	20	12.16	12.01
6	120	18.86	0.444	0.30	20	15.51	15.24
7	15	18.93	0.450	0.04	20		





Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed  Date 13 February 2024

MURRAY RIX
CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING

TEST REPORT

Client LK Consult Ltd

Address Unit 29 Eton Business Park
Eton Hill Road
Radcliffe
Greater Manchester
M26 2ZS

Contract LKC 23 1722 -
Sydney Avenue, Manchester Airport

Job Number MRN 24076/4
Date of Issue 13 February 2024
Page 1 of 21

Approved Signatories

S J Hutchings, O P Davies

Notes

1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.

2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.

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

4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.

5 The results included within the report are representative of the samples submitted for analysis.

6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

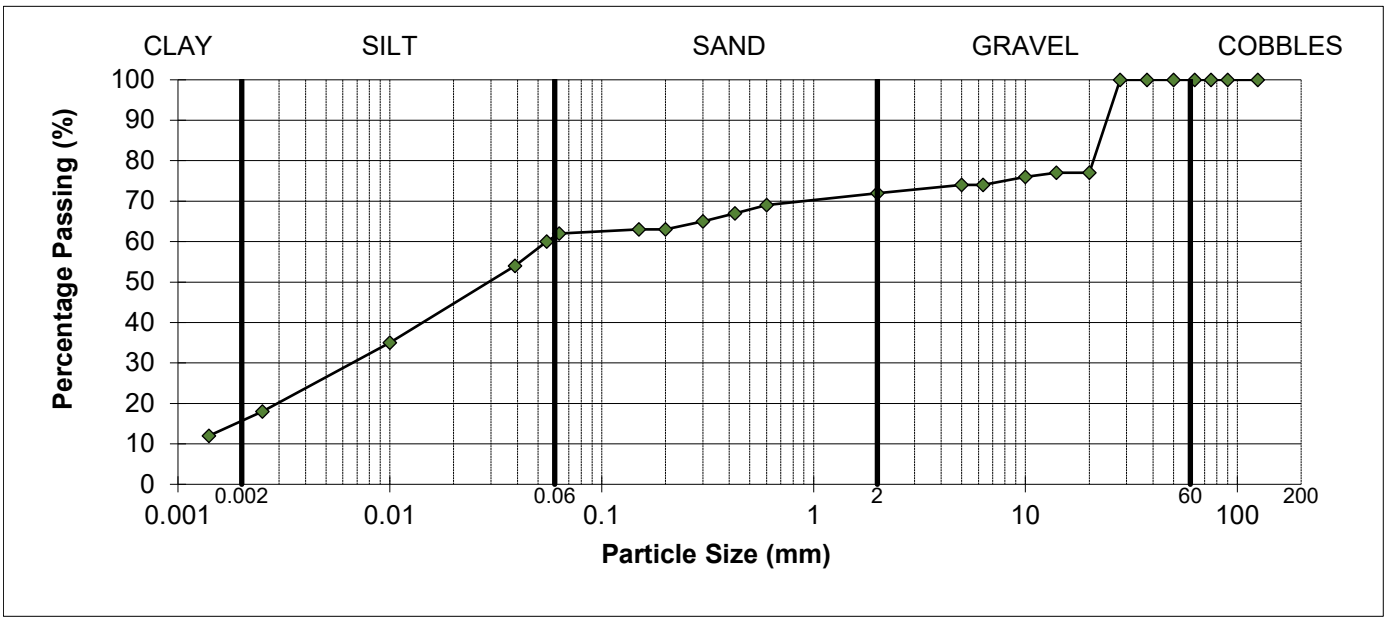
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH01 1.2 D	DATE SAMPLED	09-Jan-24
LAB SAMPLE No	410103	DATE RECEIVED	19-Jan-24
DATE TESTED	24-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	72	
90	100		0.6	69	
75	100		0.425	67	
63	100		0.3	65	
50	100		0.2	63	
37.5	100		0.15	63	
28	100		0.063	62	
20	77		0.055	60	
14	77		0.039	54	
10	76		0.01	35	
6.3	74		0.0025	18	
5	74		0.0014	12	



REMARKS
As received water content = 18.1%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

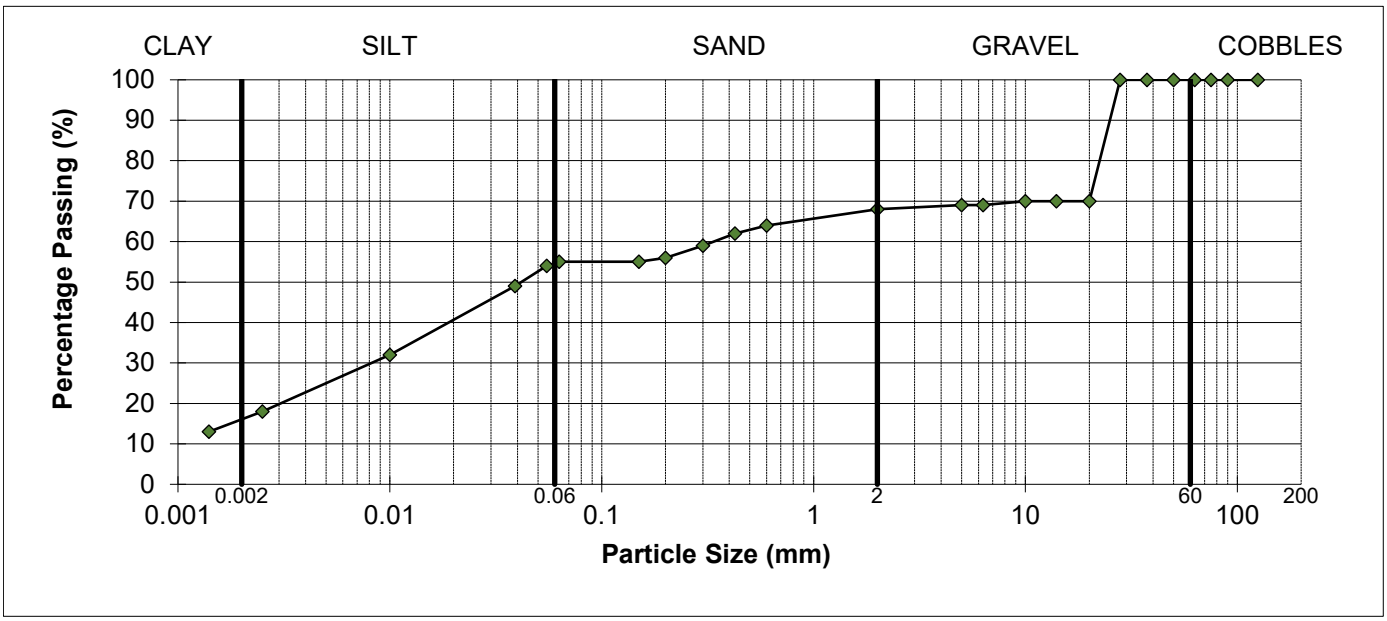
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH02 1 D	DATE SAMPLED	09-Jan-24
LAB SAMPLE No	410106	DATE RECEIVED	19-Jan-24
DATE TESTED	24-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	68	
90	100		0.6	64	
75	100		0.425	62	
63	100		0.3	59	
50	100		0.2	56	
37.5	100		0.15	55	
28	100		0.063	55	
20	70		0.055	54	
14	70		0.039	49	
10	70		0.01	32	
6.3	69		0.0025	18	
5	69		0.0014	13	



REMARKS
As received water content = 20.2%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

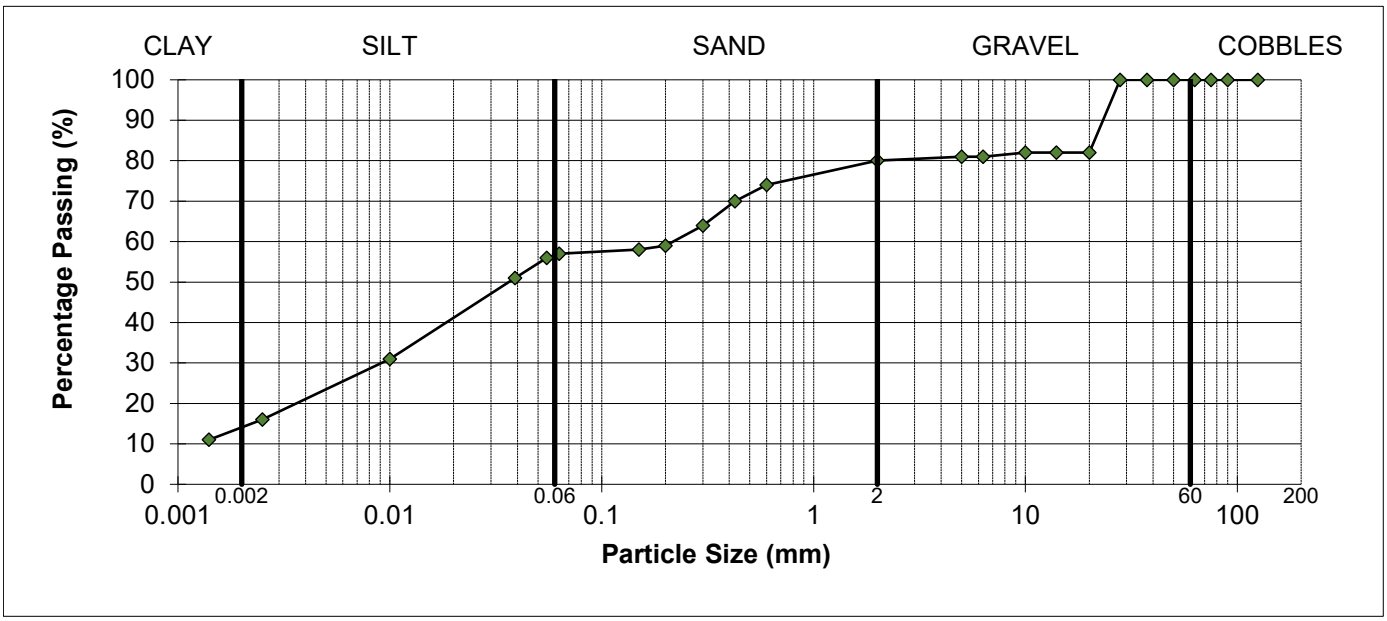
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH02 2 D	DATE SAMPLED	09-Jan-24
LAB SAMPLE No	410107	DATE RECEIVED	19-Jan-24
DATE TESTED	24-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	80	
90	100		0.6	74	
75	100		0.425	70	
63	100		0.3	64	
50	100		0.2	59	
37.5	100		0.15	58	
28	100		0.063	57	
20	82		0.055	56	
14	82		0.039	51	
10	82		0.01	31	
6.3	81		0.0025	16	
5	81		0.0014	11	



REMARKS
As received water content = 23.4%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

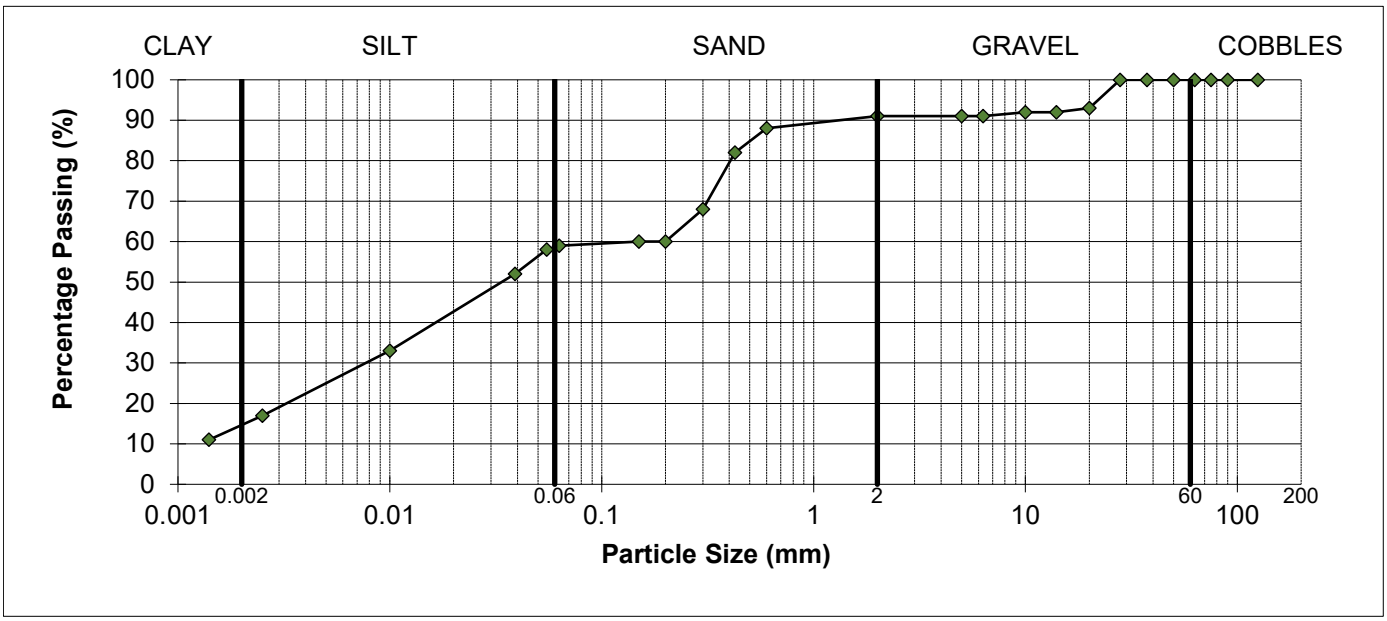
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	TP01B 1 D	DATE SAMPLED	10-Jan-24
LAB SAMPLE No	410109	DATE RECEIVED	19-Jan-24
DATE TESTED	24-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	91	
90	100		0.6	88	
75	100		0.425	82	
63	100		0.3	68	
50	100		0.2	60	
37.5	100		0.15	60	
28	100		0.063	59	
20	93		0.055	58	
14	92		0.039	52	
10	92		0.01	33	
6.3	91		0.0025	17	
5	91		0.0014	11	



REMARKS
As received water content = 16.0%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

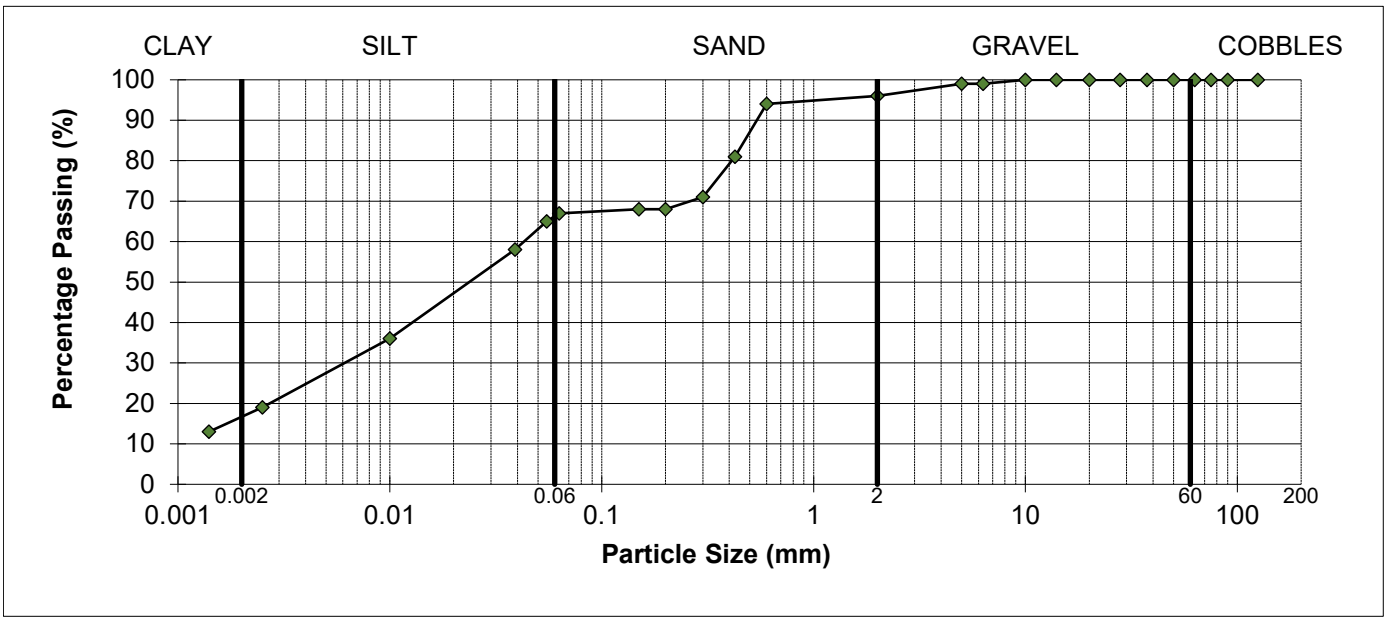
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	TP01B 1.7 D	DATE SAMPLED	10-Jan-24
LAB SAMPLE No	410111	DATE RECEIVED	19-Jan-24
DATE TESTED	24-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	96	
90	100		0.6	94	
75	100		0.425	81	
63	100		0.3	71	
50	100		0.2	68	
37.5	100		0.15	68	
28	100		0.063	67	
20	100		0.055	65	
14	100		0.039	58	
10	100		0.01	36	
6.3	99		0.0025	19	
5	99		0.0014	13	



REMARKS
As received water content = 16.4%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

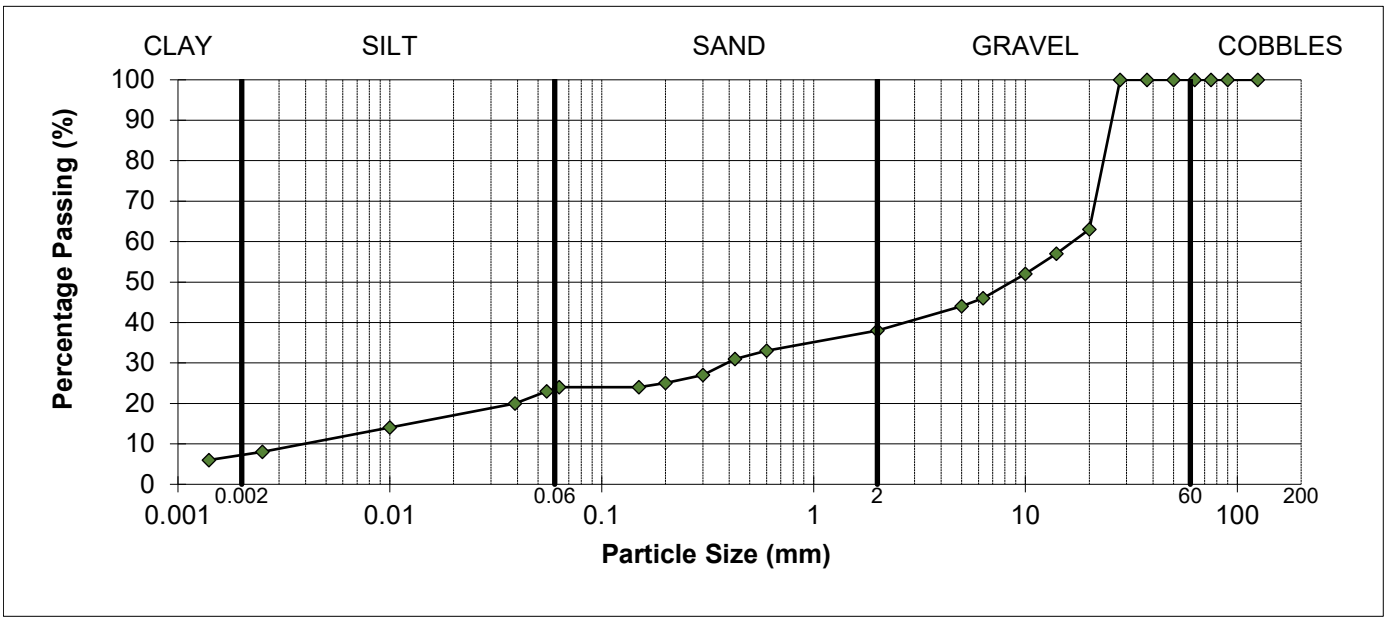
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	TP06 0.2 B	DATE SAMPLED	10-Jan-24
LAB SAMPLE No	410113	DATE RECEIVED	19-Jan-24
DATE TESTED	24-Jan-24	SAMPLED BY	Client

MATERIAL	Brown clay bound silty sandy GRAVEL
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	38	
90	100		0.6	33	
75	100		0.425	31	
63	100		0.3	27	
50	100		0.2	25	
37.5	100		0.15	24	
28	100		0.063	24	
20	63		0.055	23	
14	57		0.039	20	
10	52		0.01	14	
6.3	46		0.0025	8	
5	44		0.0014	6	



REMARKS
As received water content = 11.6%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

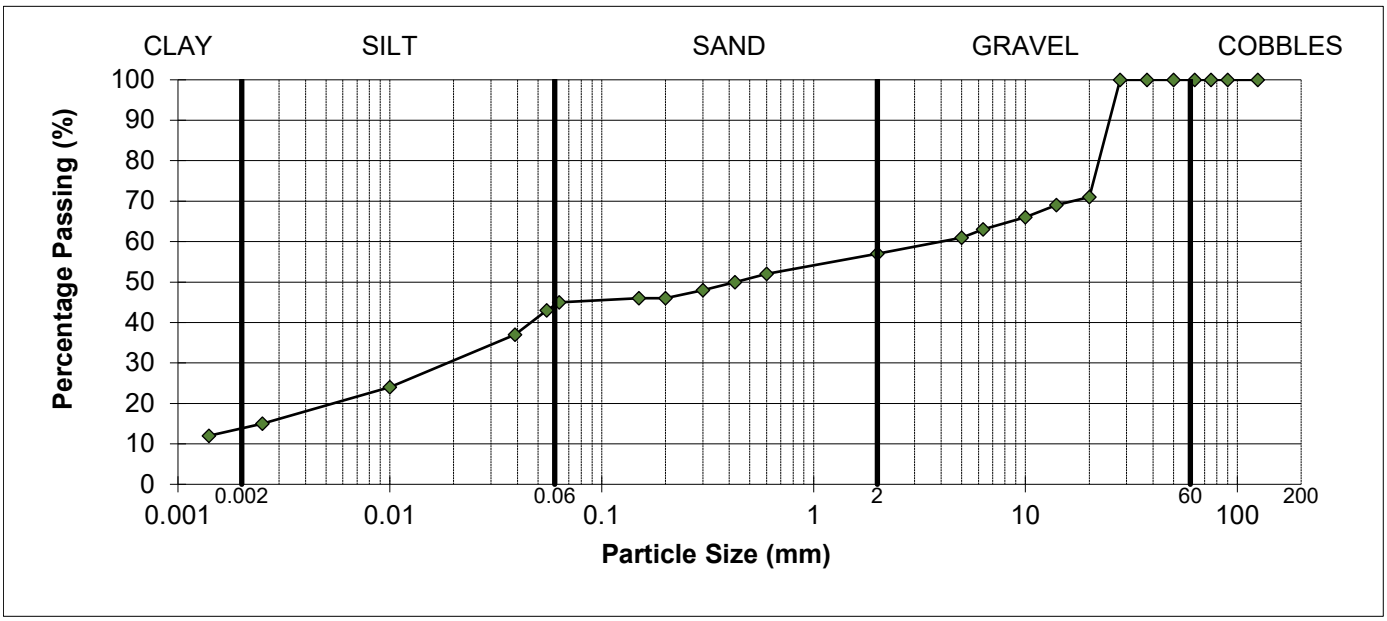
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	TP07 0.5 B	DATE SAMPLED	10-Jan-24
LAB SAMPLE No	410114	DATE RECEIVED	19-Jan-24
DATE TESTED	24-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	57	
90	100		0.6	52	
75	100		0.425	50	
63	100		0.3	48	
50	100		0.2	46	
37.5	100		0.15	46	
28	100		0.063	45	
20	71		0.055	43	
14	69		0.039	37	
10	66		0.01	24	
6.3	63		0.0025	15	
5	61		0.0014	12	



REMARKS
As received water content = 16.0%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

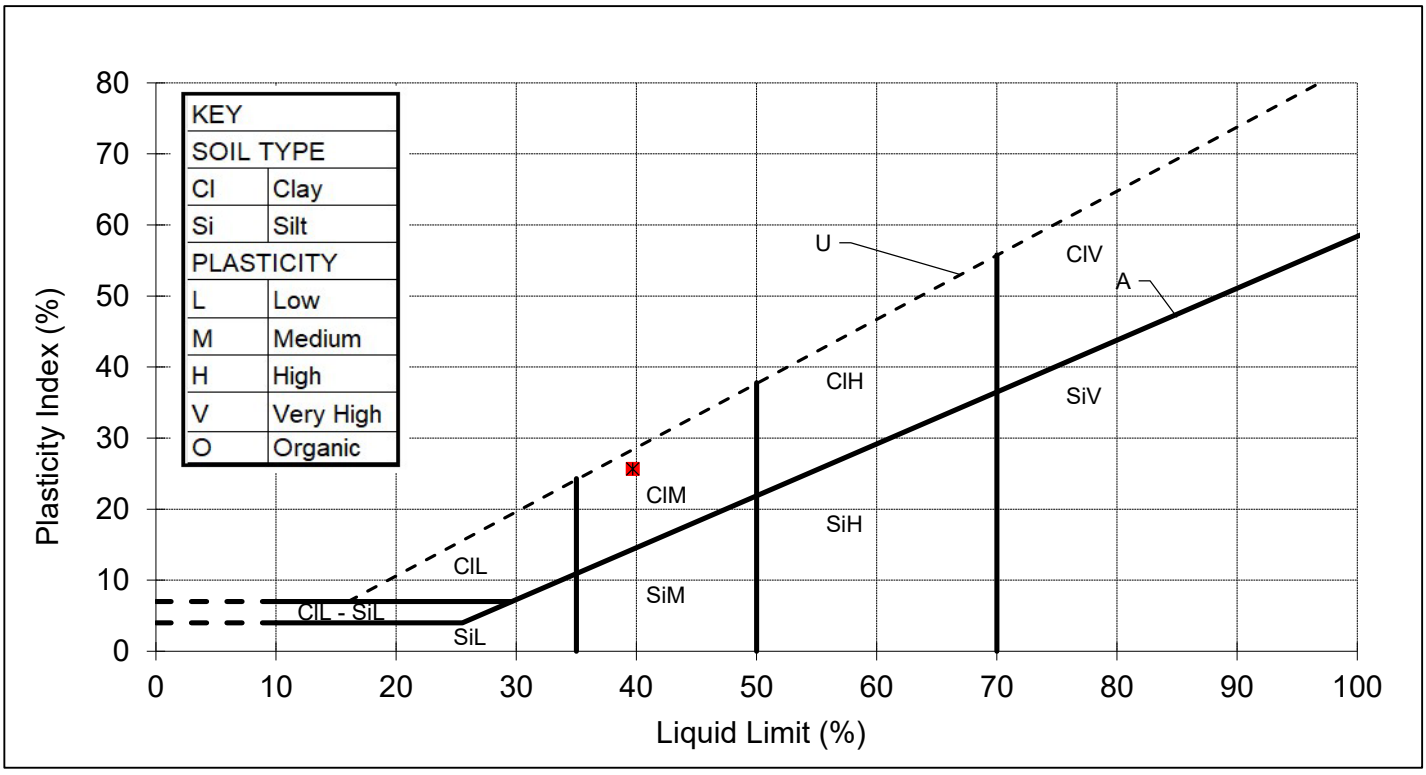
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH01 0.6 D	DATE SAMPLED	09-Jan-24
SAMPLE No.	410101	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	18.5	38.6	1.027	
Determination 2 (avg)	18.5	38.7		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
19.0	40	14	26	69



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

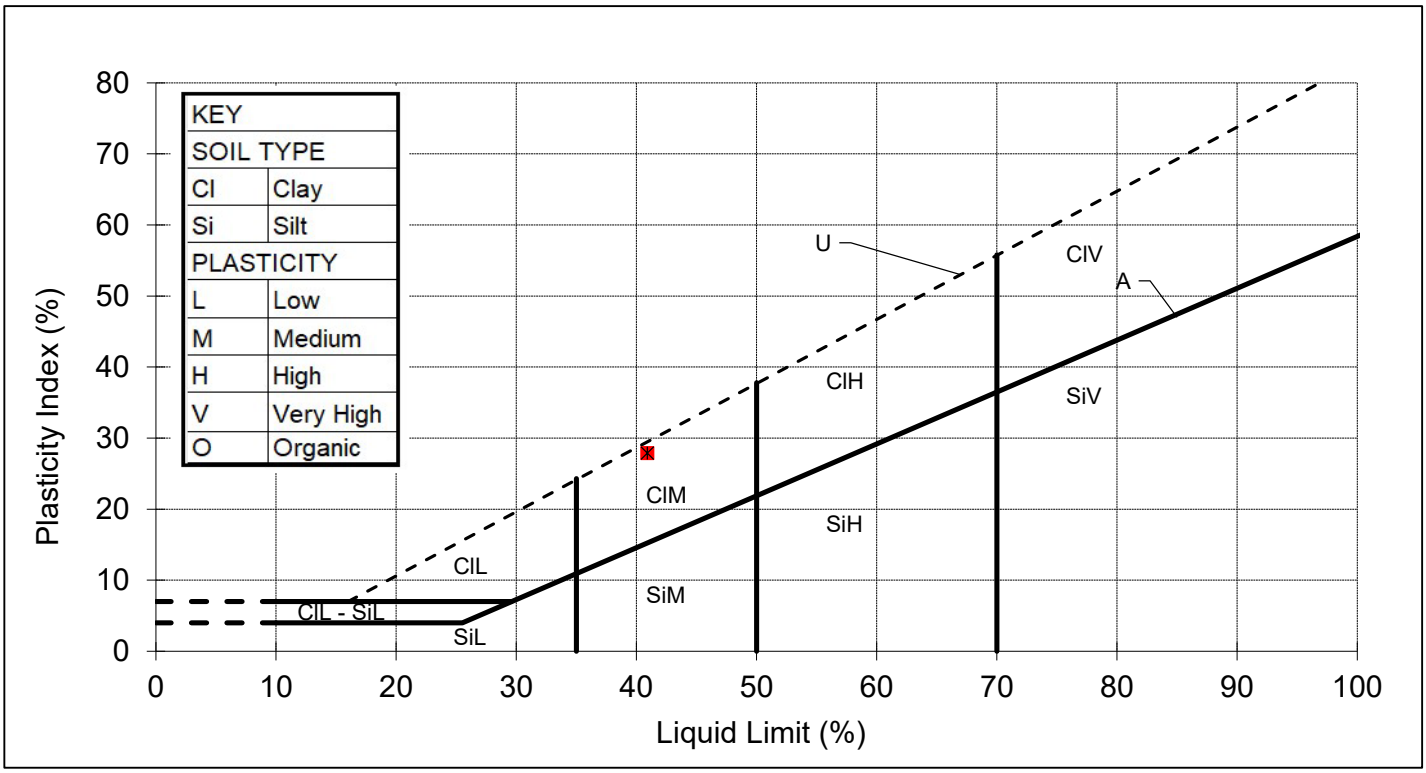
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH01 1.2 D	DATE SAMPLED	09-Jan-24
SAMPLE No.	410103	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	17.7	39.5	1.040	
Determination 2 (avg)	17.6	39.2		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
18.0	41	13	28	67



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

MURRAY RIX

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TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

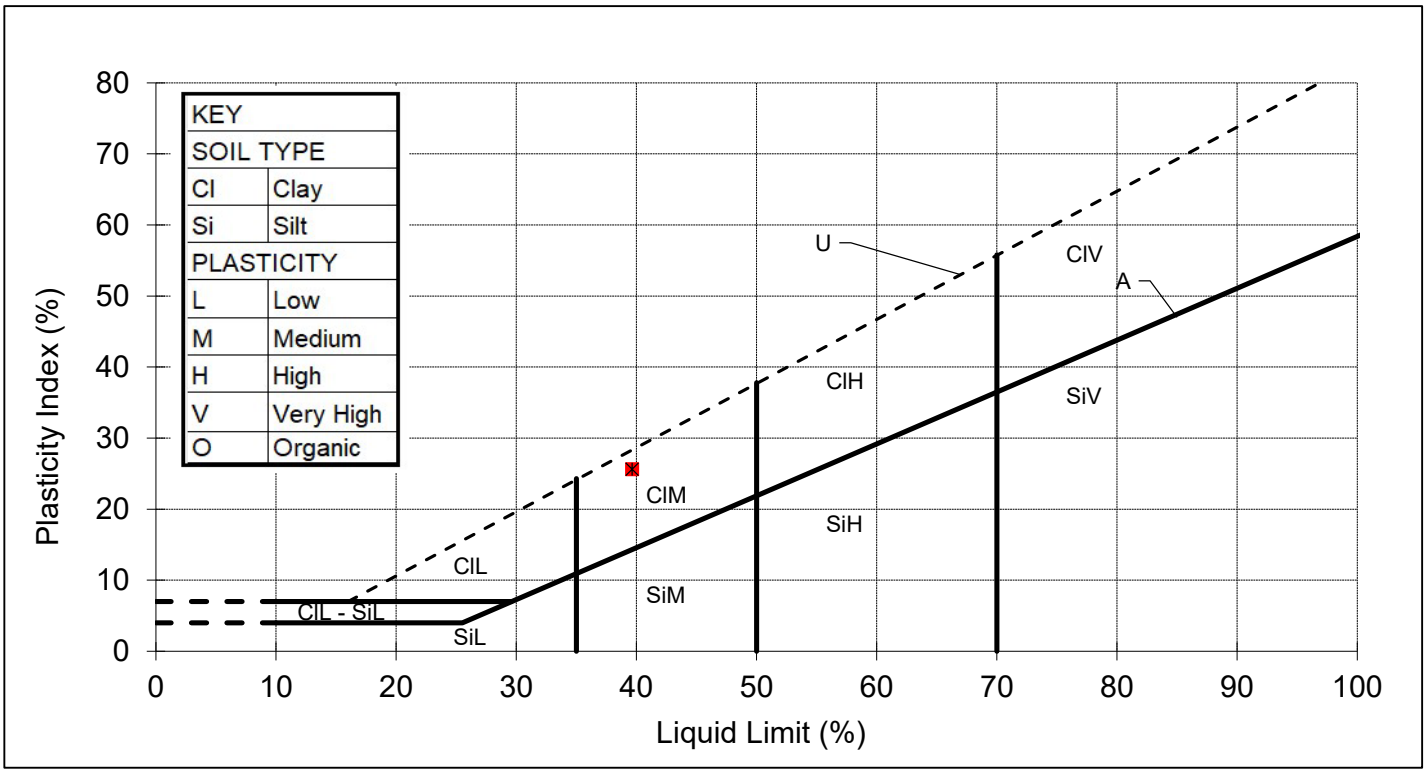
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH02 0.4 D	DATE SAMPLED	09-Jan-24
SAMPLE No.	410104	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	18.0	38.2	1.039	
Determination 2 (avg)	18.0	38.1		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
19.2	40	14	26	72



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

MURRAY RIX

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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

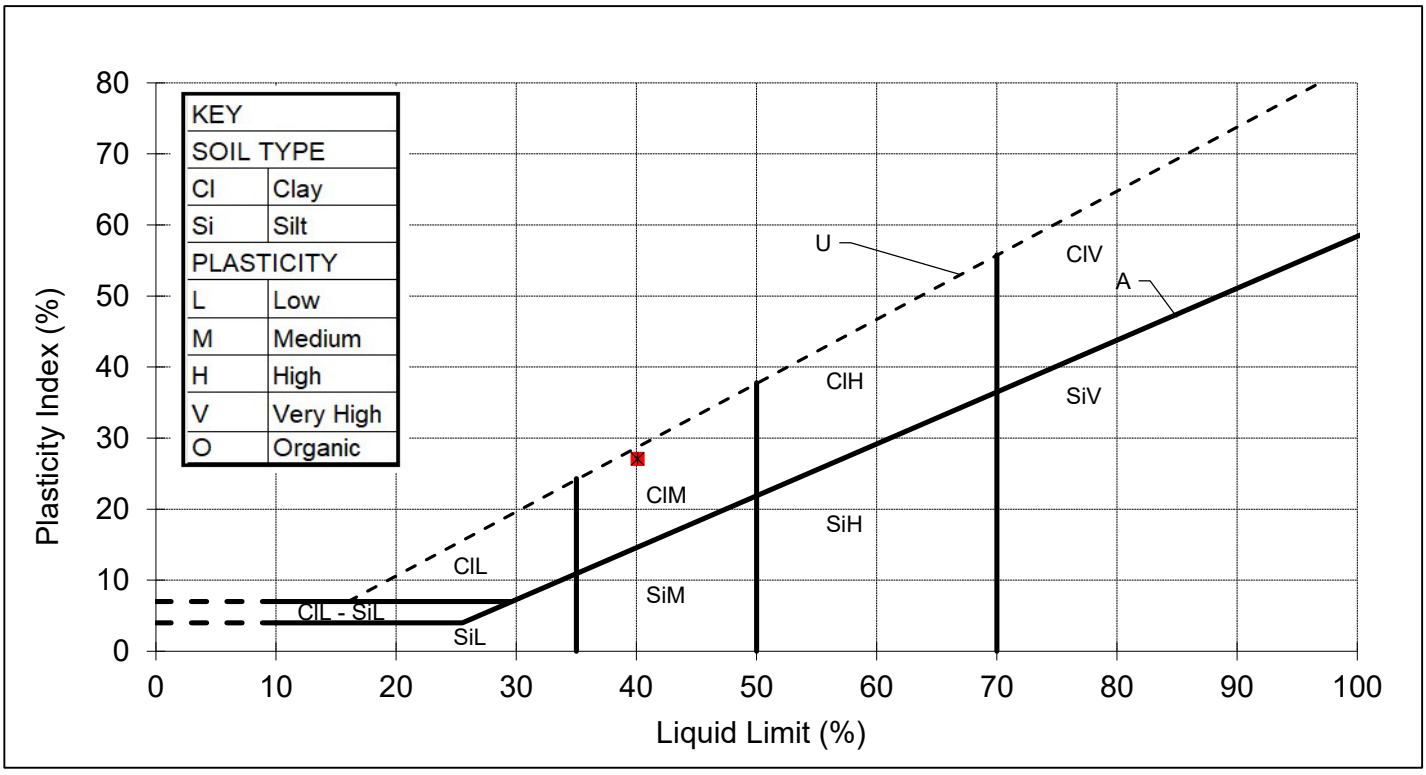
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH02 0.6 D	DATE SAMPLED	09-Jan-24
SAMPLE No.	410105	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	19.4	39.6	1.014	
Determination 2 (avg)	19.2	39.5		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
19.6	40	13	27	69



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

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TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

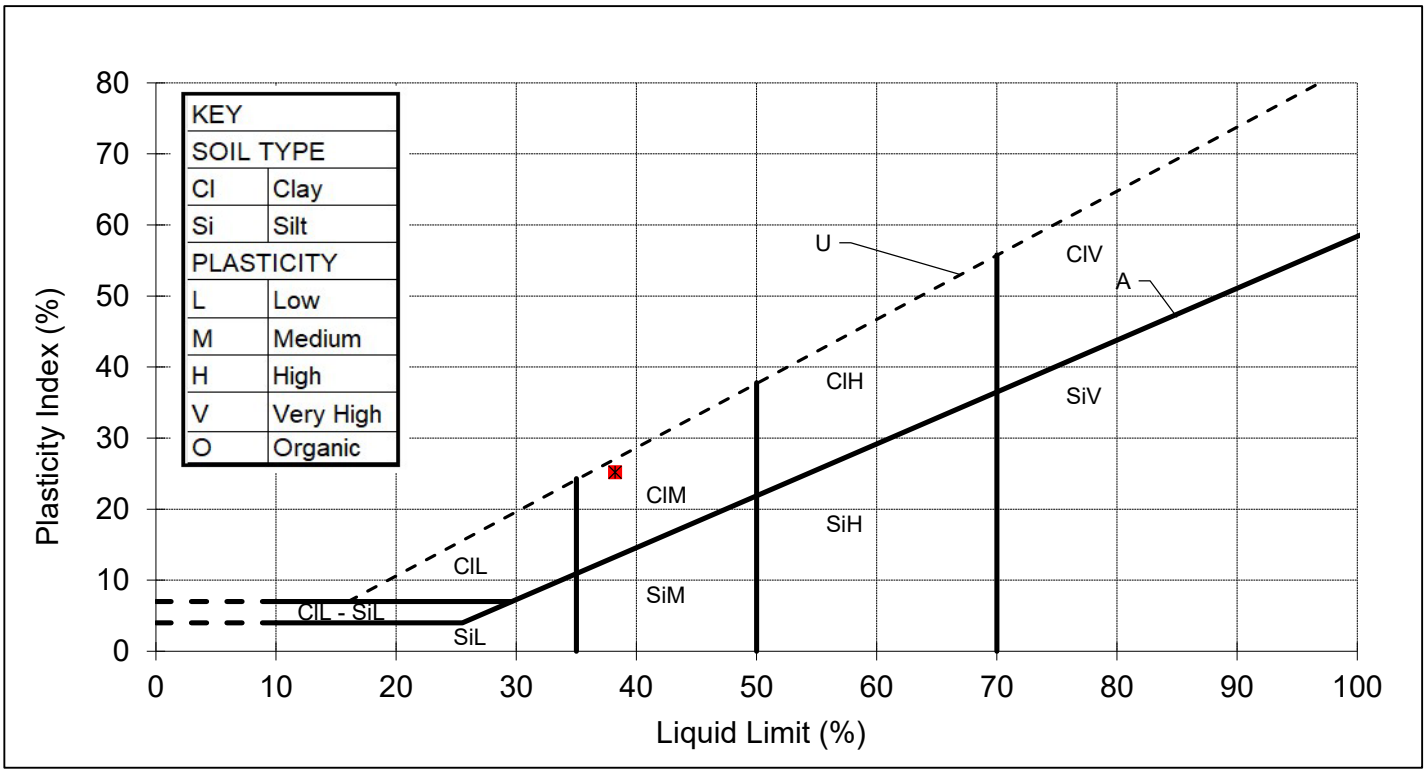
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH02 1 D	DATE SAMPLED	09-Jan-24
SAMPLE No.	410106	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	19.9	38.2	1.002	
Determination 2 (avg)	19.9	38.1		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
20.1	38	13	25	62



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

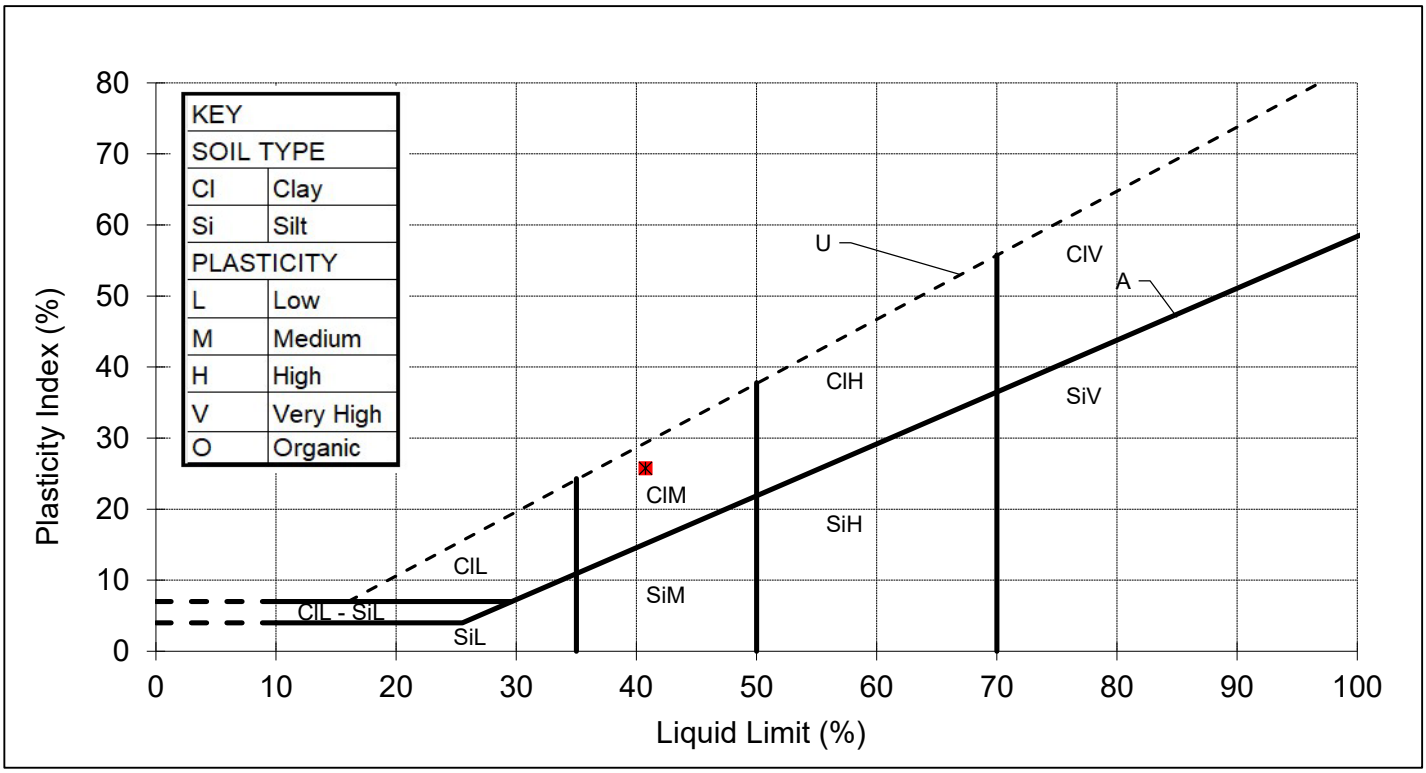
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH02 2 D	DATE SAMPLED	09-Jan-24
SAMPLE No.	410107	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	20.7	41.0	0.994	
Determination 2 (avg)	20.1	41.0		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
23.3	41	15	26	70



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

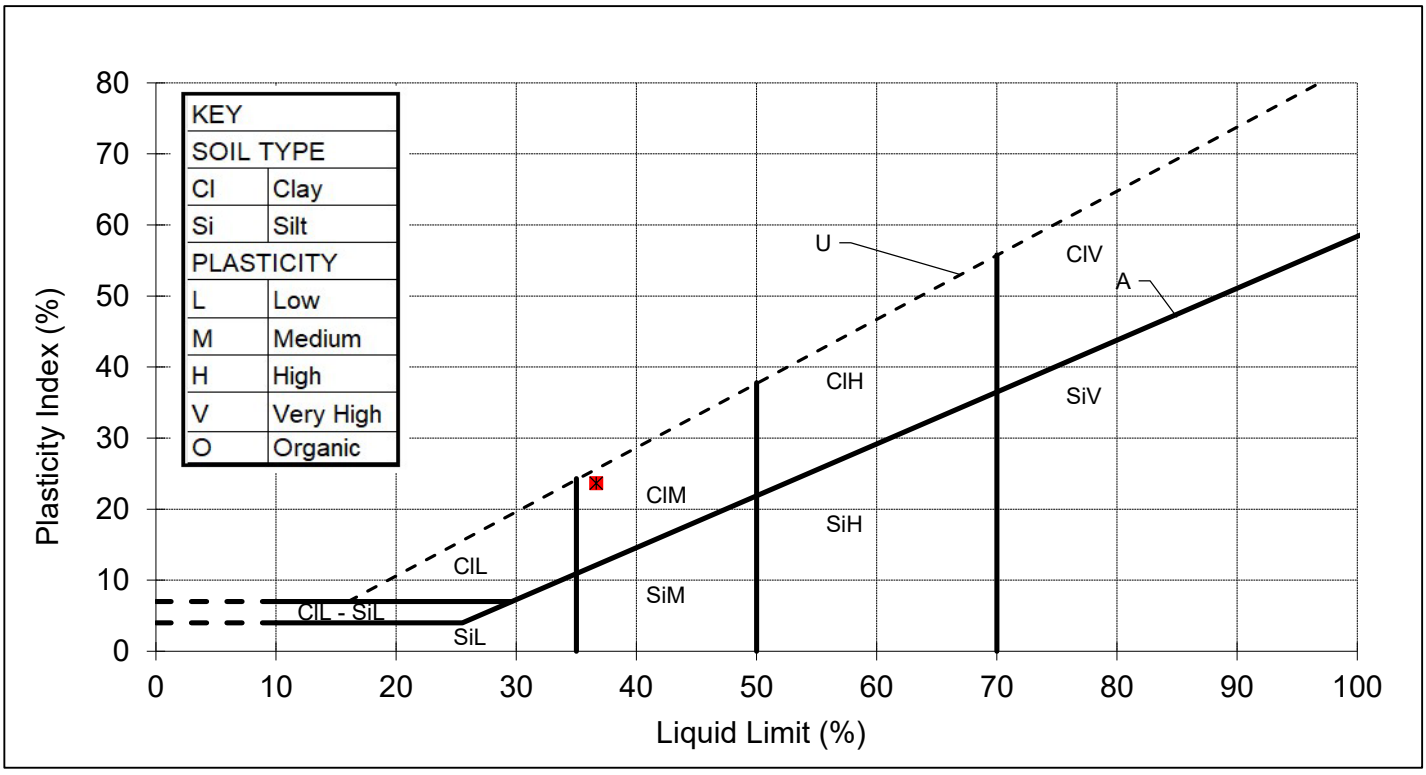
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	TP01B 0.7 D	DATE SAMPLED	10-Jan-24
SAMPLE No.	410108	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	20.2	36.8	0.998	
Determination 2 (avg)	20.2	36.7		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
17.2	37	13	24	80



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

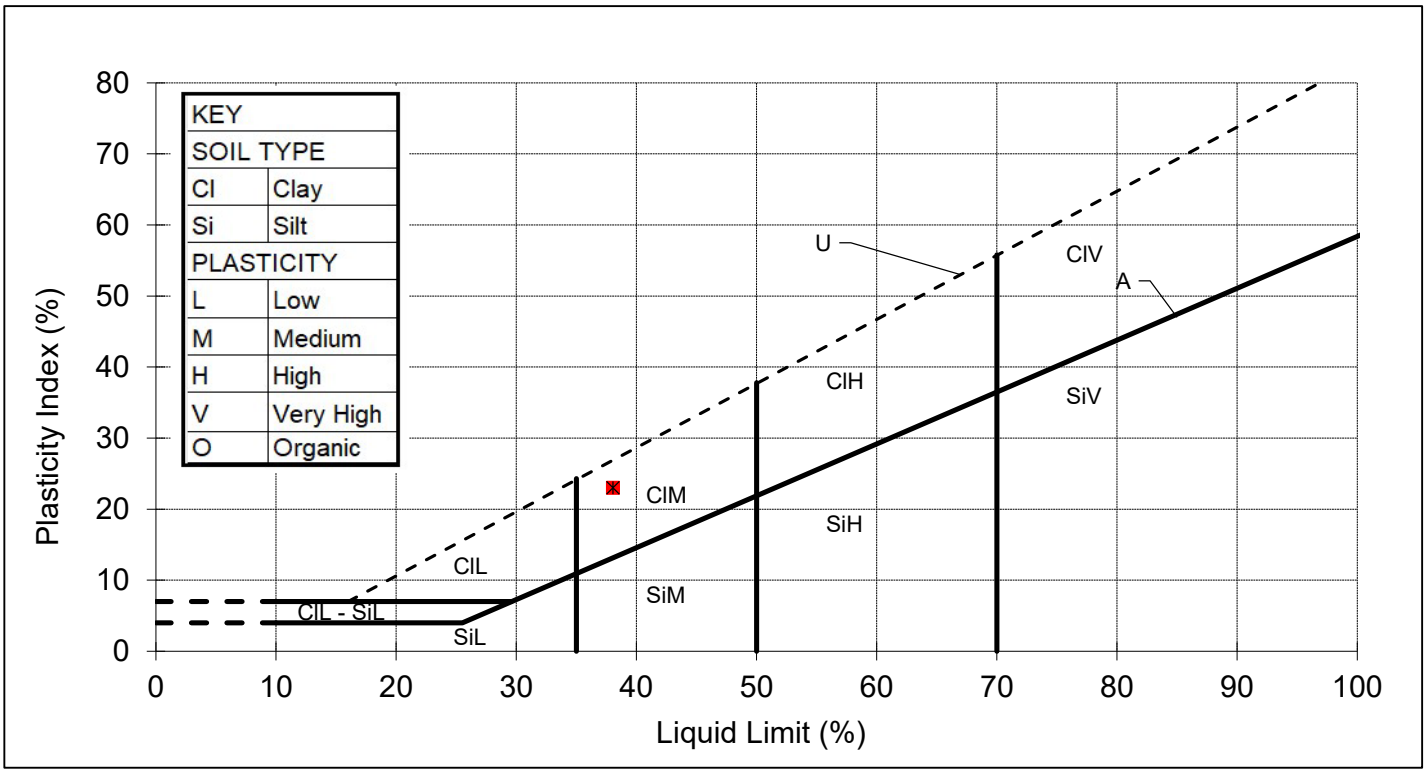
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	TP01 1.5 D	DATE SAMPLED	10-Jan-24
SAMPLE No.	410110	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	20.0	38.0	1.001	
Determination 2 (avg)	20.0	38.0		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
19.3	38	15	23	84



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

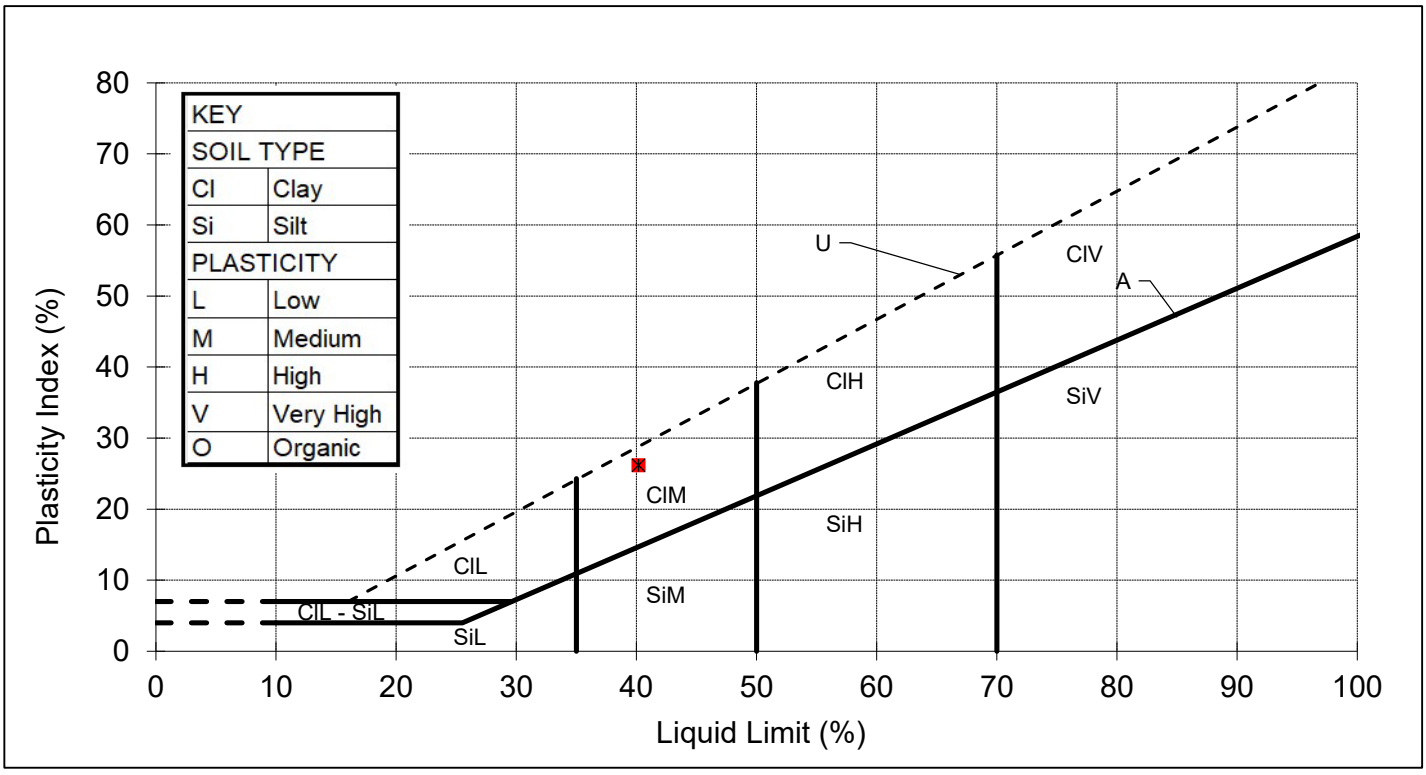
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	TP01 2.2 D	DATE SAMPLED	10-Jan-24
SAMPLE No.	410112	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	16.2	37.7	1.066	
Determination 2 (avg)	16.4	37.7		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
20.6	40	14	26	77



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

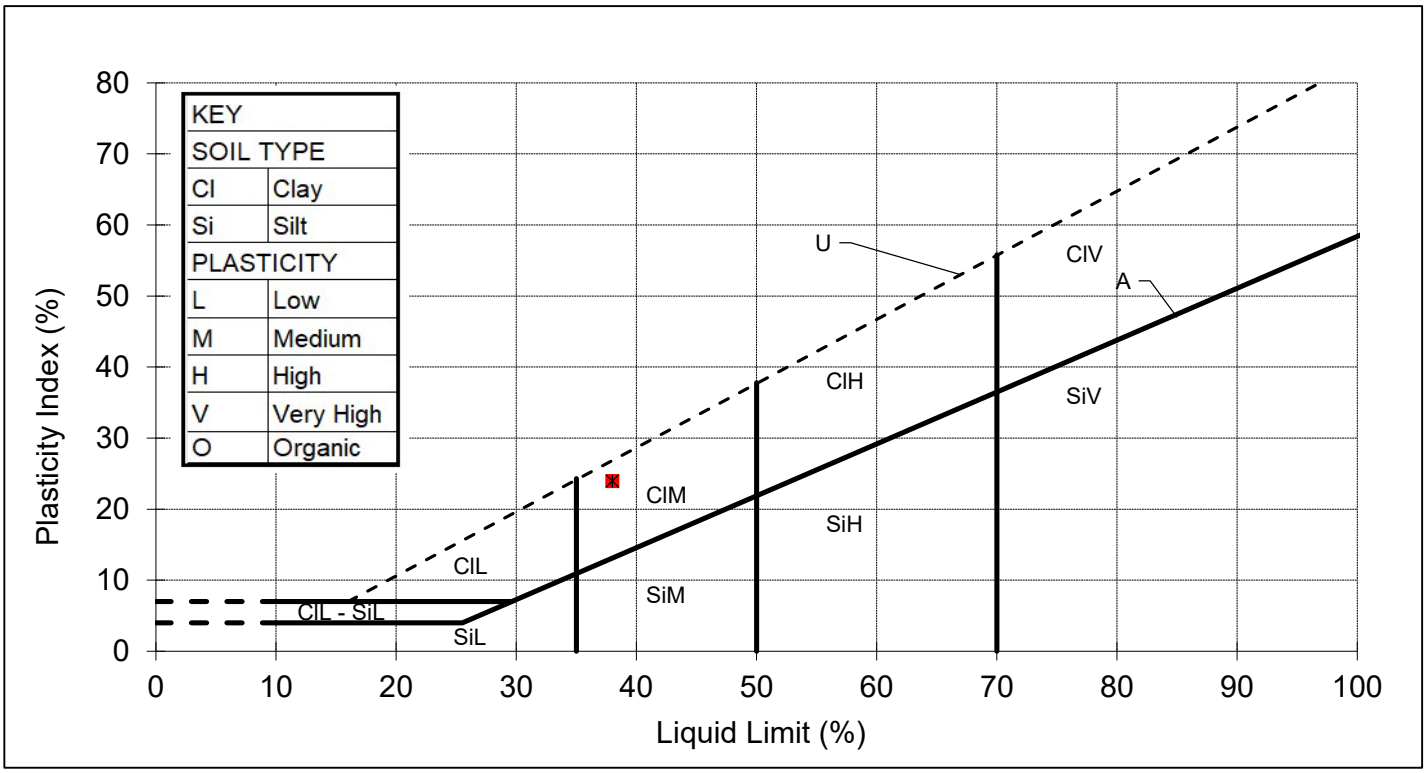
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	TP06 0.2 B	DATE SAMPLED	10-Jan-24
SAMPLE No.	410113	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown clay bound silty sandy GRAVEL		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	16.0	35.4	1.076	
Determination 2 (avg)	16.0	35.2		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
11.5	38	14	24	31



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

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TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

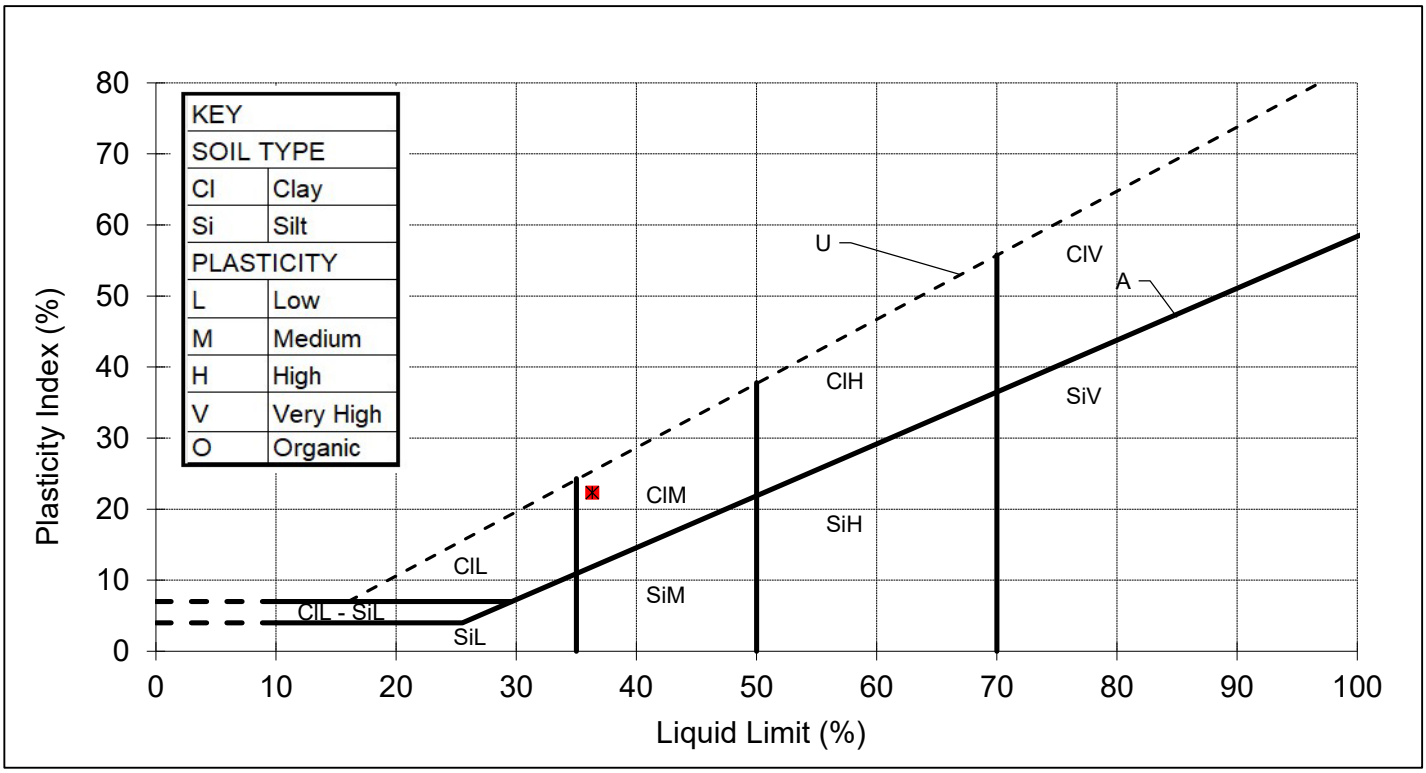
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	TP07 0.5 B	DATE SAMPLED	10-Jan-24
SAMPLE No.	410114	DATE RECEIVED	19-Jan-24
DATE TESTED	23-Jan-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	19.6	36.0	1.009	
Determination 2 (avg)	19.5	36.0		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
16.0	36	14	22	50



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 13-Feb-24

MURRAY RIX

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

BS EN ISO 17892-8:2018

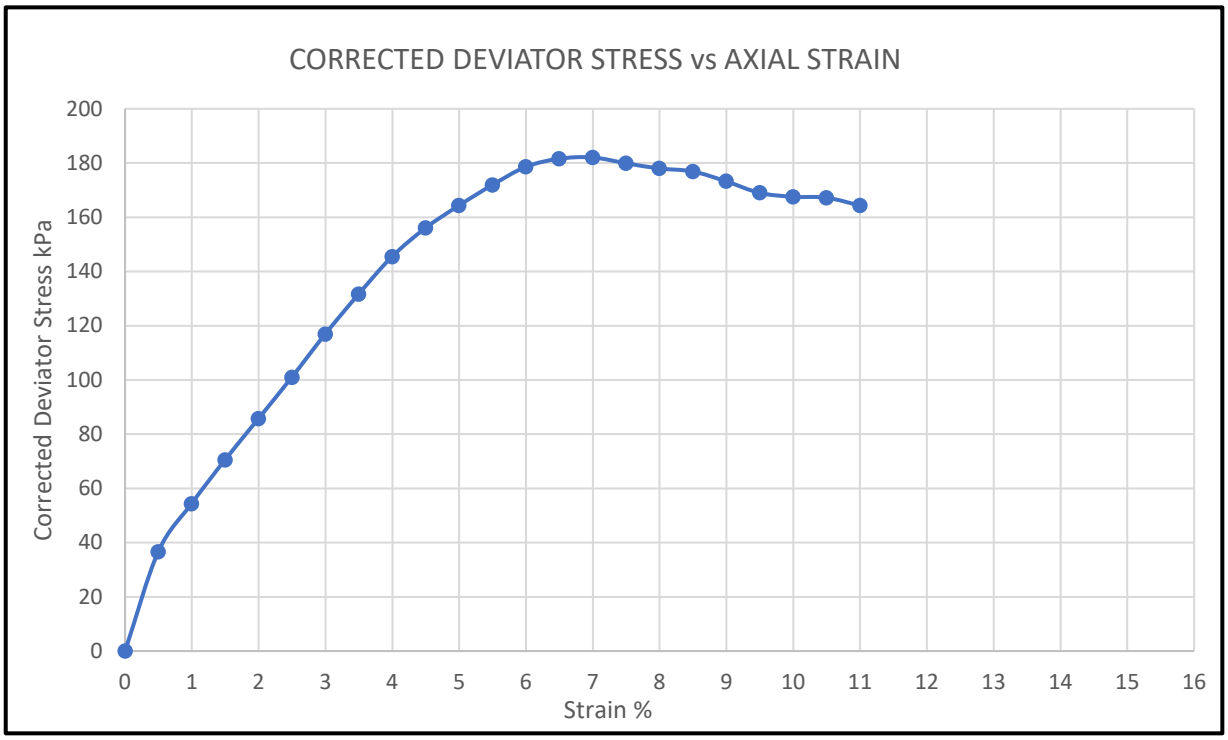
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/4

SAMPLE LABEL	BH01 1.5-2 U	**DATE SAMPLED**	09-Jan-24
LAB SAMPLE No.	410115	**DATE RECEIVED**	19-Jan-24
DATE TESTED	22-Jan-24	**SAMPLED BY**	Client
MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

INITIAL CONDITIONS

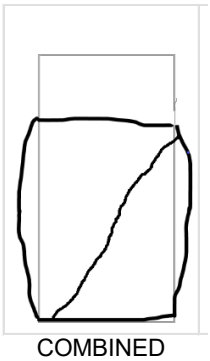
Specimen Location

Sample Length (mm)	345	Specimen depth from top of Sample (mm)	30
Sample Orientation	Vertical	Specimen Condition	Undisturbed
Specimen Length (mm)	203	Specimen Water Content (%)	20.6
Specimen Diameter (mm)	102	Specimen Bulk Density (Mg/m3)	2.16
Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.79
Membrane Correction	3.38		



TEST TYPE
SINGLE STAGE

SKETCH OF SPECIMEN AT FAILURE



COMBINED

Cell Pressure (kPa)	Failure Strain (%)	Rate of Strain (%/min)	Corrected Deviator Stress (kPa)	Shear Strength Cu (kPa)
30	7.0	2.0	182	91

Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed Date 13 February 2024

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

INCREMENTAL LOADING OEDOMETER TEST
BS EN ISO 17892-5:2017

CLIENT	
SITE	
JOB NUMBER	

SAMPLE LABEL	BH02 1.5-2 U	**DATE SAMPLED**	09-Jan-24
LAB SAMPLE No.	410116	**DATE RECEIVED**	19-Jan-24
DATE TESTED	23-Jan-24	**SAMPLED BY**	Client
MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

Specimen Location 

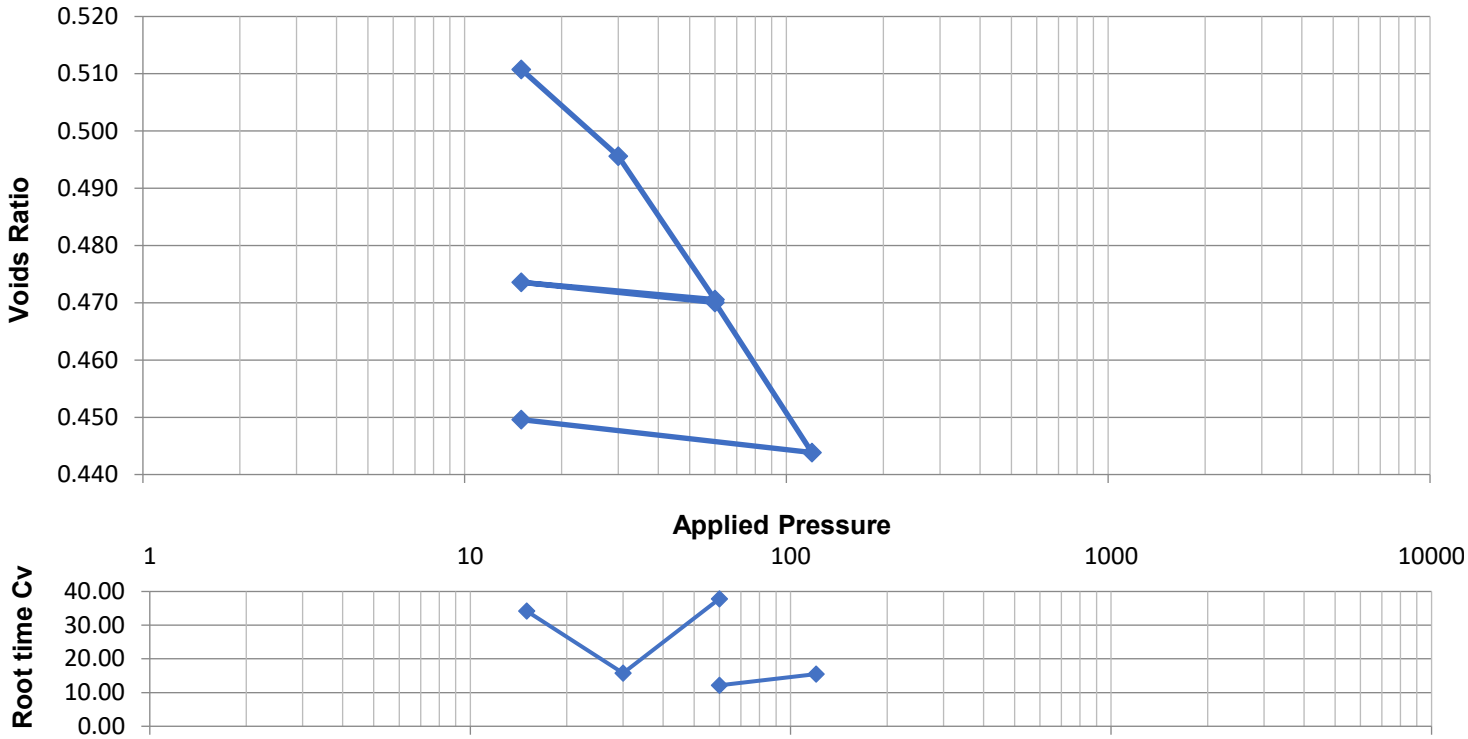
Sample Length (mm)	450	Specimen depth from top of Sample (mm)	40
Sample Orientation	Vertical	Specimen Condition	Undisturbed

INITIAL CONDITIONS

Height	20.1	mm	Particle density	2.65	Ass
Diameter	70.1	mm	Initial void ratio	0.54	
Weight wet	155.8	g	Deg. of sat.	83	%
Water cont.*	16.8	%	Swell. press.	1	kN/m^2
Bulk Density	2.02	Mg/m^3	Dry density	1.73	Mg/m^3

*determined from specimen trimmings

Load No.	Applied Pressure kPa	Sample Height mm	Void Ratio	Mv m^2/MN	Temp °C	Cv t90 root m^2/yr	Cv t50 log m^2/yr
1	15	19.73	0.511	1.09	20	34.17	34.31
2	30	19.53	0.496	0.67	20	15.81	15.42
3	60	19.21	0.471	0.56	20	37.85	37.52
4	15	19.25	0.474	0.05	20		
5	60	19.20	0.470	0.05	20	12.16	12.01
6	120	18.86	0.444	0.30	20	15.51	15.24
7	15	18.93	0.450	0.04	20		



Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed  Date 13 February 2024

MURRAY RIX
CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING

TEST REPORT

Client LK Consult Ltd

Address Unit 29 Eton Business Park
Eton Hill Road
Radcliffe
Greater Manchester
M26 2ZS

Contract LKC 23 1722 -
Sydney Avenue, Manchester Airport

Job Number MRN 24076/5
Date of Issue 14 February 2024

Approved Signatories

S J Hutchings, O P Davies

Notes

1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.

2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.

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

4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.

5 The results included within the report are representative of the samples submitted for analysis.

6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

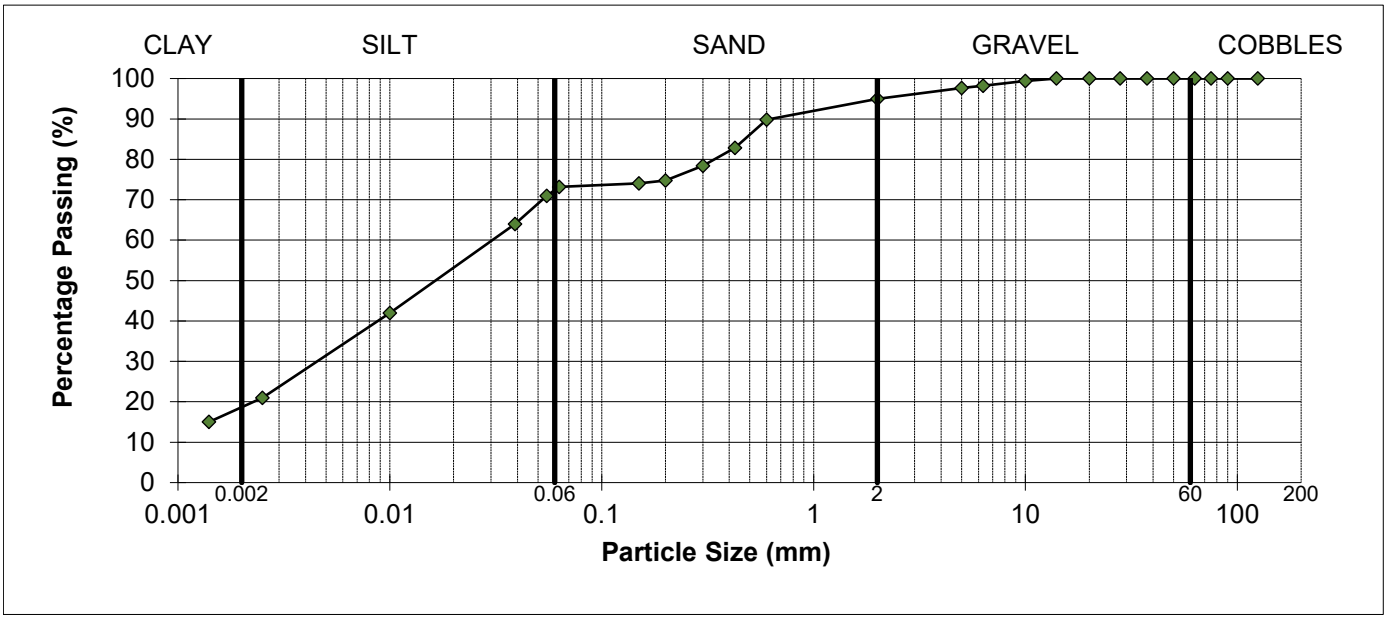
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 1 1.0m D	DATE SAMPLED	17-Jan-24
LAB SAMPLE No	417301	DATE RECEIVED	01-Feb-24
DATE TESTED	02-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	95	
90	100		0.6	90	
75	100		0.425	83	
63	100		0.3	78	
50	100		0.2	75	
37.5	100		0.15	74	
28	100		0.063	73	
20	100		0.055	71	
14	100		0.039	64	
10	99		0.01	42	
6.3	98		0.0025	21	
5	98		0.0014	15	



As received water content =	18.9%

REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

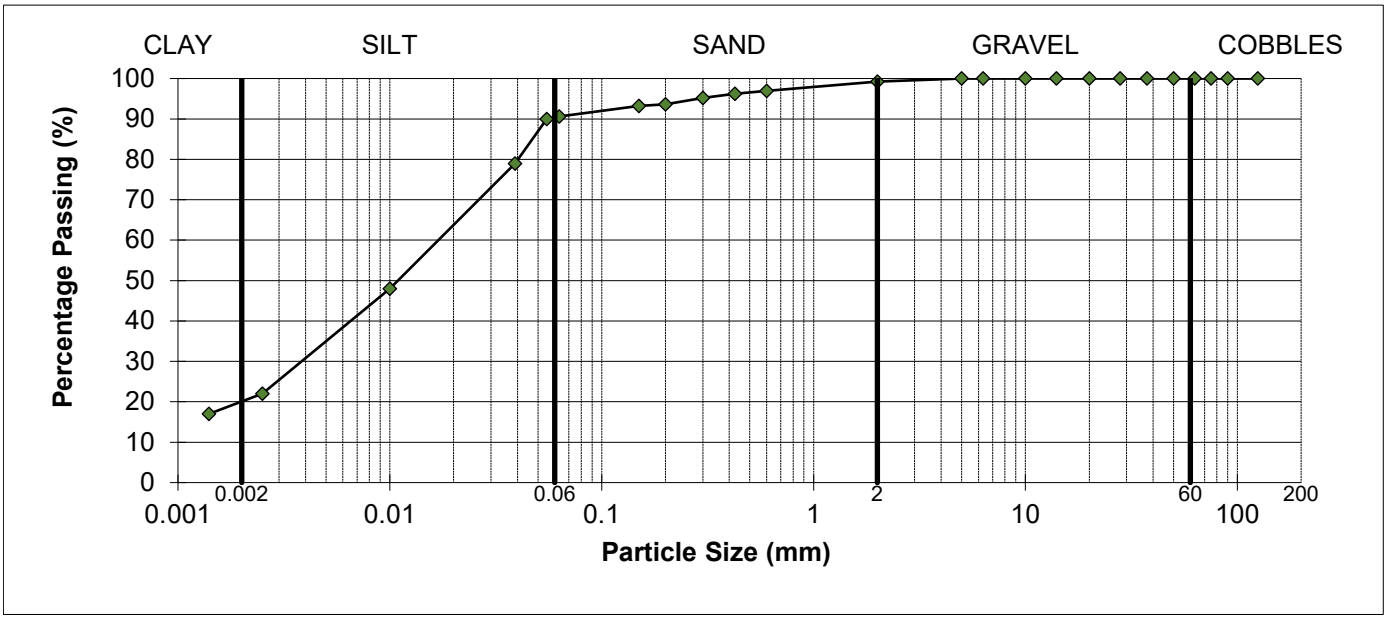
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 1 3.5m D	DATE SAMPLED	17-Jan-24
LAB SAMPLE No	417305	DATE RECEIVED	01-Feb-24
DATE TESTED	02-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	99	
90	100		0.6	97	
75	100		0.425	96	
63	100		0.3	95	
50	100		0.2	94	
37.5	100		0.15	93	
28	100		0.063	91	
20	100		0.055	90	
14	100		0.039	79	
10	100		0.01	48	
6.3	100		0.0025	22	
5	100		0.0014	17	



As received water content =	18.5%

REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

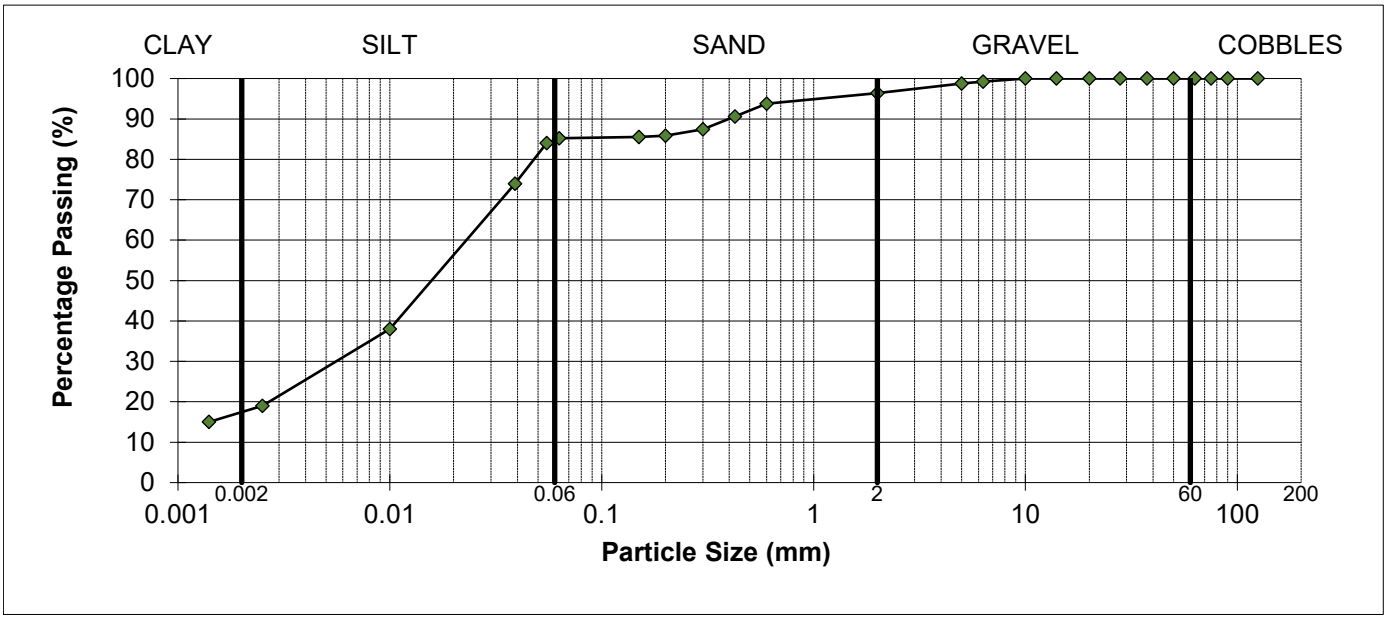
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 2 1.0m D	DATE SAMPLED	17-Jan-24
LAB SAMPLE No	417309	DATE RECEIVED	01-Feb-24
DATE TESTED	02-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	96	
90	100		0.6	94	
75	100		0.425	91	
63	100		0.3	87	
50	100		0.2	86	
37.5	100		0.15	86	
28	100		0.063	85	
20	100		0.055	84	
14	100		0.039	74	
10	100		0.01	38	
6.3	99		0.0025	19	
5	99		0.0014	15	



As received water content =	21.8%

REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

M U R R A Y R I X

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TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

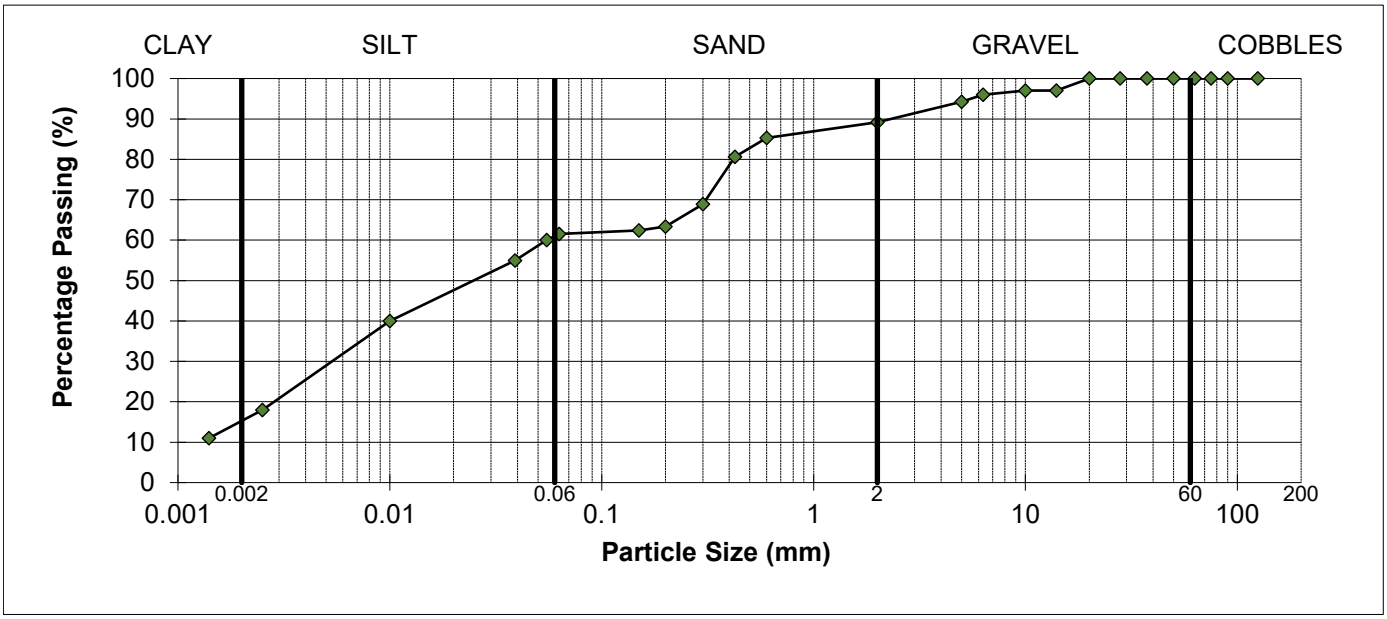
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 2 1.8m D	DATE SAMPLED	17-Jan-24
LAB SAMPLE No	417311	DATE RECEIVED	01-Feb-24
DATE TESTED	02-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	89	
90	100		0.6	85	
75	100		0.425	81	
63	100		0.3	69	
50	100		0.2	63	
37.5	100		0.15	62	
28	100		0.063	62	
20	100		0.055	60	
14	97		0.039	55	
10	97		0.01	40	
6.3	96		0.0025	18	
5	94		0.0014	11	



As received water content =	14.6%

REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

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TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

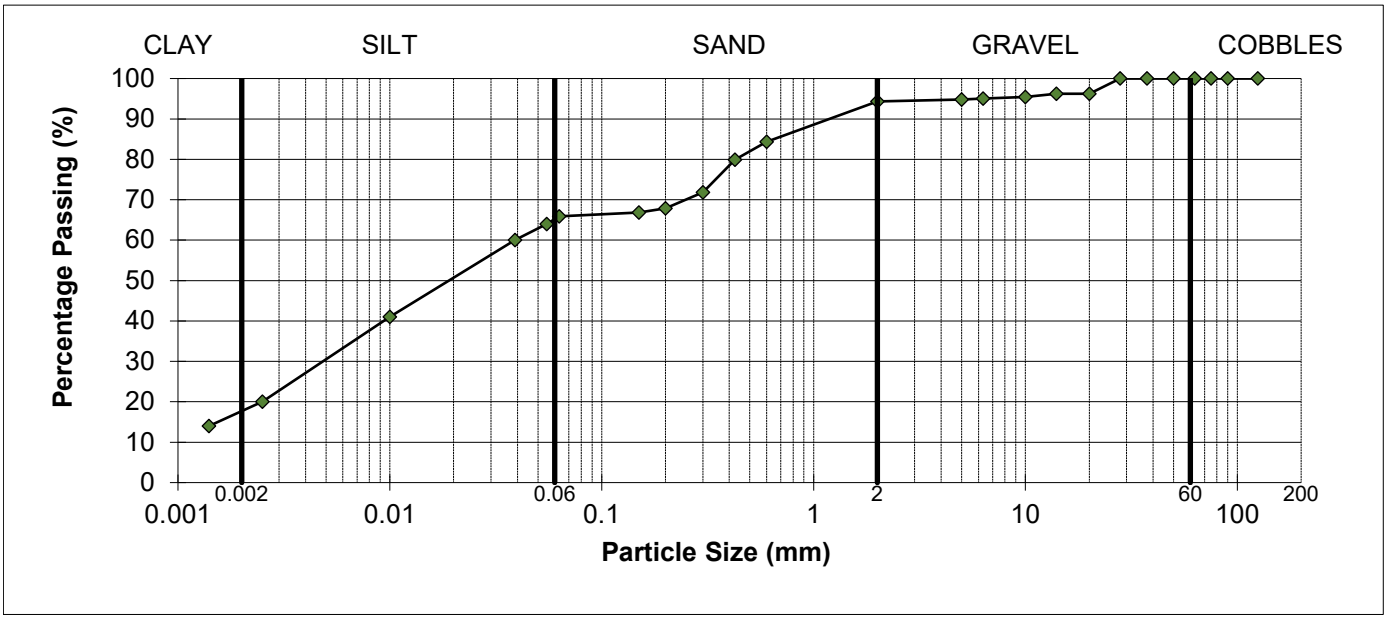
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 2 2.6m D	DATE SAMPLED	17-Jan-24
LAB SAMPLE No	417314	DATE RECEIVED	01-Feb-24
DATE TESTED	02-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	94	
90	100		0.6	84	
75	100		0.425	80	
63	100		0.3	72	
50	100		0.2	68	
37.5	100		0.15	67	
28	100		0.063	66	
20	96		0.055	64	
14	96		0.039	60	
10	95		0.01	41	
6.3	95		0.0025	20	
5	95		0.0014	14	



As received water content =	27.5%

REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

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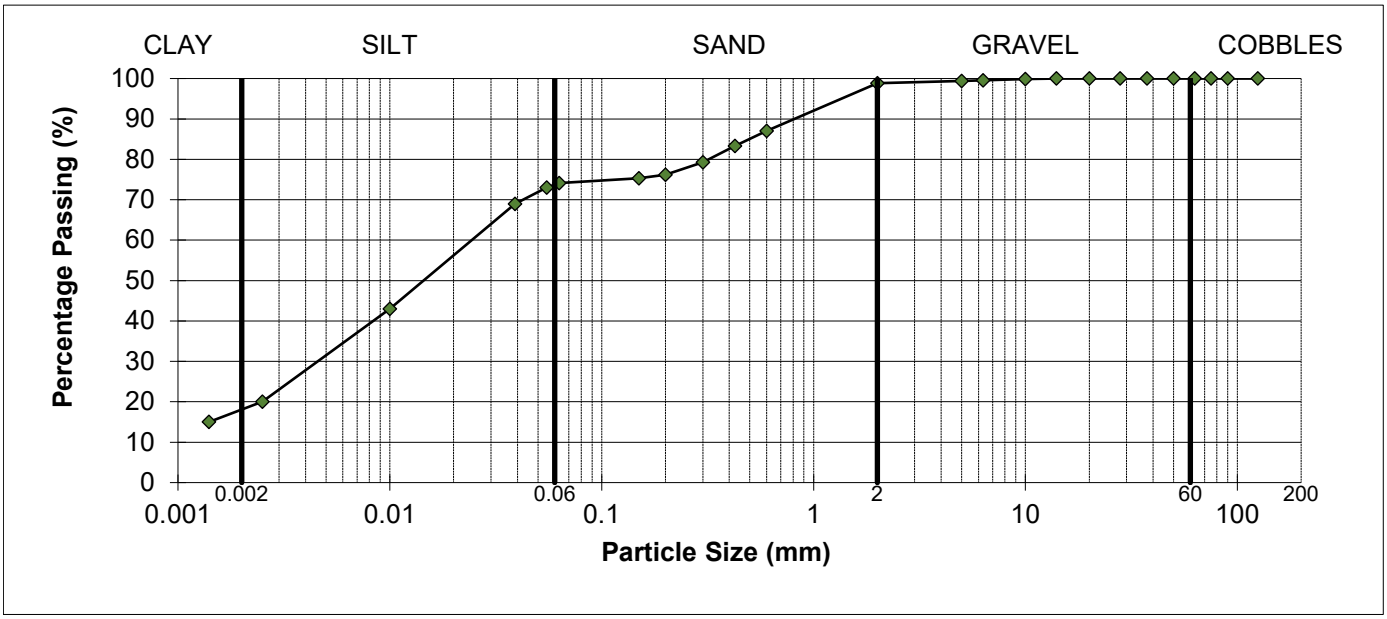
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 2 3.5m D	DATE SAMPLED	17-Jan-24
LAB SAMPLE No	417316	DATE RECEIVED	01-Feb-24
DATE TESTED	02-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	99	
90	100		0.6	87	
75	100		0.425	83	
63	100		0.3	79	
50	100		0.2	76	
37.5	100		0.15	75	
28	100		0.063	74	
20	100		0.055	73	
14	100		0.039	69	
10	100		0.01	43	
6.3	100		0.0025	20	
5	99		0.0014	15	



As received water content =	43.5%

REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

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PARTICLE SIZE DISTRIBUTION

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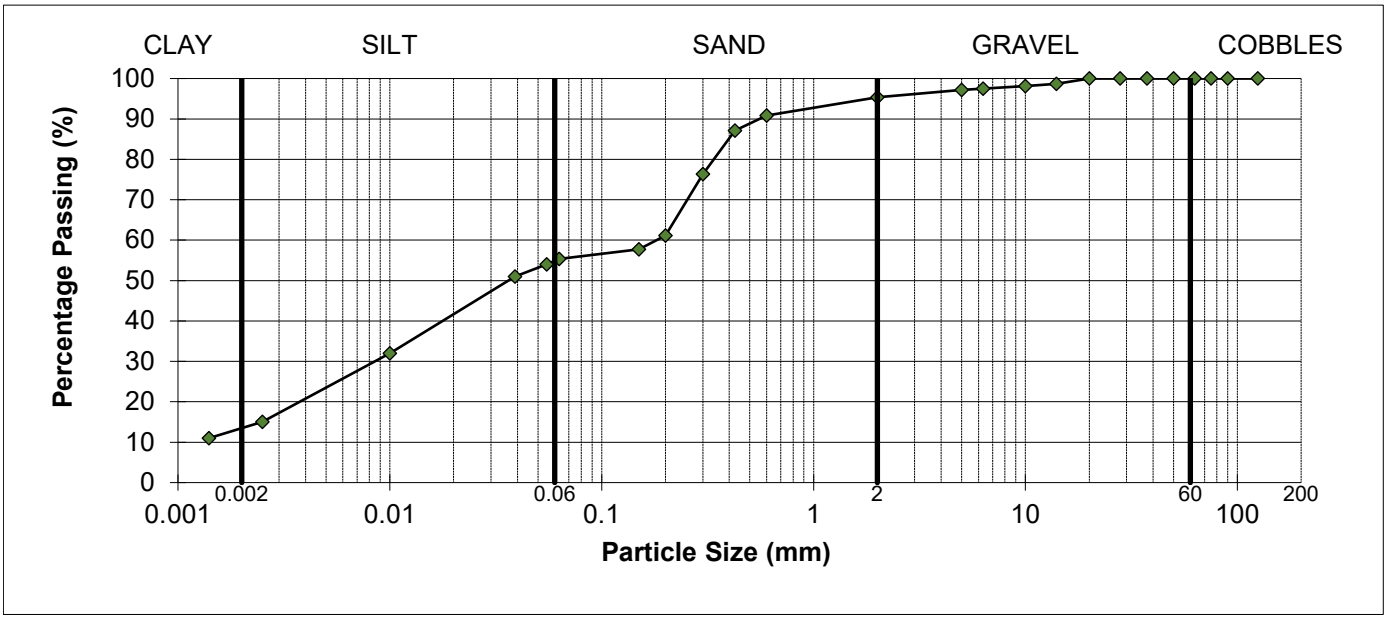
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 3 1.9m D	DATE SAMPLED	17-Jan-24
LAB SAMPLE No	417318	DATE RECEIVED	01-Feb-24
DATE TESTED	02-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	95	
90	100		0.6	91	
75	100		0.425	87	
63	100		0.3	76	
50	100		0.2	61	
37.5	100		0.15	58	
28	100		0.063	55	
20	100		0.055	54	
14	99		0.039	51	
10	98		0.01	32	
6.3	97		0.0025	15	
5	97		0.0014	11	



As received water content =	13.4%

REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

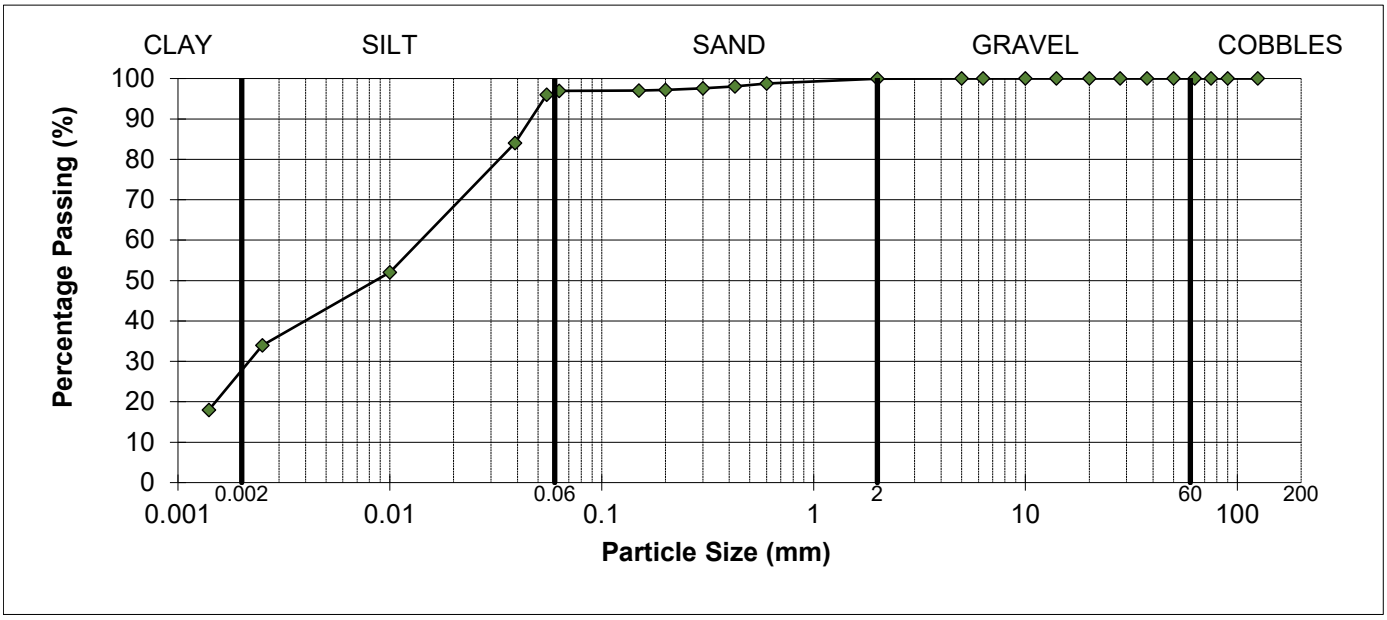
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 3 2.9m D	DATE SAMPLED	17-Jan-24
LAB SAMPLE No	417320	DATE RECEIVED	01-Feb-24
DATE TESTED	02-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	100	
90	100		0.6	99	
75	100		0.425	98	
63	100		0.3	98	
50	100		0.2	97	
37.5	100		0.15	97	
28	100		0.063	97	
20	100		0.055	96	
14	100		0.039	84	
10	100		0.01	52	
6.3	100		0.0025	34	
5	100		0.0014	18	



As received water content =	24.7%

REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

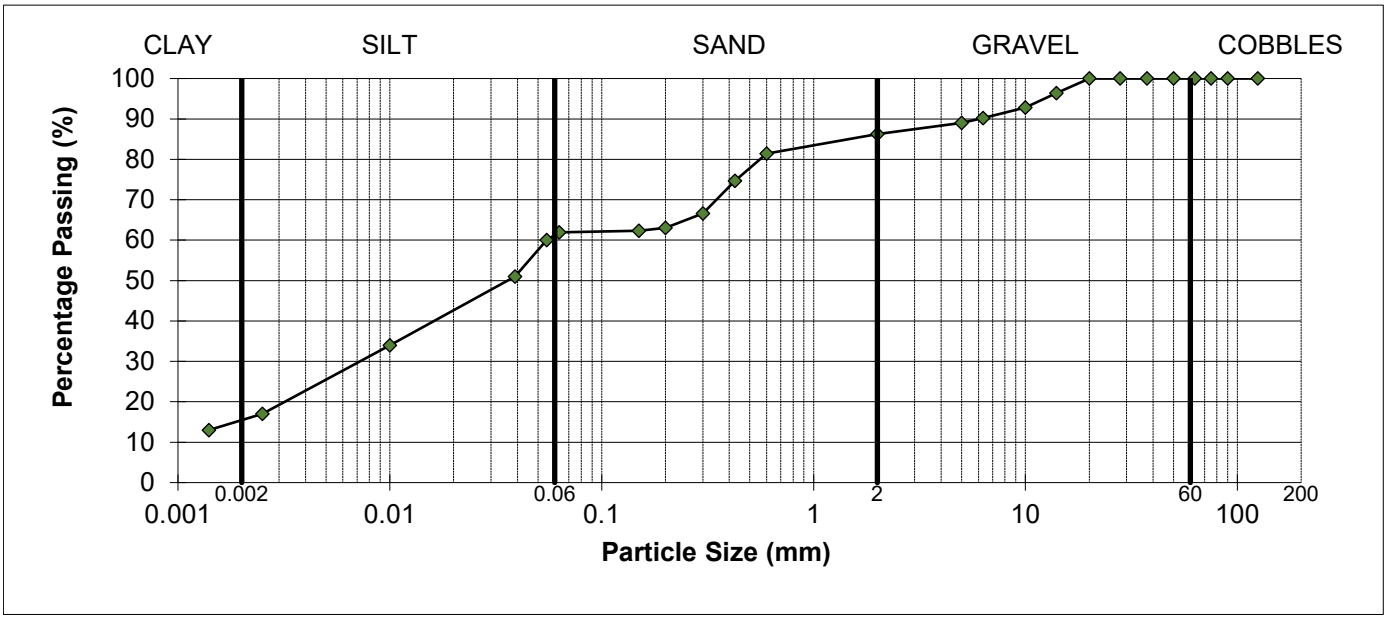
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 4 1.0m D	DATE SAMPLED	17-Jan-24
LAB SAMPLE No	417321	DATE RECEIVED	01-Feb-24
DATE TESTED	02-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	86	
90	100		0.6	81	
75	100		0.425	75	
63	100		0.3	67	
50	100		0.2	63	
37.5	100		0.15	62	
28	100		0.063	62	
20	100		0.055	60	
14	96		0.039	51	
10	93		0.01	34	
6.3	90		0.0025	17	
5	89		0.0014	13	



As received water content =	15.7%

REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

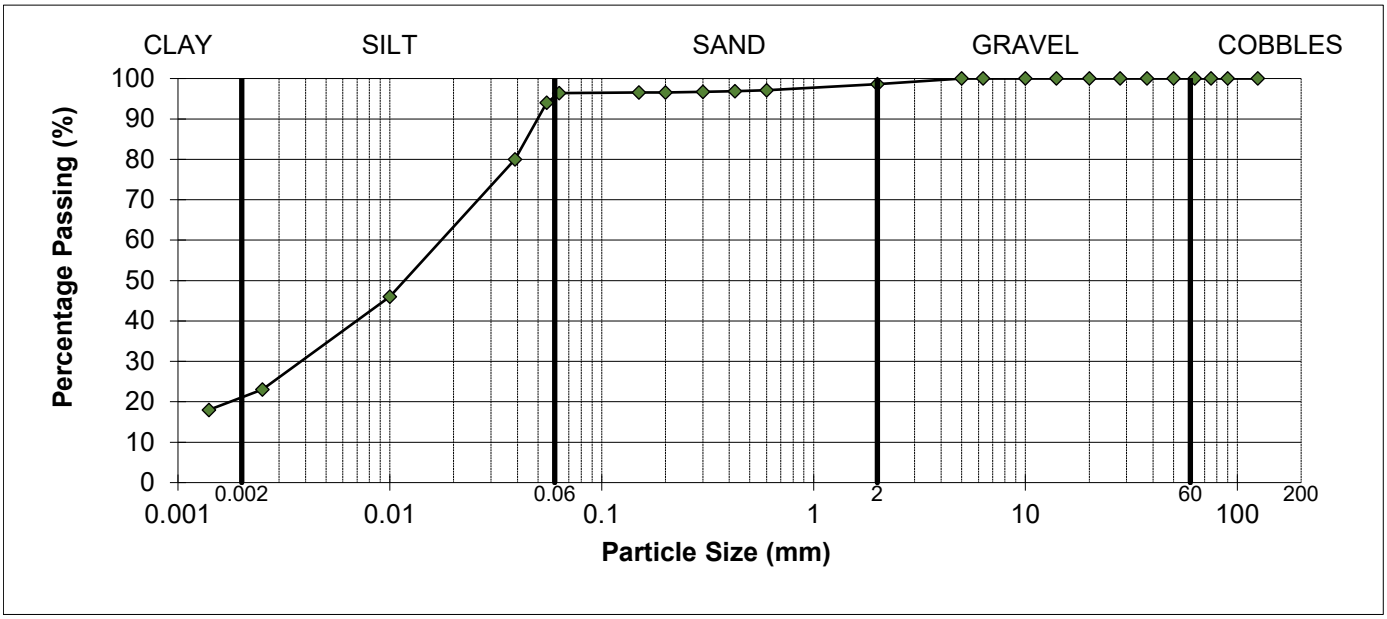
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 4 1.8m D	DATE SAMPLED	17-Jan-24
LAB SAMPLE No	417322	DATE RECEIVED	01-Feb-24
DATE TESTED	02-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	99	
90	100		0.6	97	
75	100		0.425	97	
63	100		0.3	97	
50	100		0.2	97	
37.5	100		0.15	97	
28	100		0.063	96	
20	100		0.055	94	
14	100		0.039	80	
10	100		0.01	46	
6.3	100		0.0025	23	
5	100		0.0014	18	



As received water content =	20.8%

REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

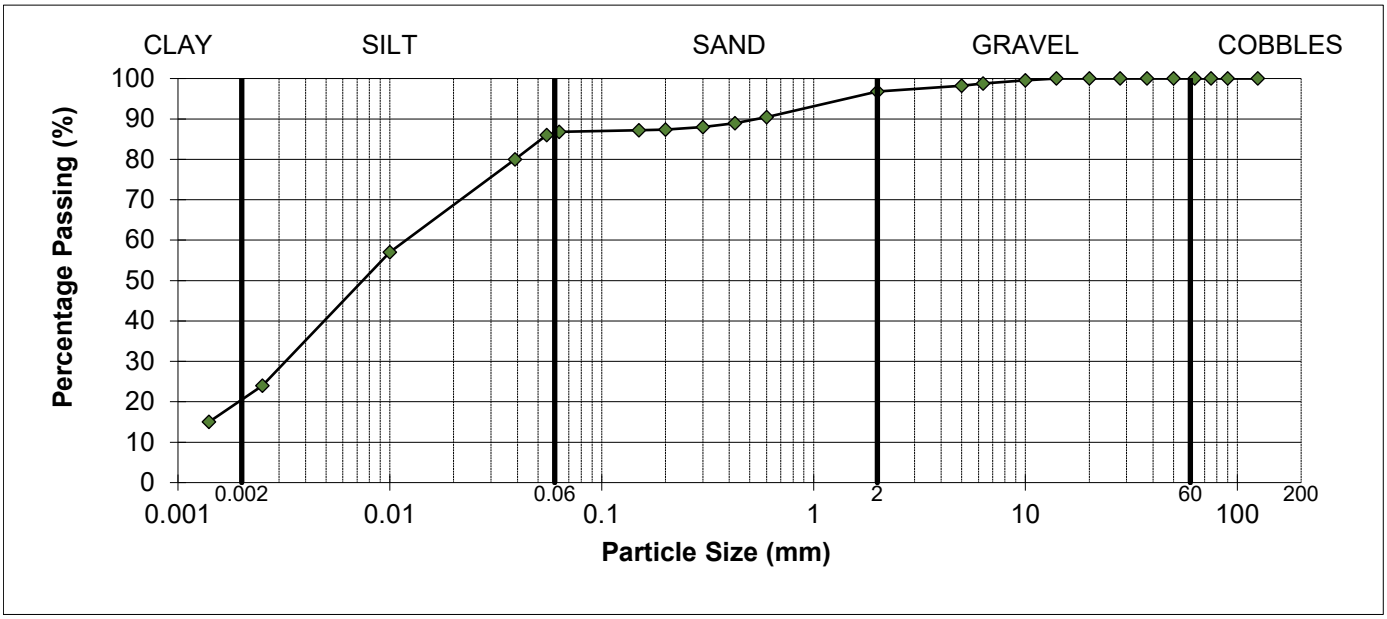
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 4 2.5m D	DATE SAMPLED	17-Jan-24
LAB SAMPLE No	417324	DATE RECEIVED	01-Feb-24
DATE TESTED	02-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	97	
90	100		0.6	90	
75	100		0.425	89	
63	100		0.3	88	
50	100		0.2	87	
37.5	100		0.15	87	
28	100		0.063	87	
20	100		0.055	86	
14	100		0.039	80	
10	100		0.01	57	
6.3	99		0.0025	24	
5	98		0.0014	15	



As received water content =	19.1%

REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

M U R R A Y R I X

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

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PARTICLE SIZE DISTRIBUTION

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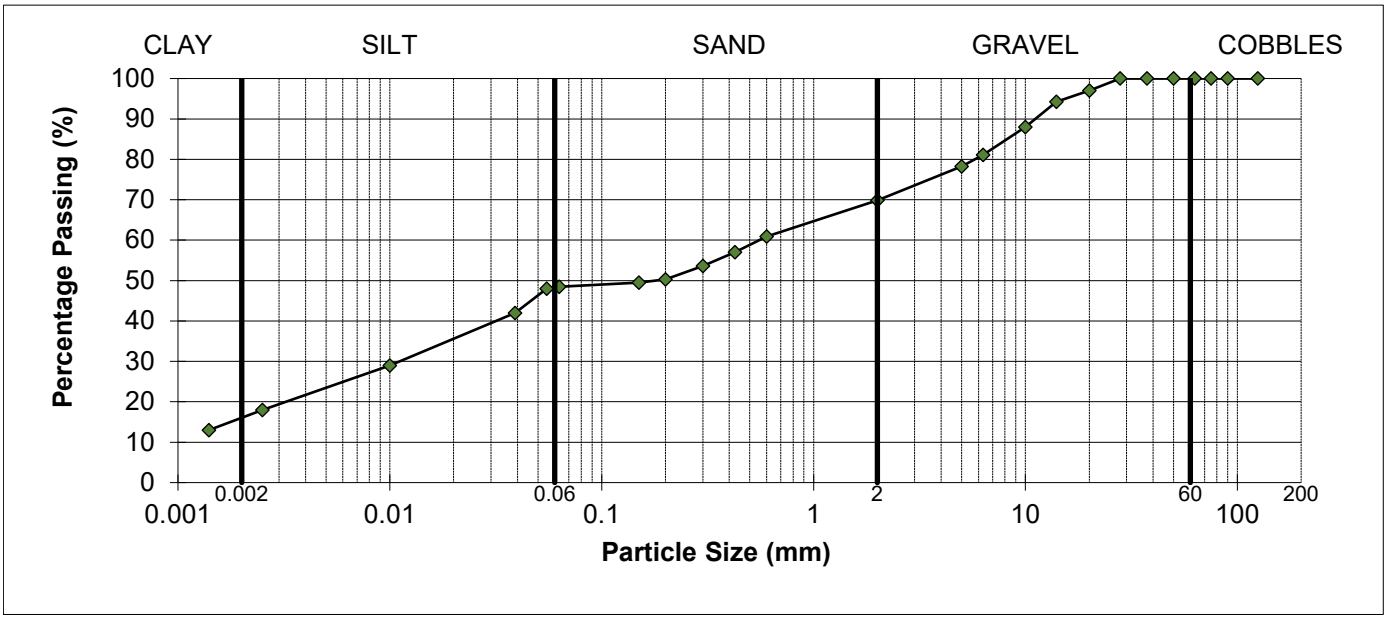
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 5 0.5m D	DATE SAMPLED	17-Jan-24
LAB SAMPLE No	417325	DATE RECEIVED	01-Feb-24
DATE TESTED	02-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	70	
90	100		0.6	61	
75	100		0.425	57	
63	100		0.3	54	
50	100		0.2	50	
37.5	100		0.15	50	
28	100		0.063	49	
20	97		0.055	48	
14	94		0.039	42	
10	88		0.01	29	
6.3	81		0.0025	18	
5	78		0.0014	13	



As received water content =	14.8%

REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

M U R R A Y R I X

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TEL 0161 475 0870

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PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

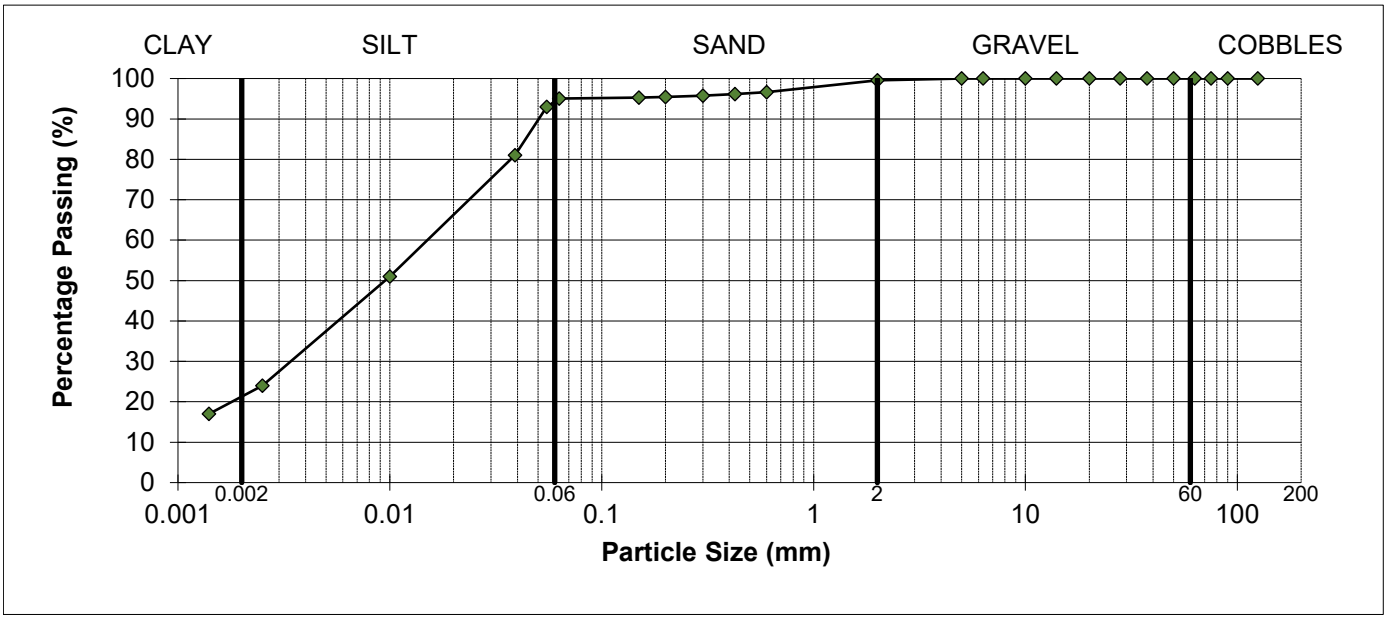
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 5 1.8m D	DATE SAMPLED	17-Jan-24
LAB SAMPLE No	417326	DATE RECEIVED	01-Feb-24
DATE TESTED	02-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	100	
90	100		0.6	97	
75	100		0.425	96	
63	100		0.3	96	
50	100		0.2	95	
37.5	100		0.15	95	
28	100		0.063	95	
20	100		0.055	93	
14	100		0.039	81	
10	100		0.01	51	
6.3	100		0.0025	24	
5	100		0.0014	17	



As received water content =	21.2%

REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

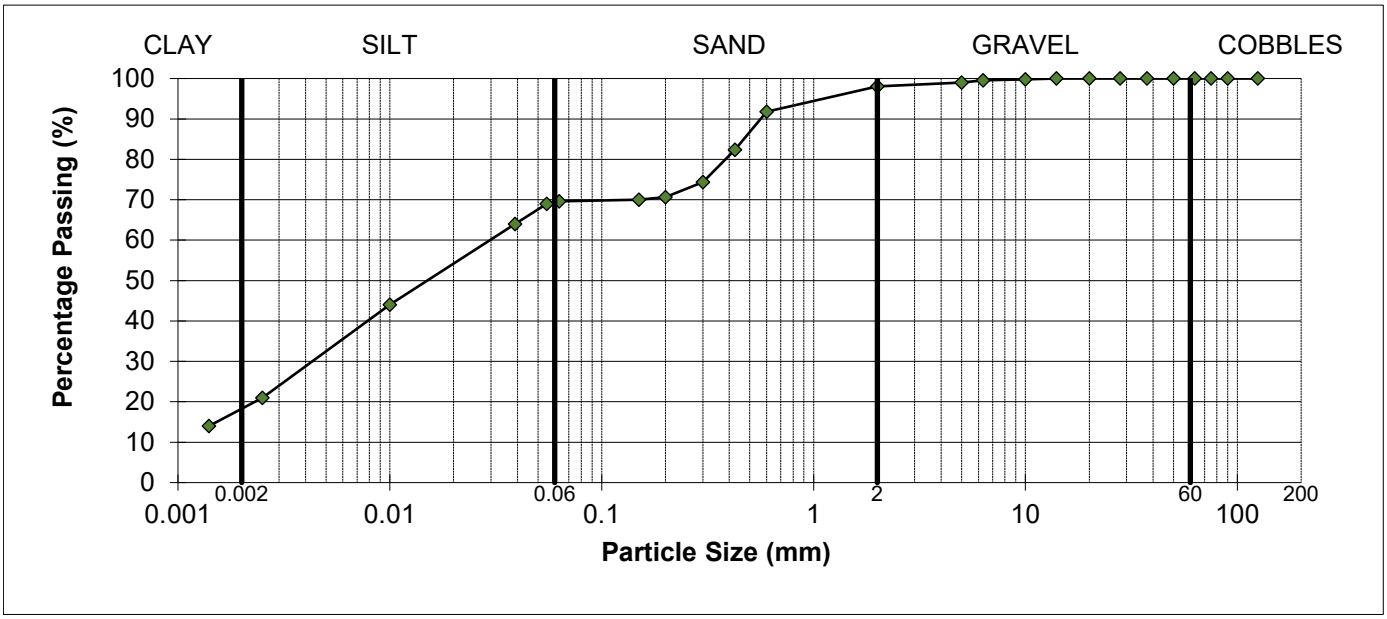
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 6 1.2m D	DATE SAMPLED	18-Jan-24
LAB SAMPLE No	417328	DATE RECEIVED	01-Feb-24
DATE TESTED	02-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	98	
90	100		0.6	92	
75	100		0.425	82	
63	100		0.3	74	
50	100		0.2	71	
37.5	100		0.15	70	
28	100		0.063	70	
20	100		0.055	69	
14	100		0.039	64	
10	100		0.01	44	
6.3	100		0.0025	21	
5	99		0.0014	14	



As received water content =	19.7%

REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

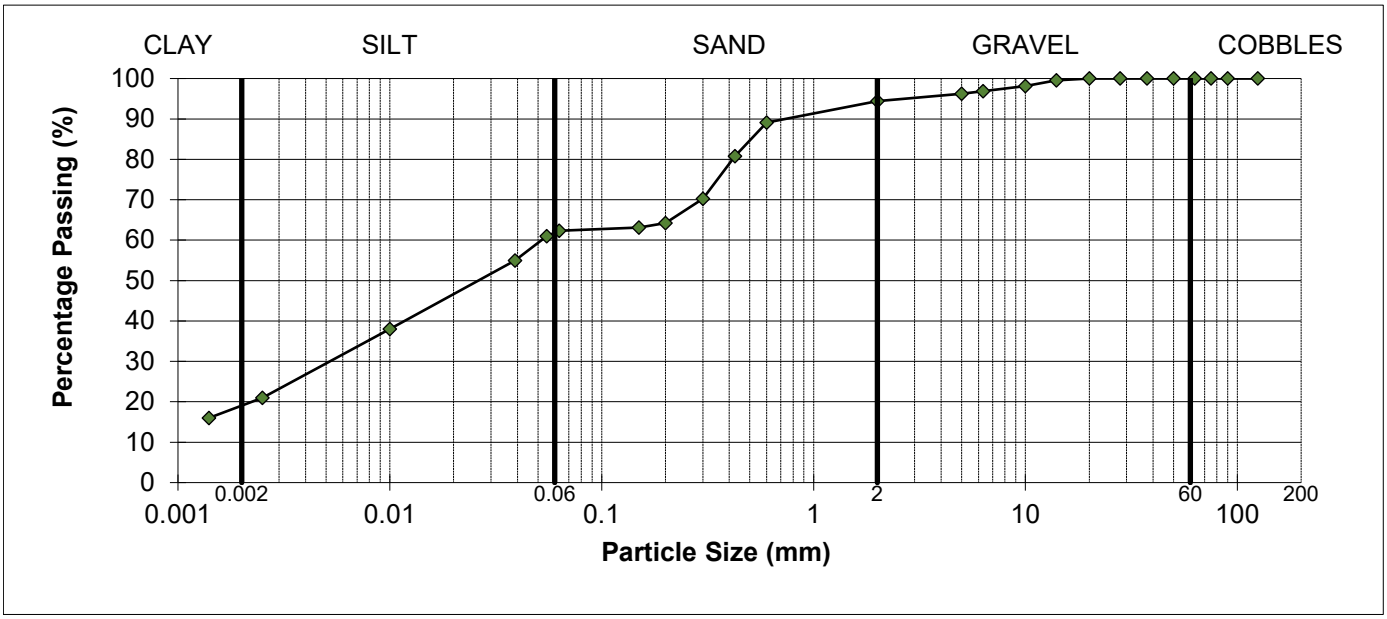
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 7 1.0m D	DATE SAMPLED	18-Jan-24
LAB SAMPLE No	417331	DATE RECEIVED	01-Feb-24
DATE TESTED	02-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	94	
90	100		0.6	89	
75	100		0.425	81	
63	100		0.3	70	
50	100		0.2	64	
37.5	100		0.15	63	
28	100		0.063	62	
20	100		0.055	61	
14	100		0.039	55	
10	98		0.01	38	
6.3	97		0.0025	21	
5	96		0.0014	16	



As received water content =	18.6%

REMARKS

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NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

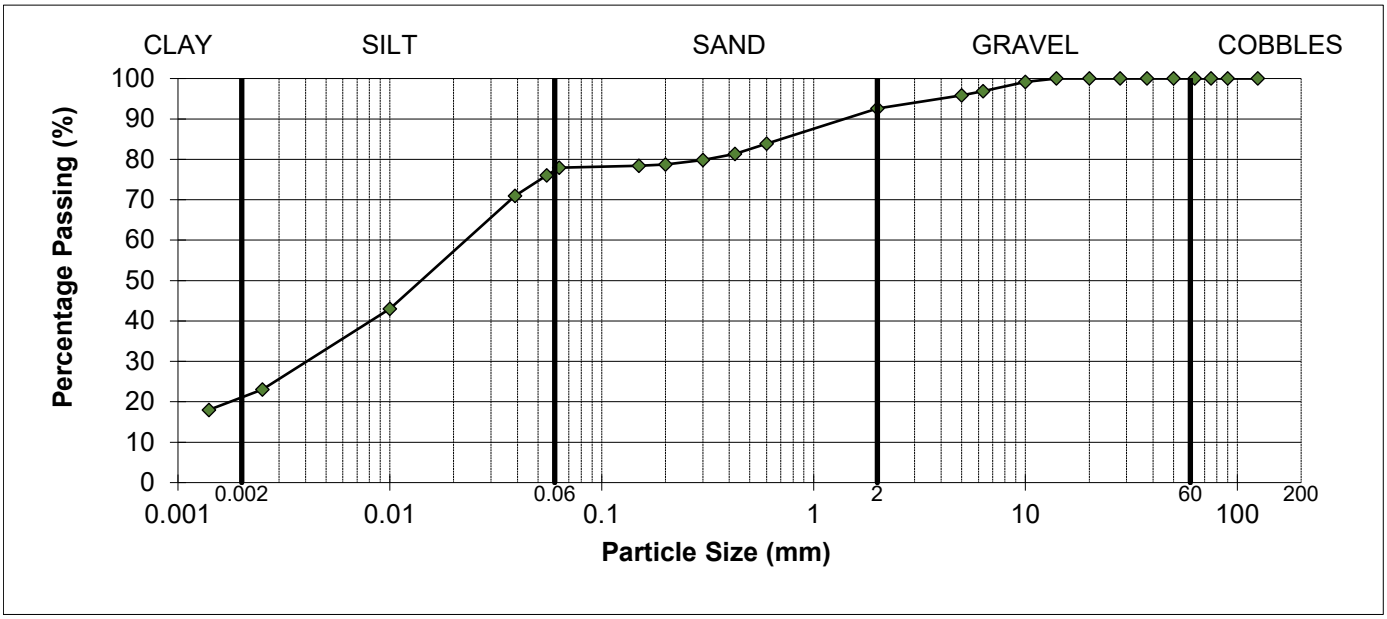
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 4 2.0m D	DATE SAMPLED	18-Jan-24
LAB SAMPLE No	417335	DATE RECEIVED	01-Feb-24
DATE TESTED	02-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	93	
90	100		0.6	84	
75	100		0.425	81	
63	100		0.3	80	
50	100		0.2	79	
37.5	100		0.15	78	
28	100		0.063	78	
20	100		0.055	76	
14	100		0.039	71	
10	99		0.01	43	
6.3	97		0.0025	23	
5	96		0.0014	18	



As received water content =	14.2%

REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

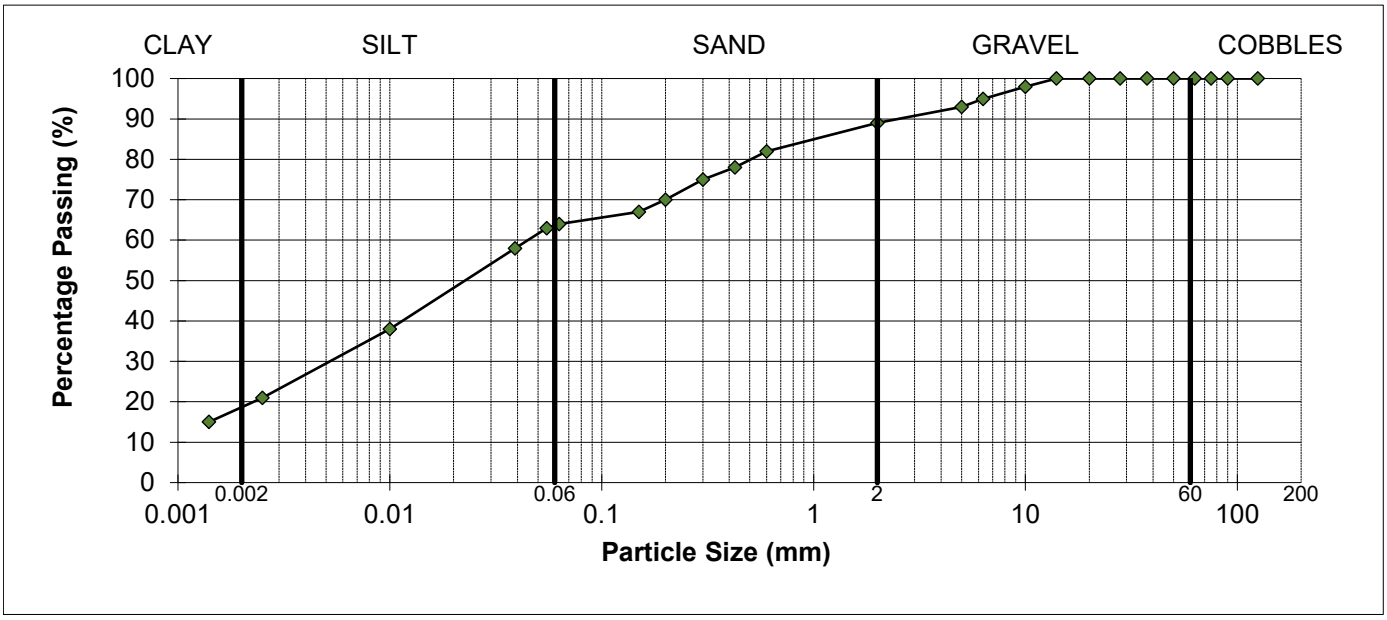
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 6 3.0-3.8m U	DATE SAMPLED	18-Jan-24
LAB SAMPLE No	417336	DATE RECEIVED	01-Feb-24
DATE TESTED	02-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	89	
90	100		0.6	82	
75	100		0.425	78	
63	100		0.3	75	
50	100		0.2	70	
37.5	100		0.15	67	
28	100		0.063	64	
20	100		0.055	63	
14	100		0.039	58	
10	98		0.01	38	
6.3	95		0.0025	21	
5	93		0.0014	15	



As received water content =	22.9%

REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

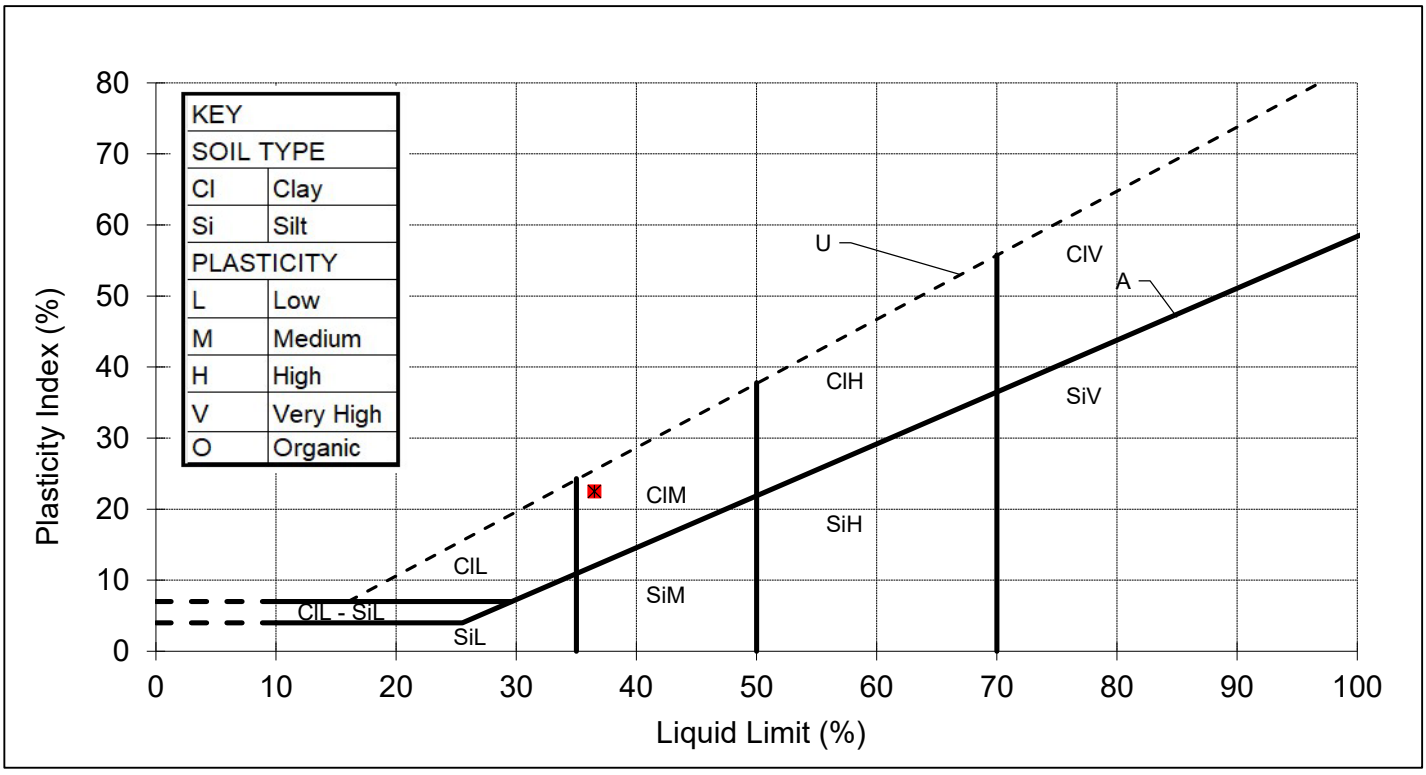
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 1 1.7m D	DATE SAMPLED	17-Jan-24
SAMPLE No.	417302	DATE RECEIVED	01-Feb-24
DATE TESTED	05-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	17.8	35.4	1.036	
Determination 2 (avg)	17.8	35.1		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
18.0	37	14	23	85



REMARKS

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NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

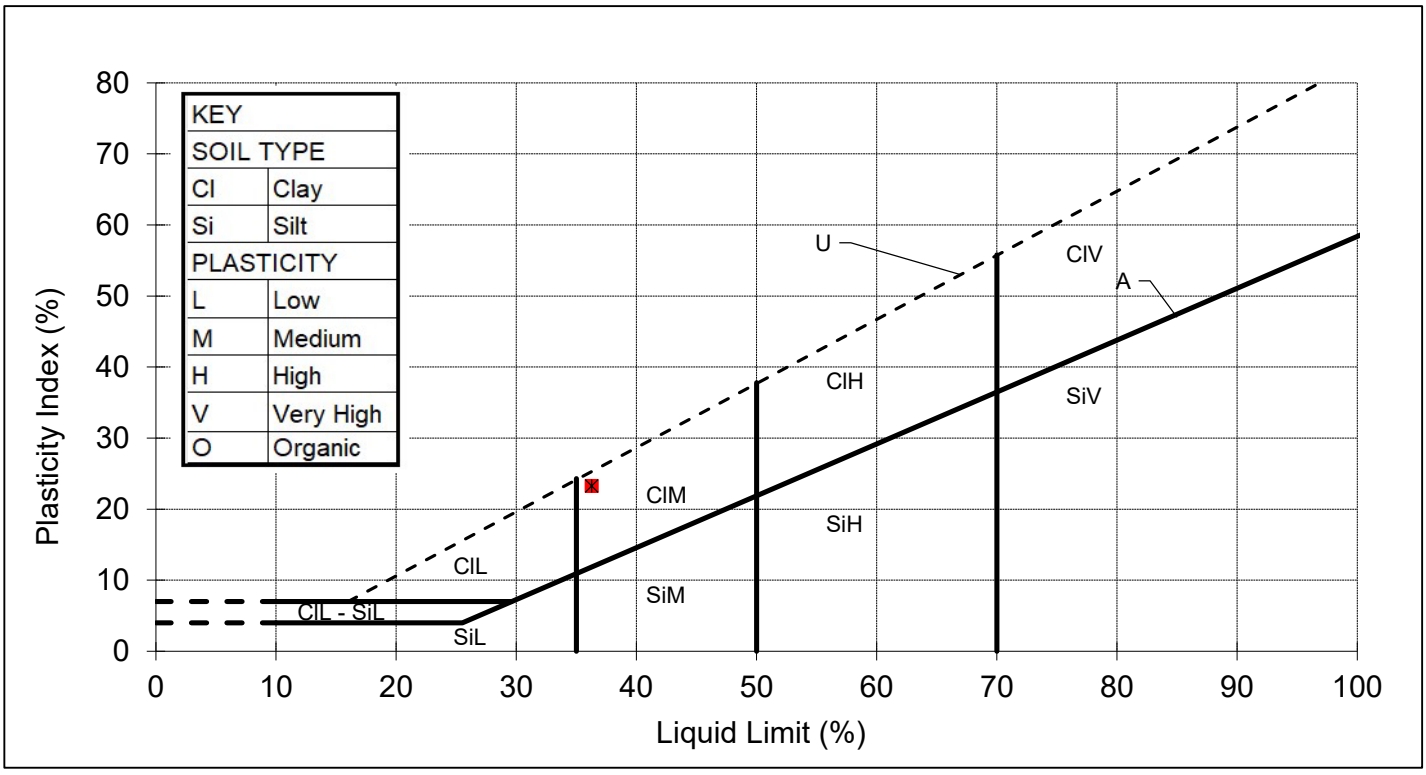
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 1 3.0m D	DATE SAMPLED	17-Jan-24
SAMPLE No.	417304	DATE RECEIVED	01-Feb-24
DATE TESTED	05-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	21.0	37.1	0.986	
Determination 2 (avg)	20.8	36.5		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
13.5	36	13	23	75



REMARKS

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NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

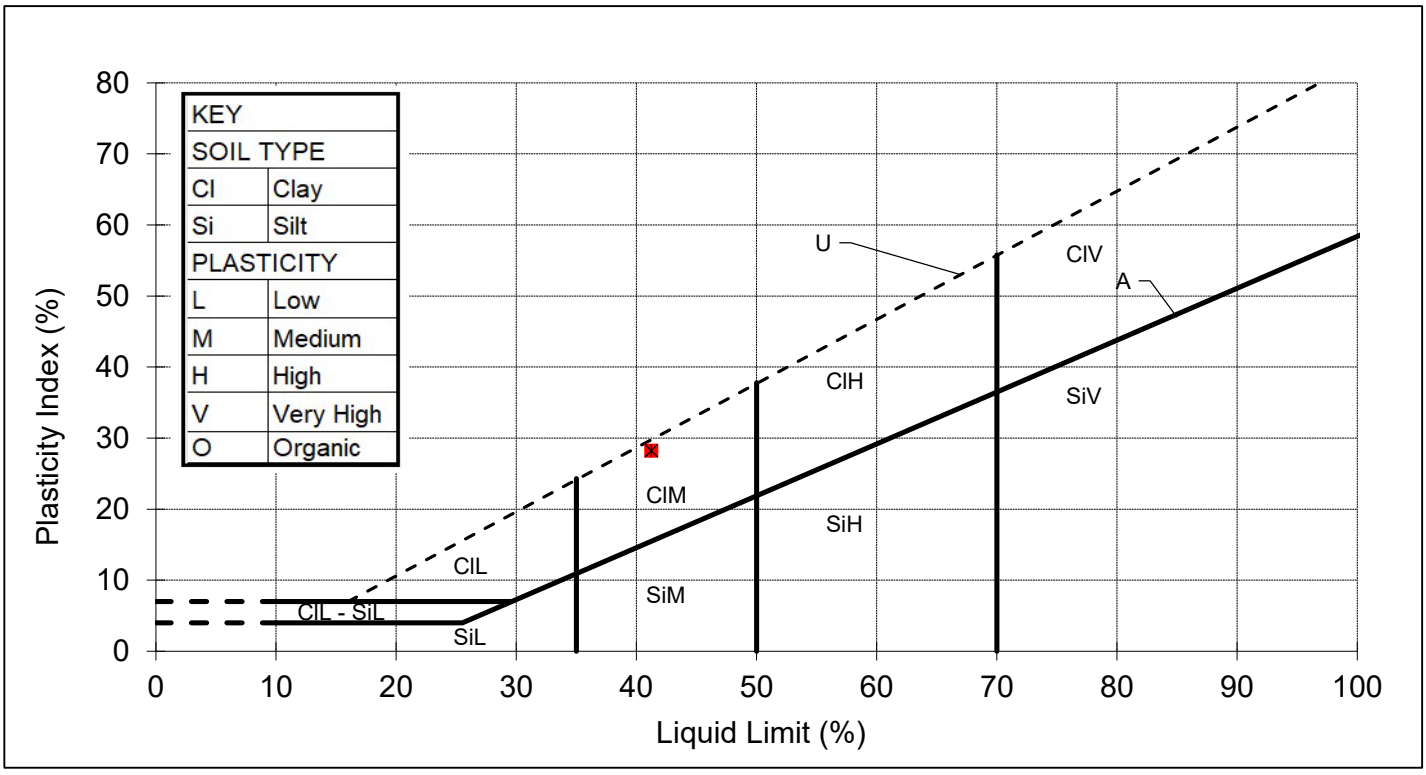
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 1 4.0m D	DATE SAMPLED	17-Jan-24
SAMPLE No.	417306	DATE RECEIVED	01-Feb-24
DATE TESTED	05-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	20.0	41.2	1.001	
Determination 2 (avg)	20.0	41.2		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
14.5	41	13	28	90



REMARKS

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NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

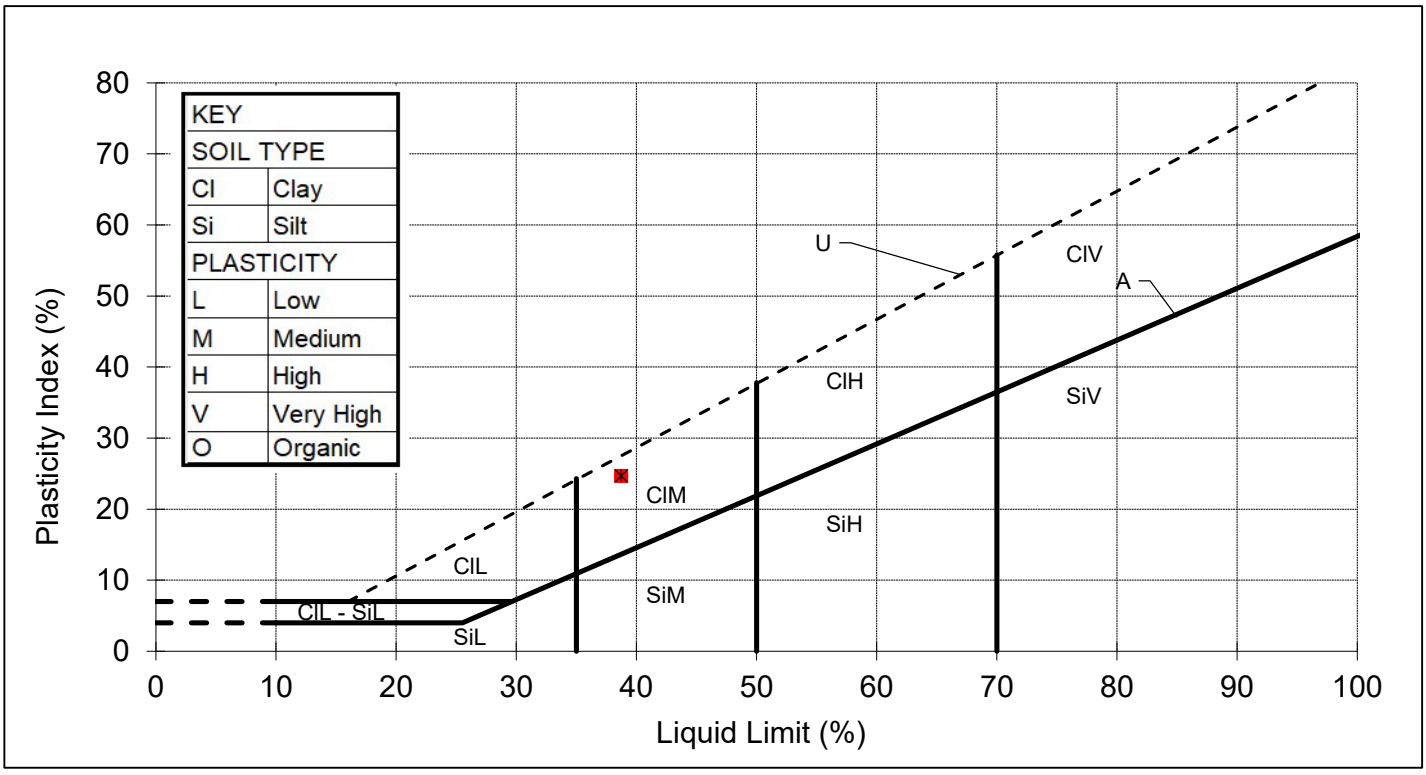
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 2 1.0m D	DATE SAMPLED	17-Jan-24
SAMPLE No.	417308	DATE RECEIVED	01-Feb-24
DATE TESTED	05-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	18.9	38.0	1.016	
Determination 2 (avg)	19.0	38.2		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
20.6	39	14	25	87



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

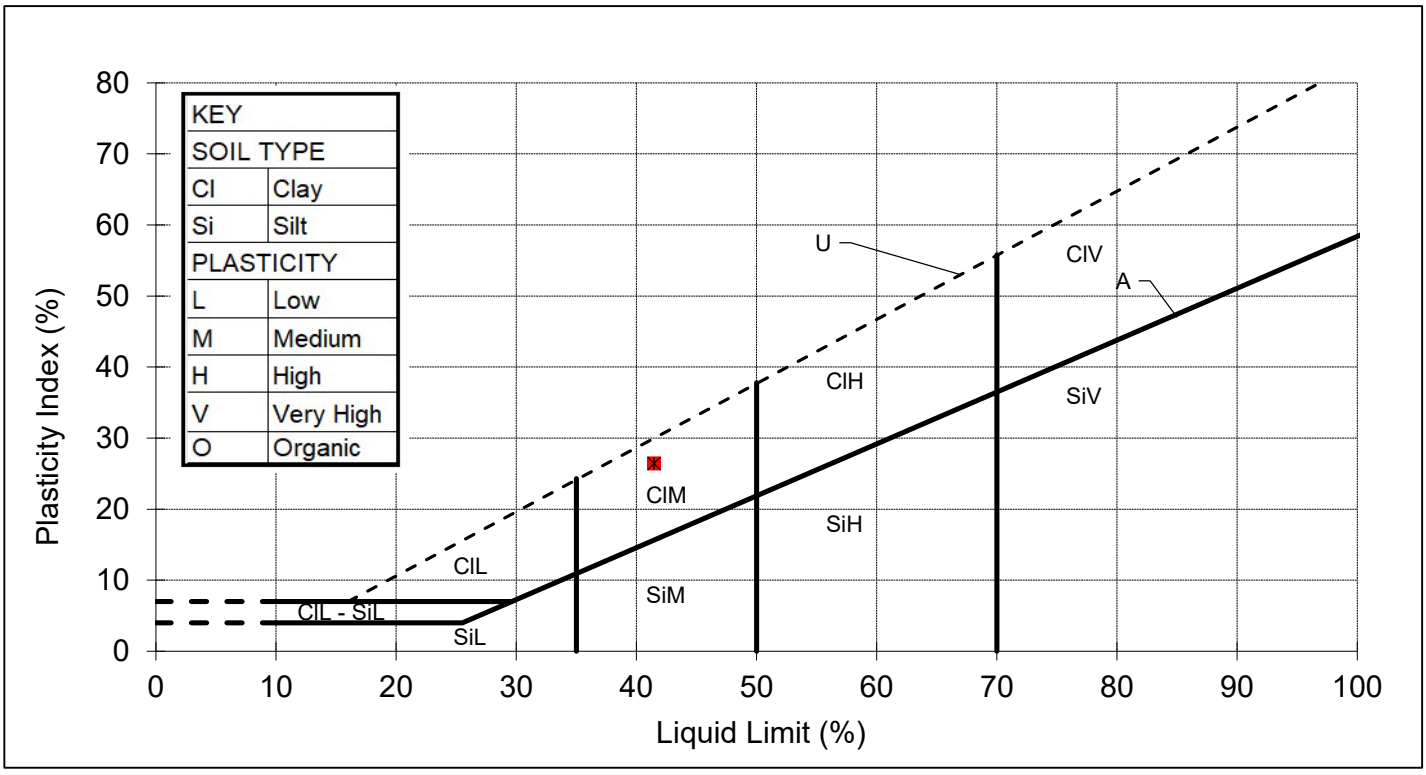
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 2 2.0m D	DATE SAMPLED	17-Jan-24
SAMPLE No.	417312	DATE RECEIVED	01-Feb-24
DATE TESTED	05-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	21.1	42.0	0.983	
Determination 2 (avg)	21.1	42.4		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
18.6	41	15	26	85



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

MURRAY RIX

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

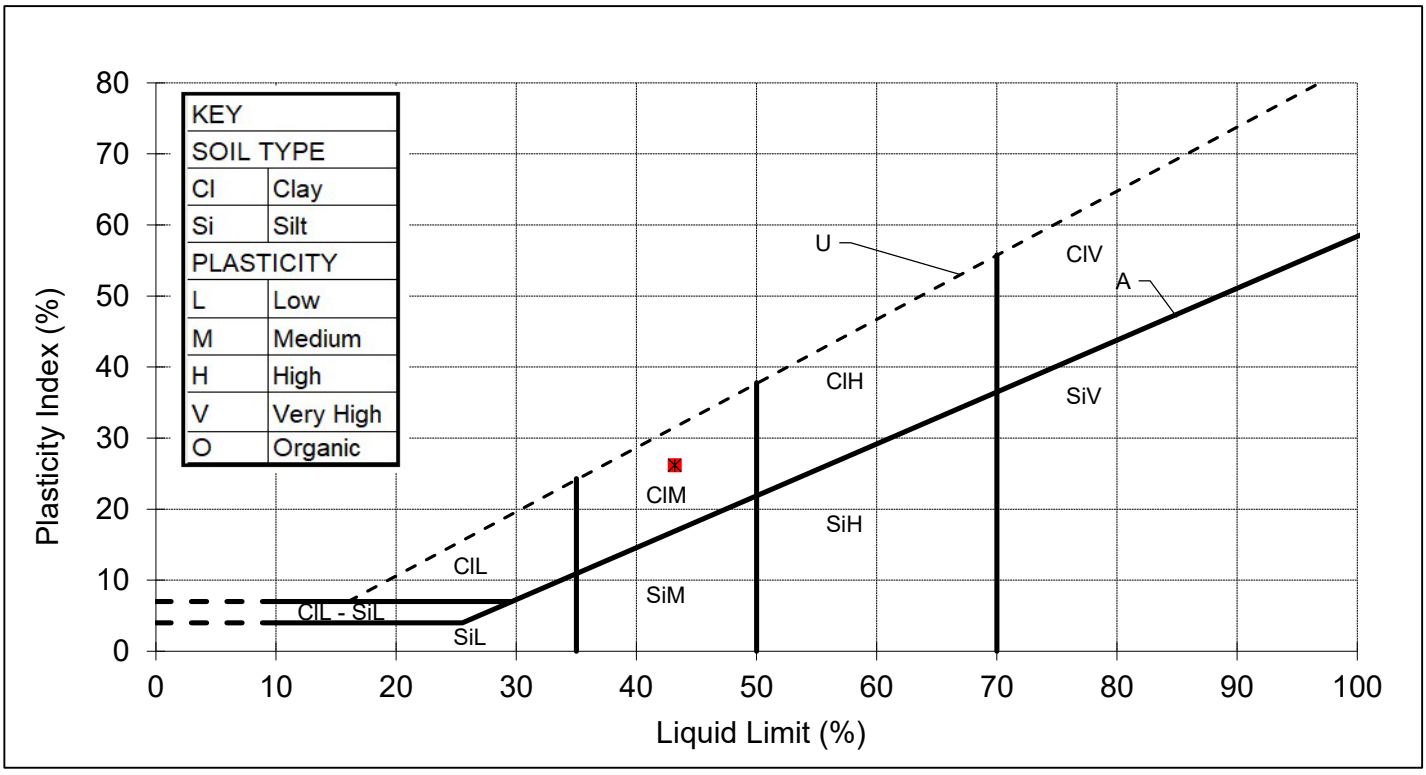
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 2 3.0m D	DATE SAMPLED	17-Jan-24
SAMPLE No.	417315	DATE RECEIVED	01-Feb-24
DATE TESTED	05-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	20.0	43.1	1.003	
Determination 2 (avg)	19.7	43.0		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
23.4	43	17	26	92



REMARKS

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NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

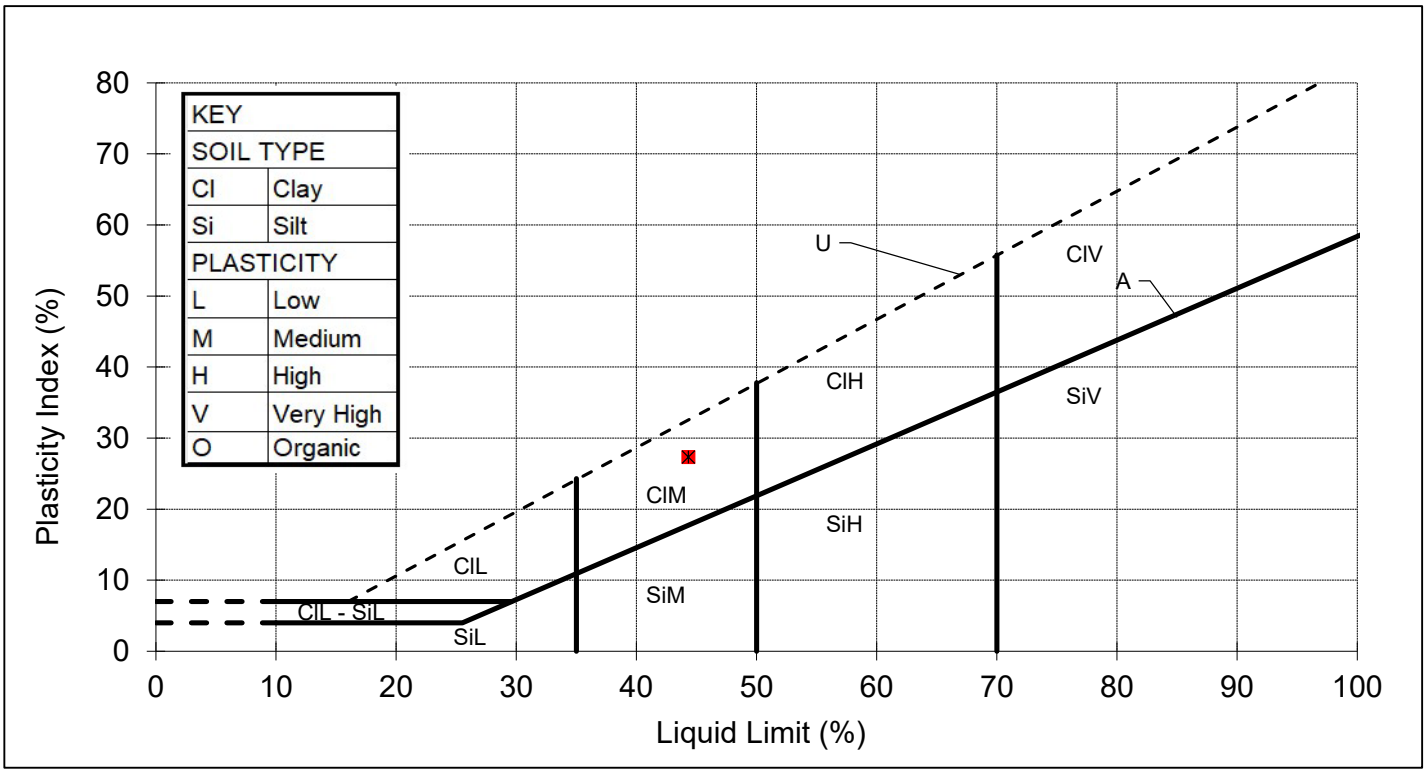
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 3 2.0m D	DATE SAMPLED	17-Jan-24
SAMPLE No.	417319	DATE RECEIVED	01-Feb-24
DATE TESTED	05-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	16.8	42.2	1.051	
Determination 2 (avg)	16.7	42.2		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
26.8	44	17	27	92



REMARKS

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NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

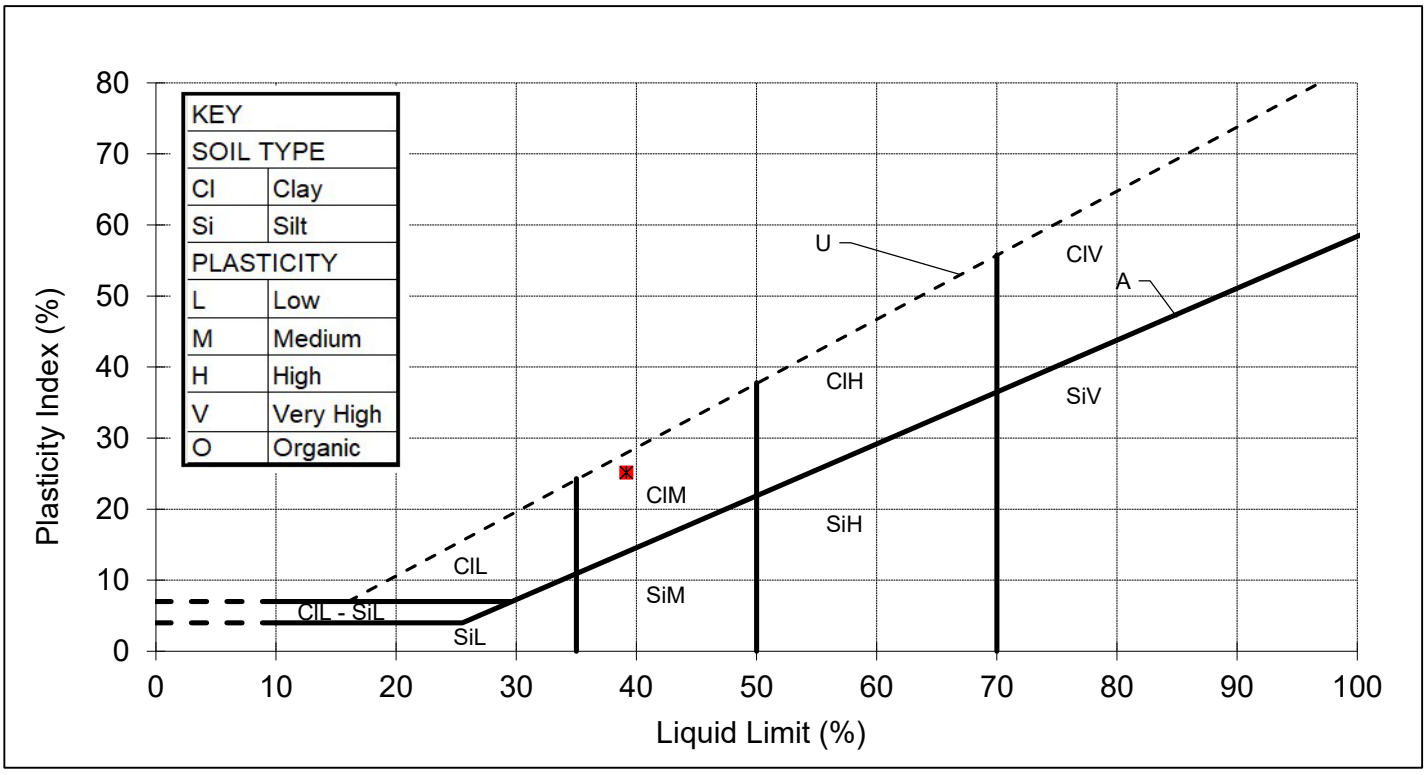
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 4 2.0m D	DATE SAMPLED	17-Jan-24
SAMPLE No.	417323	DATE RECEIVED	01-Feb-24
DATE TESTED	05-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	18.2	37.6	1.033	
Determination 2 (avg)	18.3	38.2		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
16.6	39	14	25	80



REMARKS

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NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

MURRAY RIX

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

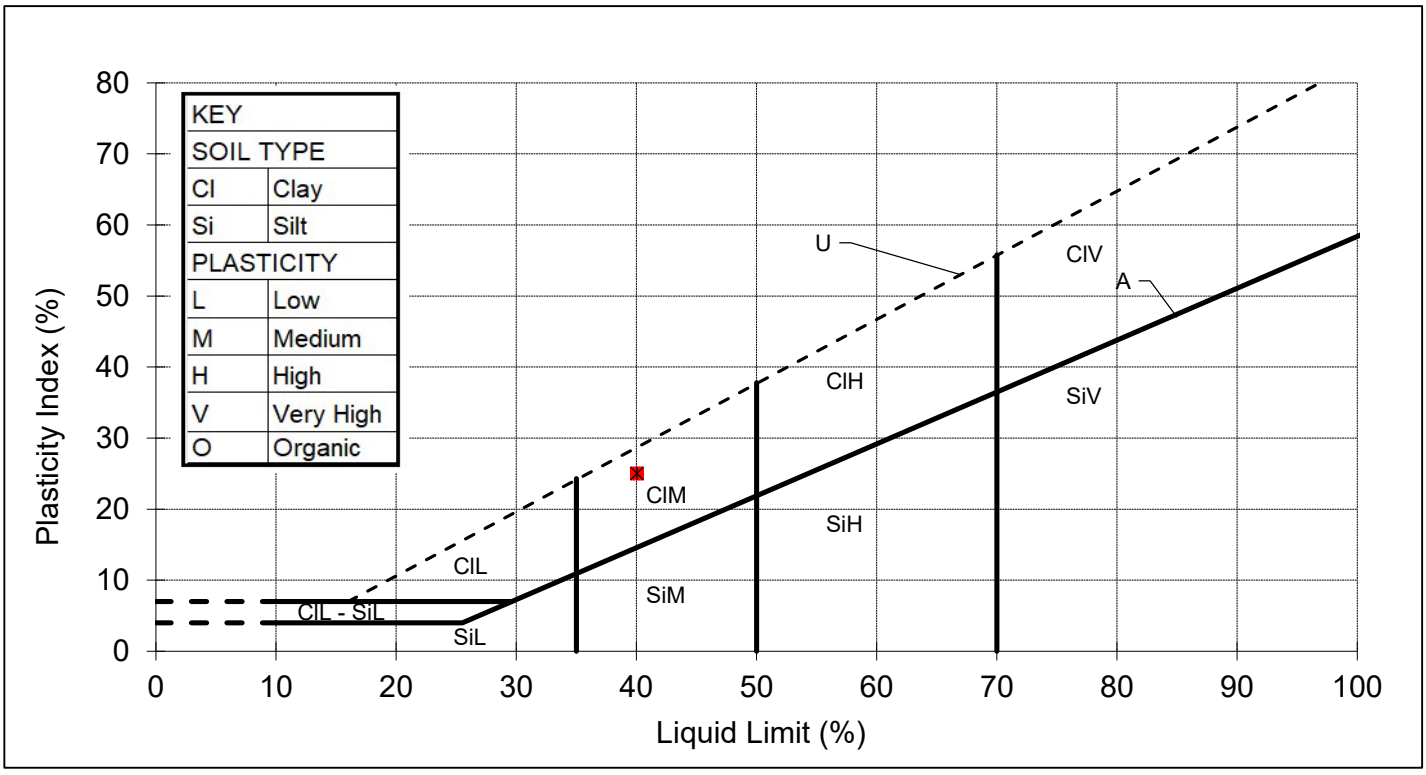
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 5 2.0m D	DATE SAMPLED	17-Jan-24
SAMPLE No.	417327	DATE RECEIVED	01-Feb-24
DATE TESTED	05-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	20.0	40.0	1.001	
Determination 2 (avg)	20.0	40.0		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
19.9	40	15	25	87



REMARKS

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NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

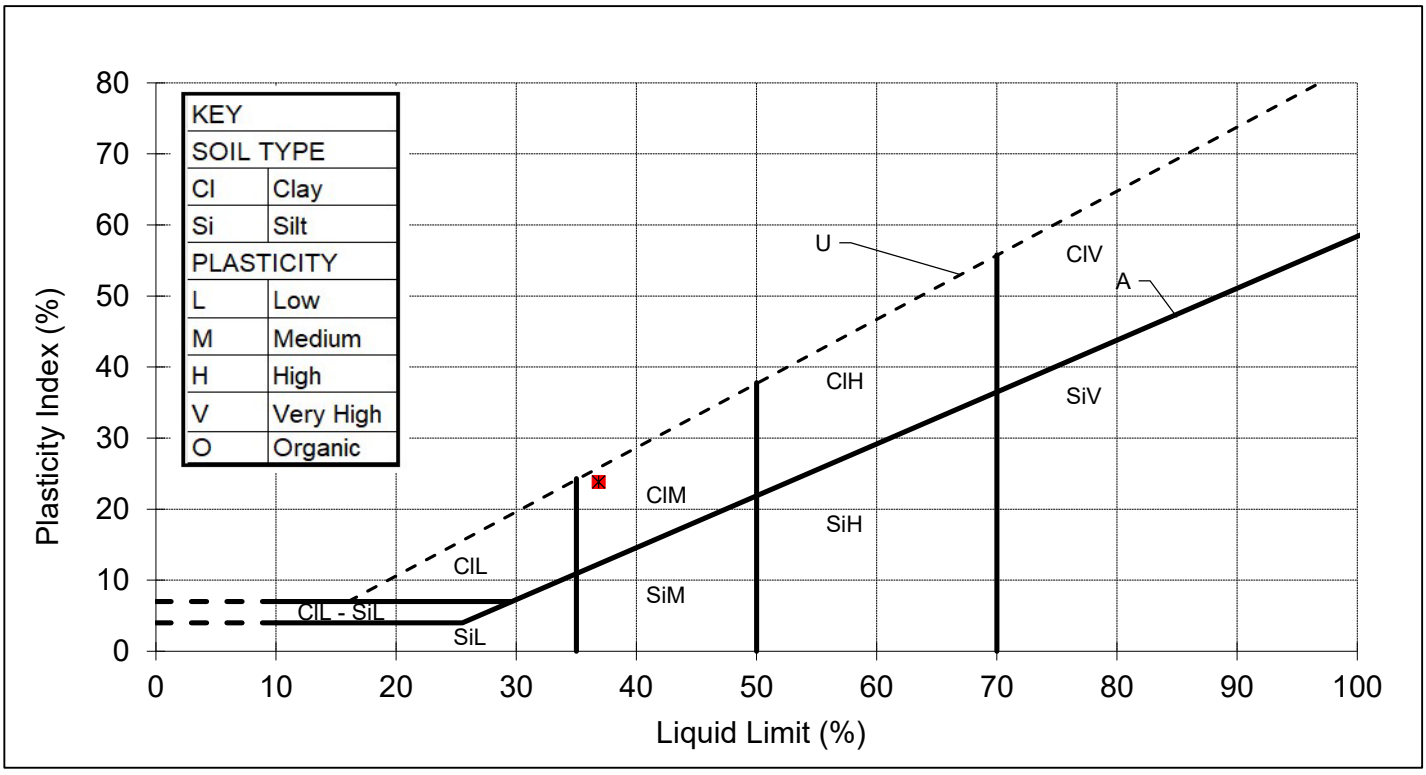
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 6 1.5-2.0m D	DATE SAMPLED	18-Jan-24
SAMPLE No.	417329	DATE RECEIVED	01-Feb-24
DATE TESTED	05-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	18.1	35.6	1.038	
Determination 2 (avg)	18.0	35.4		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
14.5	37	13	24	91



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

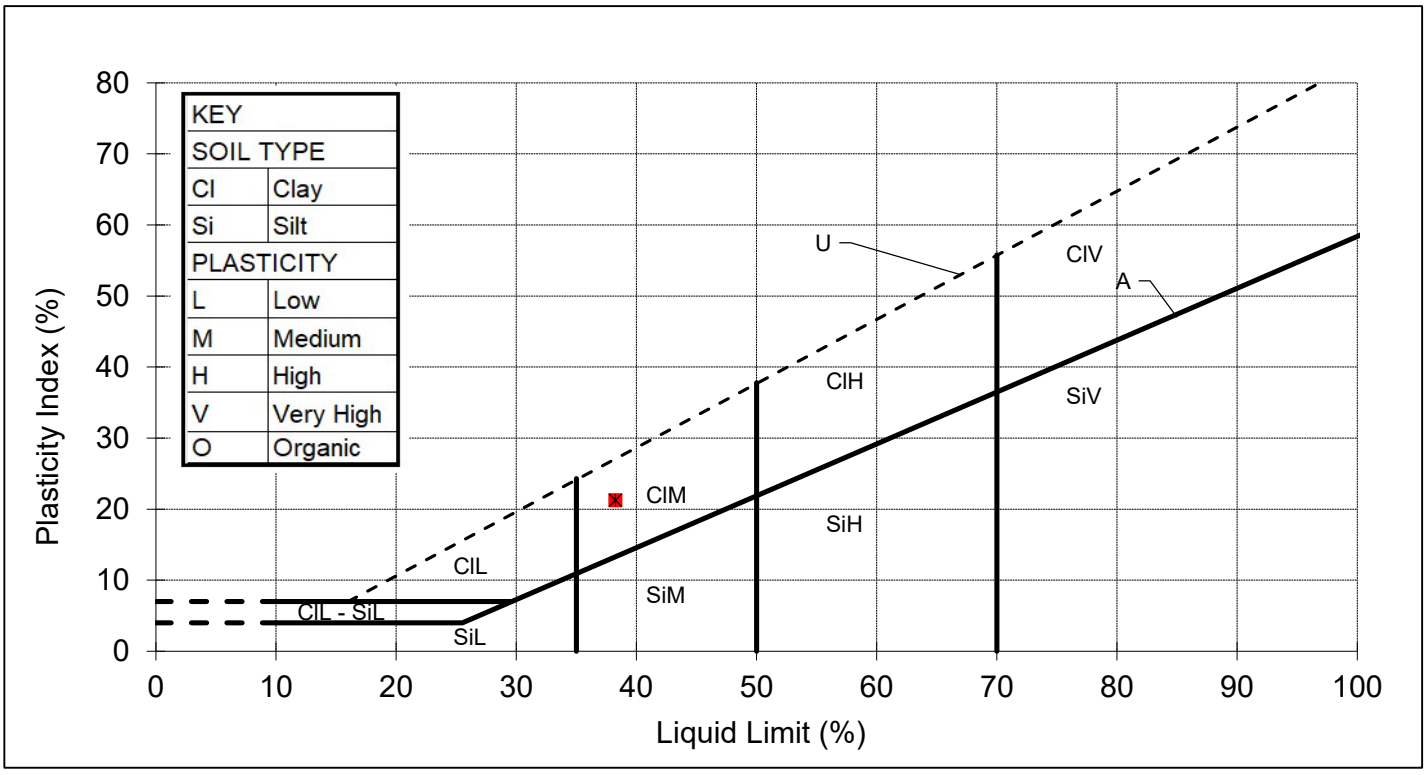
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 7 2.5m D	DATE SAMPLED	18-Jan-24
SAMPLE No.	417332	DATE RECEIVED	01-Feb-24
DATE TESTED	05-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	19.9	38.2	1.004	
Determination 2 (avg)	19.7	38.0		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
25.0	38	17	21	88



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

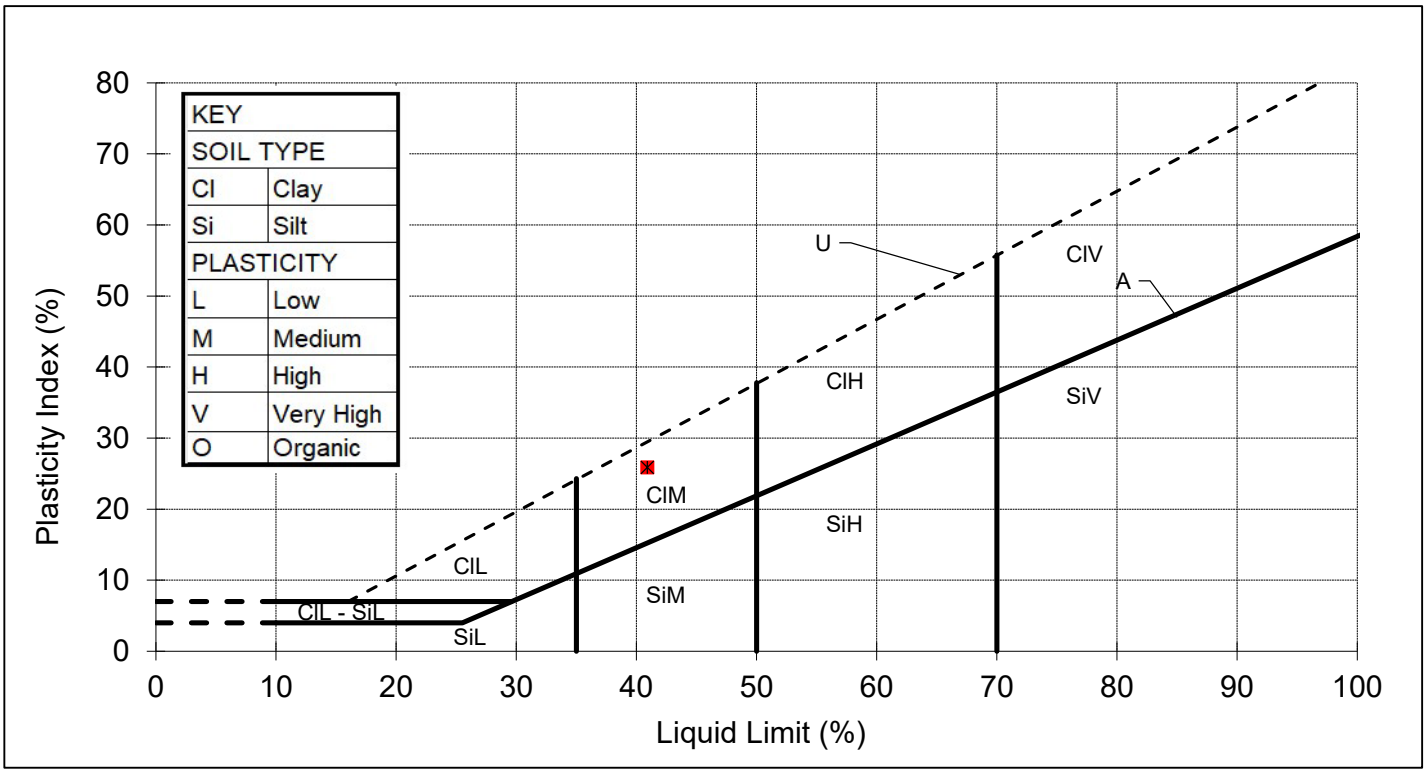
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 4 1.2m D	DATE SAMPLED	18-Jan-24
SAMPLE No.	417334	DATE RECEIVED	01-Feb-24
DATE TESTED	05-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	18.2	39.5	1.037	
Determination 2 (avg)	18.0	39.4		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
20.2	41	15	26	88



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

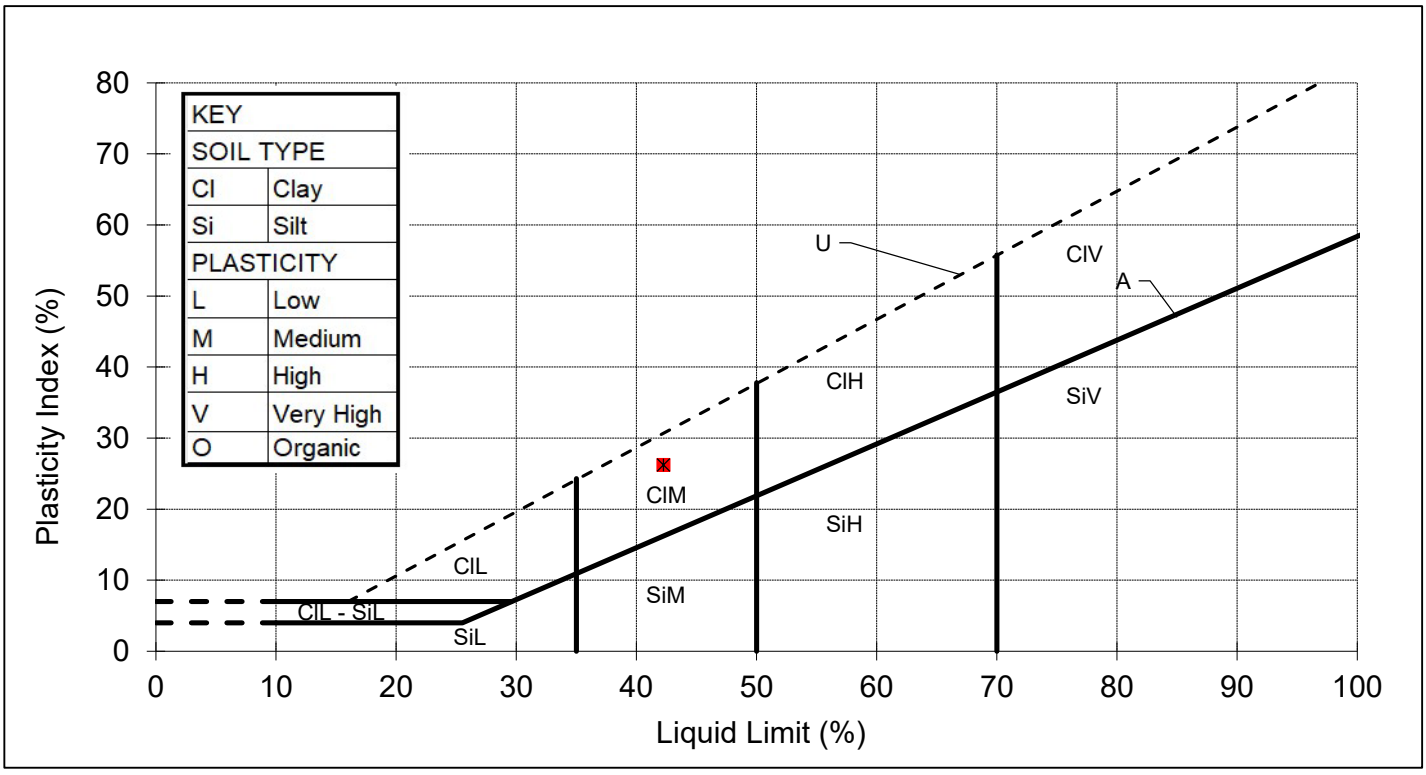
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 6 3.0-3.8m U	DATE SAMPLED	18-Jan-24
SAMPLE No.	417336	DATE RECEIVED	01-Feb-24
DATE TESTED	05-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	19.9	42.1	1.002	
Determination 2 (avg)	19.9	42.2		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
22.9	42	16	26	78



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

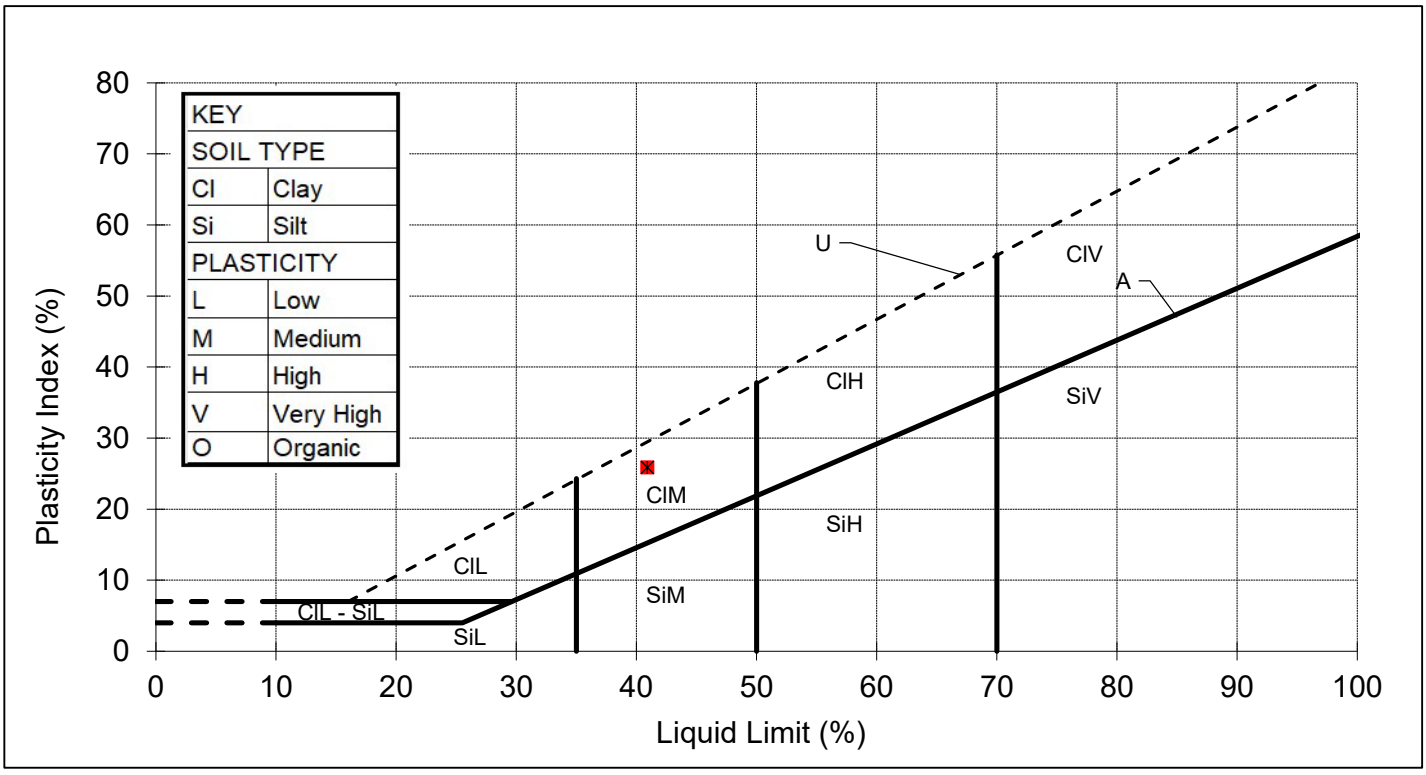
CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

SAMPLE LABEL	WS 7 1.2-2.0m U	DATE SAMPLED	18-Jan-24
SAMPLE No.	417337	DATE RECEIVED	01-Feb-24
DATE TESTED	05-Feb-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	18.9	40.0	1.016	
Determination 2 (avg)	19.0	40.5		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
19.3	41	15	26	83



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 14-Feb-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION
BS EN ISO 17892-8:2018

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

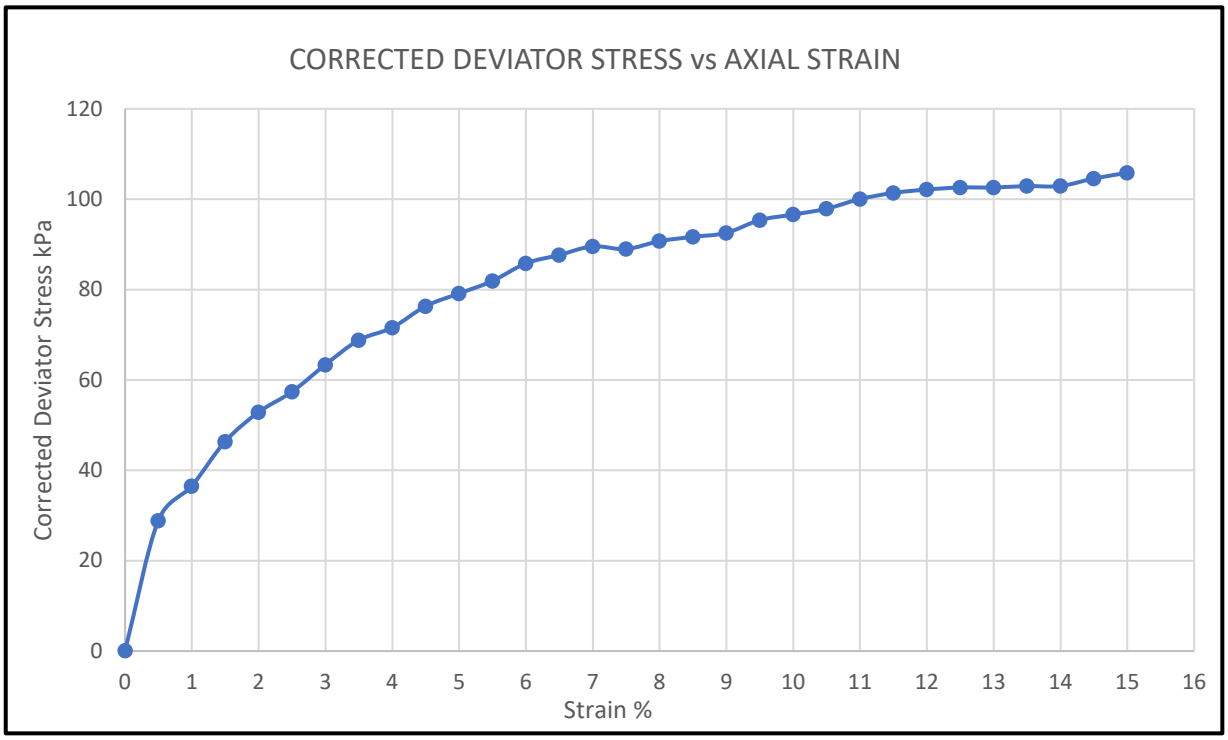
SAMPLE LABEL	WS06 3-3.8m U	**DATE SAMPLED**	18-Jan-24
LAB SAMPLE No.	417336	**DATE RECEIVED**	01-Feb-24
DATE TESTED	05-Feb-24	**SAMPLED BY**	Client
MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

INITIAL CONDITIONS

Specimen Location

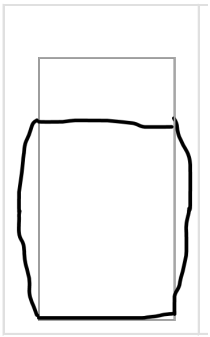


Sample Length (mm)	450	Specimen depth from top of Sample (mm)	50
Sample Orientation	Vertical	Specimen Condition	Undisturbed
Specimen Length (mm)	153	Specimen Water Content (%)	22.9
Specimen Diameter (mm)	83	Specimen Bulk Density (Mg/m3)	1.99
Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.62
Membrane Correction	1.54		



TEST TYPE
SINGLE STAGE

SKETCH OF SPECIMEN AT FAILURE



PLASTIC

Cell Pressure (kPa)	Failure Strain (%)	Rate of Strain (%/min)	Corrected Deviator Stress (kPa)	Shear Strength Cu (kPa)
60	15.0	2.0	106	53

Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed  Date 14 February 2024

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION
BS EN ISO 17892-8:2018

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

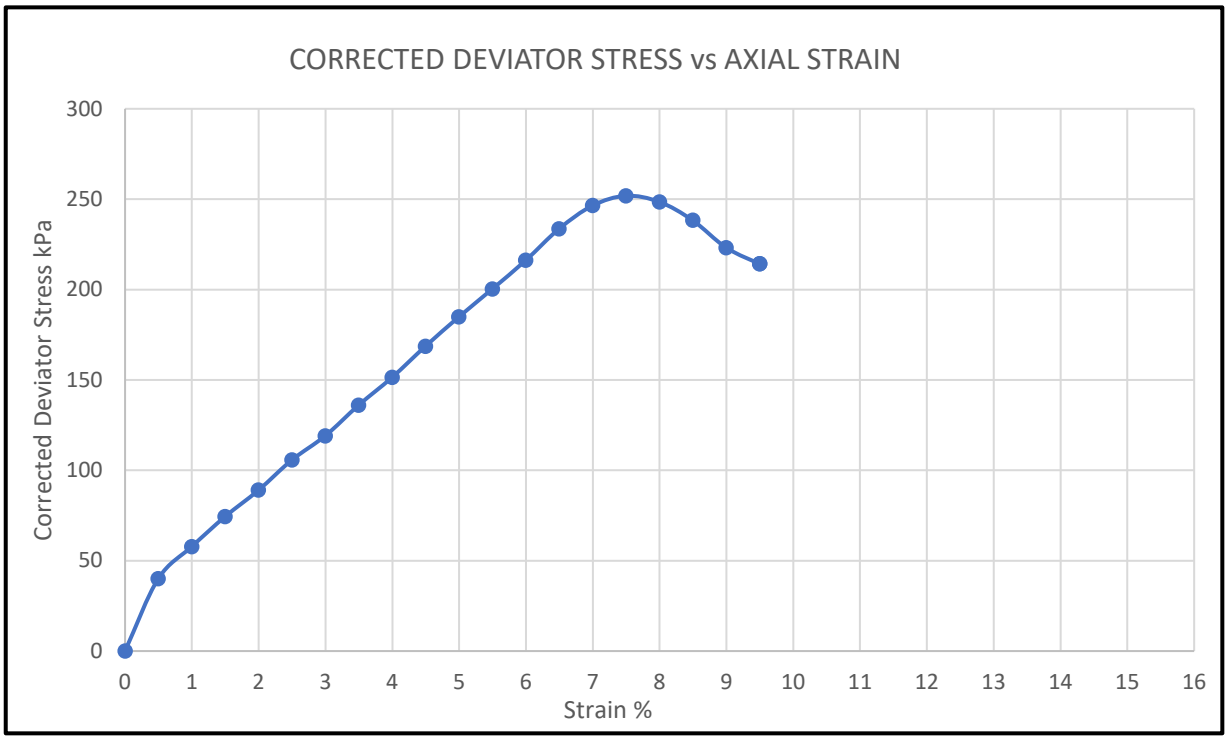
SAMPLE LABEL	WS07 1.2-2m U	**DATE SAMPLED**	18-Jan-24
LAB SAMPLE No.	417337	**DATE RECEIVED**	01-Feb-24
DATE TESTED	05-Feb-24	**SAMPLED BY**	Client
MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

INITIAL CONDITIONS

Specimen Location

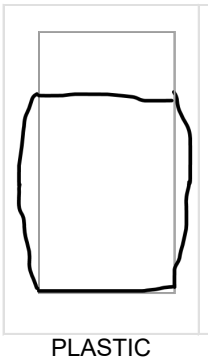


Sample Length (mm)	280	Specimen depth from top of Sample (mm)	50
Sample Orientation	Vertical	Specimen Condition	Undisturbed
Specimen Length (mm)	164	Specimen Water Content (%)	19.3
Specimen Diameter (mm)	84	Specimen Bulk Density (Mg/m3)	2.03
Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.70
Membrane Correction	1.04		



TEST TYPE
SINGLE STAGE

SKETCH OF SPECIMEN AT FAILURE



PLASTIC

Cell Pressure (kPa)	Failure Strain (%)	Rate of Strain (%/min)	Corrected Deviator Stress (kPa)	Shear Strength Cu (kPa)
30	15.0	2.0	251	126

Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed  Date 14 February 2024

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION
BS EN ISO 17892-8:2018

CLIENT	LK Consult Ltd
SITE	LKC 23 1722 - Sydney Avenue, Manchester Airport
JOB NUMBER	MRN 24076/5

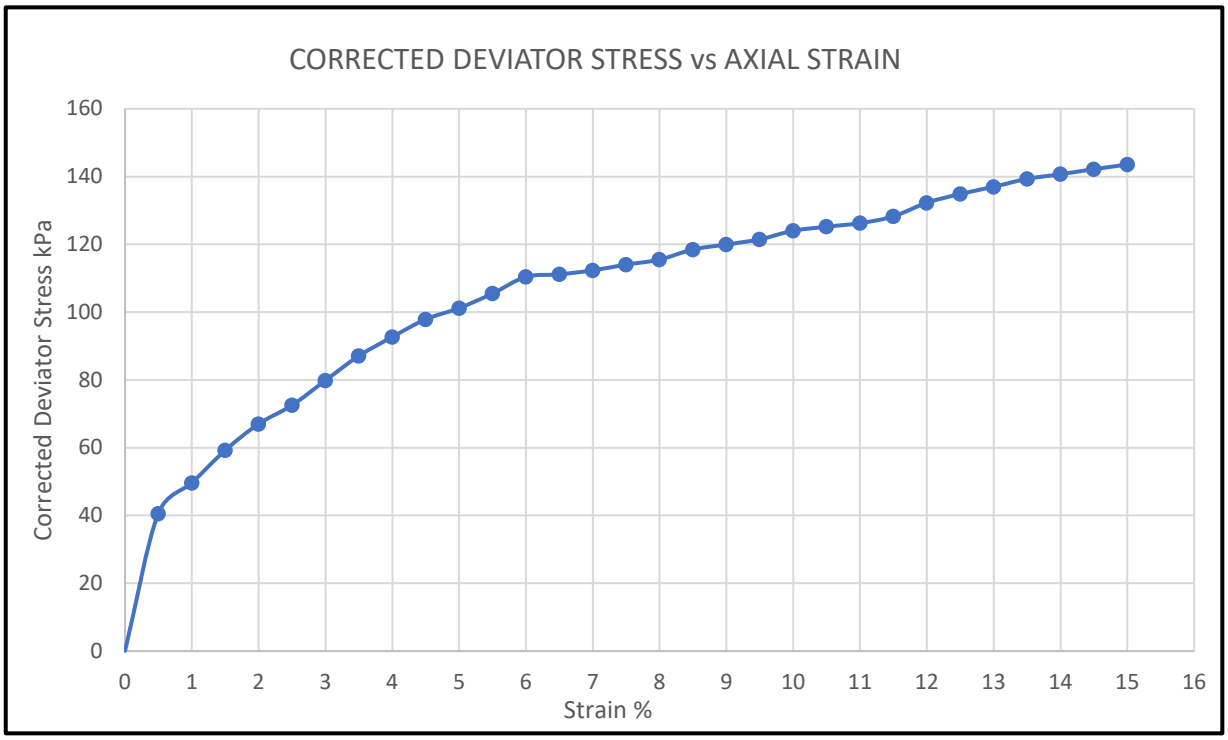
SAMPLE LABEL	WS07 1.2-2m U	**DATE SAMPLED**	18-Jan-24
LAB SAMPLE No.	417338	**DATE RECEIVED**	01-Feb-24
DATE TESTED	05-Feb-24	**SAMPLED BY**	Client
MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

INITIAL CONDITIONS

Specimen Location

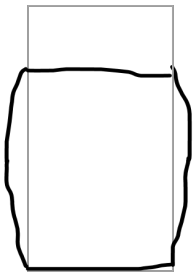


Sample Length (mm)	290	Specimen depth from top of Sample (mm)	50
Sample Orientation	Vertical	Specimen Condition	Undisturbed
Specimen Length (mm)	118	Specimen Water Content (%)	21.5
Specimen Diameter (mm)	69	Specimen Bulk Density (Mg/m3)	2.03
Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.67
Membrane Correction	1.86		



TEST TYPE
SINGLE STAGE

SKETCH OF SPECIMEN AT FAILURE



PLASTIC

Cell Pressure (kPa)	Failure Strain (%)	Rate of Strain (%/min)	Corrected Deviator Stress (kPa)	Shear Strength Cu (kPa)
30	15.0	2.0	144	72

Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed  Date 14 February 2024

Appendix E – Site Photograph Records

BH01


LK GROUP
CORE
PHOTOGRAPHIC BOARD
PROJECT NAME SYDNEY AVENUE, MANCHESTER
PROJECT NO LKC 23 1722
DATE 09/01/2024
HOLE NO. BH01
SAMPLE NO.
DEPTH FROM 0 m TO 1.2M m


LK GROUP
CORE
PHOTOGRAPHIC BOARD
SYDNEY AVENUE, MANCHESTER
LKC 23 1722
09/01/2024
BH01
0
1.2M



BH02


LK GROUP
CORE
PHOTOGRAPHIC BOARD
SYDNEY AVENUE, MANCHESTER
LKC 23 1722
09/01/2024
BH02
0
1.2M







WS01


SYDNEY AVENUE
LKC 23 1722
17/01/24
WS01
ES 1 2 3
4.0
12m


SYDNEY AVENUE
LKC 23 1722
17/01/24
WS01
ES 1 2 3
0 - 12m

WS02


SYDNEY AVENUE
LKC 73 1727
17/01/24
WS02
4.0
1.2m

WS03


SYDNEY AVENUE
LKC 73 1727
17/01/24
WS03
1.2


SYDNEY AVENUE
LKC 73 1727
17/01/24
WS03
3.0
1.2m

WS04


SYDNEY AVENUE
LKC 23 1727
18/01/24
WS04
1.2m
3m


SYDNEY AVENUE
LKC 23 1727
18/01/24
WS04
1.2m
3m

WS05


SYDNEY AVENUE
LKC 23 1727
17/01/24
WS03
1.2

HP01


PROJECT NAME Sydney Avenue
PROJECT NO. 23.1922
DATE 19/12/23
HOLE NO. HP01
SAMPLE NO. ES-1
DEPTH FROM 0.00 M TO 0.20 M


PROJECT NAME Sydney Avenue
PROJECT NO. 23.1922
DATE 19/12/23
HOLE NO. HP01
SAMPLE NO. ES-1
DEPTH FROM 0.20 M TO 0.60 M


PROJECT NAME Sydney Avenue
PROJECT NO. 23.1922
DATE 19/12/23
HOLE NO. HP01
SAMPLE NO. ES-1
DEPTH FROM 0.20 M TO 0.60 M



HP02


PROJECT NAME Sydney Avenue
PROJECT NO. 23.1922
DATE 19/12/23
HOLE NO. HP02
SAMPLE NO. ES1
DEPTH FROM 0.00 M TO 0.10 M


PROJECT NAME Sydney Avenue
PROJECT NO. 23.1922
DATE 19/12/23
HOLE NO. HP02
SAMPLE NO. ES2
DEPTH FROM 0.10 M TO 0.15 M


LK GROUP
PROJECT NAME Sydney Avenue
PROJECT NO. 23 1922
DATE 19/12/23
HOLE NO. HP02
SAMPLE NO. ES-3
DEPTH FROM 0.15
M TO 0.45


LK GROUP
PROJECT NAME Sydney Avenue
PROJECT NO. 23 1922
DATE 19/12/23
HOLE NO. HP02
SAMPLE NO. ES-4
DEPTH FROM 0.45
M TO 1.20


E14
133
E12
113
E10
093

HP06


LK GROUP
PROJECT NAME Sydney Avenue
PROJECT NO. 23 1922
DATE 19/12/23
HOLE NO. HP06
SAMPLE NO. ES-1
DEPTH FROM 0.00
M TO 0.20


LK GROUP
PROJECT NAME Sydney Avenue
PROJECT NO. 23 1922
DATE 19/12/23
HOLE NO. HP06
SAMPLE NO. ES-2
DEPTH FROM 0.20
M TO 0.90


LK GROUP
PROJECT NAME Sydney Avenue
PROJECT NO. 23 1922
DATE 19/12/23
HOLE NO. HP06
SAMPLE NO. ES-B
DEPTH FROM 0.90
M TO 1.20


133
E12
113

HP08


PROJECT NAME Sydney Avenue
PROJECT NO. 23 1922
DATE 19/12/23
HOLE NO. HP08
SAMPLE NO. Es-1
DEPTH FROM 0.00 M TO 0.20 M


PROJECT NAME Sydney Avenue
PROJECT NO. 23 1922
DATE 19/12/23
HOLE NO. HP08
SAMPLE NO. Es-2
DEPTH FROM 0.20 M TO 0.30 M


PROJECT NAME Sydney Avenue
PROJECT NO. 23 1922
DATE 19/12/23
HOLE NO. HP08
SAMPLE NO. Es-3
DEPTH FROM 0.30 M TO 0.45 M


PROJECT NAME Sydney Avenue
PROJECT NO. 23 1922
DATE 19/12/23
HOLE NO. HP08
SAMPLE NO. Es-4
DEPTH FROM 0.45 M TO 1.00 M


PROJECT NAME Sydney Avenue
PROJECT NO. 23 1922
DATE 19/12/23
HOLE NO. HP08
SAMPLE NO. Es-5
DEPTH FROM 1.00 M TO 1.20 M


133
E12
113

HP09


LK GROUP
PROJECT NAME Sydney Avenue
PROJECT NO. 23 1922
DATE 19/12/23
HOLE NO. HP09
SAMPLE NO. Es-1
DEPTH FROM 0.00
M TO 0.20


LK GROUP
PROJECT NAME Sydney Avenue
HP09
Es-2
0.20



HP03





HP04







HP05







HP07



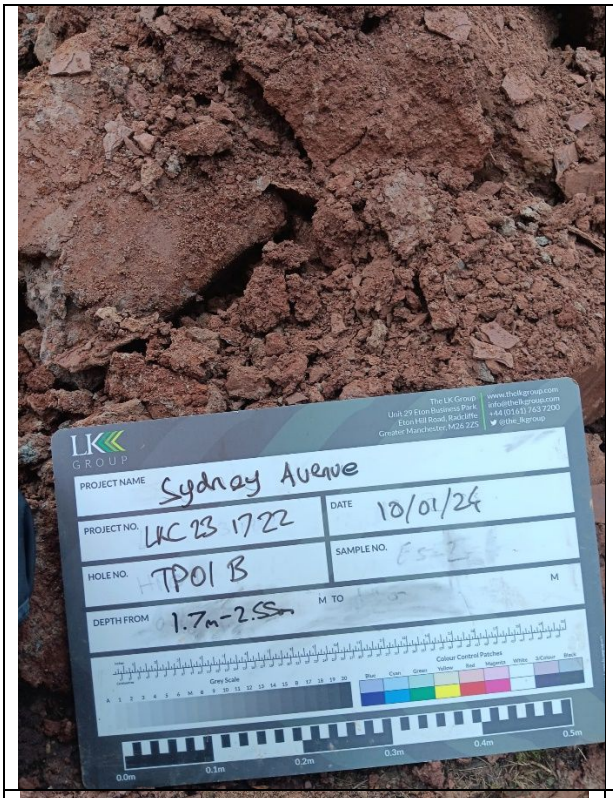




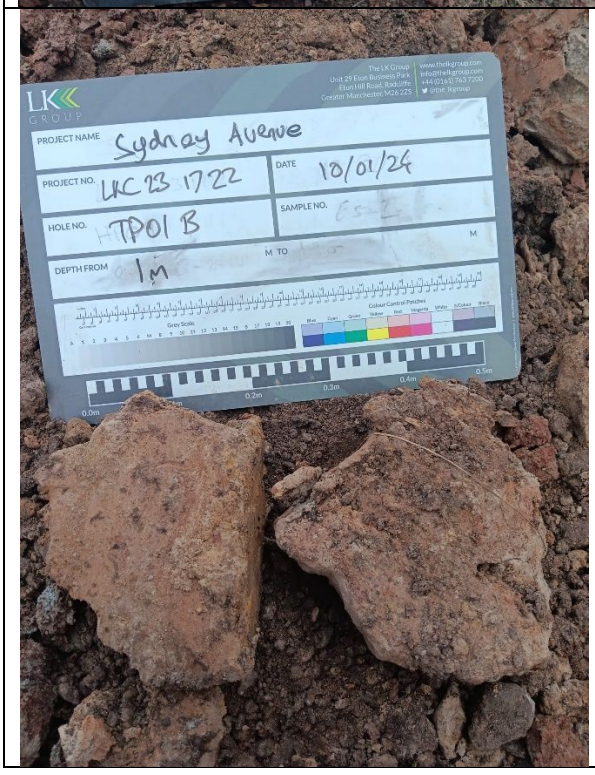
TP101B

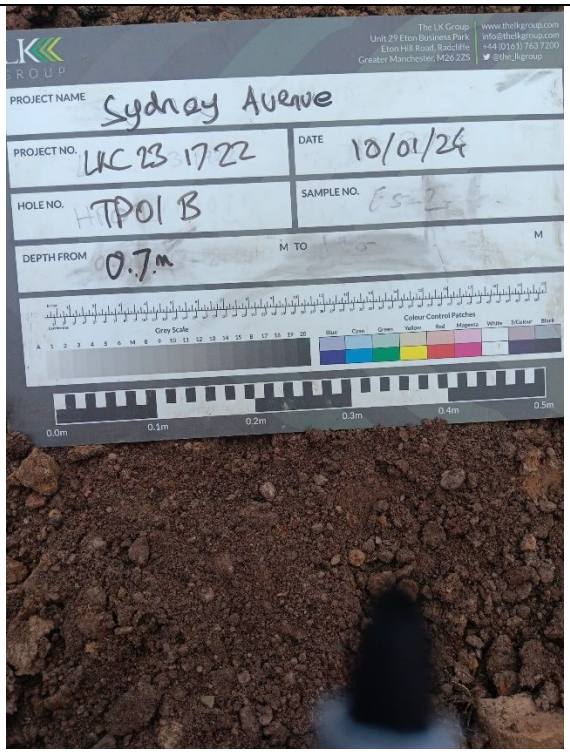





LK GROUP
PROJECT NAME Sydney Avenue
PROJECT NO. LKC 23 1722
DATE 10/01/24
HOLE NO. TP01 B
SAMPLE NO. ES2
DEPTH FROM 1.7m-2.5m
M TO
M
Grey Scale
Colour Control Patches
0.0m 0.1m 0.2m 0.3m 0.4m 0.5m

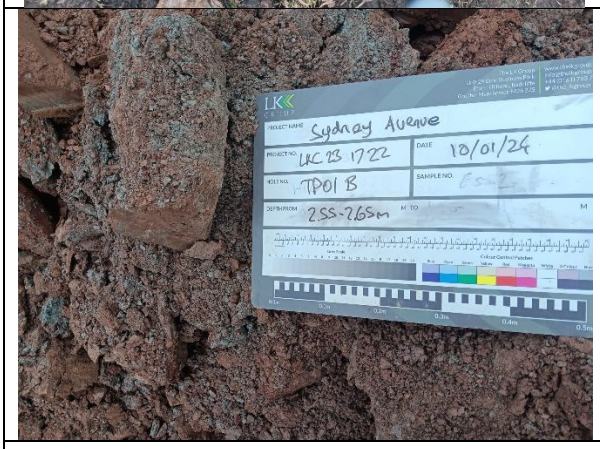

LK GROUP
PROJECT NAME Sydney Avenue
PROJECT NO. LKC 23 1722
DATE 10/01/24
HOLE NO. TP01 B
SAMPLE NO. ES2
DEPTH FROM 1-1.6m
M TO
M
Grey Scale
Colour Control Patches
0.0m 0.2m 0.3m 0.4m 0.5m


LK GROUP
PROJECT NAME Sydney Avenue
PROJECT NO. LKC 23 1722
DATE 10/01/24
HOLE NO. TP01 B
SAMPLE NO. ES2
DEPTH FROM 1m
M TO
M
Grey Scale
Colour Control Patches


LK GROUP
PROJECT NAME Sydney Avenue
PROJECT NO. LKC 23 1722
DATE 10/01/24
HOLE NO. TP01 B
SAMPLE NO. ES2
DEPTH FROM 0.7m
M TO
M
Grey Scale
Colour Control Patches
0.0m 0.1m 0.2m 0.3m 0.4m 0.5m


PROJECT NAME Sydney Avenue
PROJECT NO. LKC 23 1722
DATE 10/01/24
HOLE NO. TP01 B
SAMPLE NO.
DEPTH FROM 0.5m
M TO


PROJECT NAME Sydney Avenue
PROJECT NO. LKC 23 1722
DATE 10/01/24
HOLE NO. TP01 B
SAMPLE NO.
DEPTH FROM 0.2m
M TO


PROJECT NAME Sydney Avenue
PROJECT NO. LKC 23 1722
DATE 10/01/24
HOLE NO. TP01 B
SAMPLE NO.
DEPTH FROM 255-265m
M TO

TP02




PROJECT NAME SYDNEY AQE
PROJECT NO. LUC 23 1722
HOLE NO. TP02
DEPTH FROM
m TO
DATE 19/12/23
SAMPLE NO.
BOARD




SYDNEY AQE
LUC 23 1722
TP02
DATE 19/12/23
SAMPLE NO.
m TO


CORE PHOTOGRAPHIC BOARD

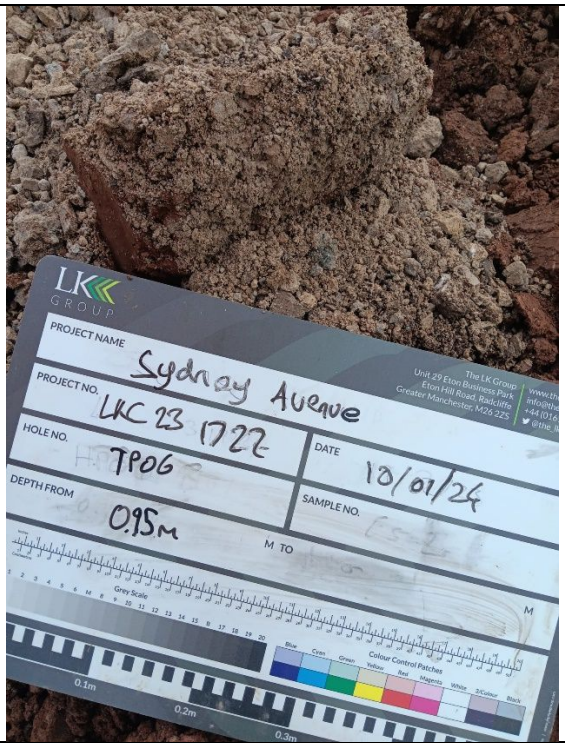
TP06


PROJECT NAME Sydney Avenue
PROJECT NO. LKC 23 1722
DATE 10/01/24
HOLE NO. TP06
SAMPLE NO.
DEPTH FROM 1.0 5M
M TO M




PROJECT NAME Sydney Avenue
PROJECT NO. LKC 23 1722
DATE 10/01/24
HOLE NO. TP06
SAMPLE NO.
DEPTH FROM 0.5M
M TO M


PROJECT NAME Sydney Avenue
PROJECT NO. LKC 23 1722
DATE 10/01/24
HOLE NO. TP06
SAMPLE NO.
DEPTH FROM 0.2M
M TO M


LK GROUP
PROJECT NAME
Sydney Avenue
PROJECT NO.
LKC 23 1722
HOLE NO.
TP06
DATE
10/01/24
SAMPLE NO.
DEPTH FROM
0.95m
M TO
Grey Scale
Colour Control Patches
0.1m
0.2m
0.3m

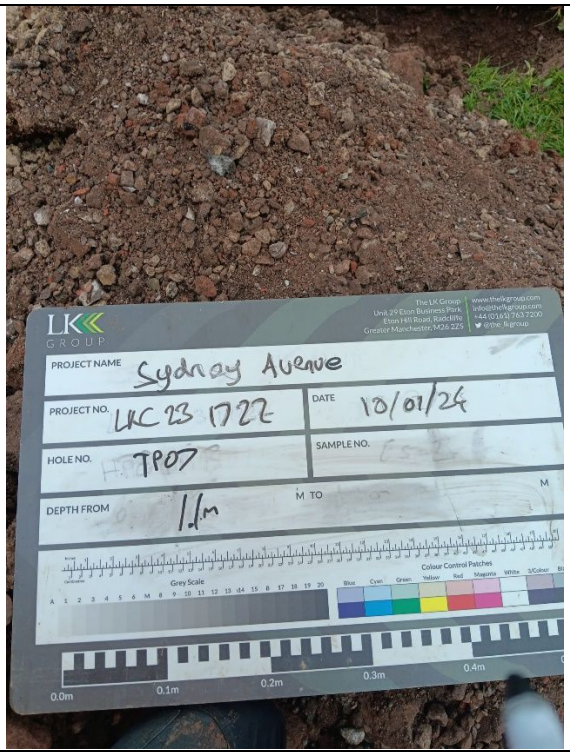


TP07




LK GROUP
PROJECT NAME
Sydney Avenue
PROJECT NO.
LKC 23 1722
DATE
10/01/24
HOLE NO.
TP07
SAMPLE NO.
DEPTH FROM
0.5m
M TO
Grey Scale
Colour Control Patches
0.0m
0.1m
0.2m
0.3m
0.4m
0.5m


PROJECT NAME Sydney Avenue
PROJECT NO. LKC 23 1722
DATE 10/01/24
HOLE NO. TP07
SAMPLE NO.
DEPTH FROM 0.2m
M TO
M


PROJECT NAME Sydney Avenue
PROJECT NO. LKC 23 1722
DATE 10/01/24
HOLE NO. TP07
SAMPLE NO.
DEPTH FROM 1.1m
M TO
M
Grey Scale
Colour Control Patches
0.0m
0.1m
0.2m
0.3m
0.4m


PROJECT NAME Sydney Avenue
PROJECT NO. LKC 23 1722
DATE 10/01/24
HOLE NO. TP07
SAMPLE NO.
DEPTH FROM 0.5m
M TO
M
Grey Scale
Colour Control Patches
0.0m
0.1m
0.2m
0.3m
0.4m
0.5m

Appendix F – References

[1] The British Standards Institution (BSI Standards), March 2018, "Geotechnical investigation and testing. Identification and classification of soil - Part 1: Identification and description", BS EN ISO 14688-1:2018.

[2] The British Standards Institution (BSI Standards), May 2020, "Code of practice for ground investigations", BS 5930:2015+A1:2020.

[3] CIRIA, December 2007, "Assessing risks posed by hazardous ground gases to buildings", C665.

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