

APPENDIX V

E3P EXPLORATORY HOLE

LOGS

				Borehole Log				Borehole No. WS101 Sheet 1 of 1	
Project Name: Loom Street				Project No. 15018		Co-ords:		Hole Type WS	
Location: Manchester				Level:		Scale 1:50			
Client: Forshaw Group				Dates: 23/11/2021		Logged By G. Haigh			

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES				MADE GROUND: Dark brown slightly clayey sandy gravel. Gravel is medium to coarse angular of brick, metal, ceramic and clinker.		
					0.70				
		1.00	SPT	N=9 (1,2/2,2,2,3)	1.20		Firm light grey mottled orange brown slightly gravelly CLAY. Gravel is fine sub-angular of mudstone and sandstone.	1	
		1.50	U				Stiff medium strength to very stiff high strength brown slightly gravelly CLAY. Gravel is fine to coarse angular to sub-angular of sandstone and mudstone.		
		2.00	SPT	N=18 (2,3/4,4,4,6)				2	
		3.00	ES		2.80		Stiff medium strength to very stiff high strength brown CLAY with occasional gravel. Gravel is sub-angular to sub-rounded of sandstone and mudstone.		
		3.00	SPT	N=19 (2,3/3,5,5,6)				3	
	4.00	SPT	N=15 (2,3/3,3,4,5)				4		
	5.00	SPT	N=19 (2,3/4,5,5,5)	5.45			5		
		End of Borehole at 5.45m						6	
								7	
								8	
								9	
								10	

Remarks
 1. Complete. 2. Monitoring well installed.



Borehole Log

Borehole No.

WS102

Sheet 1 of 1

Project Name: Loom Street

Project No.
15018

Co-ords:

Hole Type
WS

Location: Manchester

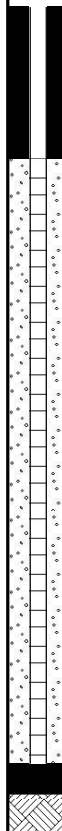
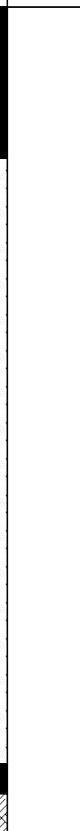
Level:

Scale
1:50

Client: Forshaw Group

Dates: 23/11/2021

Logged By
G. Haigh

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	ES		0.30			MADE GROUND: Dark brown slightly clayey sandy gravel. Gravel is medium to coarse angular of brick, metal, ceramic and clinker.	
		0.70	ES					Stiff medium strength light grey mottled orange brown slightly gravelly CLAY. Gravel is fine sub-angular of mudstone and sandstone.	1
		1.00	SPT	N=10 (1,1/2,2,3,3)					
		1.50	U		1.50				
		2.00	SPT	N=17 (2,3/3,4,4,6)				Very stiff high strength brown slightly gravelly CLAY. Gravel is fine to coarse angular to sub-angular of sandstone and mudstone.	2
		3.00	SPT	N=17 (2,3/3,4,5,5)	2.60			Stiff medium strength to very stiff high strength brown CLAY with occasional gravel. Gravel is rounded of sandstone and mudstone.	3
		4.00	SPT	N=14 (2,2/3,3,3,5)					4
		5.00	SPT	N=19 (3,3/4,5,5,5)					5
					5.45			End of Borehole at 5.45m	6
									7
									8
									9
									10

Remarks

1. Complete. 2. Monitoring well installed.

Borehole Log

Borehole No.

WS103

Sheet 1 of 1

Project Name: Loom Street

Project No.
15018

Co-ords:

Hole Type
WS

Location: Manchester

Level:

Scale
1:50

Client: Forshaw Group

Dates: 23/11/2021

Logged By
G. Haigh

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.50			MADE GROUND: Dark brown slightly clayey sandy gravel. Gravel is medium to coarse angular of brick, metal, ceramic and clinker.	
								Stiff medium strength brown mottled grey slightly gravelly CLAY. Gravel is fine to coarse sub-angular to rounded of sandstone and mudstone.	
		1.00	SPT	N=12 (1,2/2,3,3,4)	1.00			Very stiff high strength brown slightly gravelly CLAY. Gravel is fine to coarse angular to sub-angular of sandstone and mudstone.	1
		1.50	U						
		2.00	SPT	N=18 (2,3/4,4,4,6)	2.00				2
									
		3.00	SPT	N=19 (2,3/3,4,5,7)					3
									
		4.00	ES						4
		4.00	SPT	N=17 (2,3/4,4,4,5)					
									
		5.00	SPT	N=20 (3,3/4,5,5,6)					5
					5.45				
								End of Borehole at 5.45m	6
									7
									8
									9
									10

Remarks

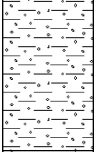
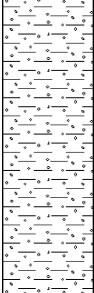
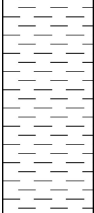
1. Complete. 2. Monitoring well installed.

				Borehole Log				Borehole No. WS104 Sheet 1 of 1	
Project Name: Loom Street				Project No. 15018		Co-ords:		Hole Type WS	
Location: Manchester				Level:		Scale 1:50		Logged By G. Haigh	
Client: Forshaw Group				Dates: 23/11/2021					

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	ES				MADE GROUND: Dark brown slightly clayey sandy gravel. Gravel is medium to coarse angular of brick, metal, ceramic and clinker.		
		1.00	SPT	N=14 (2,2/3,3,4,4)	1.00		Stiff medium strength to very stiff high strength brown mottled grey slightly gravelly CLAY. Gravel is fine to coarse sub-angular to rounded of sandstone and mudstone.	1	
		1.50	U						
		2.00	SPT	N=21 (3,3/4,5,5,7)					2
		2.50	ES		2.50		Very stiff high strength brown slightly gravelly CLAY. Gravel is fine to coarse angular to sub-angular of sandstone and mudstone.		
		3.00	SPT	N=18 (3,3/4,4,4,6)				3	
		4.00	SPT	N=14 (2,3/3,3,3,5)	3.80		Stiff medium strength to very stiff high strength brown CLAY.	4	
	5.00	SPT	N=21 (3,3/4,5,6,6)				5		
				5.45			End of Borehole at 5.45m	6	
								7	
								8	
								9	
								10	

Remarks 1. Complete. 2. Monitoring well installed.									
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				Borehole Log				Borehole No. WS105 Sheet 1 of 1	
Project Name: Loom Street				Project No. 15018		Co-ords:		Hole Type WS	
Location: Manchester				Level:		Scale 1:50		Logged By G. Haigh	
Client: Forshaw Group				Dates: 23/11/2021					

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40	ES				MADE GROUND: Brown slightly gravelly clay. Gravel is fine to coarse angular of brick and clinker.		
		1.00	SPT	N=12 (1,2/3,3,3,3)	1.00		 Stiff medium strength brown mottled grey slightly gravelly CLAY. Gravel is fine to coarse sub-angular to rounded of sandstone and mudstone.	1	
		1.50	U						
		2.00	SPT	N=26 (3,4/5,7,6,8)	2.00		 Very stiff high strength brown slightly gravelly CLAY. Gravel is fine to coarse angular to sub-angular of sandstone and mudstone.	2	
		3.00	SPT	N=23 (3,3/5,5,6,7)					
		3.50	ES						
		4.00	SPT	N=19 (2,3/3,5,5,6)	4.00		 Very stiff high strength brown CLAY. Lenses of orange fine to medium sand at 4.50m bgl.	4	
		5.00	SPT	N=23 (3,4/5,6,6,6)					5
				5.45			End of Borehole at 5.45m	6	
								7	
								8	
								9	
								10	

Remarks Complete.									
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APPENDIX VI

CHEMICAL TESTING

RESULTS

**Roy Walker**

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Analytical Report Number : 21-25511

Project / Site name: Loom Streer, Manchester

Samples received on: 24/11/2021

Your job number: 15-018

**Samples instructed on/
Analysis started on:** 26/11/2021

Your order number: 15018-RJW-C

Analysis completed by: 06/12/2021

Report Issue Number: 1

Report issued on: 06/12/2021

Samples Analysed: 2 leachate samples - 8 soil samples

Signed: *Karolina Marek*

Karolina Marek
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

Analytical Report Number: 21-25511
Project / Site name: Loom Streer, Manchester
Your Order No: 15018-RJW-C

Lab Sample Number				2096781	2096782	2096783	2096784	2096785
Sample Reference				WS101	WS101	WS102	WS103	WS103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0,10	3,00	0,30	0,20	4,00
Date Sampled				23/11/2021	23/11/2021	23/11/2021	23/11/2021	23/11/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	27	15	23	26	17
Total mass of sample received	kg	0.001	NONE	1.0	0.40	1.0	1.0	0.40

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	BPA		BPA	BPA	

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7,8	7,7	8,2	7,2	8,2
Total Cyanide	mg/kg	1	MCERTS	< 1,0	< 1,0	< 1,0	< 1,0	< 1,0
Total Sulphate as SO4	mg/kg	50	MCERTS	2200	550	2200	1200	450
Water Soluble SO4 (2:1 Leach, Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0,56	0,11	0,60	0,26	0,029
Water Soluble SO4 (2:1 Leach, Equiv.) 1hr extraction	mg/kg	2,5	MCERTS	1100	220	1200	530	59
Water Soluble SO4 (2:1 Leach, Equiv.) 1hr extraction	mg/l	1.25	MCERTS	560	108	601	263	29,3
Sulphide	mg/kg	1	MCERTS	1,2	1,2	2,4	2,1	3,8
Total Sulphur	mg/kg	50	MCERTS	1000	190	950	700	300
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	3,5	0,9	1,6	3,4	1,0

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1,0	< 1,0	< 1,0	< 1,0	< 1,0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	< 0,05	< 0,05	< 0,05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	< 0,05	< 0,05	< 0,05
Acenaphthene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	< 0,05	< 0,05	< 0,05
Fluorene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	< 0,05	< 0,05	< 0,05
Phenanthrene	mg/kg	0.05	MCERTS	0,32	< 0,05	0,61	0,52	< 0,05
Anthracene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	< 0,05	< 0,05	< 0,05
Fluoranthene	mg/kg	0.05	MCERTS	0,38	< 0,05	0,66	0,51	< 0,05
Pyrene	mg/kg	0.05	MCERTS	0,36	< 0,05	0,60	0,47	< 0,05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	0,37	0,28	< 0,05
Chrysene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	0,26	0,21	< 0,05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	0,31	< 0,05	< 0,05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	0,17	< 0,05	< 0,05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	0,29	< 0,05	< 0,05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	< 0,05	< 0,05	< 0,05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	< 0,05	< 0,05	< 0,05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	< 0,05	< 0,05	< 0,05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	1,06	< 0,80	3,27	1,99	< 0,80
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Analytical Report Number: 21-25511
 Project / Site name: Loom Streer, Manchester
 Your Order No: 15018-RJW-C

Lab Sample Number	2096781	2096782	2096783	2096784	2096785
Sample Reference	WS101	WS101	WS102	WS103	WS103
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0,10	3,00	0,30	0,20	4,00
Date Sampled	23/11/2021	23/11/2021	23/11/2021	23/11/2021	23/11/2021
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	35	7,5	22	27	10
Cadmium (aqua regia extractable)	mg/kg	0,2	MCERTS	< 0,2	< 0,2	< 0,2	< 0,2	< 0,2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4,0	< 4,0	< 4,0	< 4,0	< 4,0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24	28	34	24	32
Copper (aqua regia extractable)	mg/kg	1	MCERTS	180	25	130	170	30
Lead (aqua regia extractable)	mg/kg	1	MCERTS	200	13	180	160	16
Mercury (aqua regia extractable)	mg/kg	0,3	MCERTS	1,3	< 0,3	0,6	0,8	< 0,3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	34	32	39	31	37
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1,0	< 1,0	< 1,0	< 1,0	< 1,0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120	72	150	280	65

Petroleum Hydrocarbons

TPH (C5 - C6) HS_ID_TOTAL	mg/kg	1	NONE	< 1,0	< 1,0	< 1,0	< 1,0	< 1,0
TPH (C6 - C8) HS_ID_TOTAL	mg/kg	0,1	MCERTS	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1
TPH (C8 - C10) HS_ID_TOTAL	mg/kg	0,1	MCERTS	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1
TPH (C10 - C12) EH_CU_ID_TOTAL	mg/kg	2	MCERTS	< 2,0	< 2,0	< 2,0	< 2,0	< 2,0
TPH (C12 - C16) EH_CU_ID_TOTAL	mg/kg	4	MCERTS	< 4,0	< 4,0	< 4,0	< 4,0	< 4,0
TPH (C16 - C21) EH_CU_ID_TOTAL	mg/kg	1	MCERTS	< 1,0	< 1,0	< 1,0	< 1,0	< 1,0
TPH (C21 - C35) EH_CU_ID_TOTAL	mg/kg	1	MCERTS	< 1,0	< 1,0	< 1,0	< 1,0	< 1,0
TPH (C35 - C40) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 EH_CU+HS_ID_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-25511
Project / Site name: Loom Streer, Manchester
Your Order No: 15018-RJW-C

Lab Sample Number				2096786	2096787	2096788
Sample Reference				WS104	WS105	WS105
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0,30	0,40	3,50
Date Sampled				23/11/2021	23/11/2021	23/11/2021
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	19	24	16
Total mass of sample received	kg	0.001	NONE	1.0	1.0	0.40

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	BPA	BPA	

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7,0	7,0	8,2
Total Cyanide	mg/kg	1	MCERTS	< 1,0	< 1,0	< 1,0
Total Sulphate as SO4	mg/kg	50	MCERTS	3700	1900	650
Water Soluble SO4 (2:1 Leach, Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0,82	0,52	0,12
Water Soluble SO4 (2:1 Leach, Equiv.) 1hr extraction	mg/kg	2,5	MCERTS	1600	1000	250
Water Soluble SO4 (2:1 Leach, Equiv.) 1hr extraction	mg/l	1,25	MCERTS	824	517	123
Sulphide	mg/kg	1	MCERTS	20	5,6	< 1,0
Total Sulphur	mg/kg	50	MCERTS	1700	810	190
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2,7	2,7	0,9

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1,0	< 1,0	< 1,0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	< 0,05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	< 0,05
Acenaphthene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	< 0,05
Fluorene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	< 0,05
Phenanthrene	mg/kg	0.05	MCERTS	0,57	< 0,05	< 0,05
Anthracene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	< 0,05
Fluoranthene	mg/kg	0.05	MCERTS	0,69	< 0,05	< 0,05
Pyrene	mg/kg	0.05	MCERTS	0,68	< 0,05	< 0,05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0,42	< 0,05	< 0,05
Chrysene	mg/kg	0.05	MCERTS	0,33	< 0,05	< 0,05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0,39	< 0,05	< 0,05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0,21	< 0,05	< 0,05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0,34	< 0,05	< 0,05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	< 0,05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	< 0,05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0,05	< 0,05	< 0,05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	3,63	< 0,80	< 0,80
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Analytical Report Number: 21-25511
 Project / Site name: Loom Streer, Manchester
 Your Order No: 15018-RJW-C

Lab Sample Number				2096786	2096787	2096788
Sample Reference				WS104	WS105	WS105
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0,30	0,40	3,50
Date Sampled				23/11/2021	23/11/2021	23/11/2021
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Heavy Metals / Metalloids						
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	40	32	9,5
Cadmium (aqua regia extractable)	mg/kg	0,2	MCERTS	< 0,2	< 0,2	< 0,2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4,0	< 4,0	< 4,0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23	25	32
Copper (aqua regia extractable)	mg/kg	1	MCERTS	210	66	26
Lead (aqua regia extractable)	mg/kg	1	MCERTS	400	100	20
Mercury (aqua regia extractable)	mg/kg	0,3	MCERTS	2,5	0,5	< 0,3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	37	26	36
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1,0	< 1,0	< 1,0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	170	73	64

Petroleum Hydrocarbons						
TPH (C5 - C6) HS_ID_TOTAL	mg/kg	1	NONE	< 1,0	< 1,0	< 1,0
TPH (C6 - C8) HS_ID_TOTAL	mg/kg	0,1	MCERTS	< 0,1	< 0,1	< 0,1
TPH (C8 - C10) HS_ID_TOTAL	mg/kg	0,1	MCERTS	< 0,1	< 0,1	< 0,1
TPH (C10 - C12) EH_CU_ID_TOTAL	mg/kg	2	MCERTS	< 2,0	< 2,0	< 2,0
TPH (C12 - C16) EH_CU_ID_TOTAL	mg/kg	4	MCERTS	< 4,0	< 4,0	< 4,0
TPH (C16 - C21) EH_CU_ID_TOTAL	mg/kg	1	MCERTS	< 1,0	< 1,0	< 1,0
TPH (C21 - C35) EH_CU_ID_TOTAL	mg/kg	1	MCERTS	< 1,0	< 1,0	< 1,0
TPH (C35 - C40) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH Total C5 - C40 EH_CU+HS_ID_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 21-25511
Project / Site name: Loom Streer, Manchester

Your Order No: 15018-RJW-C

Lab Sample Number				2096789	2096790
Sample Reference				WS101	WS105
Sample Number				None Supplied	None Supplied
Depth (m)				0,10	0,40
Date Sampled				23/11/2021	23/11/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status		

General Inorganics

pH (automated)	pH Units	N/A	ISO 17025	7,5	7,7
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	5,0	5,0

Total Phenols

Total Phenols (monohydric)	µg/l	1	ISO 17025	5,5	5,2
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0,01	< 0,01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0,01	< 0,01
Acenaphthene	µg/l	0.01	ISO 17025	< 0,01	< 0,01
Fluorene	µg/l	0.01	ISO 17025	< 0,01	< 0,01
Phenanthrene	µg/l	0.01	ISO 17025	< 0,01	< 0,01
Anthracene	µg/l	0.01	ISO 17025	< 0,01	< 0,01
Fluoranthene	µg/l	0.01	ISO 17025	< 0,01	< 0,01
Pyrene	µg/l	0.01	ISO 17025	< 0,01	< 0,01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0,01	< 0,01
Chrysene	µg/l	0.01	ISO 17025	< 0,01	< 0,01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0,01	< 0,01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0,01	< 0,01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0,01	< 0,01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0,01	< 0,01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0,01	< 0,01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0,01	< 0,01

Total PAH

Total EPA-16 PAHs	µg/l	0.2	NONE	< 0,2	< 0,2
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1	ISO 17025	11	7,7
Cadmium (dissolved)	µg/l	0.08	ISO 17025	0,21	0,21
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5,0	< 5,0
Chromium (dissolved)	µg/l	0.4	ISO 17025	2,0	0,6
Copper (dissolved)	µg/l	0.7	ISO 17025	25	3,0
Lead (dissolved)	µg/l	1	ISO 17025	7,2	< 1,0
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0,5	< 0,5
Nickel (dissolved)	µg/l	0.3	ISO 17025	3,3	2,4
Selenium (dissolved)	µg/l	4	ISO 17025	< 4,0	< 4,0
Zinc (dissolved)	µg/l	0.4	ISO 17025	15	2,5

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1,0	< 1,0
Toluene	µg/l	1	ISO 17025	< 1,0	< 1,0
Ethylbenzene	µg/l	1	ISO 17025	< 1,0	< 1,0
p & m-xylene	µg/l	1	ISO 17025	< 1,0	< 1,0
o-xylene	µg/l	1	ISO 17025	< 1,0	< 1,0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	10	NONE	< 10	< 10



Analytical Report Number: 21-25511
Project / Site name: Loom Streer, Manchester

Your Order No: 15018-RJW-C

Lab Sample Number	2096789	2096790
Sample Reference	WS101	WS105
Sample Number	None Supplied	None Supplied
Depth (m)	0,10	0,40
Date Sampled	23/11/2021	23/11/2021
Time Taken	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection
		Accreditation Status

Petroleum Hydrocarbons

TPH1 (C10 - C40) EH_1D_TOTAL_#1_#2_MS	µg/l	10	NONE	< 10	< 10
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TPH-CWG - Aliphatic >C5 - C6 HS_1D_AL	µg/l	1	ISO 17025	< 1,0	< 1,0
TPH-CWG - Aliphatic >C6 - C8 HS_1D_AL	µg/l	1	ISO 17025	< 1,0	< 1,0
TPH-CWG - Aliphatic >C8 - C10 HS_1D_AL	µg/l	1	ISO 17025	< 1,0	< 1,0
TPH-CWG - Aliphatic >C10 - C12 EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) HS+EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10

TPH-CWG - Aromatic >C5 - C7 HS_1D_AR	µg/l	1	ISO 17025	< 1,0	< 1,0
TPH-CWG - Aromatic >C7 - C8 HS_1D_AR	µg/l	1	ISO 17025	< 1,0	< 1,0
TPH-CWG - Aromatic >C8 - C10 HS_1D_AR	µg/l	1	ISO 17025	< 1,0	< 1,0
TPH-CWG - Aromatic >C10 - C12 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) HS+EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number : 21-25511

Project / Site name: Loom Streer, Manchester

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2096781	WS101	None Supplied	0.1	Brown clay and loam with gravel.
2096782	WS101	None Supplied	3	Brown clay.
2096783	WS102	None Supplied	0.3	Brown clay and loam.
2096784	WS103	None Supplied	0.2	Brown clay and loam with gravel.
2096785	WS103	None Supplied	4	Brown clay with gravel.
2096786	WS104	None Supplied	0.3	Brown clay with gravel.
2096787	WS105	None Supplied	0.4	Brown clay with gravel.
2096788	WS105	None Supplied	3.5	Brown clay.

Analytical Report Number : 21-25511
Project / Site name: Loom Streer, Manchester

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
BS EN 12457-1 (2:1) Leachate Prep	2:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-1.	L043-PL	W	NONE
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in leachate - LOW LEVEL 1 ug/l	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L102B-PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
pH at 20oC in leachate (automated)	Determination of pH in leachate by electrometric measurement.	In house method.	L099B	W	ISO 17025
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE

Analytical Report Number : 21-25511
Project / Site name: Loom Streer, Manchester

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
TPH1 (Leachates)	Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	NONE
TPHCWG (Leachates)	Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX and MTBE in leachates (Monoaromatics)	Determination of BTEX and MTBE in leachates by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
Total cyanide in leachate - 1µg/l	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.



Analytical Report Number : 21-25511
Project / Site name: Loom Streer, Manchester

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
-	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

APPENDIX VII

ORIGIN OF TIER I GENERIC ASSESSMENT CRITERIA

CONSTITUENT	ORIGIN OF RISK ASSESSMENT VALUE
Arsenic	2014 LQM/CIEH S4ULs
Cadmium	2014 LQM/CIEH S4ULs
Chromium	2014 LQM/CIEH S4ULs
Lead	2014 LQM/CIEH S4ULs
Mercury	2014 LQM/CIEH S4ULs – methylmercury
Nickel	2014 LQM/CIEH S4ULs
Selenium	2014 LQM/CIEH S4ULs
Copper	2014 LQM/CIEH S4ULs
Zinc	2014 LQM/CIEH S4ULs
Cyanide – Total	2014 LQM/CIEH S4ULs
Phenols – Total	2014 LQM/CIEH S4ULs
Naphthalene	General assessment criteria (GAC) developed by CIEH/LQM Suitable 4 Use Levels with supporting data from SR3, SR7 and existing Tox report where applicable. 1% SOM.
Acenaphthylene	
Acenaphthene	
Fluorene	
Phenanthrene	
Anthracene	
Fluoranthene	
Pyrene	
Benzo(a)Anthracene	
Chrysene	
Benzo(b/k)Fluoranthene ⁽ⁱⁱⁱ⁾	
Benzo(a)Pyrene	
Indeno(123-cd)Pyrene	
Dibenzo(a,h)Anthracene	
Benzo(ghi)Perylene	
TPH C₅-C₆ (aliphatic)	
TPH C₆-C₈ (aliphatic)	
TPH C₈-C₁₀ (aliphatic)	
TPH C₁₀-C₁₂ (aliphatic)	
TPH C₁₂-C₁₆ (aromatic)	
TPH C₁₆-C₂₁ (aromatic)	
TPH C₂₁-C₃₅ (aromatic)	



APPENDIX VIII GEOTECHNICAL LABORATORY ANALYSIS REPORT



LABORATORY REPORT



4043

Contract Number: PSL22/0333

Report Date: 31 January 2022

Client's Reference: 15-018

Client Name: E3P
Taylor Road
Urmston
Manchester
M41 7JQ

For the attention of: Roy Walker

Contract Title: Loom Street, Manchester

Date Received: 14/1/2022

Date Commenced: 14/1/2022

Date Completed: 31/1/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. 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 other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins
(Director)

R Berriman
(Quality Manager)

S Royle
(Laboratory Manager)

L Knight
(Senior Technician)

S Eyre
(Senior Technician)


T Watkins
(Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
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e-mail: awatkins@prosoils.co.uk
rberriman@prosoils.co.uk

Page 1 of

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

[illegible]

 UKAS TESTING 4043	 PSL Professional Soils Laboratory	Loom Street, Manchester	Contract No:
		PSL22/0333	Contract No:
		Client Ref:	Contract No:
		15-018	Contract No:

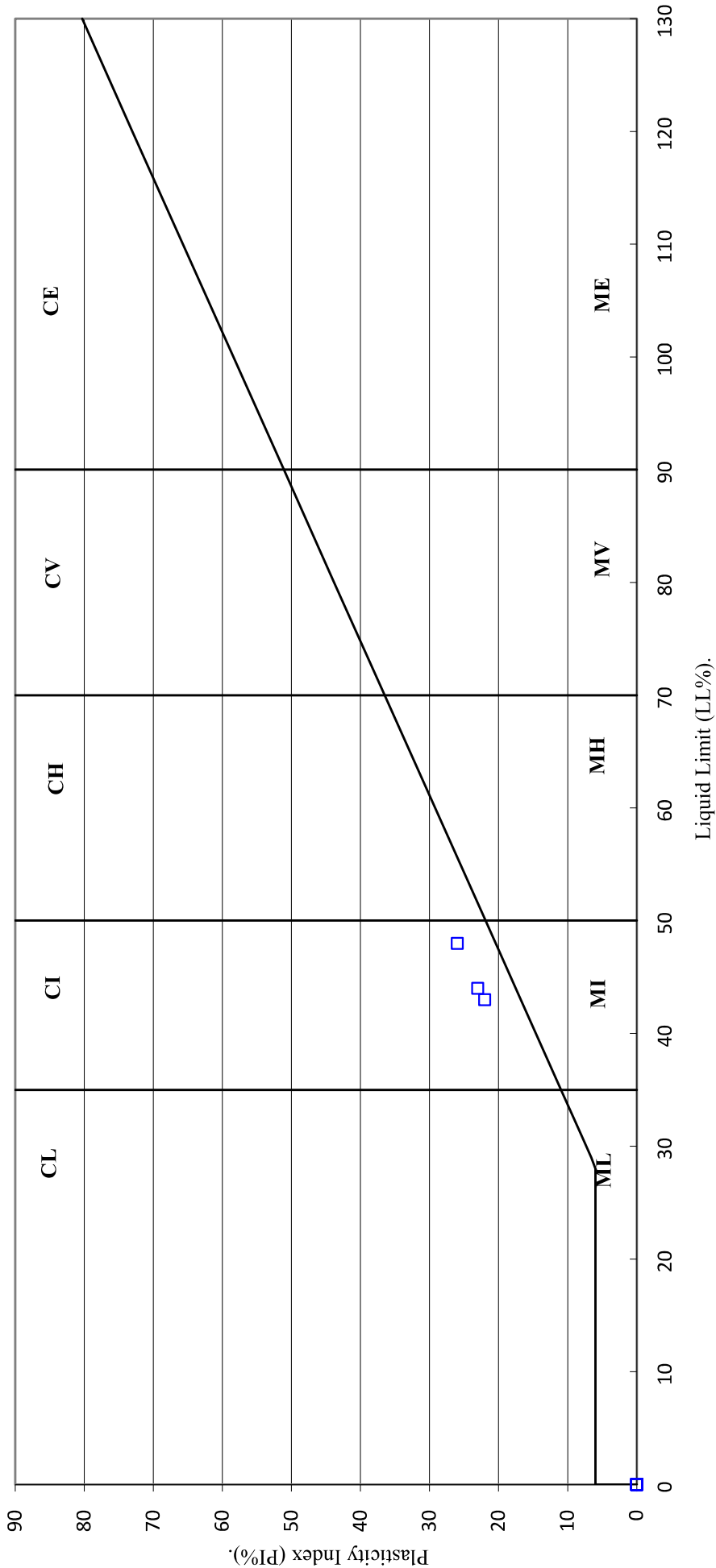
(BS1377 : PART 2 : 1990)

SYMBOLS: NP : Non Plastic

*** : Liquid Limit and Plastic Limit Wet Sieved.**

 PSL Professional Soils Laboratory	Contract No:
	PSL22/0333
	Client Ref:
	15-018

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



4043

PSL

Professional Soils Laboratory

Loom Street, Manchester

Contract No:

PSL22/0333

Client Ref:

15-018

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

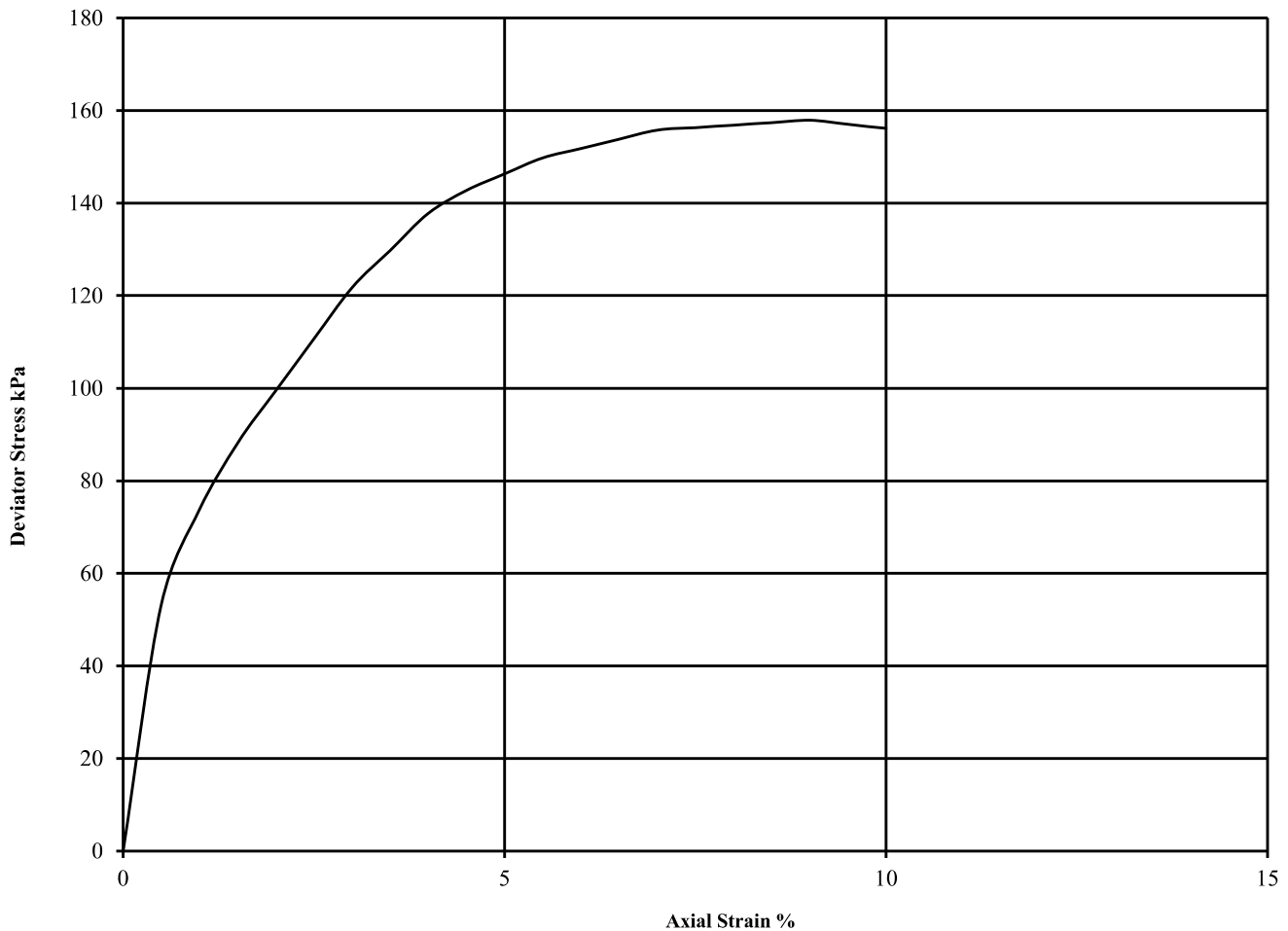
Hole Number: WS101

Top Depth (m): 1.50

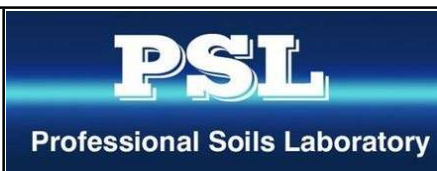
Sample Number:

Base Depth (m): 2.00

Sample Type U



Diameter (mm):		60	Height (mm):		120	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.58 See summary of soil descriptions
				θ_3	$(\theta_1 - \theta_3)_f$	$\frac{1}{2}(\theta_1 - \theta_3)_f$			
1	18	1.95	1.65	35	158	79	9.0	Brittle	



Loom Street, Manchester

Contract No:

PSL22/0333

Client Ref:

15-018

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

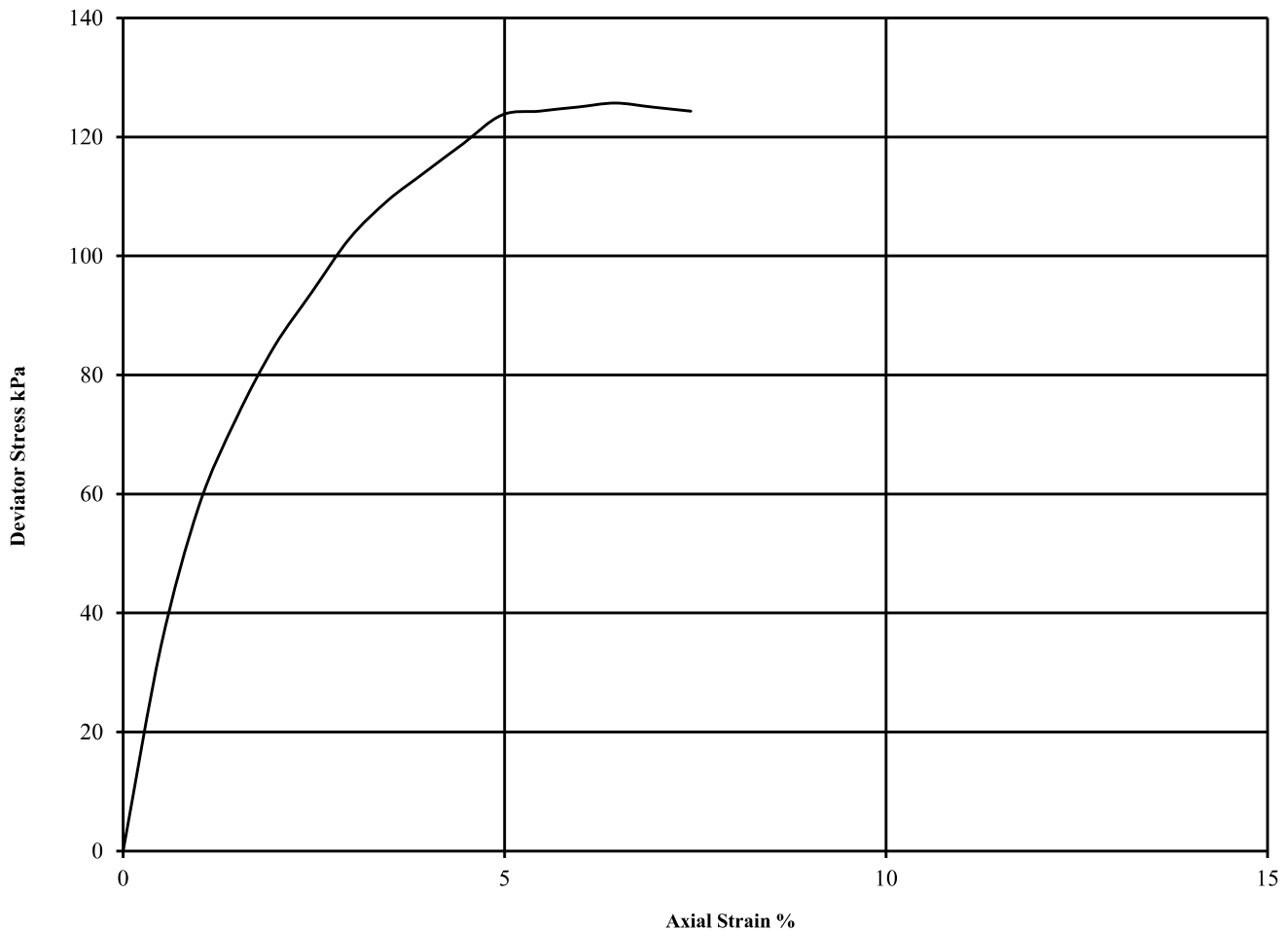
Hole Number: WS102

Top Depth (m): 1.50

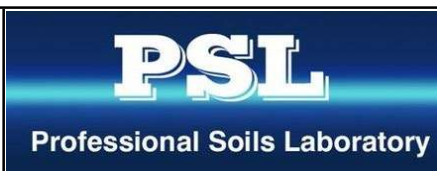
Sample Number:

Base Depth (m): 2.00

Sample Type U



Diameter (mm):		62	Height (mm):		125	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.58 See summary of soil descriptions
				θ_3	$(\theta_1 - \theta_3)_f$	$\frac{1}{2}(\theta_1 - \theta_3)_f$			
1	23	1.96	1.59	35	126	63	6.4	Brittle	



Loom Street, Manchester

Contract No:

PSL22/0333

Client Ref:

15-018

