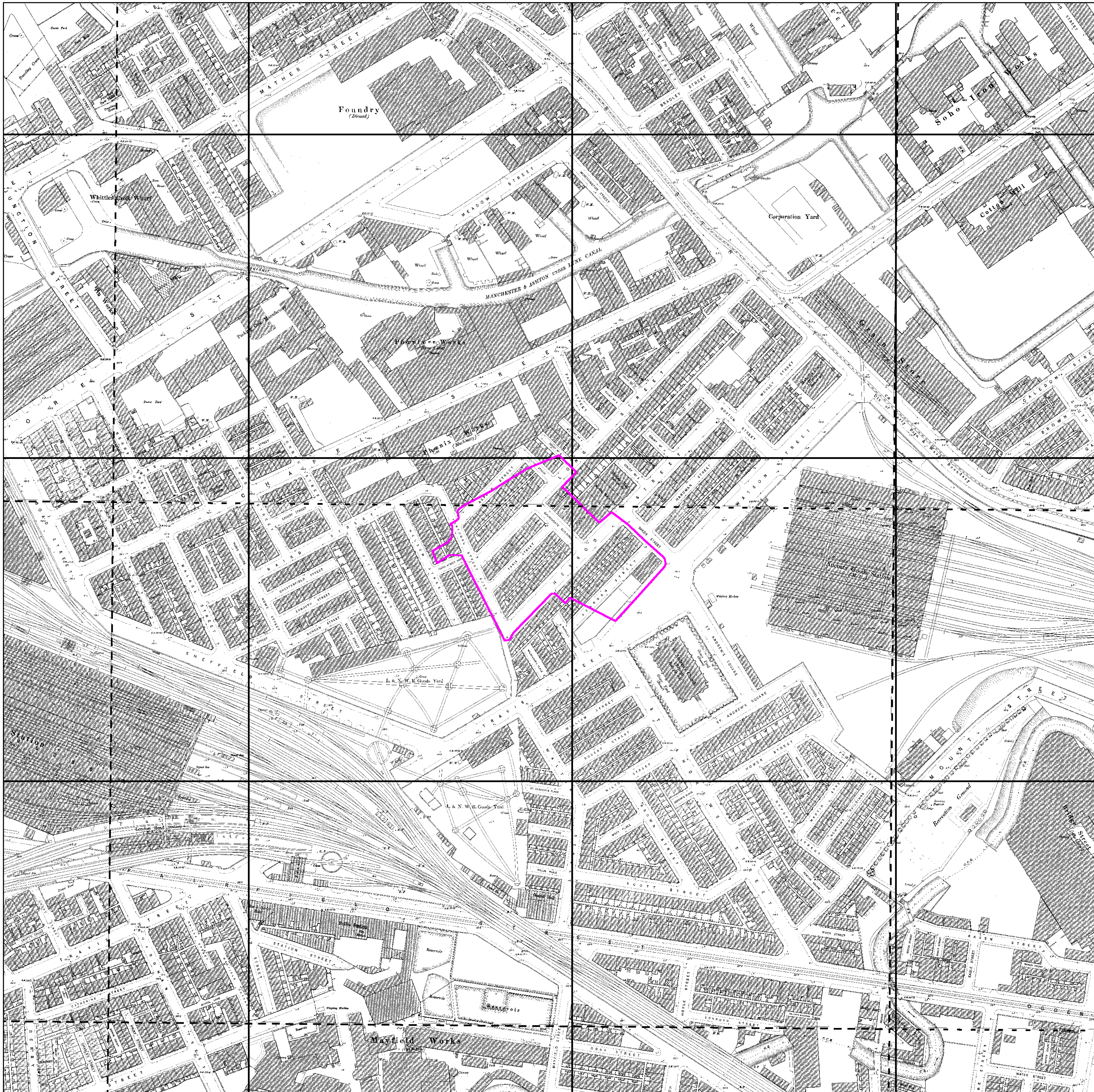


Appendix D – Historical Plans



Lancashire And Furness

Published 1891

Source map scale - 1:500

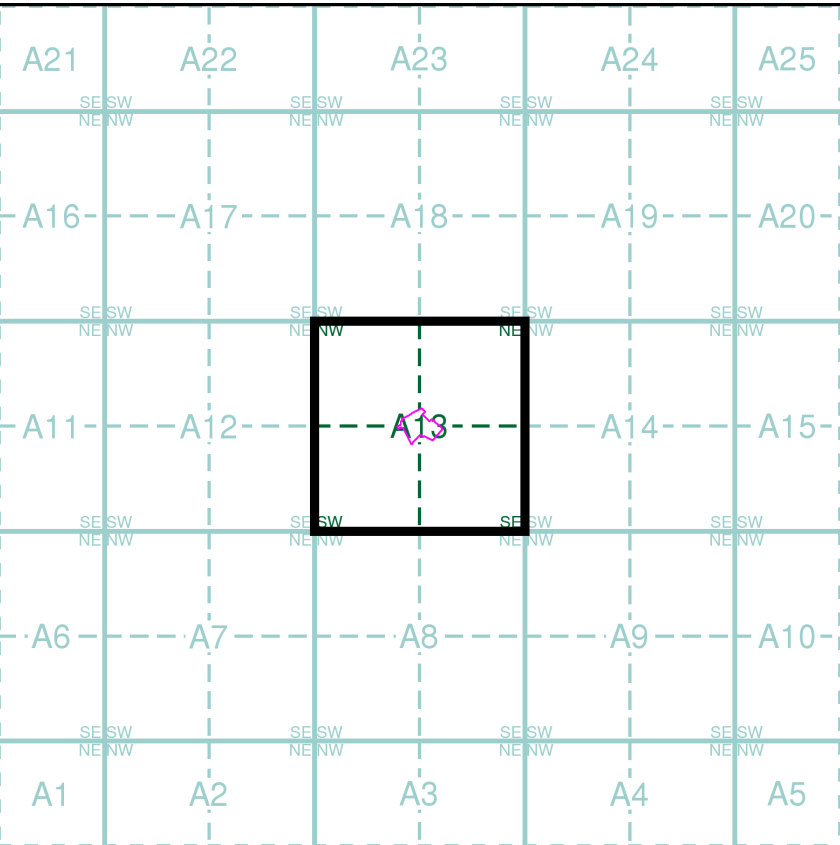
The 1:500 scale Ordnance Survey mapping was introduced in 1855 as a replacement for the 1:528 scale and to complement the 1:2500 scale that had been implemented in 1853. By 1895, the 1:500 scale covered most towns over a population of about 4000 at the time of survey, although very few towns were mapped more than once at this scale, and none have been since 1910. The 1:500 scale gives particular emphasis to such features as lamp posts, man holes, arched passages and minor building projections. Also often featured are divisions between tenements, interior ground floor layouts of public buildings, and on earlier plans, the functions of the various parts of larger industrial premises are also indicated. Content of the plans does vary however, from one town to the next in terms of, for example, the completeness of railway tracks and the coverage of public buildings.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

Map Name(s) and Date(s)

104_11_001	104_11_002	104_11_003
1891	1891	1891
1:500	1:500	1:500
104_11_006	104_11_007	104_11_008
1891	1891	1891
1:500	1:500	1:500
104_11_011	104_11_012	104_11_013
1891	1891	1891
1:500	1:500	1:500

Historical Town Plan - Segment A13



Order Details

Order Number: 168765715_1_1
Customer Ref: 3633 Rev.2
National Grid Reference: 385190, 397940
Slice: A
Site Area (Ha): 0.84
Search Buffer (m): 0

Site Details

1, Portugal Street East, MANCHESTER, M1 2WX



Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Ordnance Survey Plan

Published 1952 - 1963

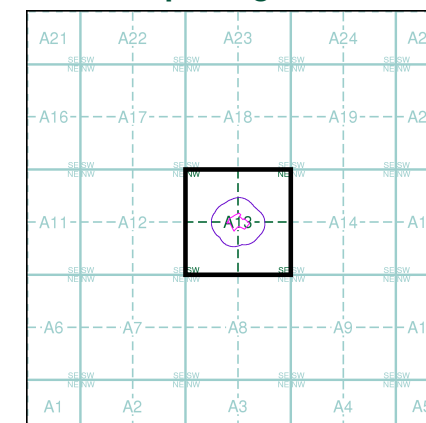
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

SJ8498SE 1954 1:1,250	SJ8598SW 1955 1:1,250	SJ8598SE 1952 1:1,250
SJ8497NE 1954 1:1,250	SJ8597NW 1963 1:1,250	SJ8597NE 1954 1:1,250

Historical Map - Segment A13



Order Details

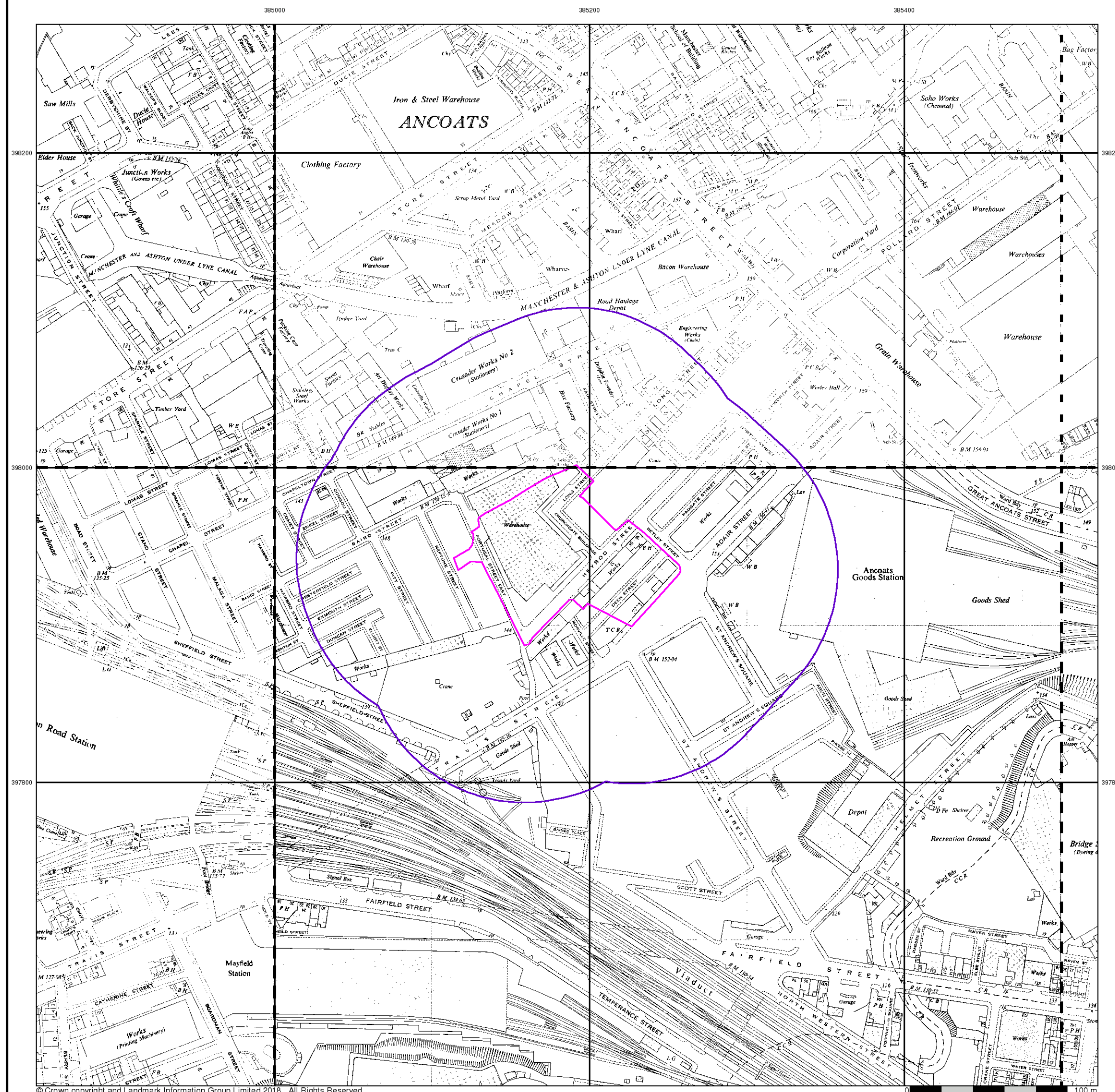
Order Number: 168765715_1_1
Customer Ref: 3633 Rev.2
National Grid Reference: 385190, 397940
Slice: A
Site Area (Ha): 0.84
Search Buffer (m): 100

Site Details

1, Portugal Street East, MANCHESTER, M1 2WX

Landmark
INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk





Large-Scale National Grid Data

Published 1992

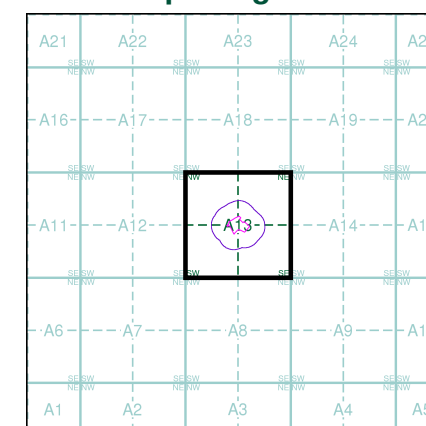
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

SJ8498SE	SJ8598SW	SJ8598SE
1992	1992	1992
1:1,250	1:1,250	1:1,250
SJ8497NE	SJ8597NW	SJ8597NE
1992	1992	1992
1:1,250	1:1,250	1:1,250

Historical Map - Segment A13



Order Details

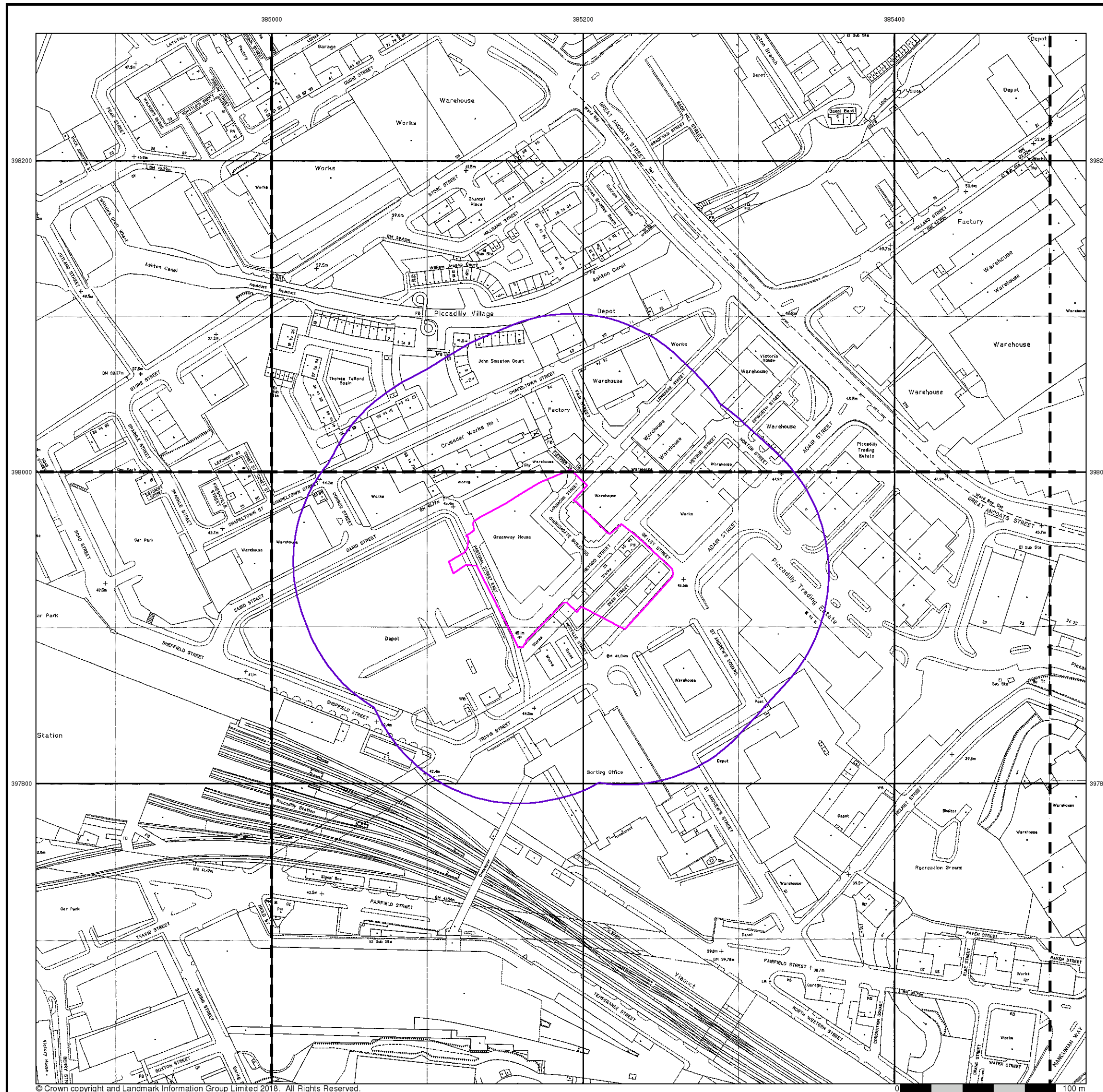
Order Number: 168765715_1_1
Customer Ref: 3633 Rev.2
National Grid Reference: 385190, 397940
Slice: A
Site Area (Ha): 0.84
Search Buffer (m): 100

Site Details

1, Portugal Street East, MANCHESTER, M1 2WX

Landmark
INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Appendix E – Window Sample Logs



Percussion Drilling Log

Project Name: Portugal Street East			Client: Olympian Homes			Date: 01/09/2021			
Location: Manchester			Contractor:						
Project No. : 1007			Crew Name:			Drilling Equipment: Window sample hole advanced by percussive methods using 120mm and 90mm sampling rods.			
Borehole Number WS01		Hole Type WS		Level		Logged By SC		Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
					0.15			MADE GROUND: Concrete (CONCRETE)			
		0.40	J,K&T					MADE GROUND: Loose orangish brown gravelly SAND with occasional pockets of clay. Sand is medium to coarse, gravel medium to coarse angular of brick cement and sandstone. (SUB-BASE)			
		0.70	J,K&T		0.75			End of Borehole at 0.750m			
									1		
									2		
									3		
									4		
									5		
									6		
									7		
Hole Diameter		Casing Diameter		Chiselling		Inclination and Orientation					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.





Percussion Drilling Log

Project Name: Portugal Street East			Client: Olympian Homes			Date: 01/09/2021					
Location: Manchester			Contractor:								
Project No. : 1007			Crew Name:			Drilling Equipment: Window sample hole advanced by percussive methods using 120mm and 90mm sampling rods.					
Borehole Number WS02		Hole Type WS		Level		Logged By SC		Scale 1:50		Page Number Sheet 1 of 1	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
					0.15			MADE GROUND: Concrete (CONCRETE)			
		0.40	J,K&T		0.40			MADE GROUND: Dark brown gravelly SAND with black residue coating. (SUB-BASE)			
		0.70	J,K&T		0.75			MADE GROUND: Loose orangish brown gravelly SAND with occasional pockets of clay. Sand medium to coarse, gravel is angular medium to coarse of brick cement and sandstone. (SUB-BASE)			
								End of Borehole at 0.750m			
										1	
										2	
										3	
										4	
										5	
										6	
										7	
Hole Diameter		Casing Diameter		Chiselling		Inclination and Orientation					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks											
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.											





Percussion Drilling Log

Project Name: Portugal Street East			Client: Olympian Homes			Date: 01/09/2021					
Location: Manchester			Contractor:								
Project No. : 1007			Crew Name:			Drilling Equipment: Window sample hole advanced by percussive methods using 120mm and 90mm sampling rods.					
Borehole Number WS03		Hole Type WS		Level		Logged By SC		Scale 1:50		Page Number Sheet 1 of 1	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		0.30	J,K&T		0.12			MADE GROUND: Concrete (CONCRETE)			
		0.60	J,K&T					MADE GROUND: Loose orangish brown gravelly SAND. Sand medium to coarse, gravel is angular medium to coarse of brick cement and clinker. (SUB-BASE)			
					0.85			End of Borehole at 0.850m		1	
										2	
										3	
										4	
										5	
										6	
										7	
Hole Diameter		Casing Diameter		Chiselling		Inclination and Orientation					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks											
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.											



Percussion Drilling Log

Project Name: Portugal Street East			Client: Olympian Homes			Date: 31/08/2021					
Location: Manchester			Contractor:								
Project No. : 1007			Crew Name:			Drilling Equipment: Window sample hole advanced by percussive methods using 120mm and 90mm sampling rods.					
Borehole Number WS04		Hole Type WS		Level		Logged By SC		Scale 1:50		Page Number Sheet 1 of 1	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
					0.20			MADE GROUND: Concrete (CONCRETE)			
		0.50 - 0.60	J,K&T					MADE GROUND: Loose orangish brown gravelly SAND with frequent cobbles and pockets of clay (<0.1m x 0.1m x 0.15m). Sand medium to coarse, gravel and cobble medium to coarse angularof brick cement and broken garden tiles. (SUB-BASE)			
		0.90 - 1.00	J,K&T		0.80			MADE GROUND: Soft dark brown slightly sandy slightly gravelly CLAY with occasional cobbles. Sand is medium to coarse, gravel medium to coarse of brick, cement and sandstone. Cobbles <0.25m x 0.15m x0.07m of sandstone. (COHESIVE MADE GROUND)		1	
					1.20			End of Borehole at 1.200m			
											2
											3
											4
											5
											6
											7
Hole Diameter		Casing Diameter		Chiselling		Inclination and Orientation					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks											
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.											



Percussion Drilling Log

Project Name: Portugal Street East			Client: Olympian Homes			Date: 01/09/2021			
Location: Manchester			Contractor:						
Project No. : 1007			Crew Name:			Drilling Equipment: Window sample hole advanced by percussive methods using 120mm and 90mm sampling rods.			
Borehole Number WS05		Hole Type WS		Level		Logged By SC		Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.15			MADE GROUND: Concrete (CONCRETE)	
		0.30	J,K&T					MADE GROUND: Loose grey sandy gravel with black coating. (SUB-BASE)	
		0.50	J,K&T		0.40			MADE GROUND: Loose orangish brown gravelly SAND. Sand medium to coarse, gravel medium to coarse, angular, of brick, cement and clinker. (SUB-BASE)	
		0.80	J,K&T		0.80			End of Borehole at 0.800m	
									1
									2
									3
									4
									5
									6
									7

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.										
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Percussion Drilling Log

Project Name: Portugal Street East				Client: Olympian Homes				Date: 02/09/2021			
Location: Manchester				Contractor:							
Project No. : 1007				Crew Name:				Drilling Equipment: Window sample hole advanced by percussive methods using 120mm and 90mm sampling rods.			
Borehole Number WS07		Hole Type WS		Level		Logged By SC		Scale 1:50		Page Number Sheet 1 of 1	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		0.30	J,K&T		0.25			MADE GROUND: Concrete. 5mm reinforcement at base on 0.3m x 0.3m grid. (CONCRETE)		1	
		0.70	J,K&T		0.60			MADE GROUND: Loose GRAVEL with thick coating of silty clay and abundant brick cobbles. Gravel medium to coarse of brick, cement, mortar. (SUB-BASE)			
					0.80			MADE GROUND: Soft dark brownish-black gravelly CLAY. Gravel is medium to coarse of brick, cement, mortar. (COHESIVE MADE GROUND)			
								Stiff to very stiff dark grey CLAY. (COHESIVE GLACIAL DEPOSITS)			
		1.60 - 1.70	D					End of Borehole at 2.700m		2	
		2.60 - 2.70	D		2.70					3	
										4	
										5	
										6	
										7	
Hole Diameter		Casing Diameter		Chiselling		Inclination and Orientation					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks											
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.											



Percussion Drilling Log

Project Name: Portugal Street East			Client: Olympian Homes			Date: 02/09/2021			
Location: Manchester			Contractor:						
Project No. : 1007			Crew Name:			Drilling Equipment: Window sample hole advanced by percussive methods using 120mm and 90mm sampling rods.			
Borehole Number WS08		Hole Type WS		Level		Logged By SC		Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	J,K&T		0.20			MADE GROUND: Concrete. 5mm reinforcement at base on 0.3m x 0.3m grid. (CONCRETE)	
		0.30	J,K&T		0.25			MADE GROUND: Loose orange slightly silty SAND. Sand is fine to medium. (SUB-BASE)	
		0.60	J,K&T		0.50			MADE GROUND: Loose GRAVEL with abundant brick cobbles. Gravel is medium to coarse, angular of brick, cement and mortar. (SUB-BASE)	
		1.00 - 1.10	D		0.70			MADE GROUND: Loose dark blackish brown gravelly SAND. Gravel is subrounded to angular of brick, flint, mortar and cement. (SUB-BASE)	1
								Stiff to very stiff dark grey CLAY. (COHESIVE GLACIAL DEPOSITS)	
		2.00 - 2.10	D		2.10				2
								End of Borehole at 2.100m	
									3
									4
									5
									6
									7

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.										
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Percussion Drilling Log

Project Name: Portugal Street East		Client: Olympian Homes		Date: 01/09/2021	
Location: Manchester		Contractor:			
Project No. : 1007		Crew Name:		Drilling Equipment: Window sample hole advanced by percussive methods using 120mm and 90mm sampling rods.	
Borehole Number WS09	Hole Type WS	Level	Logged By SC	Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.05			0.05			MADE GROUND: Concrete. (CONCRETE)	
		0.20			0.20			MADE GROUND: Two courses of brick and mortar. (BRICK SUB-BASE)	
		0.27			0.27			MADE GROUND: Road cobbles (in-situ former road). (COBBLE ROAD)	
		0.45			0.45			MADE GROUND: Loose dark brown gravelly SAND. Sand coarse, gravel medium to coarse of brick, cement, flint and clinker. (SUB-BASE)	
		0.60	J,K&T		0.70			MADE GROUND: Soft dark brown slightly sandy gravelly CLAY. Gravel is medium to coarse of brick, cement, flint and clinker. (COHESIVE MADE GROUND)	1
		1.60 - 1.70	D					Stiff to very stiff dark grey CLAY. (COHESIVE GLACIAL DEPOSITS)	2
		2.60 - 2.70	D		2.70			End of Borehole at 2.700m	3
									4
									5
									6
									7

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.										
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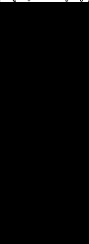
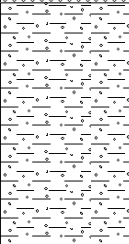
Percussion Drilling Log

Project Name: Portugal Street East			Client: Olympian Homes			Date: 01/09/2021					
Location: Manchester			Contractor:								
Project No. : 1007			Crew Name:			Drilling Equipment: Window sample hole advanced by percussive methods using 120mm and 90mm sampling rods.					
Borehole Number WS11		Hole Type WS		Level		Logged By SC		Scale 1:50		Page Number Sheet 1 of 1	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
					0.05			MADE GROUND: Concrete. (CONCRETE)			
		0.30	J,K&T		0.20			MADE GROUND: Two courses of brick and mortar. (BRICK SUB-BASE)			
		0.30			0.30			MADE GROUND: Road cobbles (in-situ former road). (COBBLE ROAD)			
		0.60	J,K&T		0.45			MADE GROUND: Loose dark brown gravelly SAND. Sand coarse, gravel medium to coarse of brick, cement, flint and clinker. (SUB-BASE)			
					0.80			MADE GROUND: Soft dark brown slightly sandy gravelly CLAY. Gravel is medium to coarse of brick, cement, flint and clinker. (COHESIVE MADE GROUND)		1	
		1.50 - 1.60	D					Stiff to very stiff dark grey CLAY. (COHESIVE GLACIAL DEPOSITS)			
		2.50 - 2.60	D		2.60			End of Borehole at 2.600m		2	
										3	
										4	
										5	
										6	
										7	
Hole Diameter		Casing Diameter		Chiselling		Inclination and Orientation					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks											
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.											



Percussion Drilling Log

Project Name: Portugal Street East			Client: Olympian Homes			Date: 01/09/2021			
Location: Manchester			Contractor:						
Project No. : 1007			Crew Name:			Drilling Equipment: Window sample hole advanced by percussive methods using 120mm and 90mm sampling rods.			
Borehole Number WS12		Hole Type WS		Level		Logged By SC		Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.15	J,K&T		0.05			MADE GROUND: Hardcore surfacing. (HARDCORE SURFACING)	1
		0.30	T				MADE GROUND: Loose dark gravel of tarmac fragments. (HARDCORE SURFACING)		
							MADE GROUND: Road cobbles (in-situ former road). (COBBLE ROAD)		
		0.70	J,K&T				MADE GROUND: Soft dark blackish brown slightly sandy gravelly CLAY. (COHESIVE MADE GROUND)		
		1.20	D				MADE GROUND: Soft becoming firm weathered orangish brown mottled dark brown slightly sandy gravelly CLAY. Gravel is fine to coarse of brick, cement and aggregate. (COHESIVE MADE GROUND)		
					1.20			Stiff to very stiff dark grey slightly gravelly CLAY. Gravel is angular of mixed lithologies including flint and sandstone. (COHESIVE GLACIAL DEPOSITS)	2
		2.70	D		2.80				
								End of Borehole at 2.800m	3
									4
									5
									6
									7

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.										
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Appendix F – Trial Pit Logs & Ground Summary Table

Trial Pit Log

Project Name: Portugal Street East		Client: Olympian Homes		Date: 06/09/2021	
Location: Manchester		Contractor:			
Project No. : 1007		Crew Name:		Equipment: JCB 3CX with 0.6m wide flat bucket.	
Location Number SP01	Location Type TP	Level	Logged By MJT	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 0.05	J,K&T		0.05			MADE GROUND: Orangish-brown (iron-stained) very sandy angular fine to coarse GRAVEL. Gravel is predominantly metal fragments with occasional glass. Metal fragments include sheet metal, metal pole, hydraulic arm, tools. (SCRAP METAL DEPOSITS) End of Borehole at 0.050m	1
									2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
0.50	0.60	1. The sides of the trial pit remained stable during excavation.					

Remarks
 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Excavated to enable additional sampling of scrap deposits in vicinity of TP05. 4. Backfilled with materials arising upon completion.



Trial Pit Log

Project Name: Portugal Street East		Client: Olympian Homes		Date: 06/09/2021	
Location: Manchester		Contractor:			
Project No. : 1007		Crew Name:		Equipment: JCB 3CX with 0.6m wide flat bucket.	
Location Number SP02	Location Type TP	Level	Logged By MJT	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 0.05	J,K&T		0.05			MADE GROUND: Orangish-brown (iron-stained) very sandy angular fine to coarse GRAVEL. Gravel is predominantly metal fragments with occasional glass. Metal fragments include sheet metal, keys, screws, metal fixings. (SCRAP METAL DEPOSITS) End of Borehole at 0.050m	1
									2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
0.50	0.60	1. The sides of the trial pit remained stable during excavation.					

Remarks

1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Excavated to enable additional sampling of scrap deposits in vicinity of TP05. 4. Backfilled with materials arising upon completion.





APEX
CONSULTING
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Trial Pit Log

Project Name: Portugal Street East		Client: Olympian Homes		Date: 06/09/2021	
Location: Manchester		Contractor:			
Project No. : 1007		Crew Name:		Equipment: JCB 3CX with 0.6m wide flat bucket.	
Location Number TP02	Location Type TP	Level	Logged By MJT	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.05	J,K&T		0.03			MADE GROUND: Red macadam surfacing. 85% angular fine gravel aggregate, 10% voids, 5% matrix. (MACADAM SURFACING)	
		0.20	J,K&T		0.10			MADE GROUND: Black macadam surfacing. 80% angular fine to coarse gravel aggregate, 10% voids, 10% matrix. Matrix looked tarry in places, slight tar odour. (MACADAM SURFACING)	
		0.50	J,K&T		0.35			MADE GROUND: Light grey very (coarse) sandy subangular coarse GRAVEL of ?limestone. (SUB-BASE)	
		1.10	D	HVP=110	0.60			MADE GROUND: Black clayey very sandy subangular to angular fine to coarse GRAVEL. Gravel is predominantly clinker with some limestone, brick fragments, pottery, glass and rare metal nails. Occasional cobble of brick. (GRANULAR MADE GROUND)	1
		1.10						<i>At 0.5m in north-west face, bundle of ropes, netting and plastic packaging straps.</i>	
								Stiff fissured reddish-brown and grey silty CLAY. (COHESIVE GLACIAL DEPOSITS)	
		2.20		HVP=130	2.30			End of Borehole at 2.300m	2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
2.00	0.60	1. The sides of the trial pit remained stable during excavation.					

Remarks
 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion.

Trial Pit Log

Project Name: Portugal Street East		Client: Olympian Homes		Date: 06/09/2021	
Location: Manchester		Contractor:			
Project No. : 1007		Crew Name:		Equipment: JCB 3CX with 0.6m wide flat bucket.	
Location Number TP03	Location Type TP	Level	Logged By MJT	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	J,K&T					MADE GROUND: Turf over dark greyish-black loamy very gravelly SAND with rootlets. Gravel is subangular to angular fine to coarse of mixed lithologies including mudstone, sandstone, brick, coal and occasional glass. Occasional cobble of brick. Plastic guttering, orange polythene sheeting and shoe sole also noted. (MADE GROUND TOPSOIL) MADE GROUND: Firm friable yellow and grey slightly gravelly sandy CLAY. Gravel is angular to rounded fine to coarse including glacial gravel, coal, brick fragments and clinker. (REWORKED NATURAL SOILS) Stiff fissured reddish-brown and grey silty CLAY. (COHESIVE GLACIAL DEPOSITS)	1
		0.50	J,K&T		0.40				
					0.80				
					1.20				
								End of Borehole at 1.200m	
									2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
1.50	0.60	1. The sides of the trial pit remained stable during excavation.					

Remarks

1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion.

Trial Pit Log

Project Name: Portugal Street East		Client: Olympian Homes		Date: 06/09/2021	
Location: Manchester		Contractor:			
Project No. : 1007		Crew Name:		Equipment: JCB 3CX with 0.6m wide flat bucket.	
Location Number TP04	Location Type TP	Level	Logged By MJT	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	J,K&T		0.20			MADE GROUND: Multicoloured very sandy angular to subangular fine to coarse GRAVEL with some rootlets. Gravel is predominantly limestone and macadam fragments with some brick. Occasional gravel sized fragments of glass, metal and timber. (HARDCORE SURFACING) <i>From 0m to 0.03m in west face, broken up former macadam surfacing.</i> <i>From 0m to 0.05m in north face, boulder of concrete (former surfacing slab).</i> MADE GROUND: Stiff fissured slightly gravelly reddish-brown and grey CLAY. Gravel is rounded to angular fine to coarse including glacial gravel and coal. Occasional cobble of brick. (REWORKED NATURAL SOILS) Stiff fissured reddish-brown and grey silty CLAY. (COHESIVE GLACIAL DEPOSITS) <i>From 0.2m to 0.8m in north face, cobbles of brick.</i> End of Borehole at 1.300m	1
		0.50	J,K&T		0.80				
					1.30				

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
1.50	0.60	1. The sides of the trial pit remained stable during excavation.					

Remarks
 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion.

Trial Pit Log

Project Name: Portugal Street East		Client: Olympian Homes		Date: 06/09/2021	
Location: Manchester		Contractor:			
Project No. : 1007		Crew Name:		Equipment: JCB 3CX with 0.6m wide flat bucket.	
Location Number TP05	Location Type TP	Level	Logged By MJT	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	J,K&T		0.05			MADE GROUND: Cobble and boulder of concrete (broken up former hardstanding). (FORMER CONCRETE SURFACING)	
		0.40	J,K&T		0.15			MADE GROUND: Orangish-brown (iron-stained) very sandy angular fine to coarse GRAVEL. Gravel is predominantly metal fragments and mudstone. Metal fragments include sheet metal, metal pole, washers, spark plugs, metal fixings. (SCRAP METAL DEPOSITS)	
		1.00	J,K&T		0.60			From 0.05 to 0.15, orange colour indicative of rusting. MADE GROUND: Black coarse SAND AND angular to subangular fine to coarse GRAVEL. Gravel includes clinker, sandstone, mudstone, metal fragments, glass, brick, concrete. (GRANULAR MADE GROUND)	1
								MADE GROUND: Soft dark brown and black slightly sandy slightly gravelly CLAY. Gravel is angular to subangular fine to coarse including limestone, brick, clayware and mudstone. (COHESIVE MADE GROUND)	
								In north face, natural ground from 1.3m.	
					1.90			Stiff fissured reddish-brown and grey silty CLAY. (COHESIVE GLACIAL DEPOSITS)	2
					2.10			End of Borehole at 2.100m	
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
1.50	0.60	1. The sides of the trial pit remained stable during excavation.					

Remarks
 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion.

Site Area	Explorator y Hole	Final Depth (m)	Depth to base of (m)														Depth to Sandstone Bedrock (m)	Water strikes	Remarks
			Made Ground											Made Ground (all)	Drift	Drift			
			Topsoil	Hardcore	Macadam	Concrete	Cobble Road	Sub-base	Scrap Metal	Granular M.G.	Cohesive M.G.	Relict Topsoil	Re-worked Natural		Granular Glacial	Cohesive Glacial			
APEX - 2021																			
External car park (TfGM building)	TP01	1.70			0.08			0.35			0.80			0.80		> 1.70		-	
	TP02	2.30			0.10			0.60		0.60				0.60		> 2.30		-	
	BH01	30.00			0.08			0.50						0.50		8.20	8.20		
Rough grassland (scrapyard)	TP03	1.20	0.40										0.80	0.80		> 1.20		-	
	TP04	1.30		0.20									0.80	0.80		> 1.30		-	
Scrapyard	TP05	2.10				0.05			0.15	0.60	1.90			1.90		> 2.10		-	Concrete is broken up.
Rammon House (internal)	WS01	0.75				0.15		0.75						> 0.75				-	Obstruction at 0.75m.
	WS02	0.75				0.15		0.75						> 0.75				-	Obstruction at 0.75m.
	WS03	0.85				0.12		0.85						> 0.85				-	Obstruction at 0.85m.
	WS04	1.20				0.20		0.80			1.20			> 0.80				-	Obstruction at 1.20m.
	WS05	0.80				0.15		0.80						> 0.80				-	Obstruction at 0.80m.
TfGM building (internal)	WS07	2.70				0.25		0.60			0.80			0.80		> 2.70		-	
	WS08	2.10				0.20		0.70						0.70		> 2.10		-	
Printing shop (internal)	WS09	2.70				0.05	0.27	0.45			0.70			0.70		> 2.70		-	
	WS11	2.60				0.05	0.30	0.45			0.80			0.80		> 2.60		-	
Van hire car park	WS12	2.80		0.20			0.37				1.20			1.20		> 2.80		-	
RoC - 2017																			
Rammon House (External)	BH101	23.40			0.10						0.60			0.60		10.80	10.80	-	
	BH102	27.00			0.10						0.65			0.65	5.60	5.10, then 8.70	8.70	-	
	BH103	26.50			0.10			0.20			0.80	1.00		1.00	5.60	4.70, then 8.60	8.60	5.40m, rising to 4.70m	
	BH104	26.00			0.05			0.10			1.10			1.10	8.70	8.10	8.70	9.00m	
	WS101	4.45			0.15					0.25	0.80			0.80		> 4.45		-	
	WS102	4.45			0.05			0.15						0.15		>4.45		-	
	WS103	2.80			0.05			0.15			0.60			0.60		> 2.80		-	

Site Area	Explorator y Hole	Final Depth (m)	Depth to base of (m)													Depth to Sandstone Bedrock (m)	Water strikes	Remarks	
			Made Ground											Made Ground (all)	Drift				Drift
			Topsoil	Hardcore	Macadam	Concrete	Cobble Road	Sub-base	Scrap Metal	Granular M.G.	Cohesive M.G.	Relict Topsoil	Re-worked Natural		Granular Glacial				Cohesive Glacial
	WS104	3.45			0.05			0.30			1.10			1.10		> 3.45		-	
	FP01	1.20			0.05			0.17		0.25, then 0.7	0.55		> 1.20	> 1.20				-	Excavated against Rammon House

Appendix G – Chemical Laboratory Results



Amended Report

Report No.:	21-31112-8		
Initial Date of Issue:	15-Sep-2021	Date of Re-Issue:	05-Oct-2021
Client	Apex Consulting Engineers Ltd		
Client Address:	Unit 3 Acres Hill Business Park Acres Hill Lane Sheffield Yorkshire SG4 LR		
Contact(s):	Matthew Thompson		
Project	1007 Portugal Street East		
Quotation No.:	Q21-23582	Date Received:	08-Sep-2021
Order No.:		Date Instructed:	08-Sep-2021
No. of Samples:	25		
Turnaround (Wkdays):	21	Results Due:	06-Oct-2021
Date Approved:	05-Oct-2021		
Approved By:			
Details:	Glynn Harvey, Technical Manager		

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:				21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112
Quotation No.: Q21-23582	Chemtest Sample ID.:				1274947	1274948	1274949	1274950	1274953	1274954	1274955	1274957
	Sample Location:				TP01	TP05	WS04	WS07	WS12	TP02	TP05	WS12
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.60	1.00	0.90	0.70	0.70	0.50	0.40	0.15
	Bottom Depth (m):											
	Date Sampled:				07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021
	Asbestos Lab:							COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD								
ACM Type	U	2192		N/A				-	-	-	-	-
Asbestos Identification	U	2192		N/A				No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Asbestos by Gravimetry	U	2192	%	0.001								
Total Asbestos	U	2192	%	0.001								
Moisture	N	2030	%	0.020	22	19	14	25	16	14	10	4.7
pH	U	2010		4.0	8.2	8.7	8.1	8.0	8.4	8.3	8.9	8.7
Magnesium (Water Soluble)	N	2120	g/l	0.010	0.013					< 0.010		
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	1.4					0.14		
Calorific Value	N	2140	MJ/kg	0.10						2.9	2.2	
Chloride (Water Soluble)	U	2220	g/l	0.010	< 0.010					0.012		
Nitrate (Water Soluble)	N	2220	g/l	0.010	< 0.010					< 0.010		
Arsenic	U	2450	mg/kg	1.0	24	9.4	10	11	11	24	45	14
Cadmium	U	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.23	1.7	5.8	1.8
Chromium	U	2450	mg/kg	1.0	29	18	120	16	26	41	64	19
Copper	U	2450	mg/kg	0.50	69	32	48	35	76	190	5100	180
Mercury	U	2450	mg/kg	0.10	0.98	0.22	0.34	0.16	0.35	0.40	7.8	0.77
Nickel	U	2450	mg/kg	0.50	31	31	19	18	23	37	97	35
Lead	U	2450	mg/kg	0.50	180	63	290	57	260	320	1600	250
Selenium	U	2450	mg/kg	0.20	0.52	< 0.20	0.44	0.24	< 0.20	0.47	0.72	< 0.20
Zinc	U	2450	mg/kg	0.50	72	38	44	37	190	340	1800	430
Total Organic Carbon	U	2625	%	0.20	11			5.1	2.4	8.2	27	12
TPH >C6-C10	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C10-C21	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	350	210	280	40
TPH >C21-C40	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	1800	1800	1300	3300
Total TPH >C6-C40	U	2670	mg/kg	10	< 10	< 10	< 10	< 10	2200	2000	1600	3400
Naphthalene	U	2700	mg/kg	0.10		< 0.10		< 0.10	< 0.10		3.6	1.4
Acenaphthylene	U	2700	mg/kg	0.10		< 0.10		< 0.10	< 0.10		2.7	0.49
Acenaphthene	U	2700	mg/kg	0.10		< 0.10		< 0.10	< 0.10		6.1	0.52
Fluorene	U	2700	mg/kg	0.10		< 0.10		< 0.10	< 0.10		6.6	0.43
Phenanthrene	U	2700	mg/kg	0.10		< 0.10		< 0.10	< 0.10		36	2.7
Anthracene	U	2700	mg/kg	0.10		< 0.10		< 0.10	< 0.10		11	0.75
Fluoranthene	U	2700	mg/kg	0.10		< 0.10		< 0.10	3.2		45	4.6
Pyrene	U	2700	mg/kg	0.10		< 0.10		< 0.10	0.63		48	4.8
Benzo[a]anthracene	U	2700	mg/kg	0.10		< 0.10		< 0.10	0.38		22	2.5
Chrysene	U	2700	mg/kg	0.10		< 0.10		< 0.10	0.77		21	2.8
Benzo[b]fluoranthene	U	2700	mg/kg	0.10		< 0.10		< 0.10	< 0.10		31	4.7

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:				21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112
Quotation No.: Q21-23582	Chemtest Sample ID.:				1274947	1274948	1274949	1274950	1274953	1274954	1274955	1274957
	Sample Location:				TP01	TP05	WS04	WS07	WS12	TP02	TP05	WS12
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.60	1.00	0.90	0.70	0.70	0.50	0.40	0.15
	Bottom Depth (m):											
	Date Sampled:				07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021
	Asbestos Lab:							COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD								
Benzo[k]fluoranthene	U	2700	mg/kg	0.10		< 0.10		< 0.10	< 0.10		12	2.1
Benzo[a]pyrene	U	2700	mg/kg	0.10		< 0.10		< 0.10	< 0.10		25	3.0
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10		< 0.10		< 0.10	< 0.10		18	2.2
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10		< 0.10		< 0.10	< 0.10		5.7	2.9
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10		< 0.10		< 0.10	< 0.10		16	3.2
Total Of 16 PAH's	U	2700	mg/kg	2.0		< 2.0		< 2.0	5.0		310	39
Dichlorodifluoromethane	U	2760	µg/kg	1.0								
Chloromethane	U	2760	µg/kg	1.0								
Vinyl Chloride	U	2760	µg/kg	1.0								
Bromomethane	U	2760	µg/kg	20								
Chloroethane	U	2760	µg/kg	2.0								
Trichlorofluoromethane	U	2760	µg/kg	1.0								
1,1-Dichloroethene	U	2760	µg/kg	1.0								
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0								
1,1-Dichloroethane	U	2760	µg/kg	1.0								
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0								
Bromochloromethane	U	2760	µg/kg	5.0								
Trichloromethane	U	2760	µg/kg	1.0								
1,1,1-Trichloroethane	U	2760	µg/kg	1.0								
Tetrachloromethane	U	2760	µg/kg	1.0								
1,1-Dichloropropene	U	2760	µg/kg	1.0								
Benzene	U	2760	µg/kg	1.0								
1,2-Dichloroethane	U	2760	µg/kg	2.0								
Trichloroethene	N	2760	µg/kg	1.0								
1,2-Dichloropropane	U	2760	µg/kg	1.0								
Dibromomethane	U	2760	µg/kg	1.0								
Bromodichloromethane	U	2760	µg/kg	5.0								
cis-1,3-Dichloropropene	N	2760	µg/kg	10								
Toluene	U	2760	µg/kg	1.0								
Trans-1,3-Dichloropropene	N	2760	µg/kg	10								
1,1,2-Trichloroethane	U	2760	µg/kg	10								
Tetrachloroethene	U	2760	µg/kg	1.0								
1,3-Dichloropropane	U	2760	µg/kg	2.0								
Dibromochloromethane	U	2760	µg/kg	10								
1,2-Dibromoethane	U	2760	µg/kg	5.0								
Chlorobenzene	U	2760	µg/kg	1.0								
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0								

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:				21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112
Quotation No.: Q21-23582	Chemtest Sample ID.:				1274947	1274948	1274949	1274950	1274953	1274954	1274955	1274957
	Sample Location:				TP01	TP05	WS04	WS07	WS12	TP02	TP05	WS12
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.60	1.00	0.90	0.70	0.70	0.50	0.40	0.15
	Bottom Depth (m):											
	Date Sampled:				07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021
	Asbestos Lab:							COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD								
Ethylbenzene	U	2760	µg/kg	1.0								
m & p-Xylene	U	2760	µg/kg	1.0								
o-Xylene	U	2760	µg/kg	1.0								
Styrene	U	2760	µg/kg	1.0								
Tribromomethane	U	2760	µg/kg	1.0								
Isopropylbenzene	U	2760	µg/kg	1.0								
Bromobenzene	U	2760	µg/kg	1.0								
1,2,3-Trichloropropane	N	2760	µg/kg	50								
N-Propylbenzene	U	2760	µg/kg	1.0								
2-Chlorotoluene	U	2760	µg/kg	1.0								
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0								
4-Chlorotoluene	U	2760	µg/kg	1.0								
Tert-Butylbenzene	U	2760	µg/kg	1.0								
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0								
Sec-Butylbenzene	U	2760	µg/kg	1.0								
1,3-Dichlorobenzene	U	2760	µg/kg	1.0								
4-Isopropyltoluene	U	2760	µg/kg	1.0								
1,4-Dichlorobenzene	U	2760	µg/kg	1.0								
N-Butylbenzene	U	2760	µg/kg	1.0								
1,2-Dichlorobenzene	U	2760	µg/kg	1.0								
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50								
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0								
Hexachlorobutadiene	U	2760	µg/kg	1.0								
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0								
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0								
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50		< 0.50		< 0.50			
Phenol	U	2790	mg/kg	0.50	< 0.50		< 0.50		< 0.50			
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50		< 0.50		< 0.50			
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50		< 0.50		< 0.50			
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50		< 0.50		< 0.50			
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50		< 0.50		< 0.50			
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50		< 0.50		< 0.50			
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50		< 0.50		< 0.50			
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50		< 0.50		< 0.50			
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50		< 0.50		< 0.50			
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50		< 0.50		< 0.50			
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50		< 0.50		< 0.50			

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:				21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112
Quotation No.: Q21-23582	Chemtest Sample ID.:				1274947	1274948	1274949	1274950	1274953	1274954	1274955	1274957
	Sample Location:				TP01	TP05	WS04	WS07	WS12	TP02	TP05	WS12
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.60	1.00	0.90	0.70	0.70	0.50	0.40	0.15
	Bottom Depth (m):											
	Date Sampled:				07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021
	Asbestos Lab:							COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD								
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
Isophorone	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
Naphthalene	U	2790	mg/kg	0.50	< 0.50		< 0.50			1.2		
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50		< 0.50			0.84		
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
Acenaphthene	U	2790	mg/kg	0.50	< 0.50		< 0.50			3.3		
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50		< 0.50			1.8		
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
Fluorene	U	2790	mg/kg	0.50	< 0.50		< 0.50			2.5		
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
Azobenzene	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
Phenanthrene	U	2790	mg/kg	0.50	< 0.50		< 0.50			8.4		
Anthracene	U	2790	mg/kg	0.50	< 0.50		< 0.50			3.4		
Carbazole	U	2790	mg/kg	0.50	< 0.50		< 0.50			0.78		

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:				21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112
Quotation No.: Q21-23582	Chemtest Sample ID.:				1274947	1274948	1274949	1274950	1274953	1274954	1274955	1274957
	Sample Location:				TP01	TP05	WS04	WS07	WS12	TP02	TP05	WS12
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.60	1.00	0.90	0.70	0.70	0.50	0.40	0.15
	Bottom Depth (m):											
	Date Sampled:				07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021
	Asbestos Lab:							COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD								
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
Fluoranthene	U	2790	mg/kg	0.50	< 0.50		< 0.50			12		
Pyrene	U	2790	mg/kg	0.50	< 0.50		< 0.50			11		
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50		< 0.50			4.8		
Chrysene	U	2790	mg/kg	0.50	< 0.50		< 0.50			500		
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50		< 0.50			< 0.50		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50		< 0.50			6.4		
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50		< 0.50			2.2		
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50		< 0.50			5.0		
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50		< 0.50			2.9		
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50		< 0.50			0.88		
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50		< 0.50			3.5		
PCB 81	N	2815	mg/kg	0.010								
PCB 77	U	2815	mg/kg	0.010								
PCB 105	N	2815	mg/kg	0.010								
PCB 114	N	2815	mg/kg	0.010								
PCB 118	N	2815	mg/kg	0.010								
PCB 123	N	2815	mg/kg	0.010								
PCB 126	N	2815	mg/kg	0.010								
PCB 156	N	2815	mg/kg	0.010								
PCB 157	N	2815	mg/kg	0.010								
PCB 167	N	2815	mg/kg	0.010								
PCB 169	N	2815	mg/kg	0.010								
PCB 189	N	2815	mg/kg	0.010								
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12								
SVOC TIC	N	2790	mg/kg	N/A	None Detected		None Detected			None Detected		

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:				21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112
Quotation No.: Q21-23582	Chemtest Sample ID.:				1274958	1274959	1274960	1274961	1274962	1274963	1274965	1274966
	Sample Location:				TP01	TP02	TP03	TP03	TP04	SP01	TP05	TP01
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.05	0.05	0.20	0.50	0.50	0.00	0.10	0.20
	Bottom Depth (m):									0.05		
	Date Sampled:				07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021
	Asbestos Lab:						COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD								
ACM Type	U	2192		N/A			-	-	-	-	Cement	-
Asbestos Identification	U	2192		N/A			No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	Amosite Chrysotile	No Asbestos Detected
Asbestos by Gravimetry	U	2192	%	0.001							0.085	
Total Asbestos	U	2192	%	0.001							0.085	
Moisture	N	2030	%	0.020	< 0.020	3.4	9.6	11	12	2.5	6.5	0.92
pH	U	2010		4.0			8.7	8.5	8.7	8.3	8.4	9.1
Magnesium (Water Soluble)	N	2120	g/l	0.010								
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010								
Calorific Value	N	2140	MJ/kg	0.10								
Chloride (Water Soluble)	U	2220	g/l	0.010								
Nitrate (Water Soluble)	N	2220	g/l	0.010								
Arsenic	U	2450	mg/kg	1.0			27	5.1	9.5	160	130	12
Cadmium	U	2450	mg/kg	0.10			2.5	< 0.10	0.25	62	32	0.92
Chromium	U	2450	mg/kg	1.0			68	19	51	350	210	9.0
Copper	U	2450	mg/kg	0.50			450	31	45	2900	2500	44
Mercury	U	2450	mg/kg	0.10			1.8	0.19	0.42	86	7.5	0.77
Nickel	U	2450	mg/kg	0.50			52	14	32	470	290	7.0
Lead	U	2450	mg/kg	0.50			780	47	51	2700	3700	68
Selenium	U	2450	mg/kg	0.20			0.66	< 0.20	< 0.20	0.63	0.73	< 0.20
Zinc	U	2450	mg/kg	0.50			450	41	120	4600	6000	74
Total Organic Carbon	U	2625	%	0.20	15	6.7	13	0.70	1.5	3.8		3.1
TPH >C6-C10	N	2670	mg/kg	1.0			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C10-C21	N	2670	mg/kg	1.0			10	< 1.0	< 1.0	390	220	< 1.0
TPH >C21-C40	N	2670	mg/kg	1.0			35	< 1.0	< 1.0	2500	1700	< 1.0
Total TPH >C6-C40	U	2670	mg/kg	10			46	< 10	< 10	2800	1900	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	2.8	
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	2.5	
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	1.7	
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	1.1	
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10		0.41		< 0.10	10	
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10		0.14		< 0.10	3.1	
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	1.4		0.78		< 0.10	25	
Pyrene	U	2700	mg/kg	0.10	< 0.10	1.1		0.87		< 0.10	26	
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10		0.60		< 0.10	17	
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10		0.79		< 0.10	18	
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	24	

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:				21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112
Quotation No.: Q21-23582	Chemtest Sample ID.:				1274958	1274959	1274960	1274961	1274962	1274963	1274965	1274966
	Sample Location:				TP01	TP02	TP03	TP03	TP04	SP01	TP05	TP01
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.05	0.05	0.20	0.50	0.50	0.00	0.10	0.20
	Bottom Depth (m):									0.05		
	Date Sampled:				07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021
	Asbestos Lab:						COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD								
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	10	
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	18	
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	13	
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	4.1	
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	14	
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	2.5		3.6		< 2.0	190	
Dichlorodifluoromethane	U	2760	µg/kg	1.0						< 1.0	< 1.0	
Chloromethane	U	2760	µg/kg	1.0						< 1.0	< 1.0	
Vinyl Chloride	U	2760	µg/kg	1.0						< 1.0	< 1.0	
Bromomethane	U	2760	µg/kg	20						< 20	< 20	
Chloroethane	U	2760	µg/kg	2.0						< 2.0	< 2.0	
Trichlorofluoromethane	U	2760	µg/kg	1.0						< 1.0	< 1.0	
1,1-Dichloroethene	U	2760	µg/kg	1.0						< 1.0	< 1.0	
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0						< 1.0	< 1.0	
1,1-Dichloroethane	U	2760	µg/kg	1.0						< 1.0	< 1.0	
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0						< 1.0	< 1.0	
Bromochloromethane	U	2760	µg/kg	5.0						< 5.0	< 5.0	
Trichloromethane	U	2760	µg/kg	1.0						< 1.0	< 1.0	
1,1,1-Trichloroethane	U	2760	µg/kg	1.0						< 1.0	< 1.0	
Tetrachloromethane	U	2760	µg/kg	1.0						< 1.0	< 1.0	
1,1-Dichloropropene	U	2760	µg/kg	1.0						< 1.0	< 1.0	
Benzene	U	2760	µg/kg	1.0						< 1.0	< 1.0	
1,2-Dichloroethane	U	2760	µg/kg	2.0						< 2.0	< 2.0	
Trichloroethene	N	2760	µg/kg	1.0						< 1.0	< 1.0	
1,2-Dichloropropane	U	2760	µg/kg	1.0						< 1.0	< 1.0	
Dibromomethane	U	2760	µg/kg	1.0						< 1.0	< 1.0	
Bromodichloromethane	U	2760	µg/kg	5.0						< 5.0	< 5.0	
cis-1,3-Dichloropropene	N	2760	µg/kg	10						< 10	< 10	
Toluene	U	2760	µg/kg	1.0						< 1.0	< 1.0	
Trans-1,3-Dichloropropene	N	2760	µg/kg	10						< 10	< 10	
1,1,2-Trichloroethane	U	2760	µg/kg	10						< 10	< 10	
Tetrachloroethene	U	2760	µg/kg	1.0						< 1.0	< 1.0	
1,3-Dichloropropane	U	2760	µg/kg	2.0						< 2.0	< 2.0	
Dibromochloromethane	U	2760	µg/kg	10						< 10	< 10	
1,2-Dibromoethane	U	2760	µg/kg	5.0						< 5.0	< 5.0	
Chlorobenzene	U	2760	µg/kg	1.0						< 1.0	< 1.0	
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0						< 2.0	< 2.0	

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112
Quotation No.: Q21-23582	Chemtest Sample ID.:	1274958	1274959	1274960	1274961	1274962	1274963	1274965	1274966
	Sample Location:	TP01	TP02	TP03	TP03	TP04	SP01	TP05	TP01
	Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):	0.05	0.05	0.20	0.50	0.50	0.00	0.10	0.20
	Bottom Depth (m):						0.05		
	Date Sampled:	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021
	Asbestos Lab:			COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD					
Ethylbenzene	U	2760	µg/kg	1.0				< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0				< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0				< 1.0	< 1.0
Styrene	U	2760	µg/kg	1.0				< 1.0	< 1.0
Tribromomethane	U	2760	µg/kg	1.0				< 1.0	< 1.0
Isopropylbenzene	U	2760	µg/kg	1.0				< 1.0	< 1.0
Bromobenzene	U	2760	µg/kg	1.0				< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	µg/kg	50				< 50	< 50
N-Propylbenzene	U	2760	µg/kg	1.0				< 1.0	< 1.0
2-Chlorotoluene	U	2760	µg/kg	1.0				< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0				< 1.0	< 1.0
4-Chlorotoluene	U	2760	µg/kg	1.0				< 1.0	< 1.0
Tert-Butylbenzene	U	2760	µg/kg	1.0				< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0				< 1.0	< 1.0
Sec-Butylbenzene	U	2760	µg/kg	1.0				< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	µg/kg	1.0				< 1.0	< 1.0
4-Isopropyltoluene	U	2760	µg/kg	1.0				< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	µg/kg	1.0				< 1.0	< 1.0
N-Butylbenzene	U	2760	µg/kg	1.0				< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	µg/kg	1.0				< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50				< 50	< 50
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0				< 1.0	< 1.0
Hexachlorobutadiene	U	2760	µg/kg	1.0				< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0				< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0				< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:				21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112
Quotation No.: Q21-23582	Chemtest Sample ID.:				1274958	1274959	1274960	1274961	1274962	1274963	1274965	1274966
	Sample Location:				TP01	TP02	TP03	TP03	TP04	SP01	TP05	TP01
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.05	0.05	0.20	0.50	0.50	0.00	0.10	0.20
	Bottom Depth (m):									0.05		
	Date Sampled:				07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021
	Asbestos Lab:						COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD								
Nitrobenzene	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50			< 0.50		< 0.50		1.6	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50			< 0.50		< 0.50		0.82	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50			< 0.50		< 0.50		1.3	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50					< 0.50		9.0	< 0.50
Anthracene	U	2790	mg/kg	0.50			6.3		< 0.50		3.0	< 0.50
Carbazole	U	2790	mg/kg	0.50			< 0.50		< 0.50		0.53	< 0.50

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:				21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112
Quotation No.: Q21-23582	Chemtest Sample ID.:				1274958	1274959	1274960	1274961	1274962	1274963	1274965	1274966
	Sample Location:				TP01	TP02	TP03	TP03	TP04	SP01	TP05	TP01
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.05	0.05	0.20	0.50	0.50	0.00	0.10	0.20
	Bottom Depth (m):									0.05		
	Date Sampled:				07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021
	Asbestos Lab:						COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD								
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50			< 0.50		< 0.50		1.3	< 0.50
Fluoranthene	U	2790	mg/kg	0.50			32		< 0.50		25	< 0.50
Pyrene	U	2790	mg/kg	0.50			30		< 0.50		0.59	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50			17		< 0.50		7.9	< 0.50
Chrysene	U	2790	mg/kg	0.50			14		< 0.50		8.1	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50			< 0.50		< 0.50		0.82	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50			< 0.50		< 0.50		< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50			20		< 0.50		11	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50			3.9		< 0.50		9.5	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50			16		< 0.50		8.7	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50			5.4		< 0.50		5.7	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50			5.6		< 0.50		1.7	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50			14		< 0.50		7.6	< 0.50
PCB 81	N	2815	mg/kg	0.010						< 0.010	< 0.010	
PCB 77	U	2815	mg/kg	0.010						< 0.010	< 0.010	
PCB 105	N	2815	mg/kg	0.010						< 0.010	< 0.010	
PCB 114	N	2815	mg/kg	0.010						< 0.010	< 0.010	
PCB 118	N	2815	mg/kg	0.010						< 0.010	< 0.010	
PCB 123	N	2815	mg/kg	0.010						< 0.010	< 0.010	
PCB 126	N	2815	mg/kg	0.010						< 0.010	< 0.010	
PCB 156	N	2815	mg/kg	0.010						< 0.010	< 0.010	
PCB 157	N	2815	mg/kg	0.010						< 0.010	< 0.010	
PCB 167	N	2815	mg/kg	0.010						< 0.010	< 0.010	
PCB 169	N	2815	mg/kg	0.010						< 0.010	< 0.010	
PCB 189	N	2815	mg/kg	0.010						< 0.010	< 0.010	
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12						< 0.12	< 0.12	
SVOC TIC	N	2790	mg/kg	N/A			None Detected		None Detected		None Detected	None Detected

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:				21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112
Quotation No.: Q21-23582	Chemtest Sample ID.:				1274967	1274969	1274970	1274974	1274975	1274978	1274981	1274982
	Sample Location:				TP02	WS01	WS02	WS04	WS05	WS07	WS08	WS09
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.20	0.70	0.40	0.50	0.30	0.30	0.60	0.30
	Bottom Depth (m):											
	Date Sampled:				07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD								
ACM Type	U	2192		N/A	-	-	Fibres/Clumps	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	Amosite Chrysotile	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Asbestos by Gravimetry	U	2192	%	0.001			0.013					
Total Asbestos	U	2192	%	0.001			0.013					
Moisture	N	2030	%	0.020	2.4	7.4	9.9	7.3	9.8	8.6	5.7	17
pH	U	2010		4.0	9.3	9.1	9.6	9.1	9.4	8.8	10.4	8.4
Magnesium (Water Soluble)	N	2120	g/l	0.010		< 0.010		< 0.010	< 0.010			
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010		0.21		0.035	1.0			
Calorific Value	N	2140	MJ/kg	0.10								1.4
Chloride (Water Soluble)	U	2220	g/l	0.010		0.021		< 0.010	0.048			
Nitrate (Water Soluble)	N	2220	g/l	0.010		< 0.010		< 0.010	< 0.010			
Arsenic	U	2450	mg/kg	1.0	14	13	10	8.6	46	5.7	8.6	12
Cadmium	U	2450	mg/kg	0.10	0.41	0.48	< 0.10	< 0.10	0.22	< 0.10	0.49	< 0.10
Chromium	U	2450	mg/kg	1.0	6.8	15	14	20	28	9.1	12	120
Copper	U	2450	mg/kg	0.50	3.3	21	41	53	70	180	21	35
Mercury	U	2450	mg/kg	0.10	0.26	0.37	0.18	0.18	0.15	0.10	0.22	0.23
Nickel	U	2450	mg/kg	0.50	1.9	23	27	21	44	29	9.9	25
Lead	U	2450	mg/kg	0.50	26	26	19	28	36	6.3	15	200
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	6.8	56	59	26	44	7.8	19	24
Total Organic Carbon	U	2625	%	0.20		< 0.20		0.59	13		1.2	
TPH >C6-C10	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C10-C21	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C21-C40	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total TPH >C6-C40	U	2670	mg/kg	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10			< 0.10		< 0.10	
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10			< 0.10		< 0.10	
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10			< 0.10		< 0.10	
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10			< 0.10		< 0.10	
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10			< 0.10		< 0.10	
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10			< 0.10		< 0.10	
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10			< 0.10		< 0.10	
Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10			< 0.10		< 0.10	
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10			< 0.10		< 0.10	
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10			< 0.10		< 0.10	
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10			< 0.10		< 0.10	

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:				21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112
Quotation No.: Q21-23582	Chemtest Sample ID.:				1274967	1274969	1274970	1274974	1274975	1274978	1274981	1274982
	Sample Location:				TP02	WS01	WS02	WS04	WS05	WS07	WS08	WS09
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.20	0.70	0.40	0.50	0.30	0.30	0.60	0.30
	Bottom Depth (m):											
	Date Sampled:				07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD								
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10			< 0.10		< 0.10	
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10			< 0.10		< 0.10	
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10			< 0.10		< 0.10	
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10			< 0.10		< 0.10	
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10			< 0.10		< 0.10	
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0			< 2.0		< 2.0	
Dichlorodifluoromethane	U	2760	µg/kg	1.0								
Chloromethane	U	2760	µg/kg	1.0								
Vinyl Chloride	U	2760	µg/kg	1.0								
Bromomethane	U	2760	µg/kg	20								
Chloroethane	U	2760	µg/kg	2.0								
Trichlorofluoromethane	U	2760	µg/kg	1.0								
1,1-Dichloroethene	U	2760	µg/kg	1.0								
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0								
1,1-Dichloroethane	U	2760	µg/kg	1.0								
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0								
Bromochloromethane	U	2760	µg/kg	5.0								
Trichloromethane	U	2760	µg/kg	1.0								
1,1,1-Trichloroethane	U	2760	µg/kg	1.0								
Tetrachloromethane	U	2760	µg/kg	1.0								
1,1-Dichloropropene	U	2760	µg/kg	1.0								
Benzene	U	2760	µg/kg	1.0								
1,2-Dichloroethane	U	2760	µg/kg	2.0								
Trichloroethene	N	2760	µg/kg	1.0								
1,2-Dichloropropane	U	2760	µg/kg	1.0								
Dibromomethane	U	2760	µg/kg	1.0								
Bromodichloromethane	U	2760	µg/kg	5.0								
cis-1,3-Dichloropropene	N	2760	µg/kg	10								
Toluene	U	2760	µg/kg	1.0								
Trans-1,3-Dichloropropene	N	2760	µg/kg	10								
1,1,2-Trichloroethane	U	2760	µg/kg	10								
Tetrachloroethene	U	2760	µg/kg	1.0								
1,3-Dichloropropane	U	2760	µg/kg	2.0								
Dibromochloromethane	U	2760	µg/kg	10								
1,2-Dibromoethane	U	2760	µg/kg	5.0								
Chlorobenzene	U	2760	µg/kg	1.0								
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0								

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:				21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112
Quotation No.: Q21-23582	Chemtest Sample ID.:				1274967	1274969	1274970	1274974	1274975	1274978	1274981	1274982
	Sample Location:				TP02	WS01	WS02	WS04	WS05	WS07	WS08	WS09
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.20	0.70	0.40	0.50	0.30	0.30	0.60	0.30
	Bottom Depth (m):											
	Date Sampled:				07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD								
Ethylbenzene	U	2760	µg/kg	1.0								
m & p-Xylene	U	2760	µg/kg	1.0								
o-Xylene	U	2760	µg/kg	1.0								
Styrene	U	2760	µg/kg	1.0								
Tribromomethane	U	2760	µg/kg	1.0								
Isopropylbenzene	U	2760	µg/kg	1.0								
Bromobenzene	U	2760	µg/kg	1.0								
1,2,3-Trichloropropane	N	2760	µg/kg	50								
N-Propylbenzene	U	2760	µg/kg	1.0								
2-Chlorotoluene	U	2760	µg/kg	1.0								
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0								
4-Chlorotoluene	U	2760	µg/kg	1.0								
Tert-Butylbenzene	U	2760	µg/kg	1.0								
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0								
Sec-Butylbenzene	U	2760	µg/kg	1.0								
1,3-Dichlorobenzene	U	2760	µg/kg	1.0								
4-Isopropyltoluene	U	2760	µg/kg	1.0								
1,4-Dichlorobenzene	U	2760	µg/kg	1.0								
N-Butylbenzene	U	2760	µg/kg	1.0								
1,2-Dichlorobenzene	U	2760	µg/kg	1.0								
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50								
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0								
Hexachlorobutadiene	U	2760	µg/kg	1.0								
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0								
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0								
N-Nitrosodimethylamine	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Phenol	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
2-Methylphenol	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Hexachloroethane	N	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
4-Methylphenol	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:				21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112
Quotation No.: Q21-23582	Chemtest Sample ID.:				1274967	1274969	1274970	1274974	1274975	1274978	1274981	1274982
	Sample Location:				TP02	WS01	WS02	WS04	WS05	WS07	WS08	WS09
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.20	0.70	0.40	0.50	0.30	0.30	0.60	0.30
	Bottom Depth (m):											
	Date Sampled:				07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD								
Nitrobenzene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Isophorone	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Naphthalene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Acenaphthylene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Acenaphthene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Dibenzofuran	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Fluorene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Azobenzene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Phenanthrene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Anthracene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Carbazole	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:				21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112	21-31112
Quotation No.: Q21-23582	Chemtest Sample ID.:				1274967	1274969	1274970	1274974	1274975	1274978	1274981	1274982
	Sample Location:				TP02	WS01	WS02	WS04	WS05	WS07	WS08	WS09
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.20	0.70	0.40	0.50	0.30	0.30	0.60	0.30
	Bottom Depth (m):											
	Date Sampled:				07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD								
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Fluoranthene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Pyrene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Chrysene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50			< 0.50	< 0.50		< 0.50		< 0.50
PCB 81	N	2815	mg/kg	0.010								
PCB 77	U	2815	mg/kg	0.010								
PCB 105	N	2815	mg/kg	0.010								
PCB 114	N	2815	mg/kg	0.010								
PCB 118	N	2815	mg/kg	0.010								
PCB 123	N	2815	mg/kg	0.010								
PCB 126	N	2815	mg/kg	0.010								
PCB 156	N	2815	mg/kg	0.010								
PCB 157	N	2815	mg/kg	0.010								
PCB 167	N	2815	mg/kg	0.010								
PCB 169	N	2815	mg/kg	0.010								
PCB 189	N	2815	mg/kg	0.010								
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12								
SVOC TIC	N	2790	mg/kg	N/A			None Detected	None Detected		None Detected		None Detected

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:		21-31112		
Quotation No.: Q21-23582	Chemtest Sample ID.:		1274983		
	Sample Location:		WS11		
	Sample Type:		SOIL		
	Top Depth (m):		0.30		
	Bottom Depth (m):				
	Date Sampled:		07-Sep-2021		
	Asbestos Lab:		COVENTRY		
Determinand	Accred.	SOP	Units	LOD	
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected
Asbestos by Gravimetry	U	2192	%	0.001	
Total Asbestos	U	2192	%	0.001	
Moisture	N	2030	%	0.020	16
pH	U	2010		4.0	8.4
Magnesium (Water Soluble)	N	2120	g/l	0.010	
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	
Calorific Value	N	2140	MJ/kg	0.10	0.52
Chloride (Water Soluble)	U	2220	g/l	0.010	
Nitrate (Water Soluble)	N	2220	g/l	0.010	
Arsenic	U	2450	mg/kg	1.0	12
Cadmium	U	2450	mg/kg	0.10	< 0.10
Chromium	U	2450	mg/kg	1.0	62
Copper	U	2450	mg/kg	0.50	48
Mercury	U	2450	mg/kg	0.10	0.18
Nickel	U	2450	mg/kg	0.50	25
Lead	U	2450	mg/kg	0.50	52
Selenium	U	2450	mg/kg	0.20	0.20
Zinc	U	2450	mg/kg	0.50	35
Total Organic Carbon	U	2625	%	0.20	2.7
TPH >C6-C10	N	2670	mg/kg	1.0	< 1.0
TPH >C10-C21	N	2670	mg/kg	1.0	< 1.0
TPH >C21-C40	N	2670	mg/kg	1.0	< 1.0
Total TPH >C6-C40	U	2670	mg/kg	10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	0.98
Anthracene	U	2700	mg/kg	0.10	0.20
Fluoranthene	U	2700	mg/kg	0.10	0.87
Pyrene	U	2700	mg/kg	0.10	0.87
Benzo[a]anthracene	U	2700	mg/kg	0.10	0.36
Chrysene	U	2700	mg/kg	0.10	0.78
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:		21-31112		
Quotation No.: Q21-23582	Chemtest Sample ID.:		1274983		
	Sample Location:		WS11		
	Sample Type:		SOIL		
	Top Depth (m):		0.30		
	Bottom Depth (m):				
	Date Sampled:		07-Sep-2021		
	Asbestos Lab:		COVENTRY		
Determinand	Accred.	SOP	Units	LOD	
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	4.1
Dichlorodifluoromethane	U	2760	µg/kg	1.0	
Chloromethane	U	2760	µg/kg	1.0	
Vinyl Chloride	U	2760	µg/kg	1.0	
Bromomethane	U	2760	µg/kg	20	
Chloroethane	U	2760	µg/kg	2.0	
Trichlorofluoromethane	U	2760	µg/kg	1.0	
1,1-Dichloroethene	U	2760	µg/kg	1.0	
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0	
1,1-Dichloroethane	U	2760	µg/kg	1.0	
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0	
Bromochloromethane	U	2760	µg/kg	5.0	
Trichloromethane	U	2760	µg/kg	1.0	
1,1,1-Trichloroethane	U	2760	µg/kg	1.0	
Tetrachloromethane	U	2760	µg/kg	1.0	
1,1-Dichloropropene	U	2760	µg/kg	1.0	
Benzene	U	2760	µg/kg	1.0	
1,2-Dichloroethane	U	2760	µg/kg	2.0	
Trichloroethene	N	2760	µg/kg	1.0	
1,2-Dichloropropane	U	2760	µg/kg	1.0	
Dibromomethane	U	2760	µg/kg	1.0	
Bromodichloromethane	U	2760	µg/kg	5.0	
cis-1,3-Dichloropropene	N	2760	µg/kg	10	
Toluene	U	2760	µg/kg	1.0	
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	
1,1,2-Trichloroethane	U	2760	µg/kg	10	
Tetrachloroethene	U	2760	µg/kg	1.0	
1,3-Dichloropropane	U	2760	µg/kg	2.0	
Dibromochloromethane	U	2760	µg/kg	10	
1,2-Dibromoethane	U	2760	µg/kg	5.0	
Chlorobenzene	U	2760	µg/kg	1.0	
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0	

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:		21-31112		
Quotation No.: Q21-23582	Chemtest Sample ID.:		1274983		
	Sample Location:		WS11		
	Sample Type:		SOIL		
	Top Depth (m):		0.30		
	Bottom Depth (m):				
	Date Sampled:		07-Sep-2021		
	Asbestos Lab:		COVENTRY		
Determinand	Accred.	SOP	Units	LOD	
Ethylbenzene	U	2760	µg/kg	1.0	
m & p-Xylene	U	2760	µg/kg	1.0	
o-Xylene	U	2760	µg/kg	1.0	
Styrene	U	2760	µg/kg	1.0	
Tribromomethane	U	2760	µg/kg	1.0	
Isopropylbenzene	U	2760	µg/kg	1.0	
Bromobenzene	U	2760	µg/kg	1.0	
1,2,3-Trichloropropane	N	2760	µg/kg	50	
N-Propylbenzene	U	2760	µg/kg	1.0	
2-Chlorotoluene	U	2760	µg/kg	1.0	
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0	
4-Chlorotoluene	U	2760	µg/kg	1.0	
Tert-Butylbenzene	U	2760	µg/kg	1.0	
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0	
Sec-Butylbenzene	U	2760	µg/kg	1.0	
1,3-Dichlorobenzene	U	2760	µg/kg	1.0	
4-Isopropyltoluene	U	2760	µg/kg	1.0	
1,4-Dichlorobenzene	U	2760	µg/kg	1.0	
N-Butylbenzene	U	2760	µg/kg	1.0	
1,2-Dichlorobenzene	U	2760	µg/kg	1.0	
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0	
Hexachlorobutadiene	U	2760	µg/kg	1.0	
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	
Phenol	U	2790	mg/kg	0.50	
2-Chlorophenol	U	2790	mg/kg	0.50	
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	
2-Methylphenol	U	2790	mg/kg	0.50	
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	
Hexachloroethane	N	2790	mg/kg	0.50	
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	
4-Methylphenol	U	2790	mg/kg	0.50	

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:		21-31112	
Quotation No.: Q21-23582	Chemtest Sample ID.:		1274983	
	Sample Location:		WS11	
	Sample Type:		SOIL	
	Top Depth (m):		0.30	
	Bottom Depth (m):			
	Date Sampled:		07-Sep-2021	
	Asbestos Lab:		COVENTRY	
Determinand	Accred.	SOP	Units	LOD
Nitrobenzene	U	2790	mg/kg	0.50
Isophorone	U	2790	mg/kg	0.50
2-Nitrophenol	N	2790	mg/kg	0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50
Naphthalene	U	2790	mg/kg	0.50
4-Chloroaniline	N	2790	mg/kg	0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50
4-Nitrophenol	N	2790	mg/kg	0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50
2-Nitroaniline	U	2790	mg/kg	0.50
Acenaphthylene	U	2790	mg/kg	0.50
Dimethylphthalate	U	2790	mg/kg	0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50
Acenaphthene	U	2790	mg/kg	0.50
3-Nitroaniline	N	2790	mg/kg	0.50
Dibenzofuran	U	2790	mg/kg	0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50
Fluorene	U	2790	mg/kg	0.50
Diethyl Phthalate	U	2790	mg/kg	0.50
4-Nitroaniline	U	2790	mg/kg	0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50
Azobenzene	U	2790	mg/kg	0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50
Hexachlorobenzene	U	2790	mg/kg	0.50
Pentachlorophenol	N	2790	mg/kg	0.50
Phenanthrene	U	2790	mg/kg	0.50
Anthracene	U	2790	mg/kg	0.50
Carbazole	U	2790	mg/kg	0.50

Results - Soil

Project: 1007 Portugal Street East

Client: Apex Consulting Engineers Ltd	Chemtest Job No.:		21-31112		
Quotation No.: Q21-23582	Chemtest Sample ID.:		1274983		
	Sample Location:		WS11		
	Sample Type:		SOIL		
	Top Depth (m):		0.30		
	Bottom Depth (m):				
	Date Sampled:		07-Sep-2021		
	Asbestos Lab:		COVENTRY		
Determinand	Accred.	SOP	Units	LOD	
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	
Fluoranthene	U	2790	mg/kg	0.50	
Pyrene	U	2790	mg/kg	0.50	
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	
Benzo[a]anthracene	U	2790	mg/kg	0.50	
Chrysene	U	2790	mg/kg	0.50	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	
Benzo[a]pyrene	U	2790	mg/kg	0.50	
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	
PCB 81	N	2815	mg/kg	0.010	< 0.010
PCB 77	U	2815	mg/kg	0.010	< 0.010
PCB 105	N	2815	mg/kg	0.010	< 0.010
PCB 114	N	2815	mg/kg	0.010	< 0.010
PCB 118	N	2815	mg/kg	0.010	< 0.010
PCB 123	N	2815	mg/kg	0.010	< 0.010
PCB 126	N	2815	mg/kg	0.010	< 0.010
PCB 156	N	2815	mg/kg	0.010	< 0.010
PCB 157	N	2815	mg/kg	0.010	< 0.010
PCB 167	N	2815	mg/kg	0.010	< 0.010
PCB 169	N	2815	mg/kg	0.010	< 0.010
PCB 189	N	2815	mg/kg	0.010	< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12
SVOC TIC	N	2790	mg/kg	N/A	

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2140	Calorific Value	Calorific Value	Bomb Calorimeter
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurement by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quantitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com

Appendix H – Geotechnical Laboratory Results

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Apex Consulting Engineers Ltd
Client Address: Unit 3, Acres Hill Business Park, 2 Acres Hill Lane, □
Sheffield, South Yorkshire, □
S9 4LT
Contact: Matthew Thompson
Site Address: Portugal Street Est, Manchester
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Śląska, Poland

Client Reference: 1007
Job Number: 21-98376
Date Sampled: 07/09/2021
Date Received: 08/09/2021
Date Tested: 21/09/2021
Sampled By: Client

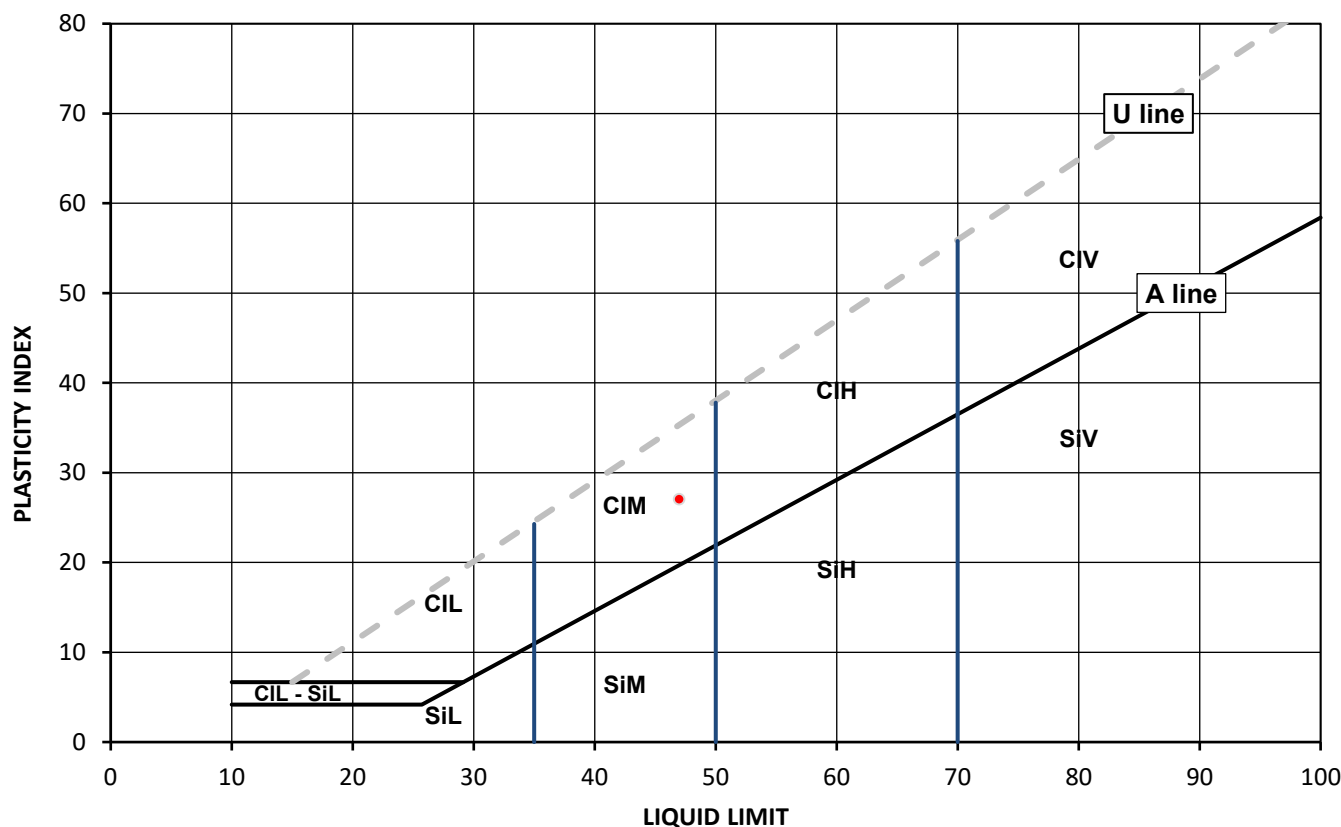
Test Results:

Laboratory Reference: 2004822
Hole No.: TP01+TP02
Sample Reference: Combined
Sample Description: Brown mottled grey sandy CLAY

Depth Top [m]: 1.00
Depth Base [m]: 1.10
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
18	47	20	27	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

Cl	Clay	Plasticity	L	Low	Liquid Limit	below 35
Si	Silt		M	Medium		35 to 50
			H	High		50 to 70
			V	Very high		exceeding 70
			O	Organic		append to classification for organic material (eg CIHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Deputy Geotechnical Laboratory Manager
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Apex Consulting Engineers Ltd
Client Address: Unit 3, Acres Hill Business Park, 2 Acres Hill Lane, Sheffield, South Yorkshire, S9 4LT
Contact: Matthew Thompson
Site Address: Portugal Street Est, Manchester
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: 1007
Job Number: 21-98376
Date Sampled: 07/09/2021
Date Received: 08/09/2021
Date Tested: 21/09/2021
Sampled By: Client

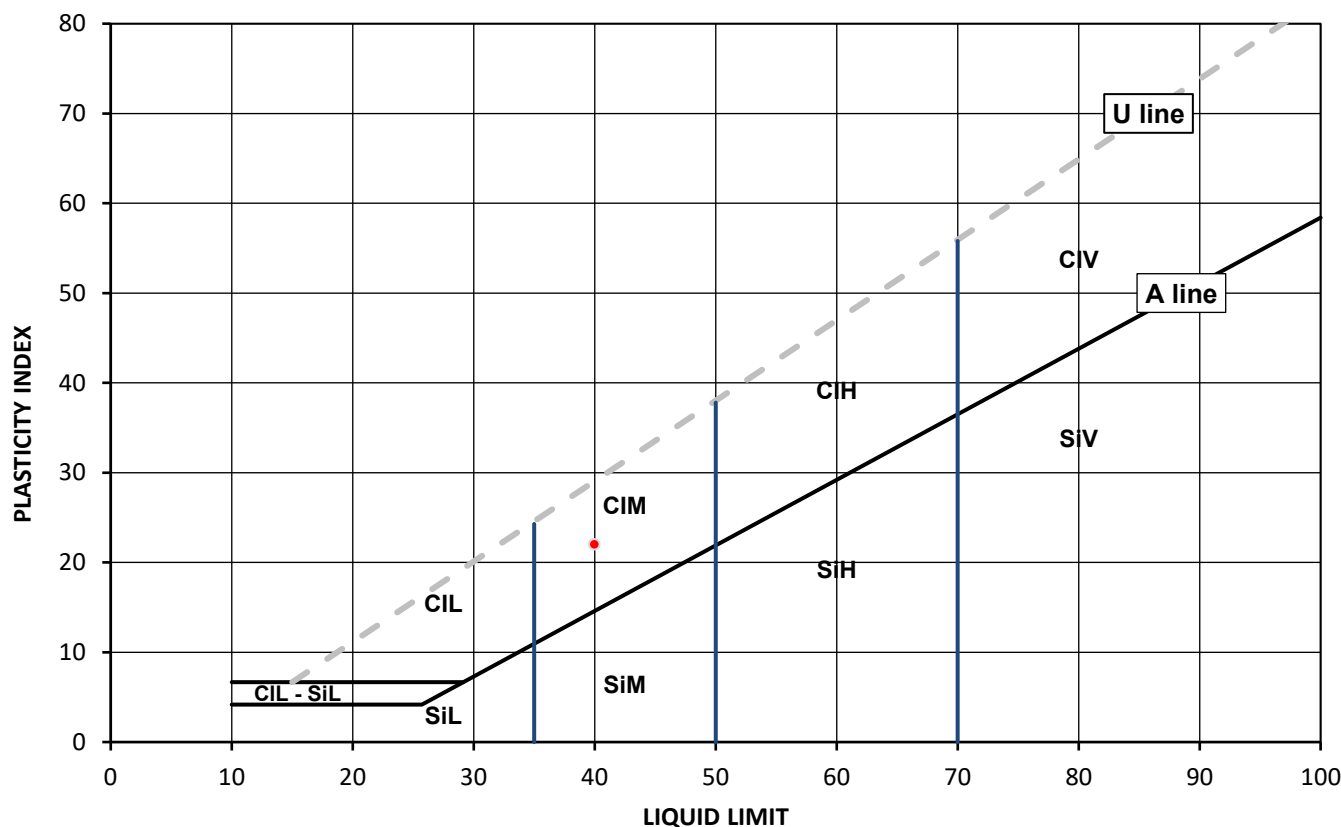
Test Results:

Laboratory Reference: 2004825
Hole No.: WS09+WS11
Sample Reference: Combined
Sample Description: Brown slightly gravelly sandy CLAY

Depth Top [m]: 1.50
Depth Base [m]: 2.60
Sample Type: D

Sample Preparation: Tested after >425um removed by hand

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
17	40	18	22	96



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

Cl	Clay	Plasticity	L	Low	Liquid Limit	below 35
Si	Silt		M	Medium		35 to 50
			H	High		50 to 70
			V	Very high		exceeding 70
			O	Organic		append to classification for organic material (eg CIHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Deputy Geotechnical Laboratory Manager
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Apex Consulting Engineers Ltd
Client Address: Unit 3, Acres Hill Business Park, 2 Acres Hill Lane, □
Sheffield, South Yorkshire, □
S9 4LT
Contact: Matthew Thompson
Site Address: Portugal Street Est, Manchester
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: 1007
Job Number: 21-98376
Date Sampled: Not Given
Date Received: 09/09/2021
Date Tested: 20/09/2021
Sampled By: Client

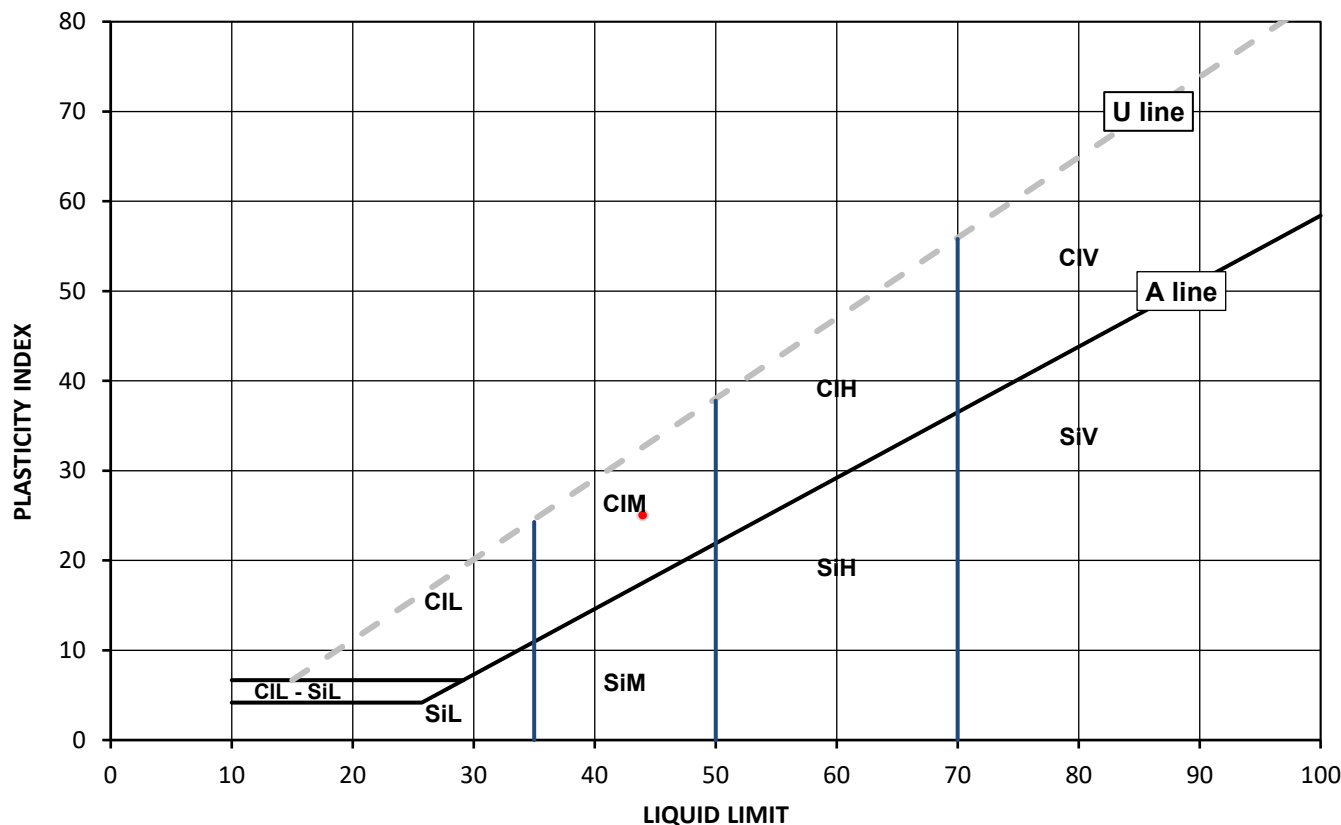
Test Results:

Laboratory Reference: 2008765
Hole No.: WS07+WS09
Sample Reference: Not Given
Sample Description: Brown slightly gravelly sandy CLAY

Depth Top [m]: 1.60
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after >425um removed by hand

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
15	44	19	25	97



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

Cl	Clay	Plasticity	Liquid Limit
Si	Silt	L Low	below 35
		M Medium	35 to 50
		H High	50 to 70
		V Very high	exceeding 70
		O Organic	append to classification for organic material (eg CIHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Deputy Geotechnical Laboratory Manager
for and on behalf of i2 Analytical Ltd

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SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Client: Apex Consulting Engineers Ltd
Client Address: Unit 3, Acres Hill Business Park, 2 Acres Hill Lane,
Sheffield, South Yorkshire,
S9 4LT
Contact: Matthew Thompson
Site Address: Portugal Street Est, Manchester

Moisture Content by BS 1377-2: 1990: Clause 3.2; Water Content by BS EN 17892-1: 2014; Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2: 1990: Clause 8.2

Client Reference: 1007
Job Number: 21-98376
Date Sampled: 07/09/2021
Date Received: 08/09/2021
Date Tested: 20/09 - 21/09/2021
Sampled By: Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Moisture Content [W]	Water Content [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m				%	%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3	%		
2004822	TP01+TP02	Combined	1.00	1.10	D	Brown mottled grey sandy CLAY	Atterberg 1 Point	18		100	47	20	27						
2008765	WS07+WS09	Not Given	1.60	Not Given	D	Brown slightly gravelly sandy CLAY	Atterberg 1 Point	15		97	44	19	25						
2004825	WS09+WS11	Combined	1.50	2.60	D	Brown slightly gravelly sandy CLAY	Atterberg 1 Point	17		96	40	18	22						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Monika Janoszek

Monika Janoszek
PL Deputy Geotechnical Laboratory Manager
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Particle Size Distribution

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Tested in Accordance with: BS 1377-2: 1990

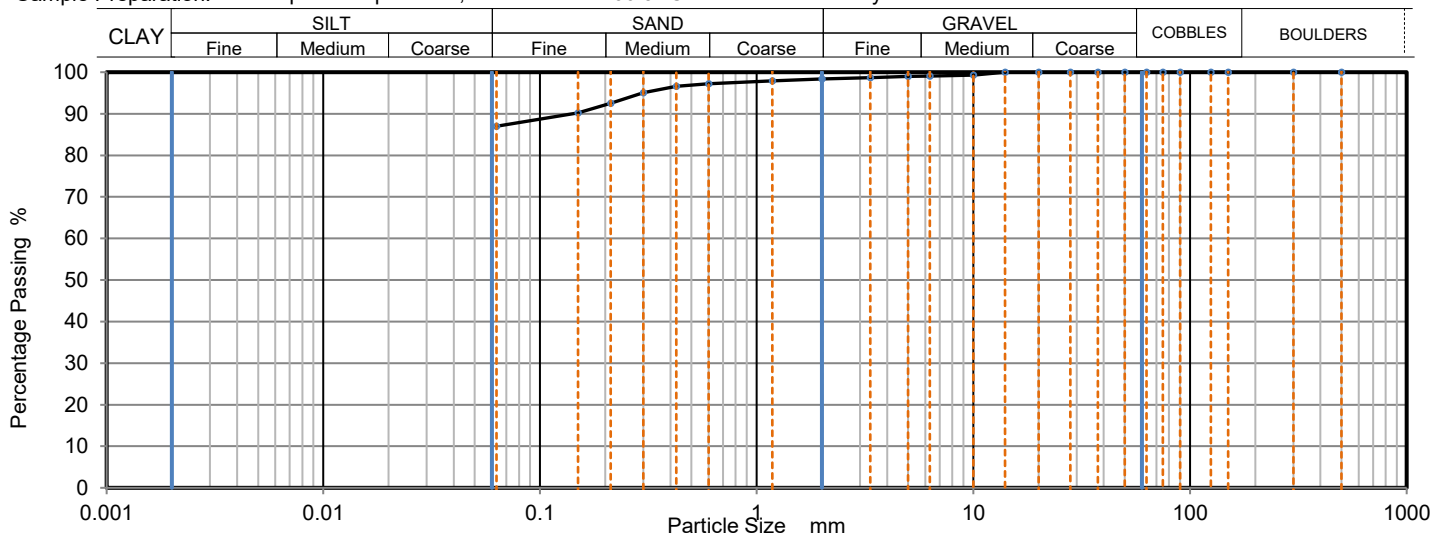
Client: Apex Consulting Engineers Ltd
Client Address: Unit 3, Acres Hill Business Park, 2 Acres Hill Lane,
Sheffield, South Yorkshire, S9 4LT
Contact: Matthew Thompson
Site Address: Portugal Street Est, Manchester
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: 1007
Job Number: 21-98376
Date Sampled: 07/09/2021
Date Received: 08/09/2021
Date Tested: 21/09/2021
Sampled By: Client

Test Results:

Laboratory Reference: 2004822
Hole No.: TP01+TP02
Sample Reference: Combined
Sample Description: Brown mottled grey sandy CLAY
Sample Preparation: Sample was quartered, oven dried at 106.3 °C and broken down by hand.

Depth Top [m]: 1.00
Depth Base [m]: 1.10
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	99		
5	99		
3.35	99		
2	98		
1.18	98		
0.6	97		
0.425	97		
0.3	95		
0.212	93		
0.15	90		
0.063	87		

Sample Proportions	% dry mass
Very coarse	0
Gravel	2
Sand	11
Fines <0.063mm	87

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	N/A
Curvature Coefficient	

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks:

Signed:

Monika Janoszek

Monika Janoszek
PL Deputy Geotechnical Laboratory Manager
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Particle Size Distribution

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Tested in Accordance with: BS 1377-2: 1990

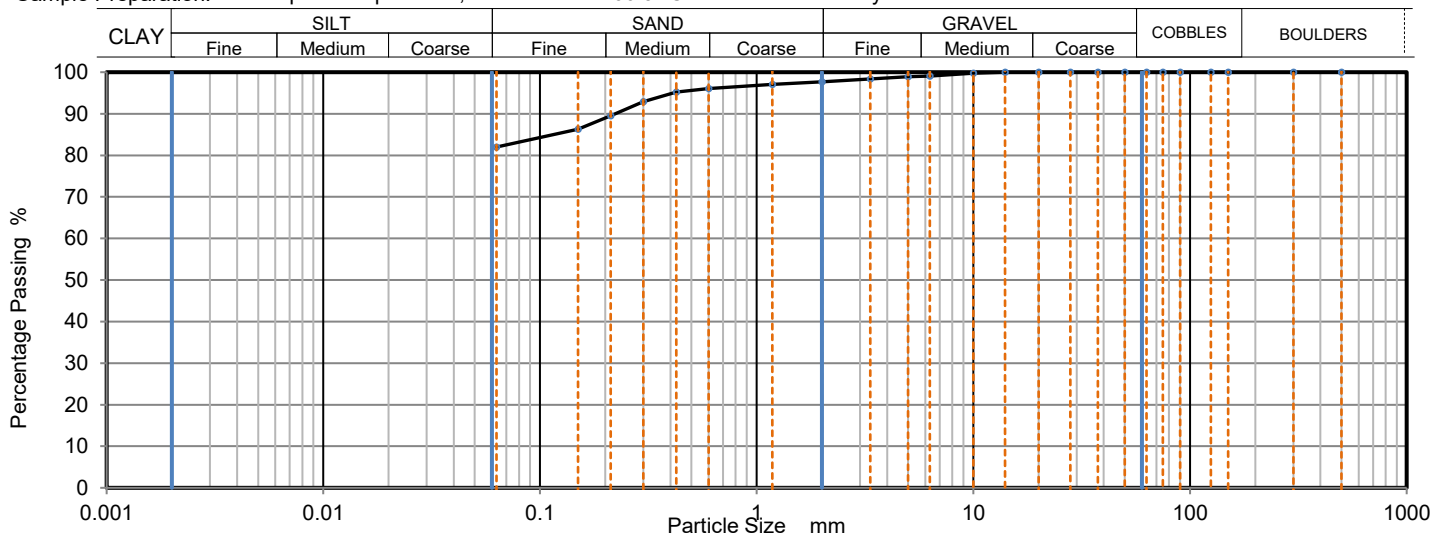
Client: Apex Consulting Engineers Ltd
Client Address: Unit 3, Acres Hill Business Park, 2 Acres Hill Lane,
Sheffield, South Yorkshire, S9 4LT
Contact: Matthew Thompson
Site Address: Portugal Street Est, Manchester
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: 1007
Job Number: 21-98376
Date Sampled: 07/09/2021
Date Received: 08/09/2021
Date Tested: 21/09/2021
Sampled By: Client

Test Results:

Laboratory Reference: 2004825
Hole No.: WS09+WS11
Sample Reference: Combined
Sample Description: Brown slightly gravelly sandy CLAY
Sample Preparation: Sample was quartered, oven dried at 106.3 °C and broken down by hand.

Depth Top [m]: 1.50
Depth Base [m]: 2.60
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	99		
3.35	98		
2	98		
1.18	97		
0.6	96		
0.425	95		
0.3	93		
0.212	90		
0.15	86		
0.063	83		

Sample Proportions	% dry mass
Very coarse	0
Gravel	2
Sand	15
Fines <0.063mm	83

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	N/A
Curvature Coefficient	

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks:

Signed:

Monika Janoszek

Monika Janoszek
PL Deputy Geotechnical Laboratory Manager
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Particle Size Distribution

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Tested in Accordance with: BS 1377-2: 1990

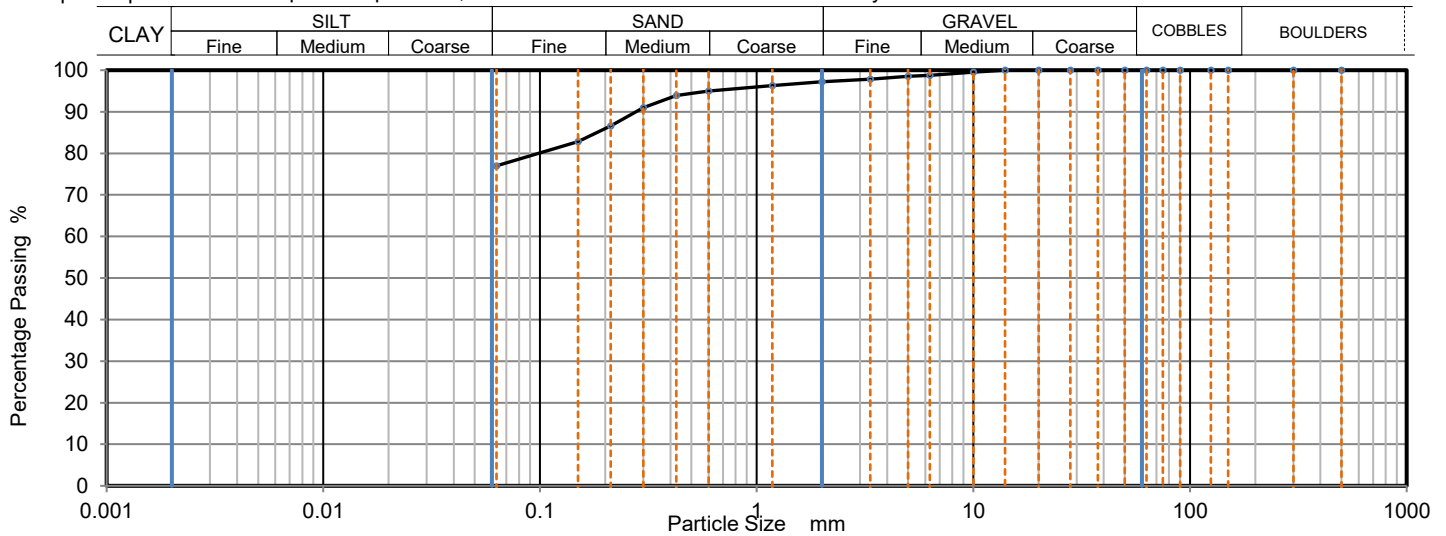
Client: Apex Consulting Engineers Ltd
Client Address: Unit 3, Acres Hill Business Park, 2 Acres Hill Lane, Sheffield, South Yorkshire, S9 4LT
Contact: Matthew Thompson
Site Address: Portugal Street Est, Manchester
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: 1007
Job Number: 21-98376
Date Sampled: Not Given
Date Received: 09/09/2021
Date Tested: 20/09/2021
Sampled By: Client

Test Results:

Laboratory Reference: 2008765
Hole No.: WS07+WS09
Sample Reference: Not Given
Sample Description: Brown slightly gravelly sandy CLAY
Sample Preparation: Sample was quartered, oven dried at 106.8 °C and broken down by hand.

Depth Top [m]: 1.60
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	99		
3.35	98		
2	97		
1.18	96		
0.6	95		
0.425	94		
0.3	91		
0.212	87		
0.15	83		
0.063	77		

Sample Proportions	% dry mass
Very coarse	0
Gravel	3
Sand	20
Fines <0.063mm	77

Grading Analysis		
D100	mm	14
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		N/A
Curvature Coefficient		

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks:

Signed:

Monika Janoszek

Monika Janoszek
PL Deputy Geotechnical Laboratory Manager
for and on behalf of i2 Analytical Ltd

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Matthew Thompson

Apex Consulting Engineers Ltd
Unit 3, Acres Hill Business Park
2 Acres Hill Lane
Sheffield
South Yorkshire
S9 4LT

t: (114) 2419360

e: helen.green@apexconsulting.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

Analytical Report Number : 21-98381

Project / Site name:	Portugal Street East, Manchester	Samples received on:	08/09/2021
Your job number:	1007	Samples instructed on/ Analysis started on:	09/09/2021
Your order number:	GEO-SY-049	Analysis completed by:	22/09/2021
Report Issue Number:	1	Report issued on:	22/09/2021
Samples Analysed:	6 soil samples		

Signed: *A. Czerwińska*

Agnieszka Czerwińska
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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

Analytical Report Number: 21-98381
 Project / Site name: Portugal Street East, Manchester
 Your Order No: GEO-SY-049

Lab Sample Number				2004836	2004837	2004838	2004839	2008888
Sample Reference				TP01	TP02	WS09	WS11	WS07
Sample Number				4	4	4	3	None Supplied
Depth (m)				1.00	1.10	2.60	1.50	2.00-2.10
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
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	13	14	9.9	14	12
Total mass of sample received	kg	0.001	NONE	0.50	0.50	0.50	0.50	0.20

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.4	8.5	8.8	8.4	8.5
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.15	0.097	0.092	0.11	0.053

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

Analytical Report Number: 21-98381
 Project / Site name: Portugal Street East, Manchester
 Your Order No: GEO-SY-049

Lab Sample Number				2008889
Sample Reference				WS09
Sample Number				None Supplied
Depth (m)				1.60-1.70
Date Sampled				Deviating
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	12
Total mass of sample received	kg	0.001	NONE	0.20

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.5
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.049

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

Analytical Report Number : 21-98381

Project / Site name: Portugal Street East, 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 *
2004836	TP01	4	1	Brown clay.
2004837	TP02	4	1.1	Brown clay.
2004838	WS09	4	2.6	Brown clay.
2004839	WS11	3	1.5	Brown clay.
2008888	WS07	None Supplied	2.00-2.10	Brown clay and sand.
2008889	WS09	None Supplied	1.60-1.70	Brown clay and sand.

Analytical Report Number : 21-98381

Project / Site name: Portugal Street East, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
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
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

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 30oC.

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

Sample Deviation Report

Analytical Report Number : 21-98381

Project / Site name: Portugal Street East, Manchester

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TP01	4	S	2004836	a	None Supplied	None Supplied	None Supplied
TP02	4	S	2004837	a	None Supplied	None Supplied	None Supplied
WS07	None Supplied	S	2008888	a	None Supplied	None Supplied	None Supplied
WS09	None Supplied	S	2008889	a	None Supplied	None Supplied	None Supplied
WS09	4	S	2004838	a	None Supplied	None Supplied	None Supplied
WS11	3	S	2004839	a	None Supplied	None Supplied	None Supplied

4041

Client: Apex Consulting Engineers Ltd
Client Address: Unit 3, Acres Hill Business Park,
2 Acres Hill Lane, Sheffield,
South Yorkshire, S9 4LT
Contact: Matthew Thompson
Site Address: Portugal Street

Client Reference: 1007
Job Number: 21-25777
Date Sampled: 24/11/2021
Date Received: 26/11/2021
Date Tested: 09/12/2021
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

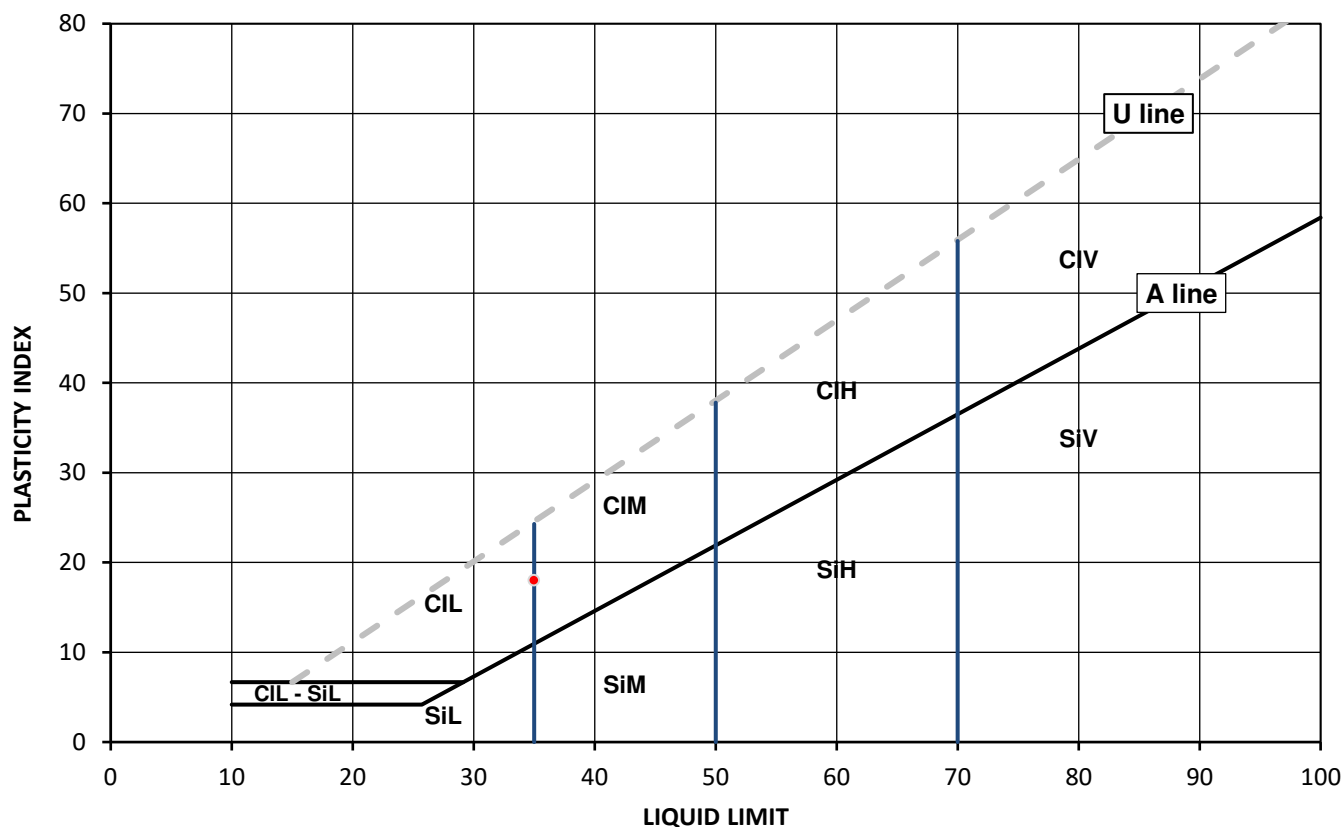
Test Results:

Laboratory Reference: 2098350
Hole No.: BH101
Sample Reference: 3
Sample Description: Brown slightly gravelly sandy CLAY

Depth Top [m]: 3.00
Depth Base [m]: 3.45
Sample Type: D

Sample Preparation: Tested after >425um removed by hand

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
15	35	17	18	98



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L	Low
	M	Medium
	H	High
	V	Very high
	O	Organic
		append to classification for organic material (eg CIHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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2 Acres Hill Lane, Sheffield,
South Yorkshire, S9 4LT
Contact: Matthew Thompson
Site Address: Portugal Street

Client Reference: 1007
Job Number: 21-25777
Date Sampled: 24/11/2021
Date Received: 26/11/2021
Date Tested: 16/12/2021
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

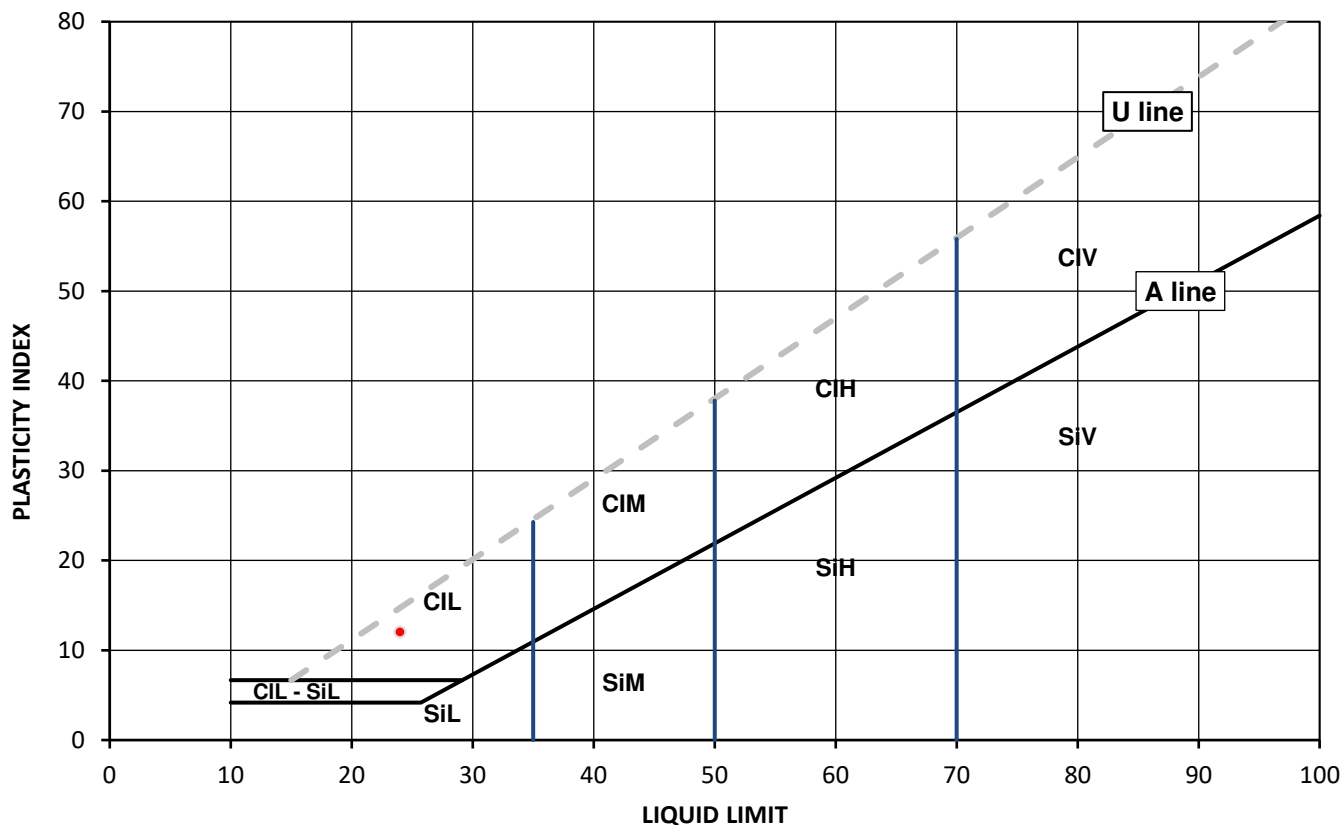
Test Results:

Laboratory Reference: 2098351
Hole No.: BH101
Sample Reference: 4
Sample Description: Brownish grey gravelly very clayey SAND

Depth Top [m]: 5.00
Depth Base [m]: 6.20
Sample Type: B

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425um BS Test Sieve
8.1	24	12	12	88



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	L Low below 35
Si	Silt	M Medium 35 to 50
	H High 50 to 70	V Very high exceeding 70
	O Organic	append to classification for organic material (eg CIHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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Katarzyna Koziel

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Client: Apex Consulting Engineers Ltd
Client Address: Unit 3, Acres Hill Business Park,
2 Acres Hill Lane, Sheffield,
South Yorkshire, S9 4LT
Contact: Matthew Thompson
Site Address: Portugal Street

Client Reference: 1007
Job Number: 21-25777
Date Sampled: 24/11/2021
Date Received: 26/11/2021
Date Tested: 09/12/2021
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

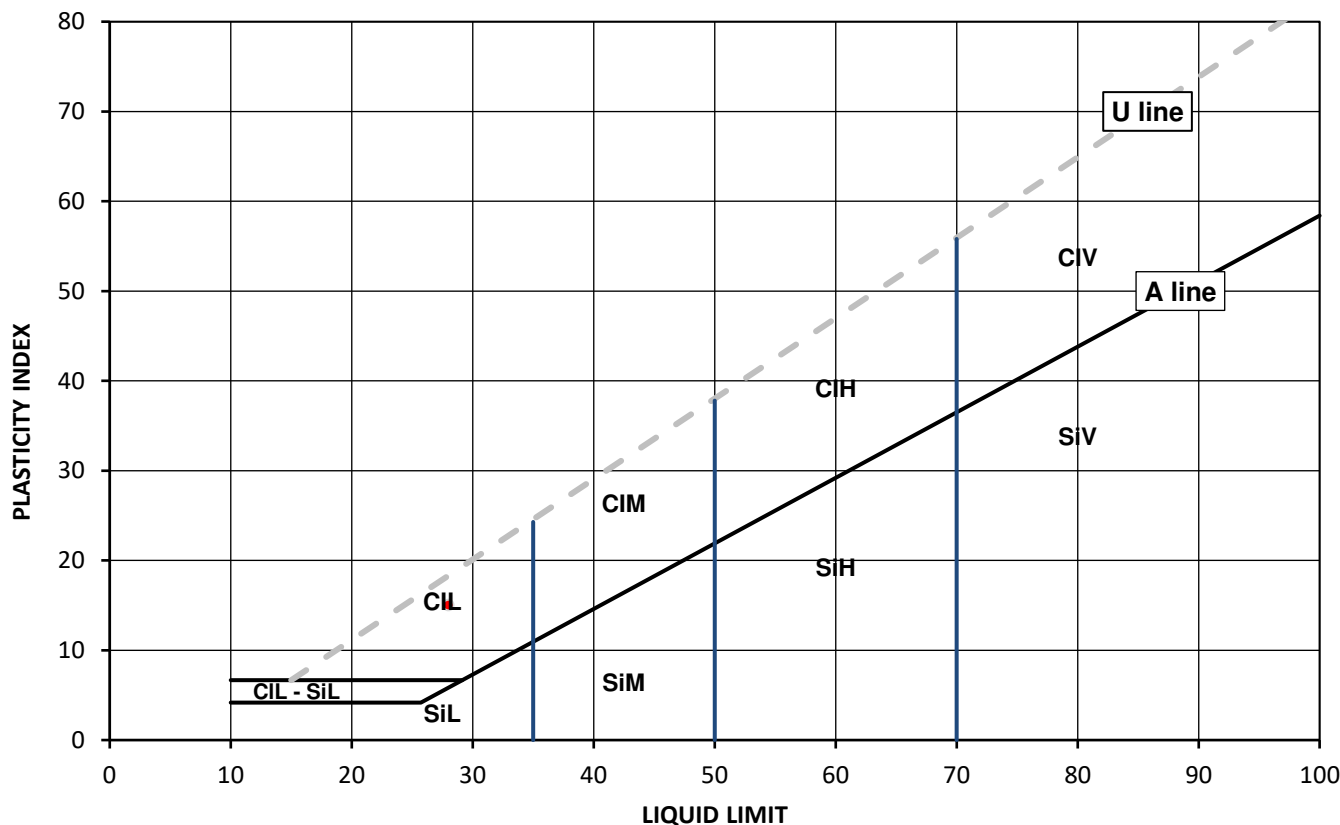
Test Results:

Laboratory Reference: 2098352
Hole No.: BH101
Sample Reference: 5
Sample Description: Brown slightly gravelly very sandy CLAY

Depth Top [m]: 6.70
Depth Base [m]: 7.01
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
15	28	13	15	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Clay	Plasticity	Liquid Limit
Cl	Clay	L Low	below 35
M	Medium	M Medium	35 to 50
H	High	H High	50 to 70
V	Very high	V Very high	exceeding 70
O	Organic	O Organic	append to classification for organic material (eg CIHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Katarzyna Koziel

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Client: Apex Consulting Engineers Ltd
Client Address: Unit 3, Acres Hill Business Park,
2 Acres Hill Lane, Sheffield
South Yorkshire, S9 4LT

Contact: Matthew Thompson
Site Address: Portugal Street

Moisture Content by BS 1377-2: 1990: Clause 3.2; Water Content by BS EN
17892-1: 2014; Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test),
Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2: 1990: Clause 8.2

Client Reference: 1007
Job Number: 21-25777
Date Sampled: 24/11/2021
Date Received: 26/11/2021
Date Tested: 09/12 - 16/12/2021
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Moisture Content [W]	Water Content [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m				%	%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3	%		
2098350	BH101	3	3.00	3.45	D	Brown slightly gravelly sandy CLAY	Atterberg 1 Point	15		98	35	17	18						
2098351	BH101	4	5.00	6.20	B	Brownish grey gravelly very clayey SAND	Atterberg 1 Point	8.1		88	24	12	12						
2098352	BH101	5	6.70	7.01	D	Brown slightly gravelly very sandy CLAY	Atterberg 1 Point	15		100	28	13	15						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Katarzyna Koziel

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Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Apex Consulting Engineers Ltd
Client Address: Unit 3, Acres Hill Business Park,
2 Acres Hill Lane, Sheffield,
South Yorkshire, S9 4LT
Contact: Matthew Thompson
Site Address: Portugal Street

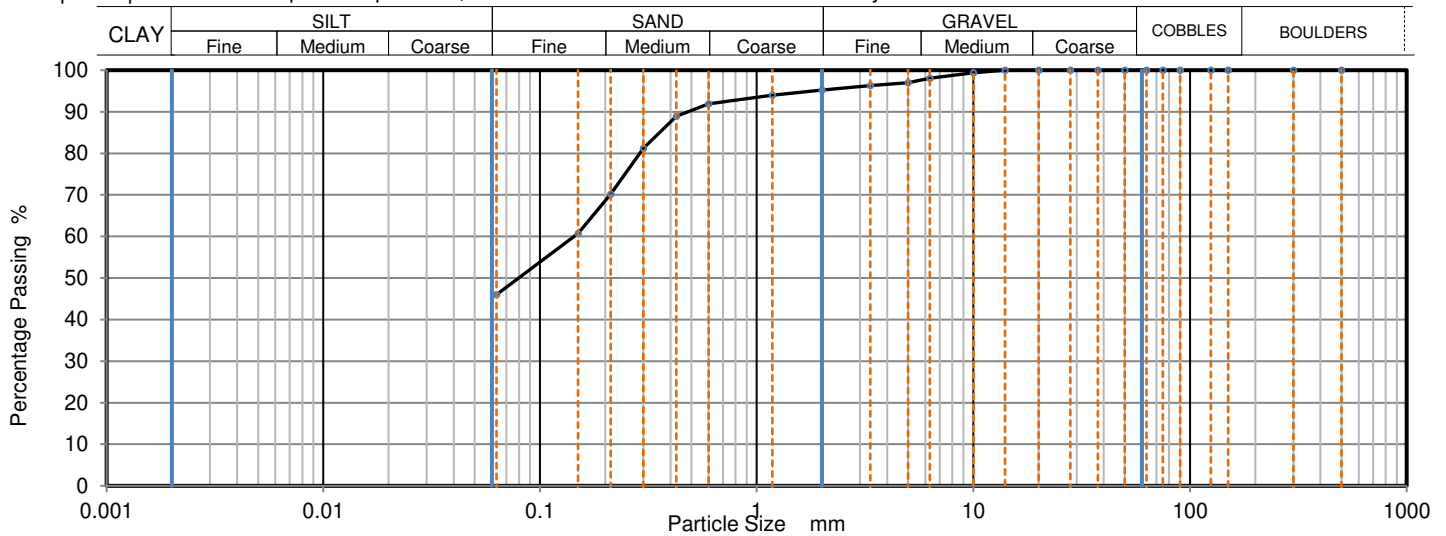
Client Reference: 1007
Job Number: 21-25777
Date Sampled: 24/11/2021
Date Received: 26/11/2021
Date Tested: 16/12/2021
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2098351
Hole No.: BH101
Sample Reference: 4
Sample Description: Brownish grey gravelly very clayey SAND
Sample Preparation: Sample was quartered, oven dried at 108.0 °C and broken down by hand.

Depth Top [m]: 5.00
Depth Base [m]: 6.20
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	98		
5	97		
3.35	96		
2	95		
1.18	94		
0.6	92		
0.425	89		
0.3	81		
0.212	70		
0.15	61		
0.063	46		

Sample Proportions	% dry mass
Very coarse	0
Gravel	5
Sand	49
Fines <0.063mm	46

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 2.3
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks:

Signed:

Katarzyna Koziel

Katarzyna Koziel
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for and on behalf of i2 Analytical Ltd

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SUMMARY REPORT

Summary of Point Load Strength Index Tests Results

Tested in Accordance with: ISRM: 2007, pages 125-132

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: Apex Consulting Engineers Ltd
Client Address: Unit 3, Acres Hill Business Park,
2 Acres Hill Lane, Sheffield,
South Yorkshire, S9 4LT
Contact: Matthew Thompson
Site Address: Portugal Street

Client Reference: 1007
Job Number: 21-25777
Date Sampled: 24/11/2021
Date Received: 26/11/2021
Date Tested: 17/12/2021
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks # (including water content if measured)	Specimen Reference	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P kN	Equivalent diameter, De mm	Point Load Strength Index	
		Reference	Depth Top m	Depth Base m	Type				Type (D, A, I, B)	Direction (L, P or U)		Lne mm	W mm	Dps mm	Dps' mm			Is MPa	Is(50) MPa
2098353	BH101	6	8.50	8.56	U	Orangish brown SANDSTONE	WC = 7.9%, Shape not suitable for Diametral - tested as AXIAL.	1	A	P	YES	-	87.3	62.0	58.0	0.8	80.3	0.12	0.15
2098355	BH101	8	11.13	11.20	U	Orangish brown SANDSTONE	WC = 10.0%, Shape not suitable for Diametral - tested as AXIAL.	1	A	P	YES	-	87.7	64.0	46.0	0.9	71.7	0.17	0.19
2098356	BH101	9	14.56	14.60	U	Brown SANDSTONE	WC = 10.9%, Shape not suitable for Diametral - tested as AXIAL.	1	A	U	YES	-	84.5	49.0	35.0	0.4	61.4	0.09	0.10
2098357	BH101	10	15.60	15.65	U	Orangish brown SANDSTONE	WC = 8.7%, Shape not suitable for Diametral - tested as AXIAL.	1	A	P	YES	-	86.2	62.0	52.0	0.6	75.5	0.10	0.12
2098358	BH101	11	17.02	17.06	U	Orangish brown SANDSTONE	WC = 10.0%, Shape not suitable for Diametral - tested as AXIAL.	1	A	P	YES	-	79.1	39.0	38.0	0.6	61.9	0.14	0.16
2098359	BH101	12	21.37	21.40	U	Brown SANDSTONE	WC = 10.5%, Shape not suitable for Diametral - tested as AXIAL.	1	A	U	YES	-	83.2	47.0	43.0	0.6	67.5	0.13	0.15
2098360	BH102	13	21.60	21.70	U	Orangish brown SANDSTONE	WC = 10.8%, Shape not suitable for Diametral - tested as AXIAL.	1	A	P	YES	-	83.3	58.0	52.0	0.8	74.3	0.14	0.16
2098363	BH105	16	28.90	28.95	U	Orangish brown SANDSTONE	WC = 10.3%, Shape not suitable for Diametral - tested as AXIAL.	1	A	P	YES	-	85.2	73.0	54.0	1.2	76.5	0.20	0.25
2098364	BH106	17	29.93	30.00	U	Brown SANDSTONE	WC = 10.0%, Shape not suitable for Diametral - tested as Irregular.	1	I	U	YES	-	39.2	84.7	80.0	0.5	63.2	0.13	0.14

Note: # non accredited; Test Type: D - Diametral, A - Axial, I - Irregular Lump, B - Block; Direction: L - parallel to planes of weakness, P - perpendicular to planes of weakness, U - unknown or random;
Dimensions: Dps - Distance between platens (platen separation), Dps' - at failure (see ISRM note 6), Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P;
Detailed legend for test and dimensions, based on ISRM, is shown above; Size factor, F = (De/50)0.45 for all tests

Comments:

Signed:

Katarzyna Koziel

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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4041

Client: Apex Consulting Engineers Ltd
 Client Address: Unit 3, Acres Hill Business Park,
 2 Acres Hill Lane, Sheffield,
 South Yorkshire, S9 4LT
 Contact: Matthew Thompson
 Site Address: Portugal Street

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

SUMMARY REPORT

Summary of Uniaxial Compression Test on Rock Test Results

Tested in Accordance with: ISRM, 2007, p153, part 1

i2 Analytical Ltd
 Unit 8 Harrowden Road
 Brackmills Industrial Estate
 Northampton NN4 7EB



Environmental Science

Client Reference: 1007
 Job Number: 21-25777
 Date Sampled: 24/11/2021
 Date Received: 26/11/2021
 Date Tested: 17/12/2021
 Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Specimen Dimensions (2)				Bulk density (2)	Water Content (1)	Uniaxial Compression (3)			
		Reference	Depth Top	Depth Base	Type			Diameter	Length	H/D	Orientation of sample			Condition	Stress Rate	Mode of failure	UCS
			m	m													
2098354	BH101	7	10.80	10.98	U	Orangish brown SANDSTONE	Sample is below recommended length to diameter ratio.	86.2	98.3	1.1	Vertical	2.01	16.5	as received	0.0171	MS + AC	6.89
2098361	BH103	14	22.85	23.00	U	Orangish brown SANDSTONE	Sample is below recommended length to diameter ratio.*	86.3	112.4	1.3	Vertical	2.06	11.0	as received	0.0171	S + AC	5.73
2098362	BH104	15	27.50	27.65	U	Orangish brown SANDSTONE	Sample is below recommended length to diameter ratio.*	85.7	103.7	1.2	Vertical	2.04	10.2	as received	0.0173	S + AC	3.83

Note: 1 - ISRM p87 test 1, water content at 105 ± 3 oC, specimen as tested for UCS, 2 - ISRM p86 clause (vii), Caliper method used for determination of bulk volume and derivation of bulk density, 3 - ISRM p153 part 1, determination of Uniaxial Compressive Strength (UCS) of Rock Materials, above notes apply unless annotated otherwise in the remarks. Compaction machine: VJ Tech AUTOCON - VJT 51-3011; Mode of failure legend: S - Single shear, MS - multiple shear, AC - Axial cleavage, F - Fragmented

Comments: * Duration of test, fell below time specified in ISRM method, 2007, p153, part1.

Signed:

Katarzyna Koziel

Katarzyna Koziel
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 for and on behalf of i2 Analytical Ltd

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Appendix I – UXO Assessment

STAGE 1 PRELIMINARY UXO RISK ASSESSMENT

REPORT REF: PRA-21-1571 | Revision: 0



Suite 6, Delta House, Laser Quay,
Culpeper Close, Rochester, ME2 4HU
0207 117 2492
www.brimstoneuxo.com

Client: Tier Consulting
Project: Portugal Street East, Manchester
Date: 25/08/2021

INTRODUCTION

The Stage 1 Preliminary Risk Assessment is an initial screening assessment designed to highlight any sources of unexploded ordnance (UXO) with the potential to contaminate a given site.

The aim of the Stage 1 assessment is to identify or discount the need for further detailed research - a Stage 2 Detailed UXO Risk Assessment.

This desktop assessment has been researched and written by a dedicated Researcher / Risk Assessor and produced in accordance with the CIRIA C681 Guidelines: 'Unexploded Ordnance, a Guide for the Construction Industry' (published in 2009).

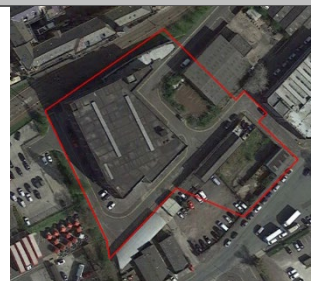
In preparation for this assessment, original wartime records, historic OS mapping and the *Brimstone UXO Sources Database* have been reviewed. The latter incorporates multiple datasets plotting the positions of a variety of domestic military sites and confirmed historic German bombing targets.

The Stage 1 Preliminary Risk Assessment considers the following:

1. The Proposed Works
2. Enemy Action during WWI and WWII
3. British / Allied Military Activity
4. Historic Site Occupancy
5. Risk Mitigating Factors

THE SITE

The Site (approximately centred on the National Grid Ref: SJ 85196 97950) is located in Manchester, within Greater Manchester, approximately 350m east of Manchester Piccadilly railway station. The Site comprises a multitude of buildings, ranging from one to three storeys. Betley Street, Heyrod Street, Churchgate Buildings and Portugal Street East are also located within the Site. It is bound to the north-east by commercial structures, to the south and south-east by Travis Street, Adair Street, structures and hard standing, to the west by a car park and north-west by railway tracks.



THE PROPOSED WORKS

Proposed SI works comprise window sampling to 4m bgl and trail pitting to 4m bgl, mostly within internal areas (current buildings).

Developmental works comprise two high rise residential blocks with basement car park.

ENEMY ACTION DURING WWI AND WWII

Potential Source of UXO	Significant?	Details	
WWI German Bombing	x/✓	Manchester experienced at least one small scale raid during WWI.	
WWII German Bombing	✓	British District Bombing Density Statistics	The Site is located within the WWII-era County Borough of Manchester which sustained 27 bombs / 1,000 acres, a low-to-moderate bombing density.
		Evidence of bomb strikes / damage	No evidence of bombing within the immediate vicinity of the Site. The nearest incident is recorded approximately 100m south-west of the Site.

			All residential structures on Site cleared before the outbreak of WWII. No historic mapped evidence of potential bomb damage.
		Local Bombing Decoy Sites	None within a significant distance of the Site. The closest was located approximately 7.3km south-east of the Site.
		Local German Bombing Targets	Manchester London Road Station (now Manchester Piccadilly Station), located approximately 350m east, was identified as a primary Luftwaffe target. A Goods Shed, located approximately 50m east of the site, may also have been a target of opportunity.
WWII German Cross Channel Artillery Shelling	✘	n/a	
BRITISH / ALLIED MILITARY ACTIVITY			
Potential Source of UXO	Significant?	Details	
WWII Home Guard (HG) activity	✘	Soldiers of the 50 th Lancashire (Manchester) Ancoats HG Battalion will have been active locally during WWII. However, armed HG troops are highly unlikely to have accessed/utilised the Site.	
Site requisitioned for wartime military use	✘	n/a	
Existing or historic Army or RAF training area / weapons range	✘	n/a	
Existing or historic military bases and other installations	✘	n/a	
Existing or historic munitions or explosives factories	✘	n/a	
Existing or historic military storage depots	✘	n/a	
Existing or historic military defensive fortifications	✘	n/a	
WWII light and / or heavy anti-aircraft (LAA and HAA) fire	✓	30 permanent HAA batteries were active within range of the Site during WWII. LAA guns would have likely defended vulnerable points within the wider area too. Luftwaffe activity in the region was frequent. It is possible that an unexploded AA shell struck the Site.	
WWII pipe-mined locations and beach minefields	✘	n/a	
SITE HISTORY			
What was the Site occupancy historically, especially during WWI and WWII?	During WWII, the north-eastern section comprised Public Buildings. The rest of the Site comprised open ground and roadway, as a result of pre-war slum clearance.		
RISK MITIGATING FACTORS			
Post-conflict ground works	By 1948, small commercial structures had been developed in the south, along Heyrod Street. By 1965, a Warehouse had been constructed in the western section. By 1980-1987, the structure in the north-east had been redeveloped, with the Site resembling its current layout. The excavations associated with foundations for the post-WWII structures erected on Site are anticipated to have varied from shallow (<2 storeys) to deep (>2 storeys). The laying of (any) hard surfaced ground is likely to have disturbed WWII-era soil to a very shallow depth.		

Likelihood of UXO remaining	The risk from (any) very shallow buried UXO will almost certainly have been mitigated. The risk from (any) shallow and deep buried UXO will have been partially mitigated.
-----------------------------	--

CONCLUSIONS

German UXO:

- Manchester was subject to medium and small-scale air raids during WWII. The wartime figures for the wider borough suggest a low-to-moderate bombing density. The Site was positioned in close proximity to the city centre target area and therefore the local bombing density was likely higher than this figure suggests.
- Luftwaffe target records indicate that the closest target was Manchester London Road Station (now Manchester Piccadilly Station), located approximately 350m east. No evidence of bombing within the immediate vicinity was discovered.
- A comparison of historical OS maps indicates that the majority of the Site was occupied by cleared ground, with a Public Building in the north-west, which is not anticipated to have sustained bomb damage.
- As areas of the Site are expected to have survived the war intact, any evidence of a UXB strikes within these areas likely have been observed and reported at the time. As other areas of the Site comprised open ground, any UXB could have occurred unobserved and remained undetected, its entry hole obscured in vegetation.
- The Site has been subject to a significant amount of post-conflict ground works. All wartime structures have been cleared and several structures have been developed across the Site. Substantial post-conflict works reduces the risk of encountering UXO.

British / Allied UXO:

- No evidence of significant military activity specifically on Site has been found and none is likely to have occurred.
- It is possible that an unexploded British AA shell struck the Site during. However, any such UXO incident would likely have been observed and reported at the time.

RECOMMENDATION(S)

SI Works	A Stage 2 Detailed Risk Assessment is not considered necessary prior to ground works commencing. However, the possibility of shallow buried UXO remaining on Site cannot be completely ruled out at desktop stage. Therefore, a UXO Safety Awareness Briefing to all personnel conducting ground works would be considered prudent.
Development Works	

Appendix J – Correspondence

Our Reference: 1007-ACE-GEO-007

9th August 2021

M J White
Olympian Homes
85 Buckingham Gate
London
SW1E 6PD

Following recent correspondence, please find below our proposal for undertaking a site investigation on the above land. We understand that the proposed development will include two residential tower blocks, 29 and 23 storeys with a central podium.

The site comprises a single parcel of land, 0.85ha in size and is currently occupied by a derelict warehouse structure, a former repair depot for Transport for Greater Manchester (TfGM), a printing workshop, a scrap metal merchant, car park for a van depot and derelict grassland.

Key points gleaned from a brief review of 3rd party report, BGS records and publicly available data include:

- The site was formerly occupied by residential housing (terraces) until redevelopment with the current warehouse in the 1960s along with a former iron works and coppersmiths in the east
- This site is at medium risk of UXO according to Zetica's online risk maps.
- The site lies within a Coal Authority Development Low Risk Area; no significant risks have been identified
- Based on comments made in the Planning Decision notice, an archaeological watching brief and assessment is required
- Given the presence of made ground, RoC consider the site to be at risk from hazardous gas
- Ground conditions are expected to comprise a veneer of made ground overlying Glacial Till (firm/stiff gravelly clay) to c. 10m, with weathered sandstone bedrock and Chester Sandstone below

We will need a Promap or topo survey in CAD format, to provide a base plan for technical drawings etc.

Our site investigation will be undertaken in accordance with UK good practice (as outlined in BS5930, BS10175, LCRM etc).

Our ground appraisal will include a desk study, contamination analysis & risk assessment with regards to human health & the environment. It is intended to

assist others as they proceed with design of the proposed development and to be suitable for submission as part of a planning application.

In putting together this proposal, we understand that Olympian have full reliance on the reports previously issued by RoC, and therefore our scope of works is designed to supplement existing data. Most notably, no allowance for further geotechnical assessment has been allowed for. Our report will focus on contamination risks and will look to address Planning Conditions 9(a) and 9(b) on Application no. 121099/FO/2018.

This proposal allows for the following works:

SCOPE OF WORKS

A breakdown of the various elements of investigation is given below, along with costs for each stage. All prices are excluding VAT. Please note, the breakdown is given for information only and this project should be treated as a lump sum proposal as per the figure given on page 4; prices for each element are not necessarily able to be removed or carried out in isolation as there are some overlap costs (eg, engineering supervision, subcontractor fees etc).

1. PRELIMINARY WORK

1.1 Preliminary investigation & Stage 1 UXO: £***

We will carry out a more detailed review of 3rd party information pertinent to the site; we have not allowed for obtaining new copies of environmental search information; it is assumed that we can make use of the information contained within RoC's reports.

We've allowed for a Preliminary (Stage 1) UXO Risk Assessment; if this identifies significant risk, a Stage 2 assessment may be required prior to ground investigation. It may also highlight the need for supervision by a UXO specialist during works.

An engineer will also attend site to carry out a walkover survey.

This information will be used to inform the conceptual site model and enable refinement of ground investigation design. Once completed, if requested by Manchester City Council (MCC), we will issue our proposed scope of works for their approval.

2. FIELDWORK

2.1 Investigation logistics and enabling works: £***

In putting together this proposal, Apex have visited site with Olympian to check access availability; the following have been allowed for to enable safe investigation of internal areas:

- Provision of internal artificial lighting and generator
- Provision of truck to lift window sampling rig up to loading bay on the western wall
- Provision of extraction vents

In addition, it is assumed that Olympian will arrange clearance of debris within Rammon House and confirmation that services are switched off inside the building.

2.2 Trial pitting: £***

We have allowed for one day of trial pitting (up to c. 8no. trial pits) across the site to gain better coverage and enable retrieval of representative samples of made ground/natural soils for subsequent laboratory testing.

Trial pitting will be confined to external areas only, using a JCB-type wheeled excavator equipped with hydraulic breaker.

The engineer will make use of a hand-held shear vane where possible in cohesive soils to estimate undrained shear strength.

On completion, any excess arisings & broken hardstanding will be left piled on top of each backfilled trial pit; these areas will not be suitable for trafficking. No allowance has been made for formal reinstatement.

All trial pits will be supervised and logged by an experienced geo-environmental engineer throughout.

2.3 Windowless sampling & concrete coring: £***

We have allowed for 4 days on site including:

- two days large diameter coring through floor slabs with hand-pit follow-on to max. 1.2m depth; followed by,
- two days drilling with a windowless sample borehole rig (c. 11no. boreholes) through the pre-cored locations, allowing investigation to up to c. 4m.

Boreholes will be positioned in areas of restricted access, namely internal areas of Rammon House, the TfGM depot, the printing workshop on Heyrod Street and the car park of a van hire company situated off Adair street.

It should be noted that the amount of coring able to be done in a day will largely depend on the thickness of floor slabs and the level of reinforcement. If slab thickness/reinforcement significantly slows down progress on site, it may be necessary to carry out additional day(s) of investigation at cost of £*** per day.

Representative samples of natural and made ground will be taken during windowless sampling, and hand vane readings will be taken where possible within cohesive soils.

Eight of the boreholes will be installed with monitoring wells to c.4m depth; the remainder will be backfilled and reinstated using post-mix concrete.

Boreholes will be supervised and logged by an experienced geo-environmental engineer throughout.

3. LABORATORY TESTING

3.1 Laboratory testing – geotechnical: £***

Whilst no geotechnical assessment is included in this scope, it would be prudent to obtain some more samples of shallow natural soils to compliment RoC's data for geotechnical designers to use in pile & basement wall design. Therefore, we have allowed for the following tests:

- 10no. moisture content & Atterberg limits
- 10no. pH & water-soluble sulphate
- 6no. particle size distribution tests

3.2 Laboratory testing – soils contamination: £***

Chemical soil analysis allowed for includes:

- 18no. pH & metals, asbestos ID, TOC
- 18no. banded TPH
- 9no. speciated PAH
- 9no. sVOCs
- 6no. calorific value

The above suite is based on our review of the site's history and current features. If conditions vary significantly and/or additional testing is required in light of initial results (eg positive asbestos ID), we will inform you immediately of any additional cost prior to scheduling further analysis.

4. REPORTING

4.1 Land Contamination Appraisal Report: £***

On completion of fieldwork and laboratory testing, a factual and interpretative report will be issued containing recommendations with regards to contamination, remediation requirements and hazardous gas.

COSTS & INVOICING

Costs for this investigation can be considered as a lump sum fee of **£***plus VAT**. Variation will only occur if substantial additional works are recommended in light of site investigation findings. In these cases, we will inform you immediately and seek your permission prior to carrying out any such works.

We will submit our invoices on completion of each element listed above.

HEALTH & SAFETY

Prior to fieldwork, risk assessments and method statements will be sent to Olympian for review.

Utility plans are required to minimise risks associated with striking underground services. We will make efforts not to damage any services (using utility plans and a CAT & Genny). However, we cannot accept liability for damage to any underground services that are not accurately marked on plans made available to us prior to commencement of our field investigation, or have not been accurately marked on the ground by a responsible third party (e.g. utility company, site owner).

Under the CDM Regulations 2015, we must be provided with pre-construction information already in your possession, or information that can reasonably be obtained through sensible enquiry. This information must be relevant to the project, have an appropriate level of detail, and be proportionate to the nature of the risks.

ASSUMPTIONS

In putting together this proposal, we have made the following assumptions:

- Asbestos surveys for all buildings will be made available and will confirm they are safe for investigation (i.e. no loose debris etc likely to be disturbed by drilling)
- Olympian will arrange clearance of debris on the floor of Rammon House (bulldozing into a corner will suffice)
- Olympian have full reliance on RoC's data, which we can re-use in our report
- No work is to be undertaken within the existing highways (Heyrod Street, Churchgate Buildings & Portugal Street East); this is to avoid the need for streetworks licenses and would be better undertaken once these highways are Stopped Up.
- Full set of service plans will be provided to Apex

ADDITIONAL WORK

In addition to the scope outlined above, the following additional work may be required in future:

- Day rate for additional days on site: £***
- Remediation Strategy: £***
- Stage 2 UXO Risk Assessment: £***
- UXO Supervision during works: £*** per day (£*** assuming 4 days on site)

- Post-demolition trial pitting investigation comprising c. 10 trial pits within the footprint of existing buildings and highways (once Stopped Up) with chemical testing on 6 no. samples. £***.
- Foundation Works Risk Assessment. Given proposals to remove made ground in order to accommodate the basement, a formal FWRA is not considered necessary. However, if mandated by the Local Authority, we could produce one for an additional cost of £***.
- Groundwater analysis to aid a Foundation Works Risk Assessment. £***.
- Gas monitoring comprising 6 visits across 2 months. This should not be necessary given proposals to remove made ground and include a basement car park, especially given the results from RoC's investigation. However, if required by the Local Authority, it could be carried out for an additional cost of £***.
- Investigation of the Principal Aquifer. At this stage, no allowance has been made for drilling to, and sampling of, the Chester Sandstone aquifer. We do not consider this necessary and will state this in our Land Contamination Appraisal Report. However, the Environment Agency may request such work. This would mean substantial additional costs in the region of £**k to £**k.
- Initial conversations with geotechnical designers suggest the RoC data is sufficient to enable pile design. However, it may be prudent to allow a contingency of on additional deep borehole in the east of the site as per RoC's recommendations. A rotary cored borehole to c. 30m depth with geotechnical testing would cost an additional c. £**k (could be partially included as part of the aquifer investigation above).

TERMS & CONDITIONS

The above scope of works will be undertaken in line with our standard Terms & Conditions, which are appended to this letter.

Yours sincerely,



For and on behalf of

APEX CONSULTING ENGINEERS

Matthew Thompson ILM, CGeol, FGS, BSc (Hons)

Geotechnical Associate

TIER CONSULT SHEFFIELD LTD
STANDARD GENERAL TERMS OF APPOINTMENT FOR PROFESSIONAL SERVICES

1 In this Agreement:

"Tier" means Tier Consult Sheffield Limited (registered in England & Wales under company number 07661675);

"Client" means the client for whom Tier is to carry out the Services;

"Parties" means Tier and the Client together;

"Services" means the services or any part thereof to be carried out by Tier for the Client;

"Charges" means the charges to be levied by Tier to the Client for the Services;

"Intellectual Property" means all drawings, software, reports, specification, bills of quantities, calculations and other documents and information prepared by or on behalf of Tier in connection with the Services;

"Agreement" means the contract between the Parties evidenced by a written quotation or estimate from Tier to the Client, identifying the Services and the Charges and any other relevant matters pertaining to the Services, and incorporating these standard general terms of appointment.

2 References to the masculine and singular shall include reference to the feminine, neuter and plural as appropriate and vice-versa; references to persons shall include reference to firms, corporations and unincorporated associations and vice-versa; references to statutes shall be taken to include reference to any modification, amendment or re-enactment of the statute in force.

3 Any alteration to this Agreement shall only be effective if agreed by Tier in writing.

4 This Agreement is the entire agreement between the Parties with respect to the Services and, save for a statement made fraudulently, the Parties accept that they are to have no rights or liabilities in respect of pre-contractual statements.

5 A person who is not party to this Agreement shall have no right under the Contracts (Rights of Third Parties) Act 1999 to enforce any term of this Agreement.

6 The benefit and burden of this Agreement to the Client may be assigned only with Tier's express consent the giving of which shall be at Tier's entire discretion.

7 This Agreement shall be governed by and construed in accordance with English Law and be subject to the jurisdiction of the English Courts.

8 Tier shall carry out the Services using reasonable skill, care and diligence and in doing so shall be entitled to rely on information provided by the Client or on the Client's behalf.

9 The Client shall provide all necessary assistance to Tier in the carrying out of the Services and provide free of charge to Tier all data, reports, plans, drawings and other information (whether or not contained in documents) in the possession of the Client which pertain to the Services.

10 In the event that there is a material alteration in the Services and/or Tier are prevented from or delayed in undertaking the Services by reasons beyond their control, Tier shall be entitled to payment by the Client of their reasonable charges caused as a result of such alteration, prevention or delay and such charges will be treated as additional Charges payable in accordance with this Agreement.

11 Nothing in this Agreement shall restrict Tier's liability:

11.1 to the extent that the Unfair Contract Terms Act 1977 prohibits Tier from excluding or restricting such liability for death or personal injury; or

11.2 for fraud.

12 Tier shall not be liable for any indirect, economic or consequential loss or damage arising from or in connection with this Agreement.

13 Tier will not be held liable for any delay or failure to fulfil Tier's obligations under this Agreement as a result of causes beyond Tier's reasonable control.

14 Save as above the liability of Tier and/or its officers, directors, employees and subcontractors under or in connection with this Agreement whether in contract, tort, breach of statutory duty or otherwise shall be limited to the lower of (i) such sum as Tier ought reasonably to pay having regard to its responsibility for the total loss or damage suffered by the Client on the basis that all other consultants, contractors or suppliers whose acts, omissions, services or advices have caused or contributed to the said loss or damage shall be deemed to have paid to the Client such contribution as it would be just and equitable for them to pay having regard only to the extent of their responsibility and ignoring any limitations of liability that may be incorporated into their contracts with the client or with any other party, (ii) the Charges, (iii) £1million.

15 The parties agree and acknowledge that the clauses above relating to limitation of liability satisfy the requirement of reasonableness as set out in the Unfair Contract Terms Act 1977.

16 The limits of liability set out in this Agreement shall continue to bind the Client notwithstanding any termination of this Agreement.

17 Tier shall be under no obligation to provide collateral warranties or letters of reliance.

18 All Intellectual Property shall remain vested in Tier and Tier shall not be liable for the use by any person of Intellectual Property for any purpose other than that for which it was prepared. Provided that all sums due from the Client to Tier however arising and whether relating to this Agreement or any other have been paid, Tier grants a royalty free licence to the Client to use and to reproduce Intellectual Property in connection with the Services.

19 Until all sums due from the Client to Tier however arising and whether relating to this Agreement or any other have been paid Tier shall be entitled to a lien over all of the Client's documents in Tier's possession.

20 Any invoice issued by Tier further to this Agreement shall be payable upon receipt and time shall be of the essence in relation to payment. If an invoice or any balance of an invoice remains outstanding after 14 days from the invoice date the following sums shall be payable in addition at Tier's option:

20.1 a fixed sum calculated in accordance with s.5A, Late Payment of Commercial Debts (Interest) Act 1998;

20.2 interest from the date of invoice at the rate of 1.5% per month, compounded on a monthly basis, both before and after judgment; and

20.3 the full amount of Tier's administrative and other costs incurred in recovering any unpaid sum including legal costs and disbursements on an indemnity basis.

21 The Client shall have no right of set-off in any circumstances and:

21.1 all sums due to the Tier in respect of this Agreement shall be paid in full without deduction save only for any deductions or withholdings required by law; and

21.2 if any deductions or withholdings are required by law the Client shall pay to Tier such further sums as will ensure that the aggregate of the sums paid or payable under this Agreement shall, after deducting all such deductions or withholdings, leave Tier with the same amount as it would have been entitled to receive under this Agreement in the absence of any such deductions or withholdings.

22 Tier may terminate this Agreement by giving at least 30 days' notice in writing to the Client in which event Tier shall be entitled to payment of that proportion of the Charges that relates to the Services performed up to the date of expiry of the notice to terminate.

23 Tier may suspend or terminate this Agreement with immediate effect without notice if the Client is in breach of any part of it or is subject to or instigates insolvency proceedings of any type or if Tier reasonably believes that the Client is or will be unable to pay its debts as they fall due. If Tier suspends or terminates this Agreement for such a reason the Client will not be entitled to make any claim against Tier in respect of such suspension or termination and the Client will remain liable to Tier in respect of all sums due.

24 Where a change in VAT liability is to be applied retrospectively, and if requested to do so by the Client (who will be responsible for reimbursing, on demand, Tier's reasonable costs) and (after taking account of any sums potentially payable to HMRC on account of claims to recover VAT input tax) a claim for repayment of overpaid tax will overall result in Tier recovering a larger sum from HMRC than it is potentially liable to pay HMRC, Tier shall submit a claim to HMRC for a refund of VAT charged in respect of the relevant Services already supplied, less additional VAT due to HMRC as a result of the decrease in Tier's input VAT recovery. The amount of VAT refunded to the Client shall be limited to the amount Tier receives from HMRC.

25 Fees and charges specified in the Agreement do not include any amount arising in respect of VAT (or other applicable taxes), which, if applicable, shall be payable by the Client and added to such fees at the rate in force at the time that they become due.

26 Any delay, waiver or abrogation by Tier in enforcing any aspect of this Agreement will not affect or restrict any of Tier's rights under this Agreement.

Our Reference: 1007-ACE-GEO-014

27th September 2021

Mr J White
Olympian Homes
85 Buckingham Gate
London
SW1E 6PD

Dear Jon,

Portugal Street East – supplementary borehole (pile design)

Following recent correspondence, please find below our proposal for undertaking some supplementary investigation at the above site.

We have already undertaken a ground investigation which focussed on contamination assessment. Our report is expected to be issued in October 2021; key findings to date have been summarised in our letter dated 8th September 2021 (ref. 1007-ACE-GEO-012).

As noted in our original proposal, conversations with geotechnical designers suggest additional drilling in the east may be beneficial in order to help refine pile design.

Our site investigation will be undertaken in accordance with UK good practice (as outlined in BS5930, BS10175, LCRM etc).

This proposal allows for the following works:

SCOPE OF WORKS

1. FIELDWORK

1.1 Cable percussion drilling with rotary core follow on

We have allowed for the drilling of one cable percussion borehole to c. 12m depth (or refusal). The borehole will be cased off throughout drilling and will enable SPTs at c. 1m intervals to 5m (1.5m thereafter), alternating with retrieval of UT100 samples in cohesive soils.

On encountering SPT refusal in bedrock the boreholes will be advanced by rotary coring to around 30m depth. This is to allow detailed logging of the bedrock and enable sampling of rock core for strength testing (see below).

On completion, the borehole will be sealed with bentonite through bedrock and at the natural/made ground boundary.

2. LABORATORY TESTING

2.1 Laboratory testing – geotechnical

Geotechnical analysis allowed for includes:

- 3no. moisture content and Atterberg limits (shrinkability)
- 3no. water-soluble sulphate, chloride, nitrate & magnesium - BRE method
- Up to 3no. unconsolidated, undrained triaxial tests on undisturbed samples
- Up to 3no unconfined compressive strength (UCS) tests on rock core samples
- 9no. point load tests on rock core samples

3. REPORTING

3.1 Supplementary Ground Appraisal Report

The data obtained as part of this phase of investigation will be included within our Ground Appraisal Report which is currently being written, along with preliminary pile capacities.

COSTS & INVOICING

Costs for this investigation can be considered as a lump sum fee of **£*** plus VAT**. Variation will only occur if substantial additional works are recommended in light of site investigation findings. In these cases, we will inform you immediately and seek your permission prior to carrying out any such works.

We will submit invoices on completion of each element listed above.

HEALTH & SAFETY

Prior to fieldwork, risk assessments and method will be sent to Olympian for review.

Utility plans are required to minimise risks associated with striking underground services. We will make efforts not to damage any services (using utility plans and a CAT & Genny). However, we cannot accept liability for damage to any underground services that are not accurately marked on plans made available to us prior to commencement of our field investigation, or have not been accurately marked on the ground by a responsible third party (e.g. utility company, site owner).

If you have copies of the necessary utility plans (including electricity, gas, water, drainage & telecom) it would be appreciated if you could forward these prior to the proposed fieldworks. However, if you do not have the necessary plans, we will obtain them direct from each of the utility companies.

CDM REGULATIONS 2015

Under the CDM Regulations 2015, we must be provided with pre-construction information already in your possession, or information that can reasonably be obtained through sensible enquiry. This information must be relevant to the project, have an appropriate level of detail, and be proportionate to the nature of the risks.

Unless a Principal Designer and/or Principal Contractor is appointed by the Client Olympian the responsibility of these roles falls to Olympian. Apex will perform the role of Contractor.

If required, Apex can take on the role of Principal Contractor and Principal Designer for the ground investigation phase of works only. Where this is required Olympian must inform Apex in writing at the time of appointment.

For clarity, this means Apex will design the ground investigation and manage any sub-contractors appointed by Apex who are working on site as part of the ground investigation only. Apex do not have the sufficient knowledge, experience or ability to carry out these roles beyond the ground investigation phase (i.e. as part of the construction phase). If additional works are taking place at the same time as the ground investigation, a separate Principal Contractor and Principal Designer must be appointed for those works and their details must be shared with Apex to enable liaison between parties such that works can be carried out safely.

TERMS & CONDITIONS

The above scope of works will be undertaken in line with our standard Terms & Conditions, which are appended to this letter.

Yours sincerely,



For and on behalf of
Apex Consulting Engineers Ltd
Matthew Thompson CGeol, BSc (hons), ILM (Level 7), FGS
Geotechnical Associate

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Matthew Thompson

From: Jon White <jon.white@olympianhomes.com>
Sent: 28 September 2021 17:12
To: Matthew Thompson
Cc: John Davies; Jack Shepherd; Richard Goodwin
Subject: RE: Portugal Street East - additional borehole

Follow Up Flag: Follow up
Flag Status: Flagged

Matt,

Thank you for your time on the phone.

Considering the potential impact on design, can you proceed the bore hole sampling and instruct the works.

Regards,

Jon White MSc(RealEstDev)
Senior Development Manager
For Olympian Homes

85 Buckingham Gate
London
SW1E 6PD
Tel: 0207 340 1170
DD: 0207 340 1176
Mob: 07977 92 99 44
E: jon.white@olympianhomes.com
www.olympianhomes.com

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From: Matthew Thompson <Matthew.Thompson@apexconsulting.co.uk>
Sent: 27 September 2021 18:49
To: Jon White <jon.white@olympianhomes.com>
Cc: John Davies <john.davies@olympianhomes.com>; Jack Shepherd <Jack.Shepherd@apexconsulting.co.uk>; Richard Goodwin <richard.goodwin@olympianhomes.com>
Subject: RE: Portugal Street East - additional borehole

Evening Jon,

Please see attached our fee for the additional BH as promised.

Any questions, please call.

Thanks & regards,

Matt



Matthew Thompson CGeol, BSc (hons), ILM (Level 7), FGS

Geotechnical Associate | Apex Consulting Engineers

Unit 3, Acres Hill Business Park, Acres Hill Lane, Sheffield, S9 4LR

t: 0114 241 9360 | m: 07539 381752 | e: Matthew.Thompson@apexconsulting.co.uk | w: apexconsulting.co.uk



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From: Jon White <jon.white@olympianhomes.com>

Sent: 23 September 2021 15:09

To: Matthew Thompson <Matthew.Thompson@apexconsulting.co.uk>

Cc: John Davies <john.davies@olympianhomes.com>; Jack Shepherd <Jack.Shepherd@apexconsulting.co.uk>;

Richard Goodwin <richard.goodwin@olympianhomes.com>

Subject: RE: Portugal Street East - additional borehole

Matt,

Yes, please can you get a quote for this.

We can have this done at any time, we will just need to get permission from MCC as before.

Regards,

Jon White MSc(RealEstDev)
Senior Development Manager
For Olympian Homes

85 Buckingham Gate
London
SW1E 6PD
Tel: 0207 340 1170
DD: 0207 340 1176
Mob: 07977 92 99 44
E: jon.white@olympianhomes.com
www.olympianhomes.com

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From: Matthew Thompson <Matthew.Thompson@apexconsulting.co.uk>

Sent: 23 September 2021 12:50

To: Jon White <jon.white@olympianhomes.com>

Cc: John Davies <john.davies@olympianhomes.com>; Jack Shepherd <Jack.Shepherd@apexconsulting.co.uk>

Subject: Portugal Street East - additional borehole

Afternoon Jon,

Jack has asked me to get in touch regarding additional geotechnical investigation at this site, as discussed during the meeting yesterday. I mentioned in the quote letter that an additional borehole would be worthwhile in order to refine piling costs (RoC also recommend this in the initial SI report). We gave a budget fee in the quote letter, would you like a formal fee proposal arranging?

Looking at the layout, the additional borehole could do to cover the south-east of the north-eastern tower; this sits over the area of car parking behind the TfGM depot and so we could carry this out prior to demolition.

Thanks & regards,

Matt



Matthew Thompson CGeol, BSc (hons), ILM (Level 7), FGS

Geotechnical Associate | Apex Consulting Engineers

Unit 3, Acres Hill Business Park, Acres Hill Lane, Sheffield, S9 4LR

t: 0114 241 9360 | m: 07539 381752 | e: Matthew.Thompson@apexconsulting.co.uk | w: apexconsulting.co.uk



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Date: 18/11/2021 - 22/11/2021

Drilling Equipment: Beretta T41 air mist flushing medium.

Page Number
Sheet 1 of 5[illegible]

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.





Rotary Core Log

Project Name: Portugal Street East				Client: Olympian Homes				Date: 18/11/2021 - 22/11/2021			
Location: Manchester				Contractor:							
Project No. : 1007				Crew Name:				Drilling Equipment: Beretta T41 air mist flushing medium.			
Borehole Number BH 01		Hole Type RC		Level		Logged By MJT		Scale 1:50		Page Number Sheet 2 of 5	

Well	Water	Depth (m)	Type /FI	Coring			Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description		
				TCR	SCR	RQD							
			PL				92mm	7.30			Hard reddish-brown and grey slightly gravelly sandy CLAY. Gravel is rounded to angular fine to medium of mixed lithologies. (COHESIVE GLACIAL DEPOSITS)	8	
											Red slightly silty medium SAND with much tabular fine to coarse gravel-sized fragments of very weakly-cemented sand. (COMPLETELY WEATHERED CHESTER PEBBLE BEDS SANDSTONE)		
		8.50 - 8.56	PL				92mm	8.20			Extremely weak very narrowly to very thinly bedded orangish-red siliceous fine grained SANDSTONE. Bedding planes dip at c. 10-15°, generally smooth planar micaceous. Rare rounded fine to medium gravel of mixed lithologies. (CHESTER PEBBLE BEDS SANDSTONE)	9	
		8.20 - 9.70		51	42	13							
		9.70 - 11.20	UCS				92mm				From 9.7m to 10.0m, recovered as silty medium SAND. SPT at 9.7m (25 for 70mm, 50 for 30mm)	10	
		10.80 - 10.98		61	53	38							
		11.13 - 11.20											
		11.20 - 12.70	PL				92mm				From 11.2 to 11.5m, recovered as silty medium SAND. Single coarse gravel sized subangular fragment of marl. SPT at 11.2m (12 for 75mm, 13 for 40mm, 50 for 40mm)	12	
	75	58		26									
12.70 - 14.20					92mm				From 12.5 to 12.6m, recovered as silty medium SAND. SPT at 12.7m (75 for 20mm)	13			
		91	67	40									
			Type/FI	TCR	SCR	RQD	D/R/(SPT)				From 13.8 to 14.0m, recovered as silty fine to medium SAND with occasional rounded medium gravel	14	

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)

Remarks

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



Date: 18/11/2021 - 22/11/2021

Contractor:

Drilling Equipment: Beretta T41 air mist flushing medium.

Page Number
Sheet 3 of 5

Remarks	
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.	

Rotary Core Log

Project Name: Portugal Street East				Client: Olympian Homes				Date: 18/11/2021 - 22/11/2021			
Location: Manchester				Contractor:							
Project No. : 1007				Crew Name:				Drilling Equipment: Beretta T41 air mist flushing medium.			
Borehole Number BH 01		Hole Type RC		Level		Logged By MJT		Scale 1:50		Page Number Sheet 4 of 5	

Well	Water	Depth (m)	Type /FI	Coring			Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description		
				TCR	SCR	RQD							
		21.37 - 21.40	PL				92mm				Extremely weak very narrowly to very thinly bedded orangish-red siliceous fine grained SANDSTONE. Bedding planes dip at c. 10-15o, generally smooth planar micaceous. Rare rounded fine to medium gravel of mixed lithologies. (CHESTER PEBBLE BEDS SANDSTONE)		
		21.60 - 21.70	PL								SPT at 21.5m, (25 for 40mm, 50 for 10mm)	22	
		21.50 - 23.00	UCS	55	45	17							
		22.85 - 23.00											
		23.00 - 24.50		87	67	40							
		24.50 - 26.00	UCS				92mm						
		26.00 - 27.50		84	75	28							
		27.50 - 27.65					92mm						
			Type/FI	TCR	SCR	RQD	D/R/(SPT)					28	

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)

Remarks

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.





Rotary Core Log

Project Name: Portugal Street East				Client: Olympian Homes				Date: 18/11/2021 - 22/11/2021									
Location: Manchester				Contractor:													
Project No. : 1007				Crew Name:				Drilling Equipment: Beretta T41 air mist flushing medium.									
Borehole Number BH 01		Hole Type RC		Level		Logged By MJT		Scale 1:50		Page Number Sheet 5 of 5							
Well	Water	Depth (m)	Type /FI	Coring			Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description						
				TCR	SCR	RQD											
		27.50 - 29.00	PL	60	54	19	92mm	30.00			Extremely weak very narrowly to very thinly bedded orangish-red siliceous fine grained SANDSTONE. Bedding planes dip at c. 10-15o, generally smooth planar micaceous. Rare rounded fine to medium gravel of mixed lithologies. (CHESTER PEBBLE BEDS SANDSTONE) <u>From 28.0 to 29.05, with closely spaced tabular subagular medium gravel sized marl inclusions with surrounding black staining.</u>	29					
		28.90 - 28.95															
		29.00 - 30.00	PL	70	56	10						30					
		29.93 - 30.00															
											End of Borehole at 30.000m	31					
												32					
												33					
												34					
												35					
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)
Remarks																	
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.																	

Appendix H – Rotary Core Log & Photos

Borehole ID : BH01

Box ID : 4



Top Depth (m)

9.70

Bottom Depth (m)

13.40

Borehole ID : BH01

Box ID : 5



Top Depth (m)

13.40

Bottom Depth (m)

15.70

Borehole ID : BH01

Box ID : 6



Top Depth (m)

15.70

Bottom Depth (m)

21.50

Borehole ID : BH01

Box ID : 7



Top Depth (m)

21.50

Bottom Depth (m)

24.50

Borehole ID : BH01

Box ID : 8



Top Depth (m)

24.50

Bottom Depth (m)

27.50

Borehole ID : BH01

Box ID : 9



Top Depth (m)

27.50

Bottom Depth (m)

30.00