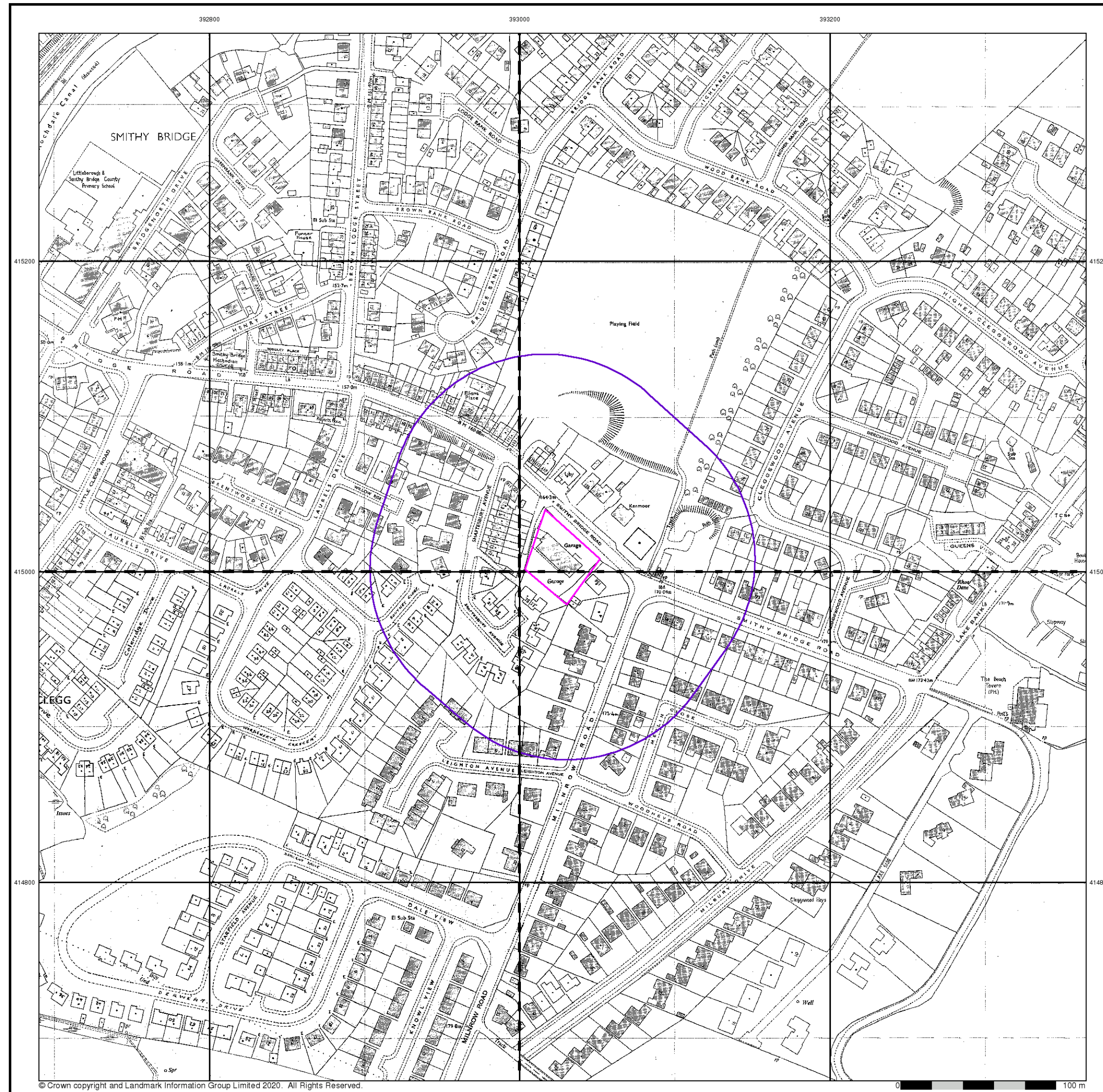




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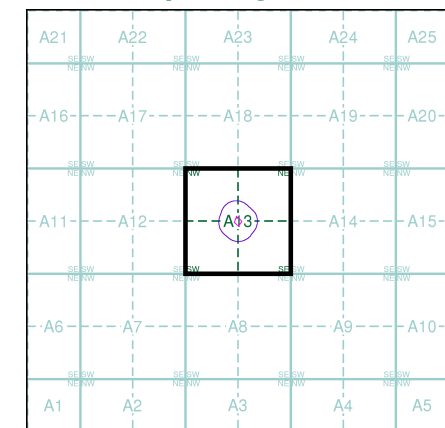
Additional SIMs
Published 1977 - 1988
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

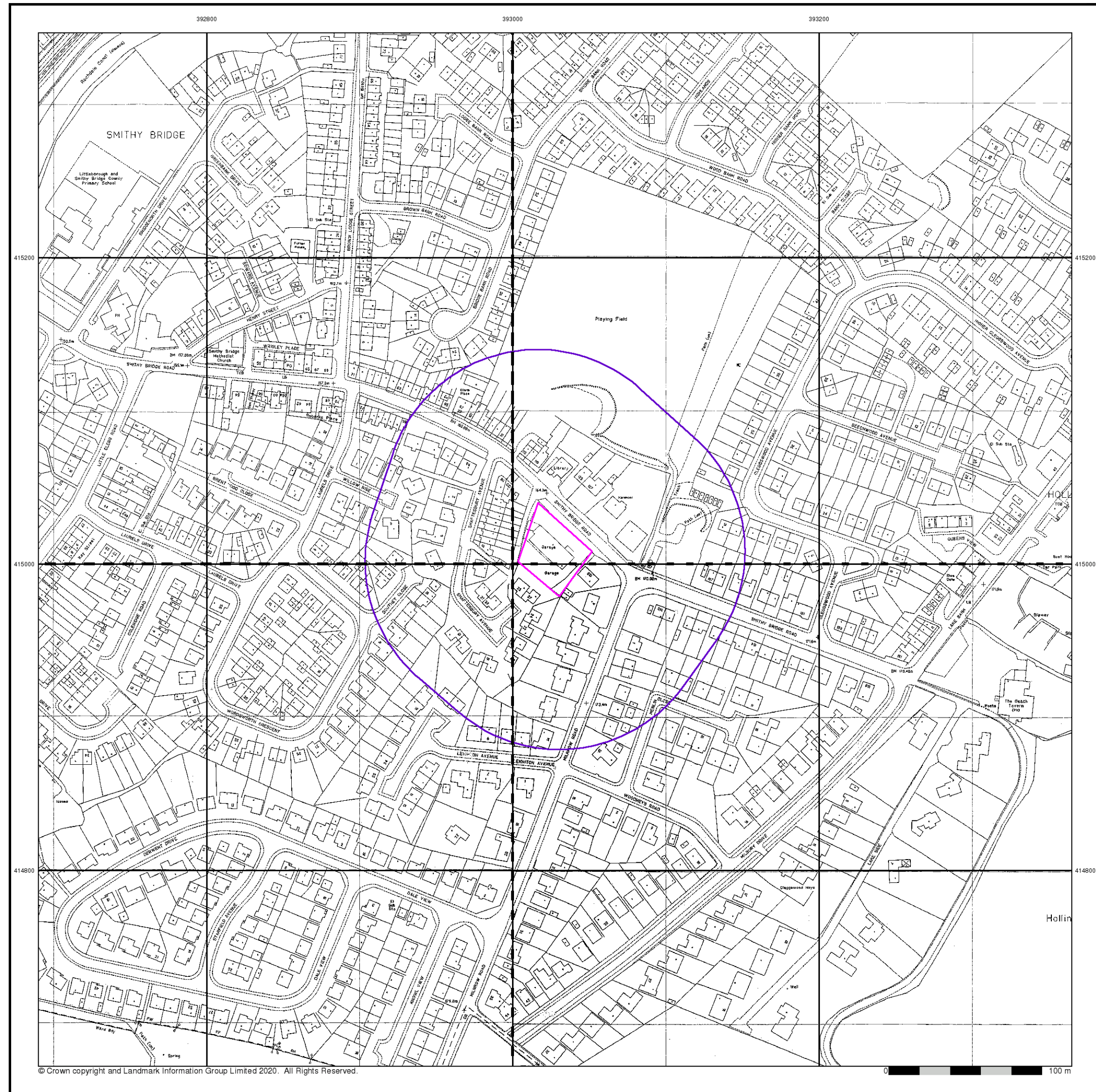
SD9215SE	SD9315SW
1988	1988
1:1,250	1:1,250
SD9214NE	SD9314NW
1977	1988
1:1,250	1:1,250

Historical Map - Segment A13



Order Details
Order Number: 263973599_1_1
Customer Ref: 0556 V2
National Grid Reference: 393030, 415010
Slice: A
Site Area (Ha): 0.16
Search Buffer (m): 100

Site Details
Lake Garage, Smithy Bridge Road, Littleborough, Lancashire, OL15 0BQ



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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'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999.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)

SD9215SE 1992 1:1,250	SD9315SW 1992 1:1,250
SD9214NE 1992 1:1,250	SD9314NW 1992 1:1,250

Historical Map - Segment A13

Order Details

Order Number: 263973599_1_1
Customer Ref: 0556 V2
National Grid Reference: 393030, 415010
Slice: A
Site Area (Ha): 0.16
Search Buffer (m): 100

Site Details

Lake Garage, Smithy Bridge Road, Littleborough, Lancashire, OL15 0BQ

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Historical Aerial Photography

Published 2001

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13

A21	A22	A23	A24	A25
-A16-	-A17-	-A18-	-A19-	-A20-
-A11-	-A12-	-A13-	-A14-	-A15-
-A6-	-A7-	-A8-	-A9-	-A10-
A1	A2	A3	A4	A5

Order Details

Order Number: 263973599_1_1
Customer Ref: 0556 V2
National Grid Reference: 393030, 415010
Slice: A
Site Area (Ha): 0.16
Search Buffer (m): 100

Site Details

Lake Garage, Smithy Bridge Road, Littleborough, Lancashire, OL15 0BQ

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Appendix D

Soil Bore Logs



11 The Mending Rooms
Sunny Bank Mills
Town St., Farsley, LS28 5UJ
0113 257 5397

Borehole Log

Borehole No.

WS1

Sheet 1 of 1

Project Name:	Lake Garage, Littleborough	Project No.	0566	Co-ords:		Hole Type	WS
Location:	Littleborough	Level:				Scale	1:50
Client:	Lincolnshire Coop	Dates:	03/11/2020			Logged By	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	PID	PID=0	0.15 0.20 0.30			TARMAC.	1
								MADE GROUND: Grey sandy clayey gravel fill.	
		0.80	PID	PID=0				SAND: Brown/orange SAND. Damp.	
		1.10	PID	PID=0				GRAVEL: Yellow/brown cobbly sandy gravel of fine, weathered, brittle shale. Cobbles and gravels of sandstone.	
					1.20			End of Borehole at 1.20m	2
									3
									4
									5
									6
									7
									8
									9
									10

Remarks	Refused at 1.2m on obstruction.
---------	---------------------------------



11 The Mending Rooms
Sunny Bank Mills
Town St., Farsley, LS28 5UJ
0113 257 5397

Borehole Log

Location Details:
Southern corner of the site.

Borehole No.
WS2
Sheet 1 of 1

Project Name:
Lake Garage, Littleborough

Project No.
0566

Co-ords:

Hole Type
WS

Location:
Littleborough

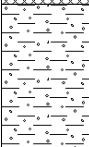
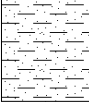
Level:

Scale
1:50

Client:
Lincolnshire Coop

Dates:
03/11/2020

Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.10			TARMAC.	1
					0.25			MADE GROUND: Grey sandy clayey gravel fill. MADE GROUND: Soft to firm gravelly clay. Gravels of red brick and occasional coal fragments.	
		0.30	PID	PID=0					
		0.80	PID	PID=0	0.85				
		1.20	PID	PID=0				CLAY: Soft to firm grey/brown slightly gravelly CLAY. Gravels are rounded of pebbles. Occasional coal fragments.	
		1.80	PID	PID=0	1.80			GRAVEL: Grey slightly silty slightly clayey very sandy GRAVEL. Gravels of pebbles and siltstone. Wet.	
		2.20	PID	PID=0	2.20			CLAY: Soft to firm very sandy slightly gravelly CLAY. Damp.	
		2.80	PID	PID=0	2.90		End of Borehole at 2.90m	3	
								4	
								5	
								6	
								7	
								8	
								9	
								10	

Remarks

Refused at 2.9m on siltstone. Some groundwater noted at the bottom.

		11 The Mending Rooms Sunny Bank Mills Town St., Farsley, LS28 5UJ 0113 257 5397		Borehole Log			Borehole No. WS3		
Project Name: Lake Garage, Littleborough		Project No. 0566		Location Details: Directly south of the dismantled AST to the rear of the garage.			Sheet 1 of 1		
Location: Littleborough				Level:			Hole Type WS		
Client: Lincolnshire Coop				Dates: 03/11/2020			Scale 1:50		
Well		Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
Water Strikes		Depth (m)	Type	Results					
		0.30	PID	PID=0	0.10 0.20 0.40		 TARMAC.  MADE GROUND: Grey sandy clayey gravel fill.  MADE GROUND: Firm brown/red gravelly CLAY.  Gravels of red brick.  CLAY: Soft to firm plastic dark grey CLAY.	1	
		0.80	PID	PID=0	0.80 0.95		 CLAY: Soft plastic light grey CLAY.  GRAVEL: Grey slightly silty slightly clayey very sandy GRAVEL. Gravels of pebbles and siltstone. Wet.		
		1.20	PID	PID=0					
		1.80	PID	PID=0	1.90 2.10		 SILT: Grey slightly clayey SILT. Wet.  CLAY: Soft to firm grey very sandy silty CLAY.	2	
		2.30	PID	PID=0	2.50 2.60		 GRAVEL: Grey/brown loose silty clayey sandy GRAVEL.  SAND: Brown SAND. Wet.	3	
		2.80	PID	PID=0	3.30 3.50		 CLAY: Firm brown slightly sandy CLAY.		
							End of Borehole at 3.50m	4	
								5	
								6	
								7	
						8			
						9			
						10			
Remarks Refused at 3.5m on stiff clay.									



11 The Mending Rooms
Sunny Bank Mills
Town St., Farsley, LS28 5UJ
0113 257 5397

Borehole Log

Location Details:
Near former SB4 location. Eastern corner of the maintenance garage.

Borehole No.
WS4

Project Name:
Lake Garage, Littleborough

Project No.
0566

Co-ords:

Sheet 1 of 1

Location:
Littleborough

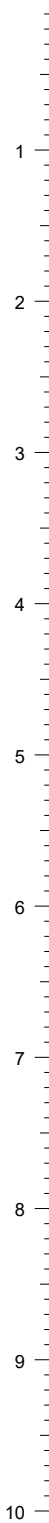
Level:

Scale
1:50

Client:
Lincolnshire Coop

Dates:
03/11/2020

Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.10			TARMAC.	
					0.20			MADE GROUND: Dark grey/black sandy gravel fill.	
		0.30	PID	PID=0	0.25			MADE GROUND: Red brick and sandstone cobble.	
								CLAY: Soft to firm grey/orange/brown CLAY with occasional fragments of coal and siltstone gravels.	
		0.80	PID	PID=0					
		1.30	PID	PID=0					
					1.80			SILT: Grey slightly clayey SILT. Damp.	2
				1.90			SAND: Brown SAND with occasional shale fragments. Wet.		
					2.50			CLAY: Soft to firm brown sandy CLAY with occasional siltstone gravels.	3
					3.50		End of Borehole at 3.50m		4
									5
									6
									7
									8
									9
									10

Remarks

Refused at 3.5m in clay.



11 The Mending Rooms
Sunny Bank Mills
Town St., Farsley, LS28 5UJ
0113 257 5397

Borehole Log

Borehole No.

WS5

Sheet 1 of 1

Project Name: Lake Garage, Littleborough

Project No.
0566

Co-ords:

Hole Type
WS

Location: Littleborough

Level:

Scale
1:50

Client: Lincolnshire Coop

Dates: 03/11/2020

Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	PID	PID=0	0.10			TARMAC.	
		0.20			0.20			MADE GROUND: Grey sandy clayey gravel fill.	
		0.30			0.30			MADE GROUND: Red brick crush.	
		0.40			0.40			CLAY: Stiff grey/orange/brown CLAY with occasional sandstone cobbles. Becoming more competent with depth.	
		0.80	PID	PID=0	0.80				1
		1.20	PID	PID=0	1.20				
		1.80	PID	PID=0	1.80				
					2.00			End of Borehole at 2.00m	2
									3
									4
									5
									6
									7
									8
									9
									10

Remarks

Refused at 2.0m in clay.



11 The Mending Rooms
Sunny Bank Mills
Town St., Farsley, LS28 5UJ
0113 257 5397

Borehole Log

Location Details:
West of an old tank farm area.

Borehole No.
WS6
Sheet 1 of 1

Project Name:
Lake Garage, Littleborough

Project No.
0566

Co-ords:

Hole Type
WS

Location:
Littleborough

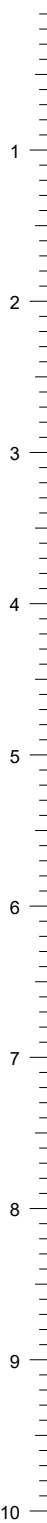
Level:

Scale
1:50

Client:
Lincolnshire Coop

Dates:
03/11/2020

Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.10			TARMAC.	
					0.20			MADE GROUND: Dark grey/black sandy gravel fill.	
		0.30	PID	PID=0	0.35			TARMAC.	
					0.60			MADE GROUND: Soft to firm, grey/orange/brown	
		0.80	PID	PID=0				CLAY with red brick and sandstone gravels.	
		1.20	PID	PID=0				CLAY: Soft to very stiff brown CLAY with coal fragments.	
					2.80			End of Borehole at 2.80m	
Remarks Refused at 2.8m in clay. Two layers of tarmac.									

		11 The Mending Rooms Sunny Bank Mills Town St., Farsley, LS28 5UJ 0113 257 5397		Borehole Log			Borehole No. WS7	
		Location Details:		North of an old tank farm.			Sheet 1 of 1	
Project Name: Lake Garage, Littleborough		Project No. 0566		Co-ords:			Hole Type WS	
Location: Littleborough					Level:			Scale 1:50
Client: Lincolnshire Coop					Dates: 03/11/2020			Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.10		 TARMAC.  MADE GROUND: Beige/red/dark brown gravel crush of sandstone, brick and mixed lithologies.  CLAY: Grey beige sandy CLAY.  CLAY: Soft grey CLAY with occasional wood fragments.  CLAY: Soft to firm, brown CLAY with occasional coal fragments and sandstone gravels.		
	0.30	PID	PID=0	0.20					
	0.40								
	0.50								
	0.80	PID	PID=0						
		1.20	PID	PID=0					
		1.80	PID	PID=0					
		2.90	PID	PID=0	2.90		End of Borehole at 2.90m		

Remarks
 Refused at 2.9m in clay.

Appendix E

Laboratory Certification



2183

Amended Report

Report No.:	20-30002-3		
Initial Date of Issue:	10-Nov-2020	Date of Re-Issue:	20-Nov-2020
Client	Geo2 Remediation		
Client Address:	Coniston House Louisa Street Idle Bradford BD10 8NE		
Contact(s):	Ugne Ankenaite		
Project	Lake Garage		
Quotation No.:		Date Received:	05-Nov-2020
Order No.:	2517/0566/UA	Date Instructed:	05-Nov-2020
No. of Samples:	7		
Turnaround (Wkdays):	13	Results Due:	23-Nov-2020
Date Approved:	20-Nov-2020		
Approved By:			



Details: Glynn Harvey, Technical Manager

Results - Soil

Project: Lake Garage

Client: Geo2 Remediation	Chemtest Job No.:				20-30002	20-30002	20-30002	20-30002	20-30002	20-30002
Quotation No.:	Chemtest Sample ID.:				1092165	1092166	1092167	1092168	1092169	1092171
	Sample Location:				WS1	WS4	WS5	WS6	WS7	WS3
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.8	0.3	1.8	0.8	2.9	2.8
	Date Sampled:				03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020
	Asbestos Lab:					DURHAM		DURHAM		
Determinand	Accred.	SOP	Units	LOD						
ACM Type	U	2192		N/A		-		-		
Asbestos Identification	U	2192		N/A		No Asbestos Detected		No Asbestos Detected		
ACM Detection Stage	U	2192		N/A		-		-		
Moisture	N	2030	%	0.020	8.4	8.5	11	19	13	16
Arsenic	U	2450	mg/kg	1.0		17		12		
Cadmium	U	2450	mg/kg	0.10		0.53		0.13		
Chromium	U	2450	mg/kg	1.0		25		15		
Copper	U	2450	mg/kg	0.50		34		24		
Mercury	U	2450	mg/kg	0.10		< 0.10		0.12		
Nickel	U	2450	mg/kg	0.50		23		24		
Lead	U	2450	mg/kg	0.50		91		46		
Selenium	U	2450	mg/kg	0.20		< 0.20		0.48		
Zinc	U	2450	mg/kg	0.50		63		51		
Total Organic Carbon	U	2625	%	0.20			0.76	5.7		0.24
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	53	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	9.6	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	11	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	29	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	400	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	41	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	550	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	16	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	13	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	28	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	150	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	3000	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	560	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	3700	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	4300	< 10	< 10	< 10	< 10
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		

Results - Soil

Project: Lake Garage

Client: Geo2 Remediation	Chemtest Job No.:				20-30002	20-30002	20-30002	20-30002	20-30002	20-30002
Quotation No.:	Chemtest Sample ID.:				1092165	1092166	1092167	1092168	1092169	1092171
	Sample Location:				WS1	WS4	WS5	WS6	WS7	WS3
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.8	0.3	1.8	0.8	2.9	2.8
	Date Sampled:				03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020
	Asbestos Lab:					DURHAM		DURHAM		
Determinand	Accred.	SOP	Units	LOD						
Trichlorofluoromethane	U	2760	µg/kg	1.0	< 1.0				< 1.0	
1,1-Dichloroethene	U	2760	mg/kg	1.0	< 1.0				< 1.0	
Trans 1,2-Dichloroethene	U	2760	mg/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	3.4	< 1.0	< 1.0	3.5	< 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	1.3	< 1.0	< 1.0	1.2	< 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	
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 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	

Results - Soil

Project: Lake Garage

Client: Geo2 Remediation	Chemtest Job No.:					20-30002	20-30002	20-30002	20-30002	20-30002	20-30002
Quotation No.:	Chemtest Sample ID.:					1092165	1092166	1092167	1092168	1092169	1092171
	Sample Location:					WS1	WS4	WS5	WS6	WS7	WS3
	Sample Type:					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):					0.8	0.3	1.8	0.8	2.9	2.8
	Date Sampled:					03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020
	Asbestos Lab:						DURHAM		DURHAM		
Determinand	Accred.	SOP	Units	LOD							
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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50					< 0.50	
Phenol	U	2790	mg/kg	0.50	< 0.50					< 0.50	
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50					< 0.50	
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50					< 0.50	
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50					< 0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50					< 0.50	
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50					< 0.50	
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50					< 0.50	
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50					< 0.50	
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50					< 0.50	
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50					< 0.50	
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50					< 0.50	
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50					< 0.50	
Isophorone	U	2790	mg/kg	0.50	< 0.50					< 0.50	
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50					< 0.50	
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50					< 0.50	
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50					< 0.50	
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50					< 0.50	
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50					< 0.50	
Naphthalene	U	2790	mg/kg	0.50	< 0.50					< 0.50	
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50					< 0.50	
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50					< 0.50	
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50					< 0.50	
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50					< 0.50	
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50					< 0.50	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50					< 0.50	
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50					< 0.50	

Results - Soil

Project: Lake Garage

Client: Geo2 Remediation	Chemtest Job No.:					20-30002	20-30002	20-30002	20-30002	20-30002	20-30002
Quotation No.:	Chemtest Sample ID.:					1092165	1092166	1092167	1092168	1092169	1092171
	Sample Location:					WS1	WS4	WS5	WS6	WS7	WS3
	Sample Type:					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):					0.8	0.3	1.8	0.8	2.9	2.8
	Date Sampled:					03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020	03-Nov-2020
	Asbestos Lab:						DURHAM		DURHAM		
Determinand	Accred.	SOP	Units	LOD							
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50				< 0.50		
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50				< 0.50		
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Acenaphthene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50				< 0.50		
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50				< 0.50		
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50				< 0.50		
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Fluorene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50				< 0.50		
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50				< 0.50		
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50				< 0.50		
Azobenzene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50				< 0.50		
Phenanthrene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Anthracene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Carbazole	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Fluoranthene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Pyrene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Chrysene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50				< 0.50		
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50				< 0.50		
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50				< 0.50		

Results - Water

Project: Lake Garage

Client: Geo2 Remediation	Chemtest Job No.:		20-30002		
Quotation No.:	Chemtest Sample ID.:		1092170		
	Sample Location:		WS5		
	Sample Type:		WATER		
	Date Sampled:		03-Nov-2020		
Determinand	Accred.	SOP	Units	LOD	
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Benzene	U	1760	µg/l	1.0	< 1.0
Toluene	U	1760	µg/l	1.0	< 1.0
Ethylbenzene	U	1760	µg/l	1.0	< 1.0
m & p-Xylene	U	1760	µg/l	1.0	< 1.0
o-Xylene	U	1760	µg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	µg/l	1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
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
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
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.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
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

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"

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 45 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 F

Risk Assessment Terminology

Definitions and Classifications of Risk Assessment Terminology.

Probability

Probability can be defined as the chance of a particular event occurring in a given period of time.

Descriptions of each of the four qualitative terms to be use in this report to describe the perceived probability of any identified pollutant linkage becoming realised are shown below in Table W.

Term	Description
High Likelihood	There is pollutant linkage and an event would appear very likely in the short-term and almost inevitable over the long-term, or there is evidence at the receptor of harm or pollution.
Likely	There is pollutant linkage and all the elements are present and in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short-term and likely over the long-term.
Low Likelihood	There is pollutant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a long period such an event would take place, and is less likely in the shorter term.
Unlikely	There is pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long-term.

Table W. Description of Probability Classifications

Severity

Severity (consequence) can be defined as the adverse effects (or harm) arising from a defined hazard, which impairs the quality of human health or the environment in the short or longer term.

Descriptions of each of the four qualitative terms to be use in this report to describe the perceived potential severity of any identified pollutant linkage becoming realised are shown overleaf in Table X.

Term	Description
Severe	Highly elevated concentrations likely to result in “significant harm” to human health as defined by the EPA 1990, Part 2A, if exposure occurs. Equivalent to EA Category 1 pollution incident including persistent and/or extensive effects on water quality; leading to closure of a potable abstraction point; major impact on amenity value or major damage to agriculture or commerce. Major damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long-term maintenance of the population. Catastrophic damage to crops, buildings or property.
Medium	Elevated concentrations which could result in “significant harm” to human health as defined by the EPA 1990, Part 2A if exposure occurs. Equivalent to EA Category 2 pollution incident including significant effect on water quality; notification required to abstractors; reduction in amenity value or significant damage to agriculture or commerce. Significant damage to aquatic or other ecosystems, which may result in a substantial adverse change in its functioning or harm to a species of special interest that may endanger the long-term maintenance of the population. Significant damage to crops, buildings or property.
Mild	Exposure to human health unlikely to lead to “significant harm”. Equivalent to EA Category 3 pollution incident including minimal or short lived effect on water quality; marginal effect on amenity value, agriculture or commerce. Minor or short lived damage to aquatic or other ecosystems, which is unlikely to result in a substantial adverse change in its functioning or harm to a species of special interest that would endanger the long-term maintenance of the population. Minor damage to crops, buildings or property.
Minor	No measurable effect on humans. Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems. Repairable effects of damage to buildings, structures and services.

Table X. Description of Severity Classifications

Once the severity and probability of a pollutant linkage has been determined the risk can be assessed using the risk matrix shown overleaf on Table Y.

Risk Matrix

By cross referencing the derived severity and probability in Table Y, below the perceived potential risk can be determined.

		Severity			
		Severe	Medium	Mild	Minor
Probability	High likelihood	Very high risk	High risk	Moderate risk	Moderate / low risk
	Likely	High risk	Moderate risk	Moderate / low risk	Low risk
	Low likelihood	Moderate risk	Moderate / low risk	Low risk	Very low risk
	Unlikely	Moderate / low risk	Low risk	Very low risk	Very low risk

Table Y. Risk Assessment Matrix

The risk categories detailed above are defined below in the following Table Z.

Term	Description
Very High Risk	There is a high probability that significant harm could arise to a designated receptor from an identified hazard at the site without appropriate remedial action.
High Risk	Significant Harm is likely to arise to a designated receptor from an identified hazard at the site without appropriate remedial action.
Moderate Risk	It is possible that without appropriate remedial action, harm could arise to a designated receptor but it is relatively unlikely that any such harm would be severe and if any harm were to occur, it is likely that such harm would be relatively mild.
Low Risk	It is possible that significant harm could arise to a designated receptor from an identified hazard but it is likely that at worst this harm if realised would normally be mild.
Very Low Risk	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

Table Z. Definition of Risk

Appendix G

Generic Method Statement. Watching Brief



Geo2 Remediation Ltd
Coniston House,
Louisa St. Idle
Bradford
BD10 8NE

Phone 0113 257 5397
Email info@geo2.co.uk
Web www.geo2.co.uk

Generic Watching Brief Method Statement

This method statement aims to establish a structure by which site works / development contractors will be able to effectively meet the requirements of a watching brief. A watching brief is frequently proposed as part of planning conditions imposed onto any brownfield site, or a site potentially affected by contaminants. This methodology proposed a strategy which allows the site workers to effectively undertake these works themselves without the need for a full time environmental specialist.

Requirements of a Nominated Competent Person (CP)

The party undertaking the site works will nominate a Competent Person (CP) who will be responsible for providing a watching brief over all excavation, soil handling works associated with construction and for ensuring site workers conform to appropriate PPE requirements at all times. The CP will be on-site during all enabling, and construction works.

The CP will be briefed by Geo² on environmental management during or in advance of the groundworks at an on-site meeting to be held prior to the commencement of works. This would typically address the following issues;

- A review of any existing site information with regard to areas of potential contamination both identified and unidentified,
- Types of contamination which may be encountered and also potential for unexpected contamination, and means of identification,
- Potential risks associated with contaminants, with regard to health and safety concerns of construction workers,
- Potential for waste disposal issues,
- Ensuring that the CP is confident and capable of undertaking the practical responsibilities identified,
- Any additional site specific concerns or factors which may prove relevant to works, such as any visual monitoring / inspection requirements (e.g. daily observations of adjacent streams etc).

The CP would be required to maintain records of any issues, as detailed above, which would be encountered during the programme of works. Records should detail the time and date, nature of any incident, or detail of potentially contaminated soils encountered, location of this material, where possible extent and the actions undertaken to ensure this was appropriately classified. These would

be required to be submitted to the client and Geo² to ensure that an appropriate validation report could be compiled to enable the planning conditions to be lifted. Records should be available onsite at all times for inspection as required.

The CP is also responsible for contacting Geo² in the event of encountering situations requiring environmental management. A Geo² contact will be ascribed to each site, so suitable site specific advice will be available over the phone as necessary. Site visits can be arranged at short notice to assist with any potentially significant issues.

Unexpected Contamination

Unexpected contamination may comprise impacted sub-soil, or structures such as underground storage tanks (UST), subsurface features, pipes, sumps or chambers with associated contamination observed beneath the site during the redevelopment works.

Where apparently contaminated sub-soils (or waters) are encountered, the permanent nominated CP should be contacted for assessment.

As a guide, apparently contaminated sub-soils or waters may comprise visually impacted and strongly odorous material. Encountered odours could be petrol, diesel, solvents or oil-like. Should materials of this description, or other description following a site specific briefing, be encountered and this material be considered to be unidentified, Geo² should be contacted. In such circumstances, the affected area should be isolated and work in the area stopped, pending the Geo² consultant visit to sample or assess the soil. The area should remain isolated whilst the samples are analysed at an appropriate laboratory, if considered necessary.

Based on the results and in comparison with adopted screening criteria, Geo² will determine whether the identified materials present a significant environmental risk. Should the soil need to be removed in line with the proposed development programme, or as a result of a risk based analysis, validation samples will be collected from the edge of the excavation by a Geo² site engineer.

All waste should be appropriately isolated and stored to prevent spreading contamination across the site. Waste should then be classified and disposed of in accordance with the applicable waste management regulations under full duty of care documentation. Potential exists for hazardous waste to be present, and this should also be dealt with in accordance with the relevant legislation.

Should unidentified underground features be encountered, such as tanks or fuel delivery lines, that require removal in line with the proposed development, they should be appropriately decommissioned. Decommissioning should comprise pumping and removal of waste water and any sediment in accordance with the applicable waste management regulations under full duty of care documentation. Water and sediment waste may need to be sampled and analysed to determine whether it needs to be disposed of as hazardous.

Should any structure encountered remain in situ, Geo² should be contacted to ensure that any potential impact that may be associated with this feature can be appropriately addressed, if necessary. This process may entail additional sampling works, which would require the identified area to be isolated until Geo² site staff are able to attend site.

Following removal of any such structure, the CP should inspect the excavations for apparently impacted materials. Should apparently contaminated material be identified beneath or adjacent to

the structure, Geo² should be contacted to undertake further sampling and analysis. All results will be included in the Validation Report.

The relevant planning authorities will be notified should any unexpected contamination be identified and any remedial actions that are required as a result of encountered materials will be agreed prior to the work being carried out.

Sampling Procedure

All samples obtained by Geo² will be stored in appropriate vessels for the required analysis and stored in controlled conditions prior to submission to an appropriately accredited laboratory. All samples will be obtained in line with standard industry guidance.

Validation Report

This typically forms the final part of any contaminated land planning condition and allows the client or local authority certainty that any contaminated land encountered during works has been appropriately addressed and the condition of remaining soils (and groundwater if applicable) is understood. This may be compiled by Geo² (typically in the event of unexpected contamination being encountered) or by the Client (this may take the form of a brief letter, stating the completed nature of the site and a brief description of conditions encountered).

Geo² Contact

A Geo² contact will be prescribed to the site upon implementation of the watching brief. If there are any other queries Geo² can be contacted on the office number at 0113 257 5397