



General

🔼 Specified Site Specified Buffer(s)

X Bearing Reference Point

Agency and Hydrological (Flood)

Extreme Flooding from Rivers or Sea without Defences (Zone 2)

Flooding from Rivers or Sea without Defences (Zone 3)

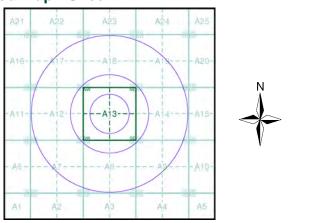
Area Benefiting from Flood Defence



Flood Water Storage Areas

--- Flood Defence

Flood Map - Slice A



Order Details

 Order Number:
 88157315_1_1

 Customer Ref:
 UK16.2295

 National Grid Reference:
 535400, 201380
 Slice: Site Area (Ha): Search Buffer (m):

А 0.01 1000

Site Details

Proposed Cheshunt Sports Village, Cheshunt, Herts, EN8 8RX

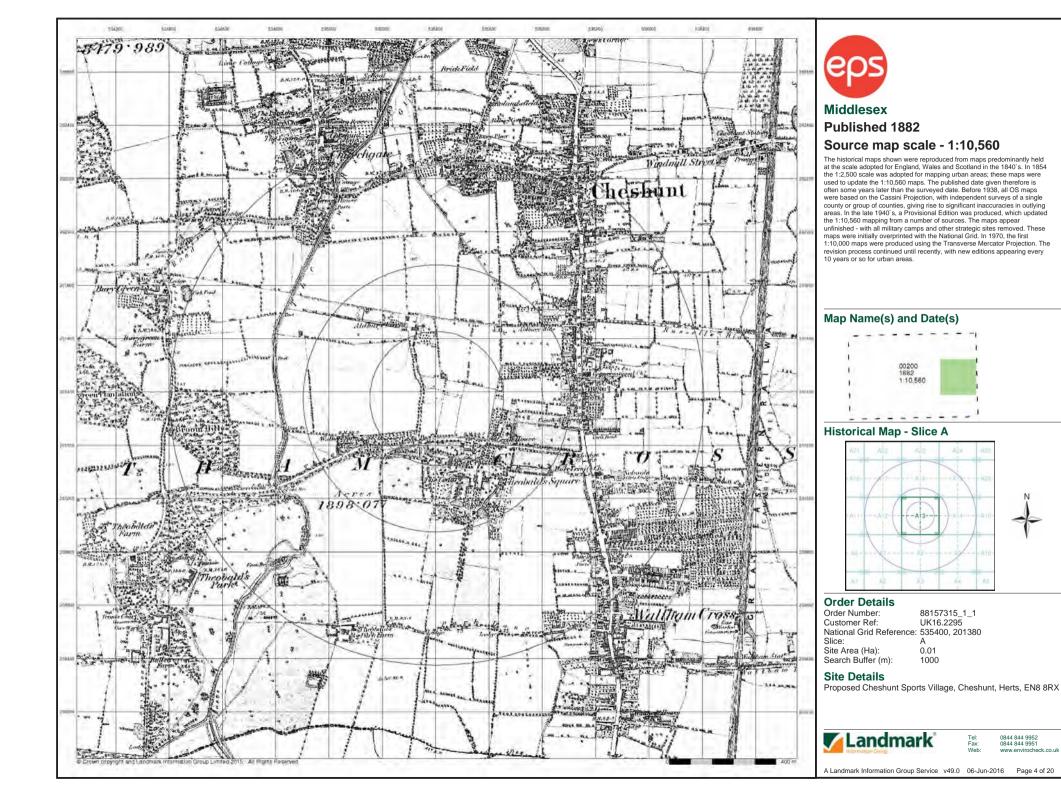


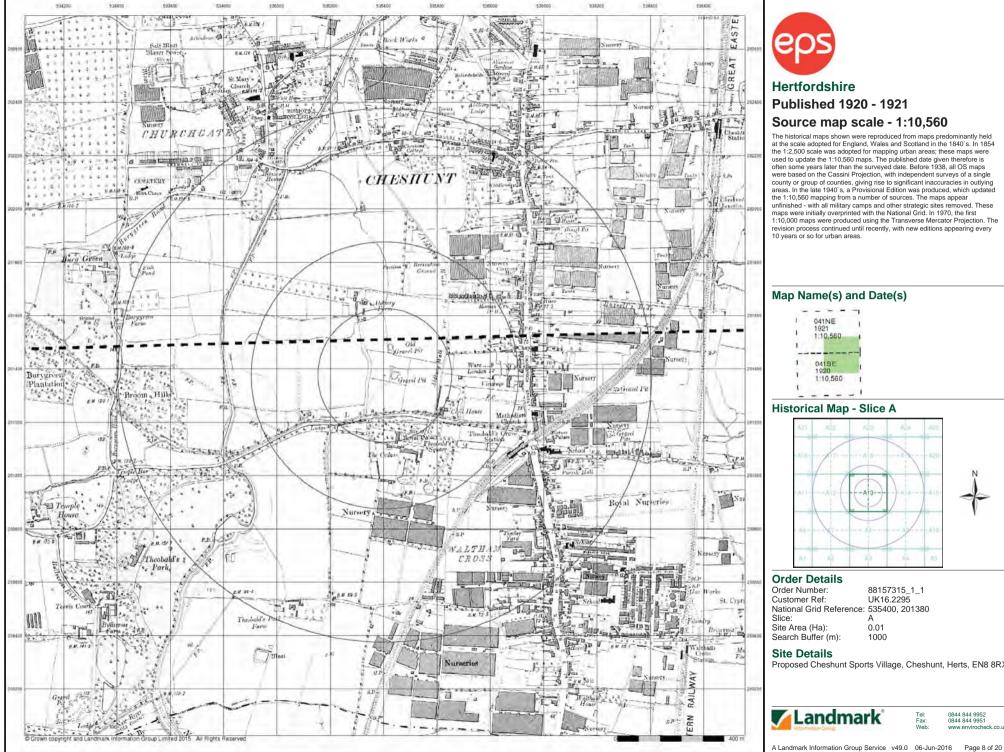
0844 844 9952 0844 844 9951 www.envirocheck.co.uk .



APPENDIX F

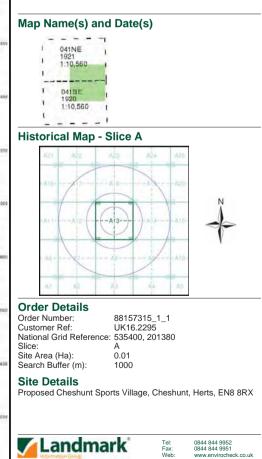
A Selection of Historic Maps

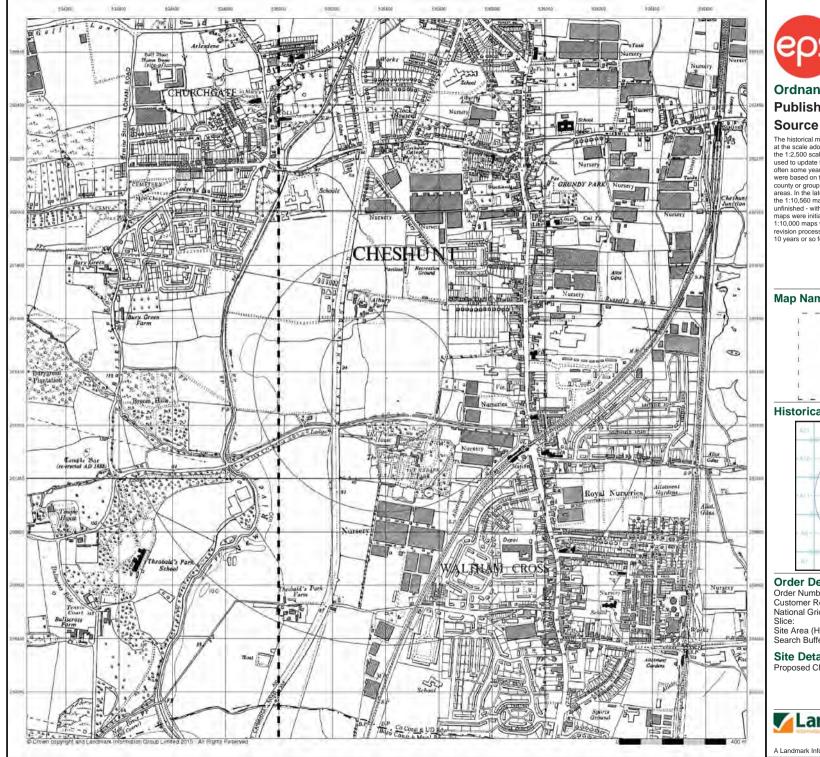




Hertfordshire Published 1920 - 1921 Source map scale - 1:10,560

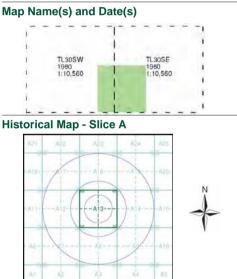
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some 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. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.





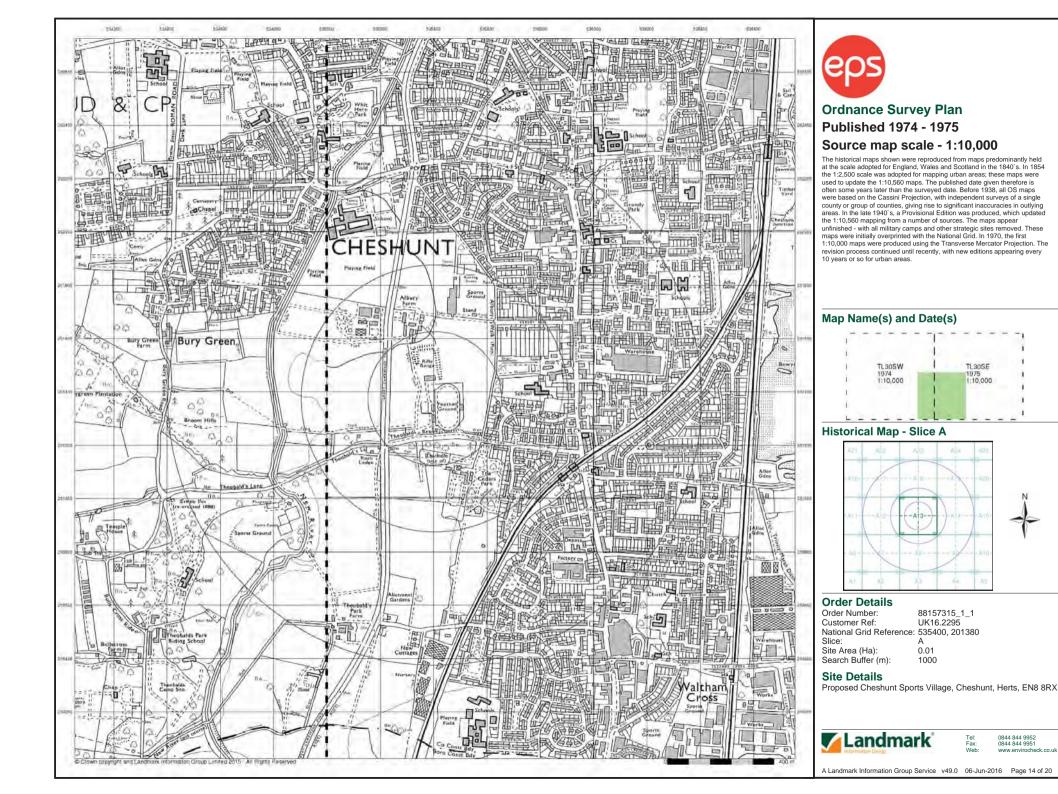
Ordnance Survey Plan Published 1960 Source map scale - 1:10,000

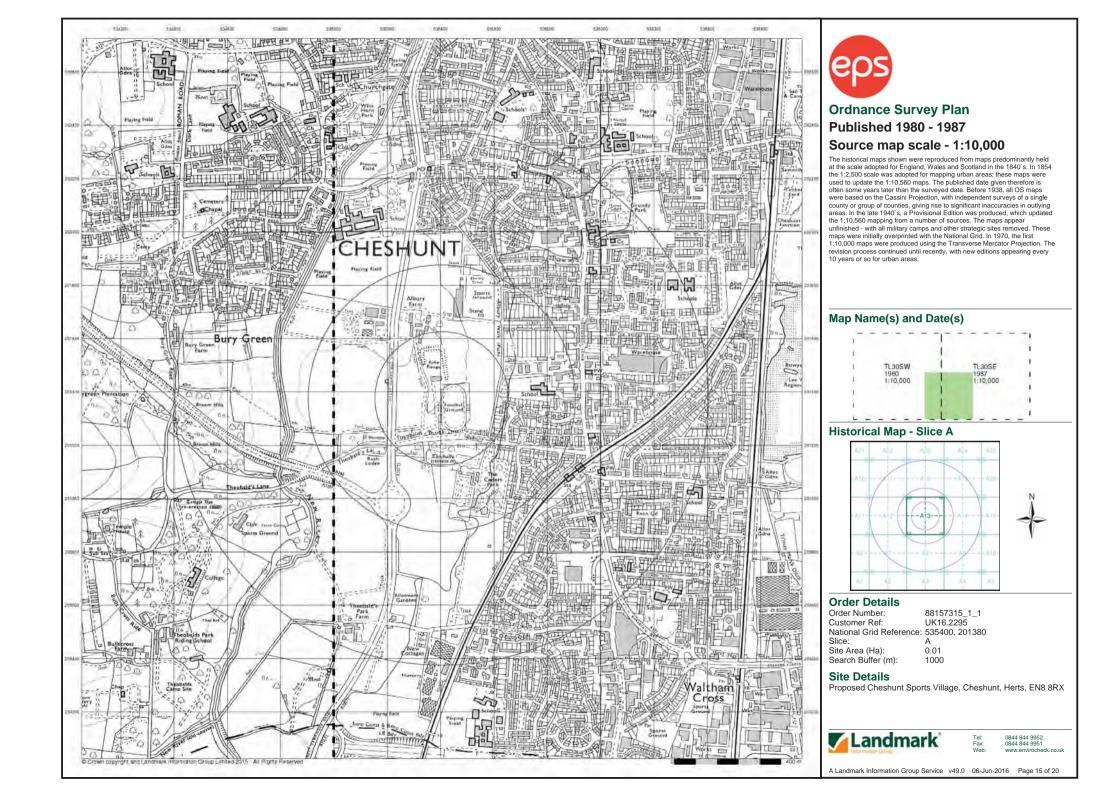
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840 s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some 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. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

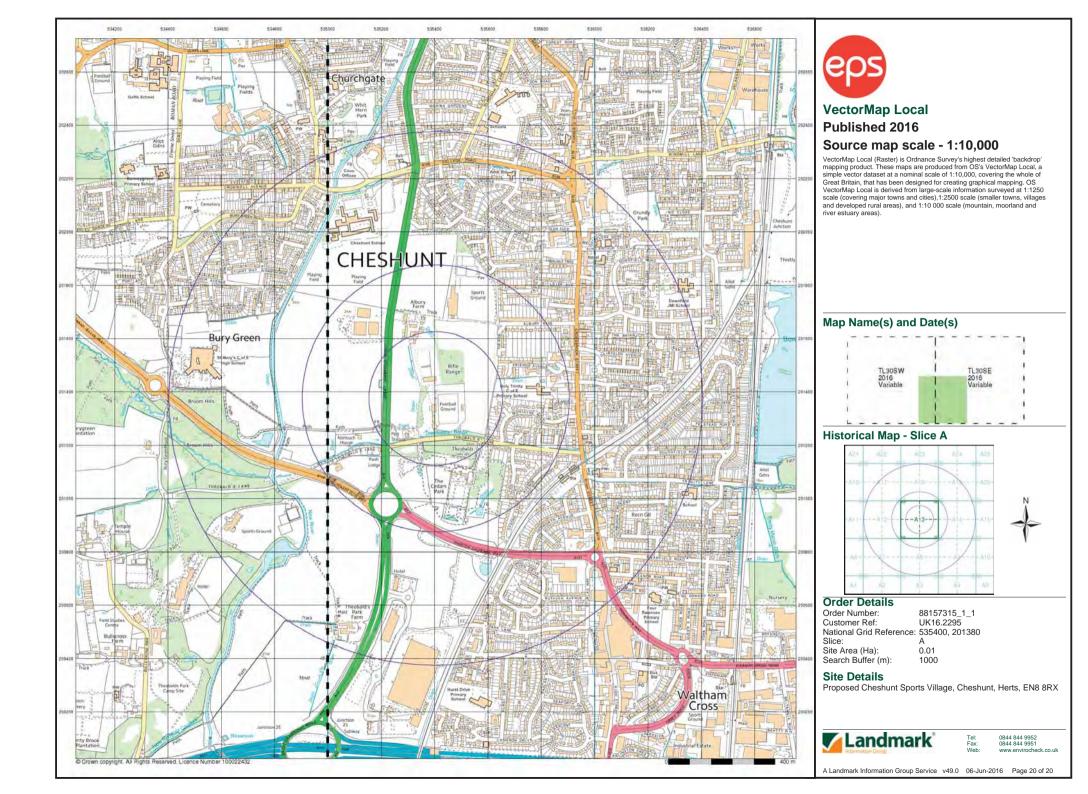


Order Details Order Number: 88157315_1_1 Customer Ref: UK16.2295 National Grid Reference: 535400, 201380 Slice: A Site Area (Ha): 0.01 Search Buffer (m): 1000 Site Details Proposed Cheshunt Sports Village, Cheshunt, Herts, EN8 8RX









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APPENDIX G

Trial Pit Logs

e	ps					Bo	reho	ole Log	Borehole N BH1 Sheet 1 of	
Project N	Name:	Cheshunt	Footba		oject No. <16.2295		Co-ords:	-	Hole Type CP	е
_ocation:	:	Cheshunt	Footba	all Club, Waltham Cr			Level:		Scale 1:50	
Client:		LW Develo	opmen	ts Ltd			Dates:	27/06/2016 -	Logged By	y
W	Vater		-	In Situ Testing	Depth	Level				
	trikes	Depth (m)	Туре	Results	(m)	(m)	Legend	Stratum Description		
		0.40 - 0.80	В		0.10			Brown silty sandy clayey TOPSOIL MADE GROUND: Mottled brown-b sandy GRAVEL with brick and cond	lack silty	
		1.20 1.20 - 1.60	В	N=19 (2,2/5,6,4,4)						1
		2.00 2.00 - 2.40	в	N=15 (2,3/4,3,4,4)						2
		2.50	D		2.40			Brown, black and white silty very sa	andy GRAVEL	-
		3.00 3.00 - 3.40	В	53 (13,13/22,31,,)						3
		4.00 4.00 - 4.40	В	61 (12,12/18,19,24,)						4
		5.00 5.00 - 5.40	В	51 (13,13/14,14,23,)						5
		6.00	D							6
		6.50 6.50 - 6.90 6.90 7.20	B D D	N=43 (8,8/11,10,10,12)	6.80 7.20			Stiff brown CLAY Stiff dark grey CLAY		- 7
		8.00 8.00	D	N=16 (2,3/4,4,4,4)				Can daix groy OLAT		8
		9.00	D							ę
		9.50 - 9.90	U							
		9.95	D				F	Continued on next sheet		10

e	eps					Bo	rehc	ole Log	Borehole No. BH1 Sheet 2 of 2
Project	Name:	Cheshunt	Footba		roject No. K16.2295		Co-ords:	-	Hole Type CP
ocatio	on:	Cheshunt	Footba	all Club, Waltham C			Level:		Scale 1:50
Client:		LW Develo	opmen	ts Ltd			Dates:	27/06/2016 -	Logged By
	Water			n Situ Testing	Depth	Level	Legend	Stratum Description	
	Strikes	Depth (m)	Туре	Results	(m)	(m)			
		10.50	D						
		11.00 11.00	D	N=21 (3,3/4,5,5,7)					1
		12.00	D						1:
		12.50 - 12.90 12.95	U						
		13.50	D						1
		14.00 14.00	D	N=24 (4,4/5,6,6,7)					1
		15.00	D						1
		15.50 - 15.90	U						
		15.95	D						1
		16.50	D						
		17.00 17.00	D	N=29 (4,4/6,7,7,9)					1
		18.00	D						1,
		18.50 - 18.90	U						
		18.95	D						1
		19.50 19.50	D	N=35 (5,5/7,9,9,10)					
Remarl	ke				20.00			End of borehole at 20.00 m	20

	eps					Bo	reho	ole Log	Borehole No BH2 Sheet 1 of 2	
Projec	t Name:	Cheshunt	Footba		oject No. (16.2295		Co-ords:	-	Hole Type CP	;
ocati	on:	Cheshunt	Footba	all Club, Waltham Cr			Level:		Scale 1:50	
Client	:	LW Devel	opmen	ts Ltd			Dates:	27/06/2016 -	Logged By	/
	Water	Sample	s and	In Situ Testing	Depth	Level	<u> </u>			
Well	Strikes	Depth (m)	Туре	Results	(m)	(m)	Legend	Stratum Description		
		0.10 - 0.50	В		0.10			Brown silty sandy clayey TOPSOIL MADE GROUND: Dark brown silty	gravelly	
		0.50 - 1.20	В					SAND		
		1.20 1.20 - 1.70 1.50	B D	N=29 (1,2/3,3,4,19)	1.60					1
					1.00			MADE GROUND: Black and brown stone	1 concrete /	
		2.00 2.00 - 2.50	В	25 (25,/25,,,)	2.20			MADE GROUND: Dense black-bro gravelly SAND with ash, brick, and		2
		2.70	D		2.70			MADE GROUND: Loose black-bro		
		3.00 3.00 - 3.50	в	N=3 (1,1/1,1,1,0)				gravelly SAND with ash, brick and	glass	3
		3.70	D							
		4.00 4.00 - 4.50	В	N=1 (1,0/1,0,0,0)						•
		4.80 5.00 5.00 - 5.50	D B	N=15 (1,0/1,1,12,1)	4.80			Firm brown gravelly silty CLAY		
		5.70	D		5.30			Dense brown very sandy GRAVEL		
		6.00 6.00 - 6.50	в	N=37 (9,10/9,11,9,8)						
		6.70	D		6.70			Stiff brown CLAY		
		7.20	D		7.20			Stiff dark grey CLAY		
		7.50 7.80 - 7.95	D	N=17 (1,2/4,4,4,5)						
		8.50	D							
		9.00 - 9.50	U							
		9.50	D							
ema		10.00	D					Continued on next sheet	1	1

e	eps					Bo	rehc	ole Log	Borehole No. BH2 Sheet 2 of 2
Projec	t Name	: Cheshunt	Footba		oject No. <16.2295		Co-ords:	-	Hole Type CP
ocatio	on:	Cheshunt	Footba	all Club, Waltham Cr	OSS		Level:		Scale 1:50
Client:		LW Develo	pmen	ts Ltd			Dates:	27/06/2016 -	Logged By
Well	Water Strikes			n Situ Testing	Depth (m)	Level (m)	Legend	Stratum Description	
	Ounco	Depth (m)	Туре	Results	(111)	(11)	<u> </u>		
		10.50 10.50 - 10.95	D	N=28 (3,4/5,7,8,8)			E- <u>-</u>		
		10.00 10.00							
									1
		11.50	D						
							E		
		12.00 - 12.50	U						1:
		40.50							
		12.50	D						
		13.00	D						4
		13.00							1
		13.50		N=36 (4,4/8,9,9,10)			F		
		13.50 - 13.95	D	11-30 (4,4/0,9,9,10)			E- <u>-</u>		
									1
									1,
		14.50	D						
		14.50							
									1
		15.50	D				E		
		10.00							
		16.00	D						1
		10100							
		16.50		N=38 (5,5/8,9,10,11)					
		16.50 - 16.95	D						
							F		1
							F		
		17.50	D				E- <u>-</u>		
							<u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>		1,
							<u> </u>		
		18.50	D				F		
							E		
		19.00	D				E-2-3		1
		19.50		N=38 (6,6/7,8,10,13)					
		19.50	D						
					20.00			End of borehole at 20.00 m	2
emar	ks			1	1	ı			AGS

	eps					Bo	reho	ole Log	Borehole N BH3 Sheet 1 of	f 2
Projec	t Name:	Cheshunt	Footba		Project No. JK16.2295		Co-ords:	-	Hole Type CP	е
Locati	on:	Cheshunt	Footba	all Club, Waltham	Cross		Level:		Scale 1:50	
Client		LW Devel	opmen	ts Ltd			Dates:	28/06/2016 -	Logged B	By
14/-11	Water	Sample	s and I	In Situ Testing	Depth	Level	Lanard		_	
Well	Strikes	Depth (m)	Туре	Results	(m)	(m)	Legend	Stratum Description		
		0.40 - 0.80	В		0.10			Brown silty sandy clayey TOPSOIL MADE GROUND: Brown-black silty SAND with ash, brick, and glass	gravelly	
		1.20 1.20 - 1.60	В	N=6 (1,1/1,1,2,2)						1
		2.00 2.00 - 2.40	В	N=3 (1,0/1,1,1,0)						2
		3.00 3.00 - 3.40	В	N=2 (1,0/1,1,0,0)	3.30			Soft brown-grey SILT		3
		4.00 4.00	D	N=1 (1,0/1,0,0,0)			× × × × × × × × × ×			4
		5.00 5.00 - 5.40 5.30	B D	N=27 (5,5/7,6,7,7)	4.90			Dense brown sandy GRAVEL		5
					5.70			Stiff brown CLAY		-
			_							6
		6.20 6.50 - 6.90	D		6.20			Stiff dark grey CLAY		
		0.00 - 0.80								
		6.95	D							7
		7.50	D							
		8.00 8.00	D	N=14 (2,2/3,3,4,4)						8
		9.00	D							ę
		9.50 - 9.90	U							
		9.95	D					Continued on next sheet		10
Rema	rks								AGS	S

eps					Bo	rehc	ole Log	Borehole No. BH3 Sheet 2 of 2
Project Nam	e: Cheshunt	Footba		roject No. K16.2295		Co-ords:	-	Hole Type CP
ocation:	Cheshunt	Footba	all Club, Waltham C			Level:		Scale 1:50
Client:	LW Develo	opmen	ts Ltd			Dates:	28/06/2016 -	Logged By
Well Wate	•		n Situ Testing	Depth	Level	Legend	Stratum Description	
Strike	S Depth (m)	Туре	Results	(m)	(m)			
	10.50	D						
	11.00 11.00	D	N=17 (2,3/4,4,4,5)					1
	12.00	D						1.
	12.50 - 12.90 12.95	U						1:
	13.50	D						
	14.00 14.00	D	N=20 (3,4/4,5,5,6)					1
	15.00	D						1
	15.50 - 15.90	U						
	15.95	D						1
	16.50	D						
	17.00 17.00	D	N=31 (4,5/6,8,8,9)					1
	18.00	D						1
	18.50 - 18.90	U						
	18.95	D						1
	19.50 19.50	D	N=32 (4,5/6,8,8,10)	20.00				
emarks				20.00			End of borehole at 20.00 m	2

					DU	renc	ole Log	BH4 Sheet 1 of 2
Name:	Cheshunt	Footba		roject No. K16.2295		Co-ords:	-	Hole Type CP
n:	Cheshunt	Footba				Level:		Scale 1:50
	LW Develo	pment	ts Ltd			Dates:	28/06/2016 -	Logged By
Water	Samples	s and I	n Situ Testing	Depth	Level			
Strikes	Depth (m)	Туре	Results	(m)	(m)	Legend		
	0.10 - 0.60	В		0.20			MADE GROUND: Loose brown-bl	lack silty
	0.60 - 1.20	В					gravelly SAND with brick, ash and	l glass
	1.20 1.20 - 1.70	В	N=1 (1,0/1,0,0,0)					
	2.00 2.00 - 2.50	В	N=1 (1,0/1,0,0,0)					
	3.00 3.00 - 3.50	в	N=1 (1,0/1,0,0,0)					
	3.70	D		3.70			Firm brown-grev silty CLAY	
	4.00 4.00 - 4.50	В	N=2 (1,0/1,0,1,0)					
	4.60	D				××		
	5.00 5.00 - 5.50	в	N=2 (1,0/1,1,0,0)					
	5 80	р		5 80				
		D						
				0.50			Stiff dark grey CLAY	
	7.50	D						
	8.00 8.00	D	N=19 (1,2/4,4,5,6)					
	9.00	D						
	9.50 - 10.00	U						
	10.00	D					Continued on next shee	et 1
	n: Water Strikes	n: Cheshunt LW Develor Water Samples Strikes Depth (m) 0.10 - 0.60 0.60 - 1.20 1.20 - 1.70 1.20 - 1.70 1.20 - 1.70 2.00 2.00 - 2.50 3.70 4.00 4.00 4.00 - 4.50 4.60 5.00 5.00 5.00 5.00 5.00 5.00 5.00 5	n: Cheshunt Footbar LW Develyment Strikes Depth (m) Type 0.10 - 0.60 B 0.60 - 1.20 B 1.20 1.20 B 1.20 - 1.70 B 2.00 2.00 2.00 2.00 B 2.00 - 2.50 B 3.70 D 4.00 4.00 4.00 4.00 - 4.50 B 4.60 D 5.00 5.00 5.00 B 4.60 D 5.00 5.00 B 4.60 D 5.00 5.00 B 4.60 D 5.00 5.00 B 1.20 - 10.00 D 9.50 - 10.00 D	U Cheshunt Football Club, Waltham C UW Develorments Ltd Water Strike Samples ISTU Testing 0.10 - 0.60 B	INIT IS Cheshunt Football Club, Waltham Cross LW Develprents Ltd Samples IS IN Testing Depth (m) Samples ISTIC Testing Depth (m) Openh (m) Type Results Depth (m) 0.10 - 0.60 B 0.20 0.60 - 1.20 B N=1 (1,0/1,0,0,0) N=1 1.20 - 1.70 B N=1 (1,0/1,0,0,0) N=1 2.00 - 2.50 B N=1 (1,0/1,0,0,0) N=1 3.00 - 3.50 B N=2 (1,0/1,0,1,0) N=1 4.00 - 4.50 B N=2 (1,0/1,1,0,0) N=1 4.60 D N=2 (1,0/1,1,0,0) S.80 5.00 - 5.50 B N=2 (1,0/1,1,0,0) S.80 5.00 - 5.50 B N=2 (1,0/1,1,0,0) S.80 6.10 D N=4 S.80 6.50 B N=1 (1,2/4,4,5,6) S.80 6.50 D N=19 (1,2/4,4,5,6) S.80 9.00 D N=19 (1,2/4,4,5,6) <td< td=""><td>INTER Cheshunt Football Club, Wattham Cross LW Developments Ltd Situ Testing Depth (m) Level Sample INTER Situr Testing Depth (m) Level Situe Sample INTER Situe Testing Depth (m) Level 0.10 - 0.60 B 0.20 120 B 0.20 120 120 120 B 0.20 120</td><td>UK16.2295 Level: LEV Cheshunt Football Club, Waltham Cross Level: LW Samples and In Situ Tosting Depth (m) Type Results Depth (m) Level Legend 0.10 - 0.60 B 0.20 Level Legend 0.20 0.20 Legend Legend</td><td>IDK18 2285 Level: Level: Level: Level: Level: Level: Date: 28/06/2016 - Water Samples and in Stru Testing Depth (m) Level: Depth (m) Type Results Depth (m) Level Legend Stratum Description 0.10 - 0.60 B 0.20 B Perpth (m) Level Image: Colspan="4">Brown sitty sandy dayey TOPSO MADE GROUND: Loose brown-bing gravelly SAND with brick, ash and gravelly SAND with brick ash and gravelly SAND with brick</td></td<>	INTER Cheshunt Football Club, Wattham Cross LW Developments Ltd Situ Testing Depth (m) Level Sample INTER Situr Testing Depth (m) Level Situe Sample INTER Situe Testing Depth (m) Level 0.10 - 0.60 B 0.20 120 B 0.20 120 120 120 B 0.20 120	UK16.2295 Level: LEV Cheshunt Football Club, Waltham Cross Level: LW Samples and In Situ Tosting Depth (m) Type Results Depth (m) Level Legend 0.10 - 0.60 B 0.20 Level Legend 0.20 0.20 Legend Legend	IDK18 2285 Level: Level: Level: Level: Level: Level: Date: 28/06/2016 - Water Samples and in Stru Testing Depth (m) Level: Depth (m) Type Results Depth (m) Level Legend Stratum Description 0.10 - 0.60 B 0.20 B Perpth (m) Level Image: Colspan="4">Brown sitty sandy dayey TOPSO MADE GROUND: Loose brown-bing gravelly SAND with brick, ash and gravelly SAND with brick ash and gravelly SAND with brick

(eps					Bo	reho	ole Log	Borehole No BH4 Sheet 2 of 2
Projec	ct Name:	Cheshunt	Footba		Project No. JK16.2295		Co-ords:	-	Hole Type CP
ocati	ion:	Cheshunt	Footba	all Club, Waltham (Level:		Scale 1:50
lient	:	LW Develo	opmen	ts Ltd			Dates:	28/06/2016 -	Logged By
Well	Water	-	s and I	n Situ Testing	Depth	Level	Legend	Stratum Description	
ven	Strikes	Depth (m)	Туре	Results	(m)	(m)	Legenu	Stratum Description	
		10.50	D						
		11.00 11.00 - 11.45	D	N=27 (3,4/6,6,7,8)					1
		12.00	D						1
		12.50 - 13.00	U						
		13.00	D						1
		13.50 14.00	D	N=32 (4,4/6,8,9,9)					1
		14.00 - 14.45	D	11 02 (1, 10,0,0,0,0)					
		15.00	D						1
		15.50 - 16.00	U						
		16.00	D						1
		16.50	D						
		17.00 17.00 - 17.45	D	N=24 (4,5/3,4,8,9)					
		18.00	D						1
		18.50 - 19.00	U						
		19.00	D						1
		19.30 19.50 19.50 - 19.95	D D	N=40 (6,6/9,9,10,12)				
					20.00		<u> </u> =	End of borehole at 20.00 m	2

	eps					Bo	reho	ole Log	Borehole No BH5 Sheet 1 of 2	
Projec	t Name:	Cheshunt	Footba	מוווי) ווב	roject No. K16.2295		Co-ords:	-	Hole Type CP	
ocati	on:	Cheshunt	Footba	all Club, Waltham C			Level:		Scale 1:50	
lient	:	LW Develo	opmen	ts Ltd			Dates:	29/06/2016 -	Logged By	y
Nell	Water	-	s and I	In Situ Testing	Depth	Level	Logond	Stratum Deparintion		
ven	Strikes	Depth (m)	Туре	Results	(m)	(m)	Legend	Stratum Description		
		0.40 - 0.80	В		0.10			Brown silty sandy clayey TOPSOIL MADE GROUND: Brown-black silty SAND with ash, brick, glass and me	gravelly etal	
		1.20 1.20 - 1.60	в	N=6 (1,2/1,2,2,1)						
		2.00 2.00 - 2.40	В	N=7 (1,1/1,2,2,2)	2.00			MADE GROUND: Soft brown silty C brick	CLAY with	
		3.00 3.00 - 3.40	В	N=5 (1,2/1,1,2,1)	2.60			MADE GROUND: Loose brown-bla gravelly SAND with brick, ash, glass metal	ck silty s, plastic and	
		4.00 4.00 - 4.40	В	N=10 (1,2/2,2,4,2)						
		5.00 5.00 - 5.40	в	N=10 (2,2/3,2,2,3)						
		5.60	D		5.60			Stiff brown CLAY		
		6.10	D		6.10			Stiff dark grey CLAY		
		6.50 6.50	D	N=12 (1,2/3,3,3,3)						
		7.50	D							
		8.00 - 8.40	U							
		8.45	D							
		9.00	D							
		9.50 9.50	D	N=18 (2,3/4,4,5,5)						
	rks							Continued on next sheet		1

Location: Cheshu Client: LW Dev		s			Boi	rehc	ole Log	Borehole No. BH5 Sheet 2 of 2
Client: LW Devident Well Water Strikes Samp Depth (m) 10.50 11.00 - 11.4 11.00 - 11.4 11.00 - 11.4 11.45 11.00 - 11.4 11.45 11.00 - 11.4 11.45 11.00 - 11.4 11.45 11.00 - 11.4 11.45 11.00 - 11.4 11.45 11.00 - 11.4 11.50 11.00 - 11.4 11.50 11.00 - 11.4 11.50 11.00 - 11.4 11.50 11.00 - 11.4 11.50 11.00 - 11.4 11.50 11.00 - 11.4 11.50 11.00 - 11.4 11.50 11.00 - 11.4 11.50 11.50 11.50 11.50 11.50 11.50 11.50	nunt Footb	ne: (roject No. K16.2295		Co-ords:	-	Hole Type CP
Wate Samp Depth (m) Init in the second secon	nunt Footb	(all Club, Waltham C	ross		Level:		Scale 1:50
Well Nate Depth (m) Strikes Depth (m) 10.50 11.00 - 11.4 11.00 - 11.4 11.45 12.00 12.50 12.50 12.50 13.50 14.00 - 14.4 14.00 - 14.4 14.45 15.00 15.50 15.50 15.50 16.50 17.00 - 17.4 18.00 18.50 18.50 18.50	evelopmer	L	ts Ltd			Dates:	29/06/2016 -	Logged By
10.50 11.00 - 11.4 11.00 - 11.4 11.45 12.00 12.50 12.50 12.50 13.50 14.00 - 14.4 14.45 15.00 15.50 15.50 15.50 15.50 15.50 16.50 17.00 - 17.4 18.00 18.50 18.50	-		In Situ Testing	Depth	Level	Legend	Stratum Description	
11.00 - 11.4 11.45 12.00 12.50 12.50 13.50 14.00 - 14.4 14.45 15.00 15.50 15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50	(m) Type	es Di	Results	(m)	(m)			
11.00 - 11.4 11.45 12.00 12.50 12.50 13.50 14.00 - 14.4 14.45 15.00 15.50 15.50 16.50 17.00 - 17.4 18.00 18.50 18.50								
11.45 12.00 12.50 12.50 13.50 14.00 - 14.4 14.45 15.00 15.50 15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50) D							
11.45 12.00 12.50 12.50 13.50 14.00 - 14.4 14.45 15.00 15.50 15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50	1.40 U	11						1'
12.00 12.50 12.50 13.50 14.00 - 14.4 14.45 15.00 15.50 15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50	1.40 0	''.						1
12.50 12.50 13.50 14.00 - 14.4 14.45 15.00 15.50 15.50 15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50	5 D							
12.50 12.50 13.50 14.00 - 14.4 14.45 15.00 15.50 15.50 15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50								
12.50 13.50 14.00 - 14.4 14.45 15.00 15.50 15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50	D							1:
12.50 13.50 14.00 - 14.4 14.45 15.00 15.50 15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50								
13.50 14.00 - 14.4 14.45 15.00 15.50 15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50)) D		N=22 (3,4/5,5,6,6)					
14.00 - 14.4 14.45 15.00 15.50 15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50								
14.00 - 14.4 14.45 15.00 15.50 15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50								1:
14.00 - 14.4 14.45 15.00 15.50 15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50								
14.45 15.00 15.50 15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50								
15.00 15.50 15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50	4.40 U	14.						14
15.00 15.50 15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50								
15.50 15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50	5 D							
15.50 15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50								
15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50) D							1
15.50 16.50 17.00 - 17.4 17.45 18.00 18.50 18.50			N=25 (4,4/5,6,6,8)					
17.00 - 17.4 17.45 18.00 18.50 18.50) D		11-23 (4,4/3,0,0,0)					
17.00 - 17.4 17.45 18.00 18.50 18.50								16
17.00 - 17.4 17.45 18.00 18.50 18.50								
17.45 18.00 18.50 18.50	D							
17.45 18.00 18.50 18.50								
18.00 18.50 18.50	7.40 U	17.						17
18.00 18.50 18.50	5 D							
18.50 18.50								
18.50 18.50) D							1
18.50								
			N=33 (5,5/7,8,8,10)					
19.50 - 19.9) D							
19.50 - 19.9								1
19.50 - 19.9								
	9.90 U	19.						
20.00) D			20.00				
emarks	, U			20.00			End of borehole at 20.00 m	2
								AGS

Cheshunt Cheshunt	Footba						Sheet 1 of 2
Cheshunt			roject No. K16.2295		Co-ords:	-	Hole Type CP
	Footba	all Club, Waltham C	ross		Level:		Scale 1:50
LW Develo	opmen	ts Ltd			Dates:	30/06/2016 -	Logged By
	-	In Situ Testing	Depth	Level			
Depth (m)	Туре	Results	(m)	(m)	Legend	Stratum Descriptior	ו ו
0.40 - 0.80	в					MADE GROUND: Brick and Concre	ete Fill
1.20 1.20 - 1.60	в	N=20 (4,4/4,3,7,6)					
1.90 2.00 2.00 - 2.40	D B	N=8 (2,2/1,2,2,3)	1.90			MADE GROUND: Brown-black silty SAND with brick, ash, glass and wo	/ gravelly bod
3.00 3.00 - 3.40	В	N=6 (1,2/2,1,1,2)					
4.00 4.00 - 4.40	В	N=7 (1,2/1,1,1,4)					
5.00 5.00 - 5.40 5.40	B D	N=8 (1,1/3,2,2,1)	5.40			MADE GROUND: Soft slightly grav	
6.50 6.50 - 6.90	В	N=13 (3,3/4,3,3,3)	6.60			MADE GROUND: Silt and Gravel F	ILL
7.30 7.50	D D		7.20 7.50			Stiff brown CLAY Stiff dark grey CLAY	
8.00 8.00	D	N=17 (2,3/4,4,4,5)					
9.00	D						
9.50 - 9.90	U						
9.95	D					Continued on next sheet	1
	0.40 - 0.80 1.20 1.20 - 1.60 1.20 - 1.60 2.00 2.00 - 2.40 3.00 3.00 - 3.40 4.00 4.00 4.00 - 4.40 5.00 5.00 - 5.40 5.40 6.50 6.50 - 6.90 7.30 7.30 7.50 8.00 8.00 8.00 9.00 9.50 - 9.90	0.40 - 0.80 B 1.20 - 1.60 B 1.20 - 1.60 B 1.20 - 2.40 B 3.00 - 2.40 B 4.00 - 4.40 B 5.00 - 5.40 B 5.40 B 5.00 - 5.40 B 5.40 B 100 B	0.40 - 0.80B $N=20 (4,4/4,3,7,6)$ $1.20 - 1.60$ B $N=20 (4,4/4,3,7,6)$ $1.20 - 1.60$ B $N=8 (2,2/1,2,2,3)$ $2.00 - 2.40$ B $N=8 (2,2/1,2,2,3)$ $3.00 - 3.40$ B $N=6 (1,2/2,1,1,2)$ $4.00 - 4.40$ B $N=7 (1,2/1,1,1,4)$ $4.00 - 4.40$ B $N=8 (1,1/3,2,2,1)$ $5.00 - 5.40$ B $N=8 (1,1/3,2,2,1)$ $5.00 - 5.40$ B $N=13 (3,3/4,3,3,3)$ $6.50 - 6.90$ B $N=13 (3,3/4,3,3,3)$ 7.30 D D 7.30 D $N=17 (2,3/4,4,4,5)$ 8.00 D $N=17 (2,3/4,4,4,5)$ 9.00 D $N=17 (2,3/4,4,4,5)$ 9.00 D $N=17 (2,3/4,4,4,5)$	1,20 $1,90$ $1,00$ $1,00$ $1,00$ $1,20$ 6 8 $N=20 (4,4/4,3,7,6)$ $1,90$ $1,20$ 6 B $N=20 (4,4/4,3,7,6)$ $1,90$ $2,00$ $2,00$ B $N=8 (2,2/1,2,2,3)$ 1.90 $3,00$ $3,00$ B $N=6 (1,2/2,1,1,2)$ 1.90 $3,00$ $4,00$ B $N=7 (1,2/1,1,1,4)$ 1.90 $4,00$ $4,00$ B $N=7 (1,2/1,1,1,4)$ 1.90 $5,00$ $5,40$ B $N=8 (1,1/3,2,2,1)$ $5,40$ $5,40$ B $N=13 (3,3/4,3,3,3)$ $6,60$ $6,50$ B $N=13 (3,3/4,3,3,3)$ $6,60$ $7,30$ D D $7,20$ $7,50$ D $N=17 (2,3/4,4,4,5)$ $7,20$ $9,00$ D $N=17 (2,3/4,4,4,5)$ 1.90 $9,50$ D Q Q Q	0.40 - 0.80BN=20 (4,4/4,3,7,6)A $1.20 - 1.60$ BN=20 (4,4/4,3,7,6)1.90 $1.90 - 2.00 - 2.40$ BN=8 (2,2/1,2,2,3)1.90 $3.00 - 3.40$ BN=6 (1,2/2,1,1,2)1.90 $4.00 - 4.40$ BN=7 (1,2/1,1,1,4)- $4.00 - 4.40$ BN=7 (1,2/1,1,1,4)- $5.00 - 5.40$ BDN=8 (1,1/3,2,2,1) $5.00 - 5.40$ BDN=13 (3,3/4,3,3,3)6.60 $6.50 - 6.90$ BN=17 (2,3/4,4,4,5)7.20 $7.30 - 7.50$ DN=17 (2,3/4,4,4,5)7.20 9.00 DUUU	1.20 1.20 B $N=20$ (4,4/4,3,7,6) I $1.20 - 1.60$ B $N=20$ (4,4/4,3,7,6) I I $1.20 - 1.60$ B $N=20$ (4,4/4,3,7,6) I I 1.90 D D $N=8$ (2,2/1,2,2,3) I I $3.00 - 3.40$ B $N=6$ (1,2/2,1,1,2) I I $4.00 - 4.40$ B $N=7$ (1,2/1,1,1,4) I I $5.00 - 5.40$ B $N=8$ (1,1/3,2,2,1) 5.40 I $6.50 - 6.90$ B $N=13$ (3,3/4,3,3,3) 6.60 I 7.30 D $N=17$ (2,3/4,4,4,5) 7.20 7.50 8.00 D $N=17$ (2,3/4,4,4,5) 7.20 7.50 9.00 D $N=17$ (2,3/4,4,4,5) 7.20 7.50 9.00 D $N=17$ (2,3/4,4,4,5) 1.44 1.44	120 100 100 MADE GROUND: Brick and Concrete 120 1.80 B N=20 (4.4/4,3,7,6) MADE GROUND: Brown-black silly 190 D N=8 (2.2/1,2,2,3) 1.90 MADE GROUND: Brown-black silly 3.00 2.00 2.00 B N=6 (1,2/2,1,1,2) MADE GROUND: Brown-black silly 3.00 3.00 B N=6 (1,2/2,1,1,2) MADE GROUND: Soft alightly grav 4.00 4.00 B N=7 (1,2/1,1,1,4) MADE GROUND: Soft alightly grav 6.50 6.50 B N=13 (3,3/4,3,3,3) 6.60 MADE GROUND: Soft alightly grav 7.30 D N=17 (2,3/4,4,4,5) 7.20 Stiff brown CLAY Stiff dark grey CLAY 8.00 D N=17 (2,3/4,4,4,5) Tool (1,1/2,2,4/4,4,5) Tool (1,1/2,3/4,4,4,5) Tool (1,1/2,3/4,4,4,5) 9.00 D N=17 (2,3/4,4,4,5) Tool (1,1/2,3/4,4,4,5) Tool (1,1/2,3/4,4,4,5) Tool (1,1/2,3/4,4,4,5) 9.00 D N=17 (2,3/4,4,4,5) Tool (1,1/2,3/4,4,4,5) Tool (1,1/2,3/4,4,4,5) Tool (1,1/2,3/4,4,4,5) 9.00 D N=17 (2,3/4,4,4,5) Tool (1,1/2,3/4,4,4,5) Tool (1,1/2,3/4,4,4,

	eps					Bo	rehc	ole Log	Borehole No BH6 Sheet 2 of 2
Projec	t Name:	Cheshunt	Footba		Project No. JK16.2295		Co-ords:	-	Hole Type CP
ocati	on:	Cheshunt	Footba	all Club, Waltham (Level:		Scale
Client:		LW Develo	opmen	ts Ltd			Dates:	30/06/2016 -	1:50 Logged By
	Water	Samples	s and l	n Situ Testing	Depth	Level			
Vell	Strikes	Depth (m)	Туре	Results	(m)	(m)	Legend	Stratum Description	
		10.50	D						
		11.00 11.00	D	N=18 (3,3/4,4,5,5)					1
		12.00	D						1
		12.50 - 12.90 12.95	U D						1
		13.50	D						
		14.00 14.00	D	N=22 (4,4/5,5,5,7)					1
		15.00	D						1
		15.50 - 15.90	U						
		15.95	D						1
		16.50	D						
		17.00 17.00	D	N=27 (4,4/5,7,7,8)					1
		18.00	D						1
		18.50 - 18.90	U						
		18.95	D						1
		19.50 19.50	D	N=31 (4,5/6,8,8,9)	20.00				
ema	rks				20.00			End of borehole at 20.00 m	AGS

	eps					Во	reho	ole Log	Borehole N BH7 Sheet 1 of	2
Projec	ct Name:	Cheshunt	Footba		Project No. JK16.2295		Co-ords:	-	Hole Type CP	9
∟ocati	ion:	Cheshunt	Footba	all Club, Waltham (Cross		Level:		Scale 1:50	
Client	:	LW Devel	opmen	ts Ltd			Dates:	01/07/2016 -	Logged By	y
Well	Water	-	s and	In Situ Testing	Depth	Level	Legend	Stratum Description		
vven	Strikes	Depth (m)	Туре	Results	(m)	(m)		MADE GROUND: Brick and concre		
		0.40 - 0.80	В					MADE GROOND. Block and conde	ae nn.	
		1.20 1.20 - 1.60	В	N=21 (4,4/6,6,5,4)						1
		2.00 2.00 - 2.40	В	N=20 (3,4/3,7,6,4)						2
		3.00 3.00 - 3.40	В	N=16 (2,3/3,5,4,4)						3
		3.60	D		3.50			MADE GROUND: Clay and brick fil	Ι.	
	_	4.00 4.00 - 4.40	В	N=13 (2,2/3,3,4,3)						4
		5.00 5.00 - 5.40	В	N=11 (2,2/2,3,2,4)	4.90 5.40			MADE GROUND: Silty Gravel		5
		5.60	D		5.40			Dense brown sandy GRAVEL		
		6.00	D							6
		6.50 6.50 - 6.90 6.80 7.00	B D D	N=15 (4,4/4,4,4,3)	6.80 7.00			Stiff brown CLAY Stiff dark grey CLAY		7
		7.50 - 7.90	U					Sun dan grey SEM		
		7.95	D							8
		8.50	D							
		9.00 9.00	D	N=17 (2,2/4,4,4,5)						9
		10.00	D							10
Rema	irks	10.00						Continued on next sheet	AGS	

	eps					Bo	rehc	ole Log	Borehole No. BH7 Sheet 2 of 2
Projec	t Name	: Cheshunt	Footba		Project No. JK16.2295		Co-ords:	-	Hole Type CP
ocati	on:	Cheshunt	Footba	all Club, Waltham (Cross		Level:		Scale 1:50
Client:	:	LW Develo	opmen	ts Ltd			Dates:	01/07/2016 -	Logged By
Well	Water		s and I	n Situ Testing	Depth	Level	Legend	Stratum Description	
vven	Strikes	Depth (m)	Туре	Results	(m)	(m)		Stratum Description	
		10.50 - 10.90	U						
		10.95	D						11
		11.50	D						
		12.00 12.00	D	N=19 (3,3/4,5,5,5)					1:
		13.00	D						1:
		13.50 - 13.90	U						
		13.95	D						1,
		14.50	D						
		15.00 15.00	D	N=22 (4,4/5,5,6,6)					1:
		16.00	D						1
		16.50 - 16.90	U						
		16.95	D						1
		17.50	D						
		18.00 18.00	D	N=32 (5,6/7,7,9,9)					1
		19.00	D						1
		19.50 - 19.90	U						
		20.00	D		20.00			End of borehole at 20.00 m	2
ema	rks								AGS

e	eps					Bo	reho	ole Log	Borehole No BH8 Sheet 1 of 2
Project	Name:	Cheshunt	Footba		roject No.		Co-ords:	_	Hole Type
ocatio			Footba	U all Club, Waltham C	K16.2295		Level:		CP Scale
Client:		LW Develo					Dates:	04/07/2016 -	1:50 Logged By
	Water		-	n Situ Testing	Depth	Level			
	Strikes	Depth (m)	Туре	Results	(m)	(m)	Legend	Stratum Description	
		0.40 - 0.80	в					MADE GROUND: Very soft mottled dark yellowish brown CLAY with oc glass, coke, cinder and coal fragme	casional
		1.20 1.20 - 1.60	в	N=16 (3,3/4,4,2,6)					
		2.00 2.00 - 2.40	В	N=19 (2,3/5,6,6,2)					
		3.00 3.00 - 3.40	В	N=16 (2,2/4,4,5,3)					
		4.00 4.00 - 4.40	в	N=10 (1,2/3,2,2,3)					
		4.50	D		4.40		*****	Dense brown silty very gravelly SA black, brown and white, subangula	ND: Gravel is r and
		5.00 5.00 - 5.40	В	N=10 (2,3/3,2,2,3)				subrounded	
		5.90	D		5.90			Soft grey-brown SILT	
		6.30 6.40 6.50 6.50	D D D	N=11 (1,2/2,3,3,3)	6.30 6.40			Stiff brown CLAY Stiff dark grey CLAY	
		7.50	D						
		8.00 - 8.40	U						
		8.45	D						
		9.00	D						
		9.50 9.50	D	N=16 (2,2/4,4,4,4)					
	ks							Continued on next sheet	1

	eps					Bo	rehc	ole Log	Borehole No BH8 Sheet 2 of 2
rojec	t Name:	Cheshunt	Footba		oject No. <16.2295		Co-ords:	-	Hole Type CP
ocatio	on:	Cheshunt	Footba	all Club, Waltham C	ross		Level:		Scale 1:50
Client:		LW Develo	pment	ts Ltd			Dates:	04/07/2016 -	Logged By
Well	Water	-		n Situ Testing	Depth	Level	Legend	Stratum Description	
	Strikes	Depth (m)	Туре	Results	(m)	(m)			
		10.50	D						
		11.00 - 11.40	U				F		1
		11.45	D				E		
		-							
		12.00	D				<u> </u>]		1
							F		
		12.50		N=18 (2,3/4,4,5,5)					
		12.50	D						
									1
		13.50	D						
		14.00 - 14.40	U						1
							F		
		14.50	D						
		15.00	D						4
		15.00							1
		15.50		N=22 (4,4/5,5,5,7)					
		15.50	D						
									1
		16.50	D				F		
		17.00 - 17.40	U				<u> </u>		1
		47 45					F		
		17.45	D				E- <u>-</u>		
		18.00	D						1
		10 50					F		
		18.50 18.50	D	N=29 (5,5/6,7,7,9)			E		
							<u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>		1
							<u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>		
		19.50 - 19.90	υ				E		
							EEE		
		20.00	D		20.00		<u>⊨−−−</u> 1	End of borehole at 20.00 m	2
emar	rks				1	1	1 1		AGS

	eps					Bo	reho	ole Log	Borehole N WS01 Sheet 1 of	1 f 1
Projec	t Name:	Cheshunt	Footba		Project No. JK16.2295		Co-ords:	-	Hole Type WLS	е
Locati	on:	Cheshunt	Footba	all Club, Waltham	Cross		Level:		Scale 1:50	
Client		LW Devel	opmen	ts Ltd			Dates:	27/06/2016 -	Logged B	3y
\A/=	Water	Sample	s and I	n Situ Testing	Depth	Level		Otractions Description		
Well	Strikes	Depth (m)	Туре	Results	(m)	(m)	Legend	Stratum Description		
					0.10			Brown silty sandy clayey TOPSOIL MADE GROUND: Mottled brown-o gravelly SAND with concrete, glass metal and brick	range silty	
		1.00		N=4 (1,1/1,1,1,1)	1.00			MADE GROUND: Brown silty sand brick, glass and plastic	y CLAY with	- 1 ·
					1.40			MADE GROUND: Mottled brown-bi clayey gravelly SAND with ash, brid glass and plastic	lack slightly ck, metal,	-
		2.00		N=4 (0,1/1,1,1,1)	2.00			MADE GROUND: Brown-grey grav CLAY	elly sandy	2
		3.50 N=2 (2,2/1,0,0,1)		2.75			Soft becoming Stiff grey silty sandy	CLAY	3	
							Band of yellow SAND.			
		4.50		N=28 (1,2/4,7,9,8)						4
					5.00			End of borehole at 5.00 m		5
										6
										7
										8
										9
										10
Rema	rks								AGS	

	eps					Bo	reho	ole Log	Borehole N WS02 Sheet 1 of	2 f 1
Projec	t Name:	Cheshunt	Footba		Project No. UK16.2295		Co-ords:	-	Hole Typ WLS	е
Locati	on:	Cheshunt	Footba	all Club, Waltham	Cross		Level:		Scale 1:50	
Client	:	LW Devel	opmen	ts Ltd			Dates:	27/06/2016 -	Logged B	By
	Water	Sample	s and I	n Situ Testing	Depth	Level				
Well	Strikes	Depth (m)	Туре	Results	(m)	(m)	Legend	Stratum Description		
		1.00		N=4 (0,1/1,1,1,1)	0.10			Brown silty clayey TOPSOIL MADE GROUND: Brown silty grave with brick, metal, plastic and glass	elly SAND	1 -
		2.00		N=1 (2,2/1,0,0,0)	1.20			MADE GROUND: Dark brown-blac SAND with ash, glass and plastic	k gravelly	- 2 -
		2.00		N - 1 (2,2) 1,0,0,0)	2.80			No Recovery MADE GROUND: Brown sandy gra	velly CLAY	-
		3.50		N=2 (1,2/1,1,0,0)	3.30			Soft becoming firm to Stiff brown (b greyer with depth) silt sandy CLAY		3 -
		4.80		0 (0 for 2mm/0 for 153mm)						4 -
				15511111)	5.00			End of borehole at 5.00 m		- 5 -
										7 -
										8 -
										9 -
Rema	rks								AGS	10 -

	eps					Во	reho	ole Log	Borehole N WS03 Sheet 1 of	B f 1
Projec	t Name:	Cheshunt	Footba		Project No. UK16.2295		Co-ords:	-	Hole Type WLS	е
Locati	on:	Cheshunt	Footba	all Club, Waltham	Cross		Level:		Scale 1:50	
Client	:	LW Develo	opmen	ts Ltd			Dates:	27/06/2016 -	Logged B	By
Well	Water		s and I	n Situ Testing	Depth	Level	Legend	Stratum Description	I	
	Strikes	Depth (m)	Туре	Results N=4 (1,1/1,1,1,1)	(m) 0.05	(m)		Brown silty sandy clayey TOPSOIL MADE GROUND: Light brown sand brick, concrete and glass		1 -
		2.00		N=2 (0,1/0,1,0,1)	2.00			MADE GROUND: Mottled brown-bl SAND with ash, brick, concrete, me plastic	ack gravelly tal, glass and	3 -
		3.50		N=7 (1,1/2,2,1,2)						4 -
		4.50		N=20 (1,2/3,5,4,8)	4.50			Soft-very soft grey CLAY		-
					5.00			Ēnd of borehole at 5.00 m		- 5 - - 6 -
										7 -
										8 -
										9 -
Rema	rks								AGS	10 - S

	eps					Во	reho	ole Log	Borehole N WS04 Sheet 1 of	L
Projec	t Name:	Cheshunt	Footba		roject No. IK16.2295		Co-ords:	-	Hole Type WLS	
Locati	on:	Cheshunt	Footba	ر all Club, Waltham C			Level:		Scale	
Client:		LW Devel	opmen	ts Ltd			Dates:	27/06/2016 -	1:50 Logged B	8y
	Water			n Situ Testing	Depth	Level				
Well	Strikes	Depth (m)	Туре	Results	(m)	(m)	Legend	Stratum Description		
					0.05			Brown silty sandy clayey TOPSOIL MADE GROUND: Brown-grey occas clayey silty gravelly SAND with brick	sionally	1
					0.50			MADE GROUND: Brown occasiona		
		1.00		N=7 (1,1/2,1,2,2)	1.00			silty gravelly SAND with brick		- 1 -
		1.00		(,,,, <u>,</u> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1.35			MADE GROUND: Light brown silty	-	
					1.55			MADE GROUND: Brown gravelly si sandy CLAY with brick	lty very	
		2.00		N=3 (1,0/0,1,1,1)						2 -
		2.00		N-3 (1,0/0,1,1,1)	2.30					
					2.00			Soft brown silty sandy CLAY		
		3.00 N=32 (5,6/8,7,8			2.80			Dense sandy medium GRAVEL. Sa	nd is medium	
				N=32 (5,6/8,7,8,9)				to coarse		3 -
		4.00		N=38 (10,10/11,10,9,8)	4.00			End of borehole at 4.00 m		4 -
										5 -
										6 -
										7 -
										8 -
										9 -
										10 -
Rema	rks									
									AGS	
									AUN	ע

(eps					Во	reho	ole Log	Borehole N WS05 Sheet 1 of	5
Projec	t Name:	Cheshunt	Footba		Project No. JK16.2295		Co-ords:	-	Hole Type WLS	
Locati	on:	Cheshunt	Footba	all Club, Waltham (Level:		Scale 1:50	
Client	:	LW Develo	opment	ts Ltd			Dates:	28/06/2016 -	Logged B	}y
Well	Water		s and I	n Situ Testing	Depth	Level	Legend	Stratum Description		
wen	Strikes	Depth (m)	Туре	Results	(m)	(m)				
		1.00		N=4 (3,3/2,1,1,0)	0.05			Brown silty sandy clayey TOPSOIL MADE GROUND: Soft-firm brown s CLAY with brick and various colour rock	silty sandy ed sands and	1 -
	3.00 N=51 (25 fc 100mm/51 fc		N=12 (1,1/1,3,4,4)	1.60			Very dense yellow-brown silty grav	elly SAND	2 -	
		3.00 N=51 (25 for 100mm/51 fo 150mm)		N=51 (25 for 100mm/51 for 150mm)	3.00			End of borehole at 3.00 m		- 3 -
										4 -
										6 -
										7 -
										8 -
										9 -
Rema	rks								AGS	10 - S

	eps					Bo	reho	ole Log	Borehole N WS06 Sheet 1 of	5 f 1
Projec	t Name:	Cheshunt	Footba		roject No. K16.2295		Co-ords:	-	Hole Type WLS	е
Locati	on:	Cheshunt	Footba	all Club, Waltham C	ross		Level:		Scale 1:50	
Client		LW Develo	opmen	ts Ltd			Dates:	28/06/2016 -	Logged B	8y
Well	Water		s and	n Situ Testing	Depth	Level	Legend	Stratum Descriptior	<u> </u>	
	Strikes	Depth (m)	Type	Results N=19 (2,2/2,2,6,9) 50 (25 for 70mm/50 for 90mm)	(m) 0.15 0.60 0.90 2.00	(m)		MADE GROUND: Grey GRAVEL MADE GROUND: Dense brown co GRAVEL with brick MADE GROUND: Firm brown sanc large amounts of brick Medium dense becoming dense to brown-yellow-orange silty gravelly coarse SAND. Gravel is fine to coa	bbly sandy ly CLAY with very dense medium to rse	
										8 - 9 -
Rema	rks								AGS	10 - S

Locat Client		Cheshunt				DU	renc	ole Log	WS07 Sheet 1 of	
Client			Footba		roject No. K16.2295		Co-ords:	-	Hole Type WLS	е
							Level:		Scale 1:50	
		LW Develo	opmen	ts Ltd			Dates:	28/06/2016 -	Logged B	y
	Water	Samples	s and I	n Situ Testing	Depth	Level				
Well	Strikes	Depth (m)	Туре	Results	(m)	(m)	Legend	Stratum Description		
					0.10 0.40			Made Ground: Gravel Hardstanding MADE GROUND: Dark grey sandy	GRAVEL	1
					0.40			MADE GROUND: Brown-grey silty with brick	sandy CLAY	
		1.00		N=14 (1,2/1,1,3,9)						1
					1.10			MADE GROUND: Brown-yellow sat gravelly CLAY	ndy slightly	1
					1.40			Light brown slightly clayey cobbly g with brick and concrete	ravelly SAND	1
		2.00		N=6 (1,1/2,2,1,1)	2.00					2
		2.00		N 0 (1, 1/2,2,1,1)	2.00			MADE GROUND: Brown silty sand CLAY with brick and concrete	y gravelly	
		3.00 N=6 (1,1/1,1,2,2								2
		3.00 N=6 (1,1/1,1,2,2		N-0 (1,1/1,1,2,2)						3
		4.00		N=10 (1,2/2,2,3,3)	4.00			Soft-firm brown silty sandy CLAY		4
					4.50			Firm grey silty sandy CLAY		-
								Tim grey sity sandy OLAT		
					5.00			End of borehole at 5.00 m		5
										6
										7
										8
										9
										10
Rema	irks					1				
									AGS	

	eps					Во	reho	ole Log	Borehole N WS08 Sheet 1 of	B f 1
Projec	t Name:	Cheshunt	Footba		Project No. JK16.2295		Co-ords:	: -	Hole Typ WLS	е
Locati	on:	Cheshunt	Footba	all Club, Waltham	Cross		Level:		Scale 1:50	
Client	:	LW Develo	opmen	ts Ltd			Dates:	28/06/2016 -	Logged E	By
Well	Water		s and I	n Situ Testing	Depth	Level	Legend	Stratum Description	n	
Well	Vater Strikes		Туре	Results N=8 (0,1/2,2,2,2) N=6 (1,2/1,2,2,1) N=8 (1,2/2,1,2,3)	(m) 0.05	Level (m)	Legend	Stratum Description Brown silty sandy clayey TOPSOIL MADE GROUND: Firm brown silty gravelly CLAY with brick and concr Band of Sand Band of Sand End of borehole at 5.00 m	sandy very ete	
										8
Rema	rks								AG	10 -

eps					Borehole No. WS09 Sheet 1 of 1						
Project Name: Cheshunt Football Club			Project No. UK16.2295		Co-ords: -		Hole Type WLS				
Locati	Location: Cheshunt Football Club, Waltham			- F		Level:		Scale 1:50			
Client	:	LW Develo	LW Developments Ltd					Dates: 28/06/2016 -		Logged By	
10/-11	Water	Samples and In Situ Testing			Depth	Level	Lagand	Otestus Description			
Well	Strikes	Depth (m)	Туре	Results	(m)		Legend	Stratum Description	1		
					0.20			Brown silty sandy clayey TOPSOIL MADE GROUND: Light grey silty gravelly SAND with some orange mottling and brick, concrete, glass and plastic			
					1.00			MADE GROUND: Loose dark brow gravelly SAND with brick and glass	n-black silty	2 -	
					3.00			MADE GROUND: Very soft brown g sandy CLAY	gravelly very	3	
					4.00			Soft grey silty CLAY		- 4	
					5.00		× 	End of borehole at 5.00 m		5	
										7-	
										8	
										9	
Rema	rks								AGS	10 -	

eps					Borehole No. WS10 Sheet 1 of 1						
Project Name: Location:		Cheshunt Football Club			Project No. UK16.2295		Co-ords: -		Hole Type WLS		
		Cheshunt	Footba	all Club, Waltham	Cross		Level:		Scale 1:50		
Client:		LW Develo	LW Developments Ltd							ogged By	
Well	Water	Samples and In Situ Testing			Depth	Level	Legend	Stratum Description			
	Strikes	Depth (m)	pth (m) Type	Results	(m) (m) 0.10		Brown silty sandy clayey TOPSOIL MADE GROUND: Dark brown silty slightly clayey gravelly SAND with glass and brick				
		1.00		N=7 (1,1/2,1,2,2)	1.00			Soft-firm light brown silty sandy CL	ΑY	- 1 - - - - - - - - - - - - -	
		2.00		N=5 (1,1/1,1,1,2)	2.00			Firm mottled brown-grey silty CLAY		2	
		3.00		52 (10,11/52 for 225mm)	3.20			Dense brown-yellow silty gravelly S	AND	3	
					4.00			Ēnd of borehole at 4.00 m		- 4	
										5	
										6	
										7	
										8	
										9	
Rema	rks									10 -	
lina									AGS	S	

	eps					Во	reho	ole Log	Borehole N WS11 Sheet 1 of	I
Proied	Project Name: Cheshunt Football Club				Project No. Co-ords: -			_	Hole Type	
Locati					UK16.2295		Level:		WLS Scale	
<u> </u>				all Club, Waltham	CIUSS		Levei.		1:50 Logged B	
Client		LW Develo					Dates:	29/06/2016 -	Logged D	'y
Well	Water Strikes		-	In Situ Testing	Depth (m)	Level (m)	Legend	Stratum Description	ı	
		Depth (m)	Туре	Results	0.05	()		Brown silty sandy clayey TOPSOIL	/	
		1.00 2.00 3.60		N=3 (1,2/1,1,1,0) N=2 (0,1/1,0,1,0) N=2 (0,1/1,0,1,0)	1.30			Brown silty sandy clayey TOPSOIL MADE GROUND: Light brown silty gravelly CLAY with brick MADE GROUND: Dark brown-blac SAND with clay bands and ash, gla plastic Very soft brown-grey silty sandy CL End of borehole at 5.00 m	k silty gravelly ss, brick and	
										9 -
Rema	rks								AGS	10 - S

eps						Во	reho	ole Log	Borehole No. WS12 Sheet 1 of 1	
Projec	Project Name: Cheshunt Football Club				Project No. UK16.2295 Co-ords: -				Hole Type WLS	
Locati	on:	Cheshunt	Footba	all Club, Waltham			Level:		Scale	
Client		LW Develo	opmen	ts Ltd			Dates:	29/06/2016 -	1:50 Logged B	By
	Water			n Situ Testing	Depth	Level				
Well	Strikes		Туре	Results	(m)	(m)	Legend	Stratum Description		
		1.00		N=1 (1,0/1,0,0,0)	0.05			Brown silty sandy clayey TOPSOIL MADE GROUND: Brown silty grave with brick, plastic and glass		- 1 -
		2.00		N=1 (1,0/1,0,0,0)				MADE GROUND: Brown-black silty SAND with ash, brick, concrete, pla	v gravelly astic and glass	2 -
		3.00		N=1 (1,0/1,0,0,0)	2.80		107 107 107	MADE GROUND: Black clayey sar No Recovery	dy GRAVEL	- 3 -
		4.20		N=3 (1,2/1,1,0,1)			Normedinacine delinacines key key key noornedinacine dinacines key key key noornedinacine dinacine dinacine key key key hey hey key hey hey key hey key hey hey hey key hey hey key hey	End of borehole at 4.00 m		- 4 -
					5.00		Key key key key incorrectincorrect key key key key incorrectincorrect key key key key			5 -
										6 -
										7 -
										8 -
										9 -
Rema	rks								AGS	10 - S

.



APPENDIX H

Laboratory Results – Environmental



EPS Ltd 7B Caxton House

Broad Street

Cambourne Cambridgeshire CB23 6JN

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point Zone 3 Deeside Industrial Park Deeside CH5 2UA

Tel: +44 (0) 1244 833780 Fax: +44 (0) 1244 833781

T.S



Attention :	Michael Judson	
Date :	11th July, 2016	THE EXVISIONMENT AGE MONTORING CONTINUENT AGE
Your reference :	UK16.2295	
Our reference :	Test Report 16/11052 Batch 1 Schedule B	
Location :	LW Developments Ltd	
Date samples received :	1st July, 2016	
Status :	Final report	
Issue :	1	

Four samples were received for analysis on 1st July, 2016 of which four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

6 Jul

Bruce Leslie Project Co-ordinator

Client Name:					
Reference:					
Location:					
Contact:					
JE Job No.:					

UK16.2295 LW Developments Ltd Michael Judson 16/11052

EPS Ltd

Report : Solid

JE JOD NO.:	16/11052									
J E Sample No.	4-5	8-9	15-16	24-25						
Sample ID	WS1	WS2	WS4	WS7						
Depth	3.20-3.40	1.40-1.70	3.30-3.50	2.20-2.40						
COC No / misc	0.20 0.40	1.40 1.70	0.00 0.00	2.20 2.40					e attached n ations and a	
Containers	VJ	٧J	VJ	VJ						
Sample Date	27/06/2016	27/06/2016								
Sample Type	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1				LOD/LOR	Units	Method
Date of Receipt	01/07/2016	01/07/2016	01/07/2016	01/07/2016						No.
Arsenic #M	13.3	84.4	5.6	12.5				<0.5	mg/kg	TM30/PM15
Cadmium ^{#M}	<0.1	<0.1	<0.1	<0.1				<0.1	mg/kg	TM30/PM15
Chromium #M	89.1	74.6	108.1	63.6				<0.5	mg/kg	TM30/PM15
Copper ^{#M}	16	259 _{AA}	5	27				<1	mg/kg	TM30/PM15
Lead ^{#M}	18	3759 _{AA}	5	76				<5	mg/kg	TM30/PM15
Mercury #M Nickel #M	<0.1 44.4	<0.1 134.9	<0.1 18.6	<0.1 32.1				<0.1 <0.7	mg/kg mg/kg	TM30/PM15 TM30/PM15
Selenium #M	<1	1	<1	2				<1	mg/kg	TM30/PM15
Zinc ^{#M}	72	679	36	71				<5	mg/kg	TM30/PM15
-									0.0	
PAH MS										
Naphthalene #M	<0.04	<0.04	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	0.15	<0.03	<0.03				<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	<0.05	<0.05	<0.05				<0.05	mg/kg	TM4/PM8
Fluorene #M	<0.04	<0.04	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
Phenanthrene ^{#M}	<0.03	0.05	0.03	<0.03				<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	0.14	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
Fluoranthene ^{#M}	<0.03	0.06	0.04	<0.03				<0.03	mg/kg	TM4/PM8
Pyrene [#] Benzo(a)anthracene [#]	<0.03 <0.06	0.05	0.03 <0.06	<0.03 <0.06				<0.03 <0.06	mg/kg mg/kg	TM4/PM8 TM4/PM8
Chrysene ^{#M}	<0.00	0.06	0.02	<0.02				<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	<0.07	0.24	<0.07	<0.07				<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene [#]	<0.04	0.12	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	<0.04	0.21	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene [#]	<0.04	0.26	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
Coronene	<0.04	0.11	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6	1.4	<0.6	<0.6				<0.6	mg/kg	TM4/PM8
PAH 17 Total	<0.64	1.54	<0.64	<0.64				<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene Benzo(k)fluoranthene	<0.05 <0.02	0.17	<0.05 <0.02	<0.05 <0.02				<0.05 <0.02	mg/kg	TM4/PM8 TM4/PM8
PAH Surrogate % Recovery	103	104	101	102				<0.02	mg/kg %	TM4/PM8
, an earlogate to receivery		101						10	70	
EPH >C8-C10 ^{#M}	<5	<5	<5	<5				<5	mg/kg	TM5/PM8
EPH >C10-C12 #M	<10	<10	<10	<10				<10	mg/kg	TM5/PM8
EPH >C12-C16 #M	<10	<10	<10	<10				<10	mg/kg	TM5/PM8
EPH >C16-C21 ^{#M}	<10	42	<10	<10				<10	mg/kg	TM5/PM8
EPH >C21-C25	<10	109	<10	<10				<10	mg/kg	TM5/PM8
EPH >C25-C35	<10	156	<10	<10				<10	mg/kg	TM5/PM8
EPH >C8-C35	<30	307	<30	<30				<30	mg/kg	TM5/PM8
Mineral Oil (C10-C40)	<30	320	<30	<30				<30	mg/kg	TM5/PM16
										1

Client Name:					
Reference:					
Location:					
Contact:					
JE Job No.:					

UK16.2295 LW Developments Ltd Michael Judson 16/11052

EPS Ltd

Report : Solid

JE Job No.:	16/11052				 	 	 			
J E Sample No.	4-5	8-9	15-16	24-25						
Sample ID	WS1	WS2	WS4	WS7						
Depth	3.20-3.40	1.40-1.70	3.30-3.50	2.20-2.40				Please se	e attached n	otes for all
COC No / misc									ations and a	
Containers	٧J	٧J	٧J	٧J						
Sample Date	27/06/2016	27/06/2016	27/06/2016	28/06/2016						
Sample Type		Soil	Soil	Soil						
Batch Number	1	1	1	1						
								LOD/LOR	Units	Method No.
Date of Receipt										TM00/DM40
GRO (>C5-C6) #M	<0.1 <0.1	<0.1 ^{sv} <0.1 ^{sv}	<0.1 <0.1	<0.1 <0.1				<0.1 <0.1	mg/kg	TM36/PM12 TM36/PM12
GRO (>C6-C7) GRO (>C7-C8)	<0.1	<0.1 <0.1	<0.1	<0.1				<0.1	mg/kg mg/kg	TM36/PM12
GRO (>C8-C10) #M	0.4	<0.1 <0.1	<0.1	<0.1				<0.1	mg/kg	TM36/PM12
GRO (>C5-C10)	0.4	<0.1	<0.1	<0.1				<0.1	mg/kg	TM36/PM12
MTBE [#]	<5	<5 ^{SV}	<5	<5				<5	ug/kg	TM31/PM12
Benzene [#]	<5	<5 ^{SV}	<5	<5				<5	ug/kg	TM31/PM12
Toluene #	<5	<5 ^{\$V}	<5	<5				<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5 ^{SV}	<5	<5				<5	ug/kg	TM31/PM12
m/p-Xylene [#]	<5	<5 ^{\$V}	<5	<5				<5	ug/kg	TM31/PM12
o-Xylene [#]	<5	<5 ^{\$V}	<5	<5				<5	ug/kg	TM31/PM12
	_	_	_	_				_		
PCB 28 [#]	<5	<5	<5	<5				<5	ug/kg	TM17/PM8
PCB 52 [#]	<5	<5	<5	<5				<5	ug/kg	TM17/PM8 TM17/PM8
PCB 101 [#] PCB 118 [#]	<5 <5	<5 <5	<5 <5	<5 <5				<5 <5	ug/kg ug/kg	TM17/PM8 TM17/PM8
PCB 138 [#]	<5	<5	<5	<5				<5	ug/kg	TM17/PM8
PCB 153 [#]	<5	<5	<5	<5				<5	ug/kg	TM17/PM8
PCB 180 [#]	<5	<5	<5	<5				<5	ug/kg	TM17/PM8
Total 7 PCBs [#]	<35	<35	<35	<35				<35	ug/kg	TM17/PM8
Natural Moisture Content	26.7	34.1	3.3	21.7				<0.1	%	PM4/PM0
Hexavalent Chromium [#]	<0.3	<0.3	<0.3	<0.3				<0.3	mg/kg	TM38/PM20
Chromium III	89.1	74.6	108.1	63.6				<0.5	mg/kg	NONE/NONE
Total Organic Carbon #	0.21	23.31	<0.02	0.35				<0.02	%	TM21/PM24
Loss on Ignition [#]	9.8	32.7	1.0	9.0				<1.0	%	TM22/PM0
Sample Type	Clay	Sandy Loam	-	Clay					None	PM13/PM0
Sample Colour		Dark Brown			 	 			None	PM13/PM0
Other Items	stones, sand	stones, roots, clinker	stones, sand	stones, brick					None	PM13/PM0

Mass of sample taken (kg)	-		Moisture Content Ratio (%) =		35.0		
Mass of dry sample (kg) =	0.09		Dry Matter Content Ratio (%) =		74.1		
Particle Size <4mm =	>95%						
JEFL Job No			16/11052	Land	ill Waste Ac	ceptance	
Sample No			5		Criteria Lin	nits	
Client Sample No			WS1		Stable		
Depth/Other			3.20-3.40	Inert	Non-reactive	Hazardous	
Sample Date			27/06/2016	Waste	Hazardous Waste in Non-	Waste	
Batch No			1	Landfill	Hazardous	Landfill	
Solid Waste Analysis					Landfill		
Total Organic Carbon (%)	0.21			3	5	6	
Loss on Ignition (%)	9.8			-	-	10	
Sum of BTEX (mg/kg)	<0.025			6	-	-	
Sum of 7 PCBs (mg/kg)	<0.035			1	-	-	
Mineral Oil (mg/kg)	<30			500	-	-	
PAH Sum of 17(mg/kg)	<0.64			100	-	-	
pH (pH Units)	-			-	>6	-	
ANC to pH 7 (mol/kg)	-			-	to be evaluated	to be evaluated	
ANC to pH 4 (mol/kg)	-			-	to be evaluated	to be evaluated	
Eluate Analysis		conc ⁿ :hed A ₁₀		le	values for co aching test 12457-2 at l	using	
	mg/l	mg/kg			mg/kg		
Arsenic	<0.0025	<0.025		0.5	2	25	
Barium	0.074	0.74		20	100	300	
Cadmium	< 0.0005	<0.005		0.04	1	5	
Chromium	<0.0015	<0.015		0.5	10	70	
Copper	<0.007	<0.07		2	50	100	
Mercury	<0.001	<0.01		0.01	0.2	2	
Molybdenum	0.014	0.14		0.5	10	30	
Nickel	0.003	0.03		0.4	10	40	
Lead	<0.005	<0.05		0.5	10	50	
Antimony	<0.002	<0.02		0.06	0.7	5	
Selenium	<0.003	<0.03		0.1	0.5	7	
Zinc	<0.003	<0.03		4	50	200	
Chloride	1.8	18		800	15000	25000	
Fluoride	<0.3	<3		10	150	500	
Sulphate as SO4	71.54	715.8		1000	20000	50000	
Total Dissolved Solids	245	2451		4000	60000	100000	
Phenol	<0.01	<0.1		1	-	-	
Dissolved Organic Carbon	4	40		500	800	1000	

Mass of sample taken (kg)	-		Moisture Content Ratio (%) =		48.8		
Mass of dry sample (kg) =	0.09		Dry Matter Content Ratio (%) =		67.2		
Particle Size <4mm =	>95%		(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		•••		
JEFL Job No			16/11052	Land	ill Waste Ac	ceptance	
Sample No			9		Criteria Lim	nits	
Client Sample No			WS2		Stable		
Depth/Other			1.40-1.70	Inert	Non-reactive	Hazardous	
Sample Date			27/06/2016	Waste	Hazardous Waste in Non-	Waste	
Batch No			1	Landfill	Hazardous	Landfill	
Solid Waste Analysis					Landfill		
Total Organic Carbon (%)	23.31			3	5	6	
Loss on Ignition (%)	32.7			-	-	10	
Sum of BTEX (mg/kg)	<0.025			6	-	-	
Sum of 7 PCBs (mg/kg)	<0.035			1	-	-	
Mineral Oil (mg/kg)	320			500	-	-	
PAH Sum of 17(mg/kg)	1.54			100	-	-	
pH (pH Units)	-			-	>6	-	
ANC to pH 7 (mol/kg)	-			-	to be evaluated	to be evaluated	
ANC to pH 4 (mol/kg)	-			-	to be evaluated	to be evaluated	
Eluate Analysis		conc ⁿ ched A ₁₀		le	values for co aching test 12457-2 at I	using	
	mg/l	mg/kg			mg/kg		
Arsenic	< 0.0025	<0.025		0.5	2	25	
Barium	0.070	0.70		20	100	300	
Cadmium	< 0.0005	<0.005		0.04	1	5	
Chromium	< 0.0015	<0.015		0.5	10	70	
Copper	<0.007	<0.07		2	50	100	
Mercury	<0.001	<0.01		0.01	0.2	2	
Molybdenum	0.017	0.17		0.5	10	30	
Nickel	<0.002	<0.02		0.4	10	40	
Lead	<0.005	<0.05		0.5	10	50	
Antimony	0.011	0.11		0.06	0.7	5	
Selenium	<0.003	<0.03		0.1	0.5	7	
Zinc	0.007	0.07		4	50	200	
Chloride	0.4	4		800	15000	25000	
Fluoride	0.3	<3		10	150	500	
Sulphate as SO4	25.90	259.0		1000	20000	50000	
Total Dissolved Solids	122	1220		4000	60000	100000	
Phenol	<0.01	<0.1		1	_	_	
FIIEIIUI	40.01	40.1					

Mass of sample taken (kg)	-		Moisture Content Ratio (%) =		28.4		
Mass of dry sample (kg) =	0.09		Dry Matter Content Ratio (%) =		77.9		
Particle Size <4mm =	>95%		(, , ,				
JEFL Job No			16/11052	Land	ill Waste Ac	ceptance	
Sample No			25		Criteria Lim	nits	
Client Sample No			WS7		Stable		
Depth/Other			2.20-2.40	Inert	Non-reactive	Hazardous	
Sample Date			28/06/2016	Waste	Hazardous Waste in Non-	Waste	
Batch No			1	Landfill	Hazardous	Landfill	
Solid Waste Analysis					Landfill		
Total Organic Carbon (%)	0.35			3	5	6	
Loss on Ignition (%)	9.0			-	-	10	
Sum of BTEX (mg/kg)	<0.025			6	-	-	
Sum of 7 PCBs (mg/kg)	< 0.035			1	-	-	
Mineral Oil (mg/kg)	<30			500	-	-	
PAH Sum of 17(mg/kg)	<0.64			100	-	-	
pH (pH Units)	8.07			-	>6	-	
ANC to pH 7 (mol/kg)	-			-	to be evaluated	to be evaluated	
ANC to pH 4 (mol/kg)	-			-	to be evaluated	to be evaluated	
Eluate Analysis		conc ⁿ ched A ₁₀		le	values for co aching test 12457-2 at l	using	
	mg/l	mg/kg			mg/kg		
Arsenic	<0.0025	<0.025		0.5	2	25	
Barium	0.016	0.16		20	100	300	
Cadmium	< 0.0005	<0.005		0.04	1	5	
Chromium	< 0.0015	<0.015		0.5	10	70	
Copper	<0.007	<0.07		2	50	100	
Mercury	<0.001	<0.01		0.01	0.2	2	
Molybdenum	0.005	0.05		0.5	10	30	
Nickel	< 0.002	<0.02		0.4	10	40	
Lead	<0.005	<0.05		0.5	10	50	
Antimony	< 0.002	<0.02		0.06	0.7	5	
Selenium	0.003	<0.03		0.1	0.5	7	
Zinc	0.009	0.09		4	50	200	
Chloride	1.9	19		800	15000	25000	
Fluoride	0.8	8		10	150	500	
Sulphate as SO4	101.19	1011.4		1000	20000	50000	
Total Dissolved Solids	287	2869		4000	60000	100000	
Phenol	<0.01	<0.1		1	-	-	
Dissolved Organic Carbon	5	50		500	800	1000	

Mass of sample taken (kg)	-		Moisture Content Ratio (%) =		4.5		
Mass of dry sample (kg) =	0.09		Dry Matter Content Ratio (%) =		95.7		
Particle Size <4mm =	>95%				55.7		
	29570						
JEFL Job No			16/11052	Land	ill Waste Ac	ceptance	
Sample No			16		Criteria Lim	nits	
Client Sample No			WS4		Stable		
Depth/Other			3.30-3.50	Inert	Non-reactive	Hazardous	
Sample Date			27/06/2016	Waste	Hazardous Waste in Non-	Waste	
Batch No			1	Landfill	Hazardous	Landfill	
Solid Waste Analysis					Landfill		
Total Organic Carbon (%)	<0.02			3	5	6	
Loss on Ignition (%)	1.0			-	-	10	
Sum of BTEX (mg/kg)	<0.025			6	-	-	
Sum of 7 PCBs (mg/kg)	<0.035			1	-	-	
Mineral Oil (mg/kg)	<30			500	-	-	
PAH Sum of 17(mg/kg)	<0.64			100	-	-	
pH (pH Units)	-			-	>6	-	
ANC to pH 7 (mol/kg)	-			-	to be evaluated	to be evaluated	
ANC to pH 4 (mol/kg)	-			-	to be evaluated	to be evaluated	
Eluate Analysis		conc ⁿ ched A ₁₀		le	values for co aching test 12457-2 at I	using	
	mg/l	mg/kg			mg/kg		
Arsenic	<0.0025	<0.025		0.5	2	25	
Barium	< 0.003	< 0.03		20	100	300	
Cadmium	< 0.0005	<0.005		0.04	1	5	
Chromium	< 0.0015	<0.015		0.5	10	70	
Copper	<0.007	<0.07		2	50	100	
Mercury	<0.001	<0.01		0.01	0.2	2	
Molybdenum	<0.002	<0.02		0.5	10	30	
Nickel	<0.002	<0.02		0.4	10	40	
Lead	<0.005	<0.05		0.5	10	50	
Antimony	0.003	0.03		0.06	0.7	5	
Selenium	<0.003	<0.03		0.1	0.5	7	
Zinc	0.003	0.03		4	50	200	
Chloride	0.5	5		800	15000	25000	
Fluoride	<0.3	<3		10	150	500	
Sulphate as SO4	4.82	48.2		1000	20000	50000	
Total Dissolved Solids	48	480		4000	60000	100000	
Phenol	<0.01	<0.1		1	-	-	
Dissolved Organic Carbon	4	40		500	800	1000	

Client Name:	EPS Ltd
Reference:	UK16.2295
Location:	LW Developments Ltd
Contact:	Michael Judson

EPH Interpretation Report

Matrix : Solid

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
16/11052	1	WS1	3.20-3.40	4-5	No interpretation possible
16/11052	1	WS2	1.40-1.70	8-9	Possible trace of degraded diesel
16/11052	1	WS4	3.30-3.50	15-16	No interpretation possible
16/11052	1	WS7	2.20-2.40	24-25	No interpretation possible

Asbestos Analysis

Jones Environmental Laboratory

EPS Ltd
UK16.2295
LW Developments Ltd
Michael Judson

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested. Opinions lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

M AMOD

Ryan Butterworth Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
16/11052	1	WS1	3.20-3.40	5	06/07/2016	General Description (Bulk Analysis)	soil/stones
					06/07/2016	Asbestos Fibres	NAD
					06/07/2016	Asbestos Fibres (2)	NAD
					06/07/2016	Asbestos ACM	NAD
					06/07/2016	Asbestos ACM (2)	NAD
					06/07/2016	Asbestos Type	NAD
					06/07/2016	Asbestos Type (2)	NAD
					06/07/2016	Asbestos Level Screen	NAD
16/11052	1	WS2	1.40-1.70	9	06/07/2016	General Description (Bulk Analysis)	soil/stones
					06/07/2016	Asbestos Fibres	NAD
					06/07/2016	Asbestos Fibres (2)	NAD
					06/07/2016	Asbestos ACM	NAD
					06/07/2016	Asbestos ACM (2)	NAD
					06/07/2016	Asbestos Type	NAD
					06/07/2016	Asbestos Type (2)	NAD
					06/07/2016	Asbestos Level Screen	NAD
16/11052	1	WS4	3.30-3.50	16	06/07/2016	General Description (Bulk Analysis)	Sand/Stones
					06/07/2016	Asbestos Fibres	NAD
					06/07/2016	Asbestos Fibres (2)	NAD
					06/07/2016	Asbestos ACM	NAD
					06/07/2016	Asbestos ACM (2)	NAD
					06/07/2016	Asbestos Type	NAD
					06/07/2016	Asbestos Type (2)	NAD
					06/07/2016	Asbestos Level Screen	NAD
16/11052	1	WS7	2.20-2.40	25	06/07/2016	General Description (Bulk Analysis)	Soil/Stone
					06/07/2016	Asbestos Fibres	NAD
					06/07/2016	Asbestos Fibres (2)	NAD
					06/07/2016	Asbestos ACM	NAD
					06/07/2016	Asbestos ACM (2)	NAD
					06/07/2016	Asbestos Type	NAD
					06/07/2016	Asbestos Type (2)	NAD
					06/07/2016	Asbestos Level Screen	NAD

Client Name:	EPS Ltd
Reference:	UK16.2295
Location:	LW Developments Ltd
Contact:	Michael Judson

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J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
16/11052	1	WS1	3.20-3.40	4-5	GRO	Solid Samples were received at a temperature above 9°C.
16/11052	1	WS2	1.40-1.70	8-9	GRO	Solid Samples were received at a temperature above 9°C.
16/11052	1	WS4	3.30-3.50	15-16	GRO	Solid Samples were received at a temperature above 9°C.
16/11052	1	WS7	2.20-2.40	24-25	GRO	Solid Samples were received at a temperature above 9°C.
	-					

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

Matrix : Solid

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 16/11052

SOILS

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

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

# ISO17025 (UKAS) accredited - UK. B Indicates analyte found in associated method blank. DR Dilution required. M MCERTS accredited. NA Not applicable NAD No Asbestos Detected. ND None Detected (usually refers to VOC and/SVOC TICs). NDP No Determination Possible SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect. W Results expressed on as received basis. + AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. +++ Result outside calibration range, results should be considered as indicative only and are not accredited. * Analysis subcontracted to a Jones Environmental approved laboratory. AD Samples are dried at 35°C ±5°C CO Suspected carry over	
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Analysis subcontracted to a softes Environmental approved laboratory. AD Samples are dried at 35°C ±5°C	
CO Suspected carry over	
LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS	
ME Matrix Effect	
NFD No Fibres Detected	
BS AQC Sample	
LB Blank Sample	
N Client Sample	
TB Trip Blank Sample	
OC Outside Calibration Range	
AA x5 Dilution	

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	CWG GC-FID			AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM20	Gravimetric determination of Total Dissolved Solids/Total Solids based on BS 1377- 3:1990 and BSEN 15126	PM0	No preparation is required.			AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.			AD	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM22	Modified USEPA 160.4. Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (450°C)	PM0	No preparation is required.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.			AR	Yes
TM27	Modified US EPA method 9056.Determination of water soluble anions using Dionex (Ion- Chromatography).	PM0	No preparation is required.			AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 $^{\circ}\text{C}.$			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen. Samples are extracted using an orbital shaker.	Yes	Yes	AD	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen. Samples are extracted using an orbital shaker.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.	Yes	Yes	AD	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.			AR	Yes
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
ТМ73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes

Method Code Appendix

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
NONE	No Method Code	NONE	No Method Code			AR	Yes
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	



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Jones Environmental Laboratory

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Tel: +44 (0) 1244 833780 Fax: +44 (0) 1244 833781



Attention :	Michael Judson	
Date :	12th July, 2016	
Your reference :	UK16.2295	
Our reference :	Test Report 16/11052 Batch 1 Schedule A Batch 1 Schedule E	16/11052 Batch 1 Schedule C 16/11052
Location :	LW Developments Ltd	
Date samples received :	1st July, 2016	
Status :	Final report	
Issue :	1	

Twenty seven samples were received for analysis on 1st July, 2016 of which sixteen were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Phil Sommerton BSc Project Manager

Client Name:
Reference:
Location:
Contact:
JE Job No.:

UK16.2295 LW Developments Ltd Michael Judson 16/11052

EPS Ltd

Report : Solid

JE Job No.:	16/11052												
J E Sample No.	1-2	3	10	11-12	13	14	17-18	19	20	23			
Sample ID	WS1	WS1	WS2	WS3	WS3	WS4	WS5	WS5	WS6	WS7			
Depth COC No / misc	0.10-0.40	1.30-1.50	2.60-2.80	0.30-0.50	0.90-1.00	1.10-1.30	0.50-0.60	1.70-1.80	1.10-1.30	0.80-1.00		e attached n ations and a	
		-	-		-	-		-	-	-			
Containers	V J	T	Τ	V J	Τ	Τ	V J	T	T	Τ			
Sample Date													
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method
Date of Receipt	01/07/2016	01/07/2016	01/07/2016	01/07/2016	01/07/2016	01/07/2016	01/07/2016	01/07/2016	01/07/2016	01/07/2016			No.
Arsenic #M	40.2	-	-	-	-	-	12.2	-	-	-	<0.5	mg/kg	TM30/PM15
Arsenic	-	-	-	18.6	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM62
Cadmium #M	<0.1	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM30/PM15
Cadmium	-	-	-	0.5	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Chromium ^{#M} Chromium	- 129.4	-	-	- 38.5	-	-	44.4	-	-	-	<0.5 <0.5	mg/kg mg/kg	TM30/PM15 TM30/PM62
Copper **	- 1053	-	-	- 38.5	-	-	- 34	-	-	-	<0.5	mg/kg	TM30/PM62
Copper	-	-	-	66	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Lead #M	812	-	-	-	-	-	114	-	-	-	<5	mg/kg	TM30/PM15
Lead	-	-	-	275	-	-	-	-	-	-	<5	mg/kg	TM30/PM62
Mercury #M	1.8	-	-	-	-	-	0.3	-	-	-	<0.1	mg/kg	TM30/PM15
Mercury	-	-	-	0.3	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Nickel ^{#M}	75.2	-	-	-	-	-	16.0	-	-	-	<0.7	mg/kg	TM30/PM15
Nickel	-	-	-	30.9	-	-	-	-	-	-	<0.7	mg/kg	TM30/PM62
Selenium ^{#M}	<1	-	-	-	-	-	<1	-	-	-	<1	mg/kg	TM30/PM15
Selenium	-	-	-	<1	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Sulphur Total Sulphate ^{#M}	- 1046	0.04 366	0.18 2849	-	0.19 3859	0.01 272	- 233	<0.01 96	0.01 218	0.08	<0.01 <50	% mg/kg	TM30/PM15 TM50/PM29
Total Sulphate	-	-	-	3456	-	-	-	-	-	-	<50	mg/kg	TM50/PM29
Zinc ^{#M}	1155	-	-	-	-	-	236	-	-	-	<5	mg/kg	TM30/PM15
Zinc	-	-	-	258	-	-	-	-	-	-	<5	mg/kg	TM30/PM62

Client Name:
Reference:
Location:
Contact:
JE Job No.:

UK16.2295 LW Developments Ltd Michael Judson 16/11052

EPS Ltd

Report : Solid

JE Job No.:	16/11052										_		
J E Sample No.	1-2	3	10	11-12	13	14	17-18	19	20	23			
Sample ID	WS1	WS1	WS2	WS3	WS3	WS4	WS5	WS5	WS6	WS7			
Depth	0.10-0.40	1.30-1.50	2.60-2.80	0.30-0.50	0.90-1.00	1.10-1.30	0.50-0.60	1.70-1.80	1.10-1.30	0.80-1.00		e attached n	
COC No / misc											abbrevia	ations and a	cronyms
Containers	٧J	т	т	٧J	т	т	٧J	т	т	т			
Sample Date	27/06/2016	27/06/2016	27/06/2016	27/06/2016	27/06/2016	27/06/2016	28/06/2016	28/06/2016	28/06/2016	28/06/2016			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			Method
Date of Receipt	01/07/2016	01/07/2016	01/07/2016	01/07/2016	01/07/2016	01/07/2016	01/07/2016	01/07/2016	01/07/2016	01/07/2016	LOD/LOR	Units	No.
PAH MS													
Naphthalene #M	<0.04	-	-	<0.04	-	-	<0.04	-	-	-	<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.13	-	-	0.08	-	-	0.04	-	-	-	<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	-	-	<0.05	-	-	<0.05	-	-	-	<0.05	mg/kg	TM4/PM8
Fluorene #M	<0.04	-	-	0.05	-	-	<0.04	-	-	-	<0.04	mg/kg	TM4/PM8
Phenanthrene #M	0.21	-	-	0.48	-	-	0.19	-	-	-	<0.03	mg/kg	TM4/PM8
Anthracene #	0.10	-	-	0.16	-	-	0.06	-	-	-	<0.04	mg/kg	TM4/PM8
Fluoranthene #M	0.62	-	-	0.92	-	-	0.44	-	-	-	<0.03	mg/kg	TM4/PM8
Pyrene [#]	0.58	-	-	0.83	-	-	0.37	-	-	-	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.44	-	-	0.52	-	-	0.19	-	-	-	<0.06	mg/kg	TM4/PM8
Chrysene ^{#M}	0.39	-	-	0.44	-	-	0.17	-	-	-	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	0.96	-	-	0.76	-	-	0.35	-	-	-	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene [#]	0.41	-	-	0.43	-	-	0.20	-	-	-	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	0.34	-	-	0.29	-	-	0.14	-	-	-	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.08	-	-	0.05	-	-	<0.04	-	-	-	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene [#]	0.34	-	-	0.29	-	-	0.13	-	-	-	<0.04	mg/kg	TM4/PM8
Coronene	-	-	-	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
PAH 16 Total	4.6	-	-	5.3	-	-	2.3	-	-	-	<0.6	mg/kg	TM4/PM8
PAH 17 Total	-	-	-	-	-	-	-	-	-	-	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.69	-	-	0.55	-	-	0.25	-	-	-	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene PAH Surrogate % Recovery	0.27	-	-	0.21	-	-	0.10 99	-	-	-	<0.02 <0	mg/kg %	TM4/PM8 TM4/PM8
PAIT Suffogate % Recovery	105	-	-	104	-	-	35	-	-	-	<0	70	11014/171010
Mineral Oil (C10-C40)	-	-	-	-	-	-	-	-	-	-	<30	mg/kg	TM5/PM16
TPH CWG													
Aliphatics													
>C5-C6 ^{#M}	<1.0 _{AA}	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<1.0 _{AA}	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
>C8-C10	<1.0 _{AA}	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
>C10-C12 ^{#M}	<0.2	-	-	-	-	-	-	-	-	-	<0.2	mg/kg	TM5/PM16
>C12-C16 ^{#M}	<4	-	-	-	-	-	-	-	-	-	<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	-	-	-	-	-	-	-	-	-	<7	mg/kg	TM5/PM16
>C21-C35 #M	44	-	-	-	-	-	-	-	-	-	<7	mg/kg	TM5/PM16
Total aliphatics C5-35	44	-	-	-	-	-	-	-	-	-	<19	mg/kg	TM5/TM36/PM12/PM16

Client Name:
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UK16.2295 LW Developments Ltd Michael Judson 16/11052

EPS Ltd

Report : Solid

JE Job No.:	16/11052										-		
J E Sample No.	1-2	3	10	11-12	13	14	17-18	19	20	23			
Sample ID	WS1	WS1	WS2	WS3	WS3	WS4	WS5	WS5	WS6	WS7			
Depth	0.10-0.40	1.30-1.50	2.60-2.80	0.30-0.50	0.90-1.00	1.10-1.30	0.50-0.60	1.70-1.80	1.10-1.30	0.80-1.00	Please se	e attached n	otes for all
COC No / misc												ations and a	
Containers	٧J	т	т	٧J	т	т	٧J	т	т	т			
Sample Date	27/06/2016	27/06/2016	27/06/2016	27/06/2016	27/06/2016	27/06/2016	28/06/2016	28/06/2016	28/06/2016	28/06/2016			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			Marthaud
Date of Receipt					01/07/2016		01/07/2016				LOD/LOR	Units	Method No.
TPH CWG													
Aromatics													
>C5-EC7	<1.0 _{AA}	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
>EC7-EC8	<1.0 _{AA}	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<1.0 _{AA}	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
>EC10-EC12	<0.2	-	-	-	-	-	-	-	-	-	<0.2	mg/kg	TM5/PM16
>EC12-EC16	<4	-	-	-	-	-	-	-	-	-	<4	mg/kg	TM5/PM16
>EC16-EC21	<7	-	-	-	-	-	-	-	-	-	<7	mg/kg	TM5/PM16
>EC21-EC35	72	-	-	-	-	-	-	-	-	-	<7	mg/kg	TM5/PM16
Total aromatics C5-35	72	-	-	-	-	-	-	-	-	-	<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	116	-	-	-	-	-	-	-	-	-	<38	mg/kg	TM5/TM36/PM12/PM16
GRO (>C5-C6) ^{#M}	-	-	-	-	-	-	-	-	_	-	<0.1	mg/kg	TM36/PM12
GRO (>C5-C6) GRO (>C6-C7)	_	_	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
GRO (>C7-C8)	-	_	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
GRO (>C8-C10) #	_	_	_	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
GRO (>C5-C10)	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
MTBE [#]	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
Benzene [#]	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
Toluene #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
Ethylbenzene [#]	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
m/p-Xylene [#]	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
o-Xylene [#]	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
Total Phenols HPLC	<0.15	-	-	<0.15	-	-	<0.15	-	-	-	<0.15	mg/kg	TM26/PM21
												5.5	
Natural Moisture Content	9.3	-	-	-	-	-	9.9	-	-	-	<0.1	%	PM4/PM0
Natural Moisture Content	-	-	-	26.5	-	-	-	-	-	-	<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	-	-	<0.3	-	-	<0.3	-	-	-	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) ^{#M}	0.0623	0.0320	0.2612	-	1.7056	0.0962	0.0153	0.0134	0.0728	0.1156	<0.0015	g/l	TM38/PM20
Sulphate as SO4 (2:1 Ext)	-	-	-	0.1714	-	-	-	-	-	-	<0.0015	g/l	TM38/PM60
Chromium III	129.4	-	-	-	-	-	44.4	-	-	-	<0.5	mg/kg	NONE/NONE
Chromium III	-	-	-	38.5	-	-	-	-	-	-	<0.5	mg/kg	NONE/NONE
Total Cyanide ^{#M}	9.2	-	-	<0.5	-	-	<0.5	-	-	-	<0.5	mg/kg	TM89/PM45
Total Organic Carbon [#]	-	-	-	-	-	-	-	-	-	-	<0.02	%	TM21/PM24
Organic Matter	16.3	-	-	NDP	-	-	2.0	-	-	-	<0.2	%	TM21/PM24
pH ^{#M}	8.02	8.29	7.55	10.57	8.03	8.11	8.32	8.64	8.29	8.54	<0.01	pH units	TM73/PM11
Sample Type	Sandy Loam	Clay	Clay	Clay	Clay	Clay	Clayey Loam	Clayey Sand	Clayey Sand	Sand		None	PM13/PM0
Sample Colour	Medium Brown	Medium Brown	Dark Brown	Medium Brown	Medium Brown	Medium Brown	Medium Brown	Medium Brown	Medium Brown	Medium Brown		None	PM13/PM0
Other Items	stones, glass, vegetation	stones, sand	stones, sand, clinker	stones, sand, clinker, brick	stones, sand, clinker, brick	stones	stones, sand, vegetation, clinker	stones	stones	stones, brick, clinker		None	PM13/PM0

Client Name:
Reference:
Location:
Contact:
JE Job No.:

UK16.2295 LW Developments Ltd Michael Judson 16/11052

EPS Ltd

Report : Solid

JE Job No.:	16/11052										
J E Sample No.	24-25	28-30	33-34	35	38	41-42					
Sample ID	WS7	WS8	WS9	WS9	WS10	WS11					
Depth	2.20-2.40	2.80-3.00	1.30-1.50	1.40-1.60	1.70-1.80	1.40-1.70					
COC No / misc										e attached n ations and a	
Containers	V J	VJT	٧J	т	т	٧J					
Sample Date	28/06/2016	28/06/2016	28/06/2016	28/06/2016	29/06/2016	29/06/2016					
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1	1					Martine
Date of Receipt									LOD/LOR	Units	Method No.
Arsenic #M	12.5	-	61.7	-	-	97.5			<0.5	mg/kg	TM30/PM15
Arsenic	-	-	-	-	-	-			<0.5	mg/kg	TM30/PM62
Cadmium #M	<0.1	-	0.3	-	-	2.6			<0.1	mg/kg	TM30/PM15
Cadmium	-	-	-	-	-	-			<0.1	mg/kg	TM30/PM62
Chromium ^{#M}	63.6	-	50.2	-	-	51.2			<0.5	mg/kg	TM30/PM15
Chromium	-	-	-	-	-	-			<0.5	mg/kg	TM30/PM62
Copper #M	27	-	217	-	-	212			<1	mg/kg	TM30/PM15
Copper	-	-	-	-	-	-			<1	mg/kg	TM30/PM62
Lead ^{#M}	76	-	632	-	-	622			<5	mg/kg	TM30/PM15
Lead Mercury ^{#M}	- <0.1	-	- 0.3	-	-	- 0.6			<5 <0.1	mg/kg	TM30/PM62 TM30/PM15
Mercury	-	-	0.3	-	-	-			<0.1	mg/kg mg/kg	TM30/PM13
Nickel ^{#M}	32.1	-	100.3	-	-	138.3			<0.7	mg/kg	TM30/PM15
Nickel	-	-	-	-	-	-			<0.7	mg/kg	TM30/PM62
Selenium ^{#M}	2	-	1	-	-	<1			<1	mg/kg	TM30/PM15
Selenium	-	-	-	-	-	-			<1	mg/kg	TM30/PM62
Sulphur	-	0.48	-	0.13	<0.01	-			<0.01	%	TM30/PM15
Total Sulphate ^{#M}	1929	13160 _{AA}	1495	1785	156	2940			<50	mg/kg	TM50/PM29
Total Sulphate	-	-	-	-	-	-			<50	mg/kg	TM50/PM29
Zinc #M	71	-	459	-	-	967			<5	mg/kg	TM30/PM15
Zinc	-	-	-	-	-	-			<5	mg/kg	TM30/PM62
	l	l									

Client Name:
Reference:
Location:
Contact:
JE Job No.:

UK16.2295 LW Developments Ltd Michael Judson 16/11052

EPS Ltd

Report : Solid

JE Job No.:	16/11052								_		
J E Sample No.	24-25	28-30	33-34	35	38	41-42					
Sample ID	WS7	WS8	WS9	WS9	WS10	WS11					
Depth	2.20-2.40	2.80-3.00	1.30-1.50	1.40-1.60	1.70-1.80	1.40-1.70			Please se	e attached n	otes for all
COC No / misc										ations and a	
Containers	٧J	VJT	٧J	т	т	٧J					
Sample Date	28/06/2016	28/06/2016	28/06/2016	28/06/2016	29/06/2016	29/06/2016					
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1	1					
Date of Receipt									LOD/LOR	Units	Method No.
PAH MS	01/07/2016	01/07/2016	01/07/2016	01/07/2016	01/07/2018	01/07/2018					
Naphthalene #M	<0.04	-	<0.04			< 0.04			<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	-	0.06	-	-	0.19			<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	-	<0.05	-	-	<0.05			<0.05	mg/kg	TM4/PM8
Fluorene #M	<0.04	-	<0.04	-	-	0.06			<0.04	mg/kg	TM4/PM8
Phenanthrene #M	<0.03	-	<0.03	-	-	0.77			<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	-	<0.04	-	-	0.29			<0.04	mg/kg	TM4/PM8
Fluoranthene #M	<0.03	-	0.04	-	-	1.53			<0.03	mg/kg	TM4/PM8
Pyrene [#]	<0.03	-	<0.03	-	-	1.29			<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene [#] Chrysene ^{#M}	<0.06 <0.02	-	0.11	•	-	0.79			<0.06 <0.02	mg/kg mg/kg	TM4/PM8 TM4/PM8
Benzo(bk)fluoranthene #M	<0.02	-	0.28	-	-	1.79			<0.02	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	-	0.13	-	-	0.95			<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	<0.04	-	0.15	-	-	0.75			<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	-	<0.04	-	-	0.19			<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	-	0.18	-	-	0.80			<0.04	mg/kg	TM4/PM8
Coronene	<0.04	-	-	-	-	-			<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6	-	1.0	-	-	10.3			<0.6	mg/kg	TM4/PM8
PAH 17 Total	<0.64	-	-	-	-	-			<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene Benzo(k)fluoranthene	<0.05 <0.02	-	0.20	•	-	1.29 0.50			<0.05 <0.02	mg/kg mg/kg	TM4/PM8 TM4/PM8
PAH Surrogate % Recovery	102	-	101	-	-	113			<0.02	%	TM4/PM8
Mineral Oil (C10-C40)	<30	-	-	-	-	-			<30	mg/kg	TM5/PM16
TPH CWG											
Aliphatics											
>C5-C6 #M	<0.1	-	<0.1 ^{SV}	-	-	<0.1 ^{SV}			<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	-	<0.1 SV	-	-	<0.1 ^{SV}			<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	-	<0.1 ^{SV}	-	-	<0.1 ^{SV}			<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	-	<0.2	-	-	<0.2			<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	-	<4	-	-	<4			<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	-	<7	-	-	<7			<7	mg/kg	TM5/PM16
>C21-C35 #M	9	-	38	-	-	39			<7	mg/kg	TM5/PM16 TM5/TM36/PM12/PM16
Total aliphatics C5-35	<19	-	38	-	-	39			<19	mg/kg	TM5/TM36/PM12/PM16
											İ

Client Name:
Reference:
Location:
Contact:
JE Job No.:

UK16.2295 LW Developments Ltd Michael Judson 16/11052

EPS Ltd

Report : Solid

JE Job No.:	16/11052						 	 			
J E Sample No.	24-25	28-30	33-34	35	38	41-42					
Sample ID	WS7	WS8	WS9	WS9	WS10	WS11					
Depth	2.20-2.40	2.80-3.00	1.30-1.50	1.40-1.60	1.70-1.80	1.40-1.70			Diagon on	a attached a	ataa far all
COC No / misc										e attached n ations and a	
Containers	٧J	VJT	٧J	т	т	٧J					
Sample Date	28/06/2016	28/06/2016	28/06/2016	28/06/2016	29/06/2016	29/06/2016					
Sample Type		Soil	Soil	Soil	Soil	Soil					
		1									
Batch Number	1		1	1	1	1			LOD/LOR	Units	Method No.
Date of Receipt	01/07/2016	01/07/2016	01/07/2016	01/07/2016	01/07/2016	01/07/2016					
TPH CWG											
Aromatics			sv			sv					
>C5-EC7	<0.1	-	<0.1 ^{SV}	-	-	<0.1 ^{SV}			<0.1	mg/kg	TM36/PM12
>EC7-EC8	<0.1	-	<0.1 ^{SV}	-	-	<0.1 ^{SV}			<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	-	<0.1 ^{SV}	-	-	<0.1 ^{SV}			<0.1	mg/kg	TM36/PM12
>EC10-EC12	<0.2	-	<0.2	-	-	<0.2			<0.2	mg/kg	TM5/PM16
>EC12-EC16 >EC16-EC21	<4 <7	-	<4 <7	-	-	<4 <7			<4 <7	mg/kg	TM5/PM16 TM5/PM16
>EC16-EC21 >EC21-EC35	<7	-	<7	-	-	<7 98			<7	mg/kg mg/kg	TM5/PM16 TM5/PM16
>EC21-EC35 Total aromatics C5-35	<19	-	<19	-	-	98			<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	<38	-	38	-	-	137			<38	mg/kg	TM5/TM36/PM12/PM16
	<50	_	50	-		157			<00	iiig/kg	
GRO (>C5-C6) #M	<0.1	-	-	-	-	-			<0.1	mg/kg	TM36/PM12
GRO (>C6-C7)	<0.1	-	-	-	-	-			<0.1	mg/kg	TM36/PM12
GRO (>C7-C8)	<0.1	-	-	-	-	-			<0.1	mg/kg	TM36/PM12
GRO (>C8-C10) #M	<0.1	-	-	-	-	-			<0.1	mg/kg	TM36/PM12
GRO (>C5-C10)	<0.1	-	-	-	-	-			<0.1	mg/kg	TM36/PM12
MTBE [#]	<5	-	<5 ^{\$V}	-	-	<5 ^{\$V}			<5	ug/kg	TM31/PM12
Benzene #	<5	-	<5 ^{SV}	-	-	<5 ^{sv}			<5	ug/kg	TM31/PM12
Toluene [#]	<5	-	<5 ^{\$V}	-	-	<5 ^{SV}			<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	-	<5 ^{SV}	-	-	<5 ^{SV}			<5	ug/kg	TM31/PM12
m/p-Xylene [#]	<5	-	<5 ^{\$V}	-	-	<5 ^{SV}			<5	ug/kg	TM31/PM12
o-Xylene [#]	<5	-	<5 ^{\$V}	-	-	<5 ^{\$V}			<5	ug/kg	TM31/PM12
Total Phenols HPLC	<0.15	-	<0.15	-	-	<0.15			<0.15	mg/kg	TM26/PM21
Natural Moisture Content	21.7	-	23.3	-	-	13.8			<0.1	%	PM4/PM0
Natural Moisture Content	-	-	-	-	-	-			<0.1	%	PM4/PM0
Hexavalent Chromium [#]	<0.3	-	<0.3	-	-	<0.3			<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #M	0.8723	1.6129	0.2174	0.1108	0.0241	0.3161			<0.0015	g/l	TM38/PM20
Sulphate as SO4 (2:1 Ext)	-	-	-	-	-	-			<0.0015	g/l	TM38/PM60
Chromium III	63.6	-	50.2	-	-	51.2			<0.5	mg/kg	NONE/NONE
Chromium III	-	-	-	-	-	-			<0.5	mg/kg	NONE/NONE
Total Cyanide #M	<0.5	-	<0.5	-	-	2.4			<0.5	mg/kg	TM89/PM45
Tatal Organia October #	0.05	-	-	-					-0.00	0/	TM21/PM24
Total Organic Carbon #	0.35				-	-			<0.02	%	
Organic Matter	0.6	-	41.1	-	-	59.0			<0.2	%	TM21/PM24
рН #М	8.07	6.49	8.11	7.61	7.50	7.80			<0.01	pH units	TM73/PM11
Sample Type	Clay	Clayey Silt	Clayey Sand	Sandy Loam	Clay	Clay				None	PM13/PM0
Sample Colour	Medium Brown	Medium Brown	Dark Brown	Dark Brown	Medium Brown	Dark Brown				None	PM13/PM0
Other Items	stones, brick	stones, sand	stones, clinker	stones, clinker, brick	stones	stones, sand, brick, clinker				None	PM13/PM0

Client Name:	EPS Ltd
Reference:	UK16.2295
Location:	LW Developments Ltd
Contact:	Michael Judson

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
16/11052	1	WS1	0.10-0.40	1-2	Possible trace of lubricating oil
16/11052	1	WS7	2.20-2.40	24-25	No interpretation possible
16/11052	1	WS9	1.30-1.50	33-34	Possible trace of tarmac/bitumen
16/11052	1	WS11	1.40-1.70	41-42	PAH's & Possible trace of lubricating oil

EPH Interpretation Report

Matrix : Solid

Asbestos Analysis

Jones Environmental Laboratory

Client Name:	EPS Ltd
Reference:	UK16.2295
Location:	LW Developments Ltd
Contact:	Michael Judson

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested. Opinions lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

/ AM

Ryan Butterworth Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
16/11052	1	WS1	0.10-0.40	2	06/07/2016	General Description (Bulk Analysis)	soil/stones
					06/07/2016	Asbestos Fibres	NAD
					06/07/2016	Asbestos Fibres (2)	NAD
					06/07/2016	Asbestos ACM	NAD
					06/07/2016	Asbestos ACM (2)	NAD
					06/07/2016	Asbestos Type	NAD
					06/07/2016	Asbestos Type (2)	NAD
					06/07/2016	Asbestos Level Screen	NAD
16/11052	1	WS3	0.30-0.50	12	06/07/2016	General Description (Bulk Analysis)	Soil/Stones
					06/07/2016	Asbestos Fibres	Fibre Bundles
					06/07/2016	Asbestos ACM	NAD
					06/07/2016	Asbestos Type	Chrysotile
					06/07/2016	Asbestos Level Screen	<0.1%
					12/07/2016	Asbestos PCOM Quantification (Fibres)	<0.001 (mass %)
					12/07/2016	Asbestos Gravimetric & PCOM Total	<0.001 (mass %)
16/11052	1	WS5	0.50-0.60	18	06/07/2016	General Description (Bulk Analysis)	soil/stones
					06/07/2016	Asbestos Fibres	NAD
					06/07/2016	Asbestos Fibres (2)	NAD
					06/07/2016	Asbestos ACM	NAD
					06/07/2016	Asbestos ACM (2)	NAD
					06/07/2016	Asbestos Type	NAD
					06/07/2016	Asbestos Type (2)	NAD
					06/07/2016	Asbestos Level Screen	NAD
16/11052	1	WS7	2.20-2.40	25	06/07/2016	General Description (Bulk Analysis)	Soil/Stone
					06/07/2016	Asbestos Fibres	NAD
					06/07/2016	Asbestos Fibres (2)	NAD
					06/07/2016	Asbestos ACM	NAD
					06/07/2016	Asbestos ACM (2)	NAD
					06/07/2016	Asbestos Type	NAD
					06/07/2016	Asbestos Type (2)	NAD
					06/07/2016	Asbestos Level Screen	NAD
16/11052	1	WS9	1.30-1.50	34	06/07/2016	General Description (Bulk Analysis)	Soil/Stone/Silt
					06/07/2016	Asbestos Fibres	NAD
					06/07/2016	Asbestos Fibres (2)	NAD
					06/07/2016	Asbestos ACM	NAD

Client Name:	EPS Ltd
Reference:	UK16.2295
Location:	LW Developments Ltd
Contact:	Michael Judson

Contact			Michael J	aacon			
J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
16/11052	1	WS9	1.30-1.50	34	06/07/2016	Asbestos ACM (2)	NAD
						Asbestos Type	NAD
						Asbestos Type (2)	NAD
					06/07/2016	Asbestos Level Screen	NAD
16/11052	1	WS11	1.40-1.70	42	06/07/2016	General Description (Bulk Analysis)	Soil/Stone/Silt
						Asbestos Fibres	NAD
						Asbestos Fibres (2)	NAD
						Asbestos ACM	NAD
						Asbestos ACM (2)	NAD
						Asbestos Type	NAD
					06/07/2016	Asbestos Type (2)	NAD
					06/07/2016	Asbestos Level Screen	NAD
						1	

Client Name:	EPS Ltd
Reference:	UK16.2295
Location:	LW Developments Ltd
Contact:	Michael Judson

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
16/11052	1	WS3	0.30-0.50	11-12	Asbestos detected in sample

NDP Reason Report

Matrix : Solid

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 16/11052

SOILS

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

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at $35^{\circ}C \pm 5^{\circ}C$ unless otherwise stated. Moisture content for CEN Leachate tests are dried at $105^{\circ}C \pm 5^{\circ}C$.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
В	Indicates analyte found in associated method blank.
DR	Dilution required.
М	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
СО	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
ТВ	Trip Blank Sample
OC	Outside Calibration Range
AA	x10 Dilution

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	CWG GC-FID			AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.			AD	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.			AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
ТМ30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
ТМ30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 $^\circ \! C.$			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
ТМЗ8	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen. Samples are extracted using an orbital shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen. Samples are extracted using an orbital shaker.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.	Yes	Yes	AD	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes

JE Job No: 16/11052

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
NONE	No Method Code	NONE	No Method Code			AR	Yes



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Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point Zone 3 Deeside Industrial Park Deeside CH5 2UA

Tel: +44 (0) 1244 833780 Fax: +44 (0) 1244 833781



Attention :	Michael Judson
Date :	15th July, 2016
Your reference :	UK16.2295
Our reference :	Test Report 16/11389 Batch 1
Location :	Cheshunt Football Club
Date samples received :	9th July, 2016
Status :	Final report
Issue :	1

Nine samples were received for analysis on 9th July, 2016 of which nine were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Phil Sommerton BSc Project Manager

• · · · · · · · · · · · · · · · · · · ·	EPS Ltd UK16.229 Cheshunt	5 Football C	lub				Report :	Liquid					
	Michael Ju 16/11389	udson						oducts: V= Z=ZnAc, N=		i=glass bottle HN0₃	e, P=plastic	bottle	
J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36				
Sample ID	WS1	WS2	WS4	WS7	WS8	WS9	WS10	WS11	BH8				
Depth											Please se	e attached r	otes for all
COC No / misc												ations and a	
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G				
Sample Date	07/07/2016	07/07/2016	07/07/2016	07/07/2016	07/07/2016	07/07/2016	07/07/2016	07/07/2016	07/07/2016				
Sample Type				Ground Water			Ground Water						
Batch Number	1	1	1	1	1	1	1	1	1		LOD/LOR	Units	Method No.
Date of Receipt	09/07/2016	09/07/2016	09/07/2016	09/07/2016	09/07/2016	09/07/2016	09/07/2016	09/07/2016	09/07/2016				
Dissolved Arsenic [#]	33.0	11.1	11.6	15.6	7.0	3.5	9.6	6.9	4.5		<2.5	ug/l	TM30/PM14
Dissolved Cadmium [#]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM30/PM14
Total Dissolved Chromium*	<1.5	<1.5	<1.5	2.3	<1.5	<1.5	<1.5	<1.5	<1.5		<1.5	ug/l	TM30/PM14
Dissolved Copper [#] Dissolved Lead [#]	13 <5	<7 <5	<7 <5	<7 <5	<7 <5	9 <5	<7 <5	9 <5	<7 <5		<7 <5	ug/l	TM30/PM14 TM30/PM14
Dissolved Lead *	<5 <1	<5 <1	<5 <1	<5 <1	<5 <1	<5 <1	<5 <1	<5 <1	<5 <1		<0	ug/l ug/l	TM30/PM14 TM30/PM14
Dissolved Nickel [#]	10	14	16	4	5	21	10	30	5		<2	ug/l	TM30/PM14
Dissolved Selenium [#]	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM30/PM14
Dissolved Zinc [#]	78	1156	167	<3	43	1593	275	2345	37		<3	ug/l	TM30/PM14
PAH MS													
Naphthalene #	0.3	0.4	0.5	0.1	0.4	0.1	<0.1	2.3	13.7 _{AA}		<0.1	ug/l	TM4/PM30
Acenaphthylene #	<0.013	<0.013	0.260	<0.013	0.030	<0.013	<0.013	0.110	0.210		<0.013	ug/l	TM4/PM30
Acenaphthene #	0.030	0.060	0.870	0.300	0.060	<0.013	<0.013	0.040	0.040		<0.013	ug/l	TM4/PM30
Fluorene #	0.020	0.040	0.840	0.050	0.020	<0.014	<0.014	0.020	0.030		<0.014	ug/l	TM4/PM30
Phenanthrene [#]	0.090	0.110	3.160	0.100	0.070	0.020	0.040	0.020	0.070		<0.011	ug/l	TM4/PM30
Anthracene #	0.020	0.020	0.520	0.020	0.020	<0.013	<0.013	<0.013	0.020		<0.013	ug/l	TM4/PM30
Fluoranthene #	0.050	0.050	1.140	0.060	0.050	0.020	0.050	0.020	0.090		<0.012	ug/l	TM4/PM30
Pyrene [#]	0.040	0.040	0.790	0.040	0.040	0.020	0.060	0.020	0.080		<0.013	ug/l	TM4/PM30
Benzo(a)anthracene #	<0.015	<0.015	0.140	0.020	<0.015	0.020	0.040	<0.015	0.040		<0.015	ug/l	TM4/PM30
Chrysene [#]	<0.011	<0.011	0.120	0.020	<0.011	<0.011	0.030	<0.011	0.040		<0.011	ug/l	TM4/PM30
Benzo(bk)fluoranthene #	<0.018	<0.018	0.090	0.030	<0.018	0.030	0.050	0.020	0.040		<0.018	ug/l	TM4/PM30
Benzo(a)pyrene [#]	<0.016	<0.016 <0.011	0.060	0.020 <0.011	<0.016 <0.011	0.020	0.030 <0.011	<0.016	0.020		<0.016 <0.011	ug/l	TM4/PM30 TM4/PM30
Indeno(123cd)pyrene [#] Dibenzo(ah)anthracene [#]	<0.011 <0.01	<0.01	<0.011 <0.01	<0.011	<0.01	0.020 <0.01	<0.01	<0.011 <0.01	<0.011 <0.01		<0.011	ug/l ug/l	TM4/PM30
Benzo(ghi)pervlene #	<0.01	<0.01	0.030	<0.01	<0.01	0.020	<0.01	<0.01	<0.01		<0.01	ug/l	TM4/PM30
PAH 16 Total [#]	0.550	0.720	8.520	0.760	0.690	0.270	0.300	2.550	14.380		<0.195	ug/l	TM4/PM30
Benzo(b)fluoranthene	<0.01	<0.01	0.06	0.02	<0.01	0.02	0.04	0.01	0.03		<0.01	ug/l	TM4/PM30
Benzo(k)fluoranthene	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	0.01	<0.01	0.01		<0.01	ug/l	TM4/PM30
PAH Surrogate % Recovery	79	82	80	77	88	81	83	87	91		<0	%	TM4/PM30
TPH CWG													
Aliphatics													
>C5-C6 [#]	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM36/PM12
>C6-C8 [#]	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM36/PM12
>C8-C10 [#]	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM36/PM12
>C10-C12#	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM5/PM30
>C12-C16 [#]	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM5/PM30
>C16-C21 #	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM5/PM30
>C21-C35 [#] Total aliphatics C5-35 [#]	<10 <10	<10 <10	<10 <10	<10 <10	<10 <10	<10 <10	<10 <10	<10 <10	<10 <10		<10 <10	ug/l ug/l	ТМ5/РМ30 тм5/тм36/РМ30

Client Name: Reference: Location:	EPS Ltd UK16.229 Cheshunt	95 Football C	lub				Report :	Liquid					
Contact: JE Job No.:	Michael J 16/11389	udson							40ml vial, G NaOH, HN=	=glass bottle HN0 ₃	e, P=plastic	bottle	
J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36				
Sample ID	WS1	WS2	WS4	WS7	WS8	WS9	WS10	WS11	BH8				
Depth											Please se	e attached n	otes for all
COC No / misc											abbreviations and acronyms		
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G				
Sample Date	07/07/2016	07/07/2016	07/07/2016	07/07/2016	07/07/2016	07/07/2016	07/07/2016	07/07/2016	07/07/2016				
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt											LOD/LOR	Units	Method No.
TPH CWG	09/07/2016	09/07/2018	09/07/2016	09/07/2016	09/07/2016	09/07/2016	09/07/2016	09/07/2016	09/07/2016				
Aromatics													
>C5-EC7 [#]	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM36/PM12
>EC7-EC8 [#]	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM36/PM12
>EC8-EC10 #	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM36/PM12
>EC10-EC12#	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM5/PM30
>EC12-EC16 [#] >EC16-EC21 [#]	<10 <10	<10 <10	<10 <10	<10 <10	<10 <10	<10 <10	<10 <10	<10 <10	<10 <10		<10 <10	ug/l ug/l	TM5/PM30 TM5/PM30
>EC18-EC21	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM5/PM30
Total aromatics C5-35 [#]	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM5/PM30
Total aliphatics and aromatics(C5-35) #	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM5/TM36/PM30
MTBE [#]	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM36/PM12
Benzene [#]	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM36/PM12
Toluene [#]	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM36/PM12
Ethylbenzene [#] m/p-Xylene [#]	<5 <5	<5 <5	<5 <5	<5 <5	<5 <5	<5 <5	<5 <5	<5 <5	<5 <5		<5 <5	ug/l ug/l	TM36/PM12 TM36/PM12
o-Xylene [#]	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM36/PM12
												0	
Total Phenols HPLC	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	mg/l	TM26/PM0
Sulphate #	1032.00	1400.87	440.29	778.24	834.42	759.24	562.55	1165.75	111.51		<0.05	mg/l	TM38/PM0
Total Cyanide [#]	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	mg/l	TM89/PM0
Hexavalent Chromium #	<6	<6	<6	<6	<6	<6	<6	<6	<6		<6	ug/l	TM38/PM0
Total Dissolved Chromium III	<6	<6	<6	<6	<6	<6	<6	<6	<6		<6	ug/l	NONE/NONE
рН [#]	6.79	6.96	7.07	7.19	7.41	6.98	7.22	6.93	7.31		<0.01	pH units	TM73/PM0
Total Organic Carbon #	37	31	38	46	11	12	35	30	4		<2	mg/l	TM60/PM0
												-	
	1	1	1	1	1	1	1	1	1				L

Client Name:	EPS Ltd
Reference:	UK16.2295
Location:	Cheshunt Football Club
Contact:	Michael Judson
IE Job No :	16/11389

SVOC Report : Liquid

JE Job No.:	16/11389											
J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36			
Sample ID	WS1	WS2	WS4	WS7	WS8	WS9	WS10	WS11	BH8			
Depth COC No / misc Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G		e attached r ations and a	
Sample Date Sample Type	07/07/2016 Ground Water	07/07/2016 Ground Water	07/07/2016 Ground Water	07/07/2016 Ground Water	07/07/2016	07/07/2016 Ground Water		07/07/2016 Ground Water	07/07/2016 Ground Water			
Batch Number Date of Receipt	1 09/07/2016	1 09/07/2016	1 09/07/2016	1 09/07/2016	1 09/07/2016	1 09/07/2016	1 09/07/2016	1 09/07/2016	1 09/07/2016	LOD/LOR	Units	Method No.
SVOC MS												
Phenols 2-Chlorophenol [#]	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
2-Methylphenol [#]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2-Nitrophenol	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2,4-Dichlorophenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2,4-Dimethylphenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
2,4,5-Trichlorophenol [#]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2,4,6-Trichlorophenol	<1	<1	<1	<1 <0.5	<1	<1	<1 <0.5	<1	<1	<1	ug/l	TM16/PM30 TM16/PM30
4-Chloro-3-methylphenol # 4-Methylphenol	<0.5 <1	<0.5 <1	<0.5 <1	<0.5	<0.5 <1	<0.5 <1	<0.5	<0.5 <1	<0.5 <1	<0.5 <1	ug/l ug/l	TM16/PM30
4-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM16/PM30
Pentachlorophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Phenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
PAHs												
2-Chloronaphthalene#	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
2-Methylnaphthalene #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Phthalates Bis(2-ethylhexyl) phthalate	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM16/PM30
Bis(2-etrijinexyl) primalate Butylbenzyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Di-n-butyl phthalate #	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	ug/l	TM16/PM30
Di-n-Octyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Diethyl phthalate #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Dimethyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Other SVOCs												
1,2-Dichlorobenzene [#]	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene # 1,3-Dichlorobenzene #	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	ug/l ug/l	TM16/PM30 TM16/PM30
1,4-Dichlorobenzene [#]	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
2-Nitroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
2,4-Dinitrotoluene#	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2,6-Dinitrotoluene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
3-Nitroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
4-Bromophenylphenylether #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
4-Chloroaniline	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	ug/l ug/l	TM16/PM30 TM16/PM30
4-Chlorophenylphenylether # 4-Nitroaniline	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Azobenzene [#]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Bis(2-chloroethoxy)methane#	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Bis(2-chloroethyl)ether#	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Carbazole #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Dibenzofuran [#]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Hexachlorobenzene [#]	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30 TM16/PM30
Hexachlorobutadiene * Hexachlorocyclopentadiene	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	ug/l ug/l	TM16/PM30 TM16/PM30
Hexachloroethane [#]	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Isophorone #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
N-nitrosodi-n-propylamine #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Nitrobenzene #	<1	<1	<1	<1	4	18	<1	<1	<1	<1	ug/l	TM16/PM30
Surrogate Recovery 2-Fluorobiphenyl	91	89	88	79	78	74	92	96	79	<0	%	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	97	96	97	89	86	82	100	105	86	<0	%	TM16/PM30
		I		I	I	I						

Client Name:	EPS Ltd
Reference:	UK16.2295
Location:	Cheshunt Football Club
Contact:	Michael Judson

Contac		Michael Ju	uson		
J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
6/11389	1	WS1		1-4	No interpretation possible
6/11389	1	WS2		5-8	No interpretation possible
6/11389	1	WS4		9-12	No interpretation possible
6/11389	1	WS7		13-16	No interpretation possible
6/11389	1	WS8		17-20	No interpretation possible
6/11389	1	WS9		21-24	No interpretation possible
6/11389	1	WS10		25-28	No interpretation possible
16/11389	1	WS11		29-32	No interpretation possible
16/11389	1	BH8		33-36	No interpretation possible

EPH Interpretation Report

Matrix : Liquid

Client Name:	EPS Ltd
Reference:	UK16.2295
Location:	Cheshunt Football Club
Contact:	Michael Judson

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
16/11389	1					Liquid Samples were received at a temperature above 9°C.
I						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

Notification of Deviating Samples

Matrix : Liquid

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 16/11389

SOILS

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

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at $35^{\circ}C \pm 5^{\circ}C$ unless otherwise stated. Moisture content for CEN Leachate tests are dried at $105^{\circ}C \pm 5^{\circ}C$.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

ISO17025 (UKAS) accredited - UK.
Indicates analyte found in associated method blank.
Dilution required.
MCERTS accredited.
Not applicable
No Asbestos Detected.
None Detected (usually refers to VOC and/SVOC TICs).
No Determination Possible
Calibrated against a single substance
Surrogate recovery outside performance criteria. This may be due to a matrix effect.
Results expressed on as received basis.
AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
Result outside calibration range, results should be considered as indicative only and are not accredited.
Analysis subcontracted to a Jones Environmental approved laboratory.
Samples are dried at 35°C ±5°C
Suspected carry over
Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
Matrix Effect
No Fibres Detected
AQC Sample
Blank Sample
Client Sample
Trip Blank Sample
Outside Calibration Range
x5 Dilution

Method Code Appendix

JE Job No: 16/11389

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.				
ТМЗО	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.	Yes			
ТМ36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			

JE Job No: 16/11389

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
ТМЗ8	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes			
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.	Yes			
NONE	No Method Code	NONE	No Method Code				

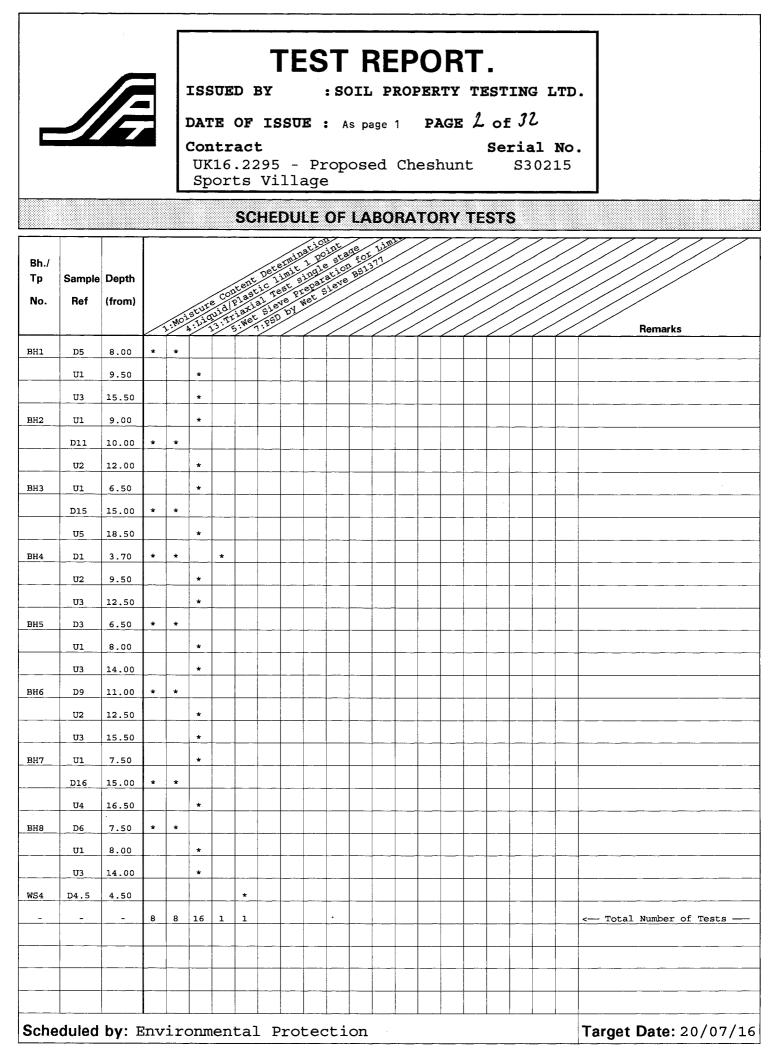
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APPENDIX I

Laboratory Results - Geotechnical

		PROPERTY TESTING LTD. /16 PAGE 1 of 32 Pages Serial No. UKAS 0998
Str 7B Brc CAM CAM	vironmental Protection categies Ltd Caxton House oad Street MBOURNE MBRIDGE 23 6JN	Soil Property Testing Ltd. 15,16 & 18 Halcyon Court, St Margarets Way, Stukeley Meadows, Huntingdon, Cambs. PE29 6DG. Telephone (01480) 455579 Fax (01480) 453619 Email enquiries@soilpropertytesting.com
	SUBMITTED BY:	APPROVED SIGNATORIES: J.C.GARNER B.Eng (Hons.) FGS Technical Director S.P.TOWNEND FGS Quality Manager W.JOHNSTONE Materials Lab Manager
SAMPLES L	ABELLED: UK16.2295 - Proposed Cheshu	nt Sports Village
DATE RECE	IVED: 06/07/16 SAMPLES For the attention of Mr M J	TESTED BETWEEN 06/07/16 and 27/07/16 udson
NOTES: 1	All remaining samples or rem will be disposed of after 2 we are notified to the cont	1 days from today, unless
2	the scope of UKAS accred	tions expressed herein are outside litation.
3	this testing laboratory.	5 Accreditation Schedule for
4		reproduced other than in full en approval of the issuing laboratory.





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Serial No.

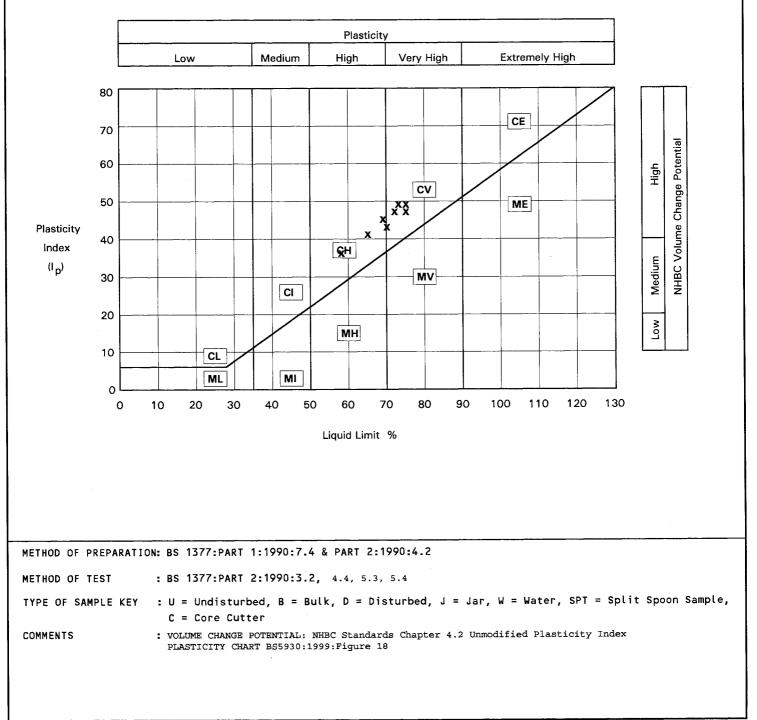
ContractSerial NoUK16.2295 - Proposed CheshuntS30215Sports VillageS10215

			Moisture	Liquid	Plastic	Plast-	Liqu-	5	AMPLE PR	EPARAT ION	4		
Borehole/ Pit No.	Depth m.		Content	Limit (%)	Limit	icity Index (%)	idity Index (%)	Method S/N	Ret'd 0.425mm (%)	Corr'd M/C <0.425mm	Curing Time (hrs.)	Description	CLAS
BH1	8.00	D5	27	72	25	47	0.04	N	0 (A)		71	Stiff dark grey CLAY	CV
BH2	10.00	D11	26	73	24	49	0.04	N	0 (A)		72	Stiff dark grey CLAY	cv
ВНЗ	15.00	D15	25	58	22	36	0.08	N	0 (A)		71	Stiff dark grey CLAY	Сн
BH4	3.70	Dl	59	70	27	43		S	30 (M)		70	Very soft mottled black and dark yellowish brown CLAY with occasional glass, coke, cinder and coal fragments from medium sand to coarse gravel size	Сн/ CV
BH5	6.50	D3	29	75	26	49	0.06	N	0 (A)		72	Stiff dark grey CLAY	CV
BH6	11.00	D9	25	65	24	41	0.02	N	(A) 0		71	Stiff dark grey CLAY with rare fine sand/silt partings	СН
ВН7	15.00	D16	26	69	24	45	0.04	N	(A) 0		72	Stiff dark grey CLAY with rare fine sand/silt partings	Сн
BH8 METHOD OF	7.50	D6	29	75	28	47	0.02	N 2-1000	(A) 0 (A) 0		71	Stiff dark grey CLAY	CV
METHOD OF TYPE OF S COMMENTS		Y :	BS 1377 U = Und C = Cor	listurk	oed, B	= Bulk	, D = I	Disturb	ed, J	·		from Natural ter, SPT = Split Spoon Samp	le,



TEST REPORT.ISSUED BY : SOIL PROPERTY TESTING LTD.DATE OF ISSUE : As page 1 PAGE 4 of 72Contract Serial No.UK16.2295 - Proposed Cheshunt S30215Sports Village

PLOT OF PLASTICITY INDEX AGAINST LIQUID LIMIT USING CASAGRANDE CLASSIFICATION CHART





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Borehole/ Pit No.	Depth m.	Sample	Moisture Content %		Description		Renarks
BH1	8.00	D5	27 5	tiff dark gre	у СLАУ		
	Р	REPARA	ΓΙΟΝ		Liquid Limit		72 🕺
lethod of Pr	eparation	Specimen fr	om Natural Soil	<u></u>	Plastic Limit		25 🏌
ample retai	ned 0.425 siev	e (Assume	d)	o 🛪	Plasticity Index		47 \$
Corrected mo	isture content	t for material	passing 0.425mm	×	Liquidity Index		0.04
Curing Time				71 Hours	Clay Content		Not analysed. 🕺
					Derived Activity (PI/CC)		Not analysed.
c = cL Plasti Index	icity	70 60 50 40	CL	CI	CH CV	CE	Medium High NHBC Volume Change Potential
(Ip		30 20 10 6		MI		ME	Low Medium NHBC Volum
M = SI	LT	0 10	20 30	40 50	<u> </u>	100 110	Liquid Limit %
METHOD C	DF TEST Sample Key	: BS 137 : U = Ur C = Co : PLASTI VOLUME	ore Cutter CITY CHART BS59 CHANGE POTENTI.	:3.2, 4.4 , 5 = Bulk, D = 30:1999:Figur AL: NHBC Stan	i.3, 5.4 Disturbed, J = Jar, W	fied Plasticity I	



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UK16.2295 - Proposed Cheshunt S30215 Sports Village

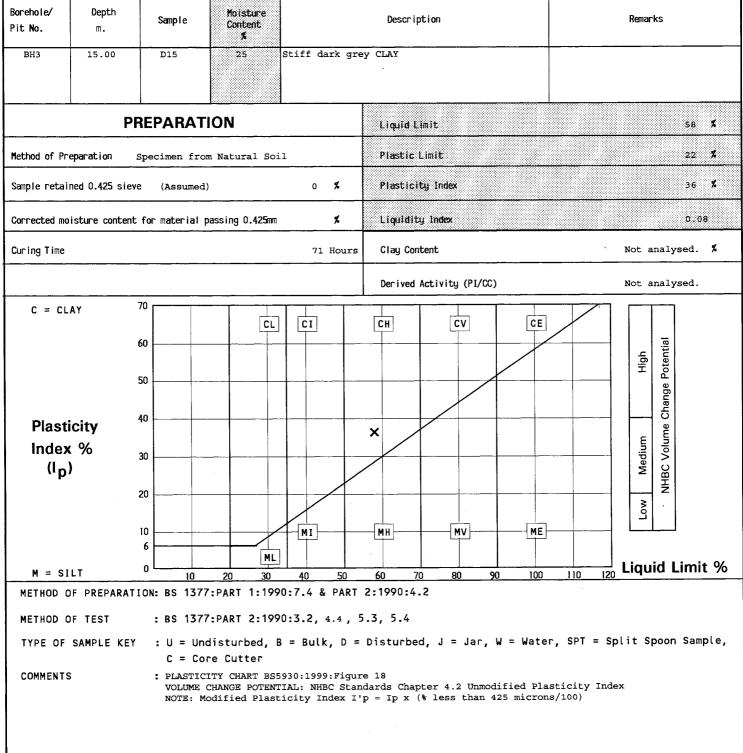
Borehole/ Pit No.	Depth m.	Sample	Moisture Content X		Description	ŀ		Re	marks	
BH2	10.00	D11	26	Stiff dark gre	Y CLAY					
	PI	REPARAT	ION		Liquid Linit					73 🕺
Method of Pr	eparation	Specimen from	n Natural Soi	1	Plastic Limit	t				24 🕺
Sample retai	ned 0.425 siev	e (Assumed)		0 🛪	Plasticity In	ndex				49 🕱
Corrected mo	isture content	for material p	assing 0.425mm	X	Liquidity Inc	dex				0.04
Curing Time				72 Hours	Clay Content			Not	analyse	ed. 🛪
					Derived Acti	vity (PI/CC)		Not	analyse	ed
C = CL Plasti Index (Ip)	icity x %	70 60 50 40 30 20 10 6	CL	CI	CH ×	CV	CE		Low Medium High NHBC Volume Change Potential	
M = SI		0 10	20 30	40 50	60 70	80 90	100 1	10 120 Lic	uid Li	mit %
METHOD C	OF TEST Sample Key	: BS 1377 : U = Unc C = Cor : PLASTIC: VOLUME (PART 2:199 disturbed, B e Cutter TY CHART BS5 CHANGE POTENT	0:7.4 & PART 0:3.2, 4.4, 5 = Bulk, D = 930:1999:Figur IAL: NHBC Stan icity Index I'	.3, 5.4 Disturbed, . e 18 dards Chapter	4.2 Unmodi	fied Plastic	ity Index	Spoon S	Sample,



: SOIL PROPERTY TESTING LTD. ISSUED BY

PAGE 7 of 32 DATE OF ISSUE : As page 1 Serial No. Contract UK16.2295 - Proposed Cheshunt S30215 Sports Village







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ContractSerial No.UK16.2295 - Proposed Cheshunt\$30215

Sports Village

Borehole/ Pit No.	Depth m.	Sample	Moisture Content X		Descripti	on			Remarks	
BH4	3.70	D1	59	Very soft mot brown CLAY wi cinder and co coarse gravel	th occasional al fragments	l glass, cok	e,			
	PI	REPARAT	ION		Liquid Lim	it				70 X
Method of Pro	eparation	Sieved Specia	men		Plastic Li	nit				27 🕻
Sample retain	ned 0.425 siev	e (Measure	3)	30 🕺	Plasticity	Index				43 🛪
Corrected mo	isture content	for material p	bassing 0.425mm	*	Liquidity	Index				
Curing Time	·			70 Hours	Clay Conte	nt			Not anal	ysed. 🕺
					Derived Ac	tivity (PI/CC)			Not anal	ysed.
C = CL/ Plasti Index (I _p)	city	70 60 50 40 30 20 10	CL		СН	CV	CE		Low Medium High NHBC Volume Change Potential	
M = SI	LT	6 0 10	ML 20 30	40 50	60 70	80 90		110 120	Liquid	Limit %
METHOD O	F PREPARATI			0:7.4 & PART						
METHOD O	F TEST SAMPLE KEY	: U = Unc		0:3.2, 4.4 , 5 = Bulk, D =		J = Jar, W	l = Water,	SPT = Spl	lit Spoo	n Sample,
COMMENTS		: PLASTIC: VOLUME (NOTE: Mo Correcte	TY CHART BS5 CHANGE POTENT odified Plast	930:1999:Figur IAL: NHBC Star icity Index I ontent and lic e.	dards Chapte p = Ip x (%	less than 42	5 microns/	100)		



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Sports Village

Borehole/ Pit No.	Depth m.	Sample	Moisture Content X		Description		Remarks	
BH5	6.50	D3	29 5	Stiff dark gre	Y CLAY			
`	P	REPARAT	TION		Liquid Limit			75 💈
lethod of Pr	eparation	Specimen fro	om Natural Soil		Plastic Limit			26 🕻
Sample retai	ined 0.425 siev	e (Assumed	1)	o 🗶	Plasticity Index			49 %
Corrected mo	visture content	: for material	passing 0.425mm	*	Liquidity Index			0.06
Curing Time				72 Hours	Clay Content		Not analys	ed. %
	·····				Derived Activity (PI/CC)		Not analys	ed.
c = cl Plast Indez (Ip	icity × %	70 60 50 40 30 20 10 6	CL	CI	CH CV X	CE	Low Medium High NHBC Volume Change Potential	
M = S]	ĨLT	0 10	20 30		60 70 80 90	100 110	Liquid Li	mit %
METHOD	OF TEST Sample Key	: BS 137 : U = Ur C = Cc : PLASTIC VOLUME	ore Cutter CITY CHART BS59 CHANGE POTENTI	:3.2, 4.4, 5 = Bulk, D = 30:1999:Figur AL: NHBC Stan	.3, 5.4 Disturbed, J = Jar, W	fied Plasticity I		Sample,

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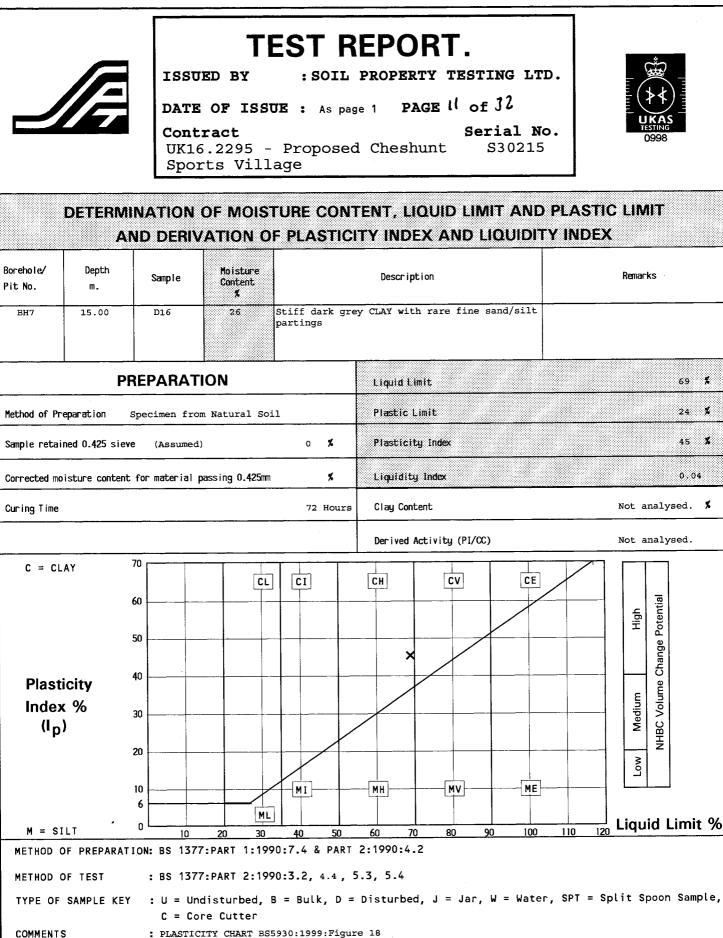


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Sports Village

Contract

Borehole/ Pit No.	Depth m.	Sample	Moisture Content X		Description			Remarks	
BH6	11.00	D9		Stiff dark gre partings	y CLAY with rare	fine sand/silt	-		
	P	REPARAT	ION		Liquid Limit			65	\$
lethod of Pr	reparation	Specimen fro	om Natural Soi	1	Plastic Limit			24	\$
ample retai	ined 0.425 sie	ve (Assumed	1)	o 🛪	Plasticity Index			41	1
Corrected mo	pisture conter	t for material	passing 0.425mm	×	Liquidity Index			0.(92
Curing Time		·		71 Hours	Clay Content			Not analysed.	*
					Derived Activity	(PI/CC)		Not analysed.	
C = CL		70 60 50 40	CL	CI	СНС			Medium High NHBC Volume Change Potential	
Plast Inde (I _p	x %	30		MI	MH	V		Low Medium NHBC Volume	
M = S]	ILT	6 0 10	20 30	40 _50	60 70 80	90 100	110 120	Liquid Lim	it %
METHOD (OF TEST Sample Ke	TION: BS 137 : BS 137 Y : U = Ur C = Cc : PLASTIC VOLUME	7:PART 1:199 7:PART 2:199 disturbed, B ore Cutter CITY CHART BS5 CHANGE POTENT	0:7.4 & PART 0:3.2, 4.4 , 5 = Bulk, D = 930:1999:Figur IAL: NHBC Stan	2:1990:4.2 5.3, 5.4 Disturbed, J =	Jar, W = Water, Unmodified Plast	SPT = Sp		nple,



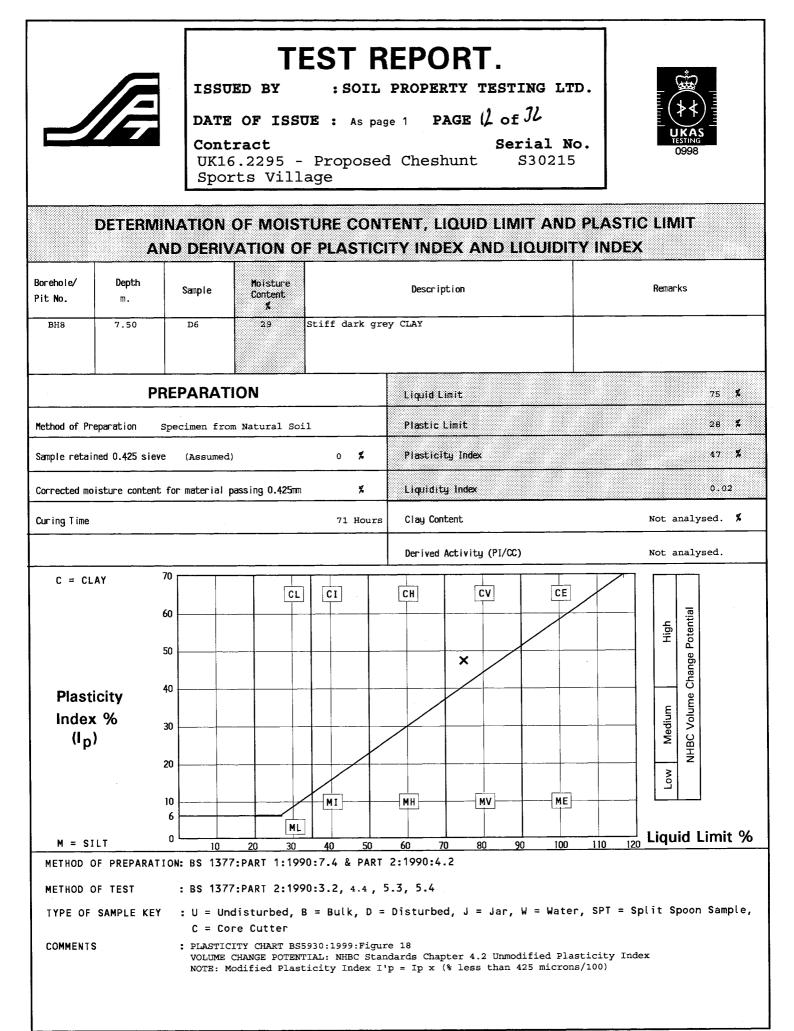
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					DZ Cc U S	AT on K1 pc	UEI E (tra .6. ort	DF ac 22 S	BY I t V:	5 i1	SU 	P	: e e	s op	01 As	p se	age ad	PR ∈ 1 C	o h	PI e:	₽ A ∋h	T \G ur	r E nt	те (3	se	f sr S	Jl ia 30	1)2	LT) No 15	D .							x x 8			
Borehole/		Depth		Sa	D mple			IM	IN	<u>A</u>	T	or	N	01				TI srip		0000	: :	51Z	ZE	D	IS	TF	318	U	TIC	DN				R	enar	ks				
Pit No. WS4		m. 4.50 4.70			4.5			Lac) ubro								si	lt	у v	/er	-y																	·			
Method of Test:	Wet	Sieve	e														F		-tr		men	t:													(mm)					
														5	ize	(m i		ons; T) 									+							<u> </u>				50	70
Sieve Size Percentage b										+	+			+	-		<u></u> ,	-			63 5		50 6	212 8	<u> </u>			-	.18 31		5 47	6.3 53	+		4 2 '8 9			\$7.5	50	75
Percentage Passing	100 90 80 70 60 50 40 30 20 10		0.002		0.00			20	2		0.0				0.2			0.			18	2				6		/	20			50			200					
METHOD METHOD TYPE OF COMMENT REMARKS	OF T SAM	EST	AT I C	ON: : : :	BS U = C = San	13 13; = U = C	SILT	PAR PAR Cu	T 1 T 2 rbe tte	l:1 2:1 ed, er	99 99 B	0:3 0:5 =	7.3 9.2 Bu	⊥lk ss	c, of	S# 4 D		Dis	11.6	urk	va	, '	 J =	= _	n f	, h	RAVI	Wa	: pr	•oc	edu	=	,ι	lii	t Sp	poo	and	Sam d o	ri	gin



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ContractSerial No.UK16.2295 - Proposed CheshuntS30215Sports VillageS10215

DETERMINATION OF DENSITY, MOISTURE CONTENT AND UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

							- • • • • • • • • •		1	000000000000000000000000000000000000000	
Borehole/	Depth	Came ! -	Moisture	Bulk	Dry	Lateral	Deviator	Shear	1	CIRCLE YSIS	Decepietics
Pit No.	m.	Sample	Content (%)	Density (Mg/m ³)	Density (Mg/m ³)	Pressure (kPa)	Stress (kPa)	Stress (kPa)	Cu	Ø	Description
BH1	9.50	U1	27	2.00	1.57	194	277	138	(kPa)	(degrees)	Stiff (High strength) fissured
BRI	9.50	01	21	2.00	1.57	1.54	2//	110			dark grey CLAY with rare silt partings
BH1	15.50	U3	23	2.06	1.67	308	484	242			Very stiff (Very high strength) fissured dark grey CLAY with rare silt partings
BH2	9.00	Ul	28	2.00	1.56	179	231	116			Stiff (High strength) fissured dark grey CLAY with rare silt partings
BH2	12.00	U2	27	1.98	1.56	239	348	174			Very stiff (Very high strength) fissured dark grey CLAY with rare silt partings
внз	6.50	U1	32	1.96	1.48	130	181	91			Stiff (High strength) fissured dark grey CLAY
ВНЗ	18.50	υ5	22	2.05	1.68	371	435	217			Very stiff (Very high strength) fissured dark grey CLAY with rare silt partings
BH4	9.50	U2	28	1.98	1.55	189	283	142			Stiff (High strength) fissured dark grey CLAY with rare black speckling and pyrite fragments
BH4	12.50	U3	26	2.00	1.59	249	281	141			Stiff (High strength) fissured dark grey CLAY with rare silt partings
ВН5	8.00	υı	29	1.97	1.53	164	172	86			Stiff (High strength) fissured dark grey CLAY
BH5	14.00	U3	27	2.00	1.57	280	254	127			Stiff (High strength) fissured dark grey CLAY with rare silt partings
ВН6	12.50	U2	28	1.97	1.54	250	258	129			Stiff (High strength) fissured dark grey CLAY with rare silt partings
вн6	15.50	U3	26	1.98	1.57	311	215	107			Stiff (High strength) fissured dark grey CLAY with rare silt partings
METHOD OF			\$ 1377-5		990.7 /	2 & 8	PART 2	• 1990 • 7	2 PART	7:1990.	8.3
METHOD OF	TEST	N	:i ote Mult	PART 7:1 ti-stage	1990:8 L e test u	Indraine Ised whe	d Shear n speci	Streng men has	th granula	199 ir conte	0:7 Determination of Density 0:9 Multi-stage test nt / behaviour and length of
TYPE OF S	AMDIE VE		pecimen = Undis	preciud sturbed,	B = Bu	ilk, D =	Distur	bed, J =	- Jar, k	I = Wate	g specimens. r, SPT = Split Spoon Sample,
COMMENTS	ATTEL KE		= Core								
REMARKS T	O INCLUD										rocedure, location and origin ature if not 105-110 deg C.



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ContractSerial No.UK16.2295 - Proposed CheshuntS30215Sports VillageSanta Santa Sant

DETERMINATION OF DENSITY, MOISTURE CONTENT AND UNDRAINED SHEAR STRENGTH

IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

<u></u>							L · .		MOHRS	CIRCLE	
Borehole/	Depth	Sample	Moisture Content	Bulk Density	Dry Density		Deviator Stress	Shear Stress		YSIS	Description
Pit No.	m.	Janhie	(%)	(Mg/m ³)		(kPa)	(kPa)	(kPa)	Cu (kPa)	Ø (degrees)	
BH7	7.50	Ul	26	2.01	1.60	151	212	106			Stiff (High strength) fissured dark grey CLAY with occasional fine sand/silt pockets and rar black speckling
BH7	16.50	U4	27	2.00	1.57	330	338	169			Very stiff (Very high strength fissured dark grey CLAY with rare pyrite fragments
BH8	8.00	υı	29	1.97	1.53	162	175	87			Stiff (High strength) fissured dark grey CLAY with rare black speckling
BH8	14.00	U3	26	1.99	1.58	279	255	127			Stiff (High strength) fissured dark grey CLAY with rare black speckling
METHOD OF			s 1377.		001.7 4	2 & 8	PART 2.	1990-7	2 PART	7:1990:	8.3
METHOD OF TYPE OF S COMMENTS		N s s y : U	:: ote Muli pecimen	PART 7:1 i-stage precluc sturbed,	1990:8 L e test u les the	Indraine Ised whe taking	d Shear n speci of 3 x	Streng men has 100mm d ^a	th granula ia by 20	199 ir conte Omm lon	0:7 Determination of Density 0:9 Multi-stage test nt / behaviour and length of g specimens. r, SPT = Split Spoon Sample,
REMARKS	TO INCLU										rocedure, location and origi ature if not 105-110 deg C.

TEST REPORT. ISSUED BY : SOIL PROPERTY TESTING LTD. DATE OF ISSUE : As page 1 DATE OF ISSUE : South Colspan="2">Serial No. UK16.2295 - Proposed Cheshunt S30215 Sports Village Cohesion (kPa) vs Depth below ground level (m.).												•					
				Coł	nesior	ı (kPa) vs	Depth	n belo	w gr	ound	leve	l (m.	.			
								С	Cohesion	(kPa)							
	0.0	0	20	40	60 	80	100 	120	140	160	180	200. L.	220	240	260	280	300
	1.0 _															-	
	2.0 _										-						
	3.0 _																
	4.0 _																
	5.0 _			-													
	6.0 _				_			-									
2	7.0 _			_		્ર	\downarrow										
Depth below ground level (m.)	8.0 _					- 58	7										
nd lev	9.0 _					N N	X	<u></u>	_								
grou	10.0 _							1/-	14			_	_				
oelow	11.0 _	ļ					1	$\left \right\rangle$									
epth l	12.0 _	<u> </u>															
Δ	13.0 _						<u> </u>	ß									
	14.0 _							X		\backslash		\sum					
	15.0						/				`\						
		1					6			1	١.			1			
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	18.0 -	$\left \right $		_						-	-+	`	3				
	19.0 _										_					_	
	20.0	1														· .	



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S30215

Serial No. Contract UK16.2295 - Proposed Cheshunt Sports Village

DETERMINATION OF UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE Bonehole/ Depth Remarks Description Sample Pit No. m. Stiff (High strength) fissured dark grey CLAY with rare BH1 9.50 Π1 silt partings Initial Specimen Wet Dry Moisture Density Height Diameter Weight Density Mg/m³ Content Depth of mm mm 9 1 Mg∕m Top of Specimen (m) 2.00 1.57 103.0 3316 27 199.4 9.53 TEST INFORMATION Rate of Strain 🗶 per Min Rubber Membrane Thickness 0.3 л**п** 0.9 280 Measured Deviator Stress (kPa) 20 5 15 ٥ 10 STRAIN % Corrected Max. Shear Stress Measured Mohrs Circle Analysis Strain at Stress Corrections (kPa) $\frac{Cu}{\sqrt{\sigma}}$ Deviator Stress $\sigma_1 - \sigma_3$ Cell Pressure *O* 3 Failure Specimen at Failure Rubber Piston PH1 ^D (1) Cu (kPa) (kPa) (kPa) Friction (kPa) Membrane 277 138 194 5.1 0.4 1 METHOD OF PREPARATION: BS 1377:PART 1:1990: : BS 1377:PART 7:1990:8 Definitive Method. 1990:9 Multi-stage loading METHOD OF TEST TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter COMMENTS : Tested in Vertical Orientation. UKAS Calibration - loads from 0.2 to 10kN. REMARKS TO INCLUDE : Sample disturbance, loss of moisture, variation from test procedure, location and origin

of test specimen within original sample. Oven drying temperature if not 105-110 deg C.



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S30215

Serial No. Contract UK16.2295 - Proposed Cheshunt Sports Village

DETERMINATION OF UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE Borehole/ Depth Description Remarks Sample Pit No. m. Very stiff (Very high strength) fissured dark grey CLAY BH1 15.50 IJЗ with rare silt partings Initial Specimen Dry Moisture Wet. Density Height Diameter Weight Density Mg/m³ Content Depth of m 9 Mg/m * Top of Specimen (m) 2.06 1.67 199.5 103.0 23 3429 15.50 TEST INFORMATION Rate of Strain 🛪 per Min Rubber Membrane Thickness 0.3 mm 0.9 490 Measured Deviator Stress (kPa) 20 5 15 0 10 STRAIN 🕺 Corrected Max. Shear Stress Measured Mohrs Circle Analysis Stress Corrections (kPa) Strain at $\frac{Cu}{\sqrt{\sigma_1 - \sigma_3}}$ Deviator Stres $\sigma_1 - \sigma_3$ Cell Pressure σ_3 Specimen at Failure Failure Rubber Piston PH1 ° (%) Cu (kPa) Friction (kPa) (kPa) (kPa) Membrane 484 242 0.4 308 6.9 1 METHOD OF PREPARATION: BS 1377:PART 1:1990: : BS 1377:PART 7:1990:8 Definitive Method. 1990:9 Multi-stage loading METHOD OF TEST : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, TYPE OF SAMPLE KEY C = Core Cutter COMMENTS : Tested in Vertical Orientation. UKAS Calibration - loads from 0.2 to 10kN.

REMARKS TO INCLUDE

: Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample. Oven drying temperature if not 105-110 deg C.



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Sports Village

DETERMINATION OF UNDRAINED SHEAR STRENGTH

IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole/ Pit No.	Depth m.	Sample			Description			Remarks	
BH2	9.00	Ul	Stiff (Hi silt part	gh strength) f ings	rare				
Initial	Specimen				1	Moistu	ire	Wet	Dry
	Depth of Top of Specimen (m	Heigh mm		Diameter mm	Weight 9	Conte X	ent D	Density Mg/m	Density Mg/m ³
	9.14	199.	5	101.1		28	2	2.00	1.56
TEST INFORMAT	ION		Rate of Stra	ain 1.0 ;	¢per Min R	ubber Membrane Thic	kness		0.3 mm
	Deviator Stress (kPa)	0			IO STRAIN X	15	20		
		Measured	Strain at	Stress Corr	ections (kPa)	Corrected Max.	Shear Stress	Mohrs Circl	e Analusis
Specimen at	Failure	Cell Pressure Ø3 (kPa)	Failure (%)	Rubber Membrane	Piston Friction	Deviator Stress	$\frac{cu}{\sqrt{(\sigma_1 - \sigma_3)_f}}$	Cu (kPa)	PH3
		179	4.5	0.4	/	231	116		
METHOD C	OF PREPAR	ATION: BS 13	77:PART 1:1	1990:					
METHOD (TYPE OF	DF TEST Sample K	EY : U = U				I. 1990:9 Multi ed, J = Jar, W			on Sample,
COMMENTS	5			al Orientation - loads from 0					
REMARKS	TO INCLU	DE : Sampl	e disturbar	nce, loss of	moisture,	variation from	test procedur	e, location	and origi

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TEST REPORT.

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Serial No.

S30215

UK16.2295 - Proposed Cheshunt Sports Village

DETERMINATION OF UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

orehole/ Depth Sample					Remarks				
BH2	12.00	U2	Very stif with rare	f (Very high s silt partings	trength) fissu	ired dark grey	CLAY		
	L Specimen Depth of Top of Specimen (m)	Heigh	t	Diameter mm	Weight 9	Moistu Conte X	re nt [Wet Density Mg∕m	Dry Density Mg/m ³
	12.02	199.	4	103.1	3291	27		1.98	1.56
EST INFORMAT	ION		Rate of Str	ain 1.0	Kiper Min Rubb	ber Membrane Thic	ness		0.3 mm
			/						
	Measured Deviator Stress (kPa)	0							
	Deviator Stress	0		5	10 STRAIN X	15	20		
	Deviator Stress (kPa)	- 1	Strain at	T	STRAIN %	Corrected Max. Deviator Stress	Shear Stress Cu	Mohrs Circ	cle Analysis
Specimen at	Deviator Stress (kPa)	0 Measured		T	STRAIN 🗶	Corrected Max.	Shear Stress	Mohrs Circ Cu (KPa)	:le Analysis PHI °

METHOD OF TEST : BS 1377:PART 7:1990:8 Definitive Method. 1990:9 Multi-stage loading

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter COMMENTS : Tested in Vertical Orientation.

UKAS Calibration - loads from 0.2 to 10kN.

REMARKS TO INCLUDE : Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample. Oven drying temperature if not 105-110 deg C.



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DETERMINATION OF UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Pit No.	Depth m.	Sample			Description			Remarks	;
внз	6.50	וט	Stiff (Hig	gh strength) f	issured dark	grey CLAY		· · · · · · · · · · · · · · · · · · ·	
Initia	l Specimen Depth of Top of	Heigh		Diameter mm	Weight g	Moistu Conte X		Wet Density Mg/m	Dry Density Mg/m ³
	Specimen (r 6.53	199.	5	103.0	3258	32		1.96	1.48
TEST INFORM	ATION	I	Rate of Stra	in 1.0	fper Min Rut	bber Membrane Thic	kness		0.3 mm
	Stress		/						
	(kPa)	0	/	5			20		
	(kPa)	0 Measured	Strain at	r	STRAIN X	Corrected Max.	Shear Stress	Mohrs Circ	te Analysis
Specimen a		0 	Strain at Failure (%)	r			Shear Stress		le Analysis PHI "
Specimen a		0 Measured Cell Pressure Ø3	Failure	Stress Corr Rubber	STRAIN X ections (kPa) Piston	Corrected Max. Deviator Stress 071 - 073	Shear Stress Cu $\frac{V_{0}}{V_{0}(\sigma_{1}-\sigma_{3})_{f}}$		
E	at Failure	Measured Cell Pressure Ø3 (kPa)	Failure (%) 7.1	Stress Corr Rubber Membrane 0.4	STRAIN X ections (kPa) Piston Friction	Corrected Max. Deviator Stress Ø1-Ø3 (kPa)	Shear Stress Cu $\frac{Cu}{(\sigma_1 - \sigma_3)_f}$ (kPa)		
METHOD	at Failure OF PREPAR OF TEST	Measured Cell Pressure O'3 (KPa) 130 RATION: BS 13 : BS 13 KEY : U = U	Failure (%) 7.1 77:PART 1:1 77:PART 7:1	Stress Corr Rubber Membrane 0.4 990: 990:8 Defini	STRAIN * rections (kPa) Piston Friction / tive Method.	Corrected Max. Deviator Stress Ø1-Ø3 (kPa)	Shear Stress G_{L} $(\sigma_1 - \sigma_3)_f$ (kPa) 91 91 -stage loadi	Cu (kPa)	PHI "

of test specimen within original sample. Oven drying temperature if not 105-110 deg C.



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DETERMINATION OF UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE Borehole/ Depth Remarks Description Sample Pit No. п. BH3 18.50 U5 Very stiff (Very high strength) fissured dark grey CLAY with rare silt partings Initial Specimen Moisture Wet Dry Height Diameter Weight Density Densitu Mg/m ³ Content Depth of m min g ۶. Mg/m Top of Specimen (m) 2.05 1.68 199.8 102.1 3347 22 18.56 ≴ per Min Rubber Membrane Thickness 0.3 m TEST INFORMATION Rate of Strain 1.0 440 Measured Deviator Stress (kPa) 15 20 ٥ 5 10 STRAIN X Corrected Max. Shear Stress Measured Mohrs Circle Analysis Stress Corrections (kPa) Strain at $\frac{c_u}{\sqrt{\sigma_1 - \sigma_3}}$ Deviator Stress $\sigma_1 - \sigma_3$ Cell Pressure Failure Specimen at Failure Piston Rubber σ_3 PH1 ° (%) Cu (kPa) (kPa) (kPa) Friction (kPa) Membrane 217 371 8.3 0.6 435 / METHOD OF PREPARATION: BS 1377:PART 1:1990: : BS 1377:PART 7:1990:8 Definitive Method. 1990:9 Multi-stage loading METHOD OF TEST : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, TYPE OF SAMPLE KEY C = Core Cutter COMMENTS : Tested in Vertical Orientation. UKAS Calibration - loads from 0.2 to 10kN.

REMARKS TO INCLUDE : Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample. Oven drying temperature if not 105-110 deg C.

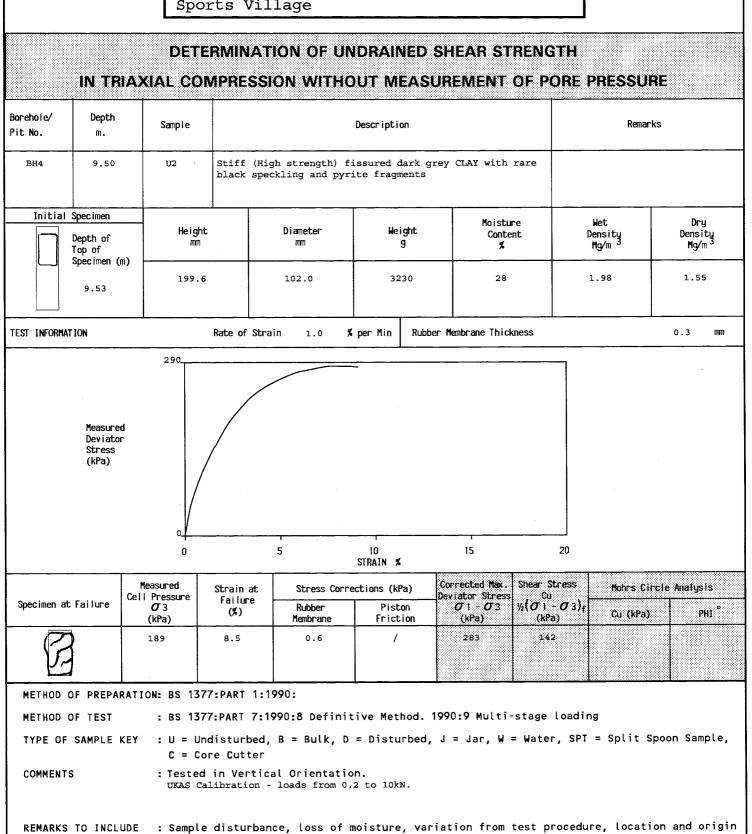


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of test specimen within original sample. Oven drying temperature if not 105-110 deg C.



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Sports Village

DETERMINATION OF UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole/ Pit No.	Depth m.	Sample			Description			Renarks			
BH4	12.50	U3	Stiff (Hi silt part	gh strength) : ings	rare						
Initial	Specimen				T	Moistu	re	Wet	Dry		
Depth of Top of Specimen (m)		Heigi		Diameter mm	Weight 9	Conte	nt I	Density Mg/m ³	Density Mg/m ³		
	Specimen (m)		6	103.1	3341	26	:	2.00	1.59		
TEST INFORMAT	ION	·····	Rate of Stra	in 1.0	≭perMin Rubb	per Membrane Thick	kness		0.3 mm		
	Measured Deviator Stress (kPa)										
		0		5	10 STRAIN %	15	20				
		Measured Cell Pressure	Strain at Failure	Stress Corr	rections (kPa)	Corrected Max. Deviator Stress	Shear Stress	Mohrs Circl	e Analysis		
Specimen at	Failure	OG (kPa)	(%)	Rubber Membrane	Piston Friction	<i>О</i> 1- <i>О</i> 3 (kPa)	%(<i>σ</i> 1 - <i>σ</i> 3) _f (kPa)	Cu (kPa)	PHI		
\sum		249	6.9	0.4	/	281	141				

METHOD OF PREPARATION: BS 1377:PART 1:1990:

METHOD OF TEST : BS 1377:PART 7:1990:8 Definitive Method. 1990:9 Multi-stage loading

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter COMMENTS : Tested in Vertical Orientation.

UKAS Calibration - loads from 0.2 to 10kN.

REMARKS TO INCLUDE : Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample. Oven drying temperature if not 105-110 deg C.



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DETERMINATION OF UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole/ Pit No.	Depth m.	Sample			Description			Remark	(S
ВН5	8.00	U1	Stiff (Hig	gh strength) f	issured dark	grey CLAY			
Initial	Specimen Depth of	Heigh		Diameter	Weight 9	Moistu Conte		Wet Density	Dry Density
	Top of Specimen (m 8.03			101.9	3208	29		Mg/m ³ 1.97	Mg∕m ³ 1.53
TEST INFORMA	it Ion		Rate of Stra	ain 1.0 9	per Min Ru	bber Membrane Thic	kness	n	0.3 mm
	Stress (kPa)	o 0		5	10 STRAIN X	15	20		
<u> </u>		Measured	Strain at	Stress Corr	ections (kPa)	Corrected Max.	Shear_Stress	Mohrs Cir	cle Analysis
Specimen a	t Failure	Cell Pressure Ø3 (kPa)	Failure (≴)	Rubber Membrane	Piston Friction	Deviator Stress Ø1-Ø3 (kPa)	ν (σι-σ3) (kPa)	f Cu (kPa)	PH1 ^P
]	164	6.5	0.4	/	172	86		
METHOD	OF PREPAR	ATION: BS 13							
	OF TEST SAMPLE K	EY : U = U				. 1990:9 Multi d, J = Jar, W			poon Sample,
COMMENT	S			al Orientatio loads from 0					
REMARKS	TO INCLU	DE : Sampl	e disturban	ice, loss of	moisture. v	ariation from	test proced	ure, locati	on and origi



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Contract

DETERMINATION OF UNDRAINED SHEAR STRENGTH

IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole/ Pit No.	Depth m.	Sample			Description	1			Rema	arks
BH5	14.00	U3	Stiff (Hi silt part	gh strength) f ings	issured da	rk gre	y CLAY with	rare		
	Specimen Depth of Top of Specimen (m)	Heigh		Diameter mm	Heig g		Moistur Conte ⊀		Wet Density Mg∕m ³	Dry Density Mg/m ³
	14.02	199.0	5	102.9	331	1	27		2.00	1.57
TEST INFORMAT	ION		Rate of Stra	ain 0.9 3	6 per Min	Rubber	Membrane Thick	iness		0.3 mm
	Measured Deviator Stress (kPa)	0		5	10 STRAIN X		, 15	20		
Specimen at	Failure	Measured Cell Pressure Ø3 (kPa)	Strain at Failure (%)	Stress Corr Rubber Membrane	ections (kPa Pisto Fricti	<u>יי</u> ס ו	Corrected Max. eviator Stress Ø1-Ø3 (kPa)	Shear Stre Cu ½(0~1 - 0 (kPa)	16011-2-3	ircle Analysis
\square		280	3.9	0.3	/	<u></u>	254	127		
METHOD O	F PREPAR	ATION: BS 13	77:PART 1:1	990:		ku				
METHOD O TYPE OF COMMENTS	SAMPLE KI	EY : U = U C = C : Tested	ndisturbed, ore Cutter d in Vertic	990:8 Defini B = Bulk, D al Orientatio loads from 0	= Distur on.	bed, .				Spoon Sample,
REMARKS	TO INCLU			nce, loss of n within orig						ion and origin 5-110 deg C.



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Serial No. Contract UK16.2295 - Proposed Cheshunt Sports Village

S30215 **DETERMINATION OF UNDRAINED SHEAR STRENGTH** IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE Borehole/ Depth Sample Description Remarks Pit No. m. 12.50 Stiff (High strength) fissured dark grey CLAY with rare BH6 112 silt partings Initial Specimen Moisture Dru Wet Density Height Diameter Weight Density Mg/m³ Content Depth of ШШ ΠΠ g Mg/m 1 Top of Specimen (m) 199.5 102.6 3250 28 1.97 1.54 12.54 TEST INFORMATION Rate of Strain 0.9 ⊀ per Min Rubber Membrane Thickness 0.3 пm 260 Measured Deviator Stress (kPa) 15 20 0 5 10 STRAIN 🖌 Corrected Max. Shear Stress Measured Stress Corrections (kPa) Mohrs Circle Analysis Strain at Deviator Stress $\sigma_1 - \sigma_3$ $\frac{Cu}{\sqrt{\sigma}}$ Cell Pressure Failure Specimen at Failure σ_3 Piston Rubber PH1 ° (%) Cu (kPa) (kPa) (kPa) (kPa) Membrane Friction 250 4.1 0.3 / 258 129 METHOD OF PREPARATION: BS 1377:PART 1:1990: METHOD OF TEST : BS 1377:PART 7:1990:8 Definitive Method. 1990:9 Multi-stage loading TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter COMMENTS : Tested in Vertical Orientation. UKAS Calibration - loads from 0.2 to 10kN.

: Sample disturbance, loss of moisture, variation from test procedure, location and origin REMARKS TO INCLUDE of test specimen within original sample. Oven drying temperature if not 105-110 deg C.



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Sports Village



Serial No. Contract UK16.2295 - Proposed Cheshunt

S30215

DETERMINATION OF UNDRAINED SHEAR STRENGTH

IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole/ Pit No.	Depth m.	Sample			Descriptio	n				Remarks	
вн6	15.50	U3	Stiff (Hi silt part	gh strength) f ings	issured d	ark grey	/ CLAY with	rare			
Initial	Specimen Depth of Top of	Height		Diameter mm	Wiei	ght 3	Moistu Conte %		We Dens Mg	t sity /m ³	Dry Density Mg/m 3
	Specimen (n 15.53	199.5		103.1	33	06	26		1.9	98	1.57
TEST INFORMA	TION		Rate of Stra	ain 1.0 ;	% per Min	Rubber I	Membrane Thick	iness			0.3 mm
	Measurec Deviator Stress (kPa)			5	IO STRAIN X		15	2	0		
Specimen a	t Failure	Measured Cell Pressure	Strain at Failure	Stress Corr	ections (kP	De	orrected Max. viator Stress	Shear Str		Mohrs Circle	
specilien a	C Fallule	О 3 (kPa)	(%)	Rubber Membrane	Pisto Frict		σ1-σ3 (kPa)	½(<i>σ</i> 1-0 (kPa)	/ 3/f	Cu (kPa)	PHI
		311	5.5	0.4	/		215	107			
METHOD	OF PREPAR	ATION: BS 137	7:PART 1:	1990:	<u> </u>				-		
METHOD	OF TEST	: BS 137	7:PART 7:1	990:8 Defini	tive Metl	nod. 199	90 :9 Multi-	stage lo	bading		
TYPE OF	SAMPLE N		ndisturbed, ore Cutter	, B = Bulk, D	= Distu	rbed, J	= Jar, W	= Water,	SPT =	Split Spoo	on Sample
COMMENT	S			al Orientati - loads from 0		۹.					
REMARKS	TO INCLU			nce, loss of n within orig							



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Contract Serial No.

UK16.2295 - Proposed Cheshunt S30215 Sports Village

DETERMINATION OF UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole/ Pit No.	Depth m.	Sample			Descriptio	ı			Rema	rks
BH7	7.50	. Ul		gh strength) f l fine sand/si						
Initial	Depth of Top of	He i gr		Diameter mm	Weig		Moistu Conte ⊀	-	Wet Density Mg/m ³	Dry Density Mg/m ³
	Spec im en (1	199.	4	102.4	330	4	26		2.01	1.60
TEST INFORM	AT ION	· · · · · · · · · · · · · · · · · · ·	Rate of Stra	in 1.0 ۶	i per Min	Rubber	Membrane Thick	iness		0.3 mm
	Measure Deviato Stress (kPa)			5	10 STRAIN X		15	20)	
Specimen a	nt Failure	Measured Cell Pressure Ø3	Strain at Failure (%)	Stress Corr Rubber	ections (kPa	De	orrected Max. wiator Stress $\sigma_1 - \sigma_3$	Shear Stre Cu ½(071-0	·	ircle Analysis
R	3	(kPa) 151	8.7	Membrane 0.6	Fricti /	on	(kPa) 212	(kPa) 106	Cu (KPa) rni
METHOD	OF PREPA	RATION: BS 13	77:PART 1:1	990:	<u> </u>				<u></u>	
	OF TEST SAMPLE	KEY : U = U C = C	ndisturbed, ore Cutter	990:8 Defini B = Bulk, D al Orientatio	= Distur					Spoon Sample,
	S TO INCL	UKAS C UDE : Sampl	alibration - e disturban	loads from 0.	2 to 10kN moisture,	varia				ion and origin 5-110 deg C.



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DATE OF ISSUE : As page 1 PAGE 3 of 32

Contract Serial No. UK16.2295 - Proposed Cheshunt S30215 Sports Village

DETERMINATION OF UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE Borehole/ Depth Sample Description Remarks Pit No. т. 16.50 Very stiff (Very high strength) fissured dark grey CLAY BH7 174 with rare pyrite fragments Initial Specimen Moisture Het Dru Density Weight Density Mg/m 3 Height Diameter Content Depth of mm m g Mg∕m % Top of Specimen (m) 199.6 102.9 3321 27 2.00 1.57 16.54 TEST INFORMATION Rate of Strain 0.9 ∦ per Min Rubber Membrane Thickness 0.3 mm 340 Measured Deviator Stress (kPa) 15 20 0 5 10 STRAIN 🖌 Corrected Max. Shear Stress Measured Stress Corrections (kPa) Mohrs Circle Analysis Strain at $\frac{Cu}{2}(\sigma^{Cu}_{1} - \sigma_{3})_{f}$ Cell Pressure Deviator Stress Failure Specimen at Failure σ_3 Piston $\sigma_1 - \sigma_3$ Rubber PH1 ° (%) Cu (kPa) (kPa) (kPa) Membrane Friction (kPa) 5.5 0.4 338 169 330 1

METHOD OF PREPARATION: BS 1377:PART 1:1990: METHOD OF TEST : BS 1377:PART 7:1990:8 Definitive Method. 1990:9 Multi-stage loading TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter COMMENTS : Tested in Vertical Orientation. UKAS Calibration - loads from 0.2 to 10kN.

REMARKS TO INCLUDE : Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample. Oven drying temperature if not 105-110 deg C.



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ContractSerial No.UK16.2295 - Proposed CheshuntS30215Sports VillageS10215

DETERMINATION OF UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE Borehole/ Depth Description Remarks Sample Pit No. Π. Stiff (High strength) fissured dark grey CLAY with rare BH8 8.00 U1 black speckling Initial Specimen Dru Moisture Wet. Density Density Height Diameter Weight Content Depth of am ៣៣ g Mg/m Mg∕m 1 Top of Specimen (m) 102.5 1.97 1.53 199.4 3242 29 8.03 TEST INFORMATION Rate of Strain **% per M**in Rubber Membrane Thickness 0.3 m 1.0 180 Measured Deviator Stress (kPa) 15 20 0 5 10 STRAIN ⊀ Corrected Max. Shear Stress Measured Mohrs Circle Analysis Strain at Stress Corrections (kPa) $\frac{Cu}{\sqrt{\sigma_1^{Cu}}}$ Cell Pressure σ_3 Deviator Stress Failure Specimen at Failure $\sigma_1 - \sigma_3$ Rubber Piston PH1 ° (%) Cu (kPa) (kPa) (kPa) Friction (kPa) Membrane 0.4 175 6.7 87 162 1 METHOD OF PREPARATION: BS 1377:PART 1:1990: METHOD OF TEST : BS 1377:PART 7:1990:8 Definitive Method. 1990:9 Multi-stage loading : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, TYPE OF SAMPLE KEY C = Core Cutter : Tested in Vertical Orientation. COMMENTS UKAS Calibration - loads from 0.2 to 10kN. : Sample disturbance, loss of moisture, variation from test procedure, location and origin REMARKS TO INCLUDE

of test specimen within original sample. Oven drying temperature if not 105-110 deg C.



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ContractSerial No.UK16.2295 - Proposed CheshuntS30215Sports WillerSince the series

Sports Village

Contract

DETERMINATION OF UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole/ Pit No.	Depth m.	Sample			Descriptio	n			Remarks	
вня	14.00	U3	Stiff (Hi black spe	gh strength) f ckling	issured d	ark grey	CLAY with	rare		
Initial	Specimen Depth of Top of Specimen (n	He ight	t	Diameter mm	Wei	ght I	Moistu Conte %		Wet Density Mg/m ³	Dry Density Mg/m ³
	14.03 ·	199.6	5	103.0	33	10	26		1.99	1.58
TEST INFORMA	TION		Rate of Stra	3in 1.0 ;	≴ per Min	Rubber Me	embrane Thick	iness		0.3 mm
	Deviator Stress (kPa)	0	/	5	10			20		
		Measured	Strain at	Stress Corr	STRAIN X		rected Max.	Sheer Stress	Mohrs Circ	le Analysis
Specimen at	t Failure	Cell Pressure Ø3 (kPa)	Failure (%)	Rubber Membrane	Pist	n Dev	iator Stress $\sigma_1 - \sigma_3$ (kPa)	$rac{\mathcal{C}_{u}}{\mathcal{C}_{1}}$ - σ_{3}) _f		PHI
		279	9.3	0.6	/		255	127		
METHOD	OF PREPAR	RATION: BS 137								
METHOD	OF TEST	CEY : U = Ur		990:8 Defini . B = Bulk, D				-		oon Sample,
COMMENT	S			al Orientati - loads from O		1.				
REMARKS	TO INCL			nce, loss of n within orig						

	ISSUED BY	ST REPORT. : SOIL PROPERTY TESTING LTD. : 30/07/16 PAGE 1 of 3 Pages Serial No.
		coposed Cheshunt S30215-2
Sti 7B Bro CAN CAN	vironmental Protection categies Ltd Caxton House Dad Street MBOURNE MBRIDGE 23 6JN	Soil Property Testing Ltd. 15,16 & 18 Halcyon Court, St Margarets Way, Stukeley Meadows, Huntingdon, Cambs. PE29 6DG. Telephone (01480) 455579 Fax (01480) 453619 Email enquiries@soilpropertytesting.com
	SUBMITTED BY:	APPROVED SIGNATORIES:
SAMPLES L		Cheshunt Sports Village
DATE RECE	IVED: 06/07/16	SAMPLES TESTED BETWEEN 06/07/16 and 30/07/16
REMARKS:	For the attention of	Mr M Judson
NOTES: 1		s or remnants from this contract after 21 days from today, unless he contrary.
2		ngdom Accreditation Service. erpretations expressed herein are outside S accreditation.
3		AS ACCREDITED" in this test report the UKAS Accreditation Schedule for ory.
4		not be reproduced other than in full r written approval of the issuing laboratory.

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Percentage Passing	100 90 80 70 60 50 40 20 10 10 0	0.002		0.000			20			63			0.2			500 0.6		*	2			6			220		6	75 75 76 77 77 77 77 77 77 77 77 77 77 77 77		200			600		-	
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APPENDIX J

Generic Screening Criteria



EPS Generic Quantitative Risk Assessment

Low Risk Generic Screening Criteria - All Land Uses

			S	oil Targets		
Contaminant	Resi	dential	Allotments	Commercial	Public Open S	Spaces
	With Home Grown Produce	Without Home Grown Produce			Residential	Parks
Unit				mg/kg		
Arsenic	37	40	49	640	79	168
Benzene	0.87	3.3	0.18	98	140	230
Benzo(a)pyrene	5	5.3	5.7	76	10	21
Cadmium	26	149	4.9	410	220	880
Chromium (VI)	21	21	170	49	23	250
Lead	200	310	80	2330	630	1300

Notes:

Targets for Human Health have been taken from available Category 4 Screening Levels (C4SLs) for assessment of land affected by contamination issued by DEFRA in December 2013.



EPS Generic Quantitative Risk Assessment

Minimal Risk Generic Screening Criteria - Residential Land Use

	Soil Targets						
Contaminant	Human Health	Controll	ed Waters	Controlle	ed Waters		
Contaminant	Human Health	LGwRP	HGwRP	LGwRP	HGwRP		
Unit		mg/kg		u	g/l		
Arsenic	37	n/c	n/c	50	10		
Cadmium	11	n/c	n/c	5	5		
Chromium III	910	n/c	n/c	250	50		
Chromium VI	6	n/c	n/c	n/c	n/c		
Copper	2400	n/c	n/c	28	28		
Mercury (elemental)	1.2	n/c	n/c	1	1		
Nickel	180	n/c	n/c	200	50		
Lead	NA	n/c	n/c	250	10 10		
Selenium Zinc	250 3700	n/c n/c	n/c n/c	10 500	500		
Benzene	0.087	0.252	0.008	30	1		
Toluene	130	1.17	1.17	50	50		
Ethylbenzene	47	15.0	10.0	300	200		
Xylene (para)	56	0.885	0.885	30	30		
MTBE#	49	0.138	0.0276	75	15		
Benzo(a)Pyrene	2.2	10	1.44	0.7	0.1		
Naphthalene	2.3	0.934	0.02	10	0.1		
Dibenz(ah)anthracene	0.24	n/c	n/c	n/c	n/c		
Aliphatic C5-C6	42	5.27	1.05	50	10		
Aliphatic C6-C8	100	23.2	4.64	50	10		
Aliphatic C8-C10	27	175	35.1	50	10		
Aliphatic C10-C12	130(48)*	1380	276	50	10		
Aliphatic C12-C16	1100(8.48)**	27500	5490	50	10		
Aliphatic C16-C35	65000 (8.48)**	3.46E+06	6.91E+05	50	10		
Aromatic C8-C10	34	8.74	1.75	50	10		
Aromatic C10-C12	74	13.8	2.76	50	10		
Aromatic C12-C16	140	27.5	5.5	50	10		
Aromatic C16-C21	260	86.9	17.4	50	10		
Aromatic C21-C35	1100	690	138	50	10		

Notes:

LGwRP - Low Groundwater Resource Potential

f = Oral, dermal and inhalation exposure compared with oral HCV N/C = Not Calculated

* = S4UL exceeds vapour saturation limit (in brackets) ** = S4UL exceeds solubility saturation limit (in brackets)

Soil Targets

Targets for Human Health have been taken from S4ULs 'Suitable For Use Levels for Human Health Risk Assessment' – LQM and CIEH (2014) derived using standard sandy loam soil with 1% SOM, except (#) = EIC/AGS/CL:AIRE GAC 'Soil Generic Assessment Criteria' (2010). For sites where ground conditions differ significantly from sandy loam or site-specific SOM and pH are available, the generic human health targets may be revised.

HGwRP - High Groundwater Resource Potential

Targets for Controlled waters have been derived using EA Remedial Targets Worksheet (v3.1) - using standard Sandy Loam ground conditions as described in Science Report SC050021/SR3, assuming no degradation for a 10m compliance distance with criteria of EQS or UKDWS for LGwRP and HGwRP respectively (see notes for GW targets).

Groundwater Targets

For LGwRP, targets have been taken as Freshwater EQS where available. For Ethylbenzene and BaP the WHO Health limit has been used and for MTBE and individual TPH fractions a 5 times multiplier of taste threshold and UKDWS has been taken repectively.

For HGwRP, targets have been taken as UKDWS where available, with the exception of Copper and Zinc where the EQS is lower than the DWS and therefore the EQS has been used as the groundwater target. For Ethlylbenzene the upper WHO ATO limit has been used. For Toluene and Xylene, the WHO ATO limit is higher than the EQS and so the lower value has been taken. For MTBE the taste threshold has been taken. Work carried out to calculate generic screening criteria for concentrations of contaminant in groundwater with respect of risks to Human Health has generally found that criteria far exceed (by at least 2 orders of magnitude) those listed for the protection of either LGwRP and HGwRP receptors. On this basis, the above Groundwater criteria are also considered protective of human health and further evaluation of these risks should be considered alongside any detailed quantitative risk assessments carried out for groundwater on a site specific basis.

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APPENDIX K

Method Statement for Encountering Unexpected Contamination



METHOD STATEMENT

ACTIONS TO BE TAKEN IN THE EVENT OF DISCOVERING UNEXPECTED CONTAMINATION DURING INTRUSIVE GROUNDWORKS

If at any point during intrusive groundworks at a site, evidence of unforeseen contamination is encountered in the form of significant noxious odours, discolouration, or instability within soils or sheen/discolouration in groundwater, the following actions will be taken:

- Intrusive works in the immediate area of the impacted ground will be suspended and the continuation of work in other areas of the site will be considered within the context of the site specific health & safety plan.
- Environmental Protection Strategies Ltd (EPS) will be contacted and appraised of the situation so that arrangements can be made to characterise the impact and determine what action may be necessary in addition to the scheduled site works. Where possible / health & safety plan permits, digital photographs of the impacted ground will be taken and emailed to EPS at the address below to assist in the initial assessment.
- It may well be necessary for EPS to attend site to undertake visual inspection and obtain samples for field and/or laboratory analysis, although the actions taken will be dependent on the nature of what is encountered.
- In cases where EPS consider the unforeseen contamination likely to pose a significant risk of significant harm to adjacent site users or local environmental receptors, the local authority and the Environment Agency will be informed of the situation and the actions being taken.
- Once appropriate action has been agreed and undertaken, a written summary will be produced by EPS for submission to the Local Authority, (and where relevant, the Environment Agency) in accordance with planning requirements. The submission will include details of work undertaken, analytical results of investigative and validation samples obtained and conclusions and recommendations for any further actions considered necessary.
- Where regulatory bodies have been involved, site works should only recommence following their agreement and in all cases should only recommence when the site manager considers it safe to do so within the context of the site specific health & safety plan.

EPS Contact Details:

Giles Lock	Director	Tel: 0781 253 9656
Will Evans	Director	Tel: 0781 253 9655
Steve Bullock	Director	Tel: 0786 694 9221

Email: <u>info@epstrategies.co.uk</u> (Automatically forwarded to the above and office based personnel.)