

Appendix D Exploratory Hole Records and Laboratory Test Results for Land Off Middlefield

Project Name
 Land off Middlefield,

Project No.
 GWPR1403

Co-ords: -

Hole Type
 WLS

Location: South Hampstead, London NW8 6NE

Level: -

Scale
 1:50

Client: Liv International

Dates: 25/09/2015

Logged By
 JD

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	D		0.20		MADE GROUND: Tarmac	
		0.25	D					
		0.50	D		0.40		MADE GROUND: Reddish-brown very gravelly sand. Sand is medium to coarse grained. Gravel is abundant, fine to coarse, sub-rounded to sub-angular brick, concrete and tarmac	
		0.80	D					
		1.00	SPT	N=7			LONDON CLAY FORMATION: Light brown silty CLAY with light grey mottling from ~0.80m bgl.	
		1.00	SPTLS	(1,0/ 1,2,2,2)				
		1.70	D				Yellow-orange sandy inclusions noted from ~1.00m bgl. Claystone noted with depth.	
		2.00	SPT	N=9				
		2.00	SPTLS	(1,2/ 2,2,2,3)			Selenite crystals noted from ~2.00m bgl becoming larger and more abundant from ~6.00m bgl.	
		2.70	D					
		3.00	SPT	N=13			Colour becomes dark grey-brown from ~10.00m bgl.	
		3.00	SPTLS	(2,3/ 3,3,3,4)				
		3.70	D					
		4.00	SPT	N=21				
		4.00	SPTLS	(3,4/ 5,6,5,5)				
		4.70	D					
		5.00	SPT	N=18				
		5.00	SPTLS	(4,4/ 4,5,4,5)				
		5.70	D					
		6.00	SPT	N=27				
		6.00	SPTLS	(5,6/ 6,7,7,7)				
		6.70	D					
		7.00	SPT	N=27				
		7.00	SPTLS	(5,6/ 7,7,6,7)				
		7.70	D					
		8.00	SPT	N=35				
		8.00	SPTLS	(6,7/ 8,9,9,9)				
		8.70	D					
		9.00	SPT	N=34				
		9.00	SPTLS	(7,7/ 8,9,8,9)				
		9.70	D					

Continued next sheet

Remarks: No groundwater encountered.

Thin, fibrous roots noted to 2.70m bgl.

50mm combined bio-gas and groundwater monitoring well installed to 5.00m bgl.

SHDP undertaken from base of borehole (12.00m bgl) to 16.20m bgl.



Project Name
 Land off Middlefield,

Project No.
 GWPR1403

Co-ords: -

Hole Type
 WLS

Location: South Hampstead, London NW8 6NE

Level: -

Scale
 1:50

Client: Liv International

Dates: 25/09/2015

Logged By
 JD

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
Well		10.00	SPT	N=42	12.45	12.45		LONDON CLAY FORMATION: Light brown silty CLAY with light grey mottling from ~0.80m bgl. Yellow-orange sandy inclusions noted from ~1.00m bgl. Claystone noted with depth. Selenite crystals noted from ~2.00m bgl becoming larger and more abundant from ~6.00m bgl. Colour becomes dark grey-brown from ~10.00m bgl.
		10.00	SPTLS	(9,9/ 9,12,12,9)				
		10.70	D					
		11.00	SPT	N=38				
		11.00	SPTLS	(8,9/ 9,9,10,10)				
		11.70	D					
		12.00	SPT	N=37				
				(8,9/ 9,9,10,9)				
							End of Borehole at 12.45 m	

11
12
13
14
15
16
17
18
19

Remarks: No groundwater encountered.
 Thin, fibrous roots noted to 2.70m bgl.
 50mm combined bio-gas and groundwater monitoring well installed to 5.00m bgl.
 SHDP undertaken from base of borehole (12.00m bgl) to 16.20m bgl.



Project Name
Land off Middlefield,

Project No.
GWPR1403

Co-ords: -

Hole Type
WLS

Location: South Hampstead, London NW8 6NE

Level: -

Scale
1:50

Client: Liv International

Dates: 28/09/2015

Logged By
FW

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	D		0.40		MADE GROUND: Concrete/tarmac over a black and red to pink brown sandy gravel. Gravel is fine to coarse, abundant, pink limestone, black limestone and black carbonaceous material (clinker, tarmac, ash)	
		0.25	D					
		0.50	D		0.65		MADE GROUND: Mid to dark brown gravelly silty clay. Gravel is occasional, fine, sub-angular to sub-rounded brick and carbonaceous material (ash/clinker)	
		0.80	D					
		1.00	SPT	N=18	1.50		HEAD DEPOSITS (possible Made Ground): Mid brown to orange brown very clayey gravelly SAND locally a sandy gravelly clay. Sand is medium to coarse grained. Gravel is fine to medium, sub-angular to rounded flint.	
		1.00	SPTLS	(3,3/ 4,5,5,4)				
		1.40	D		4.00		LONDON CLAY FORMATION: Mid brown with light grey mottled silty CLAY. Claystones noted from ~2.00m bgl and fine selenite crystals. Less grey mottling with depth. Rare fine sand and silt from ~3.00m bg.l	
		1.70	D					
		2.00	SPT	N=11	4.00		LONDON CLAY FORMATION: Mid to dark brown silty CLAY with selenite crystals and claystones.	
		2.00	SPTLS	(1,2/ 2,3,3,3)				
		2.60	D		9.50		LONDON CLAY FORMATION: Dark brown grey to dark grey silty CLAY with selenite crystals. Rare shell fragments noted.	
		3.00	SPT	N=14				
		3.00	SPTLS	(2,3/ 3,4,4,3)	9.50		LONDON CLAY FORMATION: Dark brown grey to dark grey silty CLAY with selenite crystals. Rare shell fragments noted.	
		3.80	D					
		4.00	SPT	N=17	9.50		LONDON CLAY FORMATION: Dark brown grey to dark grey silty CLAY with selenite crystals. Rare shell fragments noted.	
		4.00	SPTLS	(2,3/ 3,4,5,5)				
		4.80	D		9.50		LONDON CLAY FORMATION: Dark brown grey to dark grey silty CLAY with selenite crystals. Rare shell fragments noted.	
		5.00	SPT	N=20				
		5.00	SPTLS	(4,4/ 4,5,5,6)	9.50		LONDON CLAY FORMATION: Dark brown grey to dark grey silty CLAY with selenite crystals. Rare shell fragments noted.	
		5.70	D					
		6.00	SPT	N=26	9.50		LONDON CLAY FORMATION: Dark brown grey to dark grey silty CLAY with selenite crystals. Rare shell fragments noted.	
		6.00	SPTLS	(5,5/ 5,6,7,8)				
		6.70	D		9.50		LONDON CLAY FORMATION: Dark brown grey to dark grey silty CLAY with selenite crystals. Rare shell fragments noted.	
		7.00	SPT	N=29				
		7.00	SPTLS	(5,6/ 7,7,8,7)	9.50		LONDON CLAY FORMATION: Dark brown grey to dark grey silty CLAY with selenite crystals. Rare shell fragments noted.	
		7.60	D					
		8.00	SPT	N=33	9.50		LONDON CLAY FORMATION: Dark brown grey to dark grey silty CLAY with selenite crystals. Rare shell fragments noted.	
		8.00	SPTLS	(6,7/ 7,8,9,9)				
		8.70	D		9.50		LONDON CLAY FORMATION: Dark brown grey to dark grey silty CLAY with selenite crystals. Rare shell fragments noted.	
		9.00	SPT	N=34				
		9.00	SPTLS	(6,7/ 9,7,9,9)	9.50		LONDON CLAY FORMATION: Dark brown grey to dark grey silty CLAY with selenite crystals. Rare shell fragments noted.	
		9.80	D					

Continued next sheet

Remarks: No groundwater encountered.

White fine rootlets noted to ~2.00m bgl

Black, fibrous, possibly decaying roots/rootlets noted to 3.00m bgl.

50mm combined bio-gas and groundwater monitoring well installed to 4.50m bgl.

SHDP undertaken from base of borehole (12.45m bgl) to 16.30m bgl.



Project Name
 Land off Middlefield,

Project No.
 GWPR1403

Co-ords: -

Hole Type
 WLS

Location: South Hampstead, London NW8 6NE

Level: -

Scale
 1:50

Client: Liv International

Dates: 28/09/2015

Logged By
 FW

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
[Pattern]		10.00	SPT	N=38	12.45	[Legend]	LONDON CLAY FORMATION: Dark brown grey to dark grey silty CLAY with selenite crystals. Rare shell fragments noted.	
		10.00	SPTLS	(9,9/ 10,9,10,9)				
		10.60	D					
		11.00	SPT	N=37				
		11.00	SPTLS	(9,10/ 9,9,10,9)				
		11.60	D					
		12.00	D					
							End of Borehole at 12.45 m	

Remarks: No groundwater encountered.
 White fine rootlets noted to ~2.00m bgl
 Black, fibrous, possibly decaying roots/rootlets noted to 3.00m bgl.
 50mm combined bio-gas and groundwater monitoring well installed to 4.50m bgl.
 SHDP undertaken from base of borehole (12.45m bgl) to 16.30m bgl.



DYNAMIC PROBING

Probe No **DP1**

Client **Liv International**

Sheet 1 of 2

Site **Land off Middlefield,**

Project No **GWPR1403**

E - N - Level -

Date **25/09/2015**

Logged by **J Hogg**

Depth (m)	Readings Blows/100mm					Diagram (N100 Values)				Torque (Nm)
						10	20	30	40	
0	-	-	-	-	-					0
1.0	-	-	-	-	-					
2.0	-	-	-	-	-					
3.0	-	-	-	-	-					
4.0	-	-	-	-	-					
5.0	-	-	-	-	-					
6.0	-	-	-	-	-					
7.0	-	-	-	-	-					
8.0	-	-	-	-	-					
9.0	-	-	-	-	-					



Ground and Water Ltd
Tel: 0333 600 1221
email: enquiries@groundandwater.co.uk
www.groundandwater.co.uk

Fall Height **750**

Cone Base Diameter **43**

Hammer Wt **63.50**

Final Depth **16.20**

Probe Type **DPSH**

Log Scale **1:50**



DYNAMIC PROBING

Probe No **DP1**

Client **Liv International**

Sheet 2 of 2

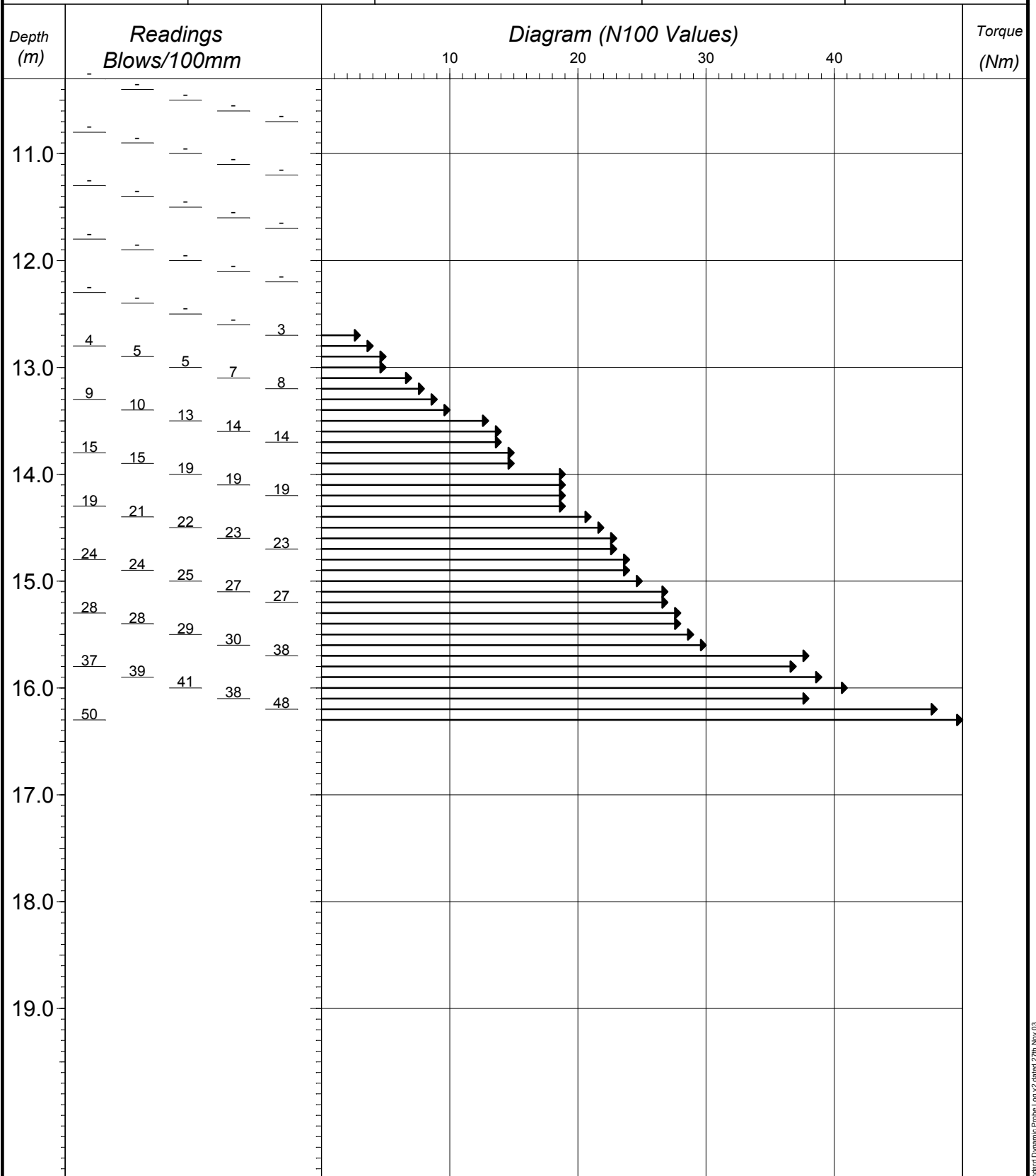
Site **Land off Middlefield,**

Project No **GWPR1403**

E - N - Level -

Date **25/09/2015**

Logged by **J Hogg**



Ground and Water Ltd
Tel: 0333 600 1221
email: enquiries@groundandwater.co.uk
www.groundandwater.co.uk

Fall Height **750**
Hammer Wt **63.50**
Probe Type **DPSH**

Cone Base Diameter **43**
Final Depth **16.20**
Log Scale **1:50**



DYNAMIC PROBING

Probe No **DP2**

Client **Liv International**

Sheet 1 of 2

Site **Land off Middlefield,**

Project No **GWPR1403**

E - N - Level -

Date **28/09/2015**

Logged by **J Hogg**

Depth (m)	Readings Blows/100mm				Diagram (N100 Values)				Torque (Nm)
					10	20	30	40	
0	-	-	-	-					0
1.0	-	-	-	-					
2.0	-	-	-	-					
3.0	-	-	-	-					
4.0	-	-	-	-					
5.0	-	-	-	-					
6.0	-	-	-	-					
7.0	-	-	-	-					
8.0	-	-	-	-					
9.0	-	-	-	-					



Ground and Water Ltd
Tel: 0333 600 1221
email: enquiries@groundandwater.co.uk
www.groundandwater.co.uk

Fall Height **750**

Cone Base Diameter **43**

Hammer Wt **63.50**

Final Depth **16.30**

Probe Type **DPSH**

Log Scale **1:50**



DYNAMIC PROBING

Probe No **DP2**

Client **Liv International**

Sheet 2 of 2

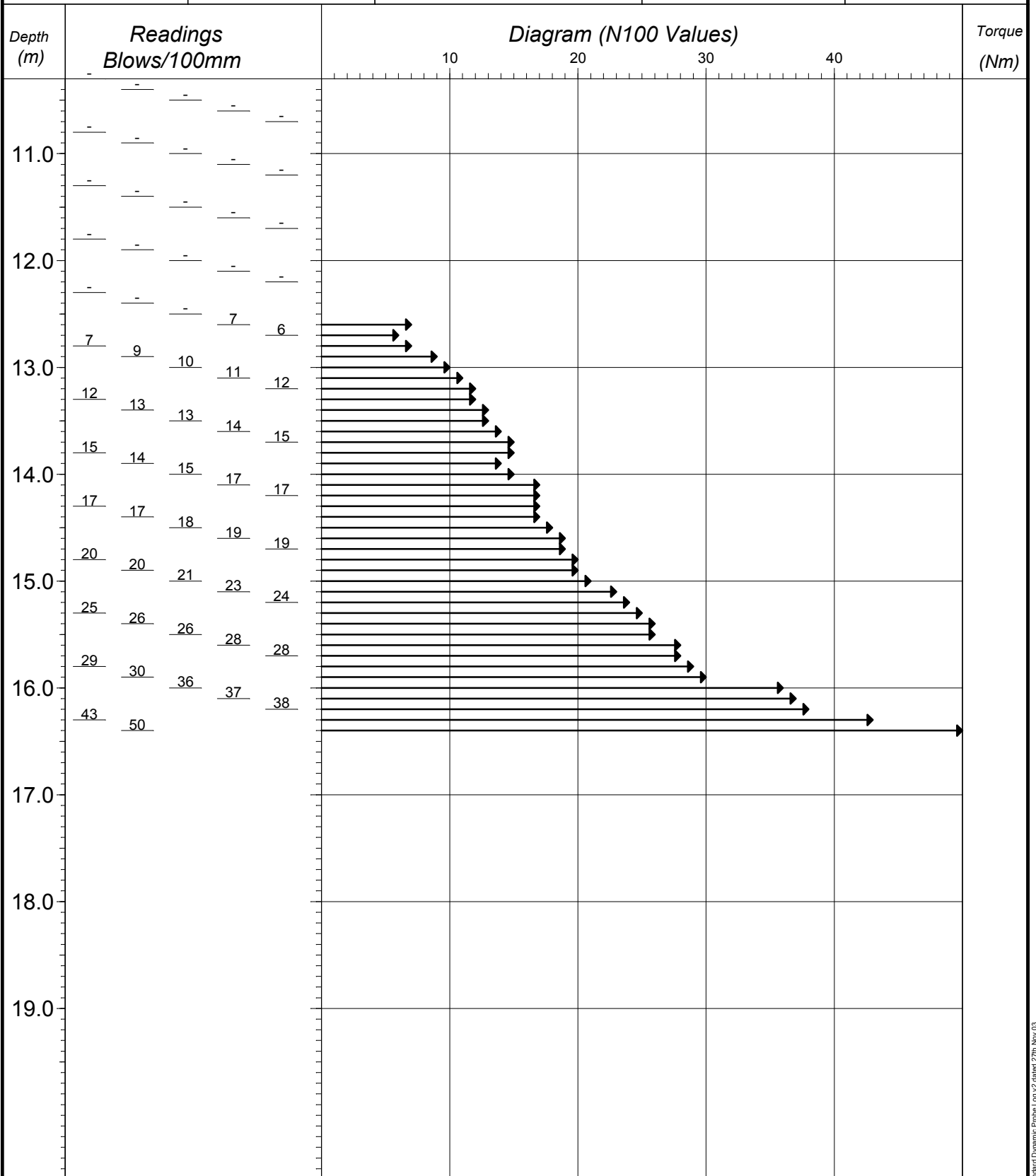
Site **Land off Middlefield,**

Project No **GWPR1403**

E - N - Level -

Date **28/09/2015**

Logged by **J Hogg**



Ground and Water Ltd
Tel: 0333 600 1221
email: enquiries@groundandwater.co.uk
www.groundandwater.co.uk

Fall Height **750**
Hammer Wt **63.50**
Probe Type **DPSH**

Cone Base Diameter **43**
Final Depth **16.30**
Log Scale **1:50**



APPENDIX C
Geotechnical Laboratory Test Results



Summary of Classification Test Results

Job No. 19639	Project Name Land adjacent to 1B St Johns Wood Park, NW8	Programme	
		Samples received	08/10/2015
Project No. GWPR1403	Client Ground and Water Ltd	Schedule received	08/10/2015
		Project started	09/10/2015
		Testing Started	23/10/2015

Hole No.	Sample				Soil Description	NMC %	Passing 425µm %	LL %	PL %	PI %	Remarks
	Ref	Top	Base	Type							
WS1		0.80		D	Brown silty CLAY with rare fine gravel and sandstone fragments	33					
WS1		1.00		D	Brown silty CLAY with rare fine gravel	31					
WS1		1.70		D	Brown with orangish brown staining silty CLAY	30					
WS1		2.00		D	Brown with grey staining silty CLAY	29					
WS1		2.70		D	Brown and grey silty CLAY with traces of selenite crystals	31	100	77	30	47	
WS1		3.00		D	Brown with grey staining silty CLAY	27					
WS1		6.00		D	Brown silty CLAY with numerous selenite crystals	30	100	68	28	40	
WS1		11.00		D	Dark grey silty CLAY	27	100	77	25	52	
WS2		1.70		D	Brown with grey staining silty CLAY with traces of fine rootlets	26					
WS2		2.00		D	Brown with grey staining silty CLAY with traces of fine rootlets	29					
WS2		2.60		D	Brown and grey mottled and orangish brown staining silty CLAY with traces of roots and rootlets	30					
WS2		3.00		D	Brown and grey silty CLAY	31	100	80	28	52	

Test Methods: BS1377: Part 2: 1990: Natural Moisture Content : clause 3.2 Atterberg Limits: clause 4.3 and 5.0	Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU Tel: 01923 711 288 Email: James@k4soils.com	Checked and Approved Initials J.P Date: 27/10/2015
Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)		MSF-5-R1(a) -Rev. 0



Summary of Classification Test Results

Job No. 19639	Project Name Land adjacent to 1B St Johns Wood Park, NW8	Programme	
		Samples received	08/10/2015
Project No. GWPR1403	Client Ground and Water Ltd	Schedule received	08/10/2015
		Project started	09/10/2015
		Testing Started	23/10/2015

Hole No.	Sample				Soil Description	NMC	Passing 425µm	LL	PL	PI	Remarks
	Ref	Top	Base	Type							
WS2		7.60		D	Brown silty CLAY with traces of selenite crystals	29	100	75	27	48	
WS2		11.60		D	Dark grey silty CLAY with rare fine gravel	27	99	71	25	46	

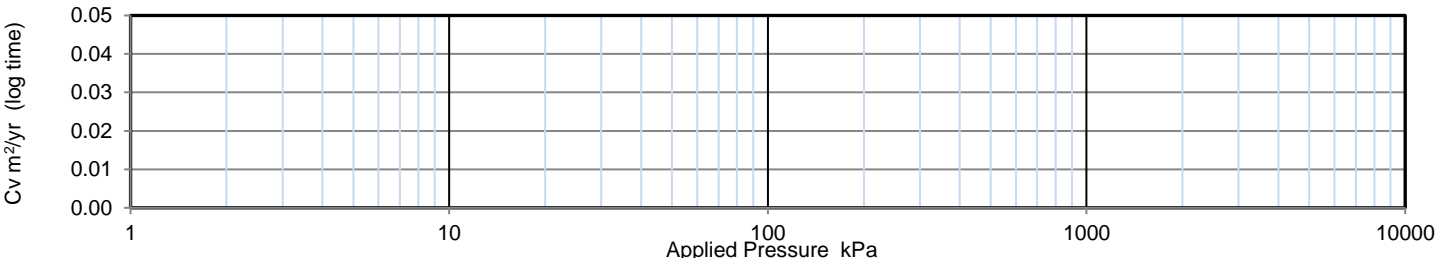
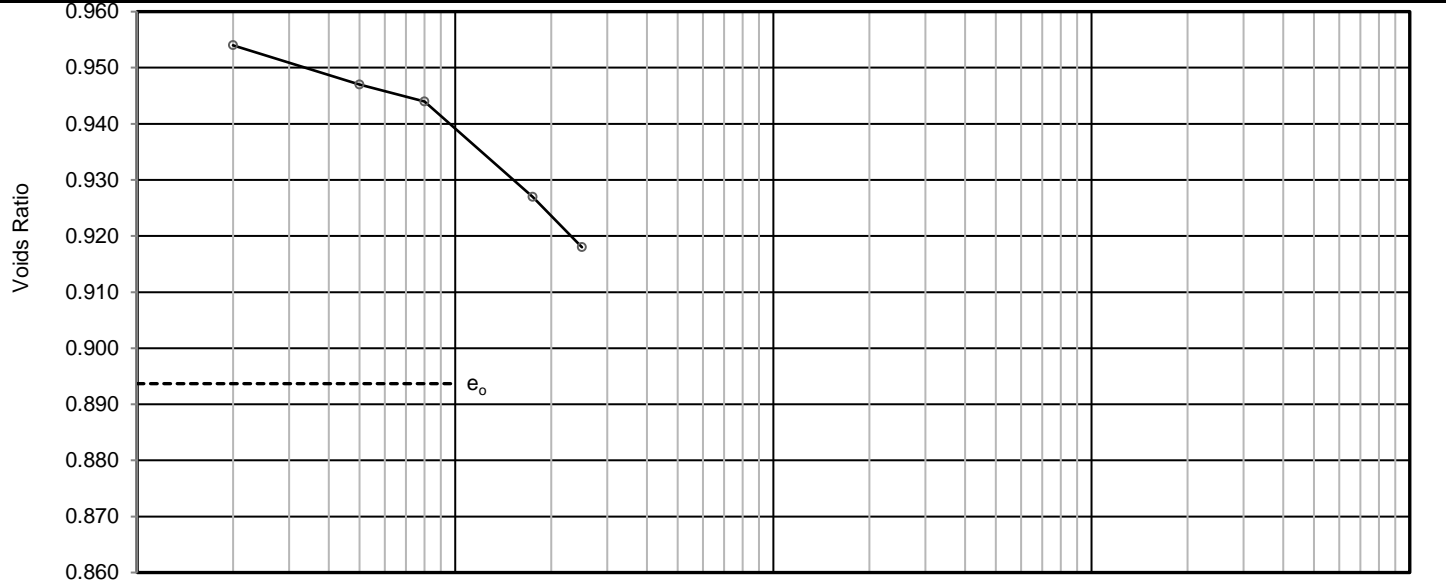
Test Methods: BS1377: Part 2: 1990: Natural Moisture Content : clause 3.2 Atterberg Limits: clause 4.3 and 5.0	Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU Tel: 01923 711 288 Email: James@k4soils.com	Checked and Approved Initials J.P Date: 27/10/2015
2519 Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)		MSF-5-R1(a) -Rev. 0



ONE DIMENSIONAL CONSOLIDATION TEST

Job Ref	19639
Borehole/Pit No.	WS1
Sample No.	-
Depth	3.70
Sample Type	D
Sample Received	08/10/2015
Schedule received	08/10/2015
Project Started	09/10/2015
Date Test started	13/10/2015

Site Name	Land adjacent to 1B St Johns Wood Park, NW8		
Project ID	GWPR1403	Client	Ground and Water Ltd
Soil Description	Brown and orangish brown mottled bluish grey slightly fissured silty CLAY with occasional selenite crystals		
Test Method	BS1377:Part 5:1990, clause 3		



Applied Pressure kPa	Voids ratio	Mv m2/MN	Cv (t50, log) m2/yr	Cv (t90, root) m2/yr	Csec
50.0	0.894	-	-	-	-
25	0.918	0.51			
18	0.927	0.66			
8	0.944	0.94			
5	0.947	0.41			
2	0.954	1.2			

Preparation

Orientation within sample: Vertical

Particle density: assumed 2.70 Mg/m3

	Initial	Final	
Diameter	74.98	-	mm
Height	16.00	16.51	mm
Moisture Content	30.2	36.3	%
Bulk density	1.86	1.88	Mg/m3
Dry density	1.43	1.38	Mg/m3
Voids Ratio	0.894	0.954	
Saturation	91	103	%
Average temperature for test	20.0		oC
Swelling Pressure	50		kPa
Settlement on saturation			%

Remarks



Test Report by K4 SOILS LABORATORY
 Unit 8 Olds Close Olds Approach
 Watford Herts WD18 9RU
 Tel: 01923 711 288
 Email: James@k4soils.com

Checked and Approved

Initials: K.P

Date: 26/10/2015



Sulphate Content (Gravimetric Method) for 2:1 Soil: Water Extract and pH Value - Summary of Results
Tested in accordance with BS1377 : Part 3 : 1990, clause 5.3 and clause 9

Job No. 19639	Project Name Land adjacent to 1B St Johns Wood Park, NW8	Programme	
		Samples received	08/10/2015
Project No. GWPR1403	Client Ground and Water Ltd	Project started	09/10/2015
		Testing Started	14/10/2015

Hole No.	Sample				Soil description	Dry Mass passing 2mm %	SO3 Content g/l	SO4 Content g/l	pH	Remarks
	Ref	Top	Base	Type						
WS1		1.70		D	Brown with orangish brown staining silty CLAY	100	0.33	0.39	7.96	
WS2		2.60		D	Brown and grey mottled and orangish brown staining silty CLAY with traces of roots and rootlets	100	0.66	0.79	7.89	

	Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU Tel: 01923 711 288 Email: James@k4soils.com	Checked and Approved Initials J.P Date: 27/10/2015
	2519	Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)