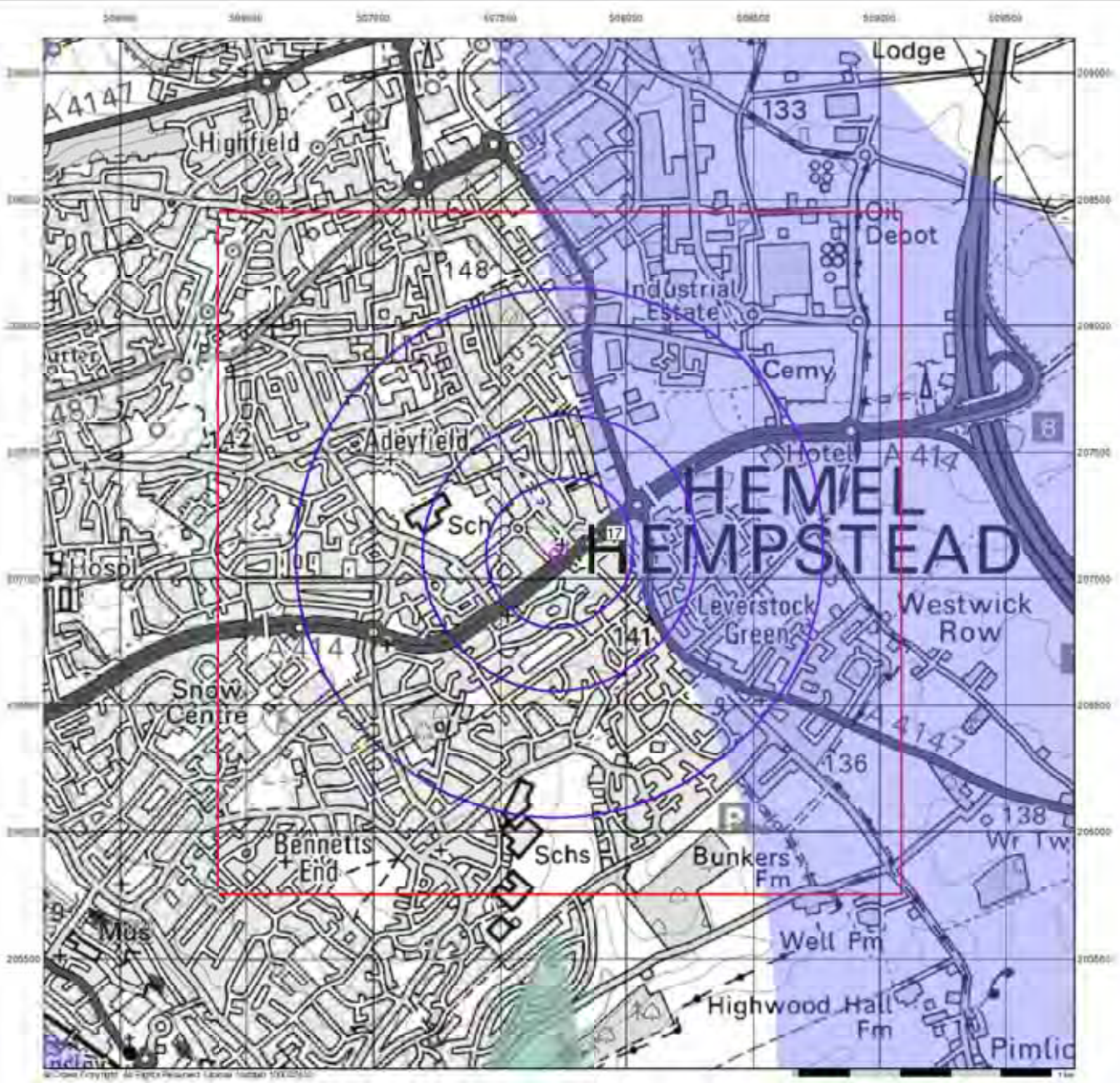


Source Protection Zones

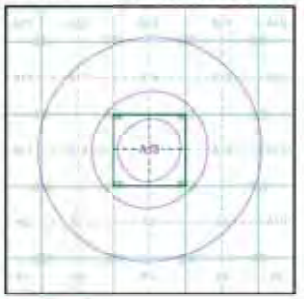
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)
- Source Protection Zone Borehole

Site Sensitivity Context Map - Slice A

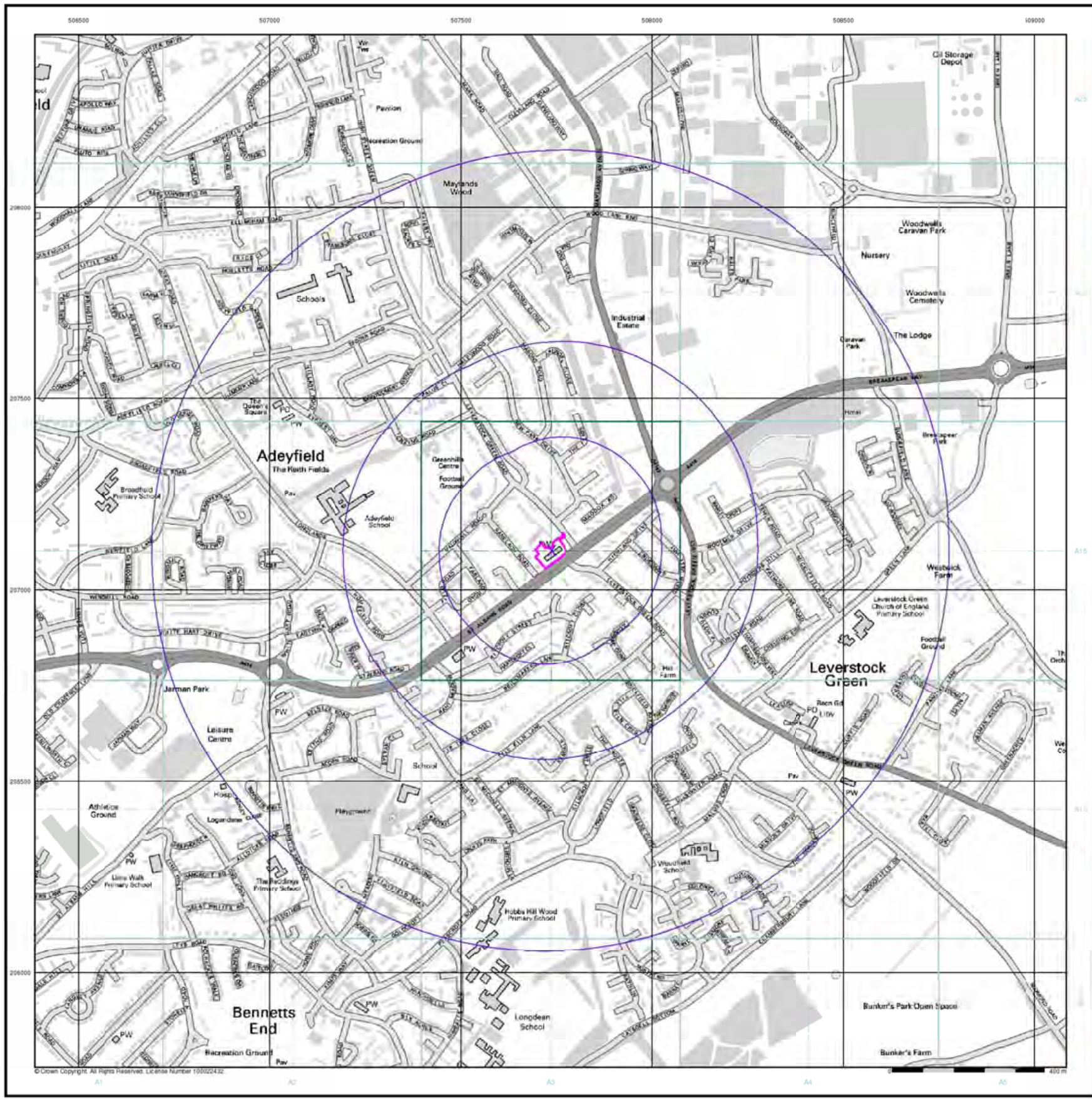


Order Details

Order Number:	77557434_1_1
Customer Ref.:	UK16.2121
National Grid Reference:	507740, 207100
Slice:	A
Site Area (Ha):	0.35
Search Buffer (m):	1000

Site Details

Adeyfield Church, Leverstock Green Road, Hemel Hempstead, Herts, HP2 4HL



eps

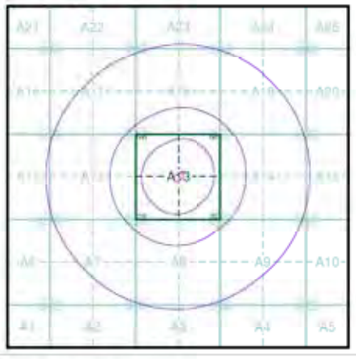
General

- Specified Site
- Specified Buffer(s)
- 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:	77557434_1_1
Customer Ref:	UK16.2121
National Grid Reference:	507740, 207100
Slice:	A
Site Area (Ha):	0.35
Search Buffer (m):	1000

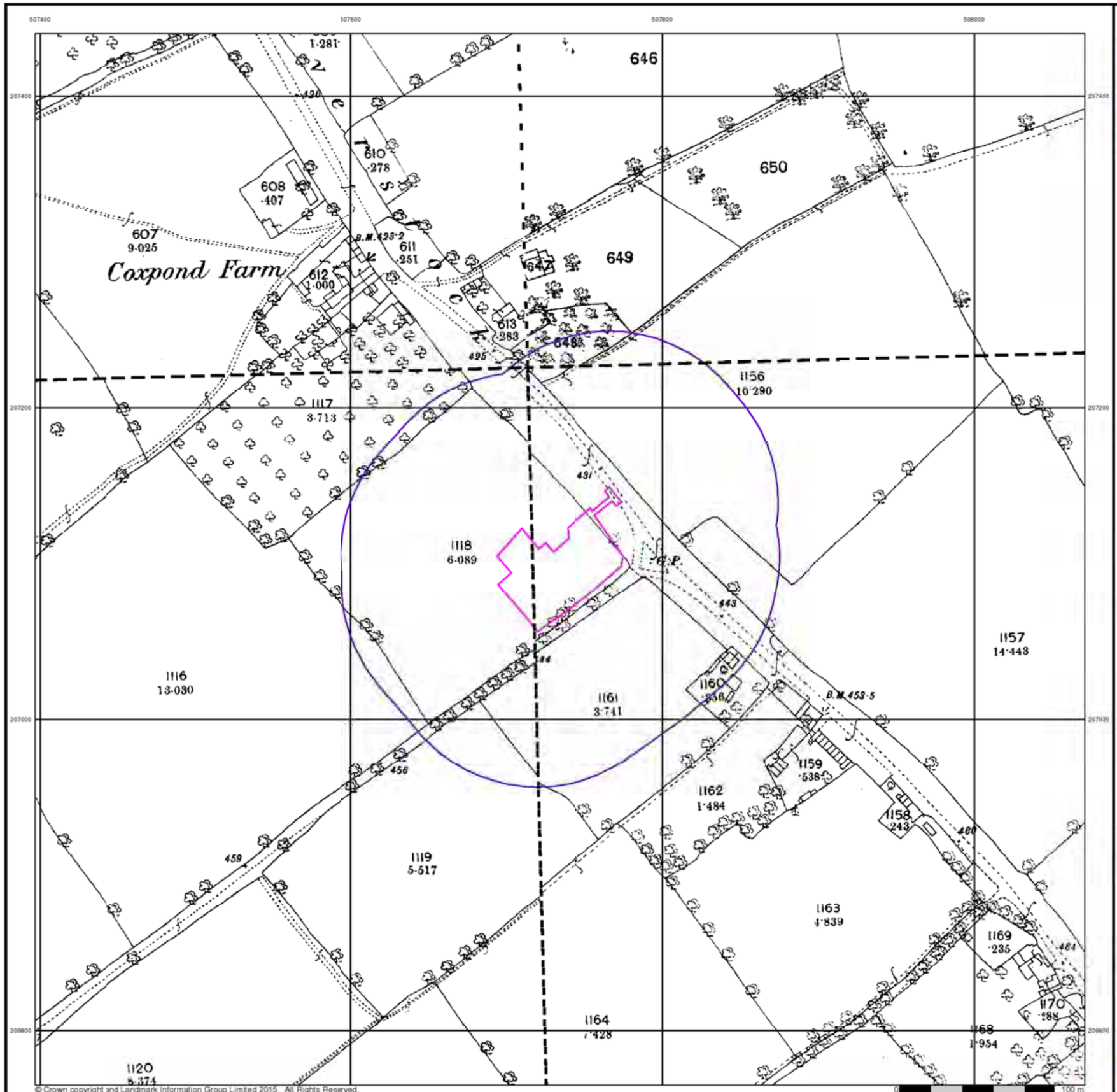
Site Details

Adeyfield CHurch, Leverstock Green Road, Hemel Hempstead, Herts, HP2 4HL

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

APPENDIX F

A Selection of Historic Maps



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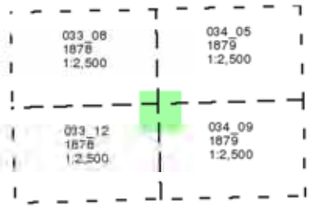
Hertfordshire

Published 1878 - 1879

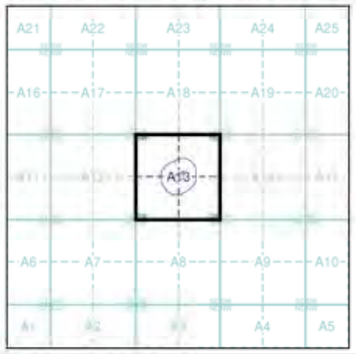
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



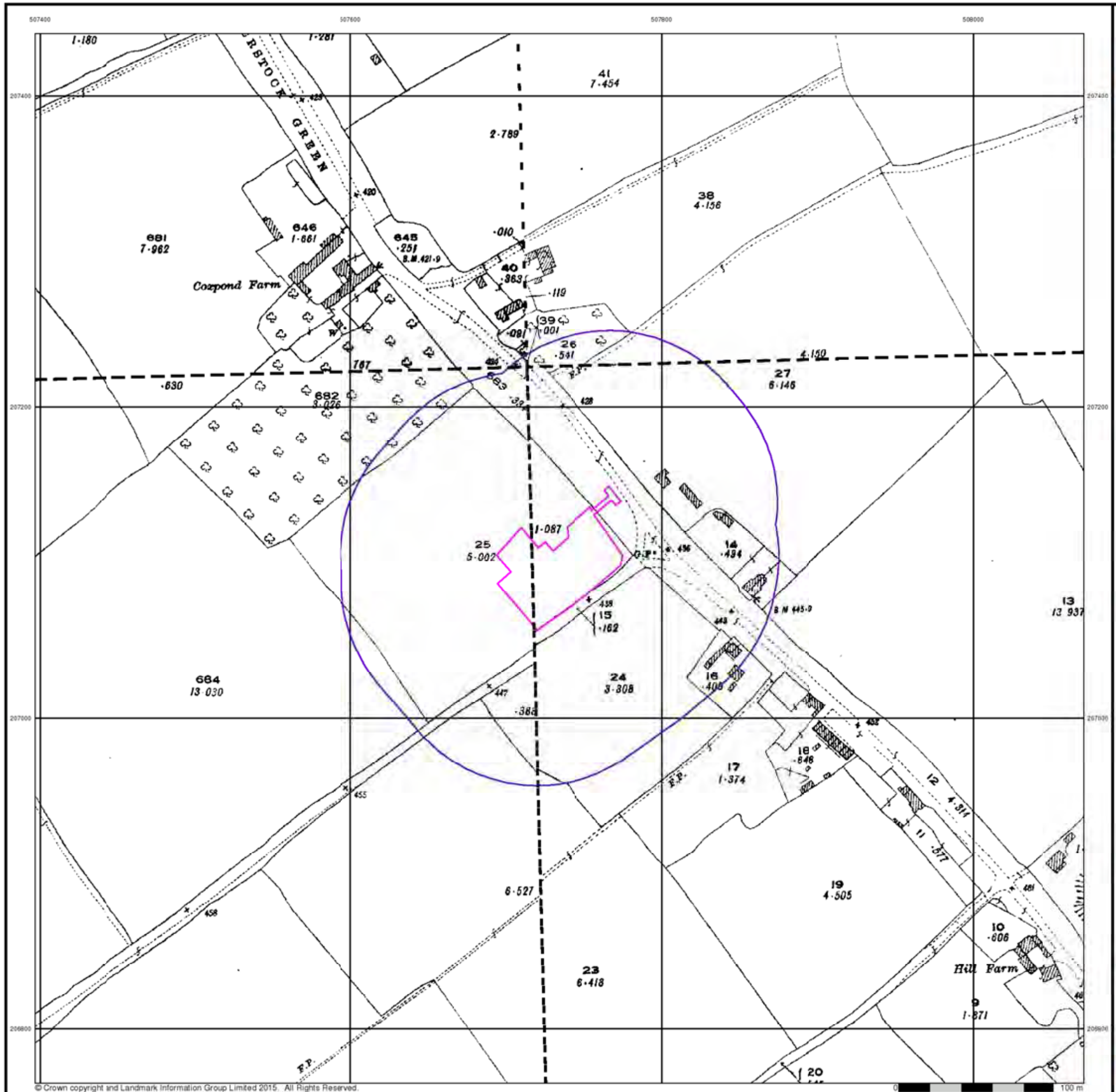
Order Details

Order Number:	77557434_1_1
Customer Ref:	UK16.2121
National Grid Reference:	507740, 207100
Slice:	A
Site Area (Ha):	0.35
Search Buffer (m):	100

Site Details

Adeyfield CHurch, Leverstock Green Road, Hemel Hempstead, Herts, HP2 4HL

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



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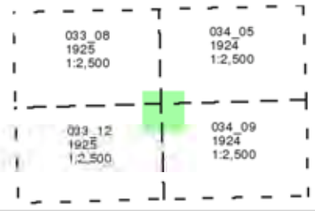
Hertfordshire

Published 1924 - 1925

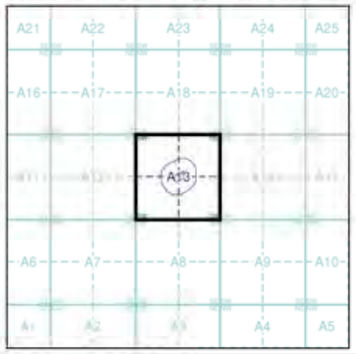
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	77557434_1_1
Customer Ref:	UK16.2121
National Grid Reference:	507740, 207100
Slice:	A
Site Area (Ha):	0.35
Search Buffer (m):	100

Site Details

Adeyfield CHurch, Leverstock Green Road, Hemel Hempstead, Herts, HP2 4HL

Landmark
Tel: 0844 844 9952
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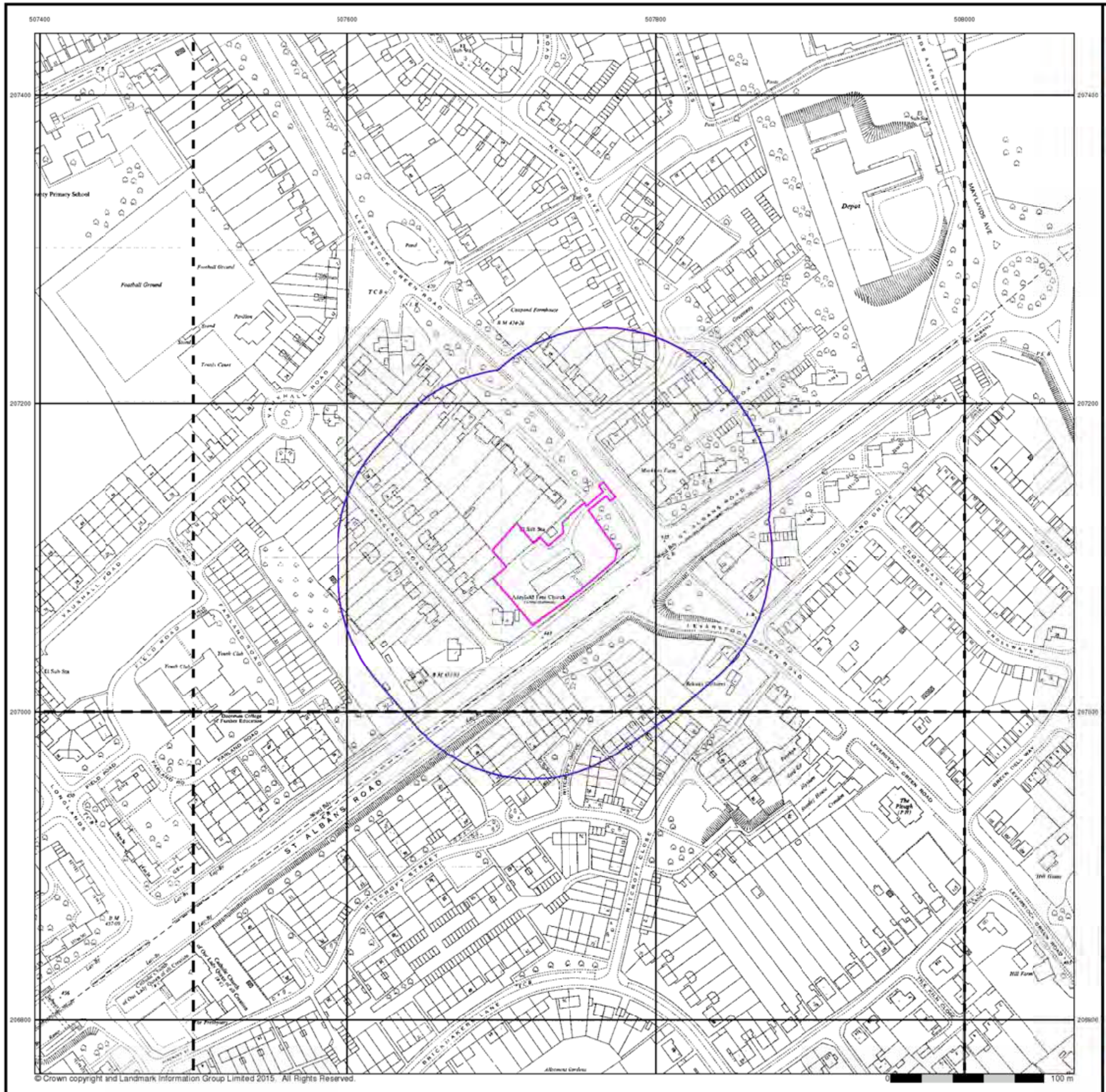

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eps

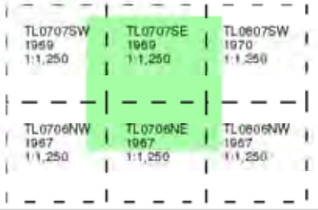
Ordnance Survey Plan

Published 1967 - 1970

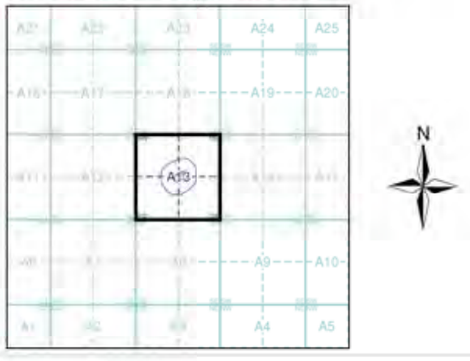
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

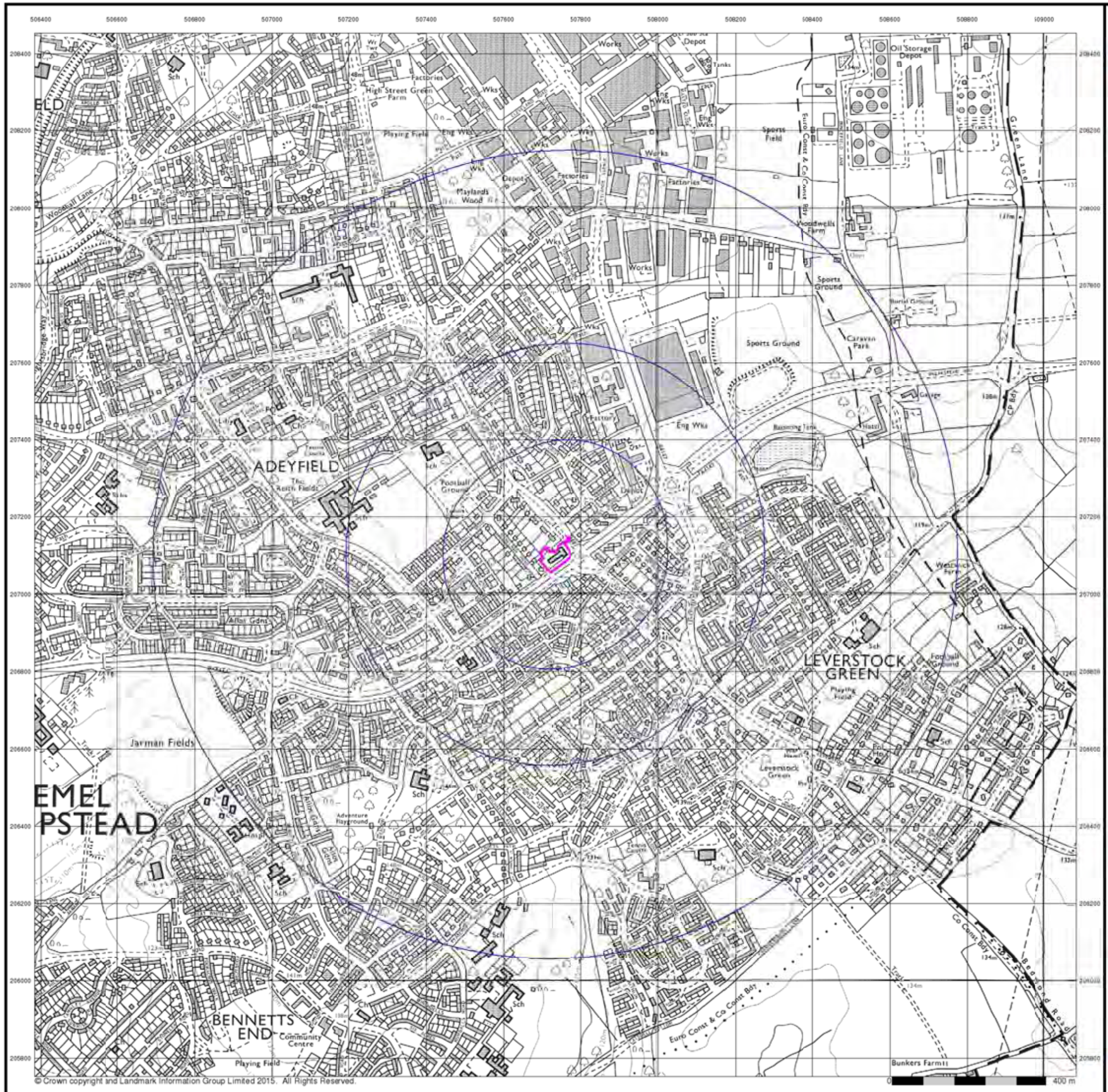
Order Number:	77557434_1_1
Customer Ref:	UK16.2121
National Grid Reference:	507740, 207100
Slice:	A
Site Area (Ha):	0.35
Search Buffer (m):	100

Site Details

Adeyfield CHurch, Leverstock Green Road, Hemel Hempstead, Herts, HP2 4HL

Landmark Information Group

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



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Ordnance Survey Plan

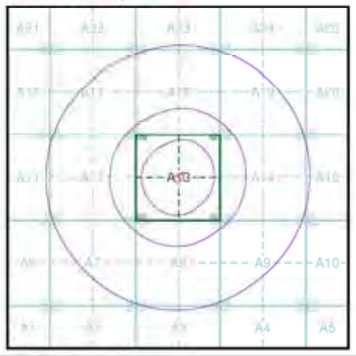
Published 1982

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.

Map Name(s) and Date(s)

Historical Map - Slice A



Order Details

Order Number:	77557434_1_1
Customer Ref:	UK16.2121
National Grid Reference:	507740, 207100
Slice:	A
Site Area (Ha):	0.35
Search Buffer (m):	1000

Site Details

Adeyfield CHurch, Leverstock Green Road, Hemel Hempstead, Herts, HP2 4HL

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

VectorMap Local

Published 2015

Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities),1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)

TL00NE
2015
Variable

Historical Map - Slice A

Order Details

Order Number:	77557434_1_1
Customer Ref:	UK16.2121
National Grid Reference:	507740, 207100
Slice:	A
Site Area (Ha):	0.35
Search Buffer (m):	1000

Site Details

Adeyfield CHurch, Leverstock Green Road, Hemel Hempstead, Herts, HP2 4HL

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APPENDIX G

Borehole Logs

Environmental Protection Strategies
Tel: 01954 710666
email: info@epstrategies.co.uk
www.epstrategies.co.uk

Borehole No
WS1
Sheet 1 of 1

Project Name	Project No.	Co-ords: -	Hole Type
Adeyfield Free Church	UK16.2121		WLS
Location: Leverstock Green Road, Hemel Hempstead, HP2 4HL		Level: -	Scale 1:50
Client: Adeyfield Free Church		Dates: 15/01/2016	Logged By G.W

Well	Water Strikes	Samples & In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
		0.10-0.40	ES					Made Ground: Light brownish beige sandy clay with frequent fine to coarse gravel and rare brick, ash and charcoal fragments (MG)
					0.70			
		0.70-1.00	D					Stiff light brownish orange slightly sandy gravelly CLAY. Gravel is fine to coarse angular flints
		1.00	CPT	N=16 (1,2/ 3,4,4,5)				
		2.00	CPT	N=29 (5,6/ 6,6,9,8)				
		2.70-3.00	D					
					3.00			End of Borehole at 3.00 m
		Type		Results				

1 2 3 4 5 6 7 8 9

Remarks: No groundwater encountered during drilling

AGS

Environmental Protection Strategies
Tel: 01954 710666
email: info@epstrategies.co.uk
www.epstrategies.co.uk

Borehole No
WS2
Sheet 1 of 1

Project Name	Project No.	Co-ords: -	Hole Type
Adeyfield Free Church	UK16.2121		WLS
Location: Leverstock Green Road, Hemel Hempstead, HP2 4HL		Level: -	Scale 1:50
Client: Adeyfield Free Church		Dates: 15/01/2016	Logged By G.W

Well	Water Strikes	Samples & In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.05			Grass Surface
		0.10-0.40	ES		0.40			TOPSOIL: Light brownish orange very sandy slightly gravelly clay. Gravel is rare medium angular flint
		1.00	CPT	N=14 (2,2/ 3,3,4,4)				Firm becoming stiff orange brown and beige slightly sandy gravelly CLAY. Gravel is medium coarse angular flint.
		1.20-1.40	D					Obstruction at 2.0m - Large flint cobble
		2.00	CPT	50 (23 for 100mm/ 21,29)	2.00			End of Borehole at 2.00 m
			Type	Results				

Remarks: No groundwater encountered during drilling

AGS

Environmental Protection Strategies
Tel: 01954 710666
email: info@epstrategies.co.uk
www.epstrategies.co.uk

Borehole No
WS3
Sheet 1 of 1

Project Name	Project No.	Co-ords: -	Hole Type
Adeyfield Free Church	UK16.2121		WLS
Location: Leverstock Green Road, Hemel Hempstead, HP2 4HL		Level: -	Scale 1:50
Client: Adeyfield Free Church		Dates: 15/01/2016	Logged By G.W

Well	Water Strikes	Samples & In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.05			Grass Surface
		0.10-0.40	ES		0.45			MADE GROUND: Brown sandy silty clay with very rare brick fragments
		0.45-1.00	D					Firm becoming stiff orange brown slightly sandy CLAY with medium to coarse angular flint gravel and cobbles
		1.00	CPT	N=14 (1,2/ 2,4,4,4)				
		1.50-1.70	D					
		2.00	CPT	N=26 (4,5/ 6,4,9,7)				
					3.00			End of Borehole at 3.00 m
			Type	Results				

1 2 3 4 5 6 7 8 9

Remarks: No groundwater encountered during drilling

AGS

Environmental Protection Strategies
Tel: 01954 710666
email: info@epstrategies.co.uk
www.epstrategies.co.uk

Borehole No
WS4
Sheet 1 of 1

Project Name	Project No.	Co-ords: -	Hole Type
Adeyfield Free Church	UK16.2121		WLS
Location: Leverstock Green Road, Hemel Hempstead, HP2 4HL		Level: -	Scale 1:50
Client: Adeyfield Free Church		Dates: 15/01/2016	Logged By G.W

Well	Water Strikes	Samples & In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.05			Grass Surface
		0.10-0.40	ES					TOPSOIL: Light brownish orange very sandy slightly gravelly clay. Gravel is rare medium angular flint
					0.70			Firm orange brownish beige slightly sandy CLAY
		1.00	CPT	N=11 (1,1/ 2,3,2,4)				
		2.00	CPT	N=14 (2,2/ 2,4,4,4)				
		2.00-2.20	D					
		2.90-3.00	D		3.00			End of Borehole at 3.00 m
			Type	Results				

Remarks: No groundwater encountered during drilling

AGS

Environmental Protection Strategies
Tel: 01954 710666
email: info@epstrategies.co.uk
www.epstrategies.co.uk

Borehole No
WS5
Sheet 1 of 1

Project Name	Project No.	Co-ords: -	Hole Type
Adeyfield Free Church	UK16.2121		WLS
Location: Leverstock Green Road, Hemel Hempstead, HP2 4HL		Level: -	Scale 1:50
Client: Adeyfield Free Church		Dates: 15/01/2016	Logged By G.W

Well	Water Strikes	Samples & In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.05			Grass Surface
		0.30-0.60	ES					TOPSOIL: Brown silty sand with rare medium flint gravel
					0.75			Firm becoming stiff slightly sandy CLAY with coarse angular flint gravel
		1.00 1.00-1.30	CPT D	N=10 (2,2/ 2,2,3,3)				
		2.00	CPT	N=22 (1,2/ 4,5,6,7)				
					3.00			End of Borehole at 3.00 m

1 2 3 4 5 6 7 8 9

Type | Results

Remarks: No groundwater encountered during drilling

AGS

Environmental Protection Strategies
Tel: 01954 710666
email: info@epstrategies.co.uk
www.epstrategies.co.uk

Borehole No
WS6
Sheet 1 of 1

Project Name	Project No.	Co-ords: -	Hole Type
Adeyfield Free Church	UK16.2121		WLS
Location: Leverstock Green Road, Hemel Hempstead, HP2 4HL		Level: -	Scale 1:50
Client: Adeyfield Free Church		Dates: 15/01/2016	Logged By G.W

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20-0.40	ES		0.25			MADE GROUND: Black, brown and beige sandy gravel
		1.00	CPT	N=15 (1,2/ 3,4,4,4)				Firm orange brown slightly sandy CLAY with coarse angular flint gravel
		2.00	CPT	N=15 (2,3/ 4,4,3,4)	2.35			White structureless very silty CHALK matrix with fine medium gravel sized chalk fragments
		2.50-3.00	D		3.00			End of Borehole at 3.00 m
			Type	Results				

Remarks: No groundwater encountered during drilling

AGS

APPENDIX H

Laboratory Results – Environmental

Client Name: EPS Ltd
Reference: UK16.2121
Location: Adeyfield Church
Contact: Greg Wain
JE Job No.: 16/3589

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7-8	9-10	11	12	13	14		LOD/LOR	Units	Method No.
Sample ID	WS1	WS2	WS4	WS5	WS6	WS1	WS2	WS3	WS5				
Depth	0.1-0.4	0.1-0.4	0.1-0.4	0.3-0.6	0.2-0.4	0.7-1.0	1.2-1.4	1.5-1.7	1.0-1.3				
COC No / misc													
Containers	V J	V J	V J	V J	V J	T	T	T	T				
Sample Date	15/01/2016	15/01/2016	15/01/2016	15/01/2016	15/01/2016	15/01/2016	15/01/2016	15/01/2016	15/01/2016				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	19/01/2016	19/01/2016	19/01/2016	19/01/2016	19/01/2016	19/01/2016	19/01/2016	19/01/2016	19/01/2016				
Arsenic #M	11.9	11.9	11.8	11.3	12.2	-	-	-	-		<0.5	mg/kg	TM30/PM15
Cadmium #M	0.3	0.1	<0.1	0.1	0.1	-	-	-	-		<0.1	mg/kg	TM30/PM15
Chromium #M	58.8	64.2	68.0	68.5	61.2	-	-	-	-		<0.5	mg/kg	TM30/PM15
Copper #M	18	12	14	13	14	-	-	-	-		<1	mg/kg	TM30/PM15
Lead #M	126	52	46	45	55	-	-	-	-		<5	mg/kg	TM30/PM15
Mercury #M	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-		<0.1	mg/kg	TM30/PM15
Nickel #M	20.0	15.8	18.1	17.8	19.4	-	-	-	-		<0.7	mg/kg	TM30/PM15
Selenium #M	2	2	2	2	2	-	-	-	-		<1	mg/kg	TM30/PM15
Sulphur	-	-	-	-	-	0.01	<0.01	<0.01	<0.01		<0.01	%	TM30/PM15
Total Sulphate #M	476	299	312	245	765	163	65	53	91		<50	mg/kg	TM50/PM29
Zinc #M	110	84	51	58	58	-	-	-	-		<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #M	<0.04	<0.04	<0.04	<0.04	<0.04	-	-	-	-		<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	0.06	-	-	-	-		<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	<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	-	-	-	-		<0.04	mg/kg	TM4/PM8
Phenanthrene #M	0.04	0.08	<0.03	0.04	0.11	-	-	-	-		<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	<0.04	0.06	-	-	-	-		<0.04	mg/kg	TM4/PM8
Fluoranthene #M	0.09	0.28	<0.03	0.11	0.39	-	-	-	-		<0.03	mg/kg	TM4/PM8
Pyrene #	0.07	0.22	<0.03	0.09	0.33	-	-	-	-		<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.07	0.13	<0.06	0.09	0.23	-	-	-	-		<0.06	mg/kg	TM4/PM8
Chrysene #M	0.05	0.13	<0.02	0.05	0.23	-	-	-	-		<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	<0.07	0.22	<0.07	0.10	0.41	-	-	-	-		<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.05	0.15	<0.04	0.06	0.28	-	-	-	-		<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	<0.04	0.10	<0.04	<0.04	0.18	-	-	-	-		<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	-	-	-	-		<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	0.08	<0.04	<0.04	0.16	-	-	-	-		<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6	1.4	<0.6	<0.6	2.4	-	-	-	-		<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05	0.16	<0.05	0.07	0.30	-	-	-	-		<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02	0.06	<0.02	0.03	0.11	-	-	-	-		<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	105	94	100	100	105	-	-	-	-		<0	%	TM4/PM8
Total Phenols HPLC	<0.15	<0.15	<0.15	<0.15	<0.15	-	-	-	-		<0.15	mg/kg	TM26/PM21
Natural Moisture Content	21.3	16.6	18.3	17.6	15.3	-	-	-	-		<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	-	-	-	-		<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #M	0.0143	0.0017	0.0028	0.0076	0.1837	0.0104	0.0076	0.0116	0.0087		<0.0015	g/l	TM38/PM20
Chromium III	58.8	64.2	68.0	68.5	61.2	-	-	-	-		<0.5	mg/kg	NONE/NONE
Total Cyanide #M	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-		<0.5	mg/kg	TM89/PM45
Organic Matter	3.3	1.7	1.5	1.4	1.9	-	-	-	-		<0.2	%	TM21/PM24

Please see attached notes for all abbreviations and acronyms

Client Name: EPS Ltd
Reference: UK16.2121
Location: Adeyfield Church
Contact: Greg Wain
JE Job No.: 16/3589

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7-8	9-10	11	12	13	14		LOD/LOR	Units	Method No.
Sample ID	WS1	WS2	WS4	WS5	WS6	WS1	WS2	WS3	WS5				
Depth	0.1-0.4	0.1-0.4	0.1-0.4	0.3-0.6	0.2-0.4	0.7-1.0	1.2-1.4	1.5-1.7	1.0-1.3				
COC No / misc													
Containers	V J	V J	V J	V J	V J	T	T	T	T				
Sample Date	15/01/2016	15/01/2016	15/01/2016	15/01/2016	15/01/2016	15/01/2016	15/01/2016	15/01/2016	15/01/2016				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	19/01/2016	19/01/2016	19/01/2016	19/01/2016	19/01/2016	19/01/2016	19/01/2016	19/01/2016	19/01/2016				
pH #M	6.55	6.16	6.82	6.84	7.19	7.22	7.36	7.50	7.27		<0.01	pH units	TM73/PM11
Sample Type	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay			None	PM13/PM0
Sample Colour	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Medium Brown	Medium Brown	Medium Brown	Medium Brown			None	PM13/PM0
Other Items	stones and brick fragments	stones	stones and clay pottery	stones	stones	stopnes	stones	stones	stones			None	PM13/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: EPS Ltd
Reference: UK16.2121
Location: Adeyfield Church
Contact: Greg Wain

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.

Any questionable sample will automatically be assumed to have breached the Waste Limit and further testing may be required.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
16/3589	1	WS1	0.1-0.4	2	19/01/2016	**Mass of Dry Sample**	47.5 (g)
					19/01/2016	**General Description (Bulk Analysis)**	soil-stones
					19/01/2016	**Asbestos Containing Material**	None
					19/01/2016	**Asbestos Containing Material (2)**	None
					19/01/2016	**Asbestos Screen**	NAD
					19/01/2016	**Asbestos Screen (2)**	NAD
					19/01/2016	**Asbestos Level**	NAD
					19/01/2016	**Waste Limit**	<0.1%
16/3589	1	WS2	0.1-0.4	4	19/01/2016	**Mass of Dry Sample**	44.8 (g)
					19/01/2016	**General Description (Bulk Analysis)**	soil-stones
					19/01/2016	**Asbestos Containing Material**	None
					19/01/2016	**Asbestos Containing Material (2)**	None
					19/01/2016	**Asbestos Screen**	NAD
					19/01/2016	**Asbestos Screen (2)**	NAD
					19/01/2016	**Asbestos Level**	NAD
					19/01/2016	**Waste Limit**	<0.1%
16/3589	1	WS4	0.1-0.4	6	19/01/2016	**Mass of Dry Sample**	44.6 (g)
					19/01/2016	**General Description (Bulk Analysis)**	soil-stones
					19/01/2016	**Asbestos Containing Material**	None
					19/01/2016	**Asbestos Containing Material (2)**	None
					19/01/2016	**Asbestos Screen**	NAD
					19/01/2016	**Asbestos Screen (2)**	NAD
					19/01/2016	**Asbestos Level**	NAD
					19/01/2016	**Waste Limit**	<0.1%
16/3589	1	WS5	0.3-0.6	8	19/01/2016	**Mass of Dry Sample**	42.3 (g)
					19/01/2016	**General Description (Bulk Analysis)**	soil/stones
					19/01/2016	**Asbestos Containing Material**	None
					19/01/2016	**Asbestos Containing Material (2)**	None
					19/01/2016	**Asbestos Screen**	NAD
					19/01/2016	**Asbestos Screen (2)**	NAD
					19/01/2016	**Asbestos Level**	NAD
					19/01/2016	**Waste Limit**	<0.1%
16/3589	1	WS6	0.2-0.4	10	19/01/2016	**Mass of Dry Sample**	48.6 (g)
					19/01/2016	**General Description (Bulk Analysis)**	soil/stones
					19/01/2016	**Asbestos Containing Material**	None

Client Name: EPS Ltd
Reference: UK16.2121
Location: Adeyfield Church
Contact: Greg Wain

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
16/3589	1	WS6	0.2-0.4	10	19/01/2016	**Asbestos Containing Material (2)**	None
					19/01/2016	**Asbestos Screen**	NAD
					19/01/2016	**Asbestos Screen (2)**	NAD
					19/01/2016	**Asbestos Level**	NAD
					19/01/2016	**Waste Limit**	<0.1%

Client Name: EPS Ltd
Reference: UK16.2121
Location: Adeyfield Church
Contact: Greg Wain

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 16/3589						

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.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 16/3589

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 HCl (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
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

JE Job No: 16/3589

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	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.			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
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	
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
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	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	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

JE Job No: 16/3589

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	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
TM50	Acid soluble 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
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.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes
NONE	No Method Code	NONE	No Method Code			AR	Yes

APPENDIX I

Laboratory Results - Geotechnical

TEST REPORT.

ISSUED BY : **SOIL PROPERTY TESTING LTD.**

DATE OF ISSUE : 08/02/16 **PAGE 1 of 8 Pages**

Contract UK16.2121 - Adeyfield Church

Serial No. S29658

UKAS TESTING 0998

CLIENT:

Environmental Protection
Strategies Ltd
7B Caxton House
Broad Street
CAMBOURNE
CAMBRIDGE
CB23 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

SAMPLES SUBMITTED BY:

Environmental Protection

APPROVED SIGNATORIES:

☑ **J.C.GARNER B.Eng (Hons.) FGS**
Technical Director

☐ **S.P.TOWNEND FGS**
Quality Manager

☐ **W.JOHNSTONE**
Materials Lab Manager

SAMPLES LABELLED:

Adeyfield Church

DATE RECEIVED: 22/01/16

SAMPLES TESTED BETWEEN 22/01/16 **and** 08/02/16

REMARKS: For the attention of Mr G Wain
Your reference 13407

NOTES:

1. All remaining samples or remnants from this contract will be disposed of after 21 days from today, unless we are notified to the contrary.
2. (a) UKAS - United Kingdom Accreditation Service.
   (b) Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.
3. Tests marked "NOT UKAS ACCREDITED" in this test report are not included in the UKAS Accreditation Schedule for this testing laboratory.
4. This test report may not be reproduced other than in full except with the prior written approval of the issuing laboratory.

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

DATE OF ISSUE : As page 1 **PAGE** 2 of 8

Contract UK16.2121 - Adeyfield Church

Serial No. S29658

SCHEDULE OF LABORATORY TESTS

Bh./ Tp No.	Sample Ref	Depth (from)	1:Moisture Content Determination	4:Liquid/Plastic limit 1 point	5:Wet Sieve Preparation for Limit	Remarks
WS1	D0.7	0.70	*	*	*	
WS2	D1.2	1.20	*	*	*	
WS4	D2.9	2.90	*	*		
WS5	D1.0	1.00	*	*	*	
-	-	-	4	4	3	<— Total Number of Tests ——

Scheduled by: Environmental Protection

Target Date: 05/02/16

SPTSCHED

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

DATE OF ISSUE : As page 1 **PAGE** 3 of 8

Contract UK16.2121 - Adeyfield Church

Serial No. S29658

UKAS TESTING 0998

SUMMARY OF MOISTURE CONTENT, LIQUID LIMIT, PLASTIC LIMIT, PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole/ Pit No.	Depth m.	Sample	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Liquidity Index (%)	SAMPLE PREPARATION				Description	CLASS
								Method S/N	Ret'd 0.425mm (%)	Corr'd M/C <0.425mm	Curing Time (hrs.)		
WS1	0.70 -1.00	D0.7	28	67	26	41	0.15*	S	12(M)	32	45	Stiff light orangey brown slightly sandy slightly gravelly CLAY. Gravel is white, dark grey and brown fine and medium angular to subrounded flint	CH
WS2	1.20 -1.40	D1.2	27	78	25	53	0.25*	S	29(M)	38	28	Stiff light orangey brown slightly sandy slightly gravelly CLAY with rare black speckling and decayed roots. Gravel is white, dark grey and brown fine and medium angular to subrounded flint	CV
WS4	2.90 -3.00	D2.9	20	35	18	17	0.18*	N	3(A)	21	45	Stiff brownish yellow slightly gravelly slightly sandy silty CLAY with rare black speckling. Gravel is white, dark grey and brown fine and medium angular to subrounded flint	CL/ CI
WS5	1.00 -1.30	D1.0	20	56	23	33	0.18*	S	32(M)	29	26	Stiff light orangey brown slightly sandy slightly gravelly CLAY. Gravel is white, dark grey and brown fine to coarse angular to subrounded flint	CH

METHOD OF PREPARATION : BS 1377:PART 1:1990:7.4 & PART 2:1990:4.2 S = Wet Sieved Specimen N = prepared from Natural

METHOD OF TEST : BS 1377:PART 2:1990:3.2, 4.4, 5.3, 5.4

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter. A = Assumed, M = Measured

COMMENTS :

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.

TEST REPORT.

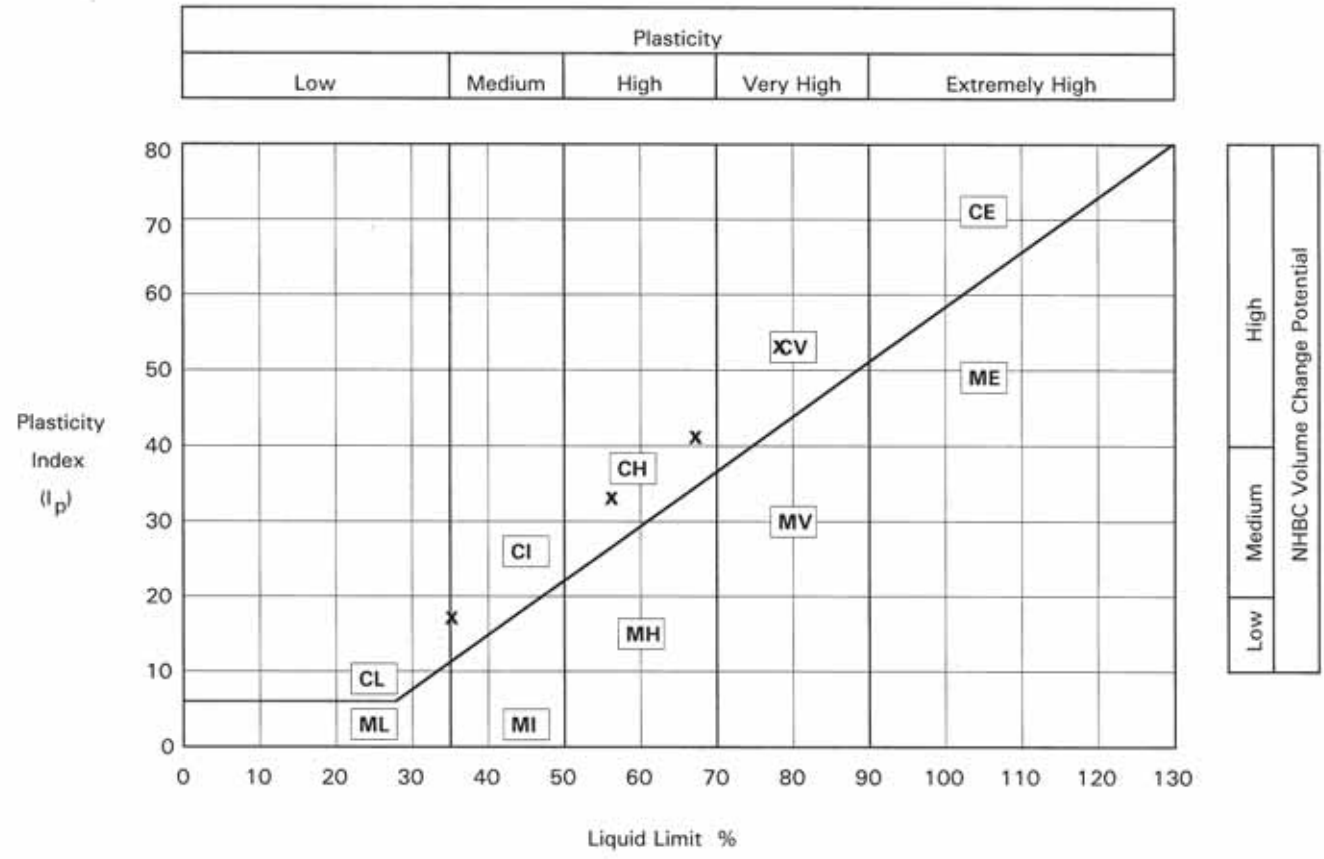
ISSUED BY : SOIL PROPERTY TESTING LTD.

DATE OF ISSUE : As page 1 **PAGE** 4 of 8

Contract UK16.2121 - Adeyfield Church

Serial No. S29658

PLOT OF PLASTICITY INDEX AGAINST LIQUID LIMIT USING CASAGRANDE CLASSIFICATION CHART



METHOD OF PREPARATION: BS 1377:PART 1:1990:7.4 & PART 2:1990:4.2

METHOD OF TEST : BS 1377:PART 2:1990:3.2, 4.4, 5.3, 5.4

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

COMMENTS : VOLUME CHANGE POTENTIAL: NHBC Standards Chapter 4.2 Unmodified Plasticity Index PLASTICITY CHART BS5930:1999:Figure 18

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

DATE OF ISSUE : As page 1 **PAGE** 5 of 8

Contract UK16.2121 - Adeyfield Church

Serial No. S29658

UKAS TESTING 0998

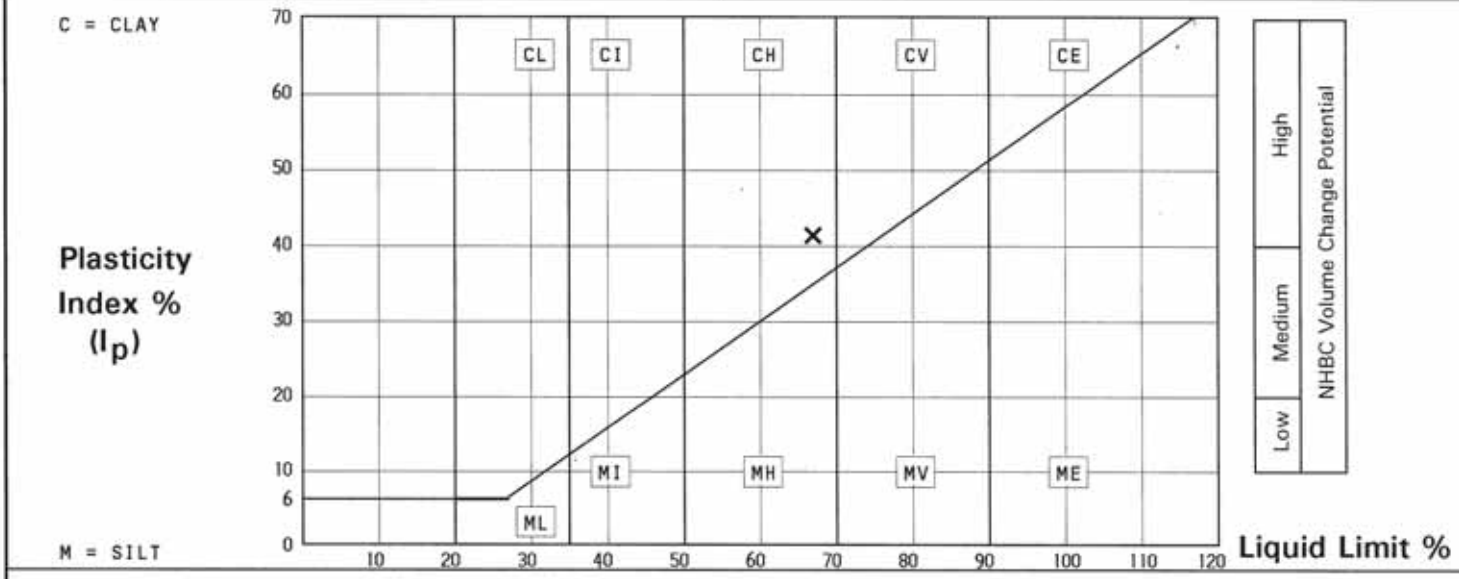
DETERMINATION OF MOISTURE CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole/ Pit No.	Depth m.	Sample	Moisture Content %	Description	Remarks
WS1	0.70 -1.00	D0.7	28	Stiff light orangey brown slightly sandy slightly gravelly CLAY. Gravel is white, dark grey and brown fine and medium angular to subrounded flint	1 piece of coarse flint excluded from test as unrepresentative. NHBC Modified I'p = 36% (Medium volume change potential)

PREPARATION

Method of Preparation	Sieved Specimen
Sample retained 0.425 sieve (Measured)	12 %
Corrected moisture content for material passing 0.425mm	32 %
Curing Time	45 Hours

Liquid Limit	67 %
Plastic Limit	26 %
Plasticity Index	41 %
Liquidity Index	0.15
Clay Content	Not analysed. %
Derived Activity (PI/CC)	Not analysed.



METHOD OF PREPARATION: BS 1377:PART 1:1990:7.4 & PART 2:1990:4.2

METHOD OF TEST : BS 1377:PART 2:1990:3.2, 4.4, 5.3, 5.4

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

COMMENTS : PLASTICITY CHART BS5930:1999:Figure 18
VOLUME CHANGE POTENTIAL: NHBC Standards Chapter 4.2 Unmodified Plasticity Index
NOTE: Modified Plasticity Index I'p = Ip x (% less than 425 microns/100)
9% retained on 2mm sieve.
Corrected moisture content and calculated liquidity index assume material greater than 0.425mm non porous. See BS1377:Part2:1990 Clause 3 Note 1.

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

DATE OF ISSUE : As page 1 **PAGE** 6 of 8

Contract UK16.2121 - Adeyfield Church

Serial No. S29658

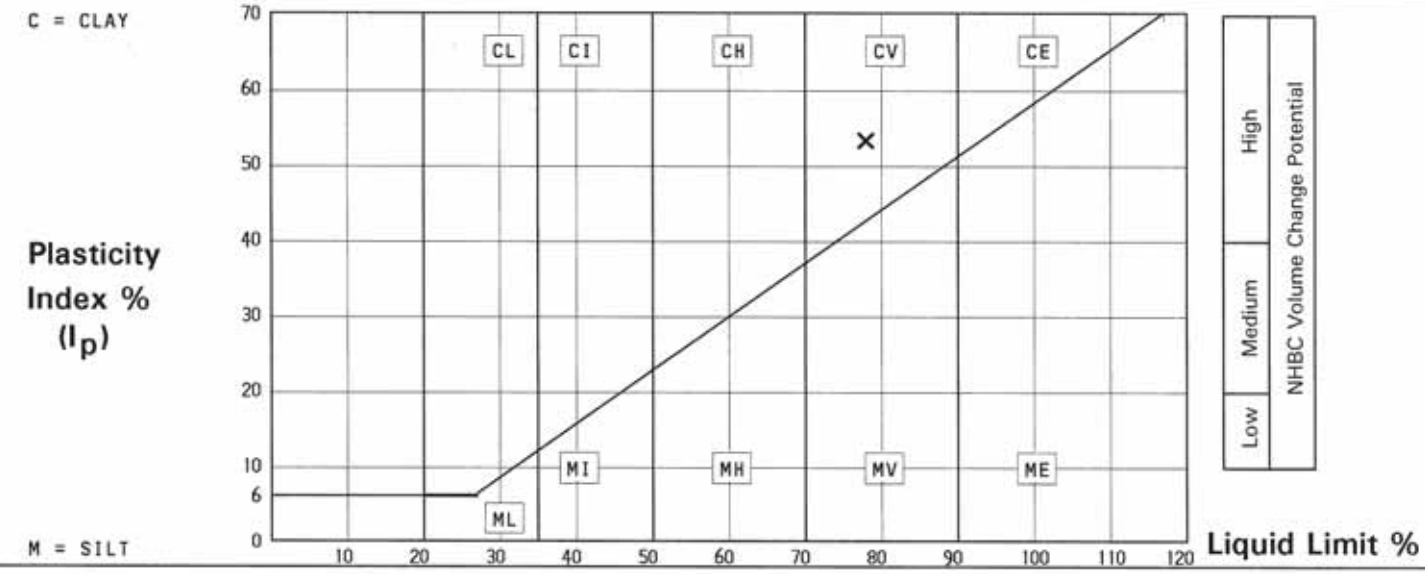
UKAS TESTING 0998

DETERMINATION OF MOISTURE CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole/ Pit No.	Depth m.	Sample	Moisture Content %	Description	Remarks
WS2	1.20 -1.40	D1.2	27	Stiff light orangey brown slightly sandy slightly gravelly CLAY with rare black speckling and decayed roots. Gravel is white, dark grey and brown fine and medium angular to subrounded flint	NHBC Modified I'p = 38% (Medium volume change potential)

PREPARATION

Method of Preparation	Sieved Specimen	Liquid Limit	78 %
Sample retained 0.425 sieve	(Measured) 29 %	Plastic Limit	25 %
Corrected moisture content for material passing 0.425mm	38 %	Plasticity Index	53 %
Curing Time	28 Hours	Liquidity Index	0.25
		Clay Content	Not analysed. %
		Derived Activity (PI/CC)	Not analysed.



METHOD OF PREPARATION: BS 1377:PART 1:1990:7.4 & PART 2:1990:4.2

METHOD OF TEST : BS 1377:PART 2:1990:3.2, 4.4, 5.3, 5.4

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

COMMENTS : PLASTICITY CHART BS5930:1999:Figure 18
VOLUME CHANGE POTENTIAL: NHBC Standards Chapter 4.2 Unmodified Plasticity Index
NOTE: Modified Plasticity Index I'p = Ip x (% less than 425 microns/100)
17% retained on 2mm sieve.
Corrected moisture content and calculated liquidity index assume material greater than 0.425mm non porous. See BS1377:Part2:1990 Clause 3 Note 1.

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

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Contract: UK16.2121 - Adeyfield Church

Serial No.: S29658

UKAS TESTING 0998

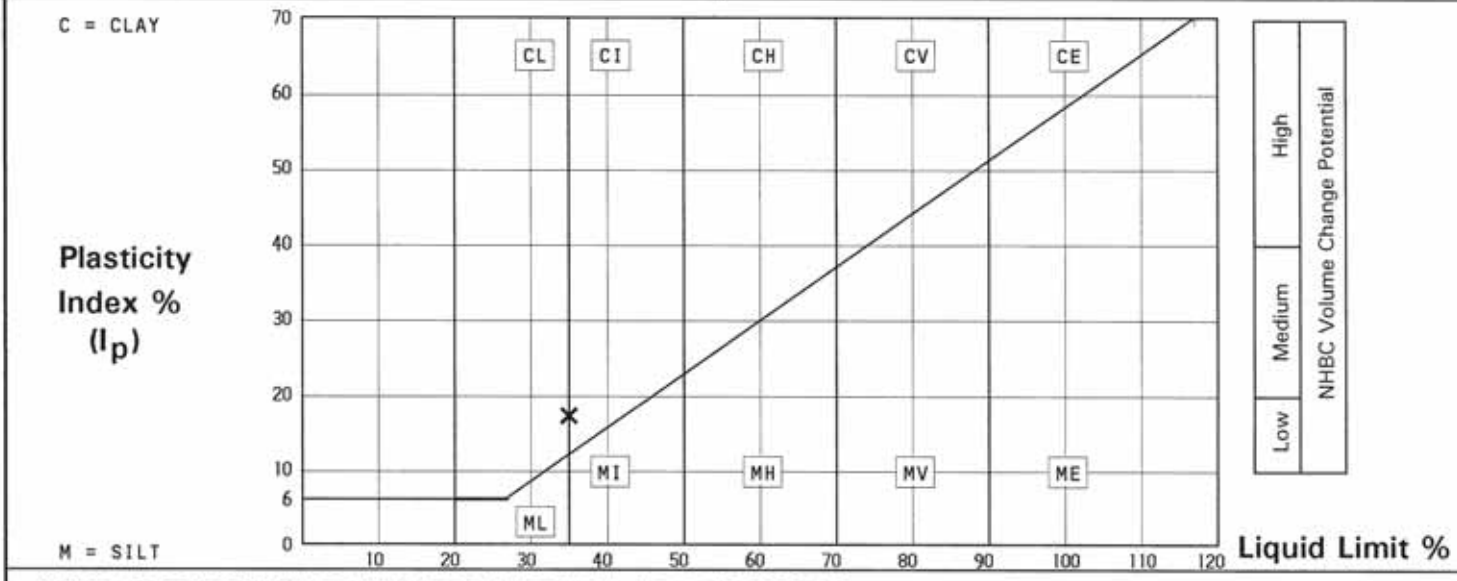
DETERMINATION OF MOISTURE CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole/ Pit No.	Depth m.	Sample	Moisture Content %	Description	Remarks
WS4	2.90 -3.00	D2.9	20	Stiff brownish yellow slightly gravelly slightly sandy silty CLAY with rare black speckling. Gravel is white, dark grey and brown fine and medium angular to subrounded flint	

PREPARATION

Method of Preparation	Specimen from Natural Soil
Sample retained 0.425 sieve (Assumed)	3 %
Corrected moisture content for material passing 0.425mm	21 %
Curing Time	45 Hours

Liquid Limit	35 %
Plastic Limit	18 %
Plasticity Index	17 %
Liquidity Index	0.18
Clay Content	Not analysed. %
Derived Activity (PI/CC)	Not analysed.



METHOD OF PREPARATION: BS 1377:PART 1:1990:7.4 & PART 2:1990:4.2

METHOD OF TEST : BS 1377:PART 2:1990:3.2, 4.4, 5.3, 5.4

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

COMMENTS : PLASTICITY CHART BS5930:1999:Figure 18
VOLUME CHANGE POTENTIAL: NHBC Standards Chapter 4.2 Unmodified Plasticity Index
NOTE: Modified Plasticity Index I'p = Ip x (% less than 425 microns/100)
Approximately 3% gravel by dry mass picked out by hand and excluded from limits tests.
Corrected moisture content and calculated liquidity index assume material greater than 0.425mm non porous. See BS1377:Part2:1990 Clause 3 Note 1.

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

DATE OF ISSUE : As page 1 **PAGE** 8 of 8

Contract UK16.2121 - Adeyfield Church

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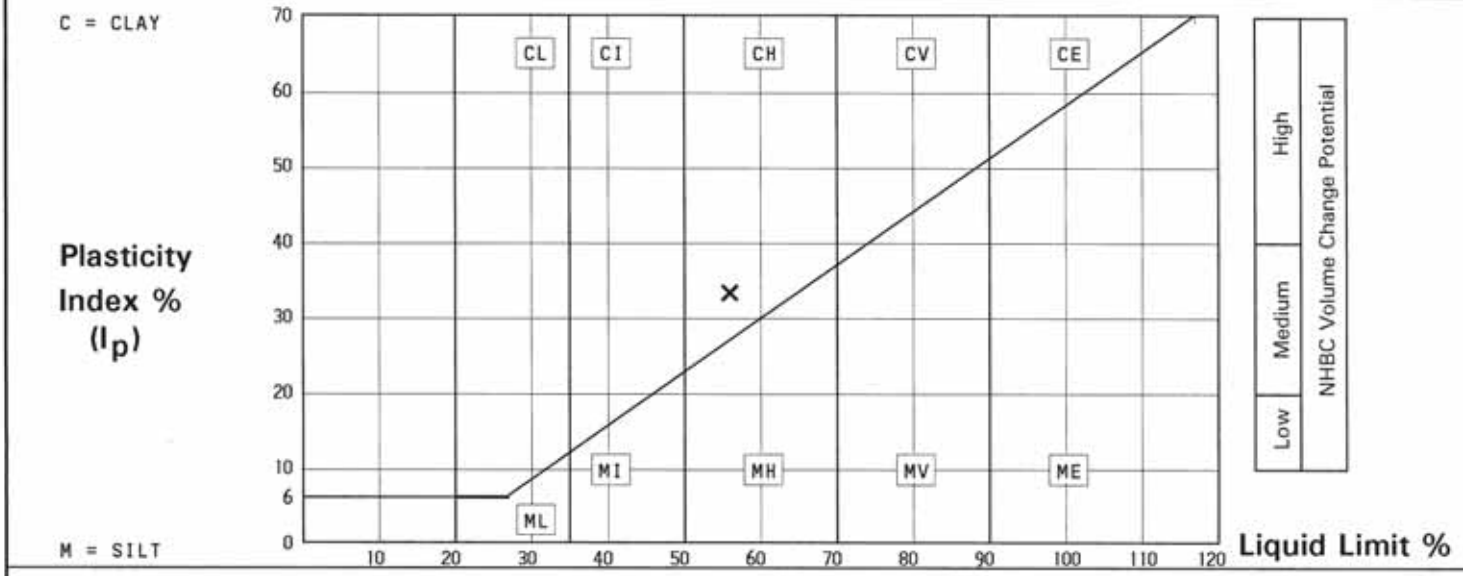
DETERMINATION OF MOISTURE CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole/ Pit No.	Depth m.	Sample	Moisture Content %	Description	Remarks
WS5	1.00 -1.30	D1.0	20	Stiff light orangey brown slightly sandy slightly gravelly CLAY. Gravel is white, dark grey and brown fine to coarse angular to subrounded flint	NHBC Modified I'p = 22% (Medium volume change potential)

PREPARATION

Method of Preparation	Sieved Specimen	Liquid Limit	56 %
Sample retained 0.425 sieve	(Measured) 32 %	Plastic Limit	23 %
Corrected moisture content for material passing 0.425mm	29 %	Plasticity Index	33 %
Curing Time	26 Hours	Liquidity Index	0.18
		Clay Content	Not analysed. %
		Derived Activity (PI/CC)	Not analysed.



METHOD OF PREPARATION: BS 1377:PART 1:1990:7.4 & PART 2:1990:4.2

METHOD OF TEST : BS 1377:PART 2:1990:3.2, 4.4, 5.3, 5.4

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

COMMENTS : PLASTICITY CHART BS5930:1999:Figure 18
VOLUME CHANGE POTENTIAL: NHBC Standards Chapter 4.2 Unmodified Plasticity Index
NOTE: Modified Plasticity Index I'p = Ip x (% less than 425 microns/100)
22% retained on 2mm sieve
Corrected moisture content and calculated liquidity index assume material greater than 0.425mm non porous. See BS1377:Part2:1990 Clause 3 Note 1.

APPENDIX J

Generic Screening Criteria

EPS Generic Quantitative Risk Assessment

Minimal Risk Generic Screening Criteria - Residential Land Use

Contaminant	Soil Targets			Groundwater Targets	
	Human Health	Controlled Waters		Controlled Waters	
		LGwRP	HGwRP	LGwRP	HGwRP
Unit	**mg/kg**			**ug/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
Selenium	250	n/c	n/c	10	10
Zinc	3700	n/c	n/c	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 HGwRP - High 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.

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.

EPS Generic Quantitative Risk Assessment

Low Risk Generic Screening Criteria - All Land Uses

Contaminant	Soil Targets					
	Residential		Allotments	Commercial	Public Open 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.