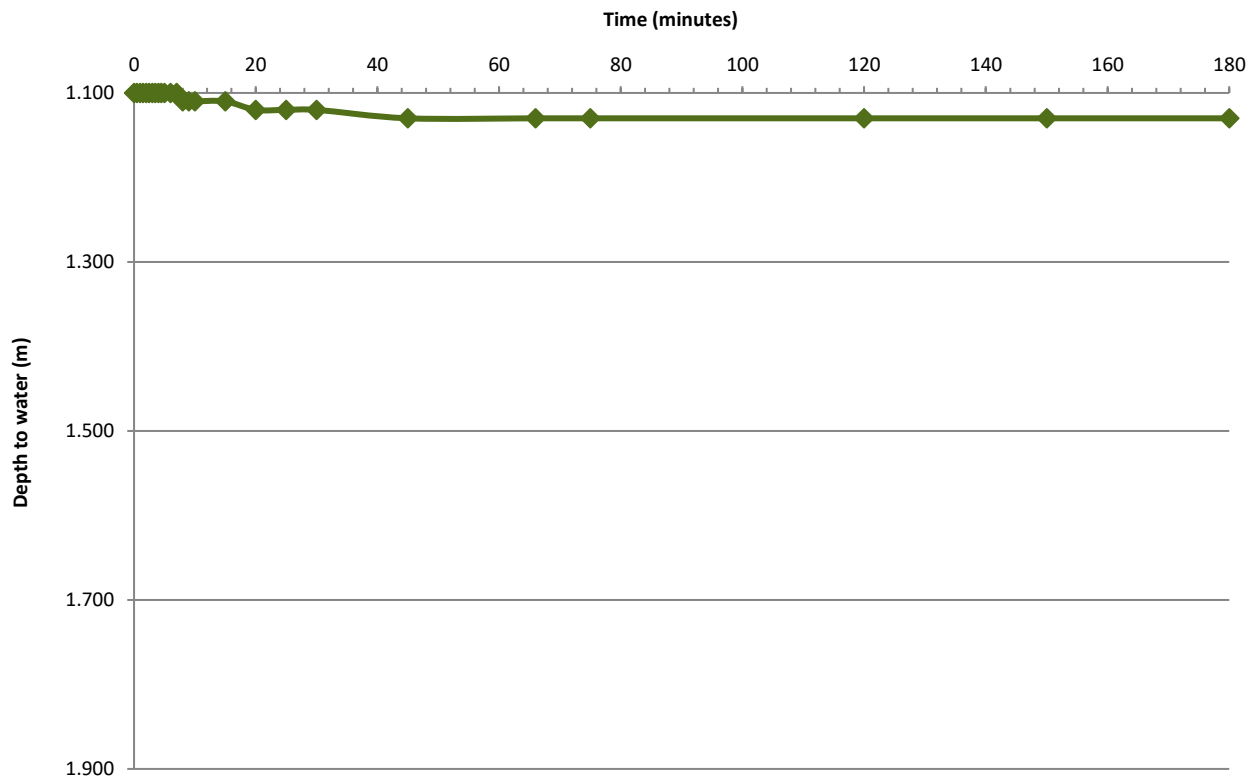


Appendix E In situ Permeability Testing Results

Soil infiltration test (following BRE Digest 365 2016)

Location	Cycle	Test date	Dimensions (m)
TP01	1	06/10/2022	0.65m x 2.00m

Depth at start of test (m)	Groundwater observations (at time of excavation)
1.1	No groundwater encountered.

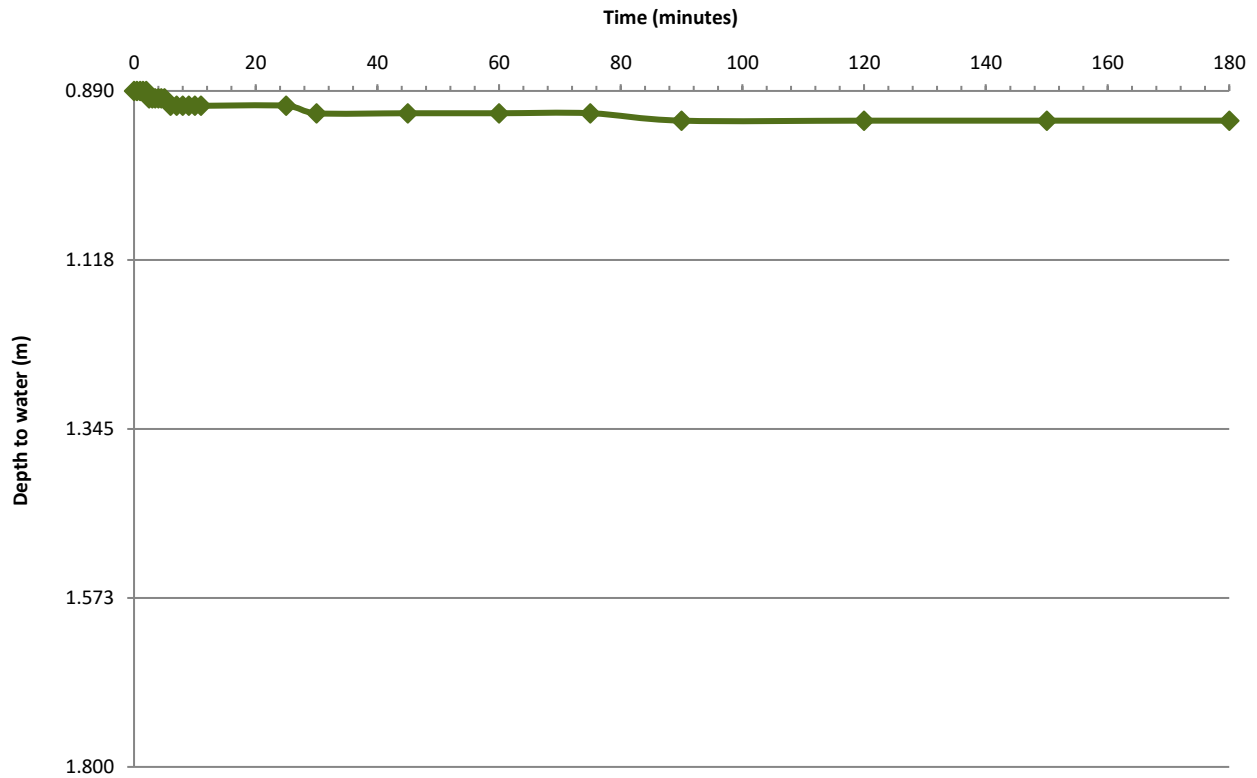


Insufficient infiltration over 180 minutes of monitoring therefore unable to calculate soil infiltration rate.

Soil infiltration test (following BRE Digest 365 2016)

Location	Cycle	Test date	Dimensions (m)
TP03	1	06/10/2022	0.60m x 0.45m

Depth at start of test (m)	Groundwater observations (at time of excavation)
0.89	No groundwater encountered.

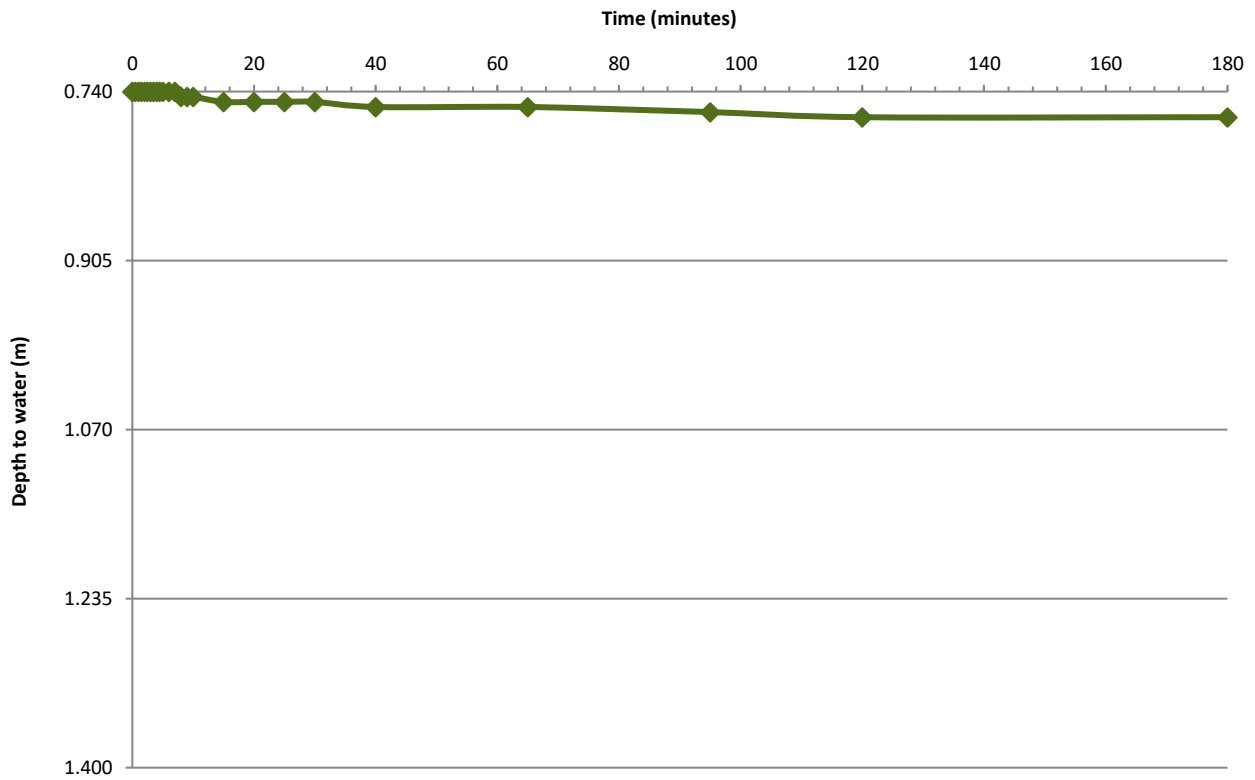


Insufficient infiltration over 180 minutes of monitoring therefore unable to calculate soil infiltration rate.

Soil infiltration test (following BRE Digest 365 2016)

Location	Cycle	Test date	Dimensions (m)
TP07	1	05/10/2022	1.00m x 0.30m

Depth at start of test (m)	Groundwater observations (at time of excavation)
0.74	No groundwater encountered.



Insufficient infiltration over 180 minutes of monitoring therefore unable to calculate soil infiltration rate.

Appendix F Geotechnical Laboratory Test Results



TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS
Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

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



4041

Client: Soiltechnics Limited
Client Address: Cedar Barn, White Lodge,
Walgrave, Northampton,
NN6 9PY
Contact: Admin
Site Address: Haul Road Herts HQ

Client Reference: STU5824
Job Number: 22-91214
Date Sampled: 06/10/2022
Date Received: 19/10/2022
Date Tested: 10/11/2022
Sampled By: Not Given

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

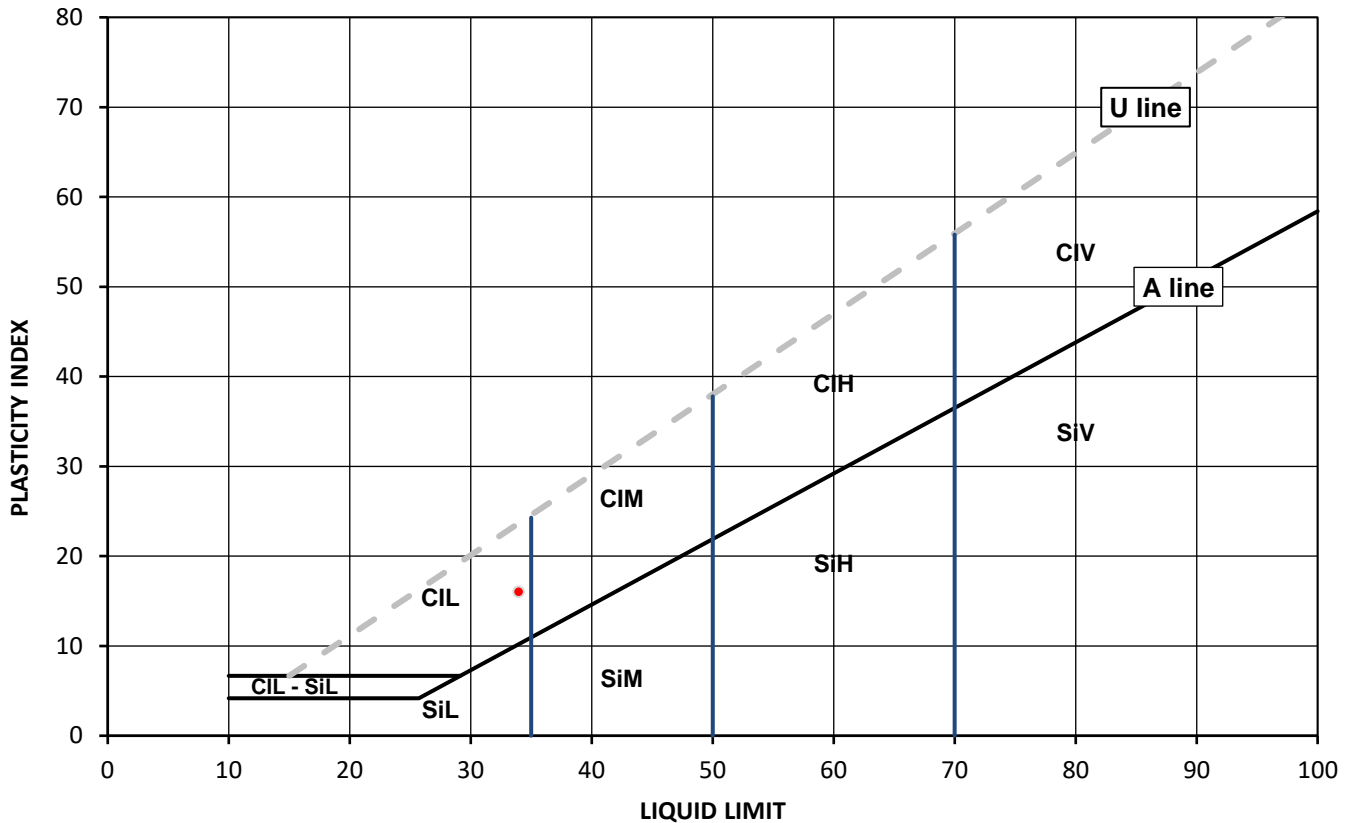
Test Results:

Laboratory Reference: 2467845
Hole No.: TP060.607
Sample Reference: 7
Sample Description: Brownish grey gravelly very sandy CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

Sample Preparation: Tested after washing to remove >425um

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
14	34	18	16	47



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

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

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

Remarks:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.



TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS
Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

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



4041

Client: Soiltechnics Limited
Client Address: Cedar Barn, White Lodge,
Walgrave, Northampton,
NN6 9PY
Contact: Admin
Site Address: Haul Road Herts HQ

Client Reference: STU5824
Job Number: 22-91214
Date Sampled: 06/10/2022
Date Received: 19/10/2022
Date Tested: 05/11/2022
Sampled By: Not Given

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

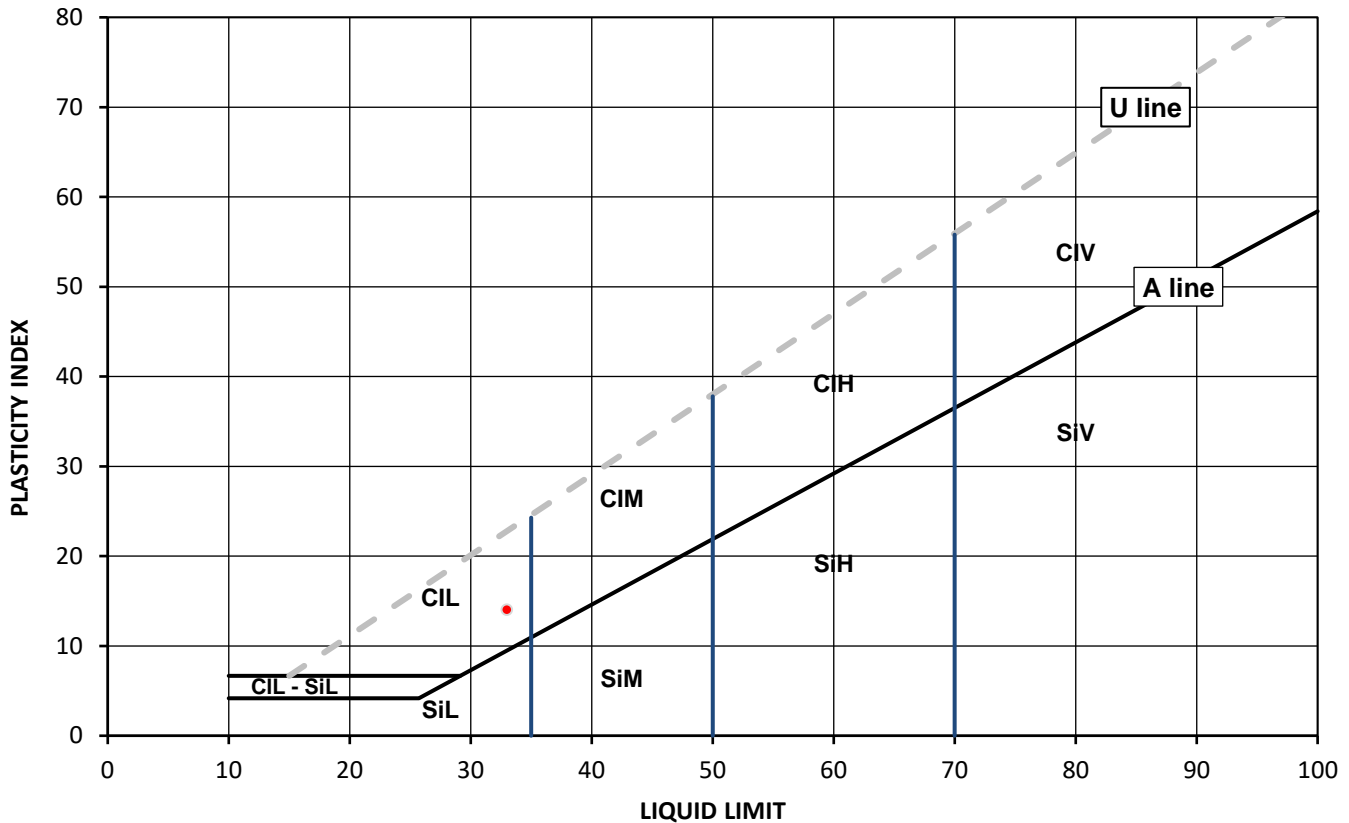
Test Results:

Laboratory Reference: 2467846
Hole No.: TP070.555
Sample Reference: 5
Sample Description: Brownish grey gravelly very sandy CLAY

Depth Top [m]: 0.55
Depth Base [m]: Not Given
Sample Type: B

Sample Preparation: Tested after washing to remove >425um

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
9.2	33	19	14	45



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

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

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

Remarks:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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4041

Client: Soiltechnics Limited
 Client Address: Cedar Barn, White Lodge,
 Walgrave, Northampton,
 NN6 9PY
 Contact: Admin
 Site Address: Haul Road Herts HQ

SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

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

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



Environmental Science

Client Reference: STU5824
 Job Number: 22-91214
 Date Sampled: 06/10/2022
 Date Received: 19/10/2022
 Date Tested: 05/11 - 10/11/2022
 Sampled By: Not Given

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

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Water Content BS 1377-2 [W] %	Water Content BS EN ISO 17892-1 [W] %	Atterberg				Density			Total Porosity# %	
		Reference	Depth Top m	Depth Base m	Type					% Passing 425um	WL	Wp	Ip	bulk Mg/m3	dry Mg/m3	PD Mg/m3		
2467845	TP060.607	7	0.60	Not Given	B	Brownish grey gravelly very sandy CLAY	Atterberg 1 Point	14		47	34	18	16					
2467846	TP070.555	5	0.55	Not Given	B	Brownish grey gravelly very sandy CLAY	Atterberg 1 Point	9.2		45	33	19	14					

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Katarzyna Koziel
 Reporting Specialist
 for and on behalf of i2 Analytical Ltd

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4041

Client: Soiltechnics Limited
 Client Address: Cedar Barn, White Lodge,
 Walgrave, Northampton,
 NN6 9PY
 Contact: Admin
 Site Address: Haul Road Herts HQ

SUMMARY REPORT

DETERMINATION OF WATER CONTENT

Tested in Accordance with: BS 1377-2: 1990: Clause 3.2

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



Environmental Science

Client Reference: STU5824
 Job Number: 22-91214
 Date Sampled: 06/10/2022
 Date Received: 19/10/2022
 Date Tested: 05/11/2022
 Sampled By: Not Given

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

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC %	Sample preparation / Oven temperature at the time of testing			
		Reference	Depth Top m	Depth Base m	Type							
2467845	TP060.607	7	0.60	Not Given	B	Brownish grey gravelly very sandy CLAY		14	Sample was quartered, oven dried at 108.7 °C			
2467846	TP070.555	5	0.55	Not Given	B	Brownish grey gravelly very sandy CLAY		9.2	Sample was quartered, oven dried at 108.7 °C			

Comments:

Signed:

Katarzyna Koziel
 Reporting Specialist
 for and on behalf of i2 Analytical Ltd

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4041

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

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



Environmental Science

Client: Soiltechnics Limited
Client Address: Cedar Barn, White Lodge,
Walgrave, Northampton,
NN6 9PY
Contact: Admin
Site Address: Haul Road Herts HQ

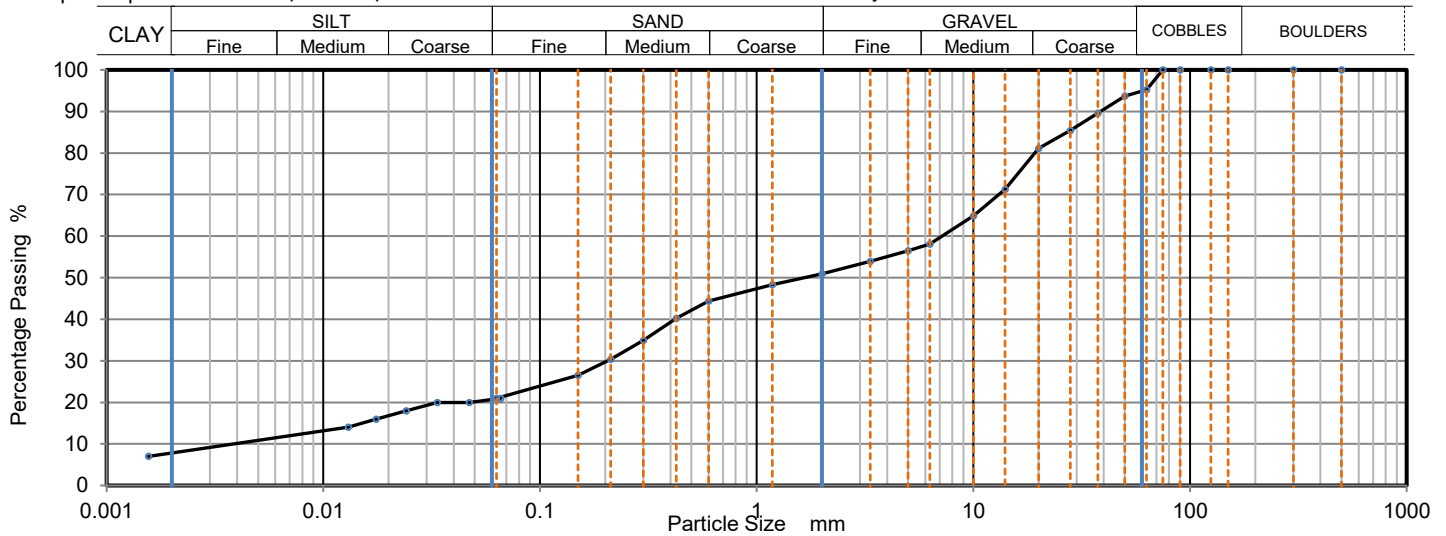
Client Reference: STU5824
Job Number: 22-91214
Date Sampled: 06/10/2022
Date Received: 19/10/2022
Date Tested: 08/11/2022
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 2467843
Hole No.: TP040.307
Sample Reference: 7
Sample Description: Brown clayey silty very sandy GRAVEL with cobbles
Sample Preparation: Sample was quartered, oven dried at 106.4 °C and broken down by hand.

Depth Top [m]: 0.30
Depth Base [m]: Not Given
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0657	21
300	100	0.0471	20
150	100	0.0336	20
125	100	0.0241	18
90	100	0.0175	16
75	100	0.0130	14
63	95	0.0016	7
50	94		
37.5	90		
28	85		
20	81		
14	71		
10	65		
6.3	58		
5	57		
3.35	54		
2	51	Particle density (assumed) 2.65 Mg/m3	
1.18	48		
0.6	44		
0.425	40		
0.3	35		
0.212	30		
0.15	27		
0.063	21		

Sample Proportions	% dry mass
Very coarse	5
Gravel	44
Sand	30
Silt	13
Clay	8

Grading Analysis		
D100	mm	75
D60	mm	7.16
D30	mm	0.204
D10	mm	0.00375
Uniformity Coefficient		1900
Curvature Coefficient		1.5

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

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF THE CALIFORNIA BEARING RATIO (CBR)

Tested in Accordance with: BS 1377-4: 1990: Clause 7

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



Environmental Science

4041

Client: Soiltechnics Limited
Client Address: Cedar Barn, White Lodge,
Walgrave, Northampton,
NN6 9PY
Contact: Admin
Site Address: Haul Road Herts HQ

Client Reference: STU5824
Job Number: 22-91214
Date Sampled: 06/10/2022
Date Received: 19/10/2022
Date Tested: 08/11/2022
Sampled By: Not Given

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

Test Results:

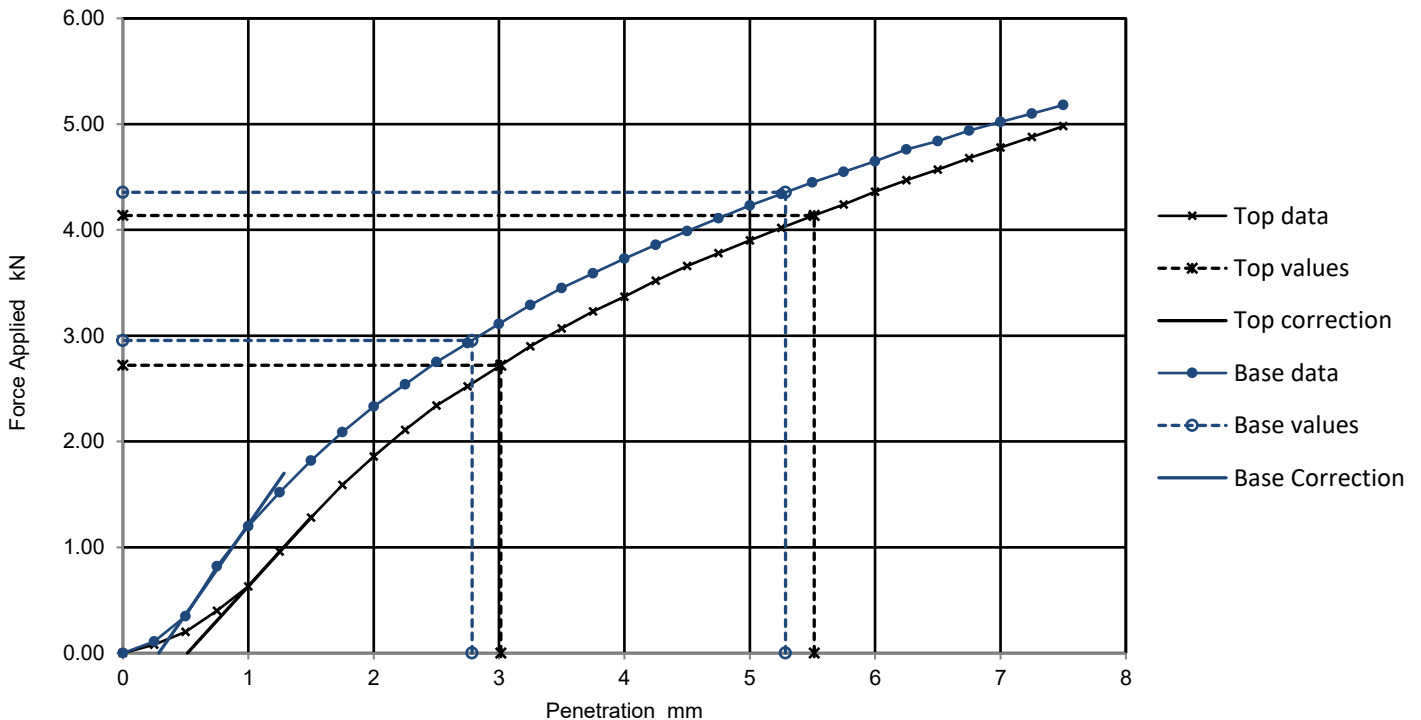
Laboratory Reference: 2467845
Hole No.: TP060.607
Sample Reference: 7
Sample Description: Brownish grey gravelly very sandy CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

Specimen Preparation:

Condition	Remoulded	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	21 %	Dry density after soaking	Mg/m ³
Initial Specimen details	Bulk density 2.09 Mg/m ³	Surcharge applied	8 kg
	Dry density 1.84 Mg/m ³		4.9 kPa
	Moisture content 14 %		

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	Yes	21.0	21.0	21.0	22.0	13
BASE	Yes	22.0	22.0	22.0		13

Remarks: Test/ Specimen specific remarks:

Signed: Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF THE CALIFORNIA BEARING RATIO (CBR)

Tested in Accordance with: BS 1377-4: 1990: Clause 7

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



Environmental Science

4041

Client: Soiltechnics Limited
Client Address: Cedar Barn, White Lodge,
Walgrave, Northampton,
NN6 9PY
Contact: Admin
Site Address: Haul Road Herts HQ

Client Reference: STU5824
Job Number: 22-91214
Date Sampled: 06/10/2022
Date Received: 19/10/2022
Date Tested: 08/11/2022
Sampled By: Not Given

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

Test Results:

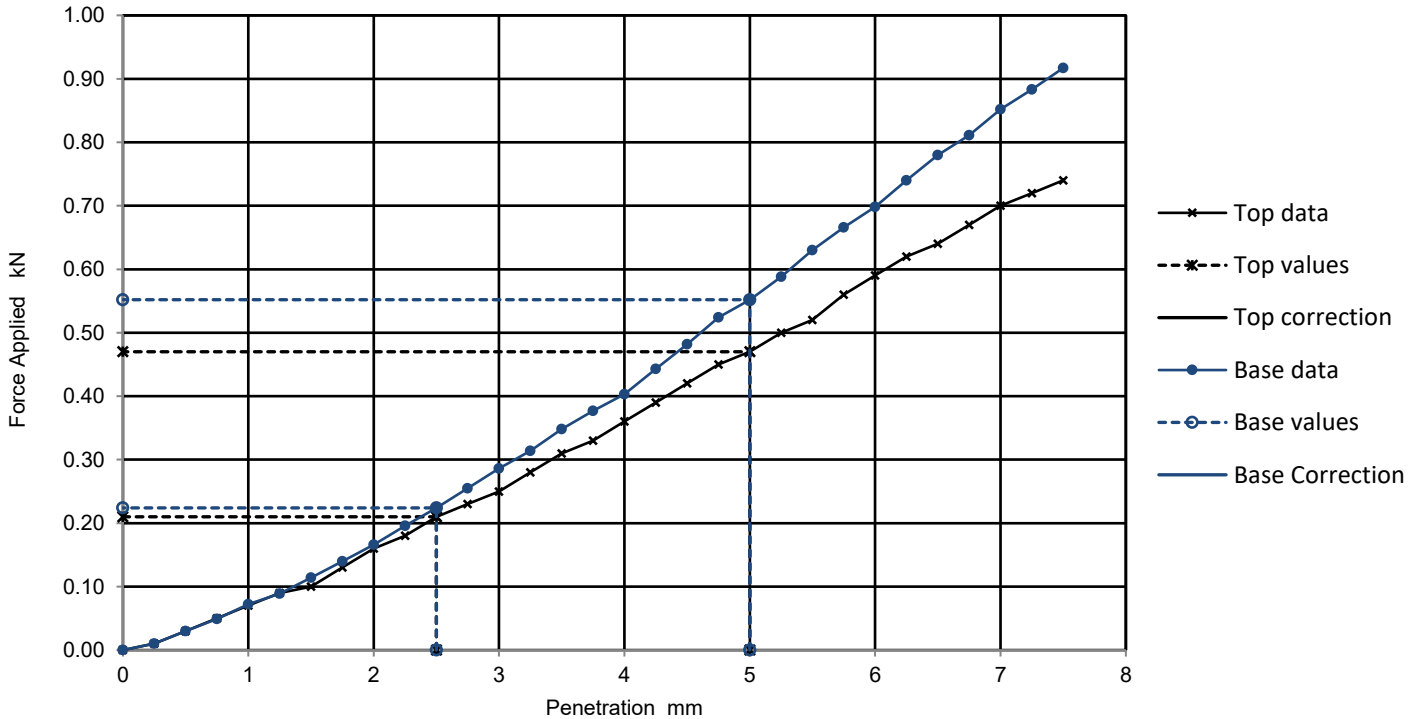
Laboratory Reference: 2467846
Hole No.: TP070.555
Sample Reference: 5
Sample Description: Brownish grey gravelly very sandy CLAY

Depth Top [m]: 0.55
Depth Base [m]: Not Given
Sample Type: B

Specimen Preparation:

Condition	Remoulded	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	24 %	Dry density after soaking	Mg/m ³
Initial Specimen details	Bulk density 2.20 Mg/m ³	Surcharge applied	8 kg
	Dry density 1.97 Mg/m ³		4.9 kPa
	Moisture content 12 %		

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	1.6	2.4	2.4	2.6	12
BASE	No	1.7	2.8	2.8		12

Remarks: Test/ Specimen specific remarks:

Signed: Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

Appendix G Geoenvironmental Laboratory Test Results



Lauren Wenham
Soiltechnics Ltd
White Lodge
Cedar Barn
Walgrave
NN6 9PY

Derwentside Environmental Testing Services Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 22-08636

Site Reference: Haul Road - Herts HQ

Project / Job Ref: STU5824

Order No: POR013806

Sample Receipt Date: 18/10/2022

Sample Scheduled Date: 18/10/2022

Report Issue Number: 1

Reporting Date: 24/10/2022

Authorised by:

Dave Ashworth
Technical Manager

Dates of laboratory activities for each tested analyte are available upon request.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

For Topsoil and WAC analysis the expanded uncertainty measurement should be considered while evaluating results against compliance values.



DETS Ltd
 Unit 1, Rose Lane Industrial Estate
 Rose Lane
 Lenham Heath
 Maidstone
 Kent ME17 2JN
 Tel : 01622 850410



Soil Analysis Certificate						
DETS Report No: 22-08636	Date Sampled	05/10/22	06/10/22	06/10/22	06/10/22	06/10/22
Soiltechnics Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Haul Road - Herts HQ	TP / BH No	CS010.001	CS020.001	TP010.055	TP020.603	TP031.004
Project / Job Ref: STU5824	Additional Refs	HR_CS_01	HR_CS_02	TP01	TP02	TP03
Order No: POR013806	Depth (m)	0.00	0.00	0.05	0.60	1.00
Reporting Date: 24/10/2022	DETS Sample No	616782	616783	616784	616785	616786

Determinand	Unit	RL	Accreditation	05/10/22	06/10/22	06/10/22	06/10/22	06/10/22
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
pH	pH Units	N/a	MCERTS	7.8	7.9	7.0	7.9	7.4
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Free Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	191	42	23	15	15
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.19	0.04	0.02	0.01	0.01
Sulphide	mg/kg	< 5	NONE	< 5	< 5	< 5	< 5	< 5
TOC (Total Organic Carbon)	%	< 0.1	MCERTS	2.1	2.3	5.9	0.4	0.4
Ammoniacal Nitrogen as NH ₄	mg/kg	< 0.5	ISO17025	< 0.5	< 0.5	0.6	< 0.5	< 0.5
Antimony (Sb)	mg/kg	< 1	NONE	< 1	2	1.3	1.5	< 1
Arsenic (As)	mg/kg	< 2	MCERTS	53	18	12	19	23
Barium (Ba)	mg/kg	< 2.5	MCERTS	437	136	68	86	30
Beryllium (Be)	mg/kg	< 0.5	MCERTS	1.9	1.4	0.8	0.9	< 0.5
W/S Boron	mg/kg	< 1	NONE	1.1	< 1	1.1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	3.2	0.3	0.2	0.2	0.2
Chromium (III)	mg/kg	< 2	NONE	24	20	17	23	11
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	221	42	27	25	26
Lead (Pb)	mg/kg	< 3	MCERTS	2670	103	50	43	448
Mercury (Hg)	mg/kg	< 1	MCERTS	3.6	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	31	15	16	20	19
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3	< 3	< 3	< 3
Vanadium (V)	mg/kg	< 1	MCERTS	49	39	29	45	26
Zinc (Zn)	mg/kg	< 3	MCERTS	3440	159	102	121	298
Magnesium	mg/kg	< 50	NONE	717	2560	1380	1310	374

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
 Subcontracted analysis (S)

(n) 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



DETS Ltd
 Unit 1, Rose Lane Industrial Estate
 Rose Lane
 Lenham Heath
 Maidstone
 Kent ME17 2JN
 Tel : 01622 850410



Soil Analysis Certificate						
DETS Report No: 22-08636	Date Sampled	06/10/22	05/10/22	05/10/22	06/10/22	06/10/22
Soiltechnics Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Haul Road - Herts HQ	TP / BH No	TP040.503	TP050.051	TP050.603	TP060.302	TP0602.005
Project / Job Ref: STU5824	Additional Refs	TP04	TP05	TP05	TP06	TP06
Order No: POR013806	Depth (m)	0.50	0.05	0.60	0.30	2.00
Reporting Date: 24/10/2022	DETS Sample No	616787	616788	616789	616790	616791

Determinand	Unit	RL	Accreditation	(n)				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
pH	pH Units	N/a	MCERTS	7.7	7.9	7.9	8.0	7.9
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Free Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	1490	215	398	42	92
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	1.49	0.21	0.40	0.04	0.09
Sulphide	mg/kg	< 5	NONE	< 5	< 5	11	< 5	34
TOC (Total Organic Carbon)	%	< 0.1	MCERTS	1.4	0.3	0.7	0.8	0.7
Ammoniacal Nitrogen as NH ₄	mg/kg	< 0.5	ISO17025	< 0.5	< 0.5	33.5	< 0.5	66.1
Antimony (Sb)	mg/kg	< 1	NONE	10.9	< 1	1.7	1.5	2
Arsenic (As)	mg/kg	< 2	MCERTS	16	4	28	11	17
Barium (Ba)	mg/kg	< 2.5	MCERTS	687	56	84	91	103
Beryllium (Be)	mg/kg	< 0.5	MCERTS	0.7	< 0.5	0.9	0.8	1
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	1.9	< 1	1.9
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	1	< 0.2	0.2	< 0.2	0.3
Chromium (III)	mg/kg	< 2	NONE	22	5	28	19	21
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	73	9	26	24	29
Lead (Pb)	mg/kg	< 3	MCERTS	233	19	42	71	56
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	16	5	19	15	20
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3	< 3	< 3	< 3
Vanadium (V)	mg/kg	< 1	MCERTS	32	12	46	31	40
Zinc (Zn)	mg/kg	< 3	MCERTS	908	37	101	63	140
Magnesium	mg/kg	< 50	NONE	1700	2030	180	1750	1560

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
 Subcontracted analysis (S)



DETS Ltd
 Unit 1, Rose Lane Industrial Estate
 Rose Lane
 Lenham Heath
 Maidstone
 Kent ME17 2JN
 Tel : 01622 850410



Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 22-08636	Date Sampled	05/10/22	06/10/22	06/10/22	06/10/22	06/10/22
Soiltechnics Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Haul Road - Herts HQ	TP / BH No	CS010.001	CS020.001	TP010.055	TP020.603	TP031.004
Project / Job Ref: STU5824	Additional Refs	HR_CS_01	HR_CS_02	TP01	TP02	TP03
Order No: POR013806	Depth (m)	0.00	0.00	0.05	0.60	1.00
Reporting Date: 24/10/2022	DETS Sample No	616782	616783	616784	616785	616786

Determinand	Unit	RL	Accreditation	05/10/22	06/10/22	06/10/22	06/10/22	06/10/22
Naphthalene	mg/kg	< 0.1	MCERTS	0.16	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	0.15	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	1.60	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	1.20	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	0.80	24.30	0.34	0.11	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	0.15	6.25	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	1.11	33.20	1.26	0.34	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	0.95	27.70	1.14	0.32	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.74	12.30	0.93	0.27	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	0.60	9.93	0.73	0.20	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.67	12.50	1.02	0.27	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.19	4.41	0.36	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.59	11.40	0.98	0.26	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.34	6.63	0.67	0.18	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	1.75	0.15	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.29	5.96	0.61	0.17	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	6.6	159	8.2	2.1	< 1.6

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 22-08636	Date Sampled	06/10/22	05/10/22	05/10/22	06/10/22	06/10/22
Soiltechnics Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Haul Road - Herts HQ	TP / BH No	TP040.503	TP050.051	TP050.603	TP060.302	TP0602.005
Project / Job Ref: STU5824	Additional Refs	TP04	TP05	TP05	TP06	TP06
Order No: POR013806	Depth (m)	0.50	0.05	0.60	0.30	2.00
Reporting Date: 24/10/2022	DETS Sample No	616787	616788	616789	616790	616791

Determinand	Unit	RL	Accreditation	(n)					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	0.13	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	2.73	0.16	0.14	< 0.1	< 0.1	0.14
Anthracene	mg/kg	< 0.1	MCERTS	0.34	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	3.58	0.94	0.24	0.15	0.28	0.28
Pyrene	mg/kg	< 0.1	MCERTS	3.02	0.98	0.21	0.13	0.26	0.26
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	1.50	0.79	0.18	< 0.1	0.19	0.19
Chrysene	mg/kg	< 0.1	MCERTS	1.47	0.66	0.14	< 0.1	0.14	0.14
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	1.43	0.87	0.20	< 0.1	0.17	0.17
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.54	0.32	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	1.39	0.86	0.18	< 0.1	0.14	0.14
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.88	0.64	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.21	0.17	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.73	0.60	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	17.9	7	< 1.6	< 1.6	< 1.6	< 1.6



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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 22-08636	Date Sampled	05/10/22	06/10/22	06/10/22	06/10/22	06/10/22
Soiltechnics Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Haul Road - Herts HQ	TP / BH No	CS010.001	CS020.001	TP010.055	TP020.603	TP031.004
Project / Job Ref: STU5824	Additional Refs	HR_CS_01	HR_CS_02	TP01	TP02	TP03
Order No: POR013806	Depth (m)	0.00	0.00	0.05	0.60	1.00
Reporting Date: 24/10/2022	DETS Sample No	616782	616783	616784	616785	616786

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	14	< 2	< 2	< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	3	125	3	< 3	< 3
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10	109	< 10	< 10	< 10
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	< 21	247	< 21	< 21	< 21
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 42	NONE	< 42	247	< 42	< 42	< 42

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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 22-08636	Date Sampled	06/10/22	05/10/22	05/10/22	06/10/22	06/10/22
Soiltechnics Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Haul Road - Herts HQ	TP / BH No	TP040.503	TP050.051	TP050.603	TP060.302	TP0602.005
Project / Job Ref: STU5824	Additional Refs	TP04	TP05	TP05	TP06	TP06
Order No: POR013806	Depth (m)	0.50	0.05	0.60	0.30	2.00
Reporting Date: 24/10/2022	DETS Sample No	616787	616788	616789	616790	616791

Determinand	Unit	RL	Accreditation	(n)					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	12	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21	< 21
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42	< 42



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 22-08636	Date Sampled	05/10/22	06/10/22	06/10/22	06/10/22	06/10/22
Soiltechnics Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Haul Road - Herts HQ	TP / BH No	CS010.001	CS020.001	TP010.055	TP020.603	TP031.004
Project / Job Ref: STU5824	Additional Refs	HR_CS_01	HR_CS_02	TP01	TP02	TP03
Order No: POR013806	Depth (m)	0.00	0.00	0.05	0.60	1.00
Reporting Date: 24/10/2022	DETS Sample No	616782	616783	616784	616785	616786

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 22-08636	Date Sampled	06/10/22	05/10/22	05/10/22	06/10/22	06/10/22
Soiltechnics Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Haul Road - Herts HQ	TP / BH No	TP040.503	TP050.051	TP050.603	TP060.302	TP0602.005
Project / Job Ref: STU5824	Additional Refs	TP04	TP05	TP05	TP06	TP06
Order No: POR013806	Depth (m)	0.50	0.05	0.60	0.30	2.00
Reporting Date: 24/10/2022	DETS Sample No	616787	616788	616789	616790	616791

Determinand	Unit	RL	Accreditation	(n)		
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	13
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5



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Soil Analysis Certificate - Volatile Organic Compounds (VOC)					
DETS Report No: 22-08636	Date Sampled	05/10/22	06/10/22		
Soiltechnics Ltd	Time Sampled	None Supplied	None Supplied		
Site Reference: Haul Road - Herts HQ	TP / BH No	TP050.603	TP0602.005		
Project / Job Ref: STU5824	Additional Refs	TP05	TP06		
Order No: POR013806	Depth (m)	0.60	2.00		
Reporting Date: 24/10/2022	DETS Sample No	616789	616791		

Determinand	Unit	RL	Accreditation				
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5	< 5		
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5	< 5		
Chloromethane	ug/kg	< 10	MCERTS	< 10	< 10		
Chloroethane	ug/kg	< 5	MCERTS	< 5	< 5		
Bromomethane	ug/kg	< 10	MCERTS	< 10	< 10		
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5	< 5		
1,1-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5		
MTBE	ug/kg	< 5	MCERTS	< 5	< 5		
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5		
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5		
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5		
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5		
Chloroform	ug/kg	< 5	MCERTS	< 5	< 5		
Bromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5		
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5	< 5		
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10	< 10		
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5	< 5		
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5		
Benzene	ug/kg	< 2	MCERTS	< 2	< 2		
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5		
Trichloroethene	ug/kg	< 5	MCERTS	< 5	< 5		
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5	< 5		
Dibromomethane	ug/kg	< 5	MCERTS	< 5	< 5		
TAME	ug/kg	< 5	MCERTS	< 5	< 5		
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5		
Toluene	ug/kg	< 5	MCERTS	< 5	13		
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5		
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10	< 10		
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5		
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5	< 5		
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5		
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5	< 5		
Chlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5		
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5		
Ethyl Benzene	ug/kg	< 2	MCERTS	< 2	< 2		
m,p-Xylene	ug/kg	< 2	MCERTS	< 2	< 2		
o-Xylene	ug/kg	< 2	MCERTS	< 2	< 2		
Styrene	ug/kg	< 5	MCERTS	< 5	< 5		
Bromoform	ug/kg	< 10	MCERTS	< 10	< 10		
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5	< 5		
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5		
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5	< 5		
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5	< 5		
Bromobenzene	ug/kg	< 5	MCERTS	< 5	< 5		
2-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5		
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5		
4-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5		
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5		
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5		
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5		
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5	< 5		
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5		
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5		
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5		
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5		
2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10	< 10		
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5	< 5		



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Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC)						
DETS Report No: 22-08636	Date Sampled	05/10/22	06/10/22			
Soiltechnics Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Haul Road - Herts HQ	TP / BH No	TP050.603	TP0602.005			
Project / Job Ref: STU5824	Additional Refs	TP05	TP06			
Order No: POR013806	Depth (m)	0.60	2.00			
Reporting Date: 24/10/2022	DETS Sample No	616789	616791			

Determinand	Unit	RL	Accreditation				
Phenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
1,2,4-Trichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1		
2-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
Nitrobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
0-Cresol	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
bis(2-chloroethoxy)methane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
bis(2-chloroethyl)ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
2,4-Dichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
2-Chlorophenol	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1		
1,3-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1		
1,4-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1		
1,2-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1		
2,4-Dimethylphenol	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15		
Isophorone	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
Hexachloroethane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
p-Cresol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15		
2,4,6-Trichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
2,4,5-Trichlorophenol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15		
2-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
4-Chloro-3-methylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
2-Methylnaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Hexachlorocyclopentadiene	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
Hexachlorobutadiene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1		
2,6-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Dimethyl phthalate	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
2-Chloronaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
4-Chloroaniline	mg/kg	< 0.15	NONE	< 0.15	< 0.15		
4-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
4-Chlorophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
3-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
4-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
4-Bromophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Hexachlorobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
2,4-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Diethyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Dibenzofuran	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Azobenzene	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
Dibutyl phthalate	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1		
Carbazole	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1		
bis(2-ethylhexyl)phthalate	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15		
Benzyl butyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Di-n-octyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		



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Soil Analysis Certificate - Speciated Phenols						
DETS Report No: 22-08636	Date Sampled	05/10/22	06/10/22	06/10/22	06/10/22	06/10/22
Soiltechnics Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Haul Road - Herts HQ	TP / BH No	CS010.001	CS020.001	TP010.055	TP020.603	TP031.004
Project / Job Ref: STU5824	Additional Refs	HR_CS_01	HR_CS_02	TP01	TP02	TP03
Order No: POR013806	Depth (m)	0.00	0.00	0.05	0.60	1.00
Reporting Date: 24/10/2022	DETS Sample No	616782	616783	616784	616785	616786

Determinand	Unit	RL	Accreditation					
2, 3, 5-trimethylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2, 3, 6-trimethylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2, 3-xyleneol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2, 4, 6-trimethylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2, 4-xyleneol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2, 5-xyleneol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2, 6-xyleneol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-ethylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-isopropylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3, 4, 5-trimethylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3, 4-xyleneol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3, 5-xyleneol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-ethylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-isopropylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-ethylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-isopropylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
m-cresol (3-methylphenol)	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
o-cresol (2-methylphenol)	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
p-cresol (4-methylphenol)	mg/kg	< 0.15	NONE	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
phenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C
 (n) 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



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Soil Analysis Certificate - Speciated Phenols						
DETS Report No: 22-08636	Date Sampled	06/10/22	05/10/22	05/10/22	06/10/22	06/10/22
Soiltechnics Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Haul Road - Herts HQ	TP / BH No	TP040.503	TP050.051	TP050.603	TP060.302	TP0602.005
Project / Job Ref: STU5824	Additional Refs	TP04	TP05	TP05	TP06	TP06
Order No: POR013806	Depth (m)	0.50	0.05	0.60	0.30	2.00
Reporting Date: 24/10/2022	DETS Sample No	616787	616788	616789	616790	616791

Determinand	Unit	RL	Accreditation	(n)				
2, 3, 5-trimethylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2, 3, 6-trimethylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2, 3-xyleneol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2, 4, 6-trimethylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2, 4-xyleneol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2, 5-xyleneol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2, 6-xyleneol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-ethylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-isopropylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3, 4, 5-trimethylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3, 4-xyleneol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3, 5-xyleneol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-ethylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-isopropylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-ethylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-isopropylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
m-cresol (3-methylphenol)	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
o-cresol (2-methylphenol)	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
p-cresol (4-methylphenol)	mg/kg	< 0.15	NONE	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
phenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C

Waste Acceptance Criteria Analytical Certificate - BS EN 12457/3										
DETS Report No: 22-08636		Date Sampled	05/10/22		Landfill Waste Acceptance Criteria Limits					
Soiltechnics Ltd		Time Sampled	None Supplied		Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill			
Site Reference: Haul Road - Herts HQ		TP / BH No	CS010.001							
Project / Job Ref: STU5824		Additional Refs	HR_CS_01							
Order No: POR013806		Depth (m)	0.00							
Reporting Date: 24/10/2022		DETS Sample No	616782							
Determinand	Unit	MDL								
TOC ^{MU}	%	< 0.1	2.1		3%		5%		6%	
Loss on Ignition	%	< 0.01	7.40		--		--		10%	
BTEX ^{MU}	mg/kg	< 0.05	< 0.05		6		--		--	
Sum of PCBs	mg/kg	< 0.1	< 0.1		1		--		--	
Mineral Oil ^{MU}	mg/kg	< 10	< 10		500		--		--	
Total PAH ^{MU}	mg/kg	< 1.7	6.6		100		--		--	
pH ^{MU}	pH Units	N/a	7.8		--		>6		--	
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	< 1		--		To be evaluated		To be evaluated	
Eluate Analysis		2:1		8:1		Cumulative 10:1		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
		mg/l		mg/l		mg/kg				
Arsenic ^U		< 0.01	< 0.01		< 0.2		0.5		25	
Barium ^U		0.05	0.04		0.4		20		100	
Cadmium ^U		< 0.0005	< 0.0005		< 0.02		0.04		1	
Chromium ^U		< 0.005	< 0.005		< 0.20		0.5		10	
Copper ^U		< 0.01	0.01		< 0.5		2		50	
Mercury ^U		< 0.0005	< 0.0005		< 0.005		0.01		0.2	
Molybdenum ^U		0.004	0.004		< 0.1		0.5		10	
Nickel ^U		< 0.007	< 0.007		< 0.2		0.4		10	
Lead ^U		< 0.005	0.005		< 0.2		0.5		10	
Antimony ^U		< 0.005	< 0.005		< 0.05		0.06		0.7	
Selenium ^U		< 0.005	< 0.005		< 0.05		0.1		0.5	
Zinc ^U		0.091	0.106		1		4		50	
Chloride ^U		6	4		41		800		15000	
Fluoride ^U		< 0.5	< 0.5		< 1		10		150	
Sulphate ^U		67	17		230		1000		20000	
TDS		196	93		1053		4000		60000	
Phenol Index		< 0.01	< 0.01		< 0.5		1		-	
DOC		13.9	31.4		294		500		800	
Leach Test Information										
Sample Mass (kg)		0.20								
Dry Matter (%)		88.7								
Moisture (%)		12.8								
Stage 1										
Volume Eluate L2 (litres)		0.33								
Filtered Eluate VE1 (litres)		0.21								
Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Samples Descriptions page describes if the test is performed on the dried or as-received portion Stated limits are for guidance only and DETS Ltd cannot be held responsible for any discrepancies with current legislation M Denotes MCERTS accredited test U Denotes ISO17025 accredited test										

Waste Acceptance Criteria Analytical Certificate - BS EN 12457/3									
DETS Report No: 22-08636		Date Sampled	06/10/22		Landfill Waste Acceptance Criteria Limits				
Soiltechnics Ltd		Time Sampled	None Supplied						
Site Reference: Haul Road - Herts HQ		TP / BH No	CS020.001						
Project / Job Ref: STU5824		Additional Refs	HR_CS_02						
Order No: POR013806		Depth (m)	0.00						
Reporting Date: 24/10/2022		DETS Sample No	616783						
Determinand	Unit	MDL				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
TOC ^{MU}	%	< 0.1	2.3				3%	5%	6%
Loss on Ignition	%	< 0.01	5.50				--	--	10%
BTEX ^{MU}	mg/kg	< 0.05	< 0.05				6	--	--
Sum of PCBs	mg/kg	< 0.1	< 0.1				1	--	--
Mineral Oil ^{MU}	mg/kg	< 10	< 10				500	--	--
Total PAH ^{MU}	mg/kg	< 1.7	161				100	--	--
pH ^{MU}	pH Units	N/a	7.9				--	>6	--
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	< 1				--	To be evaluated	To be evaluated
Eluate Analysis			2:1	8:1	Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)			
			mg/l	mg/l	mg/kg				
Arsenic ^U			< 0.01	< 0.01	< 0.2	0.5	2	25	
Barium ^U			0.02	0.02	0.2	20	100	300	
Cadmium ^U			< 0.0005	< 0.0005	< 0.02	0.04	1	5	
Chromium ^U			< 0.005	< 0.005	< 0.20	0.5	10	70	
Copper ^U			< 0.01	0.01	< 0.5	2	50	100	
Mercury ^U			< 0.0005	< 0.0005	< 0.005	0.01	0.2	2	
Molybdenum ^U			0.010	0.005	< 0.1	0.5	10	30	
Nickel ^U			< 0.007	< 0.007	< 0.2	0.4	10	40	
Lead ^U			< 0.005	< 0.005	< 0.2	0.5	10	50	
Antimony ^U			< 0.005	< 0.005	< 0.05	0.06	0.7	5	
Selenium ^U			< 0.005	< 0.005	< 0.05	0.1	0.5	7	
Zinc ^U			0.029	0.005	< 0.2	4	50	200	
Chloride ^U			3	5	46	800	15000	25000	
Fluoride ^U			1	0.5	6	10	150	500	
Sulphate ^U			14	6	75	1000	20000	50000	
TDS			96	79	813	4000	60000	100000	
Phenol Index			< 0.01	< 0.01	< 0.5	1	-	-	
DOC			19.8	39.8	371	500	800	1000	
Leach Test Information									
Sample Mass (kg)			0.19						
Dry Matter (%)			91.3						
Moisture (%)			9.6						
Stage 1									
Volume Eluate L2 (litres)			0.33						
Filtered Eluate VE1 (litres)			0.23						
Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Samples Descriptions page describes if the test is performed on the dried or as-received portion									
Stated limits are for guidance only and DETS Ltd cannot be held responsible for any discrepancies with current legislation									
M Denotes MCERTS accredited test									
U Denotes ISO17025 accredited test									

Waste Acceptance Criteria Analytical Certificate - BS EN 12457/3									
DETS Report No: 22-08636	Date Sampled	05/10/22					Landfill Waste Acceptance Criteria Limits <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px;">Inert Waste Landfill</div> <div style="border: 1px solid black; padding: 5px;">Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill</div> <div style="border: 1px solid black; padding: 5px;">Hazardous Waste Landfill</div> </div>		
Soiltechnics Ltd	Time Sampled	None Supplied							
Site Reference: Haul Road - Herts HQ	TP / BH No	TP050.603							
Project / Job Ref: STU5824	Additional Refs	TP05							
Order No: POR013806	Depth (m)	0.60							
Reporting Date: 24/10/2022	DETS Sample No	616789							
Determinand	Unit	MDL							
TOC ^{MU}	%	< 0.1	0.7				3%	5%	6%
Loss on Ignition	%	< 0.01	4.20				--	--	10%
BTEX ^{MU}	mg/kg	< 0.05	< 0.05				6	--	--
Sum of PCBs	mg/kg	< 0.1	< 0.1				1	--	--
Mineral Oil ^{MU}	mg/kg	< 10	< 10				500	--	--
Total PAH ^{MU}	mg/kg	< 1.7	< 1.7				100	--	--
pH ^{MU}	pH Units	N/a	7.9				--	>6	--
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	< 1				--	To be evaluated	To be evaluated
Eluate Analysis		2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)			
		mg/l	mg/l		mg/kg				
Arsenic ^U		< 0.01	< 0.01		< 0.2	0.5	2	25	
Barium ^U		0.08	0.05		0.5	20	100	300	
Cadmium ^U		< 0.0005	< 0.0005		< 0.02	0.04	1	5	
Chromium ^U		< 0.005	< 0.005		< 0.20	0.5	10	70	
Copper ^U		< 0.01	< 0.01		< 0.5	2	50	100	
Mercury ^U		< 0.0005	< 0.0005		< 0.005	0.01	0.2	2	
Molybdenum ^U		0.028	0.010		0.1	0.5	10	30	
Nickel ^U		< 0.007	< 0.007		< 0.2	0.4	10	40	
Lead ^U		< 0.005	< 0.005		< 0.2	0.5	10	50	
Antimony ^U		< 0.005	< 0.005		< 0.05	0.06	0.7	5	
Selenium ^U		< 0.005	< 0.005		< 0.05	0.1	0.5	7	
Zinc ^U		0.011	< 0.005		< 0.2	4	50	200	
Chloride ^U		7	3		33	800	15000	25000	
Fluoride ^U		0.9	0.8		8.3	10	150	500	
Sulphate ^U		238	52		697	1000	20000	50000	
TDS		344	146		1647	4000	60000	100000	
Phenol Index		< 0.01	< 0.01		< 0.5	1	-	-	
DOC		22	32.6		316	500	800	1000	
Leach Test Information									
Sample Mass (kg)		0.20							
Dry Matter (%)		86.7							
Moisture (%)		15.4							
Stage 1									
Volume Eluate L2 (litres)		0.32							
Filtered Eluate VE1 (litres)		0.17							
Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Samples Descriptions page describes if the test is performed on the dried or as-received portion									
Stated limits are for guidance only and DETS Ltd cannot be held responsible for any discrepancies with current legislation									
M Denotes MCERTS accredited test									
U Denotes ISO17025 accredited test									



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Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 22-08636	
Soiltechnics Ltd	
Site Reference: Haul Road - Herts HQ	
Project / Job Ref: STU5824	
Order No: POR013806	
Reporting Date: 24/10/2022	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
\$ 616782	CS010.001	HR_CS_01	0.00	11.3	Brown gravelly sand with stones and vegetation
\$ 616783	CS020.001	HR_CS_02	0.00	8.7	Brown sandy clay with stones and brick
\$ 616784	TP010.055	TP01	0.05	14.1	Brown sandy clay with vegetation
\$ 616785	TP020.603	TP02	0.60	6.8	Brown sandy clay with stones
\$ 616786	TP031.004	TP03	1.00	9	Light brown sandy clay with stones
\$ 616787	TP040.503	TP04	0.50	7.6	Brown sandy gravel with stones and concrete
\$ 616788	TP050.051	TP05	0.05	3.8	Brown gravelly sand with stones and concrete
\$ 616789	TP050.603	TP05	0.60	13.3	Brown sandy clay with stones and concrete
\$ 616790	TP060.302	TP06	0.30	9.3	Brown sandy clay with stones
\$ 616791	TP0602.005	TP06	2.00	15.5	Brown sandy clay with stones and brick

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{U/S}

Unsuitable Sample ^{U/S}

\$ samples exceeded recommended holding times



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Soil Analysis Certificate - Methodology & Miscellaneous Information	
DETS Report No:	22-08636
Soiltechnics Ltd	
Site Reference:	Haul Road - Herts HQ
Project / Job Ref:	STU5824
Order No:	POR013806
Reporting Date:	24/10/2022

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content: determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCS	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
 AR As Received

Water Analysis Certificate - Methodology & Miscellaneous Information	
DETS Report No: 22-08636	
Soiltechnics Ltd	
Site Reference: Haul Road - Herts HQ	
Project / Job Ref: STU5824	
Order No: POR013806	
Reporting Date: 24/10/2022	

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	F	Ammoniacal Nitrogen	Determination of ammoniacal nitrogen by discrete analyser.	E126
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	UF	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR dete	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichlorometha	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	TPH CWG (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	TPH LOM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

Key

F Filtered
UF Unfiltered



DETS Ltd
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 Rose Lane
 Lenham Heath
 Maidstone
 Kent ME17 2JN
 Tel : 01622 850410



List of HWOL Acronyms and Operators
DETS Report No: 22-08636
Soiltechnics Ltd
Site Reference: Haul Road - Herts HQ
Project / Job Ref: STU5824
Order No: POR013806
Reporting Date: 24/10/2022

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eq. EH+HS_Total or EH_CU+HS_Total

Det - Acronym
Benzene - HS_1D_MS
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
Mineral Oil (C10 - C40) (BS EN 12457-3) - EH_CU_1D_AL
TPH CWG - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH CWG - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH CWG - Aliphatic >C16 - C21 - EH_CU_1D_AL
TPH CWG - Aliphatic >C21 - C34 - EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH CWG - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH CWG - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH CWG - Aliphatic C5 - C34 - HS_1D_MS+EH_CU_1D_AL
TPH CWG - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH CWG - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH CWG - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C35 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH CWG - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH CWG - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH CWG - Total >C5 - C35 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
Total BTEX (BS EN 12457-3) - HS_1D_MS_Total
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

Parameter	Matrix Type	Suite Reference	Expanded Uncertainty Measurement	Unit
TOC	Soil	BS EN 12457	12.1	%
Loss on Ignition	Soil	BS EN 12457	20.4	%
BTEX	Soil	BS EN 12457	14.0	%
Sum of PCBs	Soil	BS EN 12457	21.1	%
Mineral Oil	Soil	BS EN 12457	9.0	%
Total PAH	Soil	BS EN 12457	13.9	%
pH	Soil	BS EN 12457	0.248	Units
Acid Neutralisation Capacity	Soil	BS EN 12457	18.0	%
Arsenic	Leachate	BS EN 12457	15.9	%
Barium	Leachate	BS EN 12457	14.4	%
Cadmium	Leachate	BS EN 12457	12.6	%
Chromium	Leachate	BS EN 12457	13.4	%
Copper	Leachate	BS EN 12457	13.1	%
Mercury	Leachate	BS EN 12457	16.2	%
Molybdenum	Leachate	BS EN 12457	13.6	%
Nickel	Leachate	BS EN 12457	16.0	%
Lead	Leachate	BS EN 12457	12.4	%
Antimony	Leachate	BS EN 12457	14.6	%
Selenium	Leachate	BS EN 12457	16.5	%
Zinc	Leachate	BS EN 12457	14.5	%
Chloride	Leachate	BS EN 12457	17.0	%
Fluoride	Leachate	BS EN 12457	12.0	%
Sulphate	Leachate	BS EN 12457	25.1	%
TDS	Leachate	BS EN 12457	10.0	%
Phenol Index	Leachate	BS EN 12457	12.9	%
DOC	Leachate	BS EN 12457	10.0	%
Clay Content	Soil	BS 3882: 2015	15.0	%
Silt Content	Soil	BS 3882: 2015	14.0	%
Sand Content	Soil	BS 3882: 2015	13.0	%
Loss on Ignition	Soil	BS 3882: 2015	12.4	%
pH	Soil	BS 3882: 2015	0.248	Units
Carbonate	Soil	BS 3882: 2015	12.0	%
Total Nitrogen	Soil	BS 3882: 2015	12.0	%
Phosphorus (Extractable)	Soil	BS 3882: 2015	24.0	%
Potassium (Extractable)	Soil	BS 3882: 2015	20.0	%
Magnesium (Extractable)	Soil	BS 3882: 2015	26.0	%
Zinc	Soil	BS 3882: 2015	14.9	%
Copper	Soil	BS 3882: 2015	16.0	%
Nickel	Soil	BS 3882: 2015	17.7	%
Available Sodium	Soil	BS 3882: 2015	23.0	%
Available Calcium	Soil	BS 3882: 2015	23.0	%
Electrical Conductivity	Soil	BS 3882: 2015	10.0	%

Appendix H Contamination Assessment Screening

GQRA Screening

Assessments	Status	Date	Created by	Reviewed By
Acute human health risk - Soils	Completed	16.11.22	KB	SD
Chronic human health risk - Soils	Completed	16.11.22	KB	SD
<i>Chronic human health risk - Groundwater vapour</i>	<i>Not undertaken</i>			
<i>Controlled waters risk - Surface water</i>	<i>Not undertaken</i>			
<i>Controlled waters risk - Drinking water</i>	<i>Not undertaken</i>			
<i>Controlled waters - Free phase indicator</i>	<i>Not undertaken</i>			
<i>Phytotoxicity</i>	<i>Not undertaken</i>			
<i>Ecotoxicity</i>	<i>Not undertaken</i>			

Key

Assessment	Abbr.	GQRA Source (in order of preference)	Last Update
All	NGA	No guideline value available	-
Acute human health risk - Soils	AGAC	Acute Generic Assessment Criteria (SoBRA)	April 2019
	sat.	Contaminant poses a low acute risk unless the soil saturation limit is exceeded and a free oil phase is present.	April 2019
Chronic human health risk - Soils	C4SL	Category 4 Screening Levels (DEFRA)	May 2021
	S4UL	Suitable 4 Use Levels (LQM)	August 2015
	ATK	Atrisk Soil Screening Values (Atkins)	June 2017
	CL:AIRE	Generic Assessment Criteria (CL:AIRE)	Jan 2010

Chronic human health risk (soils)

Scenario	
End user	Proposed site user
Receptor	Industrial/Commercial
SOM	1.00%
GAC Preference	C4SLs over S4ULs

Contaminant	Guideline source	Guideline value (mg/kg)	Max value (mg/kg)	Location										
				Date										
				HR_CS_01	HR_CS_02	TP01	TP02	TP03	TP04	TP05	TP05	TP06	TP06	
				Depth (m)	0.00	0.00	0.05	0.60	1.00	0.50	0.05	0.60	0.30	2.00
				Date	05/10/22	06/10/22	06/10/22	06/10/22	06/10/22	06/10/22	05/10/22	05/10/22	06/10/22	06/10/22
Inorganics - Metals														
Arsenic	C4SL	640	53	53	18	12	19	23	16	4	28	11	17	
Beryllium	S4UL	12	1.9	1.9	1.4	0.8	0.9	<0.5	0.7	<0.5	0.9	0.8	1	
Boron	S4UL	240000	1.9	1.1	<1	1.1	<1	<1	<1	<1	1.9	<1	1.9	
Cadmium	C4SL	410	3.2	3.2	0.3	0.2	0.2	0.2	1	<0.2	0.2	<0.2	0.3	
Chromium (III)	S4UL	86000	28	28	20	17	23	11	22	5	28	19	21	
Chromium (VI)	C4SL	49	<LoD	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Copper	S4UL	68000	221	221	42	27	25	26	73	9	26	24	29	
Cyanide - Free	ATK	34	<LoD	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Lead	C4SL	2300	2670	2670	103	50	43	448	233	19	42	71	56	
Mercury	S4UL	1100	3.6	3.6	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Nickel	S4UL	980	31	31	15	16	20	19	16	5	19	15	20	
Selenium	S4UL	12000	<LoD	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	
Vanadium	S4UL	9000	49	49	39	29	45	26	32	12	46	31	40	
Zinc	S4UL	730000	3440	3440	159	102	121	298	908	37	101	63	140	
Inorganics - Asbestos														
Asbestos Screen	N/A		Not Detected Not Detected Not Detected Not Detected Not Detected Not Detected Not Detected Not Detected Not Detected Not Detected											
Organics - PAH & Phenol														
Acenaphthene	S4UL	84000	1.6	<0.1	1.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Acenaphthylene	S4UL	83000	0.15	<0.1	0.15	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Anthracene	S4UL	520000	6.25	0.15	6.25	<0.1	<0.1	<0.1	0.34	<0.1	<0.1	<0.1	<0.1	
Benzo(a)anthracene	S4UL	170	12.3	0.74	12.3	0.93	0.27	<0.1	1.5	0.79	0.18	<0.1	0.19	
Benzo(a)pyrene	C4SL	77	11.4	0.59	11.4	0.98	0.26	<0.1	1.39	0.86	0.18	<0.1	0.14	
Benzo(b)fluoranthene	S4UL	44	12.5	0.67	12.5	1.02	0.27	<0.1	1.43	0.87	0.2	<0.1	0.17	
Benzo(ghi)perylene	S4UL	3900	5.96	0.29	5.96	0.61	0.17	<0.1	0.73	0.6	<0.1	<0.1	<0.1	
Benzo(k)fluoranthene	S4UL	1200	4.41	0.19	4.41	0.36	<0.1	<0.1	0.54	0.32	<0.1	<0.1	<0.1	
Chrysene	S4UL	350	9.93	0.6	9.93	0.73	0.2	<0.1	1.47	0.66	0.14	<0.1	0.14	
Dibenz(a,h)anthracene	S4UL	3.5	1.75	<0.1	1.75	0.15	<0.1	<0.1	0.21	0.17	<0.1	<0.1	<0.1	
Fluoranthene	S4UL	23000	33.2	1.11	33.2	1.26	0.34	<0.1	3.58	0.94	0.24	0.15	0.28	
Fluorene	S4UL	63000	1.2	<0.1	1.2	<0.1	<0.1	<0.1	0.13	<0.1	<0.1	<0.1	<0.1	
Indeno(1,2,3-cd)pyrene	S4UL	500	6.63	0.34	6.63	0.67	0.18	<0.1	0.88	0.64	<0.1	<0.1	<0.1	
Naphthalene	S4UL	190	0.16	0.16	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Phenanthrene	S4UL	22000	24.3	0.8	24.3	0.34	0.11	<0.1	2.73	0.16	0.14	<0.1	0.14	
Phenol	S4UL	440	<LoD	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Pyrene	S4UL	54000	27.7	0.95	27.7	1.14	0.32	<0.1	3.02	0.98	0.21	0.13	0.26	
Organics - TPH CWG and BTEX														
Benzene	C4SL	98	<LoD	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
Toluene	S4UL	56000	0.013	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.013	
Ethylbenzene	S4UL	5700	<LoD	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
o-Xylene	S4UL	6600	<LoD	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
m & p-xylene	S4UL	5900	<LoD	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
Xylenes (sum of)	S4UL	5900	<LoD	<LoD	<LoD	<LoD	<LoD	<LoD	<LoD	<LoD	<LoD	<LoD	<LoD	
EC05 - EC06 Aliphatic	S4UL	3200	<LoD	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
EC>06 - EC08 Aliphatic	S4UL	7800	<LoD	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
EC>08 - EC10 Aliphatic	S4UL	2000	<LoD	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
EC>10 - EC12 Aliphatic	S4UL	9700	<LoD	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
EC>12 - EC16 Aliphatic	S4UL	59000	<LoD	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	
EC>16 - EC21 Aliphatic	S4UL	1600000	<LoD	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	
EC>21 - EC35 Aliphatic	S4UL	1600000	<LoD	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
EC5 - EC7 (benzene)	S4UL	26000	<LoD	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
EC7 ->EC8 (toluene)	S4UL	56000	<LoD	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
EC>08 - EC10 Aromatic	S4UL	3500	<LoD	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
EC>10 - EC12 Aromatic	S4UL	16000	<LoD	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
EC>12 - EC16 Aromatic	S4UL	36000	14	<2	14	<2	<2	<2	<2	<2	<2	<2	<2	
EC>16 - EC21 Aromatic	S4UL	28000	125	3	125	3	<3	<3	12	<3	<3	<3	<3	
EC>21 - EC35 Aromatic	S4UL	28000	109	<10	109	<10	<10	<10	<10	<10	<10	<10	<10	

Chronic human health risk (soils)

Scenario	
End user	Proposed site user
Receptor	Industrial/Commercial
SOM	1.00%
GAC Preference	C4SLs over S4ULs

Contaminant	Guideline source	Guideline value	Max value	Location Depth (m)	HR_CS_01	HR_CS_02	TP01	TP02	TP03	TP04	TP05	TP05	TP06	TP06
					0.00	0.00	0.05	0.60	1.00	0.50	0.05	0.60	0.30	2.00
Organics - Volatile Organic Compounds (VOCs)														
1,1,1,2-Tetrachloroethane	S4UL	110	< LoD									< 0.005		< 0.005
1,1,1-Trichloroethane	S4UL	660	< LoD									< 0.005		< 0.005
1,1,2,2-Tetrachloroethane	S4UL	270	< LoD									< 0.005		< 0.005
1,1,2-Trichloroethane	CL:AIRE	94	< LoD									< 0.01		< 0.01
1,1-Dichloroethane	CL:AIRE	280	< LoD									< 0.005		< 0.005
1,1-Dichloroethene	CL:AIRE	26	< LoD									< 0.005		< 0.005
1,1-Dichloropropene	NGA	NGA	< LoD									< 0.01		< 0.01
1,2,3-Trichloropropane	NGA	NGA	< LoD									< 0.005		< 0.005
1,2,4-Trimethylbenzene	CL:AIRE	42	< LoD									< 0.005		< 0.005
1,2-Dibromo-3-chloropropane	NGA	NGA	< LoD									< 0.01		< 0.01
1,2-Dibromoethane	NGA	NGA	< LoD									< 0.005		< 0.005
1,2-Dichloroethane	S4UL	0.67	< LoD									< 0.005		< 0.005
1,2-Dichloropropane	CL:AIRE	3.3	< LoD									< 0.005		< 0.005
1,3,5-Trimethylbenzene	NGA	NGA	< LoD									< 0.005		< 0.005
1,3-Dichloropropane	NGA	NGA	< LoD									< 0.005		< 0.005
2,2-Dichloropropane	NGA	NGA	< LoD									< 0.005		< 0.005
2-Chlorotoluene	NGA	NGA	< LoD									< 0.005		< 0.005
4-Chlorotoluene	NGA	NGA	< LoD									< 0.005		< 0.005
Bromobenzene	CL:AIRE	97	< LoD									< 0.005		< 0.005
Bromochloromethane	NGA	NGA	< LoD									< 0.005		< 0.005
Bromodichloromethane	CL:AIRE	2.1	< LoD									< 0.005		< 0.005
Bromoform	CL:AIRE	760	< LoD									< 0.01		< 0.01
Bromomethane	NGA	NGA	< LoD									< 0.01		< 0.01
Carbon Tetrachloride	S4UL	2.9	< LoD									< 0.005		< 0.005
Chlorobenzene	S4UL	56	< LoD									< 0.005		< 0.005
Chloroethane	CL:AIRE	960	< LoD									< 0.005		< 0.005
Chloroform	S4UL	99	< LoD									< 0.005		< 0.005
Chloromethane	CL:AIRE	1	< LoD									< 0.01		< 0.01
cis-1,2-Dichloroethene	CL:AIRE	14	< LoD									< 0.005		< 0.005
cis-1,3-Dichloropropene	NGA	NGA	< LoD									< 0.005		< 0.005
Dibromochloromethane	ATK	9.27	< LoD									< 0.005		< 0.005
Dibromomethane	NGA	NGA	< LoD									< 0.005		< 0.005
Dichlorodifluoromethane	NGA	NGA	< LoD									< 0.005		< 0.005
Isopropylbenzene	CL:AIRE	1400	< LoD									< 0.005		< 0.005
MTBE	CL:AIRE	7900	< LoD		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
n-Butylbenzene	NGA	NGA	< LoD									< 0.005		< 0.005
n-Propylbenzene	CL:AIRE	4100	< LoD									< 0.005		< 0.005
p-Isopropyltoluene	NGA	NGA	< LoD									< 0.005		< 0.005
sec-Butylbenzene	NGA	NGA	< LoD									< 0.005		< 0.005
Styrene	CL:AIRE	3300	< LoD									< 0.005		< 0.005
TAME	NGA	NGA	< LoD									< 0.005		< 0.005
tert-Butylbenzene	NGA	NGA	< LoD									< 0.005		< 0.005
Tetrachloroethene	C4SL	24	< LoD									< 0.005		< 0.005
trans-1,2-Dichloroethene	CL:AIRE	22	< LoD									< 0.005		< 0.005
trans-1,3-Dichloropropene	NGA	NGA	< LoD									< 0.005		< 0.005
Trichloroethene	C4SL	0.73	< LoD									< 0.005		< 0.005
Trichlorofluoromethane	NGA	NGA	< LoD									< 0.005		< 0.005
Vinyl Chloride	C4SL	1.1	< LoD									< 0.005		< 0.005

Chronic human health risk (soils)

Scenario	
End user	Proposed site user
Receptor	Industrial/Commercial
SOM	1.00%
GAC Preference	C4SLs over S4ULs

Contaminant	Guideline source	Guideline value	Max value	Location Depth (m)	HR_CS_01	HR_CS_02	TP01	TP02	TP03	TP04	TP05	TP05	TP06	TP06
					0.00	0.00	0.05	0.60	1.00	0.50	0.05	0.60	0.30	2.00
Organics - Semi-Volatile Organic Compounds (SVOCs)														
Chlorophenols (sum of)	S4UL	3500	< LoD									< LoD	< LoD	
Cresols (sum of)	CL:AIRE	16000	< LoD									< LoD	< LoD	
o-Cresol	NGA	NGA	< LoD									<0.1	<0.1	
1,2,4-Trichlorobenzene	S4UL	220	< LoD									<0.1	<0.1	
1,2-Dichlorobenzene	S4UL	2000	< LoD									< 0.005	< 0.005	
1,3-Dichlorobenzene	S4UL	30	< LoD									< 0.1	< 0.005	
1,4-Dichlorobenzene	S4UL	4400	< LoD									<0.005	< 0.1	
2,4,5-Trichlorophenol	NGA	NGA	< LoD									< 0.15	< 0.15	
2,4,6-Trichlorophenol	NGA	NGA	< LoD									< 0.1	< 0.1	
2,4-Dichlorophenol	NGA	NGA	< LoD									< 0.1	< 0.1	
2,4-Dimethylphenol	CL:AIRE	16000	< LoD									< 0.15	< 0.15	
2,4-Dinitrotoluene	CL:AIRE	3700	< LoD									< 0.1	< 0.1	
2,6-Dinitrotoluene	CL:AIRE	1900	< LoD									< 0.1	< 0.1	
2-Chloronaphthalene	CL:AIRE	390	< LoD									< 0.1	< 0.1	
2-Chlorophenol	NGA	NGA	< LoD									< 0.1	< 0.1	
2-Methylnaphthalene	NGA	NGA	< LoD									< 0.1	< 0.1	
2-Nitroaniline	NGA	NGA	< LoD									< 0.1	< 0.1	
2-Nitrophenol	NGA	NGA	< LoD									< 0.1	< 0.1	
3-Nitroaniline	NGA	NGA	< LoD									< 0.1	< 0.1	
4-Bromophenyl phenyl ether	NGA	NGA	< LoD									< 0.1	< 0.1	
4-Chloro-3-methylphenol	NGA	NGA	< LoD									< 0.1	< 0.1	
4-Chloroaniline	NGA	NGA	< LoD									< 0.15	< 0.15	
4-Chlorophenyl phenyl ether	NGA	NGA	< LoD									< 0.1	< 0.1	
4-Nitroaniline	NGA	NGA	< LoD									< 0.1	< 0.1	
4-Nitrophenol	NGA	NGA	< LoD									< 0.1	< 0.1	
Azobenzene	NGA	NGA	< LoD									< 0.1	< 0.1	
Benzyl butyl phthalate	CL:AIRE	940000	< LoD									< 0.1	< 0.1	
bis(2-chloroethoxy)methane	NGA	NGA	< LoD									< 0.1	< 0.1	
bis(2-chloroethyl)ether	NGA	NGA	< LoD									< 0.1	< 0.1	
bis(2-ethylhexyl)phthalate	CL:AIRE	85000	< LoD									< 0.15	< 0.15	
Carbazole	NGA	NGA	< LoD									< 0.1	< 0.1	
Dibenzofuran	NGA	NGA	< LoD									< 0.1	< 0.1	
Dibutyl phthalate	CL:AIRE	15000	< LoD									< 0.1	< 0.1	
Diethyl phthalate	CL:AIRE	150000	< LoD									< 0.1	< 0.1	
Dimethyl phthalate	NGA	NGA	< LoD									< 0.1	< 0.1	
Di-n-octyl phthalate	CL:AIRE	89000	< LoD									< 0.1	< 0.1	
Hexachlorobenzene	S4UL	110	< LoD									< 0.1	< 0.1	
Hexachlorobutadiene	S4UL	31	< LoD									< 0.005	< 0.1	
Hexachlorocyclopentadiene	NGA	NGA	< LoD									< 0.1	< 0.1	
Hexachloroethane	CL:AIRE	22	< LoD									< 0.1	< 0.1	
Isophorone	NGA	NGA	< LoD									< 0.1	< 0.1	
Nitrobenzene	NGA	NGA	< LoD									< 0.1	< 0.1	
p-Cresol	NGA	NGA	< LoD									< 0.15	< 0.15	

Acute human health risk (soils)

Scenario	Occupational exposure (construction worker)
Critical receptor	Adult female worker
Oral exposure	Ingestion of soil and dusts over a single working day
Demal exposure	Soil being left on the skin for several hours, assumed no PPE worn
Inhalation exposure	30 mins exposure - worker standing adjacent to active excavation (assumed no RPE)

Contaminant	Guideline source	Principal pathway	Guideline value (mg/kg)	Max value (mg/kg)	Location	HR_CS_01	HR_CS_02	TP01	TP02	TP03	TP04	TP05	TP05	TP06	TP06
					Depth (m)	0.00	0.00	0.05	0.60	1.00	0.50	0.05	0.60	0.30	2.00
					Date	05/10/22	06/10/22	06/10/22	06/10/22	06/10/22	06/10/22	05/10/22	05/10/22	06/10/22	06/10/22
Inorganics															
Arsenic	AGAC	Oral	7,000	53		53	18	12	19	23	16	4	28	11	17
Cadmium	AGAC	Oral	12,000	3.2		3.2	0.3	0.2	0.2	0.2	1	< 0.2	0.2	< 0.2	0.3
Cyanide - Free	AGAC	Oral & Inhalation	1,400	<LoD		< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Organics															
Benzene	AGAC	Inhalation	240	<LoD		< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Phenol	AGAC	**sat.**	**sat.**	<LoD		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethene	AGAC	Inhalation	16,000	<LoD									< 0.005		< 0.005
Vinyl Chloride	AGAC	Inhalation	220	<LoD									< 0.005		< 0.005

Appendix I Waste Characterisation Analysis

Waste Classification Assessment Summary

Waste population	Topsoil-Made Ground
Hazard assessment	Non-hazardous waste
List of waste code	17-05-04
List of waste description	Soil and stones other than those mentioned in 17-05-03

Hazard property	Assessment
HP1 - Explosive	Not hazardous by HP1
HP2 - Oxidising	Not hazardous by HP2
HP3 - Flammable	Not hazardous by HP3
HP4 - Irritant	Not hazardous by HP4
HP5 - STOT & aspiration toxicity	Not hazardous by HP5
HP6 - Acute toxicity	Not hazardous by HP6
HP7 - Carcinogenic	Not hazardous by HP7
HP8 - Corrosive	Not hazardous by HP8
HP9 - Infectious	Not hazardous by HP9
HP10 - Toxic for reproduction	Not hazardous by HP10
HP11 - Mutagenic	Not hazardous by HP11
HP12 - Release of an acute toxic gas	Not hazardous by HP12
HP13 - Sensitising	Not hazardous by HP13
HP14 - Ecotoxic	Not hazardous by HP14

Waste Classification Assessment Summary

Waste population	Made Ground (general)
Hazard assessment	Hazardous waste*
List of waste code	17-05-03*
List of waste description	Soil and stones containing hazardous substances

Hazard property	Assessment
HP1 - Explosive	Not hazardous by HP1
HP2 - Oxidising	Not hazardous by HP2
HP3 - Flammable	Not hazardous by HP3
HP4 - Irritant	Not hazardous by HP4
HP5 - STOT & aspiration toxicity	Not hazardous by HP5
HP6 - Acute toxicity	Not hazardous by HP6
HP7 - Carcinogenic	Not hazardous by HP7
HP8 - Corrosive	Not hazardous by HP8
HP9 - Infectious	Not hazardous by HP9
HP10 - Toxic for reproduction	Hazardous by HP10
HP11 - Mutagenic	Not hazardous by HP11
HP12 - Release of an acute toxic gas	Not hazardous by HP12
HP13 - Sensitising	Not hazardous by HP13
HP14 - Ecotoxic	Hazardous by HP14

Waste Classification Assessment Summary

Waste population	Made Ground - landfill material
Hazard assessment	Non-hazardous waste
List of waste code	17-05-04
List of waste description	Soil and stones other than those mentioned in 17-05-03

Hazard property	Assessment
HP1 - Explosive	Not hazardous by HP1
HP2 - Oxidising	Not hazardous by HP2
HP3 - Flammable	Not hazardous by HP3
HP4 - Irritant	Not hazardous by HP4
HP5 - STOT & aspiration toxicity	Not hazardous by HP5
HP6 - Acute toxicity	Not hazardous by HP6
HP7 - Carcinogenic	Not hazardous by HP7
HP8 - Corrosive	Not hazardous by HP8
HP9 - Infectious	Not hazardous by HP9
HP10 - Toxic for reproduction	Not hazardous by HP10
HP11 - Mutagenic	Not hazardous by HP11
HP12 - Release of an acute toxic gas	Not hazardous by HP12
HP13 - Sensitising	Not hazardous by HP13
HP14 - Ecotoxic	Not hazardous by HP14

Waste classification

Overall assessment	
Waste population	Made Ground - landfill material
Hazard assessment	Non-hazardous waste
List of Waste code	17-05-04
List of waste description	Soil and stones other than those mentioned in 17-05-03
Is the statistical approach non-parametric method B utilised?	No
Moisture content correction factor	No correction made

Asbestos assessment		
Query	Value	Assessment
Are bulk ACMs visually identifiable?	No	Non-hazardous
Have free fibres been detected?	No	Non-hazardous
What is the free fibre concentration [%]?	N/A	Non-hazardous

Flammability assessment	
Comment	Assessment
The waste is not considered flammable as it is a solid waste without a free draining liquid phase, and the TPH concentration and composition is not considered to present a likely flammable hazard.	Non-hazardous

Hydrocarbon assessment	
Query	Assessment
Is the origin of the oil contamination known?	Unknown oil
B[a]P : TPH ratio [%]	Not required
B[a]P marker assessment	Not required

pH assessment		
Query	Value	Assessment
Are all substances present in the waste known?	No	See pH assessment below
pH - Min	7.90	Non-hazardous
pH - Max	7.90	Non-hazardous

Oxidising assessment	
Comment	Assessment
Cr (VI) is the only compound with an oxidising hazard statement (H272). On review, the concentration is considered too low to present a viable oxidising hazard in a waste soil.	Non-hazardous

Ecotoxic assessment			
Equation	Sum	Criteria	Assessment
WM3 Eq. 2	0.00%	25%	Non-hazardous
WM3 Eq. 3	0.00%	25%	Non-hazardous
WM3 Eq. 4	0.00%	25%	Non-hazardous

Compound hazard assessments

Hazard Property Description		Substance specific concentration limits																																															
		Irritant			Specific Target Organ Toxicity / Aspiration Toxicity				Acute Toxicity								Carcinogenic		Corrosive	Toxic for reproduction		Mutagenic		Sensitising		Ecotoxic				STOT		Carc.	Repr.																
		HP4			HP5				HP6								HP7		HP8	HP10		HP11		HP13		HP14				HP5		HP7	HP10																
Contaminant	Max. concentration (mg/kg)	Realistic worst case compound	Mass conversion factor	Hazard Class / Compound concentration (%)	Skin Corr.1A	Skin Irrit.2 Eye Irrit.2	Eye Dam.1	Asp.Tox.1	STOT SE.3	STOT RE.1	STOT RE.2	Acute Tox.2 (Oral)	Acute Tox.3 (Oral)	Acute Tox.4 (Oral)	Acute Tox.1 (Dermal)	Acute Tox.3 (Dermal)	Acute Tox.4 (Dermal)	Acute Tox.1 (Inhal.)	Acute Tox.2 (Inhal.)	Acute Tox.3 (Inhal.)	Acute Tox.4 (Inhal.)	Carc.1A Carc.1B	Carc.2	Skin Corr.1A Skin Corr.1B	Repr.1A Repr.1B	Repr.2	Muta.1A Muta.1B	Muta.2	Skin Sens.1	Resp. Sens. 1	Aquatic Acute.1	Aquatic Chronic.1	Aquatic Chronic.2	Aquatic Chronic.4	STOT SE.3	STOT RE.1	STOT RE.2	STOT RE.2	Carc.1B	Repr.2									
																																									H314	H315 and/or H319	H318	H304	H335	H372	H373	H300	H301
Cyanide - Total	2.0	Salts of hydrogen cyanide, using sodium cyanide	1.88	N/A	0.000							0.000		0.000			0.000	0.000																															
Arsenic	28.0	Nickel dithionite	1.78	N	0.005																																												
Arsenic (secondary)	28.0	Arsenic trisulfide	1.32	N	0.004																																												
Beryllium	1.0	Beryllium oxide	2.78	N	0.000																																												
Cadmium	0.3	Cadmium sulfide	1.29	N	0.000																																												
Cadmium (secondary)	0.3	Cadmium oxide	1.14	N	0.000																																												
Chromium (III)	28.0	Chromium (III) oxide	1.46	N	0.004																																												
Chromium (IV)	2.0	Chromium (IV) trioxide	1.92	N/A	0.000																																												
Copper	29.0	Copper (I) oxide	1.25	N	0.004																																												
Copper (secondary)	29.0	Copper(II) oxide	1.13	N	0.003																																												
Lead	56.0	Lead compounds, using lead sulphate	1.46	N	0.008																																												
Mercury	1.0	Mercury dichloride	1.35	N	0.000																																												
Nickel	20.0	Nickel carbonate	2.02	N	0.004																																												
Selenium	3.0	Selenium compounds, using selenium dioxide	1.41	N	0.000																																												
Zinc	140.0	Zinc sulphide	1.49	N	0.021																																												
Vanadium	46.0	Vanadium pentoxide	1.70	N	0.008																																												
Naphthalene	0.1	Naphthalene	1	N/A	0.000																																												
Acenaphthylene	0.1	Acenaphthylene	1	N/A	0.000																																												
Acenaphthene	0.1	Acenaphthene	1	N/A	0.000																																												
Fluorene	0.1	Fluorene	1	N/A	0.000																																												
Phenanthrene	0.1	Phenanthrene	1	N/A	0.000																																												
Anthracene	0.1	Anthracene	1	N/A	0.000																																												
Fluoranthene	0.3	Fluoranthene	1	N/A	0.000																																												
Pyrene	0.3	Pyrene	1	N/A	0.000																																												
Benzo[a]anthracene	0.2	Benzo[a]anthracene	1	N/A	0.000																																												
Chrysene	0.1	Chrysene	1	N/A	0.000																																												
Benzo[b]fluoranthene	0.2	Benzo[b]fluoranthene	1	N/A	0.000																																												
Benzo[k]fluoranthene	0.1	Benzo[k]fluoranthene	1	N/A	0.000																																												
Benzo[a]pyrene	0.2	Benzo[a]pyrene	1	N/A	0.000																																												
Indeno[1,2,3-cd]pyrene	0.1	Indeno[1,2,3-cd]pyrene	1	N/A	0.000																																												
Dibenz[a,h]anthracene	0.1	Dibenz[a,h]anthracene	1	N/A	0.000																																												
Benzo[ghi]perylene	0.1	Benzo[ghi]perylene	1	N/A	0.000																																												
Total TPH	42.0	Unknown oil	1	N/A	0.004																																												
Benzene	0.0	Benzene	1	N/A	0.000																																												

Waste acceptance

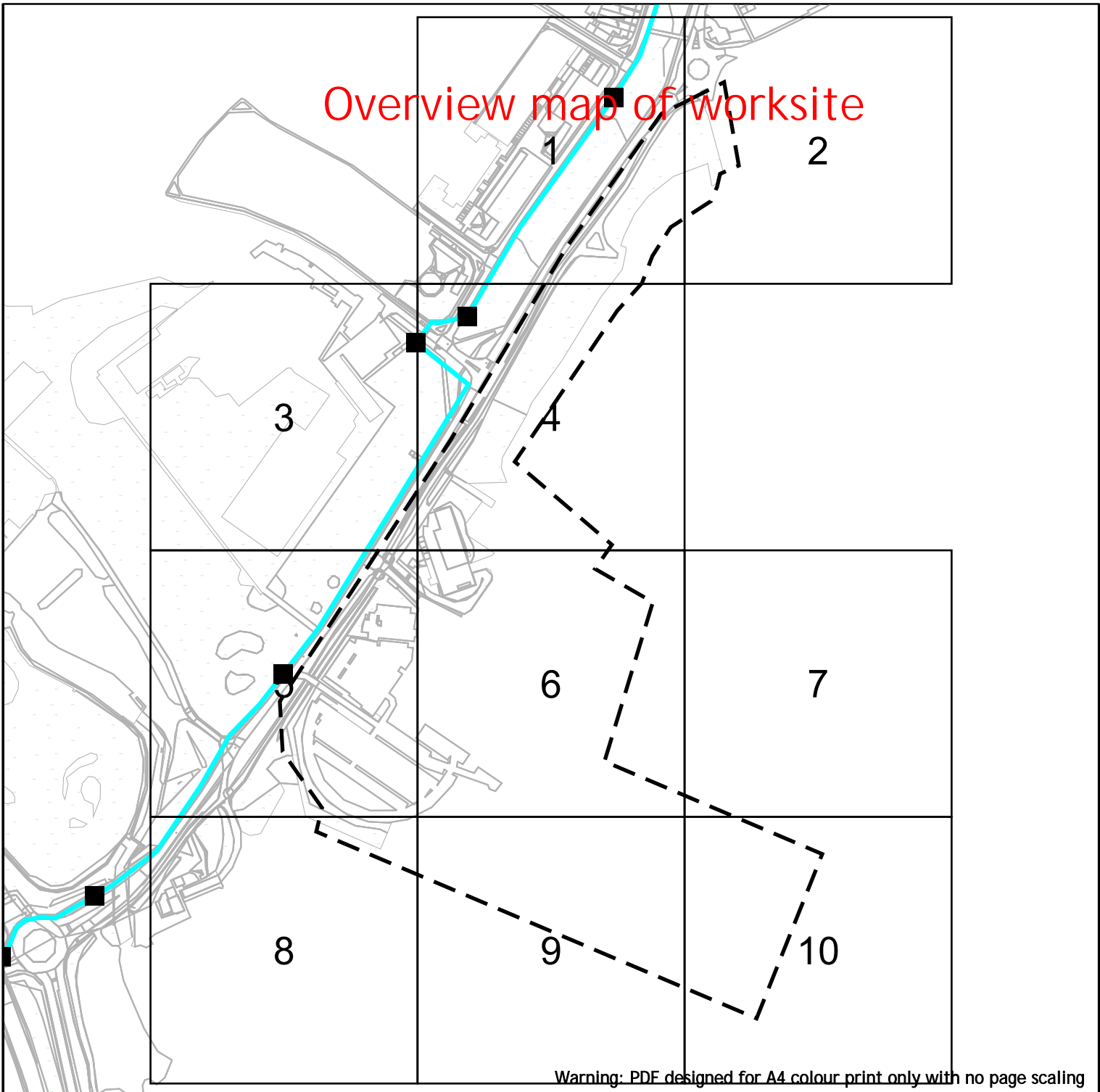
Parameter	Inert waste landfill	Stable non-reactive hazardous waste in a non-hazardous landfill cell (SNRHW)	Hazardous waste landfill	Location	HR_CS_01	HR_CS_02	TP05
				Depth (m)	0.00	0.00	0.60
				Date	05/10/22	06/10/22	05/10/22
Parameters determined on the waste							
Total organic carbon	3	5	6		2.1	2.3	0.7
Loss on ignition			10		7.4	5.5	4.2
BTEX	6				< 0.05	< 0.05	< 0.05
PCBs (7 congeners)	1				< 0.1	< 0.1	< 0.1
Mineral oil	500				< 10	< 10	< 10
PAH (17 congeners)	100				6.6	161	< 1.7
pH		6			7.8	7.9	7.9
Limit values (mg kg⁻¹) for compliance test using BN 12457-3 at L/S 10 l							
Arsenic	0.5	2	25		< 0.2	< 0.2	< 0.2
Barium	20	100	300		0.4	0.2	0.5
Cadmium	0.04	1	5		< 0.02	< 0.02	< 0.02
Chromium (III)	0.5	10	70		< 0.20	< 0.20	< 0.20
Copper	2	50	100		< 0.5	< 0.5	< 0.5
Mercury	0.01	0.2	2		< 0.005	< 0.005	< 0.005
Molybdenum	0.5	10	30		< 0.1	< 0.1	0.1
Nickel	0.4	10	40		< 0.2	< 0.2	< 0.2
Lead	0.5	10	50		< 0.2	< 0.2	< 0.2
Antimony	0.06	0.7	5		< 0.05	< 0.05	< 0.05
Selenium	0.1	0.5	7		< 0.05	< 0.05	< 0.05
Zinc	4	50	200		1	< 0.2	< 0.2
Chloride	800	15,000	25,000		41	46	33
Fluoride	10	150	500		< 1	6	8.3
Sulphate	1,000	20,000	50,000		230	75	697
Total dissolved solids	4,000	60,000	100,000		1053	813	1647
Phenol	1				< 0.5	< 0.5	< 0.5
Dissolved organic carbon	500	800	1000		294	371	316
Classifications							
Waste classification					Hazardous	Non-hazardous	Non-hazardous
Landfill type					SNRHW	Non-hazardous	Inert

Key Notes:

- 1) The values for total dissolved solids (TDS) can be used alternatively to the values for sulphate and chloride.
- 2) Soils with TOC values over the limit value may still be accepted provided the DOC value falls are below it's respective limit value.
- 3) In a hazardous waste, either the TOC or LOI must be used.

Appendix J Utility Service Plans

Overview map of worksite



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 Requested by: Miss Lauren Wenham
 Your Scheme/Reference: STU5824

Scale: 1:5125 (When plotted at A4)

Dig Sites Line: - - - - Area:

Key

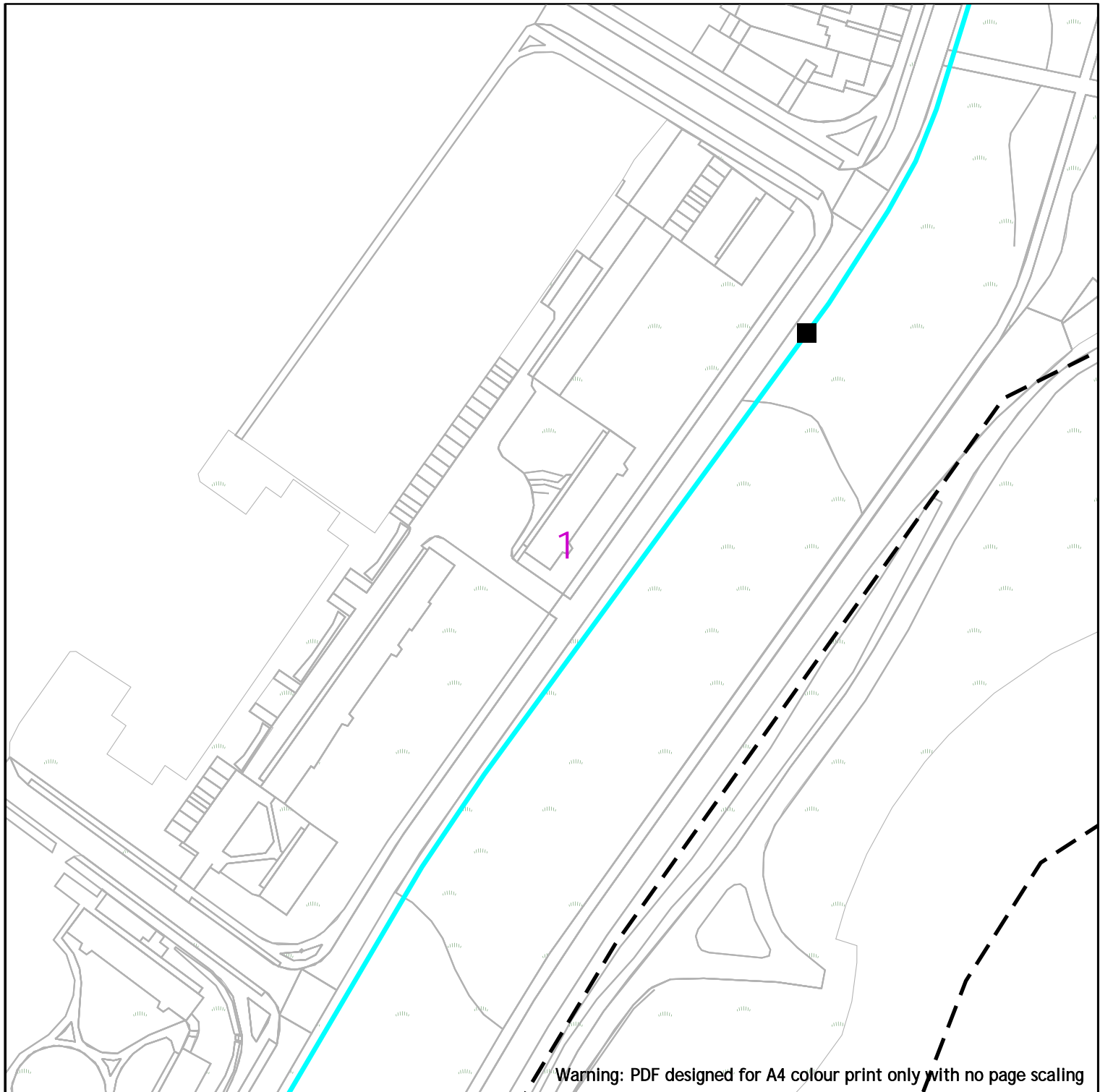
Duct Long-haul (LHN) Duct Chamber Location

IMPORTANT WARNING

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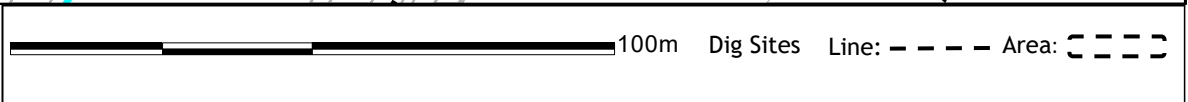
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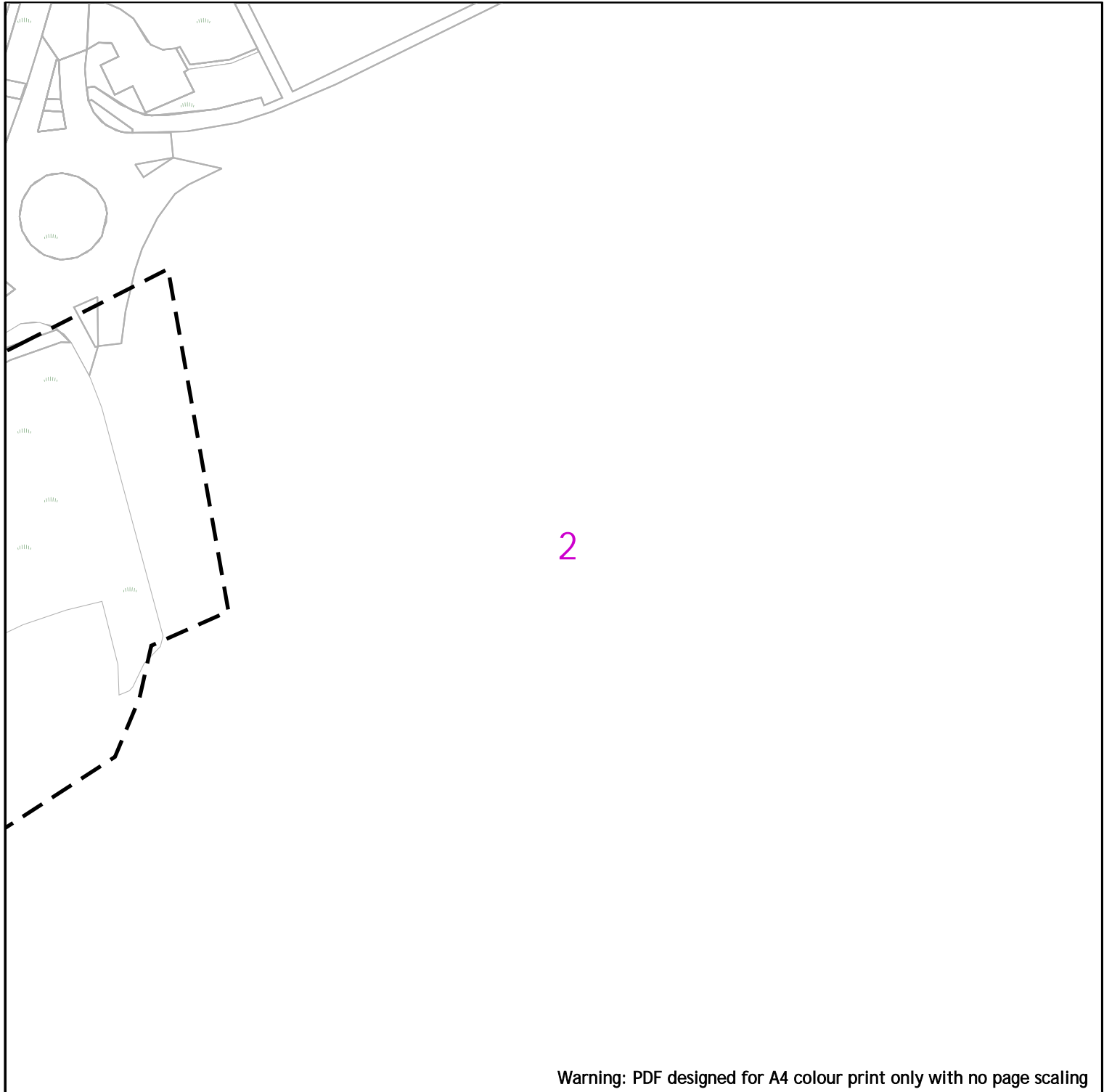
Key		
Duct		
Long-haul (LHN) Duct		
Chamber Location		

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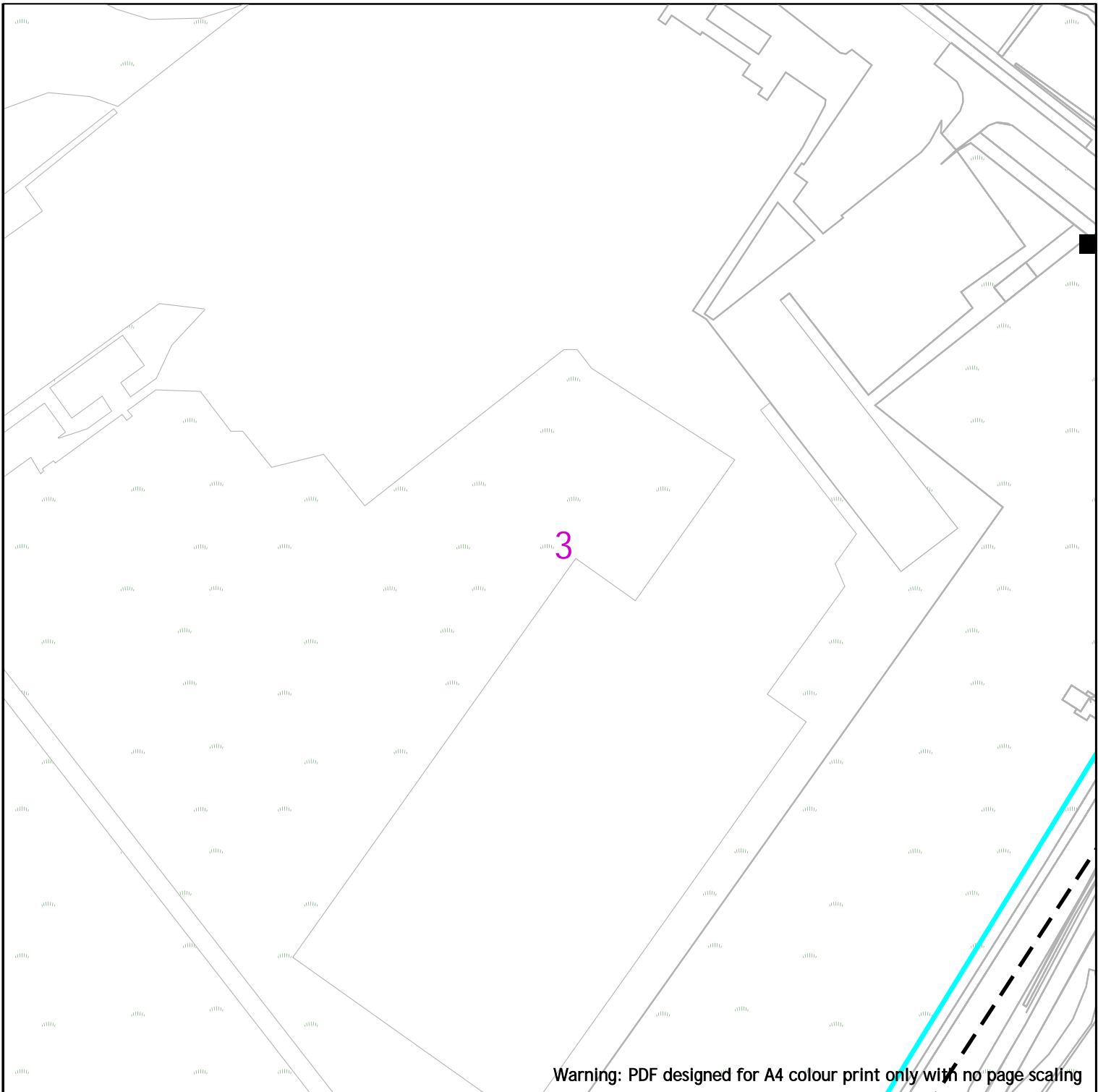
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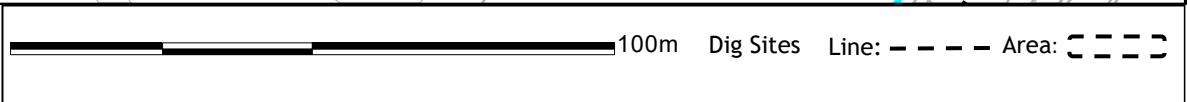
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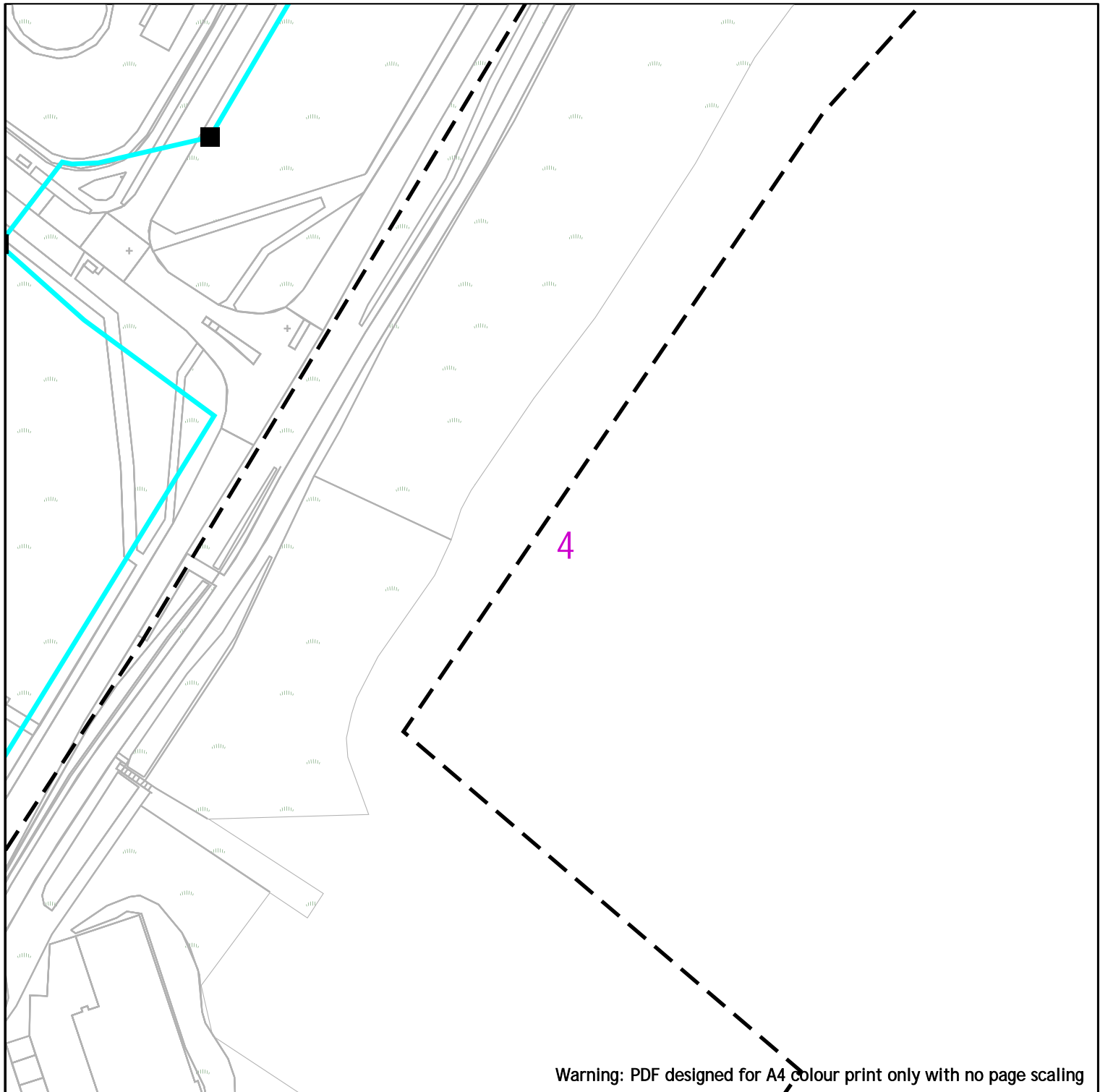
Key		
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Chamber Location		

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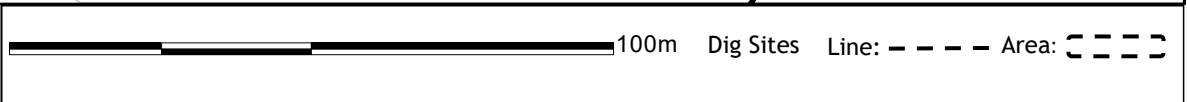
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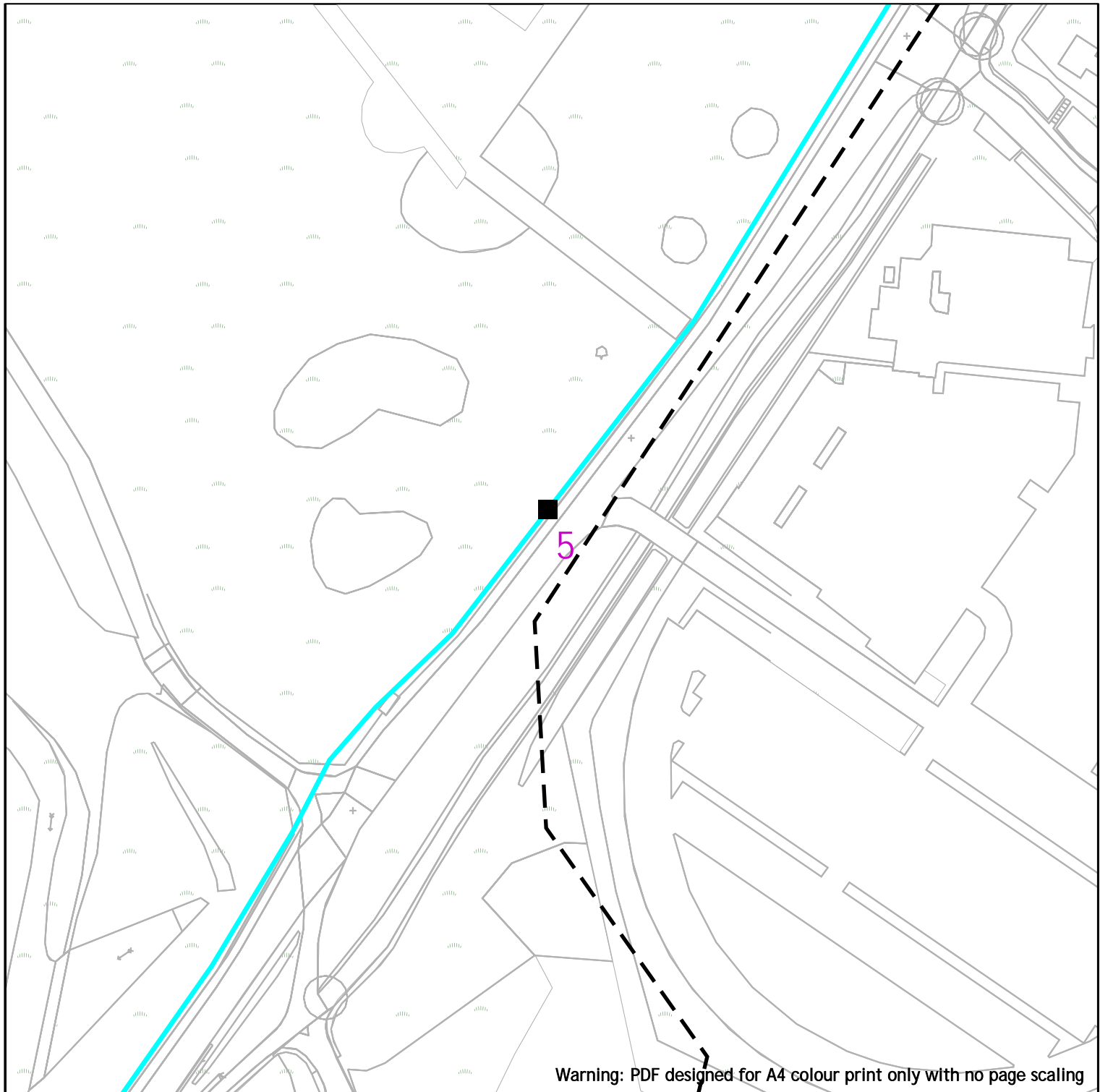
Key		
Duct		
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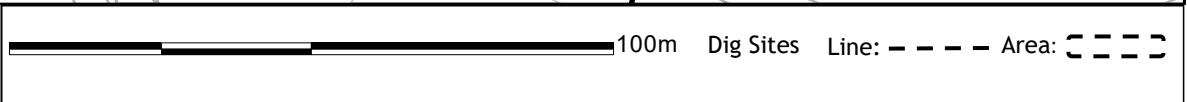
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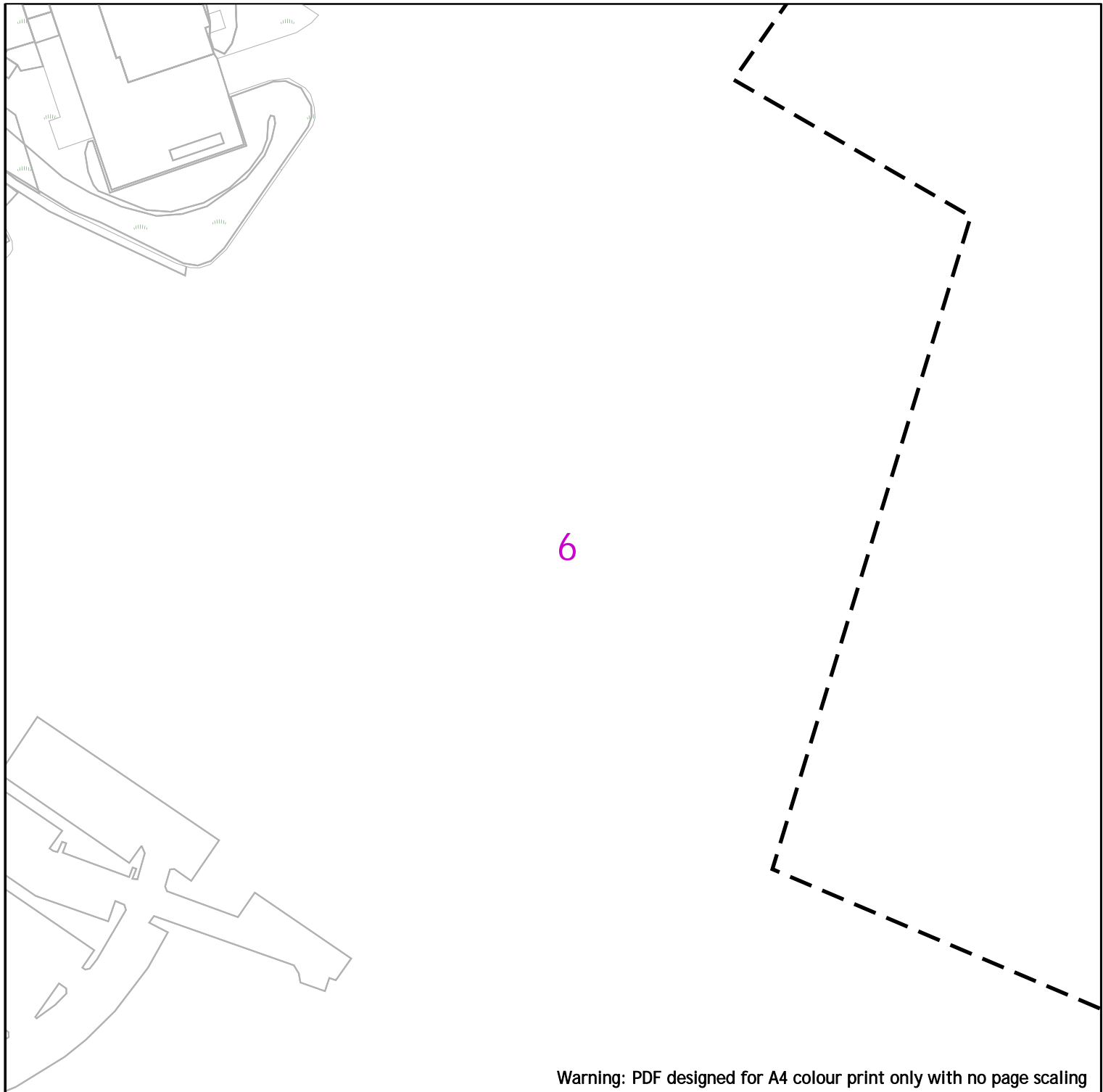
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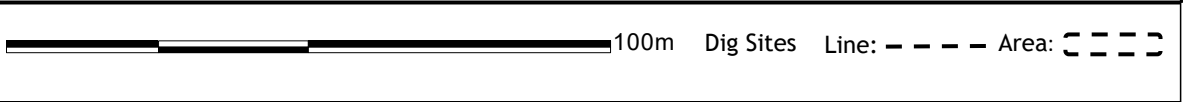
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Key

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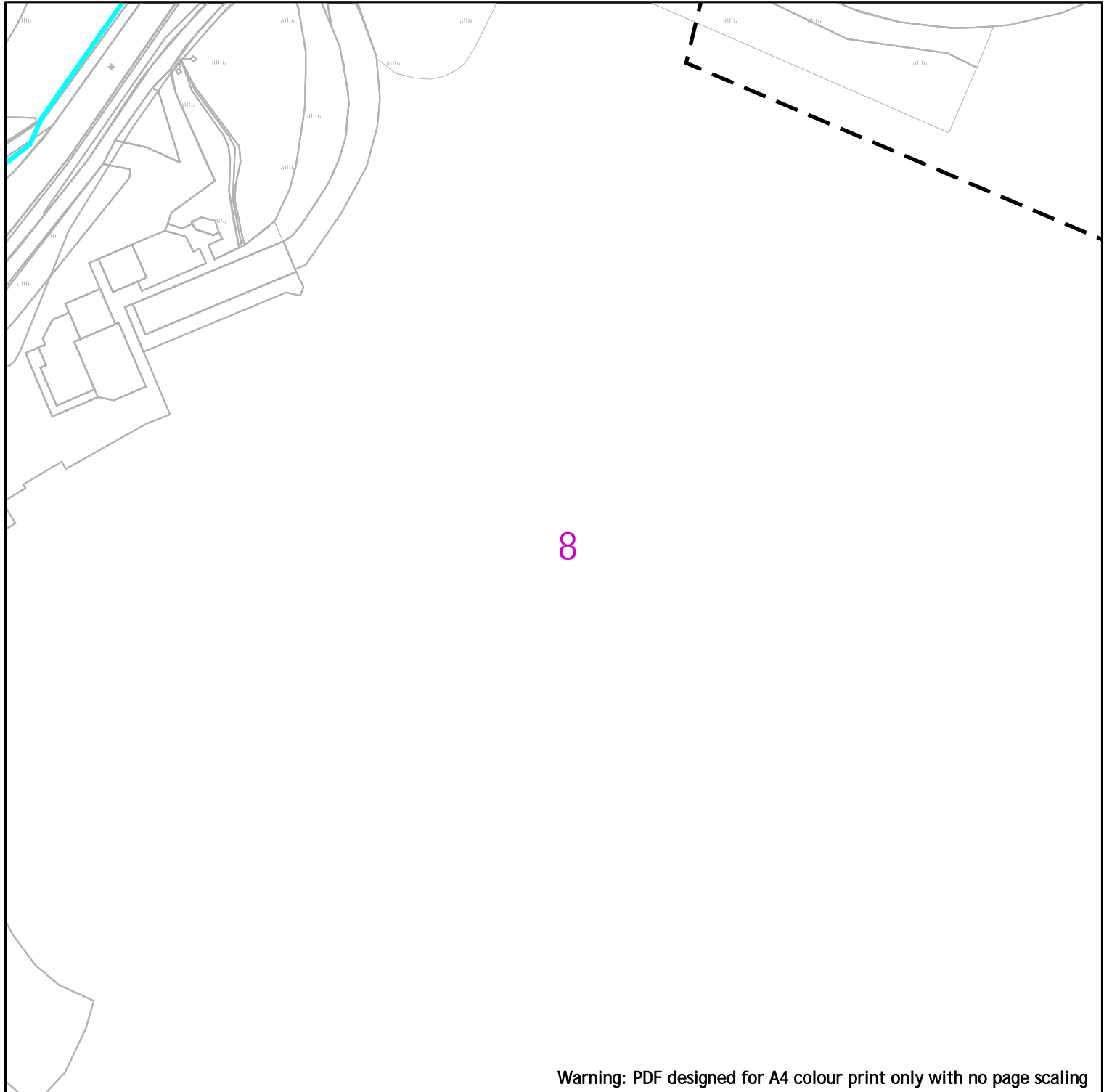
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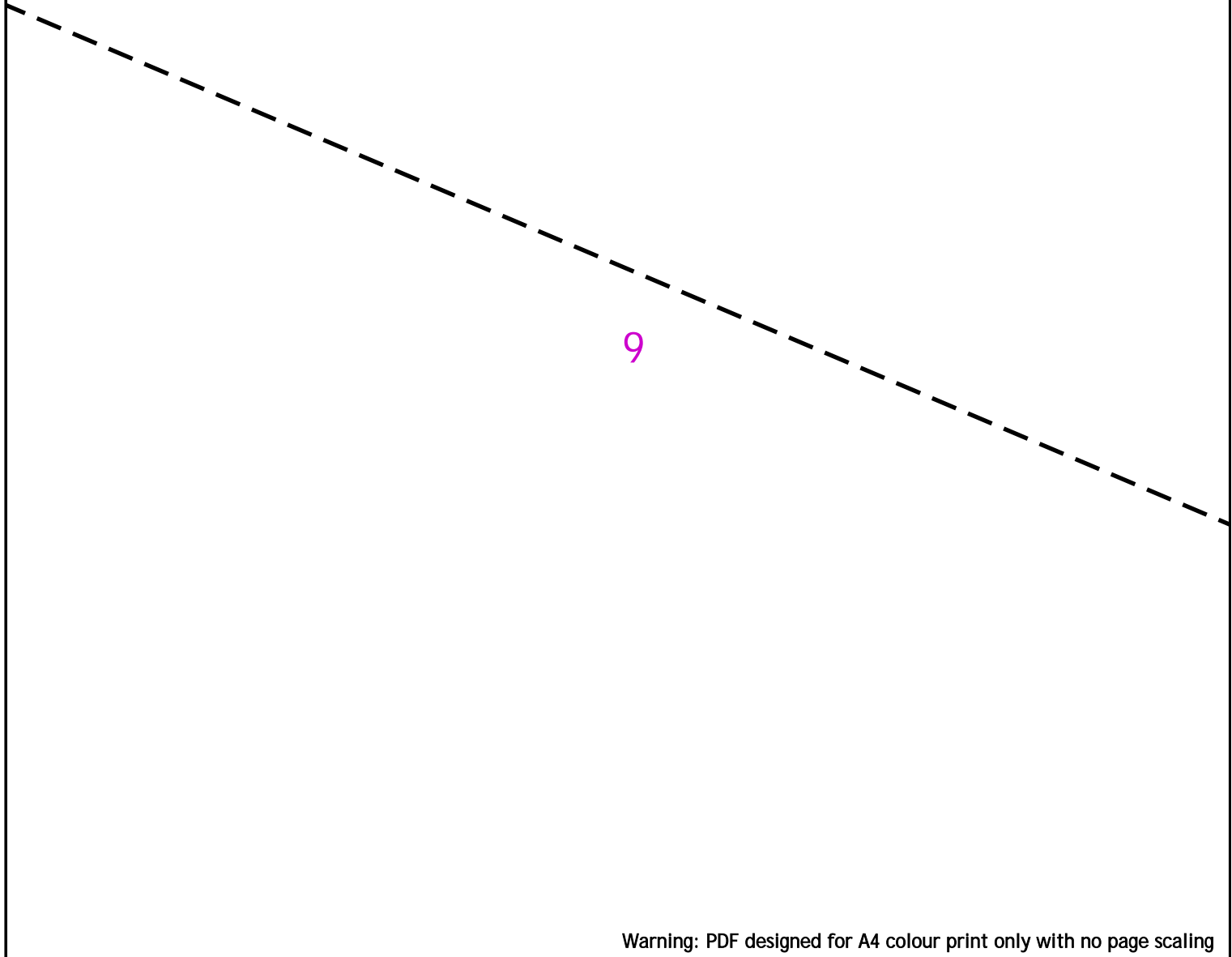
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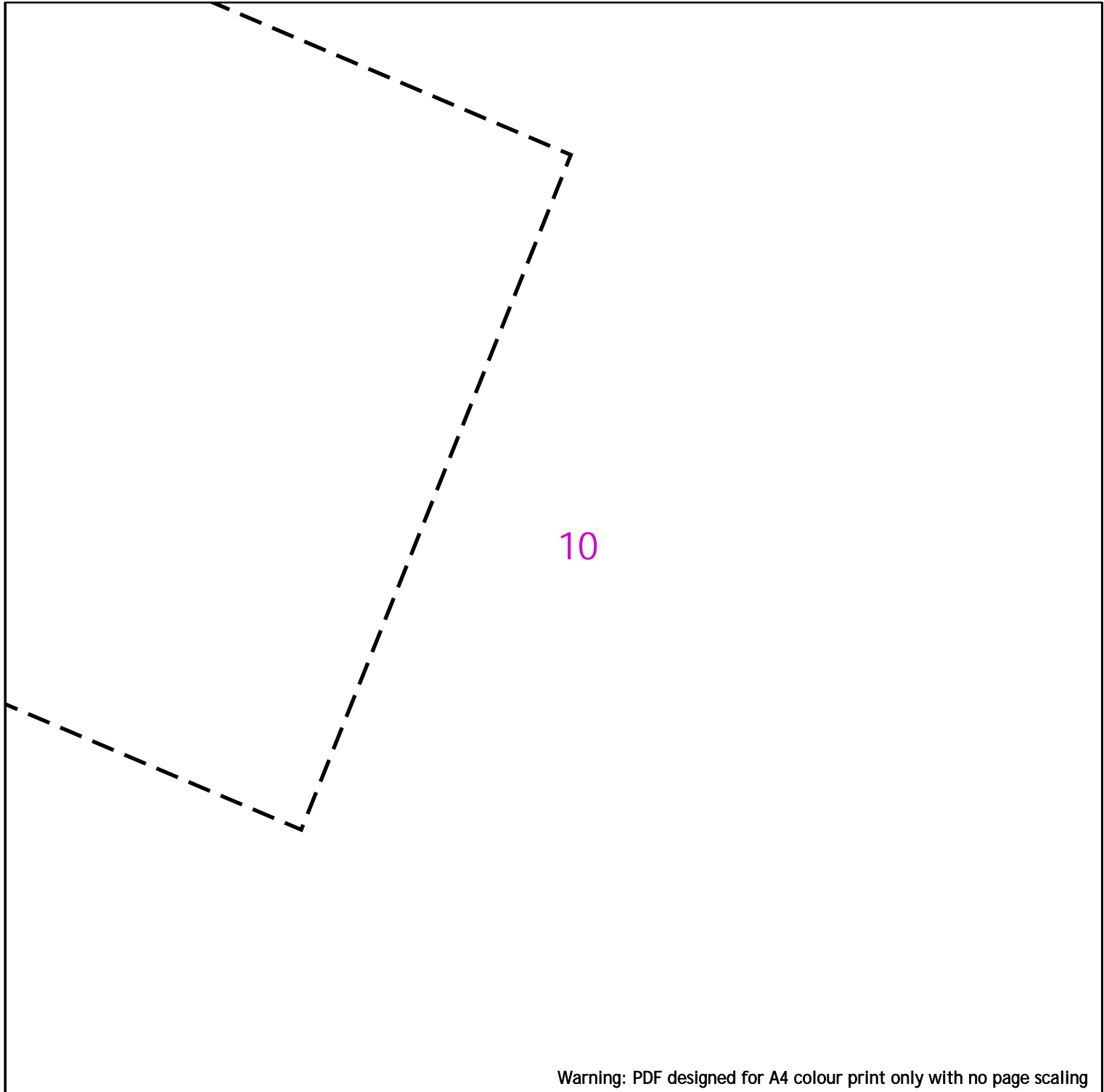
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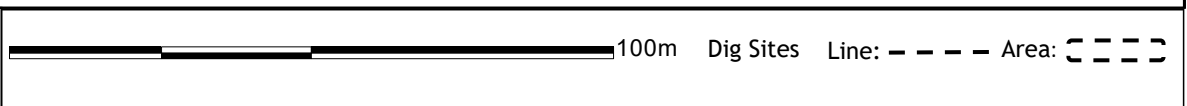
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<p>Contact us: plantprotection@eunetworks.com</p>	<p style="text-align: center;">Key</p> <p>Duct  Long-haul (LHN) Duct  Chamber Location </p>
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		Chamber Location

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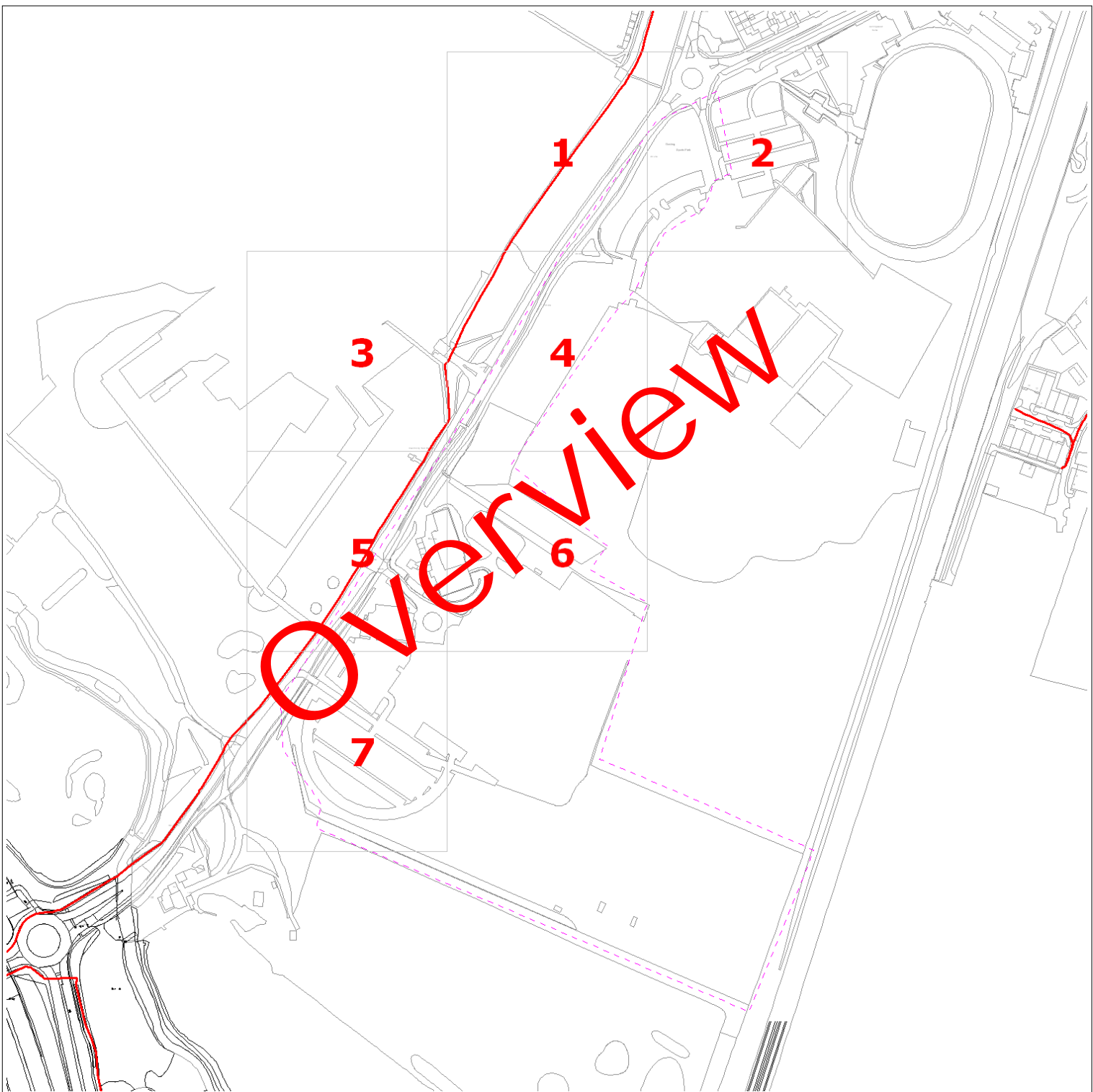
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Company: Soiltechnics Ltd

Job Reference: 26860752

Your Scheme/Reference: STU5824

 ZAYO DUCT
 or  ZAYO CHAMBER
 Dig Sites: Line  Area 
 Scale on A4 paper: 1:1000



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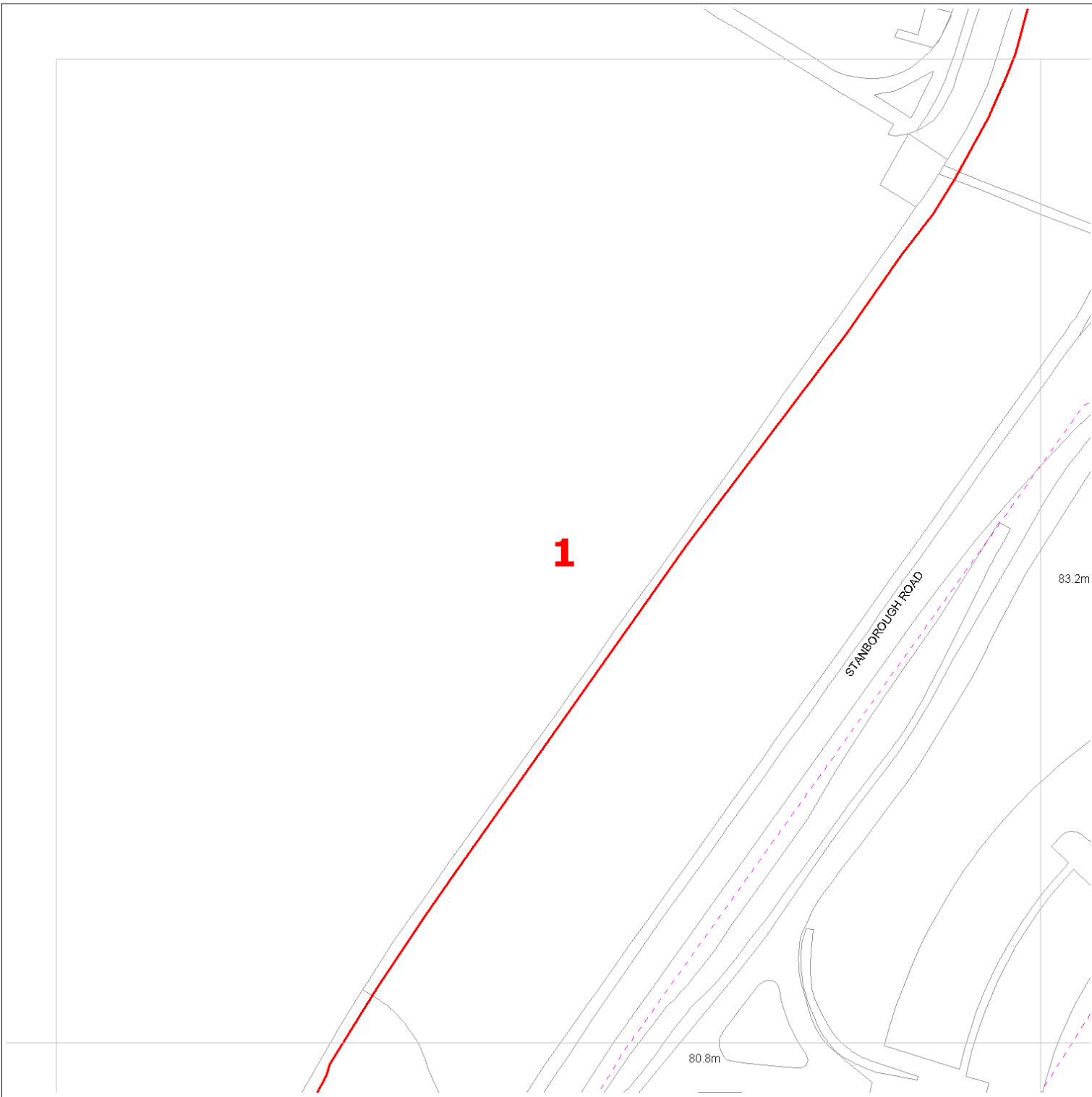
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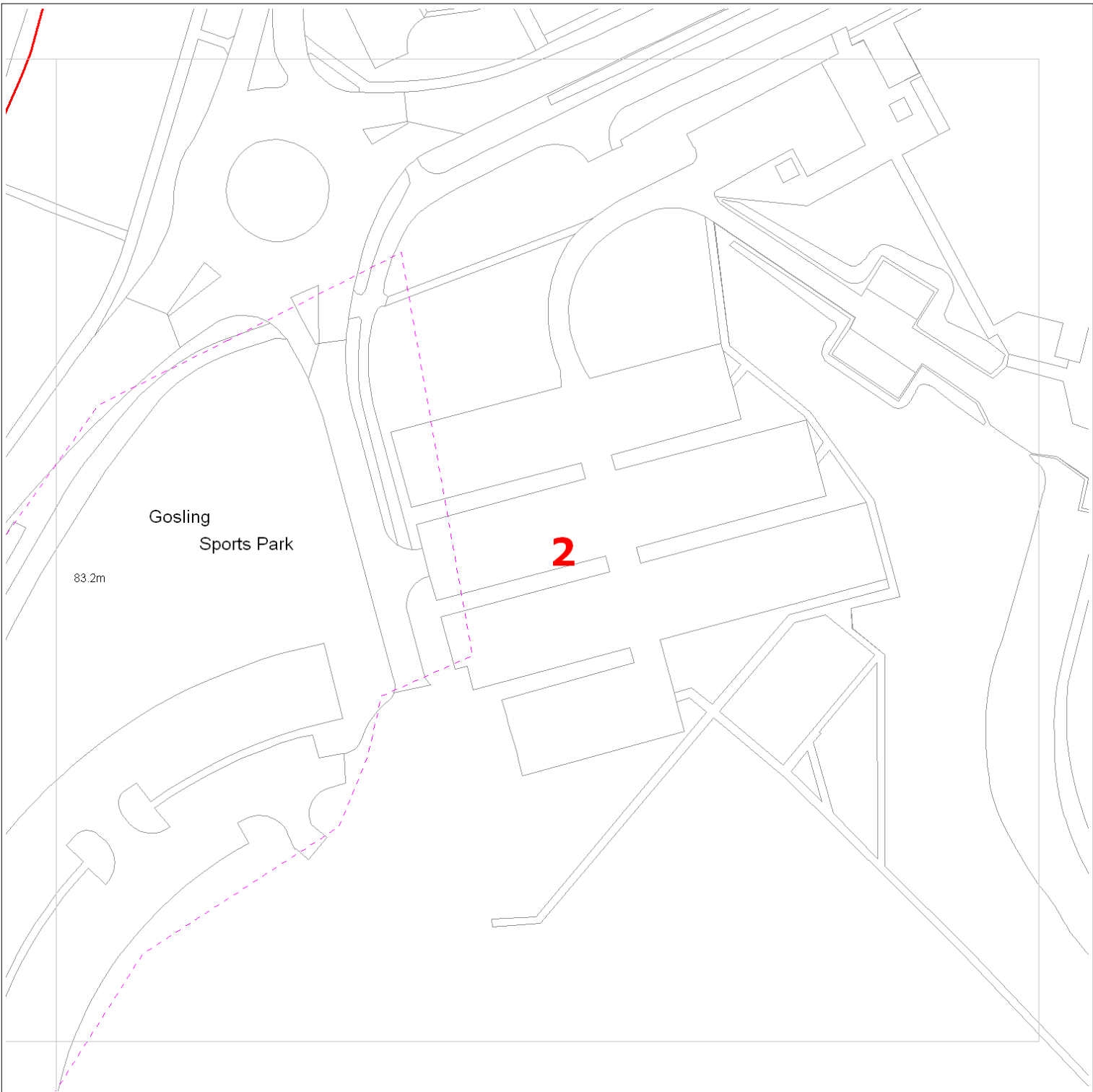
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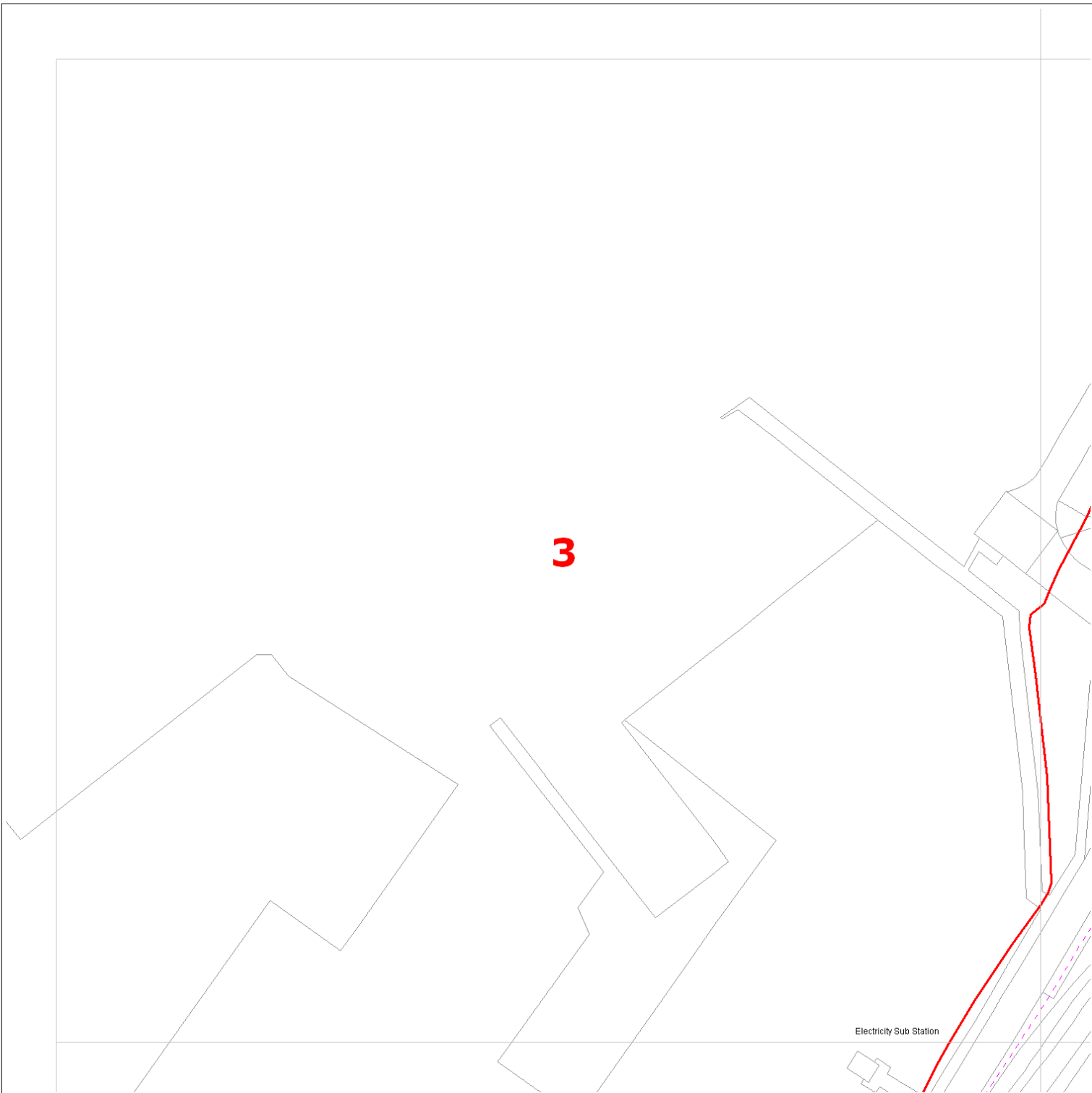
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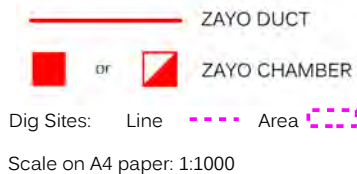
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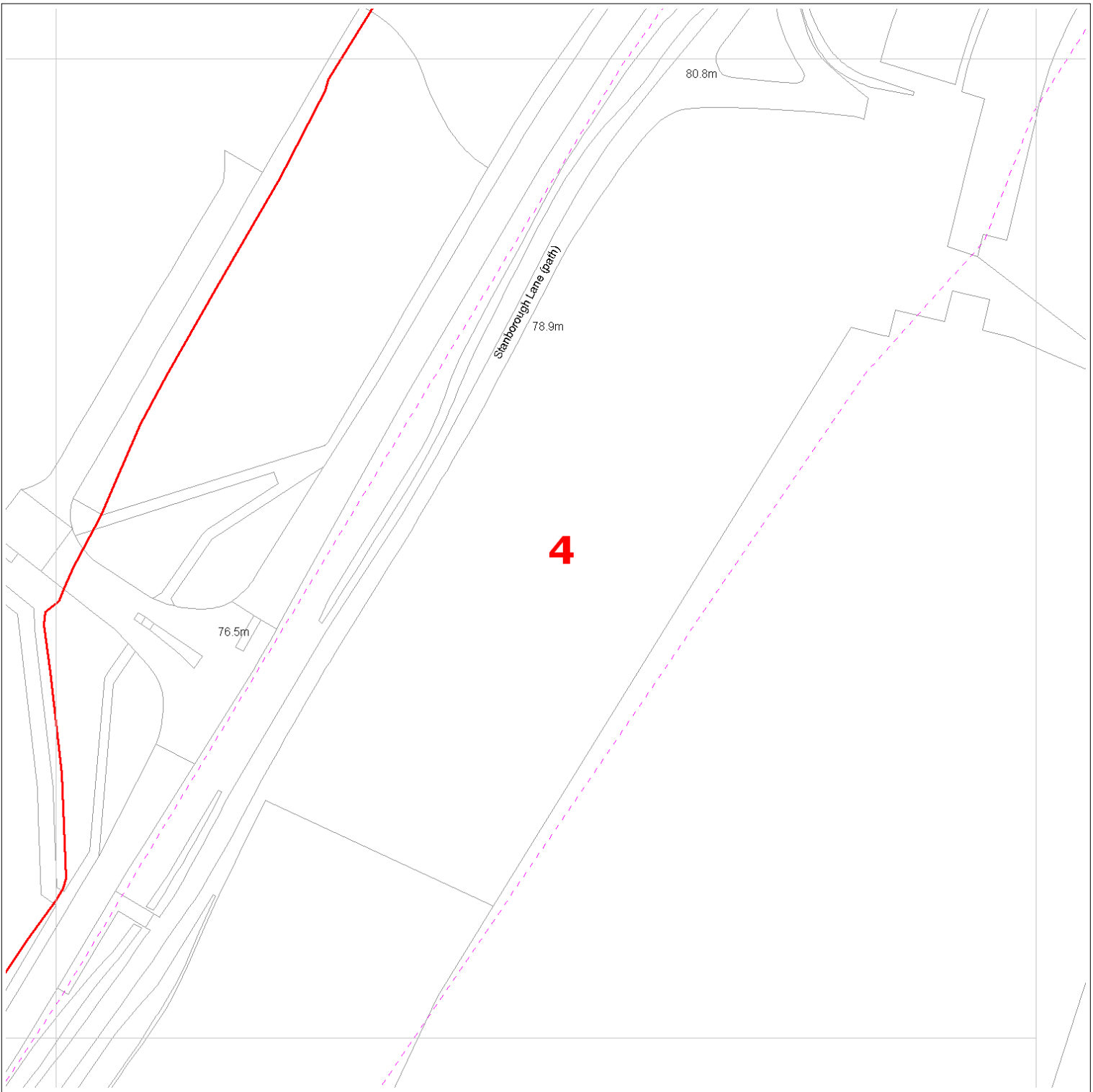
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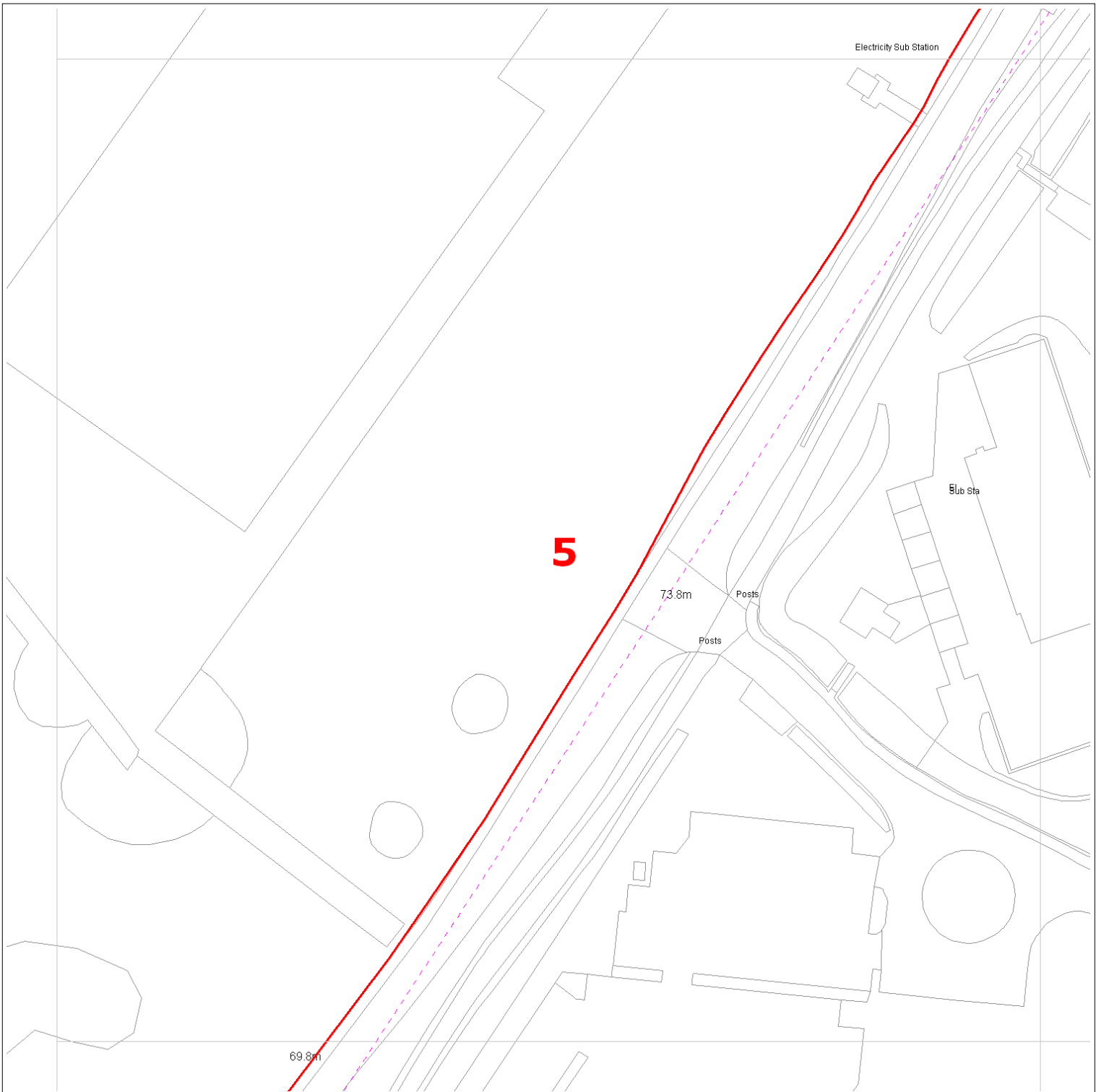
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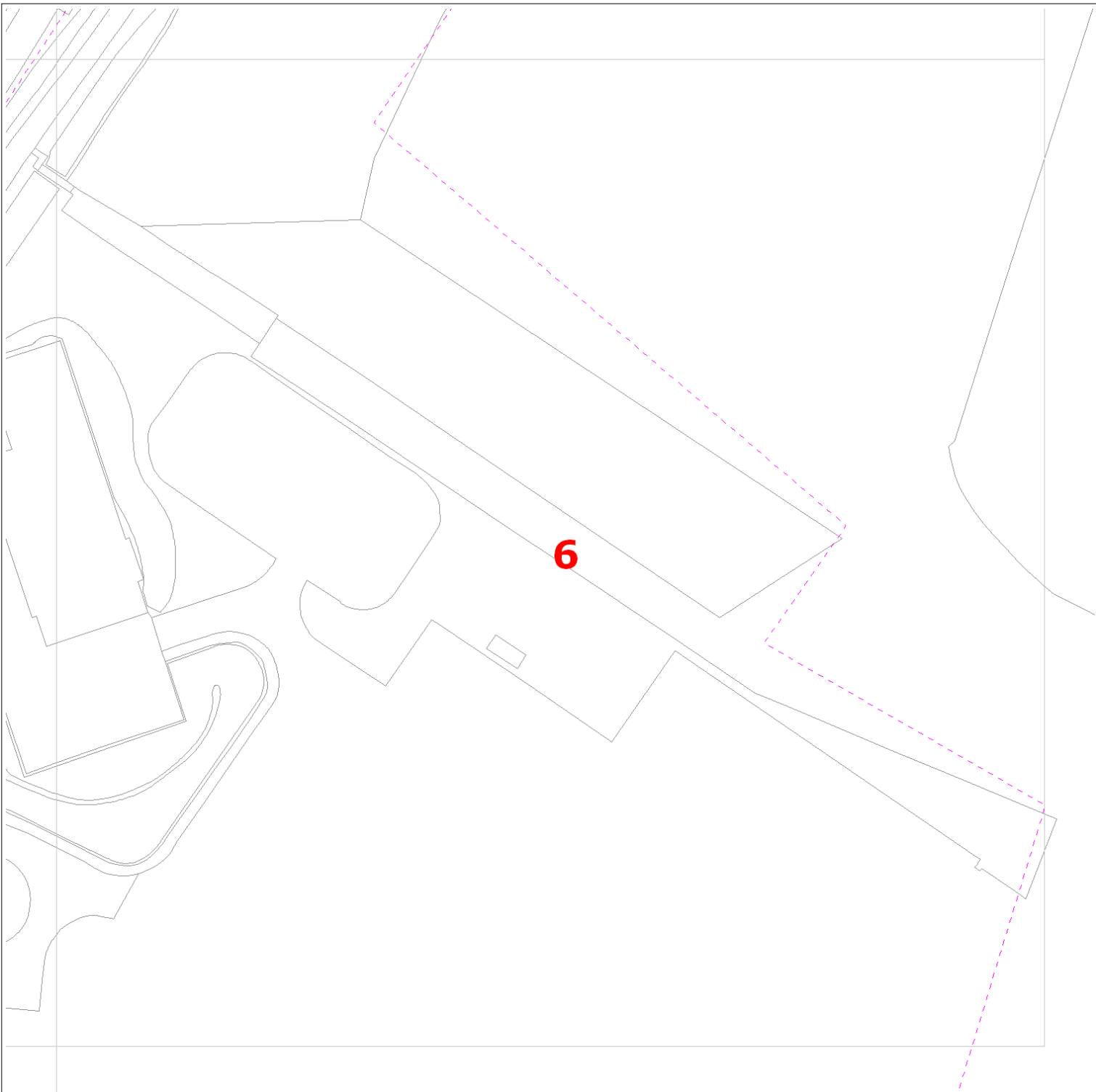
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ZAYO CHAMBER
Dig Sites: Line Area
Scale on A4 paper: 1:1000



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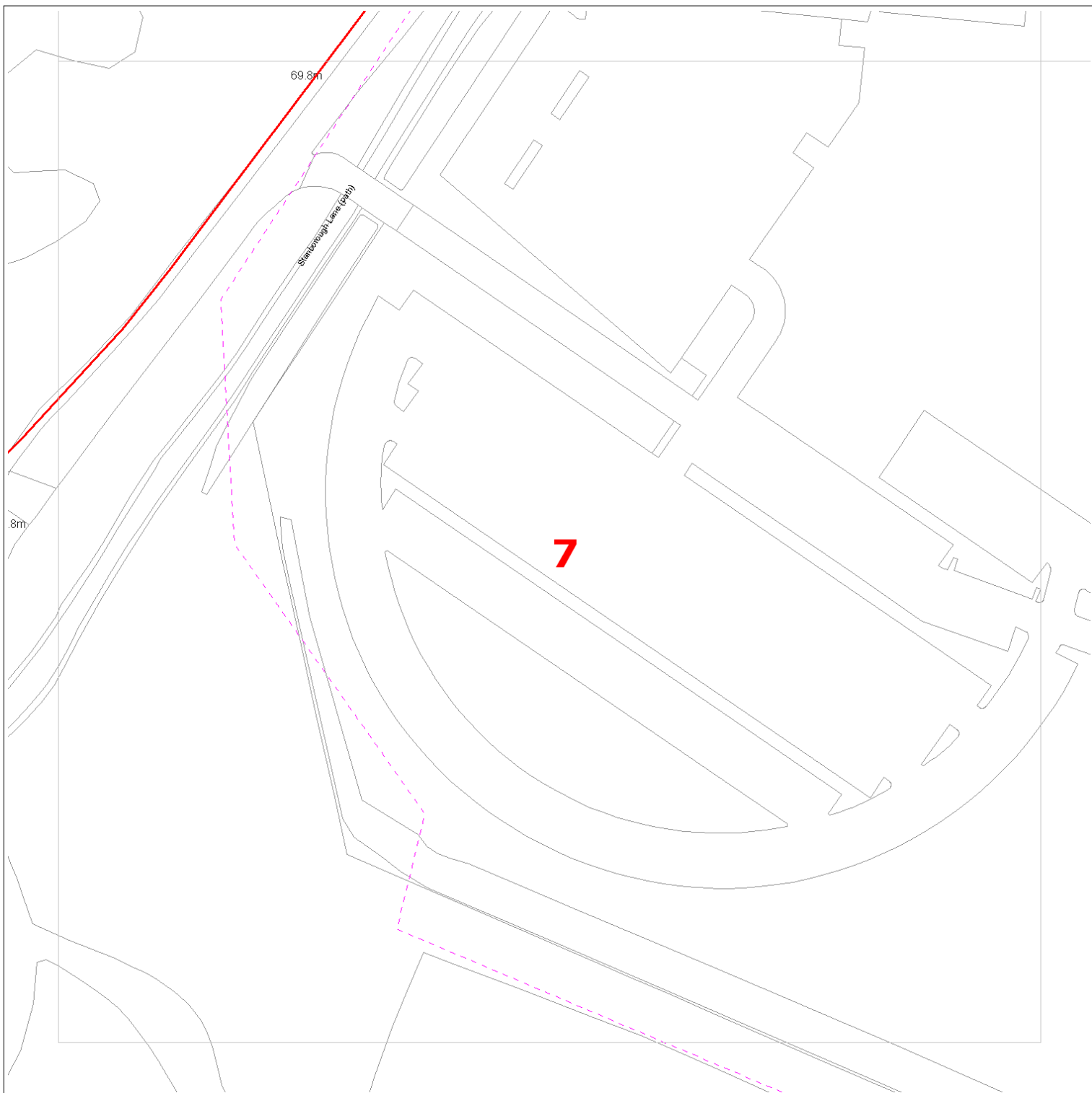
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Warning: PDF designed for colour print only with no page scaling. This Information is given as a guide only and its accuracy cannot be guaranteed



In Emergency Only and if Zayo Plant or Cables damaged call: 0800 169 1646

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Enquirer			
Name	Miss Lauren Wenham	Phone	01604 781877
Company	Soiltechnics Ltd	Mobile	Not Supplied
Address	Cedar Barn White Lodge Walgrave Northamptonshire NN6 9PY		
Email	admin@soiltechnics.net		

Enquiry Details			
Scheme/Reference	STU5824		
Enquiry type	Planned Works	Work category	Development Projects
Start date	09/09/2022	Work type	Commercial/industrial
End date	09/09/2022	Site size	162426 metres square
Searched location	XY= 523062, 211340	Work type buffer*	75 metres
Confirmed location	00 52		
Site Contact Name	Not Supplied	Site Phone No	Not Supplied
Description of Works			

* The WORK TYPE BUFFER is a distance added to your search area based on the Work type you have chosen.



Asset Owners

Terms and Conditions. Please note that this enquiry is subject always to our standard terms and conditions available at www.linesearchbeforeudig.co.uk ("Terms of Use") and the disclaimer at the end of this document. Please note that in the event of any conflict or ambiguity between the terms of this Enquiry Confirmation and the Terms of Use, the Terms of Use shall take precedence.

Notes. Please ensure your contact details are correct and up to date on the system in case the LSBUD Members need to contact you.

Validity and search criteria. The results of this enquiry are based on the confirmed information you entered and are valid only as at the date of the enquiry. It is your responsibility to ensure that the Enquiry Details are correct, and LineSearchbeforeUdig accepts no responsibility for any errors or omissions in the Enquiry Details or any consequences thereof. LSBUD Members update their asset information on a regular basis so you are advised to consider this when undertaking any works. It is your responsibility to choose the period of time after which you need to resubmit any enquiry but the maximum time (after which your enquiry will no longer be dealt with by the LSBUD Helpdesk and LSBUD Members) is 28 days. If any details of the enquiry change, particularly including, but not limited to, the location of the work, then a further enquiry must be made.

Asset Owners & Responses. Please note the enquiry results include the following:

1. "LSBUD Members" who are asset owners who have registered their assets on the LSBUD service.
2. "Non LSBUD Members" are asset owners who have not registered their assets on the LSBUD service but LSBUD is aware of their existence. Please note that there could be other asset owners within your search area.

Below are three lists of asset owners:

1. **LSBUD Members who have assets registered within your search area. ("Affected")**
 - a. **These LSBUD Members will either:**
 - i. **Ask for further information ("Email Additional Info" noted in status).** The additional information includes: Site contact name and number, Location plan, Detailed plan (minimum scale 1:2500), Cross sectional drawings (if available), Work Specification.
 - ii. **Respond directly to you ("Await Response").** In this response they may either send plans directly to you or ask for further information before being able to do so, particularly if any payments or authorisations are required.
2. **LSBUD Members who do not have assets registered within your search area. ("Not Affected")**
3. **Non LSBUD Members who may have assets within your search area.** Please note that this list is not exhaustive and all details are provided as a guide only. It is your responsibility to identify and consult with all asset owners before proceeding.

LSBUD Members who have assets registered on the LSBUD service within the vicinity of your search area.

List of affected LSBUD members

Asset Owner	Phone/Email	Emergency Only	Status
Cadent Gas	0800688588	0800111999	Await response
EUNetworks Fiber UK Limited	02031788003	02031788003	Await response
UK Power Networks	08000565866	08000565866	Await response
Zayo Group UK Ltd c/o JSM Group Ltd	01992 655 919	0800 169 1646	Await response

LSBUD Members who do not have assets registered on the LSBUD service within the vicinity of your search area. Please be aware that LSBUD Members make regular changes to their assets and this list may vary for new enquiries in the same area.

List of not affected LSBUD members

Angus Energy	AWE Pipeline	Balfour Beatty Investments Limited
BOC Limited (A Member of the Linde Group)	Box Broadband	BP Exploration Operating Company Limited
BPA	Carrington Gas Pipeline	CATS Pipeline c/o Wood Group PSN
Cemex	Centrica Storage Ltd	CNG Services Ltd
Concept Solutions People Ltd	ConocoPhillips (UK) Teesside Operator Ltd	D.S.Smith
Diamond Transmission Corporation	DIO (MOD Abandoned Pipelines)	DIO (MOD Live Pipelines)
E.ON UK CHP Limited	EirGrid	Eleclink Limited
Electricity North West Limited	Energy Assets Networks	ENI & Himor c/o Penspen Ltd
EnQuest NNS Limited	EP Langage Limited	ESP Utilities Group
ESSAR	Esso Petroleum Company Limited	EXA Infrastructure
Exolum Pipeline System	Fulcrum Electricity Assets Limited	Fulcrum Pipelines Limited
Gamma	Gas Networks Ireland (UK)	Gateshead Energy Company
Gigaclear Ltd	Harbour Energy	Heathrow Airport LTD
Humbly Grove Energy	IGas Energy	INEOS FPS Pipelines
INEOS Manufacturing (Scotland and TSEP)	INOVYN ChlorVinyls Limited	INOVYN Enterprises Limited
Intergen (Coryton Energy or Spalding Energy)	Jurassic Fibre Ltd	Last Mile
Mainline Pipelines Limited	Manchester Jetline Limited	Manx Cable Company
Marchwood Power Ltd (Gas Pipeline)	Melbourn Solar Limited	Moray East Offshore Windfarm
Murphy Utility Assets	National Grid Electricity Transmission	National Grid Gas Transmission
Neos Networks	Northumbrian Water Group	NPower CHP Pipelines
NTT Global Data Centers EMEA UK Ltd	NYnet Ltd	Oikos Storage Limited
Ørsted	Palm Paper Ltd	Perenco UK Limited (Purbeck Southampton Pipeline)
Petroineos	Phillips 66	Portsmouth Water
Premier Transmission Ltd (SNIP)	Redundant Pipelines - LPDA	RWE - Great Yarmouth Pipeline (Bacton to Great Yarmouth Power Station)
RWEnpower (Little Barford and South Haven)	SABIC UK Petrochemicals	SAS Utility Services Ltd
Scottish and Southern Electricity Networks	Scottish Power Generation	Seabank Power Ltd
SES Water	SGN	Shell

Shell NOP	SP Energy Networks	Squire Energy Networks
SSE Generation Ltd	SSE Transmission	SSE Utility Solutions Limited
Tata Communications (c/o JSM Construction Ltd)	Total Colnbrook Pipelines	Total Finaline Pipelines
Transmission Capital	Uniper UK Ltd	University of Cambridge Granta Backbone Network
Vattenfall	Veolia ES SELCHP Limited	Veolia ES Sheffield Ltd
Voneus Limited	VPI Power Limited	Wales and West Utilities
West of Duddon Sands Transmission Ltd	Western Power Distribution	Westminster City Council

The following Non-LSBUD Members may have assets in your search area. It is YOUR RESPONSIBILITY to contact them before proceeding. Please be aware this list is not exhaustive and it is your responsibility to identify and contact all asset owners within your search area.

Non-LSBUD members (Asset owners not registered on LSBUD)			
Asset Owner	Preferred contact method	Phone	Status
Affinity Water	maps@affinitywater.co.uk	03453572428	Not Notified
BT	https://www.swns.bt.com/pls/mbe/welcome.home	08000232023	Not Notified
CityFibre	asset.team@cityfibre.com	033 3150 7282	Not Notified
Colt	plantenquiries@catelecomuk.com	01227768427	Not Notified
ENGIE	nrsua.uk@equans.com	0800 130 3600	Not Notified
GTC	https://pe.gtc-uk.co.uk/PlantEnqMembership	01359240363	Not Notified
Hertfordshire County Council	highway_structures@hertfordshire.gov.uk	01992556121	Not Notified
Lumen Technologies	plantenquiries@instalcom.co.uk	02087314613	Not Notified
Mobile Broadband Network Limited	mbnl.plant.enquiries@turntown.com	01212 621 100	Not Notified
Network Rail	OPBuriedServicesEnquiries@networkrail.co.uk	01904523401	Not Notified
Sky UK Limited	nrsua@sky.uk	02070323234	Not Notified
Sota	SOTA.plantenquiries@instalcom.co.uk		Not Notified
Thames Water	http://www.digdat.co.uk	08450709145	Not Notified
Utility assets Ltd	assetrecords@utilityassets.co.uk		Not Notified
Verizon Business	osp-team@uk.verizonbusiness.com	01293611736	Not Notified
Virgin Media	http://www.digdat.co.uk	08708883116	Not Notified
Vodafone	osm.enquiries@atkinglobal.com	01454662881	Not Notified

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Miss Lauren Wenham
Soiltechnics Ltd
Cedar Barn White Lodge
Walgrave Northamptonshire
NN6 9PY

Zayo Plant Protection Centre
c/o JSM Group Ltd
Plant Protection Department
Sterling House
Mutton Lane
Potters Bar
Herts, EN6 3AR

Date: 08/09/2022

Your Reference: STU5824

Our Reference: 26860752

Dear Miss Lauren Wenham,

ZAYO GROUP LTD UK AFFECTED C2 PRELIMINARY PLANT ENQUIRY

We acknowledge with thanks your request dated 08/09/2022 10:02:10 AM for information on the location of our assets.

We confirm we have reviewed your proposed plan and have enclosed maps of the area in which Zayo Group UK Ltd have apparatus.

Please note these maps indicate approximate location only and their accuracy cannot be guaranteed. To determine the exact location a trial hole must be dug using extreme caution and hand dig methods only. Please refer to the attached document "Guide to Excavation within the vicinity of Zayo Apparatus".

Please forward all C3 and C4 Diversionary Estimate requests for diversionary works under the New Roads and Street Works Act 1991 "Measures necessary where apparatus is affected by Major Works (Diversionary Works), A Code of Practice", to zayodiversions@jsmgroup.com.

Please do not hesitate to contact us for further assistance.

Yours faithfully,

Zayo Group UK Ltd c/o JSM Group Ltd
JSM Plant Protection Department
T: 01992 655 919
zayoplantenquiries@jsmgroup.com

Appendix C 3: Soiltechnics Ground Investigation Report – Landscaping