Analytical Report Number: 22-46172
Project / Site name: Northstowe
Your Order No: 14059900

Lab Sample Number				2208351	2208352	2208353	2208354
Sample Reference				TPTCA104	TPTCA110	TPTCA119	TPTCA119
Sample Number				1	2	1	3
Depth (m)				0 00-0.20	0 20-0.90	0 00-0.20	0 50-1.20
Date Sampled				15/03/2022	15/03/2022	15/03/2022	15/03/2022
Time Taken				1526	1344	1209	1212
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	11	11	11
Total mass of sample received	kg	0.001	NONE	0 3	0 3	0.4	0.4

Asbestos in Soil	Type	N/A	ISO 17025	-	-	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A			DBU	DBU

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8 3	8.1	7 8	8 3
Total Cyanide	mg/kg	1	MCERTS	-	-	< 1 0	< 1 0
Free Cyanide	mg/kg	1	MCERTS	-	-	< 1 0	< 1 0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	0.89	0 054
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	0 012	0.0019	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	< 1 0	< 1 0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	-	-	0.52	< 0.05
Pyrene	mg/kg	0.05	MCERTS	-	-	0.49	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	0.34	< 0.05
Chrysene	mg/kg	0.05	MCERTS	-	-	0 3	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	0.37	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	0.26	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	0.32	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	0.21	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	0.25	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-	3.06	< 0.80

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	18	12	14
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	0 6	0 2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0 2	< 0 2	< 0 2
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0	< 4 0	< 4 0	< 4 0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	25	24	20	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	23	17	12	14
Lead (aqua regia extractable)	mg/kg	1	MCERTS	22	11	15	9 6
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0 3	< 0 3	< 0 3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	23	25	17	21
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1 0	< 1 0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	66	34	43	34

Analytical Report Number: 22-46172
Project / Site name: Northstowe
Your Order No: 14059900

Lab Sample Number				2208351	2208352	2208353	2208354
Sample Reference				TPTCA104	TPTCA110	TPTCA119	TPTCA119
Sample Number				1	2	1	3
Depth (m)				0 00-0.20	0 20-0.90	0 00-0.20	0 50-1.20
Date Sampled				15/03/2022	15/03/2022	15/03/2022	15/03/2022
Time Taken				1526	1344	1209	1212
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Petroleum Hydrocarbons							
TPH Texas (C6 - C8) HS_1D_TOTAL	mg/kg	0.1	ISO 17025	< 0.1	< 0.1	-	-
TPH Texas (C8 - C10) HS_1D_TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-
TPH Texas (C10 - C12) EH_CU_1D_TOTAL	mg/kg	1	MCERTS	< 1 0	< 1 0	-	-
TPH Texas (C12 - C16) EH_CU_1D_TOTAL	mg/kg	4	MCERTS	< 4 0	< 4 0	-	-
TPH Texas (C16 - C21) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	< 10	< 10	-	-
TPH Texas (C21 - C40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	13	< 10	-	-
TPH Texas (C6 - C40) EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	13	< 10	-	-
SVOCs							
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	-	-
Phenol	mg/kg	0.2	ISO 17025	< 0 2	< 0 2	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
4-Methylphenol	mg/kg	0.2	NONE	< 0 2	< 0 2	-	-
Isophorone	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3	< 0 3	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-
Azobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
Phenanthrene	mg/kg	0.05	MCERTS	0.99	< 0.05	-	-
Anthracene	mg/kg	0.05	MCERTS	0.22	< 0.05	-	-
Carbazole	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-

Analytical Report Number: 22-46172
Project / Site name: Northstowe
Your Order No: 14059900

Lab Sample Number				2208351	2208352	2208353	2208354
Sample Reference				TPTCA104	TPTCA110	TPTCA119	TPTCA119
Sample Number				1	2	1	3
Depth (m)				0 00-0.20	0 20-0.90	0 00-0.20	0 50-1.20
Date Sampled				15/03/2022	15/03/2022	15/03/2022	15/03/2022
Time Taken				1526	1344	1209	1212
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
Fluoranthene	mg/kg	0.05	MCERTS	2 5	< 0.05	-	-
Pyrene	mg/kg	0.05	MCERTS	2.1	< 0.05	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3	< 0 3	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1 3	< 0.05	-	-
Chrysene	mg/kg	0.05	MCERTS	0.86	< 0.05	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1	< 0.05	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.76	< 0.05	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.96	< 0.05	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.52	< 0.05	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.63	< 0.05	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-46172
Project / Site name: Northstowe

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2208351	TPTCA104	1	0.00-0.20	Brown clay and loam with gravel and vegetation.
2208352	TPTCA110	2	0.20-0.90	Light brown loam and clay with gravel.
2208353	TPTCA119	1	0.00-0.20	Light brown loam and clay with gravel.
2208354	TPTCA119	3	0.50-1.20	Light brown sand with gravel.

Analytical Report Number : 22-46172
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPH Texas (Soil)	TPH Texas bands C6-C10 by HS/GC-MS & C10-C40 by GC-FID	In-house method	L088/L076	D	MCERTS
Fraction Organic Carbon FOC Automated	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method	L009	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Analytical Report Number : 22-46172
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

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Analytical Report Number : 22-46874

Project / Site name:	Northstowe	**Samples received on:**	16/03/2022
Your job number:	10052307	**Samples instructed on/ Analysis started on:**	22/03/2022
Your order number:	14059900	**Analysis completed by:**	30/03/2022
Report Issue Number:	1	**Report issued on:**	30/03/2022
Samples Analysed:	4 soil samples		

Signed: Reg. 13(1)

Reg. 13(1)
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-46874
Project / Site name: Northstowe

Lab Sample Number				2211786	2211787	2211788	2211789
Sample Reference				WSTCA101	WSTCA106	WSTCA108	WSTCA117
Sample Number				1	2	2	2
Depth (m)				0.20	0.50	0.50	0.50
Date Sampled				15/03/2022	15/03/2022	15/03/2022	15/03/2022
Time Taken				1258	1151	1038	1410
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	12	8.4	14	15
Total mass of sample received	kg	0.001	NONE	1.4	1.4	1.4	1.4
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	MLO			
General Inorganics							
pH - Automated	pH Units	N/A	MCERTS	7 8	8 0	7 8	7.7
Total Cyanide	mg/kg	1	MCERTS	< 1 0	-	-	-
Free Cyanide	mg/kg	1	MCERTS	< 1 0	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	2 3	-	-	-
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	-	0.0059	0.0095	0.0094
Total Phenols							
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0	-	-	-
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	0.39	-	-	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	0.61	-	-	-
Pyrene	mg/kg	0.05	MCERTS	0.58	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.28	-	-	-
Chrysene	mg/kg	0.05	MCERTS	0.34	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.27	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.19	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.28	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	2.94	-	-	-
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	19	13	13
Boron (water soluble)	mg/kg	0.2	MCERTS	2 2	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0 2	< 0 2	< 0 2
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0	< 4 0	< 4 0	< 4 0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	29	32	27	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	16	16	16	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	21	15	21	23
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0 3	< 0 3	< 0 3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	24	29	22	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1 0	< 1 0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	68	58	58	62

Analytical Report Number: 22-46874
Project / Site name: Northstowe

Lab Sample Number				2211786	2211787	2211788	2211789
Sample Reference				WSTCA101	WSTCA106	WSTCA108	WSTCA117
Sample Number				1	2	2	2
Depth (m)				0.20	0.50	0.50	0.50
Date Sampled				15/03/2022	15/03/2022	15/03/2022	15/03/2022
Time Taken				1258	1151	1038	1410
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Petroleum Hydrocarbons							
TPH Texas (C6 - C8) HS_1D_TOTAL	mg/kg	0.1	ISO 17025	-	< 0.1	< 0.1	< 0.1
TPH Texas (C8 - C10) HS_1D_TOTAL	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
TPH Texas (C10 - C12) EH_CU_1D_TOTAL	mg/kg	1	MCERTS	-	< 1 0	< 1 0	< 1 0
TPH Texas (C12 - C16) EH_CU_1D_TOTAL	mg/kg	4	MCERTS	-	< 4 0	< 4 0	< 4 0
TPH Texas (C16 - C21) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	-	< 10	< 10	< 10
TPH Texas (C21 - C40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	-	< 10	< 10	59
TPH Texas (C6 - C40) EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	-	< 10	< 10	59
SVOCs							
Aniline	mg/kg	0.1	NONE	-	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	-	< 0 2	< 0 2	< 0 2
2-Chlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
Hexachloroethane	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
4-Methylphenol	mg/kg	0.2	NONE	-	< 0 2	< 0 2	< 0 2
Isophorone	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
2-Nitrophenol	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
4-Chloroaniline	mg/kg	0.1	NONE	-	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
Dibenzofuran	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	< 0 3	< 0 3	< 0 3
Diethyl phthalate	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
4-Nitroaniline	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
Phenanthrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	0.35
Anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Carbazole	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
Anthraquinone	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
Fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	0.59	0.6
Pyrene	mg/kg	0.05	MCERTS	-	< 0.05	0.65	0.49

Analytical Report Number: 22-46874
Project / Site name: Northstowe

Lab Sample Number				2211786	2211787	2211788	2211789
Sample Reference				WSTCA101	WSTCA106	WSTCA108	WSTCA117
Sample Number				1	2	2	2
Depth (m)				0.20	0.50	0.50	0.50
Date Sampled				15/03/2022	15/03/2022	15/03/2022	15/03/2022
Time Taken				1258	1151	1038	1410
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	< 0 3	< 0 3	< 0 3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	0.31	0.33
Chrysene	mg/kg	0.05	MCERTS	-	< 0.05	0.37	0.32
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	0.22	0.21
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	0.17	0.24
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	0.25	0.2
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-46874
Project / Site name: Northstowe

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2211786	WSTCA101	1	0.2	Brown clay and loam with gravel.
2211787	WSTCA106	2	0.5	Brown clay and loam with gravel.
2211788	WSTCA108	2	0.5	Brown clay and sand with gravel.
2211789	WSTCA117	2	0.5	Brown clay and sand with gravel and vegetation.

Analytical Report Number : 22-46874
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPH Texas (Soil)	TPH Texas bands C6-C10 by HS/GC-MS & C10-C40 by GC-FID	In-house method	L088/L076	D	MCERTS
Fraction Organic Carbon FOC Automated	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method	L009	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

Analytical Report Number : 22-46874
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

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Analytical Report Number : 22-47225

Project / Site name:	Northstowe	**Samples received on:**	22/03/2022
Your job number:	10052307	**Samples instructed on/ Analysis started on:**	22/03/2022
Your order number:	14059900	**Analysis completed by:**	31/03/2022
Report Issue Number:	1	**Report issued on:**	31/03/2022
Samples Analysed:	6 soil samples		

Signed: Reg. 13(1)

Reg. 13(1)
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-47225
Project / Site name: Northstowe

Lab Sample Number				2213697	2213698	2213699	2213700	2213701
Sample Reference				WS2C106	WS2C108	WS2C114	WS2C120	WS2C121
Sample Number				1	2	2	2	2
Depth (m)				0.20	0.50	0.50	0.50	0.50
Date Sampled				21/03/2022	15/03/2022	16/03/2022	16/03/2022	21/03/2022
Time Taken				1355	1645	1104	1507	1106
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	17	15	12	12
Total mass of sample received	kg	0.001	NONE	1 2	1 2	1 2	1 2	1 2

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	JSW	JSW	JSW	JSW	JSW

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.9	7.7	8 2	8 3	8 6
Total Cyanide	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Complex Cyanide	mg/kg	1	MCERTS	-	< 1 0	< 1 0	-	-
Free Cyanide	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Total Sulphate as SO4	mg/kg	50	MCERTS	-	17000	2200	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	1.7	-	-	0.09	0 098
Sulphide	mg/kg	1	MCERTS	-	13	< 1 0	-	-
Elemental Sulphur	mg/kg	5	MCERTS	-	< 5 0	< 5 0	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80

Analytical Report Number: 22-47225
Project / Site name: Northstowe

Lab Sample Number				2213697	2213698	2213699	2213700	2213701
Sample Reference				WS2C106	WS2C108	WS2C114	WS2C120	WS2C121
Sample Number				1	2	2	2	2
Depth (m)				0.20	0.50	0.50	0.50	0.50
Date Sampled				21/03/2022	15/03/2022	16/03/2022	16/03/2022	21/03/2022
Time Taken				1355	1645	1104	1507	1106
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	14	16	12	19
Boron (water soluble)	mg/kg	0.2	MCERTS	2	-	-	0.4	0 6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0 2	< 0 2	< 0 2	< 0 2
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0	-	-	< 4 0	< 4 0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	27	27	32	22	28
Copper (aqua regia extractable)	mg/kg	1	MCERTS	14	-	-	22	14
Lead (aqua regia extractable)	mg/kg	1	MCERTS	13	13	13	9 6	13
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0 3	< 0 3	< 0 3	< 0 3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25	-	-	25	24
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	47	-	-	36	44
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	-	< 1 0	< 1 0	-	-
Toluene	µg/kg	1	MCERTS	-	< 1 0	< 1 0	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1 0	< 1 0	-	-
p & m-xylene	µg/kg	1	MCERTS	-	< 1 0	< 1 0	-	-
o-xylene	µg/kg	1	MCERTS	-	< 1 0	< 1 0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1 0	< 1 0	-	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	-	< 0 001	< 0 001	-	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	-	< 0 001	< 0 001	-	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	-	< 0 001	< 0 001	-	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	-	< 1 0	< 1 0	-	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	-	< 2 0	< 2 0	-	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	-	< 8 0	< 8 0	-	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	-	< 8 0	< 8 0	-	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	MCERTS	-	< 10	< 10	-	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	-	< 0 001	< 0 001	-	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	-	< 0 001	< 0 001	-	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	-	< 0 001	< 0 001	-	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	-	< 1 0	< 1 0	-	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	-	< 2 0	< 2 0	-	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	-	< 10	< 10	-	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	-	< 10	< 10	-	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	MCERTS	-	< 10	< 10	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-47225
Project / Site name: Northstowe

Lab Sample Number				2213702
Sample Reference				WS2C123
Sample Number				1
Depth (m)				0.20
Date Sampled				21/03/2022
Time Taken				0947
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	16
Total mass of sample received	kg	0.001	NONE	1 2

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	JSW

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.1
Total Cyanide	mg/kg	1	MCERTS	< 1 0
Complex Cyanide	mg/kg	1	MCERTS	-
Free Cyanide	mg/kg	1	MCERTS	< 1 0
Total Sulphate as SO4	mg/kg	50	MCERTS	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.11
Sulphide	mg/kg	1	MCERTS	-
Elemental Sulphur	mg/kg	5	MCERTS	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.68
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1
Pyrene	mg/kg	0.05	MCERTS	0.9
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.52
Chrysene	mg/kg	0.05	MCERTS	0.51
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.4
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.39
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.42
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.21
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.26

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	5.32

Analytical Report Number: 22-47225
Project / Site name: Northstowe

Lab Sample Number				2213702
Sample Reference				WS2C123
Sample Number				1
Depth (m)				0.20
Date Sampled				21/03/2022
Time Taken				0947
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Heavy Metals / Metalloids				
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16
Boron (water soluble)	mg/kg	0.2	MCERTS	1.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22
Copper (aqua regia extractable)	mg/kg	1	MCERTS	21
Lead (aqua regia extractable)	mg/kg	1	MCERTS	20
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	61
Monoaromatics & Oxygenates				
Benzene	µg/kg	1	MCERTS	-
Toluene	µg/kg	1	MCERTS	-
Ethylbenzene	µg/kg	1	MCERTS	-
p & m-xylene	µg/kg	1	MCERTS	-
o-xylene	µg/kg	1	MCERTS	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-
Petroleum Hydrocarbons				
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	MCERTS	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-47225
Project / Site name: Northstowe

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2213697	WS2C106	1	0.2	Brown clay and loam with gravel.
2213698	WS2C108	2	0.5	Brown clay with gravel.
2213699	WS2C114	2	0.5	Brown clay with gravel and chalk.
2213700	WS2C120	2	0.5	Brown clay and loam with gravel and chalk.
2213701	WS2C121	2	0.5	Brown clay and loam with gravel and chalk.
2213702	WS2C123	1	0.2	Brown clay and loam with gravel and vegetation.

Analytical Report Number : 22-47225
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Elemental sulphur in soil	Determination of elemental sulphur in soil by extraction in acetonitrile followed by HPLC.	In-house method based on Secondsite Property Holdings Guidance for Assessing and Managing Potential	L021-PL	D	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

Analytical Report Number : 22-47225
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

Analytical Report Number : 22-47225
Project / Site name: Northstowe

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
WS2C108	2	S	2213698	c	Free cyanide in soil	L080-PL	c
WS2C108	2	S	2213698	c	Complex Cyanide in soil	L080-PL	c
WS2C108	2	S	2213698	c	Sulphide in soil	L010-PL	c
WS2C108	2	S	2213698	c	Total cyanide in soil	L080-PL	c

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Analytical Report Number : 22-47463

Project / Site name:	Northstowe	**Samples received on:**	22/03/2022
Your job number:	NSTO	**Samples instructed on/ Analysis started on:**	23/03/2022
Your order number:	14059900	**Analysis completed by:**	31/03/2022
Report Issue Number:	1	**Report issued on:**	31/03/2022
Samples Analysed:	5 soil samples		

Signed: Reg. 13(1)

Reg. 13(1)
Senior Quality Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-47463
Project / Site name: Northstowe

Lab Sample Number				2214824	2214825	2214826	2214827	2214828
Sample Reference				BH2C102	BHTCA105	BHTCA106	BHTCA107	BHTCA110
Sample Number				2	2	2	1	2
Depth (m)				0.50	0.50-0 50	0.50	0 20	0 50
Date Sampled				17/03/2022	11/03/2022	15/03/2022	16/03/2022	16/03/2022
Time Taken				0903	0812	1330	1007	1000
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	15	11	11	11	18
Total mass of sample received	kg	0.001	NONE	1 0	1.0	1.0	1.0	1.0
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	NTK	NTK		NTK	NTK
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7 3	7.5	-	7.2	7.8
Total Cyanide	mg/kg	1	MCERTS	< 1 0	< 1 0	-	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1 0	< 1 0	-	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.67	0.032	-	0 38	1.6
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0	< 1 0	-	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0 05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0 05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0 05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0 05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0.42
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0 05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	1.1
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0.98
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0 56
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0 56
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0 54
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0 29
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0.48
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0 24
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0 05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0 31
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	-	< 0.80	5.49

Analytical Report Number: 22-47463
Project / Site name: Northstowe

Lab Sample Number				2214824	2214825	2214826	2214827	2214828
Sample Reference				BH2C102	BHTCA105	BHTCA106	BHTCA107	BHTCA110
Sample Number				2	2	2	1	2
Depth (m)				0.50	0.50-0 50	0.50	0 20	0 50
Date Sampled				17/03/2022	11/03/2022	15/03/2022	16/03/2022	16/03/2022
Time Taken				0903	0812	1330	1007	1000
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	20	13	-	17	15
Boron (water soluble)	mg/kg	0.2	MCERTS	1.4	0.8	-	0.8	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	34	34	-	27	28
Copper (aqua regia extractable)	mg/kg	1	MCERTS	13	14	-	25	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	15	15	-	22	30
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	29	24	-	23	26
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1 0	-	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	72	57	-	68	61
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0	< 1 0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1 0	< 1 0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1 0	< 1 0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1 0	< 1 0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1 0	< 1 0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1 0	< 1 0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0 001	< 0 001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0 001	< 0 001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0 001	< 0 001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	1 0	< 1 0	2.9	1.1	3.3
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	5 3	< 2 0	8.4	4.3	7.9
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8 0	< 8 0	14	< 8.0	14
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8 0	< 8 0	39	20	45
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	MCERTS	19	< 10	64	32	71
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0 001	< 0 001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0 001	< 0 001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0 001	< 0 001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2 0	< 2 0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	12

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-47463
Project / Site name: Northstowe

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2214824	BH2C102	2	0.5	Brown clay and loam with gravel and chalk.
2214825	BHTCA105	2	0.50-0.50	Light brown clay and sand with gravel.
2214826	BHTCA106	2	0.5	Brown clay and sand with gravel and chalk.
2214827	BHTCA107	1	0.2	Brown clay and sand with gravel and vegetation.
2214828	BHTCA110	2	0.5	Brown clay with gravel.

Analytical Report Number : 22-47463
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS

Analytical Report Number : 22-47463
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

Analytical Report Number : 22-47463
Project / Site name: Northstowe

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BHTCA105	2	S	2214825	c	Free cyanide in soil	L080-PL	c
BHTCA105	2	S	2214825	c	Total cyanide in soil	L080-PL	c
BHTCA106	2	S	2214826	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
BHTCA106	2	S	2214826	b	TPHCWG (Soil)	L088/76-PL	b
BHTCA107	1	S	2214827	c	Free cyanide in soil	L080-PL	c
BHTCA107	1	S	2214827	c	Total cyanide in soil	L080-PL	c
BHTCA110	2	S	2214828	c	Free cyanide in soil	L080-PL	c
BHTCA110	2	S	2214828	c	Total cyanide in soil	L080-PL	c

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Analytical Report Number : 22-47721

Project / Site name:	Northstowe	**Samples received on:**	22/03/2022
Your job number:	10052307	**Samples instructed on/ Analysis started on:**	25/03/2022
Your order number:	14059900	**Analysis completed by:**	01/04/2022
Report Issue Number:	1	**Report issued on:**	04/04/2022
Samples Analysed:	19 soil samples		

Reg. 13(1)

Signed:

Reg. 13(1)
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-47721
Project / Site name: Northstowe

Lab Sample Number				2216182	2216183	2216184	2216185	2216186
Sample Reference				TP2C102	TP2C103	TP2C104	TP2C104	TP2C105
Sample Number				1	1	1	2	1
Depth (m)				0.40-1 60	0.00-0.20	0.00-0.20	0.20-0.50	0.00-0.50
Date Sampled				16/03/2022	17/03/2022	16/03/2022	16/03/2022	17/03/2022
Time Taken				1636	1103	1634	1634	1118
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	18	13	13	11	20
Total mass of sample received	kg	0.001	NONE	1.2	1	1.4	1.4	0 8
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	GFI	GFI	GFI	GFI	GFI
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.4	9.8	8.2	8.0	7.9
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.12	0.41	0.2	0.54	1 2
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0.59	0.42	0.24
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	1.7	0.79	0.9
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	1.6	0.68	0.9
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0.89	0.41	0.57
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0.9	0.39	0.55
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	1.1	0.34	0.51
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0.49	0.29	0.32
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0.99	0.4	0 5
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0.55	< 0.05	0.38
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0.7	< 0.05	0.47
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0 80	9.4	3.72	5.34
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.2	14	16	20	14
Boron (water soluble)	mg/kg	0.2	MCERTS	1.1	0.7	1	0.7	1 5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	1.1	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	24	27	28	28
Copper (aqua regia extractable)	mg/kg	1	MCERTS	6	8.6	16	6	8.9
Lead (aqua regia extractable)	mg/kg	1	MCERTS	9.2	13	24	13	12
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	18	21	22	27	25
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	37	44	71	51	53

Analytical Report Number: 22-47721
Project / Site name: Northstowe

Lab Sample Number				2216182	2216183	2216184	2216185	2216186
Sample Reference				TP2C102	TP2C103	TP2C104	TP2C104	TP2C105
Sample Number				1	1	1	2	1
Depth (m)				0.40-1 60	0.00-0.20	0.00-0.20	0.20-0.50	0.00-0.50
Date Sampled				16/03/2022	17/03/2022	16/03/2022	16/03/2022	17/03/2022
Time Taken				1636	1103	1634	1634	1118
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	14	< 10	12
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	19	12	16

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-47721
Project / Site name: Northstowe

Lab Sample Number				2216187	2216188	2216189	2216190	2216191
Sample Reference				TP2C107	TP2C107	TP2C109	TP2C110	TP2C111
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0 00-0.20	0.20-1.10	0.00-0.20	0.00-0.50	0.00-0.10
Date Sampled				17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022
Time Taken				1451	1451	1152	1448	1454
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	22	< 0.1
Moisture Content	%	0.01	NONE	18	21	13	12	14
Total mass of sample received	kg	0.001	NONE	0.8	0 8	0.8	1.2	0.8
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	GFI	GFI	GFI	GFI	GFI
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.1	7 8	8.2	8.1	8.7
Total Cyanide	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.34	1.7	0.86	0.22	0.33
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.48	0.34	< 0 05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	1.3	0.84	0.43
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	1.3	0.78	0.4
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.75	0.53	0.25
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.64	0.43	0.25
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.7	0.5	0.22
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.47	0.29	0.22
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.74	0.47	0.29
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.47	0.34	< 0 05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.58	0.41	< 0 05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	7.42	4.93	2.06
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	13	21	19	16
Boron (water soluble)	mg/kg	0.2	MCERTS	2.2	1.9	1.1	1.2	0.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	31	27	28	29	26
Copper (aqua regia extractable)	mg/kg	1	MCERTS	5.5	8.7	9.2	10	7.1
Lead (aqua regia extractable)	mg/kg	1	MCERTS	14	13	15	13	13
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	33	28	25	24	24
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	70	63	59	60	48

Analytical Report Number: 22-47721
Project / Site name: Northstowe

Lab Sample Number				2216187	2216188	2216189	2216190	2216191
Sample Reference				TP2C107	TP2C107	TP2C109	TP2C110	TP2C111
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0 00-0.20	0.20-1.10	0.00-0.20	0.00-0.50	0.00-0.10
Date Sampled				17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022
Time Taken				1451	1451	1152	1448	1454
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2 0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8 0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8 0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	13	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	13	16	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-47721
Project / Site name: Northstowe

Lab Sample Number				2216192	2216193	2216194	2216195	2216196	2216197
Sample Reference				TP2C113	TP2C117	TP2C117	TP2C118	TP2C119	TP2C119
Sample Number				2	1	2	1	1	2
Depth (m)				0 50	0.20	0.50	0.20	0.20	0.50
Date Sampled				17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022
Time Taken				0949	1645	1645	1122	1132	1132
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**						
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	12	9.5	13	12	12
Total mass of sample received	kg	0.001	NONE	0.8	1.4	1.4	0.8	0 8	0.8
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	NTK	NTK	NTK	NTK	NTK	NTK
General Inorganics									
pH - Automated	pH Units	N/A	MCERTS	8.2	8.3	8.5	8.2	8 5	8.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.2	0.062	0 049	0.13	0.088	0.043
Total Phenols									
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
Speciated PAHs									
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH									
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0 80	< 0.80	< 0.80	< 0.80	< 0.80
Heavy Metals / Metalloids									
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	16	16	16	13	17
Boron (water soluble)	mg/kg	0.2	MCERTS	1.6	0.2	0.2	0.4	0 5	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0 2
Chromium (hexavalent)	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4 0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	31	27	22	31	26	31
Copper (aqua regia extractable)	mg/kg	1	MCERTS	13	8.1	7.2	9.4	6 8	8.6
Lead (aqua regia extractable)	mg/kg	1	MCERTS	13	9.9	9.4	14	12	14
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.5	< 0.3	0.6	< 0.3	< 0 3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25	23	23	27	22	28
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	77	38	39	50	40	54

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Lab Sample Number				2216192	2216193	2216194	2216195	2216196	2216197
Sample Reference				TP2C113	TP2C117	TP2C117	TP2C118	TP2C119	TP2C119
Sample Number				2	1	2	1	1	2
Depth (m)				0 50	0.20	0.50	0.20	0.20	0.50
Date Sampled				17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022
Time Taken				0949	1645	1645	1122	1132	1132
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**						
Monoaromatics & Oxygenates									
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
Petroleum Hydrocarbons									
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2 0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8 0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8 0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2 0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-47721
Project / Site name: Northstowe

Lab Sample Number				2216198	2216199	2216200
Sample Reference				TP2C122	TP2C124	TP2C124
Sample Number				1	1	2
Depth (m)				0 20	0.20	0.50
Date Sampled				17/03/2022	17/03/2022	17/03/2022
Time Taken				1252	1446	1447
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	10	14
Total mass of sample received	kg	0.001	NONE	0.4	1.2	1.2
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	NTK	NTK	NTK
General Inorganics						
pH - Automated	pH Units	N/A	MCERTS	8.2	8.4	8.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0 21	0.1	0.14
Total Phenols						
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Speciated PAHs						
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.5	0.33	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1.2	0.43	< 0.05
Pyrene	mg/kg	0.05	MCERTS	1.1	0.38	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0 64	< 0 05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0 56	< 0 05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0 63	< 0 05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0 36	< 0 05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0 58	< 0 05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.3	< 0 05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0 34	< 0 05	< 0.05
Total PAH						
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	6 21	1.14	< 0.80
Heavy Metals / Metalloids						
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	19	18	13
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	0.9	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.7	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	32	25	31
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12	6.9	9.9
Lead (aqua regia extractable)	mg/kg	1	MCERTS	21	13	13
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	26	22	25
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	68	48	52

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Lab Sample Number				2216198	2216199	2216200
Sample Reference				TP2C122	TP2C124	TP2C124
Sample Number				1	1	2
Depth (m)				0 20	0.20	0.50
Date Sampled				17/03/2022	17/03/2022	17/03/2022
Time Taken				1252	1446	1447
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Monoaromatics & Oxygenates						
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	MCERTS	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	12	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	MCERTS	17	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-47721
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* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2216182	TP2C102	1	0.40-1.60	Light brown clay and sand with gravel.
2216183	TP2C103	1	0.00-0.20	Light brown clay and sand with gravel.
2216184	TP2C104	1	0.00-0.20	Brown clay and loam with gravel.
2216185	TP2C104	2	0.20-0.50	Light brown clay and sand with gravel.
2216186	TP2C105	1	0.00-0.50	Light brown clay and sand with gravel.
2216187	TP2C107	None Supplied	0.00-0.20	Brown clay and sand with gravel.
2216188	TP2C107	None Supplied	0.20-1.10	Grey clay and sand with gravel.
2216189	TP2C109	None Supplied	0.00-0.20	Brown clay and loam with gravel.
2216190	TP2C110	None Supplied	0.00-0.50	Brown clay and loam with gravel and stones.
2216191	TP2C111	None Supplied	0.00-0.10	Brown clay and loam with gravel and vegetation.
2216192	TP2C113	2	0.5	Brown clay and loam with gravel.
2216193	TP2C117	1	0.2	Light brown clay and sand with gravel.
2216194	TP2C117	2	0.5	Light brown clay and sand with gravel.
2216195	TP2C118	1	0.2	Brown clay and loam with gravel.
2216196	TP2C119	1	0.2	Brown clay and sand with gravel.
2216197	TP2C119	2	0.5	Brown clay and sand with gravel.
2216198	TP2C122	1	0.2	Brown clay and loam with gravel.
2216199	TP2C124	1	0.2	Brown clay and sand with gravel and vegetation.
2216200	TP2C124	2	0.5	Light grey clay and sand with gravel.

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Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

Analytical Report Number : 22-47721
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report

Analytical Report Number : 22-47721
Project / Site name: Northstowe

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TP2C102	1	S	2216182	c	Free cyanide in soil	L080-PL	c
TP2C102	1	S	2216182	c	Total cyanide in soil	L080-PL	c
TP2C103	1	S	2216183	c	Free cyanide in soil	L080-PL	c
TP2C103	1	S	2216183	c	Total cyanide in soil	L080-PL	c
TP2C104	1	S	2216184	c	Free cyanide in soil	L080-PL	c
TP2C104	1	S	2216184	c	Total cyanide in soil	L080-PL	c
TP2C104	2	S	2216185	c	Free cyanide in soil	L080-PL	c
TP2C104	2	S	2216185	c	Total cyanide in soil	L080-PL	c
TP2C105	1	S	2216186	c	Free cyanide in soil	L080-PL	c
TP2C105	1	S	2216186	c	Total cyanide in soil	L080-PL	c
TP2C107	None Supplied	S	2216187	c	Free cyanide in soil	L080-PL	c
TP2C107	None Supplied	S	2216187	c	Total cyanide in soil	L080-PL	c
TP2C107	None Supplied	S	2216188	c	Free cyanide in soil	L080-PL	c
TP2C107	None Supplied	S	2216188	c	Total cyanide in soil	L080-PL	c
TP2C109	None Supplied	S	2216189	c	Free cyanide in soil	L080-PL	c
TP2C109	None Supplied	S	2216189	c	Total cyanide in soil	L080-PL	c
TP2C110	None Supplied	S	2216190	c	Free cyanide in soil	L080-PL	c
TP2C110	None Supplied	S	2216190	c	Total cyanide in soil	L080-PL	c
TP2C111	None Supplied	S	2216191	c	Free cyanide in soil	L080-PL	c
TP2C111	None Supplied	S	2216191	c	Total cyanide in soil	L080-PL	c
TP2C113	2	S	2216192	c	Free cyanide in soil	L080-PL	c
TP2C113	2	S	2216192	c	Total cyanide in soil	L080-PL	c
TP2C117	1	S	2216193	c	Free cyanide in soil	L080-PL	c
TP2C117	1	S	2216193	c	Total cyanide in soil	L080-PL	c
TP2C117	2	S	2216194	c	Free cyanide in soil	L080-PL	c
TP2C117	2	S	2216194	c	Total cyanide in soil	L080-PL	c
TP2C118	1	S	2216195	c	Free cyanide in soil	L080-PL	c
TP2C118	1	S	2216195	c	Total cyanide in soil	L080-PL	c
TP2C119	1	S	2216196	c	Free cyanide in soil	L080-PL	c
TP2C119	1	S	2216196	c	Total cyanide in soil	L080-PL	c
TP2C119	2	S	2216197	c	Free cyanide in soil	L080-PL	c
TP2C119	2	S	2216197	c	Total cyanide in soil	L080-PL	c
TP2C122	1	S	2216198	c	Free cyanide in soil	L080-PL	c
TP2C122	1	S	2216198	c	Total cyanide in soil	L080-PL	c
TP2C124	1	S	2216199	c	Free cyanide in soil	L080-PL	c
TP2C124	1	S	2216199	c	Total cyanide in soil	L080-PL	c
TP2C124	2	S	2216200	c	Free cyanide in soil	L080-PL	c
TP2C124	2	S	2216200	c	Total cyanide in soil	L080-PL	c

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Analytical Report Number : 22-48661

Project / Site name:	Northstowe	**Samples received on:**	29/03/2022
Your job number:	NSTO	**Samples instructed on/ Analysis started on:**	30/03/2022
Your order number:	14059900	**Analysis completed by:**	07/04/2022
Report Issue Number:	1	**Report issued on:**	07/04/2022
Samples Analysed:	4 soil samples		

Signed: Reg. 13(1)

Reg. 13(1)
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-48661
Project / Site name: Northstowe

Lab Sample Number				2220968	2220969	2220970	2220971
Sample Reference				BHTCA301A	BHTCA301A	TPTCA115	TPTCA115
Sample Number				4	6	1	3
Depth (m)				0.50-0 60	1.00-1.10	0.20	1.00
Date Sampled				23/03/2022	23/03/2022	Deviating	Deviating
Time Taken				1440	1454	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	8.9	10	14	11
Total mass of sample received	kg	0.001	NONE	1.4	1.1	0.9	1
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	PDO	PDO	PDO	PDO
General Inorganics							
pH - Automated	pH Units	N/A	MCERTS	8 2	8.1	8.1	8.2
Total Cyanide	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1 0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1 0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0 054	0.085	1 8	0.072
Total Phenols							
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1 0	< 1.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.28	< 0 05	0.91	< 0 05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1 6	< 0 05	1.9	< 0 05
Pyrene	mg/kg	0.05	MCERTS	1.7	< 0 05	1.7	< 0 05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.87	< 0 05	0.99	< 0 05
Chrysene	mg/kg	0.05	MCERTS	0.75	< 0 05	0.83	< 0 05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.1	< 0 05	1.1	< 0 05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.42	< 0 05	0.54	< 0 05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.92	< 0 05	0.98	< 0 05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.37	< 0 05	0.42	< 0 05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.48	< 0 05	0.54	< 0 05
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	8.55	< 0 80	9.89	< 0 80
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	8.3	14	17
Boron (water soluble)	mg/kg	0.2	MCERTS	1 3	0.6	0.9	0.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0 2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0	< 4.0	< 4 0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23	21	25	33
Copper (aqua regia extractable)	mg/kg	1	MCERTS	15	7.7	12	11
Lead (aqua regia extractable)	mg/kg	1	MCERTS	20	11	18	17
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0 3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	16	22	25
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1 0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	58	41	57	51

Analytical Report Number: 22-48661
Project / Site name: Northstowe

Lab Sample Number				2220968	2220969	2220970	2220971
Sample Reference				BHTCA301A	BHTCA301A	TPTCA115	TPTCA115
Sample Number				4	6	1	3
Depth (m)				0.50-0 60	1.00-1.10	0.20	1.00
Date Sampled				23/03/2022	23/03/2022	Deviating	Deviating
Time Taken				1440	1454	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Monoaromatics & Oxygenates							
Benzene	µg/kg	1	MCERTS	< 1 0	-	< 1 0	-
Toluene	µg/kg	1	MCERTS	< 1 0	-	< 1 0	-
Ethylbenzene	µg/kg	1	MCERTS	< 1 0	-	< 1 0	-
p & m-xylene	µg/kg	1	MCERTS	< 1 0	-	< 1 0	-
o-xylene	µg/kg	1	MCERTS	< 1 0	-	< 1 0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1 0	-	< 1 0	-
Petroleum Hydrocarbons							
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0 001	-	< 0 001	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0 001	-	< 0 001	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0 001	-	< 0 001	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1 0	-	< 1 0	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2 0	-	< 2 0	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8 0	-	< 8 0	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8 0	-	< 8 0	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	MCERTS	< 10	-	< 10	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0 001	-	< 0 001	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0 001	-	< 0 001	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0 001	-	< 0 001	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1 0	-	< 1 0	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2 0	-	< 2 0	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	11	-	< 10	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	MCERTS	13	-	11	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-48661
Project / Site name: Northstowe

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2220968	BHTCA301A	4	0.50-0.60	Brown loam and clay with gravel.
2220969	BHTCA301A	6	1.00-1.10	Brown clay and sand with gravel.
2220970	TPTCA115	1	0.2	Brown loam and clay with gravel and vegetation.
2220971	TPTCA115	3	1	Brown loam and clay with gravel.

Analytical Report Number : 22-48661
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Analytical Report Number : 22-48661
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report

Analytical Report Number : 22-48661
Project / Site name: Northstowe

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TPTCA115	1	S	2220970	ab	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
TPTCA115	1	S	2220970	ab	Monohydric phenols in soil	L080-PL	b
TPTCA115	1	S	2220970	ab	Speciated EPA-16 PAHs in soil	L064-PL	b
TPTCA115	1	S	2220970	ab	TPHCWG (Soil)	L088/76-PL	b
TPTCA115	3	S	2220971	ab	Monohydric phenols in soil	L080-PL	b
TPTCA115	3	S	2220971	ab	Speciated EPA-16 PAHs in soil	L064-PL	b

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Analytical Report Number : 22-48682

Project / Site name:	Northstowe	**Samples received on:**	29/03/2022
Your job number:	NSTO	**Samples instructed on/ Analysis started on:**	30/03/2022
Your order number:	14059900	**Analysis completed by:**	08/04/2022
Report Issue Number:	1	**Report issued on:**	08/04/2022
Samples Analysed:	4 soil samples		

Signed: Reg. 13(1)

Reg. 13(1)
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-48682
Project / Site name: Northstowe

Lab Sample Number				2221053	2221054	2221055	2221056
Sample Reference				BH2C101	BH2C103	BH2C103	BH2C104
Sample Number				1	1	2	2
Depth (m)				0 20-0.30	0.10-0.20	0 50-0.60	0.10-0.20
Date Sampled				21/03/2022	22/03/2022	22/03/2022	22/03/2022
Time Taken				1804	1135	1136	1451
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	8.9	< 0.1
Moisture Content	%	0.01	NONE	19	11	12	8 8
Total mass of sample received	kg	0.001	NONE	1 5	1 5	1 5	1 5

Asbestos in Soil	Type	N/A	ISO 17025	-	-	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	N/A	N/A	LFT	LFT

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7 3	8 2	8	8.1
Total Cyanide	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1 0	< 1 0
Free Cyanide	mg/kg	1	MCERTS	-	-	< 1 0	< 1 0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	0.37	0.13
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.7	0 6	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1 0	< 1 0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	-	-	0.7	< 0.05
Anthracene	mg/kg	0.05	MCERTS	-	-	0.28	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	-	-	1 3	< 0.05
Pyrene	mg/kg	0.05	MCERTS	-	-	0.74	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	0.29	< 0.05
Chrysene	mg/kg	0.05	MCERTS	-	-	0.26	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-	3.58	< 0.80

Analytical Report Number: 22-48682
Project / Site name: Northstowe

Lab Sample Number				2221053	2221054	2221055	2221056
Sample Reference				BH2C101	BH2C103	BH2C103	BH2C104
Sample Number				1	1	2	2
Depth (m)				0 20-0.30	0.10-0.20	0 50-0.60	0.10-0.20
Date Sampled				21/03/2022	22/03/2022	22/03/2022	22/03/2022
Time Taken				1804	1135	1136	1451
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Heavy Metals / Metalloids							
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	< 1 0	2 6	-	-
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	12	15	19
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.93	0.84	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	2 8	1	0 5	1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0 2	< 0 2	< 0 2
Chromium (hexavalent)	mg/kg	4	NONE	-	-	< 4 0	< 4 0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	25	25	37	28
Copper (aqua regia extractable)	mg/kg	1	MCERTS	14	11	12	12
Lead (aqua regia extractable)	mg/kg	1	MCERTS	19	13	15	13
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0 3	< 0 3	< 0 3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25	21	28	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1 0	< 1 0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	45	47	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	62	44	60	47
Petroleum Hydrocarbons							
TPH6 - Aliphatic (C6 - C8) $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0 001	< 0 001	-	-
TPH6 - Aliphatic (C8 - C10) $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0 001	< 0 001	-	-
TPH6 - Aliphatic (C10 - C12) $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1 0	< 1 0	-	-
TPH6 - Aliphatic (C12 - C16) $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2 0	< 2 0	-	-
TPH6 - Aliphatic (C16 - C21) $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8 0	< 8 0	-	-
TPH6 - Aliphatic (C21 - C35) $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8 0	< 8 0	-	-
TPH6 - Aliphatic (C6 - C35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	< 10	-	-
TPH6 - Aromatic (C6 - C8) $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0 001	< 0 001	-	-
TPH6 - Aromatic (C8 - C10) $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0 001	< 0 001	-	-
TPH6 - Aromatic (C10 - C12) $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1 0	< 1 0	-	-
TPH6 - Aromatic (C12 - C16) $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2 0	< 2 0	-	-
TPH6 - Aromatic (C16 - C21) $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	-	-
TPH6 - Aromatic (C21 - C35) $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	-	-
TPH6 - Aromatic (C6 - C35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	< 10	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-48682
Project / Site name: Northstowe

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2221053	BH2C101	1	0.20-0.30	Brown loam and clay with gravel and vegetation.
2221054	BH2C103	1	0.10-0.20	Brown loam and clay with gravel and vegetation.
2221055	BH2C103	2	0.50-0.60	Brown loam and clay with gravel and stones.
2221056	BH2C104	2	0.10-0.20	Brown loam and clay with gravel.

Analytical Report Number : 22-48682
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
TPH6 (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method with silica gel split/clean up.	L076-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Analytical Report Number : 22-48682
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report

Analytical Report Number : 22-48682
Project / Site name: Northstowe

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH2C101	1	S	2221053	c	Total cyanide in soil	L080-PL	c
BH2C103	1	S	2221054	c	Total cyanide in soil	L080-PL	c
BH2C103	2	S	2221055	c	Free cyanide in soil	L080-PL	c
BH2C103	2	S	2221055	c	Total cyanide in soil	L080-PL	c
BH2C104	2	S	2221056	c	Free cyanide in soil	L080-PL	c
BH2C104	2	S	2221056	c	Total cyanide in soil	L080-PL	c

UKAS TESTING
4041

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Analytical Report Number : 22-51163

Project / Site name:	Northstowe	**Samples received on:**	08/04/2022
Your job number:	10052307	**Samples instructed on/ Analysis started on:**	11/04/2022
Your order number:	14059900	**Analysis completed by:**	20/04/2022
Report Issue Number:	1	**Report issued on:**	21/04/2022
Samples Analysed:	16 water samples		

Signed: Reg. 13(1)

Reg. 13(1)
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-51163
Project / Site name: Northstowe

Your Order No: 14059900

Lab Sample Number				2235073	2235074	2235075	2235076	2235077
Sample Reference				BHTCA101	WSTCA108	BHTCA105D	BHTCA104	BHTCA110
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				05/04/2022	05/04/2022	05/04/2022	06/04/2022	06/04/2022
Time Taken				1045	1503	1612	1107	1415
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7 8	7	7	7 6	7.1
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO4	mg/l	0.045	ISO 17025	458	338	817	509	524
Alkalinity as CaCO3	mg/l	3	ISO 17025	220	540	420	210	380
Phenols by HPLC								
Catechol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Resorcinol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Cresols	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Naphthols	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Isopropylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Phenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Trimethylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Total Phenols								
Total Phenols (HPLC)	µg/l	3.5	NONE	< 3 5	< 3 5	< 3 5	< 3 5	< 3 5
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16

Analytical Report Number: 22-51163
Project / Site name: Northstowe

Your Order No: 14059900

Lab Sample Number				2235073	2235074	2235075	2235076	2235077
Sample Reference				BHTCA101	WSTCA108	BHTCA105D	BHTCA104	BHTCA110
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				05/04/2022	05/04/2022	05/04/2022	06/04/2022	06/04/2022
Time Taken				1045	1503	1612	1107	1415
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Boron (dissolved)	µg/l	10	ISO 17025	1300	130	160	980	110
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5 0	< 5 0	< 5 0	< 5 0
Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.45	2.33	1.83	2.08	0.74
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.05	0.08	0.15	0.07	0.08
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0 2	0 5	< 0 2	< 0 2
Copper (dissolved)	µg/l	0.5	ISO 17025	4 5	6 8	9 5	4.1	4
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0 2	0 3	0 6	0 2	0 2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	8 5	21	28	7 3	13
Selenium (dissolved)	µg/l	0.6	ISO 17025	2 3	1.4	1 8	1 6	3 3
Zinc (dissolved)	µg/l	0.5	ISO 17025	6 6	7 2	5 5	8 8	18
Monoaromatics & Oxygenates								
Benzene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Toluene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Ethylbenzene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
p & m-xylene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
o-xylene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10) $_{HS\_1D\_TOTAL}$	µg/l	10	ISO 17025	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C8 - C10 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-51163
Project / Site name: Northstowe

Your Order No: 14059900

Lab Sample Number				2235078	2235079	2235080	2235081	2235082
Sample Reference				BHTCA103	BHTCA106	BHTCA107	BHTCA102	WS2C120
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				05/04/2022	06/04/2022	06/04/2022	05/04/2022	07/04/2022
Time Taken				1403	1007	1015	1443	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7	7.7	7 5	7 3	7 2
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO4	mg/l	0.045	ISO 17025	1090	657	1260	476	1040
Alkalinity as CaCO3	mg/l	3	ISO 17025	370	230	370	270	390
Phenols by HPLC								
Catechol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Resorcinol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Cresols	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Naphthols	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Isopropylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Phenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Trimethylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Total Phenols								
Total Phenols (HPLC)	µg/l	3.5	NONE	< 3 5	< 3 5	< 3 5	< 3 5	< 3 5
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16

Analytical Report Number: 22-51163
Project / Site name: Northstowe

Your Order No: 14059900

Lab Sample Number				2235078	2235079	2235080	2235081	2235082
Sample Reference				BHTCA103	BHTCA106	BHTCA107	BHTCA102	WS2C120
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				05/04/2022	06/04/2022	06/04/2022	05/04/2022	07/04/2022
Time Taken				1403	1007	1015	1443	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Boron (dissolved)	µg/l	10	ISO 17025	600	1000	890	930	95
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5 0	< 5 0	< 5 0	< 5 0
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.64	1.41	1.29	0.86	3.75
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.14	0.05	0.03	0.05	0.06
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0 2	< 0 2	< 0 2	< 0 2
Copper (dissolved)	µg/l	0.5	ISO 17025	5.1	4.9	3.9	4 5	5.7
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0 2	0 2	0 3	< 0 2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	56	13	12	7.4	13
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.9	9.7	1 5	2.1	3 2
Zinc (dissolved)	µg/l	0.5	ISO 17025	110	14	29	9 6	8.4
Monoaromatics & Oxygenates								
Benzene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Toluene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Ethylbenzene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
p & m-xylene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
o-xylene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10) $_{HS\_1D\_TOTAL}$	µg/l	10	ISO 17025	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C8 - C10 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-51163
Project / Site name: Northstowe

Your Order No: 14059900

Lab Sample Number				2235083	2235084	2235085	2235086	2235087
Sample Reference				WS2C112	BH2C103	BH2C104	WSTCA117	BHTCA109
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				07/04/2022	07/04/2022	07/04/2022	07/04/2022	07/04/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.4	7.4	7	6.9	6.9
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO4	mg/l	0.045	ISO 17025	936	1390	1380	519	1040
Alkalinity as CaCO3	mg/l	3	ISO 17025	260	280	250	510	610
Phenols by HPLC								
Catechol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Resorcinol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Cresols	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Naphthols	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Isopropylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Phenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Trimethylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Total Phenols								
Total Phenols (HPLC)	µg/l	3.5	NONE	< 3 5	< 3 5	< 3 5	< 3 5	< 3 5
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16

Analytical Report Number: 22-51163
Project / Site name: Northstowe

Your Order No: 14059900

Lab Sample Number				2235083	2235084	2235085	2235086	2235087
Sample Reference				WS2C112	BH2C103	BH2C104	WSTCA117	BHTCA109
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				07/04/2022	07/04/2022	07/04/2022	07/04/2022	07/04/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Boron (dissolved)	µg/l	10	ISO 17025	98	930	240	190	330
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5 0	< 5 0	< 5 0	< 5 0
Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.72	0.7	1.95	1.81	0.55
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.19	0.13	0.13	0.06	0.07
Chromium (dissolved)	µg/l	0.2	ISO 17025	0 2	< 0 2	< 0 2	< 0 2	< 0 2
Copper (dissolved)	µg/l	0.5	ISO 17025	4 5	3	4 2	3 8	3
Lead (dissolved)	µg/l	0.2	ISO 17025	0 2	< 0 2	< 0 2	0 2	0 3
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	43	16	32	29	9
Selenium (dissolved)	µg/l	0.6	ISO 17025	40	3	< 0 6	1	3.4
Zinc (dissolved)	µg/l	0.5	ISO 17025	9.7	11	28	12	11
Monoaromatics & Oxygenates								
Benzene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Toluene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Ethylbenzene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
p & m-xylene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
o-xylene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10) $_{HS\_1D\_TOTAL}$	µg/l	10	ISO 17025	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C8 - C10 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-51163
Project / Site name: Northstowe

Your Order No: 14059900

Lab Sample Number				2235088
Sample Reference				BHTCA108
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				07/04/2022
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
General Inorganics				
pH	pH Units	N/A	ISO 17025	8
Total Cyanide	µg/l	10	ISO 17025	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10
Sulphate as SO4	mg/l	0.045	ISO 17025	804
Alkalinity as CaCO3	mg/l	3	ISO 17025	210
Phenols by HPLC				
Catechol	µg/l	0.5	NONE	< 0 5
Resorcinol	µg/l	0.5	NONE	< 0 5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0 5
Cresols	µg/l	0.5	NONE	< 0 5
Naphthols	µg/l	0.5	NONE	< 0 5
Isopropylphenol	µg/l	0.5	NONE	< 0 5
Phenol	µg/l	0.5	NONE	< 0 5
Trimethylphenol	µg/l	0.5	NONE	< 0 5
Total Phenols				
Total Phenols (HPLC)	µg/l	3.5	NONE	< 3 5
Speciated PAHs				
Naphthalene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01
Total PAH				
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16

Analytical Report Number: 22-51163
Project / Site name: Northstowe

Your Order No: 14059900

Lab Sample Number				2235088
Sample Reference				BHTCA108
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				07/04/2022
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Heavy Metals / Metalloids				
Boron (dissolved)	µg/l	10	ISO 17025	790
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0
Arsenic (dissolved)	µg/l	0.15	ISO 17025	< 0.15
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0 2
Copper (dissolved)	µg/l	0.5	ISO 17025	0.7
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0 2
Mercury (dissolved)	µg/l	0.05	ISO 17025	0.07
Nickel (dissolved)	µg/l	0.5	ISO 17025	0 8
Selenium (dissolved)	µg/l	0.6	ISO 17025	7.9
Zinc (dissolved)	µg/l	0.5	ISO 17025	5
Monoaromatics & Oxygenates				
Benzene	µg/l	1	ISO 17025	< 1 0
Toluene	µg/l	1	ISO 17025	< 1 0
Ethylbenzene	µg/l	1	ISO 17025	< 1 0
p & m-xylene	µg/l	1	ISO 17025	< 1 0
o-xylene	µg/l	1	ISO 17025	< 1 0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1 0
Petroleum Hydrocarbons				
Petroleum Range Organics (C6 - C10) $_{HS\_1D\_TOTAL}$	µg/l	10	ISO 17025	< 10.0
TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0
TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0
TPH-CWG - Aliphatic >C8 - C10 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0
TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0
TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0
TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0
TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic (C5 - C35) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-51163
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Free cyanide in water	Determination of free cyanide by distillation followed by colorimetry.Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
PRO (Waters)	Determination of hydrocarbons C6-C10 by headspace GC-MS. Accredited Matrices SW, PW. GW.	In-house method based on USEPA8260	L088-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Alkalinity in Water (by discreet analyser)	Determination of Alkalinity by discreet analyser (colorimetry). Accredited matrices: SW, PW, GW.	In house method based on MEWAM & USEPA Method 310.2.	L082-PL	W	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report

Analytical Report Number : 22-51163
Project / Site name: Northstowe

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH2C103	None Supplied	W	2235084	c	pH at 20oC in water (automated)	L099-PL	c
BH2C104	None Supplied	W	2235085	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA101	None Supplied	W	2235073	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA102	None Supplied	W	2235081	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA103	None Supplied	W	2235078	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA104	None Supplied	W	2235076	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA105D	None Supplied	W	2235075	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA106	None Supplied	W	2235079	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA107	None Supplied	W	2235080	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA108	None Supplied	W	2235088	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA109	None Supplied	W	2235087	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA110	None Supplied	W	2235077	c	pH at 20oC in water (automated)	L099-PL	c
WS2C112	None Supplied	W	2235083	c	pH at 20oC in water (automated)	L099-PL	c
WS2C120	None Supplied	W	2235082	c	pH at 20oC in water (automated)	L099-PL	c
WSTCA108	None Supplied	W	2235074	c	pH at 20oC in water (automated)	L099-PL	c
WSTCA117	None Supplied	W	2235086	c	pH at 20oC in water (automated)	L099-PL	c

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Analytical Report Number : 22-51965

Project / Site name:	Northstowe	**Samples received on:**	14/04/2022
Your job number:		**Samples instructed on/ Analysis started on:**	14/04/2022
Your order number:	14059900	**Analysis completed by:**	26/04/2022
Report Issue Number:	1	**Report issued on:**	26/04/2022
Samples Analysed:	4 water samples		

Signed: Reg. 13(1)

Reg. 13(1)
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-51965
Project / Site name: Northstowe

Lab Sample Number				2239760	2239761	2239762	2239763
Sample Reference				BH2C101	WS2C108	WS2C114	BH2C102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
General Inorganics							
pH	pH Units	N/A	ISO 17025	7.4	7 5	7.4	7 3
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	110	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10
Sulphate as SO4	µg/l	45	ISO 17025	1310000	2070000	701000	1900000
Sulphate as SO4	mg/l	0.045	ISO 17025	1310	2070	701	1900
Alkalinity as CaCO3	mg/l	3	ISO 17025	230	250	440	300
Phenols by HPLC							
Catechol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5
Resorcinol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5
Cresols	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5
Naphthols	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5
Isopropylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5
Phenol	µg/l	0.5	NONE	< 0 5	< 0 5	950	< 0 5
Trimethylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5
Total Phenols							
Total Phenols (HPLC)	µg/l	3.5	NONE	< 3 5	< 3 5	950	< 3 5
Speciated PAHs							
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH							
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16

Analytical Report Number: 22-51965
Project / Site name: Northstowe

Lab Sample Number				2239760	2239761	2239762	2239763
Sample Reference				BH2C101	WS2C108	WS2C114	BH2C102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Heavy Metals / Metalloids							
Boron (dissolved)	µg/l	10	ISO 17025	1300	310	130	1100
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5 0	< 5 0	< 5 0
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.49	0.39	1.65	0.41
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.04	0.05	0.09	0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	0.4	< 0 2	< 0 2
Copper (dissolved)	µg/l	0.5	ISO 17025	2 3	2 8	4.1	2.1
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0 2	< 0 2	< 0 2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	6 5	5.7	11	9 6
Selenium (dissolved)	µg/l	0.6	ISO 17025	4.1	16	20	13
Zinc (dissolved)	µg/l	0.5	ISO 17025	7.1	16	5 2	29
Monoaromatics & Oxygenates							
Benzene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
Toluene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
Ethylbenzene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
p & m-xylene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
o-xylene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
Petroleum Hydrocarbons							
TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C8 - C10 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10
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Alkalinity in Water (by discreet analyser)	Determination of Alkalinity by discreet analyser (colorimetry). Accredited matrices: SW, PW, GW.	In house method based on MEWAM & USEPA Method 310.2.	L082-PL	W	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
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Analytical Report Number : 22-51965
Project / Site name: Northstowe

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#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

Analytical Report Number : 22-51965
Project / Site name: Northstowe

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH2C101	None Supplied	W	2239760	a	None Supplied	None Supplied	None Supplied
BH2C102	None Supplied	W	2239763	a	None Supplied	None Supplied	None Supplied
WS2C108	None Supplied	W	2239761	a	None Supplied	None Supplied	None Supplied
WS2C114	None Supplied	W	2239762	a	None Supplied	None Supplied	None Supplied

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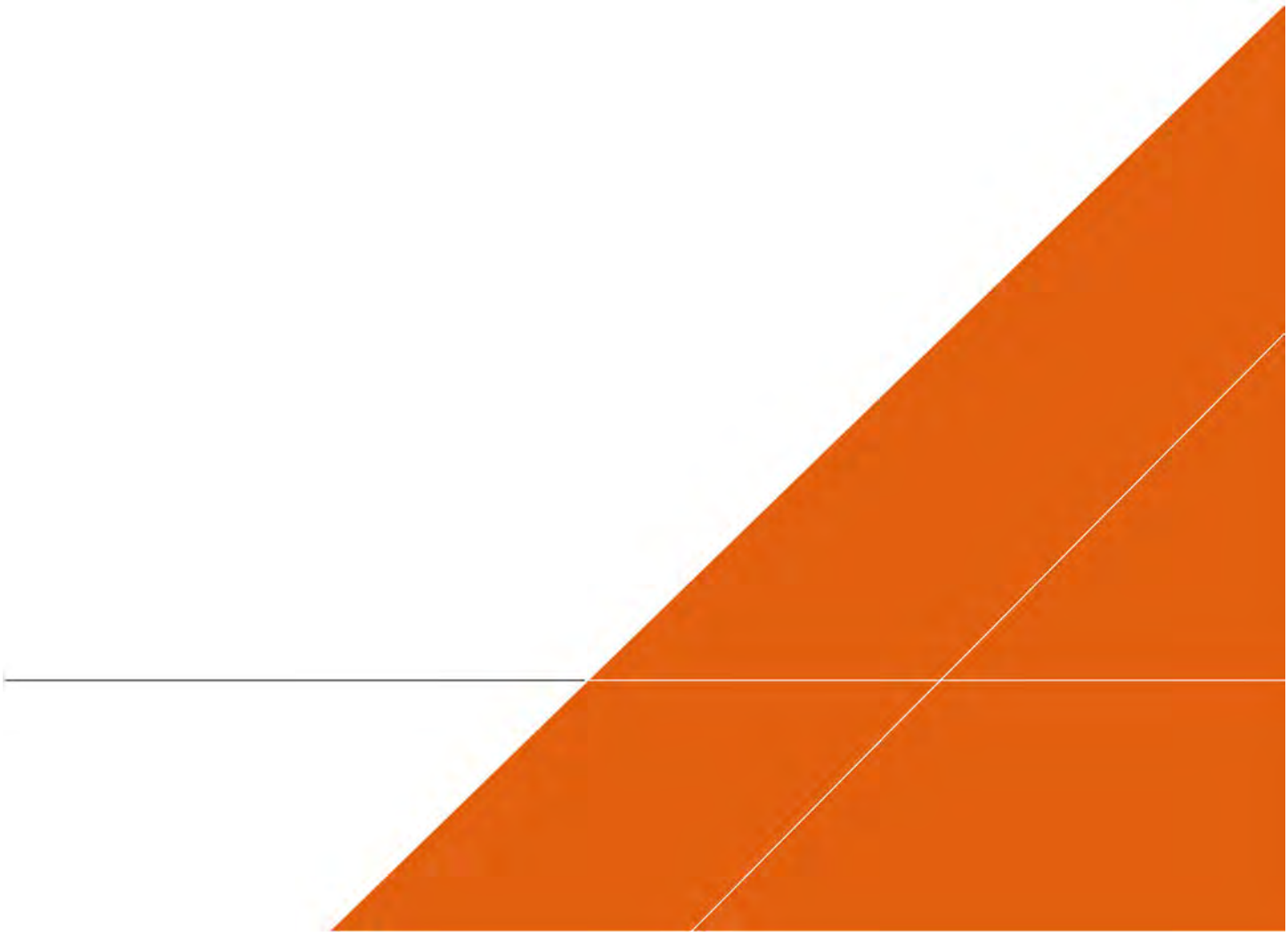
ARCADIS Design & Consultancy for natural and built assets

NORTHSTOWE PHASE 2 - PARCEL C1

Ground Investigation Factual Report

MAY 2022



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Northstowe Phase 2 - Parcel C1

Ground Investigation Factual Report

Authorised Signatures

Author Reg. 13(1)

Checker Reg. 13(1)

Approver Reg. 13(1)

Reg. 13(1)

Report No 10052307-SER-G002

Date MAY 2022

Version control

Version	Date	Author	Changes
00	May 2022	Reg. 13(1)	Original issue

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Drawing 10052307-SER-EHP-0001: Exploratory Hole Location Plan

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APPENDIX D

CERTIFICATION OF FIELD APPARATUS

APPENDIX E

MONITORING DATA

APPENDIX F

GEOTECHNICAL LABORATORY TEST DATA

APPENDIX G

GEO-ENVIRONMENTAL LABORATORY TEST DATA

1 INTRODUCTION

Homes England propose to develop a mixed use town centre with both residential and commercial space on the C1 parcel of land at Northstowe. This ground investigation was commissioned by Homes England, 'the Client', to inform on the ground conditions at the site.

The scope of the ground investigation was determined by Arcadis Consulting (UK) Ltd, and the work was instructed in February 2022.

This report provides a factual account of the fieldwork undertaken including engineering descriptions of the various strata encountered, results of *in situ* testing, monitoring and the subsequent geotechnical and geo-environmental laboratory testing undertaken on samples obtained.

1.1 Limitations

This report has been prepared for the Client in accordance with the terms and conditions of appointment. Arcadis cannot accept any responsibility for any use of or reliance on the contents of this report by any third party. The copyright of this document, including the electronic format and any AGS data, shall remain the property of Arcadis.

Arcadis do not accept liability for any use of the information presented in this report unless it is signed by the author, checker and approver and marked as final.

It should be noted that ground conditions between exploratory holes may vary from those identified during this ground investigation; any design should take this into consideration. It should also be noted that groundwater levels may be subject to diurnal, seasonal, and climatic variations and those recorded in this report are solely dependent on the time the ground investigation was carried out and the weather before and during the investigation.

1.2 Proposal

The proposed development comprises the first phase of a Town Centre development including residential and mixed use commercial units, as well as public open space and car parking.

1.3 Existing Information

The following information relating to the site and the ground conditions was made available to Arcadis prior to mobilisation to the site:

a. 10018973-ARC-XX-XX-RP-YY-0004-03-Phase 2B Interpretive Report 2020 [Arcadis Consulting (UK) Ltd. [1]

2 SITE DETAILS

2.1 Site Location and Description

The site is situated approximately 10km northwest of Cambridge at the approximate national grid reference of TL 402 672. Figure 2 1 below shows the site location.

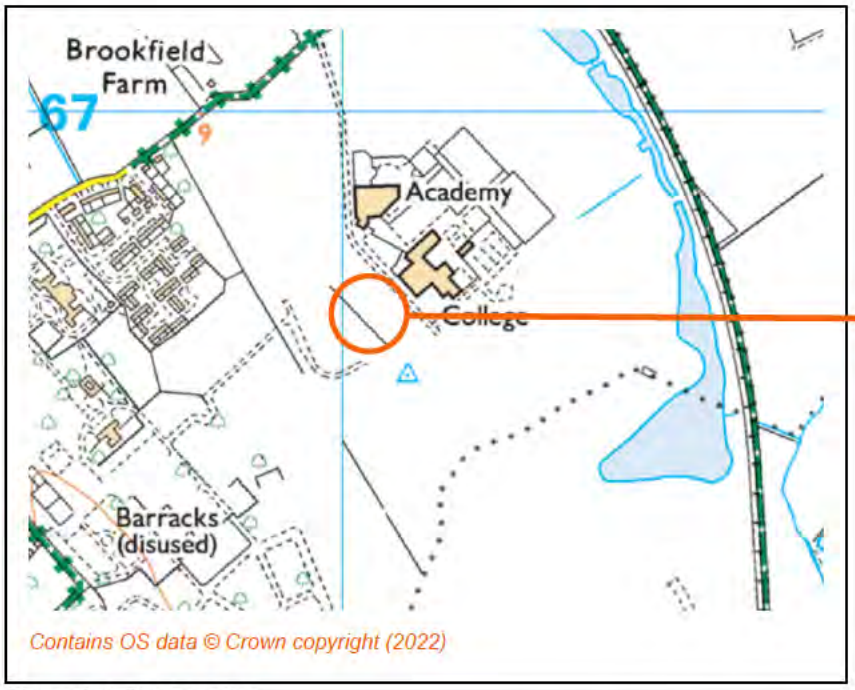


Figure 2-1 Site Location

The site is a defined plot of land, designated C1, within the wider development of the new town of Northstowe The site is currently undeveloped open land with moderate vegetation cover and small trees scattered throughout, it is generally flat and level.

The site is bound to the north and west by unnamed roads, and to the east by Stirling Road. To the south is further open land awaiting development. The site sits within the centre of the new Northstowe development, the newly opened Northstowe Secondary College is located opposite the Phase C1 plot on the eastern side.

2.2 Geology

The published 1:50 000 scale British Geological Survey (BGS) map of the area incorporating the site, Sheet 188 Cambridge [2], and the BGS OnShore GeoIndex [3] indicate the site is underlain by River Terrance Deposits; the bedrock deposits underlying the site comprise the Kimmeridge Clay Formation. The general distribution of the strata at the site is shown in Figure 2-2 below.

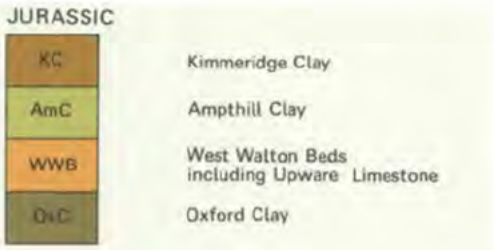


Figure 2-2: Geological Setting

The superficial River Terrace Deposits, described as "sand and gravel, locally with lenses of silt, clay or peat" [3]. These are underlain by the solid geology of the Kimmeridge Clay Formation which is described as "mudstones (calcareous or kerogen-rich or silty or sandy); thin siltstone and cementstone beds; locally sands and silts" [3]

Due to the sites history as an RAF facility and its current development, the likelihood of encountering anthropogenic materials side wide is high.

2.3 Hydrogeology and Hydrology

The superficial deposits on the site are classified as Secondary A aquifer meaning permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers [4].

The bedrock (Kimmeridge Clay Formation and Ampthill Clay Formation) is classified as Unproductive Strata. Unproductive Strata is defined as "rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow [4]"

The site is not situated in a source protection zone.

The closest surface water feature is a newly created waterparks area consisting of surface water ponds approximately 500m east southeast of the plot. The site is not situated in a flood risk zone.

3 FIELDWORK

3.1 General

Ground investigation works were carried out in a single phase between 9th March and 24th March 2022. The scope of the ground investigation, including the location, scheduled depth and type of exploratory hole undertaken was determined by Arcadis Consulting (UK) Ltd and is summarised in Table 3-1.

The ground investigation methods were undertaken in general accordance with the principles set out in BS EN 1997-2:2004 [7] and with the general practice described in BS5930:2015+A1:2020 [8]. The geo-environmental aspects of the ground investigation complied with the general requirements of BS 10175+A2:2017 [9].

Table 3-1 Initial ground investigation scope

Location ID	Hole Type	Scheduled Depth (m)	Requirements
BHTCA101-BHTCA110 BHTCA301	CP	20.00	Determine thickness of engineering soils; collect representative samples of strata and undertake *in situ* tests
TPTCA102 – TPTCA120	TP	3.00	Determine thickness of engineering soils; collect representative samples of strata.
WSTCA101 – WSTCA117	DS	3.00	Determine thickness of engineering soils; collect representative samples of strata and undertake *in situ* tests

Notes
TP = machine excavated trial pit, CP = cable percussive boring, DS = dynamic sampling.

The investigation works were carried out under the supervision of an Arcadis ground engineer who undertook the logging and reporting of the exploratory holes and *in situ* testing.

3.2 Exploratory Holes

3.2.1 Exploratory Hole Locations

The exploratory hole locations were set out using eastings and northings on site by a specialist survey firm and the elevations then established using a Trimble VRS NOW GPRS system; allowing an accuracy of +/ 50 mm.

3.2.2 Investigation Methodology

The following methods and techniques were undertaken to construct the exploratory holes at the site.

Details of the methods of investigation and associated standards adopted and a key to the notation and symbols used on the logs is presented in are presented in Appendix B; the exploratory hole records are presented in Appendix C.

3.2.3 Cable Percussive Boring

Cable percussive boring was completed using a trailer mounted Dando 2000, 2500 or Dando 3000 boring rig equipped with 200 mm and 150 mm casing and tools to undertake boreholes up to 20 m bgl.

Samples of the material recovered from the borehole were taken to enable representative laboratory testing. Generally small disturbed samples were taken at each change in stratum and at 0.5 m intervals

thereafter in clay soils; and bulk samples were taken at 1 m intervals where the sand and gravel content of the soil was significant.

Standard penetration tests (SPT) were generally undertaken at 1.0 m intervals until 10 m depth and then were taken at 1.50 m intervals until the termination depth of the hole. These were alternated with open drive tube samples, taken using thin-walled sampling apparatus from the relatively undisturbed material at the base of the borehole.

3.2.4 Dynamic Sampling

Dynamic sampling was completed using a Dart track-mounted sampling rig capable of driving windowless sampling tubes using a mechanical hammer dropped repeatedly from a self-governed height.

Photographs of the materials recovered are presented with the appropriate hole log.

Due to the method of investigation, the materials recovered within the sampler apparatus were generally disturbed and were assessed as complying with Class 3 to Class 5 of BS EN 22475-2. Sub-samples of the material recovered in the liners were taken to enable representative laboratory testing. Generally, small disturbed samples were taken at each change in stratum and at 0.5 m intervals thereafter in clay soils; and small bulk samples were taken at 1 m intervals where the sand and gravel content of the soil was significant.

Standard penetration tests (SPT) were undertaken using the track mounted rig 1.0 m centres until the termination depth of the hole.

3.2.5 Trial Pitting

Trial pits were undertaken using a tracked mechanical excavator and pits were entirely logged from the surface and arisings.

Samples of the material recovered in the trial pits were taken to enable representative laboratory testing. Generally, small disturbed samples were taken at each change in stratum and at 0.5 m intervals thereafter in clay soils; and bulk samples were taken at 1 m intervals where the sand and gravel content of the soil was assessed as significant.

Photographic records of the trial pit elevation and arisings were taken and are presented with the associated trial pit log.

3.2.6 Completed Works

Drawing 10052307-SER-EHP-0001 presented in Appendix A displays the as-constructed exploratory hole locations while the co-ordinates and elevation of the ground surface at each exploratory hole location are given on the individual logs. The completed scope of investigation is summarised in Table 3.2.

Table 3-2. Summary of completed exploratory holes

Location ID	Hole Type	Start Date	End Date	Final depth (m)	Termination Reason
BHTCA101	CP	09 March2022	10 May 2022	20.45	Target depth
BHTCA102	CP	10 Marc2022	11 March 2022	20.11	Target depth
BHTCA103	IP	08 March 2022	08 March 2022	0.40	Obstruction; move to location BHTCA103A
BHTCA103A	CP	09 March 2022	10 March 2022	17.45	Unable to seal groundwater

Location ID	Hole Type	Start Date	End Date	Final depth (m)	Termination Reason
BHTCA104	CP	14 March 2022	14 March 2022	20.16	Target depth
BHTCA105	CP	11 March 2022	15 March 2022	20.00	Target depth
BHTCA106	CP	15 March 2022	15 March 2022	20.45	Target depth
BHTCA107	CP	16 March 2022	16 March 2022	20.45	Target depth
BHTCA108	CP	11 March 2022	14 March 2022	20.45	Target depth
BHTCA109	CP	14 March 2022	16 March 2022	20.45	Target depth
BHTCA110	CP	16 March 2022	17 March 2022	20.05	Target depth
BHTCA301A	CP	23 March 2022	24 March 2022	20.45	Target depth
TPTCA102	TP	11 March 2022	11 March 2022	2.00	Instability
TPTCA103	TP	10 March 2022	10 March 2022	3.00	Target depth
TPTCA104	TP	15 March 2022	15 March 2022	3.00	Target depth
TPTCA105	TP	10 March 2022	10 March 2022	3.00	Target depth
TPTCA107	TP	11 March 2022	11 March 2022	3.00	Target depth
TPTCA110	TP	15 March 2022	15 March 2022	3.00	Target depth
TPTCA111	TP	10 March 2022	10 March 2022	3.00	Target depth
TPTCA113	TP	11 March 2022	11 March 2022	3.00	Target depth
TPTCA114	TP	11 March 2022	11 March 2022	3.00	Target depth
TPTCA115	TP	15 March 2022	15 March 2022	3.00	Target depth
TPTCA118	TP	10 March 2022	10 March 2022	3.00	Target depth
TPTCA119	TP	15 March 2022	15 March 2022	3.00	Target depth
TPTCA120	TP	10 March 2022	10 March 2022	3.00	Target depth
WSTCA101	DS	15 March 2022	15 March 2022	1.65	Refusal
WSTCA106	DS	15 March 2022	15 March 2022	3.45	Target depth
WSTCA108	DS	15 March 2022	15 March 2022	3.45	Target depth
WSTCA109	DS	14 March 2022	14 March 2022	3.45	Target depth
WSTCA112	DS	14 March 2022	14 March 2022	3.45	Target depth
WSTCA116	DS	14 March 2022	14 March 2022	3.45	Target depth

Location ID	Hole Type	Start Date	End Date	Final depth (m)	Termination Reason
WSTCA117	DS	15 March 2022	15 March 2022	3.45	Target depth

Notes
TP = machine excavated trial pit, CP = cable percussive boring, DS = dynamic sampling, IP = Inspec ion Pit.

3.3 *In situ* Testing

3.3.1 General

3.3.2 Penetration Testing

3.3.2.1 Standard Penetration Tests

Standard penetration tests (SPT) were carried out as required in the investigation scope and in accordance with the methods given in the standard procedures presented within Appendix B. Generally, tests were undertaken at regular intervals throughout the borehole to provide a profile of the soil's resistance with depth and a disturbed soil samples was recovered from the SPT split-spoon tool or a disturbed sample was taken over the range of the test interval.

The N-values as determined in the field are presented on the borehole logs as uncorrected values that do not take into account the energy losses or efficiency of the automatic trip hammer used to drive the test tool into the ground. The calibration certification for the test devices used in the investigation is presented in Appendix D and a summary of the SPT equipment used at each location is presented in Table 3-3.

Table 3-3 Test Hammer Calibrations

Location ID	SPT Hammer Reference No.	Energy Efficiency Ratio, E_r %
BHTCA101, BHTCA102, BHTCA104, BHTCA106, BHTCA107,	AR2521	78.98
BHTCA108, BHTCA109, BHTCA301A	AR2411	77.00
WSTCA101 – WSTCA117	DART489	82.00
BHTCA103A, BHTCA105, BHTCA110	1.11.18 ml	71.00

3.3.3 Hydraulic Tests

3.3.3.1 Soakaway Tests

The soil infiltration rate was determined by conducting a soakaway tests in accordance with the methodology described in BRE 365 [15]. The tests were conducted in trial pits dug to the anticipated soakaway depth. Summary information of the tests is presented Table 3-4 while detailed test sheets are presented with the relevant trial pit log in Appendix C.

Table 3-4 Summary of trial pit soakage tests

Location ID	Depth of pit (m)	Time to empty (minutes)	Soil Infiltration Rate *f* ms^{-1}	Comment/limitations
TPTCA104	1.50	Not achieved	9.84×10^{-10}	Test terminated after one hour due to site time constraints.

3.3.4 VOC Head Space Screening

The presence of Volatile Organic Compounds (VOC) within the ground was determined using a photoionization detector (PID) to detect the 'headspace' vapours emitted by the compounds. The method is applicable to a wide range of compounds that have sufficiently high volatility to be effectively liberated from the soil or water matrix in normal temperature and pressure ranges.

The headspace test was undertaken on the freshly extracted soil core sample at regular intervals corresponding with environmental sampling by placing a small amount of material into a screw-top glass jar so that the jar was not more than half-full. The jar opening was covered with an aluminium foil sheet and the lid screwed on to form an air-tight seal. The sample and jar were then shaken for about 15 seconds to break-up and disperse the soil before resting the sample for about 5 minutes.

To assess the headspace vapour, the jar lid was removed and the PID probe was inserted through the foil into the headspace area. The PID reading recorded was the highest response observed in the first 10 seconds. The screening results are presented on the relevant exploratory holes logs within Appendix C.

The testing was undertaken using a MiniRAE Lite PID with a 10.6 eV lamp.

The PID instrument was calibrated regularly throughout the day using isobutylene reference gas concentrations.

3.4 Installations and Post-fieldwork Monitoring

3.4.1 Installations

Installations to enable long term monitoring of the site were made in those boreholes selected by Arcadis Consulting (UK) Ltd and the details are summarised in Table 3-5 and are also provided on the relevant borehole logs.

Table 3-5 Summary exploratory hole installations

Location ID	Installation Type	Response Zone Top m bgl	Response Zone Base m bgl
BHTCA101	SP50	3.00	20.00
BHTCA102	SP50	15.00	19.80
BHTCA103A	SP50	13.00	17.00
BHTCA104	SP50	3.00	20.00
BHTCA105 Shallow	SP50	1.00	2.30
BHTCA105 Deep	SP50	6.00	9.00

BHTCA106	SP50	14.00	20.00
BHTCA107	SP50	3.00	20.00
BHTCA108	SP50	16.00	20.00
BHTCA109	SP50	3.00	20.00
BHTCA110	SP50	3.00	10.00
BHTCA301A	SP50	0.50	3.00
WSTCA101	SP50	0.50	1.50
WSTCA106	SP50	0.50	1.80
WSTCA108	SP50	0.50	3.00
WSTCA109	SP50	0.50	1.50
WSTCA112	SP50	0.50	1.50
WSTCA116	SP50	0.50	1.50
WSTCA117	SP50	0.50	2.30

Notes
SP = standpipe piezometer.

3.4.2 Post-fieldwork Monitoring

Post-field work monitoring was undertaken on separate visits on 5th – 7th April, 12th – 13th April, and 20th May 2022. In all, 3 visits to the site were made to record land gas emissions and groundwater levels. During the first monitoring visit, after completion of the land gas emission monitoring, groundwater monitoring and sampling was undertaken. Where installations were purged dry, monitoring and sampling was conducted on groundwater recovered following recharging of groundwater in installations.

The results of the groundwater monitoring are presented within Appendix E.

4 LABORATORY TESTING

4.1 General

Geotechnical and geo-environmental chemical testing was undertaken on selected samples obtained from the exploratory holes. The testing was scheduled by the geotechnical and/or geo-environmental engineer and the testing was undertaken by an Arcadis approved testing laboratory.

4.2 Geotechnical Laboratory Testing

The geotechnical tests detailed in Table 4.1 were carried out in accordance with either BS1377:1990: Parts 1 to 8 [10]; BS EN ISO 17892: Parts 1 to 12 [11]; BRE SD 1:2005 [12]; or other methods as listed in Table 4.1. The complete results of the geotechnical laboratory testing are presented in Appendix F.

Table 4-1 Summary of geotechnical test data

Test	Method	No of Determinations
Moisture content	BS1377 Pt 2 - 3.2	91
4-point liquid and plastic limit	BS 1377 Pt 2 - 4.3 & 5.3	90
Particle Size Distribution - Wet sieving	BS1377 Pt 2 - 9.2	20
Particle Size Distribution - Sedimentation	BS1377 Pt 2 - 9.4	20
Laboratory vane	BS1377 Pt 7 - 3	6
Remoulded CBR	BS1377 Pt 4 - 7	13
Quick Unconsolidated Undrained Triaxial	BS1377 Pt 7 - 8/9	13
pH, water soluble sulphate; total sulphate, total sulphur, chloride, nitrate, magnesium	BRE SD1 preferred methods	36
One Dimensional Consolidation	BS1377 Pt5 - 3	10

4.3 Geo-Environmental Laboratory Testing

Geo-environmental tests were undertaken on soil, groundwater and prepared leachate specimens obtained from the samples collected from the site. Testing was carried out for the contaminants detailed in Table 4.2 and Table 4.3. Details of the test methodology and results of the chemical laboratory testing are presented in Appendix G.

Table 4-2 Summary of geo-environmental test data – soil matrix

Test type	Method	No of Determinations
Metals (As, B, Cr, Cd, Cu, Pb, Hg, Ni, Se, Zn)	Induced Coupled Plasma Optical Emission Spectroscopy (ICP-OES)	42
pH		42

Cyanide Free and Total		18
Speciated Polycyclic Aromatic Hydrocarbon compounds (PAH)	Gas Chromatography –Mass Spectrometry (GC-MS)	42
Total Petroleum Hydrocarbon Criteria Working Croup (TPH CWG)	Gas Chromatography – Flame Ionisation Detector (GC-FID)	30
Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX)	Gas Chromatography –Mass Spectrometry (GC-MS)	6
Phenol (total), Cresol, Chlorinated Phenols		42
Hexavalent Chromium		42
VOCs & SVOCs	Gas Chromatography –Mass Spectrometry (GC-MS)	24

Table 4-3 Summary of geo-environmental test data – groundwater matrix

Test type	Method	No of Determinations
Metals (As, B, Cr, Cd, Cu, Pb, Hg, Ni, Se, Zn), pH, Cyanide Free & Total	Induced Coupled Plasma Optical Emission Spectroscopy (ICP-OES)	12
PAHs	Gas Chromatography –Mass Spectrometry (GC-MS)	12
TPH CWG and BTEX	Gas Chromatography – Flame Ionisation Detector (GC-FID)	12
VOCs & SVOCs	Gas Chromatography –Mass Spectrometry (GC-MS)	12

5 REFERENCES

1. Arcadis Consulting (UK) Ltd. 2020. 10018973-ARC-XX-XX-RP-YY-0004-03-Phase 2B Interpretive Report.
2. British Geological Survey. 1982. Cambridge. England and Wales Sheet 188. Bedrock and Drift Deposits. 1:50 000. BGS Keyworth, Nottingham.
3. British Geological Survey, Onshore GeoIndex http://www.bgs.ac.uk/data/mapViewers/home.html Accessed April 2022.
4. Natural England Magic Map http://www.magic.gov.uk/MagicMap.aspx Accessed April 2022.
5. BS EN 1997-1. 2004.+ A1 2013 *Incorporating corrigendum February 2009.* Eurocode 7: Geotechnical Design. Part 1 General Rules. British Standards Institution.
6. BS EN 1997-2. 2007. *Incorporating corrigendum June 2010.* Eurocode 7: Geotechnical Design. Part 2 Ground Investigation and testing. British Standards Institution.
7. BS 5930. 2015+A1:2020. Code of practice for ground investigations. British Standards Institution.
8. BS 10175+A2. 2017. Investigation of potentially contaminated sites – Code of practice. British Standards Institution.
9. Building Research Establishment. 2016. Soakaway Design. BRE Digest DG365. BRE, Watford.
10. BS 1377. 1990 & 2016 as amended. Method of test for soils for civil engineering purposes. Published in 9 Parts. British Standards Institution.
11. BS EN ISO 17892-1: Geotechnical investigation and testing – Laboratory testing of soil – Determination of water content. British Standards Institution.
12. Building Research Establishment. 2005. Concrete in aggressive ground. BRE Special Digest 1. 3rd Edition. BRE, Watford.

APPENDIX A

DRAWINGS

Drawing 10052307-SER-EHP-0002: Exploratory Hole Location Plan

LEGEND

- CABLE PERCUSSIVE BOREHOLE
- MACHINE EXCAVATED TRIAL PIT
- DYNAMIC SAMPLE
- PHASE BOUNDARY

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPEC FIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

N

0 4 8 16 24 32 40 Metres

TITLE:
EXPLORATORY HOLE LOCATION PLAN

SITE :
NORTHSTOWE PHASE C1

CLIENT :
HOMES ENGLAND

PROJECT :	10052307	FIGURE 1	
DATE :	28/04/22	DRAWN BY :	AP
DRG No. :	10052307-AUK-XX-XX-DR-ZZ-0003-P1		
SCALE :	1 1,100	PR NT :	A3

ARCADIS

APPENDIX B

STANDARD PROCEDURES

B0 General Principles

This ground investigation was undertaken in general accordance with the principles of BS EN 1997-1 [1] and BS EN 1997-2 [2] and the advice given in BS5930:2015+A1:2020 [3], which, provides complimentary guidance on the application of the primary standards. Where the requirements of the ground investigation specification differ from these primary standards, the investigation methodology was adapted as required and specific notes regarding methods and techniques employed were made in the appropriate report sections.

B1 Buried Services

Service clearance was undertaken in accordance with Arcadis' *Safety, Health and Environment (SHE) Standard – Avoidance of Sub-Surface Hazards and Structures Standard.* This document details the methods and safe working practices used to undertake excavations safely. Prior to breaking ground, services plans were consulted and the area scanned using a Cable Avoidance Tool (CAT) with detected signals marked on the ground. For all investigation positions, other than for machine excavated trial pits, hand excavated inspection pits are completed to 1.20 m bgl prior to the use of drilling and boring plant.

B2 Sampling requirements

The selection of sample types and sampling techniques has been chosen to take account of the soil fabric, size and quality of sample required based on whether the soils mass properties or the intact material properties of the ground are to be determined in subsequent laboratory tests. BS EN ISO 22475-1[4] describes three generic sample groups that are:

a. Sampling by drilling. Generally, a disturbed sample recovered from the drilling tool or digging equipment, typically meeting Class 3 to Class 5 requirements, with the recovered material being stored in bulk bags or sealed jar or tub containers.
b. Sampling by sampler. Typically referred to as open tube or drive sampling in which a tube with a sharp cutting edge is driven into the ground either by static thrust or dynamically driven to give a relatively undisturbed sample of Class 1 or Class 2 but may result in a Class 3 sample.
c. Block sampling. Cylindrical large diameter samples or cuboid hand-cut samples usually relatively undisturbed Class 1 and Class 2.

The open-tube sampling equipment used on the site was of a type and design that conformed to BS EN ISO 22475-1. For the purpose of this ground investigation block sampling was not required.

Generally, samples were assessed on site and any unexpected deterioration in sample quality was reported to the ground engineer by the lead drilling technician.

Sufficient and representative samples were taken to allow the geo-mechanical properties of the ground to be adequately characterised and to enable the sequence of soil strata to be described by an engineering geologist or geotechnical engineer.

Where samples have been taken for chemical tests the drilling method attempted to adopt dry drilling over the sampling range that generally was achieved by the use of drill casing to separate and isolate the upper soil layers and exclude groundwater. Cross-contamination was further reduced by regular cleaning of sampling tools. Sample integrity was maintained by sealing samples immediately on collection and storing the samples in a temperature controlled cool box. Samples were despatched from the site at the end of the shift on which they were collected or as

required in the project specification. Details of best practice storage, preservation and decontamination measures undertaken are given below:

Task	Soil	Groundwater	Ground Gas
Storage	Glass jars and vials supplied by the laboratory were used for the collection of soil samples to be analysed for volatile compounds. Plastic one-litre tubs were used to collect soil samples for metals analysis.	Glass vials supplied by the laboratory were used for the collection of samples to be analysed for volatile compounds. Samples to be analysed for lower volatility compounds were stored in laboratory prepared glass bottles.	1.4L Canisters supplied by the laboratory.
Preservation	Filling of sample containers as far as practicable to minimise headspace and low storage temperature to minimise the potential for volatilisation and biodegradation of petroleum hydrocarbon compounds prior to analysis.		Not required.
Decontamination	Disposable gloves were worn and changed between sample collection to prevent cross-contamination.	Groundwater samples were collected using dedicated disposable tubing / bailers, that were changed between monitoring well locations in order to prevent cross-contamination.	Disposable gloves were worn and changed between sample collection to prevent cross contamination.
Transport	Samples stored in dedicated sample boxes provided by the laboratory. Sample details and analytical requests were recorded on the laboratory chain of custody form included with samples, prior to dispatching to laboratory for analysis. Samples were dispatched to the laboratory on the day of sampling.		

B3 Sample description

Sample description was undertaken by the Arcadis site geologist in accordance with BS 5930: 2015+A1:2020. The descriptions of the individual samples were used to identify the sequence of strata at the exploratory hole location and from which representative exploratory hole logs were drawn.

B4 *In situ* testing

In situ geotechnical tests were undertaken taking account of the investigation scope and requirement to attain the appropriate parameters required in the geotechnical design. The tests were undertaken in accordance with the requirements of the relevant parts of BS EN ISO 22476 [5, 6, 7] and other methods as follows:

Standard penetration testing

Standard penetration tests were carried out in accordance with BS EN ISO 22476-3, BS EN 1997-2 and the national Annex to BS EN 1997-2. The test records are presented on the borehole logs as blow counts for each increment with the N-value as the total number of blows of the four main test increments.

Where the N-value exceeds a total of 50 blows, the test reports the penetration in millimetres for the last test increment recorded, and the N value is indicated as greater than 50,

e.g. 4,5/12,14,18, 6 for 10 mm

indicates that the seating blows (4 and 5) were completed and that the test terminated in the 4th increment after penetrating 10 mm.

Where the seating blows exceeded 25 blows for less than 150 mm; the test was stopped and the rods remarked after which, the main drive was continued. The test is then reported as the number of blows in each seating drive for the recorded penetration with the results of the main drive given as above,

e.g. 14/11 for 45 mm/12,14,16, 8 for 10 mm.

In certain circumstances where groundwater in-flow may affect the test, particularly in fine sand or silt, low SPT blow counts may be recorded. Where the SPT blow count was very low, N values of 5 or less, the test was, at the discretion of the site engineer, continued for a further 300 mm, recording blows for each 75 mm increment. **This is not** a standard penetration test value, it does however give an indication of potential disturbance to the ground.

B5 Data transfer format

The data collated during the ground investigation has been organised and managed using the "AGS data format" that allows data transfer between different disciplines and organisations in accordance with BS 8574 [10].

B6 References

1. BS EN 1997-1. 2004. Eurocode 7: Geotechnical Design. Part 1 General Rules. British Standards Institution, 2013 (revised text).
2. BS EN 1997-2. 2007. Eurocode 7: Geotechnical Design. Part 2 Ground Investigation and testing. British Standards Institution, 2010 (revised text).
3. BS 5930: 2015+A1:2020. Code of practice for ground investigation. British Standards Institution.
4. BS EN ISO 22475-1. Geotechnical investigation and testing – Sampling methods and groundwater measurements – Part 1 Technical principles for execution.
5. BS EN ISO 22476-3 2005. Geotechnical investigation and testing – Field testing – Part 3: Standard penetration test. British Standards Institution
6. BS 1377-9. 1990. Methods of test for soils for civil engineering purposes. Part 9: In-situ tests. British Standards Institution.
7. BS 8574. Code of practice for the management of geotechnical data for ground engineering projects.

B7 Exploratory Hole Key

Key to Exploratory Hole Symbols and Abbreviations

SAMPLE TYPES

B	Bu k disturbed sample	ES	Environmental soil sample	U	Undisturbed sample
C	Core sample	EW	Environmental water sample	UT	Undisturbed thin wall sample
CBR-D	Disturbed sample from CBR test area	G	Gas sample	W	Water sample
CBR-U	Undisturbed sample from CBR test area	L	Liner sample		
D	Small disturbed sample	SPT	SPT split spoon sample		

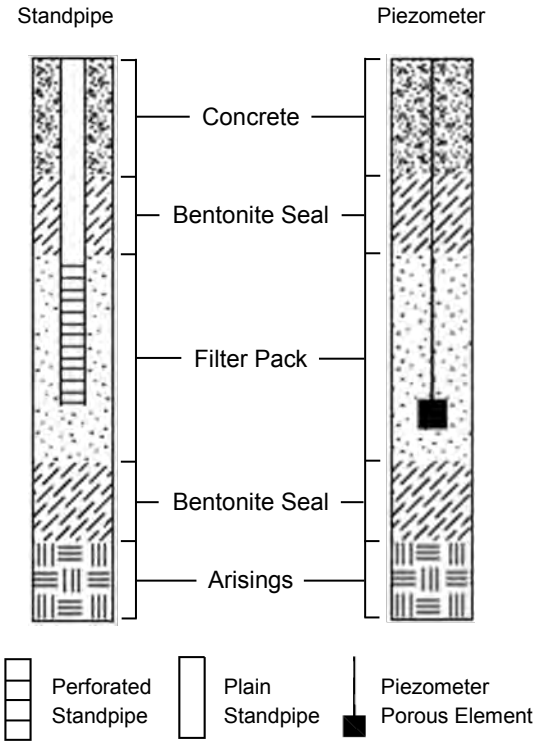
IN-SITU TESTING

SPTs	Standard Penetration Test (using a split spoon sampler)
SPTc	Standard Penetration Test (using a solid 60 degree cone)
N	Recorded SPT 'N' Value *
-/-	Blows/Penetration (mm) after seating blows totalling 150 mm
MX	Mexi Probe Test (records CBR as %)
HV	Hand Shear Vane Test (undrained shear strength quoted in kPa)
PP	Pocket Penetrometer Test (kg/m^3)
( )	Denotes residual test value
PID	Photo Ionisation Detector (ppm) *
Kf/Kr	Permeability Test (f = falling head, r = rising head quoted in ms^{-1})
HPD	High Pressure Dilatometer Test (pressure meter)
PKR	Packer / Lugeon Permeability Test
CBR	California Bearing Ratio Test

ROTARY CORE DETAILS

TCR	Total Core Recovery, %
SCR	Solid Core Recovery, %
RQD	Rock Quality Designation (% of intact core >100 mm)
FI	Fracture Spacing (average fracture spacing; in mm, over indicated length of core) * *
NI	Non-Intact Core
AZCL	Assumed Zone of Core Loss

INSTALLATION & BACKFILL DETAILS



GROUNDWATER

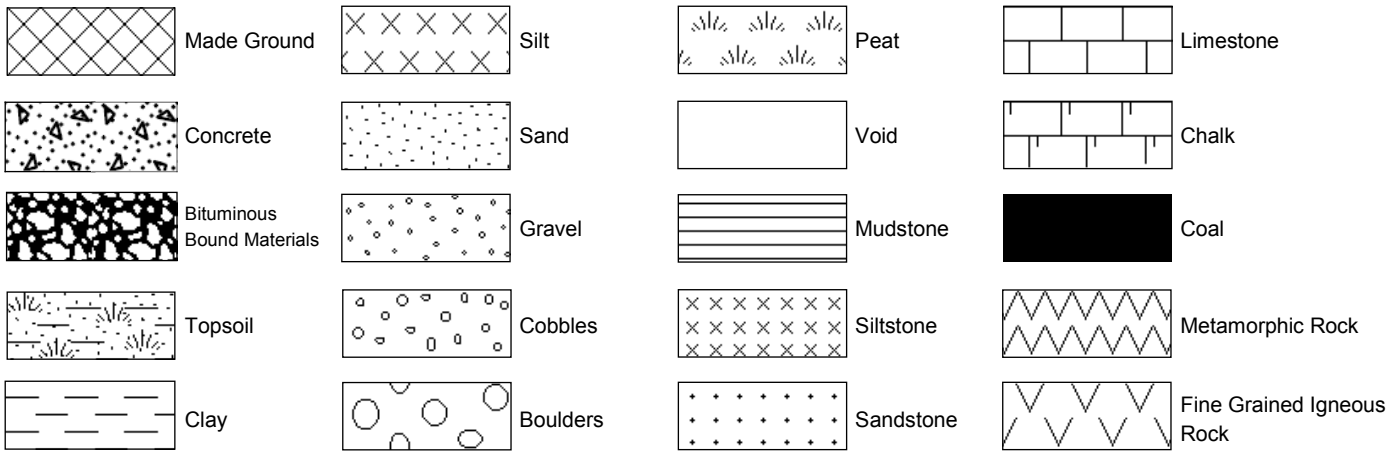
Groundwater strike

Standing water level after 20 minutes; 1st, 2nd etc (number denotes level order)

STRATUM BOUNDARIES

Unit boundary

STRATA LEGENDS - Note: Composite strata types are shown by combining symbols



* Where a single value is quoted this is the uncorrected 'N' value for a full 300 mm test drive following a seating drive of 150mm. Where the full test drive penetration is not achieved the number of blows is quoted for the penetration below the test total of 300mm, e.g.: 50/75.

* * The minimum, average and maximum are shown e.g. 5/45/125.

APPENDIX C

EXPLORATORY HOLE LOGS

ARCADIS Cable Percussive Borehole Log

BHTCA101

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.70**	**09/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**540986.40**	**266823.71**	**10/03/2022**	**Sheet 1 of 3**

Samples	Tests			Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(B1) 0.20-0.40 (ES1) 0.20 (B) 0.50-0.70 (B2) 0.50-0.70 (ES2) 0.50 (B3) 1.00-1.20 (ES3) 1.00 (B4) 1.20-1.70 (ES4) 1.20-1.70 (B5) 1.70-2.00 (B) 2.00-2.50 (B6) 2.00-2.50 (B7) 2.70-3.00 (B9) 3.00-3.50 (D8) 3.00-3.45 (ES5) 3.00-3.50 (D10) 3.50-4.00 (B12) 4.00-4.50 (UT11) 4.00-4.45 (D13) 4.50-5.00 (B) 5.00-5.50 (B15) 5.00-5.50 (D14) 5.00-5.45 (D16) 5.50-6.00 (UT17) 6.00-6.10 (B18) 6.10-6.60 (D19) 6.60-7.00 (B21) 7.00-7.50 (D20) 7.00-7.45 (D22) 7.50-8.00 (B25) 8.00-8.50 (UT23) 8.00-8.45 (D24) 8.45-8.55 (D26) 8.50-9.00 (B28) 9.00-9.50 (D27) 9.00-9.45 (D29) 9.50-10.00 (B32) 10.00-10.50 ~~(UT30) 10.00-10.45~~	SPT(C) 1.20 SPT(C) 2.00 SPT(S) 3.00 SPT(S) 5.00 SPT(S) 6.10 SPT(S) 7.00 SPT(S) 9.00	N=32 (2,4/6,8,10,8) N=31 (4,6/9,9,8,5) N=10 (1,2/2,2,3,3) N=23 (3,5/6,5,5,7) UT17 120 blows 0%rec. N>50 (25 for 25mm/37,13 for 45mm) N>50 (5,5/6,7,16,21 for 30mm) N=27 (4,5/6,7,7,7) UT11 90 blows 100% rec. UT23 121 blows 75% rec. UT30 65 blows 100% rec.	Dry Dry Dry Dry Dry Dry Dry Dry Dry Dry Dry	09/03/2022 09:30	0.00 *Dry*	MADE GROUND: Very soft to soft bluish grey mottled light greyish brown slightly sandy gravelly CLAY . Gravel is subangular to subrounded fine to coarse flint, concrete, ceramics and brick. Sand is fine to coarse. Occasional rootlets. Occasional pockets (up to 50mm diameter) of soft organic clay. [MADE GROUND] Dense yellowish brown slightly silty gravelly SAND Gravel is angular to subrounded fine and medium rarely coarse flint. Sand is fine to coarse. [RIVER TERRACE DEPOSITS] Dense light yellowish brown, orangish brown and brown clayey very sandy GRAVEL Gravel is angular to subrounded fine to coarse flint. Sand is fine to coarse. [RIVER TERRACE DEPOSITS] Firm dark bluish grey silty CLAY with thinly laminated siltstone. Rare selenite crystals. [KIMMER DGE CLAY FORMATION] Siltstone band. 4.5-4.7m bgl Becoming stiff. Siltstone band. 6.2-6 5m bgl Becoming very stiff. Becoming stiff.		(1.20) 1.20 (0.80) 2.00 (0.70) 2.70	10.50 9.70 9.00	

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
From	To	Type	Hard Strata From	Hard Strata To	Duration	Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00 1.20	1.20 20.45	Inspection Pit Cable Percussion	4.50 6.20 11.40 15.60	4.70 6.50 11.60 15.90	00:33 01:10 00:33 01:05	10/03/2022 10:30	15.90	20	15.44	13.65		200	3.00	200 150	3.00 13.15			

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 15.90m.
No evidence of contamination observed.

Termination Depth: 20.45m

AGS

Unless otherwise stated
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2000**

Logged By: **SO**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA101

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.70**	**09/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**540986.40**	**266823.71**	**10/03/2022**	**Sheet 2 of 3**

Samples		Tests		Progress		Strata			
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(D31) 10.45-10.55 (D33) 10.50-11.00				09/03/2022 17:30 10/03/2022 08:00	3.00 *8.99* 3.00 *Dry*	Firm dark bluish grey silty CLAY with thinly laminated siltstone. Rare selenite crystals. [KIMMER DGE CLAY FORMATION]		(17.75)		
(D34) 11.00-11.50										
(B36) 11.50-12.00 (D35) 11.50-11.95	SPT(S) 11.50	N>50 (6,3/9,39,2 for 5mm)	10.55							
(D37) 12.00-12.50										
(D38) 12.50-13.00										
(B40) 13.00-13.50 (UT39) 13.00-13.45		UT39 66 blows 100% rec.	Dry							
(D41) 13.50-14.00										
(B42) 14.00-14.50										
(B44) 14.50-15.00 (D43) 14.50-14.95	SPT(S) 14.50	N=30 (4,6/6,7,8,9)	10.55							
(D45) 15.00-15.50										
(D46) 15.50-16.00						Siltstone band. 15.6-15 9m bgl				
(B48) 16.00-16.50 (UT47) 16.00-16.45		UT47 70 blows 90%rec.	10.55							
(D49) 16.50-17.00										
(B50) 17.00-17.50										
(B52) 17.50-17.95 (D51) 17.50-17.95	SPT(S) 17.50	N=41 (4,6/7,10,11,13)	10.55							
(B53) 18.00-18.50										
(D54) 18.50-19.00										
(B56) 19.00-19.50 (UT55) 19.00-19.45		UT55 101 blows 100% rec.	10.55							
(D57) 19.50-20.00										
(D58) 20.00-20.45	SPT(S) 20.00	N>50 (8,8/9,9,11,21 for 55mm)	10.55							

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
From	To	Type	Hard Strata From	Hard Strata To	Duration	Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00 1.20	1.20 20.45	Inspection Pit Cable Percussion	4.50 6.20 11.40 15.60	4.70 6.50 11.60 15.90	00:33 01:10 00:33 01:05	10/03/2022 10:30	15.90	20	15.44	13.65		200	3.00	200 150	3.00 13.15			

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 15.90m.
No evidence of contamination observed.

Termination Depth: 20.45m

AGS

Unless otherwise stated
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2000**

Logged By: **SO**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA101

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.70**	**09/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**540986.40**	**266823.71**	**10/03/2022**	**Sheet 3 of 3**

Samples	Tests			Progress		Strata		Depth (Thickness)	Level	Install/ Backfill
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend			
				10/03/2022 12:45	13.15 *16.88*	Firm dark bluish grey silty CLAY with thinly laminated siltstone. Rare selenite crystals. [KIMMER DGE CLAY FORMATION]		20.45	-8.75	

DR LLING TECHNIQUE

From	To	Type
0.00	1.20	Inspection Pit
1.20	20.45	Cable Percussion

CHISELL NG

Hard Strata From	Hard Strata To	Duration
4.50	4.70	00:33
6.20	6.50	01:10
11.40	11.60	00:33
15.60	15.90	01:05

WATER OBSERVATIONS

Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed
10/03/2022 10 30	15.90	20	15.44	13.65	

HOLE/CASING DIAMETER

Hole Dia.	Depth	Casing Dia.	Depth
200	3.00	200	3.00
		150	13.15

WATER ADDED

From	To	Volume (ltr)

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 15.90m.
No evidence of contamination observed.

Termination Depth: 20.45m

AGS

Unless otherwise stated
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2000**

Logged By: **SO**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA102

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.62**	**10/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**540975.91**	**266761.53**	**11/03/2022**	**Sheet 1 of 2**

Samples		Tests		Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(B1) 0.20-0.40 (ES1) 0.20	PID () 0.20	<1ppm		10/03/2022 12:00	0.00 *Dry*	MADE GROUND: Soft to firm brown locally mottled bluish grey slightly sandy slightly gravelly CLAY Gravel is angular to rounded fine to coarse flint, concrete, brick and rare ceramics. Occasional rootlets. [MADE GROUND]		(0.80)		
(B) 0.50-0.70 (B2) 0.50-0.70 (ES2) 0.50	PID () 0.50	<1ppm						0.80	10.82	
(B3) 1.00-1.20 (ES3) 1.00	PID () 1.00	<1ppm				Orangish brown and brown slightly silty gravelly SAND Gravel is angular to subrounded fine to coarse flint. [RIVER TERRACE DEPOSITS]		(0.40)		
(B4) 1.20-1.70 (ES4) 1.20-1.70	SPT(C) 1.20 PID () 1.20	N=36 (3,5/6,9,11,10) <1ppm	Dry			Medium dense yellowish brown and light brown slightly clayey sandy GRAVEL Gravel is angular to subrounded fine to coarse flint. [RIVER TERRACE DEPOSITS]		1.20	10.42	
(D5) 1.70-2.00						Becoming dense.		(1.30)		
(B6) 2.00-2.50	SPT(C) 2.00	N=11 (3,2/3,2,4,2)	Dry							
(B7) 2.50-3.00 (ES5) 2.50-3.00	PID () 2.50	<1ppm				Stiff to very stiff bluish grey silty CLAY with bands of thickly laminated extremely weak and very weak siltstone. [KIMMER DGE CLAY FORMATION]		2.50	9.12	
(B10) 3.00-3.50 (UT8) 3.00-3.45		UT8 29 blows 100%rec.	Dry							
(D9) 3.45-3.55 (D) 3.50-4.00 (D11) 3.50-4.00										
(B13) 4.00-4.50 (D12) 4.00-4.45	SPT(S) 4.00	N>50 (3,3/7,33,10 for 55mm)	Dry							
(D14) 4.50-5.00						Siltstone band. 4.4-4 6m bgl				
(B17) 5.00-5.50 (UT15) 5.00-5.45		UT15 70 blows 100% rec.	Dry							
(D16) 5.45-5.55 (D18) 5.50-6.00										
(B20) 6.00-6.50 (D19) 6.00-6.45	SPT(S) 6.00	N=27 (5,5/6,6,7,8)	Dry							
(D21) 6.50-7.00				10/03/2022 17:20 11/03/2022 08:00	3.00 *4.87* 3.00 *Dry*					
(B24) 7.00-7.50 (UT22) 7.00-7.45		UT22 109 blows 100% rec.	Dry							
(D23) 7.45-7.55 (D25) 7.50-8.00										
						Siltstone band. 7.7-7 8m bgl				
(B27) 8.00-8.50 (D26) 8.00-8.45	SPT(S) 8.00	N>50 (4,5/5,6,19,20 for 60mm)	Dry							
(D28) 8.50-9.00						Siltstone band. 8.4-8 6m bgl				
(B30) 9.00-9.50 (UT29) 9.00-9.45		UT29 59 blows 100% rec.	Dry							
(D31) 9.50-10.00										
(B33) 10.00-10.50 ~~(B32) 10.00-10.45~~	SPT(S) 10.00	N=23 (3,4/5,5,6,7)	Dry							

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
From	To	Type	Hard Strata From	Hard Strata To	Duration	Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00	1.20	Inspection Pit	4.40	4.60	00:33	11/03/2022 10:00	15.70	20	14.92	9.15		200	3.00	200	3.00			
1.20	20.11	Cable Percussion	7.70	7.80	00:25							150	20.11	150	9.15			
			8.40	8.60	00:50													
			16.00	16.20	00:50													

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 15.70m.
No evidence of contamination observed.

Termination Depth: 20.11m

AGS

Unless otherwise stated
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2000**

Logged By: **SO**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA102

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.62**	**10/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**540975.91**	**266761.53**	**11/03/2022**	**Sheet 2 of 2**

Samples		Tests		Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(D34) 10.50-11.00						Stiff to very stiff bluish grey silty CLAY with bands of thickly laminated extremely weak and very weak siltstone. [KIMMER DGE CLAY FORMATION]				
(B35) 11.00-11.50										
(B37) 11.50-12.00 (UT36) 11.50-11.95		UT36 62 blows 100% rec.	Dry							
(D38) 12.00-12.50										
(D39) 12.50-13.00										
(B41) 13.00-13.50 (D40) 13.00-13.45	SPT(S) 13.00	N=24 (4,4/5,6,6,7)	Dry							
(D42) 13.50-14.00										
(B43) 14.00-14.50										
(B45) 14.50-15.00 (UT44) 14.50-14.95		UT44 79 blows 100% rec.	Dry							
(D46) 15.00-15.50								(17.61)		
(B47) 15.50-16.00										
(B48) 16.00-16.50	SPT(C) 16.00	N>50 (25 for 35mm/41,9 for 45mm)	Dry			Siltstone band. 16.2-16.4m bgl				
(B49) 16.50-17.00										
(D50) 17.00-17.50										
(B52) 17.50-18.00 (UT51) 17.50-17.95		UT51 130 blows 100% rec.	15.00							
(D53) 18.00-18.50										
(B54) 18.50-19.00										
(B56) 19.00-19.50 (D55) 19.00-19.45	SPT(S) 19.00	N=37 (7,8/9,9,9,10)	Dry							
(D57) 19.50-19.80										
	SPT(C) 19.80	N>50 (25,0 for 0mm/23,15,10,2 for 10mm)	Dry			Siltstone band. 19.7-19.80m bgl				
				11/03/2022 12:10	9.15 *18.03*			20.11	-8.49	

DR LLING TECHNIQUE

From	To	Type
0.00	1.20	Inspection Pit
1.20	20.11	Cable Percussion

CHISELL NG

Hard Strata From	Hard Strata To	Duration
4.40	4.60	00:33
7.70	7.80	00:25
8.40	8.60	00:50
16.00	16.20	00:50

WATER OBSERVATIONS

Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed
11/03/2022 10:00	15.70	20	14.92	9.15	

HOLE/CASING DIAMETER

Hole Dia.	Depth	Casing Dia.	Depth
200	3.00	200	3.00
150	20.11	150	9.15

WATER ADDED

From	To	Volume (ltr)

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 15.70m.
No evidence of contamination observed.

Termination Depth: **20.11m**

Unless otherwise stated
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2000**

Logged By: **SO**

Checked By: **CPr**

ARCADIS Inspection Pit Log

BHTCA103

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.60**	**08/03/2022**	**1:10**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541033.69**	**266738.05**	**08/03/2022**	**Sheet 1 of 1**

SAMPLES		TESTS			Water Strikes	STRATA		Depth (Thickness)	Level	Install/ Backfill
Depth	Type/ No.	Depth	Type/ No.	Results		Description	Legend			
						MADE GROUND: Soft to Firm dark greyish brown mottled slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse of flint, brick concrete and wood. [MADE GROUND]		(0.20)		
0.20	ES1					MADE GROUND: Firm dark brownish grey sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse of flint, brick and concrete. [MADE GROUND]		0.20	11.40	
								(0.20)		
								0.40	11.20	

PLAN DETAILS

Long Axis Orientation:

Shoring / Support:

Stability:

Groundwater (description):

Remarks

Borehole terminated at 0.40m due to concrete obstruction within hand pit. Borehole relocated to BHTCA103A.
No groundwater encountered.
No evidence of contamination observed.

Termination Depth: 0.40m

AGS

Unless otherwise stated:
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Insulated Hand Tools**

Logged By: **NM**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA103A

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.60**	**09/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541033.69**	**266738.05**	**10/03/2022**	**Sheet 1 of 2**

Samples	Tests			Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(B) 0.20-0.50 (B1) 0.20-0.50				09/03/2022 15:15	0.00 *Dry*	MADE GROUND: Soft to Firm greyish brown sandy gravelly CLAY with frequent brick fragments and ceramic. Gravel is very angular to subrounded fine to coarse flint and red brick. [MADE GROUND]		(0.40)		
(ES2) 0.50						MADE GROUND: Firm dark greyish brow sandy gravelly CLAY with wood and brick fragments. Gravel is very angular to subrounded fine to coarse flint and red brick. Hydrocarbon odour noted and purplish black staining noted at 0 5m bgl. [MADE GROUND]		0.40	11.20	
(ES3) 1.00								(1.10)		
(B2) 1.20-1.50	SPT(C) 1.20	N=29 (5,8/7,5,9,8)	Dry							
(D3) 1.80-2.00						Medium dense light orangish yellow slightly gravelly SAND Gravel is subangular to subrounded fine to coarse flint. [RIVER TERRACE DEPOSITS]		1.50	10.10	
(B4) 2.00-2.50 (ES6) 2.00	SPT(C) 2.00	N=16 (2,3/3,4,5,4)	Dry					(1.20)		
(D5) 2.70-3.00						Stiff becoming very stiff fissured greenish grey silty slightly sandy CLAY with rare gravel size pockets of orangish brown silt and rare fine decaying rootlets. [KIMMER DGE CLAY FORMATION]		2.70	8.90	
(UT6) 3.00-3.45		UT6 30 blows 95%rec.	3.00	09/03/2022 17:09 10/03/2022 08:00	3.00 *1.9* 3.00 *Dry*					
(D7) 3.45-3.50										
(B) 4.00-4.50 (B8) 4.00-4.50	SPT(S) 4.00	N=14 (2,3/3,3,4,4)	Dry							
(D9) 4.80-5.00										
(UT10) 5.00-5.45		UT10 100 blows 50% rec.	Dry							
(D11) 5.45-5.50										
(B12) 6.00-6.50	SPT(S) 6.00	N=33 (9,15/14,7,6,6)	Dry			No decayed rootlets below 6m bgl.		(14.75)		
(D13) 6.80-7.00										
(UT14) 7.00-7.45		UT14 100 blows 75% rec.	Dry							
(D15) 7.45-7.50										
(B16) 8.00-8.45	SPT(S) 8.00	N=26 (8,6/5,5,7,9)	Dry			Extremely weak light grey siltstone band.				
(D17) 8.80-9.00										
(UT18) 9.00-9.45		UT18 100 blows 60% rec.	Dry							
(19) 9.45-9.50										
(B20) 10.00-10.50	SPT(S) 10.00	N=28 (3,6/6,8,7,7)	Dry							

DR LLING TECHNIQUE

From	To	Type
0.00	1.20	Inspection Pit
1.20	17.45	Cable Percussion

CHISELL NG

Hard Strata From	Hard Strata To	Duration
8.40	8.50	00:20
16.30	16.50	00:30

WATER OBSERVATIONS

Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed
09/03/2022 16 50	2.30	20	1.90	2.00	3.00
10/03/2022 13 00	16.10	20	12.10	3.00	

HOLE/CASING DIAMETER

Hole Dia.	Depth	Casing Dia.	Depth
150	17.45	150	3.00

WATER ADDED

From	To	Volume (ltr)

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 2.30m and 16.10m.
No evidence of contamination observed.

Termination Depth: 17.45m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 3000**

Logged By: **NM**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA103A

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.60**	**09/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541033.69**	**266738.05**	**10/03/2022**	**Sheet 2 of 2**

Samples		Tests		Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
						Stiff becoming very stiff fissured greenish grey silty slightly sandy CLAY with rare gravel size pockets of orangish brown silt and rare fine decaying rootlets. [KIMMER DGE CLAY FORMATION]				
(D21) 10.80-11.00										
						Fine sand size selenite crystals present.				
(UT) 12.00-12.45		UT 100 blows 60%rec.								
(D22) 12.45-12.50										
						Fine to coarse gravel size shell fragments present.				
(B23) 13.00-13.50										
(B24) 13.50-14.00	SPT(S) 13.50	N=28 (5,6/7,7,7,7)	Dry							
(D25) 14.40-14.70										
(UT26) 15.00-15.45		UT26 100 blows 50% rec.	Dry							
(D27) 15.45-15.50										
(B28) 16.00-16.50										
						Extremely weak light grey siltstone band.				
(B29) 16.50-17.00	SPT(S) 16.50	N=35 (5,6/8,11,7,9)	12.10							
	SPT(S) 17.00	N=31 (6,7/7,8,8,8)	12.10							
				10/03/2022 14:56	3.00 *12.1*			17.45	-5.85	

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
			Hard Strata															
From	To	Type	From	To	Duration	Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00	1.20	Inspection Pit	8.40	8.50	00:20	09/03/2022 16:50	2.30	20	1.90	2.00	3.00	150	17.45	150	3.00			
1.20	17.45	Cable Percussion	16.30	16.50	00:30	10/03/2022 13:00	16.10	20	12.10	3.00								

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 2.30m and 16.10m.
No evidence of contamination observed.

Termination Depth: 17.45m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 3000**

Logged By: **NM**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA104

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.74**	**14/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**540977.05**	**266696.64**	**14/03/2022**	**Sheet 1 of 3**

Samples	Tests			Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(B1) 0.20-0.40 (ES1) 0.20	PID () 0.20	<1ppm		14/03/2022 09:00	0.00 *Dry*	MADE GROUND: Soft to firm brown locally mottled bluish grey slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is angular to rounded fine to coarse flint, concrete, brick and ceramic. [MADE GROUND]		(1.10)		
(B) 0.50-0.70 (B2) 0.50-0.70 (ES2) 0.50 (ES40) 0.50	PID () 0.50	<1ppm								
(B3) 1.00-1.20 (ES3) 1.00	PID () 1.00	<1ppm						1.10	10.64	
(B4) 1.20-1.40 (ES4) 1.20-1.70	SPT(C) 1.20 PID () 1.20	N=21 (3,2/2,5,8,6) <1ppm	Dry			Medium dense orangish brown and brown slightly silty very gravelly SAND Gravel is angular to subrounded fine to coarse flint. [RIVER TERRACE DEPOSITS]				
(D5) 1.70-2.00								(1.40)		
(B6) 2.00-2.50	SPT(C) 2.00	N=10 (2,2/2,2,3,3)								
(B7) 2.50-3.00 (ES5) 2.50-3.00	PID () 2.50	<1ppm				Firm to stiff bluish grey silty CLAY with bands of thickly laminated extremely weak to weak siltstone. [KIMMER DGE CLAY FORMATION]		2.50	9.24	
(B) 3.00-3.50 (B9) 3.00-3.50 (UT8) 3.00-3.45		UT8 30 blows 90%rec.	3.00							
(D10) 3.50-4.00										
(B12) 4.00-4.50 (D11) 4.00-4.45	SPT(S) 4.00	N=19 (10,5/5,4,4,6)	Dry			Siltstone band. 4.10 - 4.20m bgl				
(Dq3) 4.50-5.00										
(B15) 5.00-5.50 (UT14) 5.00-5.45		UT14 81 blows 100% rec.	Dry							
(D16) 5.50-6.00										
(B18) 6.00-6.50 (D17) 6.00-6.45	SPT(S) 6.00	N=38 (5,6/13,10,8,7)	Dry			Siltstone band. 6.30 - 6.40m bgl				
(D) 6.50-7.00 (D19) 6.50-7.00										
(B22) 7.00-7.50 (UT20) 7.00-7.45		UT20 52 blows 100% rec.	Dry							
(D21) 7.45-7.55 (D23) 7.50-8.00										
(B25) 8.00-8.50 (D24) 8.00-8.45	SPT(S) 8.00	N=21 (3,3/4,5,6,6)	Dry							
(D26) 8.50-9.00										
(B28) 9.00-9.50 (UT27) 9.00-9.45		UT27 76 blows 100% rec.	Dry							
(D29) 9.50-10.00										
(B31) 10.00-10.50 ~~(B30) 10.00-10.45~~	SPT(S) 10.00	N=26 (4,4/6,6,7,7)	Dry							

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
From	To	Type	Hard Strata From	Hard Strata To	Duration	Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00 1.20	1.20 20.16	Inspection Pit Cable Percussion	4.10 6.30 15.30 16.10	4.20 6.40 15.60 16.30	00:15 00:25 00:30 00:30	14/03/2022 10:40	2.30	20	2.11	1.70		150	20.16	150	3.00			

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 2.30m.
No evidence of contamination observed.

Termination Depth: 20.16m

AGS

Unless otherwise stated
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2000**

Logged By: **SO**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA104

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.74**	**14/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**540977.05**	**266696.64**	**14/03/2022**	**Sheet 2 of 3**

Samples		Tests		Progress		Strata			
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(B32) 10.50-11.00						Firm to stiff bluish grey silty CLAY with bands of thickly laminated extremely weak to weak siltstone. [KIMMER DGE CLAY FORMATION]				
(D33) 11.00-11.50										
(B35) 11.50-12.00 (UT34) 11.50-11.95		UT34 48 blows 100% rec.	Dry							
(D36) 12.00-12.50										
(B37) 12.50-13.00										
(B39) 13.00-13.50 (D38) 13.00-13.45	SPT(S) 13.00	N=30 (3,3/6,6,9,9)	Dry							
(B40) 13.50-14.00										
(D41) 14.00-14.50										
(B44) 14.50-15.00 (UT42) 14.50-14.95		UT42 72 blows 100% rec.	Dry							
(D43) 14.95-15.05 (D45) 15.00-15.50								(17.66)		
(B46) 15.50-16.00						Siltstone band. 15.30 - 15.60m bgl				
(B47) 16.00-16.50	SPT(C) 16.00	N=32 (18,7 for 35mm/9,8,7,8)	Dry			Siltstone band. 16.10 - 16 30m bgl.				
(B48) 16.50-17.00										
(D49) 17.00-17.50										
(B51) 17.50-18.00 (UT50) 17.50-17.95		UT50 91 blows 100% rec.	Dry							
(D52) 18.00-18.50										
(B53) 18.50-19.00										
(B55) 19.00-19.50 (D54) 19.00-19.45	SPT(S) 19.00	N=37 (7,8/8,9,10,10)	Dry							
(D56) 19.50-20.00										
(D57) 20.00-20.16	SPT(S) 20.00	N>50 (25 for 50mm/42,8 for 35mm)	Dry			Siltstone band. 19.90 - 20.16m bgl		20.16	-8.42	

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
From	To	Type	Hard Strata From	Hard Strata To	Duration	Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00	1.20	Inspection Pit	4.10	4.20	00:15	14/03/2022 10:40	2.30	20	2.11	1.70		150	20.16	150	3.00			
1.20	20.16	Cable Percussion	6.30	6.40	00:25													
			15.30	15.60	00:30													
			16.10	16.30	00:30													

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 2.30m.
No evidence of contamination observed.

Termination Depth: 20.16m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2000**

Logged By: **SO**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA104

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.74**	**14/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**540977.05**	**266696.64**	**14/03/2022**	**Sheet 3 of 3**

Samples	Tests			Progress		Strata		Depth (Thickness)	Level	Install/ Backfill
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend			
				14/03/2022 17:30	9.15 *Dry*					

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
From	To	Type	Hard Strata From	Hard Strata To	Duration	Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00	1.20	Inspection Pit	4.10	4.20	00:15	14/03/2022 10 40	2.30	20	2.11	1.70		150	20.16	150	3.00			
1.20	20.16	Cable Percussion	6.30	6.40	00:25													
			15.30	15.60	00:30													
			16.10	16.30	00:30													

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 2.30m.
No evidence of contamination observed.

Termination Depth: 20.16m

AGS

Unless otherwise stated
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2000**

Logged By: **SO**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA105

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.53**	**11/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541064.71**	**266703.08**	**15/03/2022**	**Sheet 1 of 2**

Samples		Tests		Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(B) 0.10-0.50 (B1) 0.10-0.50 (ES1) 0.20	PID (1) 0.10	<1ppm		10/03/2022 16:00	0.00 *Dry*	MADE GROUND: Soft to firm dark brown slightly sandy gravelly CLAY with occasional pockets of dark green clay. Gravel is fine to coarse, subangular to subrounded of flint, brick and concrete. [MADE GROUND]		(1.00)		
(B2) 0.50-0.90 (ES2) 0.50	PID (2) 0.50	<1ppm								
(ES3) 1.00								1.00	10.53	
(B3) 1.20-1.70	SPT(C) 1.20 PID (3) 1.20	N=17 (2,3/5,4,3,5) <1ppm	Dry	10/03/2022 17:00 14/03/2022 08:00	0.00 *Dry* 0.00 *Dry*	Soft to firm orangish brown sandy gravelly CLAY Gravel is subangular to subrounded fine to coarse of flint. [RIVER TERRACE DEPOSITS]		(1.30)		
(D4) 1.80-2.00										
(B5) 2.00-2.50	SPT(C) 2.00	N=15 (1,3/2,4,4,5)	Dry					2.30	9.23	
(D6) 2.80-3.00						Firm to stiff dark bluish grey silty CLAY with occasional pockets of orangish brown silty clay. [KIMMER DGE CLAY FORMATION]				
(UT7) 3.00-3.45		UT7 75 blows 100%rec.	3.00							
(D8) 3.45-3.50								(2.60)		
(B9) 4.00-4.50	SPT(S) 4.00	N=12 (2,3/3,3,3,3)	1.9							
(D10) 4.80-5.00								4.90	6.63	
(B11) 5.00-5.50	SPT(C) 5.00	N=25 (13,12 for 55mm/9,6,5,5)	1.9			Firm to stiff dark bluish grey silty CLAY with bands of thickly laminated extremely weak to weak light grey and grey siltstone. [KIMMER DGE CLAY FORMATION]				
						Band of extremely weak light grey siltstone.				
(D12) 5.80-6.00										
	SPT(S) 6.00	N=47 (14,11 for 35mm/17,18,6,6)	1.9							
						Band of extremely weak light grey siltstone.				
(D14) 6.80-7.00										
(UT15) 7.00-7.45		UT15 50 blows 100% rec.	Dry							
(D16) 7.45-7.50				14/03/2022 17:00 15/03/2022 08:00	3.00 *7.2* 3.00 *7.2*					
(B17) 8.00-8.50	SPT(S) 8.00	N=25 (4,5/6,6,6,7)	Dry							
(D18) 8.80-9.00										
(UT19) 9.00-9.45		UT19 100 blows 60% rec.	7.00							
(D20) 9.45-9.50										
(B21) 10.00-10.50	SPT(S) 10.00	N=27 (4,6/6,7,7,7)	Dry							

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
From	To	Type	Hard Strata From	Hard Strata To	Duration	Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00	1.20	Inspection Pit	5.10	5.30	00:20	14/03/2022 10 00	2.10	20	1.90	1.50	3.00	200	20.00	200	3.00			
1.20	20.00	Cable Percussion	6.10	6.40	00:30	14/03/2022 15 00	7.50	20	7.00	3.00								
			16.40	16.60	00:20	15/03/2022 12 00	16.40	20	14.70	3.00								

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination observed.

Termination Depth: 20.00m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 3000**

Logged By: **HS**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA105

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.53**	**11/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541064.71**	**266703.08**	**15/03/2022**	**Sheet 2 of 2**

Samples	Tests			Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
						Firm to stiff dark bluish grey silty CLAY with bands of thickly laminated extremely weak to weak light grey and grey siltstone. [KIMMER DGE CLAY FORMATION]				
(D22) 11.00-11.50										
(UT23) 12.00-12.45		UT23 75 blows 70%rec.	7.00							
(D24) 12.45-12.50										
(B25) 13.00-13.50										
(B26) 13.50-14.00	SPT(S) 13.50	N=25 (5,6/6,6,6,7)	Dry							
(D27) 14.50-14.70										
(UT28) 15.00-15.45		UT28 100 blows 75% rec.	Dry					(15.10)		
(D29) 15.45-15.50										
(B30) 16.00-16.50										
(B31) 16.50-16.70	SPT(S) 16.50	N=36 (11,14/17,7,6,6)	Dry			Band of extremely weak light grey siltstone.				
(D32) 17.50-17.80										
(B33) 18.00-18.50	SPT(S) 18.00	N=33 (6,7/7,8,9,9)	Dry							
(D34) 19.20-19.50										
(UT35) 19.50-19.95		UT35 100 blows 75% rec.	14.70							
(D36) 19.95-20.00				15/03/2022 17:00	3.00 *17.3*			20.00	-8.47	

DR LLING TECHNIQUE

From	To	Type
0.00	1.20	Inspection Pit
1.20	20.00	Cable Percussion

CHISELL NG

Hard Strata From	Hard Strata To	Duration
5.10	5.30	00:20
6.10	6.40	00:30
16.40	16.60	00:20

WATER OBSERVATIONS

Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed
14/03/2022 10 00	2.10	20	1.90	1.50	3.00
14/03/2022 15 00	7.50	20	7.00	3.00	
15/03/2022 12 00	16.40	20	14.70	3.00	

HOLE/CASING DIAMETER

Hole Dia.	Depth	Casing Dia.	Depth
200	20.00	200	3.00

WATER ADDED

From	To	Volume (ltr)

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination observed.

Termination Depth: 20.00m

Unless otherwise stated
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 3000**

Logged By: **HS**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA106

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.34**	**15/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541016.73**	**266686.81**	**15/03/2022**	**Sheet 1 of 3**

Samples	Tests			Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(B) 0.20-0.40 (B1) 0.20-0.40 (ES1) 0.20 (B2) 0.50-0.70 (ES2) 0.50				15/03/2022 09:00	0.00 *Dry*	MADE GROUND: Soft to firm brown locally mottled bluish grey slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is angular to rounded fine to coarse of flint, concrete, brick and ceramics. [MADE GROUND]		(1.70)		
(B3) 1.00-1.20 (ES3) 1.00 (B4) 1.20-1.70	SPT(C) 1.20	N=11 (2,2/2,2,3,4)								
(B) 1.70-2.00 (B5) 1.70-2.00 (ES4) 1.70-2.00 (B7) 2.00-2.50 (D6) 2.00-2.45	SPT(S) 2.00	N=12 (2,2/2,3,3,4)				Firm to stiff dark bluish grey mottled greyish brown silty slightly sandy CLAY with occasional selenite crystals. Sand is fine and medium. [KIMMER DGE CLAY FORMATION]		1.70	9.64	
(D8) 2.50-3.00										
(B11) 3.00-3.50 (ES5) 3.00-3.50 (UT9) 3.00-3.45		UT9 40 blows 100%rec.	Dry							
(D10) 3.45-3.55 (D12) 3.50-4.00								(3.80)		
(B) 4.00-4.50 (B14) 4.00-4.50 (D13) 4.00-4.45	SPT(S) 4.00	N=47 (3,18/18,14,9,6)				Siltstone band. 4 20-4.40m bgl				
(D15) 4.50-5.00										
(B17) 5.00-5.50 (UT16) 5.00-5.45		UT16 103 blows 80% rec.	Dry			Siltstone band. 5 20-5.50m bgl				
(D18) 5.50-6.00						Firm to stiff bluish grey silty CLAY with bands of thickly laminated to medium bedded extremely weak to weak light grey siltstone. [KIMMER DGE CLAY FORMATION]		5.50	5.84	
(B20) 6.00-6.50 (D19) 6.00-6.45	SPT(S) 6.00	N=21 (16,8/4,4,5,8)				Siltstone band. 5 90-6.40m bgl				
(D21) 6.50-7.00										
(B) 7.00-7.50 (B22) 7.00-7.50	SPT(C) 7.00	N>50 (25 for 60mm/19,17,14 for 70mm)								
(D23) 7.50-8.00										
(B25) 8.00-8.50 (UT24) 8.00-8.45		UT24 97 blows 100% rec.	Dry							
(D26) 8.50-9.00										
(B28) 9.00-9.50 (D27) 9.00-9.45	SPT(S) 9.00	N=22 (3,4/5,5,6,6)								
(D29) 9.50-10.00										
(B31) 10.00-10.50 ~~(UT30) 10.00-10.45~~		UT30 75 blows 100% rec.	Dry							

DR LLING TECHNIQUE

From	To	Type
0.00	1.20	Inspection Pit
1.20	20.45	Cable Percussion

CHISELL NG

Hard Strata From	Hard Strata To	Duration
4.20	4.40	00:20
5.20	5.50	00:20
15.00	15.30	00:40
18.30	18.50	00:20

WATER OBSERVATIONS

Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed
15/03/2022 14:30	15.50	20	15.11	1.80	

HOLE/CASING DIAMETER

Hole Dia.	Depth	Casing Dia.	Depth
200	1.80	200	1.80
150	20.45		

WATER ADDED

From	To	Volume (ltr)

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 15.50m.
No evidence of contamination observed.

Termination Depth: 20.45m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2000**

Logged By: **SO**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA106

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.34**	**15/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541016.73**	**266686.81**	**15/03/2022**	**Sheet 2 of 3**

Samples		Tests		Progress		Strata		Depth (Thickness)	Level	Install/ Backfill
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend			
(B32) 10.50-11.00						Firm to stiff bluish grey silty CLAY with bands of thickly laminated to medium bedded extremely weak to weak light grey siltstone. [KIMMER DGE CLAY FORMATION]				
(D33) 11.00-11.50										
(B35) 11.50-12.00 (D34) 11.50-11.95	SPT(S) 11.50	N=24 (4,4/5,5,7,7)								
(D36) 12.00-12.50										
(B37) 12.50-13.00										
(B39) 13.00-13.50 (UT38) 13.00-13.45		UT38 106 blows 70% rec.	Dry							
(B40) 13.50-14.00										
(D41) 14.00-14.50										
(B) 14.50-15.00 (B43) 14.50-15.00 (D42) 14.50-14.95	SPT(C) 14.50	N=27 (4,5/6,6,7,8)								
(D44) 15.00-15.50						Siltstone band. 15.00-15.30m bgl		(14.95)		
(B45) 15.50-16.00										
(B47) 16.00-16.50 (UT46) 16.00-16.45		UT46 90 blows 100% rec.	15.10							
(B) 16.50-17.00 (B48) 16.50-17.00										
(D49) 17.00-17.50										
(B51) 17.50-18.00 (D50) 17.50-17.95	SPT(S) 17.50	N>50 (6,8/9,9,32,0 for 0mm)								
(D52) 18.00-18.50										
(B53) 18.50-19.00						Siltstone band. 18.30-18.50m bgl				
(B55) 19.00-19.50 (UT54) 19.00-19.45	SPT(C) 19.10	UT54 130 blows 10% rec. N>50 (25 for 40mm/50 for 50mm)	15.10							
(D56) 19.50-20.00						Siltstone band. 19.50-19.60m bgl				
(D57) 20.00-20.45	SPT(S) 20.00	N>50 (25 for 50mm/36,14 for 65mm)								

DR LLING TECHNIQUE

From	To	Type
0.00	1.20	Inspection Pit
1.20	20.45	Cable Percussion

CHISELL NG

Hard Strata From	Hard Strata To	Duration
4.20	4.40	00:20
5.20	5.50	00:20
15.00	15.30	00:40
18.30	18.50	00:20

WATER OBSERVATIONS

Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed
15/03/2022 14:30	15.50	20	15.11	1.80	

HOLE/CASING DIAMETER

Hole Dia.	Depth	Casing Dia.	Depth
200	1.80	200	1.80
150	20.45		

WATER ADDED

From	To	Volume (ltr)

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 15.50m.
No evidence of contamination observed.

Termination Depth: 20.45m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2000**

Logged By: **SO**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA106

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.34**	**15/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541016.73**	**266686.81**	**15/03/2022**	**Sheet 3 of 3**

Samples	Tests			Progress		Strata		Depth (Thickness)	Level	Install/ Backfill
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend			
				15/03/2022 17:00	1.80 *18.23*	Firm to stiff bluish grey silty CLAY with bands of thickly laminated to medium bedded extremely weak to weak light grey siltstone. [KIMMER DGE CLAY FORMATION]		20.45	-9.11	

DR LLING TECHNIQUE

From	To	Type
0.00	1.20	Inspection Pit
1.20	20.45	Cable Percussion

CHISELL NG

Hard Strata From	Hard Strata To	Duration
4.20	4.40	00:20
5.20	5.50	00:20
15.00	15.30	00:40
18.30	18.50	00:20

WATER OBSERVATIONS

Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed
15/03/2022 14 30	15.50	20	15.11	1.80	

HOLE/CASING DIAMETER

Hole Dia.	Depth	Casing Dia.	Depth
200	1.80	200	1.80
150	20.45		

WATER ADDED

From	To	Volume (ltr)

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 15.50m.
No evidence of contamination observed.

Termination Depth: 20.45m

AGS

Unless otherwise stated
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2000**

Logged By: **SO**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA107

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.44**	**16/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541011.56**	**266642.42**	**16/03/2022**	**Sheet 1 of 3**

Samples		Tests		Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(B1) 0.20-0.40 (ES1) 0.20				16/03/2022 08:00	0.00 *Dry*	MADE GROUND: Soft to firm locally stiff dark brown and brown slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is angular to subrounded fine to coarse of flint, concrete, brick and ceramics. [MADE GROUND]		(1.00)		
(B2) 0.50-0.70 (ES2) 0.50										
(B3) 1.00-1.20 (ES3) 1.00 (B4) 1.20-1.70 (ES4) 1.20-1.70	SPT(C) 1.20	N=12 (2,2/2,3,3,4)	Dry			Firm brown mottled orangish brown and bluish grey slightly sandy slightly gravelly CLAY Gravel is subangular to subrounded fine to coarse flint. [RIVER TERRACE DEPOSITS]		1.00 (0.20) 1.20	10.44 10.24	
(B5) 1.70-2.00						Soft to firm light brown mottled bluish grey sandy slightly gravelly CLAY Gravel is angular to subrounded fine to coarse of flint. Occasional pockets (up to 30mm diameter) of soft dark grey organic clay. [RIVER TERRACE DEPOSITS]		(1.00)		
	SPT(S) 2.00	N=15 (3,5/6,5,2,2)	Dry							
(B6) 2.20-2.60 (ES5) 2.20-2.60						Stiff becoming very stiff bluish grey mottled greyish brown silty CLAY Rare selenite crystals. [KIMMER DGE CLAY FORMATION]		2.20	9.24	
(D7) 2.60-3.00										
(B) 3.00-3.45 (B10) 3.00-3.50 (ES6) 3.00-3.50 (UT8) 3.00-3.45 (D9) 3.45-3.55 (D11) 3.50-4.00		UT8 34 blows 100%rec.	Dry					(2.40)		
(B13) 4.00-4.50 (D12) 4.00-4.45	SPT(S) 4.00	N>50 (3,3/4,5,15,26 for 70mm)	Dry							
(D14) 4.50-5.00										
(B) 5.00-5.45 (B15) 5.00-5.50	SPT(C) 5.00	N>50 (25 for 25mm/41,9 for 35mm)	Dry			Stiff bluish grey silty CLAY interbedded with closely to widely spaced thickly laminated to medium bedded extremely weak and very weak siltstone. [KIMMER DGE CLAY FORMATION]		4.60	6.84	
(D16) 5.50-6.00						Siltstone band. 5 20-5.40m bgl Siltstone band. 5 60-5.80m bgl				
(B18) 6.00-6.50 (UT17) 6.00-6.45		UT17 62 blows 100% rec.	Dry							
(D19) 6.50-7.00										
(B21) 7.00-7.50 (D20) 7.00-7.45	SPT(S) 7.00	N=23 (3,4/4,6,6,7)	Dry							
(B22) 7.50-8.00										
(B24) 8.00-8.50 (UT23) 8.00-8.45		UT23 77 blows 90%rec.	Dry							
(D25) 8.50-9.00										
(B27) 9.00-9.50 (D26) 9.00-9.45	SPT(S) 9.00	N=28 (4,4/6,6,8,8)	Dry							
(D28) 9.50-10.00										
(B30) 10.00-10.50 ~~(UT29) 10.00-10.45~~		UT29 100 blows 100% rec.	Dry							

DR LLING TECHNIQUE

From	To	Type
0.00	1.20	Inspection Pit
1.20	20.45	Cable Percussion

CHISELL NG

Hard Strata From	Hard Strata To	Duration
5.20	5.40	00:20
5.60	5.80	00:30
15.30	15.70	00:40
19.80	20.00	00:30

WATER OBSERVATIONS

Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed
16/03/2022 09:45	2.30	20	1.49	1.65	2.60

HOLE/CASING DIAMETER

Hole Dia.	Depth	Casing Dia.	Depth
200	2.60	200	2.60
150	20.00		

WATER ADDED

From	To	Volume (ltr)

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 2.30m.
No evidence of contamination observed.

Termination Depth: 20.45m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2000**

Logged By: **SO**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA107

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.44**	**16/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541011.56**	**266642.42**	**16/03/2022**	**Sheet 2 of 3**

Samples		Tests		Progress		Strata		Depth (Thickness)	Level	Install/ Backfill
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend			
(B31) 10.50-11.00						Stiff bluish grey silty CLAY interbedded with closely to widely spaced thickly laminated to medium bedded extremely weak and very weak siltstone. [KIMMER DGE CLAY FORMATION]				
(D32) 11.00-11.50										
(B34) 11.50-12.00 (D33) 11.50-11.95	SPT(S) 11.50	N=27 (3,5/6,6,7,8)	Dry							
(D35) 12.00-12.50										
(B36) 12.50-13.00										
(B39) 13.00-13.50 (UT37) 13.00-13.45		UT37 59 blows 100% rec.	Dry							
(D38) 13.45-13.55 (B40) 13.50-14.00										
(D41) 14.00-14.50										
(B43) 14.50-15.00 (D42) 14.50-14.95	SPT(S) 14.50	N=31 (4,6/6,8,8,9)	Dry							
(D44) 15.00-15.50								(15.85)		
(B45) 15.50-16.00						Siltstone band. 15.30-15.70m bgl				
(B47) 16.00-16.50 (UT46) 16.00-16.45		UT46 79 blows 100% rec.	Dry							
(B48) 16.50-17.00										
(D49) 17.00-17.50										
(B51) 17.50-18.00 (D50) 17.50-17.95	SPT(S) 17.50	N=32 (3,5/6,8,8,10)	Dry							
(D52) 18.00-18.50										
(B53) 18.50-19.00										
(B55) 19.00-19.50 (UT54) 19.00-19.45		UT54 87 blows 100% rec.	Dry							
(D56) 19.50-20.00										
						Siltstone band. 19.80-20.00m bgl				
	SPT(C) 20.00	N>50 (25 for 40mm/50 for 50mm)	Dry							

DR LLING TECHNIQUE

From	To	Type
0.00	1.20	Inspection Pit
1.20	20.45	Cable Percussion

CHISELL NG

Hard Strata From	Hard Strata To	Duration
5.20	5.40	00:20
5.60	5.80	00:30
15.30	15.70	00:40
19.80	20.00	00:30

WATER OBSERVATIONS

Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed
16/03/2022 09:45	2.30	20	1.49	1.65	2.60

HOLE/CASING DIAMETER

Hole Dia.	Depth	Casing Dia.	Depth
200	2.60	200	2.60
150	20.00		

WATER ADDED

From	To	Volume (ltr)

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 2.30m.
No evidence of contamination observed.

Termination Depth: 20.45m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2000**

Logged By: **SO**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA107

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.44**	**16/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541011.56**	**266642.42**	**16/03/2022**	**Sheet 3 of 3**

Samples	Tests			Progress		Strata		Depth (Thickness)	Level	Install/ Backfill
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend			
				16/03/2022 17:00	2.60 *Dry.*	Stiff bluish grey silty CLAY interbedded with closely to widely spaced thickly laminated to medium bedded extremely weak and very weak siltstone. [KIMMER DGE CLAY FORMATION]		20.45	-9.01	

DR LLING TECHNIQUE

From	To	Type
0.00	1.20	Inspection Pit
1.20	20.45	Cable Percussion

CHISELL NG

Hard Strata From	Hard Strata To	Duration
5.20	5.40	00:20
5.60	5.80	00:30
15.30	15.70	00:40
19.80	20.00	00:30

WATER OBSERVATIONS

Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed
16/03/2022 09 45	2.30	20	1.49	1.65	2.60

HOLE/CASING DIAMETER

Hole Dia.	Depth	Casing Dia.	Depth
200	2.60	200	2.60
150	20.00		

WATER ADDED

From	To	Volume (ltr)

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 2.30m.
No evidence of contamination observed.

Termination Depth: 20.45m

AGS

Unless otherwise stated
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2000**

Logged By: **SO**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA108

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.30**	**11/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541092.29**	**266654.52**	**14/03/2022**	**Sheet 1 of 3**

Samples		Tests		Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
	PID (1) 0.10	<1ppm		11/03/2022 08:00	0.00 *Dry*	MADE GROUND: Soft brownish orange sandy gravelly CLAY. Gravel is fine to coarse angular to subangular of brick, flint, concrete. [MADE GROUND]		(0.80)		
(B) 0.50-0.80 (B1) 0.50-0.80 (ES40) 0.50-0.60	PID (2) 0.50	<1ppm						0.80	10.50	
(B2) 1.00-1.20 (ES41) 1.00-1.10 (B4) 1.20-1.65 (D3) 1.20-1.65 (ES42) 1.20-1.30	SPT(S) 1.20 PID (3) 1.20	N=19 (3,4/4,5,5,5) <1ppm	Dry			Soft to firm greenish grey silty sandy CLAY. [POSSIBLE REWORKED NATURAL]		(1.30)		
				11/03/2022 14:00	1.20 *0.5*					
(UT5) 2.00-2.45	PID (4) 2.00	<1ppm UT5 32 blows 78%rec.	Dry	14/03/2022 07:30	1.20 *Dry*			2.10	9.20	
(D6) 2.45-2.50						Firm to stiff dark blueish grey CLAY. [KIMMER DGE CLAY FORMATION]				
(B8) 3.00-3.50 (D7) 3.00-3.45	SPT(S) 3.00	N=9 (2,2/2,2,3,2)	Dry							
(UT9) 4.00-4.45		UT9 19 blows 100%rec.	Dry					(4.10)		
(D10) 4.45-4.50										
(B12) 5.00-5.50 (D) 5.00-5.45 (D11) 5.00-5.45	SPT(S) 5.00	N=15 (2,2/3,4,4,4)	Dry							
(UT13) 6.00-6.45		UT13 96 blows 67%rec.	Dry							
(D14) 6.45-6.50						Extremely weak light grey SILTSTONE. Recovered as light grey clayey fine to coarse angular to subangular siltstone gravel. [KIMMER DGE CLAY FORMATION]		6.20	5.10	
(B15) 7.00-7.50	SPT(C) 7.00	N>50 (25 for 30mm/50 for 60mm)	Dry					(1.40)		
						Stiff dark bluish grey slightly silty CLAY.		7.60	3.70	
(UT16) 8.00-8.45		UT16 53 blows 100% rec.	Dry							
(D17) 8.45-8.50										
(B19) 9.00-9.50 (D18) 9.00-9.45	SPT(S) 9.00	N=23 (3,4/4,5,7,7)	Dry							
(UT20) 10.00-10.45		UT20 54 blows 89%rec.	Dry							

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
From	To	Type	Hard Strata From	Hard Strata To	Duration	Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00 1.20	1.20 20.45	Inspection Pit Cable Percussion				14/03/2022 12:10	16.45	20	14.80	3.00		150	20.45	200	1.20			

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 16.45m.
No evidence of contamination observed.

Termination Depth: 20.45m

AGS

Unless otherwise stated
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2500**

Logged By: **S0**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA108

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.30**	**11/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541092.29**	**266654.52**	**14/03/2022**	**Sheet 2 of 3**

Samples		Tests		Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(D21) 10.45-10.50						Stiff dark bluish grey slightly silty CLAY.				
(D22) 11.00-11.10										
(B24) 11.50-12.00 (D23) 11.50-11.95	SPT(S) 11.50	N=24 (4,4/4,6,7,7)	Dry							
(D25) 12.00-12.10								(6.60)		
(UT26) 13.00-13.45		UT26 49 blows 100% rec.	Dry							
(D27) 13.45-13.50										
(D28) 14.00-14.10										
						Stiff to very stiff dark blueish grey CLAY with frequent extremely weak light grey siltstone bands. [KIMMER DGE CLAY FORMATION]		14.20	-2.90	
(B30) 14.50-15.00 (D29) 14.50-14.95	SPT(S) 14.50	N=29 (4,5/6,7,8,8)	Dry							
(D31) 15.00-15.10										
(UT32) 16.00-16.45		UT32 47 blows 89%rec.	Dry							
(D33) 16.45-16.50										
(D34) 17.00-17.10								(6.25)		
(B36) 17.50-18.00 (D35) 17.50-17.95	SPT(S) 17.50	N=31 (4,5/6,8,8,9)	Dry							
(UT37) 19.00-19.45		UT37 61 blows 89%rec.	18.10							
(D38) 19.45-19.50										
(D39) 20.00-20.45	SPT(S) 20.00	N=26 (5,5/5,6,8,7)	18.40							

DR LLING TECHNIQUE

From	To	Type
0.00	1.20	Inspection Pit
1.20	20.45	Cable Percussion

CHISELL NG

Hard Strata From	Hard Strata To	Duration

WATER OBSERVATIONS

Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed
14/03/2022 12:10	16.45	20	14.80	3.00	

HOLE/CASING DIAMETER

Hole Dia.	Depth	Casing Dia.	Depth
150	20.45	200	1.20

WATER ADDED

From	To	Volume (ltr)

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 16.45m.
No evidence of contamination observed.

Termination Depth: 20.45m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2500**

Logged By: **S0**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA108

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.30**	**11/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541092.29**	**266654.52**	**14/03/2022**	**Sheet 3 of 3**

Samples	Tests			Progress		Strata		Depth (Thickness)	Level	Install/ Backfill
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend			
				14/03/2022 13:50	1.20 *Dry*	Stiff to very stiff dark blueish grey CLAY with frequent extremely weak light grey siltstone bands. [KIMMER DGE CLAY FORMATION]		20.45	-9.15	

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
From	To	Type	Hard Strata From	Hard Strata To	Duration	Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00	1.20	Inspection Pit				14/03/2022 12 10	16.45	20	14.80	3.00		150	20.45	200	1.20			
1.20	20.45	Cable Percussion																

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 16.45m.
No evidence of contamination observed.

Termination Depth: 20.45m

AGS

Unless otherwise stated
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2500**

Logged By: **S0**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA109

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.37**	**14/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541123.46**	**266640.37**	**16/03/2022**	**Sheet 1 of 3**

Samples		Tests		Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(B1) 0.10-0.30 (ES2) 0.20-0.30				14/03/2022 14:00	0.00 *Dry*	MADE GROUND: Soft brownish orange sandy gravelly CLAY. Gravel is fine to coarse angular to subangular of brick, flint, concrete. [MADE GROUND]		(0.30) 0.30	11.07	
(B3) 0.50-0.70 (ES4) 0.50-0.60						MADE GROUND: Stiff to very stiff greyish brown gravelly CLAY. Gravel is fine to coarse, angular to subrounded of brick and concrete. [MADE GROUND]		(0.40) 0.70	10.67	
(B5) 1.00-1.20 (ES6) 1.00-1.10 (B8) 1.20-1.50 (D7) 1.20-1.65 (ES9) 1.30-1.40	SPT(S) 1.20	N=6 (1,2/2,2,1,1)	0.60	14/03/2022 17:00 16/03/2022 07:30	0.00 *Dry* 0.00 *Dry*	Firm brown silty sandy CLAY [POSSIBLE REWORKED NATURAL]		(0.60) 1.30	10.07	
						Medium dense yellow brown slightly clayey gravelly SAND. Gravel is fine to coarse, subangular to subrounded of chert. [RIVER TERRACE DEPOSITS]		(0.50)		
(B10) 1.80-2.00 (ES11) 1.80-1.90 (UT12) 2.00-2.45		UT12 41 blows 100% rec.	Dry			Firm to stiff bluish grey slightly sandy silty CLAY [KIMMER DGE CLAY FORMATION]		1.80	9.57	
(D13) 2.45-2.50										
(B15) 3.00-3.50 (D14) 3.00-3.45	SPT(S) 3.00	N=7 (2,2/2,1,2,2)	Dry					(2.40)		
(UT16) 4.00-4.45		UT16 71 blows 67%rec.	Dry							
(D17) 4.45-4.50						Extremely weak light grey SILTSTONE interbedded with stiff bluish grey CLAY.. [KIMMER DGE CLAY FORMATION]		4.20	7.17	
(B18) 5.00-5.50	SPT(C) 5.00	N=24 (4,5/6,6,5,7)	Dry					(1.50)		
(UT19) 6.00-6.45		UT19 51 blows 100% rec.	Dry			Stiff blueish grey CLAY with occasional selenite crystals. [KIMMER DGE CLAY FORMATION]		5.70	5.67	
(D20) 6.45-6.50										
(B22) 7.00-7.50 (D21) 7.00-7.45	SPT(S) 7.00	N=21 (2,4/4,5,5,7)	Dry							
(UT23) 8.00-8.45		UT23 52 blows 100% rec.	Dry							
(D24) 8.45-8.50										
(B26) 9.00-9.50 (D25) 9.00-9.45	SPT(S) 9.00	N=22 (4,5/5,5,6,6)	Dry							
(UT27) 10.00-10.45		UT27 58 blows 100% rec.	Dry							

DR LLING TECHNIQUE

From	To	Type
0.00	1.20	Inspection Pit
1.20	20.45	Cable Percussion

CHISELL NG

Hard Strata From	Hard Strata To	Duration

WATER OBSERVATIONS

Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed
16/03/2022 13:10	16.60	5	16.50	3.00	

HOLE/CASING DIAMETER

Hole Dia.	Depth	Casing Dia.	Depth
200	3.00	200	3.00
150	20.45		

WATER ADDED

From	To	Volume (ltr)

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 16.60m.
No evidence of contamination observed.

Termination Depth: 20.45m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2500**

Logged By: **S0**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA109

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.37**	**14/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541123.46**	**266640.37**	**16/03/2022**	**Sheet 2 of 3**

Samples		Tests		Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(D28) 10.45-10.50						Stiff blueish grey CLAY with occasional selenite crystals. [KIMMER DGE CLAY FORMATION]				
(D29) 11.00-11.10										
(B31) 11.50-12.00 (D30) 11.50-11.95	SPT(S) 11.50	N=18 (2,3/4,4,5,5)	Dry							
(D32) 12.00-12.10										
(UT33) 13.00-13.45		UT33 48 blows 100% rec.	Dry					(10.30)		
(D34) 13.45-13.50										
(D35) 14.00-14.10										
(B37) 14.50-15.00 (D36) 14.50-14.95	SPT(S) 14.50	N=26 (3,4/6,6,7,7)	Dry							
(D38) 15.00-15.10										
(UT39) 16.00-16.45		UT39 53 blows 100% rec.	Dry					16.00	-4.63	
(D40) 16.45-16.50						Stiff to very stiff bluish grey CLAY with frequent extremely weak light grey siltstone bands up to 15mm thick. [KIMMER DGE CLAY FORMATION]				
(D41) 17.00-17.10										
(B43) 17.50-18.00 (D42) 17.50-17.95	SPT(S) 17.50	N=31 (4,6/6,8,8,9)	17.30							
(D44) 18.00-18.10								(4.45)		
(UT45) 19.00-19.45		UT45 59 blows 100% rec.	18.80							
(D46) 19.45-19.50										
(D47) 20.00-20.45	SPT(S) 20.00	N=27 (4,5/5,7,7,8)	19.60							

DR LLING TECHNIQUE

From	To	Type
0.00	1.20	Inspection Pit
1.20	20.45	Cable Percussion

CHISELL NG

Hard Strata From	Hard Strata To	Duration

WATER OBSERVATIONS

Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed
16/03/2022 13:10	16.60	5	16.50	3.00	

HOLE/CASING DIAMETER

Hole Dia.	Depth	Casing Dia.	Depth
200	3.00	200	3.00
150	20.45		

WATER ADDED

From	To	Volume (ltr)

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 16.60m.
No evidence of contamination observed.

Termination Depth: 20.45m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2500**

Logged By: **S0**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA109

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.37**	**14/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541123.46**	**266640.37**	**16/03/2022**	**Sheet 3 of 3**

Samples	Tests			Progress		Strata		Depth (Thickness)	Level	Install/ Backfill
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend			
						Stiff to very stiff bluish grey CLAY with frequent extremely weak light grey siltstone bands up to 15mm thick. [KIMMER DGE CLAY FORMATION]		20.45	-9.08	

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
From	To	Type	Hard Strata From	Hard Strata To	Duration	Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00	1.20	Inspection Pit				16/03/2022 13 10	16.60	5	16.50	3.00		200	3.00	200	3.00			
1.20	20.45	Cable Percussion										150	20.45					

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 16.60m.
No evidence of contamination observed.

Termination Depth: 20.45m

AGS

Unless otherwise stated
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2500**

Logged By: **S0**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA110

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.29**	**16/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541072.33**	**266613.52**	**17/03/2022**	**Sheet 1 of 2**

Samples		Tests		Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(B1) 0.00-0.20				16/03/2022 09:00	0.00 *Dry*	MADE GROUND: Very soft to soft light bluish grey and greyish brown slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse flint, brick and chert. [MADE GROUND]		(0.30)		
(ES1) 0.25								0.30	10.99	
(B) 0.40-0.60						MADE GROUND: Soft to firm light greyish brown slightly sandy gravelly CLAY Gravel is angular to subrounded fine to coarse brick, concrete and flint. [MADE GROUND]		(0.50)		
(B2) 0.40-0.60								0.80	10.49	
(ES2) 0.50						MADE GROUND: Firm dark brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to medium flint and brick. [MADE GROUND]		(0.40)		
(B3) 0.80-1.20								1.20	10.09	
(ES3) 1.00						Medium dense light yellowish brown and yellowish brown clayey gravelly SAND. Gravel is angular to subrounded fine to coarse flint. [RIVER TERRACE DEPOSITS]		(1.10)		
(B4) 1.20-1.70	SPT(C) 1.20	N=23 (4,5/4,7,6,6)								
(ES4) 1.20-1.70								2.30	8.99	
(D5) 1.80-2.00						Firm to stiff bluish grey silty CLAY with beds of thickly laminated to medium bedded extremely weak to weak light grey and grey siltstone. [KIMMER DGE CLAY FORMATION]				
(B6) 2.00-2.50	SPT(C) 2.00	N=23 (5,9/8,7,4,4)								
(D7) 2.80-3.00										
(B8) 3.20-3.70	SPT(S) 3.20	N=11 (2,3/2,3,3,3)								
(D9) 3.80-4.00										
(UT10) 4.00-4.45		UT10 100 blows 70% rec.								
(D11) 4.45-4.50						Siltstone band. 4 20-4.50m bgl				
(B12) 5.00-5.50	SPT(S) 5.00	N=37 (6,9/12,12,7,6)								
(D13) 5.80-6.00						Siltstone band. 5 20-5.80m bgl				
	SPT(C) 6.00	N=42 (8,12/15,17,5,5)								
(B14) 6.50-7.00										
(D15) 6.80-7.00										
(B17) 7.00-7.50		UT16 100 blows 0%rec.								
(UT16) 7.00-7.45										
(D18) 7.80-8.00										
(B19) 8.00-8.50	SPT(S) 8.00	N>50 (25,0 for 0mm/22,18,10 for 35mm)				Siltstone band. 8.10-8.50m bgl				
(D20) 8.80-9.00										
(UT21) 9.00-9.45		UT21 100 blows 80% rec.								
(D22) 9.45-9.50										
(B23) 9.50-10.00										
(B24) 10.00-10.50	SPT(S) 10.00	N=20 (2,3/3,4,6,7)								

DR LLING TECHNIQUE

From	To	Type
0.00	1.20	Inspection Pit
1.20	20.05	Cable Percussion

CHISELL NG

Hard Strata From	Hard Strata To	Duration
4.20	5.20	00:20
5.20	5.80	00:45
8.10	8.50	01:20

WATER OBSERVATIONS

Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed
16/03/2022 10 15	1.30	20	0.90	1.20	
16/03/2022 12 00	4.20	20	4.00	3.00	
17/03/2022 10 00	15.80	20	13.30	3.00	

HOLE/CASING DIAMETER

Hole Dia.	Depth	Casing Dia.	Depth
200	3.00	200	3.00
150	20.05		

WATER ADDED

From	To	Volume (ltr)

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 1.30m, 4 20m and 15.80m.
No evidence of contamination observed.

Termination Depth: 20.05m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 3000**

Logged By: **SO**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA110

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.29**	**16/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541072.33**	**266613.52**	**17/03/2022**	**Sheet 2 of 2**

Samples		Tests		Progress		Strata		Depth (Thickness)	Level	Install/ Backfill
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend			
						Firm to stiff bluish grey silty CLAY with beds of thickly laminated to medium bedded extremely weak to weak light grey and grey siltstone. [KIMMER DGE CLAY FORMATION]				
(D25) 11.00-11.20				16/03/2022 17:00	3.00 *Dry*					
				17/03/2022 08:30	3.00 *Dry*					
(B26) 11.50-12.00										
(UT27) 12.00-12.45		UT27 100 blows 70% rec.								
(D28) 12.45-12.50										
(B29) 13.00-13.50										
(B30) 13.50-14.00	SPT(S) 13.50	N=24 (3,5/5,6,6,7)								
(D31) 14.00-14.20										
(UT32) 15.00-15.45		UT32 70 blows 80%rec.						(17.75)		
(D33) 15.45-15.50										
(B34) 16.00-16.50										
(B35) 16.50-17.00	SPT(S) 16.50	N=28 (14,11/8,6,7,7)								
(UT36) 18.00-18.45		UT36 100 blows 60% rec.								
(D37) 18.45-18.50										
(B38) 19.00-19.50										
	SPT(S) 19.60	N=32 (5,6/7,8,8,9)								
				17/03/2022 12:00	3.00 *18.2*			20.05	-8.76	

DR LLING TECHNIQUE		
From	To	Type
0.00	1.20	Inspection Pit
1.20	20.05	Cable Percussion

CHISELL NG		
Hard Strata From	To	Duration
4.20	5.20	00:20
5.20	5.80	00:45
8.10	8.50	01:20

WATER OBSERVATIONS					
Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed
16/03/2022 10 15	1.30	20	0.90	1.20	
16/03/2022 12 00	4.20	20	4.00	3.00	
17/03/2022 10 00	15.80	20	13.30	3.00	

HOLE/CASING DIAMETER			
Hole Dia.	Depth	Casing Dia.	Depth
200	3.00	200	3.00
150	20.05		

WATER ADDED		
From	To	Volume (ltr)

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 1.30m, 4 20m and 15.80m.
No evidence of contamination observed.

Termination Depth: 20.05m

AGS

Unless otherwise stated
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 3000**

Logged By: **SO**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA301A

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.61**	**23/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**540924.36**	**266675.09**	**24/03/2022**	**Sheet 1 of 3**

Samples	Tests			Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(B1) 0.10-0.40 (ES2) 0.10-0.20				23/03/2022 15:00	0.00 *Dry*	MADE GROUND: Soft light orangish brown slightly sandy gravelly CLAY Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse flint and brick . [MADE GROUND]		(0.30)		
(B3) 0.50-0.80 (ES4) 0.50-0.60						MADE GROUND: Firm light greyish brown slightly sandy gravelly CLAY Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse flint and brick. [MADE GROUND]		0.30 (0.90)	11.31	
(B5) 1.00-1.20 (ES6) 1.00-1.10 (B8) 1.20-1.65 (D7) 1.20-1.65	SPT(S) 1.20	N=8 (1,2/2,2,2,2)	Dry			Light yellowish brown slightly clayey gravelly SAND Sand is fine to coarse. Gravel is angular to subrounded fine to coarse flint. [RIVER TERRACE DEPOSITS]		1.20	10.41	
(B10) 2.00-2.50 (D9) 2.00-2.45 (ES11) 2.00-2.10	SPT(S) 2.00	N=14 (2,4/3,3,4,4)	Dry					(1.70)		
(B13) 3.00-3.50 (D12) 3.00-3.45 (ES14) 3.00-3.10	SPT(S) 3.00	N=9 (2,2/2,3,2,2)	Dry			Firm to Stiff bluish grey silty CLAY. Frequent closely to widely spaced thickly laminated to medium bedded extremely weak and very weak light grey Siltstone beds. [KIMMER DGE CLAY FORMATION]		2.90	8.71	
				23/03/2022 17:15 24/03/2022 07:30	3.00 *Dry* 3.00 *Dry*					
(UT15) 4.00-4.45		UT15 27 blows 100% rec.								
(D16) 4.45-4.50						Frequent claystone bands.				
(B17) 5.00-5.50 (D18) 5.00-5.10	SPT(C) 5.00	N=24 (4,5/5,6,6,7)	Dry							
(B20) 6.00-6.50 (D19) 6.00-6.10	SPT(C) 6.00	N=23 (4,5/5,6,6,6)	Dry							
(UT21) 7.00-7.45		UT21 39 blows 78%rec.								
(D22) 7.45-7.50										
(B24) 8.00-8.50 (D23) 8.00-8.45	SPT(S) 8.00	N=15 (2,3/3,4,4,4)	Dry							
(UT25) 9.00-9.45		UT25 43 blows 100% rec.								
(D26) 9.45-9.50										
(B28) 10.00-10.50 ~~(D27) 10.00-10.45~~	SPT(S) 10.00	N=17 (3,4/4,4,5,4)	Dry							

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
From	To	Type	Hard Strata From	Hard Strata To	Duration	Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00 1.20	1.20 20.00	Inspection Pit Cable Percussion				24/03/2022 12:10	16.50	5	16.50	3.00		150 200	20.00 20.00	200	3.00			

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at m.
No evidence of contamination observed.

Termination Depth: 20.45m

AGS

Unless otherwise stated
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2500**

Logged By: **NM**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA301A

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.61**	**23/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**540924.36**	**266675.09**	**24/03/2022**	**Sheet 2 of 3**

Samples	Tests			Progress		Strata		Depth (Thickness)	Level	Install/ Backfill
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend			
						Firm to Stiff bluish grey silty CLAY. Frequent closely to widely spaced thickly laminated to medium bedded extremely weak and very weak light grey Siltstone beds. [KIMMER DGE CLAY FORMATION]				
(D29) 11.00-11.10										
(UT30) 11.50-11.95		UT30 47 blows 89%rec.								
(D31) 11.95-12.00										
(D32) 12.00-12.10										
(B34) 13.00-13.50	SPT(S) 13.00	N=19 (3,4/4,5,5,5)	Dry							
(D33) 13.00-13.45										
(D35) 14.00-14.10										
(B36) 14.50-15.00										
(D37) 15.00-15.10								(17.10)		
(B38) 16.00-16.50	SPT(C) 16.00	N=28 (4,6/6,6,7,9)	Dry							
(D39) 17.00-17.10										
(B40) 17.50-18.00										
(D41) 18.00-18.10										
(B42) 19.00-19.50	SPT(C) 19.00	N=23 (5,6/5,5,5,8)	18.90							
(UT43) 19.50-19.95		UT43 51 blows 100% rec.	19.10							
(D44) 19.95-20.00				24/03/2022 16:00	3.00 *Dry*			20.00	-8.39	

DR LLING TECHNIQUE

From	To	Type
0.00	1.20	Inspection Pit
1.20	20.00	Cable Percussion

CHISELL NG

Hard Strata From	Hard Strata To	Duration

WATER OBSERVATIONS

Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed
24/03/2022 12 10	16.50	5	16.50	3.00	

HOLE/CASING DIAMETER

Hole Dia.	Depth	Casing Dia.	Depth
150	20.00	200	3.00
200	20.00		

WATER ADDED

From	To	Volume (ltr)

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at m.
No evidence of contamination observed.

Termination Depth: 20.45m

AGS

Unless otherwise stated
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2500**

Logged By: **NM**

Checked By: **CPr**

ARCADIS Cable Percussive Borehole Log

BHTCA301A

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.61**	**23/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**540924.36**	**266675.09**	**24/03/2022**	**Sheet 3 of 3**

Samples	Tests			Progress		Strata		Depth (Thickness)	Level	Install/ Backfill
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend			

DR LLING TECHNIQUE		
From	To	Type
0.00	1.20	Inspection Pit
1.20	20.00	Cable Percussion

CHISELL NG		
Hard Strata From	Hard Strata To	Duration

WATER OBSERVATIONS					
Date & Time	Depth Strike	Time Elapsed (mins)	Rise To	Depth Casing	Depth Sealed
24/03/2022 12 10	16.50	5	16.50	3.00	

HOLE/CASING DIAMETER			
Hole Dia.	Depth	Casing Dia.	Depth
150	20.00	200	3.00
200	20.00		

WATER ADDED		
From	To	Volume (ltr)

Remarks

Borehole terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at m.
No evidence of contamination observed.

Termination Depth: 20.45m

AGS

Unless otherwise stated
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Dando 2500**

Logged By: **NM**

Checked By: **CPr**

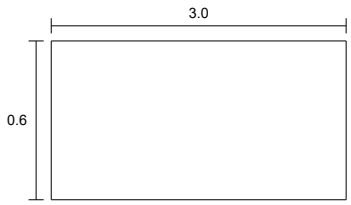
ARCADIS Trial Pit Log

TPTCA102

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.73**	**11/03/2022**	**1:25**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**540972.99**	**266791.37**	**11/03/2022**	**Sheet 1 of 1**

SAMPLES		TESTS			Water Strikes	STRATA		Depth (Thickness)	Level	Install/ Backfill
Depth	Type/ No.	Depth	Type/ No.	Results		Description	Legend			
0.00 - 0.20	B1					MADE GROUND: Soft yellowish brown sandy gravelly CLAY. Gravel is fine to coarse, angular to subangular of flint, brick, concrete. [MADE GROUND]		(1.00)		
0.00 - 0.20	D1									
0.00 - 0.20	ES1									
0.20 - 0.50	B2									
0.20 - 0.50	D2									
0.20 - 0.50	ES2									
0.50 - 1.00	B3									
0.50 - 1.00	D									
0.50 - 1.00	D3									
0.50 - 1.00	ES3									
1.00 - 2.00	B4					Yellowish brown very gravelly SAND Gravel is subangular fine and medium of flint. [RIVER TERRACE DEPOSITS]		1.00	10.73	
1.00 - 2.00	D4									
1.00 - 2.00	ES4							(1.00)		
								2.00	9.73	

PLAN DETAILS



Long Axis Orientation:

Shoring / Support: None

Stability: unstable from 1.10

Groundwater (description):

Remarks

Trial pit terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination.

Termination Depth: 2.00m

AGS

Unless otherwise stated:
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **JCB 3CX**

Logged By: **MM**

Checked By: **CPr**

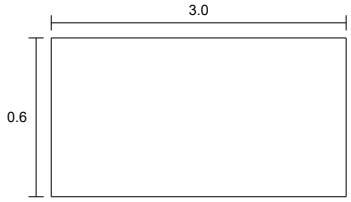
ARCADIS Trial Pit Log

TPTCA103

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.89**	**10/03/2022**	**1:25**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**540948.28**	**266760.22**	**10/03/2022**	**Sheet 1 of 1**

SAMPLES Depth	SAMPLES Type/ No.	TESTS Depth	TESTS Type/ No.	TESTS Results	Water Strikes	STRATA Description	STRATA Legend	Depth (Thickness)	Level	Install/ Backfill
0.00	B1					MADE GROUND: Soft bluish grey gravelly CLAY with rootlets. Gravel is fine to coarse, subangular to subrounded of brick, concrete, chert. [MADE GROUND]				
0.00 - 0.20	D1									
0.00 - 0.20	ES1									
0.20 - 0.50	B2	0.20	PID	<1ppm				(0.50)		
0.20 - 0.50	D2									
0.20 - 0.50	ES2									
0.50 - 1.00	B	0.50	PID	<1ppm		Yellowish brown slightly clayey gravelly SAND with rootlets. Gravel is subangular fine to coarse of flint and chert. [RIVER TERRACE DEPOSITS]		0.50	11.39	
0.50 - 1.00	B3							(0.40)		
0.50 - 1.00	D3									
0.50 - 1.00	ES3									
1.00 - 2.00	B4	1.00	PID	<1ppm		Yellowish brown gravelly SAND. Gravel is subangular to subrounded, fine to medium of flint. [RIVER TERRACE DEPOSITS]		0.90	10.99	
1.00 - 2.00	D4									
1.00 - 2.00	ES4							(1.50)		
2.00 - 3.00	B5	2.00	PID	<1ppm						
2.00 - 3.00	D5									
2.00 - 3.00	ES5									
						Firm to stiff bluish greenish mottled dark grey CLAY. [KIMMERIDGE CLAY FORMATION]		2.40	9.49	
								(0.60)		
		3.00	PID	<1ppm				3.00	8.89	

PLAN DETAILS



Long Axis Orientation:

Shoring / Support: None

Stability: Unstable from 2.00 to 2.40m bgl

Groundwater (description):

Remarks

Trial pit terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination.

Termination Depth: 3.00m

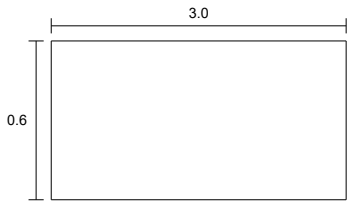
ARCADIS Trial Pit Log

TPTCA104

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.64**	**15/03/2022**	**1:25**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541003.49**	**266764.06**	**15/03/2022**	**Sheet 1 of 1**

SAMPLES Depth	SAMPLES Type/ No.	TESTS Depth	TESTS Type/ No.	TESTS Results	Water Strikes	STRATA Description	STRATA Legend	Depth (Thickness)	Level	Install/ Backfill
0.00 - 0.20	B1					MADE GROUND: Soft dark brown sandy slightly gravelly CLAY with frequent rootlets. Gravel is subangular to subrounded fine to coarse of brick, plastic and fabric. Organic odour noted [MADE GROUND]		(0.20)		
0.00 - 0.20	D1									
0.00 - 0.20	ES1									
0.20 - 0.80	B2	0.20	PID	<1ppm				0.20	11.44	
0.20 - 0.80	D					MADE GROUND: Soft to firm dark brown slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse of brick and flint. [MADE GROUND]		(0.60)		
0.20 - 0.80	D2									
0.20 - 0.80	ES2									
0.80 - 1.70	B3	0.80	PID	<1ppm		Light orangish yellow clayey very gravelly SAND Gravel is subangular to well rounded fine to coarse flint and chert, Sand is fine to coarse. [RIVER TERRACE DEPOSITS]		0.80	10.84	
0.80 - 1.70	D3							(0.90)		
0.80 - 1.70	ES3									
1.70 - 3.00	B4	1.70	PID	<1ppm		Firm to stiff dark bluish grey slightly silty CLAY with occasional light grey silt pockets [KIMMERIDGE CLAY FORMATION]		1.70	9.94	
1.70 - 3.00	D4							(1.30)		
1.70 - 3.00	ES4									
		3.00	PID	<1ppm				3.00	8.64	

PLAN DETAILS



Long Axis Orientation:

0.00

Shoring / Support: None

Stability: Stable

Groundwater (description):

Remarks

Trial pit terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination.

Termination Depth:

3.00m

AGS

Unless otherwise stated:
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used

CAT 308 GR

Logged By

MM

Checked By

CPr

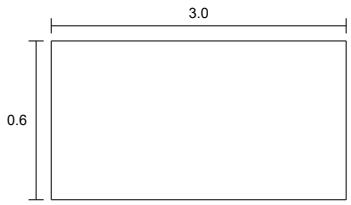
ARCADIS Trial Pit Log

TPTCA105

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.50**	**10/03/2022**	**1:25**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**540975.04**	**266728.80**	**10/03/2022**	**Sheet 1 of 1**

SAMPLES Depth	SAMPLES Type/ No.	TESTS Depth	TESTS Type/ No.	TESTS Results	Water Strikes	STRATA Description	STRATA Legend	Depth (Thickness)	Level	Install/ Backfill
0.00 - 0.20	B1					MADE GROUND: Grass over soft yellowish grey gravelly CLAY with fragments of wood and occasional rootlets. Gravel is subangular fine and medium of brick and concrete.		(0.20)		
0.00 - 0.20	D1									
0.00 - 0.20	ES1									
0.20 - 0.50	B2	0.20	PID	<1ppm		[MADE GROUND]		0.20	11.30	
0.20 - 0.50	D					MADE GROUND: Medium dense orangish yellow clayey gravelly SAND brick fragments Gravel is subangular flint				
0.20 - 0.50	D2					[MADE GROUND]				
0.20 - 0.50	ES2									
0.50 - 1.00	B3	0.50	PID	<1ppm				(1.00)		
0.50 - 1.00	D3									
0.50 - 1.00	ES3									
1.00 - 2.00	B4	1.00	PID	<1ppm						
1.00 - 2.00	D4									
1.00 - 2.00	ES4									
						Orangish yellow gravelly SAND. Gravel is subangular fine to course of flint.		1.20	10.30	
						[RIVER TERRACE DEPOSITS]		(0.60)		
					▼					
						Firm to Stiff dark grey CLAY		1.80	9.70	
						[KIMMERIDGE CLAY FORMATION]				
2.00 - 3.00	B5	2.00	PID	<1ppm				(1.20)		
2.00 - 3.00	D5									
2.00 - 3.00	ES5									
		3.00	PID	<1ppm				3.00	8.50	

PLAN DETAILS



Long Axis Orientation:

Shoring / Support: None

Stability: Stable

Groundwater (description):

Remarks

Trial pit terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination.

Termination Depth: 3.00m

Unless otherwise stated:
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **JCB 3CX**

Logged By: **MM**

Checked By: **CPr**

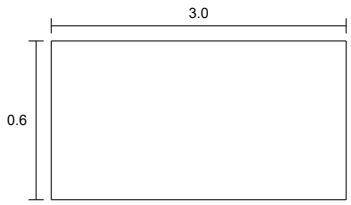
ARCADIS Trial Pit Log

TPTCA107

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.40**	**11/03/2022**	**1:25**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541006.30**	**266700.60**	**11/03/2022**	**Sheet 1 of 1**

SAMPLES		TESTS			Water Strikes	STRATA		Depth (Thickness)	Level	Install/ Backfill
Depth	Type/ No.	Depth	Type/ No.	Results		Description	Legend			
0.00 - 0.20	D1					MADE GROUND: Reddish brown gravelly CLAY with occasional rootlets. Gravel is angular medium to coarse of brick and conrete. [MADE GROUND]		(0.30)		
0.00 - 0.20	ES1									
0.20	B2									
0.20 - 0.50	D2									
0.20 - 0.50	ES2					MADE GROUND: Firm sandy gravelly CLAY. Gravel is angular medium to coarse, angular to subangular of brick and concrete. [MADE GROUND]		0.30	11.10	
0.50	B3									
0.50 - 1.00	D3									
0.50 - 1.00	ES3							(0.60)		
0.90 - 1.50	B3							0.90	10.50	
1.00 - 2.00	D4					Brownish yellow very gravelly coarse SAND. Gravel is medium to coarse, subangular to subrounded of flint and chert. [RIVER TERRACE DEPOSITS]				
1.00 - 2.00	ES4							(0.60)		
								1.50	9.90	
						Firm to stiff bluish dark grey silty CLAY with frequent light grey silt pockets. [KIMMERIDGE CLAY FORMATION]				
2.00 - 3.00	D5									
2.00 - 3.00	ES5							(1.50)		
								3.00	8.40	

PLAN DETAILS



Long Axis Orientation:

Shoring / Support: None

Stability: Unstable from 0.90 to 1.50m bgl

Groundwater (description):

Remarks

Trial pit terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination.

Termination Depth: 3.00m

AGS

Unless otherwise stated:
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **JCB 3CX**

Logged By: **MM**

Checked By: **CPr**

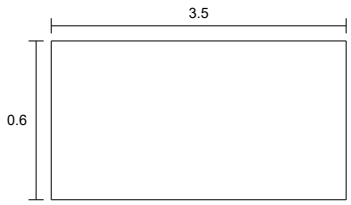
ARCADIS Trial Pit Log

TPTCA110

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.23**	**15/03/2022**	**1:25**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541037.86**	**266671.20**	**15/03/2022**	**Sheet 1 of 1**

SAMPLES Depth	SAMPLES Type/ No.	TESTS Depth	TESTS Type/ No.	TESTS Results	Water Strikes	STRATA Description	STRATA Legend	Depth (Thickness)	Level	Install/ Backfill
0.00 - 0.20	B1					MADE GROUND: Soft dark brown sandy gravelly CLAY with frequent rootlets. Gravel is angular to subrounded fine to coarse of brick, and concrete. [MADE GROUND]		(0.20)		
0.00 - 0.20	D1							0.20	11.02	
0.00 - 0.20	ES1									
0.20 - 0.90	B2	0.20	PID	<1ppm		MADE GROUND: Firm to stiff dark brown sandy gravelly CLAY with occasional fine orange sand pockets and wood fragments. Gravel is angular to subrounded fine to coarse of brick, concrete and flint. [MADE GROUND]		(0.70)		
0.20 - 0.90	D2									
0.20 - 0.90	ES2									
0.90 - 1.70	B3	0.90	PID	<1ppm		Yellowish orange slightly clayey gravelly SAND. Gravel is subangular to subrounded fine to coarse of flint and chert. [RIVER TERRACE DEPOSITS]		0.90	10.32	
0.90 - 1.70	D3							(0.80)		
0.90 - 1.70	ES3									
1.70 - 3.00	B4	1.70	PID	<1ppm	▼	Firm to stiff dark bluish grey slightly silty slightly sandy CLAY [KIMMERIDGE CLAY FORMATION]		1.70	9.52	
1.70 - 3.00	D4							(1.30)		
1.70 - 3.00	ES4									
		3.00	PID	<1ppm				3.00	8.22	

PLAN DETAILS



Long Axis Orientation:

0.00

Shoring / Support: None

Stability: Unstable from 0.90m to 1.70m bgl.

Groundwater (description):

Remarks

Trial pit terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination.

Termination Depth:

3.00m

AGS

Unless otherwise stated:
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used

JCB 3CX

Logged By

MM

Checked By

CPr

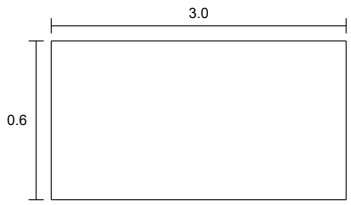
ARCADIS Trial Pit Log

TPTCA111

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.24**	**10/03/2022**	**1:25**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541069.43**	**266672.33**	**10/03/2022**	**Sheet 1 of 1**

SAMPLES		TESTS			Water Strikes	STRATA		Depth (Thickness)	Level	Install/ Backfill
Depth	Type/ No.	Depth	Type/ No.	Results		Description	Legend			
0.00 - 0.20	B1					MADE GROUND: Soft to firm brownish dark grey sandy gravelly CLAY. Gravel is fine to coarse, angular to subangular of flint, brick and concrete. [MADE GROUND]		(0.20)		
0.00 - 0.20	D1									
0.00 - 0.20	ES1									
0.20 - 0.50	B2	0.20	PID	<1ppm				0.20	11.04	
0.20 - 0.50	D2					Soft to firm yellowish grey sandy gravelly CLAY with occasional rootlets. Gravel is subangular fine to medium of flint. [RIVER TERRACE DEPOSITS]				
0.20 - 0.50	ES2									
0.50 - 1.00	B3	0.50	PID	<1ppm						
0.50 - 1.00	D3									
0.50 - 1.00	ES3									
1.00 - 2.00	B4	1.00	PID	<1ppm				(1.50)		
1.00 - 2.00	D4									
1.00 - 2.00	ES4									
								1.70	9.54	
						Orangish yellow very gravelly SAND. Gravel is angular subangular fine to medium of flint. [RIVER TERRACE DEPOSITS]		(0.30)		
2.00 - 3.00	5	2.00	PID	<1ppm				2.00	9.24	
2.00 - 3.00	B5					Firm bluish dark grey CLAY with occasional rootlets an light grey silt pockets. [KIMMERIDGE CLAY FORMATION]				
2.00 - 3.00	D5									
								(1.00)		
		3.00	PID	<1ppm				3.00	8.24	

PLAN DETAILS



Long Axis Orientation:

0.00

Shoring / Support: None

Stability: Stable

Groundwater (description):

Remarks

Trial pit terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination.

Termination Depth:

3.00m

AGS

Unless otherwise stated:
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used

JCB 3CX

Logged By

MM

Checked By

CPr

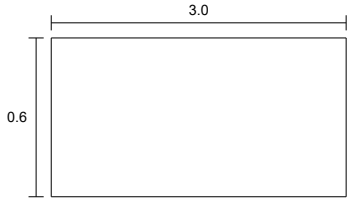
ARCADIS Trial Pit Log

TPTCA113

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.32**	**11/03/2022**	**1:25**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541039.11**	**266640.03**	**11/03/2022**	**Sheet 1 of 1**

SAMPLES Depth	SAMPLES Type/ No.	TESTS Depth	TESTS Type/ No.	TESTS Results	Water Strikes	STRATA Description	Legend	Depth (Thickness)	Level	Install/ Backfill
0.00 - 0.20	B1					MADE GROUND: Soft to Firm yellowish light brown gravelly CLAY with occasional rootlets. Gravel is fine to medium, angular to subangular of brick and concrete. [MADE GROUND]		(0.20)		
0.00 - 0.20	D1							0.20	11.12	
0.00 - 0.20	ES1									
0.20 - 0.50	B1					MADE GROUND: Soft dark brown gravelly CLAY with occasional rootlets and wood fragments. Gravel is subangular fine to coarse of brick, flint, concrete. [MADE GROUND]		(0.30)		
0.20 - 0.50	D2							0.50	10.82	
0.20 - 0.50	ES2									
0.50 - 1.00	B3					Yellowish brown very gravelly SAND. Gravel is fine to coarse, subangular to subrounded of flint. [RIVER TERRACE DEPOSITS]		(0.50)		
0.50 - 1.00	D3							1.00	10.32	
0.50 - 1.00	ES3									
1.00 - 2.00	B4					Soft to firm bluish grey slightly sandy CLAY with occasional light grey silt pockets. [KIMMERIDGE CLAY FORMATION]		(1.00)		
1.00 - 2.00	D4							2.00	9.32	
1.00 - 2.00	ES4									
2.00 - 3.00	B	2.00	HV(1)	340()kPa		Stiff greenish dark grey CLAY with rootlets and silt pockets [KIMMERIDGE CLAY FORMATION]		(1.00)		
2.00 - 3.00	B5	2.00	HV(2)	350()kPa				3.00	8.32	
2.00 - 3.00	D5	2.00	HV(3)	370()kPa						
2.00 - 3.00	ES5									
		3.00	HV(1)	470()kPa						
		3.00	HV(2)	500()kPa						
		3.00	HV(3)	500()kPa						

PLAN DETAILS



Long Axis Orientation:

Shoring / Support: None

Stability: Unstable from 1.00m to 1.30m bgl.

Groundwater (description):

Remarks

Trial pit terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination.

Termination Depth: 3.00m

Unless otherwise stated:
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **JBC 3CX**

Logged By: **MM**

Checked By: **CPr**

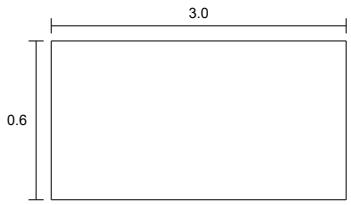
ARCADIS Trial Pit Log

TPTCA114

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.31**	**11/03/2022**	**1:25**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541068.91**	**266640.68**	**11/03/2022**	**Sheet 1 of 1**

SAMPLES Depth	SAMPLES Type/ No.	TESTS Depth	TESTS Type/ No.	TESTS Results	Water Strikes	STRATA Description	STRATA Legend	Depth (Thickness)	Level	Install/ Backfill
0.00 - 0.20	B1					MADE GROUND: Soft yellowish light brown gravelly CLAY. Gravel is fine to coarse, angular to subangular of flint, brick and concrete. [MADE GROUND]		(0.20)		
0.00 - 0.20	D1							0.20	11.11	
0.00 - 0.20	ES1									
0.20 - 0.50	B					MADE GROUND: Soft greenish brown gravelly CLAY. Gravel is fine to coarse, angular to subangular of ceramic and brick. [MADE GROUND]		(0.30)		
0.20 - 0.50	B2									
0.20 - 0.50	D2									
0.20 - 0.50	ES2							0.50	10.81	
0.50 - 1.00	B					MADE GROUND: Soft yellowish brown sandy gravelly CLAY with occasional rootlets. Gravel is angular fine to medium of flint and brick. [MADE GROUND]		(0.50)		
0.50 - 1.00	B3									
0.50 - 1.00	D3									
0.50 - 1.00	ES3							1.00	10.31	
1.00 - 2.00	B4					Light creamish yellow gravelly SAND. Gravel is fine and medium, subangular to subrounded of flint. [RIVER TERRACE DEPOSITS]		(1.00)		
1.00 - 2.00	D4									
1.00 - 2.00	ES4									
2.00 - 3.00	B5					Firm to stiff bluish dark grey CLAY. [KIMMERIDGE CLAY FORMATION]		2.00	9.31	
2.00 - 3.00	D5							(1.00)		
2.00 - 3.00	ES5							3.00	8.31	

PLAN DETAILS



Long Axis Orientation: 0.00

Shoring / Support: None

Stability: Stable

Groundwater (description):

Remarks

Trial pit terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination.

Termination Depth: 3.00m

Unless otherwise stated:
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **JCB 3CX**

Logged By: **Mm**

Checked By: **CPr**

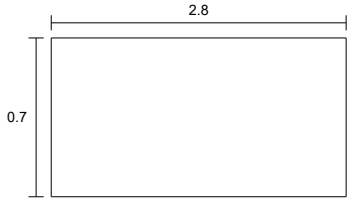
ARCADIS Trial Pit Log

TPTCA115

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.32**	**15/03/2022**	**1:25**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541102.98**	**266628.75**	**15/03/2022**	**Sheet 1 of 1**

SAMPLES		TESTS			Water Strikes	STRATA		Depth (Thickness)	Level	Install/ Backfill
Depth	Type/ No.	Depth	Type/ No.	Results		Description	Legend			
0.20	ES1					MADE GROUND: Soft to firm brown locally mottled bluish grey slightly sandy slightly gravelly CLAY Gravel is angular to rounded fine to coarse flint, concrete, brick and rare ceramics. [MADE GROUND]		(0.90)		
0.50	ES2									
0.50 - 0.60	B1									
								0.90	10.42	
1.00	ES3					Soft to firm becoming stiff bluish grey, light brown and orangish brown slightly sandy slightly gravelly CLAY Gravel is subangular to subrounded fine to coarse flint. . [RIVER TERRACE DEPOSITS]		(0.70)		
1.00 - 1.10	B2									
1.00 - 1.10	D1									
								1.60	9.72	
1.70	ES4					Orangish brown and yellowish brown clayey sandy GRAVEL Gravel is subangular to subrounded, fine to coarse of flint. [RIVER TERRACE DEPOSITS]		(0.30)		
1.70 - 1.80	B3									
								1.90	9.42	
2.00 - 2.20	B4					Firm to stiff dark bluish grey silty slightly sandy CLAY with occasional selenite crystals. [KIMMERIDGE CLAY FORMATION]		(1.10)		
2.00 - 2.10	D2									
2.10	ES5									
								3.00	8.32	

PLAN DETAILS



Long Axis Orientation:

0.00

Shoring / Support: None

Stability: Stable.

Groundwater (description):

Remarks

Trial pit terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination.

Termination Depth:

3.00m

AGS

Unless otherwise stated:
Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used

JCB 3CX

Logged By

SO

Checked By

CPr

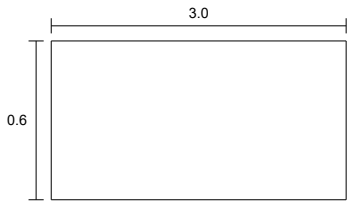
ARCADIS Trial Pit Log

TPTCA118

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.40**	**10/03/2022**	**1:25**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541133.51**	**266613.21**	**10/03/2022**	**Sheet 1 of 1**

SAMPLES		TESTS			Water Strikes	STRATA		Depth (Thickness)	Level	Install/ Backfill
Depth	Type/ No.	Depth	Type/ No.	Results		Description	Legend			
0.00 - 0.20	B1					MADE GROUND: Firm dark brown sandy gravelly CLAY. Gravel is fine to coarse, angular to subangular of brick and concrete. [MADE GROUND]		(0.50)		
0.00 - 0.20	D1									
0.00 - 0.20	ES1									
0.20 - 0.50	B2	0.20	PID	<1ppm						
0.20 - 0.50	D2									
0.20 - 0.50	ES2									
0.50 - 1.00	B	0.50	PID	<1ppm		MADE GROUND: Firm to stiff bluish grey sandy gravelly CLAY with occasional light grey silt pockets. Gravel is fine to coarse, angular to subangular of flint, brick, plastic. [MADE GROUND]		0.50	10.90	
0.50 - 1.00	B3							(0.50)		
0.50 - 1.00	D3									
0.50 - 1.00	ES3									
1.00 - 2.00	B4	1.00	PID	<1ppm		Firm bluish dark grey silty CLAY with occasional light grey silt pockets. [KIMMERIDGE CLAY FORMATION]		1.00	10.40	
1.00 - 2.00	D4									
1.00 - 2.00	ES4							(1.00)		
2.00 - 3.00	B5	2.00	PID	<1ppm		Stiff bluish grey CLAY with occasional light grey silt pockets. [KIMMERIDGE CLAY FORMATION]		2.00	9.40	
2.00 - 3.00	D5									
2.00 - 3.00	ES5							(1.00)		
		3.00	PID	<1ppm				3.00	8.40	

PLAN DETAILS



Long Axis Orientation:

0.00

Shoring / Support: None

Stability: Stable

Groundwater (description):

Remarks

Trial pit terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination.

Termination Depth:

3.00m

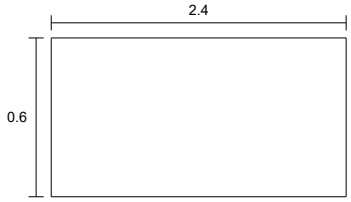
ARCADIS Trial Pit Log

TPTCA119

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.34**	**15/03/2022**	**1:25**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541069.88**	**266578.92**	**15/03/2022**	**Sheet 1 of 1**

SAMPLES		TESTS			Water Strikes	STRATA		Depth (Thickness)	Level	Install/ Backfill
Depth	Type/ No.	Depth	Type/ No.	Results		Description	Legend			
0.00 - 0.20	B1					MADE GROUND: Grass over yellowish brown clayey sandy GRAVEL. Gravel is subangular fine to coarse of brick and concrete. [MADE GROUND]		(0.20)		
0.00 - 0.20	D1									
0.00 - 0.20	ES1									
0.20 - 0.50	B2	0.20	PID	<1ppm		MADE GROUND: Soft to firm greenish brown sandy gravelly CLAY. Gravel is fine to coarse, angular to subangular of brick, wood, and concrete. [MADE GROUND]		0.20	11.14	
0.20 - 0.50	D2							(0.30)		
0.20 - 0.50	ES2									
0.50 - 1.20	B3	0.50	PID	<1ppm		Orangish yellow slightly clayey gravelly SAND with occasional rootlets Gravel is angular to subangular medium to coarse of flint. [RIVER TERRACE DEPOSITS]		0.50	10.84	
0.50 - 1.20	D3									
0.50 - 1.20	ES3							(0.70)		
1.20 - 3.00	B4	1.20	PID	<1ppm		Firm to stiff bluish dark grey CLAY with rare sand pockets and silt pockets. [KIMMERIDGE CLAY FORMATION]		1.20	10.14	
1.20 - 3.00	D4									
1.20 - 3.00	ES4									
								(1.80)		
		3.00	PID	<1ppm				3.00	8.34	

PLAN DETAILS



Long Axis Orientation:

0.00

Shoring / Support: None

Stability: Unstable from 1.30m to 2.00m bgl.

Groundwater (description):

Remarks

Trial pit terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination.

Termination Depth:

3.00m

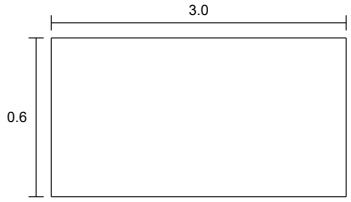
ARCADIS Trial Pit Log

TPTCA120

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.32**	**10/03/2022**	**1:25**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541103.14**	**266581.24**	**10/03/2022**	**Sheet 1 of 1**

SAMPLES		TESTS			Water Strikes	STRATA				
Depth	Type/ No.	Depth	Type/ No.	Results		Description	Legend	Depth (Thickness)	Level	Install/ Backfill
0.00 - 0.20	B1					MADE GROUND: Firm bluish grey gravelly CLAY. Gravel is fine to coarse, angular to subangular of wood, brick, concrete, and plastic. [MADE GROUND]		(0.20)		
0.00 - 0.20	D1									
0.00 - 0.20	ES1									
0.20 - 0.50	B2	0.20	PID	<1ppm		MADE GROUND: Firm brown gravelly CLAY with ceramic fragments and rare rootlets.. Gravel is subangular fine to coarse of flint, brick, and concrete. [MADE GROUND]		0.20	11.12	
0.20 - 0.50	D2							(0.30)		
0.20 - 0.50	ES2									
0.50 - 1.00	D3	0.50	PID	<1ppm		Soft to firm light grey sandy CLAY with occasional rootlets and silt pockets Sand is medium and coarse. [POSS BLE REWORKED NATURAL]		0.50	10.82	
0.50 - 1.00	ES3							(0.50)		
0.50 - 1.00	ES3									
1.00 - 2.00	B4	1.00	PID	<1ppm		Firm to stiff bluish grey CLAY with light grey silt pockets up to 50mm. [KIMMERIDGE CLAY FORMATION]		1.00	10.32	
1.00 - 2.00	D4									
1.00 - 2.00	ES4							(1.00)		
2.00 - 3.00	B5	2.00	PID	<1ppm		Stiff dark bluish grey CLAY. [KIMMERIDGE CLAY FORMATION]		2.00	9.32	
2.00 - 3.00	D5									
2.00 - 3.00	ES5							(1.00)		
		3.00	PID	<1ppm				3.00	8.32	

PLAN DETAILS



Long Axis Orientation:

0.00

Shoring / Support: None

Stability: Stable

Groundwater (description):

Remarks

Trial pit terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination.

Termination Depth:

3.00m

ARCADIS Dynamic Sample Borehole Log

WSTCA101

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.90**	**15/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**540946.83**	**266791.17**	**15/03/2022**	**Sheet 1 of 1**

Samples		Tests		Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(ES1) 0.20 (ES2) 0.50				21/03/2022 11:30	0.00 *Dry*	MADE GROUND: Soft mottled dark brown and brown silty gravelly CLAY with rare rootlets. Gravel is subangular to subrounded fine to coarse of flint, brick, and sandstone. [MADE GROUND]		(0.90)		
(ES3) 1.00 (B1) 1.10 (D1) 1.10-1.45 (ES4) 1.20	SPT(S) 1.20	N=25 (3,3/4,3,6,12)	Dry			MADE GROUND: Firm brown and greenish grey silty gravelly CLAY. Gravel is fine to coarse, subangular-subrounded fine to coarse of flint and brick. [MADE GROUND]		0.90 (0.20) 1.10	11.00 10.80	
				21/03/2022 12:30	1.00 *Dry*	Medium dense orangish brown silty gravelly SAND becoming gravelly sand at depth. Gravel is subangular-subrounded fine to medium of flint. [RIVER TERRACE DEPOSITS]		(0.55) 1.65	10.25	

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
From	To	Type	Hard Strata From	Hard Strata To	Duration	Date/Time	Strike At	Time (mins)	Rise To	Casing	Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00 1.20	1.20 1.65	Inspection Pit Dynamic Sample										87	1.65	87	1.00			

Remarks

Window Sample terminated due to refusal at 1.65m.
No groundwater encountered.
No evidence of contamination.

Termination Depth: 1.65m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Competitor Dart**

Logged By: **HS**

Checked By: **CPr**

ARCADIS Dynamic Sample Borehole Log

WSTCA106

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.26**	**15/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541003.41**	**266730.51**	**15/03/2022**	**Sheet 1 of 1**

Samples		Tests		Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(ES1) 0.20				21/03/2022 09:40	0.00 *Dry*	MADE GROUND: Grass over soft dark brown silty gravelly CLAY with occasional rootlets. Gravel is subangular to subrounded fine to coarse of flint and chalk. [MADE GROUND]		(0.70)		
(ES2) 0.50								0.70	10.56	
(ES3) 1.00						Medium dense yellowish orange sandy GRAVEL. Gravel is subangular to subrounded fine to coarse of flint. [RIVER TERRACE DEPOSITS]		(1.10)		
(B1) 1.20-1.80	SPT(C) 1.20	N=24 (7,7/9,6,5,4)	Dry					1.80	9.46	
(ES4) 1.90						Firm to stiff bluish grey silty slightly gravelly CLAY with occasional selenite crystals and rare shell fragments. Gravel is fine to coarse, subangular of siltstone. [KIMMER DGE CLAY FORMATION]				
(B2) 2.00-2.50	SPT(S) 2.00	N=10 (1,1/2,2,3,3)	Dry							
(B3) 2.50-3.00								(1.65)		
	SPT(S) 3.00	N=10 (2,2/3,2,2,3)	Dry							
				21/03/2022 11:00	2.00 *Dry*			3.45	7.81	

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
From	To	Type	Hard Strata From	To	Duration	Date/Time	Strike At	Time (mins)	Rise To	Casing	Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00 1.20	1.20 3.45	Inspection Pit Dynamic Sample				15/03/2022 11:55	0.70	20	0.70			87 87	2.00 3.45	87	2.00			

Remarks

Window Sample terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 0.70m.
No evidence of contamination.

Termination Depth: 3.45m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Competitor Dart**

Logged By: **HS**

Checked By: **CPr**

ARCADIS Dynamic Sample Borehole Log

WSTCA108

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.33**	**15/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541038.42**	**266699.80**	**15/03/2022**	**Sheet 1 of 1**

Samples		Tests		Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(ES1) 0.20				15/03/2022 07:30	0.00 *Dry*	MADE GROUND: Grass over soft dark brown and brown mottled sandy silty gravelly CLAY with gravel size pockets of organic clay and fine roots. gravel is subangular-subrounded fine to coarse flint and rare brick fragments [MADE GROUND]		(0.80)		
(ES2) 0.50										
(B1) 0.80-1.20						Soft orangish brown sandy gravelly CLAY gravel is occasional subangular-subrounded fine to coarse flint. [POSSIBLE REWORKED NATURAL]		0.80 (0.40)	10.53	
(ES3) 1.00										
(B2) 1.20-1.50	SPT(S) 1.20	N=12 (2,1/2,3,4,3)	.4			Firm greenish grey silty slightly gravelly CLAY. Gravel is subangular fine to coarse of siltstone. [KIMMER DGE CLAY FORMATION]		1.20 (0.30)	10.13	
(ES4) 1.50-1.60								1.50	9.83	
(B3) 1.60-2.00						Yellowish brown sandy GRAVEL gravel is subangular-subrounded fine to coarse flint. [RIVER TERRACE DEPOSITS]		1.60	9.73	
(B4) 2.00-2.50	SPT(S) 2.00	N=9 (2,1/2,2,3,2)	.4			Firm to stiff greenish grey silty slightly gravelly CLAY with occasional selenite crystals and rare shell fragments. Gravel is fine to coarse angular to subangular of claystone. [KIMMER DGE CLAY FORMATION]		(1.85)		
(B5) 2.50-3.00										
	SPT(S) 3.00	N=11 (2,1/3,2,3,3)	.4							
				22/05/2022 09:30	2.00 *0.40*			3.45	7.88	

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
From	To	Type	Hard Strata From	To	Duration	Date/Time	Strike At	Time (mins)	Rise To	Casing	Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00 1.20	1.20 3.45	Inspection Pit Dynamic Sample				15/03/2022 11:54	0.40	20	0.40			87 87	2.00 3.45	87	2.00			

Remarks

Window Sample terminated on Engineer's Instruction on achieving target depth.
Groundwater encountered at 0.40m.
No evidence of contamination.

Termination Depth: 3.45m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Competitor Dart**

Logged By: **HS**

Checked By: **CPr**

ARCADIS Dynamic Sample Borehole Log

WSTCA109

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.53**	**14/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**540997.10**	**266666.42**	**14/03/2022**	**Sheet 1 of 1**

Samples	Tests			Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(ES1) 0.10				14/03/2022 14:00	0.00 *Dry*	MADE GROUND: Firm mottled dark brown and brown slightly sandy gravelly CLAY with rare fine roots. gravel is occasional subangular-subrounded fine to coarse flint and rare clay stone and brick fragments. [MADE GROUND]		(0.70)		
(ES2) 0.50										
(B1) 0.70-1.45						Orangish brown slightly silty gravelly SAND. Gravel is fine to coarse subangular to subrounded of flint. [RIVER TERRACE DEPOSITS]		0.70	10.83	
(ES3) 1.00								(0.75)		
	SPT(S) 1.20	N=25 (7,6/10,7,5,3)	Dry							
(B2) 1.45-2.00						Stiff greenish grey slightly silty CLAY with rare pockets of orangish brown silty clay and occasional selenite crystals and shell fragments. [KIMMER DGE CLAY FORMATION]		1.45	10.08	
(B) 2.00-3.00 (B3) 2.00-3.00 (ES4) 2.00	SPT(S) 2.00	N=13 (2,4/5,3,3,2)	Dry					(2.00)		
	SPT(S) 3.00	N=6 (1,2/1,0,2,3)	Dry							
				14/03/2022 15:00	2.00 *Dry*			3.45	8.08	

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
From	To	Type	Hard Strata From	To	Duration	Date/Time	Strike At	Time (mins)	Rise To	Casing	Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00 1.20	1.20 3.45	Inspection Pit Dynamic Sample										87 77	2.00 3.45	87	2.00			

Remarks

Window Sample terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination.

Termination Depth: 3.45m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Competitor Dart**

Logged By: **HS**

Checked By: **CPr**

ARCADIS Dynamic Sample Borehole Log

WSTCA112

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.38**	**14/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541092.78**	**266673.43**	**14/03/2022**	**Sheet 1 of 1**

Samples		Tests		Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(ES1) 0.10				14/03/2022 10:00	0.00 *Dry*	MADE GROUND: Firm dark brown silty sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of flint and brick. [MADE GROUND]		(0.90)		
(ES2) 0.50										
(B) 0.90-1.30								0.90	10.48	
(B1) 0.90-1.30						Firm orangish brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of flint. [POSSIBLE REWORKED NATURAL]		(0.40)		
(ES3) 1.00										
(ES4) 1.20	SPT(S) 1.20	N=8 (2,2/2,2,2,2)	Dry							
(B2) 1.30-2.00								1.30	10.07	
						Stiff bluish grey slightly silty CLAY with rare 50mm pockets of orangish brown silty clay and rare selenite crystals. [KIMMER DGE CLAY FORMATION]				
(B3) 2.00-2.50	SPT(S) 2.00	N=11 (1,2/2,3,3,3)	Dry							
(ES5) 2.00										
								(2.15)		
(B4) 2.50-3.00										
	SPT(S) 3.00	N=12 (2,1/2,3,3,4)	Dry							
				14/03/2022 11:30	0.00 *Dry*			3.45	7.92	

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
From	To	Type	Hard Strata From	Hard Strata To	Duration	Date/Time	Strike At	Time (mins)	Rise To	Casing	Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00	1.20	Inspection Pit										101	1.00					
1.20	3.45	Dynamic Sample										87	3.45					

Remarks

Window Sample terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination.

Termination Depth: 3.45m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Competitor Dart**

Logged By: **HS**

Checked By: **CPr**

ARCADIS Dynamic Sample Borehole Log

WSTCA116

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.42**	**14/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541038.99**	**266609.86**	**14/03/2022**	**Sheet 1 of 1**

Samples		Tests		Progress		Strata				
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend	Depth (Thickness)	Level	Install/ Backfill
(ES1) 0.10				14/03/2022 11:30	0.00 *Dry*	MADE GROUND: Firm dark brown sandy gravelly CLAY with occasional rootlets. Gravel is subangular to subrounded, fine to coarse of flint, brick, and igneous lithologies. [MADE GROUND]		(0.40)		
								0.40	11.02	
(ES2) 0.50						MADE GROUND: Soft orangish brown sandy gravelly CLAY with occasional pockets of soft grey clay. Gravel is subangular to subrounded fine, to coarse of flint, brick, and concrete. [MADE GROUND]		(0.30)		
								0.70	10.72	
(ES3) 1.00								(0.20)		
						Firm mottled brown and green slightly sandy gravelly CLAY gravel is fine and medium, subangular to subrounded of flint. [POSSIBLE REWORKED NATURAL]		0.90	10.52	
(B1) 1.20-1.50	SPT(S) 1.20	N=9 (1,2/1,2,3,3)	Dry							
(B2) 1.50-2.00						Stiff greenish grey slightly silty CLAY with occasional pockets of orangish brown silty clay and occasional selenite crystals. [KIMMERDIGE CLAY FORMATION]				
(B3) 2.00-2.50	SPT(S) 2.00	N=19 (2,3/4,4,5,6)	Dry							
(ES4) 2.00								(2.55)		
(B4) 2.50-3.00										
	SPT(S) 3.00	N=16 (2,2/3,4,4,5)	Dry							
				13/03/2022 13:30	0.00 *Dry*			3.45	7.97	

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
From	To	Type	Hard Strata From	Hard Strata To	Duration	Date/Time	Strike At	Time (mins)	Rise To	Casing	Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00 1.20	1.20 3.45	Inspection Pit Dynamic Sample										77 67	2.00 3.45					

Remarks

Window Sample terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination.

Termination Depth: 3.45m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Competitor Dart**

Logged By: **HS**

Checked By: **CPr**

ARCADIS Dynamic Sample Borehole Log

WSTCA117

Project	Project No.	Ground Level (mAOD)	Start Date	Scale
Northstowe	**10052307**	**11.22**	**15/03/2022**	**1:50**
Client	Easting (OS mE)	Northing (OS mN)	End Date	
Homes England	**541101.11**	**266611.82**	**15/03/2022**	**Sheet 1 of 1**

Samples		Tests		Progress		Strata		Depth (Thickness)	Level	Install/ Backfill
Type + Depth	Type + Depth	Results	Water Depth	Date & Time	Casing & Water Depth	Description	Legend			
(ES1) 0.20				15/03/2022 13:30	0.00 *Dry*	MADE GROUND: Soft dark brown gravelly CLAY. Gravel is subangular to subrounded fine to coarse of flint and brick. [MADE GROUND]		(0.70)		
(ES2) 0.50								0.70	10.52	
(ES3) 1.00						Firm mottled brown and greenish grey silty gravelly CLAY with rare 50mm pockets of sandy gravel. Gravel is subangular to subrounded, fine and medium of flint and chert. [RIVER TERRACE DEPOSITS]				
(B1) 1.20-1.50 (ES4) 1.20	SPT(S) 1.20	N=11 (1,2/2,2,3,4)	Dry							
(B) 1.50-2.00 (B2) 1.50-2.00								(1.80)		
(B3) 2.00-2.50	SPT(S) 2.00	N=6 (1,1/0,1,2,3)	Dry							
(B) 2.50-2.80 (B4) 2.50-2.80						Stiff greenish grey silty CLAY with occasional pockets of orangish brown silty clay and occasional selenite crystals. [KIMMER DGE CLAY FORMATION]		2.50	8.72	
	SPT(S) 3.00	N=15 (2,2/3,3,4,5)	Dry					(0.95)		
				15/03/2022 14:40	2.00 *Dry*			3.45	7.76	

DR LLING TECHNIQUE			CHISELL NG			WATER OBSERVATIONS						HOLE/CASING DIAMETER				WATER ADDED		
From	To	Type	Hard Strata From	Hard Strata To	Duration	Date/Time	Strike At	Time (mins)	Rise To	Casing	Sealed	Hole Dia.	Depth	Casing Dia.	Depth	From	To	Volume (ltr)
0.00 1.20	1.20 3.45	Inspection Pit Dynamic Sample										101 87	2.00 3.45	101	2.00			

Remarks

Window Sample terminated on Engineer's Instruction on achieving target depth.
No groundwater encountered.
No evidence of contamination.

Termination Depth: 3.45m

AGS

Unless otherwise stated Depth (m), Diameter (mm), Time (hhmm), Thickness (m), Level (mOD).

Equipment Used: **Competitor Dart**

Logged By: **HS**

Checked By: **CPr**

Trial Pit Soakaway Test

Based on BRE DG 365:2016

Project	Northstowe	Status	LOCATION ID
Project ID	10052307	CHECKED	TPTCA104

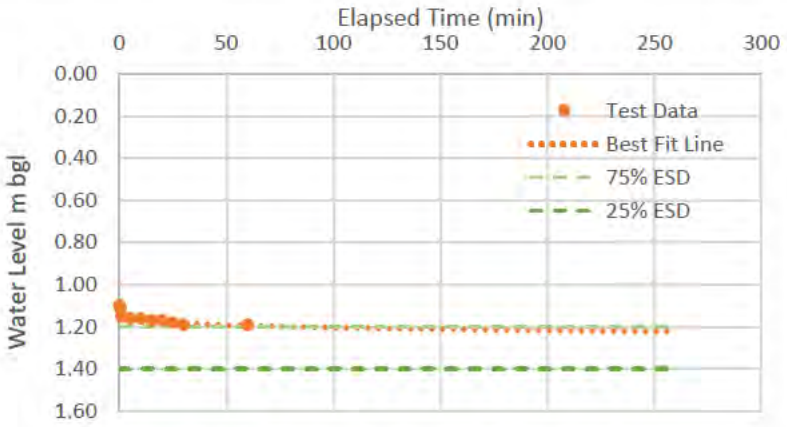
Trial Pit Details

	Test 1	Test 2	Test 3				
Depth	1.50	1.50		Ground Level	mAOD	Date Excavated	16/03/2022
Width	0.60	0.60		Coordinates	mE	Date Tested	16/03/2022
Length	1.90	1.90			mN		

Test 1

Time min	Depth to Water m bgl
0	1.10
0.5	1.11
1	1.15
5	1.16
10	1.16
15	1.17
20	1.17
25	1.18
30	1.19
60	1.19

Test Parameters	
75% esd (mbgl)	1.20
50% esd (mbgl)	1.30
25% esd (mbgl)	1.40
A_{s50} (m^2)	2.14
V_{p75-25} (m^3)	0.23
t_{75} (min)	8.1E+01
t_{25}(min)	1.8E+06
Data Fit R^2	0.868



Infiltration rate f (ms^{-1}) **9.84E-10**

Total effective storage depth (esd) (m) 0.40

Carried out by	Notes:	Logged	Checked
Arcadis Consulting (UK) Ltd	Test terminated due to time constraints	MM	LC

APPENDIX D

CERTIFICATION OF FIELD APPARATUS

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Borehole Calibration & Testing Solutions Ltd

Unit 8
Orton Enterprise Centre
Orton Southgate
Peterborough
PE2 6XU

SPT Hammer Ref:	AR2411
Test Date:	20/06/2021
Report Date:	20/06/2021
File Name:	AR2411.spt
Test Operator:	PR

Instrumented Rod Data

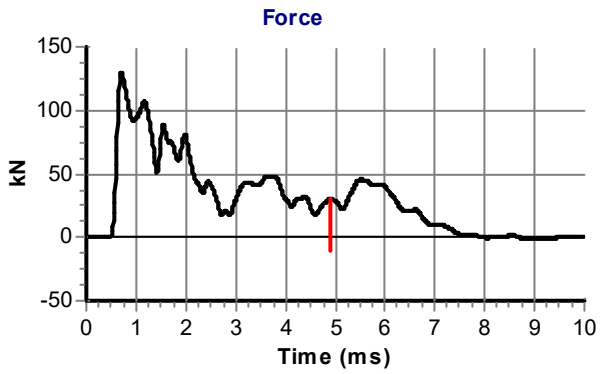
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.3
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	11853
Accelerometer No.2:	10332

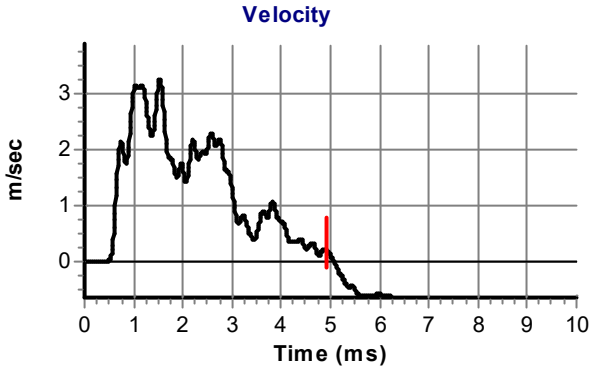
SPT Hammer Information

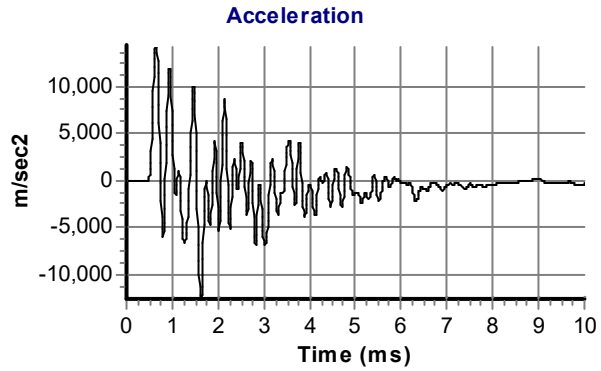
Hammer Mass m (kg):	63.0
Falling Height h (mm):	760
SPT String Length L (m):	15.0

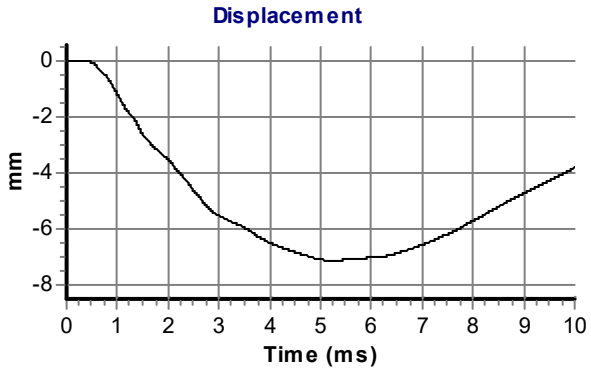
Comments / Location

Maximum calibration interval is 6 months









Calculations

Area of Rod A (mm2):	944
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	366

Energy Ratio E_r (%): **77**

Reg. 13(1)

Signed: PR

Title: Operator

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Borehole Calibration & Testing Solutions Ltd

Unit 8
Orton Enterprise Centre
Orton Southgate
Peterborough
PE2 6XU

SPT Hammer Ref:	DART489
Test Date:	27/02/2022
Report Date:	27/02/2022
File Name:	DART489.spt
Test Operator:	PR

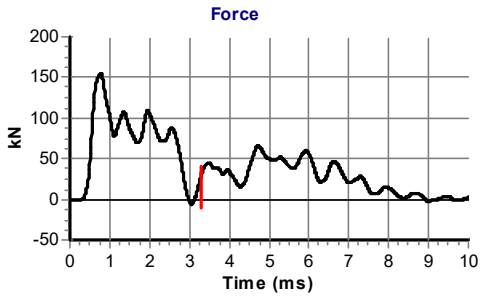
Instrumented Rod Data

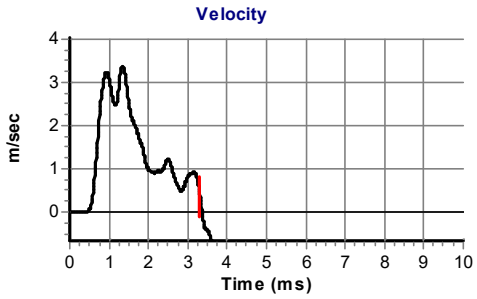
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.3
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	11853
Accelerometer No.2:	10332

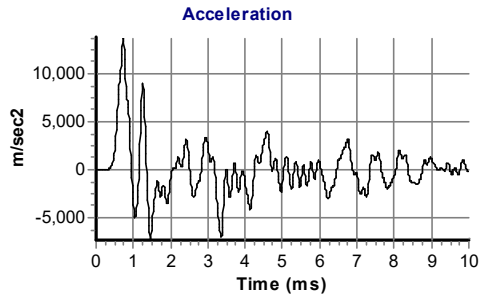
SPT Hammer Information

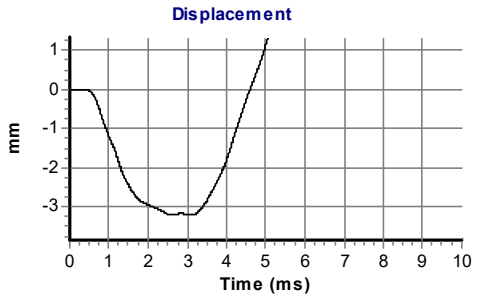
Hammer Mass m (kg):	63.0
Falling Height h (mm):	760
SPT String Length L (m):	15.0

Comments / Location









Calculations

Area of Rod A (mm2):	944
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	390

Energy Ratio E_r (%): **82**

Reg. 13(1)

Signed: PR

Title: Operator

Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Dynamic sampling
Unit 8
Victory parkway
Victory rd
Derby
DE24 8ZF

Hammer Ref:	1.11.18
Test Date:	04/08/2021
Report Date:	04/08/2021
File Name:	1.11.18.spt
Test Operator:	AP

Instrumented Rod Data

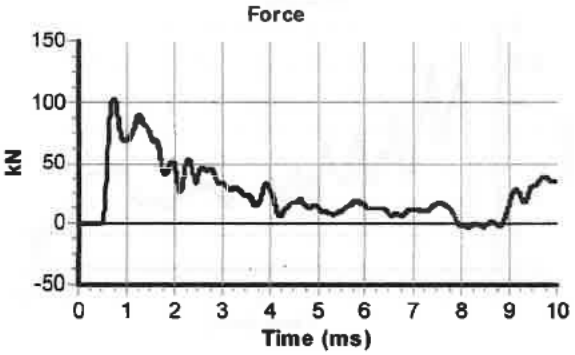
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.0
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	62901
Accelerometer No.2:	62902

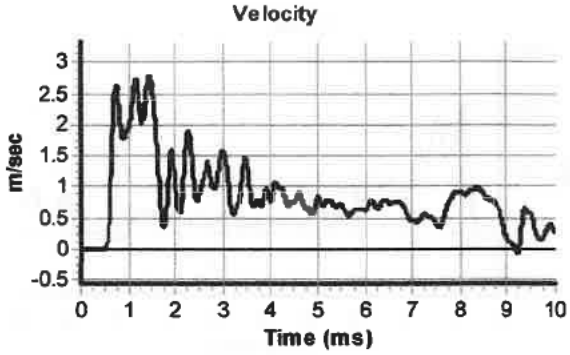
Hammer Information

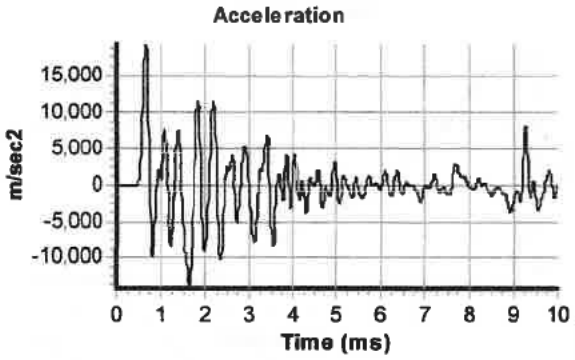
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
String Length L (m):	15.0

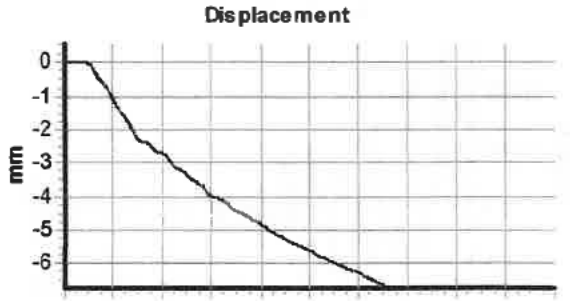
Comments / Location

CJ associates hammer tested at Dynamic samplings yard.









Calculations

Area of Rod A (mm2):	905
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	336

Energy Ratio E_r (%): **71**

[redacted]

Title: Associate Director

The recommended calibration interval is 12 months

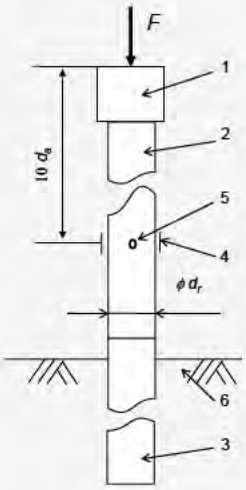
SPT Calibration Report

Hammer Energy Measurement Report

Type of Hammer		SPT HAMMER
Test No		EQU3039_2
Client		CJ ASSOCIATES
Test Depth (m)		9 80
Mass of hammer	m =	63 5kg
Falling height	h =	0.76m
E_{theor} =	$m \times g \times h$ =	473J

Characteristics of the instrumented rod

Diameter	d_r =	0.052 m
Length of instrumented rod		0 558 m
Area	A =	11.61 cm²
Modulus	E_a =	206843 MPa



Key

1 Anvil
2 Part of instrumented rod
3 Drive Rod
4 Strain Gauge
5 Accelerometer
6 Ground

F Force
d_r Diameter of rod

Fig. B.1 and B.2
BS EN ISO 22476-3 : 2005 + A1 : 2011

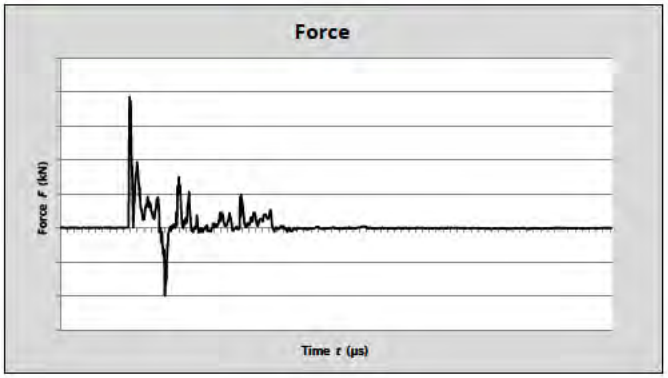
DATE OF TEST	VALID UNTIL	HAMMER ID
21/10/2021	21/10/2022	AR2521

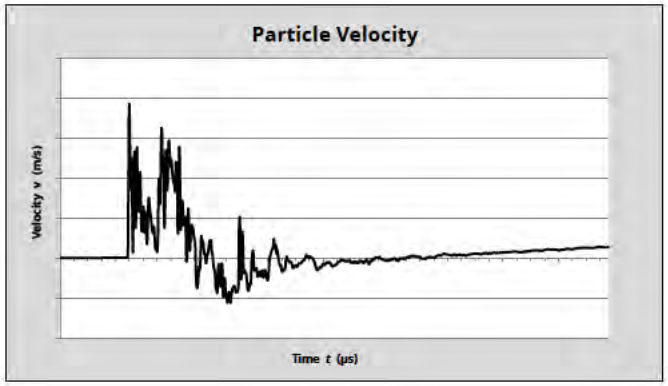
E_{meas} = **0.374** kN-m

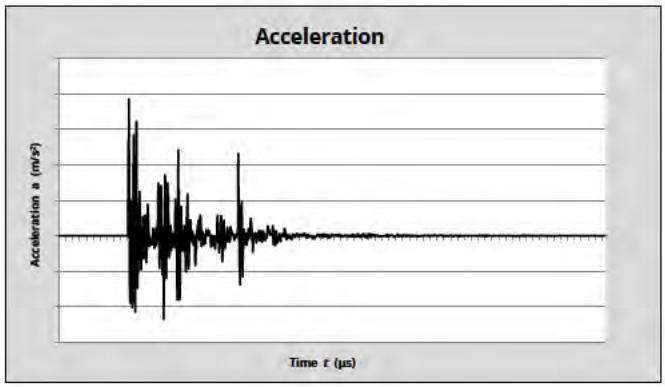
E_{theor} = **0.473** kN-m

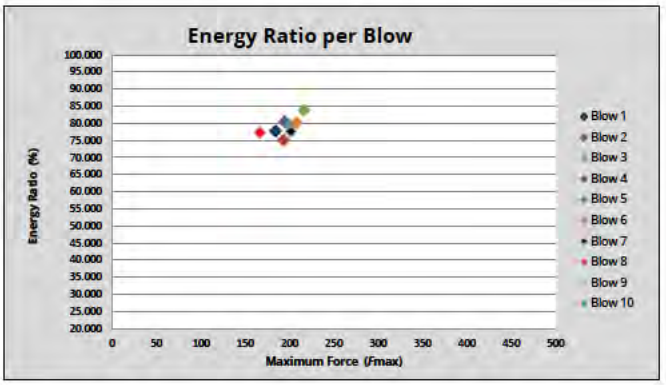
Comments

Energy Ratio (Er) = $\frac{E_{meas}}{E_{theor}}$ **78.98%**









Equipe SPT Analyzer Operator	Certificate prepared by	Certificate checked by	Certificate date
Reg. 13(1)	Reg. 13(1)	Reg. 13(1)	03/11/2021

 Equipe Group, The Paddocks, Home Farm Offices, The Upton Estate, Banbury, Oxfordshire, OX15 6HU
Tel: +44 (0)1295 670990 Fax: +44 (0)1295 678232 Email: info@equipegroup.com

APPENDIX E

MONITORING DATA

Well ID	Date Time	Baro mbar	PID ppm	Rel BH Pres mbar	Peak Flow l/h	Steady Flow l/h	O2 % min	CH4 % max	CO2 % max	CO ppm max	H2S ppm max	O2 % last	CH4 % last	CO2 % last	CO ppm last	H2S ppm last	Depth to Water (m bgl)	Weather
BHTCA101	05/04/2022 09:41	1008		90.25	15.7	1.9	18	0.2	0.9	5	0	18	0.2	0.9	4	0	3.002	Cloudy
BHTCA102_	05/04/2022 10 56	1008		-0.03	0	0	21.4	0.1	0.3	2	0	21.4	0.1	0.1	0	0	1.803	Cloudy
BHTCA103A	05/04/2022 13:20	1008		5.96	0	0	21.3	0.2	0.1	0	0	21.3	0.2	0.1	0	0	1.936	Cloudy
BHTCA105D	05/04/2022 13 54	1007		33.06	0	0	13.6	0.2	3.6	2	0	13.6	0.2	3.6	1	0	2.138	Cloudy
BHTCA105S	05/04/2022 15 54	1007		-0.07	0	0	9.6	0.1	4.8	5	0	9.6	0.1	4.8	0	0	2.255	Cloudy
WSTCA101	05/04/2022 09:27	1008		0	0	0	13.5	0.2	3	1	0	13.5	0.2	3	0	0	Dry	Cloudy
WSTCA106	05/04/2022 11:25	1008		0.19	0.1	0.1	2.8	3.7	3.3	1	0	2.8	3.7	3.3	0	0	1.088	Cloudy
WSTCA108	05/04/2022 14:17	1008		-8.13	-1.4	-0.9	12.6	1.7	5.9	6	0	12.6	1.7	5.9	6	0	0.428	Cloudy
BHTCA104	06/04/2022 10:14	997		-0.02	0	0	20.6	0.2	0.6	2	0	20.9	0.1	0.3	1	0	2.758	Cloudy
BHTCA106	06/04/2022 09:13	998		0.33	0	0	19.6	0.2	0.9	4	0	20.3	0.2	0.6	3	0	2.482	Cloudy, rain
BHTCA107	06/04/2022 11:25	996		0.03		0	16.3	0.2	1.7	14	0	20.1	0.1	0	4	0	2.936	Cloudy
BHTCA110	06/04/2022 13:29	994		2.54	1.4	0.2	17.8	0.2	4.4	5	0	17.8	0.2	4.4	1	0	0.863	Cloudy
WSTCA109	06/04/2022 08 59	998		-0.07	0	0	1	2.8	12.2	1	0	1	2.8	12.2	0	0	Dry	Cloudy
WSTCA116	06/04/2022 13:19	994		0.12	0	0	20.8	0.2	0.2	1	0	20.8	0.2	0.2	0	0	Dry	Cloudy
WSTCA117	06/04/2022 14 07	993		-0.02	0	0	21.1	0.1	0.2	1	0	21.1	0.1	0.2	0	0	0.996	Cloudy
BHTCA108	07/04/2022 08:27	981		0.21	0	0	21.6	0.2	0.1	0	0	21.6	0.2	0.1	0	0	2.848	Sunny very windy
BHTCA109	07/04/2022 09:25	982		-0.02	0	0	21.4	0.2	0.5	0	0	21.4	0.2	0.2	0	0	1.357	Sunny very windy
BHTCA301A	07/04/2022 11 08	983		0.14	0	0	18	0.2	3.5	0	0	19.4	0.2	1.9	0	0	1.725	Sunny, cloudy, very windy
WSTCA112	07/04/2022 08:10	981		0.09	0.1	0	20.2	0.2	0.6	2	0	21.5	0.2	0.6	2	0	Dry	Sunny very windy

Well ID	Date Time	Baro mbar	Rel BH Pres mbar	Peak Flow l/h	Steady Flow l/h	O2 % min	CH4 % max	CO2 % max	CO ppm max	H2S ppm max	O2 % last	CH4 % last	CO2 % last	CO ppm last	H2S ppm last	Depth to Water (m bgl)	Weather
BHTCA101	12/04/2022 09:32	1004	0.5	-0.2	-0.2	19.4	0.2	0.6	2	0	19.4	0 2	0.6	2	0	3.000	Clear
BHTCA102	12/04/2022 10 03	1004	0.1	0	0	18.7	0.2	0 8	0	0	20.6	0 2	0.1	0	0	1.800	Clear
BHTCA103A	12/04/2022 11:15	1005	1.02	0	0	11.3	2.9	3	11	0	17	0 2	2.8	1	0	1.490	Clear
BHTCA104	12/04/2022 11:27	1005	0.24	0	0	17.1	0.2	2 5	3	0	20.5	0.1	0.4	2	0	2.630	Clear
BHTCA105D	12/04/2022 13 03	1005	0.03	0	0	10.3	0.1	4.1	1	0	15.9	0.1	2.3	1	0	1.989	Clear
BHTCA105S	12/04/2022 12:58	1005	1.62	0	0	10.2	0.1	4.4	2	0	10.2	0.1	4.4	1	0	2.411	Clear
BHTCA106	12/04/2022 11:56	1005	0.14	0	-0.1	6.3	0.1	6 2	1	0	21	0.1	0.1	0	0	2.301	Clear
BHTCA107	12/04/2022 13:14	1004	0.03	0	0	15.9	0.1	2 2	7	1	19.1	0.1	0.8	6	0	2.634	Clear
BHTCA108	12/04/2022 14:23	1005	0.09	0	0	21	0.1	0.6	4	0	21.4	0	0	2	0	2.632	Clear
BHTCA109	12/04/2022 14:13	1005	1.2	0.2	0.2	20.9	1	0.7	4	0	20.9	0.1	0.7	3	0	1.050	Clear
BHTCA110	12/04/2022 13:54	1004	0.96	0.2	0.2	20	0.1	2	9	0	20	0.1	2	2	0	0.967	Clear
BHTCA301A	12/04/2022 11:37	1005	0.19	0	0	20.5	0.2	0.6	2	0	20.9	0.1	0.4	1	0	Dry	Clear
WSTCA101	12/04/2022 09:53	1004	0.2	0	0	18	0.2	1.1	1	0	18.1	0 2	1.1	0	0	1.810	Clear
WSTCA106	12/04/2022 10:13	1004	0.3	-0.1	-0.1	0.2	3.7	5 5	1	0	0.2	3.7	5.5	0	0	Dry	Clear
WSTCA108	12/04/2022 12 07	1005	0.26	0	0	19.9	0.2	2 2	2	0	19.9	0 2	2.2	1	0	0.410	Clear
WSTCA109	12/04/2022 11:46	1005	0.05	0	0	4.8	0.2	6 5	2	0	4.8	0 2	6.5	1	0	Dry	Clear
WSTCA112	12/04/2022 14:30	1005	0.09	0	0	21	0.1	0 3	4	0	21	0	0.3	4	0	Dry	Clear
WSTCA116	12/04/2022 13:24	1004	0.16	0.1	0	20	0.1	0 8	3	0	20.9	0.1	0.1	2	0	0.994	Clear
WSTCA117	12/04/2022 14 04	1005	0	0.1	0.1	21	0	0.4	3	0	21.1	0	0.1	3	0	0.888	Clear

Well ID	Date Time	Baro mbar	Rel BH Pres mbar	Peak Flow l/h	Steady Flow l/h	O2 % min	CH4 % max	CO2 % max	CO ppm max	H2S ppm max	O2 % last	CH4 % last	CO2 % last	CO ppm last	H2S ppm last	Depth to Water (m bgl)	Weather
BHTCA101	20/05/2022 09:45	1017	38.35	5.6	0.6	18.4	0.1	0 8	5	0	18.4	0	0 8	5	0	2 334	cloudy, cool
BHTCA102	20/05/2022 10:19	1018	0.03	0	0	20.8	0	0 2	2	0	21	0	0.1	1	0	1 553	cloudy, cool
BHTCA103	20/05/2022 10:44	1019	0.43	0	0	20.7	0	0.6	0	0	20.7	0	0.6	0	0	1.168	cloudy, cool
BHTCA104	20/05/2022 10:58	1019	0.21	0	0	20.9	0	0.6	3	0	21.5	0	0.1	1	0	2 355	cloudy, cool
BHTCA105D	20/05/2022 12:32	1018	-6.13	1 5	0.2	15.5	0	3	3	0	15.5	0	3	3	0	2.434	cloudy, cool
BHTCA105S	20/05/2022 12:17	1018	-0.1	0	0	11.2	0	5.4	1	0	11.2	0	5.4	1	0	Dry	cloudy, cool
BHTCA106	20/05/2022 11:53	1018	0.19	0	0	21.9	0	0 2	2	0	22	0	0.1	1	0	2.138	cloudy, cool
BHTCA107	20/05/2022 11:40	1018	0.09	0	0	19.9	0	1 2	3	0	21.1	0	0.7	2	0	2.496	cloudy, cool
BHTCA108	20/05/2022 13:42	1017	-0.03	0	0	21.5	0	0.1	1	0	21.5	0	0.1	0	0	2.508	cloudy, cool
BHTCA109	20/05/2022 13:53	1017	0.6	0	0	20.3	0	1.3	5	0	20.5	0	0 5	3	0	1 038	cloudy, cool
BHTCA110	20/05/2022 14:26	1018	0.22	0	0	19.4	0	1.2	3	0	19.6	0	1	1	0	1 009	cloudy, cool
BHTCA301A	20/05/2022 14:43	1018	0.05	0	0	21	0	0.4	2	0	21	0	0.4	1	0	Dry	cloudy, cool
WSTCA101	20/05/2022 10:08	1018	-0.1	0	0	16.7	0	1.5	2	0	16.7	0	1 5	1	0	Dry	cloudy, cool
WSTCA106	20/05/2022 10:32	1019	-0.05	0	0	1.1	0	8.7	3	0	1.1	0	8.7	2	0	1.89	cloudy, cool
WSTCA108	20/05/2022 12:06	1018	0.22	0	0	7.9	0 3	10.2	3	0	8.1	0 3	9 9	2	0	0.957	cloudy, cool
WSTCA109	20/05/2022 11:33	1018	-0.21	0	0	12.6	0.1	7.1	2	0	12.6	0	7.1	2	0	Dry	cloudy, cool
WSTCA112	20/05/2022 13:33	1017	0.02	0	0	21.3	0.1	0.8	1	0	21.3	0	0 8	1	0	Dry	cloudy, cool
WSTCA116	20/05/2022 14:34	1018	0.14	0	0	20.7	0	0.2	2	0	20.9	0	0 2	1	0	0.912	cloudy, cool
WSTCA117	20/05/2022 14:17	1017	0.05	0	0	20.1	0	0.2	2	2	20.1	0	0 2	1	0	0.488	cloudy, cool

APPENDIX F

GEOTECHNICAL LABORATORY TEST DATA

Laboratory Report

GEO Site & Testing Services Ltd

Contract Number: 58610

Client Ref: **10052307**
Client PO: **14059902**

Report Date: **27-04-2022**

Client **Arcadis**
Fortran Rd
St Mellons
Cardiff
CF3 0EY

Contract Title: **Northstowe**
For the attention of: Reg. 13(1)

Date Received: **04-04-2022**
Date Completed: **27-04-2022**

Test Description	Qty
Samples Received - @ Non Accredited Test	898
Moisture Content of Soil BS1377 : Part 2 : Clause 3.2 : 1990 - * UKAS	99
4 Point Liquid & Plastic Limit BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS	98
PSD Wet & Dry Sieve method BS 1377:1990 - Part 2 : 9.2 - * UKAS	29
BRE Full Suite **includes pH, water & acid soluble sulphate, total sulphur, magnesium, chloride and nitrate** Sub-contracted Test	48
CBR: Remoulded Specimen and tested at top only BS 1377:1990 - Part 4 : 7 - * UKAS	13
One-dimensional Consolidation 75mm or 50mm diameter specimens (5 days) BS 1377:1990 - Part 5 : 3 - * UKAS	8

Notes: **Observations and Interpretations are outside the UKAS Accreditation**
*** - denotes test included in laboratory scope of accreditation**
 # - denotes test carried out by approved contractor
@ - denotes non accredited tests

Approved Signatories:
Reg. 13(1) (Business Support Manager) - Reg. 13(1) (Director) - Reg. 13(1) (Quality/Technical Manager)
Reg. 13(1) (Laboratory manager) - Reg. 13(1) (Site Manager) - Reg. 13(1) (Quality Assistant / Administrator / Health and Safety Coordinator)

GEO Site & Testing Services Ltd
Unit 3-4, Heol Aur, Dafen Ind Estate, Dafen, Llanelli, Carmarthenshire SA14 8QN
Tel: 01554 784040 Fax: 01554 784041 info@gstl.co.uk gstl.co.uk

Laboratory Report

2788

GEO Site & Testing Services Ltd

Contract Number: 58610

Test Description	Qty
Natural Shear Strength by Hand Vane (3 measurements) - @ Non Accredited Test	6
Quick Undrained Triaxial Compression test - single specimen at one confining pressure (100mm or 38mm diameter) BS 1377:1990 - Part 7 : 8 - * UKAS	21
Disposal of samples for job	1

Notes: **Observations and Interpretations are outside the UKAS Accreditation**
*** - denotes test included in laboratory scope of accreditation**
 # - denotes test carried out by approved contractor
@ - denotes non accredited tests

Approved Signatories:

Reg. 13(1) (Business Support Manager) - Reg. 13(1) (Director) - Reg. 13(1) (Quality/Technical Manager)
Reg. 13(1) (Laboratory manager) - Reg. 13(1) (Site Manager) - Reg. 13(1) (Quality Assistant / Administrator / Health and Safety Coordinator)

GEO Site & Testing Services Ltd
Unit 3-4, Heol Aur, Dafen Ind Estate, Dafen, Llanelli, Carmarthenshire SA14 8QN
Tel: 01554 784040 Fax: 01554 784041 info@gstl.co.uk gstl.co.uk

GSTL

Natural Moisture Content
(BS 1377:1990 - Part 2 : 3.2)
DESCRIPTIONS

Contract Number	58610
Site Name	Northstowe
Date Tested	18/04/2022

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Descriptions
WSTCA117	1	B	1.20	-	1.50	Brown silty CLAY

Operators	Checked	26/04/2022	Reg. 13(1) (Advanced Testing Manager)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1) (Quality/Technical Manager)

GSTL	Natural Moisture Content (BS 1377:1990 - Part 2 : 3.2)	
Contract Number	58610	
Site Name	Northstowe	
Date Tested	18/04/2022	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content %	Remarks
WSTCA117	1	B	1.20	-	1.50	28	
				-			
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Operators	Checked	26/04/2022	Reg. 13(1) [redacted] (Advanced Testing Manager)
Reg. 13(1) [redacted]	Approved	26/04/2022	Reg. 13(1) [redacted] (Quality/Technical Manager)

GSTL	NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377:1990 - Part 2 : 4.3 & 5.3)	
Contract Number	58610	
Site Name	Northstowe	
Date Tested	18/04/2022	
	DESCRIPTIONS	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Descriptions
TPTCA103	2	D	0.20	-	0.50	Brown gravelly sandy silty CLAY
TPTCA103	5	B	2.00	-	3.00	Brown silty clayey sandy GRAVEL
TPTCA105	4	D	1.00	-	2.00	Brown silty CLAY
TPTCA107	3	D	0.50	-	1.00	Brown gravelly sandy silty CLAY
TPTCA111	1	D	0.00	-	0.20	Brown gravelly silty CLAY
TPTCA113	4	D	1.00	-	2.00	Brown gravelly sandy silty CLAY
TPTCA114	5	D	2.00	-	3.00	Brown silty clayey sandy GRAVEL
TPTCA118	4	D	1.00	-	2.00	Brown silty CLAY
TPTCA118	5	D	2.00	-	3.00	Grey silty CLAY
TPTCA204	4	B	1.00	-	2.00	Brown gravelly silty CLAY
TPTCA204	5	D	2.00	-	3.00	Brown gravelly sandy silty CLAY
TPTCA205	4	B	1.00	-	2.00	Brown gravelly silty CLAY
TPTCA208	5	D	2.00	-	3.00	Brown gravelly silty CLAY
BHTCA101	7	B	2.70	-	3.00	Brown gravelly silty CLAY
BHTCA101	8	D	3.00	-	3.45	Grey silty CLAY
BHTCA101	14	D	5.00	-	5.45	Brown silty CLAY
BHTCA101	16	D	5.50	-	6.00	Grey silty CLAY
BHTCA202	9	D	2.50	-	3.00	Brown silty CLAY
BHTCA202	14	D	4.00	-	4.45	Brown silty CLAY
BHTCA202	24	D	7.00	-	7.45	Grey silty CLAY
WSTCA109	2	B	1.45	-	2.00	Brown silty CLAY
WSTCA112	1	B	0.90	-	1.30	Brown sandy gravelly silty CLAY
WSTCA112	2	B	1.30	-	2.00	Brown silty CLAY
WSTCA112	4	B	2.50	-	3.00	Brown silty CLAY

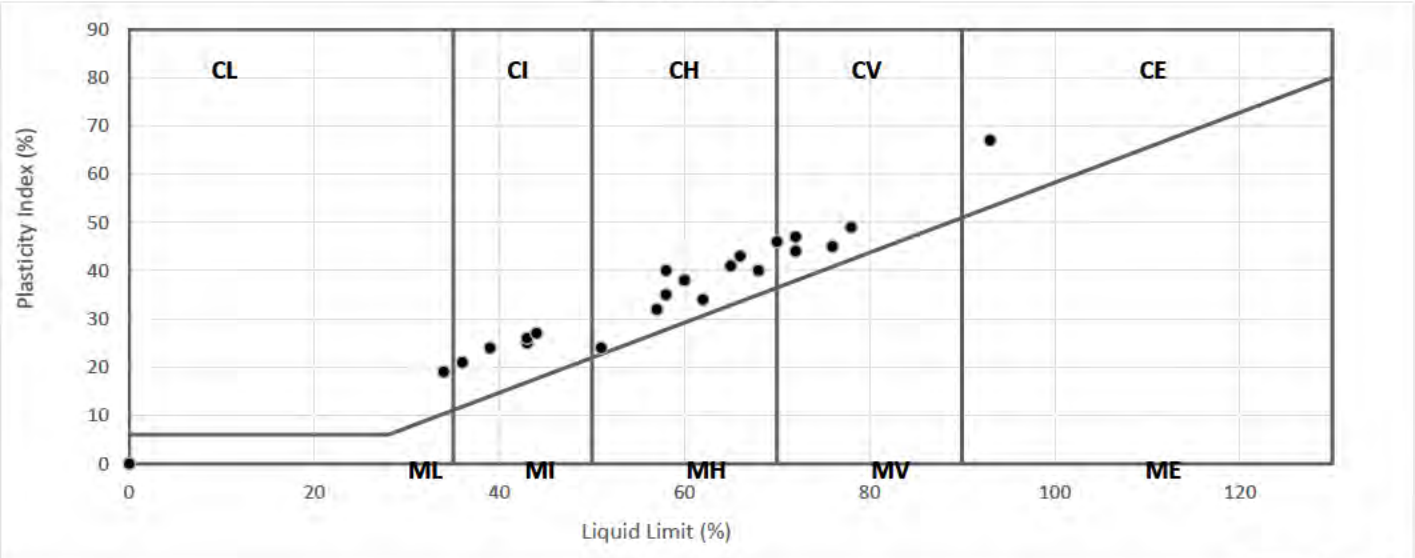
Operators	Checked	25/04/2022	Reg. 13(1) (Advanced Testing Manager)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1) (Quality/Technical Manager)

GSTL	NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377:1990 - Part 2 : 4.3 & 5.3)	
Contract Number	58610	
Project Location	Northstowe	
Date Tested	18/04/2022	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks
TPTCA103	2	D	0.20	-	0.50	14	36	15	21	89	CI Intermediate Plasticity
TPTCA103	5	B	2.00	-	3.00	13		NP		20	
TPTCA105	4	D	1.00	-	2.00	25	60	22	38	100	CH High Plasticity
TPTCA107	3	D	0.50	-	1.00	15	39	15	24	89	CI Intermediate Plasticity
TPTCA111	1	D	0.00	-	0.20	18	43	18	25	95	CI Intermediate Plasticity
TPTCA113	4	D	1.00	-	2.00	33	76	31	45	88	CV Very High Plasticity
TPTCA114	5	D	2.00	-	3.00	11		NP		21	
TPTCA118	4	D	1.00	-	2.00	27	60	22	38	100	CH High Plasticity
TPTCA118	5	D	2.00	-	3.00	31	65	24	41	100	CH High Plasticity
TPTCA204	4	B	1.00	-	2.00	31	51	27	24	89	CH High Plasticity
TPTCA204	5	D	2.00	-	3.00	19	43	17	26	89	CI Intermediate Plasticity
TPTCA205	4	B	1.00	-	2.00	28	58	23	35	89	CH High Plasticity
TPTCA208	5	D	2.00	-	3.00	13	44	17	27	87	CI Intermediate Plasticity
BHTCA101	7	B	2.70	-	3.00	23	68	28	40	89	CH High Plasticity
BHTCA101	8	D	3.00	-	3.45	33	72	28	44	100	CV Very High Plasticity
BHTCA101	14	D	5.00	-	5.45	27	57	25	32	100	CH High Plasticity
BHTCA101	16	D	5.50	-	6.00	20	58	18	40	100	CH High Plasticity
BHTCA202	9	D	2.50	-	3.00	29	72	25	47	100	CV Very High Plasticity
BHTCA202	14	D	4.00	-	4.45	33	62	28	34	100	CH High Plasticity
BHTCA202	24	D	7.00	-	7.45	32	66	23	43	100	CH High Plasticity
WSTCA109	2	B	1.45	-	2.00	39	78	29	49	100	CV Very High Plasticity
WSTCA112	1	B	0.90	-	1.30	13	34	15	19	84	CL Low Plasticity
WSTCA112	2	B	1.30	-	2.00	29	93	26	67	100	CE Extremely High Plasticity
WSTCA112	4	B	2.50	-	3.00	32	70	24	46	100	CH/V High/HighPlasticity

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:1999+A2:2010



Operators	Checked	25/04/2022	Reg. 13(1) (Advanced Testing Manager)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1) (Quality/Technical Manager)

GSTL	NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377:1990 - Part 2 : 4.3 & 5.3)	
Contract Number	58610	
Site Name	Northstowe	
Date Tested	18/04/2022	
	DESCRIPTIONS	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Descriptions
WSTCA116	1	B	1.20	-	1.50	Brown silty CLAY
WSTCA116	3	B	2.00	-	2.50	Brown silty CLAY
WSTCA116	4	B	2.50	-	3.00	Brown silty CLAY
BHTCA102	10	B	3.00	-	3.50	Grey silty CLAY
BHTCA102	9	D	3.45	-	3.55	Brown silty CLAY
BHTCA102	14	D	4.50	-	5.00	Grey silty CLAY
BHTCA102	21	D	6.50	-	7.00	Grey gravelly silty CLAY
BHTCA102	23	D	7.45	-	7.55	Brown silty CLAY
BHTCA103A	5	D	2.70	-	3.00	Brown silty CLAY
BHTCA103A	7	D	3.45	-	3.50	Brown silty CLAY
BHTCA103A	12	B	6.00	-	6.50	Grey silty CLAY
BHTCA103A	15	D	7.45	-	7.50	Brown silty CLAY
BHTCA103A	17	D	8.80	-	9.00	Grey silty CLAY
BHTCA103A	24	B	13.50	-	14.00	Grey silty CLAY
TPTCA104	3	D	0.80	-	1.70	Brown gravelly silty CLAY
TPTCA104	4	D	1.70	-	3.00	Brown gravelly silty CLAY
TPTCA119	4	D	1.20	-	3.00	Brown silty CLAY
BHTCA104	5	D	1.70	-	2.00	Brown gravelly sandy silty CLAY
BHTCA104	6	B	2.00	-	2.50	Brown silty CLAY
BHTCA104	11	D	4.00	-	4.45	Grey silty CLAY
BHTCA104	16	D	5.50	-	6.00	Brown silty CLAY
BHTCA104	19	D	6.50	-	7.00	Grey silty CLAY
BHTCA108	6	D	2.45	-	2.50	Brown silty CLAY
BHTCA108	7	D	3.00	-	3.45	Brown silty CLAY

Operators	Checked	26/04/2022	Reg. 13(1) (Advanced Testing Manager)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1) (Quality/Technical Manager)

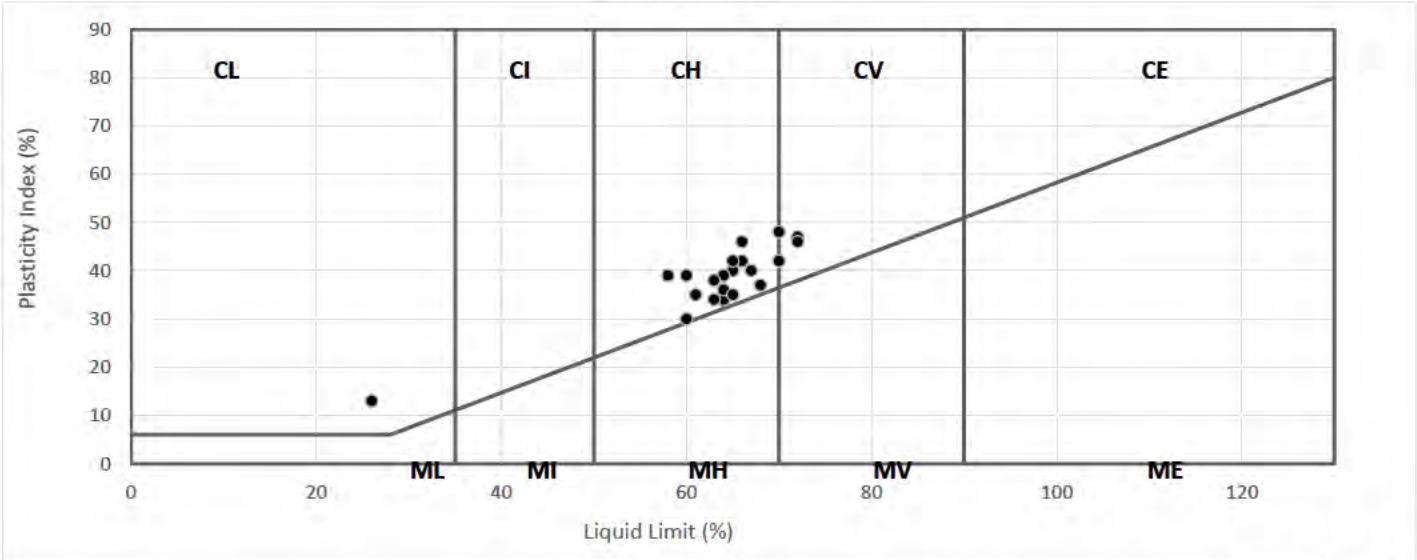
NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.3 & 5.3)

Contract Number	58610
Project Location	Northstowe
Date Tested	18/04/2022

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks
WSTCA116	1	B	1.20	-	1.50	32	63	25	38	100	CH High Plasticity
WSTCA116	3	B	2.00	-	2.50	28	65	25	40	100	CH High Plasticity
WSTCA116	4	B	2.50	-	3.00	38	60	30	30	100	CH High Plasticity
BHTCA102	10	B	3.00	-	3.50	29	67	27	40	100	CH High Plasticity
BHTCA102	9	D	3.45	-	3.55	46	64	30	34	100	CH High Plasticity
BHTCA102	14	D	4.50	-	5.00	28	64	25	39	100	CH High Plasticity
BHTCA102	21	D	6.50	-	7.00	34	64	30	34	87	CH High Plasticity
BHTCA102	23	D	7.45	-	7.55	26	70	22	48	100	CH/V High/HighPlasticity
BHTCA103A	5	D	2.70	-	3.00	37	64	30	34	100	CH High Plasticity
BHTCA103A	7	D	3.45	-	3.50	27	72	25	47	100	CV Very High Plasticity
BHTCA103A	12	B	6.00	-	6.50	27	58	19	39	100	CH High Plasticity
BHTCA103A	15	D	7.45	-	7.50	26	66	24	42	100	CH High Plasticity
BHTCA103A	17	D	8.80	-	9.00	33	63	29	34	100	CH High Plasticity
BHTCA103A	24	B	13.50	-	14.00	30	68	31	37	100	CH High Plasticity
TPTCA104	3	D	0.80	-	1.70	30	64	28	36	94	CH High Plasticity
TPTCA104	4	D	1.70	-	3.00	34	72	26	46	90	CV Very High Plasticity
TPTCA119	4	D	1.20	-	3.00	26	65	23	42	100	CH High Plasticity
BHTCA104	5	D	1.70	-	2.00	14	26	13	13	69	CL Low Plasticity
BHTCA104	6	B	2.00	-	2.50	36	65	30	35	100	CH High Plasticity
BHTCA104	11	D	4.00	-	4.45	29	66	20	46	100	CH High Plasticity
BHTCA104	16	D	5.50	-	6.00	25	60	21	39	100	CH High Plasticity
BHTCA104	19	D	6.50	-	7.00	35	61	26	35	100	CH High Plasticity
BHTCA108	6	D	2.45	-	2.50	31	63	25	38	100	CH High Plasticity
BHTCA108	7	D	3.00	-	3.45	27	70	28	42	100	CH/V High/HighPlasticity

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:1999+A2:2010



Operators	Checked	26/04/2022	Reg. 13(1) (Advanced Testing Manager)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1) (Quality/Technical Manager)

GSTL	NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377:1990 - Part 2 : 4.3 & 5.3)	
Contract Number	58610	
Site Name	Northstowe	
Date Tested	18/04/2022	
	DESCRIPTIONS	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Descriptions
BHTCA108	14	D	6.45	-	6.50	Brown silty CLAY
WSTCA106	2	B	2.00	-	2.50	Brown gravelly silty CLAY
WSTCA106	3	B	2.50	-	3.00	Brown silty CLAY
WSTCA108	3	B	1.60	-	2.00	Brown clayey SILT
WSTCA117	4	B	2.50	-	2.80	Brown silty CLAY
WS2C101	2	D	1.20	-	1.65	Brown silty CLAY
WS2C106	2	D	1.20	-	1.65	Brown gravelly silty CLAY
WS2C106	3	D	2.00	-	2.45	Grey silty CLAY
WS2C108	1	D	1.20	-	1.65	Brown silty CLAY
WS2C108	2	D	2.00	-	2.45	Brown silty CLAY
WS2C112	1	B	0.80	-	1.20	Brown silty CLAY
WS2C112	1	D	1.20	-	1.65	Brown silty CLAY
WS2C114	1	B	1.50	-	2.00	Brown silty CLAY
WS2C120	1	D	1.20	-	1.65	Brown silty CLAY
WS2C120	3	D	2.70	-	2.80	Brown silty CLAY
WS2C121	2	D	1.20	-	1.65	Brown silty CLAY
WS2C121	3	D	2.00	-	2.45	Brown silty CLAY
WS2C123	1	D	0.70	-		Brown silty CLAY
WS2C123	3	D	2.00	-	2.45	Brown clayey SILT
BHTCA107	3	B	1.00	-	1.20	Grey silty CLAY
BHTCA107	5	B	1.70	-	2.00	Brown gravelly silty CLAY
BHTCA107	7	D	2.60	-	3.00	Grey silty CLAY
BHTCA107	9	D	3.45	-	3.55	Brown silty CLAY
BHTCA107	14	D	4.50	-	5.00	Grey silty CLAY

Operators	Checked	25/04/2022	Reg. 13(1) (Advanced Testing Manager)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1) (Quality/Technical Manager)

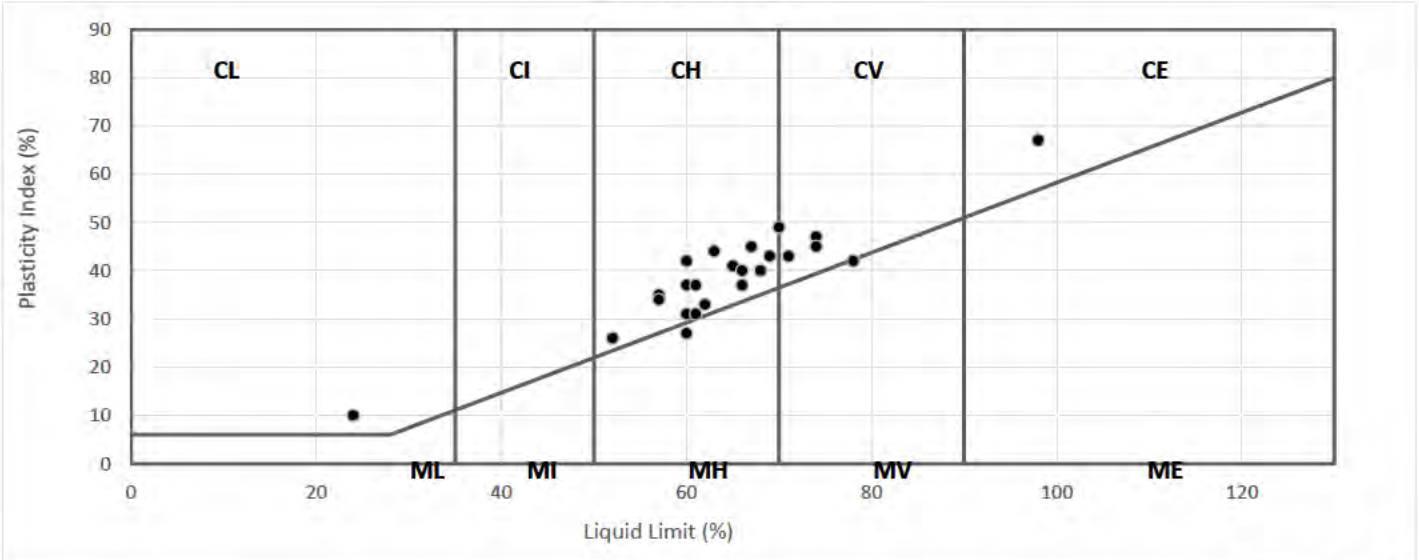
NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.3 & 5.3)

Contract Number	58610
Project Location	Northstowe
Date Tested	18/04/2022

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks
BHTCA108	14	D	6.45	-	6.50	10	24	14	10	100	CL Low Plasticity
WSTCA106	2	B	2.00	-	2.50	30	74	27	47	88	CV Very High Plasticity
WSTCA106	3	B	2.50	-	3.00	35	71	28	43	100	CV Very High Plasticity
WSTCA108	3	B	1.60	-	2.00	45	78	36	42	100	MV Very High Plasticity
WSTCA117	4	B	2.50	-	2.80	34	98	31	67	100	CE Extremely High Plasticity
WS2C101	2	D	1.20	-	1.65	28	69	26	43	100	CH High Plasticity
WS2C106	2	D	1.20	-	1.65	22	52	26	26	91	CH High Plasticity
WS2C106	3	D	2.00	-	2.45	28	60	23	37	100	CH High Plasticity
WS2C108	1	D	1.20	-	1.65	18	67	22	45	100	CH High Plasticity
WS2C108	2	D	2.00	-	2.45	33	63	19	44	100	CH High Plasticity
WS2C112	1	B	0.80	-	1.20	31	68	28	40	100	CH High Plasticity
WS2C112	1	D	1.20	-	1.65	27	70	21	49	100	CH/V High/HighPlasticity
WS2C114	1	B	1.50	-	2.00	27	61	24	37	100	CH High Plasticity
WS2C120	1	D	1.20	-	1.65	31	65	24	41	100	CH High Plasticity
WS2C120	3	D	2.70	-	2.80	29	60	18	42	100	CH High Plasticity
WS2C121	2	D	1.20	-	1.65	37	60	29	31	100	CH High Plasticity
WS2C121	3	D	2.00	-	2.45	30	74	29	45	100	CV Very High Plasticity
WS2C123	1	D	0.70	-		29	62	29	33	100	CH High Plasticity
WS2C123	3	D	2.00	-	2.45	34	60	33	27	100	MH High Plasticity
BHTCA107	3	B	1.00	-	1.20	37	61	30	31	100	CH High Plasticity
BHTCA107	5	B	1.70	-	2.00	27	57	22	35	88	CH High Plasticity
BHTCA107	7	D	2.60	-	3.00	28	66	26	40	100	CH High Plasticity
BHTCA107	9	D	3.45	-	3.55	37	66	29	37	100	CH High Plasticity
BHTCA107	14	D	4.50	-	5.00	26	57	23	34	100	CH High Plasticity

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:1999+A2:2010



Operators	Checked	25/04/2022	Reg. 13(1) (Advanced Testing Manager)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1) (Quality/Technical Manager)

GSTL	NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377:1990 - Part 2 : 4.3 & 5.3)	
Contract Number	58610	
Site Name	Northstowe	
Date Tested	18/04/2022	
	DESCRIPTIONS	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Descriptions
BHTCA107	16	D	5.50	-	6.00	Grey silty CLAY
BHTCA107	25	D	8.50	-	9.00	Grey silty CLAY
BHTCA110	7	D	2.80	-	3.00	Brown silty CLAY
BHTCA110	9	D	3.80	-	4.00	Grey silty CLAY
BHTCA110	12	B	5.00	-	5.50	Grey silty CLAY
BHTCA110	15	D	6.80	-	7.00	Grey silty CLAY
BHTCA301A	10	B	2.00	-	2.50	Brown silty clayey GRAVEL
BHTCA301A	12	D	3.00	-	3.45	Grey silty CLAY
BHTCA301A	16	D	4.45	-	4.50	Grey silty CLAY
BHTCA301A	19	D	6.00	-	6.10	Grey silty CLAY
BHTCA301A	22	D	7.45	-	7.50	Grey silty CLAY
BH2C101	11	D	2.45	-	2.50	Brown silty CLAY
BH2C101	15	D	4.45	-	4.50	Grey silty CLAY
BH2C101	18	D	6.45	-	6.50	Brown silty CLAY
BH2C102	7	D	2.50	-	3.00	Brown silty CLAY
BH2C102	10	D	3.50	-	4.00	Grey silty CLAY
BH2C102	12	D	4.45	-	4.55	Grey silty CLAY
BH2C102	20	D	6.50	-	7.00	Grey silty CLAY
BH2C103	17	D	1.20	-	1.65	Brown silty CLAY
BH2C103	19	D	4.45	-	4.50	Brown silty CLAY
BH2C103	20	D	6.45	-	6.50	Brown silty CLAY
BH2C103	21	D	7.00	-	7.45	Brown silty CLAY
BH2C104	14	B	3.70	-		Brown gravelly silty CLAY
BH2C104	18	D	5.00	-	5.45	Brown silty CLAY

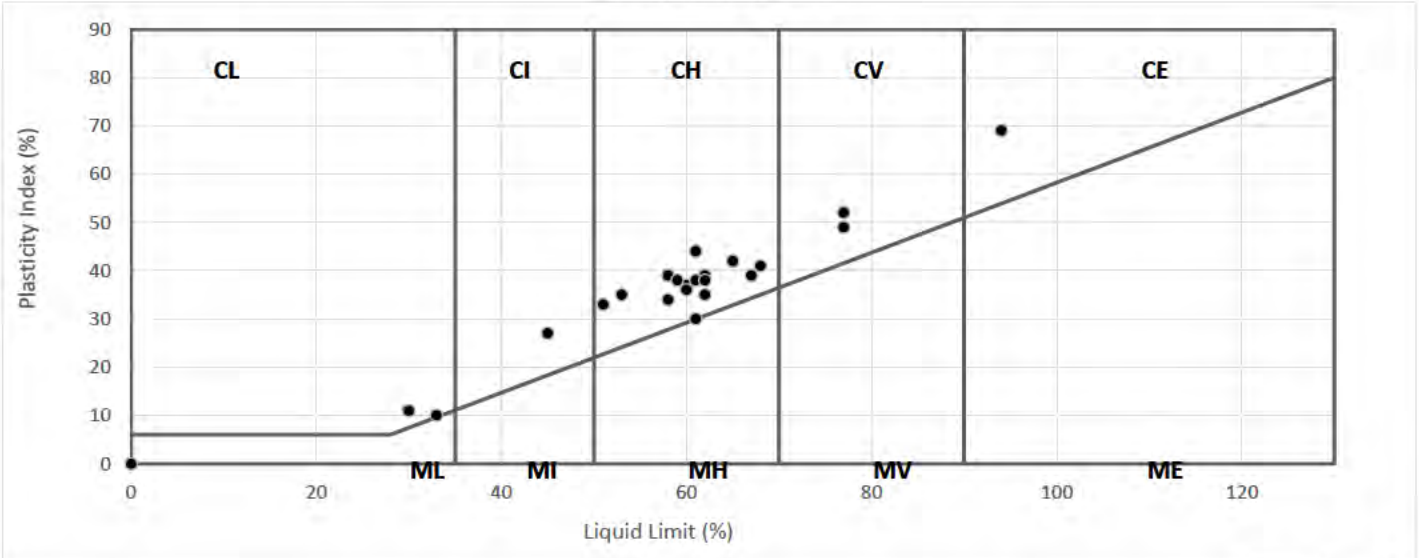
Operators	Checked	25/04/2022	Reg. 13(1) (Advanced Testing Manager)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1) (Quality/Technical Manager)

GSTL	NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377:1990 - Part 2 : 4.3 & 5.3)	
Contract Number	58610	
Project Location	Northstowe	
Date Tested	18/04/2022	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks
BHTCA107	16	D	5.50	-	6.00	27	60	23	37	100	CH High Plasticity
BHTCA107	25	D	8.50	-	9.00	28	62	23	39	100	CH High Plasticity
BHTCA110	7	D	2.80	-	3.00	35	77	25	52	100	CV Very High Plasticity
BHTCA110	9	D	3.80	-	4.00	32	67	28	39	100	CH High Plasticity
BHTCA110	12	B	5.00	-	5.50	34	62	27	35	100	CH High Plasticity
BHTCA110	15	D	6.80	-	7.00	36	61	31	30	100	CH High Plasticity
BHTCA301A	10	B	2.00	-	2.50	10		NP		18	
BHTCA301A	12	D	3.00	-	3.45	24	58	19	39	100	CH High Plasticity
BHTCA301A	16	D	4.45	-	4.50	18	61	17	44	100	CH High Plasticity
BHTCA301A	19	D	6.00	-	6.10	20	51	18	33	100	CH High Plasticity
BHTCA301A	22	D	7.45	-	7.50	23	61	23	38	100	CH High Plasticity
BH2C101	11	D	2.45	-	2.50	16	30	19	11	100	CL Low Plasticity
BH2C101	15	D	4.45	-	4.50	17	33	23	10	100	CL Low Plasticity
BH2C101	18	D	6.45	-	6.50	27	94	25	69	100	CE Extremely High Plasticity
BH2C102	7	D	2.50	-	3.00	27	58	24	34	100	CH High Plasticity
BH2C102	10	D	3.50	-	4.00	35	60	24	36	100	CH High Plasticity
BH2C102	12	D	4.45	-	4.55	27	65	23	42	100	CH High Plasticity
BH2C102	20	D	6.50	-	7.00	39	68	27	41	100	CH High Plasticity
BH2C103	17	D	1.20	-	1.65	19	53	18	35	100	CH High Plasticity
BH2C103	19	D	4.45	-	4.50	30	77	28	49	100	CV Very High Plasticity
BH2C103	20	D	6.45	-	6.50	28	65	23	42	100	CH High Plasticity
BH2C103	21	D	7.00	-	7.45	26	62	24	38	100	CH High Plasticity
BH2C104	14	B	3.70	-		22	45	18	27	89	CI Intermediate Plasticity
BH2C104	18	D	5.00	-	5.45	24	59	21	38	100	CH High Plasticity

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:1999+A2:2010



Operators	Checked	25/04/2022	Reg. 13(1) (Advanced Testing Manager)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1) (Quality/Technical Manager)

GSTL	NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377:1990 - Part 2 : 4.3 & 5.3)	
Contract Number	58610	
Site Name	Northstowe	
Date Tested	18/04/2022	
	DESCRIPTIONS	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Descriptions
BH2C104	21	D	6.45	-	6.50	Grey silty CLAY
BH2C104	26	D	8.45	-	8.50	Brown silty CLAY
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
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				-		

Operators	Checked	25/04/2022	Reg. 13(1) (Advanced Testing Manager)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1) (Quality/Technical Manager)

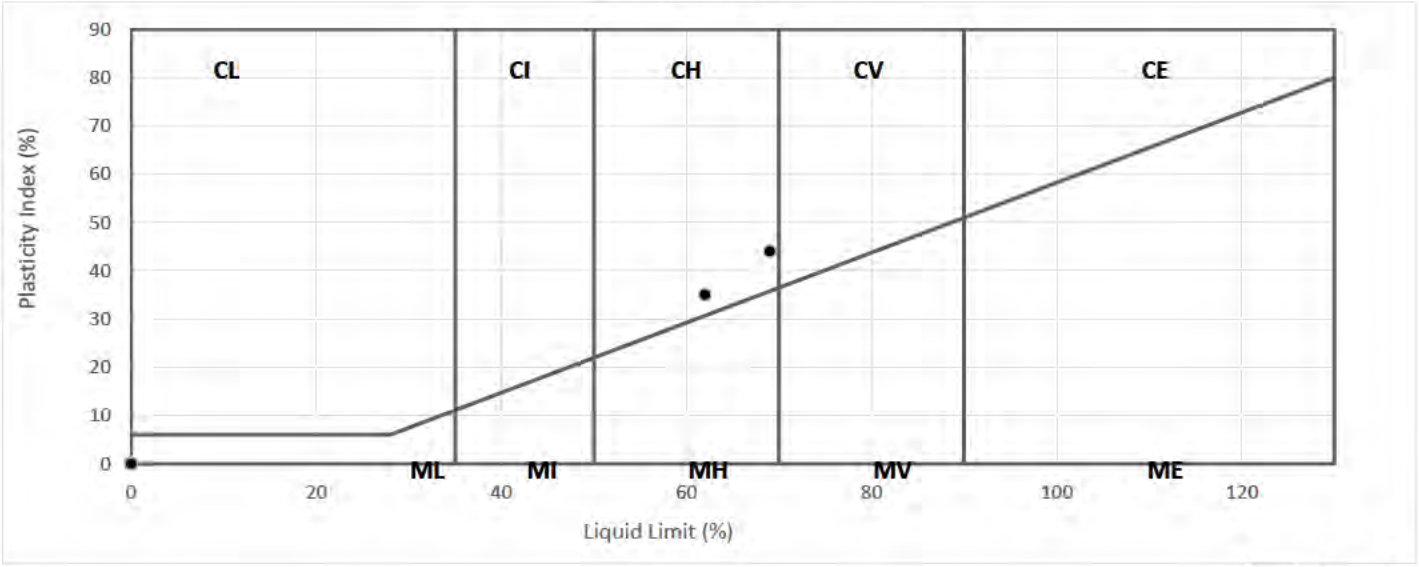
NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.3 & 5.3)

Contract Number	58610
Project Location	Northstowe
Date Tested	18/04/2022

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks
BH2C104	21	D	6.45	-	6.50	26	69	25	44	100	CH High Plasticity
BH2C104	26	D	8.45	-	8.50	30	62	27	35	100	CH High Plasticity

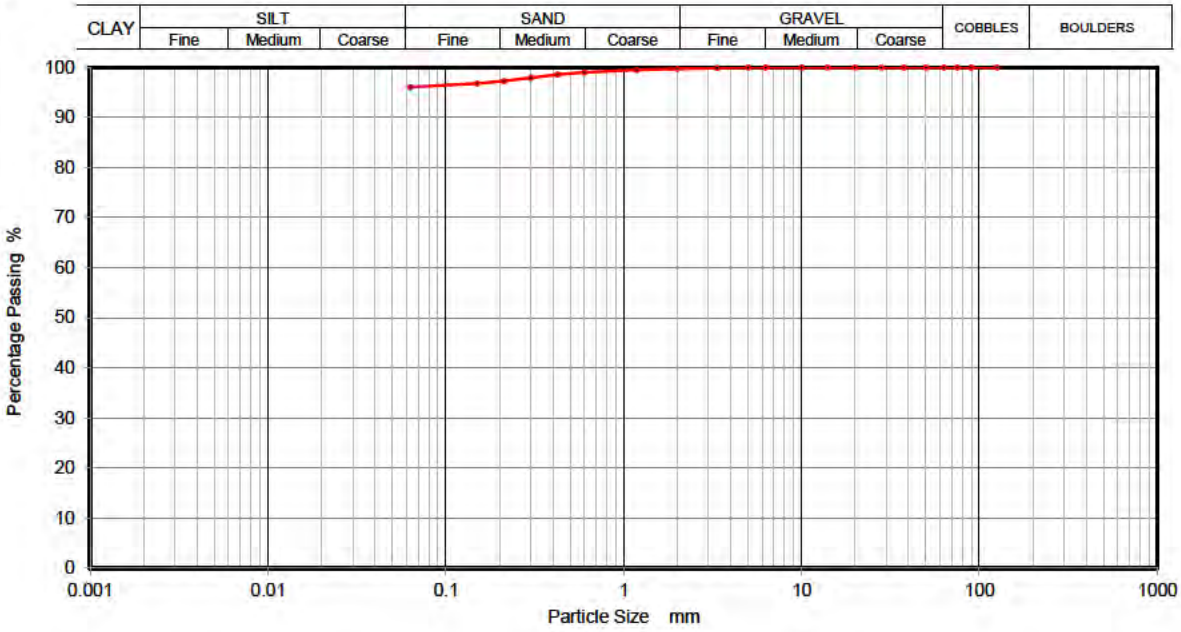
Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:1999+A2:2010



Operators	Checked	25/04/2022	Reg. 13(1) (Advanced Testing Manager)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1) (Quality/Technical Manager)

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	BH2C101
Site Name	Northstowe	Sample No.	9
Soil Description	Grey slightly fine to coarse sandy SILT/CLAY	Depth Top	1.20
		Depth Base	1.65
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6 3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	99		
0 3	98		
0.212	97		
0.15	97		
0.063	96		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	4
Silt and Clay	96

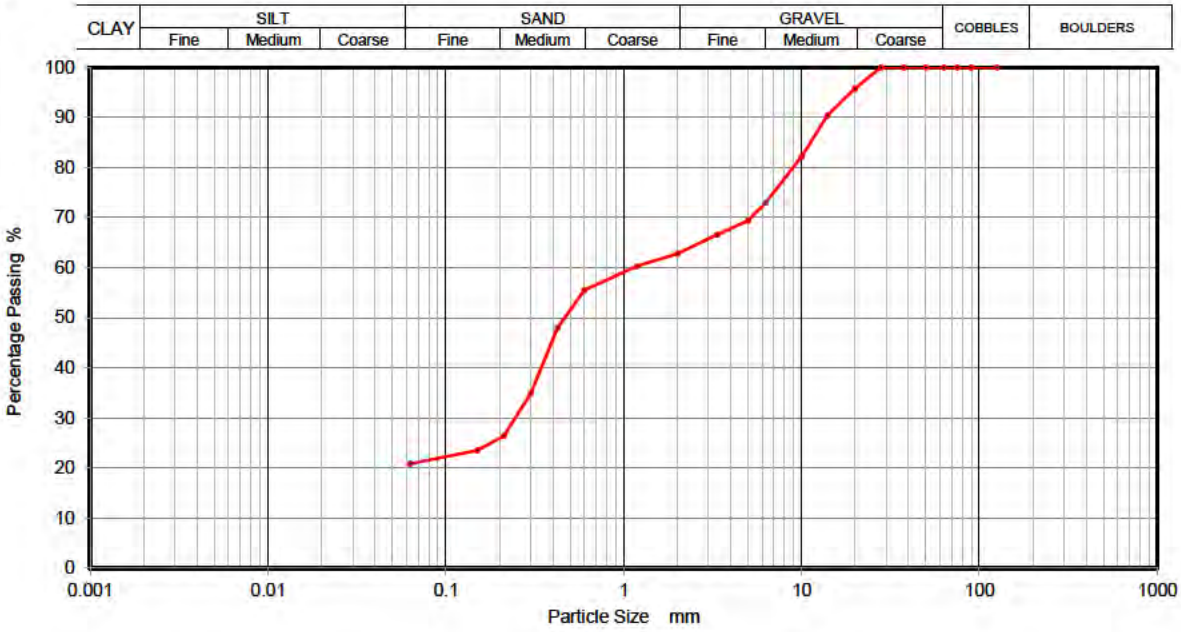
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	25/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)

Reg. 13(1)

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	BH2C102
Site Name	Northstowe	Sample No.	4
Soil Description	Brown silty/clayey fine to coarse gravelly fine to coarse SAND	Depth Top	1.40
		Depth Base	1.70
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	96		
14	90		
10	82		
6 3	73		
5	69		
3.35	67		
2	63		
1.18	60		
0.6	56		
0.425	48		
0 3	35		
0.212	26		
0.15	24		
0.063	21		

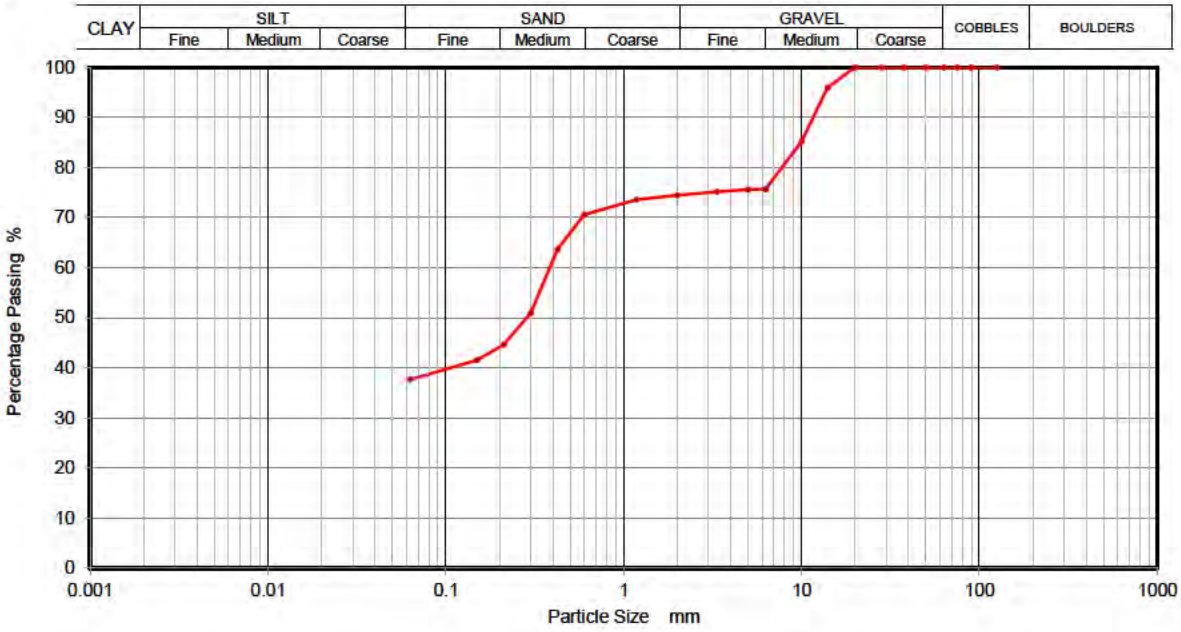
Sample Proportions	% dry mass
Cobbles	0
Gravel	37
Sand	42
Silt and Clay	21

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	24/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1)	

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	BH2C103
Site Name	Northstowe	Sample No.	9
Soil Description	Grey fine to medium gravelly fine to coarse sandy SILT/CLAY	Depth Top	1.00
		Depth Base	1.20
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	96		
10	85		
6 3	76		
5	76		
3.35	75		
2	74		
1.18	74		
0.6	71		
0.425	64		
0 3	51		
0.212	45		
0.15	42		
0.063	38		

Sample Proportions	% dry mass
Cobbles	0
Gravel	26
Sand	36
Silt and Clay	38

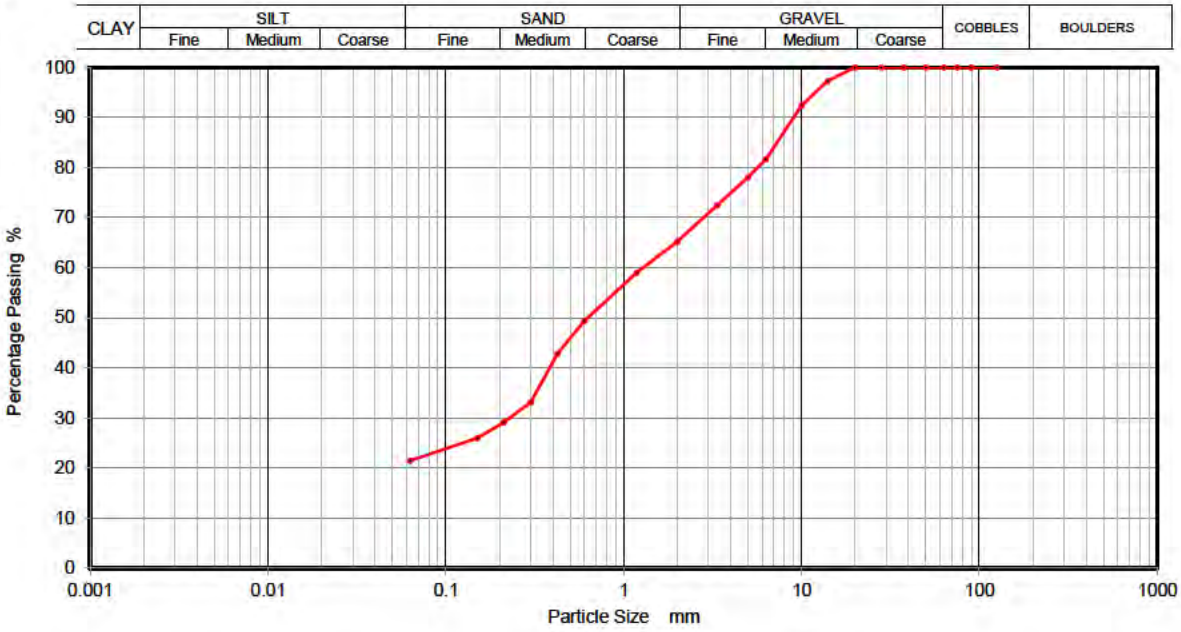
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	25/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)

Reg. 13(1)

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	BH2C104
Site Name	Northstowe	Sample No.	3
Soil Description	Brown silty/clayey fine to medium gravelly fine to coarse SAND	Depth Top	0.50
		Depth Base	1.00
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	97		
10	92		
6 3	82		
5	78		
3.35	72		
2	65		
1.18	59		
0.6	49		
0.425	43		
0 3	33		
0.212	29		
0.15	26		
0.063	21		

Sample Proportions	% dry mass
Cobbles	0
Gravel	35
Sand	44
Silt and Clay	21

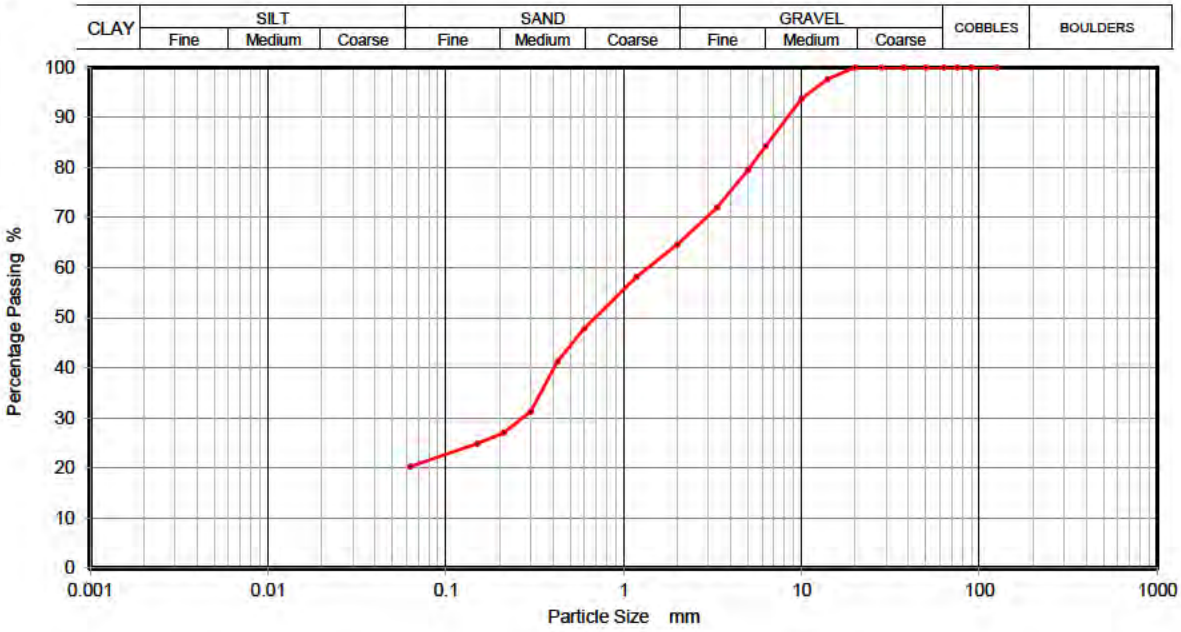
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	25/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)

Reg. 13(1)

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	BH2C104
Site Name	Northstowe	Sample No.	8
Soil Description	Brown clayey/silty fine to medium gravelly fine to coarse SAND	Depth Top	2.00
		Depth Base	2.45
Date Tested	19/04/2022	Sample Type	D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	98		
10	94		
6 3	84		
5	80		
3.35	72		
2	65		
1.18	58		
0.6	48		
0.425	41		
0 3	31		
0.212	27		
0.15	25		
0.063	20		

Sample Proportions	% dry mass
Cobbles	0
Gravel	35
Sand	45
Silt and Clay	20

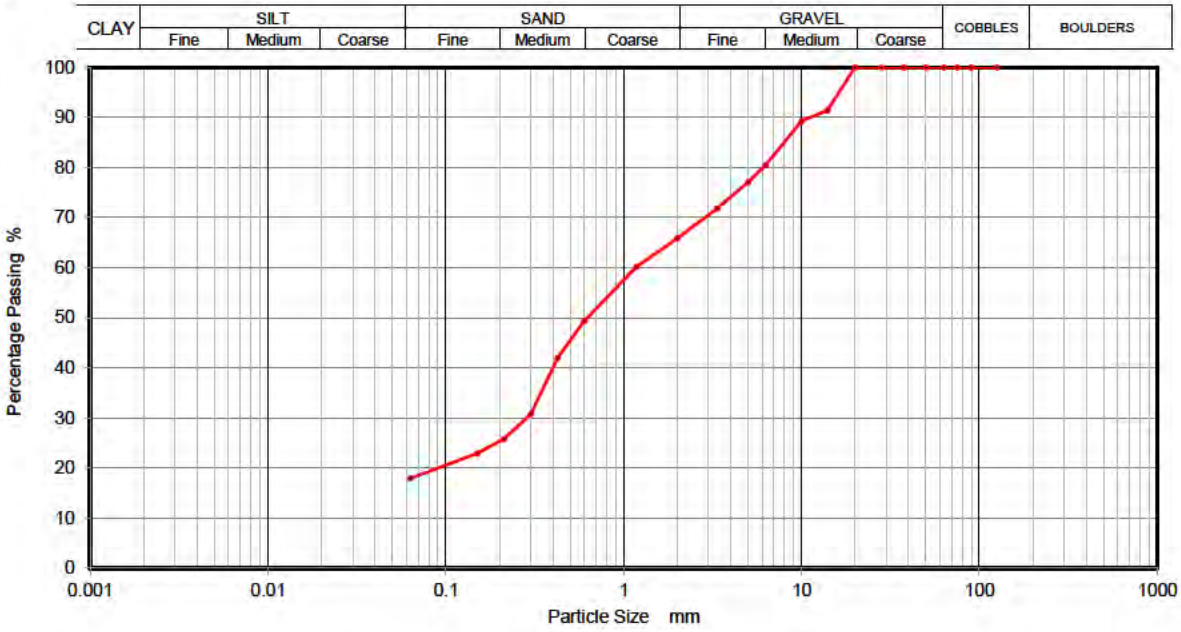
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	24/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1)

Reg. 13(1)

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	BH2C104
Site Name	Northstowe	Sample No.	11
Soil Description	Grey clayey/silty fine to medium gravelly fine to coarse SAND	Depth Top	3.00
		Depth Base	3.45
Date Tested	19/04/2022	Sample Type	D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	91		
10	89		
6 3	80		
5	77		
3.35	72		
2	66		
1.18	60		
0.6	49		
0.425	42		
0 3	31		
0.212	26		
0.15	23		
0.063	18		

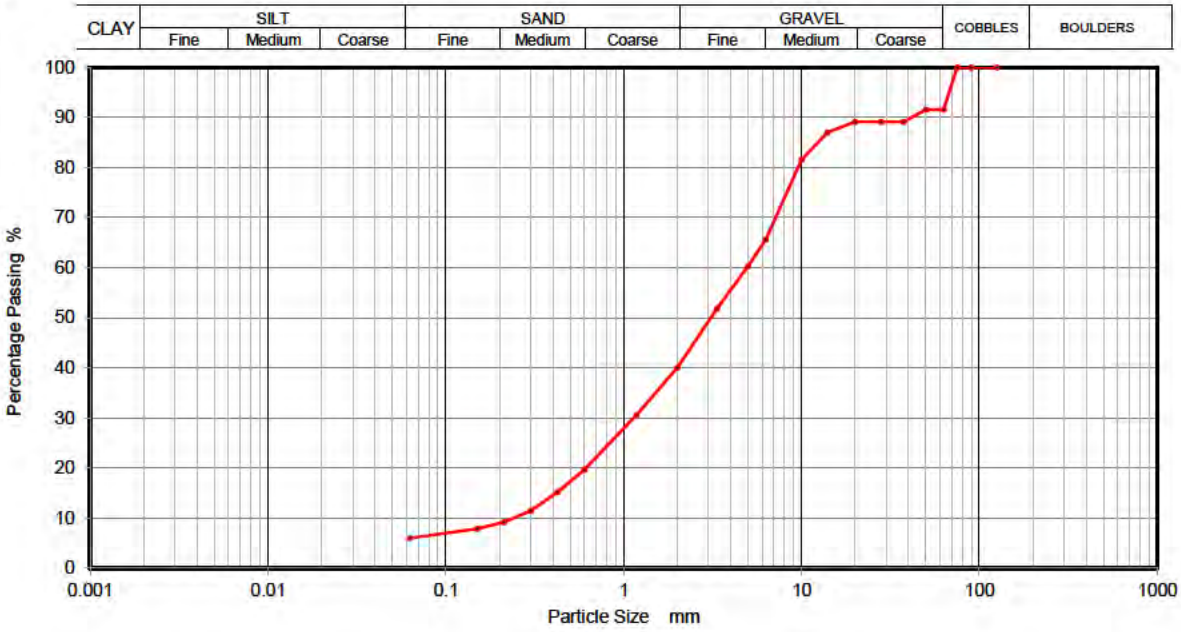
Sample Proportions	% dry mass
Cobbles	0
Gravel	34
Sand	48
Silt and Clay	18

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	25/04/2022	Reg. 13(1)	[redacted]
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)	[redacted]

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	BH2C104
Site Name	Northstowe	Sample No.	16
Soil Description	Grey sligh ly clayey/silty fine to coarse sandy fine to coarse GRAVEL (with cobbles)	Depth Top	4.00
		Depth Base	4.50
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	92		
50	92		
37.5	89		
28	89		
20	89		
14	87		
10	82		
6 3	66		
5	60		
3.35	52		
2	40		
1.18	31		
0.6	20		
0.425	15		
0 3	11		
0.212	9		
0.15	8		
0.063	6		

Sample Proportions	% dry mass
Cobbles	8
Gravel	52
Sand	34
Silt and Clay	6

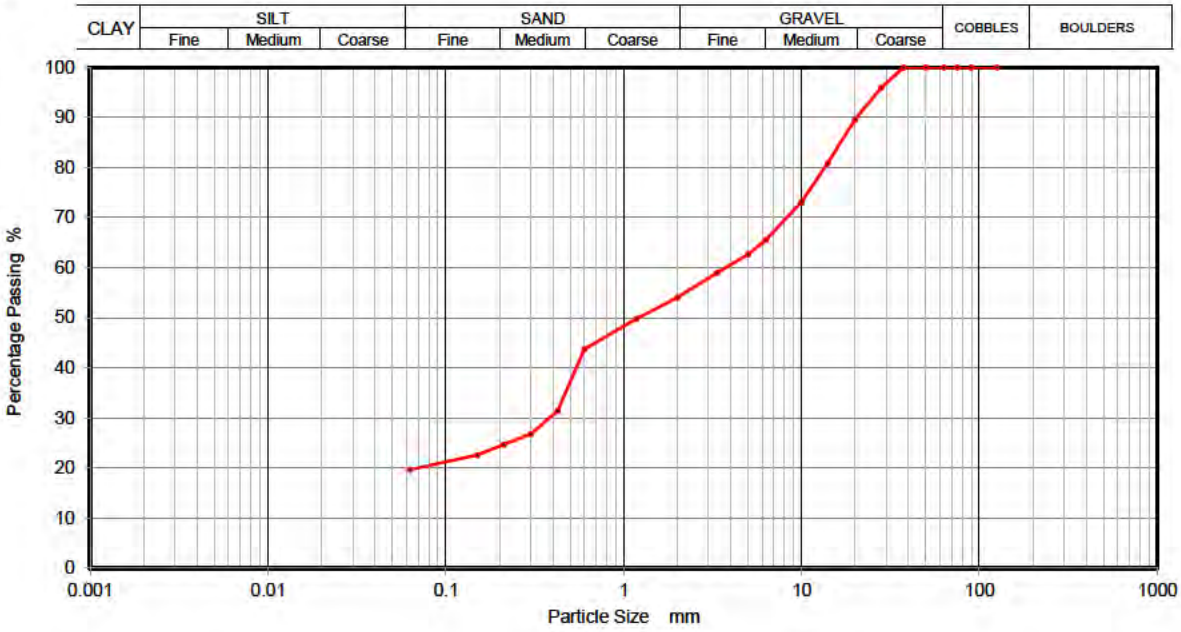
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	24/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1)

Reg. 13(1)

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	BHTCA101
Site Name	Northstowe	Sample No.	3
Soil Description	Grey silty/clayey fine to coarse sandy fine to coarse GRAVEL	Depth Top	1.00
		Depth Base	1.20
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	96		
20	90		
14	81		
10	73		
6 3	65		
5	63		
3.35	59		
2	54		
1.18	50		
0.6	44		
0.425	31		
0 3	27		
0.212	25		
0.15	23		
0.063	20		

Sample Proportions	% dry mass
Cobbles	0
Gravel	46
Sand	34
Silt and Clay	20

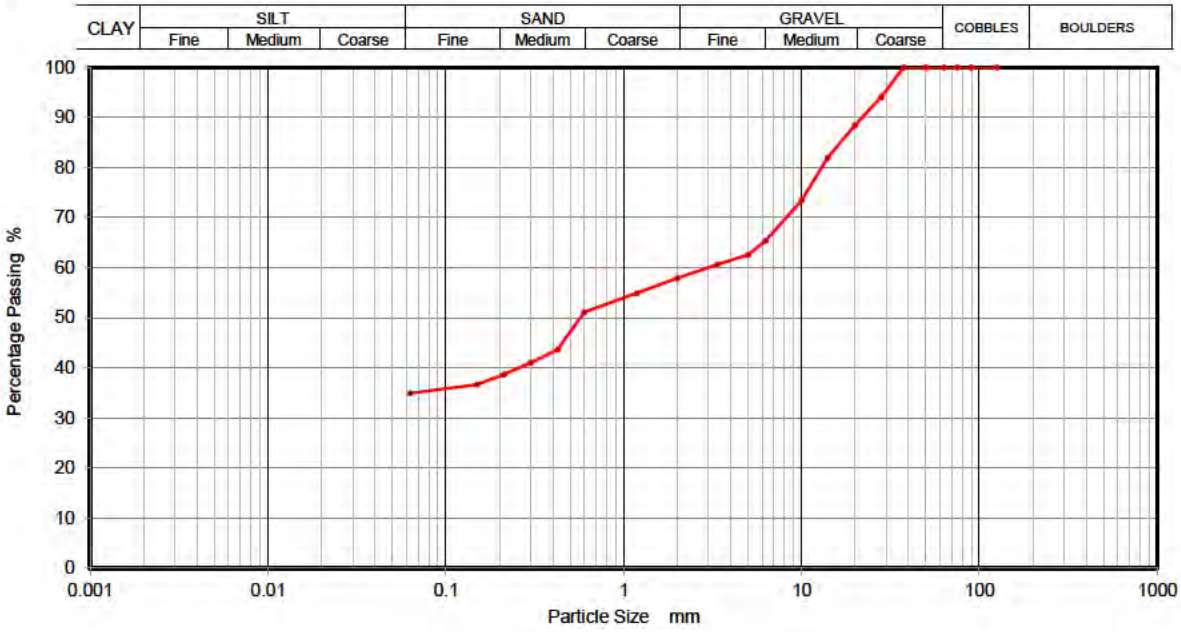
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	25/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)

Reg. 13(1)

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	BHTCA101
Site Name	Northstowe	Sample No.	6
Soil Description	Greyish brown fine to coarse sandy fine to coarse gravelly SILT/CLAY	Depth Top	2.00
		Depth Base	2.50
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	94		
20	88		
14	82		
10	73		
6 3	65		
5	63		
3.35	61		
2	58		
1.18	55		
0.6	51		
0.425	44		
0 3	41		
0.212	39		
0.15	37		
0.063	35		

Sample Proportions	% dry mass
Cobbles	0
Gravel	42
Sand	23
Silt and Clay	35

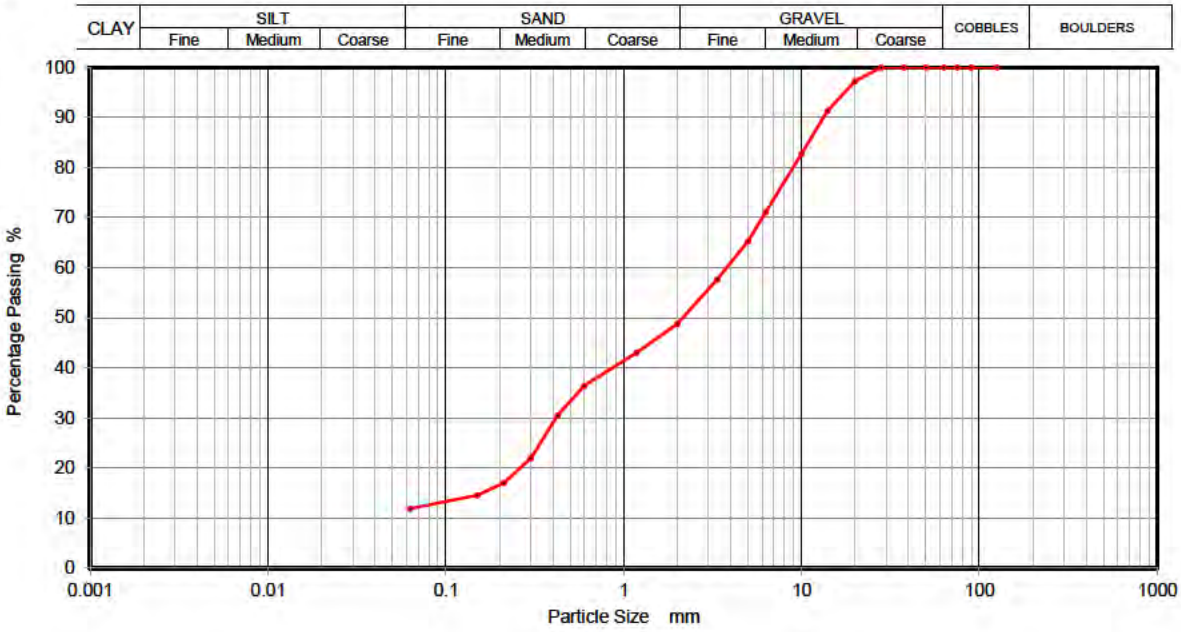
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	25/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)

Reg. 13(1)

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	BHTCA102
Site Name	Northstowe	Sample No.	3
Soil Description	Brown clayey/silty fine to coarse sandy fine to coarse GRAVEL	Depth Top	1.00
		Depth Base	1.20
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	97		
14	91		
10	83		
6 3	71		
5	65		
3.35	58		
2	49		
1.18	43		
0.6	36		
0.425	31		
0 3	22		
0.212	17		
0.15	15		
0.063	12		

Sample Proportions	% dry mass
Cobbles	0
Gravel	51
Sand	37
Silt and Clay	12

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	24/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1)

Reg. 13(1)

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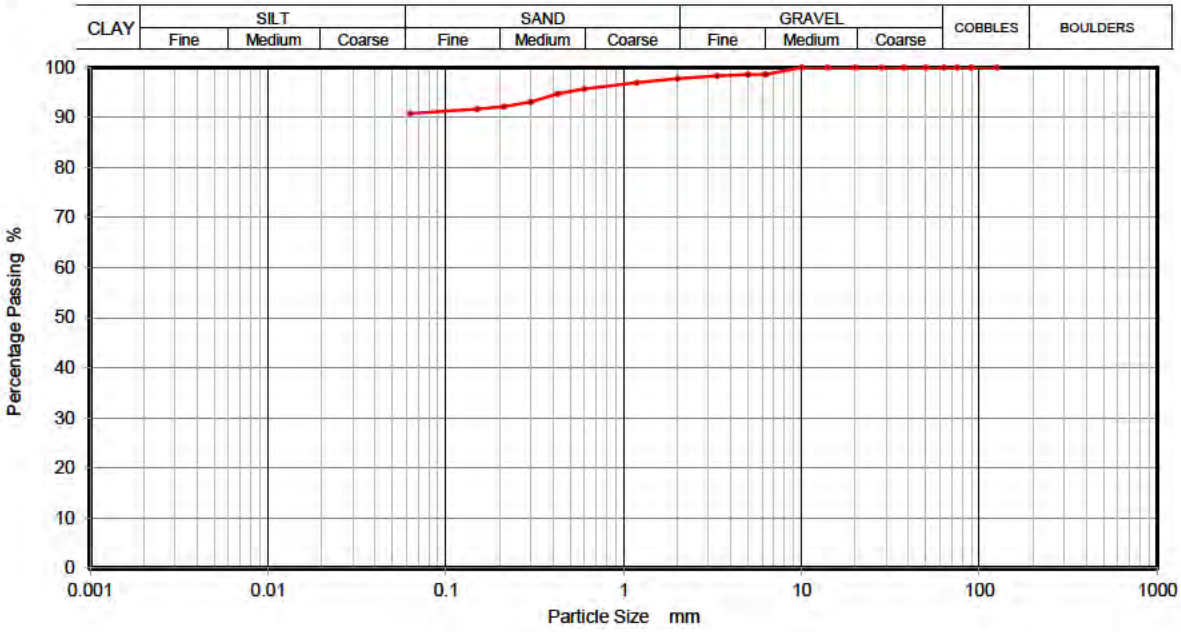
GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	BHTCA102
Site Name	Northstowe	Sample No.	6
Soil Description	Grey slightly fine to medium gravelly fine to coarse sandy SILT/CLAY	Depth Top	2.00
		Depth Base	2.50
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6 3	99		
5	99		
3.35	98		
2	98		
1.18	97		
0.6	96		
0.425	95		
0 3	93		
0.212	92		
0.15	92		
0.063	91		

Sample Proportions	% dry mass
Cobbles	0
Gravel	2
Sand	7
Silt and Clay	91

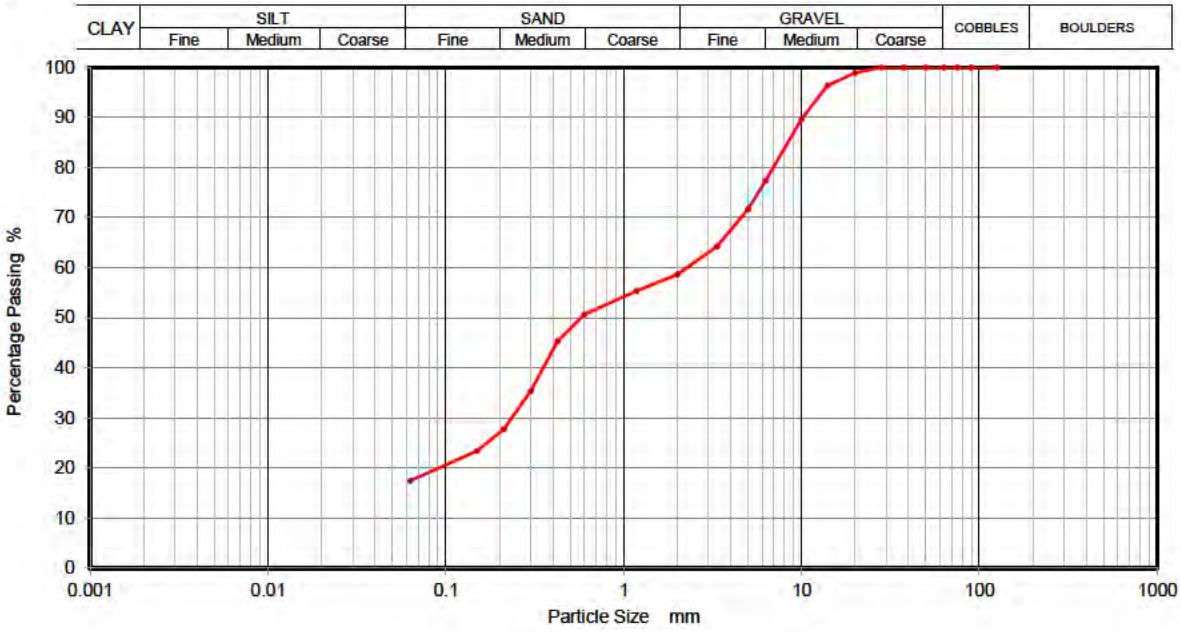
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	25/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)

Reg. 13(1)

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	BHTCA103A
Site Name	Northstowe	Sample No.	3
Soil Description	Brown clayey/silty fine to coarse gravelly fine to coarse SAND	Depth Top	1.80
		Depth Base	2.00
Date Tested	19/04/2022	Sample Type	D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	99		
14	96		
10	90		
6 3	77		
5	72		
3.35	64		
2	59		
1.18	55		
0.6	51		
0.425	45		
0 3	35		
0.212	28		
0.15	23		
0.063	17		

Sample Proportions	% dry mass
Cobbles	0
Gravel	41
Sand	42
Silt and Clay	17

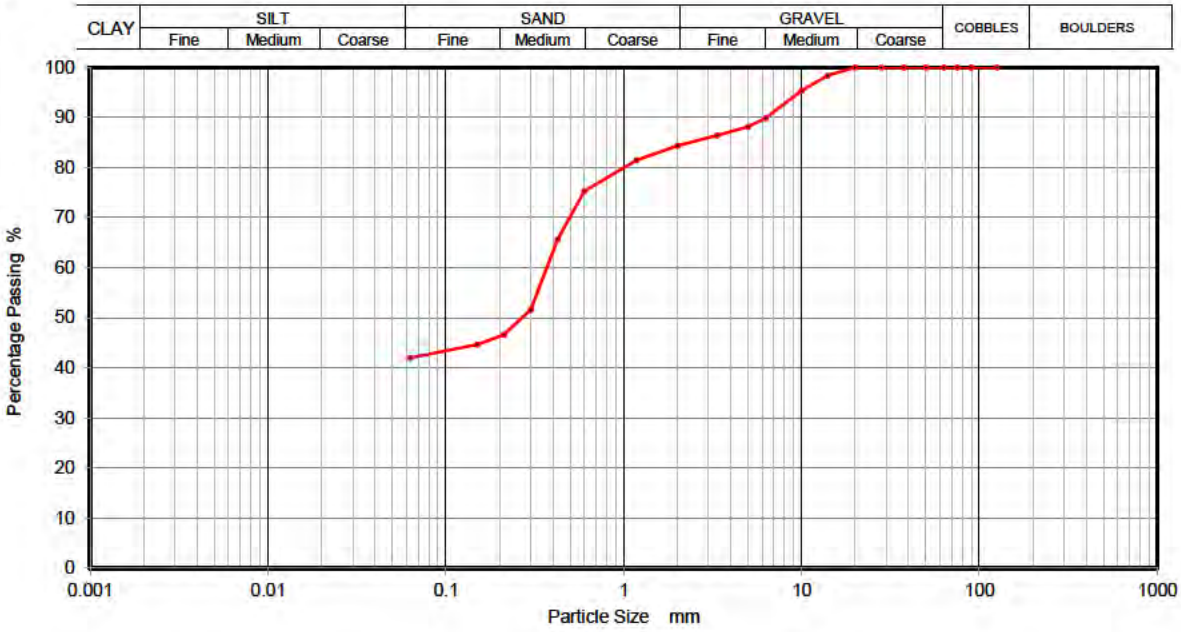
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	24/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1)

Reg. 13(1)

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	BHTCA104
Site Name	Northstowe	Sample No.	3
Soil Description	Grey fine to medium gravelly fine to coarse sandy SILT/CLAY	Depth Top	1.00
		Depth Base	1.20
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	98		
10	95		
6 3	90		
5	88		
3.35	86		
2	84		
1.18	81		
0.6	75		
0.425	66		
0 3	52		
0.212	47		
0.15	45		
0.063	42		

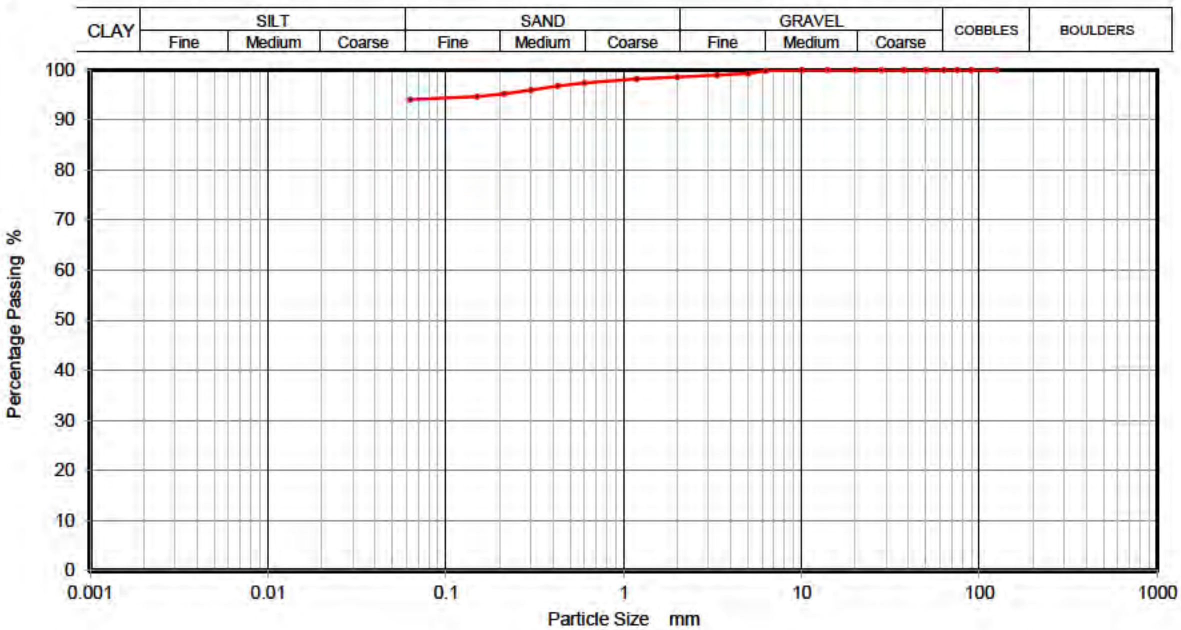
Sample Proportions	% dry mass
Cobbles	0
Gravel	16
Sand	42
Silt and Clay	42

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)	

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	BHTCA107
Site Name	Northstowe	Sample No.	4
Soil Description	Grey slightly fine to medium gravelly fine to coarse sandy SILT/CLAY	Depth Top	1.20
		Depth Base	1.70
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6 3	100		
5	99		
3.35	99		
2	99		
1.18	98		
0.6	97		
0.425	97		
0 3	96		
0.212	95		
0.15	95		
0.063	94		

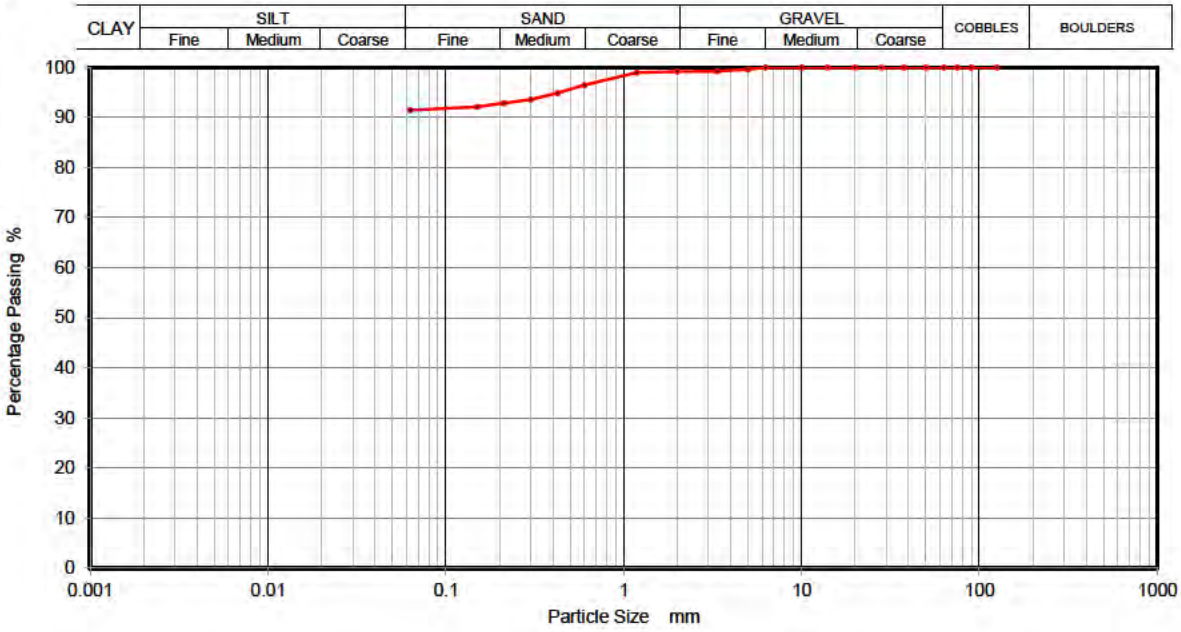
Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	5
Silt and Clay	94

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	24/04/2022	[redacted]	[redacted]
[redacted]	Approved	25/04/2022	[redacted]	

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	BHTCA110
Site Name	Northstowe	Sample No.	4
Soil Description	Brown slightly fine gravelly fine to coarse sandy silty CLAY	Depth Top	1.20
		Depth Base	1.70
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6 3	100		
5	100		
3.35	99		
2	99		
1.18	99		
0.6	96		
0.425	95		
0 3	94		
0.212	93		
0.15	92		
0.063	91		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	8
Silt and Clay	91

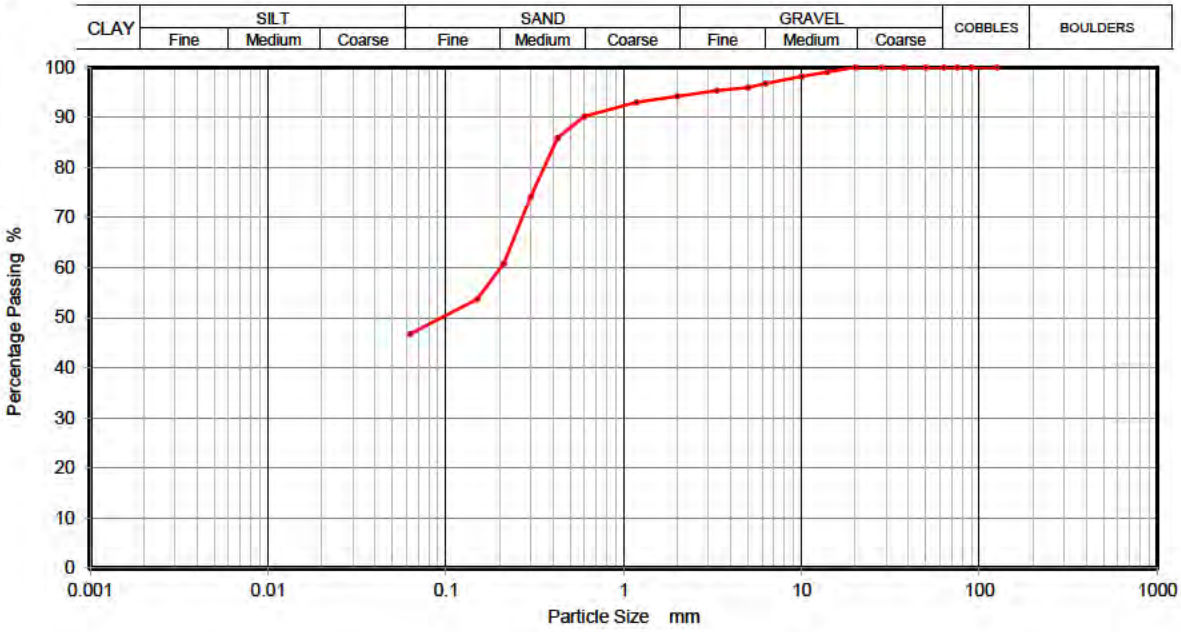
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	25/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)

Reg. 13(1)

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	TPTCA102
Site Name	Northstowe	Sample No.	4
Soil Description	Brown fine to medium gravelly fine to coarse sandy SILT/CLAY	Depth Top	1.00
		Depth Base	2.00
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	98		
6 3	97		
5	96		
3.35	95		
2	94		
1.18	93		
0.6	90		
0.425	86		
0 3	74		
0.212	61		
0.15	54		
0.063	47		

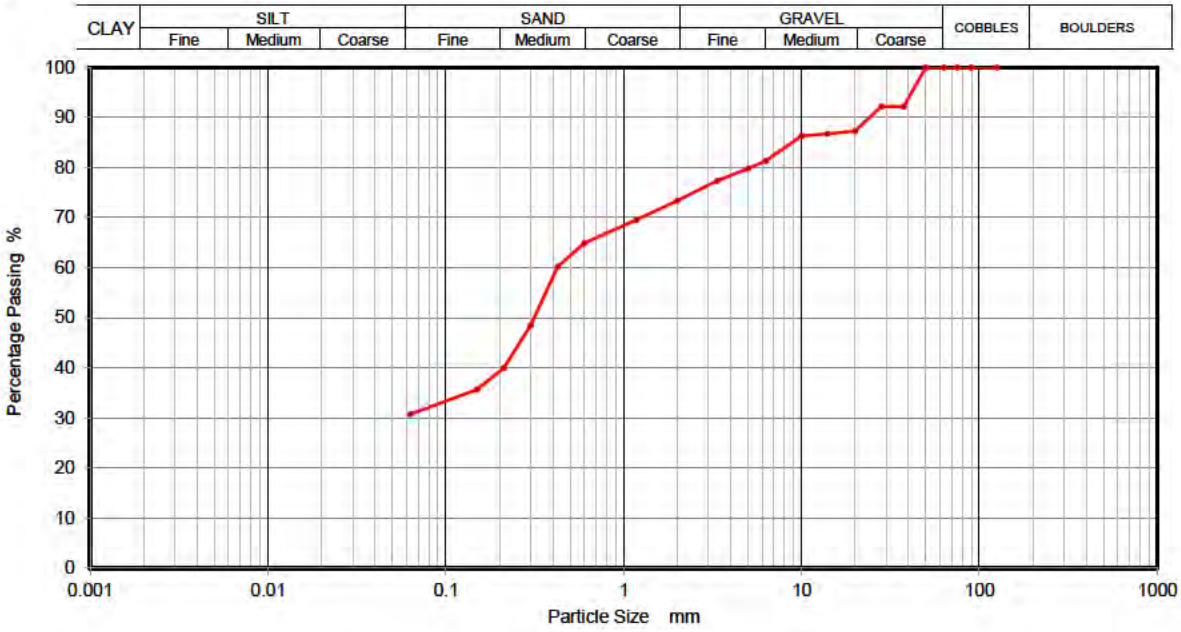
Sample Proportions	% dry mass
Cobbles	0
Gravel	6
Sand	47
Silt and Clay	47

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	24/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1)	

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	TPTCA103
Site Name	Northstowe	Sample No.	3
Soil Description	Grey fine to coarse gravelly silty/clayey fine to coarse SAND	Depth Top	0.50
		Depth Base	1.00
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	92		
28	92		
20	87		
14	87		
10	86		
6 3	81		
5	80		
3.35	77		
2	73		
1.18	70		
0.6	65		
0.425	60		
0 3	48		
0.212	40		
0.15	36		
0.063	31		

Sample Proportions	% dry mass
Cobbles	0
Gravel	27
Sand	42
Silt and Clay	31

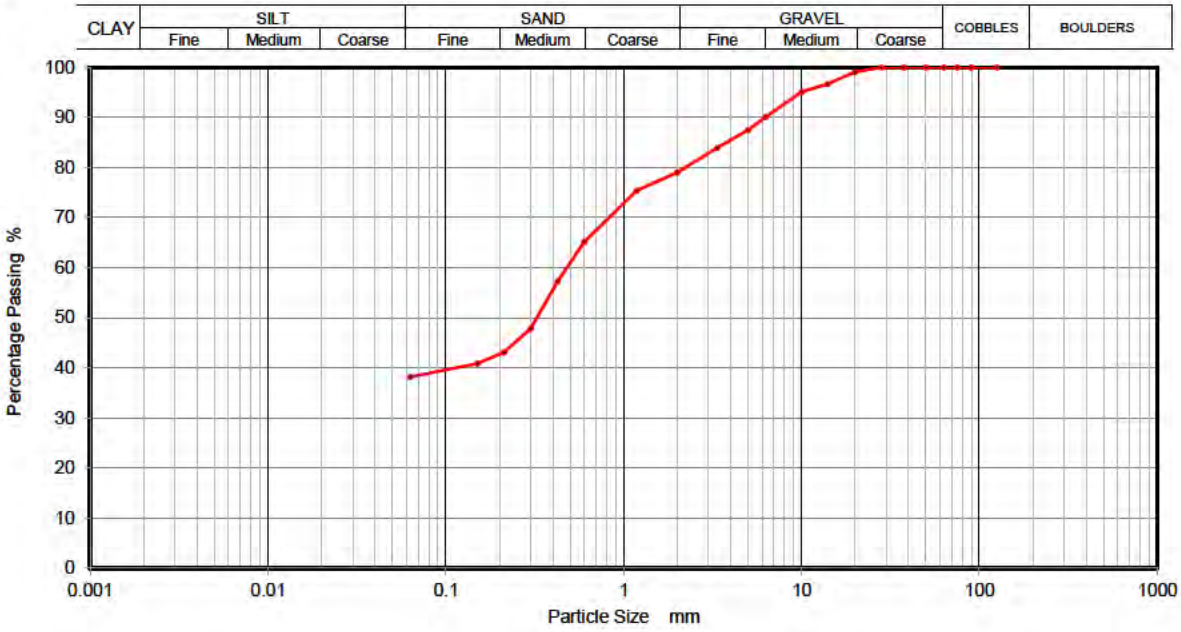
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	25/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)

Reg. 13(1)

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	TPTCA103
Site Name	Northstowe	Sample No.	2
Soil Description	Brown fine to coarse gravelly fine to coarse sandy SILT/CLAY	Depth Top	0.20
		Depth Base	0.50
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	99		
14	97		
10	95		
6 3	90		
5	88		
3.35	84		
2	79		
1.18	75		
0.6	65		
0.425	57		
0 3	48		
0.212	43		
0.15	41		
0.063	38		

Sample Proportions	% dry mass
Cobbles	0
Gravel	21
Sand	41
Silt and Clay	38

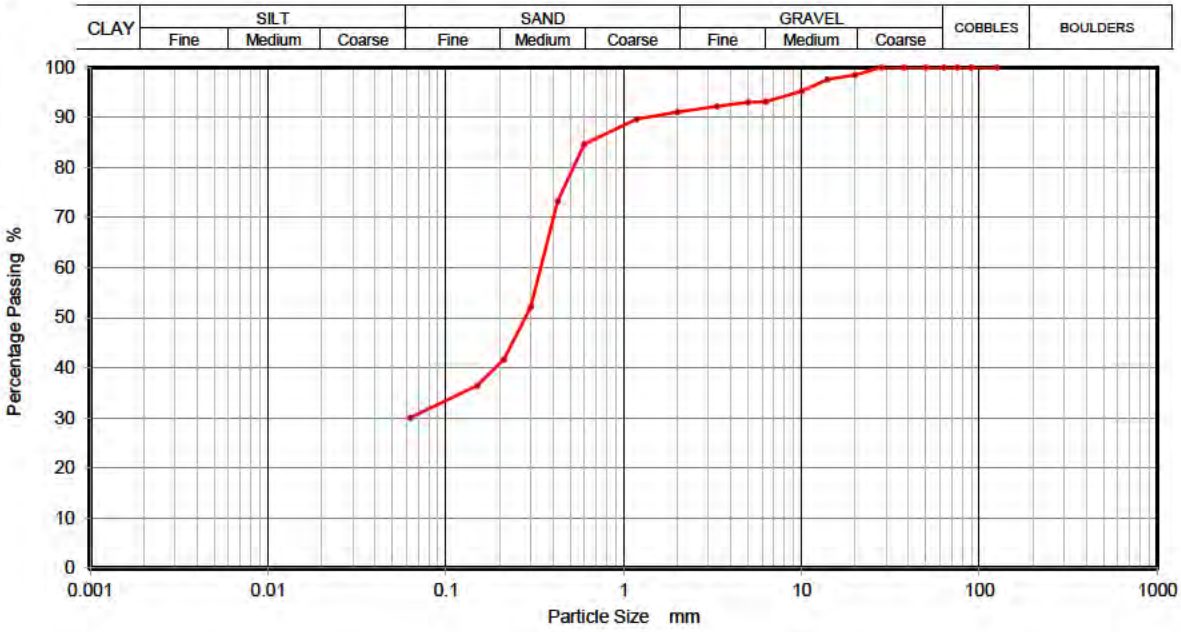
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	24/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1)

Reg. 13(1)

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	TPTCA103
Site Name	Northstowe	Sample No.	4
Soil Description	Brown fine to coarse gravelly silty/clayey fine to coarse SAND	Depth Top	1.00
		Depth Base	2.00
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	98		
14	98		
10	95		
6 3	93		
5	93		
3.35	92		
2	91		
1.18	90		
0.6	85		
0.425	73		
0 3	52		
0.212	42		
0.15	36		
0.063	30		

Sample Proportions	% dry mass
Cobbles	0
Gravel	9
Sand	61
Silt and Clay	30

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	24/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1)

Reg. 13(1)

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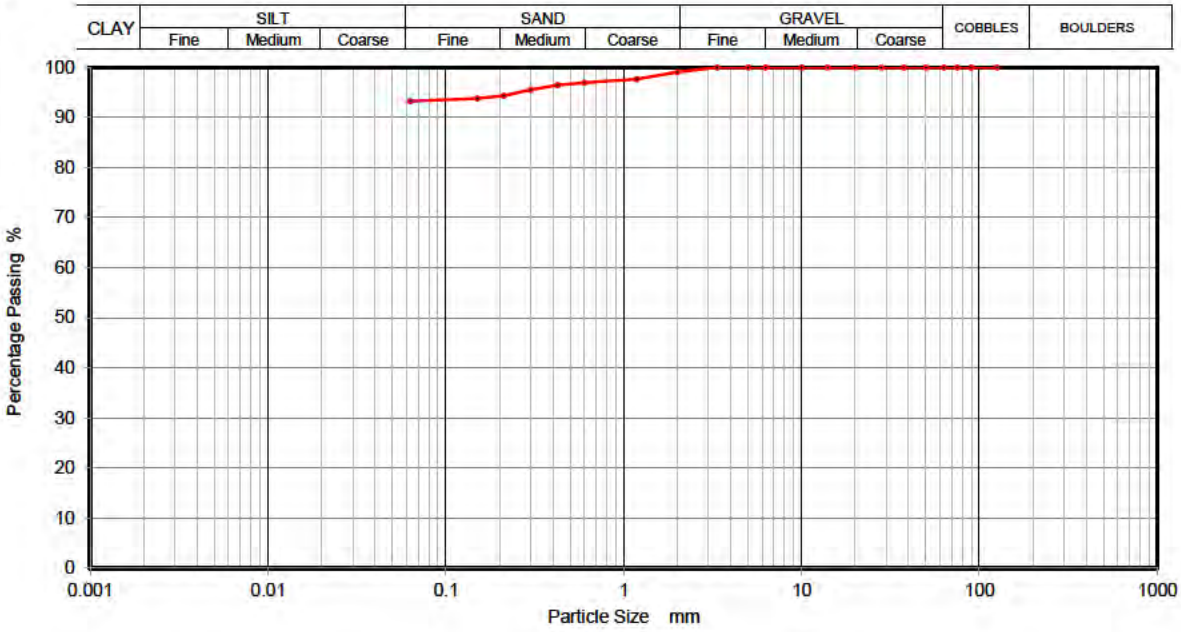
GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	TPTCA105
Site Name	Northstowe	Sample No.	4
Soil Description	Brown sligh ly fine gravelly fine to coarse sandy SILT/CLAY	Depth Top	1.00
		Depth Base	2.00
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6 3	100		
5	100		
3.35	100		
2	99		
1.18	98		
0.6	97		
0.425	96		
0 3	96		
0.212	94		
0.15	94		
0.063	93		

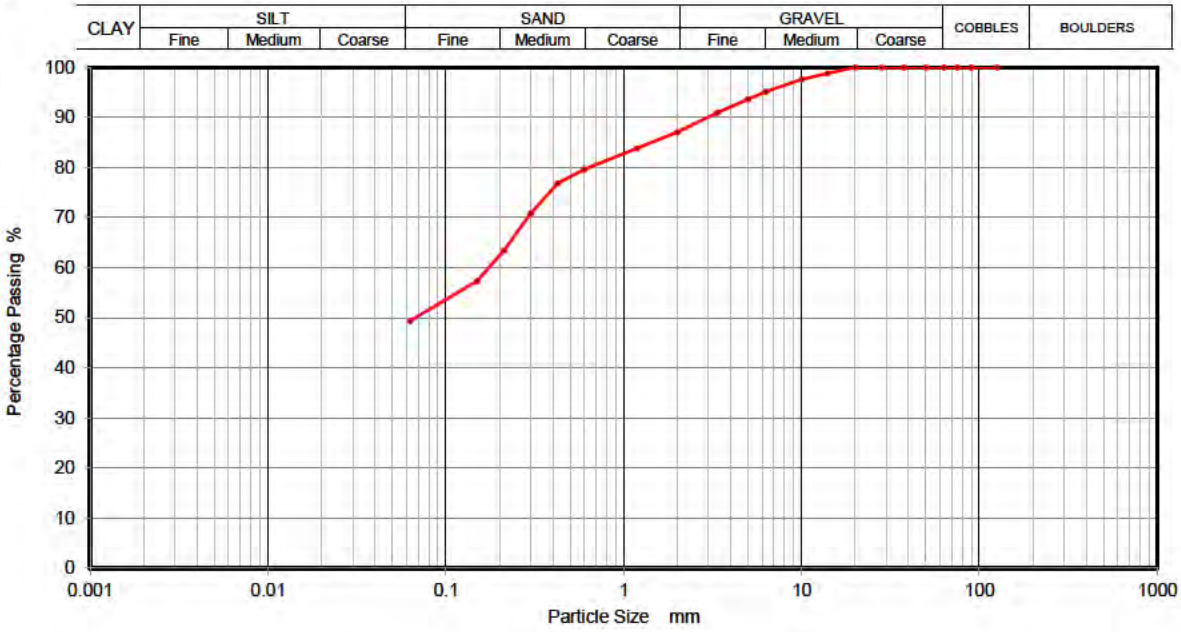
Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	6
Silt and Clay	93

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)	

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	TPTCA110
Site Name	Northstowe	Sample No.	2
Soil Description	Brown fine to medium gravelly fine to coarse sandy SILT/CLAY	Depth Top	0.20
		Depth Base	0.90
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	98		
6 3	95		
5	94		
3.35	91		
2	87		
1.18	84		
0.6	80		
0.425	77		
0 3	71		
0.212	63		
0.15	57		
0.063	49		

Sample Proportions	% dry mass
Cobbles	0
Gravel	13
Sand	38
Silt and Clay	49

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	24/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1)

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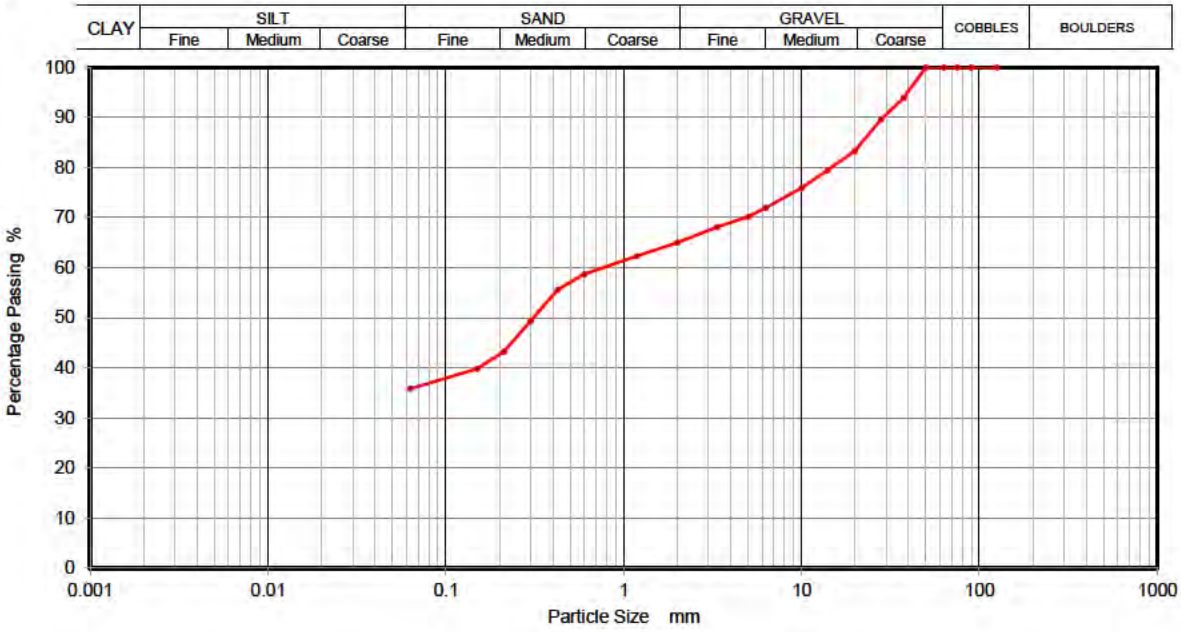
GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	TPTCA113
Site Name	Northstowe	Sample No.	3
Soil Description	Brown fine to coarse sandy fine to coarse gravelly SILT/CLAY	Depth Top	0.50
		Depth Base	1.00
Date Tested	19/04/2022	Sample Type	D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	94		
28	90		
20	83		
14	79		
10	76		
6 3	72		
5	70		
3.35	68		
2	65		
1.18	62		
0.6	59		
0.425	56		
0 3	49		
0.212	43		
0.15	40		
0.063	36		

Sample Proportions	% dry mass
Cobbles	0
Gravel	35
Sand	29
Silt and Clay	36

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	24/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1)

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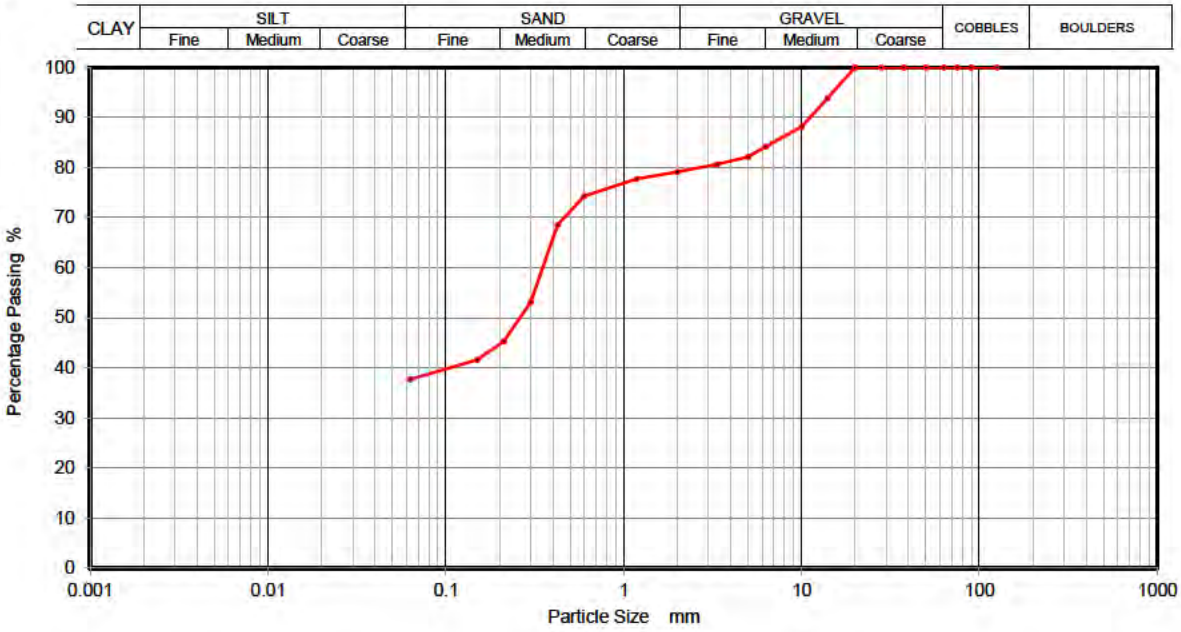
GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	TPTCA114
Site Name	Northstowe	Sample No.	4
Soil Description	Brown fine to medium gravelly fine to coarse sandy SILT/CLAY	Depth Top	1.00
		Depth Base	2.00
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	94		
10	88		
6 3	84		
5	82		
3.35	81		
2	79		
1.18	78		
0.6	74		
0.425	69		
0 3	53		
0.212	45		
0.15	42		
0.063	38		

Sample Proportions	% dry mass
Cobbles	0
Gravel	21
Sand	41
Silt and Clay	38

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	24/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1)

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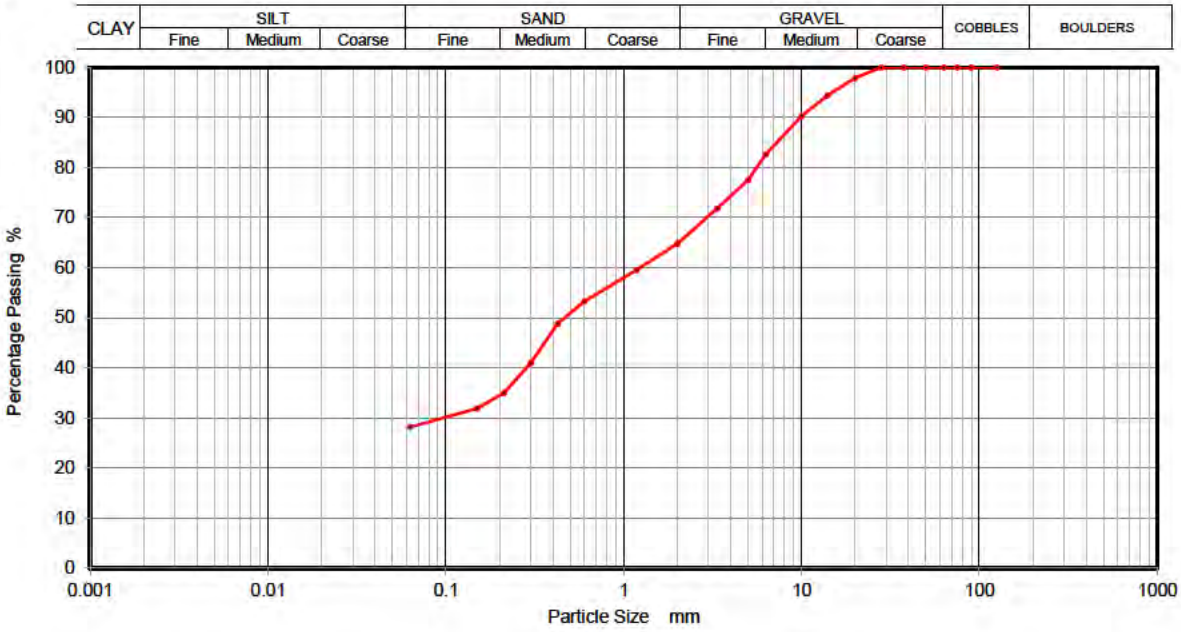
GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	TPTCA119
Site Name	Northstowe	Sample No.	2
Soil Description	Grey silty/clayey fine to coarse gravelly fine to coarse SAND	Depth Top	0.20
		Depth Base	0.50
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	98		
14	94		
10	90		
6 3	83		
5	77		
3.35	72		
2	65		
1.18	60		
0.6	53		
0.425	49		
0 3	41		
0.212	35		
0.15	32		
0.063	28		

Sample Proportions	% dry mass
Cobbles	0
Gravel	35
Sand	37
Silt and Clay	28

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	24/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1)

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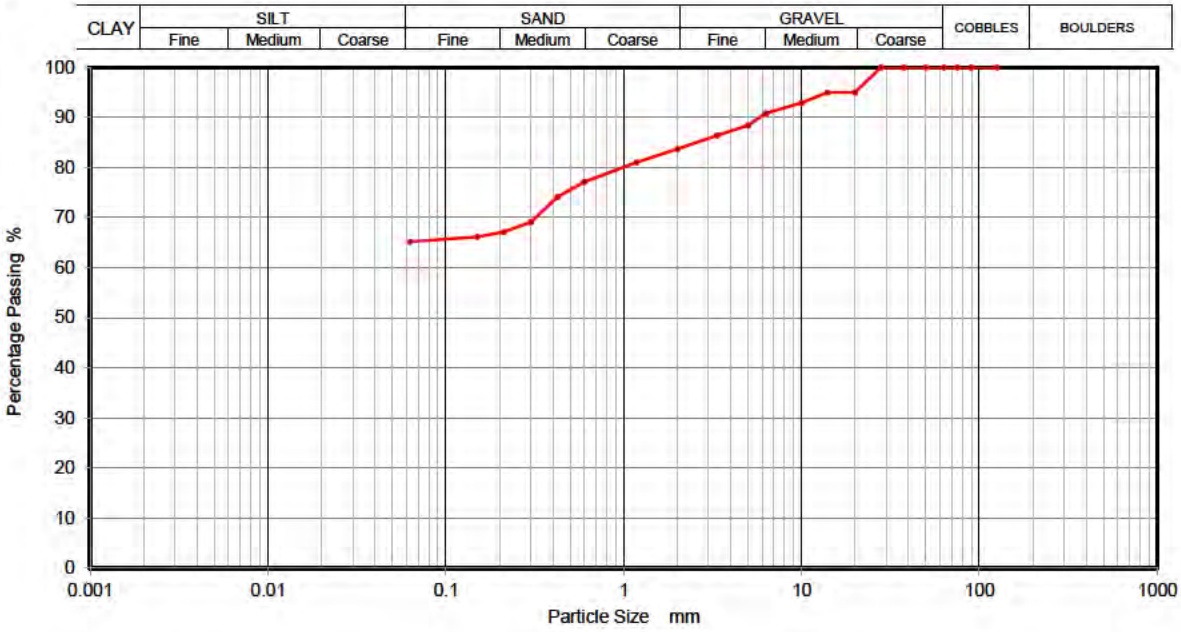
GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	TPTCA201
Site Name	Northstowe	Sample No.	4
Soil Description	Grey fine to coarse gravelly fine to coarse sandy SILT/CLAY	Depth Top	0.90
		Depth Base	1.20
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	95		
14	95		
10	93		
6 3	91		
5	88		
3.35	86		
2	84		
1.18	81		
0.6	77		
0.425	74		
0 3	69		
0.212	67		
0.15	66		
0.063	65		

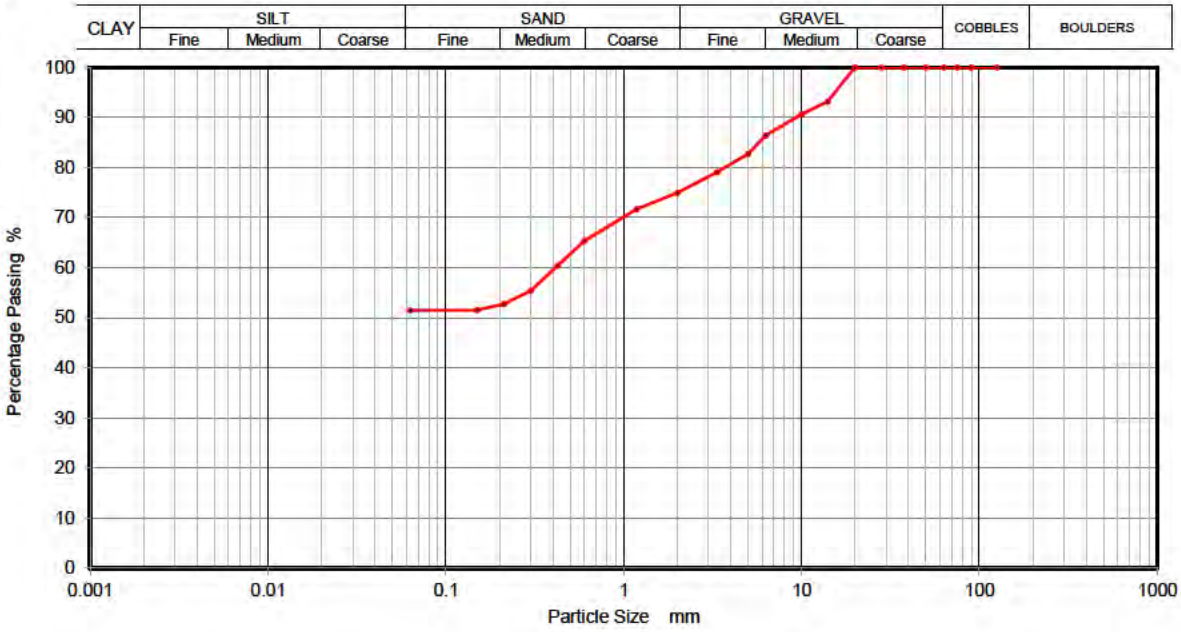
Sample Proportions	% dry mass
Cobbles	0
Gravel	16
Sand	19
Silt and Clay	65

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	24/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(1)	Approved	25/04/2022	Reg. 13(1)	

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	TPTCA204
Site Name	Northstowe	Sample No.	4
Soil Description	Grey fine to coarse sandy fine to medium gravelly SILT/CLAY	Depth Top	1.00
		Depth Base	2.00
Date Tested	19/04/2022	Sample Type	D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	93		
10	91		
6 3	86		
5	83		
3.35	79		
2	75		
1.18	72		
0.6	65		
0.425	60		
0 3	55		
0.212	53		
0.15	52		
0.063	52		

Sample Proportions	% dry mass
Cobbles	0
Gravel	25
Sand	23
Silt and Clay	52

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	25/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)

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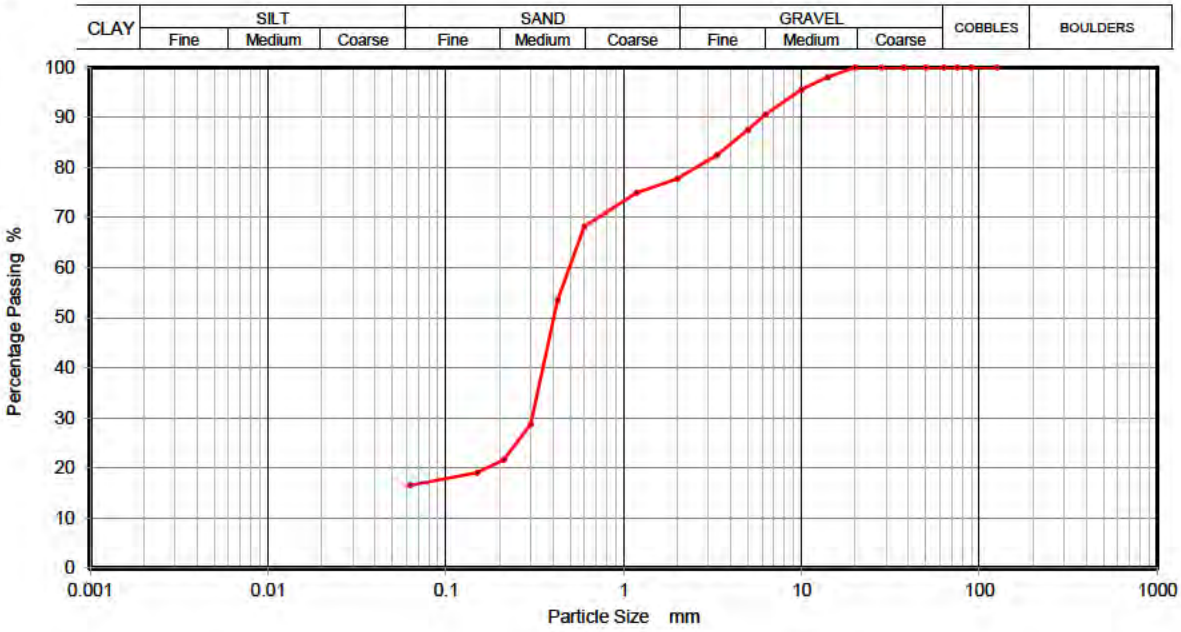
GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	WSTCA101
Site Name	Northstowe	Sample No.	1
Soil Description	Brown clayey/silty fine to medium gravelly fine to coarse SAND	Depth Top	1.10
		Depth Base	1.45
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	98		
10	96		
6 3	91		
5	88		
3.35	83		
2	78		
1.18	75		
0.6	68		
0.425	54		
0 3	29		
0.212	22		
0.15	19		
0.063	17		

Sample Proportions	% dry mass
Cobbles	0
Gravel	22
Sand	61
Silt and Clay	17

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	24/04/2022	Reg. 13(1)	Reg. 13(1)
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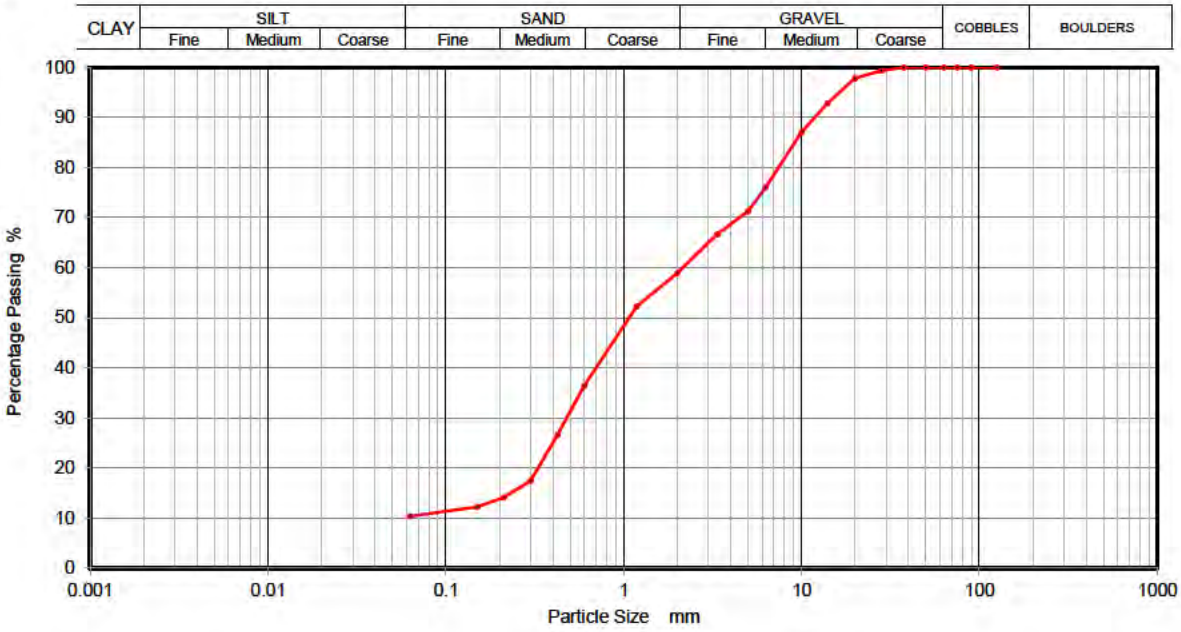
GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	WSTCA106
Site Name	Northstowe	Sample No.	1
Soil Description	Brown clayey/silty fine to coarse gravelly fine to coarse SAND	Depth Top	1.20
		Depth Base	1.80
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	99		
20	98		
14	93		
10	87		
6 3	76		
5	71		
3.35	67		
2	59		
1.18	52		
0.6	36		
0.425	27		
0 3	18		
0.212	14		
0.15	12		
0.063	10		

Sample Proportions	% dry mass
Cobbles	0
Gravel	41
Sand	49
Silt and Clay	10

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	24/04/2022	Reg. 13(1)	Reg. 13(1)
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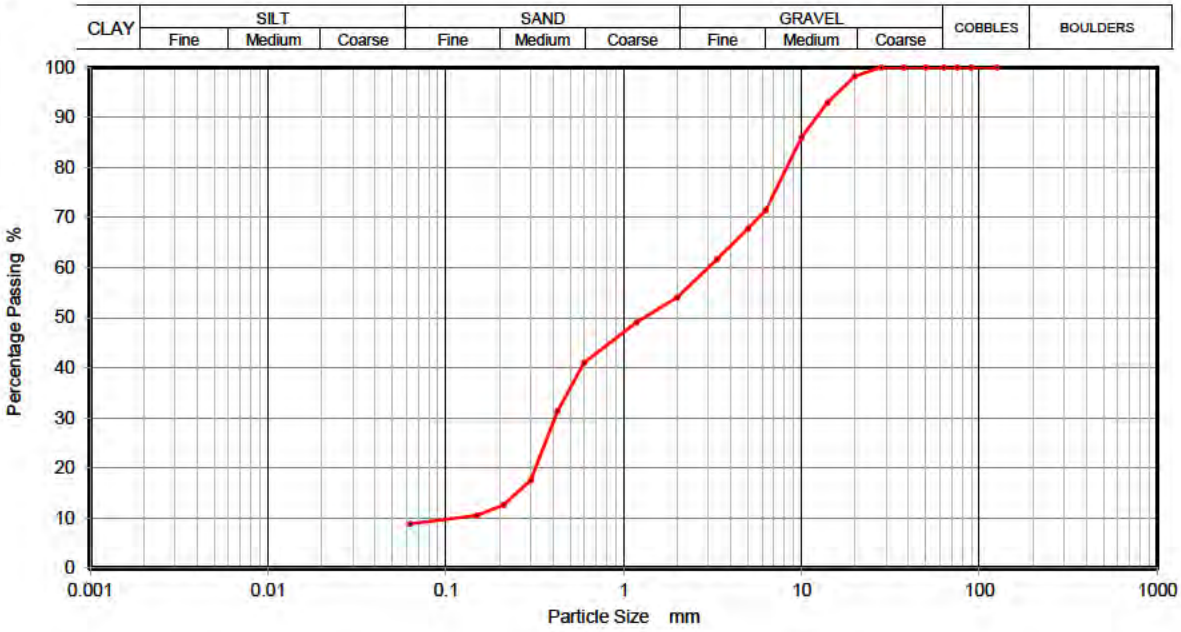
GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	58610
		Borehole/Pit No.	WSTCA109
Site Name	Northstowe	Sample No.	1
Soil Description	Brown clayey/silty fine to coarse sandy fine to coarse GRAVEL	Depth Top	0.70
		Depth Base	1.45
Date Tested	19/04/2022	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	98		
14	93		
10	86		
6 3	71		
5	68		
3.35	62		
2	54		
1.18	49		
0.6	41		
0.425	31		
0 3	18		
0.212	13		
0.15	11		
0.063	9		

Sample Proportions	% dry mass
Cobbles	0
Gravel	46
Sand	45
Silt and Clay	9

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	24/04/2022	Reg. 13(1)
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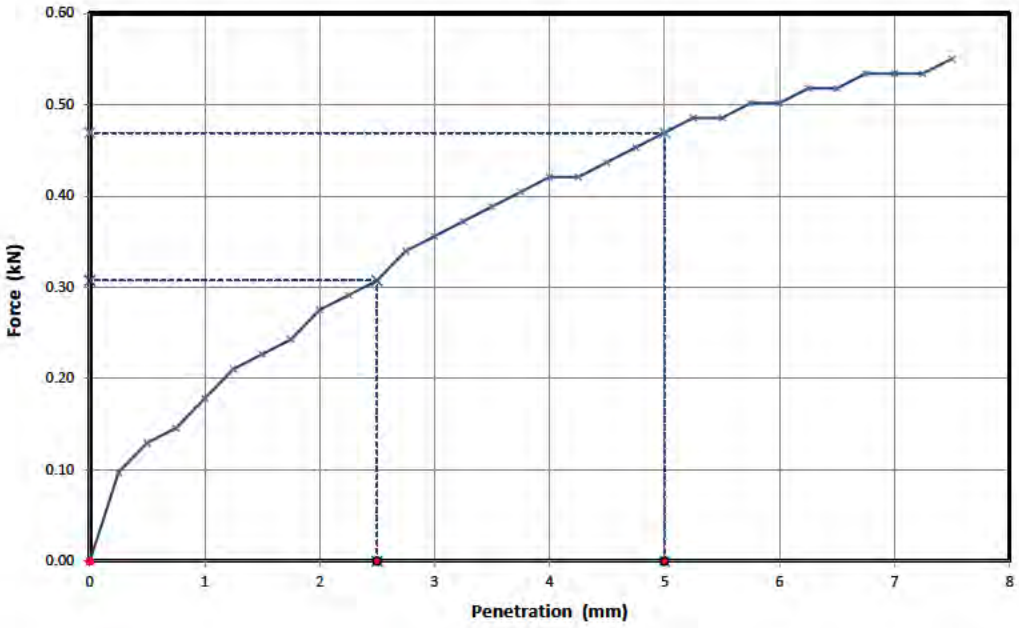
GSTL	California Bearing Ratio BS 1377: Part 4: 1990 Clause 7	Contract Number	58610
		Borehole/Pit No.	TPTCA107
Site Name	Northstowe	Sample No.	2
Soil Description	Brown fine to coarse gravelly sandy silty CLAY	Depth Top	0 20
Compaction Method	2.5 Kg Rammer	Depth Base	0 50
Retained 20mm (%)	4	Sample Type	B
Date Tested	14/04/2022		



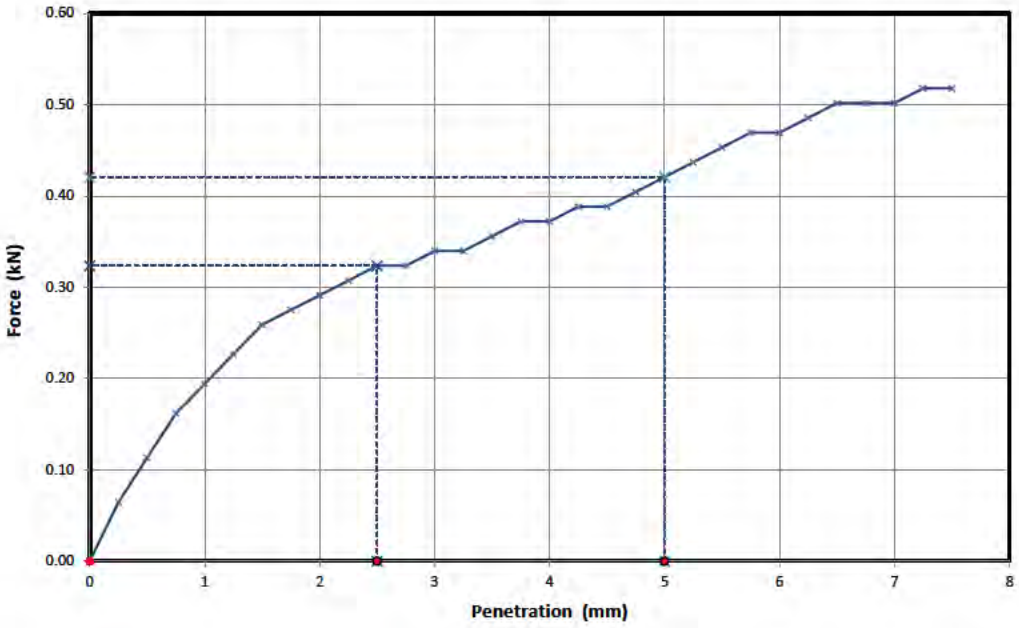
Initial Sample Conditions	
Moisture Content (%)	15
Moisture Top (%)	15
Moisture Bottom (%)	
Bulk Density (Mg/m3)	2.09
Dry Density (Mg/m3)	1.82

Specified Testing Parameters	
Surcharge (Kg)	2
Soaking Time (hours)	N/A
Swelling (mm)	N/A
Remarks	

CBR Test Values			
2.5mm Top	2 3	2 5mm Bottom	
5mm Top	2 3	5mm Bottom	
CBR Value %	2.3	CBR Value %	

Operators	Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)	

GSTL	California Bearing Ratio BS 1377: Part 4: 1990 Clause 7	Contract Number	58610
		Borehole/Pit No.	TPTCA107
Site Name	Northstowe	Sample No.	3
Soil Description	Brown fine to coarse gravelly sandy silty CLAY	Depth Top	0 50
Compaction Method	2.5 Kg Rammer	Depth Base	1 00
Retained 20mm (%)	3	Sample Type	B
Date Tested	14/04/2022		



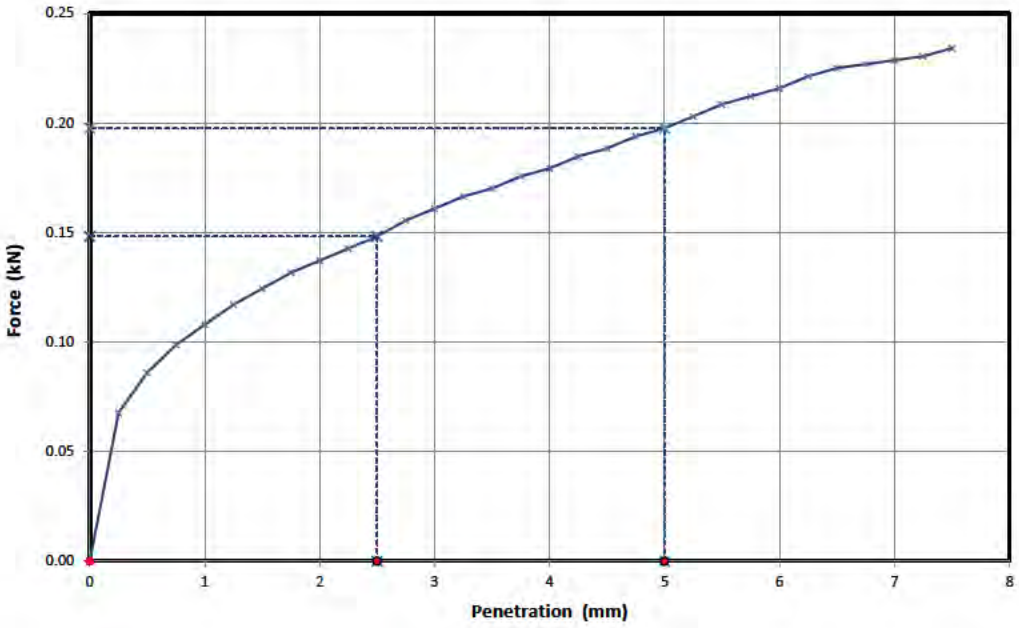
Initial Sample Conditions	
Moisture Content (%)	14
Moisture Top (%)	14
Moisture Bottom (%)	
Bulk Density (Mg/m3)	2.05
Dry Density (Mg/m3)	1.80

Specified Testing Parameters	
Surcharge (Kg)	2
Soaking Time (hours)	N/A
Swelling (mm)	N/A
Remarks	

CBR Test Values			
2.5mm Top	2 5	2 5mm Bottom	
5mm Top	2.1	5mm Bottom	
CBR Value %	2.5	CBR Value %	

Operators	Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(	Approved	26/04/2022	Reg. 13(1)	

GSTL	California Bearing Ratio BS 1377: Part 4: 1990 Clause 7	Contract Number	58610
		Borehole/Pit No.	TPTCA110
Site Name	Northstowe	Sample No.	1
Soil Description	Brown sandy fine to coarse gravelly silty CLAY	Depth Top	0 00
Compaction Method	2.5 Kg Rammer	Depth Base	0 20
Retained 20mm (%)	2	Sample Type	B
Date Tested	14/04/2022		



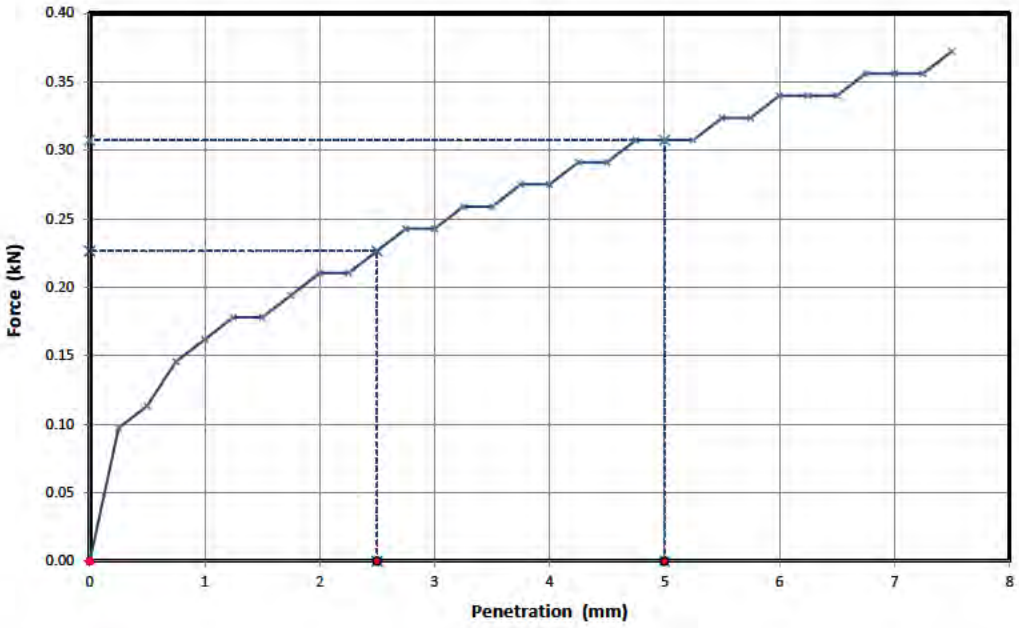
Initial Sample Conditions	
Moisture Content (%)	24
Moisture Top (%)	24
Moisture Bottom (%)	
Bulk Density (Mg/m3)	2.02
Dry Density (Mg/m3)	1.62

Specified Testing Parameters	
Surcharge (Kg)	2
Soaking Time (hours)	N/A
Swelling (mm)	N/A
Remarks	

CBR Test Values			
2.5mm Top	1.1	2 5mm Bottom	
5mm Top	0.99	5mm Bottom	
CBR Value %	1.1	CBR Value %	

Operators	Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(	Approved	26/04/2022	Reg. 13(1)	

GSTL	California Bearing Ratio BS 1377: Part 4: 1990 Clause 7	Contract Number	58610
		Borehole/Pit No.	TPTCA110
Site Name	Northstowe	Sample No.	2
Soil Description	Brown fine to medium gravelly fine to coarse sandy S LT/CLAY	Depth Top	0 20
Compaction Method	2.5 Kg Rammer	Depth Base	0 90
Retained 20mm (%)	0	Sample Type	B
Date Tested	14/04/2022		



Initial Sample Conditions	
Moisture Content (%)	22
Moisture Top (%)	22
Moisture Bottom (%)	
Bulk Density (Mg/m3)	2.05
Dry Density (Mg/m3)	1.68

Specified Testing Parameters	
Surcharge (Kg)	2
Soaking Time (hours)	N/A
Swelling (mm)	N/A
Remarks	

CBR Test Values			
2.5mm Top	1.7	2 5mm Bottom	
5mm Top	1 5	5mm Bottom	
CBR Value %	1.7	CBR Value %	

Operators	Checked	25/04/2022	Reg. 13(1)
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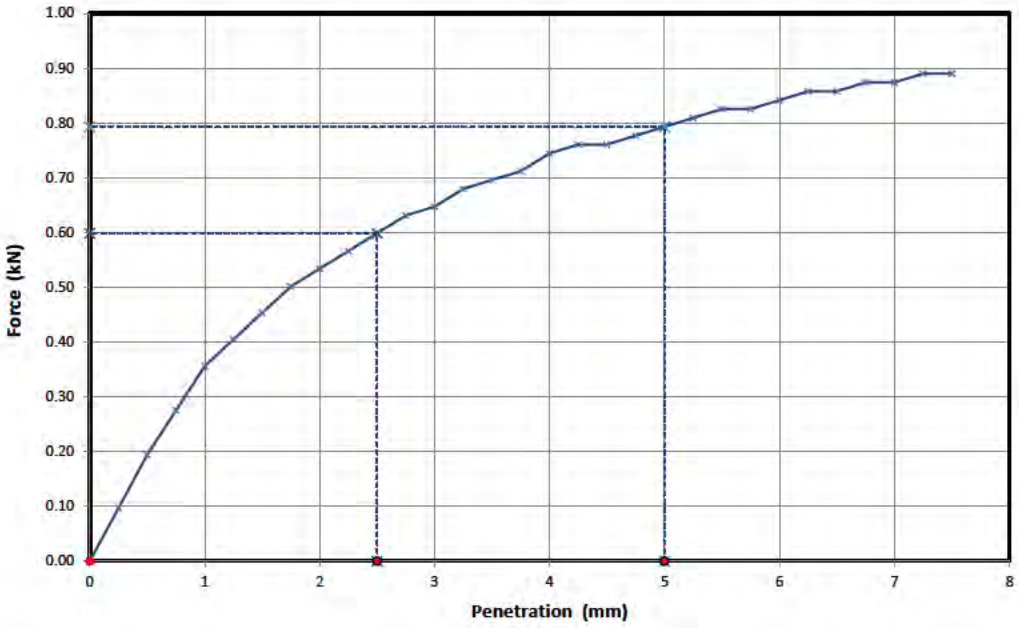
GSTL	California Bearing Ratio BS 1377: Part 4: 1990 Clause 7	Contract Number	58610
		Borehole/Pit No.	TPTCA111
Site Name	Northstowe	Sample No.	2
Soil Description	Brown silty sandy fine to coarse gravelly CLAY	Depth Top	0 20
Compaction Method	2.5 Kg Rammer	Depth Base	0 50
Retained 20mm (%)	1	Sample Type	B
Date Tested	14/04/2022		



Initial Sample Conditions	
Moisture Content (%)	21
Moisture Top (%)	21
Moisture Bottom (%)	
Bulk Density (Mg/m3)	2.06
Dry Density (Mg/m3)	1.71

Specified Testing Parameters	
Surcharge (Kg)	2
Soaking Time (hours)	N/A
Swelling (mm)	N/A
Remarks	

CBR Test Values			
2.5mm Top	4 5	2 5mm Bottom	
5mm Top	4	5mm Bottom	
CBR Value %	4.5	CBR Value %	

Operators	Checked	25/04/2022	Reg. 13(1)
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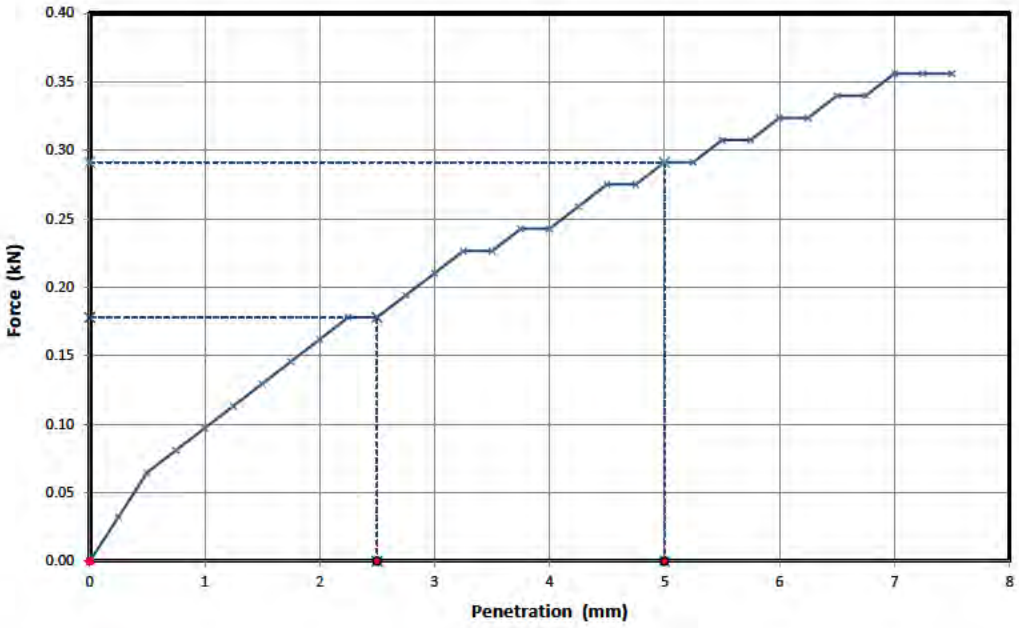
GSTL	California Bearing Ratio BS 1377: Part 4: 1990 Clause 7	Contract Number	58610
		Borehole/Pit No.	TPTCA113
Site Name	Northstowe	Sample No.	3
Soil Description	Brown sandy fine to coarse gravelly sitly CLAY	Depth Top	0 50
Compaction Method	2.5 Kg Rammer	Depth Base	1 00
Retained 20mm (%)	4	Sample Type	B
Date Tested	14/04/2022		



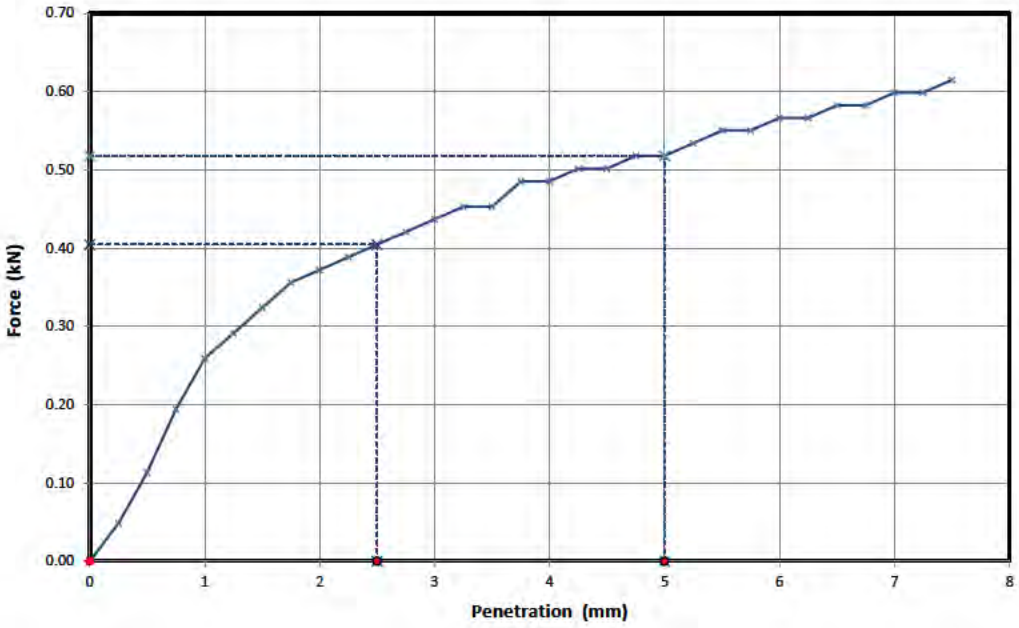
Initial Sample Conditions	
Moisture Content (%)	19
Moisture Top (%)	19
Moisture Bottom (%)	
Bulk Density (Mg/m3)	2.03
Dry Density (Mg/m3)	1.71

Specified Testing Parameters	
Surcharge (Kg)	2
Soaking Time (hours)	N/A
Swelling (mm)	N/A
Remarks	

CBR Test Values			
2.5mm Top	1 3	2 5mm Bottom	
5mm Top	1 5	5mm Bottom	
CBR Value %	1.5	CBR Value %	

Operators	Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(	Approved	26/04/2022	Reg. 13(1)	

GSTL	California Bearing Ratio BS 1377: Part 4: 1990 Clause 7	Contract Number	58610
		Borehole/Pit No.	TPTCA201
Site Name	Northstowe	Sample No.	2
Soil Description	Grey silty fine to coarse gravelly sandy CLAY	Depth Top	0 20
Compaction Method	2.5 Kg Rammer	Depth Base	0 50
Retained 20mm (%)	2	Sample Type	B
Date Tested	14/04/2022		



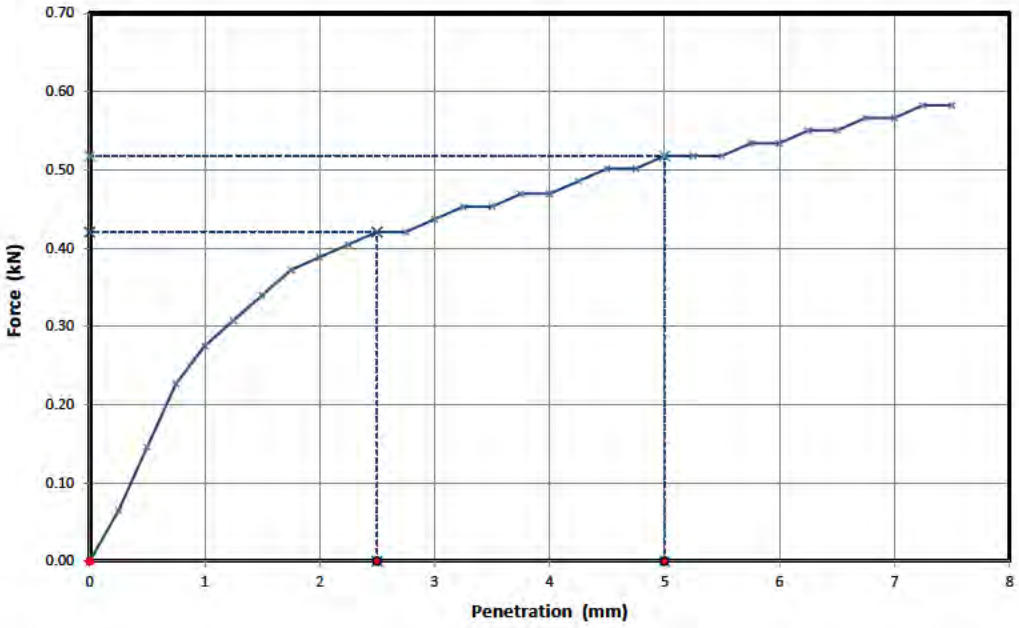
Initial Sample Conditions	
Moisture Content (%)	29
Moisture Top (%)	29
Moisture Bottom (%)	
Bulk Density (Mg/m3)	1.92
Dry Density (Mg/m3)	1.49

Specified Testing Parameters	
Surcharge (Kg)	2
Soaking Time (hours)	N/A
Swelling (mm)	N/A
Remarks	

CBR Test Values			
2.5mm Top	3.1	2 5mm Bottom	
5mm Top	2 6	5mm Bottom	
CBR Value %	3.1	CBR Value %	

Operators	Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(	Approved	26/04/2022	Reg. 13(1)	

GSTL	California Bearing Ratio BS 1377: Part 4: 1990 Clause 7	Contract Number	58610
		Borehole/Pit No.	TPTCA201
Site Name	Northstowe	Sample No.	3
Soil Description	Grey silty fine to coarse gravelly sandy CLAY	Depth Top	0 50
Compaction Method	2.5 Kg Rammer	Depth Base	0 90
Retained 20mm (%)	4	Sample Type	B
Date Tested	14/04/2022		



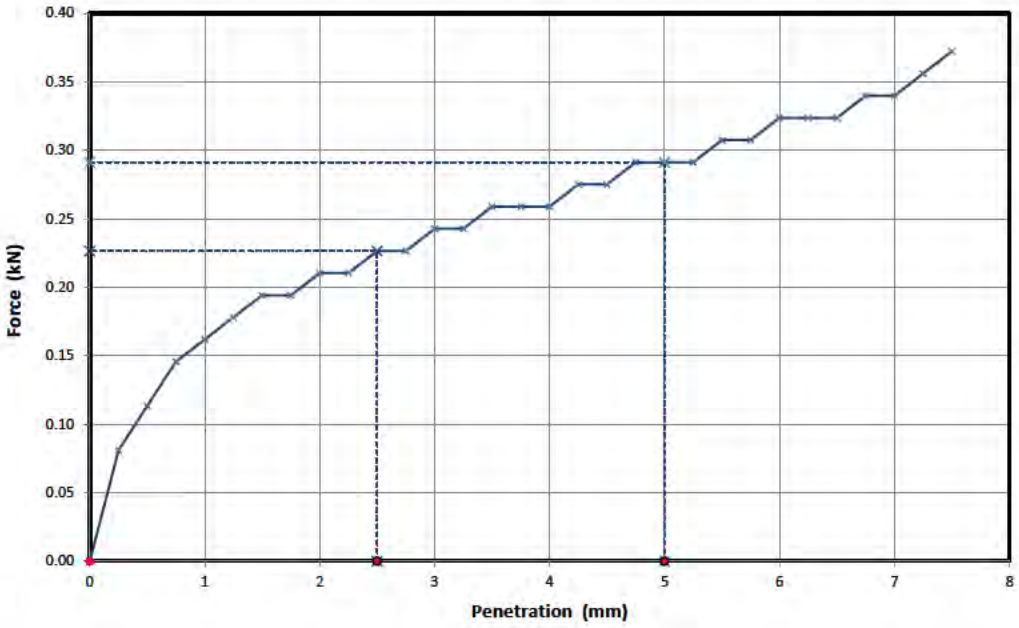
Initial Sample Conditions	
Moisture Content (%)	29
Moisture Top (%)	29
Moisture Bottom (%)	
Bulk Density (Mg/m3)	1.91
Dry Density (Mg/m3)	1.48

Specified Testing Parameters	
Surcharge (Kg)	2
Soaking Time (hours)	N/A
Swelling (mm)	N/A
Remarks	

CBR Test Values			
2.5mm Top	3 2	2 5mm Bottom	
5mm Top	2 6	5mm Bottom	
CBR Value %	3.2	CBR Value %	

Operators	Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(	Approved	26/04/2022	Reg. 13(1)	

GSTL	California Bearing Ratio BS 1377: Part 4: 1990 Clause 7	Contract Number	58610
		Borehole/Pit No.	TPTCA205
Site Name	Northstowe	Sample No.	2
Soil Description	Grey sandy fine to coarse gravelly silty CLAY	Depth Top	0 20
Compaction Method	2.5 Kg Rammer	Depth Base	0 50
Retained 20mm (%)	3	Sample Type	B
Date Tested	14/04/2022		



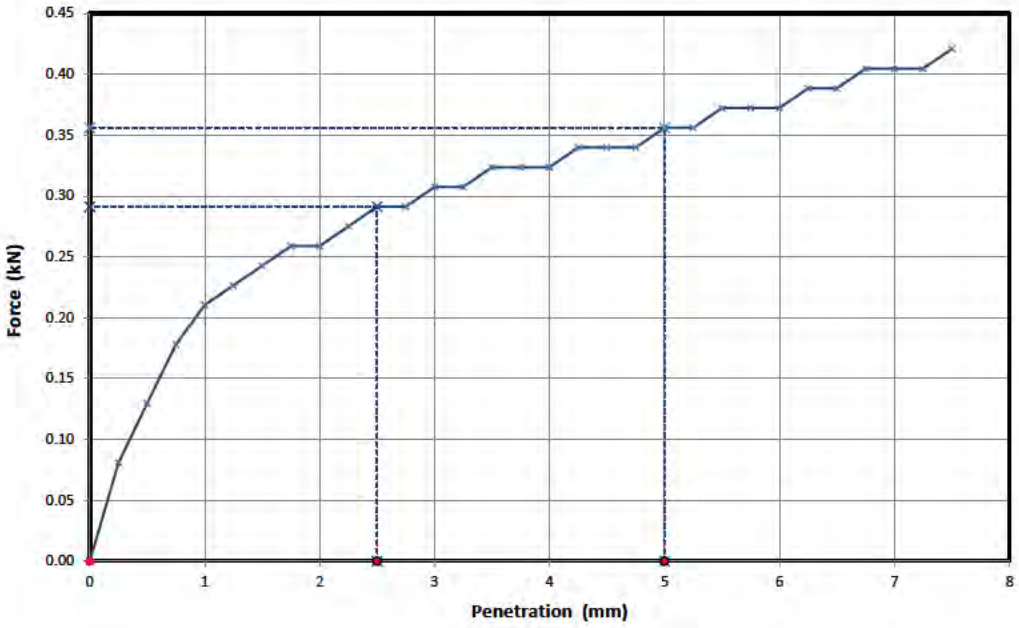
Initial Sample Conditions	
Moisture Content (%)	22
Moisture Top (%)	22
Moisture Bottom (%)	
Bulk Density (Mg/m3)	2.04
Dry Density (Mg/m3)	1.68

Specified Testing Parameters	
Surcharge (Kg)	2
Soaking Time (hours)	N/A
Swelling (mm)	N/A
Remarks	

CBR Test Values			
2.5mm Top	1.7	2 5mm Bottom	
5mm Top	1 5	5mm Bottom	
CBR Value %	1.7	CBR Value %	

Operators	Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(	Approved	26/04/2022	Reg. 13(1)	

GSTL	California Bearing Ratio BS 1377: Part 4: 1990 Clause 7	Contract Number	58610
		Borehole/Pit No.	TPTCA205
Site Name	Northstowe	Sample No.	3
Soil Description	Grey sandy fine to coarse gravelly silty CLAY	Depth Top	0 50
Compaction Method	2.5 Kg Rammer	Depth Base	1 00
Retained 20mm (%)	2	Sample Type	B
Date Tested	14/04/2022		



Initial Sample Conditions	
Moisture Content (%)	25
Moisture Top (%)	25
Moisture Bottom (%)	
Bulk Density (Mg/m3)	2.03
Dry Density (Mg/m3)	1.63

Specified Testing Parameters	
Surcharge (Kg)	2
Soaking Time (hours)	N/A
Swelling (mm)	N/A
Remarks	

CBR Test Values			
2.5mm Top	2 2	2 5mm Bottom	
5mm Top	1 8	5mm Bottom	
CBR Value %	2.2	CBR Value %	

Operators	Checked	25/04/2022	Reg. 13(1)	
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)	

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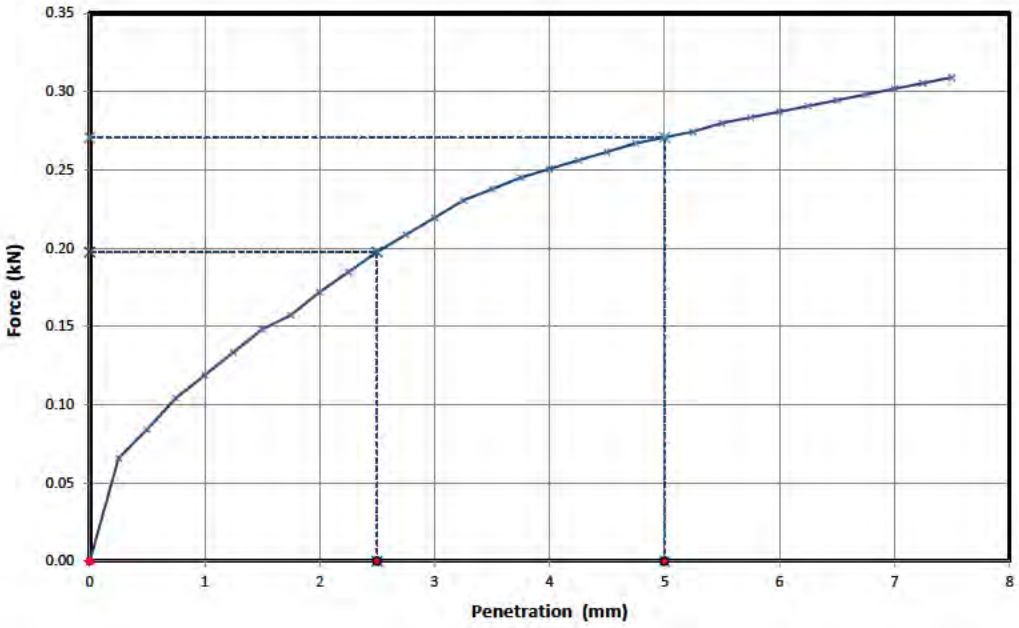
GSTL	California Bearing Ratio BS 1377: Part 4: 1990 Clause 7	Contract Number	58610
		Borehole/Pit No.	TPTCA206
Site Name	Northstowe	Sample No.	1
Soil Description	Grey fine gravelly silty CLAY	Depth Top	0 00
Compaction Method	2.5 Kg Rammer	Depth Base	0 20
Retained 20mm (%)	0	Sample Type	B
Date Tested	14/04/2022		



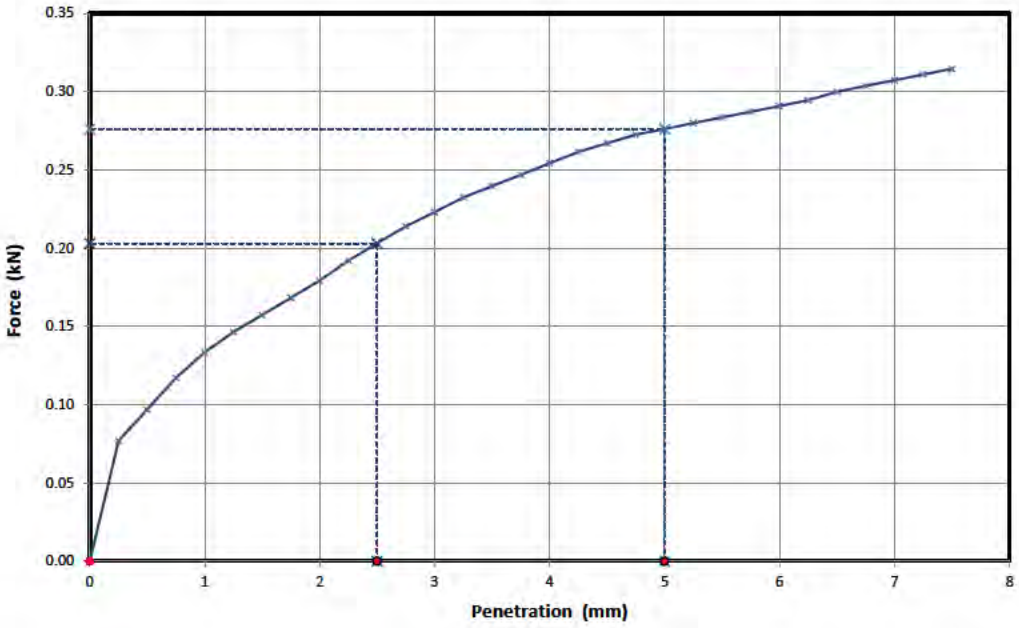
Initial Sample Conditions	
Moisture Content (%)	33
Moisture Top (%)	33
Moisture Bottom (%)	
Bulk Density (Mg/m3)	1.92
Dry Density (Mg/m3)	1.45

Specified Testing Parameters	
Surcharge (Kg)	2
Soaking Time (hours)	N/A
Swelling (mm)	N/A
Remarks	

CBR Test Values			
2.5mm Top	1 5	2 5mm Bottom	
5mm Top	1.4	5mm Bottom	
CBR Value %	1.5	CBR Value %	

Operators	Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(	Approved	26/04/2022	Reg. 13(1)	

GSTL	California Bearing Ratio BS 1377: Part 4: 1990 Clause 7	Contract Number	58610
		Borehole/Pit No.	TPTCA206
Site Name	Northstowe	Sample No.	2
Soil Description	Grey fine gravelly silty CLAY	Depth Top	0 20
Compaction Method	2.5 Kg Rammer	Depth Base	0 50
Retained 20mm (%)	0	Sample Type	B
Date Tested	14/04/2022		



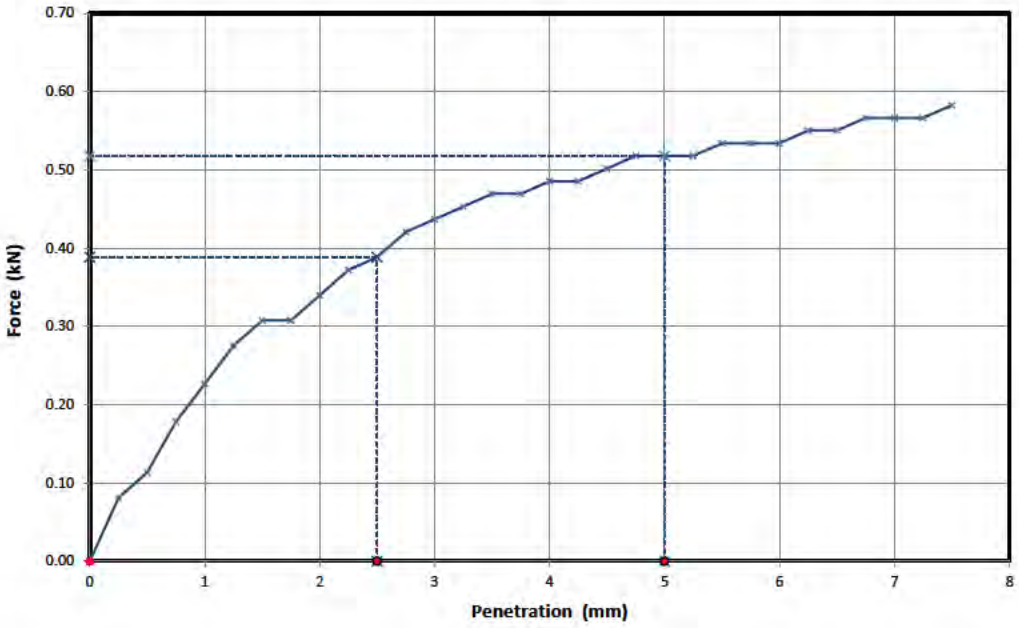
Initial Sample Conditions	
Moisture Content (%)	33
Moisture Top (%)	33
Moisture Bottom (%)	
Bulk Density (Mg/m3)	1.91
Dry Density (Mg/m3)	1.43

Specified Testing Parameters	
Surcharge (Kg)	2
Soaking Time (hours)	N/A
Swelling (mm)	N/A
Remarks	

CBR Test Values			
2.5mm Top	1 5	2 5mm Bottom	
5mm Top	1.4	5mm Bottom	
CBR Value %	1.5	CBR Value %	

Operators	Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(	Approved	26/04/2022	Reg. 13(1)	

GSTL	California Bearing Ratio BS 1377: Part 4: 1990 Clause 7	Contract Number	58610
		Borehole/Pit No.	WSTCA108
Site Name	Northstowe	Sample No.	1
Soil Description	Brown fine to coarse gravelly silty sandy CLAY	Depth Top	0 80
Compaction Method	2.5 Kg Rammer	Depth Base	1 20
Retained 20mm (%)	3	Sample Type	B
Date Tested	14/04/2022		



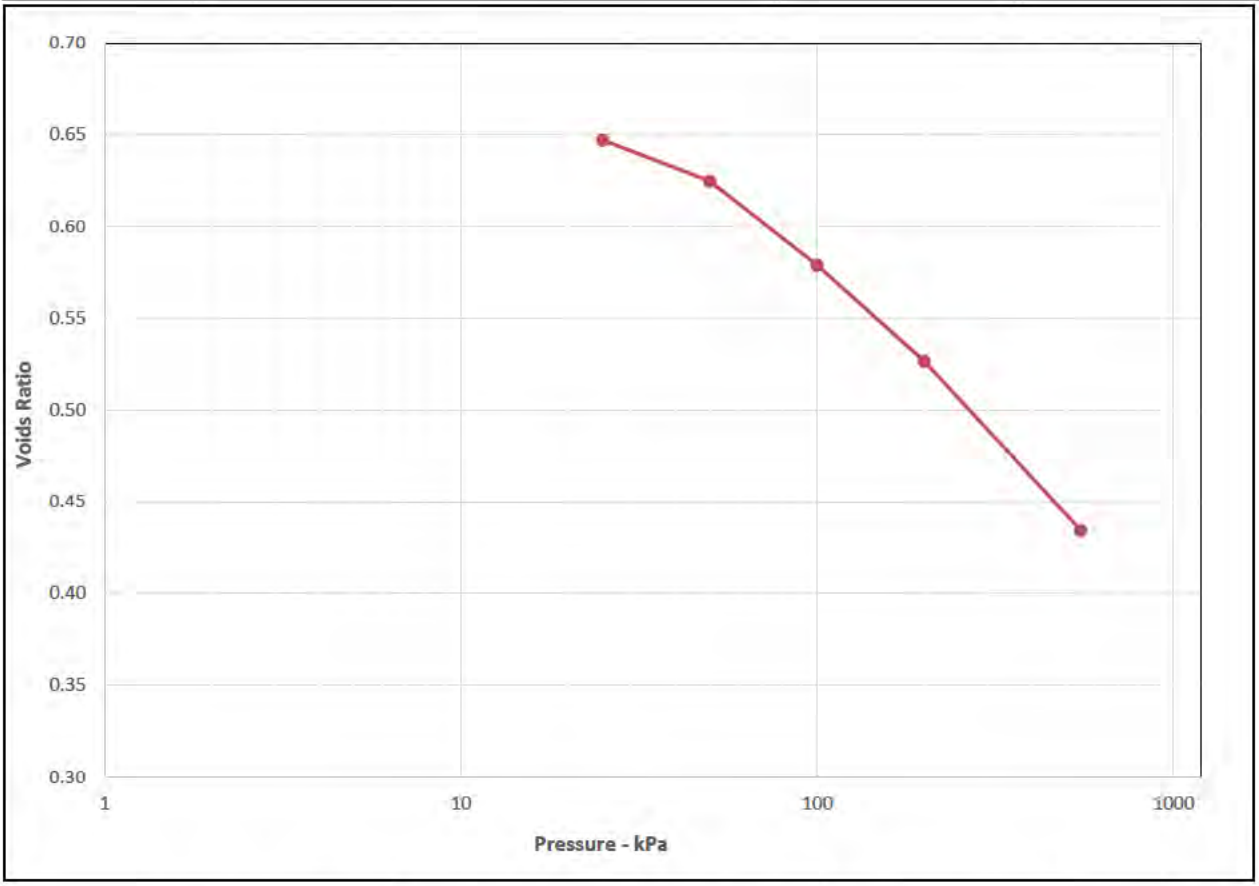
Initial Sample Conditions	
Moisture Content (%)	19
Moisture Top (%)	19
Moisture Bottom (%)	
Bulk Density (Mg/m3)	2.11
Dry Density (Mg/m3)	1.78

Specified Testing Parameters	
Surcharge (Kg)	2
Soaking Time (hours)	N/A
Swelling (mm)	N/A
Remarks	

CBR Test Values			
2.5mm Top	2 9	2 5mm Bottom	
5mm Top	2 6	5mm Bottom	
CBR Value %	2.9	CBR Value %	

Operators	Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(	Approved	26/04/2022	Reg. 13(1)	

GSTL	ONE DIMENSIONAL CONSOLIDATION TEST BS1377:Part 5:1990, clause 3	Contract Number	58610
		Borehole/Trialpit No.	BH2C101
Site Name	Northstowe	Sample No.	10
Soil Description	Grey silty CLAY	Depth Top (m)	2.00
		Depth Base (m)	2.45
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Par icle Density Assumed Unless Stated Otherwise	Sample Type	UT
Date Tested	08/04/2022		



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	27	0	-	25	1	1 2		-			
Bulk Density (Mg/m3)	1.99	25	-	50	0.54	1.7		-			
Dry Density (Mg/m3)	1.57	50	-	100	0.56	2 3		-			
Voids Ratio	0.6896	100	-	200	0.33	1 0		-			
Degree of saturation	103.3	200	-	550	0.17	0.94		-			
Height (mm)	20.11		-					-			
Diameter (mm)	75.11		-					-			
Particle Density (Mg/m3)	2.65		-					-			

Operators	Checked	25/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)

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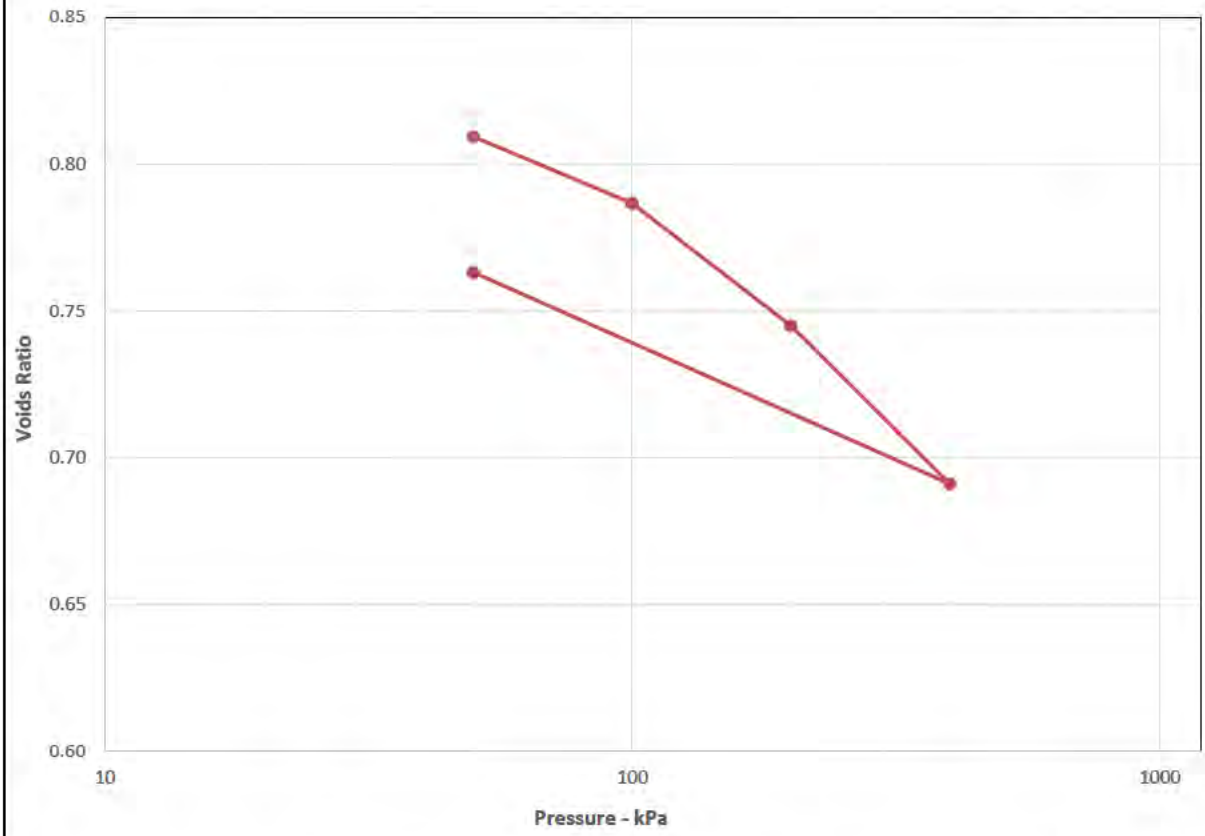
GSTL	ONE DIMENSIONAL CONSOLIDATION TEST BS1377:Part 5:1990, clause 3	Contract Number	58610
		Borehole/Trialpit No.	BHTCA102
Site Name	Northstowe	Sample No.	8
Soil Description	Grey silty CLAY	Depth Top (m)	3.00
		Depth Base (m)	3.45
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Par icle Density Assumed Unless Stated Otherwise	Sample Type	UT
Date Tested	08/04/2022		



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	34	0	-	50	0.25	16		-			
Bulk Density (Mg/m3)	1.94	50	-	100	0.25	6.6		-			
Dry Density (Mg/m3)	1.45	100	-	200	0.23	1.6		-			
Voids Ratio	0.8321	200	-	400	0.15	4 0		-			
Degree of saturation	109.4	400	-	50	0.12	0.62		-			
Height (mm)	19.72		-					-			
Diameter (mm)	75.1		-					-			
Particle Density (Mg/m3)	2.65		-					-			

Operators	Checked	25/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)

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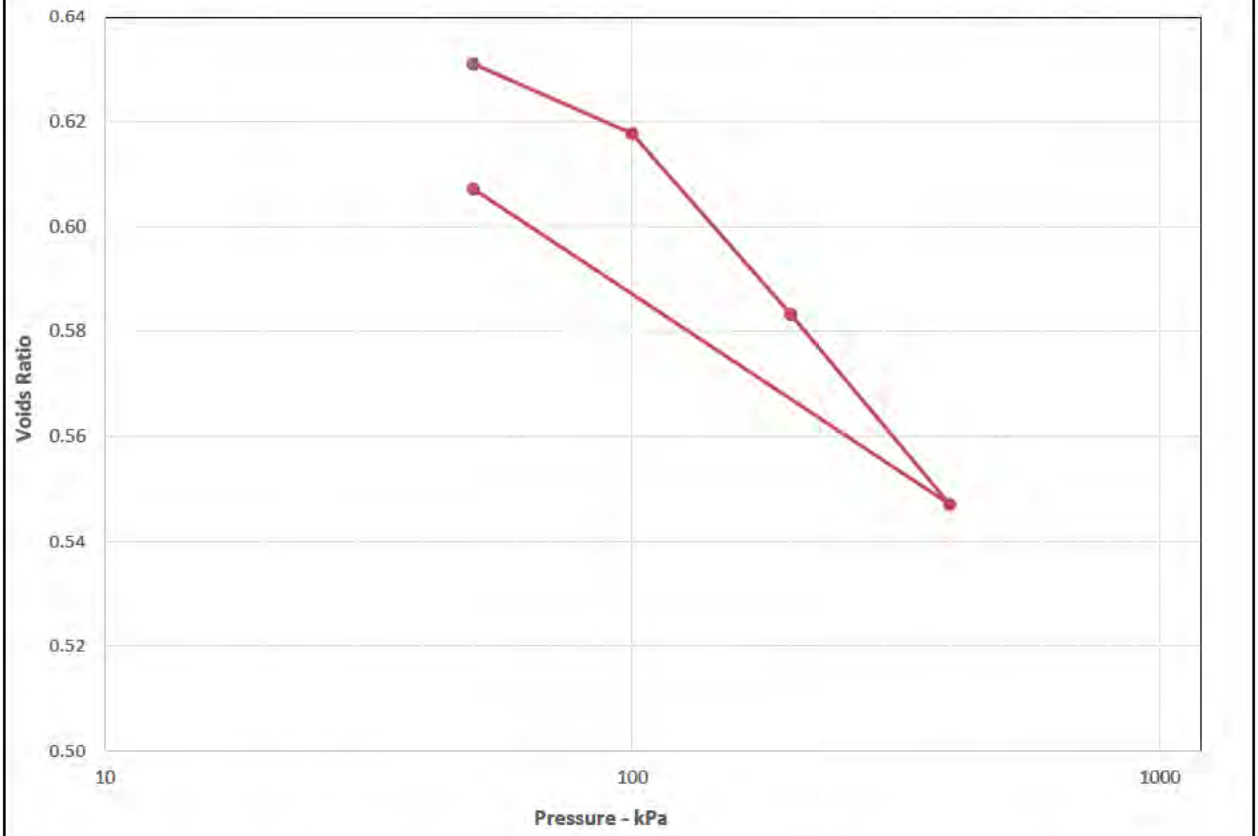
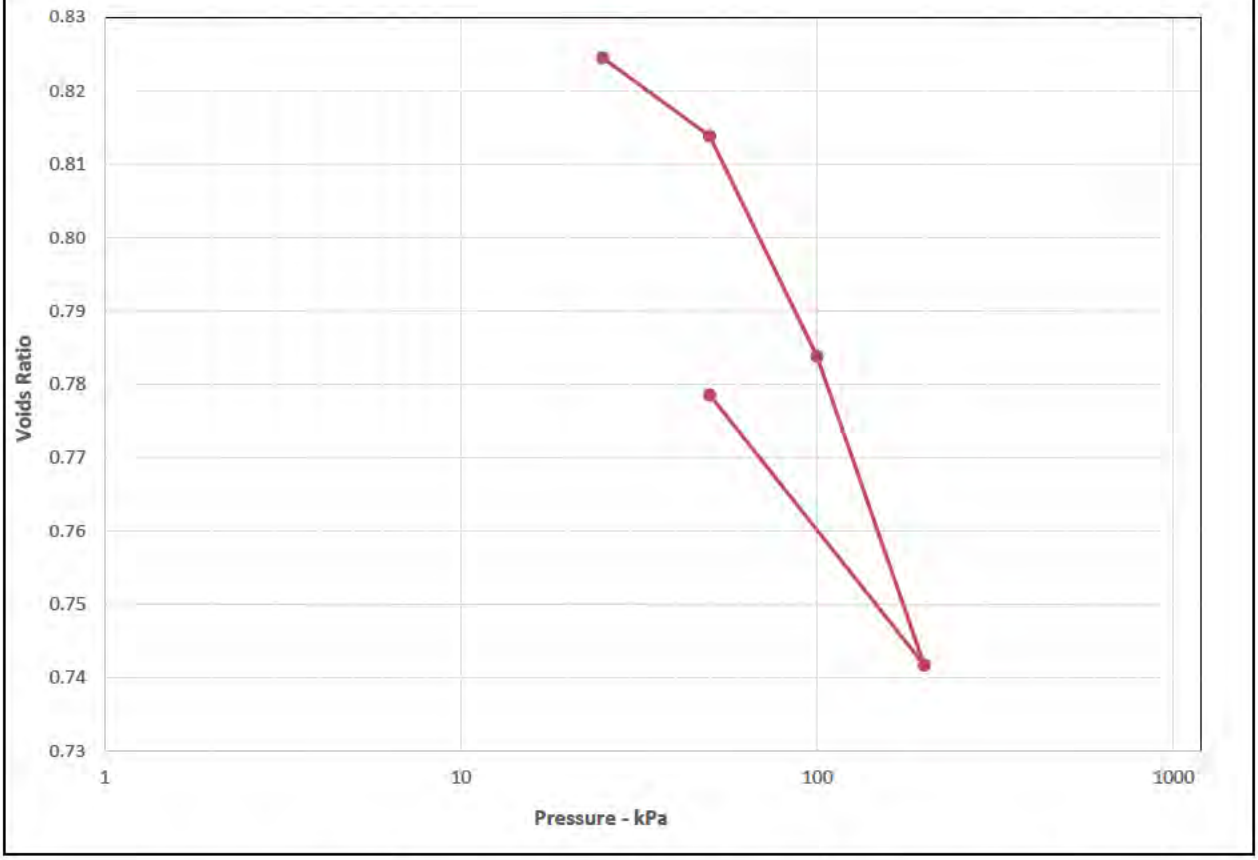
GSTL	ONE DIMENSIONAL CONSOLIDATION TEST BS1377:Part 5:1990, clause 3	Contract Number	58610
		Borehole/Trialpit No.	BHTCA103A
Site Name	Northstowe	Sample No.	10
Soil Description	Grey silty CLAY	Depth Top (m)	5.00
		Depth Base (m)	5.45
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Par icle Density Assumed Unless Stated Otherwise	Sample Type	UT
Date Tested	08/04/2022		



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	28	0	-	50	0.16	9.7		-			
Bulk Density (Mg/m3)	2.06	50	-	100	0.16	2.7		-			
Dry Density (Mg/m3)	1.61	100	-	200	0.21	1.6		-			
Voids Ratio	0.6446	200	-	400	0.11	1.6		-			
Degree of saturation	113.4	400	-	50	0.11	0 8		-			
Height (mm)	19.65		-					-			
Diameter (mm)	75.15		-					-			
Particle Density (Mg/m3)	2.65		-					-			

Operators	Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)	

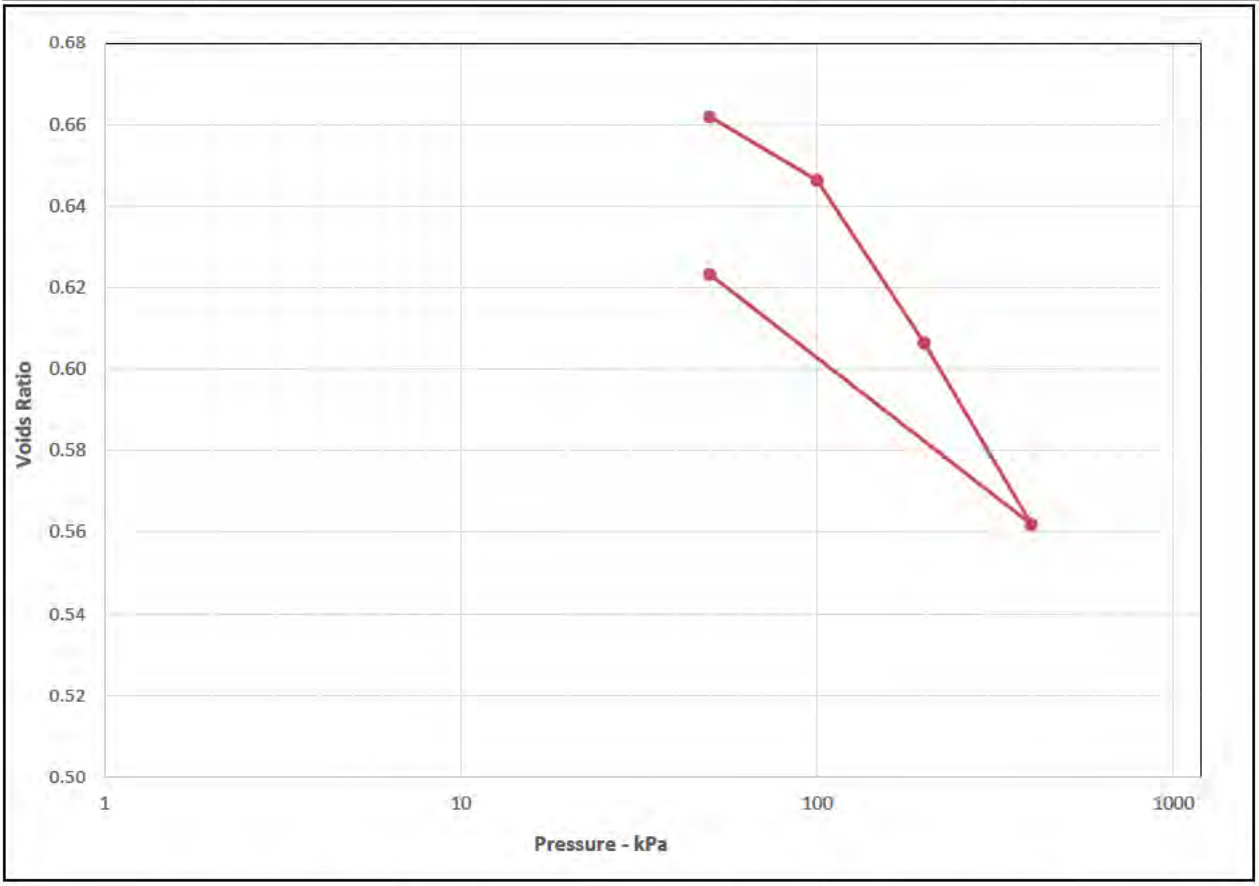
GSTL	ONE DIMENSIONAL CONSOLIDATION TEST BS1377:Part 5:1990, clause 3	Contract Number	58610
		Borehole/Trialpit No.	BHTCA107
Site Name	Northstowe	Sample No.	8
Soil Description	Grey silty CLAY	Depth Top (m)	3.00
		Depth Base (m)	3.45
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Par icle Density Assumed Unless Stated Otherwise	Sample Type	UT
Date Tested	08/04/2022		



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	33	0	-	25	SWELL	SWELL		-			
Bulk Density (Mg/m3)	1.97	25	-	50	0.23	11		-			
Dry Density (Mg/m3)	1.48	50	-	100	0.33	7 3		-			
Voids Ratio	0.7932	100	-	200	0.24	7 0		-			
Degree of saturation	111.8	200	-	50	0.14	0.37		-			
Height (mm)	20.15		-					-			
Diameter (mm)	75.15		-					-			
Particle Density (Mg/m3)	2.65		-					-			

Operators	Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)	

GSTL	ONE DIMENSIONAL CONSOLIDATION TEST BS1377:Part 5:1990, clause 3	Contract Number	58610
		Borehole/Trialpit No.	BHTCA202
Site Name	Northstowe	Sample No.	10
Soil Description	Grey silty CLAY	Depth Top (m)	3.00
		Depth Base (m)	3.45
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Par icle Density Assumed Unless Stated Otherwise	Sample Type	UT
Date Tested	08/04/2022		



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	31	0	-	50	0.23	34		-			
Bulk Density (Mg/m3)	2.06	50	-	100	0.19	9.6		-			
Dry Density (Mg/m3)	1.58	100	-	200	0.24	3		-			
Voids Ratio	0.6814	200	-	400	0.14	4.4		-			
Degree of saturation	120.4	400	-	50	0.11	0.49		-			
Height (mm)	19.8		-					-			
Diameter (mm)	75.11		-					-			
Particle Density (Mg/m3)	2.65		-					-			

Operators	Checked	25/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)

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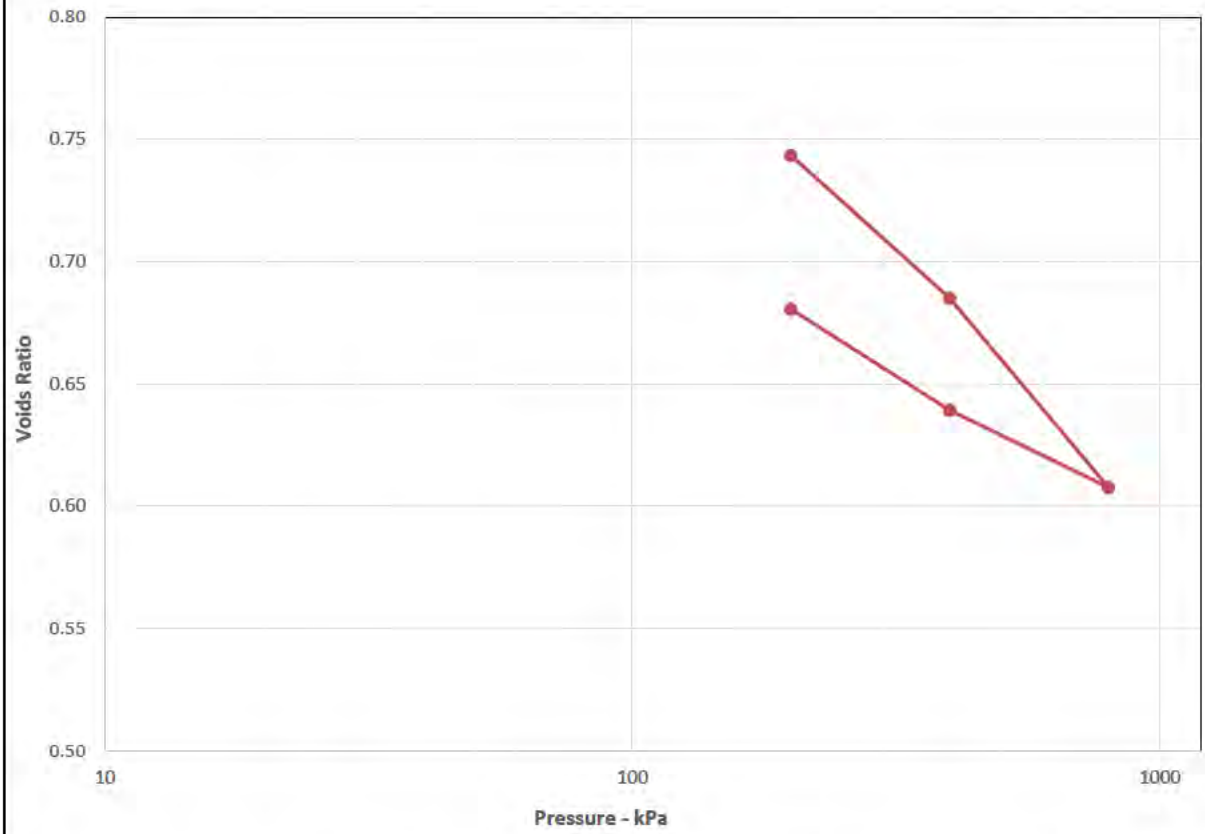
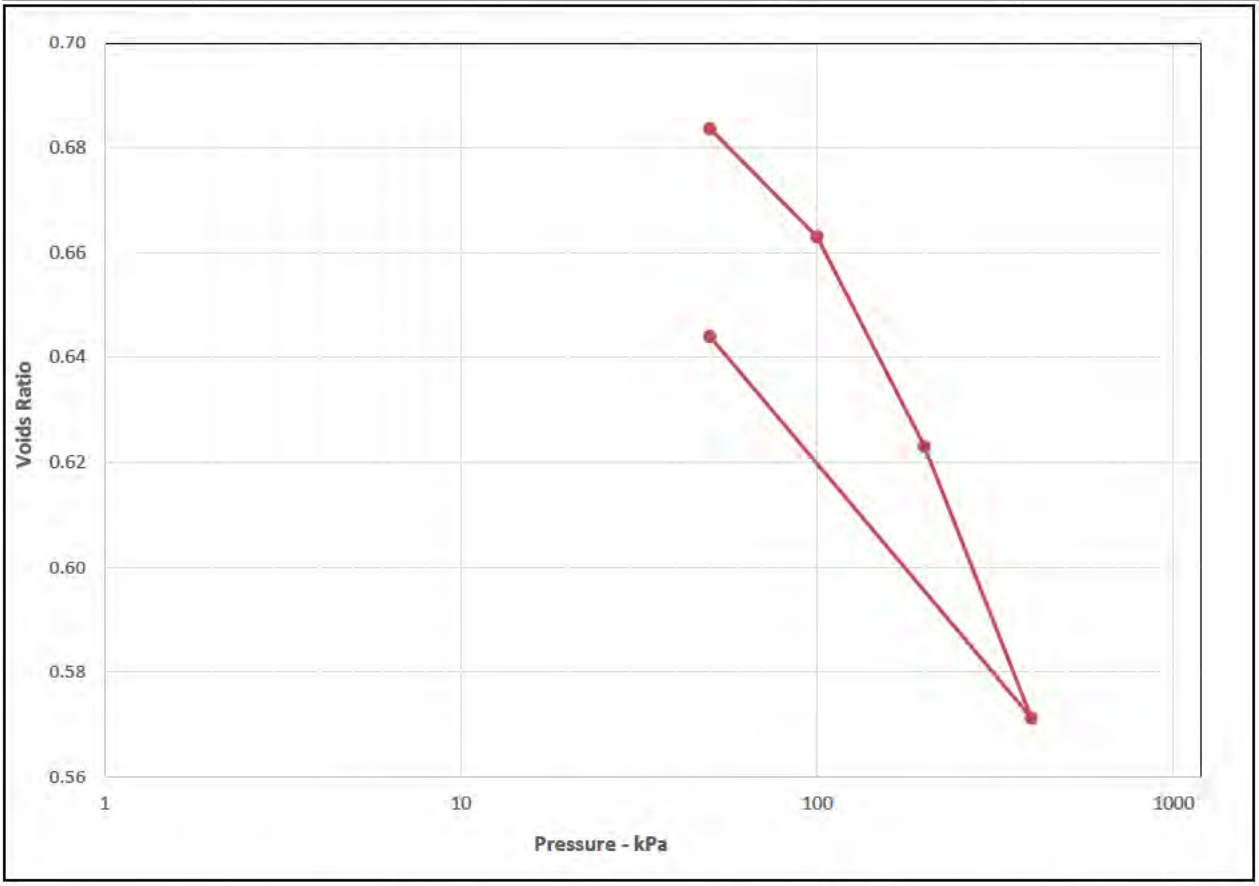
GSTL	ONE DIMENSIONAL CONSOLIDATION TEST BS1377:Part 5:1990, clause 3	Contract Number	58610
		Borehole/Trialpit No.	BHTCA202
Site Name	Northstowe	Sample No.	34
Soil Description	Grey silty CLAY	Depth Top (m)	10.00
		Depth Base (m)	10.45
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Par icle Density Assumed Unless Stated Otherwise	Sample Type	UT
Date Tested	08/04/2022		



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	33	0	-	200	0.095	15		-			
Bulk Density (Mg/m3)	1.99	200	-	400	0.17	3.7		-			
Dry Density (Mg/m3)	1.49	400	-	800	0.11	2.7		-			
Voids Ratio	0.7772	800	-	400	0.05	0 3		-			
Degree of saturation	113.1	400	-	200	0.13	0.18		-			
Height (mm)	18.81		-					-			
Diameter (mm)	75.09		-					-			
Particle Density (Mg/m3)	2.65		-					-			

Operators	Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)	

GSTL	ONE DIMENSIONAL CONSOLIDATION TEST BS1377:Part 5:1990, clause 3	Contract Number	58610
		Borehole/Trialpit No.	BHTCA301A
Site Name	Northstowe	Sample No.	15
Soil Description	Grey silty CLAY	Depth Top (m)	4.00
		Depth Base (m)	4.45
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Par icle Density Assumed Unless Stated Otherwise	Sample Type	UT
Date Tested	08/04/2022		



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	31	0	-	50	0.13	15		-			
Bulk Density (Mg/m3)	2.04	50	-	100	0.25	9		-			
Dry Density (Mg/m3)	1.56	100	-	200	0.24	3 9		-			
Voids Ratio	0.6945	200	-	400	0.16	2 8		-			
Degree of saturation	116.5	400	-	50	0.13	0.71		-			
Height (mm)	18.54		-					-			
Diameter (mm)	75.23		-					-			
Particle Density (Mg/m3)	2.65		-					-			

Operators	Checked	25/04/2022	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)

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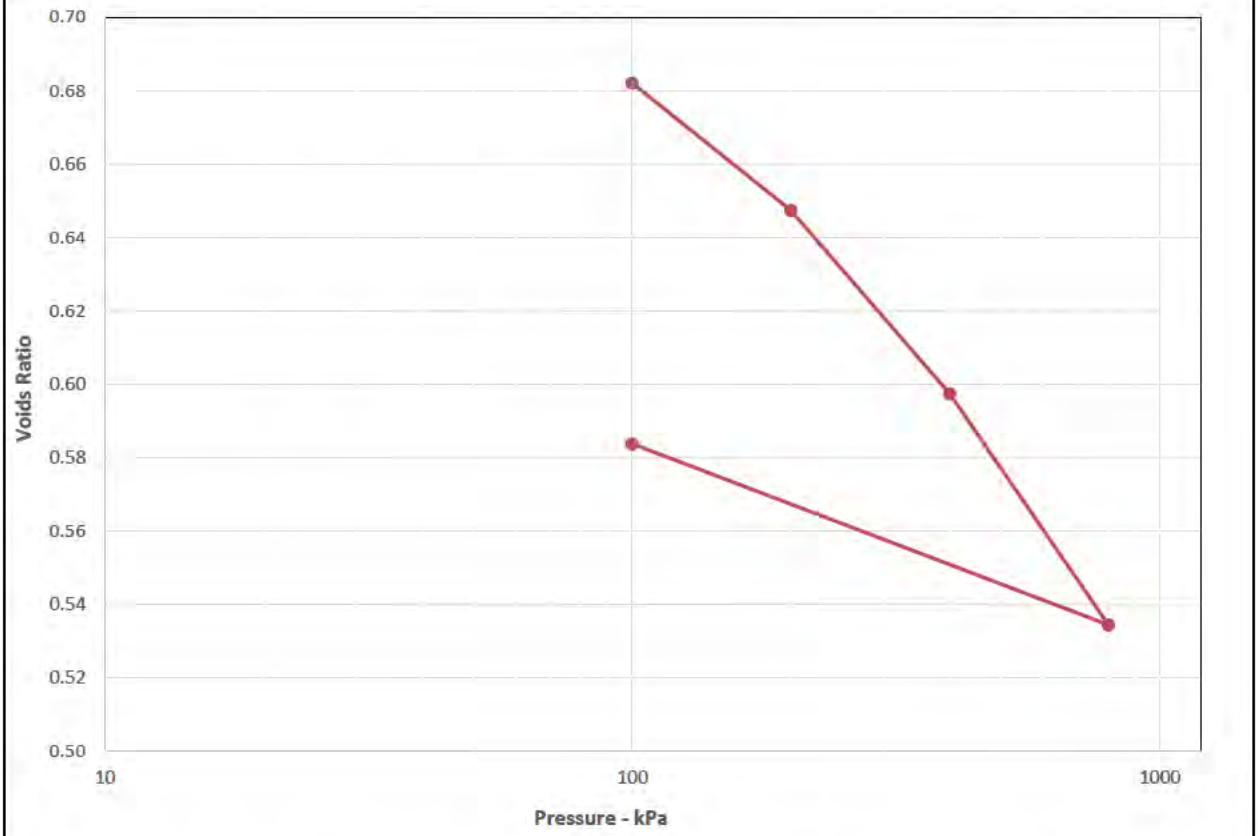
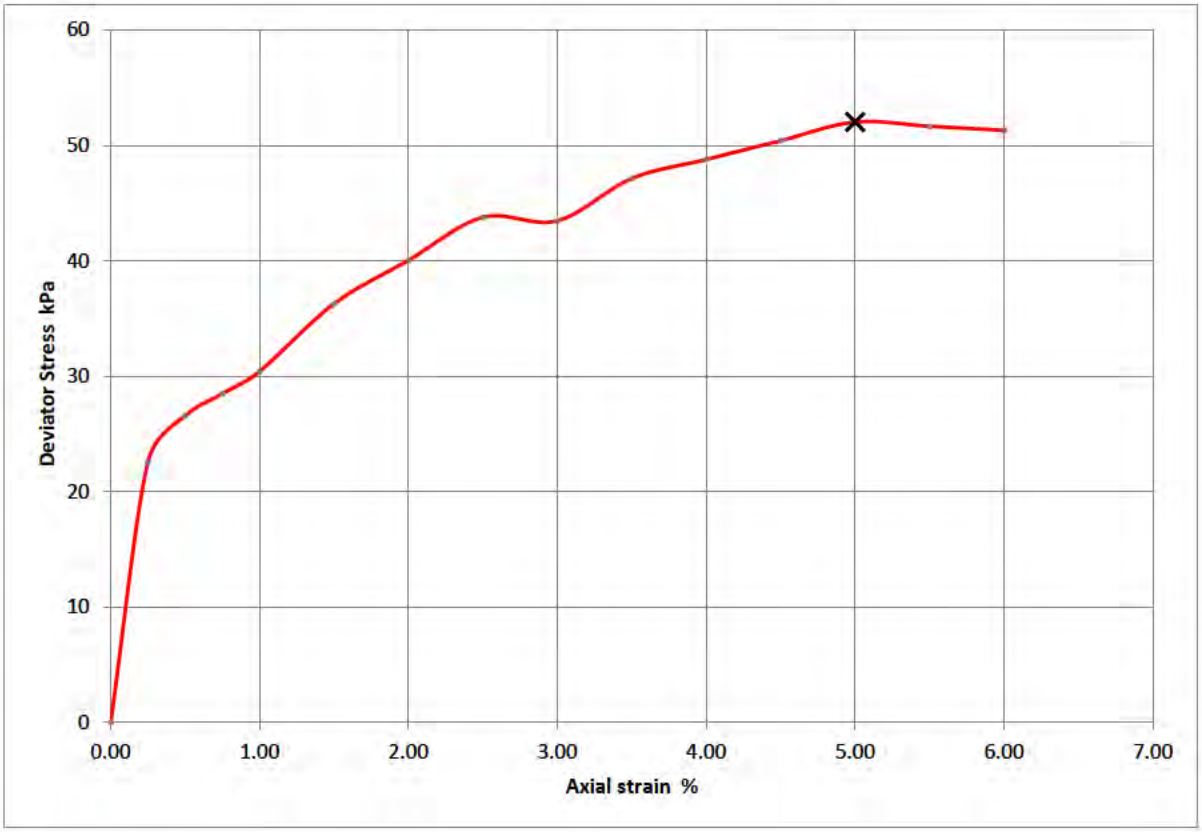
GSTL	ONE DIMENSIONAL CONSOLIDATION TEST BS1377:Part 5:1990, clause 3	Contract Number	58610
		Borehole/Trialpit No.	BHTCA301A
Site Name	Northstowe	Sample No.	21
Soil Description	Grey silty CLAY	Depth Top (m)	7.00
		Depth Base (m)	7.45
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Par icle Density Assumed Unless Stated Otherwise	Sample Type	UT
Date Tested	07/04/2022		



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	31	0	-	100	0.28	2 5		-			
Bulk Density (Mg/m3)	2.01	100	-	200	0.21	1.6		-			
Dry Density (Mg/m3)	1.53	200	-	400	0.15	2 8		-			
Voids Ratio	0.7299	400	-	800	0.10	2 3		-			
Degree of saturation	114.3	800	-	100	0.046	0.98		-			
Height (mm)	19.9		-					-			
Diameter (mm)	50.21		-					-			
Particle Density (Mg/m3)	2.65		-					-			

Operators	Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(1)	Approved	26/04/2022	Reg. 13(1)	

GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BH2C101
Site Name	Northstowe	Sample No.	10
Soil Description	Grey silty CLAY	Depth Top (m)	2 00
		Depth Base (m)	2.45
Date Tested	18/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	24
Bulk Density (Mg/m^3)	2.22
Dry Density (Mg/m^3)	1.79
Specimen Length (mm)	200
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	52
Undrained Shear Strength (kPa)	26
Failure Strain (%)	5
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.50

Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Approved	26/04/2022	Reg. 13(1)	

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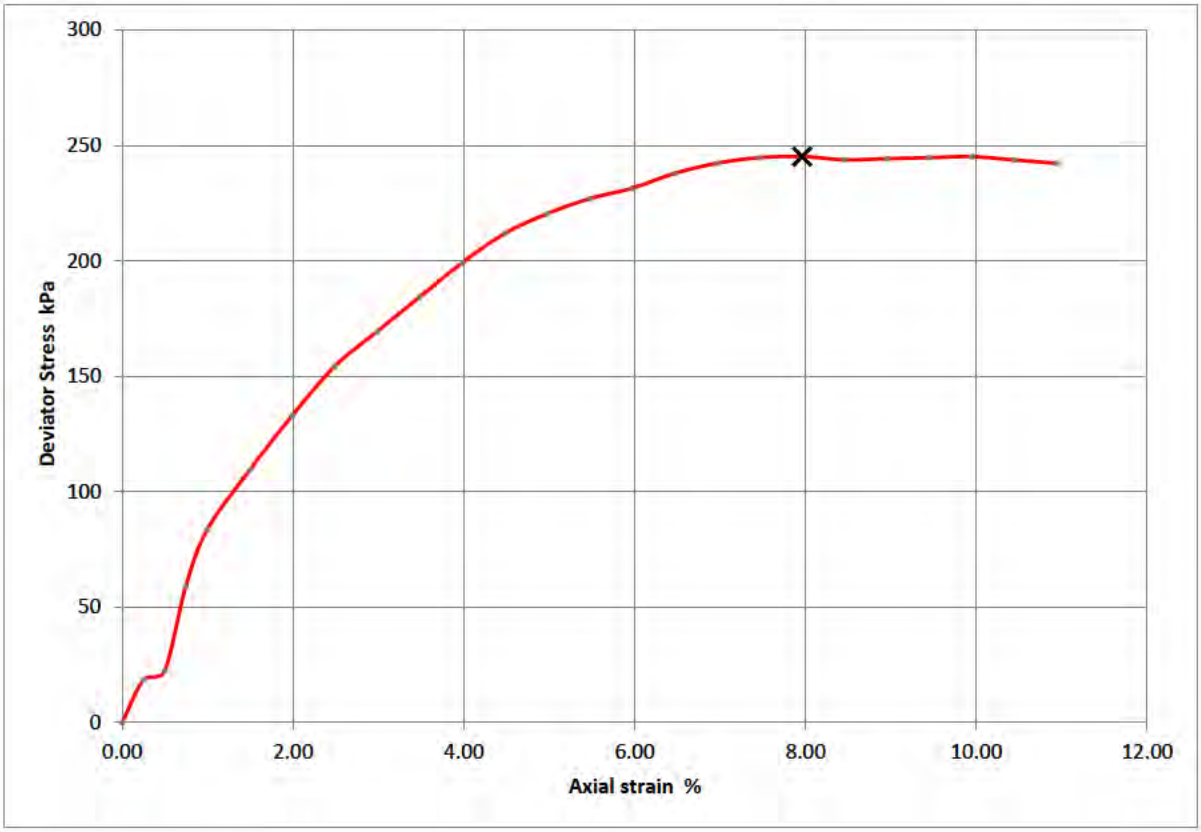
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BH2C101
Site Name	Northstowe	Sample No.	14
Soil Description	Grey silty CLAY	Depth Top (m)	4 00
		Depth Base (m)	4.45
Date Tested	18/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	30
Bulk Density (Mg/m^3)	2.23
Dry Density (Mg/m^3)	1.71
Specimen Length (mm)	201
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	245
Undrained Shear Strength (kPa)	123
Failure Strain (%)	8
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.49

Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
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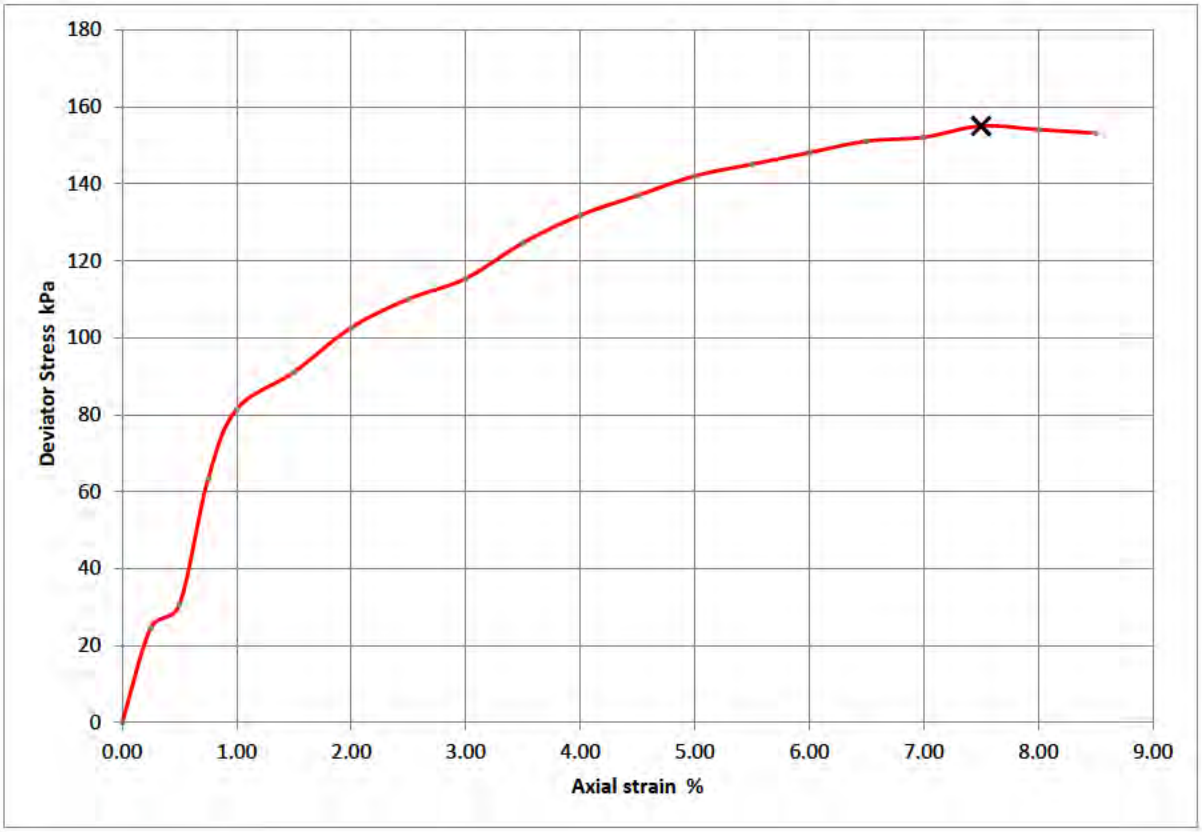
CAS TING 788

GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BH2C101
Site Name	Northstowe	Sample No.	17
Soil Description	Dark grey silty CLAY	Depth Top (m)	6.00
		Depth Base (m)	6.45
Date Tested	18/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	29
Bulk Density (Mg/m^3)	2.14
Dry Density (Mg/m^3)	1.67
Specimen Length (mm)	200
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	155
Undrained Shear Strength (kPa)	78
Failure Strain (%)	8
Mode Of Failure	Brit le
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.50

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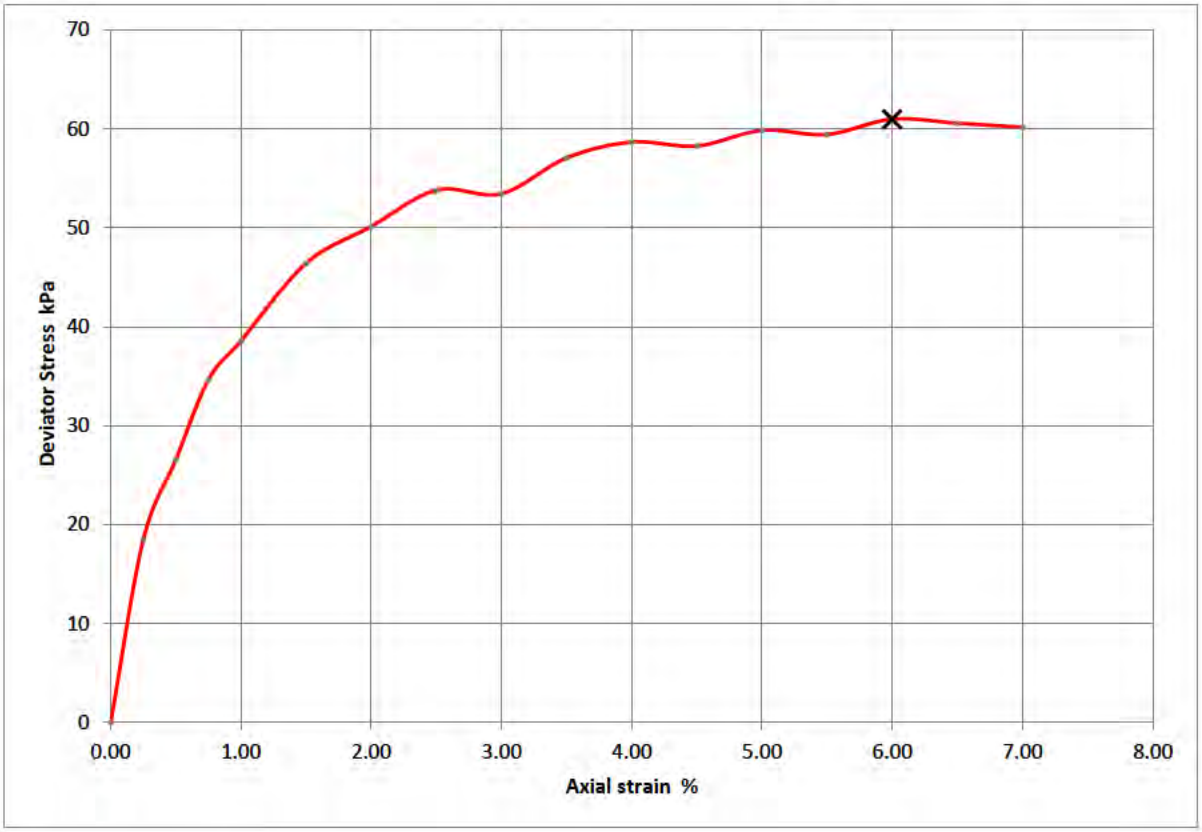
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BH2C102
Site Name	Northstowe	Sample No.	11
Soil Description	Dark grey silty CLAY	Depth Top (m)	4 00
		Depth Base (m)	4.45
Date Tested	18/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	27
Bulk Density (Mg/m^3)	2.06
Dry Density (Mg/m^3)	1.62
Specimen Length (mm)	200
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	61
Undrained Shear Strength (kPa)	30
Failure Strain (%)	6
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.50

Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Approved	26/04/2022	Reg. 13(1)	

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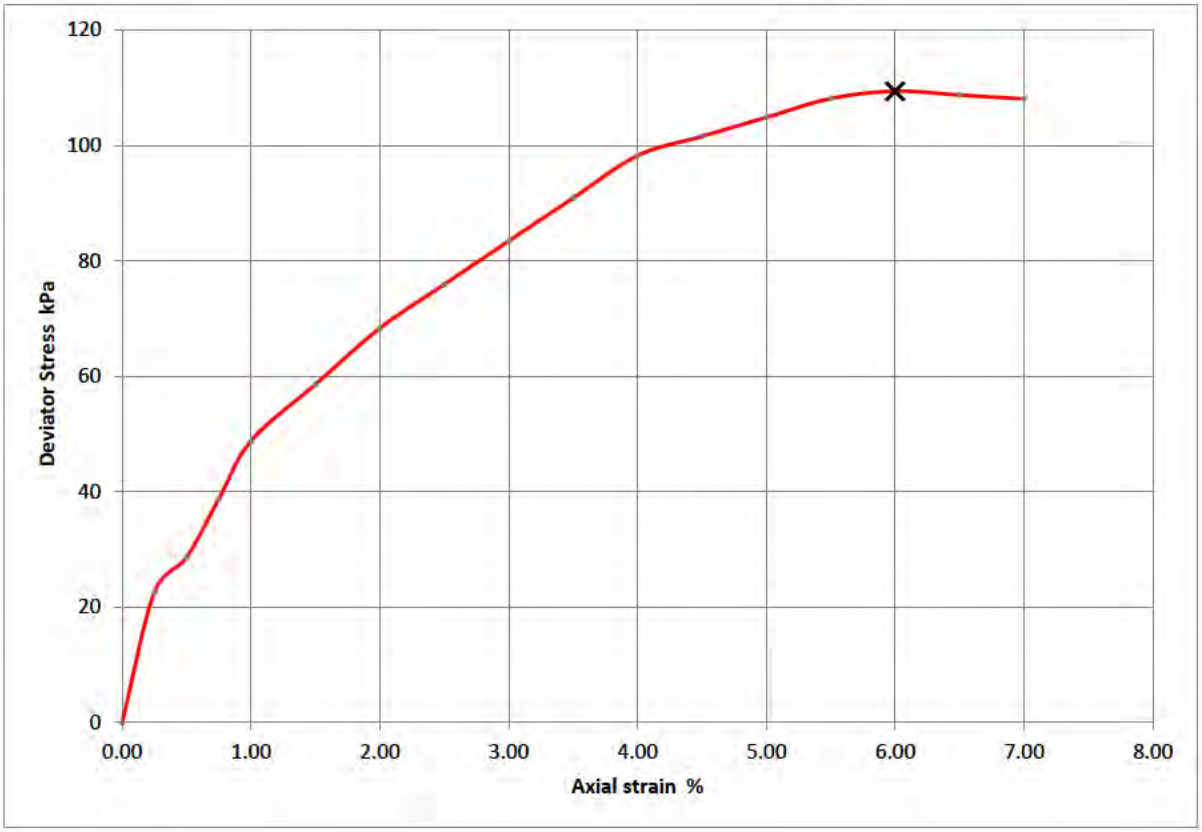
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BH2C102
Site Name	Northstowe	Sample No.	18
Soil Description	Dark grey silty CLAY	Depth Top (m)	6.00
		Depth Base (m)	6.45
Date Tested	18/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	29
Bulk Density (Mg/m^3)	2.06
Dry Density (Mg/m^3)	1.60
Specimen Length (mm)	200
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	109
Undrained Shear Strength (kPa)	55
Failure Strain (%)	6
Mode Of Failure	Brit le
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.50

Checked	26/04/2022	Reg. 13(1)	Reg. 13(1)
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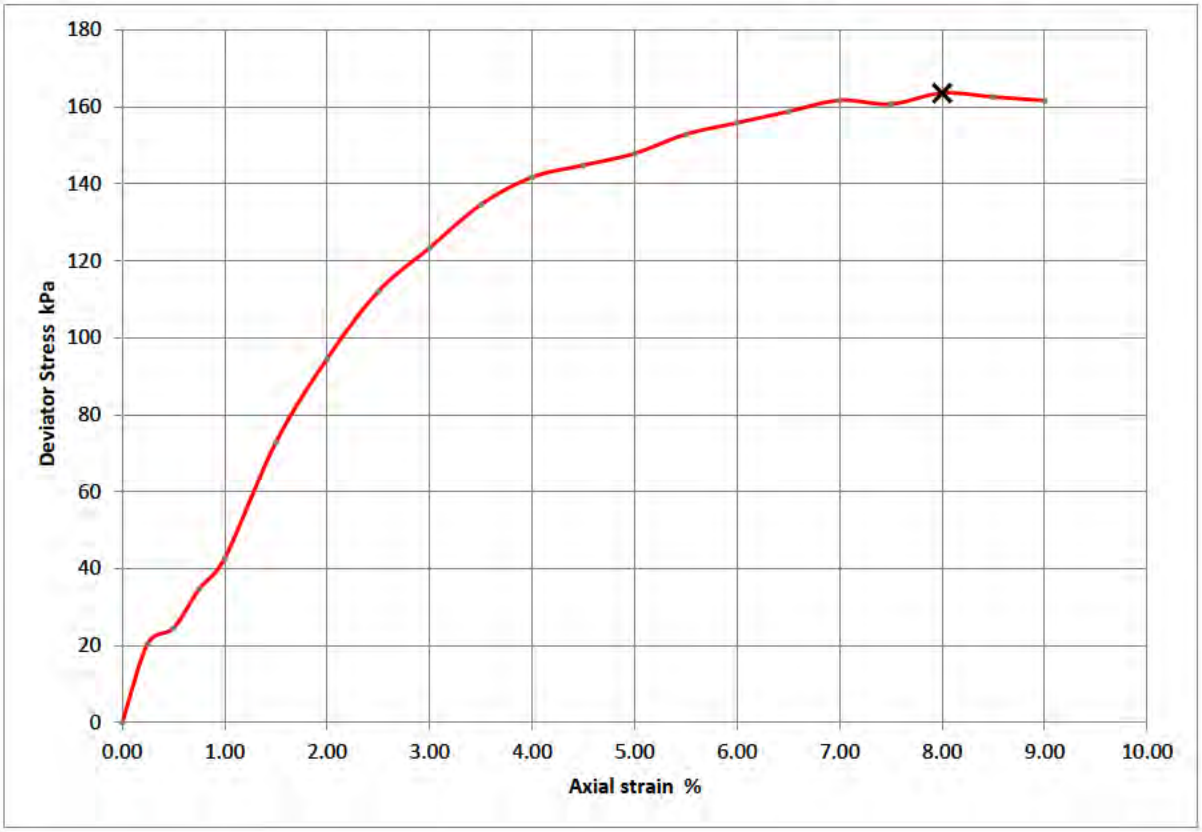
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BH2C103
Site Name	Northstowe	Sample No.	31
Soil Description	Dark grey silty CLAY	Depth Top (m)	4.00
		Depth Base (m)	4.45
Date Tested	18/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	32
Bulk Density (Mg/m^3)	2.06
Dry Density (Mg/m^3)	1.57
Specimen Length (mm)	200
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	164
Undrained Shear Strength (kPa)	82
Failure Strain (%)	8
Mode Of Failure	Brit le
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.50

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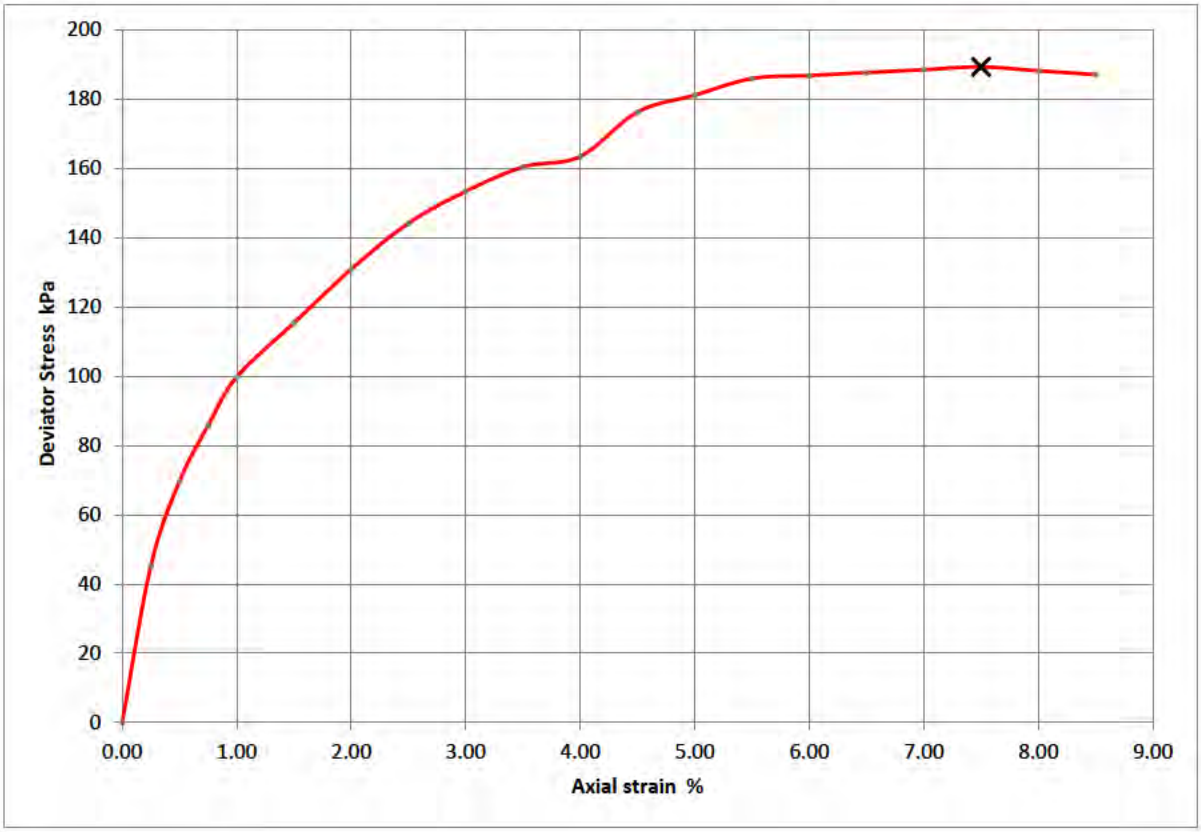
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BH2C103
Site Name	Northstowe	Sample No.	32
Soil Description	Dark grey silty CLAY	Depth Top (m)	6 00
		Depth Base (m)	6.45
Date Tested	18/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	30
Bulk Density (Mg/m^3)	2.16
Dry Density (Mg/m^3)	1.67
Specimen Length (mm)	200
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	189
Undrained Shear Strength (kPa)	95
Failure Strain (%)	8
Mode Of Failure	Brit le
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.50

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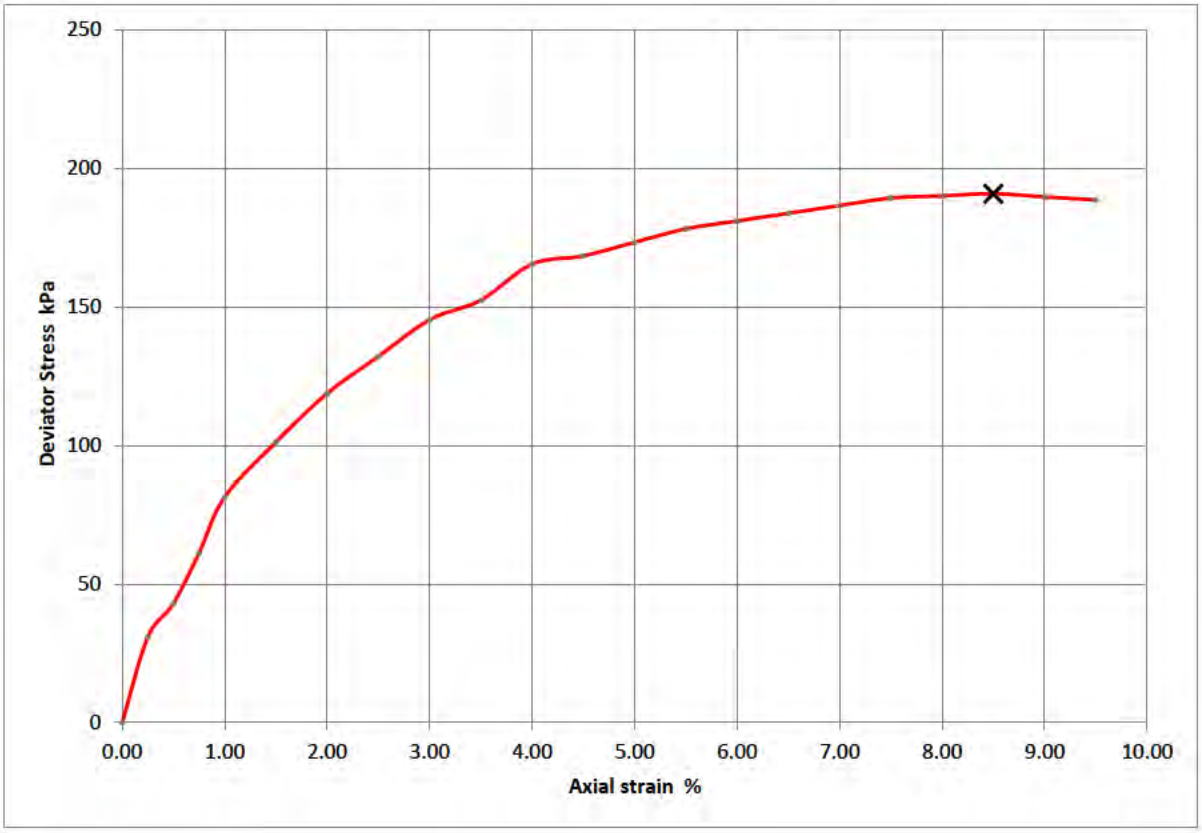
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BH2C103
Site Name	Northstowe	Sample No.	33
Soil Description	Dark grey silty CLAY	Depth Top (m)	8 00
		Depth Base (m)	8.45
Date Tested	18/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	15
Bulk Density (Mg/m^3)	2.19
Dry Density (Mg/m^3)	1.91
Specimen Length (mm)	200
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	191
Undrained Shear Strength (kPa)	95
Failure Strain (%)	9
Mode Of Failure	Brit le
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.50

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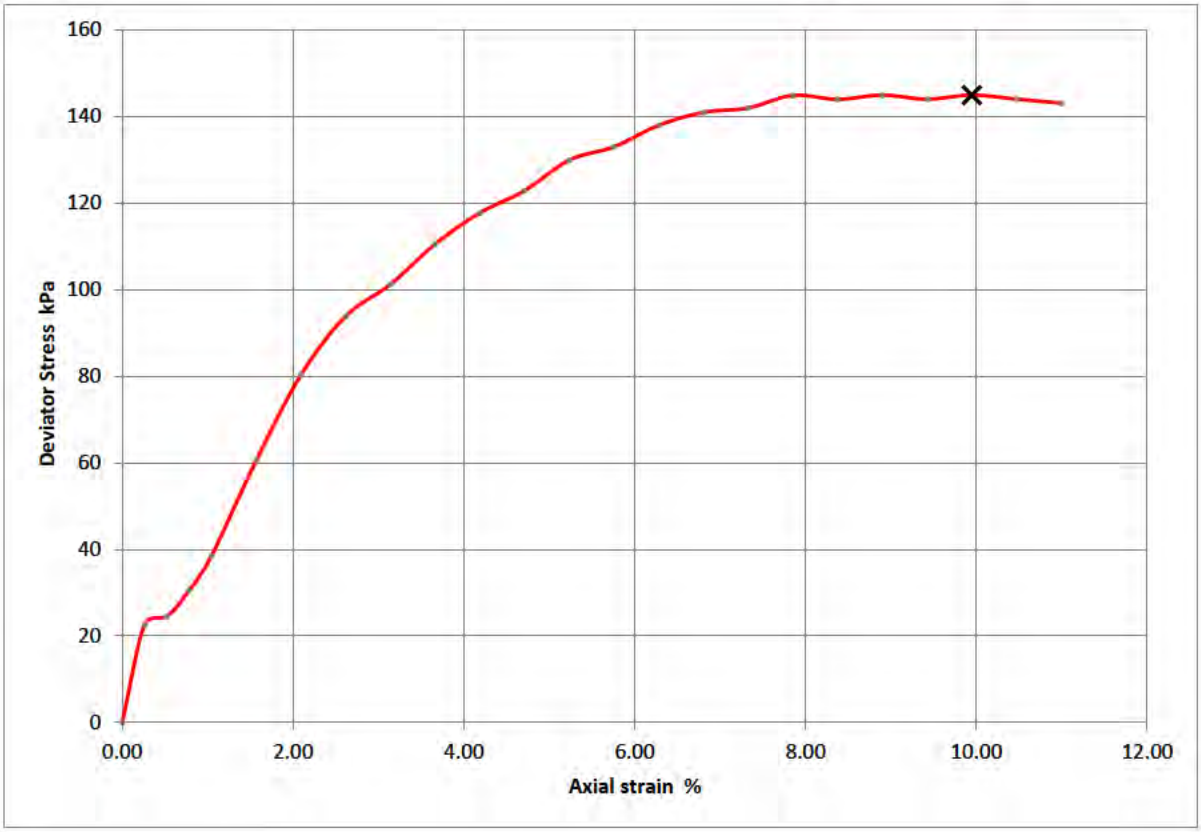
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BH2C104
Site Name	Northstowe	Sample No.	20
Soil Description	Grey silty CLAY	Depth Top (m)	6.00
		Depth Base (m)	6.45
Date Tested	18/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	17
Bulk Density (Mg/m^3)	2.28
Dry Density (Mg/m^3)	1.95
Specimen Length (mm)	191
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	145
Undrained Shear Strength (kPa)	72
Failure Strain (%)	10
Mode Of Failure	Brit le
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.57

Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
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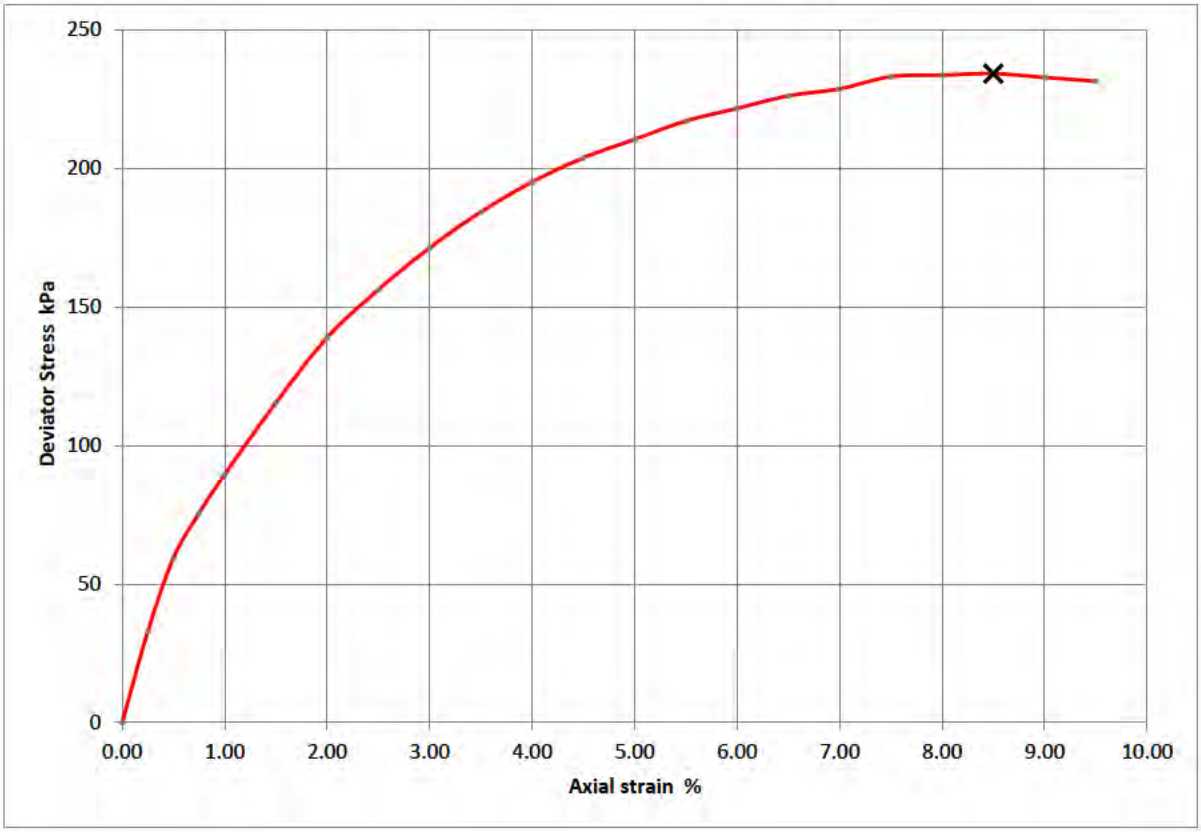
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BHTCA102
Site Name	Northstowe	Sample No.	15
Soil Description	Dark grey silty CLAY	Depth Top (m)	5 00
		Depth Base (m)	5.45
Date Tested	18/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	25
Bulk Density (Mg/m^3)	2.24
Dry Density (Mg/m^3)	1.80
Specimen Length (mm)	200
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	234
Undrained Shear Strength (kPa)	117
Failure Strain (%)	9
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.50

Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
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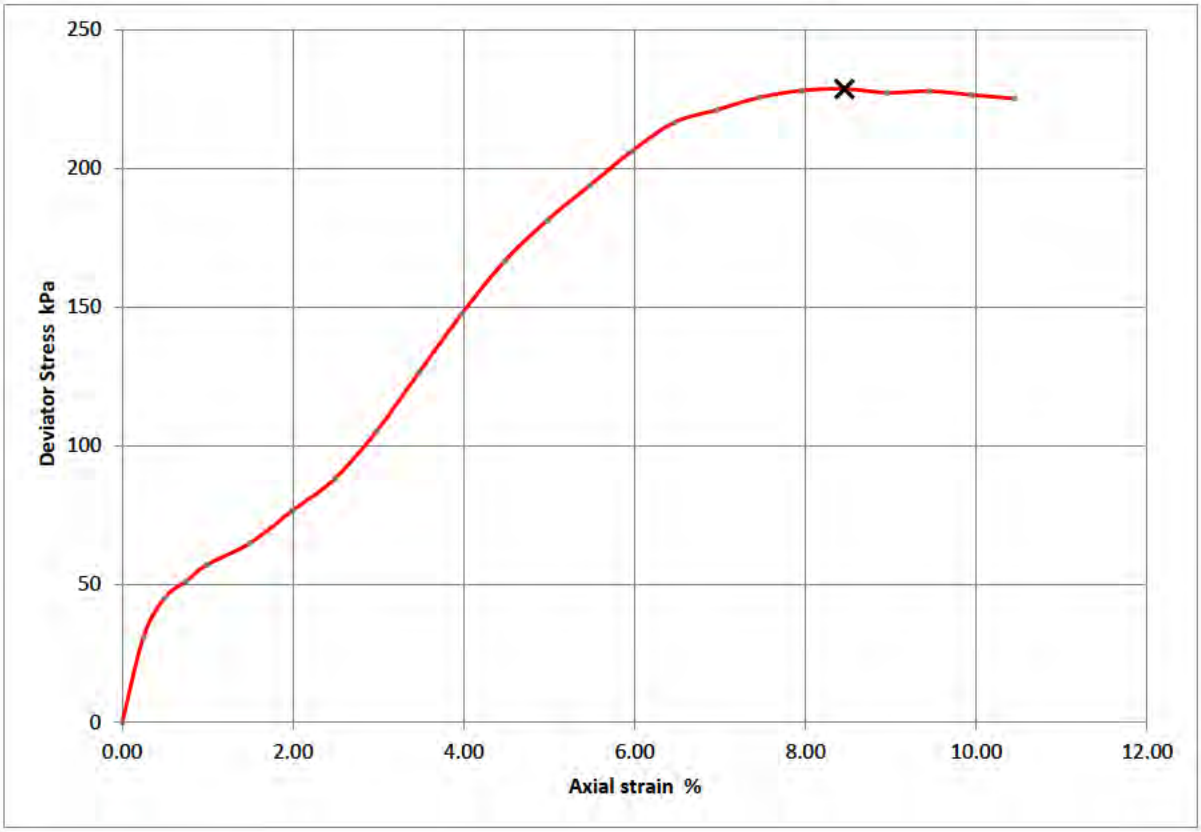
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BHTCA102
Site Name	Northstowe	Sample No.	29
Soil Description	Greyish brown silty CLAY	Depth Top (m)	9 00
		Depth Base (m)	9.45
Date Tested	18/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	29
Bulk Density (Mg/m^3)	2.16
Dry Density (Mg/m^3)	1.67
Specimen Length (mm)	201
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	229
Undrained Shear Strength (kPa)	114
Failure Strain (%)	8
Mode Of Failure	Brit le
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.49

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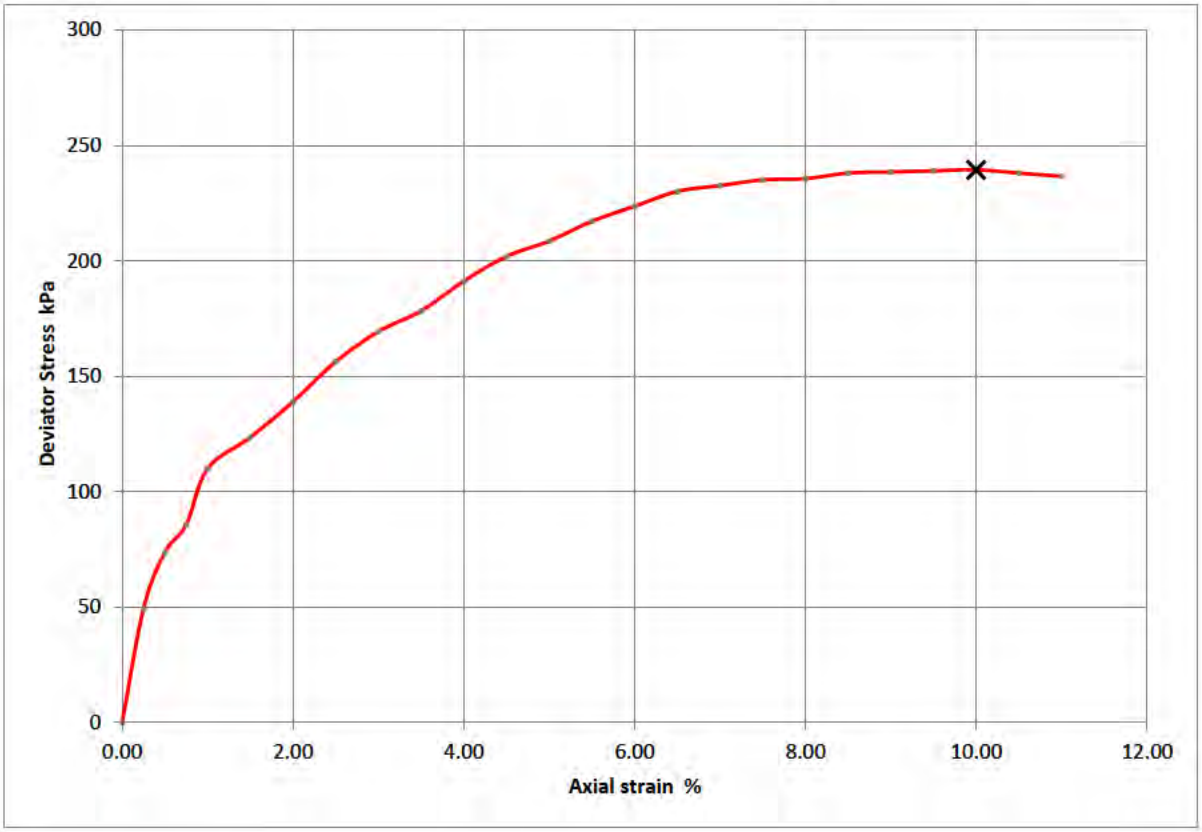
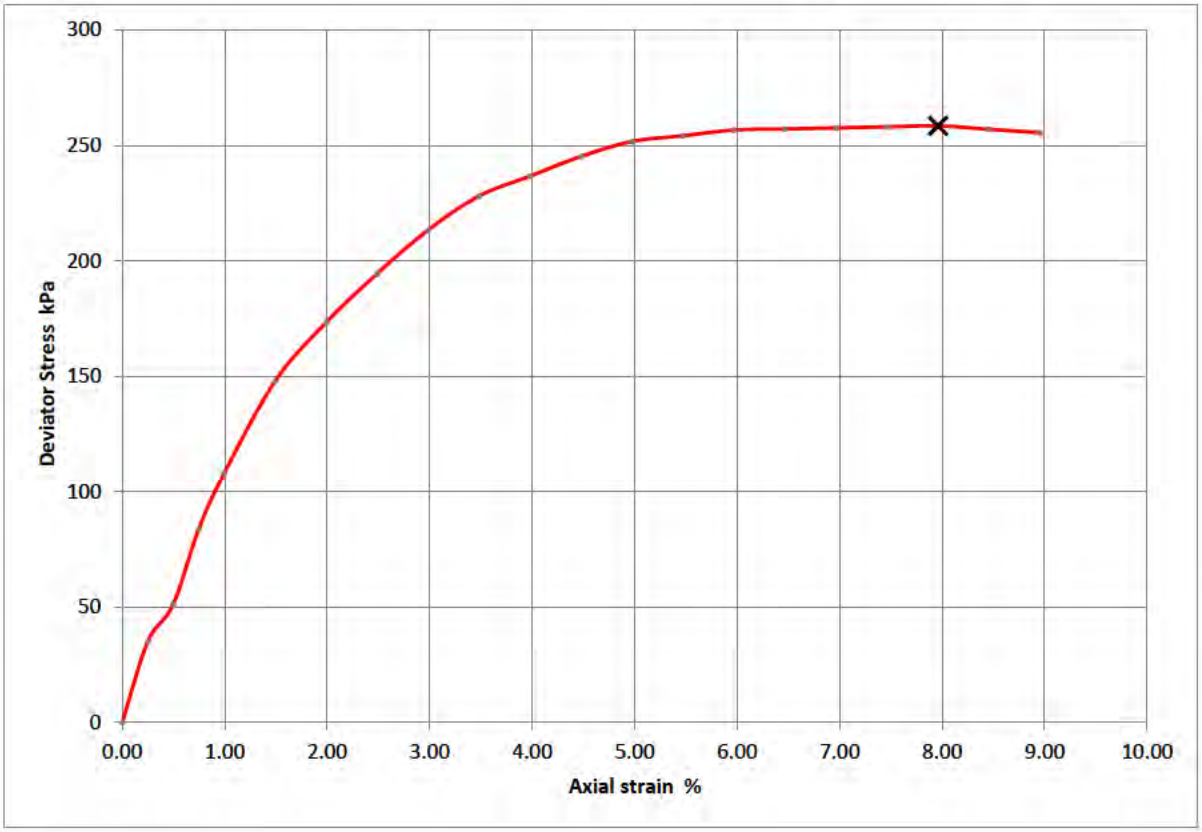
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BHTCA103A
Site Name	Northstowe	Sample No.	14
Soil Description	Dark grey silty CLAY	Depth Top (m)	7 00
		Depth Base (m)	7.45
Date Tested	13/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	28
Bulk Density (Mg/m^3)	2.23
Dry Density (Mg/m^3)	1.74
Specimen Length (mm)	200
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	239
Undrained Shear Strength (kPa)	120
Failure Strain (%)	10
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.50

Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Approved	26/04/2022	Reg. 13(1)	

GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BHTCA107
Site Name	Northstowe	Sample No.	17
Soil Description	Dark grey silty CLAY	Depth Top (m)	6 00
		Depth Base (m)	6.45
Date Tested	18/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	26
Bulk Density (Mg/m^3)	2.23
Dry Density (Mg/m^3)	1.77
Specimen Length (mm)	201
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	259
Undrained Shear Strength (kPa)	129
Failure Strain (%)	8
Mode Of Failure	Brit le
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.49

Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Approved	26/04/2022	Reg. 13(1)	

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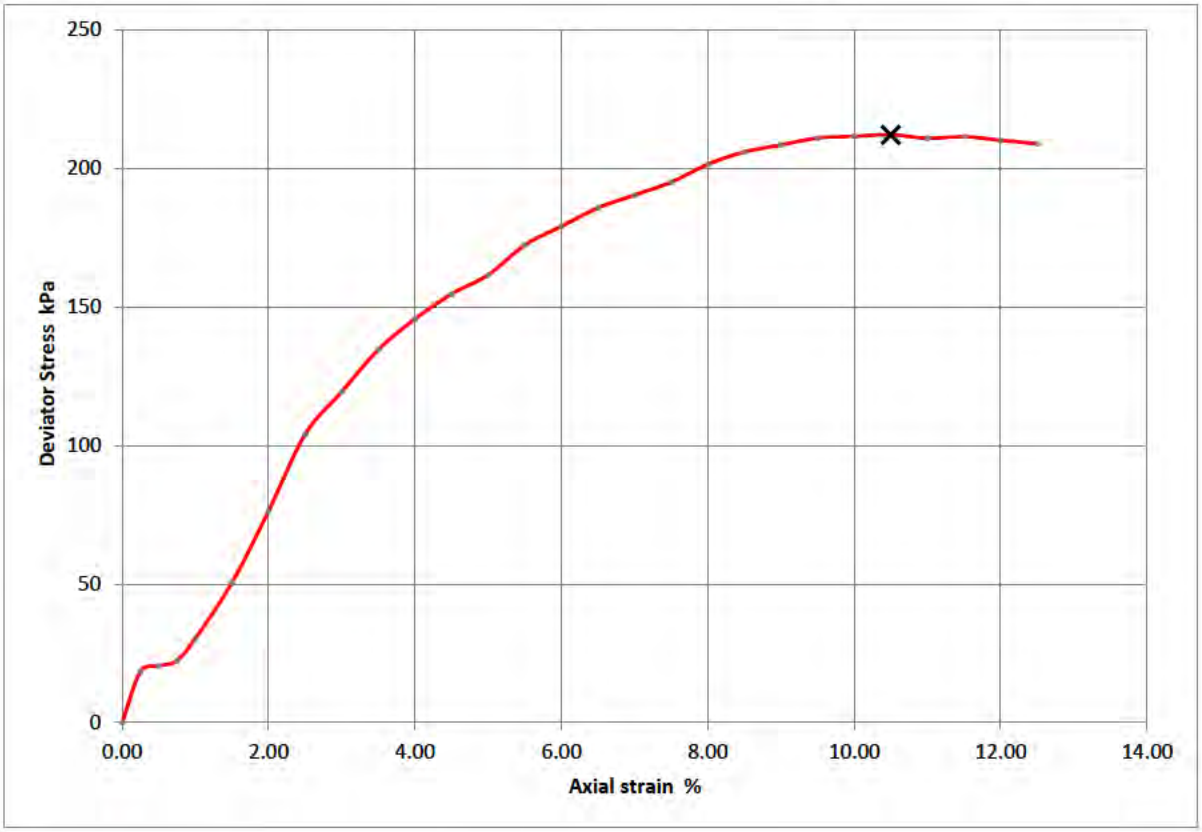
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BHTCA107
Site Name	Northstowe	Sample No.	23
Soil Description	Dark grey silty CLAY	Depth Top (m)	8 00
		Depth Base (m)	8.45
Date Tested	18/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	26
Bulk Density (Mg/m^3)	2.16
Dry Density (Mg/m^3)	1.72
Specimen Length (mm)	200
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	212
Undrained Shear Strength (kPa)	106
Failure Strain (%)	11
Mode Of Failure	Brit le
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.50

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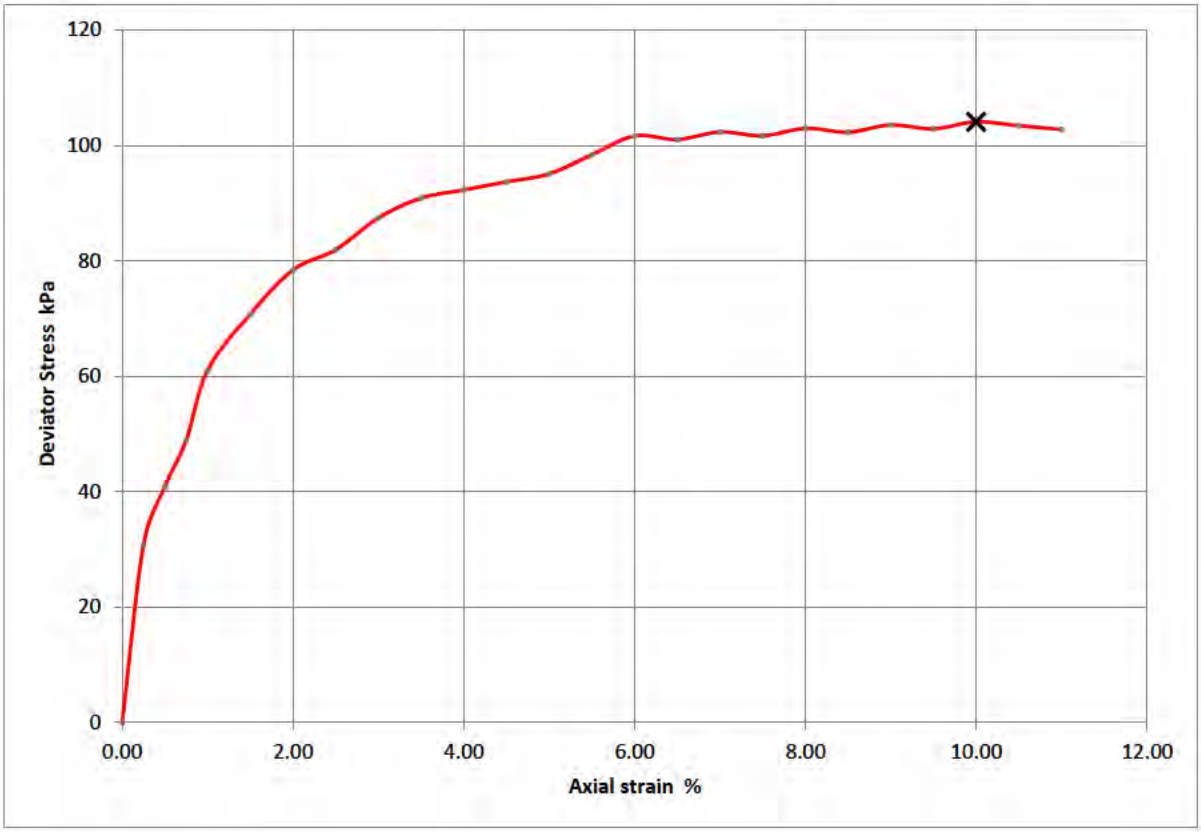
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BHTCA108
Site Name	Northstowe	Sample No.	5
Soil Description	Brown silty CLAY	Depth Top (m)	2 00
		Depth Base (m)	2.45
Date Tested	18/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	30
Bulk Density (Mg/m^3)	2.11
Dry Density (Mg/m^3)	1.62
Specimen Length (mm)	200
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	104
Undrained Shear Strength (kPa)	52
Failure Strain (%)	10
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.50

Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
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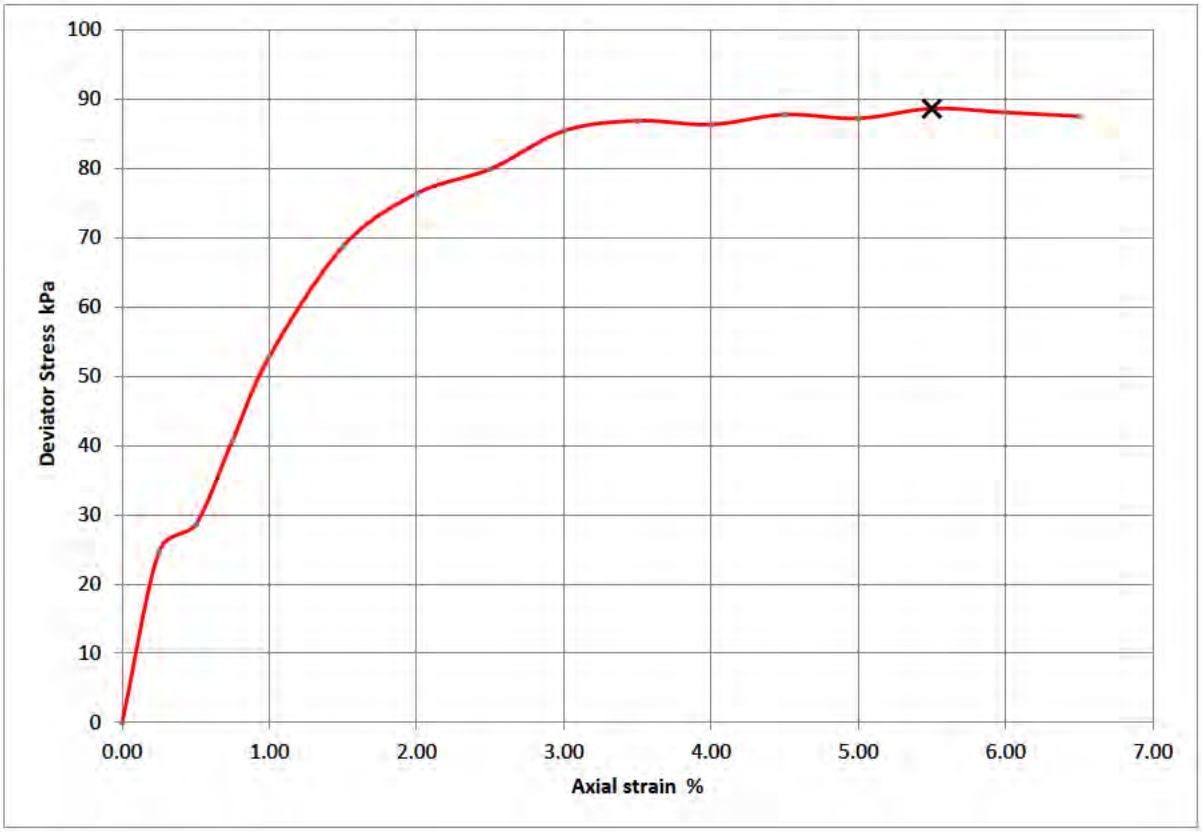
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BHTCA108
Site Name	Northstowe	Sample No.	9
Soil Description	Grey silty CLAY	Depth Top (m)	4.00
		Depth Base (m)	4.45
Date Tested	18/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	36
Bulk Density (Mg/m^3)	2.09
Dry Density (Mg/m^3)	1.54
Specimen Length (mm)	200
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	89
Undrained Shear Strength (kPa)	44
Failure Strain (%)	6
Mode Of Failure	Brit le
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.50

Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
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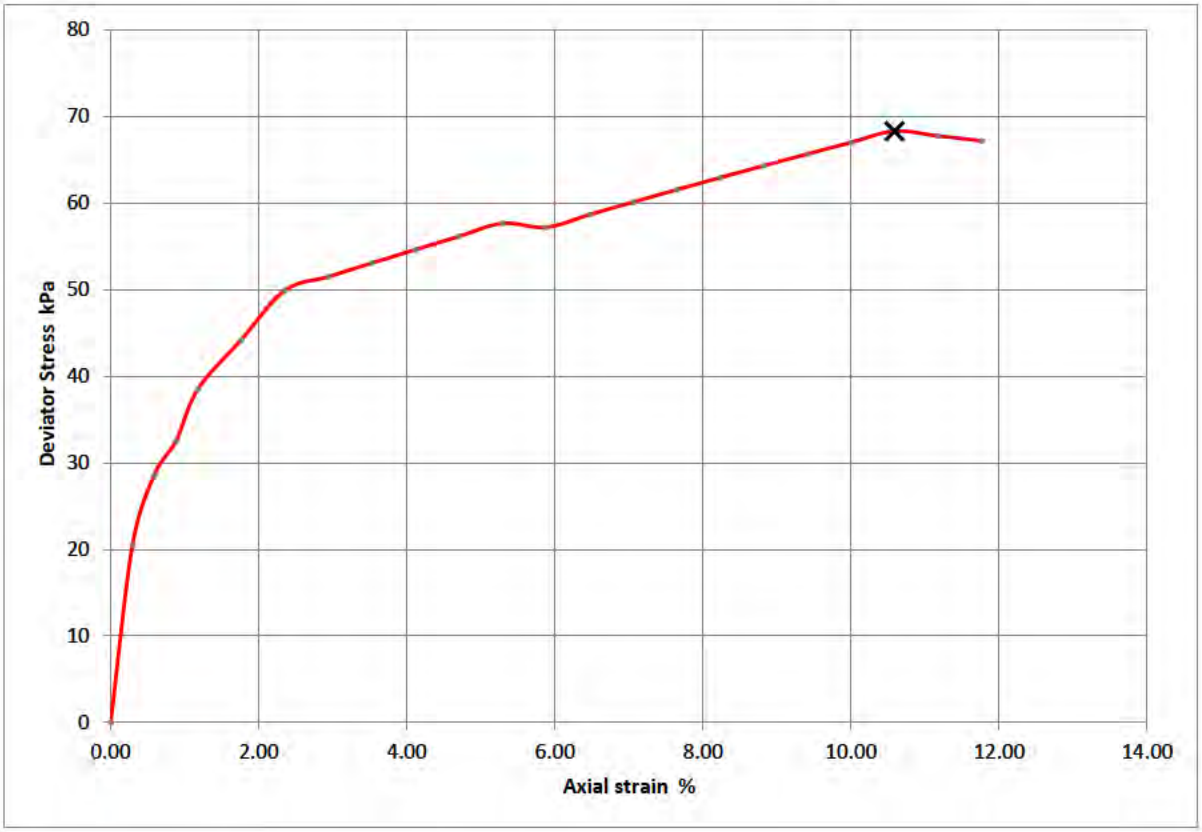
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BHTCA108
Site Name	Northstowe	Sample No.	13
Soil Description	Light grey silty CLAY	Depth Top (m)	6 00
		Depth Base (m)	6.45
Date Tested	18/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	31
Bulk Density (Mg/m^3)	2.17
Dry Density (Mg/m^3)	1.65
Specimen Length (mm)	170
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	68
Undrained Shear Strength (kPa)	34
Failure Strain (%)	11
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.76

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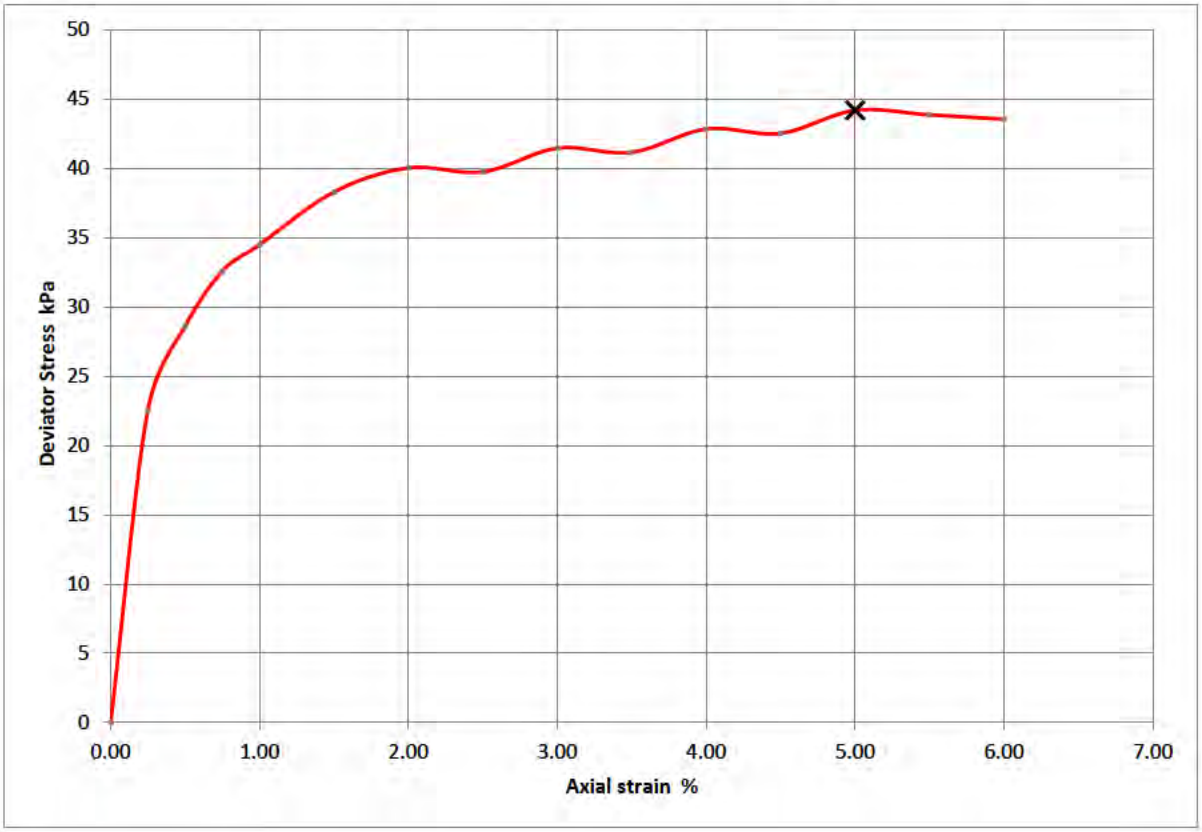
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BHTCA110
Site Name	Northstowe	Sample No.	10
Soil Description	Grey silty CLAY	Depth Top (m)	4.00
		Depth Base (m)	4.45
Date Tested	13/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	39
Bulk Density (Mg/m^3)	2.10
Dry Density (Mg/m^3)	1.51
Specimen Length (mm)	200
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	44
Undrained Shear Strength (kPa)	22
Failure Strain (%)	5
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.50

Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
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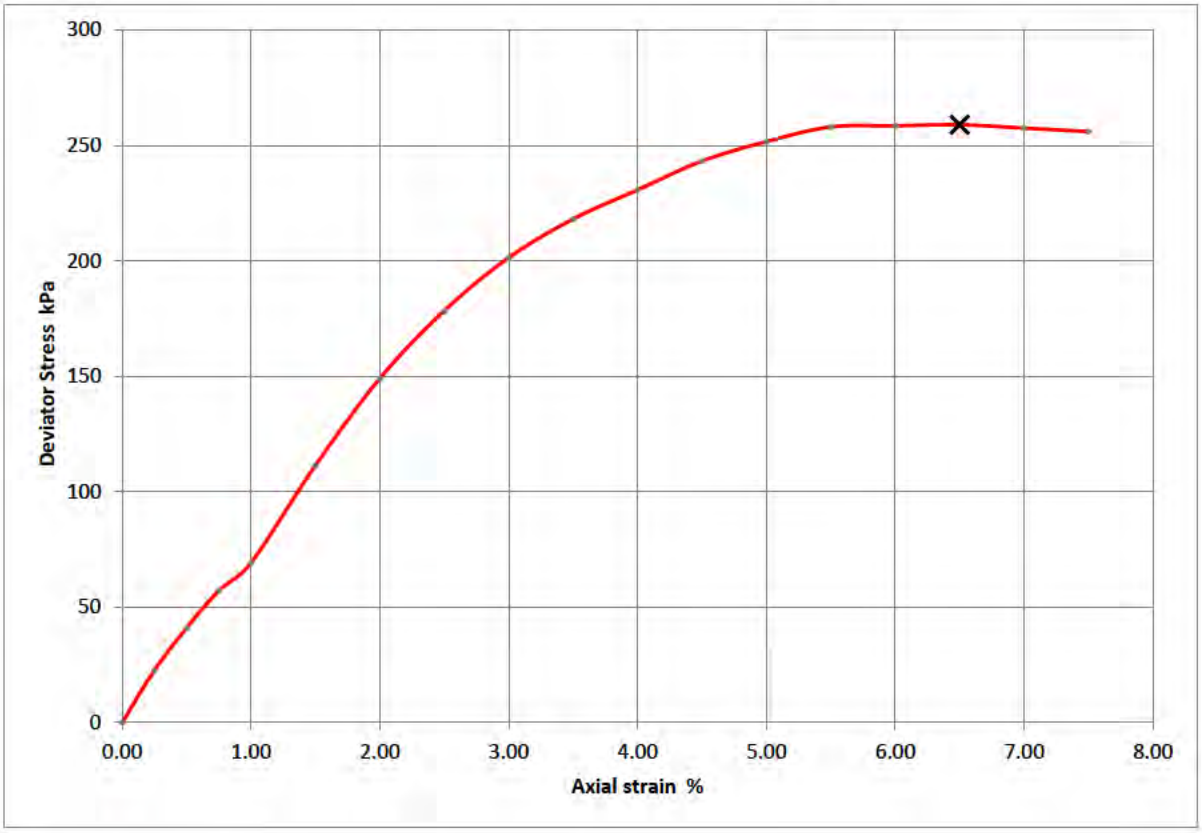
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BHTCA110
Site Name	Northstowe	Sample No.	16
Soil Description	Brown silty CLAY	Depth Top (m)	7 00
		Depth Base (m)	7.45
Date Tested	18/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	20
Bulk Density (Mg/m^3)	2.18
Dry Density (Mg/m^3)	1.81
Specimen Length (mm)	200
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	259
Undrained Shear Strength (kPa)	129
Failure Strain (%)	7
Mode Of Failure	Brit le
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.50

Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
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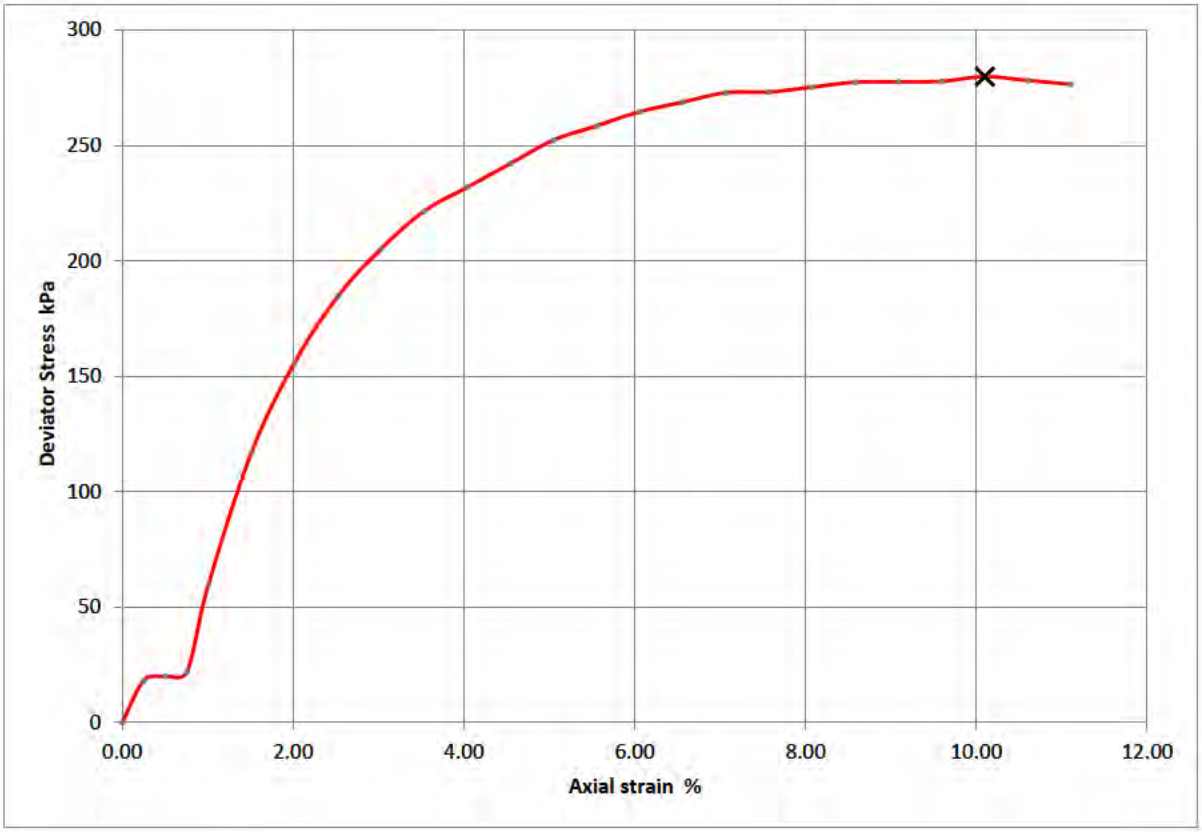
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BHTCA202
Site Name	Northstowe	Sample No.	20
Soil Description	Grey silty CLAY	Depth Top (m)	6.00
		Depth Base (m)	6.45
Date Tested	13/04/2022	Sample Type	U
		Technician	Jordan

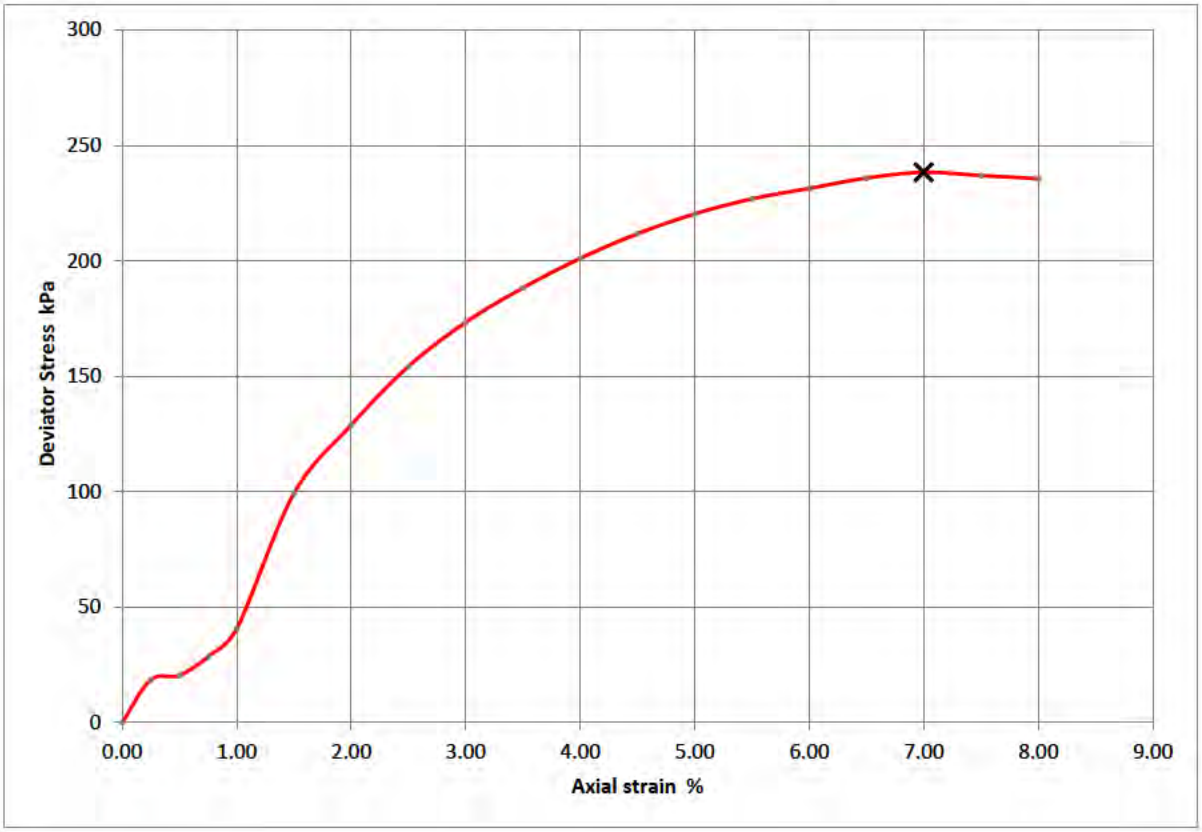


Moisture Content (%)	28
Bulk Density (Mg/m^3)	2.09
Dry Density (Mg/m^3)	1.63
Specimen Length (mm)	198
Specimen Diamteter (mm)	101
Cell Pressure (kPa)	250
Deviator Stress (kPa)	280
Undrained Shear Strength (kPa)	140
Failure Strain (%)	10
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.52

Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Approved	26/04/2022	Reg. 13(1)	

CAS TING 788

GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	58610
		Borehole/Pit No.	BHTCA202
Site Name	Northstowe	Sample No.	27
Soil Description	Greyish brown silty CLAY	Depth Top (m)	8 00
		Depth Base (m)	8.45
Date Tested	18/04/2022	Sample Type	U
		Technician	Jordan



Moisture Content (%)	33
Bulk Density (Mg/m^3)	2.19
Dry Density (Mg/m^3)	1.65
Specimen Length (mm)	200
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	238
Undrained Shear Strength (kPa)	119
Failure Strain (%)	7
Mode Of Failure	Brit le
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.50

Checked	25/04/2022	Reg. 13(1)	Reg. 13(1)
Approved	26/04/2022	Reg. 13(1)	

CAS TING 788

GSTL	SUMMARY OF SHEAR STRENGTH TESTS (TOTAL STRESS) (BS 1377 : PART 7 : 3 : 1990)	
Contract Number	58610	
Site Name	Northstowe	
Date Tested	20.04.2022	

BH/TP Number/ Window sample	Sample Number	Sample Type	Depth (m)			Moisture Content	Location of Test Horizon	Diameter of Tube (mm)	Vane Size (mm)	Disturbed / Undisturbed	Hand Vane	
											Peak	Residual
TPTCA113	4	B	1.00	-	2.00	24			33	Disturbed	40	17
TPTCA204	5	B	2.00	-	3.00	22.7			33	Disturbed	138	45
TPTCA208	4	B	1.00	-	2.00	14.8			33	Disturbed	106	58
WSTCA109	3	B	2.00	-	3.00	18			33	Disturbed	149	14
WSTCA112	1	B	0.90	-	1.30	22			33	Disturbed	152	76
WSTCA116	1	B	1.20	-	1.50	16			33	Disturbed	68	31
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Key	Reported As
Moisture Content	%
Hand Vane	kPa

Operators	Checked	25/04/2022	[redacted]	[redacted]
[redacted]	Approved	26/04/2022	[redacted]	

GSTL	Certificate of Chemical Analysis (BRE BR 279)	Contract Number	58610
		Client Reference	10052307
Client	Arcadis	**Date Received**	
Site Name	Northstowe	**Date Started**	20/04/2022
		Date Completed	26/04/2022
		No. of Samples	4

Hole Number	Sample Number	Sample Type	Depth (m)			Acid Soluble Sulphate	Aqueous Extract Sulphate	Chloride Content	Ph Value	Total Sulphur	Magnesium	Nitrate
TPTCA208	1	D	0.50	-	1.00	0.21	0.04	8.9	8.06	0.10	<1	<10
TPTCA208	3	D	2.00	-	3.00	0.29	0.05	11	8.22	0.12	<1	<10
BH2C102	16	B	5.00	-	5.50	0.31	0.05	7.7	8.30	0.13	<1	<10
TPTCA119	4	B	1.20	-	3.00	0.25	0.04	9.1	8.11	0.12	<1	<10
				-								
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Key	**Reported As**
Acid Soluble Sulphate	% SO_4
Aqueous Extract Sulphate	g/l SO_4
Chloride Content (Semi)	mg Cl/l
PH Value	@ 25°
Total Sulphur	% S
Magnesium	g/l SO_4
Nitrate	NO_3 mg/l

Remarks

NCP = No Chloride Present

Test Operator	Checked and Authorised by		Reg. 13(1) [redacted]	Reg. 13(1)
Reg. 13(1) [redacted]	Date	26/04/2022		

2531

ANALYTICAL TEST REPORT

Contract no:	108224
Contract name:	Northstowe
Client reference:	NSTO
Clients name:	Geo Site & Testing Services
Clients address:	Unit 3 and 4 Heol Aur Dafen Industrial Estate, Dafen Llanelli, Carmarthenshire SA14 8QN
Samples received:	14 April 2022
Analysis started:	14 April 2022
Analysis completed:	25 April 2022
Report issued:	25 April 2022

Key		
	U	UKAS accredited test
	M	MCERTS & UKAS accredited test
	$	Test carried out by an approved subcontractor
	I/S	Insufficient sample to carry out test
	N/S	Sample not suitable for testing

Approved by: Reg. 13(1)

Reg. 13(1)

Reporting Team Lead

Chemtech Environmental Limited

SOILS

Lab number			108224-1	108224-2	108224-3	108224-4	108224-5	108224-6
Sample id			BHTCA101	BHTCA101	BHTCA101	BHTCA102	BH2C102	BHTCA102
Depth (m)			0.50-0.70	2.00-2.50	5.00-5.50	0.50-0.70	2.10- 2.50	3.50-4.00
Sample Type			B2	B6	B15	B2	B6	D11
Date sampled			-	-	-	-	-	-
Test	Method	Units						
pH	CE004 U	un ts	8.7	8.9	8.8	8.6	8.2	7.9
Magnesium (2:1 water soluble)	CE061	mg/l Mg	1.8	2.5	13	28	14	55
Chloride (2:1 water soluble)	CE049 U	mg/l Cl	6.0	3.6	7.7	8.0	8.9	67
Nitrate (2:1 water soluble)	CE049 U	mg/l NO_3	5.9	1.2	1.9	20	2.2	4.4
Sulphate (2:1 water soluble)	CE061 U	mg/l SO_4	427	55	362	1706	284	1066
Sulphate (total)	CE062 U	mg/kg SO_4	2363	480	2787	4287	1770	4372
Sulphur (total)	CE119	mg/kg S	1060	229	7576	2907	909	4393
Sulphur (total)	CE119	% w/w S	0.11	0.02	0.76	0.29	0.09	0.44

Chemtech Environmental Limited

SOILS

Lab number			108224-7	108224-8	108224-9	108224-10	108224-11	108224-12
Sample id			BHTCA103A	BHTCA103A	BHTCA104	BHTCA104	BHTCA104	BHTCA107
Depth (m)			0.20-0.50	4.00-4.50	0.50-0.70	3.00-3.50	6.50-7.00	3.00-3.45
Sample Type			B1	B8	B2	B9	D19	B10
Date sampled			-	-	-	-	-	-
Test	Method	Units						
pH	CE004 U	un ts	8.1	8.1	9.4	8.5	8.5	8.2
Magnesium (2:1 water soluble)	CE061	mg/l Mg	2.6	11	2.4	53	38	72
Chloride (2:1 water soluble)	CE049 U	mg/l Cl	63	11	17	35	19	20
Nitrate (2:1 water soluble)	CE049 U	mg/l NO_3	19	3.3	10	3.6	1.8	3.3
Sulphate (2:1 water soluble)	CE061 U	mg/l SO_4	752	409	1456	1900	999	1626
Sulphate (total)	CE062 U	mg/kg SO_4	2257	2065	3934	23098	4050	4946
Sulphur (total)	CE119	mg/kg S	1190	4559	1810	9459	8047	15498
Sulphur (total)	CE119	% w/w S	0.12	0.46	0.18	0.95	0.80	1.55

Chemtech Environmental Limited

SOILS

Lab number			108224-13	108224-14	108224-15	108224-16	108224-17	108224-18
Sample id			BHTCA107	BHTCA108	BHTCA108	BHTCA110	BHTCA202	BHTCA202
Depth (m)			5.00-5.45	0.50-0.80	5.00-5.45	0.40-0.60	0.20-0.60	1.70-2.00
Sample Type			B15	B1	D11	B2	B4	D7
Date sampled			-	-	-	-	-	-
Test	Method	Units						
pH	CE004 U	un ts	8.2	8.3	8.0	8.0	8.1	8.3
Magnesium (2:1 water soluble)	CE061	mg/l Mg	38	8.6	82	34	31	19
Chloride (2:1 water soluble)	CE049 U	mg/l Cl	11	7.4	18	9.2	7.8	8.1
Nitrate (2:1 water soluble)	CE049 U	mg/l NO_3	2.4	6.8	1.7	20	31	5.6
Sulphate (2:1 water soluble)	CE061 U	mg/l SO_4	884	240	1937	1505	1570	628
Sulphate (total)	CE062 U	mg/kg SO_4	2989	660	18026	8075	10579	1596
Sulphur (total)	CE119	mg/kg S	6494	505	7555	2972	4256	683
Sulphur (total)	CE119	% w/w S	0.65	0.05	0.76	0.30	0.43	0.07

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SOILS

Lab number			108224-19	108224-20	108224-21	108224-22	108224-23	108224-24
Sample id			TPTCA102	TPTCA103	TPTCA104	TPTCA105	TPTCA113	TPTCA114
Depth (m)			0.50-1.00	0.50-1.00	0.20-0.80	0.20-0.50	2.00-3.00	0.20-0.50
Sample Type			D3	B3	D2	D2	B5	B2
Date sampled			-	-	-	-	-	-
Test	Method	Units						
pH	CE004 [U]	un ts	8.3	8.0	8.2	10.1	9.0	8.1
Magnesium (2:1 water soluble)	CE061	mg/l Mg	2.6	16	5.6	<1	3.0	18
Chloride (2:1 water soluble)	CE049 [U]	mg/l Cl	5.1	9.6	10	7.6	14	5.4
Nitrate (2:1 water soluble)	CE049 [U]	mg/l NO_3	9.3	14	16	7.3	2.4	2.6
Sulphate (2:1 water soluble)	CE061 [U]	mg/l SO_4	116	1510	167	608	116	1498
Sulphate (total)	CE062 [U]	mg/kg SO_4	359	6568	488	1868	647	3732
Sulphur (total)	CE119	mg/kg S	173	3341	291	844	308	1486
Sulphur (total)	CE119	% w/w S	0.02	0.33	0.03	0.08	0.03	0.15

Chemtech Environmental Limited

SOILS

Lab number			108224-25	108224-26	108224-27	108224-28	108224-29	108224-30
Sample id			TPTCA114	TPTCA118	TPTCA204	TPTCA204	TPTCA208	WS2C101
Depth (m)			0.50-1.00	0.50-1.00	0.20-0.50	2.00-3.00	1.00-2.00	1.20-1.65
Sample Type			B3	B3	B2	D5	D4	D2
Date sampled			-	-	-	-	-	-
Test	Method	Units						
pH	CE004 [U]	un ts	7.7	8.0	7.8	8.3	8.2	8.3
Magnesium (2:1 water soluble)	CE061	mg/l Mg	6.4	10	42	11	51	67
Chloride (2:1 water soluble)	CE049 [U]	mg/l Cl	7.2	7.2	29	14	17	12
Nitrate (2:1 water soluble)	CE049 [U]	mg/l NO_3	100	14	37	9.5	7.2	8.1
Sulphate (2:1 water soluble)	CE061 [U]	mg/l SO_4	116	253	1630	763	1651	1715
Sulphate (total)	CE062 [U]	mg/kg SO_4	539	904	14318	1750	8548	6178
Sulphur (total)	CE119	mg/kg S	317	370	5488	615	4331	2564
Sulphur (total)	CE119	% w/w S	0.03	0.04	0.55	0.06	0.43	0.26

Chemtech Environmental Limited

SOILS

Lab number			108224-31	108224-32	108224-33	108224-34	108224-35	108224-36
Sample id			WS2C106	WS2C108	WS2C108	WS2C112	WS2C120	WS2C120
Depth (m)			1.20-1.65	1.20-1.65	1.80-2.70	2.00-2.45	1.20-1.65	2.70-2.80
Sample Type			D2	D1	B2	D2	D1	D3
Date sampled			-	-	-	-	-	-
Test	Method	Units						
pH	CE004 U	un ts	8.4	8.4	8.1	8.0	8.3	8.1
Magnesium (2:1 water soluble)	CE061	mg/l Mg	16	6.4	46	63	21	74
Chloride (2:1 water soluble)	CE049 U	mg/l Cl	4.5	3.0	72	12	7.5	21
Nitrate (2:1 water soluble)	CE049 U	mg/l NO_3	2.9	3.7	3.2	3.8	1.6	1.3
Sulphate (2:1 water soluble)	CE061 U	mg/l SO_4	599	180	1586	1901	554	1932
Sulphate (total)	CE062 U	mg/kg SO_4	1827	897	81273	16604	3367	26645
Sulphur (total)	CE119	mg/kg S	641	401	29260	6307	1373	10410
Sulphur (total)	CE119	% w/w S	0.06	0.04	2.93	0.63	0.14	1.04

Chemtech Environmental Limited

SOILS

Lab number			108224-37	108224-38	108224-39	108224-40	108224-41	108224-42
Sample id			WS2C121	WS2C121	WS2C123	WS2C123	WSTCA109	WSTCA112
Depth (m)			1.20-1.65	2.00-2.45	0.70	2.00-2.45	2.00-3.00	0.90-1.30
Sample Type			D2	D3	B1	D3	B3	B15
Date sampled			-	-	-	-	-	-
Test	Method	Units						
pH	CE004 U	un ts	8.6	8.1	8.4	8.3	8.1	8.5
Magnesium (2:1 water soluble)	CE061	mg/l Mg	39	72	12	70	43	11
Chloride (2:1 water soluble)	CE049 U	mg/l Cl	11	18	32	21	11	8.6
Nitrate (2:1 water soluble)	CE049 U	mg/l NO_3	1.3	5.1	3.6	3.3	2.0	<1
Sulphate (2:1 water soluble)	CE061 U	mg/l SO_4	1616	2066	873	1919	1820	431
Sulphate (total)	CE062 U	mg/kg SO_4	5188	49024	2956	70761	16292	1402
Sulphur (total)	CE119	mg/kg S	1939	15257	1270	23080	11389	753
Sulphur (total)	CE119	% w/w S	0.19	1.53	0.13	2.31	1.14	0.08

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SOILS

Lab number			108224-43	108224-44
Sample id			WSTCA117	WSTCA117
Depth (m)			1.50-2.00	2.50-2.80
Sample Type			B2	B4
Date sampled			-	-
Test	Method	Units		
pH	CE004 U	un ts	8.1	7.7
Magnesium (2:1 water soluble)	CE061	mg/l Mg	5.9	69
Chloride (2:1 water soluble)	CE049 U	mg/l Cl	9.6	19
Nitrate (2:1 water soluble)	CE049 U	mg/l NO_3	1.3	1.7
Sulphate (2:1 water soluble)	CE061 U	mg/l SO_4	138	1882
Sulphate (total)	CE062 U	mg/kg SO_4	995	47633
Sulphur (total)	CE119	mg/kg S	457	16234
Sulphur (total)	CE119	% w/w S	0.05	1.62

Chemtech Environmental Limited

METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE004	pH	Based on BS 1377, pH Meter	As received	U	-	units
CE061	Magnesium (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry		1	mg/l Mg
CE049	Chloride (2:1 water soluble)	Aqueous extraction, IC-COND	Dry	U	1	mg/l Cl
CE049	Nitrate (2:1 water soluble)	Aqueous extraction, IC-COND	Dry	U	1	mg/l NO_3
CE061	Sulphate (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry	U	10	mg/l SO_4
CE062	Sulphate (total)	Acid extraction, ICP-OES	Dry	U	100	mg/kg SO_4
CE119	Sulphur (total)	Acid extraction, ICP-OES	Dry		100	mg/kg S
CE119	Sulphur (total)	Acid extraction, ICP-OES	Dry		0.01	% w/w S

Chemtech Environmental Limited

DEVIATING SAMPLE INFORMATION

Comments
Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.
For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.
Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

N	No (not deviating sample)
Y	Yes (deviating sample)
NSD	Sampling date not provided
NST	Sampling time not provided (waters only)
EHT	Sample exceeded holding time(s)
IC	Sample not received in appropriate containers
HP	Headspace present in sample container
NCF	Sample not chemically fixed (where appropriate)
OR	Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
108224-1	BHTCA101	0.50-0.70	Y	All (NSD)
108224-2	BHTCA101	2.00-2.50	Y	All (NSD)
108224-3	BHTCA101	5.00-5.50	Y	All (NSD)
108224-4	BHTCA102	0.50-0.70	Y	All (NSD)
108224-5	BH2C102	2.10- 2.50	Y	All (NSD)
108224-6	BHTCA102	3.50-4.00	Y	All (NSD)
108224-7	BHTCA103A	0.20-0.50	Y	All (NSD)
108224-8	BHTCA103A	4.00-4.50	Y	All (NSD)
108224-9	BHTCA104	0.50-0.70	Y	All (NSD)
108224-10	BHTCA104	3.00-3.50	Y	All (NSD)
108224-11	BHTCA104	6.50-7.00	Y	All (NSD)
108224-12	BHTCA107	3.00-3.45	Y	All (NSD)
108224-13	BHTCA107	5.00-5.45	Y	All (NSD)
108224-14	BHTCA108	0.50-0.80	Y	All (NSD)
108224-15	BHTCA108	5.00-5.45	Y	All (NSD)
108224-16	BHTCA110	0.40-0.60	Y	All (NSD)
108224-17	BHTCA202	0.20-0.60	Y	All (NSD)
108224-18	BHTCA202	1.70-2.00	Y	All (NSD)
108224-19	TPTCA102	0.50-1.00	Y	All (NSD)
108224-20	TPTCA103	0.50-1.00	Y	All (NSD)
108224-21	TPTCA104	0.20-0.80	Y	All (NSD)
108224-22	TPTCA105	0.20-0.50	Y	All (NSD)
108224-23	TPTCA113	2.00-3.00	Y	All (NSD)
108224-24	TPTCA114	0.20-0.50	Y	All (NSD)
108224-25	TPTCA114	0.50-1.00	Y	All (NSD)
108224-26	TPTCA118	0.50-1.00	Y	All (NSD)
108224-27	TPTCA204	0.20-0.50	Y	All (NSD)
108224-28	TPTCA204	2.00-3.00	Y	All (NSD)
108224-29	TPTCA208	1.00-2.00	Y	All (NSD)
108224-30	WS2C101	1.20-1.65	Y	All (NSD)

Chemtech Environmental Limited

DEVIATING SAMPLE INFORMATION

Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.

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Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

N	No (not deviating sample)
Y	Yes (deviating sample)
NSD	Sampling date not provided
NST	Sampling time not provided (waters only)
EHT	Sample exceeded holding time(s)
IC	Sample not received in appropriate containers
HP	Headspace present in sample container
NCF	Sample not chemically fixed (where appropriate)
OR	Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
108224-31	WS2C106	1.20-1.65	Y	All (NSD)
108224-32	WS2C108	1.20-1.65	Y	All (NSD)
108224-33	WS2C108	1.80-2.70	Y	All (NSD)
108224-34	WS2C112	2.00-2.45	Y	All (NSD)
108224-35	WS2C120	1.20-1.65	Y	All (NSD)
108224-36	WS2C120	2.70-2.80	Y	All (NSD)
108224-37	WS2C121	1.20-1.65	Y	All (NSD)
108224-38	WS2C121	2.00-2.45	Y	All (NSD)
108224-39	WS2C123	0.70	Y	All (NSD)
108224-40	WS2C123	2.00-2.45	Y	All (NSD)
108224-41	WSTCA109	2.00-3.00	Y	All (NSD)
108224-42	WSTCA112	0.90-1.30	Y	All (NSD)
108224-43	WSTCA117	1.50-2.00	Y	All (NSD)
108224-44	WSTCA117	2.50-2.80	Y	All (NSD)

Chemtech Environmental Limited

ADDITIONAL INFORMATION

Notes

Opinions and interpretations expressed herein are outside the UKAS accreditation scope.
Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.
All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.
Methods, procedures and performance data are available on request.
Results reported herein relate only to the material supplied to the laboratory.
This report shall not be reproduced except in full, without prior written approval.
Samples will be disposed of 6 weeks from initial receipt unless otherwise instructed.
For soils and solids, all results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.
Analytical results are inclusive of stones, where applicable.

Laboratory Report

GEO Site & Testing Services Ltd

Contract Number: 59102

Client Ref:

Client PO: **14059902**

Report Date: **05-05-2022**

Client **Arcadis**
Fortran Rd
St Mellons
Cardiff
CF3 0EY

Contract Title: **Northstowe**

For the attention of: Reg. 13(1)

Date Received: **19-04-2022**

Date Completed: **05-05-2022**

Test Description	Qty
Moisture Content of Soil BS1377 : Part 2 : Clause 3.2 : 1990 - * UKAS	36
4 Point Liquid & Plastic Limit BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS	36
BRE Full Suite **includes pH, water & acid soluble sulphate, total sulphur, magnesium, chloride and nitrate** Sub-contracted Test	7
One-dimensional Consolidation 75mm or 50mm diameter specimens (5 days) BS 1377:1990 - Part 5 : 3 - * UKAS	5
Quick Undrained Triaxial Compression test - single specimen at one confining pressure (100mm or 38mm diameter) BS 1377:1990 - Part 7 : 8 - * UKAS	3
Disposal of samples for job	1

Notes: **Observations and Interpretations are outside the UKAS Accreditation**
*** - denotes test included in laboratory scope of accreditation**
 # - denotes test carried out by approved contractor
@ - denotes non accredited tests

Approved Signatories:

Reg. 13(1) (Business Support Manager) - Reg. 13(1) (Director) - Reg. 13(1) (Quality/Technical Manager)
Reg. 13(1) (Laboratory manager) - Reg. 13(1) (Site Manager) - Reg. 13(1) (Quality Assistant / Administrator / Health and Safety Coordinator)

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GSTL	NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377:1990 - Part 2 : 4.3 & 5.3)	
Contract Number	59102	
Site Name	Northstowe	
Date Tested	26/04/2022	
	DESCRIPTIONS	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Descriptions
BHTCA105	3	B	1.20	-	1.70	Brown gravelly silty CLAY
BHTCA105	5	B	2.00	-	2.50	Brown gravelly silty CLAY
BHTCA105	6	D	2.80	-	3.00	Grey fine to medium gravelly silty CLAY
BHTCA105	10	D	4.80	-	5.00	Grey silty CLAY
BHTCA105	14	D	6.80	-	7.00	Grey fine to medium gravelly silty CLAY
BHTCA105	18	D	8.80	-	9.00	Grey silty CLAY
BHTCA106	5	B	1.70	-	2.00	Brown gravelly silty CLAY
BHTCA106	10	D	3.45	-	3.55	Grey silty CLAY
BHTCA106	18	D	5.50	-	6.00	Grey fine to medium gravelly silty CLAY
BHTCA106	23	D	7.50	-	8.00	Grey silty CLAY
BHTCA106	26	D	8.50	-	9.00	Grey silty CLAY
BHTCA106	41	D	14.00	-	14.50	Brownish grey fine to medium gravelly silty CLAY
BHTCA106	49	D	17.00	-	17.50	Grey silty CLAY
TP2C102	3	D	1.60	-	3.00	Brown silty CLAY
TP2C103	6	D	0.50	-	1.40	Brown sandy silty CLAY
TP2C103	8	D	1.40	-	3.00	Grey silty CLAY
TP2C104	2	D	0.20	-	0.50	Brown gravelly silty CLAY
TP2C104	4	D	1.50	-	3.00	Grey silty CLAY
TP2C105	5	D	0.50	-	1.40	Brown silty CLAY
TP2C107	5	D	0.20	-	1.10	Brown silty CLAY
TP2C107	6	D	1.10	-	3.00	Brown silty CLAY
TP2C109	6	D	0.20	-	0.70	Brown gravelly silty CLAY
TP2C109	7	D	0.70	-	1.70	Brown silty CLAY
TP2C110	5	D	0.50	-	1.90	Brown silty CLAY

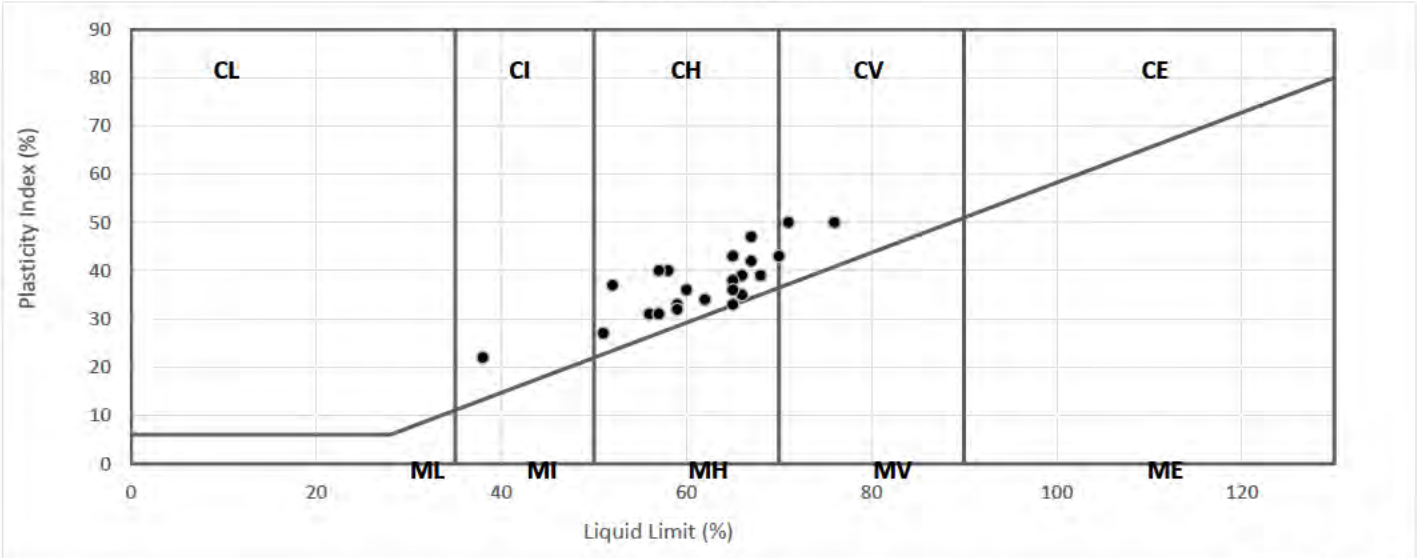
Operators	Checked	04/05/2022	Reg. 13(1) (Advanced Testing Manager)
Reg. 13(1)	Approved	04/05/2022	Reg. 13(1) (Quality/Technical Manager)

GSTL	NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377:1990 - Part 2 : 4.3 & 5.3)	
Contract Number	59102	
Project Location	Northstowe	
Date Tested	26/04/2022	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks
BHTCA105	3	B	1.20	-	1.70	19	38	16	22	84	CI Intermediate Plasticity
BHTCA105	5	B	2.00	-	2.50	26	67	25	42	87	CH High Plasticity
BHTCA105	6	D	2.80	-	3.00	32	68	29	39	95	CH High Plasticity
BHTCA105	10	D	4.80	-	5.00	34	62	28	34	100	CH High Plasticity
BHTCA105	14	D	6.80	-	7.00	30	51	24	27	96	CH High Plasticity
BHTCA105	18	D	8.80	-	9.00	39	65	32	33	100	CH High Plasticity
BHTCA106	5	B	1.70	-	2.00	37	62	28	34	95	CH High Plasticity
BHTCA106	10	D	3.45	-	3.55	40	66	31	35	100	CH High Plasticity
BHTCA106	18	D	5.50	-	6.00	24	65	22	43	96	CH High Plasticity
BHTCA106	23	D	7.50	-	8.00	29	70	27	43	100	CH/V High/HighPlasticity
BHTCA106	26	D	8.50	-	9.00	32	66	27	39	100	CH High Plasticity
BHTCA106	41	D	14.00	-	14.50	34	56	25	31	96	CH High Plasticity
BHTCA106	49	D	17.00	-	17.50	32	57	26	31	100	CH High Plasticity
TP2C102	3	D	1.60	-	3.00	27	67	20	47	100	CH High Plasticity
TP2C103	6	D	0.50	-	1.40	27	76	26	50	100	CV Very High Plasticity
TP2C103	8	D	1.40	-	3.00	28	65	27	38	100	CH High Plasticity
TP2C104	2	D	0.20	-	0.50	29	59	26	33	94	CH High Plasticity
TP2C104	4	D	1.50	-	3.00	30	60	24	36	100	CH High Plasticity
TP2C105	5	D	0.50	-	1.40	33	58	18	40	100	CH High Plasticity
TP2C107	5	D	0.20	-	1.10	30	59	27	32	100	CH High Plasticity
TP2C107	6	D	1.10	-	3.00	40	65	29	36	100	CH High Plasticity
TP2C109	6	D	0.20	-	0.70	17	52	15	37	85	CH High Plasticity
TP2C109	7	D	0.70	-	1.70	18	57	17	40	100	CH High Plasticity
TP2C110	5	D	0.50	-	1.90	24	71	21	50	100	CV Very High Plasticity

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:1999+A2:2010



Operators	Checked	04/05/2022	Reg. 13(1) (Advanced Testing Manager)
Reg. 13(1)	Approved	04/05/2022	Reg. 13(1) (Quality/Technical Manager)

GSTL	NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377:1990 - Part 2 : 4.3 & 5.3)	
Contract Number	59102	
Site Name	Northstowe	
Date Tested	26/04/2022	
	DESCRIPTIONS	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Descriptions
TP2C110	6	D	1.90	-	3.00	Brown silty CLAY
TP2C113	2	D	2.50	-		Grey silty CLAY
TP2C115	8	D	1.30	-	3.00	Brown gravelly silty CLAY
TP2C116	8	D	1.40	-	3.00	Grey silty CLAY
TP2C118	1	D	1.20	-		Brown silty CLAY
TP2C118	2	B	2.80	-		Brown silty CLAY
TP2C119	1	D	1.20	-		Brown silty CLAY
TP2C119	2	D	2.20	-		Brown silty CLAY
TP2C122	1	D	0.90	-		Brown gravelly silty CLAY
TP2C122	2	D	3.00	-		Brown silty CLAY
TP2C124	1	D	1.10	-		Brown silty CLAY
TP2C124	2	D	2.60	-		Grey silty CLAY
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
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Operators	Checked	04/05/2022	Reg. 13(1) (Advanced Testing Manager)
Reg. 13(1)	Approved	04/05/2022	Reg. 13(1) (Quality/Technical Manager)

NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.3 & 5.3)

Contract Number	59102
Project Location	Northstowe
Date Tested	26/04/2022

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks
TP2C110	6	D	1.90	-	3.00	29	71	27	44	100	CV Very High Plasticity
TP2C113	2	D	2.50	-		29	68	23	45	100	CH High Plasticity
TP2C115	8	D	1.30	-	3.00	30	62	27	35	90	CH High Plasticity
TP2C116	8	D	1.40	-	3.00	26	70	25	45	100	CH/V High/HighPlasticity
TP2C118	1	D	1.20	-		30	80	25	55	100	CV Very High Plasticity
TP2C118	2	B	2.80	-		30	64	23	41	100	CH High Plasticity
TP2C119	1	D	1.20	-		31	48	27	21	100	CI Intermediate Plasticity
TP2C119	2	D	2.20	-		30	87	24	63	100	CV Very High Plasticity
TP2C122	1	D	0.90	-		17	30	16	14	91	CL Low Plasticity
TP2C122	2	D	3.00	-		27	67	25	42	100	CH High Plasticity
TP2C124	1	D	1.10	-		26	69	24	45	100	CH High Plasticity
TP2C124	2	D	2.60	-		32	70	25	45	100	CH/V High/HighPlasticity
				-							
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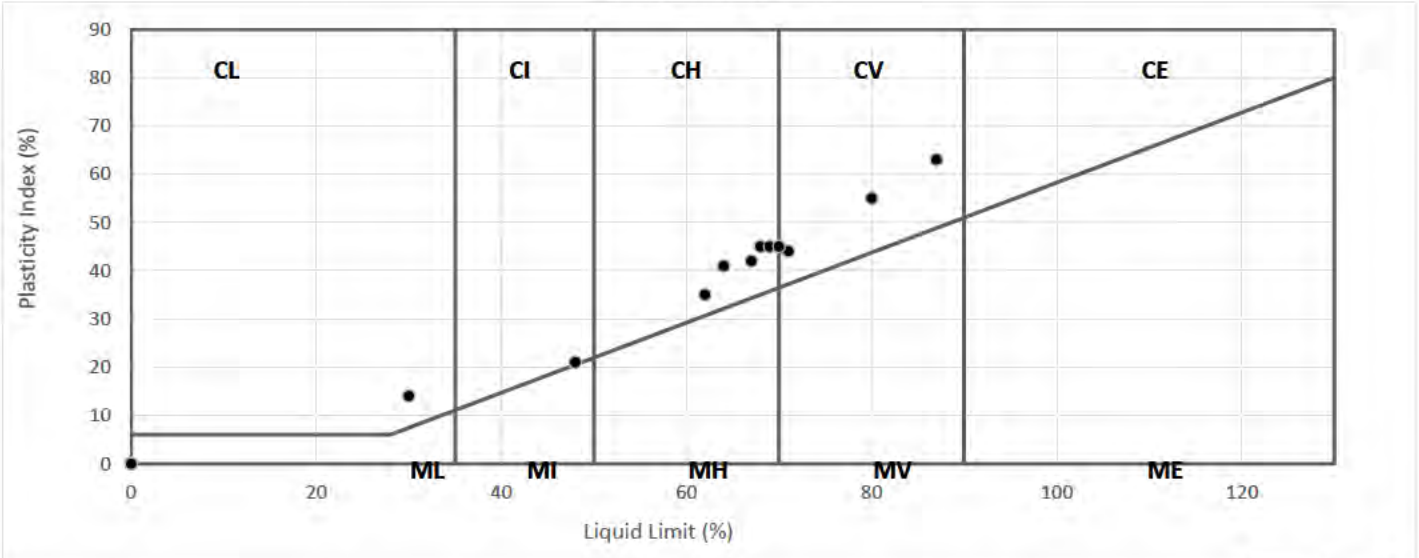
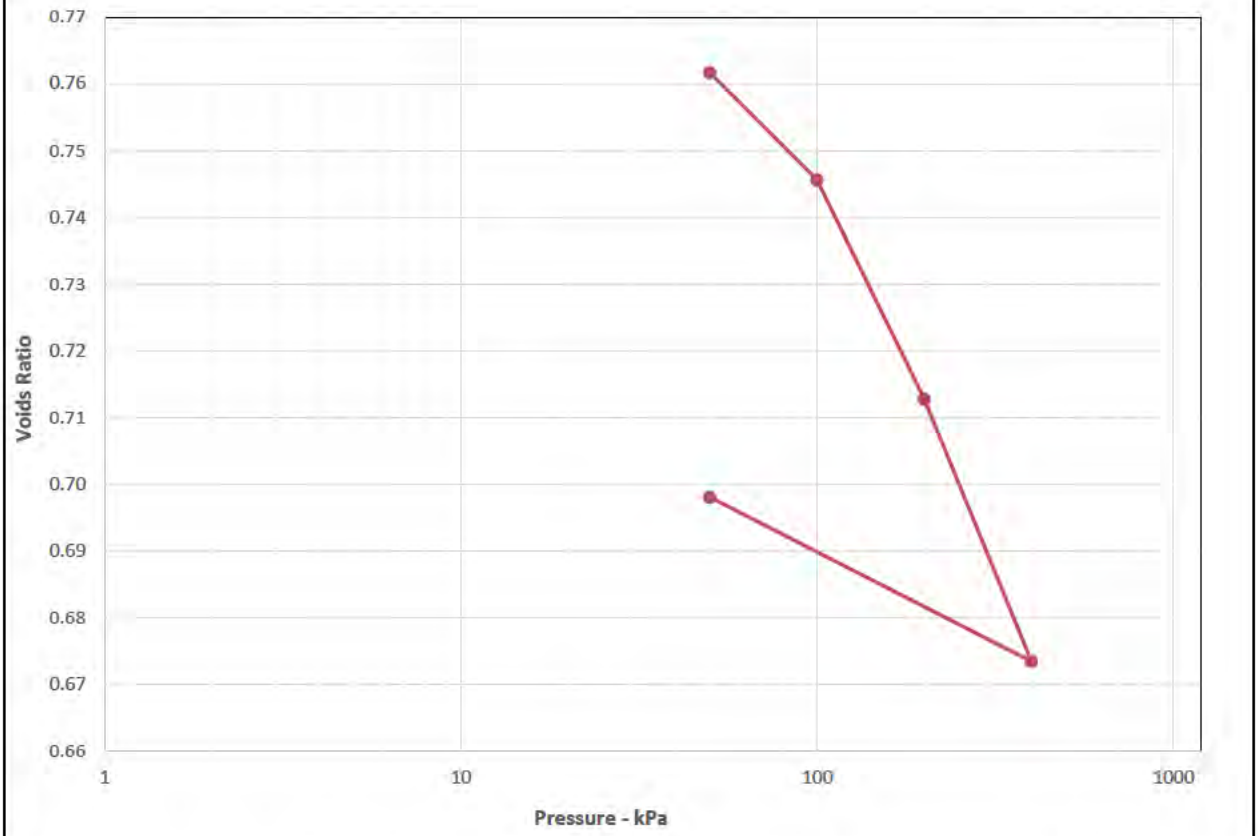
Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:1999+A2:2010



Operators	Checked	04/05/2022	Reg. 13(1) (Advanced Testing Manager)
Reg. 13(1)	Approved	04/05/2022	Reg. 13(1) (Quality/Technical Manager)

GSTL	ONE DIMENSIONAL CONSOLIDATION TEST BS1377:Part 5:1990, clause 3	Contract Number	59102
		Borehole/Trialpit No.	BHTCA105
Site Name	Northstowe	Sample No.	7
Soil Description	Grey silty CLAY	Depth Top (m)	3.00
		Depth Base (m)	3.45
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Par icle Density Assumed Unless Stated Otherwise	Sample Type	U
Date Tested	26/04/2022		

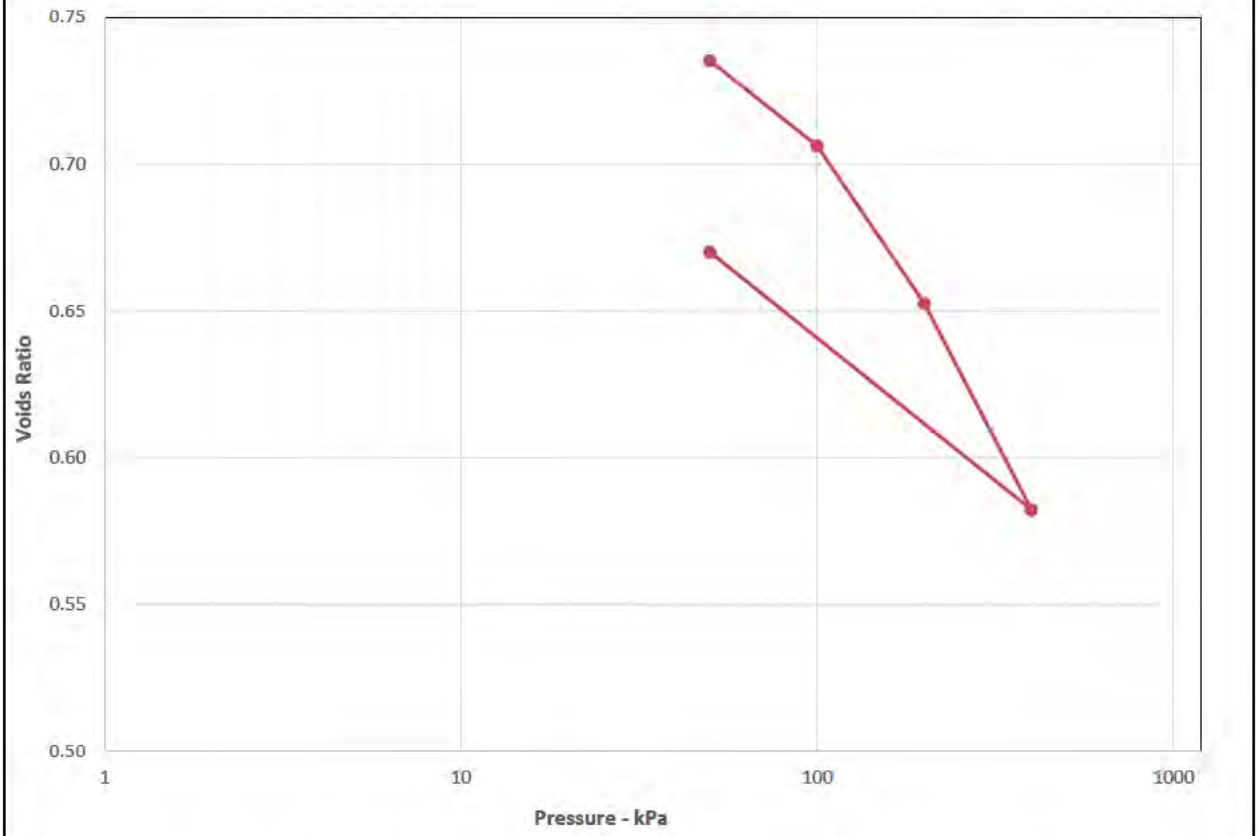


Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	31	0	-	50	-0.2	SWELL		-			
Bulk Density (Mg/m3)	1.98	50	-	100	0.18	6 2		-			
Dry Density (Mg/m3)	1.52	100	-	200	0.19	3.1		-			
Voids Ratio	0.7488	200	-	400	0.11	0 2		-			
Degree of saturation	108.6	400	-	50	0.042	0.98		-			
Height (mm)	18.68		-					-			
Diameter (mm)	75.09		-					-			
Particle Density (Mg/m3)	2.65		-					-			

Operators	Checked	04/05/2022	Reg. 13(1)
Reg. 13(1)	Approved	05/05/2022	Reg. 13(1)

Reg. 13(1)

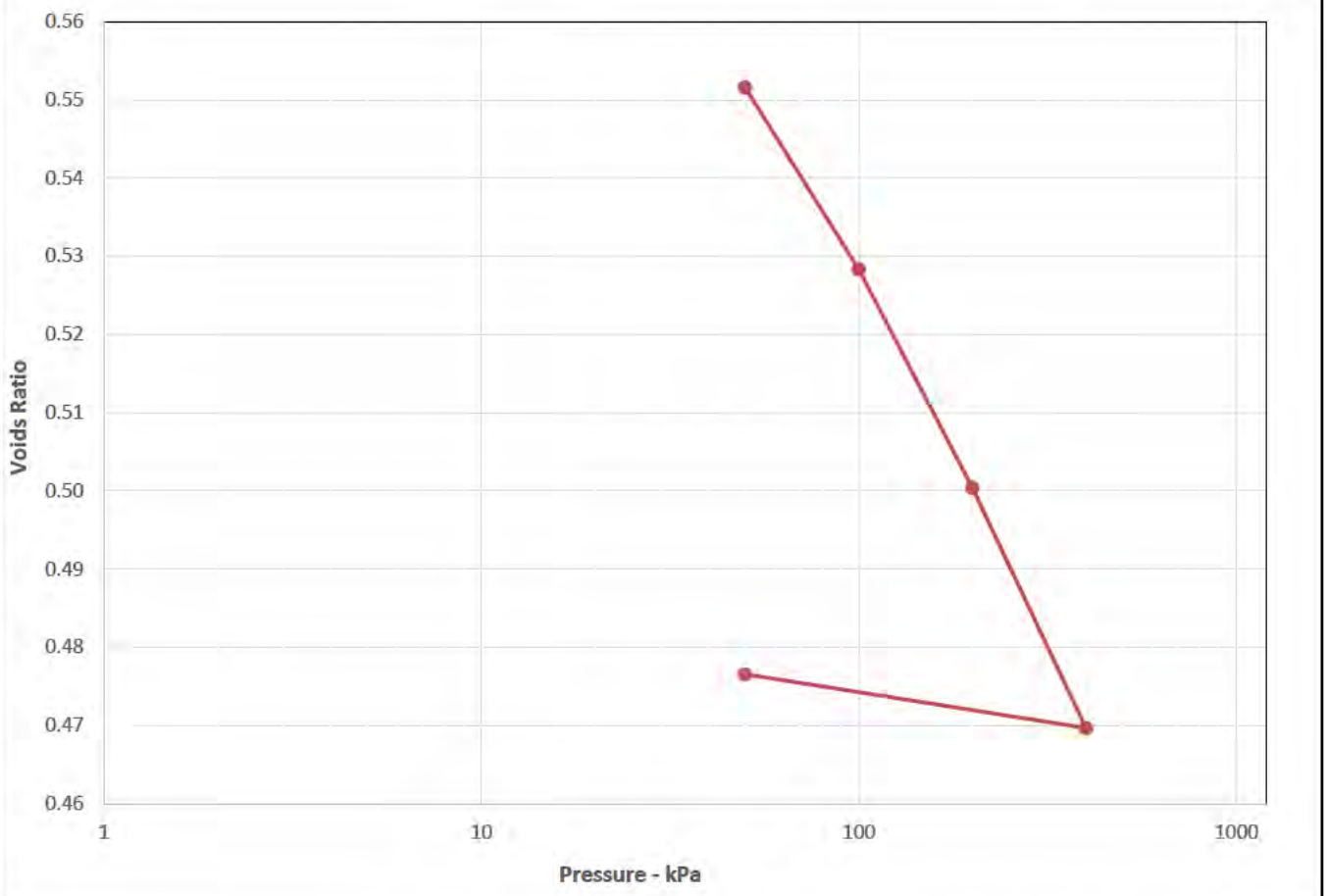
GSTL	ONE DIMENSIONAL CONSOLIDATION TEST BS1377:Part 5:1990, clause 3	Contract Number	59102
		Borehole/Trialpit No.	BHTCA105
Site Name	Northstowe	Sample No.	19
Soil Description	Grey silty CLAY	Depth Top (m)	9.00
		Depth Base (m)	9.45
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Par icle Density Assumed Unless Stated Otherwise	Sample Type	U
Date Tested	26/04/2022		



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	29	0	-	50	-0.3	SWELL		-			
Bulk Density (Mg/m3)	1.99	50	-	100	0.33	10		-			
Dry Density (Mg/m3)	1.55	100	-	200	0.31	9 9		-			
Voids Ratio	0.7129	200	-	400	0.21	4 5		-			
Degree of saturation	106.2	400	-	50	0.16	1.6		-			
Height (mm)	19.8		-					-			
Diameter (mm)	75.11		-					-			
Particle Density (Mg/m3)	2.65		-					-			

Operators	Checked	04/05/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(1)	Approved	05/05/2022	Reg. 13(1)	

GSTL	ONE DIMENSIONAL CONSOLIDATION TEST BS1377:Part 5:1990, clause 3	Contract Number	59102
		Borehole/Trialpit No.	BHTCA106
Site Name	Northstowe	Sample No.	9
Soil Description	Grey silty CLAY	Depth Top (m)	3.00
		Depth Base (m)	3.45
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Particle Density Assumed Unless Stated Otherwise	Sample Type	U
Date Tested	26/04/2022		

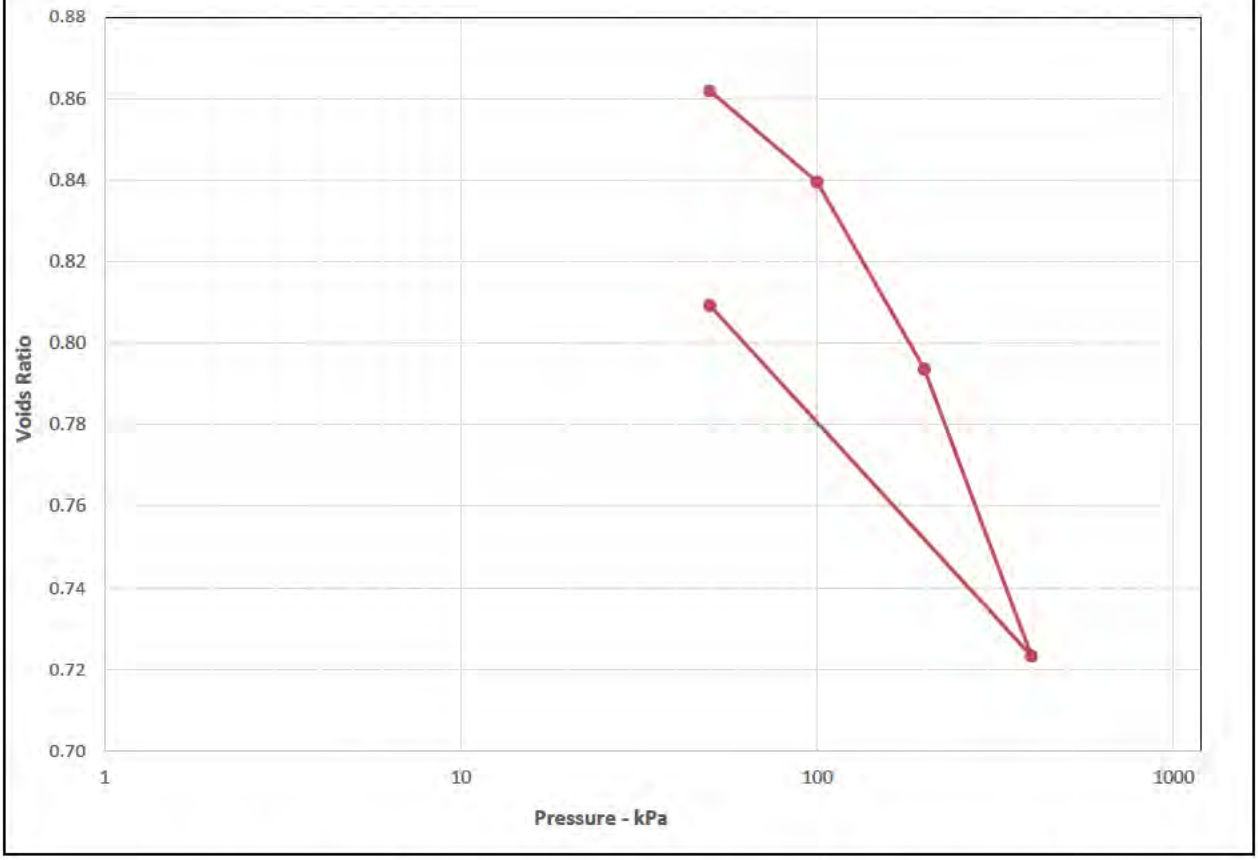


Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	24	0	-	50	0.5	1.3		-			
Bulk Density (Mg/m3)	2.07	50	-	100	0.3	1.8		-			
Dry Density (Mg/m3)	1.67	100	-	200	0.18	3.2		-			
Voids Ratio	0.5893	200	-	400	0.10	9.1		-			
Degree of saturation	108.2	400	-	50	0.013	6		-			
Height (mm)	20.27		-					-			
Diameter (mm)	50.28		-					-			
Particle Density (Mg/m3)	2.65		-					-			

Operators	Checked	04/05/2022	Reg. 13(1)
Reg. 13(1)	Approved	05/05/2022	Reg. 13(1)

Reg. 13(1)

GSTL	ONE DIMENSIONAL CONSOLIDATION TEST BS1377:Part 5:1990, clause 3	Contract Number	59102
		Borehole/Trialpit No.	BHTCA106
Site Name	Northstowe	Sample No.	24
Soil Description	Grey silty CLAY	Depth Top (m)	8.00
		Depth Base (m)	8.45
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Par icle Density Assumed Unless Stated Otherwise	Sample Type	U
Date Tested	26/04/2022		



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	33	0	-	50	0.0	SWELL		-			
Bulk Density (Mg/m3)	1.90	50	-	100	0.24	1 9		-			
Dry Density (Mg/m3)	1.43	100	-	200	0.25	1 2		-			
Voids Ratio	0.8580	200	-	400	0.20	0.7		-			
Degree of saturation	101.8	400	-	50	0.14	0.33		-			
Height (mm)	20.15		-					-			
Diameter (mm)	50.3		-					-			
Particle Density (Mg/m3)	2.65		-					-			

Operators	Checked	04/05/2022	Reg. 13(1)
Reg. 13(1)	Approved	05/05/2022	Reg. 13(1)

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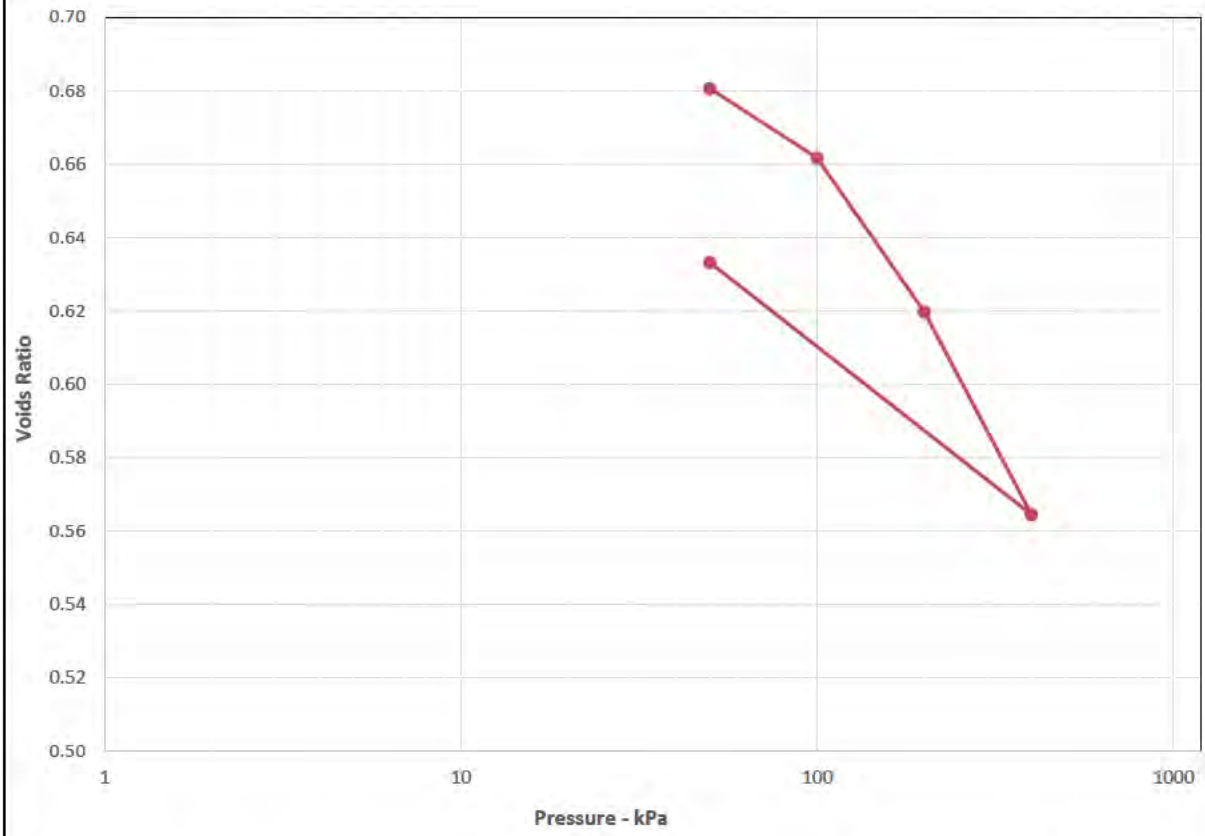
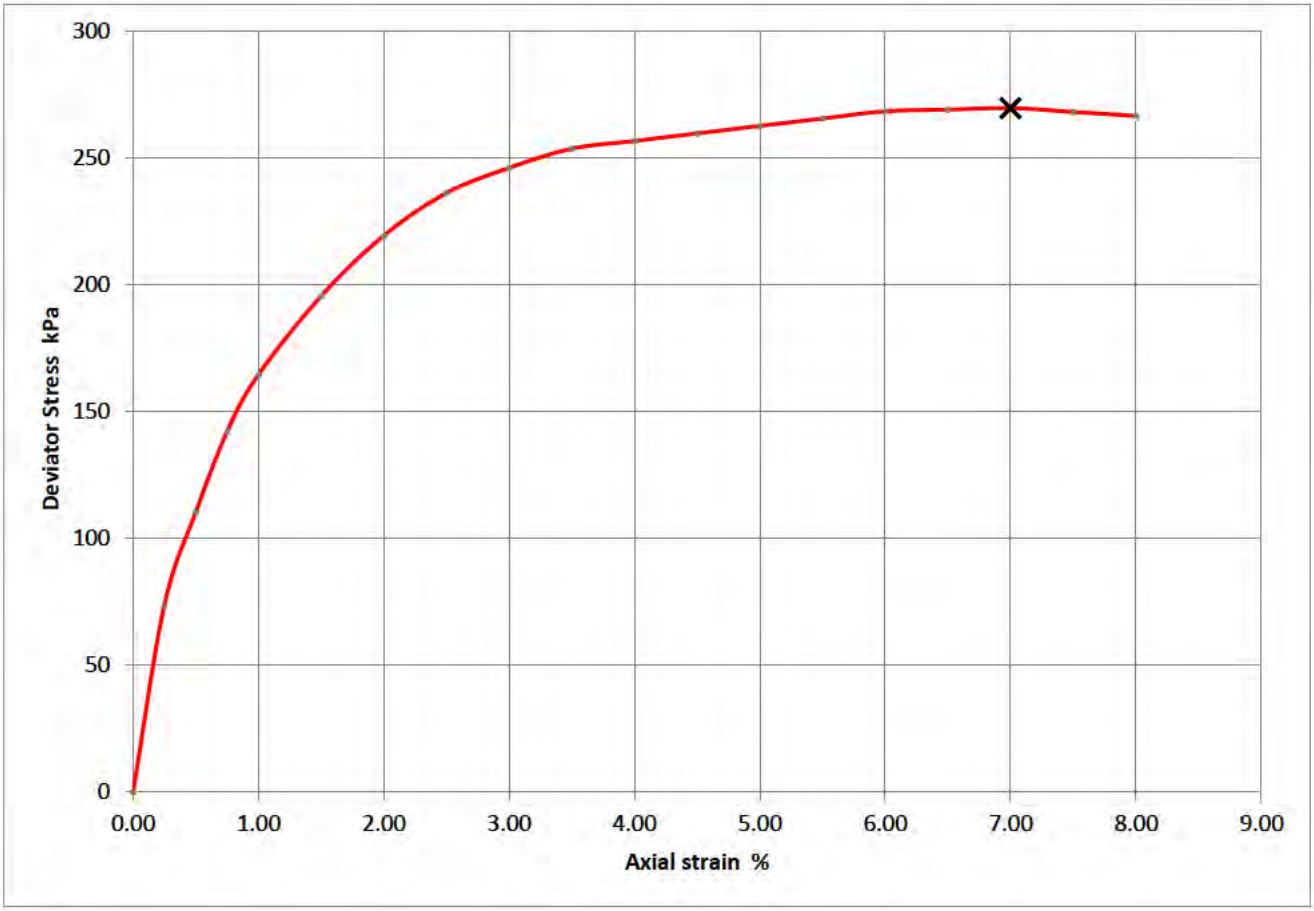
GSTL	ONE DIMENSIONAL CONSOLIDATION TEST BS1377:Part 5:1990, clause 3	Contract Number	59102
		Borehole/Trialpit No.	BHTCA106
Site Name	Northstowe	Sample No.	38
Soil Description	Grey silty CLAY	Depth Top (m)	13.00
		Depth Base (m)	13.45
Lab Temperature	20°c	Sample Location	Top
Remarks	Cv Calculated Using T90 Par icle Density Assumed Unless Stated Otherwise	Sample Type	U
Date Tested	26/04/2022		



Initial Sample Conditions		Pressure Range			Mv m2/MN	Cv m2/yr	Pressure Range			Mv m2/MN	Cv m2/yr
Moisture Content (%)	29	0	-	50	-0.3	SWELL		-			
Bulk Density (Mg/m3)	2.06	50	-	100	0.22	3.7		-			
Dry Density (Mg/m3)	1.60	100	-	200	0.25	3 5		-			
Voids Ratio	0.6566	200	-	400	0.17	6 8		-			
Degree of saturation	115.8	400	-	50	0.13	1.1		-			
Height (mm)	19.9		-					-			
Diameter (mm)	50.21		-					-			
Particle Density (Mg/m3)	2.65		-					-			

Operators	Checked	04/05/2022	Reg. 13(1)	Reg. 13(1)
Reg. 13(1)	Approved	05/05/2022	Reg. 13(1)	

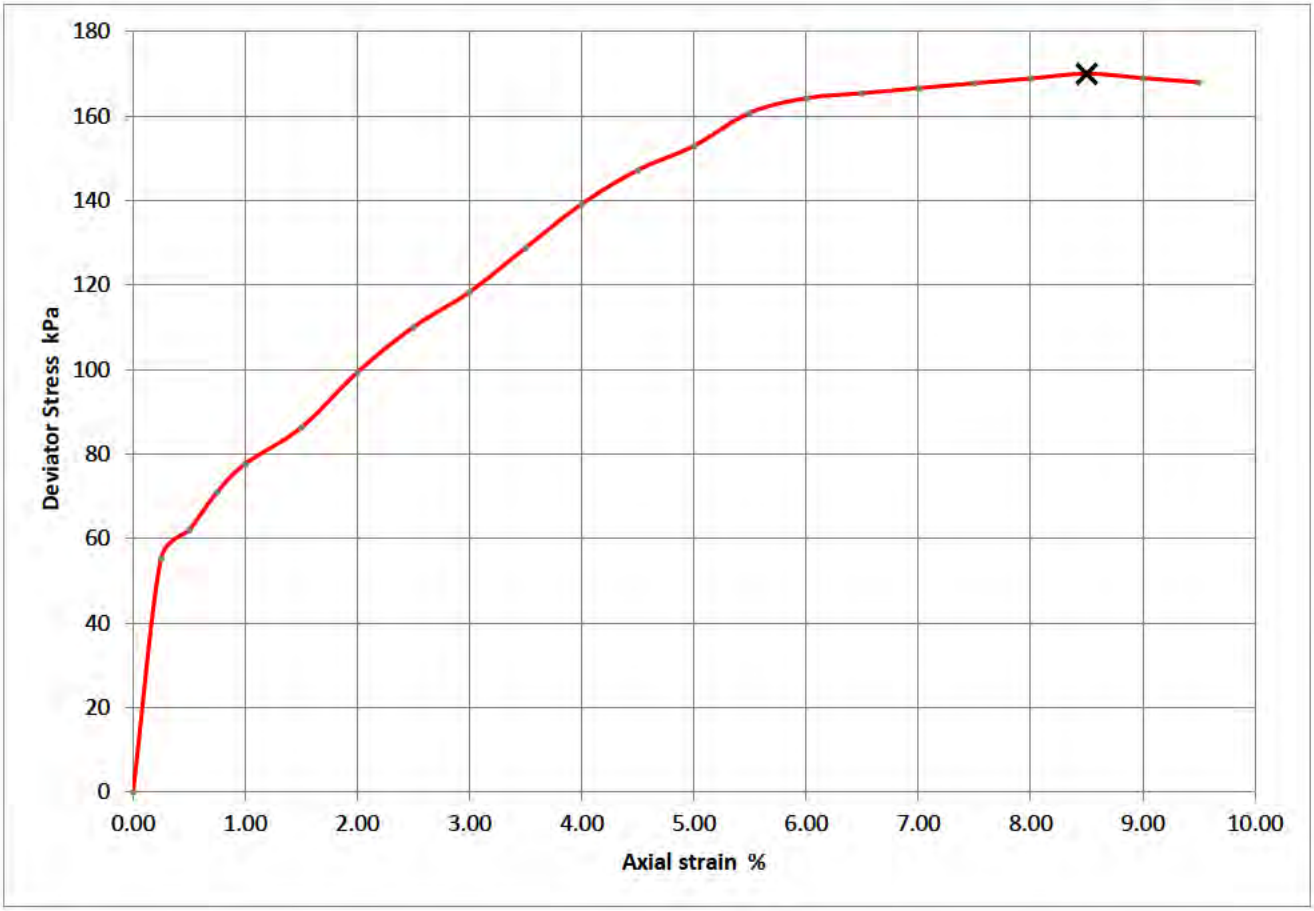
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	59102
		Borehole/Pit No.	BHTCA105
Site Name	Northstowe	Sample No.	15
Soil Description	Grey silty CLAY	Depth Top (m)	7.00
		Depth Base (m)	7.45
Date Tested	03/05/2022	Sample Type	U
		Technician	Daniel B



Moisture Content (%)	25
Bulk Density (Mg/m^3)	1.74
Dry Density (Mg/m^3)	1.39
Specimen Length (mm)	200
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	270
Undrained Shear Strength (kPa)	135
Failure Strain (%)	7
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.50

Checked	04/05/2022	Reg. 13(1)	Reg. 13(1)
Approved	05/05/2022	Reg. 13(1)	

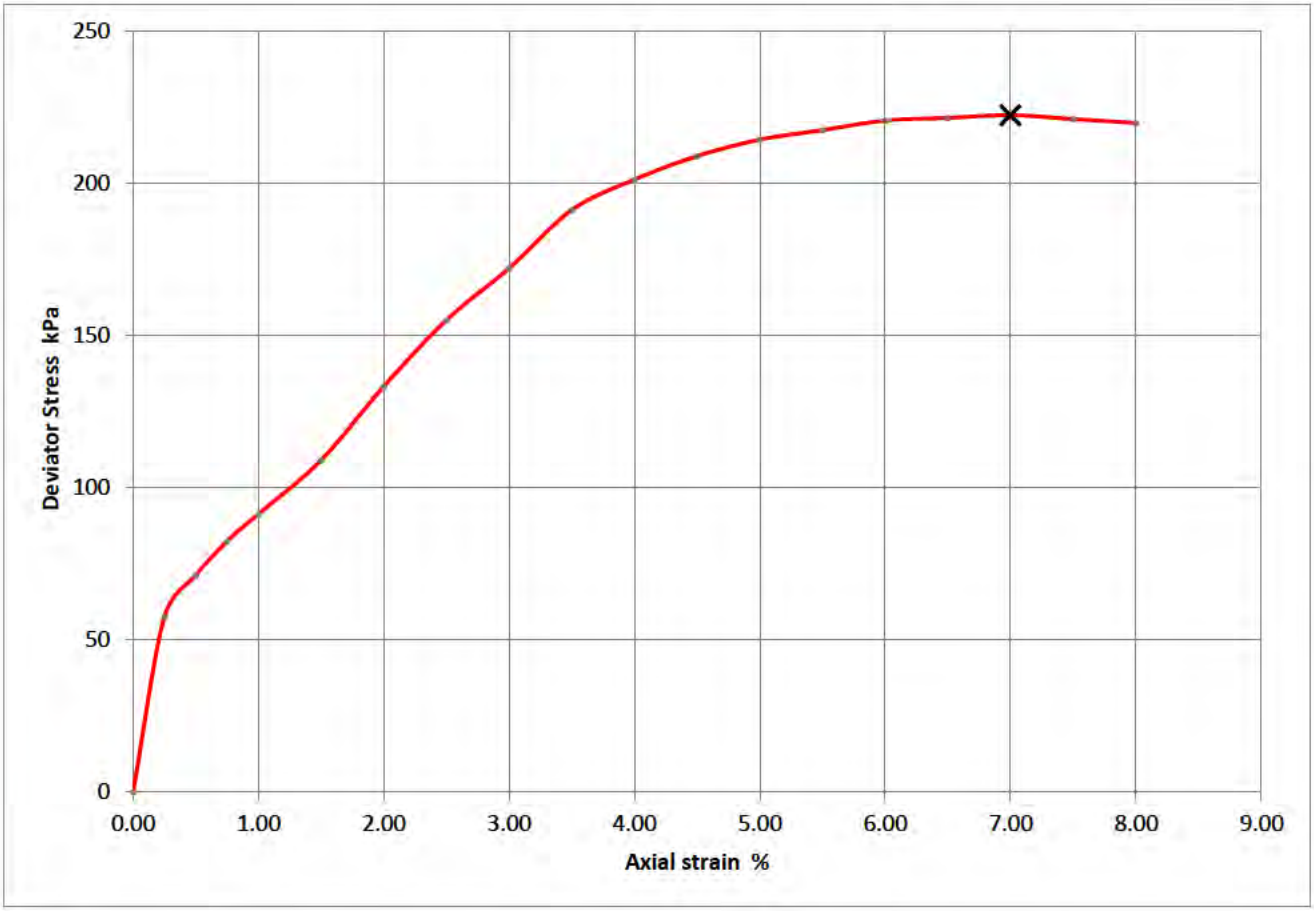
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	59102
		Borehole/Pit No.	BHTCA106
Site Name	Northstowe	Sample No.	16
Soil Description	Grey CLAY	Depth Top (m)	5.00
		Depth Base (m)	5.45
Date Tested	03/05/2022	Sample Type	U
		Technician	Daniel B



Moisture Content (%)	26
Bulk Density (Mg/m^3)	2.21
Dry Density (Mg/m^3)	1.76
Specimen Length (mm)	200
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	170
Undrained Shear Strength (kPa)	85
Failure Strain (%)	9
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.50

Checked	04/05/2022	Reg. 13(1)	Reg. 13(1)
Approved	05/05/2022	Reg. 13(1)	

GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	59102
		Borehole/Pit No.	BHTCA106
Site Name	Northstowe	Sample No.	24
Soil Description	Grey silty CLAY	Depth Top (m)	8.00
		Depth Base (m)	8.45
Date Tested	03/05/2022	Sample Type	U
		Technician	Daniel B



Moisture Content (%)	38
Bulk Density (Mg/m^3)	1.44
Dry Density (Mg/m^3)	1.05
Specimen Length (mm)	200
Specimen Diamteter (mm)	100
Cell Pressure (kPa)	250
Deviator Stress (kPa)	223
Undrained Shear Strength (kPa)	111
Failure Strain (%)	7
Mode Of Failure	Compound
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.50

Checked	04/05/2022	Reg. 13(1)	Reg. 13(1)
Approved	05/05/2022	Reg. 13(1)	

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ANALYTICAL TEST REPORT

Contract no:	108536
Contract name:	Northstowe
Client reference:	59102
Clients name:	Geo Site & Testing Services
Clients address:	Unit 3 and 4 Heol Aur Dafen Industrial Estate, Dafen Llanelli, Carmarthenshire SA14 8QN
Samples received:	25 April 2022
Analysis started:	25 April 2022
Analysis completed:	03 May 2022
Report issued:	03 May 2022

Key		
	U	UKAS accredited test
	M	MCERTS & UKAS accredited test
	$	Test carried out by an approved subcontractor
	I/S	Insufficient sample to carry out test
	N/S	Sample not suitable for testing

Approved by: Reg. 13(1)

Reg. 13(1)

Senior Reporting Administrator

Chemtech Environmental Limited

SOILS

Lab number			108536-1	108536-2	108536-3	108536-4	108536-5	108536-6
Sample id			BHTCA105	BHTCA106	BHTCA106	BHTCA106	BHTCA106	BHTCA106
Depth (m)			0.10-0.50	0.20-0.40	1.70-2.00	4.00-4.50	7.00-7.50	14.50-15.00
Sample Type			B1	B1	B5	B14	B22	B43
Date sampled			-	-	-	-	-	-
Test	Method	Units						
pH	CE004 U	un ts	7.8	8.4	8.1	8.6	8.3	8.5
Magnesium (2:1 water soluble)	CE061	mg/l Mg	5.1	31	8.2	17	28	17
Chloride (2:1 water soluble)	CE049 U	mg/l Cl	6.7	23	88	24	26	20
Nitrate (2:1 water soluble)	CE049 U	mg/l NO_3	3.9	6.9	10	2.5	2.0	2.8
Sulphate (2:1 water soluble)	CE061 U	mg/l SO_4	74	709	198	420	655	481
Sulphate (total)	CE062 U	mg/kg SO_4	433	3777	856	826	3793	2959
Sulphur (total)	CE119	mg/kg S	594	7909	774	6351	12282	9993
Sulphur (total)	CE119	% w/w S	0.06	0.79	0.08	0.64	1.23	1.00

Chemtech Environmental Limited

SOILS

Lab number			108536-7
Sample id			BHTCA106
Depth (m)			16.50-17.00
Sample Type			B48
Date sampled			-
Test	Method	Units	
pH	CE004 U	un ts	8.3
Magnesium (2:1 water soluble)	CE061	mg/l Mg	17
Chloride (2:1 water soluble)	CE049 U	mg/l Cl	60
Nitrate (2:1 water soluble)	CE049 U	mg/l NO_3	5.9
Sulphate (2:1 water soluble)	CE061 U	mg/l SO_4	638
Sulphate (total)	CE062 U	mg/kg SO_4	2263
Sulphur (total)	CE119	mg/kg S	12399
Sulphur (total)	CE119	% w/w S	1.24

Chemtech Environmental Limited

METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE004	pH	Based on BS 1377, pH Meter	As received	U	-	units
CE061	Magnesium (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry		1	mg/l Mg
CE049	Chloride (2:1 water soluble)	Aqueous extraction, IC-COND	Dry	U	1	mg/l Cl
CE049	Nitrate (2:1 water soluble)	Aqueous extraction, IC-COND	Dry	U	1	mg/l NO_3
CE061	Sulphate (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry	U	10	mg/l SO_4
CE062	Sulphate (total)	Acid extraction, ICP-OES	Dry	U	100	mg/kg SO_4
CE119	Sulphur (total)	Acid extraction, ICP-OES	Dry		100	mg/kg S
CE119	Sulphur (total)	Acid extraction, ICP-OES	Dry		0.01	% w/w S

Chemtech Environmental Limited

DEVIATING SAMPLE INFORMATION

Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.
For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.
Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

N	No (not deviating sample)
Y	Yes (deviating sample)
NSD	Sampling date not provided
NST	Sampling time not provided (waters only)
EHT	Sample exceeded holding time(s)
IC	Sample not received in appropriate containers
HP	Headspace present in sample container
NCF	Sample not chemically fixed (where appropriate)
OR	Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
108536-1	BHTCA105	0.10-0.50	Y	All (NSD)
108536-2	BHTCA106	0.20-0.40	Y	All (NSD)
108536-3	BHTCA106	1.70-2.00	Y	All (NSD)
108536-4	BHTCA106	4.00-4.50	Y	All (NSD)
108536-5	BHTCA106	7.00-7.50	Y	All (NSD)
108536-6	BHTCA106	14.50-15.00	Y	All (NSD)
108536-7	BHTCA106	16.50-17.00	Y	All (NSD)

Chemtech Environmental Limited

ADDITIONAL INFORMATION

Notes

Opinions and interpretations expressed herein are outside the UKAS accreditation scope.
Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.
All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.
Methods, procedures and performance data are available on request.
Results reported herein relate only to the material supplied to the laboratory.
This report shall not be reproduced except in full, without prior written approval.
Samples will be disposed of 6 weeks from initial receipt unless otherwise instructed.
For soils and solids, all results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.
Analytical results are inclusive of stones, where applicable.

APPENDIX G

GEO-ENVIRONMENTAL LABORATORY TEST DATA

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Analytical Report Number : 22-45875

Project / Site name:	Northstowe	**Samples received on:**	15/03/2022
Your job number:	NSTO	**Samples instructed on/ Analysis started on:**	15/03/2022
Your order number:	14059900	**Analysis completed by:**	24/03/2022
Report Issue Number:	1	**Report issued on:**	24/03/2022
Samples Analysed:	3 soil samples		

Signed: Reg. 13(1)

Reg. 13(1)
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-45875
Project / Site name: Northstowe
Your Order No: 14059900

Lab Sample Number				2206534	2206535	2206536
Sample Reference				BHTCA101	BHTCA202	BHTCA202
Sample Number				2	1	3
Depth (m)				0.50	0.20	1.00
Date Sampled				09/03/2022	09/03/2022	09/03/2022
Time Taken				1437	1440	1442
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Stone Content	%	0.1	NONE	26	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	7.6	17	14
Total mass of sample received	kg	0.001	NONE	1	1	1
General Inorganics						
pH - Automated	pH Units	N/A	MCERTS	9.5	8 8	8.2
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	0.011	0.007	0.0059
Heavy Metals / Metalloids						
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	17	15
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22	27	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	13	15	14
Lead (aqua regia extractable)	mg/kg	1	MCERTS	19	18	15
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	18	28	24
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	61	61	59
Petroleum Hydrocarbons						
TPH Texas (C6 - C8) $_{HS\_1D\_TOTAL}$	mg/kg	0.1	ISO 17025	< 0.1	< 0.1	< 0.1
TPH Texas (C8 - C10) $_{HS\_1D\_TOTAL}$	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
TPH Texas (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0
TPH Texas (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	4	MCERTS	< 4 0	< 4.0	< 4.0
TPH Texas (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	MCERTS	11	< 10	< 10
TPH Texas (C21 - C40) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	MCERTS	21	< 10	< 10
TPH Texas (C6 - C40) $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	32	< 10	< 10

Analytical Report Number: 22-45875
Project / Site name: Northstowe
Your Order No: 14059900

Lab Sample Number				2206534	2206535	2206536
Sample Reference				BHTCA101	BHTCA202	BHTCA202
Sample Number				2	1	3
Depth (m)				0.50	0.20	1.00
Date Sampled				09/03/2022	09/03/2022	09/03/2022
Time Taken				1437	1440	1442
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
SVOCs						
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0 2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0 2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.22	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	0.12	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	2.1	0 6	0.22
Anthracene	mg/kg	0.05	MCERTS	0.44	< 0.05	< 0.05
Carbazole	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	5	1.4	0.49
Pyrene	mg/kg	0.05	MCERTS	5.3	1.4	0.49
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.6	0.67	0.2
Chrysene	mg/kg	0.05	MCERTS	2.2	0.67	0.24
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	3.1	0.78	0.31
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1.1	0.35	0.07
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.5	0.57	0.23

Analytical Report Number: 22-45875
Project / Site name: Northstowe
Your Order No: 14059900

Lab Sample Number				2206534	2206535	2206536
Sample Reference				BHTCA101	BHTCA202	BHTCA202
Sample Number				2	1	3
Depth (m)				0.50	0.20	1.00
Date Sampled				09/03/2022	09/03/2022	09/03/2022
Time Taken				1437	1440	1442
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.1	0.29	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.27	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.3	0.39	< 0.05

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-45875
Project / Site name: Northstowe

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2206534	BHTCA101	2	0.5	Brown clay and sand with gravel and stones.
2206535	BHTCA202	1	0.2	Grey clay and sand with gravel.
2206536	BHTCA202	3	1	Brown clay and sand with gravel.

Analytical Report Number : 22-45875
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
TPH Texas (Soil)	TPH Texas bands C6-C10 by HS/GC-MS & C10-C40 by GC FID	In-house method	L088/L076	D	MCERTS
Fraction Organic Carbon FOC Automated	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method	L009	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

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Analytical Report Number : 22-45878

Project / Site name:	Northstowe	**Samples received on:**	15/03/2022
Your job number:	10052307	**Samples instructed on/ Analysis started on:**	16/03/2022
Your order number:	14059900	**Analysis completed by:**	24/03/2022
Report Issue Number:	1	**Report issued on:**	24/03/2022
Samples Analysed:	4 soil samples		

Signed: Reg. 13(1)

Reg. 13(1)
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-45878
Project / Site name: Northstowe
Your Order No: 14059900

Lab Sample Number				2206546	2206547	2206548	2206549
Sample Reference				BHTCA102	BHTCA103	BHTCA103A	BHTCA103A
Sample Number				2	1	3	6
Depth (m)				0.50	0.20	1.00	2.00
Date Sampled				10/03/2022	10/03/2022	10/03/2022	10/03/2022
Time Taken				1539	1455	1612	1705
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	28	< 0.1
Moisture Content	%	0.01	NONE	14	10	9.6	11
Total mass of sample received	kg	0.001	NONE	1	1	1	1
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-	-
Asbestos Analyst ID	N/A	N/A	N/A		NTK		

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.1	7.7	10.4	8.9
Total Cyanide	mg/kg	1	MCERTS	-	< 1.0	-	-
Free Cyanide	mg/kg	1	MCERTS	-	< 1.0	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	0.53	-	-
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	0.009	-	0.011	< 0.0010

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	0.23	-	-
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	1.7	-	-
Anthracene	mg/kg	0.05	MCERTS	-	0.42	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	4 5	-	-
Pyrene	mg/kg	0.05	MCERTS	-	3.9	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	2 2	-	-
Chrysene	mg/kg	0.05	MCERTS	-	1 6	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	1 6	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	1 3	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	1.9	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	0.99	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	0.25	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.99	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	21.6	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	18	14	15
Boron (water soluble)	mg/kg	0.2	MCERTS	-	1.9	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	0 6	0.5	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	26	23	23	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	20	17	22	9.5
Lead (aqua regia extractable)	mg/kg	1	MCERTS	28	19	25	7.5
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	23	22	21	16
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	71	63	82	28

Analytical Report Number: 22-45878
Project / Site name: Northstowe
Your Order No: 14059900

Lab Sample Number				2206546	2206547	2206548	2206549
Sample Reference				BHTCA102	BHTCA103	BHTCA103A	BHTCA103A
Sample Number				2	1	3	6
Depth (m)				0.50	0.20	1.00	2.00
Date Sampled				10/03/2022	10/03/2022	10/03/2022	10/03/2022
Time Taken				1539	1455	1612	1705
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Petroleum Hydrocarbons							
TPH Texas (C6 - C8) $_{HS\_1D\_TOTAL}$	mg/kg	0.1	ISO 17025	< 0.1	-	< 0.1	< 0.1
TPH Texas (C8 - C10) $_{HS\_1D\_TOTAL}$	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1
TPH Texas (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	1	MCERTS	< 1 0	-	< 1.0	< 1.0
TPH Texas (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	4	MCERTS	< 4 0	-	< 4.0	< 4.0
TPH Texas (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	MCERTS	< 10	-	10	< 10
TPH Texas (C21 - C40) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	MCERTS	25	-	26	< 10
TPH Texas (C6 - C40) $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	25	-	36	< 10

Analytical Report Number: 22-45878
Project / Site name: Northstowe
Your Order No: 14059900

Lab Sample Number				2206546	2206547	2206548	2206549
Sample Reference				BHTCA102	BHTCA103	BHTCA103A	BHTCA103A
Sample Number				2	1	3	6
Depth (m)				0.50	0.20	1.00	2.00
Date Sampled				10/03/2022	10/03/2022	10/03/2022	10/03/2022
Time Taken				1539	1455	1612	1705
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
SVOCs							
Aniline	mg/kg	0.1	NONE	< 0.1	-	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0 2	-	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0 2	-	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	-	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3	-	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	0.6	-	0.47	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.25	-	< 0.05	< 0.05
Carbazole	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	2.9	-	1.5	< 0.05
Pyrene	mg/kg	0.05	MCERTS	2.7	-	1.5	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3	-	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.7	-	0.76	< 0.05
Chrysene	mg/kg	0.05	MCERTS	1.2	-	0.73	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.3	-	0.74	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1	-	0.39	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.6	-	0.77	< 0.05

Analytical Report Number: 22-45878
Project / Site name: Northstowe
Your Order No: 14059900

Lab Sample Number				2206546	2206547	2206548	2206549
Sample Reference				BHTCA102	BHTCA103	BHTCA103A	BHTCA103A
Sample Number				2	1	3	6
Depth (m)				0.50	0.20	1.00	2.00
Date Sampled				10/03/2022	10/03/2022	10/03/2022	10/03/2022
Time Taken				1539	1455	1612	1705
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.8	-	0.36	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1	-	0.45	< 0.05

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-45878
Project / Site name: Northstowe

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2206546	BHTCA102	2	0.5	Brown clay and sand with gravel.
2206547	BHTCA103	1	0.2	Brown clay and sand with gravel.
2206548	BHTCA103A	3	1	Brown clay and sand with stones and gravel
2206549	BHTCA103A	6	2	Brown clay and sand with gravel.

Analytical Report Number : 22-45878
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS

Analytical Report Number : 22-45878
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPH Texas (Soil)	TPH Texas bands C6-C10 by HS/GC-MS & C10-C40 by GC FID	In-house method	L088/L076	D	MCERTS
Fraction Organic Carbon FOC Automated	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method	L009	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

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Analytical Report Number : 22-45879

Project / Site name:	Northstowe	**Samples received on:**	15/03/2022
Your job number:	NSTO	**Samples instructed on/ Analysis started on:**	15/03/2022
Your order number:	14059900	**Analysis completed by:**	24/03/2022
Report Issue Number:	1	**Report issued on:**	24/03/2022
Samples Analysed:	3 soil samples		

Reg. 13(1)

Signed:

Reg. 13(1)
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-45879
Project / Site name: Northstowe
Your Order No: 14059900

Lab Sample Number				2206550	2206551	2206552
Sample Reference				WSTCA109	WSTCA112	WSTCA116
Sample Number				2	2	1
Depth (m)				0.50	0.50	0.10
Date Sampled				14/03/2022	14/03/2022	14/03/2022
Time Taken				1532	1515	1516
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	11	13
Total mass of sample received	kg	0.001	NONE	1.5	1 5	1.5
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	PDO	PDO	PDO
General Inorganics						
pH - Automated	pH Units	N/A	MCERTS	8.2	8.1	8.2
Total Cyanide	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	1.1	0.11	2
Total Phenols						
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0
Speciated PAHs						
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.66	< 0.05	0.47
Anthracene	mg/kg	0.05	MCERTS	0.19	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1.3	< 0.05	1.2
Pyrene	mg/kg	0.05	MCERTS	1.4	< 0.05	1.2
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.55	< 0.05	0.69
Chrysene	mg/kg	0.05	MCERTS	0.54	< 0.05	0.7
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.6	< 0.05	0.69
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.36	< 0.05	0.56
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.5	< 0.05	0.84
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.32	< 0.05	0.41
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.35	< 0.05	0.47
Total PAH						
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	6.75	< 0.80	7.2
Heavy Metals / Metalloids						
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	14	16
Boron (water soluble)	mg/kg	0.2	MCERTS	3	0.9	1.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	33	29	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	21	17	14
Lead (aqua regia extractable)	mg/kg	1	MCERTS	25	19	26
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	24	20	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	67	58	66

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-45879
Project / Site name: Northstowe

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2206550	WSTCA109	2	0.5	Brown clay and sand with gravel.
2206551	WSTCA112	2	0.5	Brown clay and sand with gravel.
2206552	WSTCA116	1	0.1	Brown clay and sand with gravel.

Analytical Report Number : 22-45879
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

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Analytical Report Number : 22-45898

Project / Site name:	Northstowe Boreholes	**Samples received on:**	15/03/2022
Your job number:	NSTO	**Samples instructed on/ Analysis started on:**	15/03/2022
Your order number:	14059900	**Analysis completed by:**	24/03/2022
Report Issue Number:	1	**Report issued on:**	24/03/2022
Samples Analysed:	17 soil samples		

Signed: Reg. 13(1)

Reg. 13(1)
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-45898
Project / Site name: Northstowe Boreholes
Your Order No: 14059900

Lab Sample Number				2206630	2206631	2206632	2206633	2206634
Sample Reference				TPTCA102	TPTCA103	TPTCA103	TPTCA107	TPTCA111
Sample Number				1	2	4	2	1
Depth (m)				0 00-0.20	0.20-0.50	1.00-2.00	0.20-0.50	0.00-0.20
Date Sampled				10/03/2022	10/03/2022	10/03/2022	11/03/2022	10/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	35	20	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	15	11	8	11	11
Total mass of sample received	kg	0.001	NONE	2	2	2	1.4	1
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	SSZ		SSZ	SSZ	SSZ
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	6.7	9.7	8.3	8.1	8.1
Total Cyanide	mg/kg	1	MCERTS	< 1 0	-	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1 0	-	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.034	-	0.1	0 066	0.23
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	-	0.0078	-	-	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0	-	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	0.26	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	0.37	0.39
Pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	0.35	0.37
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	0.31	0.27
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	0.22	0.19
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	0.3	0.2
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	0.2	0.22
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	0.35	0.27
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	-	< 0.80	2.36	1.91

Analytical Report Number: 22-45898
Project / Site name: Northstowe Boreholes
Your Order No: 14059900

Lab Sample Number				2206630	2206631	2206632	2206633	2206634
Sample Reference				TPTCA102	TPTCA103	TPTCA103	TPTCA107	TPTCA111
Sample Number				1	2	4	2	1
Depth (m)				0 00-0.20	0.20-0.50	1.00-2.00	0.20-0.50	0.00-0.20
Date Sampled				10/03/2022	10/03/2022	10/03/2022	11/03/2022	10/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	18	27	17	14
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	-	0.3	0.5	1.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	28	27	24	26	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	22	17	11	24	14
Lead (aqua regia extractable)	mg/kg	1	MCERTS	23	23	10	24	20
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25	23	27	23	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	72	58	39	62	64
Petroleum Hydrocarbons								
TPH Texas (C6 - C8) $_{HS\_1D\_TOTAL}$	mg/kg	0.1	ISO 17025	-	< 0.1	-	-	-
TPH Texas (C8 - C10) $_{HS\_1D\_TOTAL}$	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
TPH Texas (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	1	MCERTS	-	< 1.0	-	-	-
TPH Texas (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	4	MCERTS	-	12	-	-	-
TPH Texas (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	MCERTS	-	37	-	-	-
TPH Texas (C21 - C40) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	MCERTS	-	85	-	-	-
TPH Texas (C6 - C40) $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	-	130	-	-	-

Analytical Report Number: 22-45898
Project / Site name: Northstowe Boreholes
Your Order No: 14059900

Lab Sample Number				2206630	2206631	2206632	2206633	2206634
Sample Reference				TPTCA102	TPTCA103	TPTCA103	TPTCA107	TPTCA111
Sample Number				1	2	4	2	1
Depth (m)				0 00-0.20	0.20-0.50	1.00-2.00	0.20-0.50	0.00-0.20
Date Sampled				10/03/2022	10/03/2022	10/03/2022	11/03/2022	10/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	< 0.1	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	< 0.2	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	< 0.2	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	< 0.1	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	< 0.1	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	< 0.1	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	< 0.3	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	2 3	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	0.7	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	9 8	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	9.9	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	< 0.3	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	6.4	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	3 8	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	5.1	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	3	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	5.7	-	-	-

Analytical Report Number: 22-45898
Project / Site name: Northstowe Boreholes
Your Order No: 14059900

Lab Sample Number				2206630	2206631	2206632	2206633	2206634
Sample Reference				TPTCA102	TPTCA103	TPTCA103	TPTCA107	TPTCA111
Sample Number				1	2	4	2	1
Depth (m)				0 00-0.20	0.20-0.50	1.00-2.00	0.20-0.50	0.00-0.20
Date Sampled				10/03/2022	10/03/2022	10/03/2022	11/03/2022	10/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	2 8	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	0.62	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	2.9	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-45898
Project / Site name: Northstowe Boreholes
Your Order No: 14059900

Lab Sample Number				2206635	2206636	2206637	2206638	2206639
Sample Reference				TPTCA113	TPTCA114	TPTCA114	TPTCA118	TPTCA118
Sample Number				1	1	3	1	3
Depth (m)				0 00-0.20	0.00-0.20	0.50-1.00	0.00-0.20	0.50-1.00
Date Sampled				11/03/2022	11/03/2022	11/03/2022	10/03/2022	10/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	12	14	14	11	16
Total mass of sample received	kg	0.001	NONE	0.4	0.4	0.4	1.4	1.4
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A					
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.2	8 5	8.4	8.7	7.9
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Free Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	-
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	0.0095	0 0064	0.0039	0 008	0.0015
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	-	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-	-	-	-

Analytical Report Number: 22-45898
Project / Site name: Northstowe Boreholes
Your Order No: 14059900

Lab Sample Number				2206635	2206636	2206637	2206638	2206639
Sample Reference				TPTCA113	TPTCA114	TPTCA114	TPTCA118	TPTCA118
Sample Number				1	1	3	1	3
Depth (m)				0 00-0.20	0.00-0.20	0.50-1.00	0.00-0.20	0.50-1.00
Date Sampled				11/03/2022	11/03/2022	11/03/2022	10/03/2022	10/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	14	18	14	13
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	25	24	32	25	31
Copper (aqua regia extractable)	mg/kg	1	MCERTS	17	15	17	16	17
Lead (aqua regia extractable)	mg/kg	1	MCERTS	23	21	15	22	14
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25	21	30	21	25
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	59	55	50	56	46

Petroleum Hydrocarbons

TPH Texas (C6 - C8) $_{HS\_1D\_TOTAL}$	mg/kg	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH Texas (C8 - C10) $_{HS\_1D\_TOTAL}$	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH Texas (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
TPH Texas (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	4	MCERTS	< 4 0	< 4.0	< 4.0	< 4.0	< 4.0
TPH Texas (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	MCERTS	12	< 10	< 10	< 10	< 10
TPH Texas (C21 - C40) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	MCERTS	43	23	< 10	29	< 10
TPH Texas (C6 - C40) $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	55	23	< 10	29	< 10

Analytical Report Number: 22-45898
Project / Site name: Northstowe Boreholes
Your Order No: 14059900

Lab Sample Number				2206635	2206636	2206637	2206638	2206639
Sample Reference				TPTCA113	TPTCA114	TPTCA114	TPTCA118	TPTCA118
Sample Number				1	1	3	1	3
Depth (m)				0 00-0.20	0.00-0.20	0.50-1.00	0.00-0.20	0.50-1.00
Date Sampled				11/03/2022	11/03/2022	11/03/2022	10/03/2022	10/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Azobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	0.28	< 0.05	0.25	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Carbazole	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	0.38	0.73	< 0.05	0.75	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.4	0.77	< 0.05	0.74	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.26	0.46	< 0.05	0.57	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.25	0.47	< 0.05	0.47	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.54	0.63	< 0.05	0.69	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.49	0.29	< 0.05	0.35	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.31	0.59	< 0.05	0.61	< 0.05

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Lab Sample Number				2206635	2206636	2206637	2206638	2206639
Sample Reference				TPTCA113	TPTCA114	TPTCA114	TPTCA118	TPTCA118
Sample Number				1	1	3	1	3
Depth (m)				0 00-0.20	0.00-0.20	0.50-1.00	0.00-0.20	0.50-1.00
Date Sampled				11/03/2022	11/03/2022	11/03/2022	10/03/2022	10/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0 3	< 0.05	0.31	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.39	< 0.05	0.38	< 0.05

U/S = Unsuitable Sample I/S = Insufficient Sample

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Project / Site name: Northstowe Boreholes
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Lab Sample Number				2206640	2206641	2206642	2206643	2206644
Sample Reference				TPTCA120	TPTCA201	TPTCA205	TPTCA206	TPTCA208
Sample Number				2	1	2	2	1
Depth (m)				0 20-0.50	0.20-0.50	0.20-0.50	0.50-1.00	0.00-0.20
Date Sampled				10/03/2022	10/03/2022	09/03/2022	09/03/2022	10/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	4.3	16	< 0.1
Moisture Content	%	0.01	NONE	14	15	14	10	12
Total mass of sample received	kg	0.001	NONE	1	1	1.5	1.5	0.4
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A					
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.6	7 8	7.7	8.7	8.4
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Free Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	-
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	0.011	0 0045	0.0041	0 013	0.0075
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	-	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-	-	-	-

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Lab Sample Number				2206640	2206641	2206642	2206643	2206644
Sample Reference				TPTCA120	TPTCA201	TPTCA205	TPTCA206	TPTCA208
Sample Number				2	1	2	2	1
Depth (m)				0 20-0.50	0.20-0.50	0.20-0.50	0.50-1.00	0.00-0.20
Date Sampled				10/03/2022	10/03/2022	09/03/2022	09/03/2022	10/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	14	15	15	16
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	1.4
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23	27	29	27	26
Copper (aqua regia extractable)	mg/kg	1	MCERTS	16	16	14	22	22
Lead (aqua regia extractable)	mg/kg	1	MCERTS	19	22	17	160	21
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	25	27	20	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	58	63	51	76	69

Petroleum Hydrocarbons

TPH Texas (C6 - C8) $_{HS\_1D\_TOTAL}$	mg/kg	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH Texas (C8 - C10) $_{HS\_1D\_TOTAL}$	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH Texas (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
TPH Texas (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	4	MCERTS	< 4 0	< 4.0	< 4.0	< 4.0	< 4.0
TPH Texas (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	MCERTS	< 10	< 10	< 10	16	< 10
TPH Texas (C21 - C40) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	MCERTS	22	< 10	< 10	30	< 10
TPH Texas (C6 - C40) $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	22	< 10	< 10	45	< 10

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Lab Sample Number				2206640	2206641	2206642	2206643	2206644
Sample Reference				TPTCA120	TPTCA201	TPTCA205	TPTCA206	TPTCA208
Sample Number				2	1	2	2	1
Depth (m)				0 20-0.50	0.20-0.50	0.20-0.50	0.50-1.00	0.00-0.20
Date Sampled				10/03/2022	10/03/2022	09/03/2022	09/03/2022	10/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.25	< 0 05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.24	< 0 05
Azobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	0.79	0 3	< 0.05	2.6	2.1
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.82	< 0 05
Carbazole	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	1.3	0.61	< 0.05	5.9	2
Pyrene	mg/kg	0.05	MCERTS	1.1	0.66	< 0.05	5.5	1.6
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.58	0.34	< 0.05	3.2	0.52
Chrysene	mg/kg	0.05	MCERTS	0.47	0.28	< 0.05	3	0.55
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.65	0.38	< 0.05	4.3	0.66
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.21	0 2	< 0.05	1.7	0.24
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.55	0.36	< 0.05	3.8	0.46

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Lab Sample Number				2206640	2206641	2206642	2206643	2206644
Sample Reference				TPTCA120	TPTCA201	TPTCA205	TPTCA206	TPTCA208
Sample Number				2	1	2	2	1
Depth (m)				0 20-0.50	0.20-0.50	0.20-0.50	0.50-1.00	0.00-0.20
Date Sampled				10/03/2022	10/03/2022	09/03/2022	09/03/2022	10/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.27	< 0.05	< 0.05	1.9	0.26
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.56	< 0 05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.29	< 0.05	< 0.05	2.4	0.28

U/S = Unsuitable Sample I/S = Insufficient Sample

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Project / Site name: Northstowe Boreholes
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Lab Sample Number				2206645	2206646
Sample Reference				TPTCA208	TPTCA208
Sample Number				3	5
Depth (m)				0 50-1.00	2.00-3.00
Date Sampled				10/03/2022	10/03/2022
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	18	16
Total mass of sample received	kg	0.001	NONE	0.4	0.4
Asbestos in Soil	Type	N/A	ISO 17025	-	-
Asbestos Analyst ID	N/A	N/A	N/A		
General Inorganics					
pH - Automated	pH Units	N/A	MCERTS	8	7 8
Total Cyanide	mg/kg	1	MCERTS	-	-
Free Cyanide	mg/kg	1	MCERTS	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	0.0056	0 0041
Total Phenols					
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-
Speciated PAHs					
Naphthalene	mg/kg	0.05	MCERTS	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-
Total PAH					
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-

Analytical Report Number: 22-45898
Project / Site name: Northstowe Boreholes
Your Order No: 14059900

Lab Sample Number				2206645	2206646
Sample Reference				TPTCA208	TPTCA208
Sample Number				3	5
Depth (m)				0 50-1.00	2.00-3.00
Date Sampled				10/03/2022	10/03/2022
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
Heavy Metals / Metalloids					
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	12
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	29	36
Copper (aqua regia extractable)	mg/kg	1	MCERTS	14	13
Lead (aqua regia extractable)	mg/kg	1	MCERTS	16	16
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	26	25
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	58	58

Petroleum Hydrocarbons

TPH Texas (C6 - C8) $_{HS\_1D\_TOTAL}$	mg/kg	0.1	ISO 17025	< 0.1	< 0.1
TPH Texas (C8 - C10) $_{HS\_1D\_TOTAL}$	mg/kg	0.1	MCERTS	< 0.1	< 0.1
TPH Texas (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	1	MCERTS	< 1 0	< 1.0
TPH Texas (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	4	MCERTS	< 4 0	< 4.0
TPH Texas (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	MCERTS	< 10	< 10
TPH Texas (C21 - C40) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	MCERTS	< 10	< 10
TPH Texas (C6 - C40) $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	< 10	< 10

Analytical Report Number: 22-45898
Project / Site name: Northstowe Boreholes
Your Order No: 14059900

Lab Sample Number				2206645	2206646
Sample Reference				TPTCA208	TPTCA208
Sample Number				3	5
Depth (m)				0 50-1.00	2.00-3.00
Date Sampled				10/03/2022	10/03/2022
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
SVOCs					
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0 2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0 2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0 2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0 2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0 2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0 2	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0 3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Carbazole	mg/kg	0.3	MCERTS	< 0 3	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05

Analytical Report Number: 22-45898
Project / Site name: Northstowe Boreholes
Your Order No: 14059900

Lab Sample Number				2206645	2206646
Sample Reference				TPTCA208	TPTCA208
Sample Number				3	5
Depth (m)				0 50-1.00	2.00-3.00
Date Sampled				10/03/2022	10/03/2022
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-45898
Project / Site name: Northstowe Boreholes

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2206630	TPTCA102	1	0.00-0.20	Brown clay and sand with gravel.
2206631	TPTCA103	2	0.20-0.50	Brown clay and sand with stones and gravel
2206632	TPTCA103	4	1.00-2.00	Brown clay and sand with stones and gravel
2206633	TPTCA107	2	0.20-0.50	Brown clay and sand with gravel.
2206634	TPTCA111	1	0.00-0.20	Brown clay and sand with gravel.
2206635	TPTCA113	1	0.00-0.20	Brown clay and sand with gravel.
2206636	TPTCA114	1	0.00-0.20	Brown clay and sand with gravel.
2206637	TPTCA114	3	0.50-1.00	Brown clay and sand with gravel.
2206638	TPTCA118	1	0.00-0.20	Brown clay and sand with gravel.
2206639	TPTCA118	3	0.50-1.00	Brown clay and sand with gravel.
2206640	TPTCA120	2	0.20-0.50	Grey clay and sand with gravel.
2206641	TPTCA201	1	0.20-0.50	Brown clay and sand with gravel.
2206642	TPTCA205	2	0.20-0.50	Brown clay and sand with stones and gravel
2206643	TPTCA206	2	0.50-1.00	Brown clay and loam with stones and gravel
2206644	TPTCA208	1	0.00-0.20	Brown clay and sand with gravel.
2206645	TPTCA208	3	0.50-1.00	Grey clay and sand with gravel.
2206646	TPTCA208	5	2.00-3.00	Grey clay and sand with gravel.

Analytical Report Number : 22-45898
Project / Site name: Northstowe Boreholes

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS

Analytical Report Number : 22-45898
Project / Site name: Northstowe Boreholes

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPH Texas (Soil)	TPH Texas bands C6-C10 by HS/GC-MS & C10-C40 by GC FID	In-house method	L088/L076	D	MCERTS
Fraction Organic Carbon FOC Automated	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method	L009	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

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Analytical Report Number : 22-46172

Project / Site name:	Northstowe	**Samples received on:**	16/03/2022
Your job number:	10052307	**Samples instructed on/ Analysis started on:**	16/03/2022
Your order number:	14059900	**Analysis completed by:**	25/03/2022
Report Issue Number:	1	**Report issued on:**	25/03/2022
Samples Analysed:	4 soil samples		

Signed: Reg. 13(1)

Reg. 13(1)
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-46172
Project / Site name: Northstowe
Your Order No: 14059900

Lab Sample Number				2208351	2208352	2208353	2208354
Sample Reference				TPTCA104	TPTCA110	TPTCA119	TPTCA119
Sample Number				1	2	1	3
Depth (m)				0 00-0.20	0 20-0.90	0 00-0.20	0 50-1.20
Date Sampled				15/03/2022	15/03/2022	15/03/2022	15/03/2022
Time Taken				1526	1344	1209	1212
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	11	11	11
Total mass of sample received	kg	0.001	NONE	0 3	0 3	0.4	0.4

Asbestos in Soil	Type	N/A	ISO 17025	-	-	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A			DBU	DBU

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8 3	8.1	7 8	8 3
Total Cyanide	mg/kg	1	MCERTS	-	-	< 1 0	< 1 0
Free Cyanide	mg/kg	1	MCERTS	-	-	< 1 0	< 1 0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	0.89	0 054
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	0 012	0.0019	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	< 1 0	< 1 0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	-	-	0.52	< 0.05
Pyrene	mg/kg	0.05	MCERTS	-	-	0.49	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	0.34	< 0.05
Chrysene	mg/kg	0.05	MCERTS	-	-	0 3	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	0.37	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	0.26	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	0.32	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	0.21	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	0.25	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-	3.06	< 0.80

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	18	12	14
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	0 6	0 2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0 2	< 0 2	< 0 2
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0	< 4 0	< 4 0	< 4 0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	25	24	20	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	23	17	12	14
Lead (aqua regia extractable)	mg/kg	1	MCERTS	22	11	15	9 6
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0 3	< 0 3	< 0 3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	23	25	17	21
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1 0	< 1 0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	66	34	43	34

Analytical Report Number: 22-46172
Project / Site name: Northstowe
Your Order No: 14059900

Lab Sample Number				2208351	2208352	2208353	2208354
Sample Reference				TPTCA104	TPTCA110	TPTCA119	TPTCA119
Sample Number				1	2	1	3
Depth (m)				0 00-0.20	0 20-0.90	0 00-0.20	0 50-1.20
Date Sampled				15/03/2022	15/03/2022	15/03/2022	15/03/2022
Time Taken				1526	1344	1209	1212
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Petroleum Hydrocarbons							
TPH Texas (C6 - C8) HS_1D_TOTAL	mg/kg	0.1	ISO 17025	< 0.1	< 0.1	-	-
TPH Texas (C8 - C10) HS_1D_TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-
TPH Texas (C10 - C12) EH_CU_1D_TOTAL	mg/kg	1	MCERTS	< 1 0	< 1 0	-	-
TPH Texas (C12 - C16) EH_CU_1D_TOTAL	mg/kg	4	MCERTS	< 4 0	< 4 0	-	-
TPH Texas (C16 - C21) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	< 10	< 10	-	-
TPH Texas (C21 - C40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	13	< 10	-	-
TPH Texas (C6 - C40) EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	13	< 10	-	-
SVOCs							
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	-	-
Phenol	mg/kg	0.2	ISO 17025	< 0 2	< 0 2	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
4-Methylphenol	mg/kg	0.2	NONE	< 0 2	< 0 2	-	-
Isophorone	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3	< 0 3	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-
Azobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
Phenanthrene	mg/kg	0.05	MCERTS	0.99	< 0.05	-	-
Anthracene	mg/kg	0.05	MCERTS	0.22	< 0.05	-	-
Carbazole	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	-

Analytical Report Number: 22-46172
Project / Site name: Northstowe
Your Order No: 14059900

Lab Sample Number				2208351	2208352	2208353	2208354
Sample Reference				TPTCA104	TPTCA110	TPTCA119	TPTCA119
Sample Number				1	2	1	3
Depth (m)				0 00-0.20	0 20-0.90	0 00-0.20	0 50-1.20
Date Sampled				15/03/2022	15/03/2022	15/03/2022	15/03/2022
Time Taken				1526	1344	1209	1212
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	-
Fluoranthene	mg/kg	0.05	MCERTS	2 5	< 0.05	-	-
Pyrene	mg/kg	0.05	MCERTS	2.1	< 0.05	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3	< 0 3	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1 3	< 0.05	-	-
Chrysene	mg/kg	0.05	MCERTS	0.86	< 0.05	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1	< 0.05	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.76	< 0.05	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.96	< 0.05	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.52	< 0.05	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.63	< 0.05	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-46172
Project / Site name: Northstowe

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2208351	TPTCA104	1	0.00-0.20	Brown clay and loam with gravel and vegetation.
2208352	TPTCA110	2	0.20-0.90	Light brown loam and clay with gravel.
2208353	TPTCA119	1	0.00-0.20	Light brown loam and clay with gravel.
2208354	TPTCA119	3	0.50-1.20	Light brown sand with gravel.

Analytical Report Number : 22-46172
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPH Texas (Soil)	TPH Texas bands C6-C10 by HS/GC-MS & C10-C40 by GC-FID	In-house method	L088/L076	D	MCERTS
Fraction Organic Carbon FOC Automated	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method	L009	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Analytical Report Number : 22-46172
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

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Analytical Report Number : 22-46874

Project / Site name:	Northstowe	**Samples received on:**	16/03/2022
Your job number:	10052307	**Samples instructed on/ Analysis started on:**	22/03/2022
Your order number:	14059900	**Analysis completed by:**	30/03/2022
Report Issue Number:	1	**Report issued on:**	30/03/2022
Samples Analysed:	4 soil samples		

Signed Reg. 13(1)

Reg. 13(1)
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-46874
Project / Site name: Northstowe

Lab Sample Number				2211786	2211787	2211788	2211789
Sample Reference				WSTCA101	WSTCA106	WSTCA108	WSTCA117
Sample Number				1	2	2	2
Depth (m)				0.20	0.50	0.50	0.50
Date Sampled				15/03/2022	15/03/2022	15/03/2022	15/03/2022
Time Taken				1258	1151	1038	1410
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	12	8.4	14	15
Total mass of sample received	kg	0.001	NONE	1.4	1.4	1.4	1.4
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	MLO			
General Inorganics							
pH - Automated	pH Units	N/A	MCERTS	7 8	8 0	7 8	7.7
Total Cyanide	mg/kg	1	MCERTS	< 1 0	-	-	-
Free Cyanide	mg/kg	1	MCERTS	< 1 0	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	2 3	-	-	-
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	-	0.0059	0.0095	0.0094
Total Phenols							
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0	-	-	-
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	0.39	-	-	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	0.61	-	-	-
Pyrene	mg/kg	0.05	MCERTS	0.58	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.28	-	-	-
Chrysene	mg/kg	0.05	MCERTS	0.34	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.27	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.19	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.28	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	2.94	-	-	-
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	19	13	13
Boron (water soluble)	mg/kg	0.2	MCERTS	2 2	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0 2	< 0 2	< 0 2
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0	< 4 0	< 4 0	< 4 0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	29	32	27	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	16	16	16	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	21	15	21	23
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0 3	< 0 3	< 0 3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	24	29	22	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1 0	< 1 0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	68	58	58	62

Analytical Report Number: 22-46874
Project / Site name: Northstowe

Lab Sample Number				2211786	2211787	2211788	2211789
Sample Reference				WSTCA101	WSTCA106	WSTCA108	WSTCA117
Sample Number				1	2	2	2
Depth (m)				0.20	0.50	0.50	0.50
Date Sampled				15/03/2022	15/03/2022	15/03/2022	15/03/2022
Time Taken				1258	1151	1038	1410
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Petroleum Hydrocarbons							
TPH Texas (C6 - C8) HS_1D_TOTAL	mg/kg	0.1	ISO 17025	-	< 0.1	< 0.1	< 0.1
TPH Texas (C8 - C10) HS_1D_TOTAL	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
TPH Texas (C10 - C12) EH_CU_1D_TOTAL	mg/kg	1	MCERTS	-	< 1 0	< 1 0	< 1 0
TPH Texas (C12 - C16) EH_CU_1D_TOTAL	mg/kg	4	MCERTS	-	< 4 0	< 4 0	< 4 0
TPH Texas (C16 - C21) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	-	< 10	< 10	< 10
TPH Texas (C21 - C40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	-	< 10	< 10	59
TPH Texas (C6 - C40) EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	-	< 10	< 10	59
SVOCs							
Aniline	mg/kg	0.1	NONE	-	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	-	< 0 2	< 0 2	< 0 2
2-Chlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
Hexachloroethane	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
4-Methylphenol	mg/kg	0.2	NONE	-	< 0 2	< 0 2	< 0 2
Isophorone	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
2-Nitrophenol	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
4-Chloroaniline	mg/kg	0.1	NONE	-	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
Dibenzofuran	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	< 0 3	< 0 3	< 0 3
Diethyl phthalate	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
4-Nitroaniline	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
Phenanthrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	0.35
Anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Carbazole	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	< 0 2	< 0 2	< 0 2
Anthraquinone	mg/kg	0.3	MCERTS	-	< 0 3	< 0 3	< 0 3
Fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	0.59	0.6
Pyrene	mg/kg	0.05	MCERTS	-	< 0.05	0.65	0.49

Analytical Report Number: 22-46874
Project / Site name: Northstowe

Lab Sample Number				2211786	2211787	2211788	2211789
Sample Reference				WSTCA101	WSTCA106	WSTCA108	WSTCA117
Sample Number				1	2	2	2
Depth (m)				0.20	0.50	0.50	0.50
Date Sampled				15/03/2022	15/03/2022	15/03/2022	15/03/2022
Time Taken				1258	1151	1038	1410
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	< 0 3	< 0 3	< 0 3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	0.31	0.33
Chrysene	mg/kg	0.05	MCERTS	-	< 0.05	0.37	0.32
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	0.22	0.21
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	0.17	0.24
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	0.25	0.2
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-46874
Project / Site name: Northstowe

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2211786	WSTCA101	1	0.2	Brown clay and loam with gravel.
2211787	WSTCA106	2	0.5	Brown clay and loam with gravel.
2211788	WSTCA108	2	0.5	Brown clay and sand with gravel.
2211789	WSTCA117	2	0.5	Brown clay and sand with gravel and vegetation.

Analytical Report Number : 22-46874
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPH Texas (Soil)	TPH Texas bands C6-C10 by HS/GC-MS & C10-C40 by GC-FID	In-house method	L088/L076	D	MCERTS
Fraction Organic Carbon FOC Automated	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method	L009	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

Analytical Report Number : 22-46874
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

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Analytical Report Number : 22-47225

Project / Site name:	Northstowe	**Samples received on:**	22/03/2022
Your job number:	10052307	**Samples instructed on/ Analysis started on:**	22/03/2022
Your order number:	14059900	**Analysis completed by:**	31/03/2022
Report Issue Number:	1	**Report issued on:**	31/03/2022
Samples Analysed:	6 soil samples		

Signed: Reg. 13(1)

Reg. 13(1)
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-47225
Project / Site name: Northstowe

Lab Sample Number				2213697	2213698	2213699	2213700	2213701
Sample Reference				WS2C106	WS2C108	WS2C114	WS2C120	WS2C121
Sample Number				1	2	2	2	2
Depth (m)				0.20	0.50	0.50	0.50	0.50
Date Sampled				21/03/2022	15/03/2022	16/03/2022	16/03/2022	21/03/2022
Time Taken				1355	1645	1104	1507	1106
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	17	15	12	12
Total mass of sample received	kg	0.001	NONE	1 2	1 2	1 2	1 2	1 2

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	JSW	JSW	JSW	JSW	JSW

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.9	7.7	8 2	8 3	8 6
Total Cyanide	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Complex Cyanide	mg/kg	1	MCERTS	-	< 1 0	< 1 0	-	-
Free Cyanide	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Total Sulphate as SO4	mg/kg	50	MCERTS	-	17000	2200	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	1.7	-	-	0.09	0 098
Sulphide	mg/kg	1	MCERTS	-	13	< 1 0	-	-
Elemental Sulphur	mg/kg	5	MCERTS	-	< 5 0	< 5 0	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80

Analytical Report Number: 22-47225
Project / Site name: Northstowe

Lab Sample Number				2213697	2213698	2213699	2213700	2213701
Sample Reference				WS2C106	WS2C108	WS2C114	WS2C120	WS2C121
Sample Number				1	2	2	2	2
Depth (m)				0.20	0.50	0.50	0.50	0.50
Date Sampled				21/03/2022	15/03/2022	16/03/2022	16/03/2022	21/03/2022
Time Taken				1355	1645	1104	1507	1106
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	14	16	12	19
Boron (water soluble)	mg/kg	0.2	MCERTS	2	-	-	0.4	0 6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0 2	< 0 2	< 0 2	< 0 2
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0	-	-	< 4 0	< 4 0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	27	27	32	22	28
Copper (aqua regia extractable)	mg/kg	1	MCERTS	14	-	-	22	14
Lead (aqua regia extractable)	mg/kg	1	MCERTS	13	13	13	9 6	13
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0 3	< 0 3	< 0 3	< 0 3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25	-	-	25	24
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	47	-	-	36	44
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	-	< 1 0	< 1 0	-	-
Toluene	µg/kg	1	MCERTS	-	< 1 0	< 1 0	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1 0	< 1 0	-	-
p & m-xylene	µg/kg	1	MCERTS	-	< 1 0	< 1 0	-	-
o-xylene	µg/kg	1	MCERTS	-	< 1 0	< 1 0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1 0	< 1 0	-	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	-	< 0 001	< 0 001	-	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	-	< 0 001	< 0 001	-	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	-	< 0 001	< 0 001	-	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	-	< 1 0	< 1 0	-	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	-	< 2 0	< 2 0	-	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	-	< 8 0	< 8 0	-	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	-	< 8 0	< 8 0	-	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	MCERTS	-	< 10	< 10	-	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	-	< 0 001	< 0 001	-	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	-	< 0 001	< 0 001	-	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	-	< 0 001	< 0 001	-	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	-	< 1 0	< 1 0	-	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	-	< 2 0	< 2 0	-	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	-	< 10	< 10	-	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	-	< 10	< 10	-	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	MCERTS	-	< 10	< 10	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-47225
Project / Site name: Northstowe

Lab Sample Number				2213702
Sample Reference				WS2C123
Sample Number				1
Depth (m)				0.20
Date Sampled				21/03/2022
Time Taken				0947
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	16
Total mass of sample received	kg	0.001	NONE	1 2

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	JSW

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.1
Total Cyanide	mg/kg	1	MCERTS	< 1 0
Complex Cyanide	mg/kg	1	MCERTS	-
Free Cyanide	mg/kg	1	MCERTS	< 1 0
Total Sulphate as SO4	mg/kg	50	MCERTS	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.11
Sulphide	mg/kg	1	MCERTS	-
Elemental Sulphur	mg/kg	5	MCERTS	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.68
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1
Pyrene	mg/kg	0.05	MCERTS	0.9
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.52
Chrysene	mg/kg	0.05	MCERTS	0.51
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.4
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.39
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.42
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.21
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.26

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	5.32

Analytical Report Number: 22-47225
Project / Site name: Northstowe

Lab Sample Number				2213702
Sample Reference				WS2C123
Sample Number				1
Depth (m)				0.20
Date Sampled				21/03/2022
Time Taken				0947
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Heavy Metals / Metalloids				
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16
Boron (water soluble)	mg/kg	0.2	MCERTS	1.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22
Copper (aqua regia extractable)	mg/kg	1	MCERTS	21
Lead (aqua regia extractable)	mg/kg	1	MCERTS	20
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	61
Monoaromatics & Oxygenates				
Benzene	µg/kg	1	MCERTS	-
Toluene	µg/kg	1	MCERTS	-
Ethylbenzene	µg/kg	1	MCERTS	-
p & m-xylene	µg/kg	1	MCERTS	-
o-xylene	µg/kg	1	MCERTS	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-
Petroleum Hydrocarbons				
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	MCERTS	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-47225
Project / Site name: Northstowe

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2213697	WS2C106	1	0.2	Brown clay and loam with gravel.
2213698	WS2C108	2	0.5	Brown clay with gravel.
2213699	WS2C114	2	0.5	Brown clay with gravel and chalk.
2213700	WS2C120	2	0.5	Brown clay and loam with gravel and chalk.
2213701	WS2C121	2	0.5	Brown clay and loam with gravel and chalk.
2213702	WS2C123	1	0.2	Brown clay and loam with gravel and vegetation.

Analytical Report Number : 22-47225
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Elemental sulphur in soil	Determination of elemental sulphur in soil by extraction in acetonitrile followed by HPLC.	In-house method based on Secondsite Property Holdings Guidance for Assessing and Managing Potential	L021-PL	D	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

Analytical Report Number : 22-47225
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

Analytical Report Number : 22-47225
Project / Site name: Northstowe

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
WS2C108	2	S	2213698	c	Free cyanide in soil	L080-PL	c
WS2C108	2	S	2213698	c	Complex Cyanide in soil	L080-PL	c
WS2C108	2	S	2213698	c	Sulphide in soil	L010-PL	c
WS2C108	2	S	2213698	c	Total cyanide in soil	L080-PL	c

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Analytical Report Number : 22-47463

Project / Site name:	Northstowe	**Samples received on:**	22/03/2022
Your job number:	NSTO	**Samples instructed on/ Analysis started on:**	23/03/2022
Your order number:	14059900	**Analysis completed by:**	31/03/2022
Report Issue Number:	1	**Report issued on:**	31/03/2022
Samples Analysed:	5 soil samples		

Signed: Reg. 13(1)

Reg. 13(1)
Senior Quality Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-47463
Project / Site name: Northstowe

Lab Sample Number				2214824	2214825	2214826	2214827	2214828
Sample Reference				BH2C102	BHTCA105	BHTCA106	BHTCA107	BHTCA110
Sample Number				2	2	2	1	2
Depth (m)				0.50	0.50-0 50	0.50	0 20	0 50
Date Sampled				17/03/2022	11/03/2022	15/03/2022	16/03/2022	16/03/2022
Time Taken				0903	0812	1330	1007	1000
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	15	11	11	11	18
Total mass of sample received	kg	0.001	NONE	1 0	1.0	1.0	1.0	1.0
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	NTK	NTK		NTK	NTK
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7 3	7.5	-	7.2	7.8
Total Cyanide	mg/kg	1	MCERTS	< 1 0	< 1 0	-	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1 0	< 1 0	-	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.67	0.032	-	0 38	1.6
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0	< 1 0	-	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0 05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0 05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0 05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0 05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0.42
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0 05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	1.1
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0.98
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0 56
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0 56
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0 54
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0 29
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0.48
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0 24
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0 05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0 31
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	-	< 0.80	5.49

Analytical Report Number: 22-47463
Project / Site name: Northstowe

Lab Sample Number				2214824	2214825	2214826	2214827	2214828
Sample Reference				BH2C102	BHTCA105	BHTCA106	BHTCA107	BHTCA110
Sample Number				2	2	2	1	2
Depth (m)				0.50	0.50-0 50	0.50	0 20	0 50
Date Sampled				17/03/2022	11/03/2022	15/03/2022	16/03/2022	16/03/2022
Time Taken				0903	0812	1330	1007	1000
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	20	13	-	17	15
Boron (water soluble)	mg/kg	0.2	MCERTS	1.4	0.8	-	0.8	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0 2	-	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	34	34	-	27	28
Copper (aqua regia extractable)	mg/kg	1	MCERTS	13	14	-	25	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	15	15	-	22	30
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0 3	-	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	29	24	-	23	26
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1 0	-	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	72	57	-	68	61
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0	< 1 0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1 0	< 1 0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1 0	< 1 0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1 0	< 1 0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1 0	< 1 0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1 0	< 1 0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0 001	< 0 001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0 001	< 0 001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0 001	< 0 001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	1 0	< 1 0	2.9	1.1	3.3
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	5 3	< 2 0	8.4	4.3	7.9
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8 0	< 8 0	14	< 8.0	14
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8 0	< 8 0	39	20	45
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	MCERTS	19	< 10	64	32	71
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0 001	< 0 001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0 001	< 0 001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0 001	< 0 001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2 0	< 2 0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	12

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-47463
Project / Site name: Northstowe

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2214824	BH2C102	2	0.5	Brown clay and loam with gravel and chalk.
2214825	BHTCA105	2	0.50-0.50	Light brown clay and sand with gravel.
2214826	BHTCA106	2	0.5	Brown clay and sand with gravel and chalk.
2214827	BHTCA107	1	0.2	Brown clay and sand with gravel and vegetation.
2214828	BHTCA110	2	0.5	Brown clay with gravel.

Analytical Report Number : 22-47463
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS

Analytical Report Number : 22-47463
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

Analytical Report Number : 22-47463
Project / Site name: Northstowe

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BHTCA105	2	S	2214825	c	Free cyanide in soil	L080-PL	c
BHTCA105	2	S	2214825	c	Total cyanide in soil	L080-PL	c
BHTCA106	2	S	2214826	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
BHTCA106	2	S	2214826	b	TPHCWG (Soil)	L088/76-PL	b
BHTCA107	1	S	2214827	c	Free cyanide in soil	L080-PL	c
BHTCA107	1	S	2214827	c	Total cyanide in soil	L080-PL	c
BHTCA110	2	S	2214828	c	Free cyanide in soil	L080-PL	c
BHTCA110	2	S	2214828	c	Total cyanide in soil	L080-PL	c

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Analytical Report Number : 22-47721

Project / Site name:	Northstowe	**Samples received on:**	22/03/2022
Your job number:	10052307	**Samples instructed on/ Analysis started on:**	25/03/2022
Your order number:	14059900	**Analysis completed by:**	01/04/2022
Report Issue Number:	1	**Report issued on:**	04/04/2022
Samples Analysed:	19 soil samples		

Reg. 13(1)

Signed:

Reg. 13(1)
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-47721
Project / Site name: Northstowe

Lab Sample Number				2216182	2216183	2216184	2216185	2216186
Sample Reference				TP2C102	TP2C103	TP2C104	TP2C104	TP2C105
Sample Number				1	1	1	2	1
Depth (m)				0.40-1 60	0.00-0.20	0.00-0.20	0.20-0.50	0.00-0.50
Date Sampled				16/03/2022	17/03/2022	16/03/2022	16/03/2022	17/03/2022
Time Taken				1636	1103	1634	1634	1118
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	18	13	13	11	20
Total mass of sample received	kg	0.001	NONE	1.2	1	1.4	1.4	0 8
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	GFI	GFI	GFI	GFI	GFI
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.4	9.8	8.2	8.0	7.9
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.12	0.41	0.2	0.54	1 2
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0.59	0.42	0.24
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	1.7	0.79	0.9
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	1.6	0.68	0.9
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0.89	0.41	0.57
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0.9	0.39	0.55
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	1.1	0.34	0.51
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0.49	0.29	0.32
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0.99	0.4	0 5
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0.55	< 0.05	0.38
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0.7	< 0.05	0.47
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0 80	9.4	3.72	5.34
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.2	14	16	20	14
Boron (water soluble)	mg/kg	0.2	MCERTS	1.1	0.7	1	0.7	1 5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	1.1	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	24	27	28	28
Copper (aqua regia extractable)	mg/kg	1	MCERTS	6	8.6	16	6	8.9
Lead (aqua regia extractable)	mg/kg	1	MCERTS	9.2	13	24	13	12
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	18	21	22	27	25
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	37	44	71	51	53

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Project / Site name: Northstowe

Lab Sample Number				2216182	2216183	2216184	2216185	2216186
Sample Reference				TP2C102	TP2C103	TP2C104	TP2C104	TP2C105
Sample Number				1	1	1	2	1
Depth (m)				0.40-1 60	0.00-0.20	0.00-0.20	0.20-0.50	0.00-0.50
Date Sampled				16/03/2022	17/03/2022	16/03/2022	16/03/2022	17/03/2022
Time Taken				1636	1103	1634	1634	1118
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	14	< 10	12
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	19	12	16

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-47721
Project / Site name: Northstowe

Lab Sample Number				2216187	2216188	2216189	2216190	2216191
Sample Reference				TP2C107	TP2C107	TP2C109	TP2C110	TP2C111
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0 00-0.20	0.20-1.10	0.00-0.20	0.00-0.50	0.00-0.10
Date Sampled				17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022
Time Taken				1451	1451	1152	1448	1454
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	22	< 0.1
Moisture Content	%	0.01	NONE	18	21	13	12	14
Total mass of sample received	kg	0.001	NONE	0.8	0 8	0.8	1.2	0.8
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	GFI	GFI	GFI	GFI	GFI
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.1	7 8	8.2	8.1	8.7
Total Cyanide	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.34	1.7	0.86	0.22	0.33
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.48	0.34	< 0 05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	1.3	0.84	0.43
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	1.3	0.78	0.4
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.75	0.53	0.25
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.64	0.43	0.25
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.7	0.5	0.22
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.47	0.29	0.22
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.74	0.47	0.29
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.47	0.34	< 0 05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0 05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.58	0.41	< 0 05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	7.42	4.93	2.06
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	13	21	19	16
Boron (water soluble)	mg/kg	0.2	MCERTS	2.2	1.9	1.1	1.2	0.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	31	27	28	29	26
Copper (aqua regia extractable)	mg/kg	1	MCERTS	5.5	8.7	9.2	10	7.1
Lead (aqua regia extractable)	mg/kg	1	MCERTS	14	13	15	13	13
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	33	28	25	24	24
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	70	63	59	60	48

Analytical Report Number: 22-47721
Project / Site name: Northstowe

Lab Sample Number				2216187	2216188	2216189	2216190	2216191
Sample Reference				TP2C107	TP2C107	TP2C109	TP2C110	TP2C111
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0 00-0.20	0.20-1.10	0.00-0.20	0.00-0.50	0.00-0.10
Date Sampled				17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022
Time Taken				1451	1451	1152	1448	1454
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2 0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8 0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8 0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	13	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	13	16	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-47721
Project / Site name: Northstowe

Lab Sample Number				2216192	2216193	2216194	2216195	2216196	2216197
Sample Reference				TP2C113	TP2C117	TP2C117	TP2C118	TP2C119	TP2C119
Sample Number				2	1	2	1	1	2
Depth (m)				0 50	0.20	0.50	0.20	0.20	0.50
Date Sampled				17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022
Time Taken				0949	1645	1645	1122	1132	1132
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**						
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	12	9.5	13	12	12
Total mass of sample received	kg	0.001	NONE	0.8	1.4	1.4	0.8	0 8	0.8
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	NTK	NTK	NTK	NTK	NTK	NTK
General Inorganics									
pH - Automated	pH Units	N/A	MCERTS	8.2	8.3	8.5	8.2	8 5	8.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.2	0.062	0 049	0.13	0.088	0.043
Total Phenols									
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
Speciated PAHs									
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH									
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0 80	< 0.80	< 0.80	< 0.80	< 0.80
Heavy Metals / Metalloids									
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	16	16	16	13	17
Boron (water soluble)	mg/kg	0.2	MCERTS	1.6	0.2	0.2	0.4	0 5	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0 2
Chromium (hexavalent)	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4 0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	31	27	22	31	26	31
Copper (aqua regia extractable)	mg/kg	1	MCERTS	13	8.1	7.2	9.4	6 8	8.6
Lead (aqua regia extractable)	mg/kg	1	MCERTS	13	9.9	9.4	14	12	14
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.5	< 0.3	0.6	< 0.3	< 0 3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25	23	23	27	22	28
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	77	38	39	50	40	54

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Project / Site name: Northstowe

Lab Sample Number				2216192	2216193	2216194	2216195	2216196	2216197
Sample Reference				TP2C113	TP2C117	TP2C117	TP2C118	TP2C119	TP2C119
Sample Number				2	1	2	1	1	2
Depth (m)				0 50	0.20	0.50	0.20	0.20	0.50
Date Sampled				17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022
Time Taken				0949	1645	1645	1122	1132	1132
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**						
Monoaromatics & Oxygenates									
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
Petroleum Hydrocarbons									
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2 0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8 0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8 0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1 0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2 0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-47721
Project / Site name: Northstowe

Lab Sample Number				2216198	2216199	2216200
Sample Reference				TP2C122	TP2C124	TP2C124
Sample Number				1	1	2
Depth (m)				0 20	0.20	0.50
Date Sampled				17/03/2022	17/03/2022	17/03/2022
Time Taken				1252	1446	1447
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	10	14
Total mass of sample received	kg	0.001	NONE	0.4	1.2	1.2
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	NTK	NTK	NTK
General Inorganics						
pH - Automated	pH Units	N/A	MCERTS	8.2	8.4	8.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0 21	0.1	0.14
Total Phenols						
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Speciated PAHs						
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.5	0.33	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1.2	0.43	< 0.05
Pyrene	mg/kg	0.05	MCERTS	1.1	0.38	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0 64	< 0 05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0 56	< 0 05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0 63	< 0 05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0 36	< 0 05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0 58	< 0 05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.3	< 0 05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0 34	< 0 05	< 0.05
Total PAH						
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	6 21	1.14	< 0.80
Heavy Metals / Metalloids						
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	19	18	13
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	0.9	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.7	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	32	25	31
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12	6.9	9.9
Lead (aqua regia extractable)	mg/kg	1	MCERTS	21	13	13
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	26	22	25
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	68	48	52

Analytical Report Number: 22-47721
Project / Site name: Northstowe

Lab Sample Number				2216198	2216199	2216200
Sample Reference				TP2C122	TP2C124	TP2C124
Sample Number				1	1	2
Depth (m)				0 20	0.20	0.50
Date Sampled				17/03/2022	17/03/2022	17/03/2022
Time Taken				1252	1446	1447
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Monoaromatics & Oxygenates						
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	MCERTS	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	12	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	MCERTS	17	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-47721
Project / Site name: Northstowe

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2216182	TP2C102	1	0.40-1.60	Light brown clay and sand with gravel.
2216183	TP2C103	1	0.00-0.20	Light brown clay and sand with gravel.
2216184	TP2C104	1	0.00-0.20	Brown clay and loam with gravel.
2216185	TP2C104	2	0.20-0.50	Light brown clay and sand with gravel.
2216186	TP2C105	1	0.00-0.50	Light brown clay and sand with gravel.
2216187	TP2C107	None Supplied	0.00-0.20	Brown clay and sand with gravel.
2216188	TP2C107	None Supplied	0.20-1.10	Grey clay and sand with gravel.
2216189	TP2C109	None Supplied	0.00-0.20	Brown clay and loam with gravel.
2216190	TP2C110	None Supplied	0.00-0.50	Brown clay and loam with gravel and stones.
2216191	TP2C111	None Supplied	0.00-0.10	Brown clay and loam with gravel and vegetation.
2216192	TP2C113	2	0.5	Brown clay and loam with gravel.
2216193	TP2C117	1	0.2	Light brown clay and sand with gravel.
2216194	TP2C117	2	0.5	Light brown clay and sand with gravel.
2216195	TP2C118	1	0.2	Brown clay and loam with gravel.
2216196	TP2C119	1	0.2	Brown clay and sand with gravel.
2216197	TP2C119	2	0.5	Brown clay and sand with gravel.
2216198	TP2C122	1	0.2	Brown clay and loam with gravel.
2216199	TP2C124	1	0.2	Brown clay and sand with gravel and vegetation.
2216200	TP2C124	2	0.5	Light grey clay and sand with gravel.

Analytical Report Number : 22-47721
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

Analytical Report Number : 22-47721
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report

Analytical Report Number : 22-47721
Project / Site name: Northstowe

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TP2C102	1	S	2216182	c	Free cyanide in soil	L080-PL	c
TP2C102	1	S	2216182	c	Total cyanide in soil	L080-PL	c
TP2C103	1	S	2216183	c	Free cyanide in soil	L080-PL	c
TP2C103	1	S	2216183	c	Total cyanide in soil	L080-PL	c
TP2C104	1	S	2216184	c	Free cyanide in soil	L080-PL	c
TP2C104	1	S	2216184	c	Total cyanide in soil	L080-PL	c
TP2C104	2	S	2216185	c	Free cyanide in soil	L080-PL	c
TP2C104	2	S	2216185	c	Total cyanide in soil	L080-PL	c
TP2C105	1	S	2216186	c	Free cyanide in soil	L080-PL	c
TP2C105	1	S	2216186	c	Total cyanide in soil	L080-PL	c
TP2C107	None Supplied	S	2216187	c	Free cyanide in soil	L080-PL	c
TP2C107	None Supplied	S	2216187	c	Total cyanide in soil	L080-PL	c
TP2C107	None Supplied	S	2216188	c	Free cyanide in soil	L080-PL	c
TP2C107	None Supplied	S	2216188	c	Total cyanide in soil	L080-PL	c
TP2C109	None Supplied	S	2216189	c	Free cyanide in soil	L080-PL	c
TP2C109	None Supplied	S	2216189	c	Total cyanide in soil	L080-PL	c
TP2C110	None Supplied	S	2216190	c	Free cyanide in soil	L080-PL	c
TP2C110	None Supplied	S	2216190	c	Total cyanide in soil	L080-PL	c
TP2C111	None Supplied	S	2216191	c	Free cyanide in soil	L080-PL	c
TP2C111	None Supplied	S	2216191	c	Total cyanide in soil	L080-PL	c
TP2C113	2	S	2216192	c	Free cyanide in soil	L080-PL	c
TP2C113	2	S	2216192	c	Total cyanide in soil	L080-PL	c
TP2C117	1	S	2216193	c	Free cyanide in soil	L080-PL	c
TP2C117	1	S	2216193	c	Total cyanide in soil	L080-PL	c
TP2C117	2	S	2216194	c	Free cyanide in soil	L080-PL	c
TP2C117	2	S	2216194	c	Total cyanide in soil	L080-PL	c
TP2C118	1	S	2216195	c	Free cyanide in soil	L080-PL	c
TP2C118	1	S	2216195	c	Total cyanide in soil	L080-PL	c
TP2C119	1	S	2216196	c	Free cyanide in soil	L080-PL	c
TP2C119	1	S	2216196	c	Total cyanide in soil	L080-PL	c
TP2C119	2	S	2216197	c	Free cyanide in soil	L080-PL	c
TP2C119	2	S	2216197	c	Total cyanide in soil	L080-PL	c
TP2C122	1	S	2216198	c	Free cyanide in soil	L080-PL	c
TP2C122	1	S	2216198	c	Total cyanide in soil	L080-PL	c
TP2C124	1	S	2216199	c	Free cyanide in soil	L080-PL	c
TP2C124	1	S	2216199	c	Total cyanide in soil	L080-PL	c
TP2C124	2	S	2216200	c	Free cyanide in soil	L080-PL	c
TP2C124	2	S	2216200	c	Total cyanide in soil	L080-PL	c

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Analytical Report Number : 22-48661

Project / Site name:	Northstowe	**Samples received on:**	29/03/2022
Your job number:	NSTO	**Samples instructed on/ Analysis started on:**	30/03/2022
Your order number:	14059900	**Analysis completed by:**	07/04/2022
Report Issue Number:	1	**Report issued on:**	07/04/2022
Samples Analysed:	4 soil samples		

Signed: Reg. 13(1)

Reg. 13(1)
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-48661
Project / Site name: Northstowe

Lab Sample Number				2220968	2220969	2220970	2220971
Sample Reference				BHTCA301A	BHTCA301A	TPTCA115	TPTCA115
Sample Number				4	6	1	3
Depth (m)				0.50-0 60	1.00-1.10	0.20	1.00
Date Sampled				23/03/2022	23/03/2022	Deviating	Deviating
Time Taken				1440	1454	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	8.9	10	14	11
Total mass of sample received	kg	0.001	NONE	1.4	1.1	0.9	1
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	PDO	PDO	PDO	PDO
General Inorganics							
pH - Automated	pH Units	N/A	MCERTS	8 2	8.1	8.1	8.2
Total Cyanide	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1 0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1 0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0 054	0.085	1 8	0.072
Total Phenols							
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1 0	< 1.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.28	< 0 05	0.91	< 0 05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1 6	< 0 05	1.9	< 0 05
Pyrene	mg/kg	0.05	MCERTS	1.7	< 0 05	1.7	< 0 05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.87	< 0 05	0.99	< 0 05
Chrysene	mg/kg	0.05	MCERTS	0.75	< 0 05	0.83	< 0 05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.1	< 0 05	1.1	< 0 05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.42	< 0 05	0.54	< 0 05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.92	< 0 05	0.98	< 0 05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.37	< 0 05	0.42	< 0 05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.48	< 0 05	0.54	< 0 05
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	8.55	< 0 80	9.89	< 0 80
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	8.3	14	17
Boron (water soluble)	mg/kg	0.2	MCERTS	1 3	0.6	0.9	0.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0 2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4 0	< 4.0	< 4 0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23	21	25	33
Copper (aqua regia extractable)	mg/kg	1	MCERTS	15	7.7	12	11
Lead (aqua regia extractable)	mg/kg	1	MCERTS	20	11	18	17
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0 3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	16	22	25
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1 0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	58	41	57	51

Analytical Report Number: 22-48661
Project / Site name: Northstowe

Lab Sample Number				2220968	2220969	2220970	2220971
Sample Reference				BHTCA301A	BHTCA301A	TPTCA115	TPTCA115
Sample Number				4	6	1	3
Depth (m)				0.50-0 60	1.00-1.10	0.20	1.00
Date Sampled				23/03/2022	23/03/2022	Deviating	Deviating
Time Taken				1440	1454	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Monoaromatics & Oxygenates							
Benzene	µg/kg	1	MCERTS	< 1 0	-	< 1 0	-
Toluene	µg/kg	1	MCERTS	< 1 0	-	< 1 0	-
Ethylbenzene	µg/kg	1	MCERTS	< 1 0	-	< 1 0	-
p & m-xylene	µg/kg	1	MCERTS	< 1 0	-	< 1 0	-
o-xylene	µg/kg	1	MCERTS	< 1 0	-	< 1 0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1 0	-	< 1 0	-
Petroleum Hydrocarbons							
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0 001	-	< 0 001	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0 001	-	< 0 001	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0 001	-	< 0 001	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1 0	-	< 1 0	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2 0	-	< 2 0	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8 0	-	< 8 0	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8 0	-	< 8 0	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	MCERTS	< 10	-	< 10	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0 001	-	< 0 001	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0 001	-	< 0 001	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0 001	-	< 0 001	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1 0	-	< 1 0	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2 0	-	< 2 0	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	11	-	< 10	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	MCERTS	13	-	11	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-48661
Project / Site name: Northstowe

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2220968	BHTCA301A	4	0.50-0.60	Brown loam and clay with gravel.
2220969	BHTCA301A	6	1.00-1.10	Brown clay and sand with gravel.
2220970	TPTCA115	1	0.2	Brown loam and clay with gravel and vegetation.
2220971	TPTCA115	3	1	Brown loam and clay with gravel.

Analytical Report Number : 22-48661
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Analytical Report Number : 22-48661
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report

Analytical Report Number : 22-48661
Project / Site name: Northstowe

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TPTCA115	1	S	2220970	ab	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
TPTCA115	1	S	2220970	ab	Monohydric phenols in soil	L080-PL	b
TPTCA115	1	S	2220970	ab	Speciated EPA-16 PAHs in soil	L064-PL	b
TPTCA115	1	S	2220970	ab	TPHCWG (Soil)	L088/76-PL	b
TPTCA115	3	S	2220971	ab	Monohydric phenols in soil	L080-PL	b
TPTCA115	3	S	2220971	ab	Speciated EPA-16 PAHs in soil	L064-PL	b

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Analytical Report Number : 22-48682

Project / Site name:	Northstowe	**Samples received on:**	29/03/2022
Your job number:	NSTO	**Samples instructed on/ Analysis started on:**	30/03/2022
Your order number:	14059900	**Analysis completed by:**	08/04/2022
Report Issue Number:	1	**Report issued on:**	08/04/2022
Samples Analysed:	4 soil samples		

Signed: Reg. 13(1)

Reg. 13(1)
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-48682
Project / Site name: Northstowe

Lab Sample Number				2221053	2221054	2221055	2221056
Sample Reference				BH2C101	BH2C103	BH2C103	BH2C104
Sample Number				1	1	2	2
Depth (m)				0 20-0.30	0.10-0.20	0 50-0.60	0.10-0.20
Date Sampled				21/03/2022	22/03/2022	22/03/2022	22/03/2022
Time Taken				1804	1135	1136	1451
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	8.9	< 0.1
Moisture Content	%	0.01	NONE	19	11	12	8 8
Total mass of sample received	kg	0.001	NONE	1 5	1 5	1 5	1 5

Asbestos in Soil	Type	N/A	ISO 17025	-	-	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	N/A	N/A	LFT	LFT

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7 3	8 2	8	8.1
Total Cyanide	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1 0	< 1 0
Free Cyanide	mg/kg	1	MCERTS	-	-	< 1 0	< 1 0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	0.37	0.13
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.7	0 6	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1 0	< 1 0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	-	-	0.7	< 0.05
Anthracene	mg/kg	0.05	MCERTS	-	-	0.28	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	-	-	1 3	< 0.05
Pyrene	mg/kg	0.05	MCERTS	-	-	0.74	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	0.29	< 0.05
Chrysene	mg/kg	0.05	MCERTS	-	-	0.26	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-	3.58	< 0.80

Analytical Report Number: 22-48682
Project / Site name: Northstowe

Lab Sample Number				2221053	2221054	2221055	2221056
Sample Reference				BH2C101	BH2C103	BH2C103	BH2C104
Sample Number				1	1	2	2
Depth (m)				0 20-0.30	0.10-0.20	0 50-0.60	0.10-0.20
Date Sampled				21/03/2022	22/03/2022	22/03/2022	22/03/2022
Time Taken				1804	1135	1136	1451
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Heavy Metals / Metalloids							
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	< 1 0	2 6	-	-
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	12	15	19
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.93	0.84	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	2 8	1	0 5	1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0 2	< 0 2	< 0 2	< 0 2
Chromium (hexavalent)	mg/kg	4	NONE	-	-	< 4 0	< 4 0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	25	25	37	28
Copper (aqua regia extractable)	mg/kg	1	MCERTS	14	11	12	12
Lead (aqua regia extractable)	mg/kg	1	MCERTS	19	13	15	13
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0 3	< 0 3	< 0 3	< 0 3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25	21	28	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1 0	< 1 0	< 1 0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	45	47	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	62	44	60	47
Petroleum Hydrocarbons							
TPH6 - Aliphatic (C6 - C8) $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0 001	< 0 001	-	-
TPH6 - Aliphatic (C8 - C10) $_{HS\_1D\_AL}$	mg/kg	0.001	MCERTS	< 0 001	< 0 001	-	-
TPH6 - Aliphatic (C10 - C12) $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1 0	< 1 0	-	-
TPH6 - Aliphatic (C12 - C16) $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2 0	< 2 0	-	-
TPH6 - Aliphatic (C16 - C21) $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8 0	< 8 0	-	-
TPH6 - Aliphatic (C21 - C35) $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8 0	< 8 0	-	-
TPH6 - Aliphatic (C6 - C35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	< 10	-	-
TPH6 - Aromatic (C6 - C8) $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0 001	< 0 001	-	-
TPH6 - Aromatic (C8 - C10) $_{HS\_1D\_AR}$	mg/kg	0.001	MCERTS	< 0 001	< 0 001	-	-
TPH6 - Aromatic (C10 - C12) $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1 0	< 1 0	-	-
TPH6 - Aromatic (C12 - C16) $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2 0	< 2 0	-	-
TPH6 - Aromatic (C16 - C21) $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	-	-
TPH6 - Aromatic (C21 - C35) $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	-	-
TPH6 - Aromatic (C6 - C35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	< 10	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-48682
Project / Site name: Northstowe

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2221053	BH2C101	1	0.20-0.30	Brown loam and clay with gravel and vegetation.
2221054	BH2C103	1	0.10-0.20	Brown loam and clay with gravel and vegetation.
2221055	BH2C103	2	0.50-0.60	Brown loam and clay with gravel and stones.
2221056	BH2C104	2	0.10-0.20	Brown loam and clay with gravel.

Analytical Report Number : 22-48682
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
TPH6 (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method with silica gel split/clean up.	L076-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Analytical Report Number : 22-48682
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report

Analytical Report Number : 22-48682
Project / Site name: Northstowe

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH2C101	1	S	2221053	c	Total cyanide in soil	L080-PL	c
BH2C103	1	S	2221054	c	Total cyanide in soil	L080-PL	c
BH2C103	2	S	2221055	c	Free cyanide in soil	L080-PL	c
BH2C103	2	S	2221055	c	Total cyanide in soil	L080-PL	c
BH2C104	2	S	2221056	c	Free cyanide in soil	L080-PL	c
BH2C104	2	S	2221056	c	Total cyanide in soil	L080-PL	c

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Analytical Report Number : 22-51163

Project / Site name:	Northstowe	**Samples received on:**	08/04/2022
Your job number:	10052307	**Samples instructed on/ Analysis started on:**	11/04/2022
Your order number:	14059900	**Analysis completed by:**	20/04/2022
Report Issue Number:	1	**Report issued on:**	21/04/2022
Samples Analysed:	16 water samples		

Signed: Reg. 13(1)

Reg. 13(1)
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-51163
Project / Site name: Northstowe

Your Order No: 14059900

Lab Sample Number				2235073	2235074	2235075	2235076	2235077
Sample Reference				BHTCA101	WSTCA108	BHTCA105D	BHTCA104	BHTCA110
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				05/04/2022	05/04/2022	05/04/2022	06/04/2022	06/04/2022
Time Taken				1045	1503	1612	1107	1415
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7 8	7	7	7 6	7.1
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO4	mg/l	0.045	ISO 17025	458	338	817	509	524
Alkalinity as CaCO3	mg/l	3	ISO 17025	220	540	420	210	380
Phenols by HPLC								
Catechol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Resorcinol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Cresols	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Naphthols	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Isopropylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Phenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Trimethylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Total Phenols								
Total Phenols (HPLC)	µg/l	3.5	NONE	< 3 5	< 3 5	< 3 5	< 3 5	< 3 5
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16

Analytical Report Number: 22-51163
Project / Site name: Northstowe

Your Order No: 14059900

Lab Sample Number				2235073	2235074	2235075	2235076	2235077
Sample Reference				BHTCA101	WSTCA108	BHTCA105D	BHTCA104	BHTCA110
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				05/04/2022	05/04/2022	05/04/2022	06/04/2022	06/04/2022
Time Taken				1045	1503	1612	1107	1415
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Boron (dissolved)	µg/l	10	ISO 17025	1300	130	160	980	110
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5 0	< 5 0	< 5 0	< 5 0
Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.45	2.33	1.83	2.08	0.74
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.05	0.08	0.15	0.07	0.08
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0 2	0 5	< 0 2	< 0 2
Copper (dissolved)	µg/l	0.5	ISO 17025	4 5	6 8	9 5	4.1	4
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0 2	0 3	0 6	0 2	0 2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	8 5	21	28	7 3	13
Selenium (dissolved)	µg/l	0.6	ISO 17025	2 3	1.4	1 8	1 6	3 3
Zinc (dissolved)	µg/l	0.5	ISO 17025	6 6	7 2	5 5	8 8	18
Monoaromatics & Oxygenates								
Benzene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Toluene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Ethylbenzene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
p & m-xylene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
o-xylene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10) $_{HS\_1D\_TOTAL}$	µg/l	10	ISO 17025	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C8 - C10 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-51163
Project / Site name: Northstowe

Your Order No: 14059900

Lab Sample Number				2235078	2235079	2235080	2235081	2235082
Sample Reference				BHTCA103	BHTCA106	BHTCA107	BHTCA102	WS2C120
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				05/04/2022	06/04/2022	06/04/2022	05/04/2022	07/04/2022
Time Taken				1403	1007	1015	1443	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7	7.7	7 5	7 3	7 2
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO4	mg/l	0.045	ISO 17025	1090	657	1260	476	1040
Alkalinity as CaCO3	mg/l	3	ISO 17025	370	230	370	270	390
Phenols by HPLC								
Catechol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Resorcinol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Cresols	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Naphthols	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Isopropylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Phenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Trimethylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Total Phenols								
Total Phenols (HPLC)	µg/l	3.5	NONE	< 3 5	< 3 5	< 3 5	< 3 5	< 3 5
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16

Analytical Report Number: 22-51163
Project / Site name: Northstowe

Your Order No: 14059900

Lab Sample Number				2235078	2235079	2235080	2235081	2235082
Sample Reference				BHTCA103	BHTCA106	BHTCA107	BHTCA102	WS2C120
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				05/04/2022	06/04/2022	06/04/2022	05/04/2022	07/04/2022
Time Taken				1403	1007	1015	1443	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Boron (dissolved)	µg/l	10	ISO 17025	600	1000	890	930	95
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5 0	< 5 0	< 5 0	< 5 0
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.64	1.41	1.29	0.86	3.75
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.14	0.05	0.03	0.05	0.06
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0 2	< 0 2	< 0 2	< 0 2
Copper (dissolved)	µg/l	0.5	ISO 17025	5.1	4.9	3.9	4 5	5.7
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0 2	0 2	0 3	< 0 2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	56	13	12	7.4	13
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.9	9.7	1 5	2.1	3 2
Zinc (dissolved)	µg/l	0.5	ISO 17025	110	14	29	9 6	8.4
Monoaromatics & Oxygenates								
Benzene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Toluene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Ethylbenzene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
p & m-xylene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
o-xylene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10) $_{HS\_1D\_TOTAL}$	µg/l	10	ISO 17025	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C8 - C10 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-51163
Project / Site name: Northstowe

Your Order No: 14059900

Lab Sample Number				2235083	2235084	2235085	2235086	2235087
Sample Reference				WS2C112	BH2C103	BH2C104	WSTCA117	BHTCA109
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				07/04/2022	07/04/2022	07/04/2022	07/04/2022	07/04/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.4	7.4	7	6.9	6.9
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO4	mg/l	0.045	ISO 17025	936	1390	1380	519	1040
Alkalinity as CaCO3	mg/l	3	ISO 17025	260	280	250	510	610
Phenols by HPLC								
Catechol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Resorcinol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Cresols	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Naphthols	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Isopropylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Phenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Trimethylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5	< 0 5
Total Phenols								
Total Phenols (HPLC)	µg/l	3.5	NONE	< 3 5	< 3 5	< 3 5	< 3 5	< 3 5
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16

Analytical Report Number: 22-51163
Project / Site name: Northstowe

Your Order No: 14059900

Lab Sample Number				2235083	2235084	2235085	2235086	2235087
Sample Reference				WS2C112	BH2C103	BH2C104	WSTCA117	BHTCA109
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				07/04/2022	07/04/2022	07/04/2022	07/04/2022	07/04/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Boron (dissolved)	µg/l	10	ISO 17025	98	930	240	190	330
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5 0	< 5 0	< 5 0	< 5 0
Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.72	0.7	1.95	1.81	0.55
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.19	0.13	0.13	0.06	0.07
Chromium (dissolved)	µg/l	0.2	ISO 17025	0 2	< 0 2	< 0 2	< 0 2	< 0 2
Copper (dissolved)	µg/l	0.5	ISO 17025	4 5	3	4 2	3 8	3
Lead (dissolved)	µg/l	0.2	ISO 17025	0 2	< 0 2	< 0 2	0 2	0 3
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	43	16	32	29	9
Selenium (dissolved)	µg/l	0.6	ISO 17025	40	3	< 0 6	1	3.4
Zinc (dissolved)	µg/l	0.5	ISO 17025	9.7	11	28	12	11
Monoaromatics & Oxygenates								
Benzene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Toluene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Ethylbenzene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
p & m-xylene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
o-xylene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10) $_{HS\_1D\_TOTAL}$	µg/l	10	ISO 17025	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C8 - C10 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-51163
Project / Site name: Northstowe

Your Order No: 14059900

Lab Sample Number				2235088
Sample Reference				BHTCA108
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				07/04/2022
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
General Inorganics				
pH	pH Units	N/A	ISO 17025	8
Total Cyanide	µg/l	10	ISO 17025	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10
Sulphate as SO4	mg/l	0.045	ISO 17025	804
Alkalinity as CaCO3	mg/l	3	ISO 17025	210
Phenols by HPLC				
Catechol	µg/l	0.5	NONE	< 0 5
Resorcinol	µg/l	0.5	NONE	< 0 5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0 5
Cresols	µg/l	0.5	NONE	< 0 5
Naphthols	µg/l	0.5	NONE	< 0 5
Isopropylphenol	µg/l	0.5	NONE	< 0 5
Phenol	µg/l	0.5	NONE	< 0 5
Trimethylphenol	µg/l	0.5	NONE	< 0 5
Total Phenols				
Total Phenols (HPLC)	µg/l	3.5	NONE	< 3 5
Speciated PAHs				
Naphthalene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01
Total PAH				
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16

Analytical Report Number: 22-51163
Project / Site name: Northstowe

Your Order No: 14059900

Lab Sample Number				2235088
Sample Reference				BHTCA108
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				07/04/2022
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Heavy Metals / Metalloids				
Boron (dissolved)	µg/l	10	ISO 17025	790
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0
Arsenic (dissolved)	µg/l	0.15	ISO 17025	< 0.15
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0 2
Copper (dissolved)	µg/l	0.5	ISO 17025	0.7
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0 2
Mercury (dissolved)	µg/l	0.05	ISO 17025	0.07
Nickel (dissolved)	µg/l	0.5	ISO 17025	0 8
Selenium (dissolved)	µg/l	0.6	ISO 17025	7.9
Zinc (dissolved)	µg/l	0.5	ISO 17025	5
Monoaromatics & Oxygenates				
Benzene	µg/l	1	ISO 17025	< 1 0
Toluene	µg/l	1	ISO 17025	< 1 0
Ethylbenzene	µg/l	1	ISO 17025	< 1 0
p & m-xylene	µg/l	1	ISO 17025	< 1 0
o-xylene	µg/l	1	ISO 17025	< 1 0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1 0
Petroleum Hydrocarbons				
Petroleum Range Organics (C6 - C10) $_{HS\_1D\_TOTAL}$	µg/l	10	ISO 17025	< 10.0
TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0
TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0
TPH-CWG - Aliphatic >C8 - C10 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0
TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0
TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0
TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0
TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic (C5 - C35) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-51163
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Free cyanide in water	Determination of free cyanide by distillation followed by colorimetry.Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
PRO (Waters)	Determination of hydrocarbons C6-C10 by headspace GC-MS. Accredited Matrices SW, PW. GW.	In-house method based on USEPA8260	L088-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Alkalinity in Water (by discreet analyser)	Determination of Alkalinity by discreet analyser (colorimetry). Accredited matrices: SW, PW, GW.	In house method based on MEWAM & USEPA Method 310.2.	L082-PL	W	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Analytical Report Number : 22-51163
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report

Analytical Report Number : 22-51163
Project / Site name: Northstowe

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH2C103	None Supplied	W	2235084	c	pH at 20oC in water (automated)	L099-PL	c
BH2C104	None Supplied	W	2235085	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA101	None Supplied	W	2235073	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA102	None Supplied	W	2235081	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA103	None Supplied	W	2235078	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA104	None Supplied	W	2235076	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA105D	None Supplied	W	2235075	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA106	None Supplied	W	2235079	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA107	None Supplied	W	2235080	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA108	None Supplied	W	2235088	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA109	None Supplied	W	2235087	c	pH at 20oC in water (automated)	L099-PL	c
BHTCA110	None Supplied	W	2235077	c	pH at 20oC in water (automated)	L099-PL	c
WS2C112	None Supplied	W	2235083	c	pH at 20oC in water (automated)	L099-PL	c
WS2C120	None Supplied	W	2235082	c	pH at 20oC in water (automated)	L099-PL	c
WSTCA108	None Supplied	W	2235074	c	pH at 20oC in water (automated)	L099-PL	c
WSTCA117	None Supplied	W	2235086	c	pH at 20oC in water (automated)	L099-PL	c

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Analytical Report Number : 22-51965

Project / Site name:	Northstowe	**Samples received on:**	14/04/2022
Your job number:		**Samples instructed on/ Analysis started on:**	14/04/2022
Your order number:	14059900	**Analysis completed by:**	26/04/2022
Report Issue Number:	1	**Report issued on:**	26/04/2022
Samples Analysed:	4 water samples		

Signed: Reg. 13(1)

Reg. 13(1)
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-51965
Project / Site name: Northstowe

Lab Sample Number				2239760	2239761	2239762	2239763
Sample Reference				BH2C101	WS2C108	WS2C114	BH2C102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
General Inorganics							
pH	pH Units	N/A	ISO 17025	7.4	7 5	7.4	7 3
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	110	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10
Sulphate as SO4	µg/l	45	ISO 17025	1310000	2070000	701000	1900000
Sulphate as SO4	mg/l	0.045	ISO 17025	1310	2070	701	1900
Alkalinity as CaCO3	mg/l	3	ISO 17025	230	250	440	300
Phenols by HPLC							
Catechol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5
Resorcinol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5
Cresols	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5
Naphthols	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5
Isopropylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5
Phenol	µg/l	0.5	NONE	< 0 5	< 0 5	950	< 0 5
Trimethylphenol	µg/l	0.5	NONE	< 0 5	< 0 5	< 0 5	< 0 5
Total Phenols							
Total Phenols (HPLC)	µg/l	3.5	NONE	< 3 5	< 3 5	950	< 3 5
Speciated PAHs							
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH							
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16

Analytical Report Number: 22-51965
Project / Site name: Northstowe

Lab Sample Number				2239760	2239761	2239762	2239763
Sample Reference				BH2C101	WS2C108	WS2C114	BH2C102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Heavy Metals / Metalloids							
Boron (dissolved)	µg/l	10	ISO 17025	1300	310	130	1100
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5 0	< 5 0	< 5 0
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.49	0.39	1.65	0.41
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.04	0.05	0.09	0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	0.4	< 0 2	< 0 2
Copper (dissolved)	µg/l	0.5	ISO 17025	2 3	2 8	4.1	2.1
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0 2	< 0 2	< 0 2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	6 5	5.7	11	9 6
Selenium (dissolved)	µg/l	0.6	ISO 17025	4.1	16	20	13
Zinc (dissolved)	µg/l	0.5	ISO 17025	7.1	16	5 2	29
Monoaromatics & Oxygenates							
Benzene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
Toluene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
Ethylbenzene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
p & m-xylene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
o-xylene	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
Petroleum Hydrocarbons							
TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C8 - C10 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1 0	< 1 0	< 1 0	< 1 0
TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-51965
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Free cyanide in water	Determination of free cyanide by distillation followed by colorimetry.Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Alkalinity in Water (by discreet analyser)	Determination of Alkalinity by discreet analyser (colorimetry). Accredited matrices: SW, PW, GW.	In house method based on MEWAM & USEPA Method 310.2.	L082-PL	W	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Analytical Report Number : 22-51965
Project / Site name: Northstowe

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e g. EH+HS_Total or EH_CU+HS_Total

Analytical Report Number : 22-51965
Project / Site name: Northstowe

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH2C101	None Supplied	W	2239760	a	None Supplied	None Supplied	None Supplied
BH2C102	None Supplied	W	2239763	a	None Supplied	None Supplied	None Supplied
WS2C108	None Supplied	W	2239761	a	None Supplied	None Supplied	None Supplied
WS2C114	None Supplied	W	2239762	a	None Supplied	None Supplied	None Supplied

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PHASE 1 DESK STUDY AND PHASE 2 INTRUSIVE INVESTIGATION; INTERPRETATIVE REPORT

Northstowe Phase 2 – Phase 2C

Document Ref: 10018973-ARC-XX-XX-RP-YY-0004-PH2C

Revision: 00

JUNE 2022

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Phase 1 Desk Study and Phase 2 Intrusive Investigation; Interpretative Report

Northstowe Phase 2 – Phase 2C

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Approver	Reg. 13(1)
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00	**June**	Reg. 13(1)Reg. 13(1)	Reg. 13(1)Reg. 13(1)	Reg. 13(1)	**First Issue**

Contents

Appendices

Appendix A

Exploratory Hole Plan

Appendix B

ESDAT Tables

Appendix C

Phase 2C Factual Report

1 Introduction

1.1 Terms of Reference

Arcadis Consulting (UK) Limited (Arcadis) was instructed by Homes England, 'the Client', to undertake a ground investigation at the proposed site, known as Phase 2C (the "Site") within the Northstowe development near Cambridge.

No previous investigations have taken place within the Phase 2C boundary. The area was investigated during the wider Phase 2 investigation due to access constraints and archaeological investigation been undertaken in the area.

It should be noted that it is proposed to increase site levels across Phase 2C by approximately 1m to coincide with adjacent road levels. Therefore, near surface soil conditions, are likely to change from those recorded by some exploratory holes and as reported herein. The quality of the imported fills will therefore define near surface land quality in those areas that are filled. Full details of fill areas are not yet known.

The investigation undertaken across Phase 2C was based on a 50m grid, in order to provide greater certainty of the ground conditions and better investigate the presence of the sand and gravel channels that are present in this area. The investigation was undertaken in the area to be developed and did not take place in the area shown in green (western area) on Plan 1 below.

Details of the most recent investigation are provided within the factual report [1].

1.2 Proposed Redevelopment

At the time of writing, it is understood that the development will comprise low rise residential dwellings (up to 3 storeys) with gardens and associated infrastructure and a Neighbourhood Equipped Area of Play (NEAP)

The wider Phase 2 Northstowe development scheme comprises the following;

- Development of the main Phase 2 development area into approximately 3,500 dwellings, schools, town centre including employment uses, formal and informal recreation space and landscaped areas, the eastern sports hub, the busway, a primary road to the southern access, construction haul route and engineering and infrastructure works, and;
- Construction of a highway link (Southern Access Road (West) (SARW)) between the proposed new town of Northstowe and the B1050, improvements to the B1050 and associated landscaping and drainage.

Plan 1, below, shows the Phase 2C area within the main Phase 2 development area.

Plan 1 – Redline boundary for the Northstowe Phase 2C

1.3 Supplementary Reporting

The assessment and recommendations made in this report are based upon the following documents which should be referred to for factual data:

- Arcadis, Northstowe Phase 2C – Factual Ground Investigation Report, May 2022 [1];
- WSP Environmental (UK) (2007) Northstowe Zone B - Interim Factual Report [2].

A combined exploratory hole location plan is presented within Appendix A.

1.4 Limitations

This report has been prepared for the client in accordance with the terms and conditions of appointment. Arcadis cannot accept any responsibility for any use of or reliance on the contents of this report by any third party. The copyright of this document, including the electronic format shall remain the property of Arcadis.

This report has been compiled from a number of sources, which Arcadis believes to be trustworthy. However, Arcadis is unable to guarantee the accuracy of information provided by others. The report is based on information available at the time. Consequently, there is a potential for further information to become available, which may change this report's conclusion and for which Arcadis cannot be responsible.

It should be noted that ground conditions between exploratory holes may vary from those identified during and ground investigations; any design should take this into consideration. It should also be noted that groundwater levels may be subject to diurnal, seasonal, and climatic variations and those recorded in this report are solely dependent on the time the ground investigations were carried out and the weather before and during the investigations, (carried out at different times).

2 Site Setting

2.1 Site Location and Description

The Northstowe development is centred on the former RAF Oakington Airfield and surrounding farmland which is situated approximately 10km northwest of Cambridge. The National Grid Reference (NGR) is TL 408 665.

The Phase 2C site is approximately 3.6 hectares and generally flat. It is located towards the eastern side of the main Northstowe Phase 2 development. The Northstowe Secondary College is located to the northwest of the Site.

Previous specialist work, for example, UXO and archaeology surveys have been undertaken by others across the area which includes the Phase 2 development.

2.2 Site History

The Phase 2C development area 'the Site' includes open space and limited hardstanding associated with the former RAF Oakington airfield.

It is not the intention of this report to provide a full history, but to identify those past uses on and within the vicinity of the Site that could have resulted in contamination of the soils and/or waters. Significant changes to the land use of the Site and surrounding areas are summarised in Table 2.1 below.

Table 2.1 Site History

Year	On Site	Off Site
1886 – 1938	The site is undeveloped fields.	The surrounding area is farmland and associated buildings
1938 – 1952	No change.	The area to the south of site is now listed as Airfield.
1958 – 1973	The site contains part of an airfield. This area is mainly undeveloped and is located next to a runway.	The airfield to the south of site has been further developed with additional buildings shown and runways.
1981 – 2006	The site is now listed as Oakington Barracks.	The airfield is now listed as Oakington Airfield, there have been changes to the layout of the runways.
2018	The site is now listed as Oakington Barracks (disused).	The airfield is now listed as Oakington Airfield (disused).

2.3 Published Geology, Hydrogeology, Hydrology and Relevant Environmental Information

Below is a summary of site information to assist with providing context to the report.

Table 2.2 Published information

Geology / Aquifer Status	**Superficial Deposit:** River Terrace Deposits comprised of clay, sand and gravel. The superficial deposits (River Terrace Deposits) on the site are classified as a Secondary A aquifer by the Environment Agency (EA). Secondary A aquifers are defined as "permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers". Their mode or occurrence is naturally variable and is not persistent across all areas. Where present there is a strong influence on local groundwater conditions. **Solid Geology:** Based on Geological Mapping at 1:50,000 scale, Sheet 187 (drift) Huntingdon and Sheet 188 (solid and drift) Cambridge [3], the geological sequence underlying the locality is River Terrace Deposits over Kimmeridge Clay and Ampthill Clay. The bedrock (Kimmeridge Clay Formation and Ampthill Clay Formation) is classified as Unproductive Strata. Unproductive Strata is defined as "rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow" Phase 2C is mapped as underlain by the Kimmeridge Clay only.
Additional Geological Information	There are no geological faults located on the site, according to the BGS mapping. The previous borehole/investigations, undertaken by the British Geological Survey between 1980's and 1990's across the whole Northstowe Phase 2 area, encountered between 0.2 m and 1.2 m of medium dense made ground overlying medium dense to dense River Terrace Sand and Gravel between 4 m and 6 m thick before proving the bedrock.
Radon	The radon risk has been assessed and indicates that the site is not in a radon affected area, as less than 1% of properties are above the action level, therefore no protective measures are necessary.
Source Protection Zone	The site is not situated within a Source Protection Zone (SPZ).

Licensed Groundwater Abstraction Points	There are a number of groundwater abstractions within 2000m of the site, with groundwater being utilised by multiple sources for spray irrigation and agriculture purposes.
Surface Water Features	A number of field drains within the surrounding agricultural land and Beck Brook located approximately 500m east of the Phase 2C site, which flows in a northerly direction. A number of ponds have been created and are present on the eastern boundary of the Phase 2 development.
Likely Groundwater Flow Direction	Groundwater flow is likely to be to the north and northeast and it is considered likely that groundwater is likely to be in continuity with Beck Brook to the east of the site. Groundwater is often present close to the ground surface.

3 Preliminary Conceptual Site Model

Geo-environmental assessments are required, in accordance with current regulatory guidance (CIRIA C552 [3] and LC:RM [5]), to consider the significance of potential contamination in terms of plausible contaminant source-pathway-receptor contaminant linkages. As part of this process, it is necessary to develop a conceptual model of these potential contaminant linkages by identifying the potential contamination sources, sensitive receptors and potential exposure pathways.

3.1 Potential Contaminant Sources

Based on the information obtained from the environmental site setting, historical mapping and previous investigations, there are a number of potential contaminative sources identified on and off-site. These are summarised in Table 3.1 below.

It should be noted that it is considered unlikely that all these substances would be present at significant concentrations across the Site.

Table 3.1 Potential Contaminant Sources

Source	Potential Contaminants
On Site	
Made Ground/ reworked ground/ imported ground associated with current use and historical use as the RAF Oakington	Metals, polyaromatic hydrocarbons (PAHs), Fuel Spillages – petroleum hydrocarbons (TPHs), asbestos, ground gases and vapours, UXO.
Off Site	
RAF Oakington and former Barracks	Metals, PAH, TPH, asbestos, ground gases, UXO