

Analytical Report Number: 24-031072
Project / Site name: Newport Silo Base
Your Order No: ORD 23266 4238

Lab Sample Number				258842	258843	258844	258845	258846
Sample Reference				WS01	WS02	WS04	WS06	PLT02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.60	0.50	0.60	0.35
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.02	MCERTS	< 0.020	-	-	< 0.020	< 0.020
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.02	MCERTS	< 0.020	-	-	< 0.020	< 0.020
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.05	MCERTS	< 0.050	-	-	< 0.050	< 0.050
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	6.2	-	-	1.5	1.2
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	16	-	-	2.4	5.3
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	51	-	-	< 8.0	19
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	520	-	-	21	100
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	590	-	-	25	130

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.05	MCERTS	< 0.050	-	-	< 0.050	< 0.050
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	2.3	-	-	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	13	-	-	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	150	-	-	< 10	52
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	170	-	-	< 10	52

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	-	-	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	< 5.0

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Your Order No: ORD 23266 4238

Lab Sample Number				258847
Sample Reference				PLT05
Sample Number				None Supplied
Depth (m)				0.40
Date Sampled				Deviating
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Stone Content	%	0.1	NONE	60.1
Moisture Content	%	0.01	NONE	5.5
Total mass of sample received	kg	0.1	NONE	1.3

Asbestos

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

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	10.8
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	260
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	128
Organic Matter (automated)	%	0.1	MCERTS	1.6

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.25
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.06
Phenanthrene	mg/kg	0.05	MCERTS	0.35
Anthracene	mg/kg	0.05	MCERTS	0.07
Fluoranthene	mg/kg	0.05	MCERTS	0.59
Pyrene	mg/kg	0.05	MCERTS	0.48
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.36
Chrysene	mg/kg	0.05	MCERTS	0.42
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.58
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.22
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.39
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.25
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.09
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.27

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	4.39
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.6
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	120
Copper (aqua regia extractable)	mg/kg	1	MCERTS	120
Lead (aqua regia extractable)	mg/kg	1	MCERTS	140
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	86
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	390



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Lab Sample Number				258847
Sample Reference				PLT05
Sample Number				None Supplied
Depth (m)				0.40
Date Sampled				Deviating
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.02	MCERTS	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.02	MCERTS	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.05	MCERTS	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.05	MCERTS	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-
Benzene	µg/kg	5	MCERTS	-
Toluene	µg/kg	5	MCERTS	-
Ethylbenzene	µg/kg	5	MCERTS	-
p & m-Xylene	µg/kg	5	MCERTS	-
o-Xylene	µg/kg	5	MCERTS	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



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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 *
258842	WS01	None Supplied	0.3	Brown clay and sand with gravel
258843	WS02	None Supplied	0.6	Brown sand with gravel and stones
258844	WS04	None Supplied	0.5	Brown sand with gravel and stones
258845	WS06	None Supplied	0.6	Brown clay and sand with gravel
258846	PLT02	None Supplied	0.35	Brown sand with gravel and stones
258847	PLT05	None Supplied	0.4	Brown sand with gravel and stones

Analytical Report Number : 24-031072
Project / Site name: Newport Silo Base

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
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
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.	L019B	D	NONE
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	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088	D/W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080	W	MCERTS



Analytical Report Number : 24-031072
Project / Site name: Newport Silo Base

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
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099	D	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
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 - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

Analytical Report Number : 24-031072

Project / Site name: Newport Silo Base

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.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
PLT02	N/A	S	258846	a	Asbestos Quant if Screen/ID positive	N/A	a
PLT02	N/A	S	258846	a	Asbestos identification in Soil	A001B	a
PLT02	N/A	S	258846	a	Asbestos types if id possitive	N/A	a
PLT02	N/A	S	258846	a	BTEX and/or Volatile organic compounds in soil	L073B	a
PLT02	N/A	S	258846	a	Hexavalent chromium in soil	L080	a
PLT02	N/A	S	258846	a	Metals in soil by ICP-OES	L038B	a
PLT02	N/A	S	258846	a	Organic matter (Automated) in soil	L009B	a
PLT02	N/A	S	258846	a	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	a
PLT02	N/A	S	258846	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
PLT02	N/A	S	258846	a	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	a
PLT02	N/A	S	258846	a	pH in soil (automated)	L099	a
PLT05	N/A	S	258847	a	Asbestos Quant if Screen/ID positive	N/A	a
PLT05	N/A	S	258847	a	Asbestos identification in Soil	A001B	a
PLT05	N/A	S	258847	a	Asbestos types if id possitive	N/A	a
PLT05	N/A	S	258847	a	Hexavalent chromium in soil	L080	a
PLT05	N/A	S	258847	a	Metals in soil by ICP-OES	L038B	a
PLT05	N/A	S	258847	a	Organic matter (Automated) in soil	L009B	a
PLT05	N/A	S	258847	a	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	a
PLT05	N/A	S	258847	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
PLT05	N/A	S	258847	a	pH in soil (automated)	L099	a
WS01	N/A	S	258842	a	Asbestos Quant if Screen/ID positive	N/A	a
WS01	N/A	S	258842	a	Asbestos identification in Soil	A001B	a
WS01	N/A	S	258842	a	Asbestos types if id possitive	N/A	a
WS01	N/A	S	258842	a	BTEX and/or Volatile organic compounds in soil	L073B	a
WS01	N/A	S	258842	a	Hexavalent chromium in soil	L080	a
WS01	N/A	S	258842	a	Metals in soil by ICP-OES	L038B	a
WS01	N/A	S	258842	a	Organic matter (Automated) in soil	L009B	a
WS01	N/A	S	258842	a	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	a
WS01	N/A	S	258842	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
WS01	N/A	S	258842	a	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	a
WS01	N/A	S	258842	a	pH in soil (automated)	L099	a
WS02	N/A	S	258843	a	Asbestos Quant if Screen/ID positive	N/A	a
WS02	N/A	S	258843	a	Asbestos identification in Soil	A001B	a
WS02	N/A	S	258843	a	Asbestos types if id possitive	N/A	a
WS02	N/A	S	258843	a	Hexavalent chromium in soil	L080	a
WS02	N/A	S	258843	a	Metals in soil by ICP-OES	L038B	a
WS02	N/A	S	258843	a	Organic matter (Automated) in soil	L009B	a
WS02	N/A	S	258843	a	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	a
WS02	N/A	S	258843	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
WS02	N/A	S	258843	a	pH in soil (automated)	L099	a
WS04	N/A	S	258844	a	Asbestos Quant if Screen/ID positive	N/A	a
WS04	N/A	S	258844	a	Asbestos identification in Soil	A001B	a
WS04	N/A	S	258844	a	Asbestos types if id possitive	N/A	a
WS04	N/A	S	258844	a	Hexavalent chromium in soil	L080	a
WS04	N/A	S	258844	a	Metals in soil by ICP-OES	L038B	a
WS04	N/A	S	258844	a	Organic matter (Automated) in soil	L009B	a
WS04	N/A	S	258844	a	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	a
WS04	N/A	S	258844	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
WS04	N/A	S	258844	a	pH in soil (automated)	L099	a
WS06	N/A	S	258845	a	Asbestos Quant if Screen/ID positive	N/A	a
WS06	N/A	S	258845	a	Asbestos identification in Soil	A001B	a
WS06	N/A	S	258845	a	Asbestos types if id possitive	N/A	a
WS06	N/A	S	258845	a	BTEX and/or Volatile organic compounds in soil	L073B	a
WS06	N/A	S	258845	a	Hexavalent chromium in soil	L080	a
WS06	N/A	S	258845	a	Metals in soil by ICP-OES	L038B	a
WS06	N/A	S	258845	a	Organic matter (Automated) in soil	L009B	a
WS06	N/A	S	258845	a	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	a
WS06	N/A	S	258845	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
WS06	N/A	S	258845	a	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	a



Sample Deviation Report



Analytical Report Number : 24-031072
Project / Site name: Newport Silo Base

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.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
WS06	N/A	S	258845	a	pH in soil (automated)	L099	a

APPENDIX 5 - Geotechnical Testing Results



LABORATORY REPORT



Contract Number: PSL24/5143

Report Date: 07 August 2024
Client's Reference: GRO-23266
Client Name: Groundtech Consulting
First Floor
Lloyd House
Orford Court
Greenfold Way
WN7 3XJ

For the attention of: Lewis Angus

Contract Title: New Silo Base, Newport

Date Received: 18/7/2024
Date Commenced: 18/7/2024
Date Completed: 7/8/2024

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins
(Managing Director)

R Berriman
(Associate Director)

S Royle
(Laboratory Manager)

L Knight
(Assistant Laboratory Manager)


D Nicholson
(Senior Technician)

T Watkins
(Senior Technician)

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SUMMARY OF LABORATORY SOIL DESCRIPTIONS

[illegible]

New Silo Base, Newport

Contract No:

PSL24/5143

Client Ref:

GRO-23266

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

[illegible]

SYMBOLS : NP : Non Plastic

*** : Liquid Limit and Plastic Limit Wet Sieved.**



New Silo Base, Newport

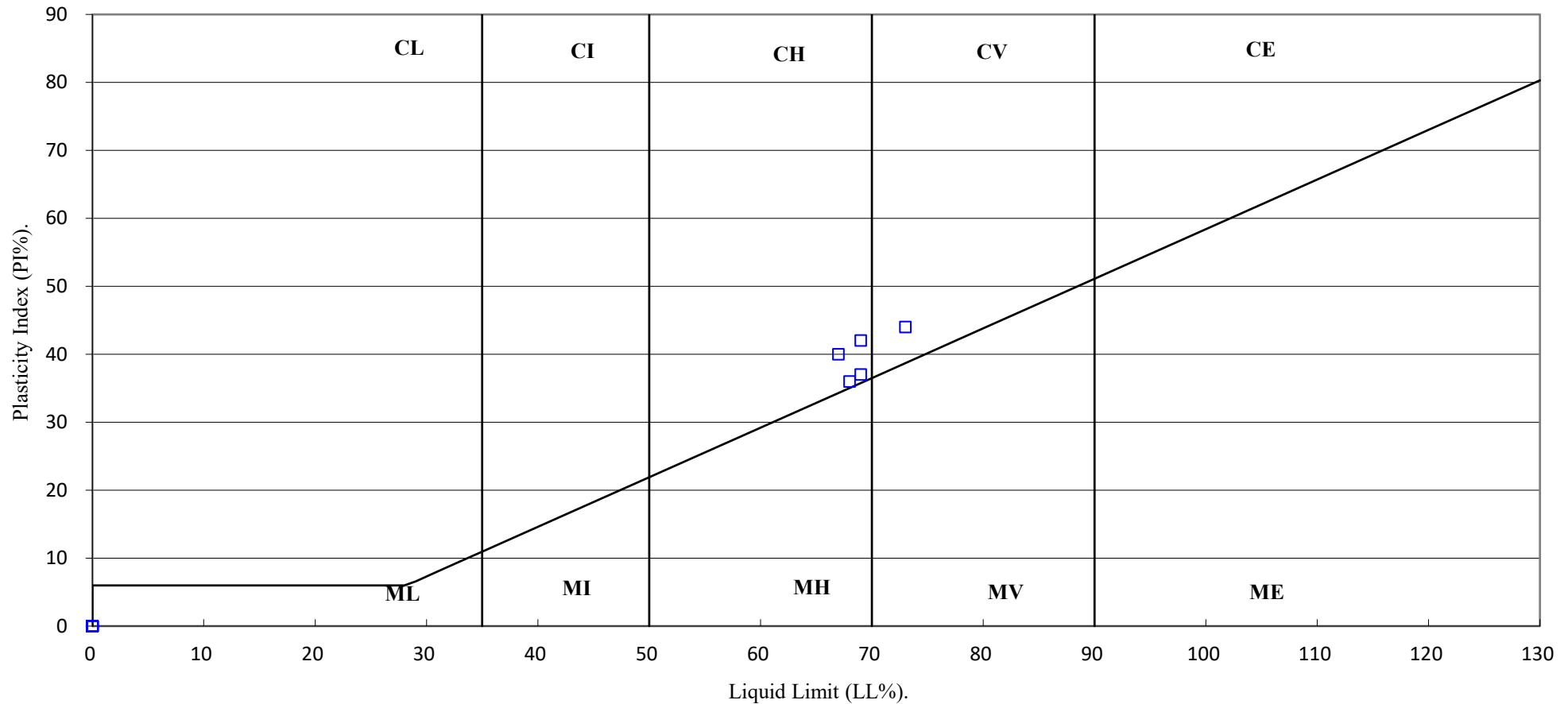
Contract No:

PSL24/5143

Client Ref:

GRO-23266

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



New Silo Base, Newport

Contract No:

PSL24/5143

Client Ref:

GRO-23266

APPENDIX 6 - Plate Load Testing Results



LABORATORY REPORT



Contract Number: PSL24/4961

Report Date: 11 July 2024

Client's Reference:

Client Name: Groundtech Consulting
First Floor
Lloyd House
Orford Court
Greenfold Way
WN7 3XJ

For the attention of: Rebecca Rowlinson

Contract Title: Eastern Dry Dock, Newport

Date Received: 10/7/2024

Date Commenced: 10/7/2024

Date Completed: 11/7/2024

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins
(Managing Director)

R Berriman
(Associate Director)

S Royle
(Laboratory Manager)

L Knight
(Assistant Laboratory Manager)


D Nicholson
(Senior Technician)

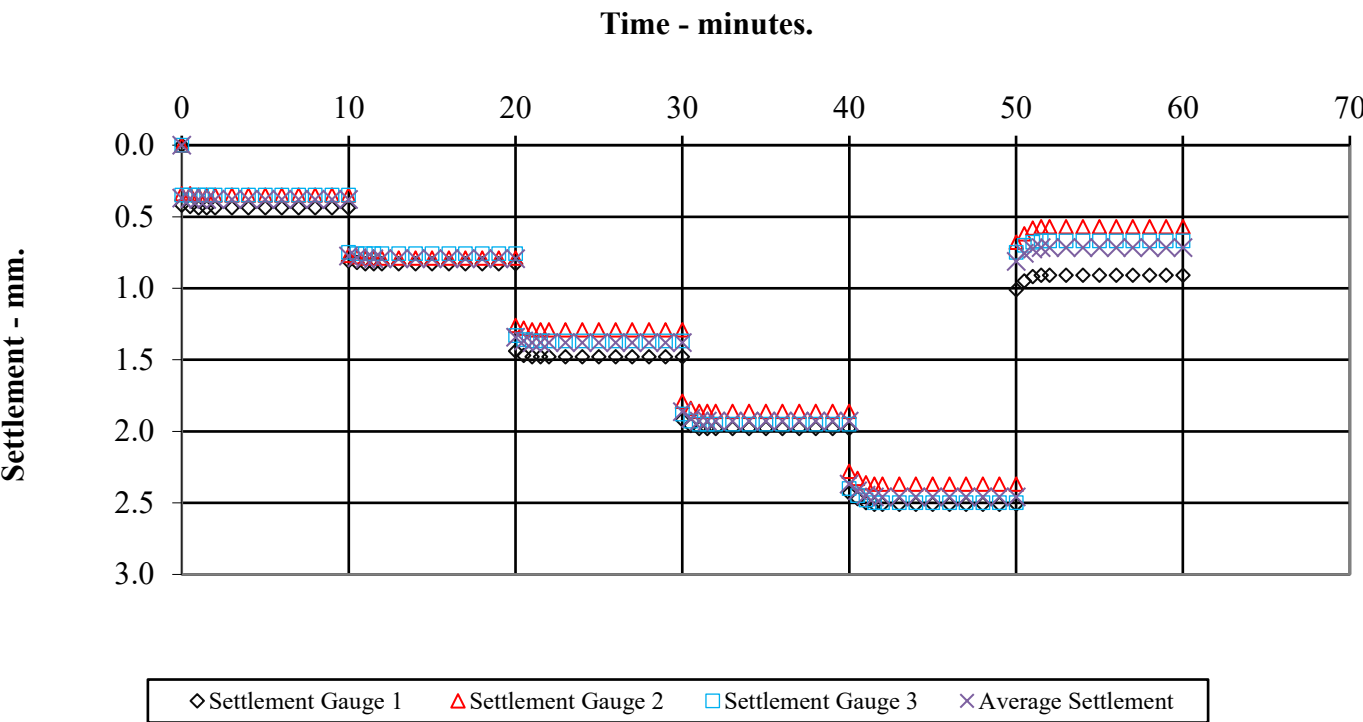
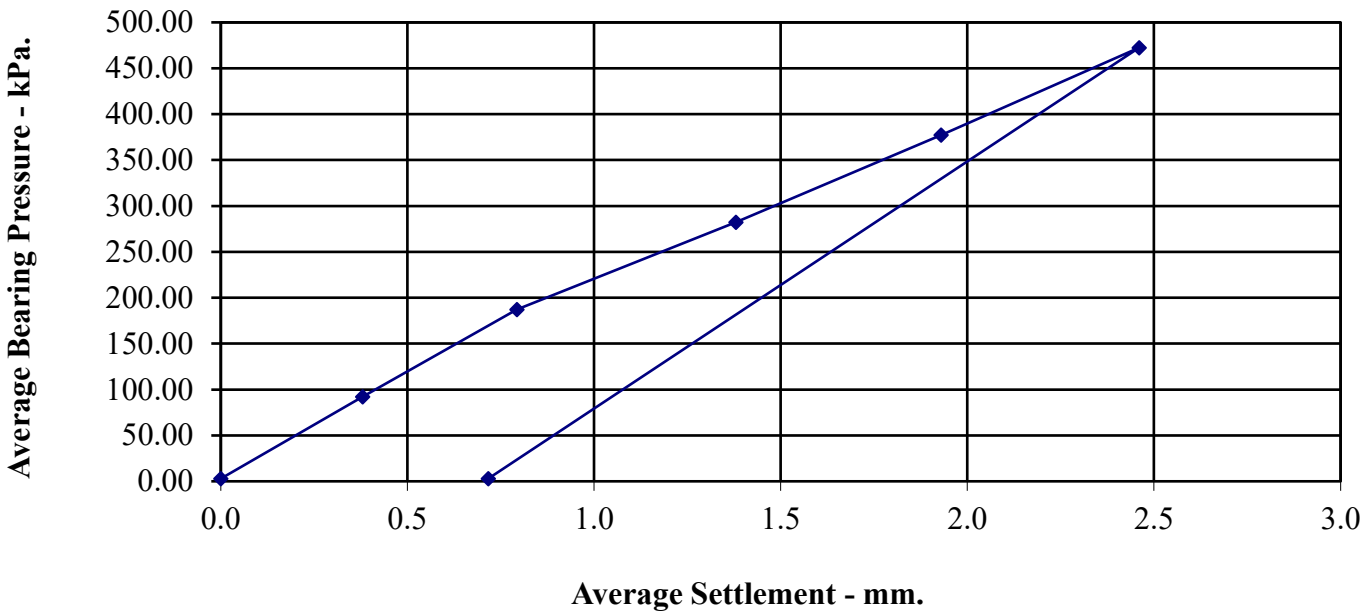
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VERTICAL DEFORMATION TESTS.
BS 1377 : Part 9 : 1990.

Date of Test:	10-Jul-24	Test Ref:	PBT 1
Grid Ref:		Depth (m):	0.80
Layer:		Comments:	
Maximum Applied Pressure (kPa):	472.43		
Maximum Deformation (mm):	2.46		
Plate Area (m2):	0.0707		
Description:	Greyish brown SAND		



Calculation of Equivalent CBR Value from Plate Bearing Test
Design Manual for Roads and Bridges Volume 7 Section 2 Chapter 4
Incorporating IAN 73/06

Date of Test	10-Jul-24
Test Ref	PBT 1
Depth (m)	0.80
Grid Ref	
Layer	
Comments	

Description	Greyish brown SAND
-------------	--------------------

Maximum Deflection	2.46	mm
Deflection required for CBR value	1.25	mm
Load at 1.25mm	261	kN/m ²
Plate diameter	300	mm
Conversion factor for plate diameter	0.442	
 K ₇₆₂ (modulus of subgrade reaction) calculated using 1.25mm settlement	 92.3	 kN/m ² /mm
 CBR Value	 24.6	 %



**Eastern Dry Dock, Corporation Road,
Newport**

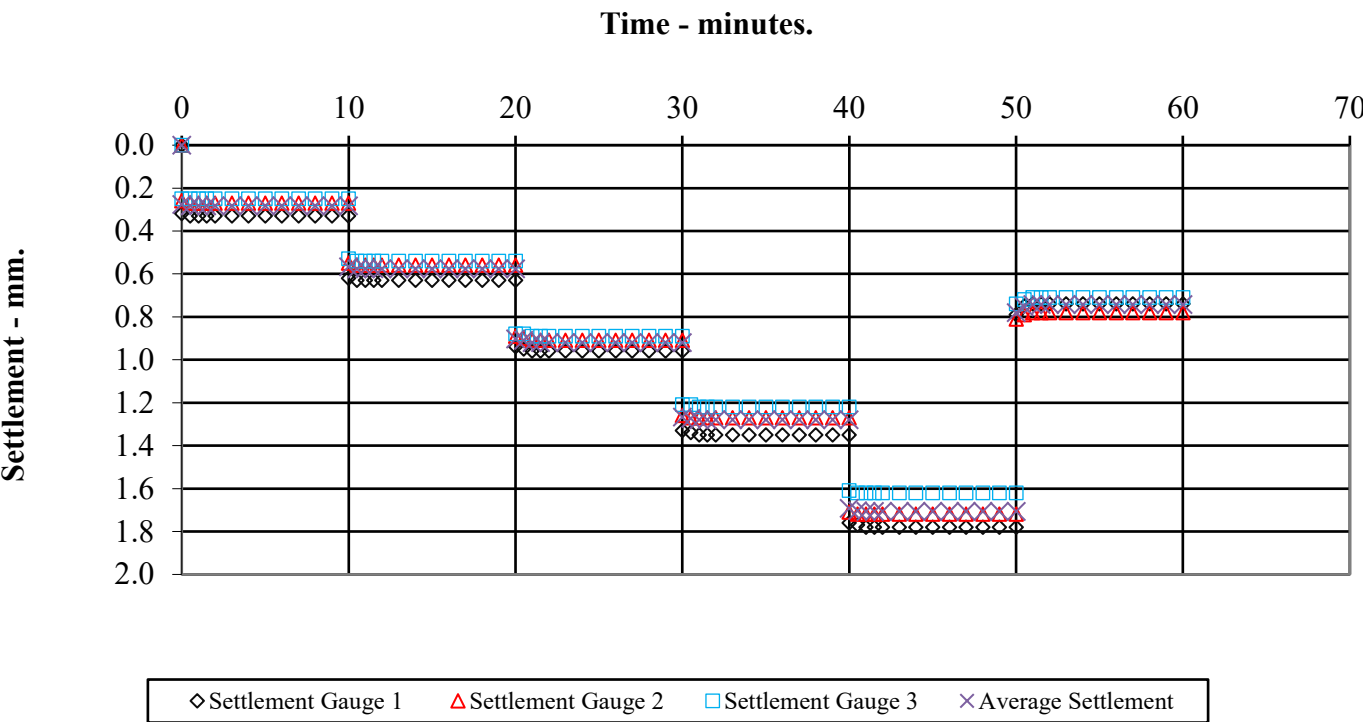
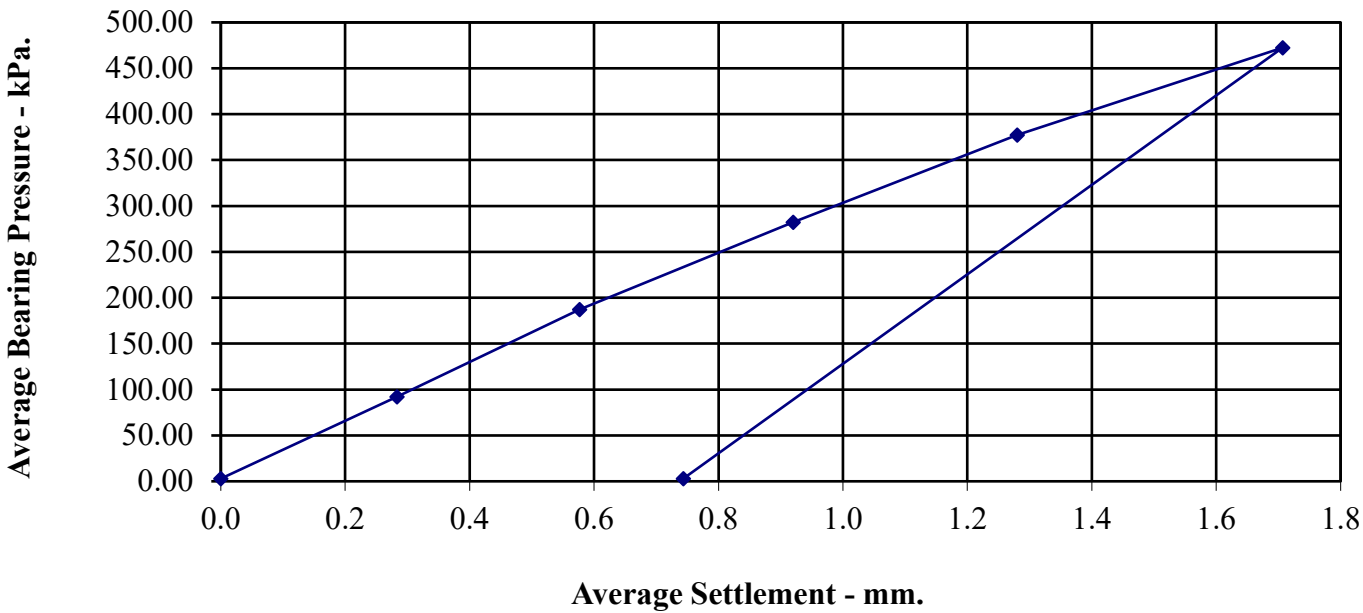
Contract No:

PSL24/4961

Client Ref:

VERTICAL DEFORMATION TESTS.
BS 1377 : Part 9 : 1990.

Date of Test:	10-Jul-24	Test Ref:	PBT 2
Grid Ref:		Depth (m):	0.40
Layer:		Comments:	
Maximum Applied Pressure (kPa):	472.43		
Maximum Deformation (mm):	1.71		
Plate Area (m2):	0.0707		
Description:	Orangish brown SAND		



Calculation of Equivalent CBR Value from Plate Bearing Test

Design Manual for Roads and Bridges Volume 7 Section 2 Chapter 4

Incorporating IAN 73/06

Date of Test 10-Jul-24
Test Ref PBT 2
Depth (m) 0.40
Grid Ref
Layer
Comments

Description Orangish brown SAND

Maximum Deflection 1.71 mm
Deflection required for CBR value 1.25 mm
Load at 1.25mm 369 kN/m²
Plate diameter 300 mm
Conversion factor for plate diameter 0.442

**K₇₆₂(modulus of subgrade reaction)
calculated using 1.25mm settlement** 130.5 kN/m²/mm

CBR Value 44.8 %



**Eastern Dry Dock, Corporation Road,
Newport**

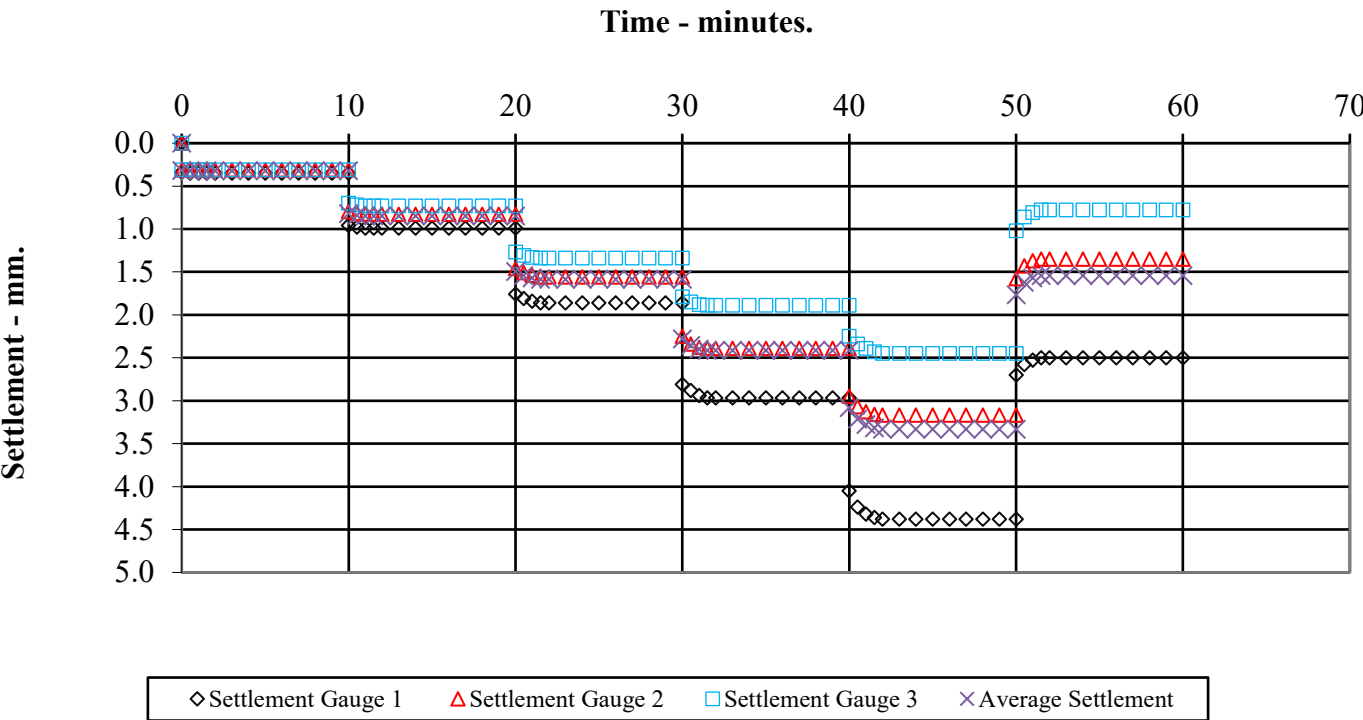
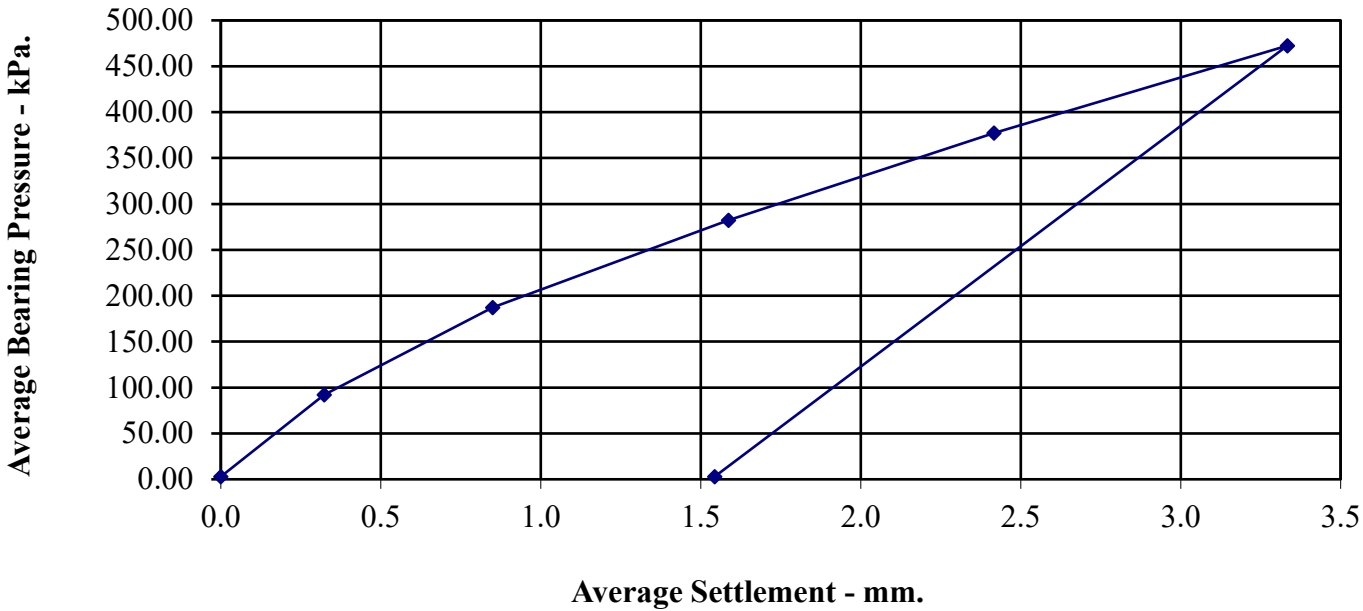
Contract No:

PSL24/4961

Client Ref:

VERTICAL DEFORMATION TESTS.
BS 1377 : Part 9 : 1990.

Date of Test:	10-Jul-24	Test Ref:	PBT 3
Grid Ref:		Depth (m):	0.60
Layer:		Comments:	
Maximum Applied Pressure (kPa):	472.43		
Maximum Deformation (mm):	3.33		
Plate Area (m2):	0.0707		
Description:	Dark grey slightly gravelly CLAY		



Calculation of Equivalent CBR Value from Plate Bearing Test

Design Manual for Roads and Bridges Volume 7 Section 2 Chapter 4

Incorporating IAN 73/06

Date of Test	10-Jul-24		
Test Ref	PBT 3		
Depth (m)	0.60		
Grid Ref			
Layer			
Comments			
Description	Dark grey slightly gravelly CLAY		
Maximum Deflection	3.33	mm	
Deflection required for CBR value	1.25	mm	
Load at 1.25mm	239	kN/m ²	
Plate diameter	300	mm	
Conversion factor for plate diameter	0.442		
K ₇₆₂ (modulus of subgrade reaction) calculated using 1.25mm settlement	84.4	kN/m ² /mm	
CBR Value	21.0	%	



Eastern Dry Dock, Corporation Road,
Newport

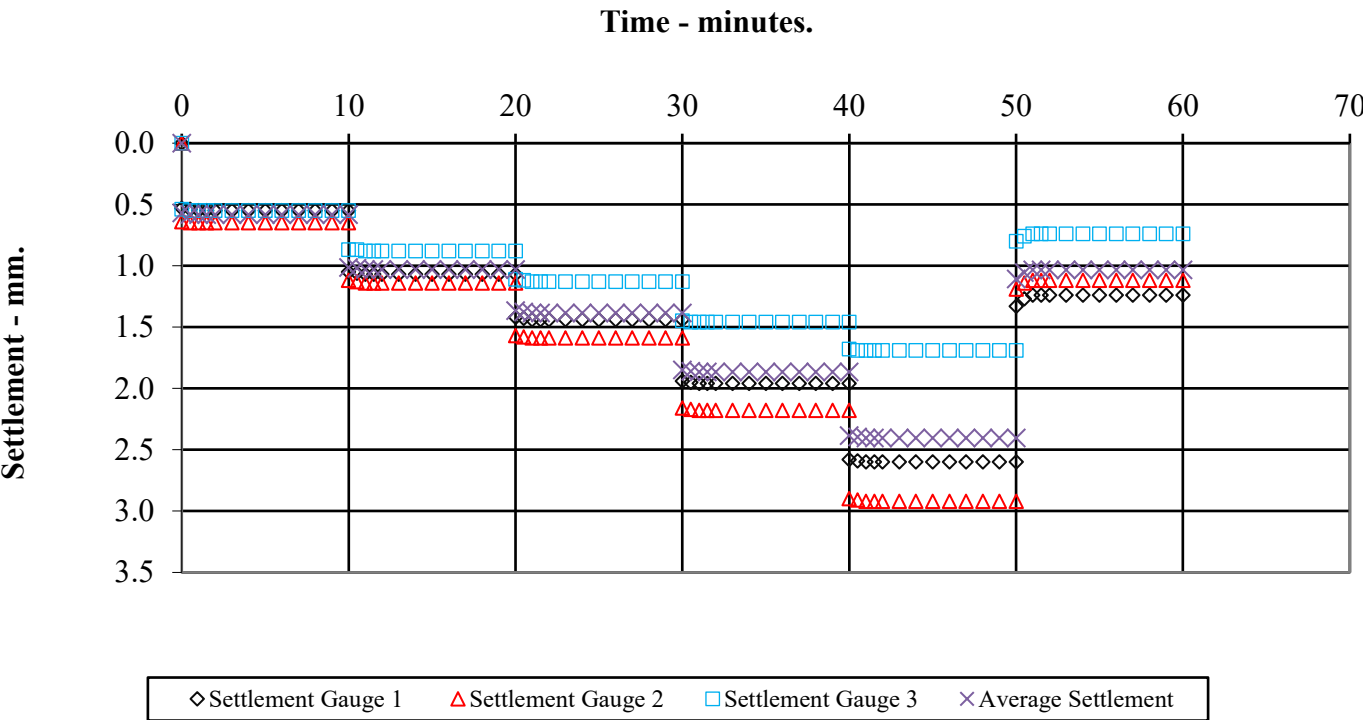
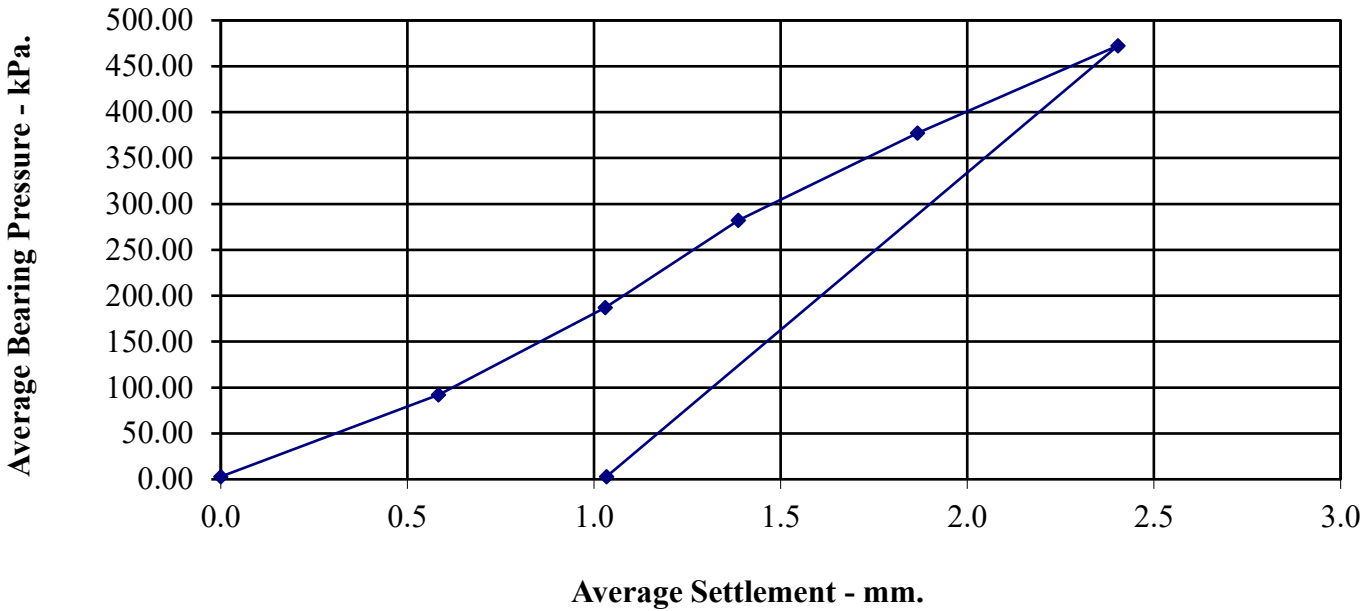
Contract No:

PSL24/4961

Client Ref:

VERTICAL DEFORMATION TESTS.
BS 1377 : Part 9 : 1990.

Date of Test:	10-Jul-24	Test Ref:	PBT 4
Grid Ref:		Depth (m):	0.50
Layer:		Comments:	
Maximum Applied Pressure (kPa):	472.43		
Maximum Deformation (mm):	2.40		
Plate Area (m2):	0.0707		
Description:	Dark grey sandy GRAVEL		



◇ Settlement Gauge 1 △ Settlement Gauge 2 □ Settlement Gauge 3 × Average Settlement

Calculation of Equivalent CBR Value from Plate Bearing Test

Design Manual for Roads and Bridges Volume 7 Section 2 Chapter 4

Incorporating IAN 73/06

Date of Test 10-Jul-24
Test Ref PBT 4
Depth (m) 0.50
Grid Ref
Layer
Comments

Description Dark grey sandy GRAVEL

Maximum Deflection 2.40 mm
Deflection required for CBR value 1.25 mm
Load at 1.25mm 246 kN/m²
Plate diameter 300 mm
Conversion factor for plate diameter 0.442

K₇₆₂(modulus of subgrade reaction)
calculated using 1.25mm settlement 86.9 kN/m²/mm

CBR Value 22.1 %



**Eastern Dry Dock, Corporation Road,
Newport**

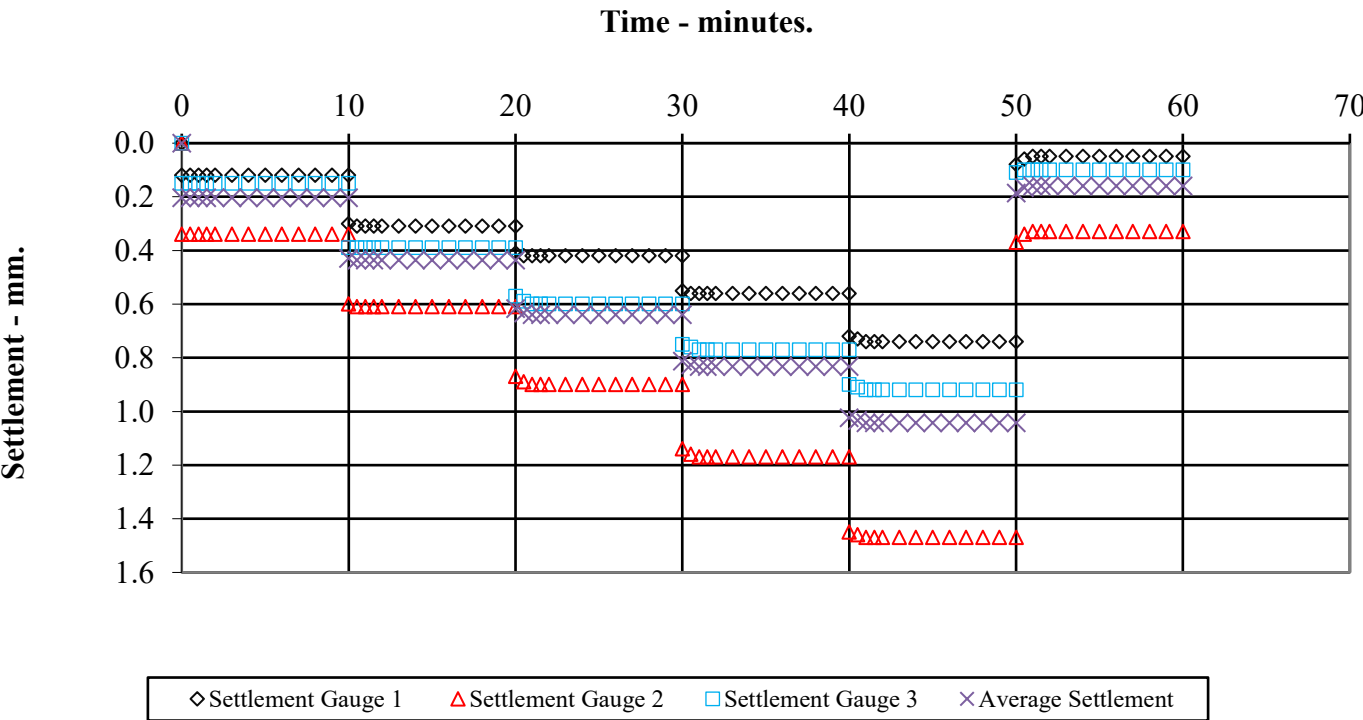
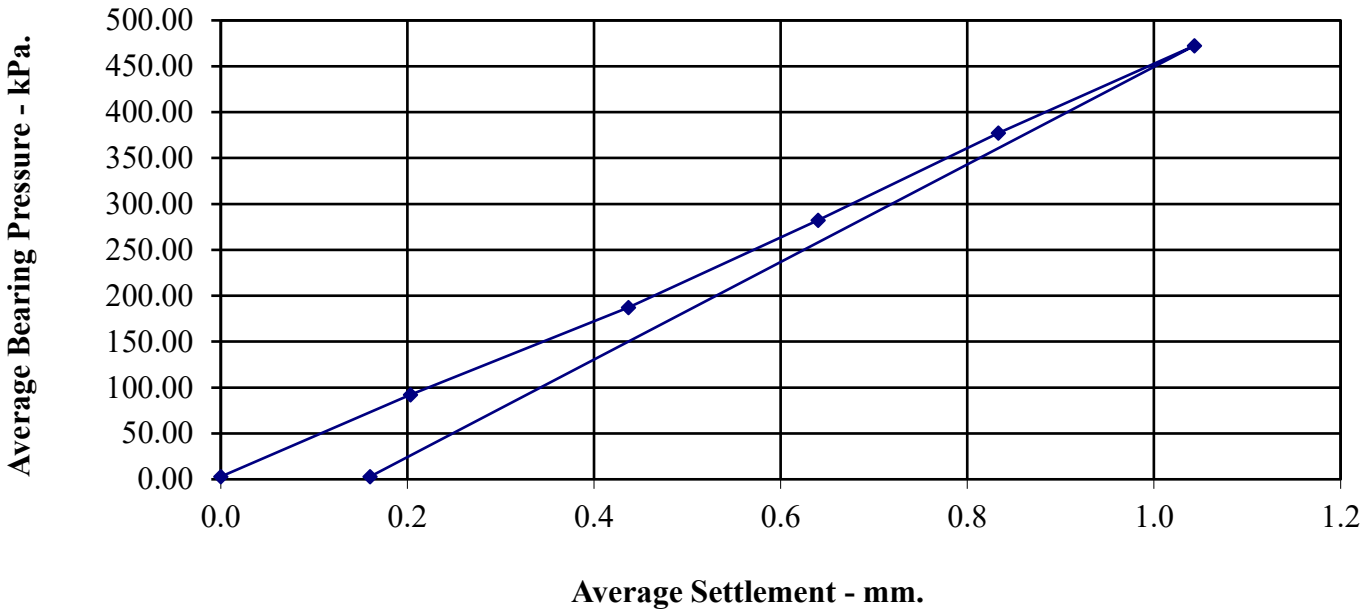
Contract No:

PSL24/4961

Client Ref:

VERTICAL DEFORMATION TESTS.
BS 1377 : Part 9 : 1990.

Date of Test:	10-Jul-24	Test Ref:	PBT 5
Grid Ref:		Depth (m):	0.60
Layer:		Comments:	
Maximum Applied Pressure (kPa):	472.43		
Maximum Deformation (mm):	1.04		
Plate Area (m2):	0.0707		
Description:	Dark grey sandy clayey GRAVEL		



Calculation of Equivalent CBR Value from Plate Bearing Test

Design Manual for Roads and Bridges Volume 7 Section 2 Chapter 4

Incorporating IAN 73/06

Date of Test 10-Jul-24
Test Ref PBT 5
Depth (m) 0.60
Grid Ref
Layer
Comments

Description Dark grey sandy clayey GRAVEL

Maximum Deflection 1.04 mm
Deflection required for CBR value 1.25 mm
Load at 1.04mm 472 kN/m²
Plate diameter 300 mm
Conversion factor for plate diameter 0.442

K₇₆₂(modulus of subgrade reaction)
calculated using 1.25mm settlement > 166.9 kN/m²/mm

CBR Value > 68.6 %



**Eastern Dry Dock, Corporation Road,
Newport**

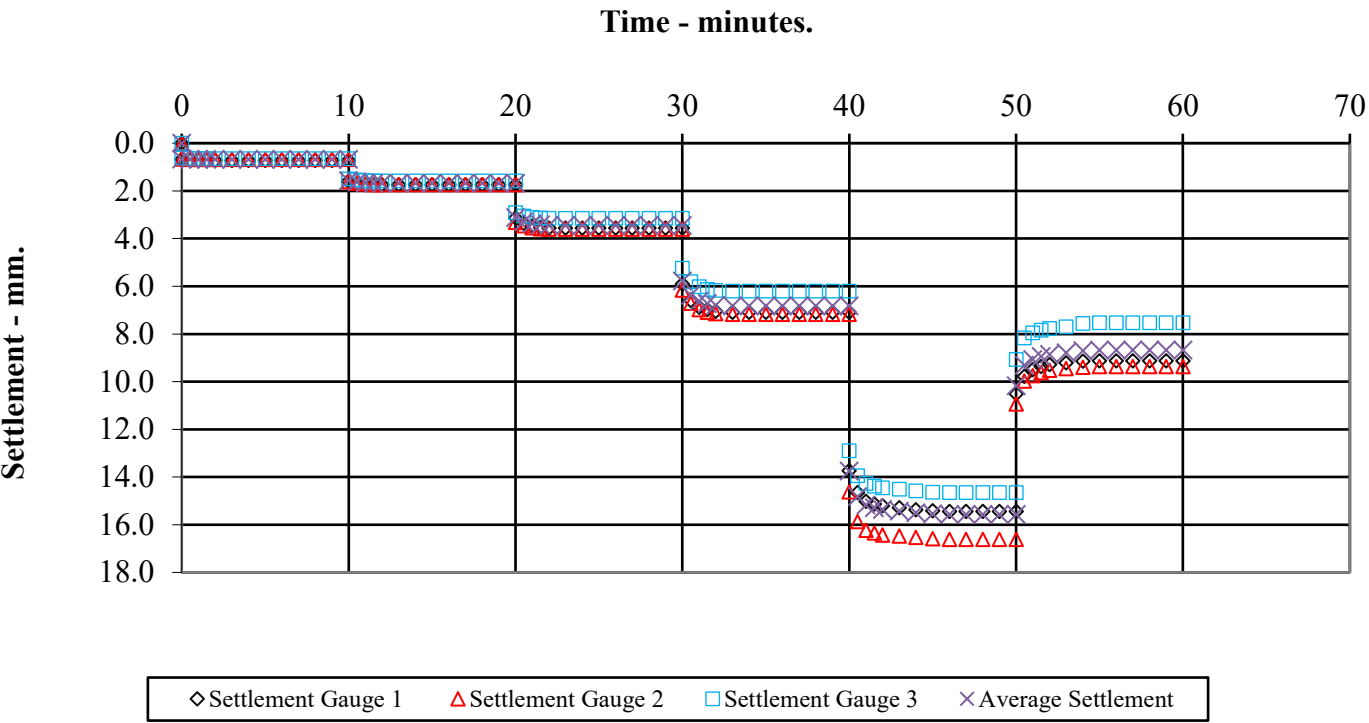
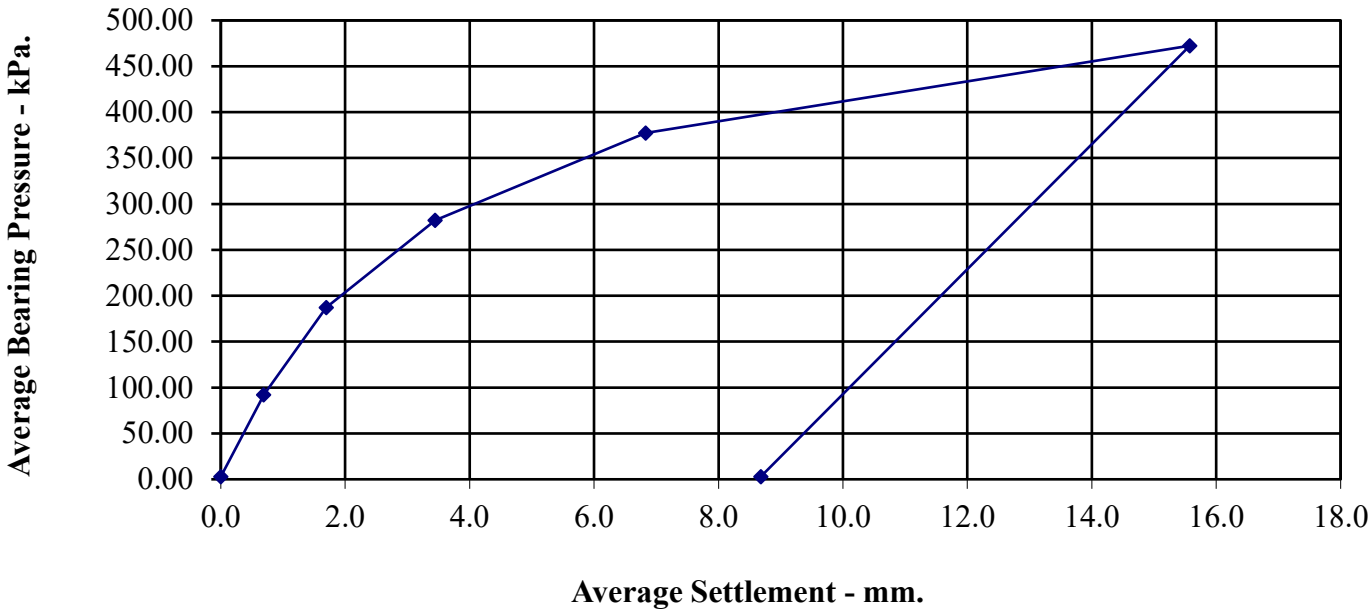
Contract No:

PSL24/4961

Client Ref:

VERTICAL DEFORMATION TESTS.
BS 1377 : Part 9 : 1990.

Date of Test:	10-Jul-24	Test Ref:	PBT 6
Grid Ref:		Depth (m):	0.60
Layer:		Comments:	
Maximum Applied Pressure (kPa):	472.43		
Maximum Deformation (mm):	15.58		
Plate Area (m2):	0.0707		
Description:	Grey CLAY		



Calculation of Equivalent CBR Value from Plate Bearing Test

Design Manual for Roads and Bridges Volume 7 Section 2 Chapter 4

Incorporating IAN 73/06

Date of Test 10-Jul-24
Test Ref PBT 6
Depth (m) 0.60
Grid Ref
Layer
Comments

Description Grey CLAY

Maximum Deflection 15.58 mm
Deflection required for CBR value 1.25 mm
Load at 1.25mm 145 kN/m²
Plate diameter 300 mm
Conversion factor for plate diameter 0.442

K₇₆₂(modulus of subgrade reaction)
calculated using 1.25mm settlement 51.3 kN/m²/mm

CBR Value 8.9 %



**Eastern Dry Dock, Corporation Road,
Newport**

Contract No:

PSL24/4961

Client Ref:

APPENDIX 7 - Generic Screening Values (Commercial)

Generic Assessment Criteria (GAC)							GROUNDTECH CONSULTING	
Proposed End Use	Unit	Residential with Plant Uptake			Commercial			Source
SOM	%	1	2.5	6	1	2.5	6	
Arsenic	mg/kg	37	37	37	640	640	640	LQM S4ULs
Beryllium	mg/kg	1.7	1.7	1.7	12	12	12	LQM S4ULs
Boron (water soluble)	mg/kg	290	290	290	240000	240000	240000	LQM S4ULs
Cadmium	mg/kg	11	11	11	190	190	190	LQM S4ULs
Chromium (Total)	mg/kg	910	910	910	8600	8600	8600	LQM S4ULs
Chromium (VI)	mg/kg	6	6	6	33	33	33	LQM S4ULs
Copper	mg/kg	2400	2400	2400	68000	68000	68000	LQM S4ULs
Lead	mg/kg	200	200	200	2300	2300	2300	DEFRA C4SLs
Organic Mercury	mg/kg	1.2	1.2	1.2	26	26	26	LQM S4ULs
Nickel	mg/kg	130	130	130	980	980	980	LQM S4ULs
Selenium	mg/kg	250	250	250	12000	12000	12000	LQM S4ULs
Vanadium	mg/kg	410	410	410	9000	9000	9000	LQM S4ULs
Zinc	mg/kg	3700	3700	3700	730000	730000	730000	LQM S4ULs
Aliphatic EC 5 - 6	mg/kg	42	78	160	3200 (304) ^{sol}	5900 (558) ^{sol}	12000 (1150) ^{sol}	LQM S4ULs
Aliphatic EC 6 - 8	mg/kg	100	230	530	7800 (144) ^{sol}	17000 (322) ^{sol}	40000 (736) ^{sol}	LQM S4ULs
Aliphatic EC 8 - 10	mg/kg	27	65	150	2000 (78) ^{sol}	4800 (190) ^{sol}	11000 (451) ^{vap}	LQM S4ULs
Aliphatic EC 10 - 12	mg/kg	130 (48) ^{vap}	330 (118) ^{vap}	760 (283) ^{vap}	9700 (48) ^{sol}	23000 (118) ^{vap}	47000 (283) ^{vap}	LQM S4ULs
Aliphatic EC 12 - 16	mg/kg	1100 (24) ^{sol}	2400 (59) ^{sol}	4300 (142) ^{sol}	59000 (24) ^{sol}	82000 (59) ^{sol}	90000 (142) ^{sol}	LQM S4ULs
Aliphatic EC 16 - 35	mg/kg	65000 (8.48) ^{f,sol}	92000 (21) ^{f,sol}	110000 ^f	1600000 ^f	1700000 ^f	1800000 ^f	LQM S4ULs
Aliphatic EC 35 - 44	mg/kg	65000 (8.48) ^{f,sol}	92000 (21) ^{f,sol}	110000 ^f	1600000 ^f	1700000 ^f	1800000 ^f	LQM S4ULs
Aromatic EC 5 - 7	mg/kg	70	140	300	26000 (1220) ^{sol}	46000 (2260) ^{sol}	86000 (4710) ^{sol}	LQM S4ULs
Aromatic EC 7 - 8	mg/kg	130	290	660	56000 (869) ^{vap}	110000 (1920)	180000 (4360)	LQM S4ULs
Aromatic EC 8 - 10	mg/kg	34	83	190	3500 (613) ^{vap}	8100 (1500) ^{vap}	17000 (3580)	LQM S4ULs
Aromatic EC 10 - 12	mg/kg	74	180	380	16000 (364) ^{sol}	28000 (899) ^{sol}	34000 (2150) ^{sol}	LQM S4ULs
Aromatic EC 12 -16	mg/kg	140	330	660	36000 (169) ^{sol}	37000	38000	LQM S4ULs
Aromatic EC 16 - 21	mg/kg	260 ^f	540 ^f	930 ^f	28000 ^f	28000 ^f	28000 ^f	LQM S4ULs
Aromatic EC 21 - 35	mg/kg	1100 ^f	1500 ^f	1700 ^f	28000 ^f	28000 ^f	28000 ^f	LQM S4ULs
Aromatic EC 35 - 44	mg/kg	1100 ^f	1500 ^f	1700 ^f	28000 ^f	28000 ^f	28000 ^f	LQM S4ULs
Benzene	mg/kg	0.087	0.17	0.37	27	47	90	LQM S4ULs
Toluene	mg/kg	130	130	130	56000 (869)	110000 (1920)	180000 (4360)	LQM S4ULs
Ethyl Benzene	mg/kg	47	110	260	5700	13000	27000	LQM S4ULs
Xylene - o	mg/kg	60	140	330	6600	15000	33000	LQM S4ULs
Xylene - m	mg/kg	59	140	320	6200	14000	31000	LQM S4ULs
Xylene - p	mg/kg	56	130	310	5900	14000	30000	LQM S4ULs
MTBE (methyl tert-butyl ether)	mg/kg	49	84	160	7900	13000	24000	CL:AIRE 2010
Acenaphthene	mg/kg	210	510	1100	84000 (57) ^{sol}	97000 (141) ^{sol}	100000	LQM SAULs
Acenaphthylene	mg/kg	170	420	920	83000 (86.1) ^{sol}	97000 (212) ^{sol}	100000	LQM S4ULs
Anthracene	mg/kg	2400	5400	11000	520000	540000	540000	LQM S4ULs
Benz(a)anthracene	mg/kg	7.2	11	13	170	170	180	LQM S4ULs
Benzo(a)pyrene	mg/kg	2.2	2.7	3	35	35	36	LQM S4ULs
Benzo(b)fluoranthene	mg/kg	2.6	3.3	3.7	44	44	45	LQM S4ULs
Benzo(ghi)perylene	mg/kg	320	340	350	3900	4000	4000	LQM S4ULs
Benzo(k)fluoranthene	mg/kg	77	93	100	1200	1200	1200	LQM S4ULs
Chrysene	mg/kg	15	22	27	350	350	350	LQM S4ULs
Dibenz(ah)anthracene	mg/kg	0.24	0.28	0.3	3.5	3.6	3.6	LQM S4ULs
Fluoranthene	mg/kg	280	560	890	23000	23000	23000	LQM S4ULs
Fluorene	mg/kg	170	400	860	63000 (30.9) ^{sol}	68000	71000	LQM S4ULs
Indeno(123-cd)pyrene	mg/kg	27	36	41	500	510	510	LQM S4ULs
Naphthalene	mg/kg	15 ^f	36 ^f	85 ^f	1600 ^f	3700 ^f	8400 ^f	LQM S4ULs
Phenanthrene	mg/kg	95	220	440	22000	22000	23000	LQM S4ULs
Pyrene	mg/kg	620	1200	2000	54000	54000	54000	LQM S4ULs

Generic Assessment Criteria (GAC)								
Proposed End Use	Unit	Residential with Plant Uptake			Commercial			Source
SOM	%	1	2.5	6	1	2.5	6	
Phenol	mg/kg	120	200	380	440	690	1300	LQM S4ULs
Chlorophenols	mg/kg	0.87 ^g	2	4.5	3500	4000	4300	LQM S4ULs
Pentachlorophenol	mg/kg	0.22	0.52	1.2	400	400	400	LQM S4ULs
Carbon disulphide	mg/kg	0.14	0.29	0.62	11	22	47	LQM S4ULs
Hexachlorobutadiene	mg/kg	0.29	0.7	1.6	31	66	120	LQM S4ULs
1,1,1,2 Tetrachloroethane	mg/kg	1.6	3.4	7.5	270	550	1100	LQM S4ULs
1,1,1 Trichloroethane	mg/kg	8.8	18	39	660	1300	3000	LQM S4ULs
Trichloroethene	mg/kg	0.016	0.034	0.075	1.2	2.6	5.7	LQM S4ULs
Tetrachloromethane (Carbon Tetrachloride)	mg/kg	0.026	0.056	0.13	2.9	6.3	14	LQM S4ULs
1,2-Dichloroethane	mg/kg	0.0071	0.011	0.019	0.67	0.97	1.7	LQM S4ULs
Chloroethene (Vinyl chloride)	mg/kg	0.00064	0.00087	0.0014	0.059	0.077	0.12	LQM S4ULs
Trichloromethane (Chloroform)	mg/kg	0.91	1.7	3.4	99	170	350	LQM S4ULs
Tetrachloroethene	mg/kg	0.18	0.39	0.9	19	42	95	LQM S4ULs
Hexachlorobenzene	mg/kg	1.8 (0.2) ^{vap}	3.3 (0.5) ^{vap}	4.9	110 (0.2) ^{vap}	120	120	LQM S4ULs
Pentachlorobenzene	mg/kg	5.8	12	22	640 (43) ^{sol}	770 (107) ^{sol}	830	LQM S4ULs
1,2,4,5-Tetrachlorobenzene	mg/kg	0.33	0.77	1.6	42 (19.7) ^{sol}	72 (49.1) ^{sol}	96	LQM S4ULs
1,2,3,5-Tetrachlorobenzene	mg/kg	0.66	1.69	3.7	49 (39.4) ^{vap}	120 (98.1) ^{vap}	240 (235) ^{vap}	LQM S4ULs
1,2,3,4-Tetrachlorobenzene	mg/kg	15	36	78	1700 (122) ^{vap}	3080 (304) ^{vap}	4400 (728) ^{vap}	LQM S4ULs
1,3,5-Trichlorobenzene	mg/kg	0.33	0.81	1.9	23	55	130	LQM S4ULs
1,2,4-Trichlorobenzene	mg/kg	2.6	6.4	15	220	530	1300	LQM S4ULs
1,2,3-Trichlorobenzene	mg/kg	1.5	3.6	8.6	102	250	590	LQM S4ULs
1,4-dichlorobenzene	mg/kg	61 ^f	150 ^f	350 ^f	4400 ^f (224) ^{vap}	10000 ^f (540)	25000 ^f (1280)	LQM S4ULs
1,3-dichlorobenzene	mg/kg	0.4	1	2.3	30	73	170	LQM S4ULs
1,2-Dichlorobenzene	mg/kg	23	55	130	2000 (571) ^{sol}	4800 (1370) ^{sol}	11000 (3240) ^{sol}	LQM S4ULs
Chlorobenzene	mg/kg	0.46	1	2.4	56	130	290	LQM S4ULs
Gamma-Hexachlorocyclohexane	mg/kg	0.06	0.14	0.33	67	69	70	LQM S4ULs
Beta-Hexachlorocyclohexane	mg/kg	0.085	0.2	0.46	65	65	65	LQM S4ULs
Alpha -Hexachlorocyclohexane	mg/kg	0.23	0.55	1.2	170	180	180	LQM S4ULs
Beta -Endosulfan	mg/kg	7	17	39	6300 (0.00007)	7800 (0.0002)	8700	LQM S4ULs
Alpha-Endosulfan	mg/kg	7.4	18	41	5600 (0.003) ^{vap}	7400 (0.007) ^{vap}	8400 (0.016) ^{vap}	LQM S4ULs
Dichlorvos	mg/kg	0.032	0.066	0.14	140	140	140	LQM S4ULs
Atrazine	mg/kg	3.3	7.6	17.4	9300	9400	9400	LQM S4ULs
Dieldrin	mg/kg	0.97	2	3.5	170	170	170	LQM S4ULs
Aldrin	mg/kg	5.7	6.6	7.1	170	170	170	LQM S4ULs
HMX	mg/kg	5.7	13	26	110000	110000	110000	LQM S4ULs
2,4,6-Trinitrotoulene	mg/kg	1.6	3.7	8.1	1000	1000	1000	LQM S4ULs
RDX	mg/kg	120	250	540	210000	210000	210000	LQM S4ULs
^{sol} S4UL exceeds the solubility saturation limit (which is presented in brackets)								
^{vap} S4ULs presented exceeds the vapour saturation limit, which is presented in brackets								
^f For naphthalene, the S4UL is based on a comparison of inhalation exposure with the TDI _{inhal} for localised affects								
^f S4UL based on comparison of inhalation exposure with inhalation TDI for localised effects								
^{dir} S4ULs based on a threshold protective direct skin contact with phenol (guideline in brackets based on health effects following long term exposure provided for illustation only								

APPENDIX 8 - CIRIA Risk Assessment Methodology

Contaminated Land Risk Assessment

Contaminated Land Risk Assessment is a technique that identifies and considers the associated risk, determines whether the risks are significant and whether action needs to be taken. The four main stages of risk assessment are:

Hazard Identification ➡ Hazard Assessment ➡ Risk Estimation ➡ Risk Evaluation

LCRM outlines the framework to be followed for risk assessment in the UK. The framework is designed to be consistent with UK legislation and policies including planning. The starting point of the risk assessment is to identify the context of the problem and the objectives of the process.

Formulating and developing a conceptual model for the site is an important requirement of risk assessment, this supports the identification and assessment of pollutant linkages. Development of the conceptual model forms the main part of preliminary risk assessment, and the model is subsequently refined or revised as more information and understanding is obtained through the risk assessment process.

Risk is a combination of the likelihood of an event occurring and the magnitude of its consequences. Therefore, both the likelihood and the consequences of an event must be taken into account when assessing risk.

The risk assessment process needs to take into account the degree of confidence required in decisions. Identification of uncertainties is an essential step in risk assessment.

The likelihood of an event is classified on a four-point system using the following terms and definitions from CIRIA C552:

- **High likelihood:** There is a pollution linkage and an event appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution;
- **Likely:** There is a pollution linkage and all the elements are present and in the right place, which means it is probable that an event will occur. Circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term;
- **Low likelihood:** There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain even over a longer period such event would take place, and is less likely in the short term;
- **Unlikely:** There is a pollution linkage but circumstances are such that it is improbable the event would occur even in the long term.

The severity is also classified using a system based on CIRIA C552. The terms and definitions are:

- **Severe:** Short term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. A short-term risk to a particular ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Draft Circular on Contaminated Land', DETR 2000);
Examples – High concentrations of contaminant on surface of recreation area, major spillage of contaminants from site into controlled waters, explosion causing building to collapse;

- **Medium:** Chronic damage to human health ('significant harm' as defined in DETR 2000). Pollution of sensitive water resources. A significant change in a particular ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Draft Circular on Contaminated Land', DETR 2000);
Examples - Concentrations of contaminants exceed the generic assessment criteria, leaching of contaminants from a site to a Principal or Secondary Aquifer, death of species within a designated nature reserve;
- **Mild:** Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm' as defined in 'Draft Circular on Contaminated Land', DETR 2000). Damage to sensitive buildings, structures, services or the environment;
Examples – Pollution of non-classified groundwater or damage to buildings rendering it unsafe to occupy.
- **Minor:** harm, not necessarily significant harm, which may result in financial loss or expenditure to resolve. Non-permanent health effects to human health (easily prevented by use of personal protective clothing etc). Easily repairable effects of damage to buildings, structures and services.
Examples – Presence of contaminants at such concentrations PPE is required during site work, loss of plants in landscaping scheme or discolouration of concrete.

Once the likelihood and severity have been determined, a risk category can be assigned using the table below.

		Consequences			
		Severe	Medium	Mild	Minor
Probability	Highly likely	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very Low	Very low

Definitions of the risk categories obtained from the above table are as follows together with an assessment of the further work that might be required:

- **Very high:** There is a high probability that severe harm could arise to a designated receptor from an identified hazard or there is evidence that severe harm is currently happening. This risk, if realised, could result in substantial liability. Urgent investigation and remediation are likely to be required;
- **High:** Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation is required and remedial works may be necessary in the short term and are likely over the longer term;
- **Moderate:** It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it would be more likely to be relatively mild. Investigation is normally required to clarify the risk and determine the liability. Some remedial works may be required in the longer term;
- **Low:** It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild;
- **Very Low:** There is a low possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

APPENDIX 9 - Waste Classification Report

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

- understand the origin of the waste
- select the correct List of Waste code(s)
- confirm that the list of determinands, results and sampling plan are fit for purpose
- select and justify the chosen metal species (Appendix B)
- correctly apply moisture correction and other available corrections
- add the meta data for their user-defined substances (Appendix A)
- check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)



SYWTN-DTYS3-NCTYP

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

Job name

24-031072_HWOL

Description/Comments

Project

Site

Classified by

Name: **Connor Hastings**
 Date: **04 Sep 2024 13:35 GMT**
 Telephone:
 Company: **Groundtech Consulting Limited**
First Floor, Lloyd House, Orford Court,
Greenfold Way, WN7 3XJ

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification:

Course
 Hazardous Waste Classification

Date

Purpose of classification

4 - Classification of Waste Products

Address of the waste

Post Code

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Description of the specific process, sub-process and/or activity that created the waste

Description of the waste

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS01---0.30		Non Hazardous		3
2	WS02---0.60		Non Hazardous		5
3	WS04---0.50		Non Hazardous		7
4	WS06---0.60		Non Hazardous		9
5	PLT02---0.35		Non Hazardous		11
6	PLT05---0.40		Hazardous	HP 7	13

Related documents

#	Name	Description
1	24-031072_HWOL.hwol	i2 Analytical .hwol file used to populate the Job
2	Example waste stream template for contaminated soils	waste stream template used to create this Job

Report

Created by: Connor Hastings

Created date: 04 Sep 2024 13:35 GMT

Appendices	Page
Appendix A: Classifier defined and non EU CLP determinands	15
Appendix B: Rationale for selection of metal species	16
Appendix C: Version	16

Classification of sample: WS01---0.30

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
WS01---0.30	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
16% (wet weight correction)	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 16% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
1		arsenic { arsenic trioxide }				21	mg/kg	1.32	23.291	mg/kg	0.00233 %	✓	
		033-003-00-0	215-481-4	1327-53-3									
2		cadmium { cadmium oxide }				2.4	mg/kg	1.142	2.303	mg/kg	0.00023 %	✓	
		048-002-00-0	215-146-2	1306-19-0									
3		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				230	mg/kg	1.462	336.158	mg/kg	0.0336 %		
			215-160-9	1308-38-9									
4		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8	mg/kg	2.27	<4.086	mg/kg	<0.000409 %		<LOD
		024-017-00-8											
5		copper { dicopper oxide; copper (I) oxide }				130	mg/kg	1.126	122.947	mg/kg	0.0123 %	✓	
		029-002-00-X	215-270-7	1317-39-1									
6		lead { lead chromate }			1	720	mg/kg	1.56	943.376	mg/kg	0.0605 %	✓	
		082-004-00-2	231-846-0	7758-97-6									
7		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
8		nickel { nickel chromate }				43	mg/kg	2.976	107.503	mg/kg	0.0108 %	✓	
		028-035-00-7	238-766-5	14721-18-7									
9		selenium { nickel selenate }				1.6	mg/kg	2.554	3.432	mg/kg	0.000343 %	✓	
		028-031-00-5	239-125-2	15060-62-5									
10		zinc { zinc chromate }				370	mg/kg	2.774	862.205	mg/kg	0.0862 %	✓	
		024-007-00-3	236-878-9	13530-65-9									
11		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
12		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
13		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
14		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
15		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	pH		PH		7.7 pH		7.7 pH	7.7 pH		
17	naphthalene				0.42 mg/kg		0.353 mg/kg	0.0000353 %	✓	
	601-052-00-2	202-049-5	91-20-3							
18	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
19	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
20	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
21	phenanthrene				0.36 mg/kg		0.302 mg/kg	0.0000302 %	✓	
		201-581-5	85-01-8							
22	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7							
23	fluoranthene				0.27 mg/kg		0.227 mg/kg	0.0000227 %	✓	
		205-912-4	206-44-0							
24	pyrene				0.23 mg/kg		0.193 mg/kg	0.0000193 %	✓	
		204-927-3	129-00-0							
25	benzo[a]anthracene				0.19 mg/kg		0.16 mg/kg	0.000016 %	✓	
	601-033-00-9	200-280-6	56-55-3							
26	chrysene				0.31 mg/kg		0.26 mg/kg	0.000026 %	✓	
	601-048-00-0	205-923-4	218-01-9							
27	benzo[b]fluoranthene				0.33 mg/kg		0.277 mg/kg	0.0000277 %	✓	
	601-034-00-4	205-911-9	205-99-2							
28	benzo[k]fluoranthene				0.12 mg/kg		0.101 mg/kg	0.0000101 %	✓	
	601-036-00-5	205-916-6	207-08-9							
29	benzo[a]pyrene; benzo[def]chrysene				0.19 mg/kg		0.16 mg/kg	0.000016 %	✓	
	601-032-00-3	200-028-5	50-32-8							
30	indeno[123-cd]pyrene				0.15 mg/kg		0.126 mg/kg	0.0000126 %	✓	
		205-893-2	193-39-5							
31	dibenz[a,h]anthracene				0.05 mg/kg		0.042 mg/kg	0.0000042 %	✓	
	601-041-00-2	200-181-8	53-70-3							
32	benzo[ghi]perylene				0.17 mg/kg		0.143 mg/kg	0.0000143 %	✓	
		205-883-8	191-24-2							
Total:								0.207 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
•	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS02---0.60

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
WS02---0.60	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
8.4%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 8.4% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				10 mg/kg	1.32	12.094	mg/kg	0.00121 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				12 mg/kg	1.462	17.539	mg/kg	0.00175 %		
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086	mg/kg	<0.000409 %		<LOD
	024-017-00-8										
5	copper { dicopper oxide; copper (I) oxide }				75 mg/kg	1.126	77.349	mg/kg	0.00773 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	38 mg/kg	1.56	54.294	mg/kg	0.00348 %	✓	
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				24 mg/kg	2.976	65.43	mg/kg	0.00654 %	✓	
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc chromate }				230 mg/kg	2.774	584.457	mg/kg	0.0584 %	✓	
	024-007-00-3	236-878-9	13530-65-9								
11	pH				9.3 pH		9.3	pH	9.3 pH		
			PH								
12	naphthalene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3								
13	acenaphthylene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8								
14	acenaphthene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9								
15	fluorene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7								
16	phenanthrene				0.06 mg/kg		0.055	mg/kg	0.0000055 %	✓	
		201-581-5	85-01-8								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
18	fluoranthene	205-912-4	206-44-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
19	pyrene	204-927-3	129-00-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
20	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
21	chrysene	601-048-00-0	205-923-4	218-01-9	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
Total:								0.08 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS04---0.50

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
WS04---0.50	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
5.7%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 5.7% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				4.3	mg/kg	1.32	5.354	mg/kg	0.000535 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
2	cadmium { cadmium oxide }				<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				9.1	mg/kg	1.462	13.3	mg/kg	0.00133 %		
		215-160-9	1308-38-9									
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8	mg/kg	2.27	<4.086	mg/kg	<0.000409 %		<LOD
	024-017-00-8											
5	copper { dicopper oxide; copper (I) oxide }				6.2	mg/kg	1.126	6.583	mg/kg	0.000658 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead chromate }			1	8	mg/kg	1.56	11.767	mg/kg	0.000754 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
7	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel chromate }				4.3	mg/kg	2.976	12.068	mg/kg	0.00121 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
9	selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
10	zinc { zinc chromate }				36	mg/kg	2.774	94.177	mg/kg	0.00942 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
11	pH				9.3	pH		9.3	pH	9.3 pH		
			PH									
12	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
13	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8									
14	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9									
15	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7									
16	phenanthrene				0.05	mg/kg		0.0472	mg/kg	0.00000471 %	✓	
		201-581-5	85-01-8									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
18	fluoranthene	205-912-4	206-44-0		0.06 mg/kg		0.0566 mg/kg	0.00000566 %	✓	
19	pyrene	204-927-3	129-00-0		0.06 mg/kg		0.0566 mg/kg	0.00000566 %	✓	
20	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
21	chrysene	601-048-00-0	205-923-4	218-01-9	0.06 mg/kg		0.0566 mg/kg	0.00000566 %	✓	
22	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.06 mg/kg		0.0566 mg/kg	0.00000566 %	✓	
23	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
Total:								0.0147 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
•	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS06---0.60

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
WS06---0.60	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
12%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)	Entry:

Hazard properties

None identified

Determinands

Moisture content: 12% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				15 mg/kg	1.32	17.428 mg/kg	0.00174 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				0.8 mg/kg	1.142	0.804 mg/kg	0.0000804 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				29 mg/kg	1.462	42.385 mg/kg	0.00424 %		
		215-160-9	1308-38-9							
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
	024-017-00-8									
5	copper { dicopper oxide; copper (I) oxide }				89 mg/kg	1.126	88.18 mg/kg	0.00882 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead chromate }			1	100 mg/kg	1.56	137.264 mg/kg	0.0088 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury dichloride }				1.2 mg/kg	1.353	1.429 mg/kg	0.000143 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel chromate }				21 mg/kg	2.976	55.001 mg/kg	0.0055 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5							
10	zinc { zinc chromate }				190 mg/kg	2.774	463.837 mg/kg	0.0464 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
11	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
12	benzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
13	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
14	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	pH PH				8.6 pH		8.6 pH	8.6 pH		
17	naphthalene 601-052-00-2 202-049-5 91-20-3				0.4 mg/kg		0.352 mg/kg	0.0000352 %	✓	
18	acenaphthylene 205-917-1 208-96-8				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
19	acenaphthene 201-469-6 83-32-9				0.06 mg/kg		0.0528 mg/kg	0.00000528 %	✓	
20	fluorene 201-695-5 86-73-7				0.05 mg/kg		0.044 mg/kg	0.0000044 %	✓	
21	phenanthrene 201-581-5 85-01-8				0.51 mg/kg		0.449 mg/kg	0.0000449 %	✓	
22	anthracene 204-371-1 120-12-7				0.08 mg/kg		0.0704 mg/kg	0.00000704 %	✓	
23	fluoranthene 205-912-4 206-44-0				0.8 mg/kg		0.704 mg/kg	0.0000704 %	✓	
24	pyrene 204-927-3 129-00-0				0.67 mg/kg		0.59 mg/kg	0.000059 %	✓	
25	benzo[a]anthracene 601-033-00-9 200-280-6 56-55-3				0.49 mg/kg		0.431 mg/kg	0.0000431 %	✓	
26	chrysene 601-048-00-0 205-923-4 218-01-9				0.59 mg/kg		0.519 mg/kg	0.0000519 %	✓	
27	benzo[b]fluoranthene 601-034-00-4 205-911-9 205-99-2				0.74 mg/kg		0.651 mg/kg	0.0000651 %	✓	
28	benzo[k]fluoranthene 601-036-00-5 205-916-6 207-08-9				0.26 mg/kg		0.229 mg/kg	0.0000229 %	✓	
29	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3 200-028-5 50-32-8				0.49 mg/kg		0.431 mg/kg	0.0000431 %	✓	
30	indeno[123-cd]pyrene 205-893-2 193-39-5				0.28 mg/kg		0.246 mg/kg	0.0000246 %	✓	
31	dibenz[a,h]anthracene 601-041-00-2 200-181-8 53-70-3				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
32	benzo[ghi]perylene 205-883-8 191-24-2				0.28 mg/kg		0.246 mg/kg	0.0000246 %	✓	
Total:								0.0769 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
•	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: PLT02---0.35

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
PLT02---0.35	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
9.8%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)	
Entry:	

Hazard properties

None identified

Determinands

Moisture content: 9.8% Wet Weight Moisture Correction applied (MC)

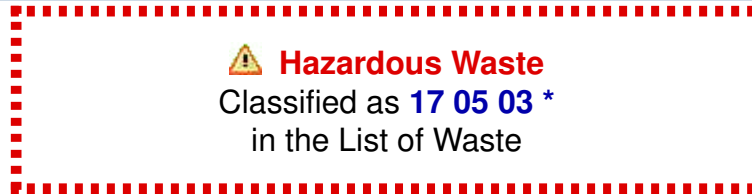
#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				23 mg/kg	1.32	27.391 mg/kg	0.00274 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				21 mg/kg	1.462	30.693 mg/kg	0.00307 %		
		215-160-9	1308-38-9							
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
	024-017-00-8									
5	copper { dicopper oxide; copper (I) oxide }				50 mg/kg	1.126	50.778 mg/kg	0.00508 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead chromate }			1	39 mg/kg	1.56	54.871 mg/kg	0.00352 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel chromate }				21 mg/kg	2.976	56.376 mg/kg	0.00564 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { nickel selenate }				1.6 mg/kg	2.554	3.686 mg/kg	0.000369 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
10	zinc { zinc chromate }				140 mg/kg	2.774	350.319 mg/kg	0.035 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
11	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
12	benzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
13	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
14	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	pH		PH		10.4 pH		10.4 pH	10.4 pH		
17	naphthalene	601-052-00-2	202-049-5	91-20-3	0.16 mg/kg		0.144 mg/kg	0.0000144 %	✓	
18	acenaphthylene		205-917-1	208-96-8	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
19	acenaphthene		201-469-6	83-32-9	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
20	fluorene		201-695-5	86-73-7	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
21	phenanthrene		201-581-5	85-01-8	0.14 mg/kg		0.126 mg/kg	0.0000126 %	✓	
22	anthracene		204-371-1	120-12-7	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
23	fluoranthene		205-912-4	206-44-0	0.18 mg/kg		0.162 mg/kg	0.0000162 %	✓	
24	pyrene		204-927-3	129-00-0	0.17 mg/kg		0.153 mg/kg	0.0000153 %	✓	
25	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.1 mg/kg		0.0902 mg/kg	0.00000902 %	✓	
26	chrysene	601-048-00-0	205-923-4	218-01-9	0.14 mg/kg		0.126 mg/kg	0.0000126 %	✓	
27	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.18 mg/kg		0.162 mg/kg	0.0000162 %	✓	
28	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.06 mg/kg		0.0541 mg/kg	0.00000541 %	✓	
29	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.11 mg/kg		0.0992 mg/kg	0.00000992 %	✓	
30	indeno[123-cd]pyrene		205-893-2	193-39-5	0.09 mg/kg		0.0812 mg/kg	0.00000812 %	✓	
31	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
32	benzo[ghi]perylene		205-883-8	191-24-2	0.14 mg/kg		0.126 mg/kg	0.0000126 %	✓	
Total:								0.0561 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: PLT05---0.40



Sample details

Sample name:	LoW Code:
PLT05---0.40	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
5.5% (wet weight correction)	Entry:
	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

zinc chromate: (compound conc.: 0.102%)

Determinands

Moisture content: 5.5% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number								
1		arsenic { arsenic trioxide }				11 mg/kg	1.32	13.725 mg/kg	0.00137 %	✓		
		033-003-00-0	215-481-4	1327-53-3								
2		cadmium { cadmium oxide }				1.6 mg/kg	1.142	1.727 mg/kg	0.000173 %	✓		
		048-002-00-0	215-146-2	1306-19-0								
3		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				120 mg/kg	1.462	175.387 mg/kg	0.0175 %			
			215-160-9	1308-38-9								
4		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD	
		024-017-00-8										
5		copper { dicopper oxide; copper (I) oxide }				120 mg/kg	1.126	127.676 mg/kg	0.0128 %	✓		
		029-002-00-X	215-270-7	1317-39-1								
6		lead { lead chromate }			1	140 mg/kg	1.56	206.364 mg/kg	0.0132 %	✓		
		082-004-00-2	231-846-0	7758-97-6								
7		mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD	
		080-010-00-X	231-299-8	7487-94-7								
8		nickel { nickel chromate }				86 mg/kg	2.976	241.881 mg/kg	0.0242 %	✓		
		028-035-00-7	238-766-5	14721-18-7								
9		selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD	
		028-031-00-5	239-125-2	15060-62-5								
10		zinc { zinc chromate }				390 mg/kg	2.774	1022.412 mg/kg	0.102 %	✓		
		024-007-00-3	236-878-9	13530-65-9								
11		pH				10.8 pH		10.8 pH	10.8 pH			
				PH								
12		naphthalene				0.25 mg/kg		0.236 mg/kg	0.0000236 %	✓		
		601-052-00-2	202-049-5	91-20-3								
13		acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD	
			205-917-1	208-96-8								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	acenaphthene	201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
15	fluorene	201-695-5	86-73-7		0.06 mg/kg		0.0567 mg/kg	0.00000567 %	✓	
16	phenanthrene	201-581-5	85-01-8		0.35 mg/kg		0.331 mg/kg	0.0000331 %	✓	
17	anthracene	204-371-1	120-12-7		0.07 mg/kg		0.0662 mg/kg	0.00000662 %	✓	
18	fluoranthene	205-912-4	206-44-0		0.59 mg/kg		0.558 mg/kg	0.0000558 %	✓	
19	pyrene	204-927-3	129-00-0		0.48 mg/kg		0.454 mg/kg	0.0000454 %	✓	
20	benzo[a]anthracene	601-033-00-9	200-280-6		0.36 mg/kg		0.34 mg/kg	0.000034 %	✓	
21	chrysene	601-048-00-0	205-923-4		0.42 mg/kg		0.397 mg/kg	0.0000397 %	✓	
22	benzo[b]fluoranthene	601-034-00-4	205-911-9		0.58 mg/kg		0.548 mg/kg	0.0000548 %	✓	
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.22 mg/kg		0.208 mg/kg	0.0000208 %	✓	
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		0.39 mg/kg		0.369 mg/kg	0.0000369 %	✓	
25	indeno[123-cd]pyrene	205-893-2	193-39-5		0.25 mg/kg		0.236 mg/kg	0.0000236 %	✓	
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8		0.09 mg/kg		0.085 mg/kg	0.0000085 %	✓	
27	benzo[ghi]perylene	205-883-8	191-24-2		0.27 mg/kg		0.255 mg/kg	0.0000255 %	✓	
Total:								0.173 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non EU CLP determinands

■ **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **pH** (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

■ **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

■ **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

■ **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

■ **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Carc. 2; H351

■ **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

EU CLP index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds (edit as required)

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. (edit as required) Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history (edit as required)

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass (edit as required)

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight (edit as required)

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018
HazWasteOnline Classification Engine Version: 2024.235.6223.11423 (22 Aug 2024)
HazWasteOnline Database: 2024.235.6223.11423 (22 Aug 2024)

This classification utilises the following guidance and legislation:

WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

14th ATP - Regulation (EU) 2020/217 of 4 October 2019

15th ATP - Regulation (EU) 2020/1182 of 19 May 2020

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2019 - UK: 2019 No. 720 of 27th March 2019

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK:

2020 No. 1540 of 16th December 2020

17th ATP - Regulation (EU) 2021/849 of 11 March 2021

APPENDIX 10 - Contaminated Land Legislative Background

Legislative Background

Environmental liabilities and risks have been evaluated in terms of a source -pathway - target relationship in accordance with the approach set out in:

- The 1995 Environment Act;
- The Contaminated Land (England) Regulations 2000;
- The DETR circular 02/2000 Environmental Protection Act 1990: Part IIA Contaminated Land.

Contaminated land is defined within the legislative framework as land which is in such condition by reason of substances in, on or under the land that:

- 1) Significant harm is being caused or there is a significant possibility of such harm being caused;
- 2) Significant pollution of controlled waters is being or is likely to be caused.

The potential for harm is based on the presence of three factors:

- **Source** - substances that are potential contaminants or pollutants that may cause harm;
- **Pathway** - a potential route by which contaminants can move from the source to the receptor;
- **Receptor** - a receptor that may be harmed, for example the water environment, humans and water.

Where a source, pathway and target are all present a pollutant linkage exists and there is potential for harm to be caused. The presence of a source does not automatically imply that a contamination problem exists, since contamination must be defined in terms of pollutant linkages and unacceptable risk of harm. The nature and importance of both pathways and receptors are site specific and will vary according to the intended end use of the site, its characteristics and its surroundings.

The key principle which supports the SPR approach is 'suitable for use' criteria. This requires remedial action only where contamination is considered to pose unacceptable actual or potential risks to health or the environment and, taking into account the proposed use of the site.

Relevant Guidance Documents

This report has been prepared in accordance with the list of guidance below however the list is not exhaustive:

- LCRM – Model Procedures;
- Contamination and Environmental Matters - Their implications for Property Professionals (2nd Edition RICS Nov 2003);
- Brownfields – Managing the development of previously developed land – A client's guide, CIRIA 2002;
- DEFRA and Environment Agency publications CLR7 – 10, supported by the TOX guides and SGV guides, dated March 2002;
- DETR Circular 02/2000, Contaminated Land: Implementation of Part IIA of the Environmental Protection Act 1990;
- Environment Agency technical advice to third parties on Pollution of Controlled Waters for Part IIA of the EPA1990, May 2002;

Relevant Legislative Documents

The following is a non-exhaustive list of legislative framework documents that has been considered in the production of this report:

- The Environment Act (1995);
- The Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance (2012);
- The Environment Protection Act (1990);
- The Contaminated Land (England) Act (2000);
- Contaminated Land (England) Regulations (2012);
- The Water Resources Act (1991);
- The Pollution Prevention and Control (England and Wales) Regulations (2000);
- The Landfill Regulations (England and Wales) Regulations (2002);
- The Landfill (England and Wales) (Amendment) Regulations (2004);
- Health and Safety at Work Act;

APPENDIX 11 - Limitations

Limitations

This report (Report) forms part of the Services and if applicable Additional Services undertaken by Groundtech Consulting Ltd pursuant to a written contract (Agreement) which contains detailed provisions including express limitations of the liability of Groundtech Consulting Ltd.

This Report was prepared using reasonable skill and care as stated in the Agreement for the purpose including intended end use stated by the Client (Purpose) and the liability of Groundtech Consulting Ltd in respect of the form and content of this Report is no greater than its liability under the Agreement. All records, measurements notes, or any other data (Data) obtained by or for the benefit of the Consultant were obtained at a specific point in time and it may not be assumed by the Client or any person relying on this Report that the Data will remain unaffected by the passage of time, the seasons, weather conditions, changes in the water table or the carrying out and completion of works at the Site.

Unless otherwise agreed this Report has been prepared exclusively for the use and reliance of the Client and may not be relied upon, by any other party except as provided for in the Agreement. A third party who relies on this Report, does so at their own and sole risk and Groundtech Consulting Ltd has no liability to such parties.

Groundtech Consulting Ltd that this Report is to be used for the Purpose. The Purpose was instrumental in determining the scope and of the Services provided. If the Purpose should change, the Client may not be able to rely on the Report without the separate agreement of Groundtech Consulting Ltd.

Since the Report was written, later changes in legislation, statutory requirements and industry best practices have not been considered and this should be allowed for. Ground conditions can also change (see below) and should be investigated if there is any significant delay in acting on the findings of this Report. The period of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the Report inaccurate or unreliable. The information and conclusions in this Report should not be relied upon in the future without written confirmation from Groundtech Consulting Ltd that it is safe to do so.

The observations and conclusions outlined in this Report are based exclusively on the services that were provided as set out in the agreement between the client and Groundtech Consulting Ltd.

Groundtech Consulting Ltd is not liable for the existence of any condition, the discovery of which would require additional investigation outside the agreed scope of works or core competency. The Report is based upon Groundtech Consulting Ltd's observations of existing physical conditions at the Site gained from site reconnaissance together with interpretation of information including documentation, obtained from third parties and from the Client on the history and usage of the Site. The findings and recommendations contained in this Report are based in part upon information provided by third parties, and Groundtech Consulting Ltd have relied upon such information assuming it to be correct.

Groundtech Consulting Ltd accepts no responsibility for errors or inaccuracies in third party information presented in this Report. Groundtech Consulting Ltd was not authorised to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services or Additional Services. Groundtech Consulting Ltd is not liable for any inaccurate information, misrepresentation of data or conclusions, which may inform the scope of investigation undertaken by Groundtech Consulting Ltd and forms the contract with the client.



Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions may also vary due to the ground's heterogeneous properties and because investigation exploratory locations only allow examination of the ground at discrete locations. The potential exists for ground conditions to be encountered which are different to those considered in this Report, particularly between exploratory holes. The extent of the limited area depends on the soil and groundwater conditions, together with other constraints such as the position of any existing structures and underground utilities. If so stipulated in the Agreement, geo-environmental testing was carried out for a limited number of parameters based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

Any groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The groundwater level often has not had time to reach equilibrium and a monitoring period is required. Furthermore, groundwater levels are subject to seasonal variation or changes in local drainage conditions and groundwater levels may occur at other times of the year which are higher than were recorded during this investigation.

Any site drawings provided in this Report are preliminary and used to present the general relative locations of features on, and surrounding, the Site.

