



TP06



TP06



TP07



TP07



TP07



TP07



TP07



TP07



TP07



TP07



TP07



TP08



TP08



TP08



TP08

For inspection purposes only.
Consent of copyright owner required for any other use.



TP08



TP08



TP08



TP08



CAUSEWAY
— GEOTECH

APPENDIX E

VARIABLE HEAD TEST RESULTS

*For inspection purposes only.
Consent of copyright owner required for any other use.*

VARIABLE HEAD PERMEABILITY TEST (STANDPIPE)

Project Name: Galway Historical Landfills - New Inn
 Project No.: 19-1465B
 Date: 10/07/2020

Borehole No.: GW01
 Test No.: 1

TYPE OF TEST: **Falling** HEAD

Diameter of standpipe: 0.05 (m)
 Depth to top of filter below ground level: 4.00 (m)
 Depth to bottom of filter below ground level: 8.50 (m)
 Length of test section of filter (L): 4.50 (m)
 Diameter of filter (D): 0.20 (m)
 Standing ground water level (SWL) below ground level: 5.70 (m)

TIME ELAPSED (mins)	WATER LEVEL* (m)	HEAD H (m)	HEAD RATIO H/Ho
0	0.00	5.70	1.00
1	0.98	4.72	0.83
2	1.08	4.62	0.81
4	2.08	3.62	0.64
6	3.08	2.62	0.46
8	5.28	0.42	0.07
10	5.48	0.22	0.04
12	5.53	0.17	0.03
14	5.58	0.12	0.02
16	5.63	0.07	0.01
18	5.66	0.04	0.01
20	5.66	0.04	0.01
25	5.67	0.03	0.01
30	5.69	0.01	0.00
45	5.69	0.01	0.00
60	5.70	0.00	0.00

CALCULATION OF PERMEABILITY OF SOIL:

Employing Horslev Method (1951)

$$k = \frac{2.3A}{F(t_2 - t_1)} \log \frac{h_1}{h_2}$$

where:

- k is the permeability of soil
- A is the cross-section area of borehole
- F is the shape factor (see below)
- h_1 and h_2 are the hydraulic heads measured respectively at the times t_1 and t_2

Values for the shape factor (F) are given for various conditions (cases A-E) in Annex B of BS EN ISO 22282-1:2012

$$L/D = 22.5$$

Assumed condition: Case = **E**

$$\text{hence } F = (2 * \pi * L) / (\ln(2 * (L/D)))$$

$$F = 7.43$$

$$\text{and } A = 0.03 \text{ (m}^2\text{)}$$

$$\text{and } h_1 = 5.70 \text{ (m)}$$

$$\text{and } h_2 = 0.57 \text{ (m)}$$

$$\text{and } t_1 = 0 \text{ (s)}$$

$$\text{and } t_2 = 450 \text{ (s)}$$

hence, k = 2.161E-05 m/s



VARIABLE HEAD PERMEABILITY TEST (STANDPIPE)

Project Name: Galway Historical Landfills - New Inn
 Project No.: 19-1465B
 Date: 10/07/2020

Borehole No.: GW02
 Test No.: 1

TYPE OF TEST: **Falling** HEAD

Diameter of standpipe: 0.05 (m)
 Depth to top of filter below ground level: 4.00 (m)
 Depth to bottom of filter below ground level: 10.00 (m)
 Length of test section of filter (L): 6.00 (m)
 Diameter of filter (D): 0.20 (m)
 Standing ground water level (SWL) below ground level: 10.00 (m)

TIME ELAPSED (mins)	WATER LEVEL* (m)	HEAD H (m)	HEAD RATIO H/Ho
0	4.00	6.00	1.00
1	4.30	5.70	0.95
2	4.40	5.60	0.93
4	4.44	5.56	0.93
6	4.48	5.52	0.92
8	4.48	5.52	0.92
10	4.49	5.51	0.92
12	4.49	5.51	0.92
14	4.50	5.50	0.92
16	4.50	5.50	0.92
18	4.50	5.50	0.92
20	4.50	5.50	0.92
25	4.50	5.50	0.92
30	4.50	5.50	0.92
45	4.50	5.50	0.92
60	4.50	5.50	0.92

CALCULATION OF PERMEABILITY OF SOIL:

Employing Horslev Method (1951)

$$k = \frac{2.3A}{F(t_2 - t_1)} \log \frac{h_1}{h_2}$$

where:

- k is the permeability of soil
- A is the cross-section area of borehole
- F is the shape factor (see below)
- h_1 and h_2 are the hydraulic heads measured respectively at the times t_1 and t_2

Values for the shape factor (F) are given for various conditions (cases A-E) in Annex B of BS EN ISO 22282-1:2012

$$L/D = 30$$

Assumed condition: Case = **E**

$$\text{hence } F = (2 * \pi * L) / (\ln(2 * (L/D)))$$

Insufficient drop in water level to calculate permeability, therefore permeability assumed to be very low





CAUSEWAY
—
GEOTECH

APPENDIX F
GEOTECHNICAL LABORATORY TEST RESULTS

*For inspection purposes only.
Consent of copyright owner required for any other use.*



**SOIL AND ROCK SAMPLE ANALYSIS
LABORATORY TEST REPORT**

13 August 2020

Project Name:	Galway Historic Landfills – New Inn
Project No.:	19-1465C
Client:	Galway County Council
Engineer:	Feehily Timoney

We are pleased to attach the results of laboratory testing carried out for the above project. This memo and its attachments constitute a report of the results of tests as detailed in the Contents page(s).

The attached results complete the testing requested and we would therefore wish to confirm that samples will be retained without charge for a period of 28 days from the above date after which they will be appropriately disposed of unless we receive written instructions to the contrary prior to that date.

We trust our report meets with your approval but if you have any queries or require additional information, please do not hesitate to contact the undersigned.

Stephen Watson

Laboratory Manager

Signed for and on behalf of Causeway Geotech Ltd



Project Name: Galway Historic Landfills – New Inn

Report Reference: Schedule 1

The table below details the tests carried out, the specifications used, and the number of tests included in this report.

Tests marked with* in this report are not United Kingdom Accreditation Service (UKAS) accredited and are not included in Causeway Geotech Limited's scope of UKAS Accreditation Schedule of Tests. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

Material tested	Type of test/Properties measured/Range of measurement	Standard specifications	No. of results included in the report
SOIL	Moisture Content of Soil	BS 1377-2: 1990: Cl 3.2	2
SOIL	Liquid and Plastic Limits of soil-1 point cone penetrometer method	BS 1377-2: 1990: Cl 4.4, 5.3 & 5.4	2
SOIL	Particle size distribution - wet sieving	BS 1377-2: 1990: Cl 9.2	2
SOIL	Particle size distribution - sedimentation hydrometer method	BS 1377-2: 1990: Cl 9.5	2
SOIL	Moisture Condition Value / Moisture Content Relationship	BS 1377-4: 1990: Cl 5.5	2
SOIL	Undrained shear strength – triaxial compression without measurement of pore pressure (loads from 0.12 to 24 kN)	BS 1377-7: 1990: Cl 8	2


Summary of Classification Test Results

Project No. 19-1465C	Project Name Galway Historical Landfills - New Inn
-------------------------	---

Hole No.	Sample				Soil Description	Density		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Casagrande Classification
	Ref	Top	Base	Type		bulk Mg/m3	dry							
TP02	1	0.10		B	Grey gravelly clayey fine to coarse SAND.			10.0	27	31 -1pt	21	10		CL
TP02	2	0.30		B	Brown gravelly silty fine to coarse SAND.			7.9	40	25 -1pt	23	2		ML

For inspection purposes only.
Consent of copyright owner required for any other use.

All tests performed in accordance with BS1377:1990 unless specified otherwise LAB 01R Version 4

Key Density test Liquid Limit Particle density Linear measurement unless : 4pt cone unless : sp - small pyknometer wd - water displacement cas - Casagrande method gj - gas jar wi - immersion in water 1pt - single point test	Date Printed <p style="text-align: center;">13/08/2020</p>	Approved By <p style="text-align: center;">Stephen.Watson</p>	
---	--	---	---



PARTICLE SIZE DISTRIBUTION

Job Ref **19-1465C**

Borehole/Pit No. **TP02**

Site Name **Galway Historical Landfills - New Inn**

Sample No. **1**

Soil Description **Grey gravelly clayey fine to coarse SAND.**

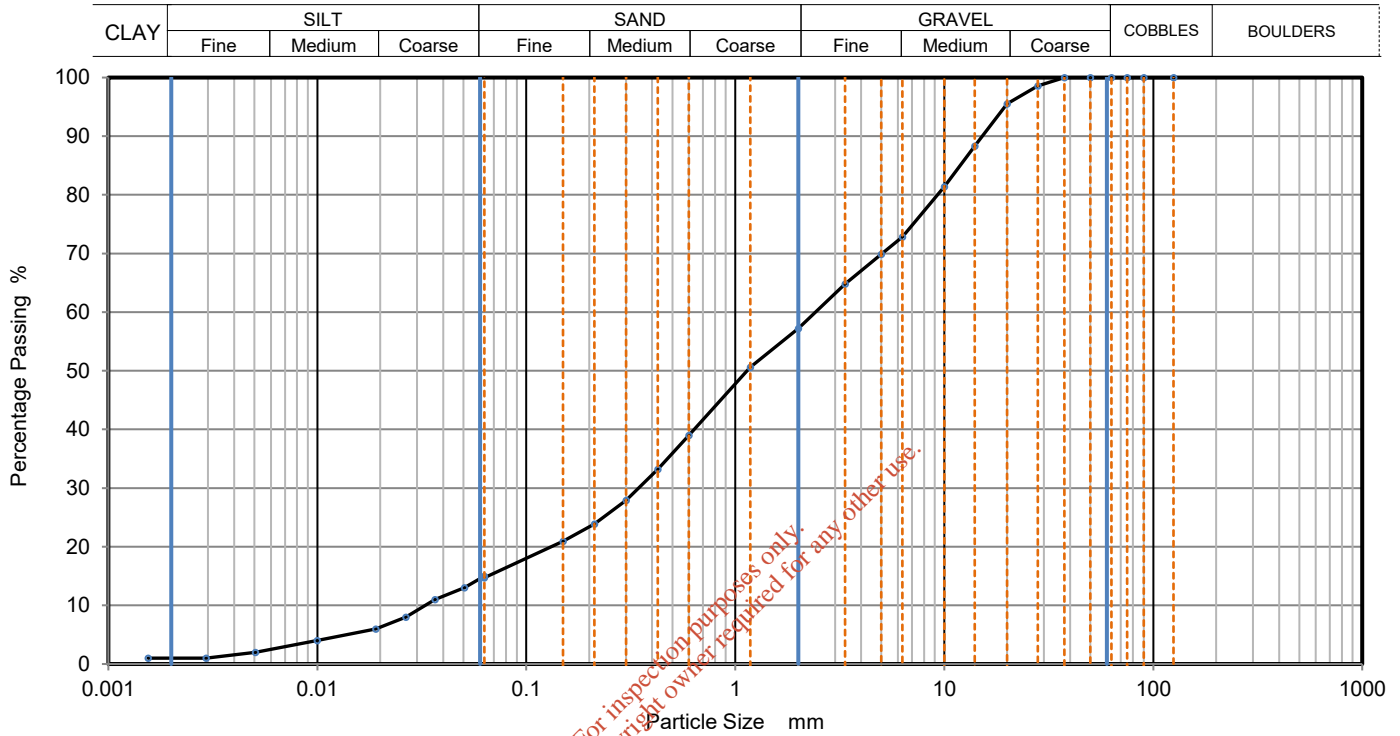
Depth, m **0.10**

Specimen Reference **8** Specimen Depth **0.1** m

Sample Type **B**

Test Method **BS1377:Part 2:1990, clauses 9.2 and 9.5**

KeyLAB ID **Caus2020071697**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	15
90	100	0.05053	13
75	100	0.03660	11
63	100	0.02648	8
50	100	0.01904	6
37.5	100	0.00999	4
28	99	0.00505	2
20	96	0.00293	1
14	88	0.00155	1
10	81		
6.3	73		
5	70		
3.35	65		
2	57		
1.18	51		
0.6	39	Particle density (assumed)	
0.425	33	2.65 Mg/m3	
0.3	28		
0.212	24		
0.15	21		
0.063	15		

Dry Mass of sample, g 2675

Sample Proportions	% dry mass
Cobbles	0
Gravel	43
Sand	43
Silt	14
Clay	1

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	70
Curvature Coefficient	1.4

Remarks
Preparation and testing in accordance with BS1377-2 :1990 unless noted below



LAB 05R Version 4

10122

Approved

Stephen.Watson



PARTICLE SIZE DISTRIBUTION

Job Ref **19-1465C**

Borehole/Pit No. **TP02**

Site Name **Galway Historical Landfills - New Inn**

Sample No. **2**

Soil Description **Brown gravelly silty fine to coarse SAND.**

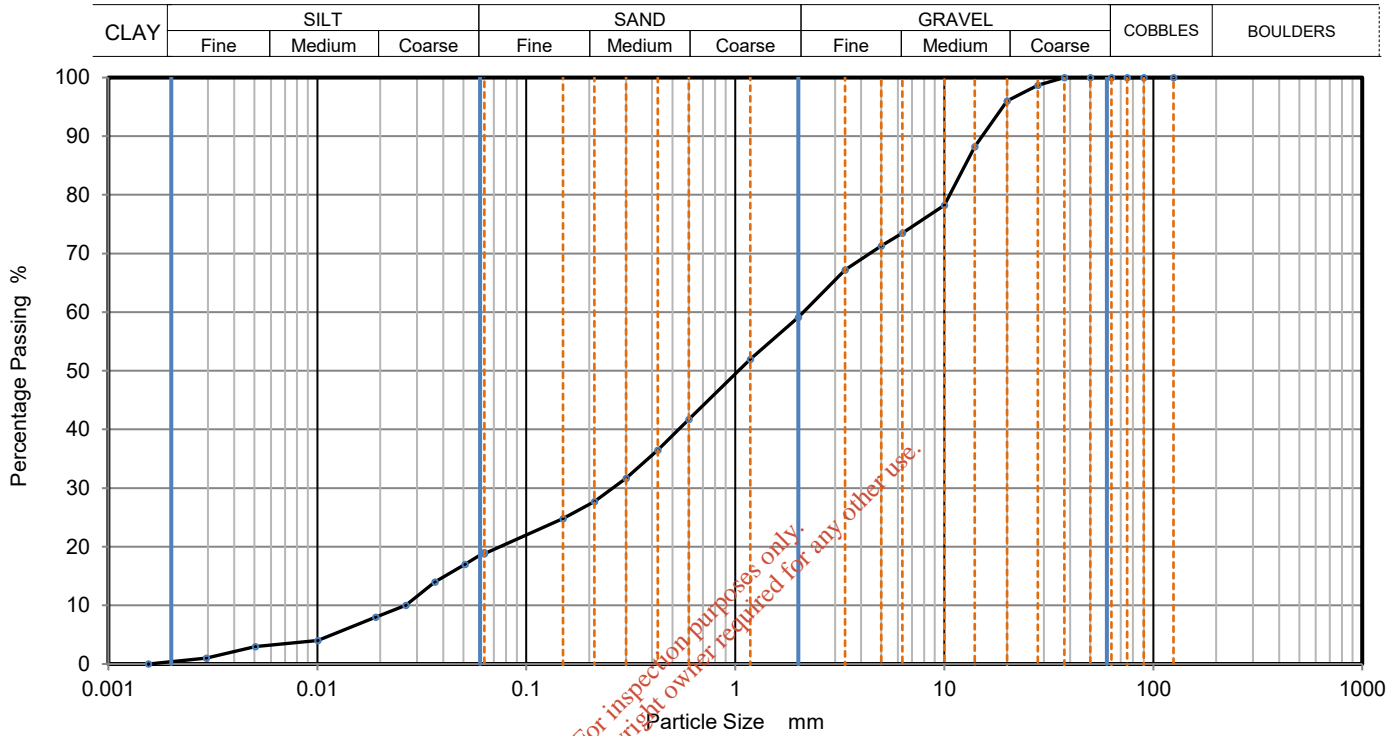
Depth, m **0.30**

Specimen Reference **8** Specimen Depth **0.3** m

Sample Type **B**

Test Method **BS1377:Part 2:1990, clauses 9.2 and 9.5**

KeyLAB ID **Caus2020071698**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	19
90	100	0.05084	17
75	100	0.03660	14
63	100	0.02648	10
50	100	0.01904	8
37.5	100	0.01004	4
28	99	0.00505	3
20	96	0.00294	1
14	88	0.00156	0
10	78		
6.3	74		
5	71		
3.35	67		
2	59		
1.18	52		
0.6	42		
0.425	37	Particle density (assumed)	
0.3	32	2.65 Mg/m3	
0.212	28		
0.15	25		
0.063	19		

Dry Mass of sample, g 2603

Sample Proportions	% dry mass
Cobbles	0
Gravel	41
Sand	40
Silt	18
Clay	0

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	83
Curvature Coefficient	1.2

Remarks
Preparation and testing in accordance with BS1377-2 :1990 unless noted below

Approved

Stephen.Watson

LAB 05R Version 4



10122



Moisture Condition Value / Moisture Content Relationship

Job Ref	19-1465C
Borehole/Pit No.	TP02
Sample No.	1
Depth	0.1
Sample Type	B
KeyLAB ID	Caus2020071697
Date started	23/07/2020

Site Name	Galway Historical Landfills - New Inn		
Soil Description	Grey gravelly clayey fine to coarse SAND.		
Specimen Reference	9	Specimen Depth	0.1 m
Specimen Description	Grey gravelly clayey fine to coarse SAND.		
Test Method	BS1377:Part4:1990:clause 5.5		

Sample preparation

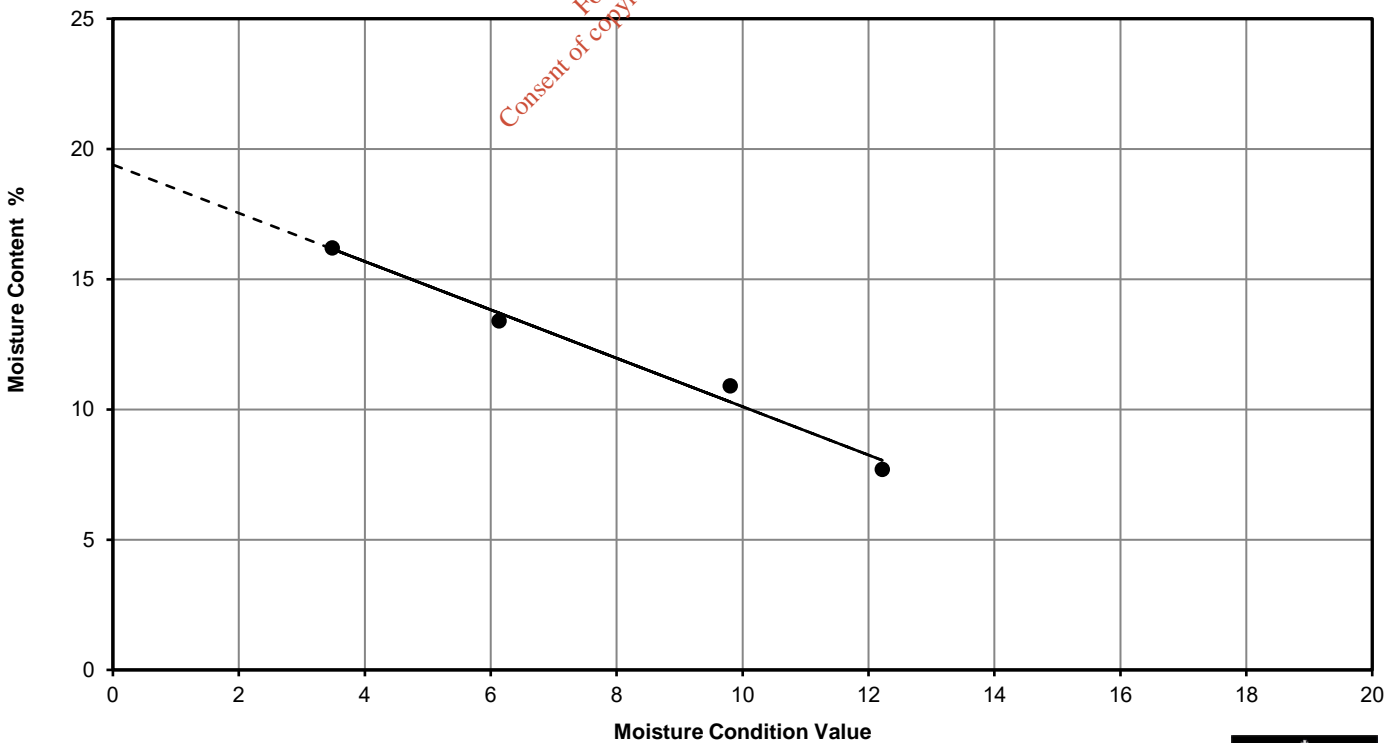
Amount of material larger than 20mm sieve removed	13	%
Natural Moisture Content of sample	9.3	%
Initial Moisture Content of test sample below 20mm	10.9	%
Separate specimens tested		

General remarks

Table of results

MCV Test Number	1	2	3	4	
Moisture Content, %	10.9	13.4	16.2	7.7	
Moisture Condition Value	9.8	6.1	3.5	12.2	
MCV report	9.8	6.1	3.5	12.2	
Effective / Valid data point	YES	YES	YES	YES	
Specimen remarks					

● valid points × invalid points - - - extended regression — linear regression



Approved
Stephen.Watson
LAB 11R Version 4





Moisture Condition Value / Moisture Content Relationship

Job Ref	19-1465C
Borehole/Pit No.	TP02
Sample No.	2
Depth	0.3
Sample Type	B
KeyLAB ID	Caus2020071698
Date started	24/07/2020

Site Name	Galway Historical Landfills - New Inn		
Soil Description	Brown gravelly silty fine to coarse SAND.		
Specimen Reference	9	Specimen Depth	0.3 m
Specimen Description	Brown gravelly silty fine to coarse SAND.		
Test Method	BS1377:Part4:1990:clause 5.5		

Sample preparation

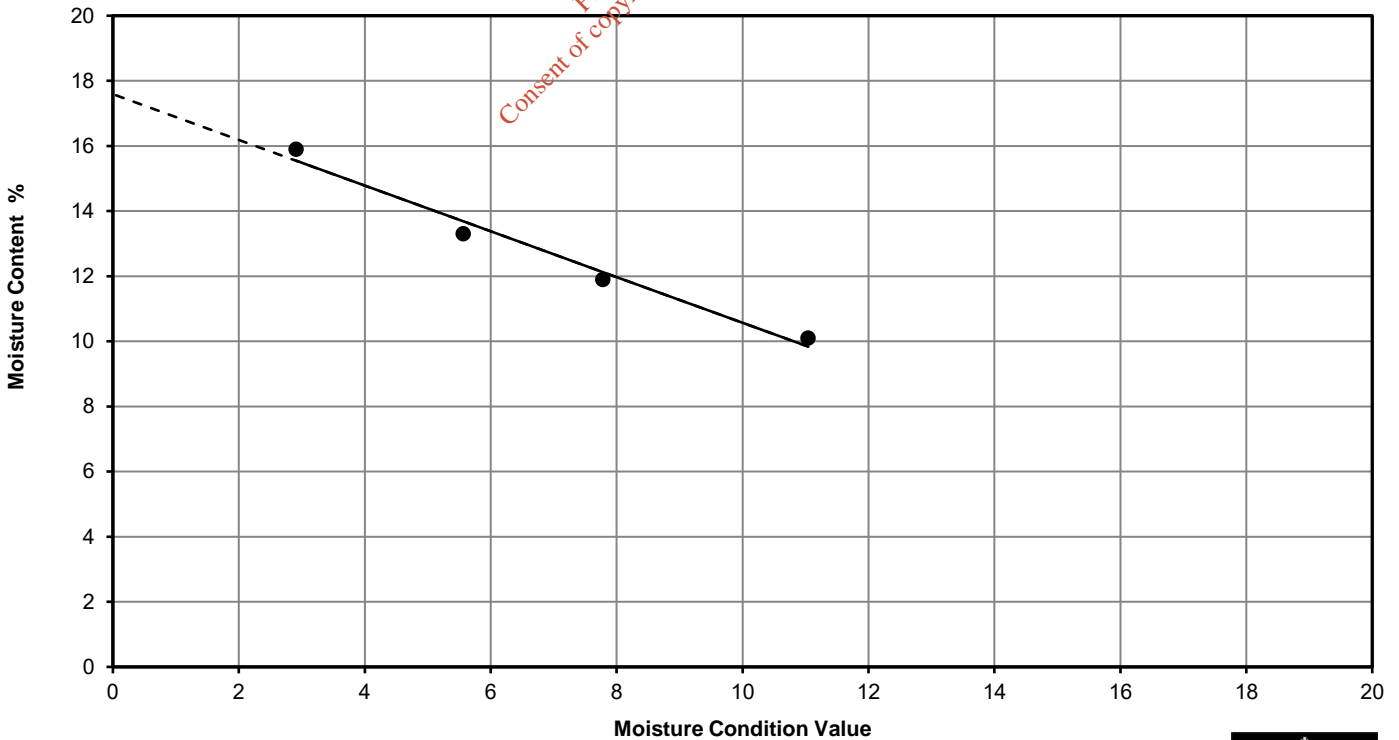
Amount of material larger than 20mm sieve removed	11	%
Natural Moisture Content of sample	8.9	%
Initial Moisture Content of test sample below 20mm	10.1	%
Separate specimens tested		

General remarks

Table of results

MCV Test Number	1	2	3	4	
Moisture Content, %	10.1	11.9	13.3	15.9	
Moisture Condition Value	11.0	7.8	5.6	2.9	
MCV report	11	7.8	5.6	2.9	
Effective / Valid data point	YES	YES	YES	YES	
Specimen remarks					

● valid points × invalid points - - - extended regression — linear regression



Approved
Stephen.Watson
LAB 11R Version 4





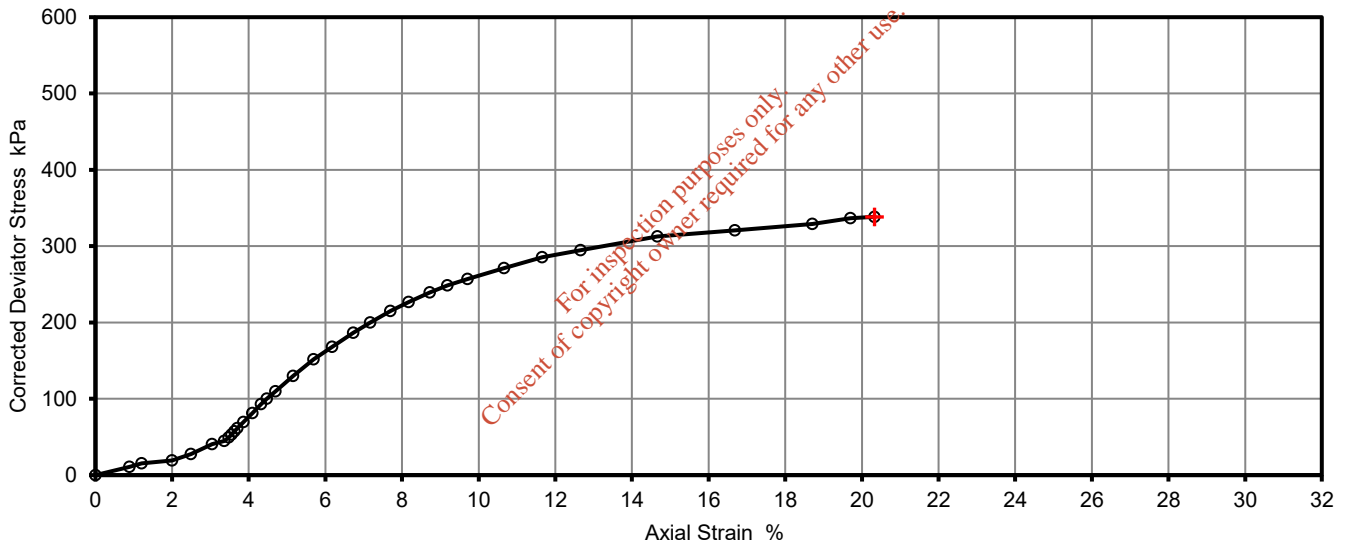
Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

Job Ref	19-1465C
Borehole/Pit No.	TP02
Sample No.	1
Depth	0.10
Sample Type	B
KeyLAB ID	Caus2020071697
Date of test	12/08/2020

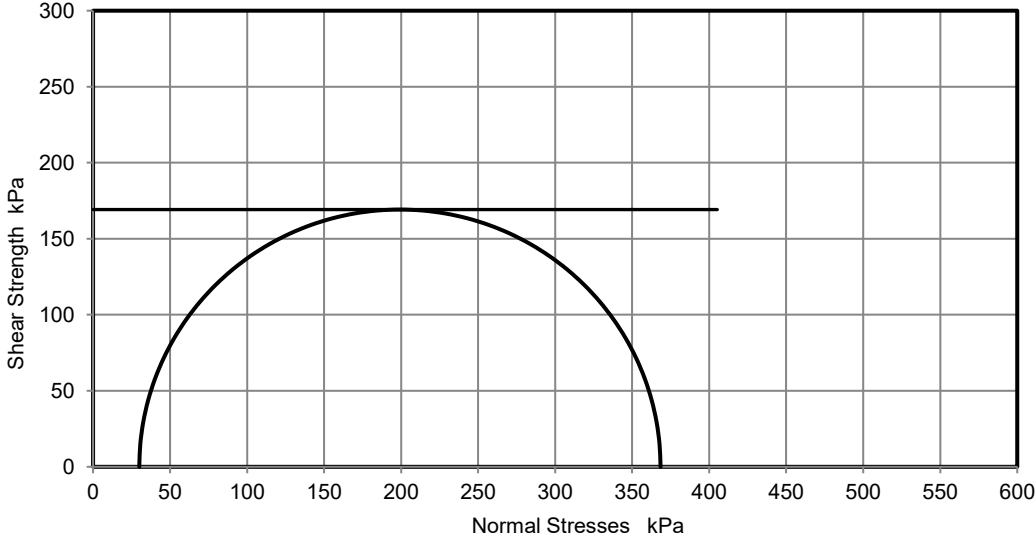
Site Name	Galway Historical Landfills - New Inn		
Soil Description	Grey gravelly clayey fine to coarse SAND.		
Specimen Reference	10	Specimen Depth	0.10 m
Specimen Description	Grey gravelly clayey fine to coarse SAND.		
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen		

Test Number	1	
Length	210.3	mm
Diameter	106.2	mm
Bulk Density	2.30	Mg/m3
Moisture Content	9.9	%
Dry Density	2.10	Mg/m3
Rate of Strain	1.0	%/min
Cell Pressure	30	kPa
At failure	20.3	%
Axial Strain	338	kPa
Deviator Stress, ($\sigma_1 - \sigma_3$) _f	169	kPa $\frac{1}{2}(\sigma_1 - \sigma_3)$
Undrained Shear Strength, c_u		
Mode of Failure		

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects based on Fig 11 BS1377-7:1990

Mohr circles and their interpretation is not covered by BS1377-7. This is provided for information only.

Remarks

Recompacted from bulk sample using 4.5kg rammer. Testing terminated at 20% axial strain.

Approved

Stephen.Watson

Printed

13/08/2020 09:54



10122



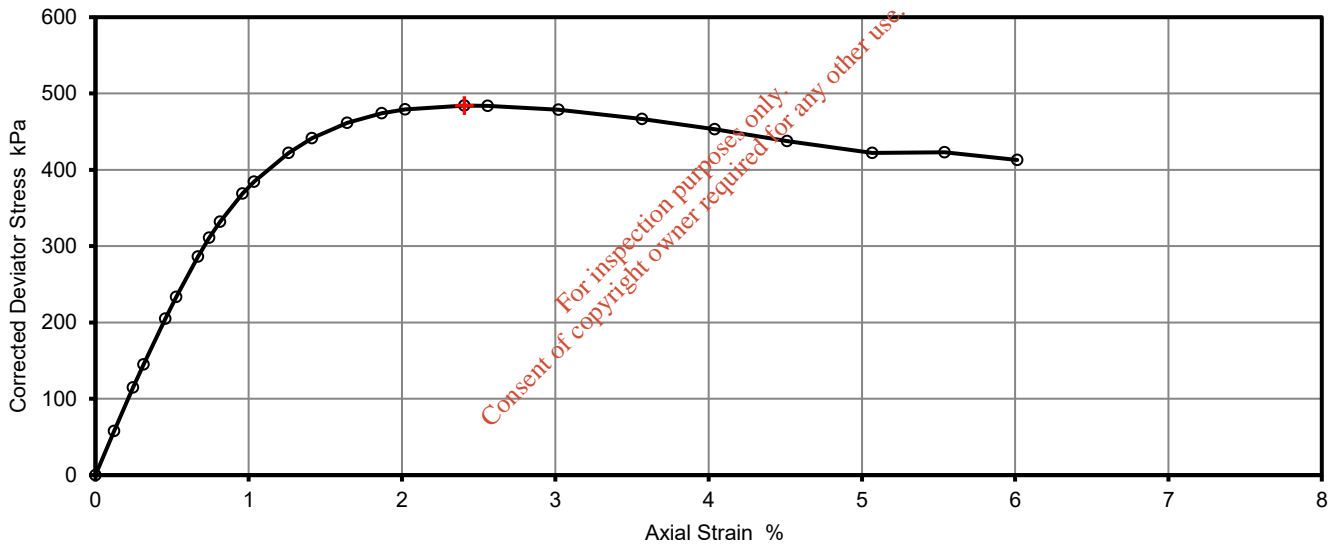
Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

Job Ref	19-1465C
Borehole/Pit No.	TP02
Sample No.	2
Depth	0.30
Sample Type	B
KeyLAB ID	Caus2020071698
Date of test	12/08/2020

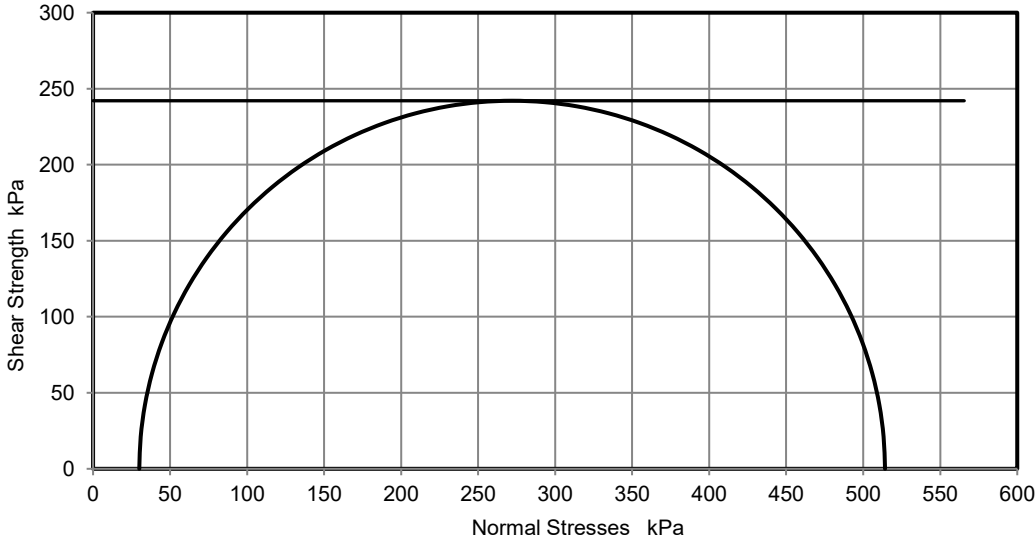
Site Name	Galway Historical Landfills - New Inn		
Soil Description	Brown gravelly silty fine to coarse SAND.		
Specimen Reference	10	Specimen Depth	0.30 m
Specimen Description	Brown gravelly silty fine to coarse SAND.		
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen		

Test Number	1	
Length	210.5	mm
Diameter	105.4	mm
Bulk Density	2.22	Mg/m ³
Moisture Content	9.6	%
Dry Density	2.02	Mg/m ³
Rate of Strain	1.0	%/min
Cell Pressure	30	kPa
At failure	2.4	%
Axial Strain	484	kPa
Deviator Stress, ($\sigma_1 - \sigma_3$) _f	242	kPa $\frac{1}{2}(\sigma_1 - \sigma_3)$
Undrained Shear Strength, <i>c_u</i>		
Mode of Failure		

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects based on Fig 11 BS1377-7:1990

Mohr circles and their interpretation is not covered by BS1377-7. This is provided for information only.

Remarks

Recompacted from bulk sample using 4.5kg rammer. Testing terminated at 20% axial strain.

Approved

Stephen.Watson

Printed

13/08/2020 09:54



10122



CAUSEWAY
— GEOTECH

APPENDIX G
ENVIRONMENTAL LABORATORY TEST RESULTS

*For inspection purposes only.
Consent of copyright owner required for any other use.*



Final Report

Report No.: 20-17519-1
Initial Date of Issue: 21-Jul-2020
Client: Causeway Geotech Ltd
Client Address: 8 Drumahiskey Road
 Balnamore
 Ballymoney
 County Antrim
 BT53 7QL
Contact(s): Carin Cornwall
 Colm Hurley
 Darren O'Mahony
 Fernando Alfonso
 Gabriella Horan
 Joe Gervin
 John Cameron
 Lucy Newland
 Matthew Gilbert
 Neil Haggan
 Paul Dunlop
 Paul McNamara
 Sean Ross
 Stephen Franey
 Stephen McCracken
 Stephen Watson
 Stuart Abraham

Project: 19-1465C Galway Historical Landfills - New Inn

Quotation No.:		Date Received:	09-Jul-2020
Order No.:		Date Instructed:	15-Jul-2020
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	21-Jul-2020
Date Approved:	21-Jul-2020		

Approved By:

Details: Glynn Harvey, Technical Manager

For inspection purposes only.
Consent of copyright owner required for any other use.

Results - Single Stage WAC

Project: 19-1465C Galway Historical Landfills - New Inn

Chemtest Job No: 20-17519 Chemtest Sample ID: 1028878 Sample Ref: Sample ID: Sample Location: TP04 Top Depth(m): 1.0 Bottom Depth(m): Sampling Date: 06-Jul-2020				Landfill Waste Acceptance Criteria Limits			
				Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	1.0	3	5	6
Loss On Ignition	2610	M	%	4.6	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC (Mineral Oil)	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.1	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.031	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1450	U	0.0034	< 0.050	0.5	2	25
Barium	1450	U	0.058	0.58	20	100	300
Cadmium	1450	U	< 0.00010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.050	0.5	10	70
Copper	1450	U	0.0010	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.026	0.26	0.5	10	30
Nickel	1450	U	0.0021	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	< 0.010	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.010	0.06	0.7	5
Selenium	1450	U	0.0015	0.015	0.1	0.5	7
Zinc	1450	U	0.015	< 0.50	4	50	200
Chloride	1220	U	2.5	25	800	15000	25000
Fluoride	1220	U	0.15	1.5	10	150	500
Sulphate	1220	U	620	6200	1000	20000	50000
Total Dissolved Solids	1020	N	980	9700	4000	60000	100000
Phenol Index	1920	U	0.030	0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.9	69	500	800	1000

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	8.2

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 19-1465C Galway Historical Landfills - New Inn

Chemtest Job No: 20-17519 Chemtest Sample ID: 1028879 Sample Ref: Sample ID: Sample Location: TP01 Top Depth(m): 1.0 Bottom Depth(m): Sampling Date: 06-Jul-2020				Landfill Waste Acceptance Criteria Limits			
				Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	2.1	3	5	6
Loss On Ignition	2610	M	%	4.1	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC (Mineral Oil)	2670	M	mg/kg	50	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.044	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1450	U	< 0.0010	< 0.050	0.5	2	25
Barium	1450	U	0.042	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.050	0.5	10	70
Copper	1450	U	0.0016	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.011	0.11	0.5	10	30
Nickel	1450	U	0.0019	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	< 0.010	0.5	10	50
Antimony	1450	U	0.0029	0.029	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.010	0.1	0.5	7
Zinc	1450	U	0.0032	< 0.50	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.21	2.1	10	150	500
Sulphate	1220	U	32	320	1000	20000	50000
Total Dissolved Solids	1020	N	290	2900	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	7.0	70	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.2

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	Compliance Test for Leaching of Granular Waste Material and Sludge

Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
- < "less than"
- > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com