

Environmental Impact Assessment Report

Appendix 8.2

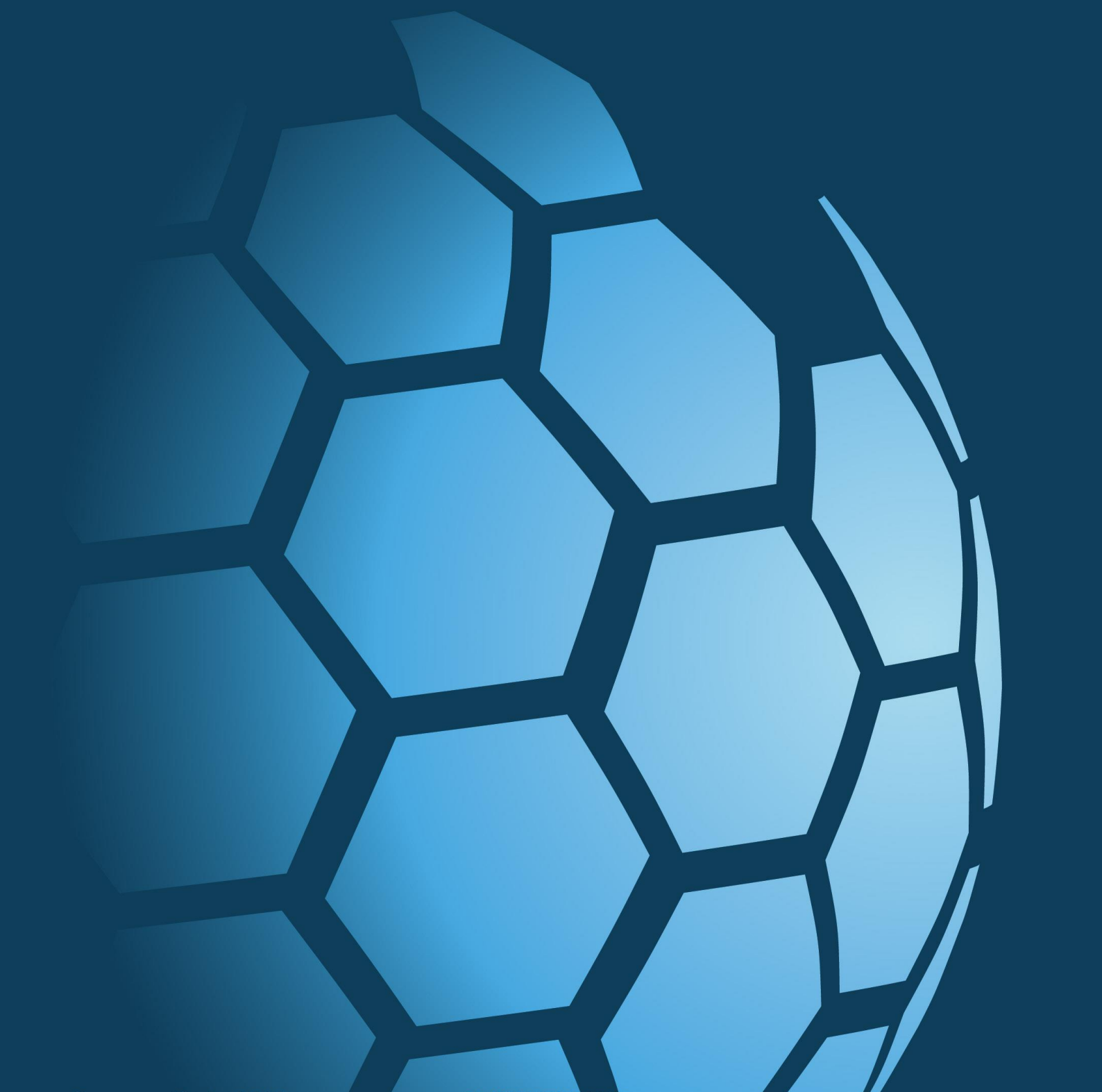
Volume 3 Part 5





CAUSEWAY
— GEOTECH

APPENDIX H
GEOTECHNICAL LABORATORY TEST RESULTS



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

30 March 2023

Project Name:	3FM Planning Design GI - Lot B 3rd Party Lands
Project No.:	22-1041B
Client:	Dublin Port Company (DPC)
Engineer:	RPS

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). This testing was performed between 08/03/2023 and 31/03/2023.

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: 3FM Planning Design GI - Lot B 3rd Party Lands

Report Reference: Schedule 1

The table below details the tests carried out, the specifications used, and the number of tests included in this report. The results contained in this report relate to the sample(s) as received

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	8
SOIL	Liquid and Plastic Limits of soil-4 point cone penetrometer method	BS 1377-2: 1990: Cl 4.4, 5.3 & 5.4	8
SOIL	Particle size distribution - wet sieving	BS 1377-2: 1990: Cl 9.2	16
SOIL	Particle size distribution - sedimentation hydrometer method	BS 1377-2: 1990: Cl 9.5	6
SOIL	California Bearing Ratio (CBR)	BS 1377-4: 1990: Cl 7	3
SOIL	Consolidation properties in oedometer - Using 5 pressures (up to 5 days total duration)	BS 1377-5: 1990: Cl 3: 1	4
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
SOIL	Undrained shear strength – triaxial compression with multistage loading and without measurement of pore pressure (loads from 0.12 to 24 kN)	BS 1377-7: 1990: Cl 9	2
SOIL	Direct Shear Test using 60mm Small Shearbox (up to 3 days)	BS EN ISO 17892-10:2018	10
	Extra over days (more than initial 3 days)		0
ROCK	Point load index	ISRM Commission on Testing Methods. Suggested Method for Determining Point Load Strength 1985	10

SUB-CONTRACTED TESTS

In agreement with Client, the following tests were conducted by an approved sub-contractor. All sub-contracting laboratories used are UKAS accredited.


Material tested	Type of test/Properties measured/Range of measurement	Standard specifications	No. of results included in the report
SOIL – Subcontracted to Eurofins Chemtest Ltd (<i>UKAS 2183</i>)	pH Value of Soil		12
SOIL – Subcontracted to Eurofins Chemtest Ltd (<i>UKAS 2183</i>)	Sulphate Content water extract		12

Summary of Classification Test Results

Project No. 22-1041B	Project Name 3FM Planning Design GI - Lot B 3rd Party Lands
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Hole No.	Sample				Specimen Description	Density		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Casagrande Classification
	Ref	Top	Base	Type		bulk Mg/m3	dry							
BH215	30	8.00		D	Greyish brown silty slightly gravelly fine to coarse SAND.			44	98	35	29	6		ML/MI
BH215	1	21.50		C	Greyish brown clayey SILT.			21	100	25	20	5		ML
BH215	5	26.00	27.50	C	Greyish brown sandy silty CLAY.			21	100	28	14	14		CL
BH215	6	30.50	32.00	C	Greyish brown sandy silty CLAY.			29	99	38	19	19		CI
BH216	20	7.00		D	Greyish brown clayey SILT.			36	100	32	27	5		ML
BH216	1	21.00	21.45	C	Brownish grey sandy slightly gravelly silty CLAY.			24	99	35	16	19		CL/CI
BH217	16	5.50		D	Brownish grey slightly gravelly slightly silty fine to coarse SAND.			38	94	34	21	13		CL
BH217	22	9.50		D	Brownish grey slightly sandy slightly silty subangular fine to coarse GRAVEL.			5.5	17	29	22	7		ML/CL

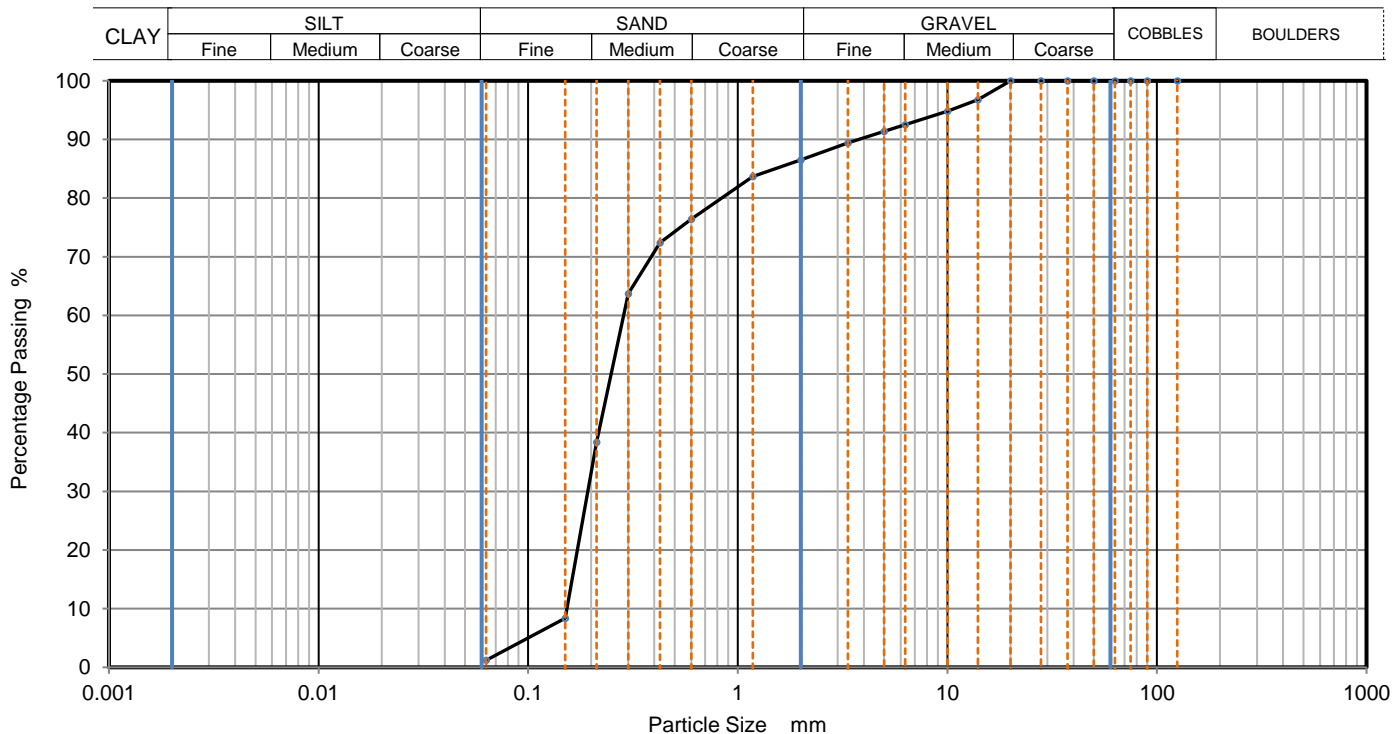
All tests performed in accordance with BS1377:1990 unless specified otherwise
LAB 01R Version 6

Key Density test Liquid Limit Particle density Linear measurement unless : 4pt cone unless : sp - small pycnometer wd - water displacement cas - Casagrande method gj - gas jar wi - immersion in water 1pt - single point test	Date Printed <p style="text-align: center;">27/03/2023</p>	Approved By <p style="text-align: center;">Stephen Watson</p>	 UKAS TESTING 10122
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PARTICLE SIZE DISTRIBUTION

Job Ref	22-1041B
Borehole/Pit No.	BH212
Sample No.	2
Sample Depth (m)	Top 1.00
	Base 1.00
Sample Type	B
KeyLAB ID	Caus2023030817



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	97		
10	95		
6.3	93		
5	91		
3.35	89		
2	87		
1.18	84		
0.6	76		
0.425	72		
0.3	64		
0.212	38		
0.15	8		
0.063	1		

Dry Mass of sample, g 302

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	13.5
Sand	85.3
Fines <0.063mm	1.0

Grading Analysis	
D100	mm
D60	mm 0.285
D30	mm 0.192
D10	mm 0.153
Uniformity Coefficient	1.9
Curvature Coefficient	0.85

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

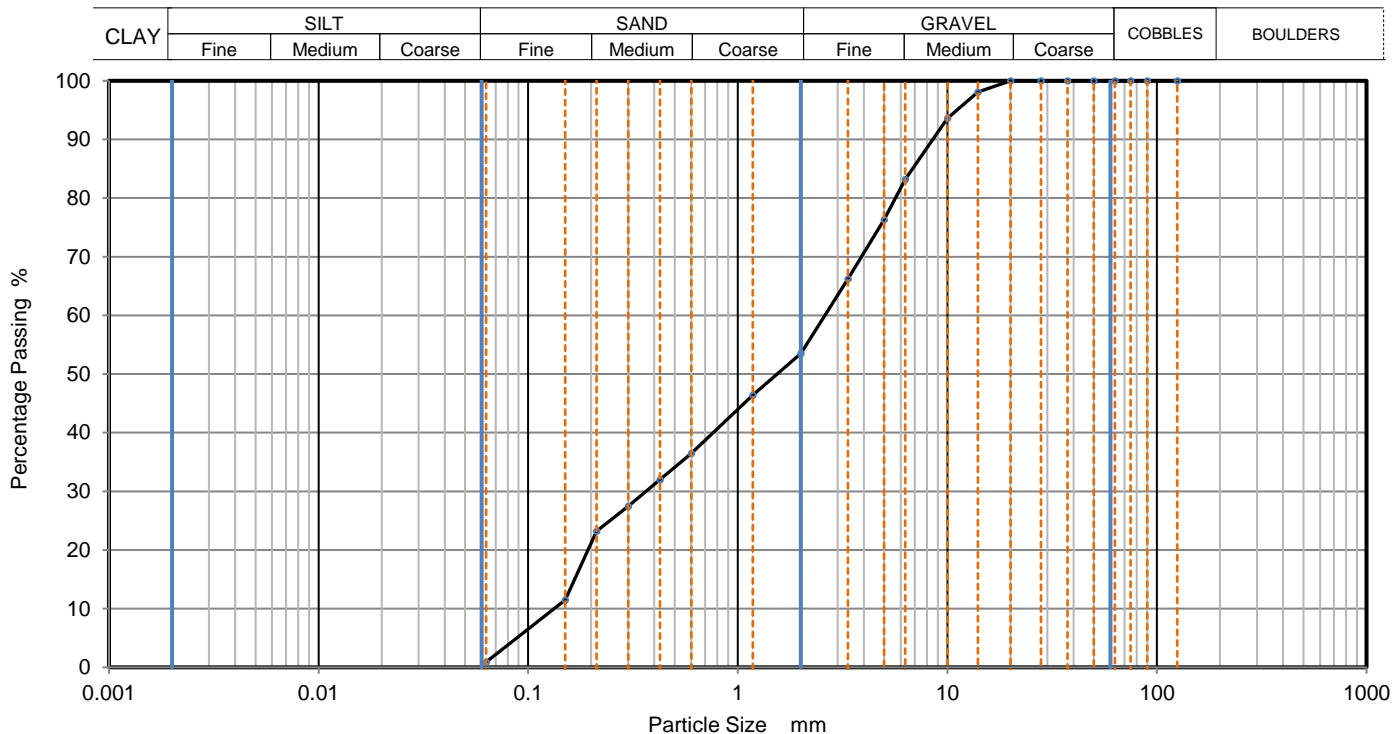
Approved
Stephen Watson





PARTICLE SIZE DISTRIBUTION

Job Ref	22-1041B
Borehole/Pit No.	BH212
Sample No.	8
Sample Depth (m)	Top 4.00
	Base 5.00
Sample Type	B
KeyLAB ID	Caus2023030820



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	98		
10	94		
6.3	83		
5	76		
3.35	66		
2	54		
1.18	46		
0.6	37		
0.425	32		
0.3	28		
0.212	23		
0.15	12		
0.063	1		

Dry Mass of sample, g 304

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	46.5
Sand	52.5
Fines <0.063mm	1.0

Grading Analysis		
D100	mm	
D60	mm	2.6
D30	mm	0.364
D10	mm	0.132
Uniformity Coefficient		20
Curvature Coefficient		0.38

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

Approved
Stephen Watson

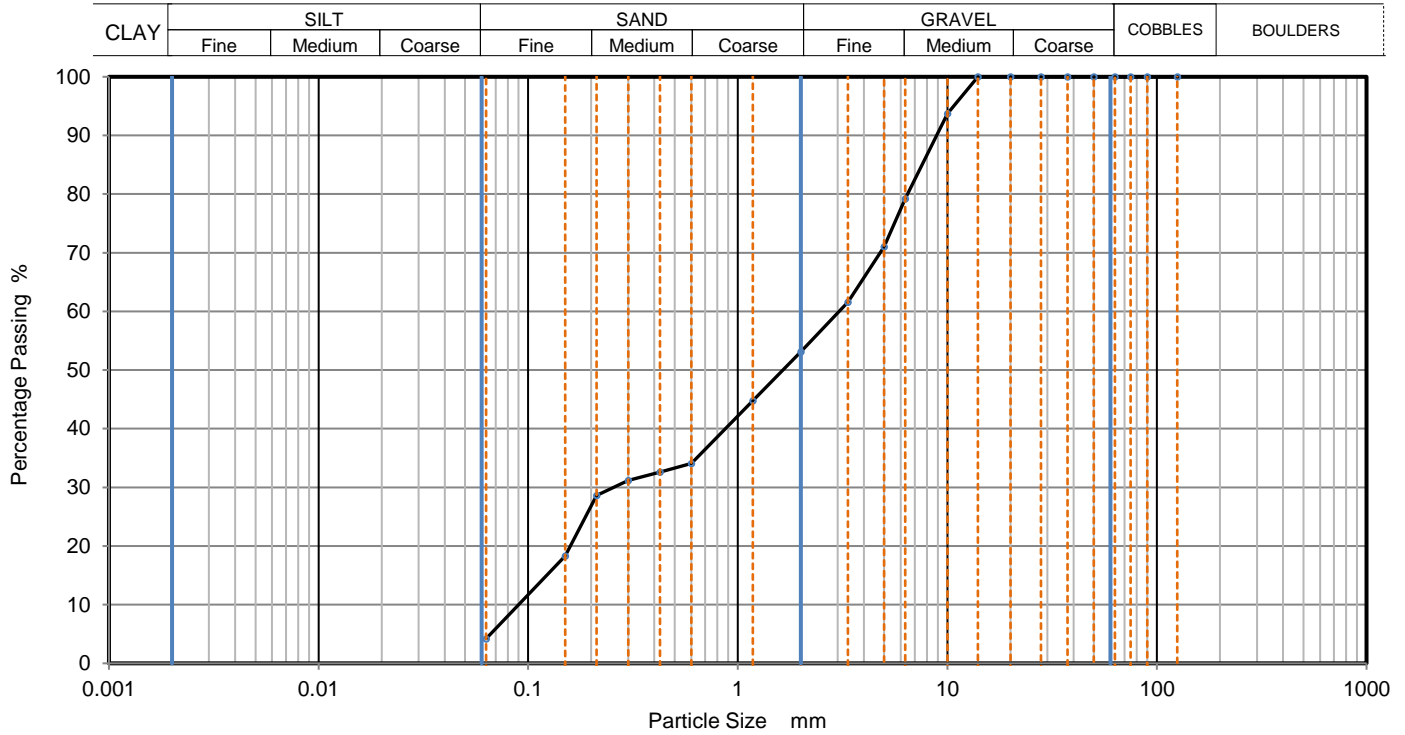




PARTICLE SIZE DISTRIBUTION

Job Ref	22-1041B
Borehole/Pit No.	BH212
Sample No.	16
Sample Depth (m)	Top 8.00
	Base 9.00
Sample Type	B
KeyLAB ID	Caus2023030823

Site Name	3FM Planning Design GI - Lot B 3rd Party Lands		
Specimen Description	Greyish brown slightly gravelly slightly silty fine to coarse SAND.		
Specimen Reference	3	Specimen Depth	8 m
Test Method	BS1377:Part 2:1990, clause 9.2		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	94		
6.3	79		
5	71		
3.35	62		
2	53		
1.18	45		
0.6	34		
0.425	33		
0.3	31		
0.212	29		
0.15	18		
0.063	4		

Dry Mass of sample, g 327

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	46.9
Sand	48.9
Fines <0.063mm	4.0

Grading Analysis		
D100	mm	
D60	mm	3.04
D30	mm	0.255
D10	mm	0.0901
Uniformity Coefficient		34
Curvature Coefficient		0.24

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

Approved
Stephen Watson





PARTICLE SIZE DISTRIBUTION

Job Ref

22-1041B

Borehole/Pit No.

BH215

Site Name

3FM Planning Design GI - Lot B 3rd Party Lands

Sample No.

26

Specimen Description

Greyish brown sandy gravelly silty CLAY with cobbles.

Sample Depth (m)

Top

5.50

Base

6.50

Specimen Reference

3

Specimen Depth

5.5

m

Sample Type

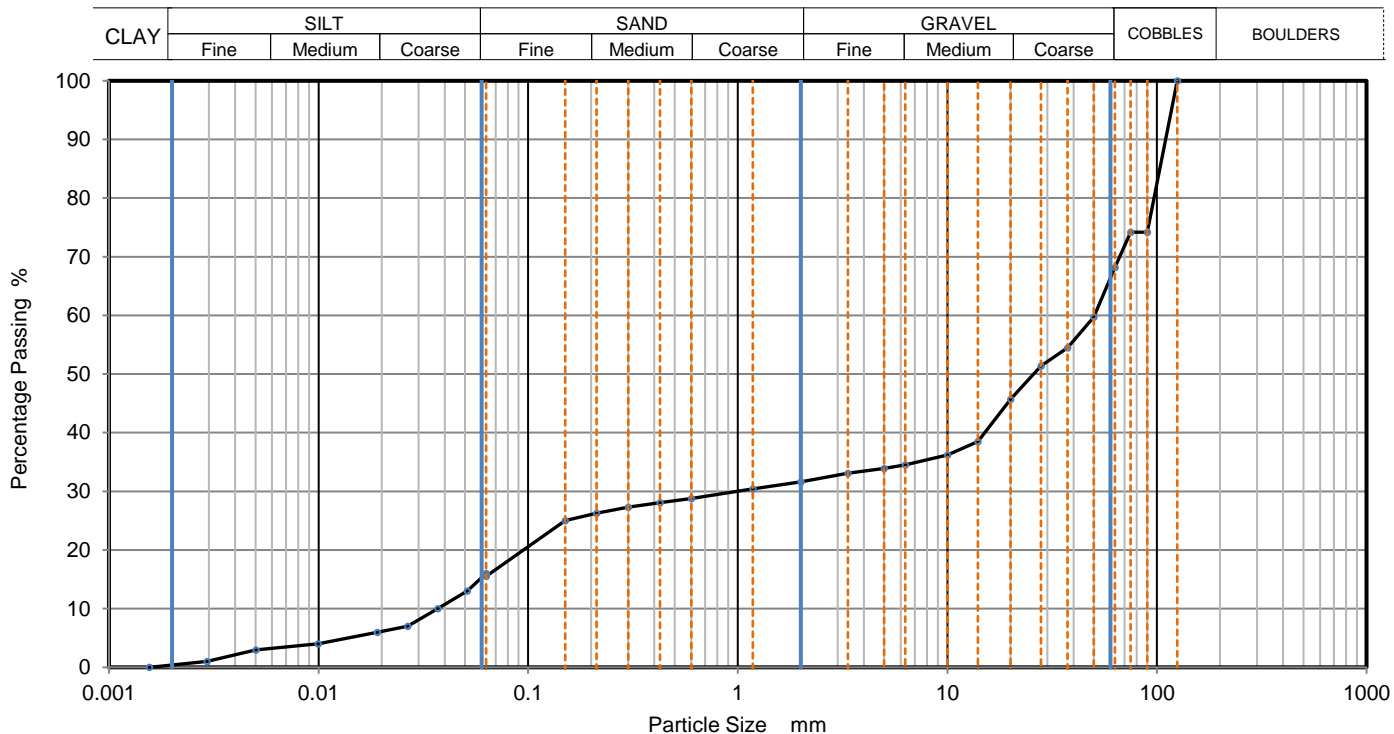
B

Test Method

BS1377:Part 2:1990, clauses 9.2 and 9.5

KeyLAB ID

Caus2023030828



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	16
90	74	0.05121	13
75	74	0.03707	10
63	68	0.02666	7
50	60	0.01906	6
37.5	55	0.00995	4
28	51	0.00503	3
20	46	0.00293	1
14	39	0.00156	0
10	36		
6.3	35		
5	34		
3.35	33		
2	32		
1.18	30		
0.6	29		
0.425	28	Particle density (assumed)	
0.3	27	2.65	Mg/m ³
0.212	26		
0.15	25		
0.063	16		

Dry Mass of sample, g

11082

Sample Proportions	% dry mass
Cobbles	31.8
Gravel	36.6
Sand	16.1
Silt	14.9
Clay	0.6

Grading Analysis		
D100	mm	125
D60	mm	50.5
D30	mm	1
D10	mm	0.0387
Uniformity Coefficient		1300
Curvature Coefficient		0.51

Remarks

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

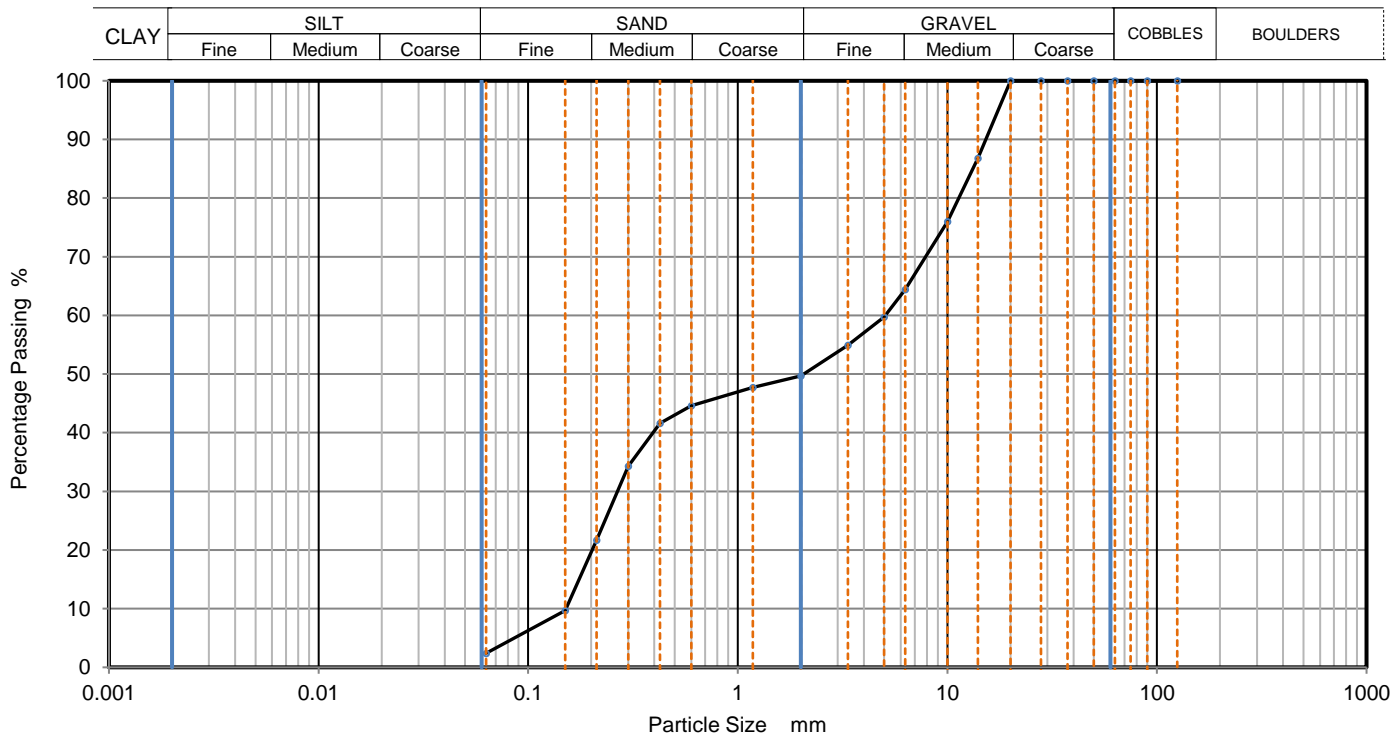
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Stephen Watson





PARTICLE SIZE DISTRIBUTION

Job Ref	22-1041B
Borehole/Pit No.	BH215
Sample No.	32
Sample Depth (m)	Top 9.50
	Base
Sample Type	D
KeyLAB ID	Caus2023030830



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	87		
10	76		
6.3	64		
5	60		
3.35	55		
2	50		
1.18	48		
0.6	45		
0.425	42		
0.3	34		
0.212	22		
0.15	10		
0.063	2		

Dry Mass of sample, g 323

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	50.3
Sand	47.3
Fines <0.063mm	2.0

Grading Analysis		
D100	mm	
D60	mm	5.08
D30	mm	0.266
D10	mm	0.151
Uniformity Coefficient		34
Curvature Coefficient		0.092

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

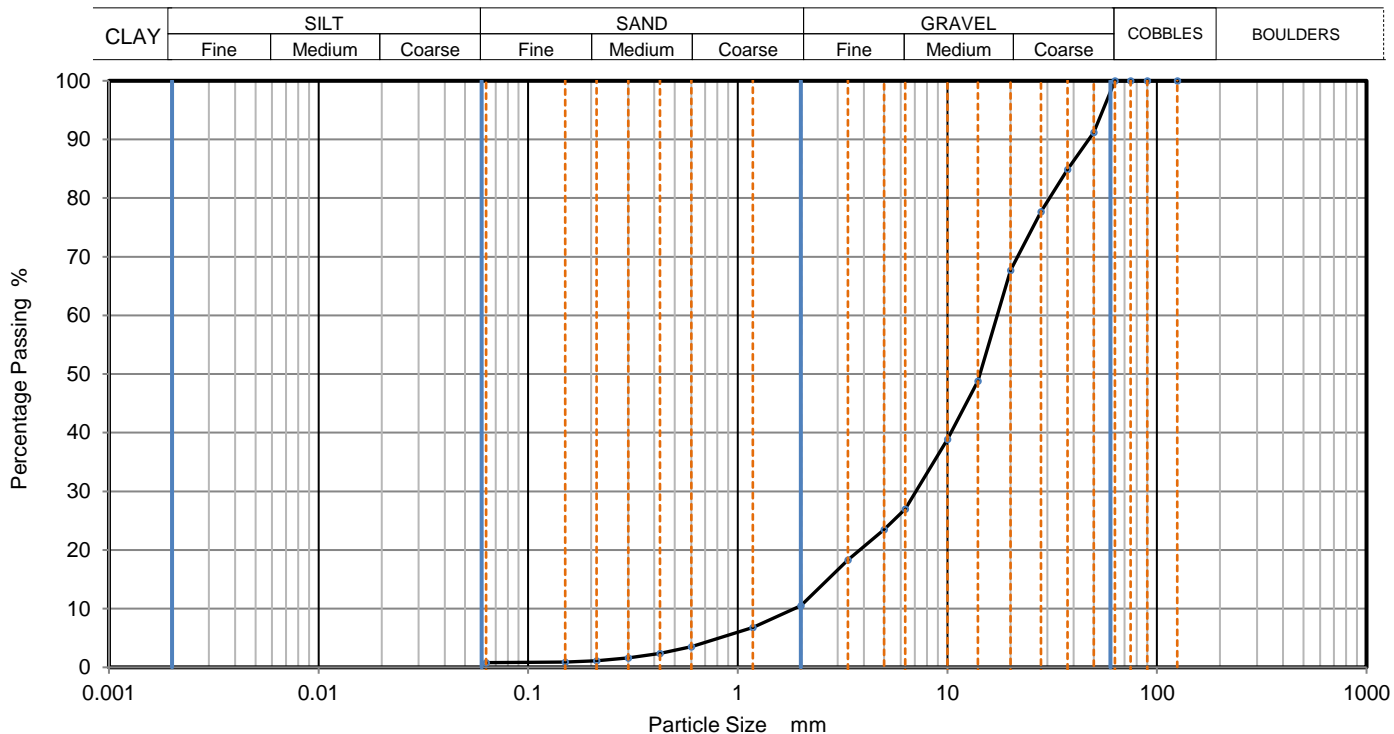
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Stephen Watson





PARTICLE SIZE DISTRIBUTION

Job Ref	22-1041B
Borehole/Pit No.	BH215
Sample No.	40
Sample Depth (m)	Top 16.00
	Base 17.00
Sample Type	B
KeyLAB ID	Caus2023030834



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	91		
37.5	85		
28	78		
20	68		
14	49		
10	39		
6.3	27		
5	24		
3.35	18		
2	11		
1.18	7		
0.6	4		
0.425	2		
0.3	2		
0.212	1		
0.15	1		
0.063	1		

Dry Mass of sample, g 12185

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	89.5
Sand	9.7
Fines <0.063mm	1.0

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	9.3
Curvature Coefficient	1.5

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

Approved
Stephen Watson

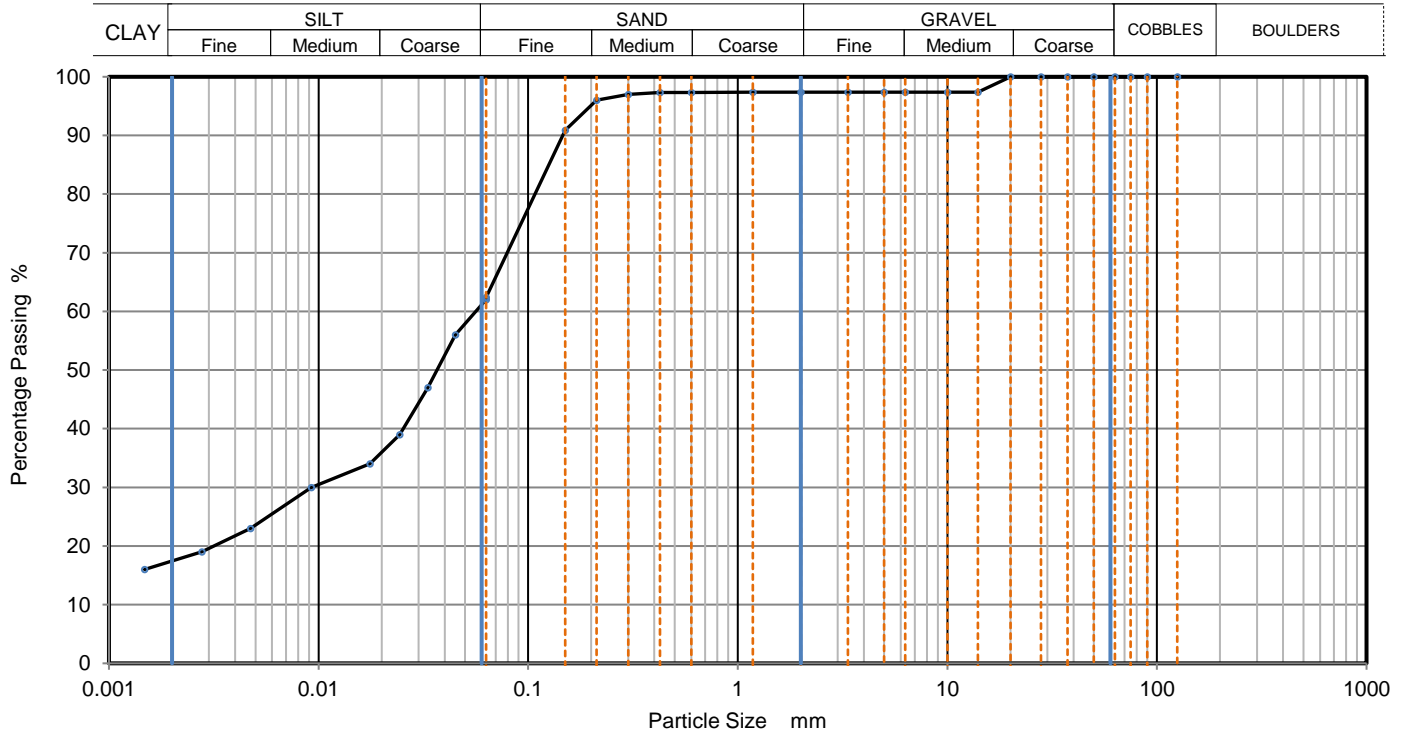




PARTICLE SIZE DISTRIBUTION

Job Ref	22-1041B
Borehole/Pit No.	BH215
Sample No.	4
Sample Depth (m)	Top 23.00
	Base 24.50
Sample Type	C
KeyLAB ID	Caus2023030836

Site Name	3FM Planning Design GI - Lot B 3rd Party Lands		
Specimen Description	Greyish brown sandy silty CLAY.		
Specimen Reference	3	Specimen Depth	23 m
Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.5		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	62
90	100	0.04499	56
75	100	0.03326	47
63	100	0.02434	39
50	100	0.01755	34
37.5	100	0.00924	30
28	100	0.00473	23
20	100	0.00278	19
14	97	0.00148	16
10	97		
6.3	97		
5	97		
3.35	97		
2	97		
1.18	97		
0.6	97	Particle density (assumed) 2.65 Mg/m ³	
0.425	97		
0.3	97		
0.212	96		
0.15	91		
0.063	62		

Dry Mass of sample, g 315

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	2.6
Sand	35.1
Silt	45.2
Clay	17.1

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

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

Approved
Stephen Watson





PARTICLE SIZE DISTRIBUTION

Job Ref **22-1041B**

Borehole/Pit No. **BH216**

Site Name **3FM Planning Design GI - Lot B 3rd Party Lands**

Sample No. **12**

Specimen Description **Greyish brown slightly gravelly silty fine to coarse SAND.**

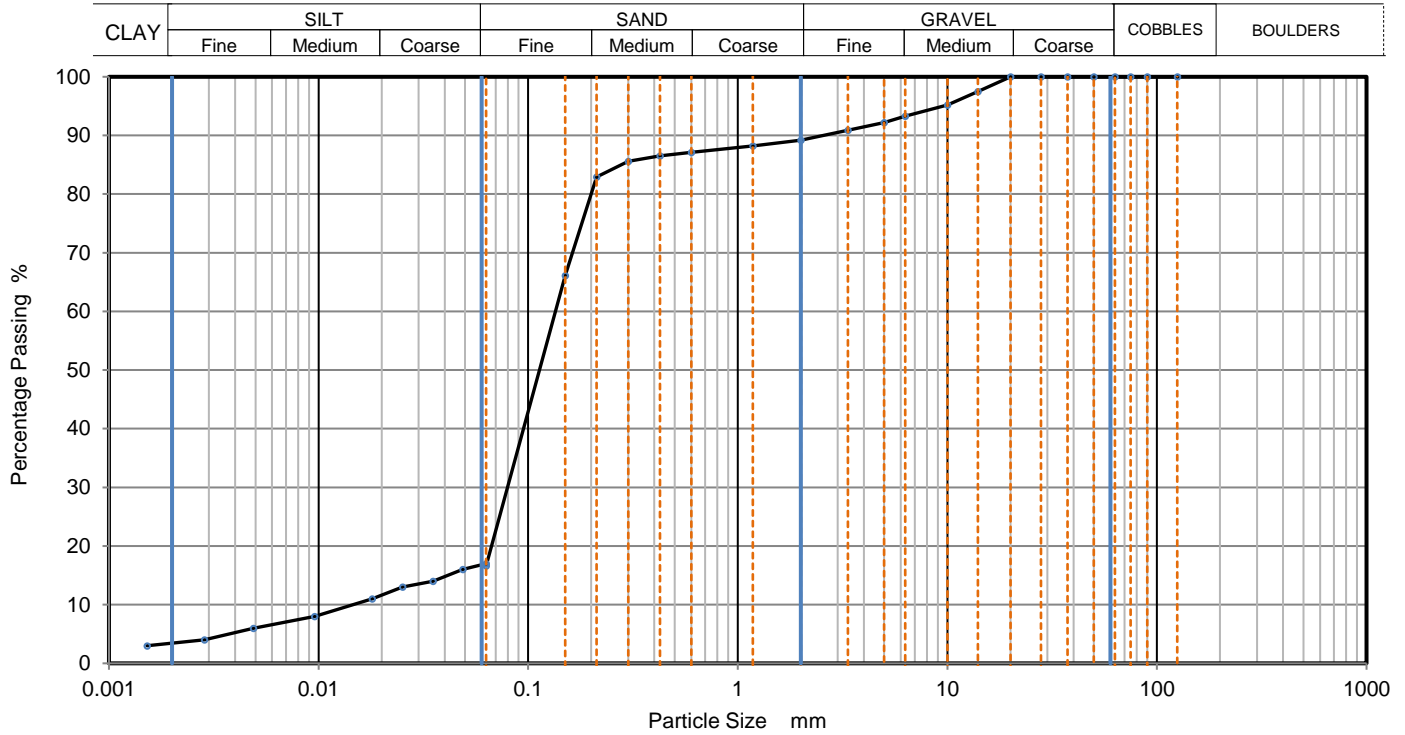
Sample Depth (m)	Top	0.60
	Base	1.50

Specimen Reference	3	Specimen Depth	0.6	m
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Sample Type **B**

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

KeyLAB ID **Caus2023030839**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	17
90	100	0.04869	16
75	100	0.03510	14
63	100	0.02514	13
50	100	0.01800	11
37.5	100	0.00957	8
28	100	0.00489	6
20	100	0.00286	4
14	98	0.00152	3
10	95		
6.3	93		
5	92		
3.35	91		
2	89		
1.18	88		
0.6	87	Particle density (assumed)	
0.425	87	2.65	Mg/m3
0.3	86		
0.212	83		
0.15	66		
0.063	17		

Dry Mass of sample, g 303

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	10.8
Sand	72.6
Silt	12.9
Clay	3.7

Grading Analysis	
D100	mm
D60	mm 0.135
D30	mm 0.0797
D10	mm 0.0134
Uniformity Coefficient	10
Curvature Coefficient	3.5

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

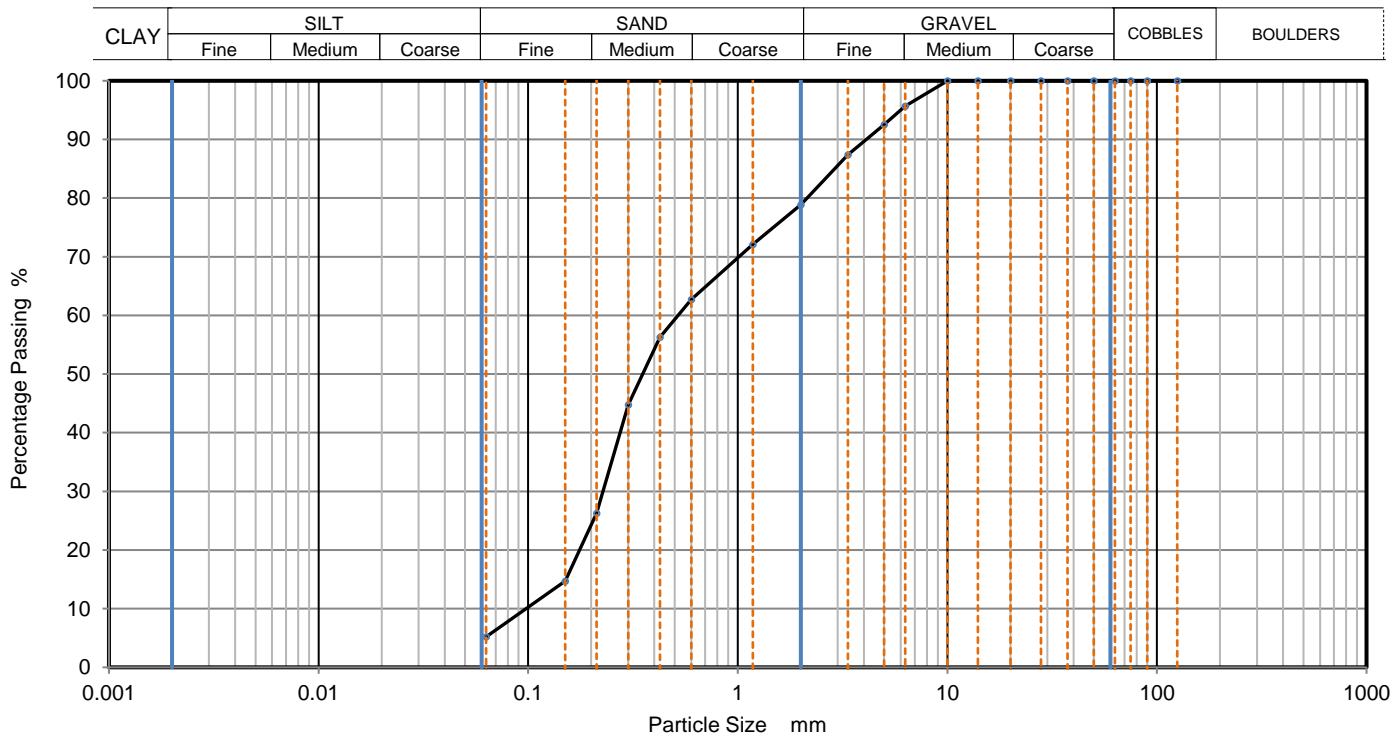
Approved
Stephen Watson





PARTICLE SIZE DISTRIBUTION

Job Ref	22-1041B
Borehole/Pit No.	BH216
Sample No.	21
Sample Depth (m)	Top 7.50
	Base 8.30
Specimen Reference	3
Specimen Depth	7.5 m
Sample Type	B
KeyLAB ID	Caus2023030844



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	96		
5	93		
3.35	87		
2	79		
1.18	72		
0.6	63		
0.425	56		
0.3	45		
0.212	26		
0.15	15		
0.063	5		

Dry Mass of sample, g 301

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	21.1
Sand	73.7
Fines <0.063mm	5.0

Grading Analysis	
D100	mm
D60	mm 0.519
D30	mm 0.227
D10	mm 0.0977
Uniformity Coefficient	5.3
Curvature Coefficient	1

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

Approved

Stephen Watson

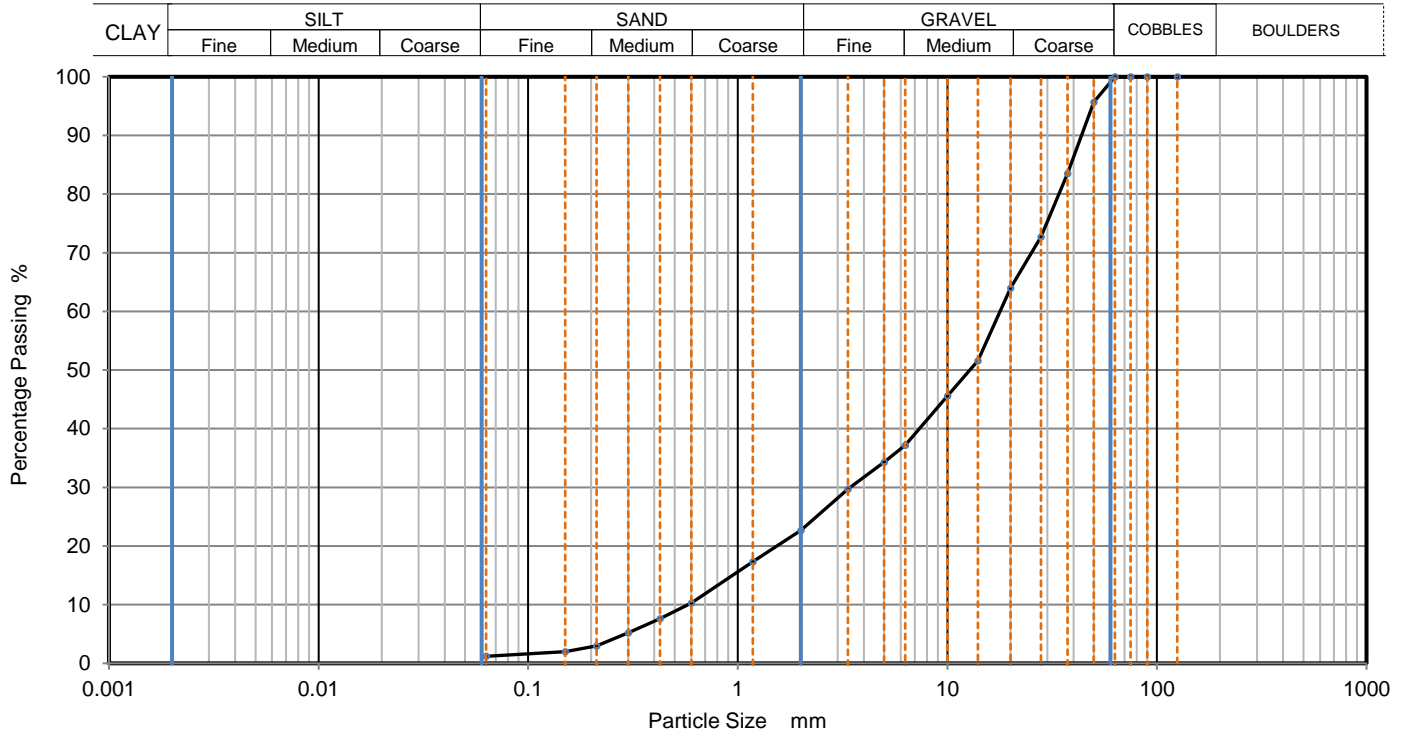




PARTICLE SIZE DISTRIBUTION

Job Ref	22-1041B
Borehole/Pit No.	BH216
Sample No.	31
Sample Depth (m)	Top 14.50
	Base 15.50
Sample Type	B
KeyLAB ID	Caus2023030848

Site Name	3FM Planning Design GI - Lot B 3rd Party Lands		
Specimen Description	Brownish grey slightly sandy slightly silty subangular fine to coarse GRAVEL.		
Specimen Reference	3	Specimen Depth	14.5 m
Test Method	BS1377:Part 2:1990, clause 9.2		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	96		
37.5	84		
28	73		
20	64		
14	52		
10	46		
6.3	37		
5	34		
3.35	30		
2	23		
1.18	17		
0.6	10		
0.425	8		
0.3	5		
0.212	3		
0.15	2		
0.063	1		

Dry Mass of sample, g 11880

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	77.3
Sand	21.5
Fines <0.063mm	1.0

Grading Analysis		
D100	mm	
D60	mm	17.8
D30	mm	3.44
D10	mm	0.58
Uniformity Coefficient		31
Curvature Coefficient		1.1

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

Approved
Stephen Watson

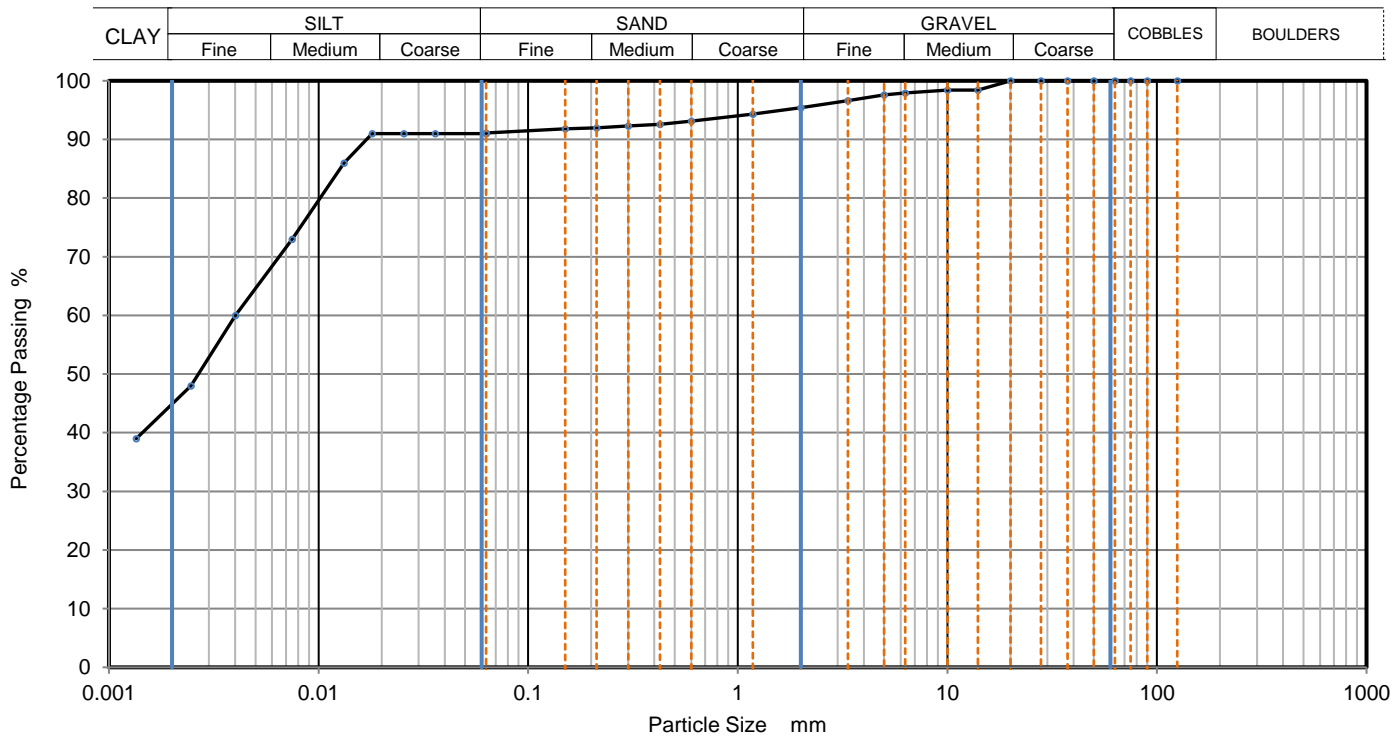




PARTICLE SIZE DISTRIBUTION

Job Ref	22-1041B
Borehole/Pit No.	BH216
Sample No.	2
Sample Depth (m)	Top 22.50
	Base 22.95
Sample Type	C
KeyLAB ID	Caus2023030850

Site Name	3FM Planning Design GI - Lot B 3rd Party Lands		
Specimen Description	Brownish grey slightly sandy silty CLAY.		
Specimen Reference	3	Specimen Depth	22.5 m
Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.5		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	91
90	100	0.03606	91
75	100	0.02550	91
63	100	0.01803	91
50	100	0.01320	86
37.5	100	0.00748	73
28	100	0.00401	60
20	100	0.00246	48
14	98	0.00135	39
10	98		
6.3	98		
5	98		
3.35	97		
2	95		
1.18	94		
0.6	93	Particle density (assumed) 2.65 Mg/m3	
0.425	93		
0.3	92		
0.212	92		
0.15	92		
0.063	91		

Dry Mass of sample, g 302

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	4.6
Sand	4.3
Silt	46.4
Clay	44.7

Grading Analysis		
D100	mm	
D60	mm	0.00398
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

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

Approved
Stephen Watson





PARTICLE SIZE DISTRIBUTION

Job Ref **22-1041B**

Borehole/Pit No. **BH217**

Site Name **3FM Planning Design GI - Lot B 3rd Party Lands**

Sample No. **10**

Specimen Description **Brownish grey silty fine to coarse SAND.**

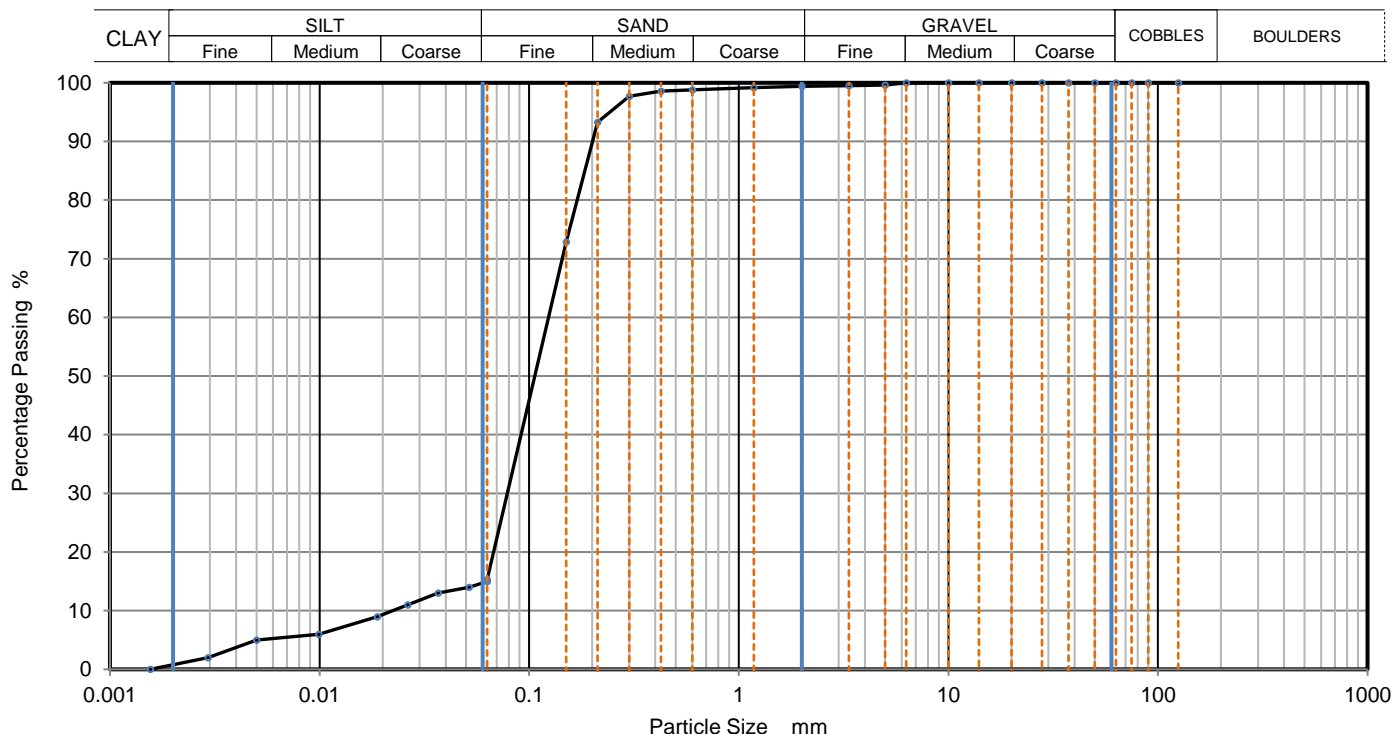
Sample Depth (m)	Top	2.00
	Base	3.00

Specimen Reference	3	Specimen Depth	2	m
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Sample Type **B**

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

KeyLAB ID **Caus2023030852**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	15
90	100	0.05182	14
75	100	0.03685	13
63	100	0.02636	11
50	100	0.01885	9
37.5	100	0.00989	6
28	100	0.00500	5
20	100	0.00293	2
14	100	0.00156	0
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	99		
0.6	99	Particle density (assumed)	
0.425	99	2.65	Mg/m3
0.3	98		
0.212	93		
0.15	73		
0.063	15		

Dry Mass of sample, g **300**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	0.6
Sand	84.1
Silt	14.6
Clay	0.7

Grading Analysis		
D100	mm	
D60	mm	0.123
D30	mm	0.0786
D10	mm	0.0227
Uniformity Coefficient		5.4
Curvature Coefficient		2.2

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

Approved

Stephen Watson

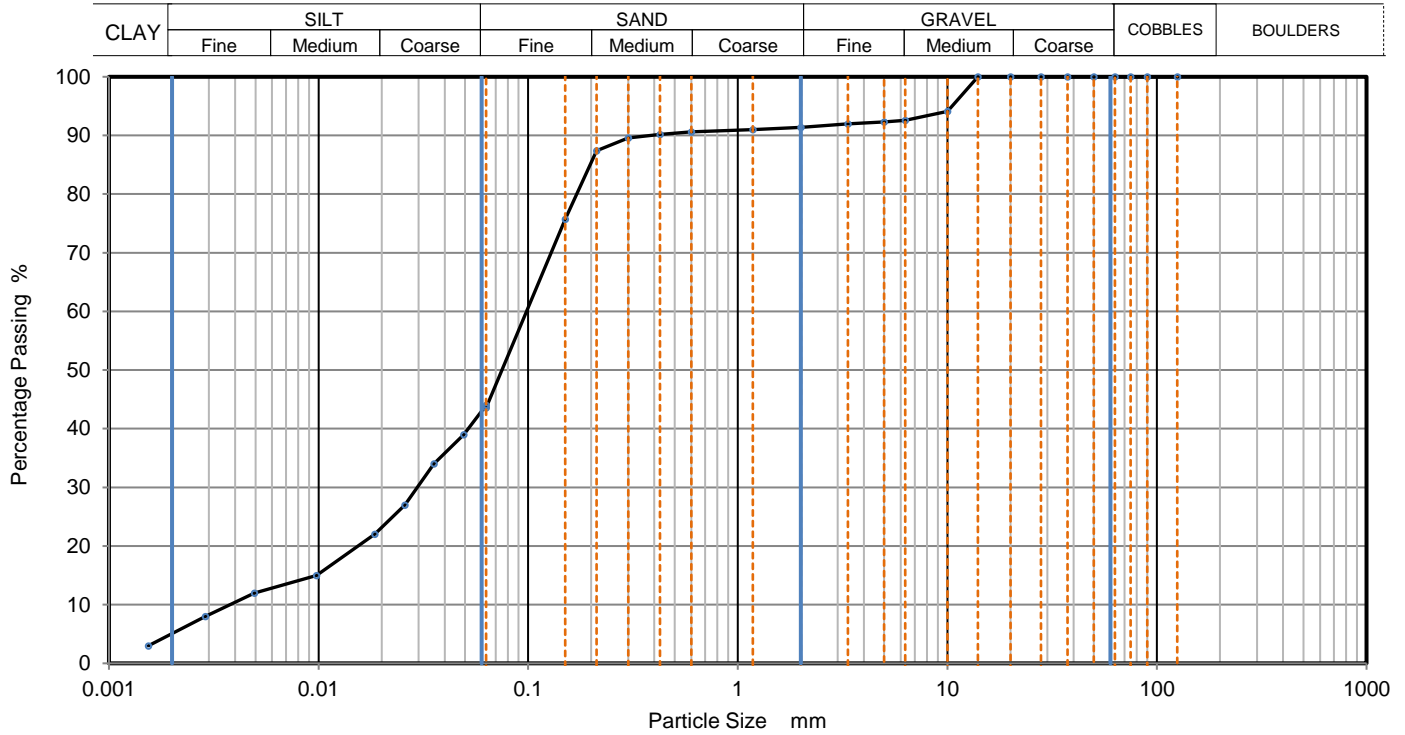




PARTICLE SIZE DISTRIBUTION

Job Ref	22-1041B
Borehole/Pit No.	BH217
Sample No.	17
Sample Depth (m)	Top 6.00
	Base 7.00
Sample Type	B
KeyLAB ID	Caus2023030857

Site Name	3FM Planning Design GI - Lot B 3rd Party Lands		
Specimen Description	Brownish grey slightly gravelly silty fine to coarse SAND.		
Specimen Reference	3	Specimen Depth	6 m
Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.5		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	44
90	100	0.04933	39
75	100	0.03555	34
63	100	0.02576	27
50	100	0.01853	22
37.5	100	0.00979	15
28	100	0.00495	12
20	100	0.00289	8
14	100	0.00154	3
10	94		
6.3	93		
5	92		
3.35	92		
2	91		
1.18	91		
0.6	91		
0.425	90	Particle density (assumed) 2.65 Mg/m3	
0.3	90		
0.212	87		
0.15	76		
0.063	44		

Dry Mass of sample, g 306

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	8.6
Sand	47.8
Silt	38.2
Clay	5.4

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	26
Curvature Coefficient	2.4

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

Approved
Stephen Watson





PARTICLE SIZE DISTRIBUTION

Job Ref **22-1041B**

Borehole/Pit No. **BH217**

Site Name **3FM Planning Design GI - Lot B 3rd Party Lands**

Sample No. **29**

Specimen Description **Brownish grey slightly sandy subangular fine to coarse GRAVEL.**

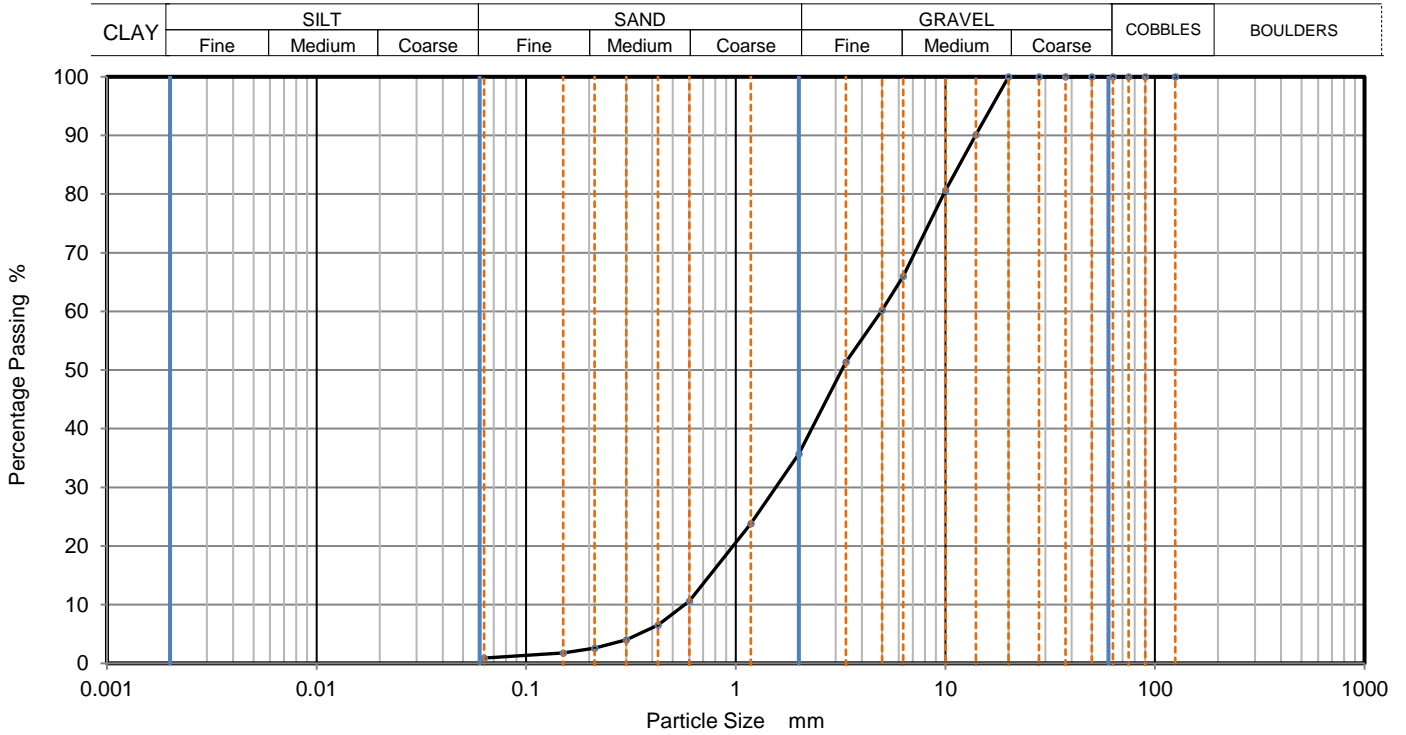
Sample Depth (m)	Top	14.00
	Base	

Specimen Reference	3	Specimen Depth	14	m
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Sample Type **D**

Test Method **BS1377:Part 2:1990, clause 9.2**

KeyLAB ID **Caus2023030862**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	90		
10	81		
6.3	66		
5	60		
3.35	51		
2	36		
1.18	24		
0.6	11		
0.425	7		
0.3	4		
0.212	3		
0.15	2		
0.063	1		

Dry Mass of sample, g 256

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	64.3
Sand	34.8
Fines <0.063mm	1.0

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	8.7
Curvature Coefficient	0.85

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

Approved
Stephen Watson

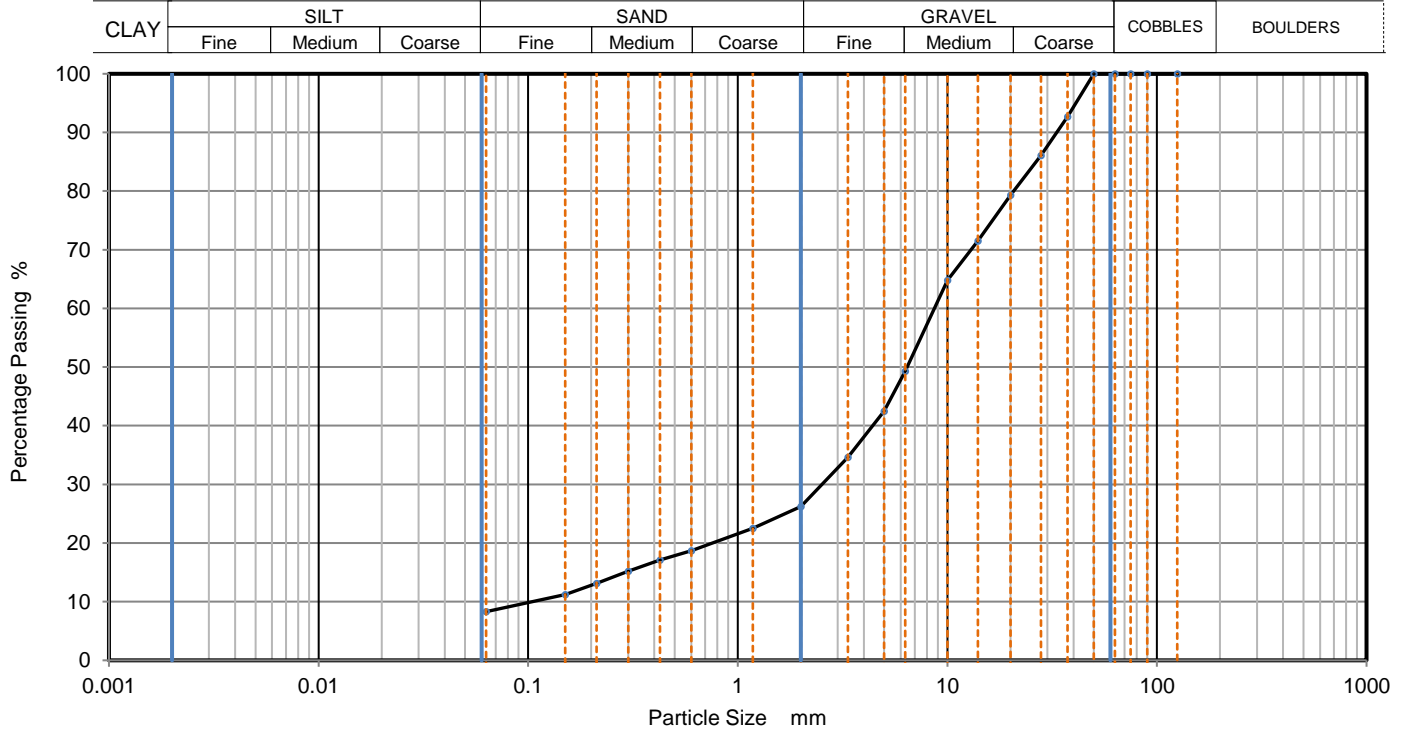




PARTICLE SIZE DISTRIBUTION

Job Ref	22-1041B
Borehole/Pit No.	ST203
Sample No.	4
Sample Depth (m)	Top 1.00
	Base 1.00
Sample Type	B
KeyLAB ID	Caus2023030865

Site Name	3FM Planning Design GI - Lot B 3rd Party Lands		
Specimen Description	Brownish grey gravelly slightly silty fine to coarse SAND.		
Specimen Reference	3	Specimen Depth	1 m
Test Method	BS1377:Part 2:1990, clause 9.2		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	93		
28	86		
20	79		
14	72		
10	65		
6.3	49		
5	43		
3.35	35		
2	26		
1.18	23		
0.6	19		
0.425	17		
0.3	15		
0.212	13		
0.15	11		
0.063	8		

Dry Mass of sample, g 5866

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	73.8
Sand	17.9
Fines <0.063mm	8.0

Grading Analysis	
D100	mm
D60	mm 8.66
D30	mm 2.52
D10	mm 0.104
Uniformity Coefficient	83
Curvature Coefficient	7

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

Approved
Stephen Watson

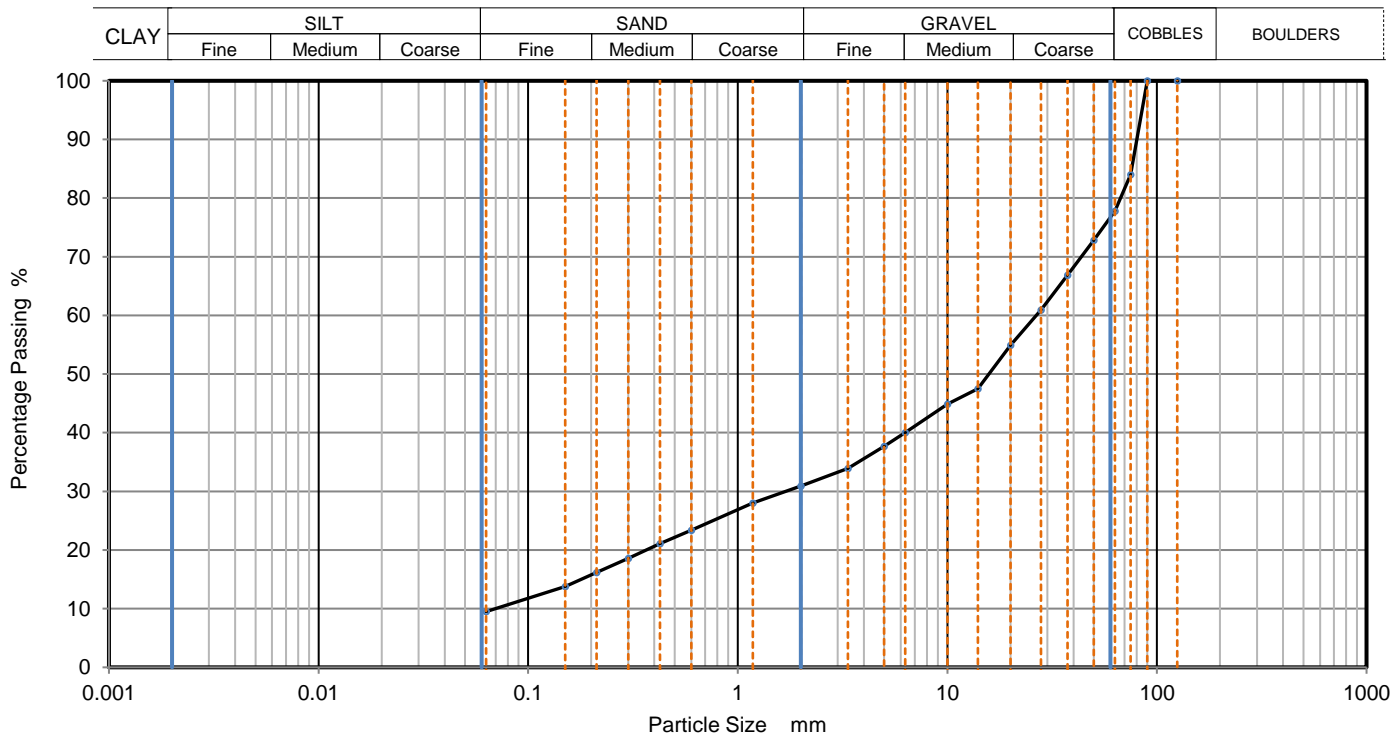




PARTICLE SIZE DISTRIBUTION

Job Ref	22-1041B
Borehole/Pit No.	ST204
Sample No.	5
Sample Depth (m)	Top 1.00
	Base
Sample Type	B
KeyLAB ID	Caus2023030867

Site Name	3FM Planning Design GI - Lot B 3rd Party Lands		
Specimen Description	Brownish grey slightly sandy slightly silty subangular fine to coarse GRAVEL with cobbles.		
Specimen Reference	3	Specimen Depth	1 m
Test Method	BS1377:Part 2:1990, clause 9.2		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	84		
63	78		
50	73		
37.5	67		
28	61		
20	55		
14	48		
10	45		
6.3	40		
5	38		
3.35	34		
2	31		
1.18	28		
0.6	23		
0.425	21		
0.3	19		
0.212	16		
0.15	14		
0.063	10		

Dry Mass of sample, g	10777
Sample Proportions	% dry mass
Cobbles	22.2
Gravel	47.0
Sand	21.4
Fines <0.063mm	9.0
Grading Analysis	
D100	mm
D60	mm 26.7
D30	mm 1.7
D10	mm 0.0698
Uniformity Coefficient	380
Curvature Coefficient	1.6

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

Approved
Stephen Watson





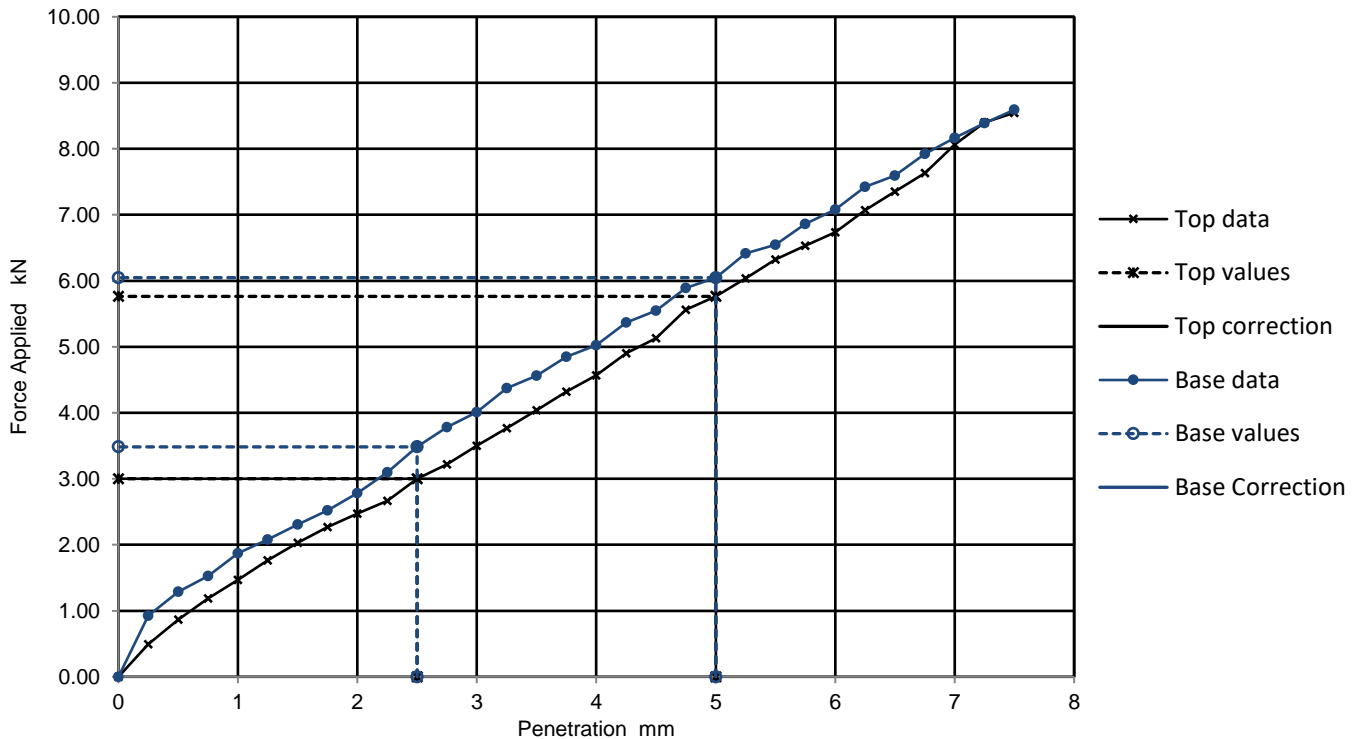
California Bearing Ratio (CBR)

Job Ref	22-1041B
Borehole/Pit No.	BH208
Sample No.	2
Depth m	0.50
Sample Type	B
KeyLAB ID	Caus2023030816
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	31 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density 1.83 Mg/m3	Surcharge applied	4.5 kg
	Dry density 1.55 Mg/m3		3 kPa
	Moisture content 18 %		

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	23.0	29.0	29.0	30.0	18
BASE	No	26.0	30.0	30.0		18

General remarks	Test specific remarks	Approved
Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson





California Bearing Ratio (CBR)

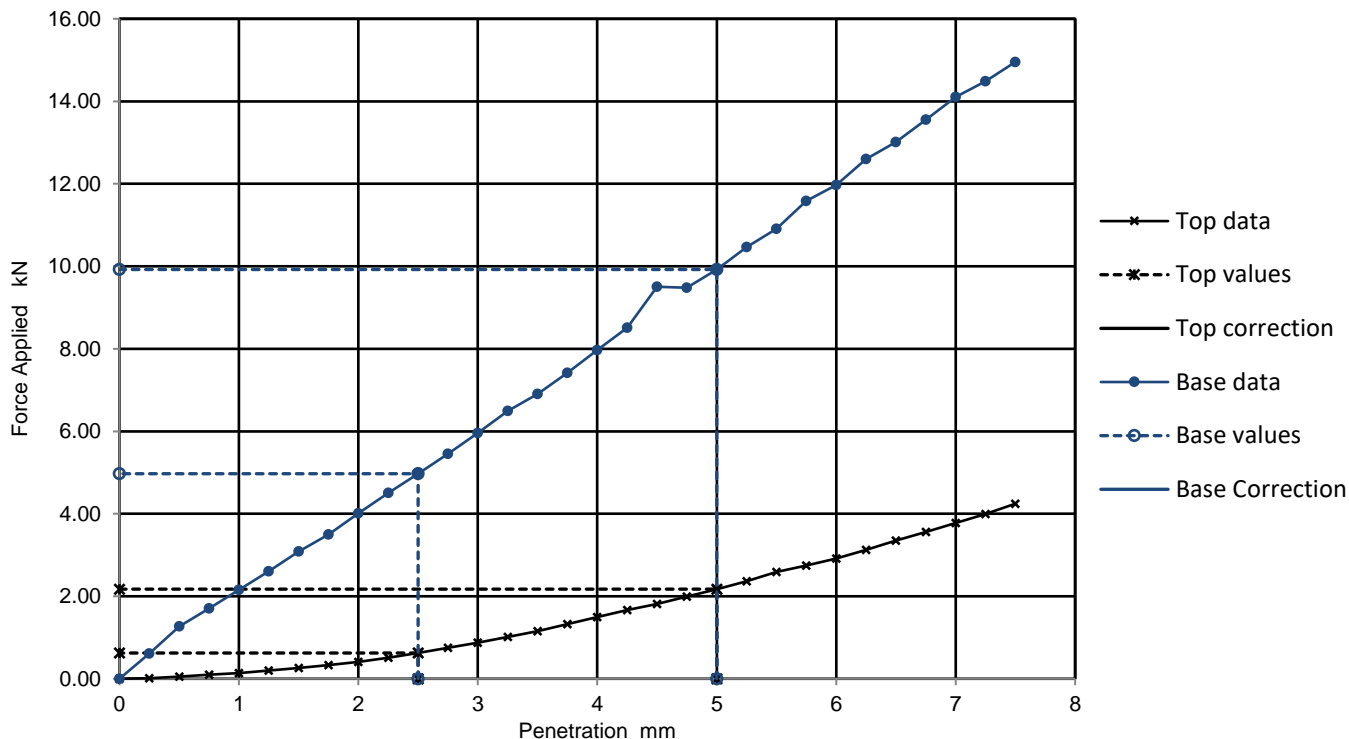
Job Ref	22-1041B
Borehole/Pit No.	ST203
Sample No.	2
Depth m	0.50
Sample Type	B
KeyLAB ID	Caus2023030864
CBR Test Number	1

Site Name	3FM Planning Design GI - Lot B 3rd Party Lands	
Soil Description	Brownish grey slightly gravelly slightly silty fine to coarse SAND.	
Specimen Reference	Specimen Depth	m
Specimen Description	Brownish grey slightly gravelly slightly silty fine to coarse SAND.	
Test Method	BS1377 : Part 4 : 1990, clause 7	

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	38 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density	2.21 Mg/m3	Surcharge applied
	Dry density	2.02 Mg/m3	4.5 kg
	Moisture content	9.5 %	3 kPa

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	4.7	11.0	11.0		9.5
BASE	No	38.0	50.0	50.0		8.9

General remarks

Test specific remarks

Approved

Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson
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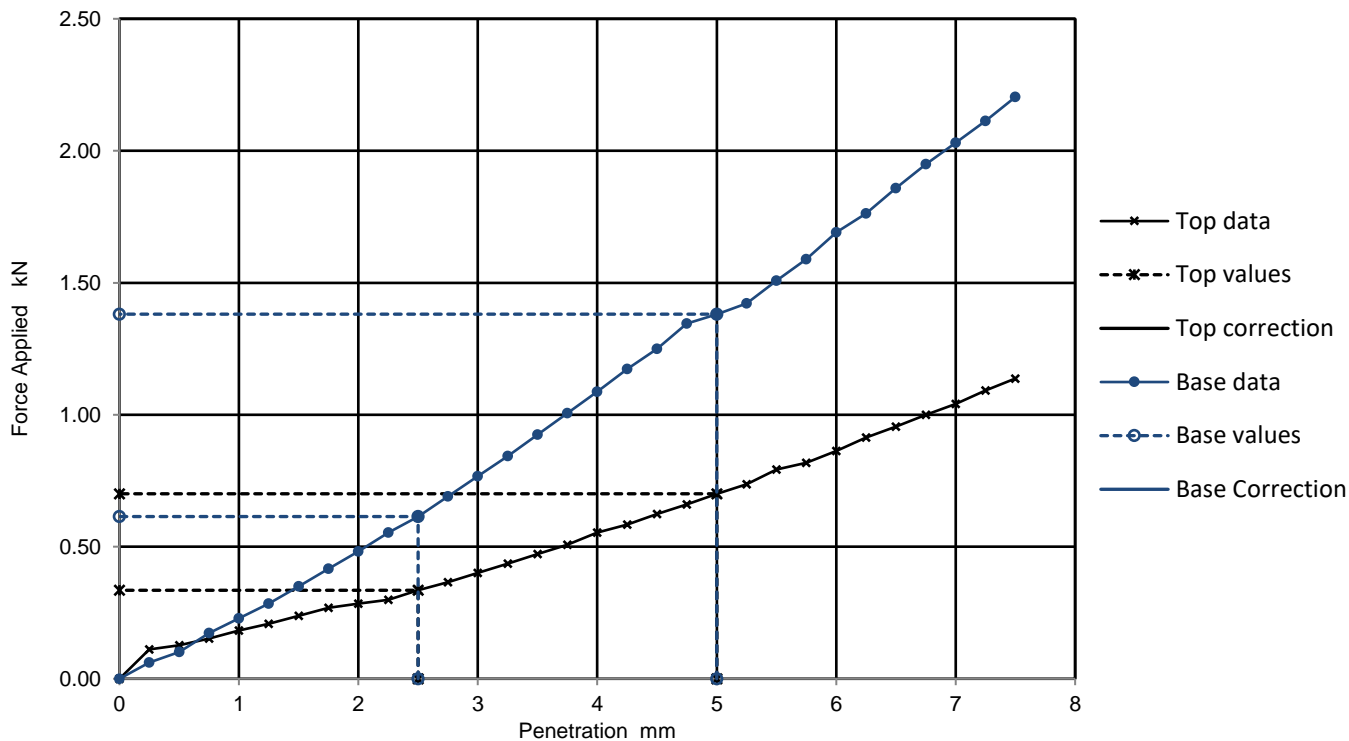
California Bearing Ratio (CBR)

Job Ref	22-1041B
Borehole/Pit No.	ST204
Sample No.	4
Depth m	0.50
Sample Type	B
KeyLAB ID	Caus2023030866
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	25 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density 2.09 Mg/m3	Surcharge applied	4.5 kg
	Dry density 1.87 Mg/m3		3 kPa
	Moisture content 12 %		

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	2.5	3.5	3.5		12
BASE	No	4.7	6.9	6.9		12

General remarks

Test specific remarks

Approved

Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson
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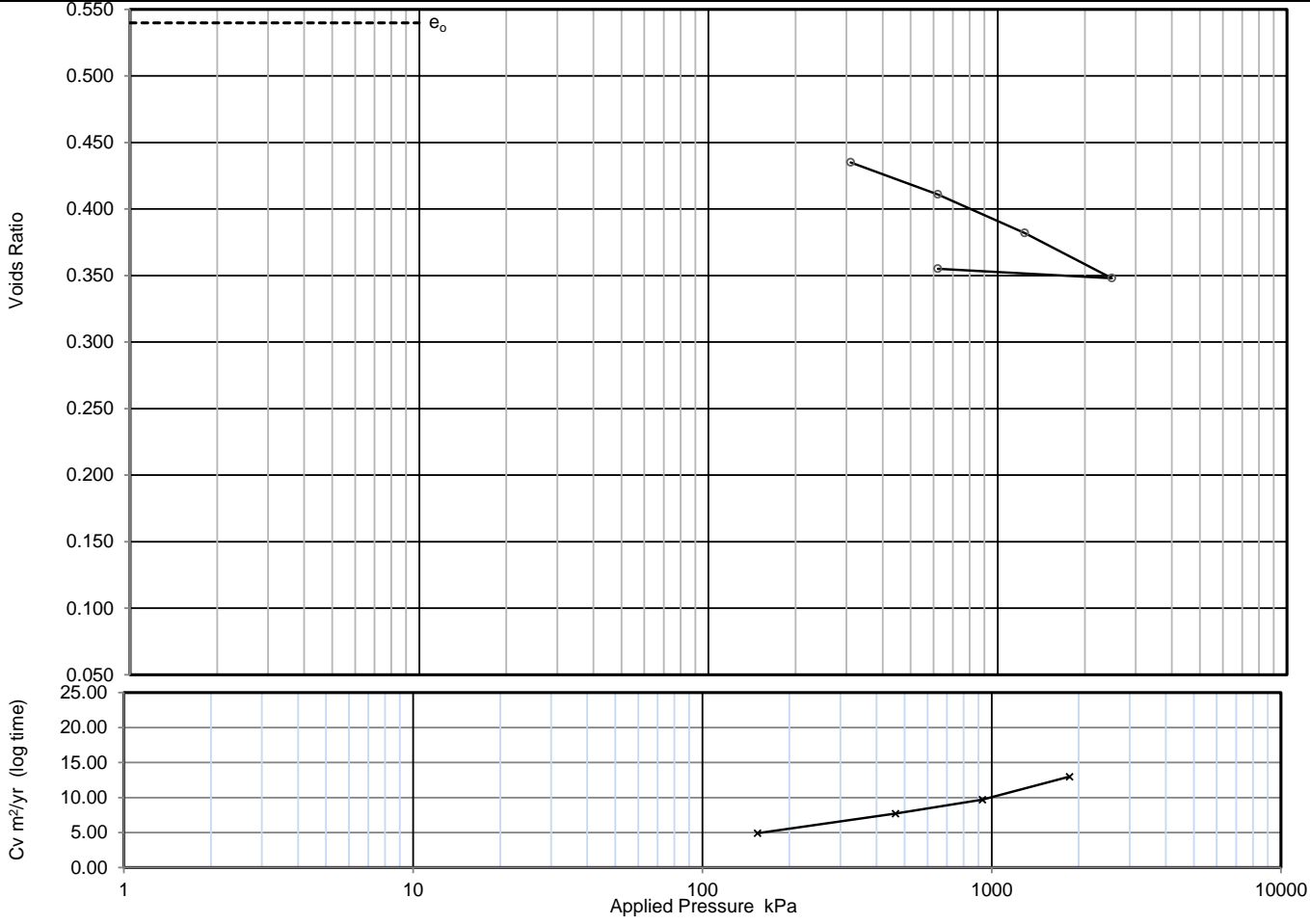




**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

Job Ref	22-1041B	
Borehole/Pit No.	BH215	
Sample No.	8	
Sample Depth (m)	Top	31.40
	Bottom	31.6
Sample Type	C	
KeyLAB ID	Caus2023030913	
Date started	27/03/2023	

Site Name	3FM Planning Design GI - Lot B 3rd Party Lands		
Soil Description	Greyish brown sandy silty CLAY.		
Specimen Reference	1	Specimen Depth	31.4 m
Specimen Description	Greyish brown sandy silty CLAY.		
Test Method	BS1377:Part 5:1990, clause 3		



Applied Pressure kPa	Voids ratio	Mv m2/MN	Cv (t50, log) m2/yr	Cv (t90, root) m2/yr	Csec
0.0	0.540	-	-	-	-
310	0.435	0.22	4.9	4.8	0.0019
620	0.411	0.054	7.7	12	0.0018
1,240	0.382	0.033	9.7	14	0.0022
2,480	0.348	0.02	13	16	0.0024
620	0.355	0.0026			

Preparation

Particle density assumed 2.65 Mg/m3

Specimen details

	Initial	Final	
Diameter	75.00	-	mm
Height	20.00	17.59	mm
Moisture Content	19.0	23.0	%
Bulk density	2.04	2.41	Mg/m3
Dry density	1.72	1.96	Mg/m3
Voids Ratio	0.540	0.355	
Saturation	92	172	%
Average temperature for test	20.0		oC
Swelling Pressure			kPa
Settlement on saturation			%

Remarks

Final values should be used with caution

Cv plotted at mid point of load increments

Cv corrected to 20oC

Approved

Stephen Watson

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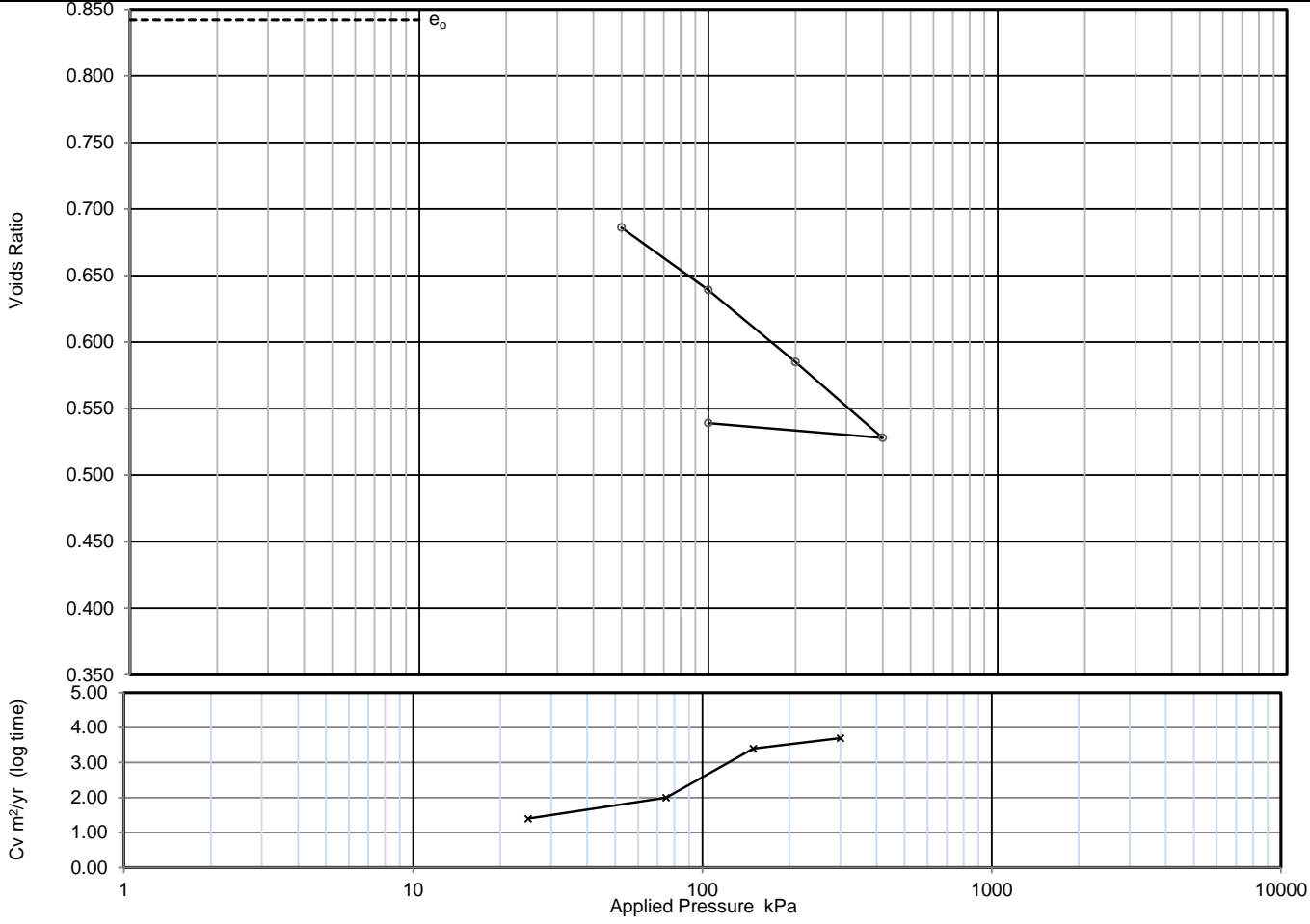




**ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3**

Job Ref	22-1041B	
Borehole/Pit No.	BH217	
Sample No.	27	
Sample Depth (m)	Top	5.00
	Bottom	5.45
Sample Type	U	
KeyLAB ID	Caus2023030855	
Date started	21/03/2023	

Site Name	3FM Planning Design GI - Lot B 3rd Party Lands		
Soil Description	Brownish grey sandy slightly gravelly silty CLAY.		
Specimen Reference	5	Specimen Depth	5.05 m
Specimen Description	Brownish grey sandy slightly gravelly silty CLAY.		
Test Method	BS1377:Part 5:1990, clause 3		



Applied Pressure kPa	Voids ratio	Mv m2/MN	Cv (t50, log) m2/yr	Cv (t90, root) m2/yr	Csec
0.0	0.842	-	-	-	-
50	0.686	1.7	1.4	1.4	0.0036
100	0.639	0.56	2	2.6	0.0045
200	0.585	0.33	3.4	3.8	0.0051
400	0.528	0.18	3.7	4.8	0.0044
100	0.539	0.024			

Preparation	
Particle density	assumed 2.65 Mg/m3
Specimen details	
Diameter	75.00 mm
Height	20.00 mm
Moisture Content	28.0 %
Bulk density	1.84 Mg/m3
Dry density	1.44 Mg/m3
Voids Ratio	0.842
Saturation	88 %
Average temperature for test	20.0 oC
Swelling Pressure	
Settlement on saturation	
Remarks	

	Initial	Final	
Diameter	75.00	-	mm
Height	20.00	16.71	mm
Moisture Content	28.0	41.0	%
Bulk density	1.84	2.43	Mg/m3
Dry density	1.44	1.72	Mg/m3
Voids Ratio	0.842	0.539	
Saturation	88	202	%
Average temperature for test	20.0		oC
Swelling Pressure			kPa
Settlement on saturation			%

Final values should be used with caution

Cv plotted at mid point of load increments

Cv corrected to 20oC

Approved

Stephen Watson

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

Job Ref	22-1041B
Borehole/Pit No.	BH215
Sample No.	2
Depth	22.00
Sample Type	C
KeyLAB ID	Caus2023030910
Date of test	13/03/2023

Site Name	3FM Planning Design GI - Lot B 3rd Party Lands		
Soil Description	Greyish brown clayey SILT.		
Specimen Reference	1	Specimen Depth	22.00 m
Specimen Description	Firm greyish brown clayey SILT.		
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen		

Sample Condition
Test Number
Length
Diameter
Bulk Density
Moisture Content
Dry Density

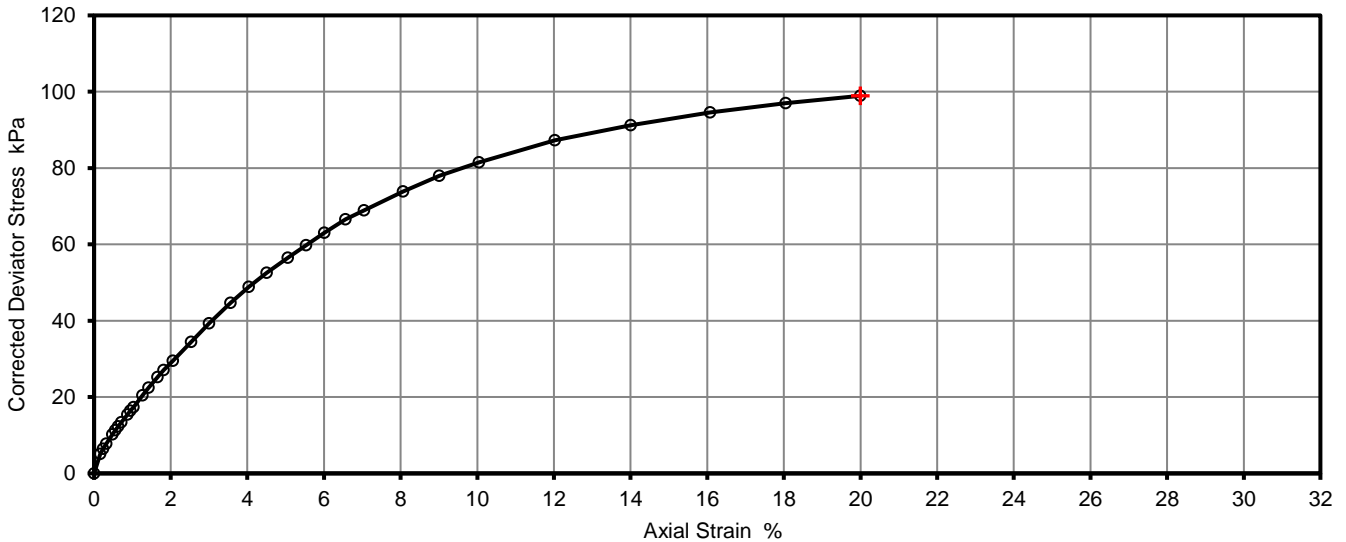
UNDISTURBED	
1	
210.0	mm
106.6	mm
2.08	Mg/m3
19	%
1.75	Mg/m3

Rate of Strain
Cell Pressure
At failure

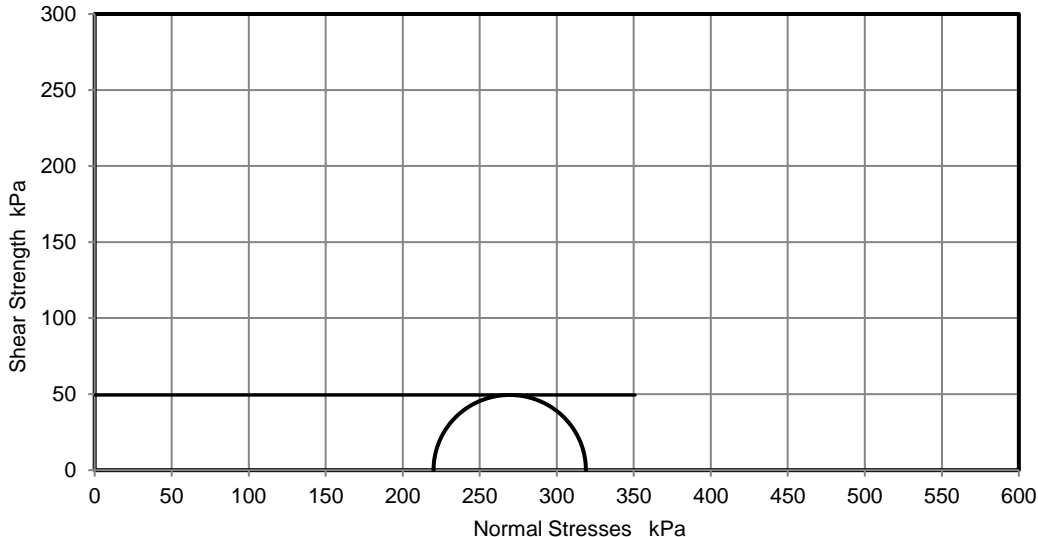
Axial Strain
Deviator Stress, $(\sigma_1 - \sigma_3)_f$
Undrained Shear Strength, c_u
Mode of Failure

2.0	%/min
220	kPa
20.0	%
99	kPa
49	kPa $\frac{1}{2}(\sigma_1 - \sigma_3)_f$

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

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

Remarks

No failure defined. Testing terminated at 20% axial strain.

Approved

Stephen Watson

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

Job Ref	22-1041B	
Borehole/Pit No.	BH216	
Site Name	3FM Planning Design GI - Lot B 3rd Party Lands	
Sample No.	28	
Soil Description	Greyish brown sandy silty CLAY.	
Depth	6.50	
Specimen Reference	6	Specimen Depth 6.55 m
Sample Type	U	
Specimen Description	Very soft greyish brown sandy silty CLAY.	
KeyLAB ID	Caus2023030842	
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen	
Date of test	13/03/2023	

Sample Condition
Test Number
Length
Diameter
Bulk Density
Moisture Content
Dry Density

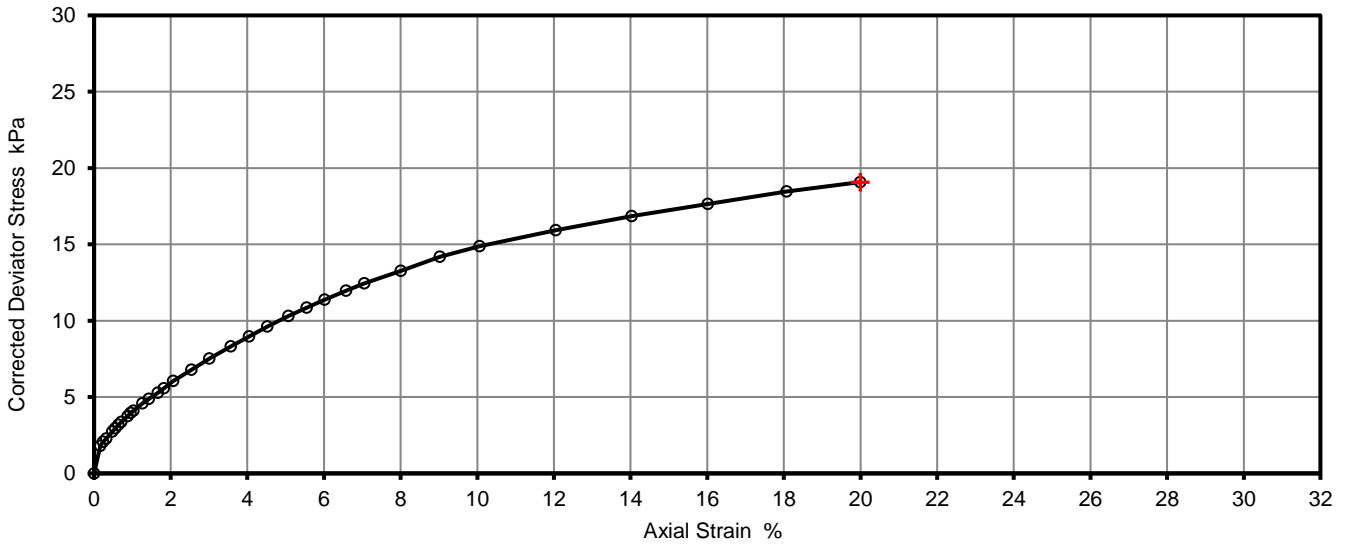
UNDISTURBED
1
210.0
mm
104.9
mm
1.74
Mg/m3
60
%
1.09
Mg/m3

Rate of Strain
Cell Pressure
At failure

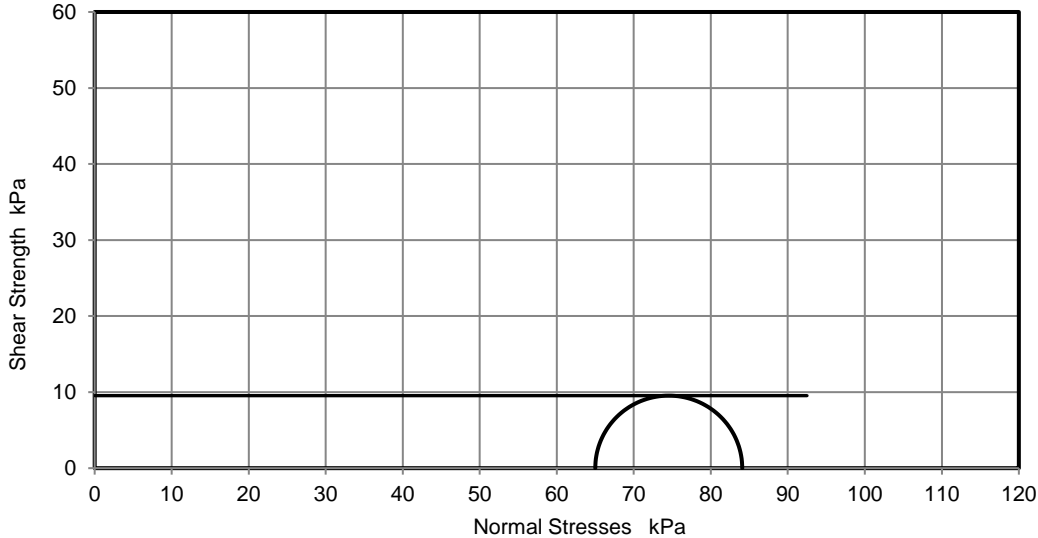
2.0
%/min
65
kPa
20.0
%
19
kPa
10
kPa $\frac{1}{2}(\sigma_1 - \sigma_3)_f$

Axial Strain
Deviator Stress, $(\sigma_1 - \sigma_3)_f$
Undrained Shear Strength, c_u
Mode of Failure

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

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

Remarks

No failure defined. Testing terminated at 20% axial strain.

Approved

Stephen Watson

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Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - Multistage test

Job Ref	22-1041B			
Borehole/Pit No.	BH215			
Sample No.	7			
Sample Depth (m)	Top	31.10		
	Base	31.40		
Specimen Reference	1	Specimen Depth	31.10 m	
Specimen Description	Firm greyish brown sandy silty CLAY.		Sample Type	C
Test Method	BS1377:Part 7:1990, clause 9, multistage test on a single spe		KeyLAB ID	Caus2023030912
			Date of test	13/03/2023

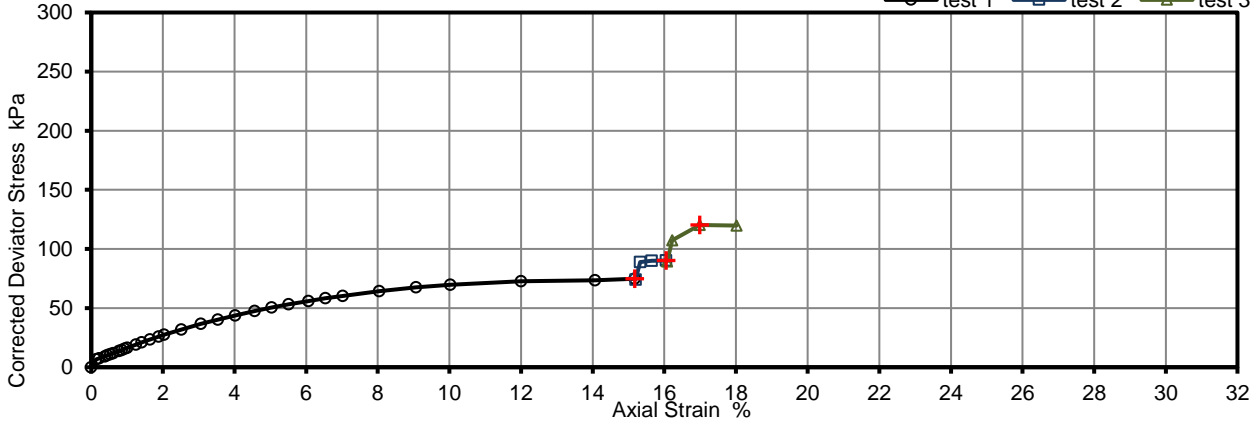
Sample Condition
Length
Diameter
Bulk Density
Moisture Content
Dry Density

UNDISTURBED	
mm	210.0
mm	103.9
Mg/m3	1.98
%	21.0
Mg/m3	1.63

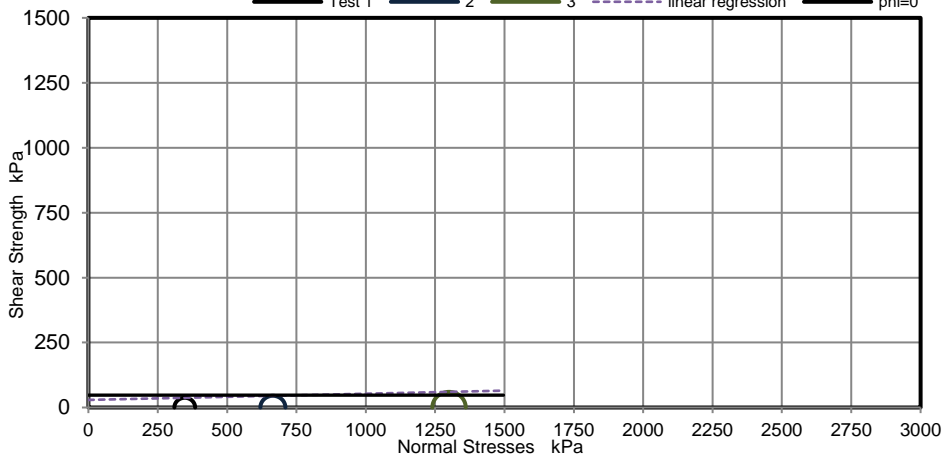
Rate of Strain
Stage Number
Cell Pressure
End of stage
Axial Strain
Deviator Stress, ($\sigma_1 - \sigma_3$) corrected for area and membrane
Shear strength, cu
Mode of failure

%/min	2.00		
	1	2	3
kPa	310	620	1240
%	15.2	16.1	17.0
kPa	74.8	90.2	120.3
kPa	37.4	45.1	60.1
	Plastic		

Deviator Stress v Axial Strain



Mohr Circles



$\phi_u = 0$
Average cu 48 kPa

Linear Regression
 ϕ_u 1.4 °
cu 29 kPa

Mohr circles and their interpretation is not covered by BS1377-7: 1990. These are provided for information only.

Remarks

Approved

Stephen Watson

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10122



Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - Multistage test

Job Ref	22-1041B			
Borehole/Pit No.	BH217			
Site Name	3FM Planning Design GI - Lot B 3rd Party Lands			
Sample No.	27			
Soil Description	Brownish grey sandy slightly gravelly silty CLAY.	Sample Depth (m)	Top	5.00
			Base	5.45
Specimen Reference	6	Specimen Depth	5.05	m
Specimen Description	Very soft brownish grey sandy slightly gravelly silty CLAY.		KeyLAB ID	Caus2023030855
Test Method	BS1377:Part 7:1990, clause 9, multistage test on a single specimen		Date of test	14/03/2023

Sample Condition

Length

Diameter

Bulk Density

Moisture Content

Dry Density

Rate of Strain

Stage Number

Cell Pressure

End of stage Axial Strain

Deviator Stress, ($\sigma_1 - \sigma_3$) corrected for area and membrane

Shear strength, cu

Mode of failure

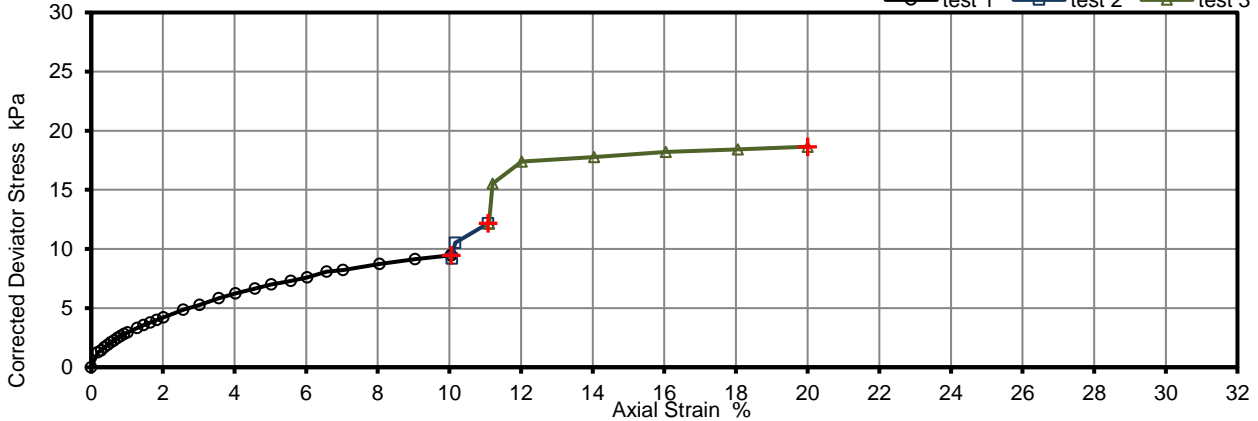
UNDISTURBED

mm	182.2
mm	107.6
Mg/m3	2.18
%	39.0
Mg/m3	1.57

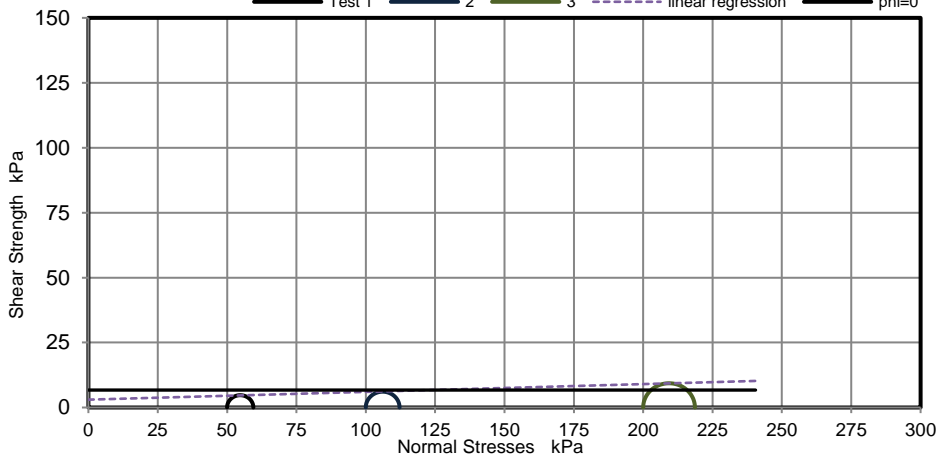
%/min

	1	2	3
kPa	50	100	200
%	10.1	11.1	20.0
kPa	9.5	12.2	18.6
kPa	4.7	6.1	9.3

Deviator Stress v Axial Strain



Mohr Circles



$\phi_u = 0$

Average cu 7 kPa

Linear Regression

ϕ_u 1.7 °

cu 3 kPa

Mohr circles and their interpretation is not covered by BS1377-7: 1990. These are provided for information only.

Remarks

No failure defined. Testing terminated at 20% axial strain.

Approved

Stephen Watson

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LAB 16R - Version 6



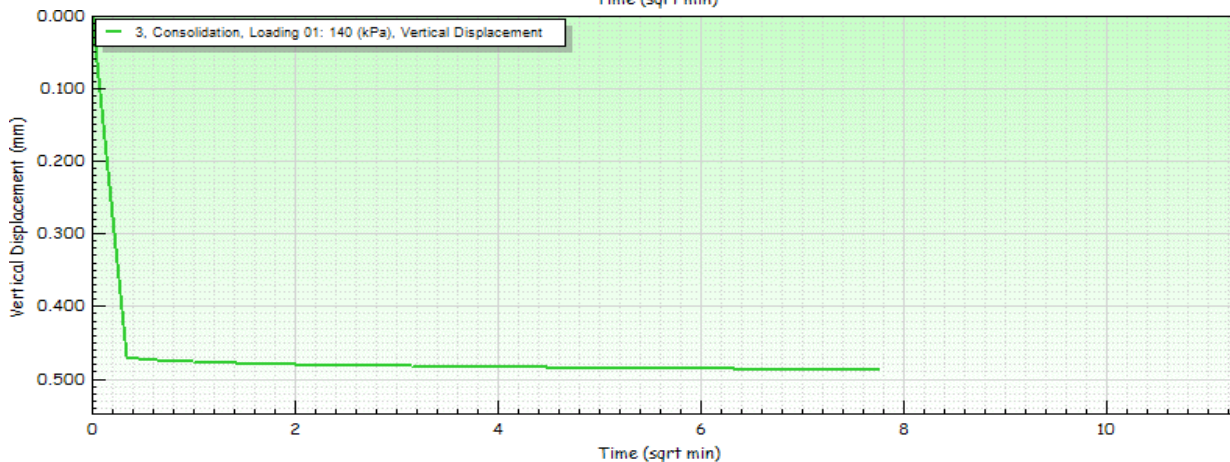
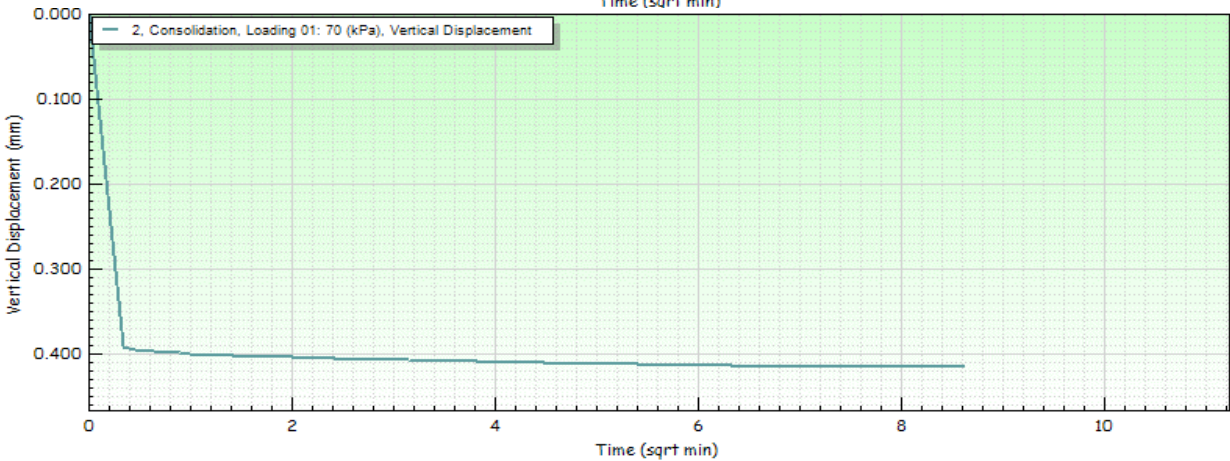
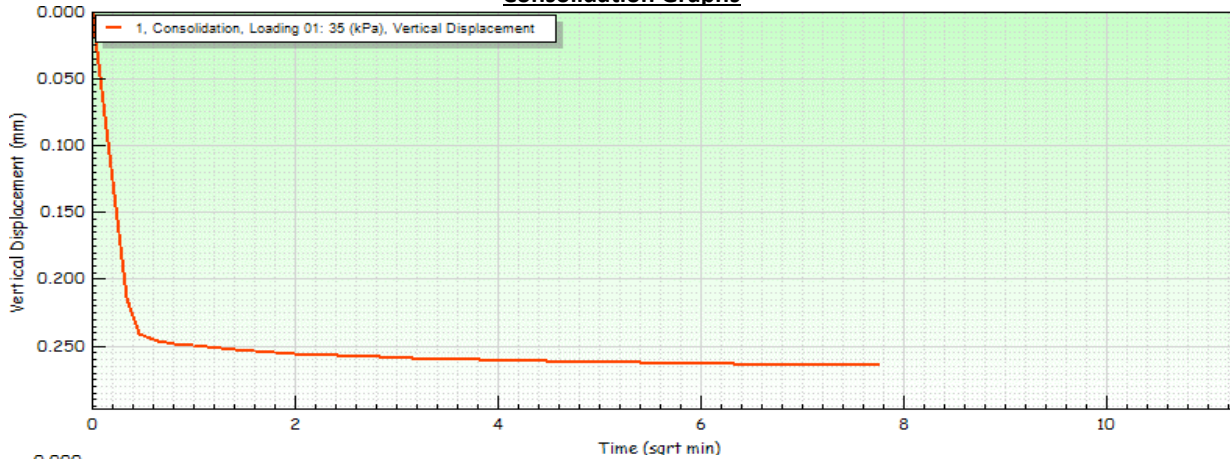
10122

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH212	Sample Reference	6	
Depth (m)	3.00	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Greyish brown slightly gravelly fine to coarse SAND.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	15.0	15.0	15.0
	Bulk Density (Mg/m ³)	1.83	1.84	1.88
	Dry Density (Mg/m ³)	1.60	1.60	1.64
	Voids Ratio	0.659	0.651	0.617
Consolidation				
	Normal Pressure (kPa)	35	70	140
	Vertical Displacement (mm)	0.264	0.415	0.487
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	37.7	63.6	119.4
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	1.683	1.503	1.437
Final Conditions				
	Water Content (%)	23.0	23.0	23.0
	Dry Density (Mg/m ³)	1.60	1.62	1.66
	Voids Ratio	0.653	0.625	0.594

 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH212	Sample Reference	6	
Depth (m)	3.00	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

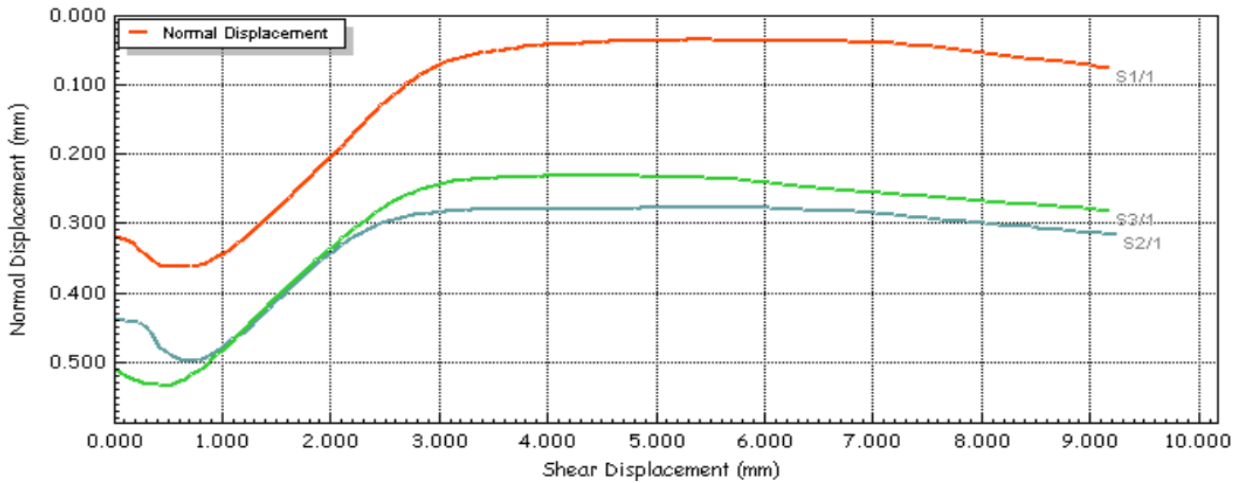
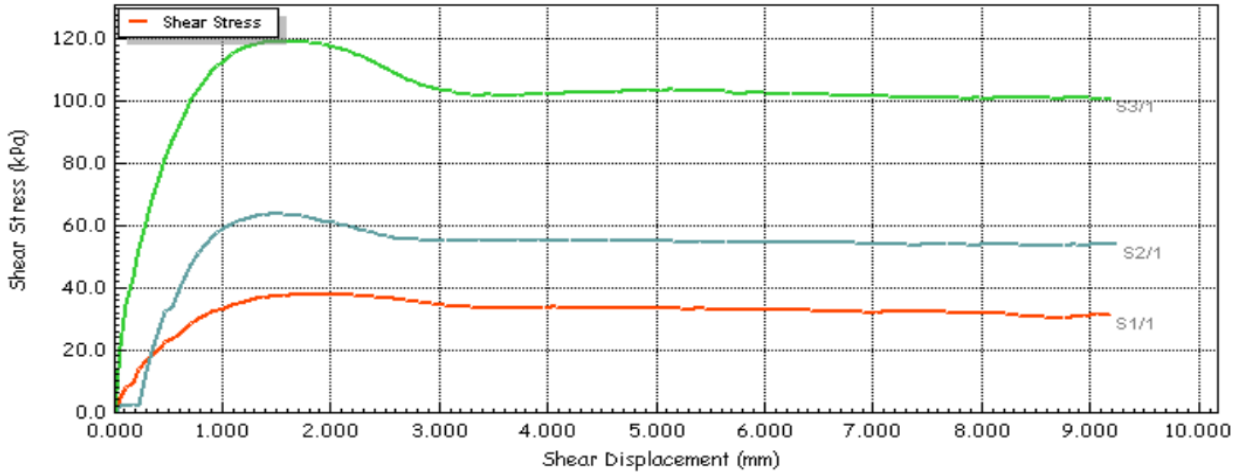
Consolidation Graphs



  10122	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH212	Sample Reference	6	
Depth (m)	3.00	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

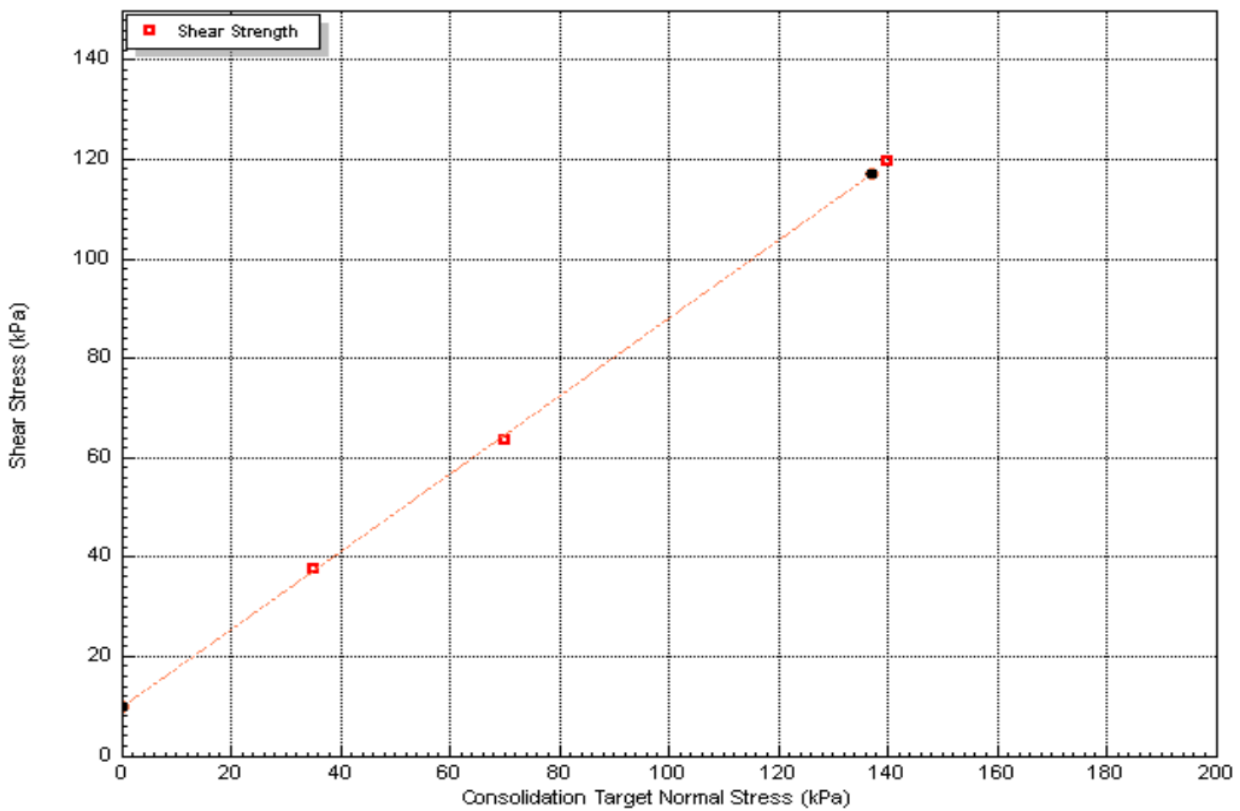
Shear Stage



 	Tested	Approved
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Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH212	Sample Reference	6	
Depth (m)	3.00	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

Stage	1	2	3
Envelope Failure Results			
Apparent Cohesion (kPa)	10		
Angle of Shearing Resistance (°)	38.0		



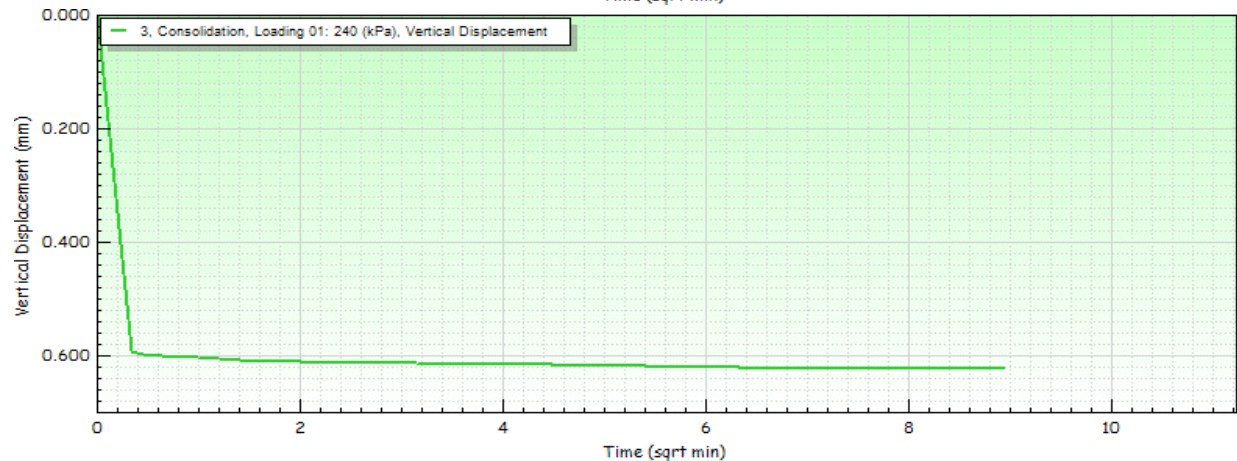
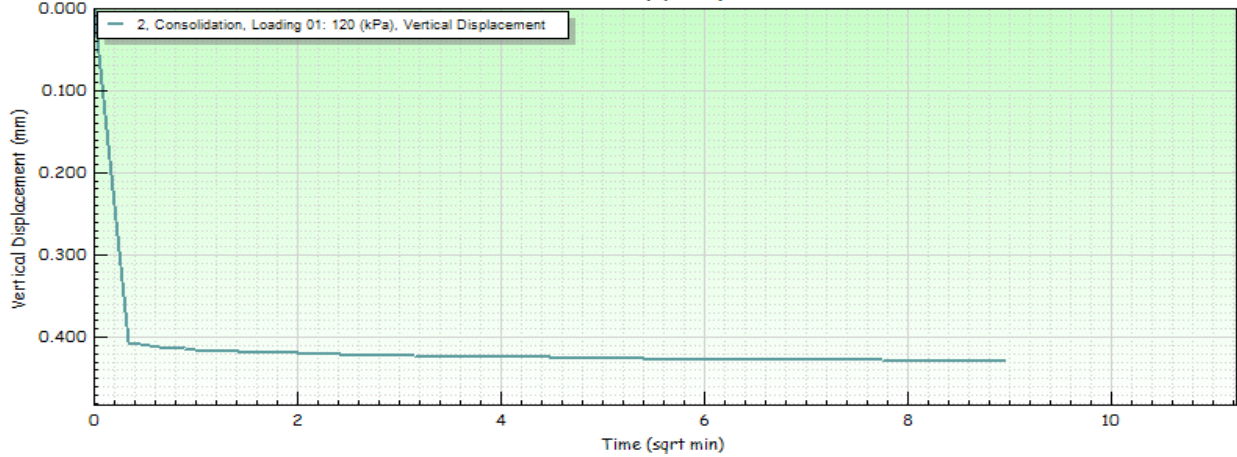
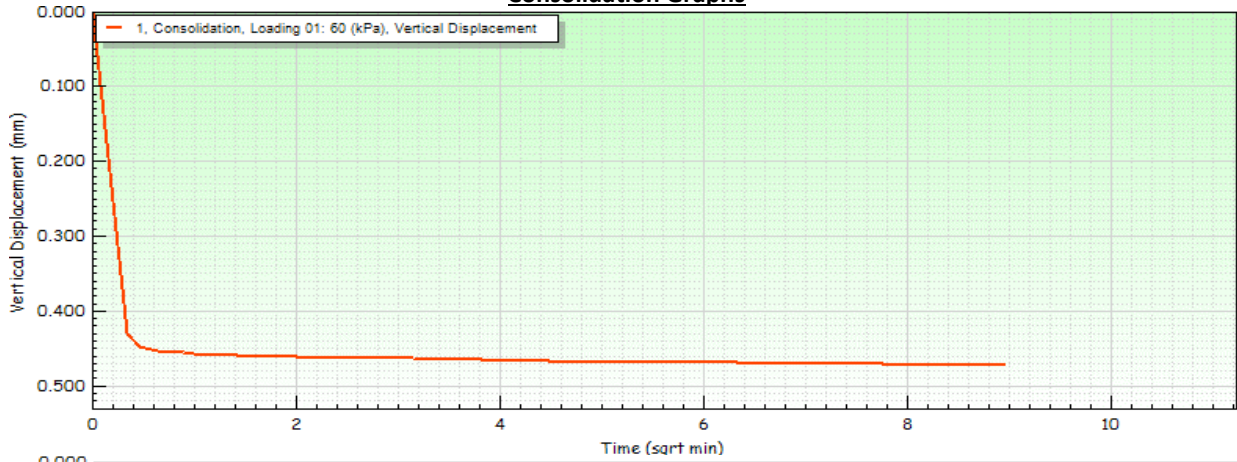
 	Tested	Approved
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Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH212	Sample Reference	12	
Depth (m)	6.00	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Greyish brown slightly gravelly fine to coarse SAND.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	19.0	20.0	20.0
	Bulk Density (Mg/m ³)	1.86	1.88	1.89
	Dry Density (Mg/m ³)	1.55	1.58	1.58
	Voids Ratio	0.706	0.682	0.676
Consolidation				
	Normal Pressure (kPa)	60	120	240
	Vertical Displacement (mm)	0.472	0.429	0.622
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	52.6	97.4	194.0
	Hoz Displacement (mm)	8.4	8.4	8.4
	Hoz Displacement at Peak Shear Stress (mm)	1.437	1.857	1.983
Final Conditions				
	Water Content (%)	24.0	24.0	24.0
	Dry Density (Mg/m ³)	1.59	1.59	1.63
	Voids Ratio	0.675	0.661	0.632

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Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH212	Sample Reference	12	
Depth (m)	6.00	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

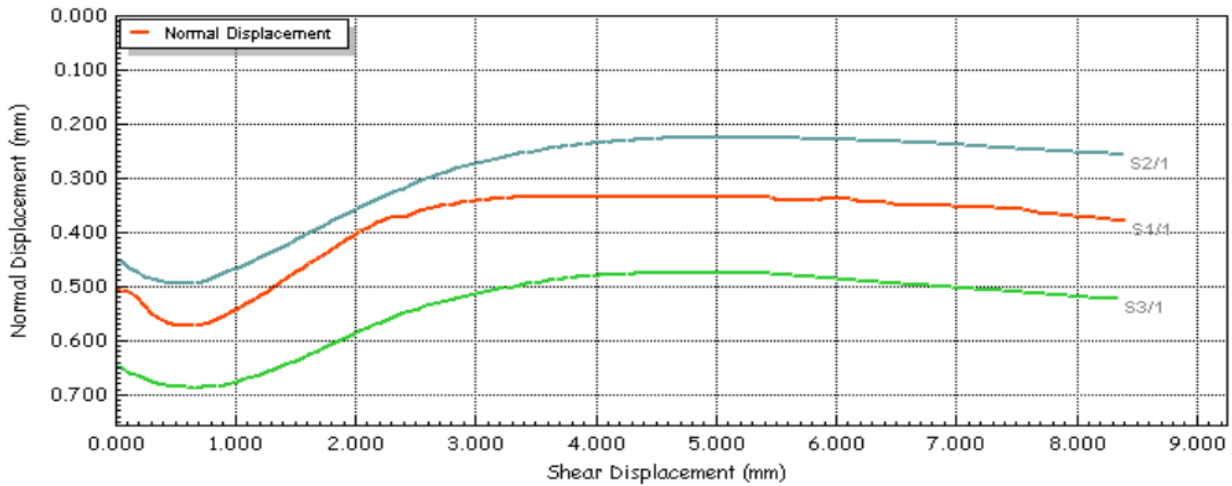
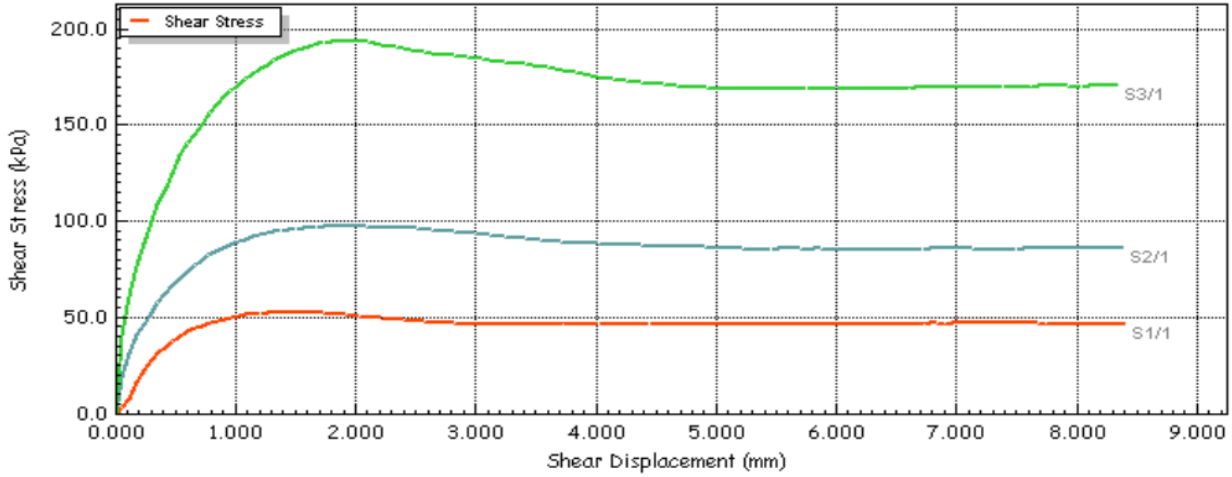
Consolidation Graphs



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	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH212	Sample Reference	12	
Depth (m)	6.00	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

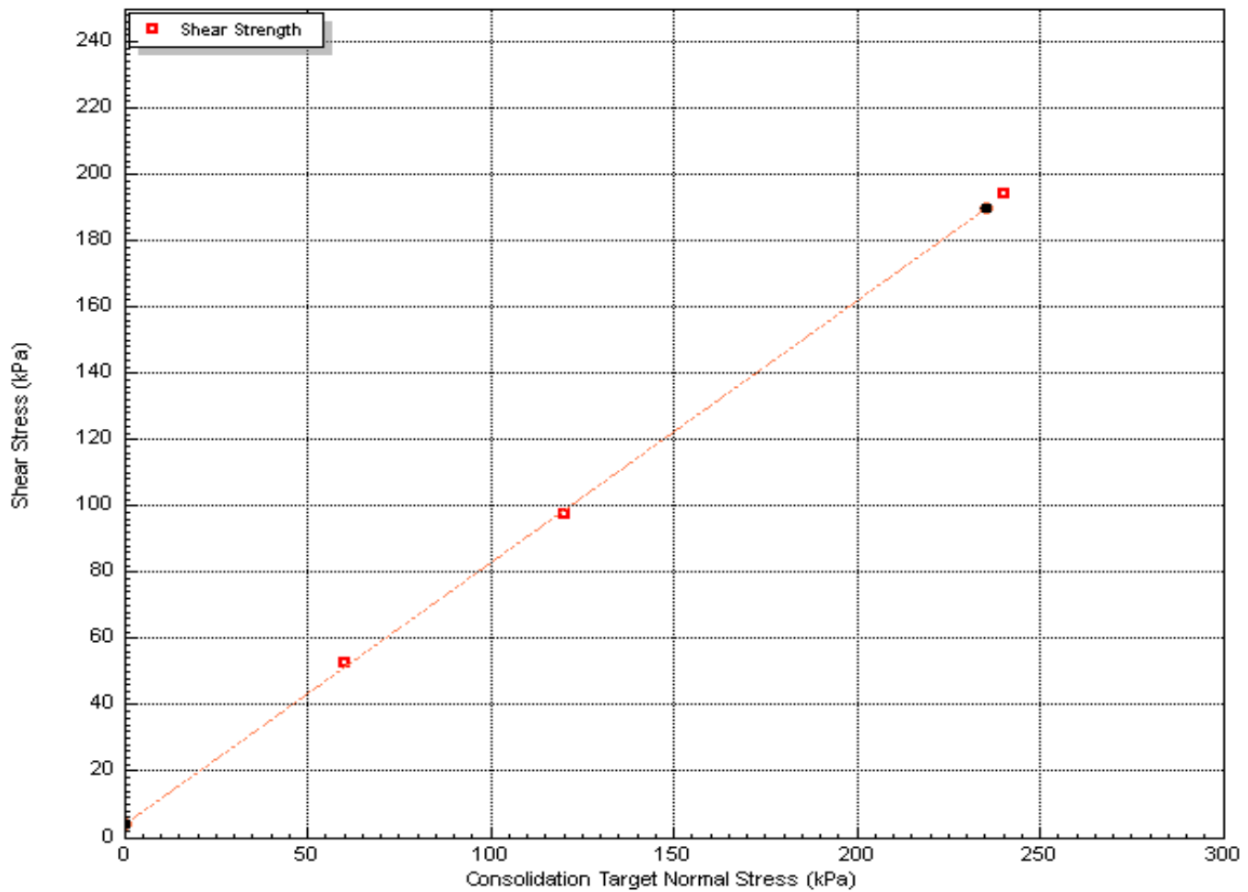
Shear Stage



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Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH212	Sample Reference	12	
Depth (m)	6.00	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		4		
Angle of Shearing Resistance (°)		38.5		



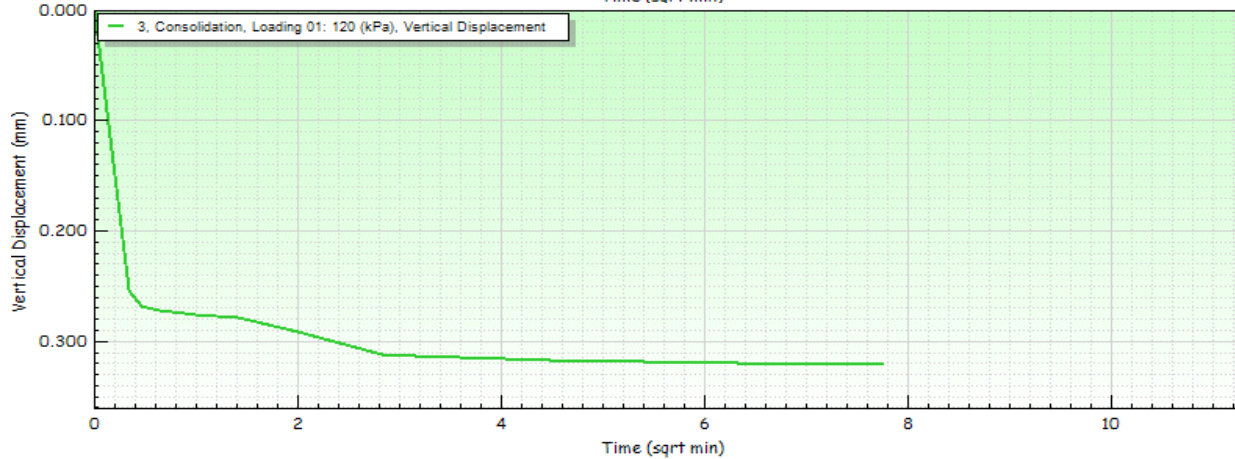
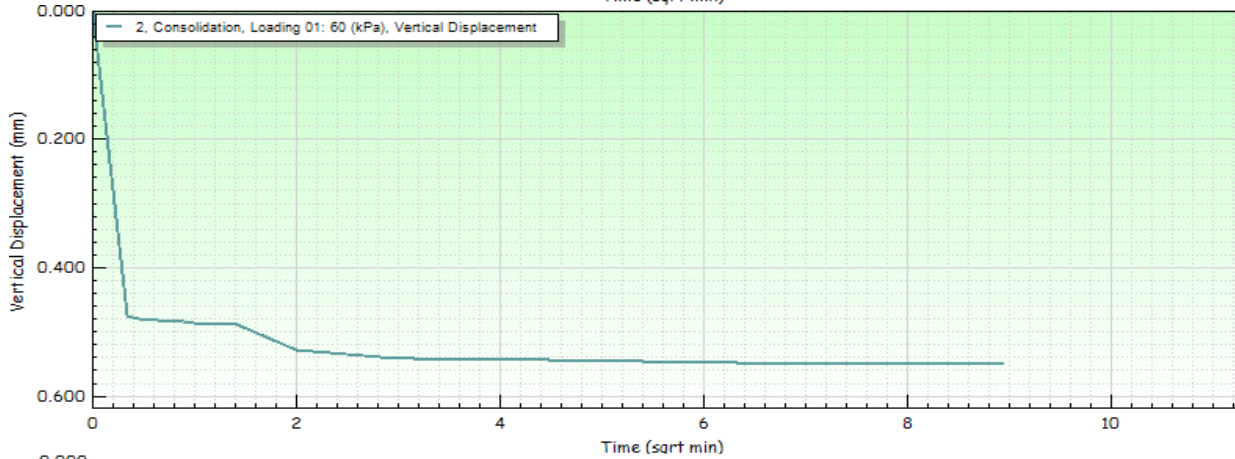
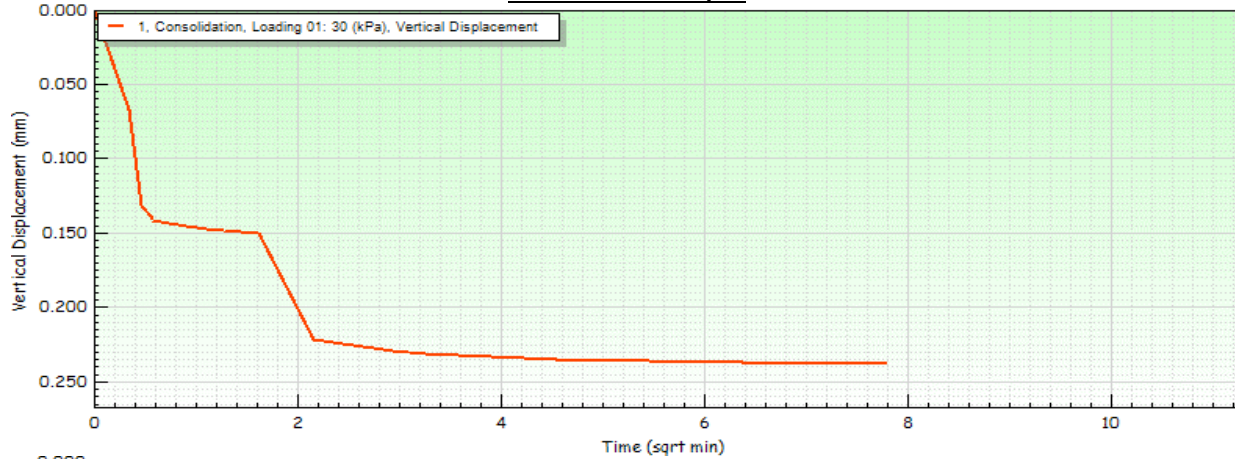
 	Tested	Approved
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Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH215	Sample Reference	21	
Depth (m)	2.00	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Greyish brown slightly gravelly fine to coarse SAND.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	20.0	20.0	20.0
	Bulk Density (Mg/m ³)	1.89	1.90	1.90
	Dry Density (Mg/m ³)	1.57	1.58	1.58
	Voids Ratio	0.684	0.675	0.678
Consolidation				
	Normal Pressure (kPa)	30	60	120
	Vertical Displacement (mm)	0.238	0.550	0.321
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	38.6	61.6	97.4
	Hoz Displacement (mm)	4.6	4.6	4.6
	Hoz Displacement at Peak Shear Stress (mm)	1.863	1.917	1.683
Final Conditions				
	Water Content (%)	23.0	23.0	24.0
	Dry Density (Mg/m ³)	1.56	1.61	1.57
	Voids Ratio	0.677	0.640	0.665

 	Tested	Approved
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Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH215	Sample Reference	21	
Depth (m)	2.00	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

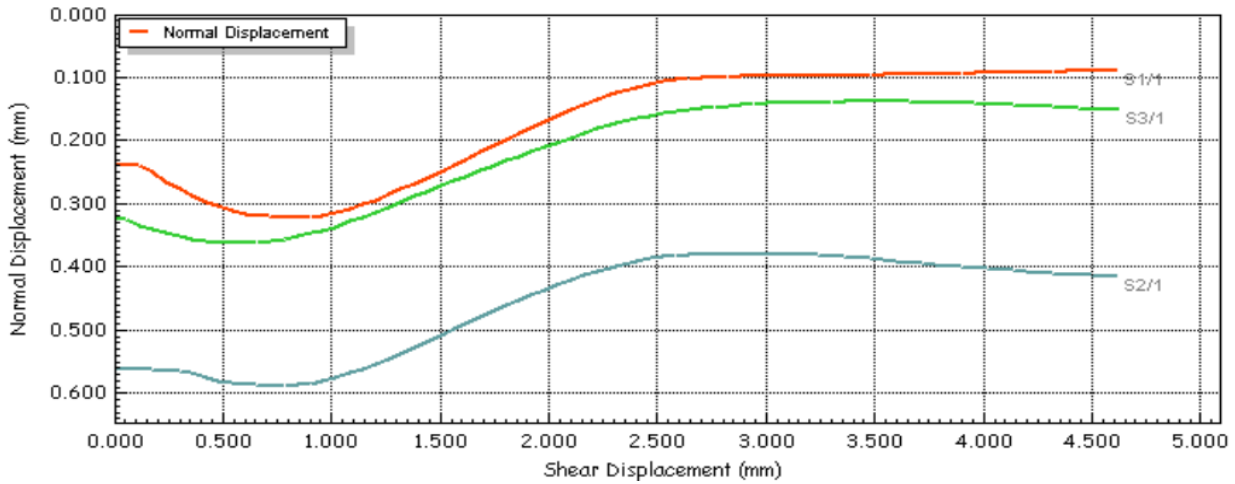
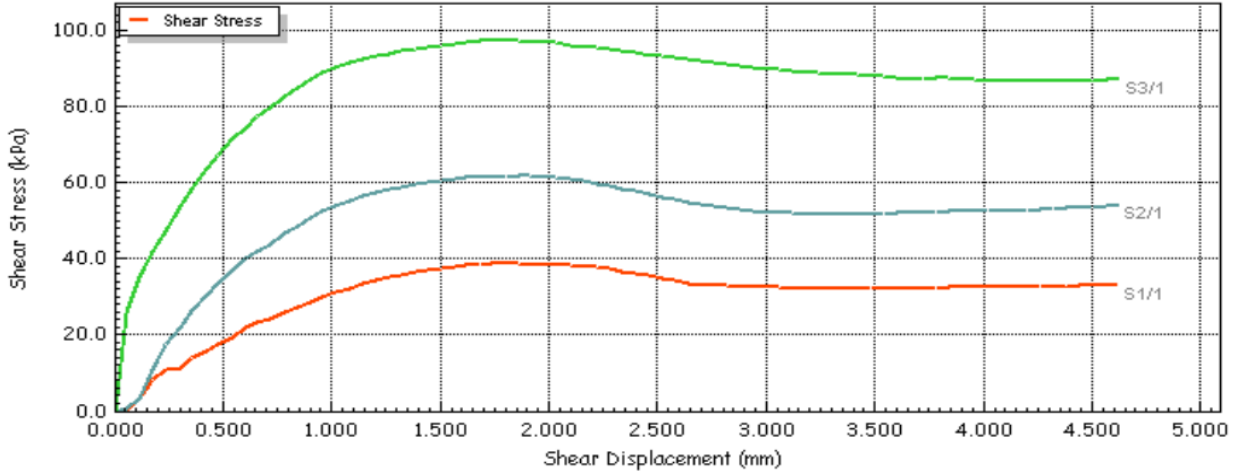
Consolidation Graphs



  10122	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH215	Sample Reference	21	
Depth (m)	2.00	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

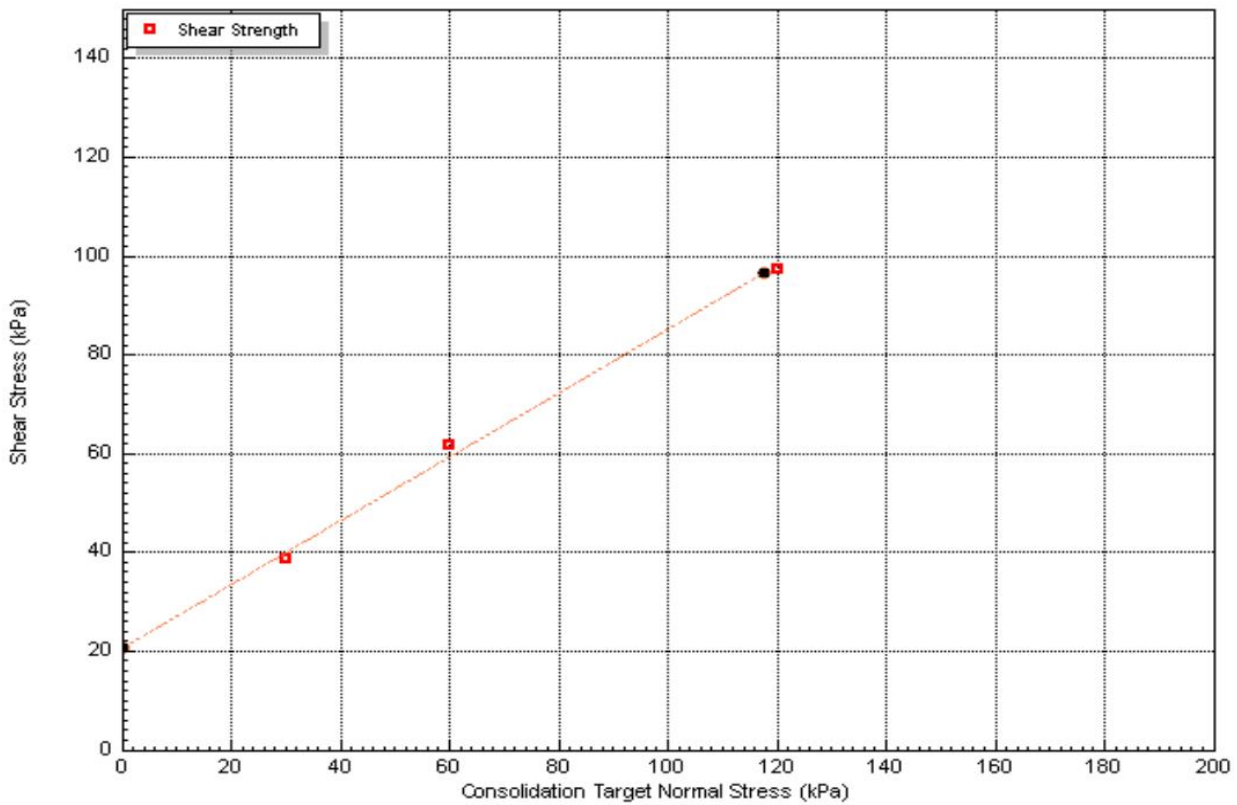
Shear Stage



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Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH215	Sample Reference	21	
Depth (m)	2.00	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

		Stage	1	2	3
Envelope Failure Results					
Apparent Cohesion (kPa)			20		
Angle of Shearing Resistance (°)			33.0		



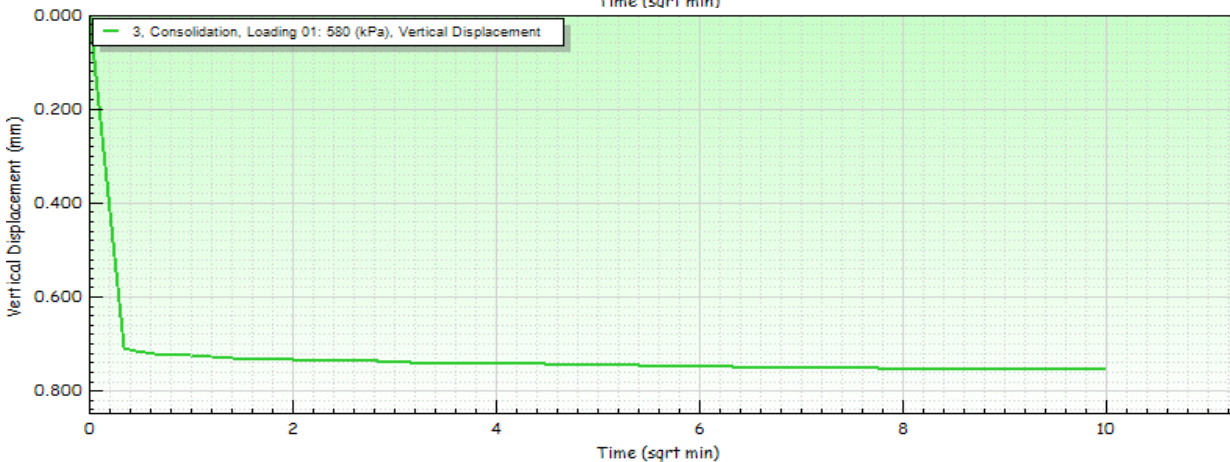
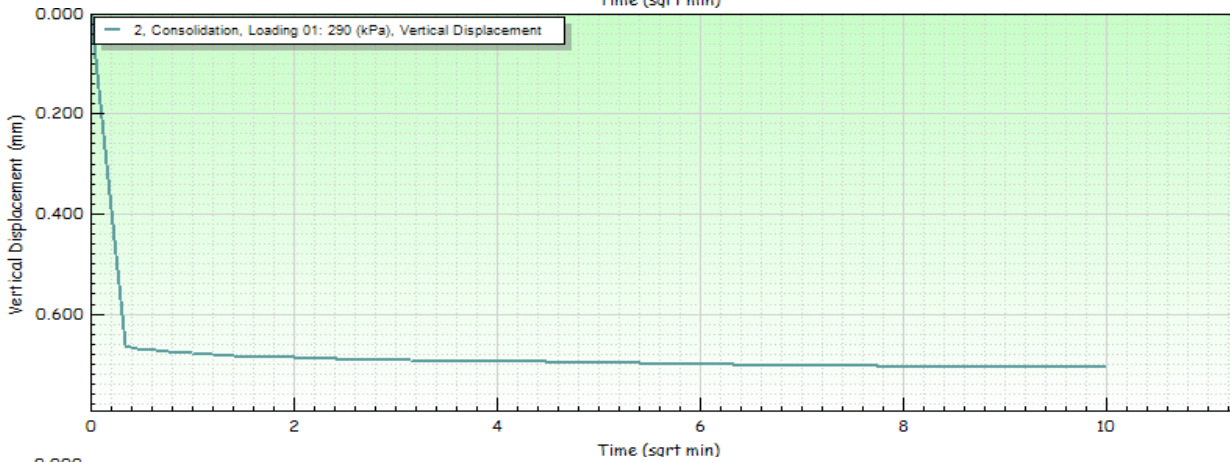
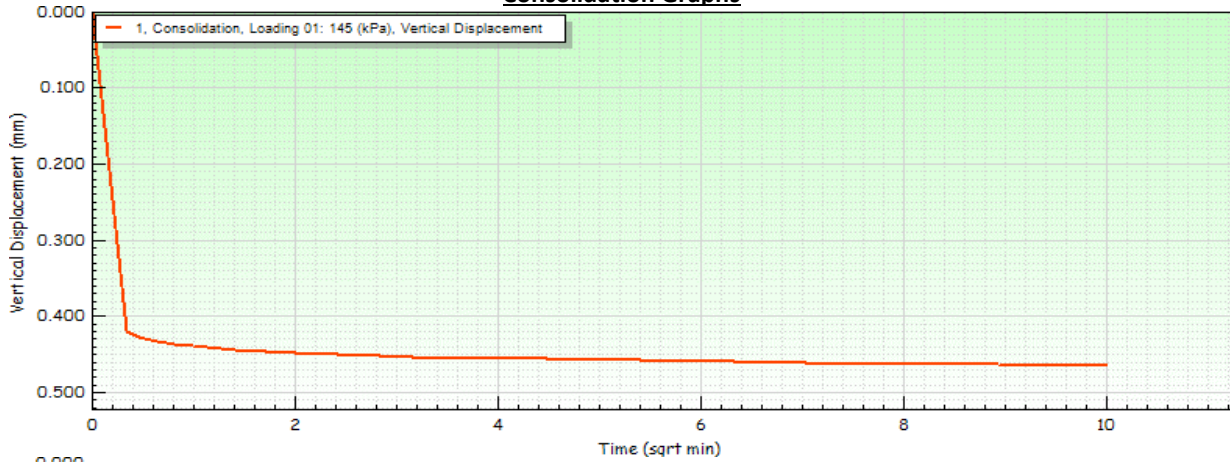
 	Tested	Approved
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Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH215	Sample Reference	38	
Depth (m)	14.50	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Greyish brown slightly sandy subangular fine to coarse GRAVEL.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	8.9	8.9	8.9
	Bulk Density (Mg/m ³)	1.71	1.72	1.70
	Dry Density (Mg/m ³)	1.57	1.58	1.56
	Voids Ratio	0.690	0.675	0.697
Consolidation				
	Normal Pressure (kPa)	145	290	580
	Vertical Displacement (mm)	0.465	0.706	0.754
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	123.2	233.1	473.0
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	2.103	2.637	2.517
Final Conditions				
	Water Content (%)	21.0	22.0	21.0
	Dry Density (Mg/m ³)	1.58	1.66	1.64
	Voids Ratio	0.649	0.611	0.622

 	Tested	Approved
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Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH215	Sample Reference	38	
Depth (m)	14.50	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

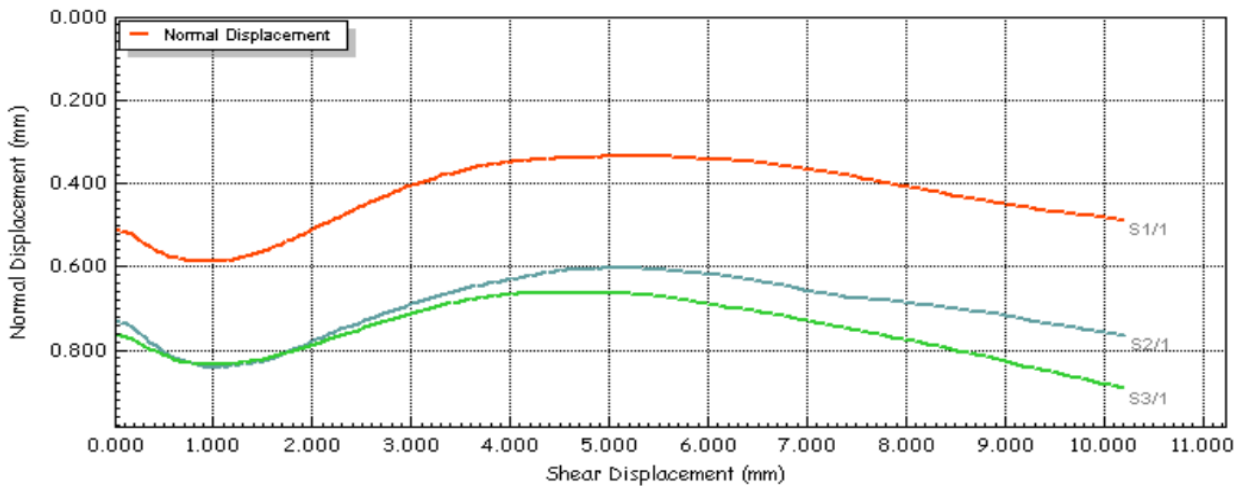
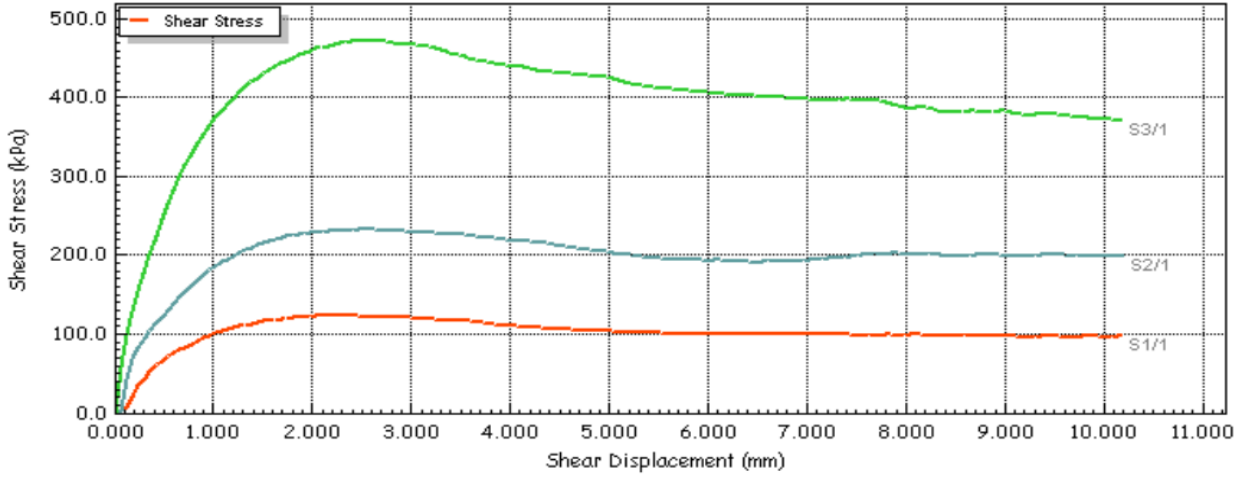
Consolidation Graphs



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH215	Sample Reference	38	
Depth (m)	14.50	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

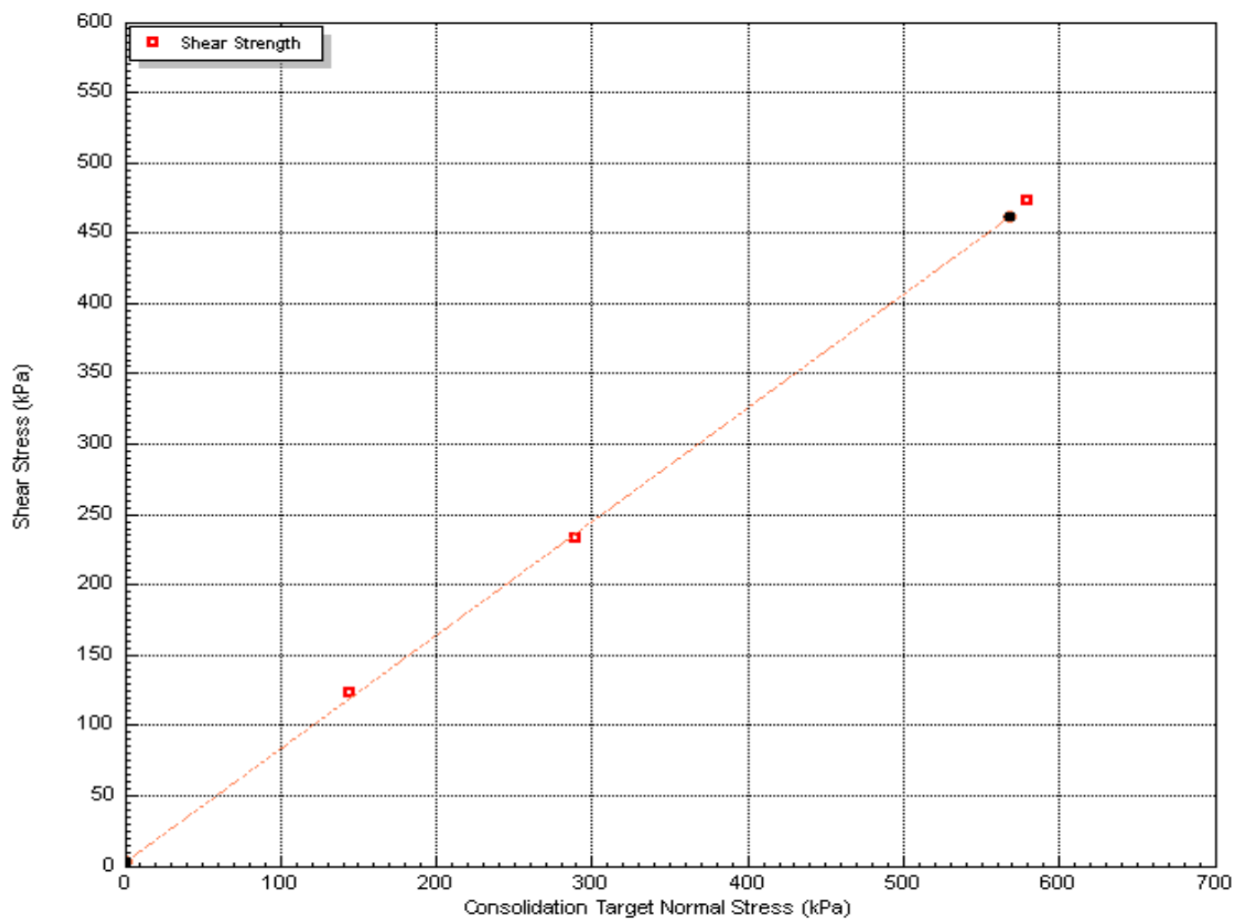
Shear Stage



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH215	Sample Reference	38	
Depth (m)	14.50	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		3		
Angle of Shearing Resistance (°)		39.0		



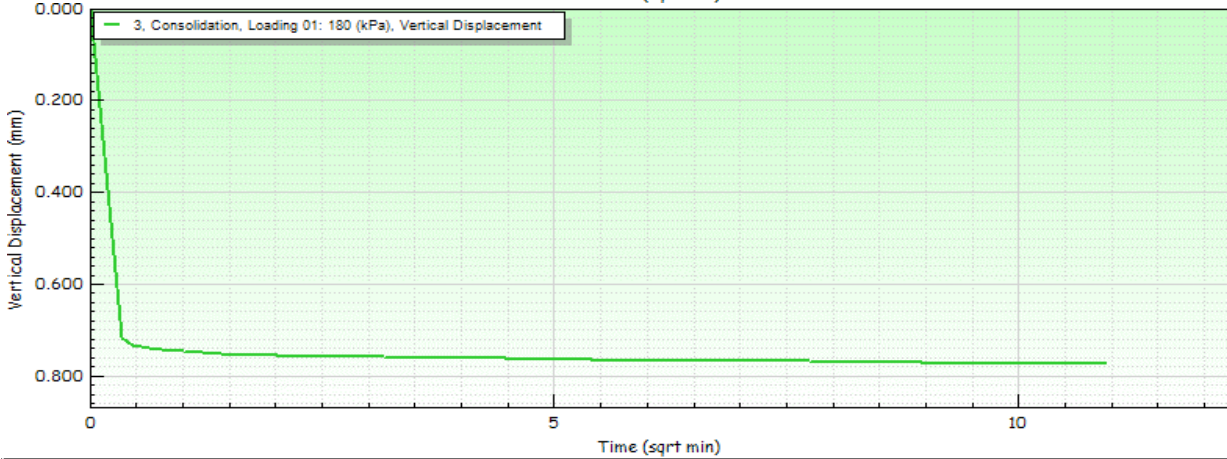
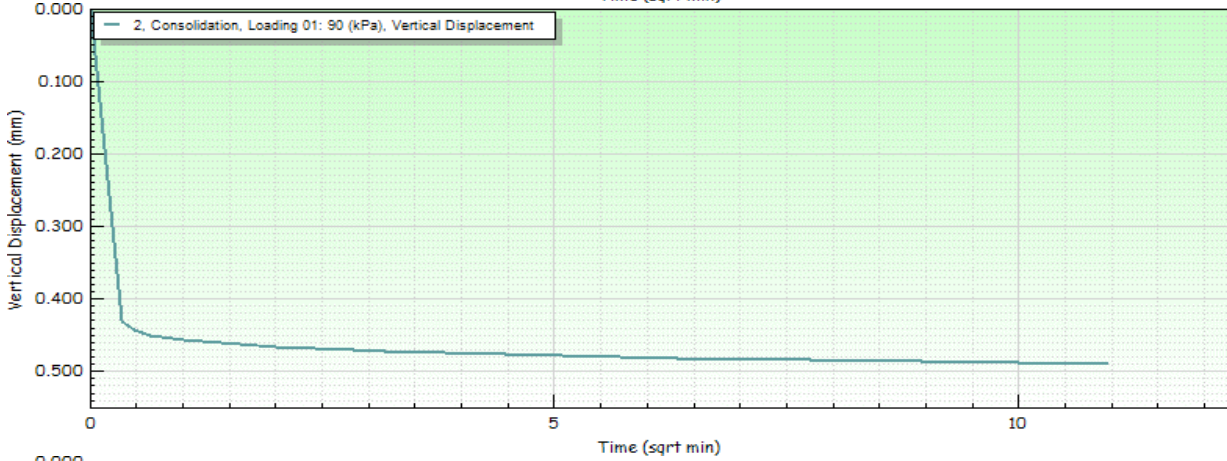
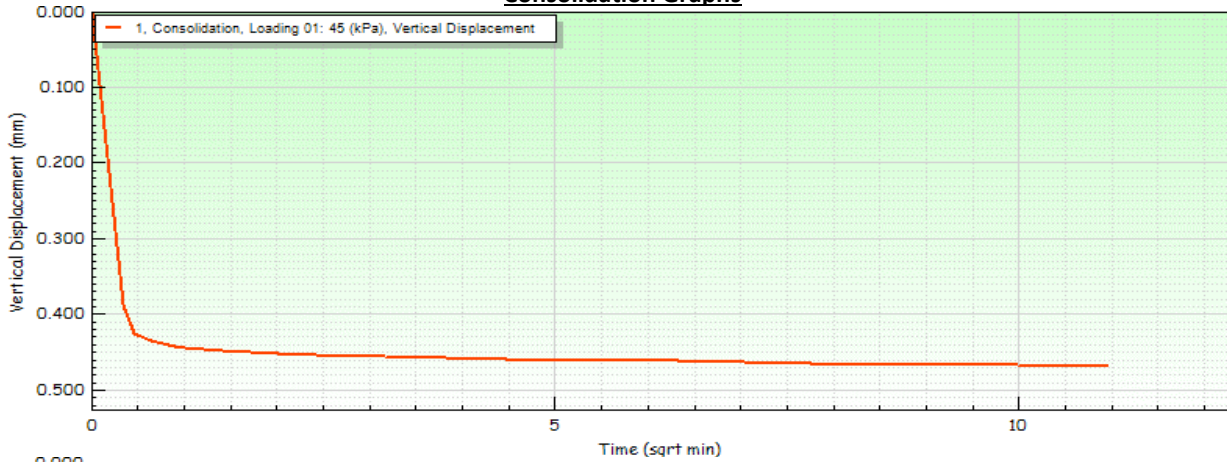
 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH216	Sample Reference	17	
Depth (m)	4.50	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Greyish brown slightly gravelly slightly silty fine to coarse SAND.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	22.0	22.0	22.0
	Bulk Density (Mg/m ³)	1.93	1.93	1.93
	Dry Density (Mg/m ³)	1.58	1.58	1.58
	Voids Ratio	0.681	0.678	0.676
Consolidation				
	Normal Pressure (kPa)	45	90	180
	Vertical Displacement (mm)	0.468	0.490	0.773
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	29.0	78.0	135.7
	Hoz Displacement (mm)	9.4	9.4	9.4
	Hoz Displacement at Peak Shear Stress (mm)	1.863	2.103	2.223
Final Conditions				
	Water Content (%)	24.0	24.0	24.0
	Dry Density (Mg/m ³)	1.60	1.65	1.67
	Voids Ratio	0.653	0.638	0.612

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Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH216	Sample Reference	17	
Depth (m)	4.50	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

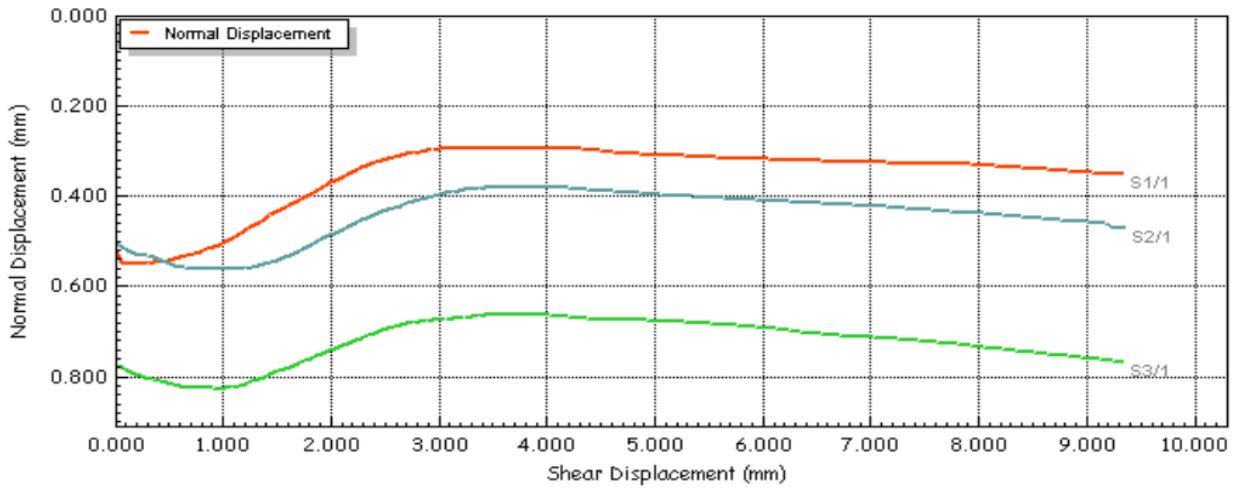
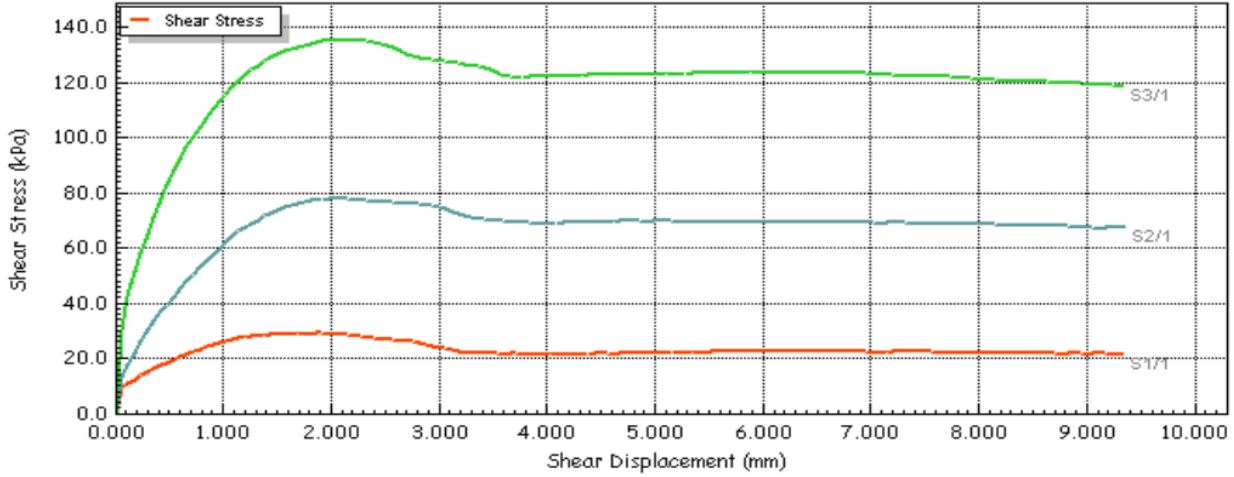
Consolidation Graphs



  10122	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH216	Sample Reference	17	
Depth (m)	4.50	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

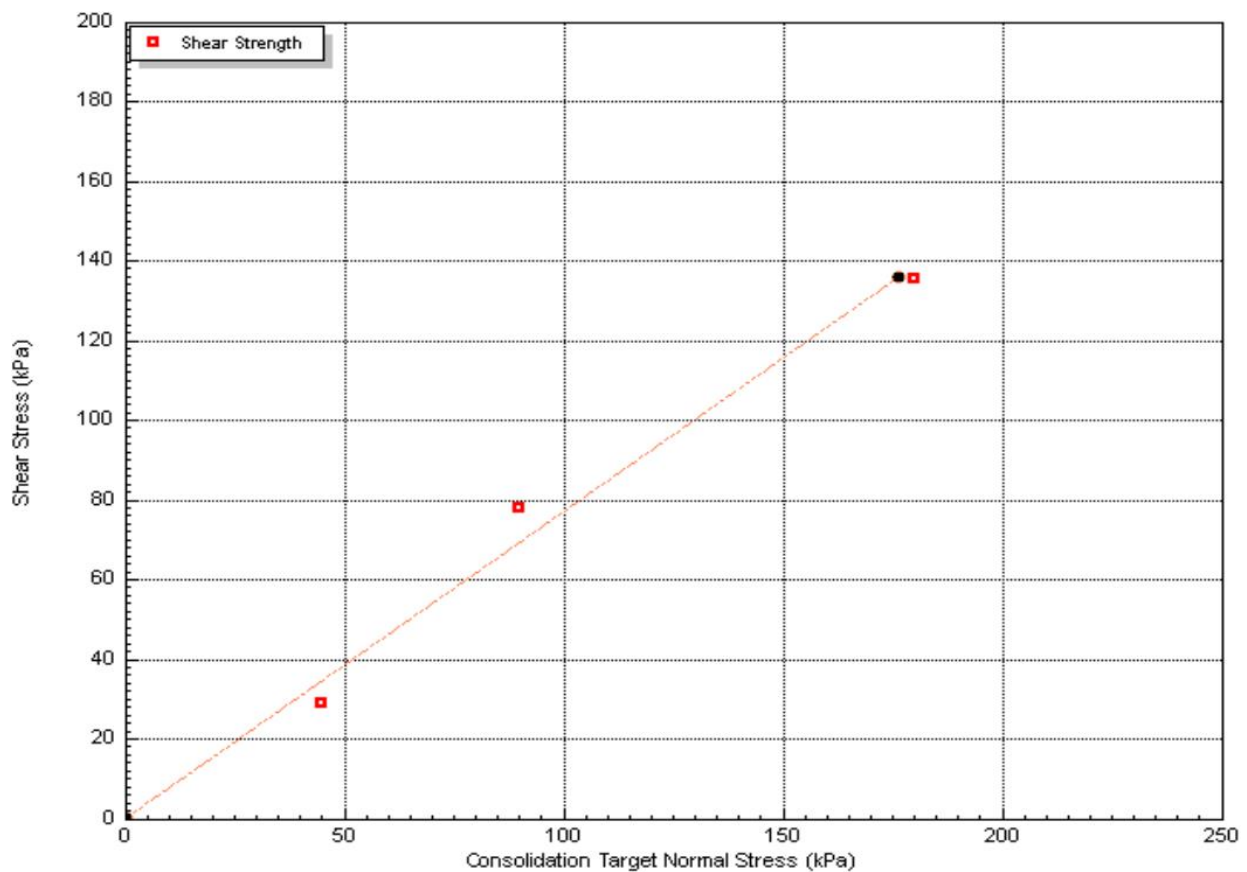
Shear Stage



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Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH216	Sample Reference	17	
Depth (m)	4.50	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

		Stage	1	2	3
Envelope Failure Results					
Apparent Cohesion (kPa)			0		
Angle of Shearing Resistance (°)			37.5		



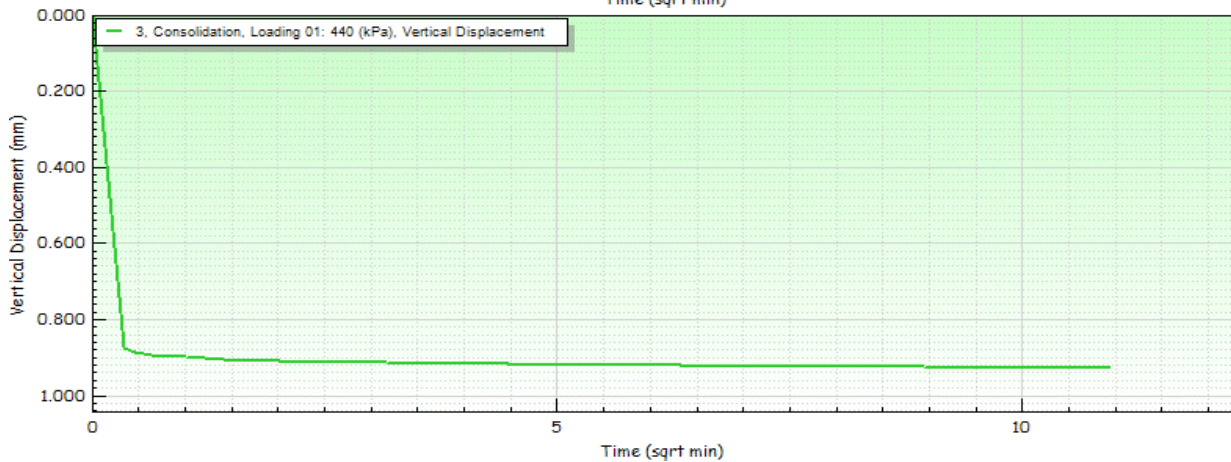
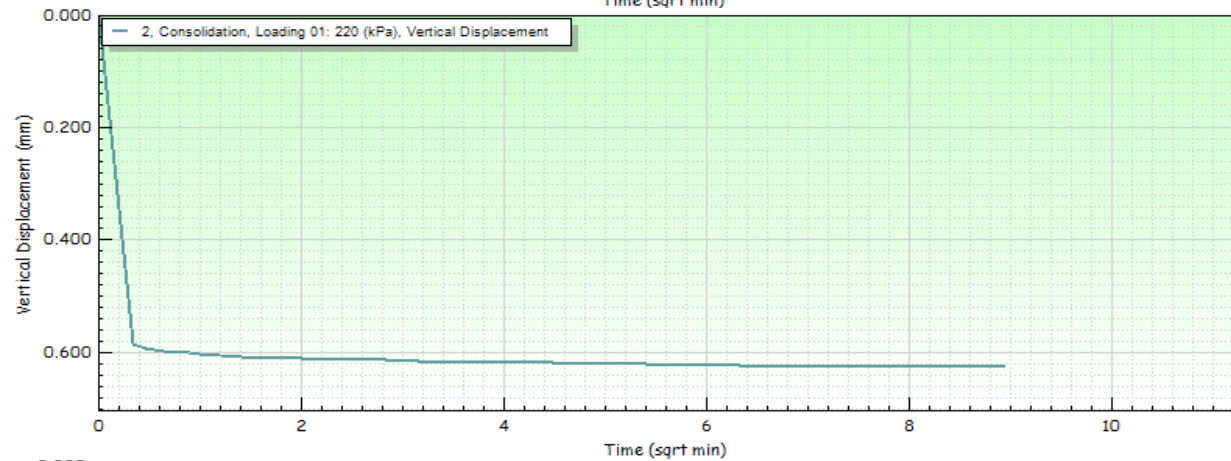
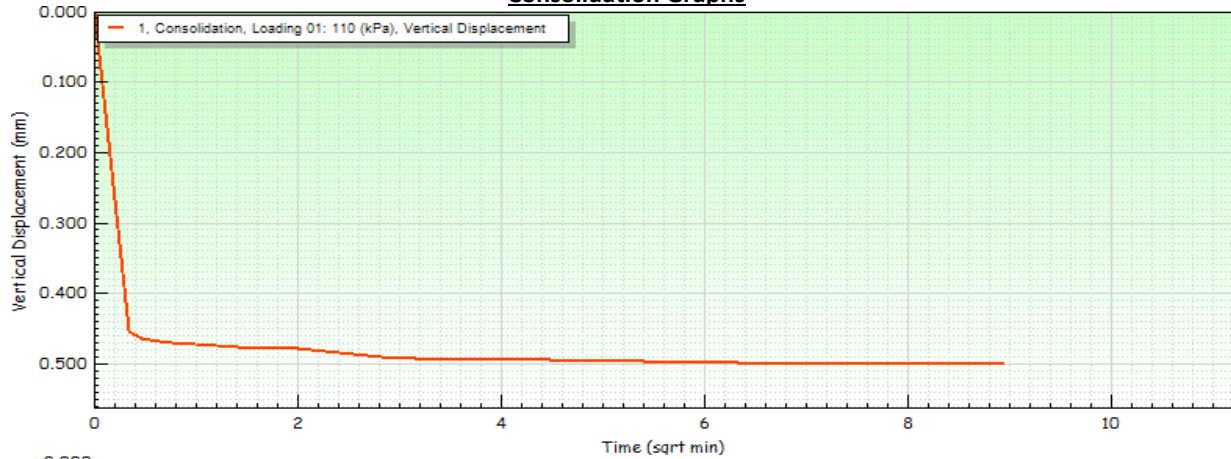
 10122		Tested	Approved
		Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH216	Sample Reference	26	
Depth (m)	11.00	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Greyish brown slightly gravelly slightly silty fine to coarse SAND.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	16.0	16.0	16.0
	Bulk Density (Mg/m ³)	1.89	1.91	1.92
	Dry Density (Mg/m ³)	1.62	1.64	1.65
	Voids Ratio	0.632	0.611	0.608
Consolidation				
	Normal Pressure (kPa)	110	220	440
	Vertical Displacement (mm)	0.501	0.626	0.928
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	101.1	181.6	286.7
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	1.737	2.703	2.337
Final Conditions				
	Water Content (%)	22.0	21.0	21.0
	Dry Density (Mg/m ³)	1.69	1.81	1.75
	Voids Ratio	0.605	0.565	0.529

 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH216	Sample Reference	26	
Depth (m)	11.00	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

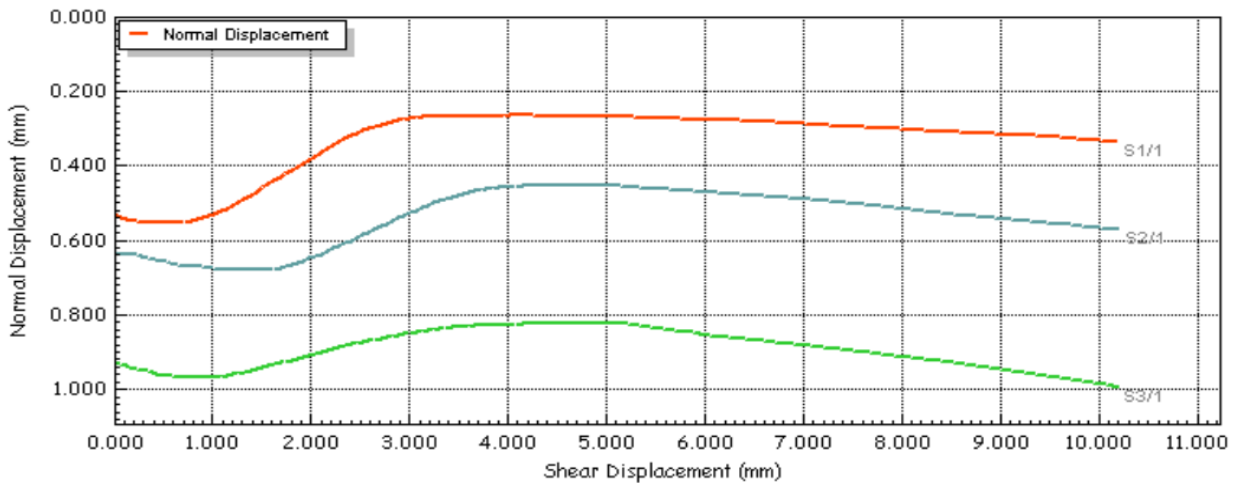
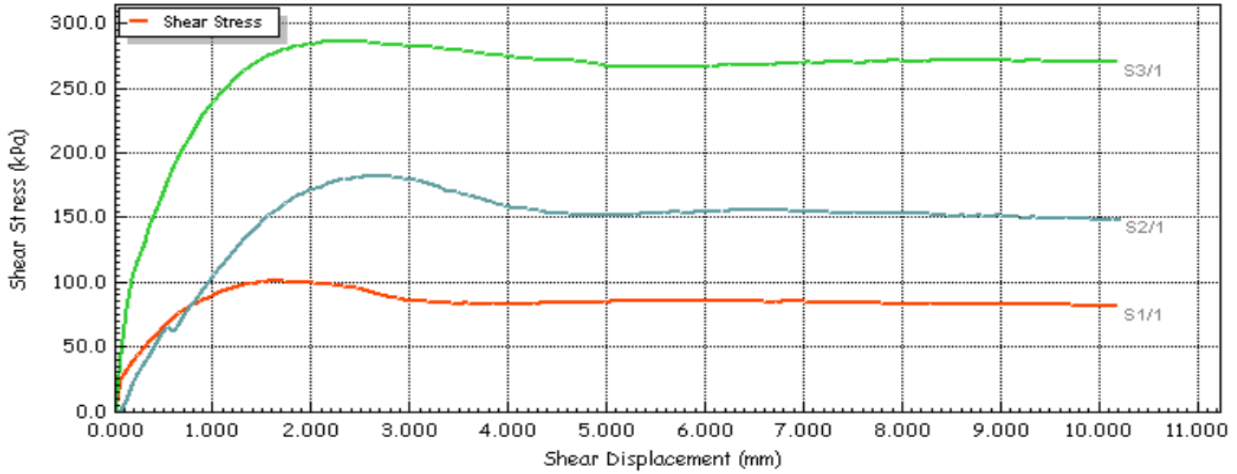
Consolidation Graphs



 10122		Tested	Approved
		Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH216	Sample Reference	26	
Depth (m)	11.00	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

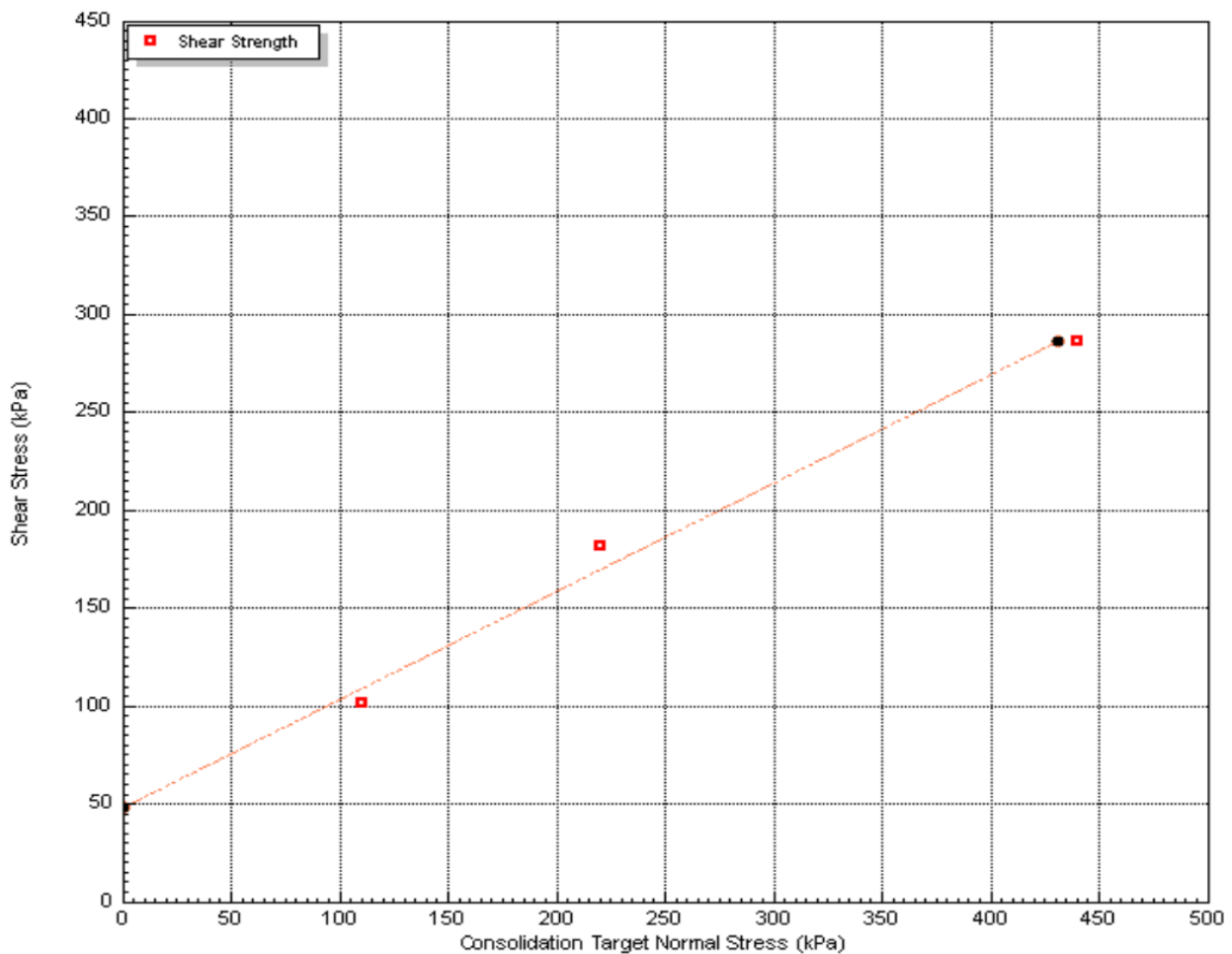
Shear Stage



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH216	Sample Reference	26	
Depth (m)	11.00	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		49		
Angle of Shearing Resistance (°)		29.0		



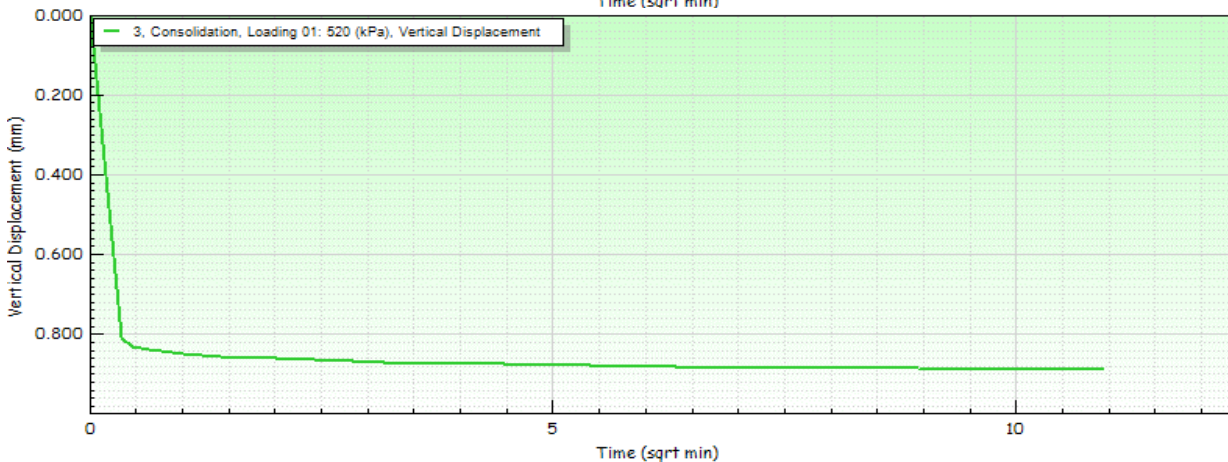
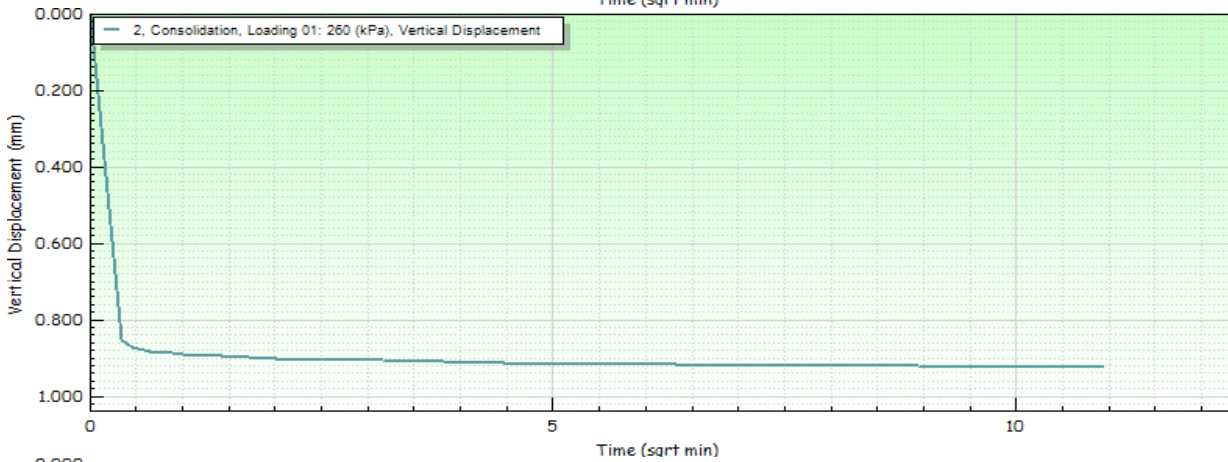
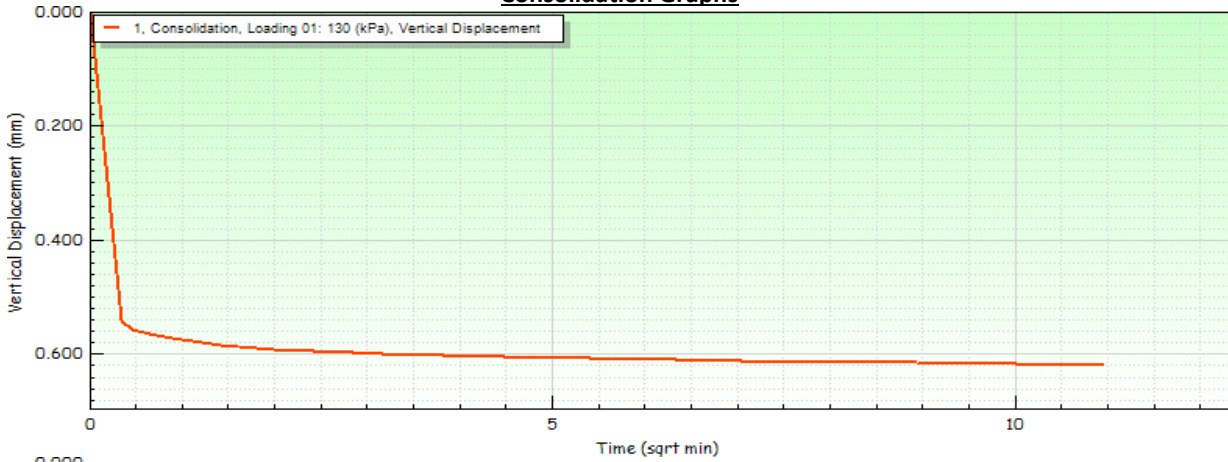
 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH216	Sample Reference	29	
Depth (m)	12.90	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Grey silty fine to medium SAND.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	5.6	5.7	5.7
	Bulk Density (Mg/m ³)	1.64	1.65	1.65
	Dry Density (Mg/m ³)	1.56	1.56	1.56
	Voids Ratio	0.701	0.696	0.699
Consolidation				
	Normal Pressure (kPa)	130	260	520
	Vertical Displacement (mm)	0.619	0.924	0.888
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	102.2	204.8	369.8
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	3.303	3.063	9.837
Final Conditions				
	Water Content (%)	21.0	21.0	21.0
	Dry Density (Mg/m ³)	1.61	1.71	1.69
	Voids Ratio	0.642	0.604	0.597

 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH216	Sample Reference	29	
Depth (m)	12.90	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

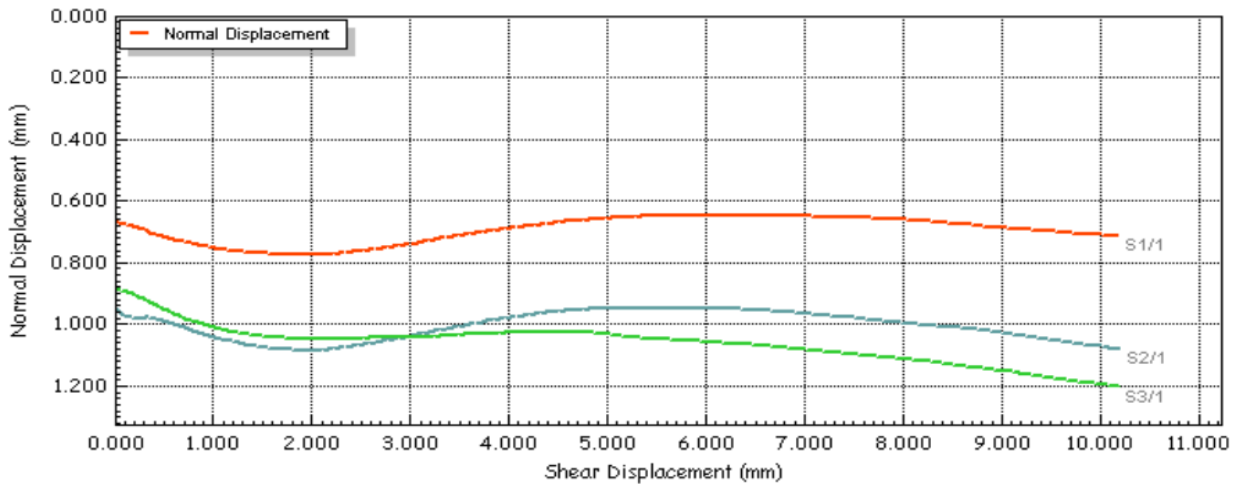
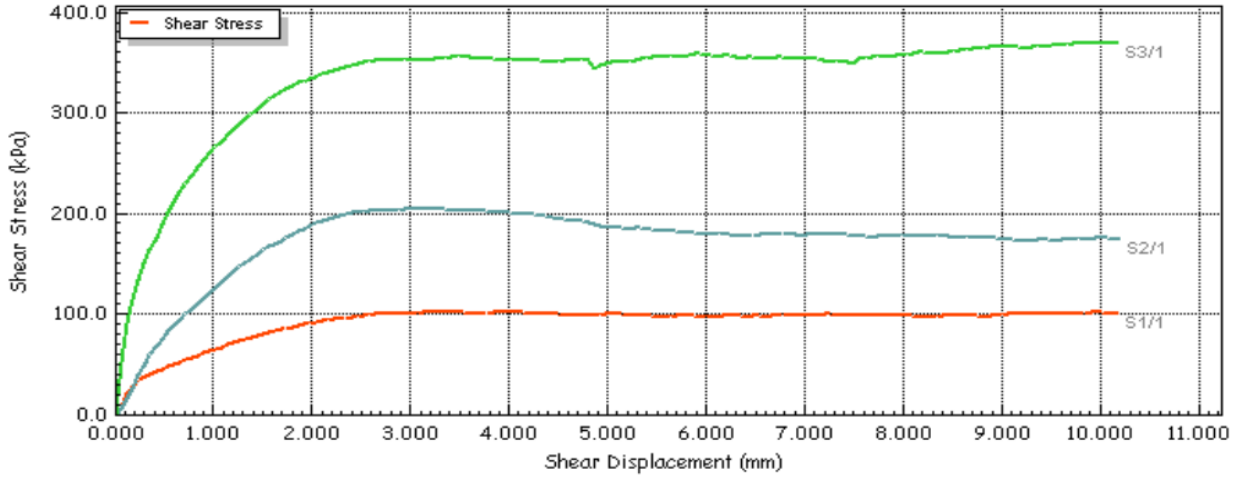
Consolidation Graphs



 10122		Tested	Approved
		Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH216	Sample Reference	29	
Depth (m)	12.90	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

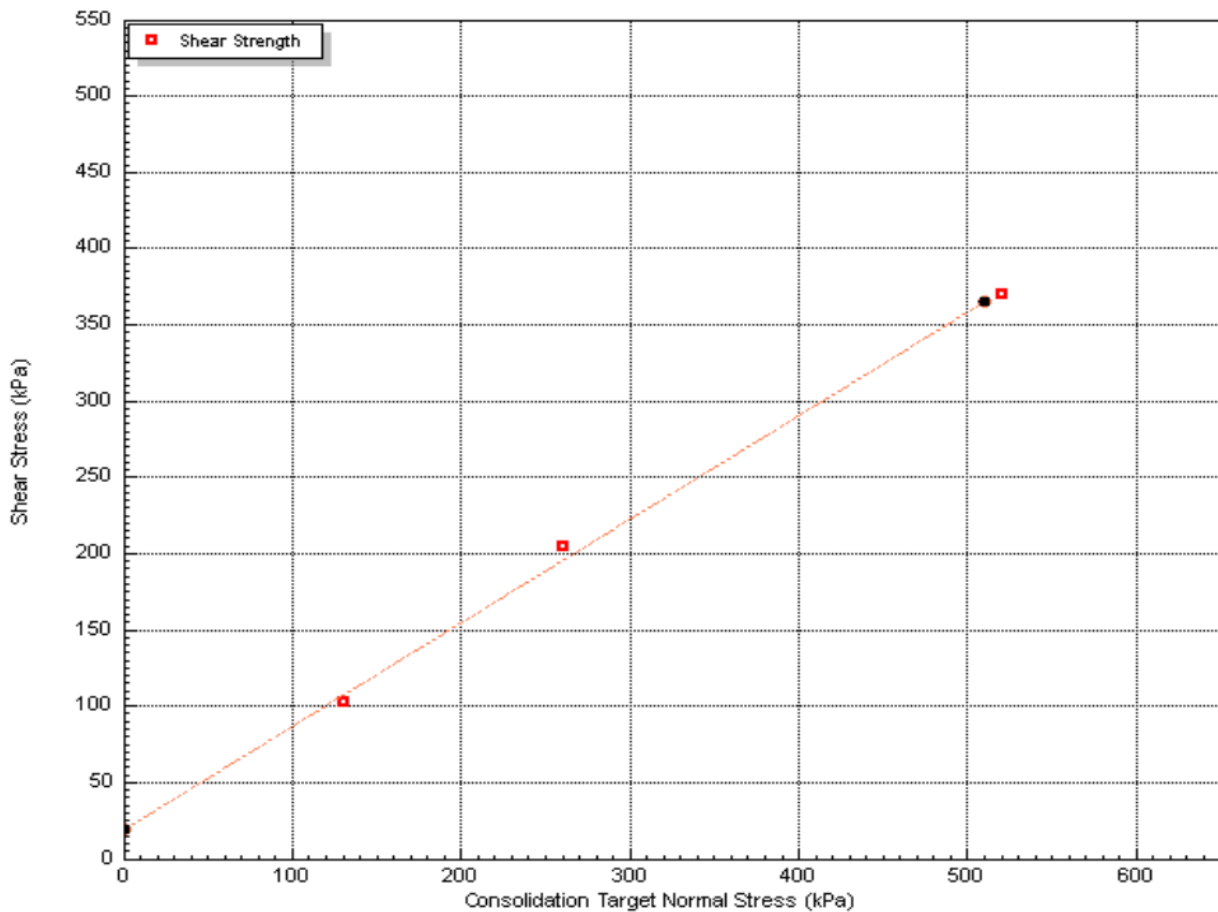
Shear Stage



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl


Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH216	Sample Reference	29	
Depth (m)	12.90	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

		Stage	1	2	3
Envelope Failure Results					
Apparent Cohesion (kPa)			20		
Angle of Shearing Resistance (°)			34.0		



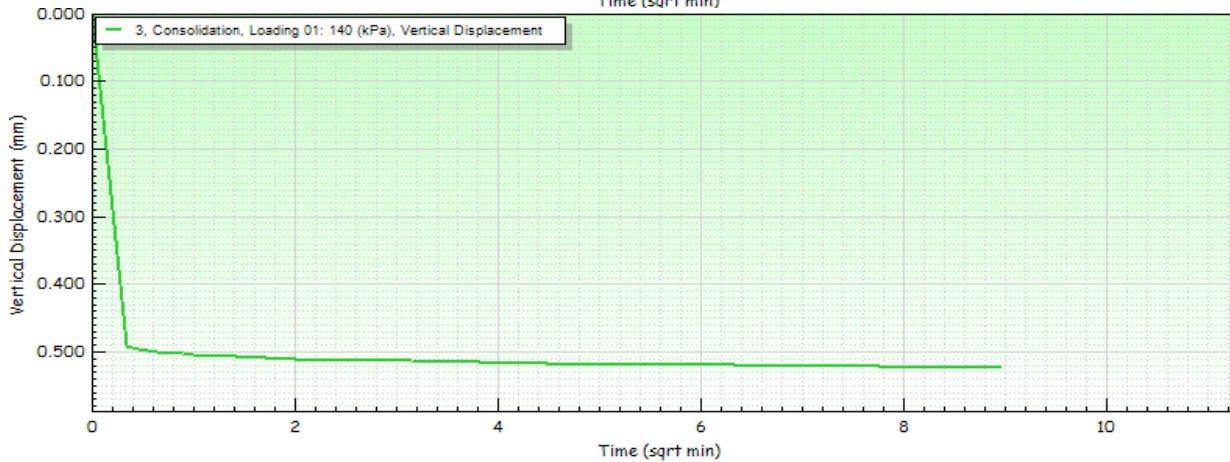
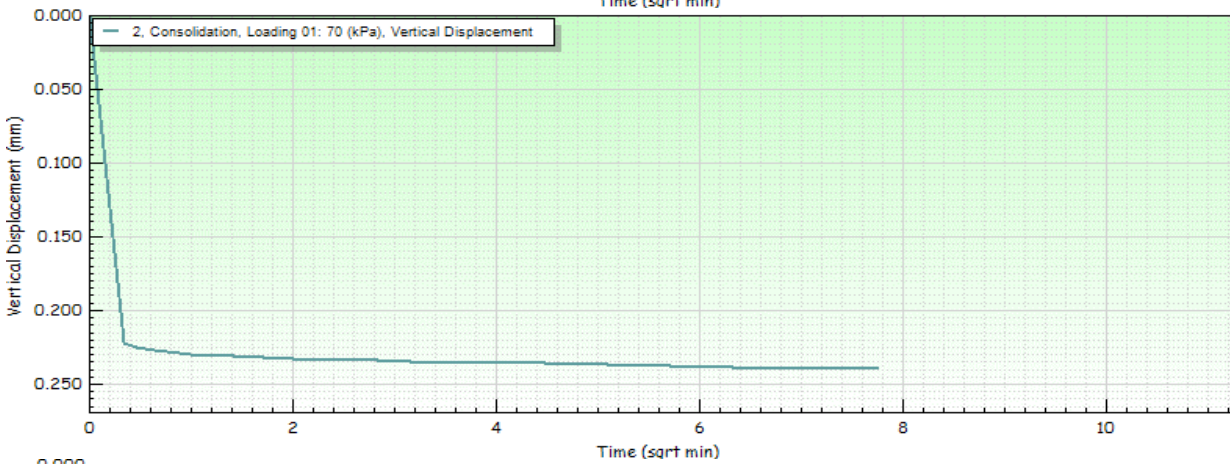
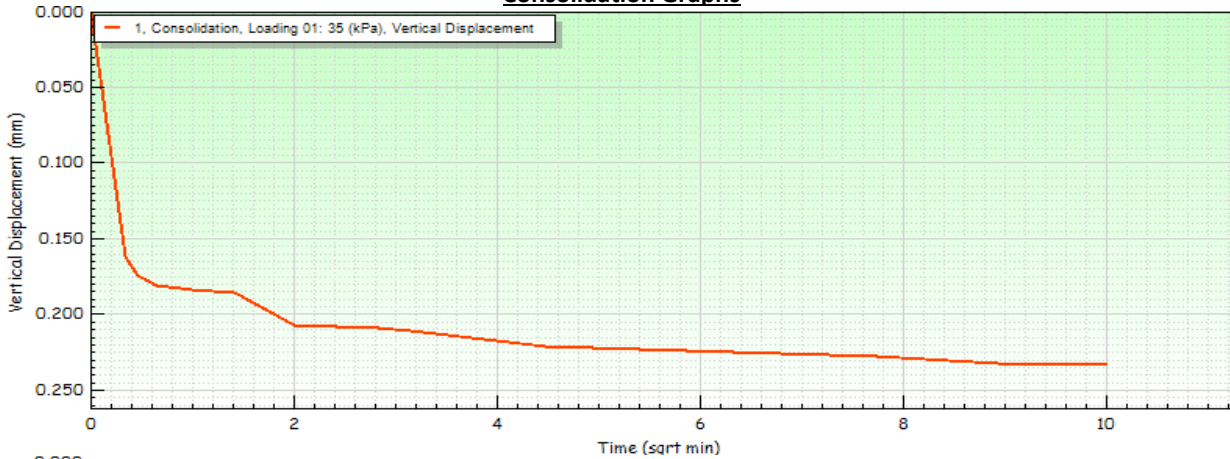
  10122	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH217	Sample Reference	13	
Depth (m)	3.50	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Brownish grey silty fine to coarse SAND.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	23.0	23.0	23.0
	Bulk Density (Mg/m ³)	1.84	1.83	1.79
	Dry Density (Mg/m ³)	1.49	1.49	1.45
	Voids Ratio	0.773	0.783	0.824
Consolidation				
	Normal Pressure (kPa)	35	70	140
	Vertical Displacement (mm)	0.233	0.239	0.523
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	37.4	61.0	105.6
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	1.684	1.917	7.143
Final Conditions				
	Water Content (%)	27.0	27.0	28.0
	Dry Density (Mg/m ³)	1.47	1.45	1.48
	Voids Ratio	0.760	0.767	0.770

 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH217	Sample Reference	13	
Depth (m)	3.50	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

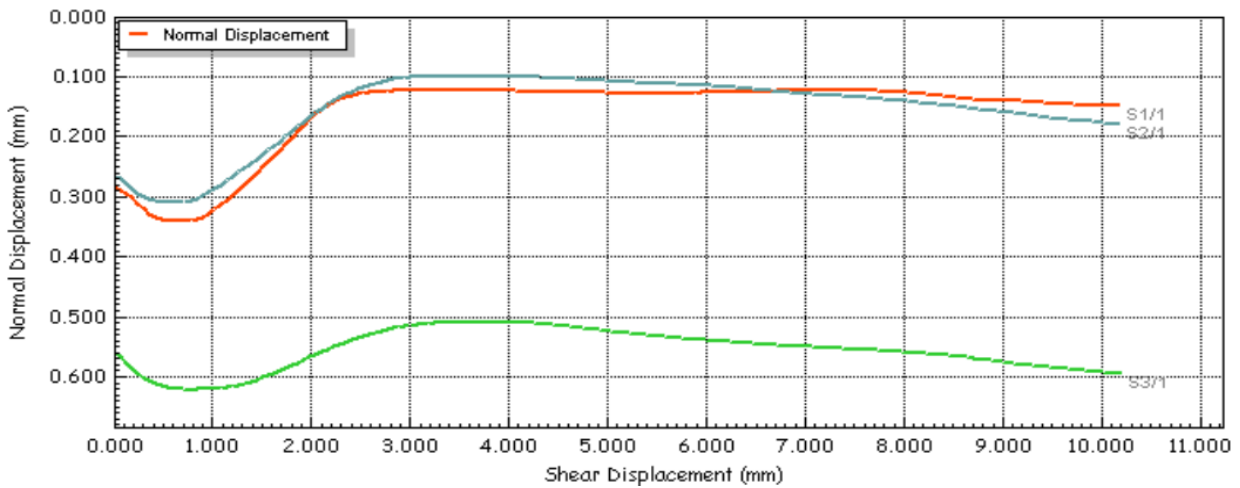
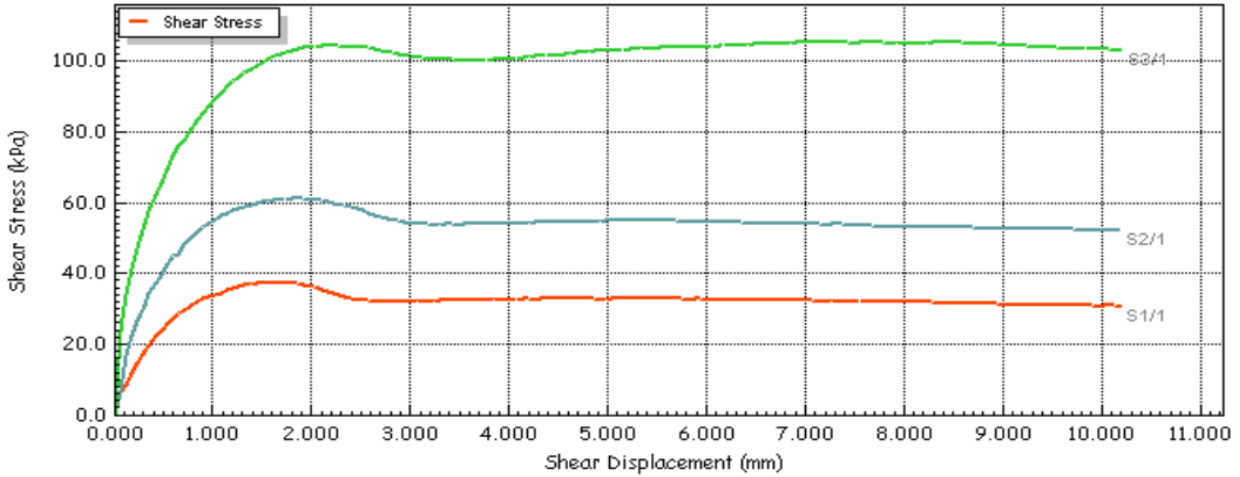
Consolidation Graphs



  10122	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH217	Sample Reference	13	
Depth (m)	3.50	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

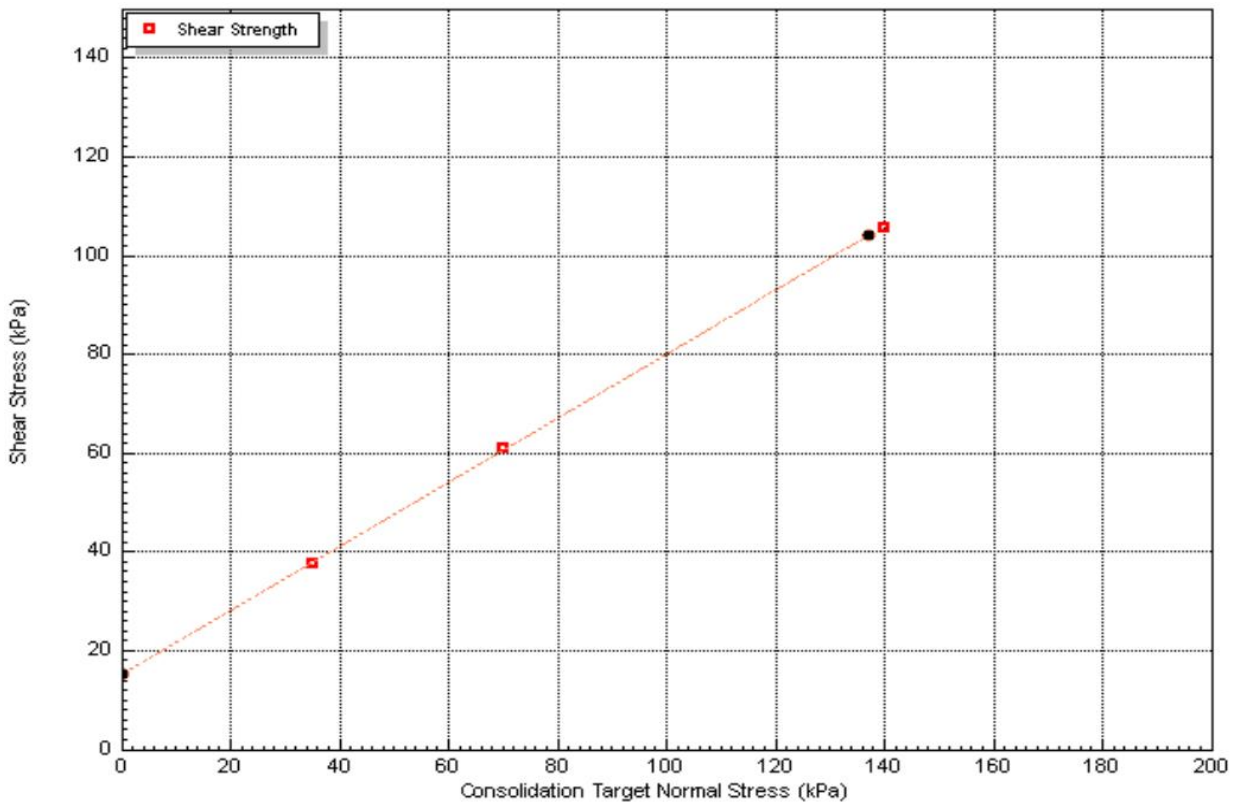
Shear Stage



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH217	Sample Reference	13	
Depth (m)	3.50	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

		Stage	1	2	3
Envelope Failure Results					
Apparent Cohesion (kPa)			15		
Angle of Shearing Resistance (°)			33.0		



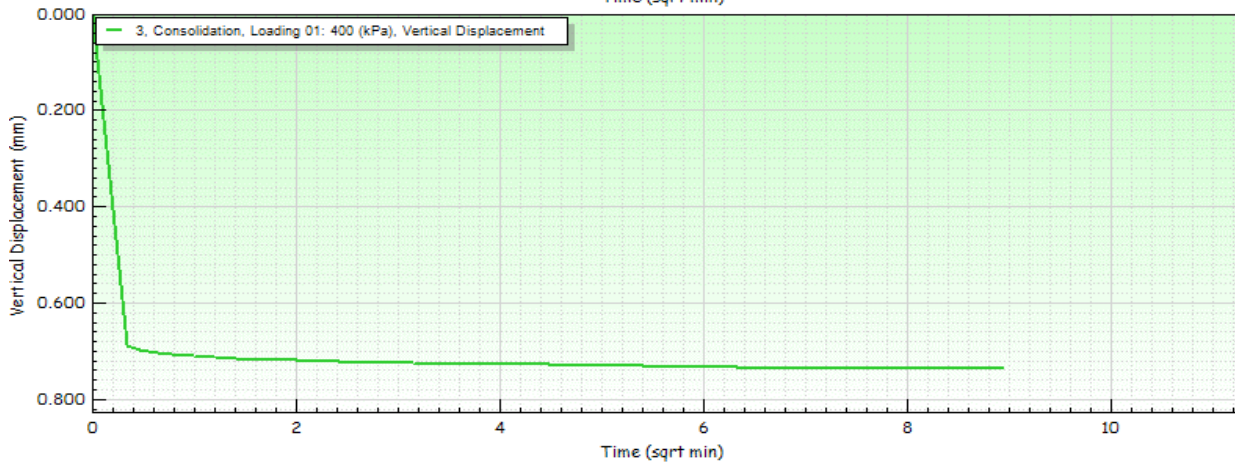
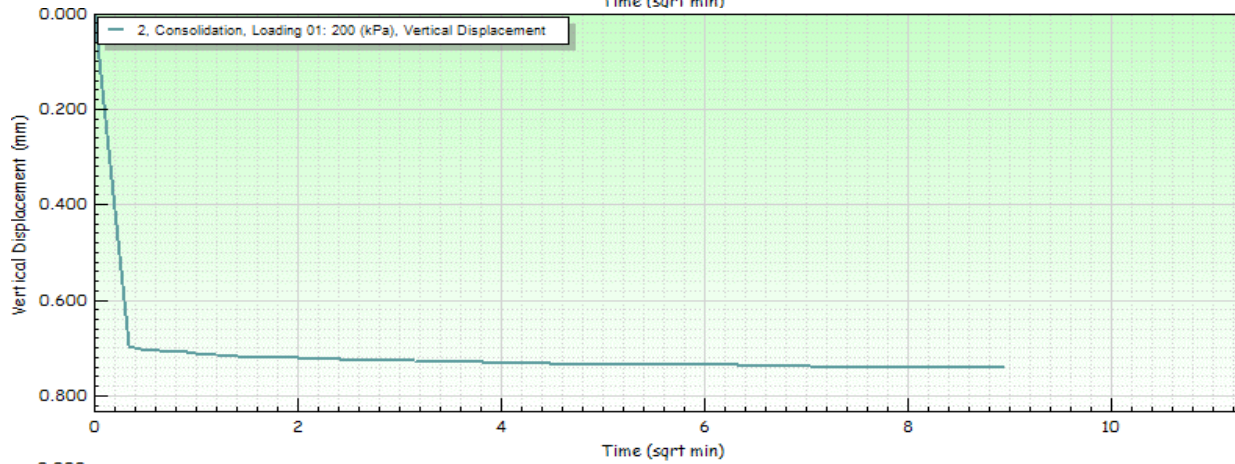
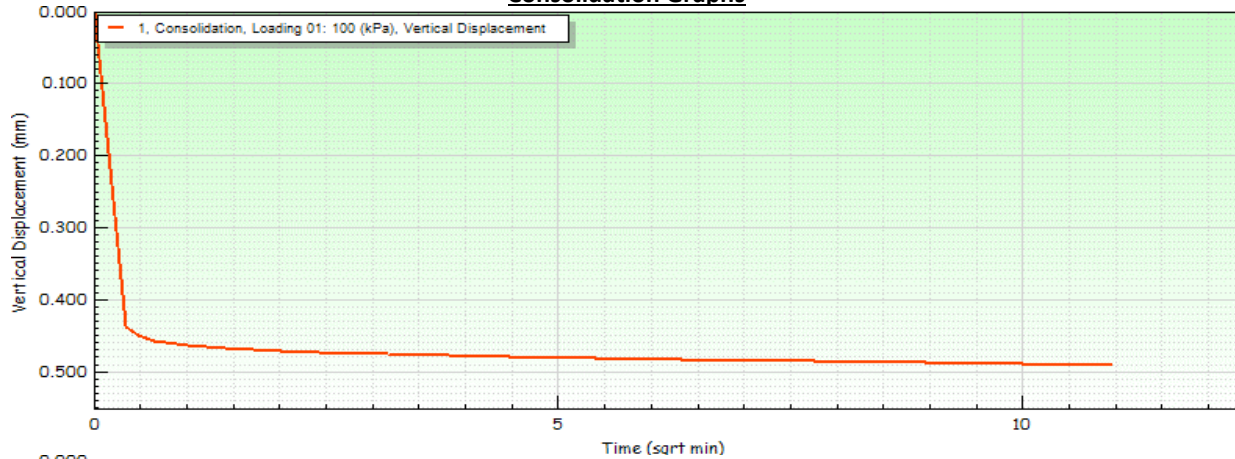
  10122	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH217	Sample Reference	23	
Depth (m)	10.60	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Grey silty fine to coarse SAND.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	20.0	20.0	20.0
	Bulk Density (Mg/m ³)	1.86	1.88	1.85
	Dry Density (Mg/m ³)	1.55	1.57	1.54
	Voids Ratio	0.707	0.682	0.717
Consolidation				
	Normal Pressure (kPa)	100	200	400
	Vertical Displacement (mm)	0.491	0.741	0.736
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	71.7	154.6	274.4
	Hoz Displacement (mm)	10.0	10.0	10.0
	Hoz Displacement at Peak Shear Stress (mm)	2.403	3.063	2.763
Final Conditions				
	Water Content (%)	25.0	24.0	24.0
	Dry Density (Mg/m ³)	1.57	1.63	1.60
	Voids Ratio	0.675	0.637	0.648

 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH217	Sample Reference	23	
Depth (m)	10.60	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

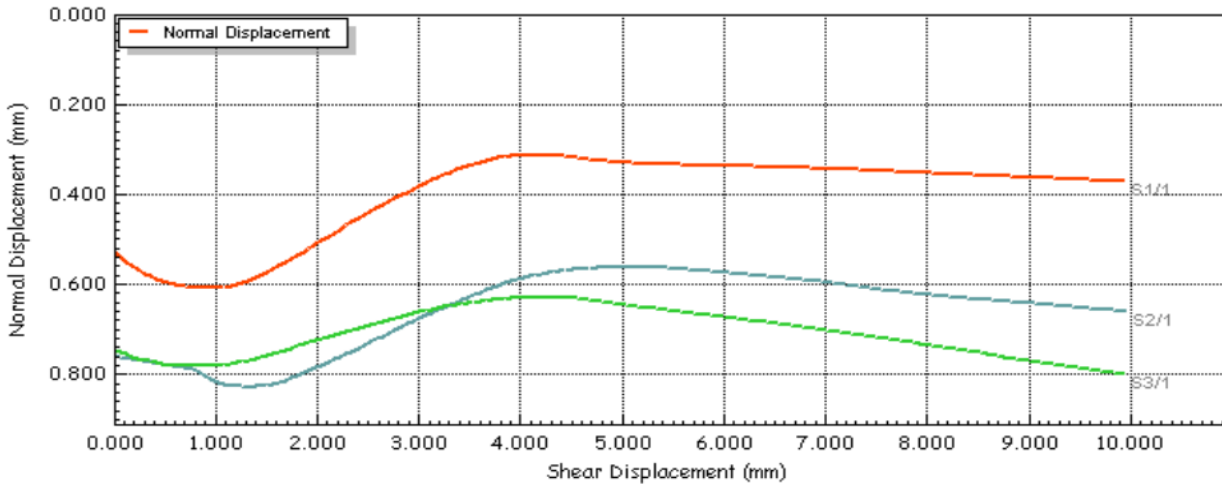
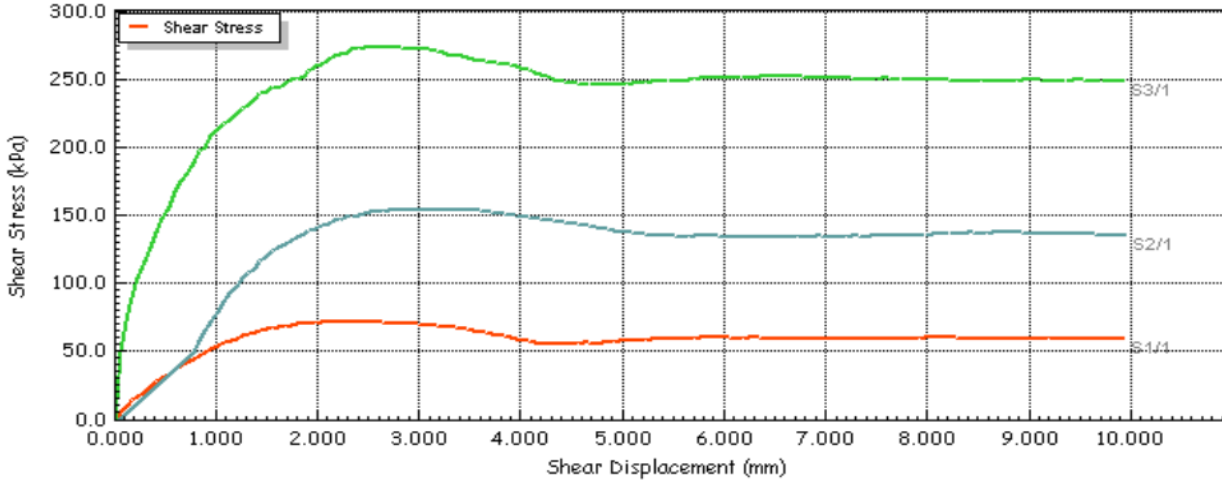
Consolidation Graphs



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH217	Sample Reference	23	
Depth (m)	10.60	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

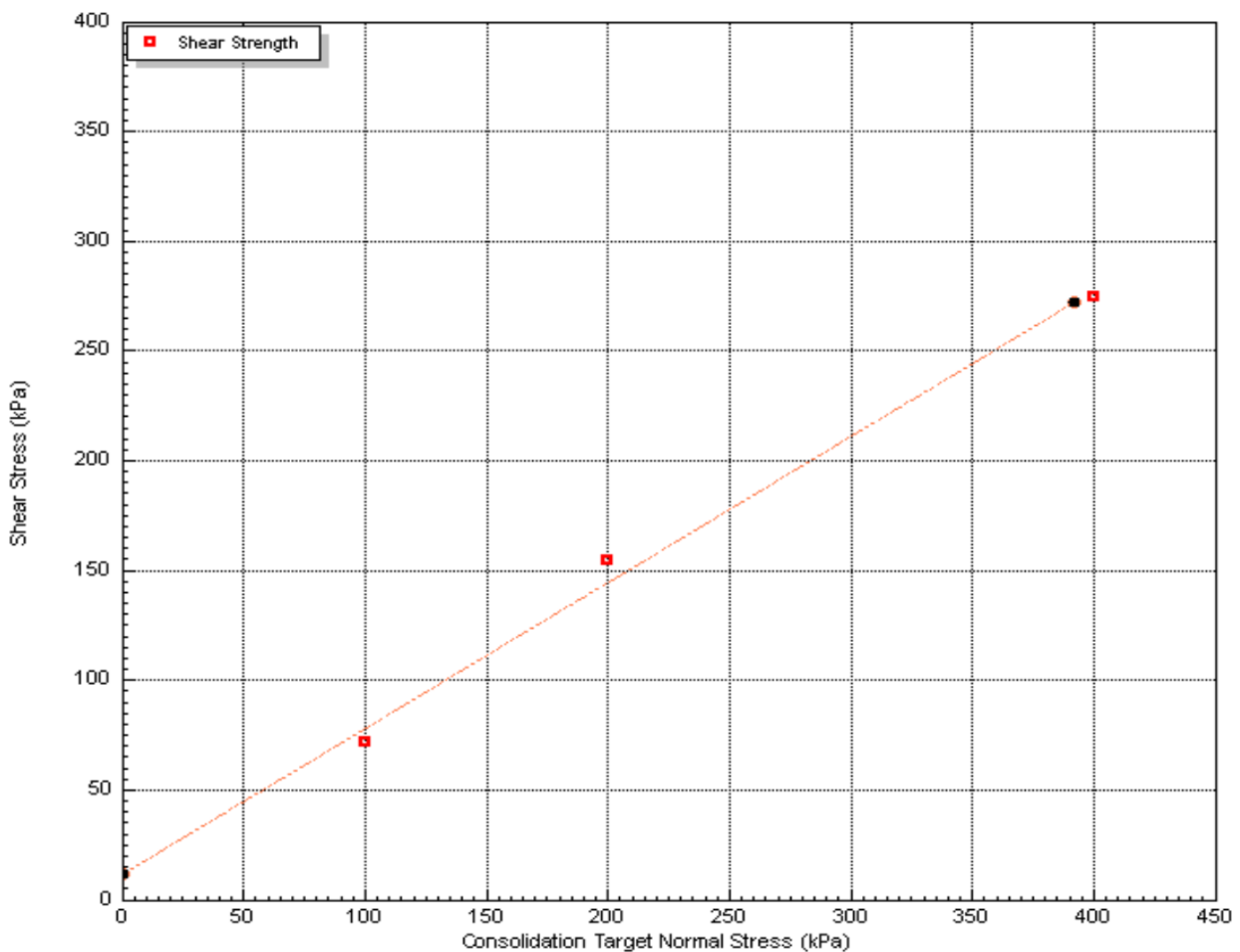
Shear Stage



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl


Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH217	Sample Reference	23	
Depth (m)	10.60	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		12		
Angle of Shearing Resistance (°)		33.5		



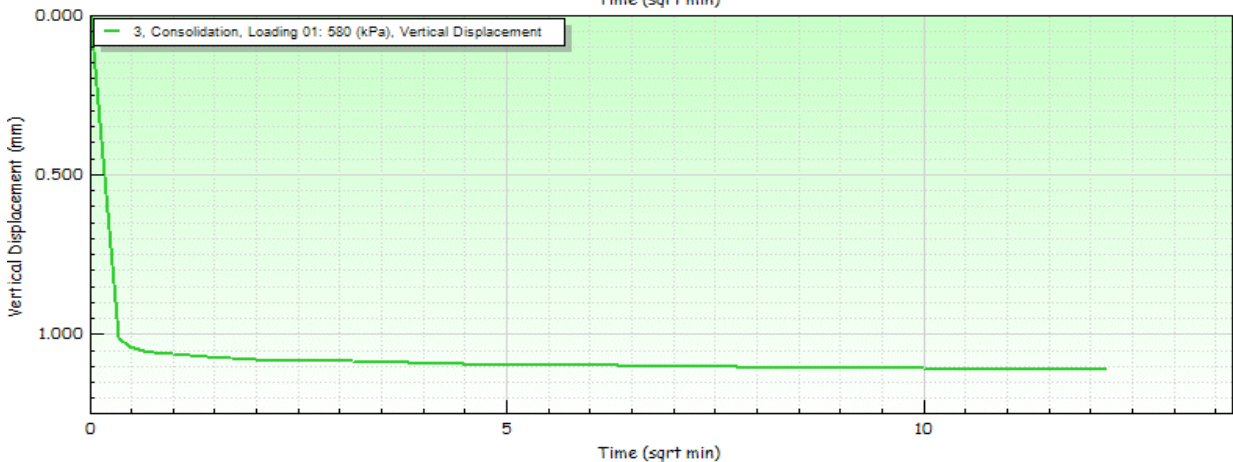
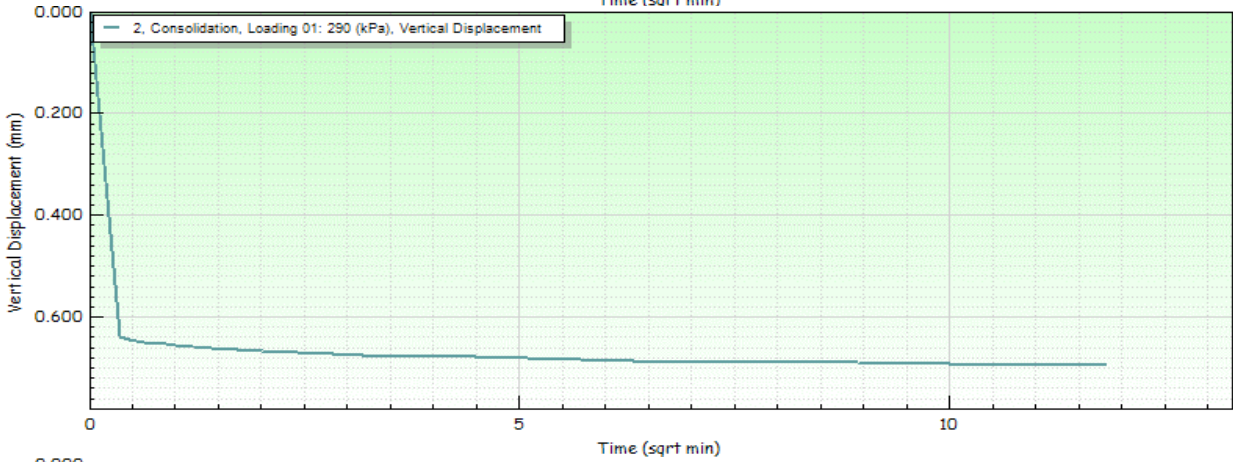
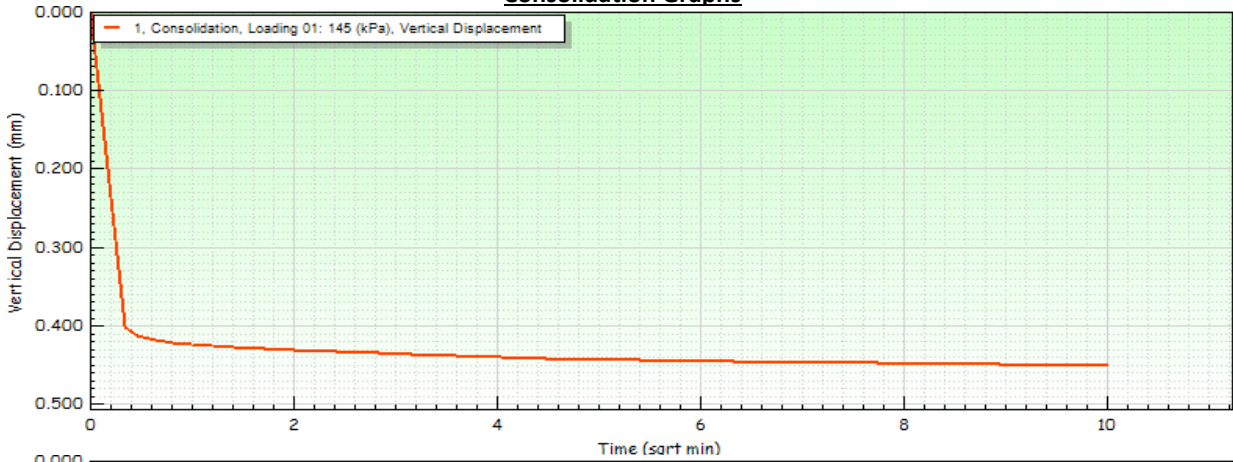
 10122		Tested	Approved
		Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH217	Sample Reference	30	
Depth (m)	14.50	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Brownish grey slightly gravelly slightly silty fine to coarse SAND.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	4.8	4.8	4.8
	Bulk Density (Mg/m ³)	1.58	1.57	1.59
	Dry Density (Mg/m ³)	1.51	1.50	1.52
	Voids Ratio	0.758	0.772	0.744
Consolidation				
	Normal Pressure (kPa)	145	290	580
	Vertical Displacement (mm)	0.450	0.694	1.110
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	120.6	231.0	466.6
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	3.723	4.497	4.743
Final Conditions				
	Water Content (%)	23.0	24.0	23.0
	Dry Density (Mg/m ³)	1.55	1.60	1.70
	Voids Ratio	0.715	0.685	0.630

 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH217	Sample Reference	30	
Depth (m)	14.50	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

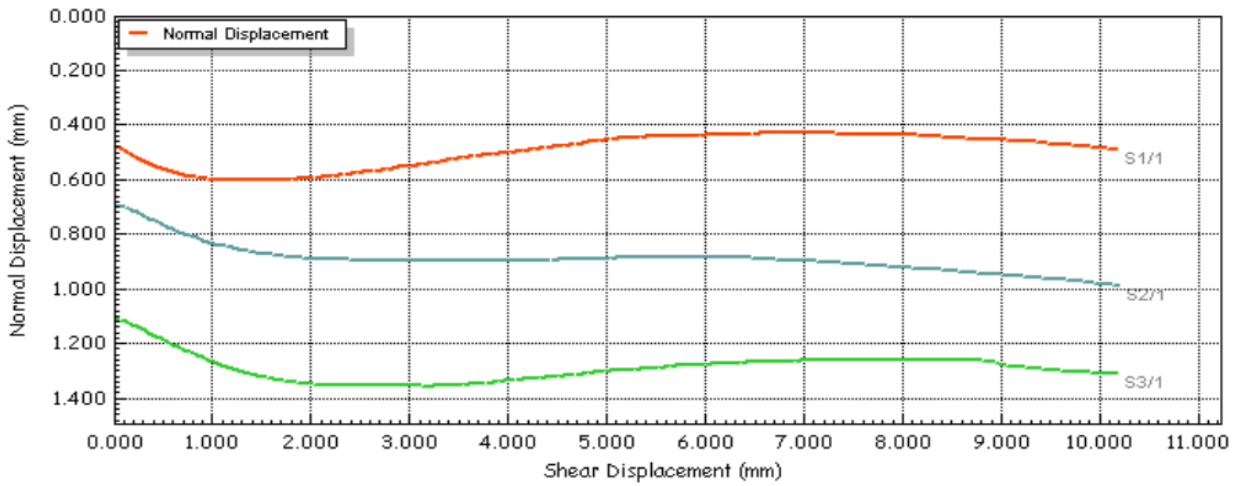
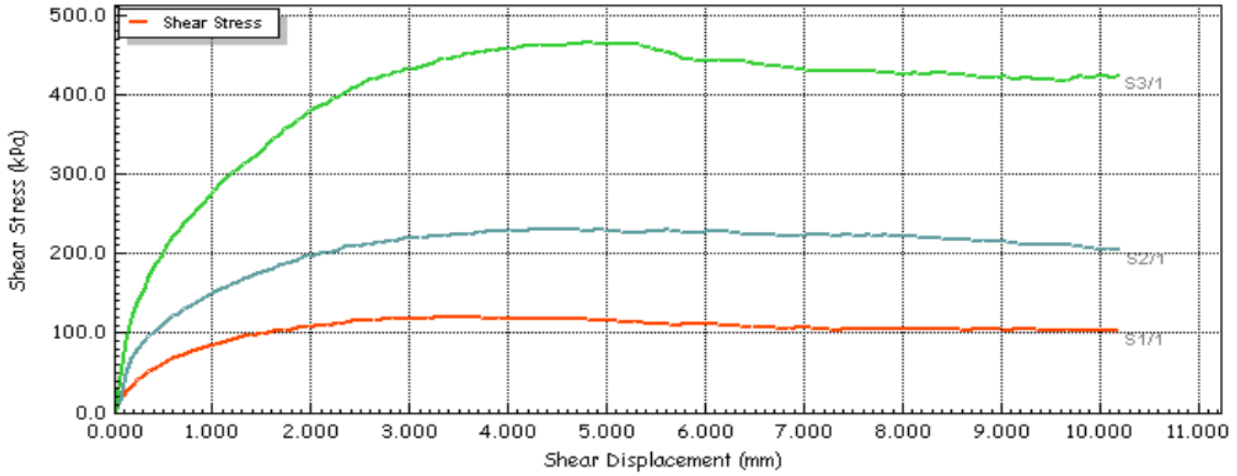
Consolidation Graphs



  10122	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH217	Sample Reference	30	
Depth (m)	14.50	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

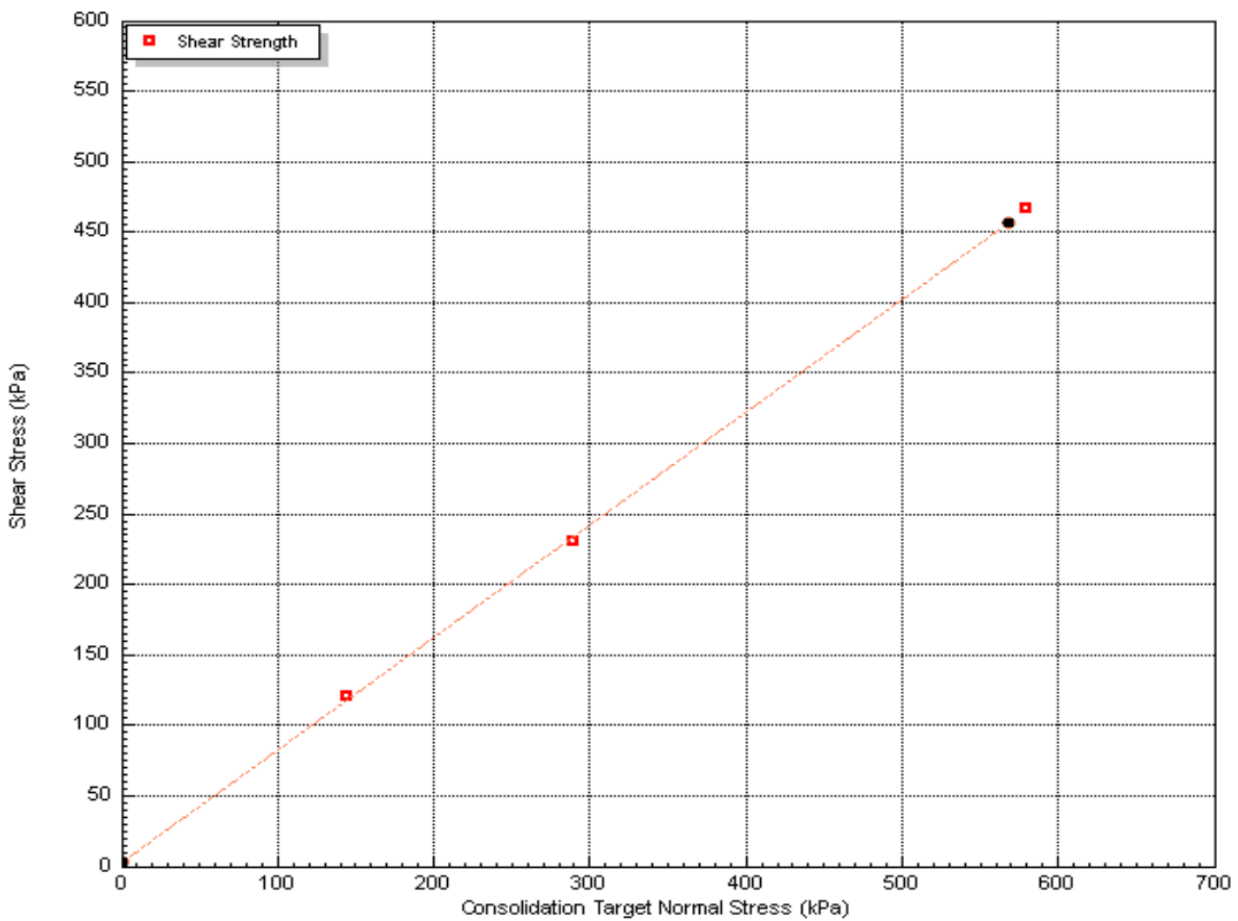
Shear Stage



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	22-1041B	Project	3FM Planning Design GI - Lot B	
Location Number	BH217	Sample Reference	30	
Depth (m)	14.50	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		3		
Angle of Shearing Resistance (°)		38.5		



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl



Final Report

Report No.: 23-08647-1
Initial Date of Issue: 16-Mar-2023
Client Causeway Geotech Ltd
Client Address: 8 Drumahiskey Road
Balnamore
Ballymoney
County Antrim
BT53 7QL
Contact(s): Colm Hurley
Stephen Watson

Project 22-10418B 3FM Lot B 3rd Party Lands

Quotation No.:		Date Received:	14-Mar-2023
Order No.:		Date Instructed:	14-Mar-2023
No. of Samples:	12		
Turnaround (Wkdays):	5	Results Due:	20-Mar-2023
Date Approved:	16-Mar-2023		

Approved By:

Details: Stuart Henderson, Technical
Manager

Results - Soil

Project: 22-10418B 3FM Lot B 3rd Party Lands

Client: Causeway Geotech Ltd		Chemtest Job No.:		23-08647	23-08647	23-08647	23-08647	23-08647	23-08647	23-08647	23-08647	23-08647	
Quotation No.:		Chemtest Sample ID.:		1607183	1607184	1607185	1607186	1607187	1607188	1607189	1607190	1607191	
Order No.:		Client Sample Ref.:		2	11	17	19	24	34	39	14	22	
		Sample Location:		BH212	BH212	BH212	BH215	BH215	BH215	BH215	BH216	BH216	
		Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
		Top Depth (m):		3.2	6.2	9.2	1.2	4	11	15.5	2	8	
		Date Sampled:		10-Mar-2023	10-Mar-2023	10-Mar-2023	10-Mar-2023	10-Mar-2023	10-Mar-2023	10-Mar-2023	10-Mar-2023	10-Mar-2023	
Determinand	Accred.	SOP	Units	LOD									
Moisture	N	2030	%	0.020	7.2	16	3.8	2.9	9.3	20	3.2	19	13
pH	U	2010		4.0	9.3	9.2	9.2	9.4	10.0	8.8	9.3	9.2	8.7
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.052	0.37	0.11	0.13	0.56	0.17	0.057	0.012	0.38

Results - Soil

Project: 22-10418B 3FM Lot B 3rd Party Lands

Client: Causeway Geotech Ltd	Chemtest Job No.:				23-08647	23-08647	23-08647
Quotation No.:	Chemtest Sample ID.:				1607192	1607193	1607194
Order No.:	Client Sample Ref.:				12	18	24
	Sample Location:				BH217	BH217	BH217
	Sample Type:				SOIL	SOIL	SOIL
	Top Depth (m):				3	6.5	11
	Date Sampled:				10-Mar-2023	10-Mar-2023	10-Mar-2023
Determinand	Accred.	SOP	Units	LOD			
Moisture	N	2030	%	0.020	19	26	17
pH	U	2010		4.0	8.9	8.4	8.7
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.11	0.26	0.58

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
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
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES

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"
SOP	Standard operating procedure
LOD	Limit of detection

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 30 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:

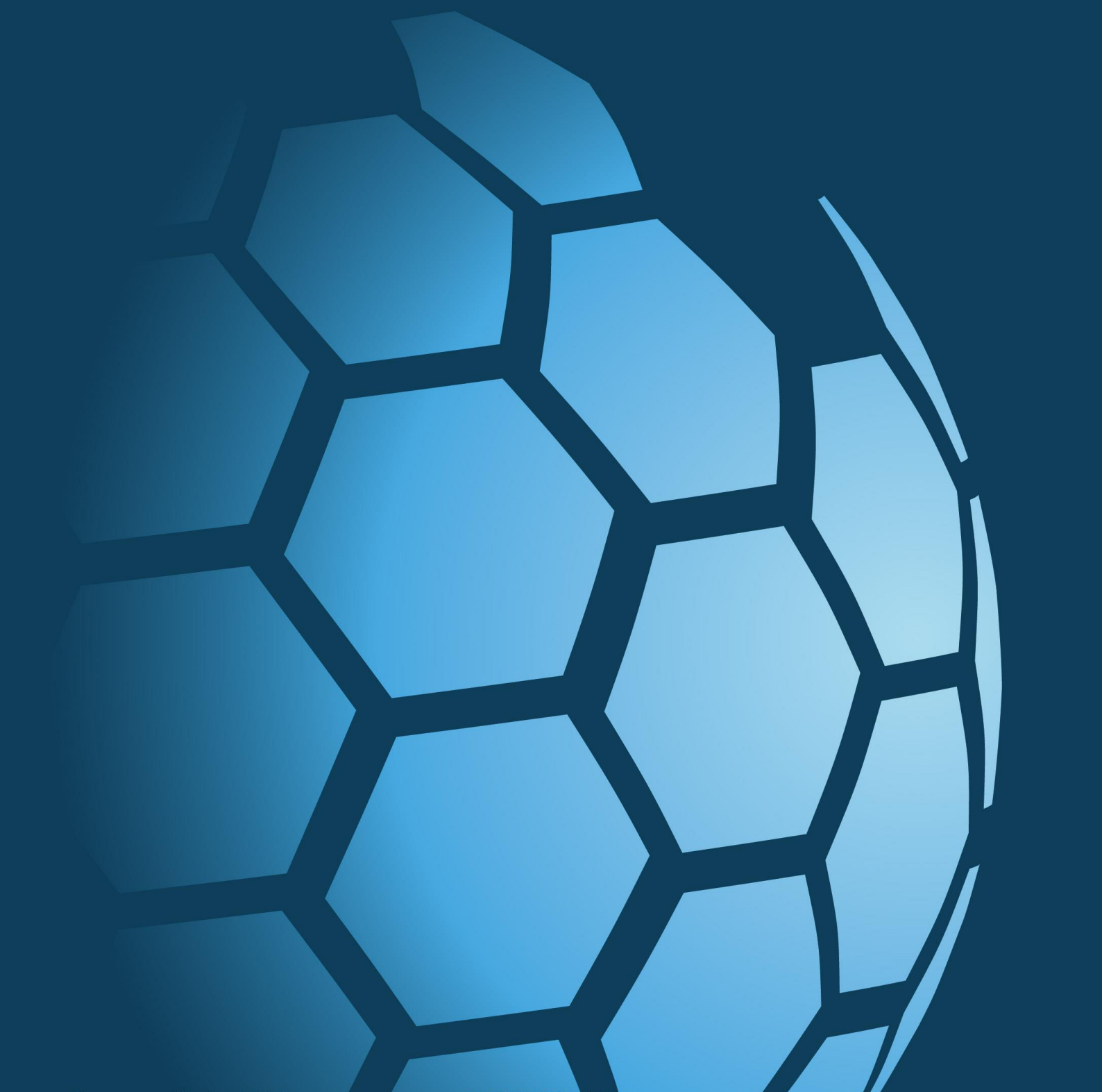
customerservices@chemtest.com



CAUSEWAY
— GEOTECH

APPENDIX I

ENVIRONMENTAL LABORATORY TEST RESULTS



Final Report

Report No.: 22-47435-1
Initial Date of Issue: 17-Jan-2023
Client: Causeway Geotech Ltd
Client Address: 8 Drumahiskey Road
 Balnamore
 Ballymoney
 County Antrim
 BT53 7QL
Contact(s): Alistair McQuat
 Carin Cornwall
 Celine Rooney
 Colm Hurley
 Darren O'Mahony
 Dean McCloskey
 Gabriella Horan
 Joe Gervin
 John Cameron
 Lucy Newland
 Martin Gardiner
 Matthew Gilbert
 Neil Haggan
 Paul Dunlop
 Sean Ross
 Stephen Franey
 Stephen McCracken
Project: 22-1041B 3FM Planning Design GI
Quotation No.: Q22-28455
Order No.:
No. of Samples: 1
Turnaround (Wkdays): 8
Date Approved: 17-Jan-2023

Date Received: 11-Dec-2022
Date Instructed: 22-Dec-2022
Results Due: 09-Jan-2023

Approved By:



Details: Stuart Henderson, Technical
 Manager

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd	Chemtest Job No.:				22-47435
Quotation No.: Q22-28455	Chemtest Sample ID.:				1562261
	Sample Location:				BH215
	Sample Type:				SOIL
	Top Depth (m):				6.00
	Date Sampled:				05-Dec-2022
	Asbestos Lab:				DURHAM
Determinand	Accred.	SOP	Units	LOD	
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected
Moisture	N	2030	%	0.020	10
Natural Moisture Content	N	2030	%	0.020	12
Soil Colour	N	2040		N/A	Brown
Other Material	N	2040		N/A	Stones
Soil Texture	N	2040		N/A	Sand
pH	U	2010		4.0	8.2
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	2.5
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.42
Total Sulphur	U	2175	%	0.010	0.36
Sulphur (Elemental)	U	2180	mg/kg	1.0	140
Cyanide (Free)	U	2300	mg/kg	0.50	[B] < 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	[B] < 0.50
Thiocyanate	U	2300	mg/kg	5.0	[B] < 5.0
Aluminium (Total)	N	2430	mg/kg	100	16000
Iron (Total)	N	2430	mg/kg	100	24000
Arsenic	U	2455	mg/kg	0.5	13
Barium	U	2455	mg/kg	0	79
Beryllium	U	2455	mg/kg	0.5	1.6
Cadmium	U	2455	mg/kg	0.10	< 0.10
Chromium	U	2455	mg/kg	0.5	71
Manganese	U	2455	mg/kg	1.0	670
Copper	U	2455	mg/kg	0.50	90
Mercury	U	2455	mg/kg	0.05	0.18
Nickel	U	2455	mg/kg	0.50	54
Lead	U	2455	mg/kg	0.50	410
Selenium	U	2455	mg/kg	0.25	< 0.25
Vanadium	U	2455	mg/kg	0.5	31
Zinc	U	2455	mg/kg	0.50	90
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Organic Matter	U	2625	%	0.40	3.5
Total Organic Carbon	U	2625	%	0.20	2.0
Aliphatic TPH >C5-C6	N	2680	mg/kg	0.010	[B] < 0.010
Aliphatic TPH >C6-C8	N	2680	mg/kg	0.010	[B] < 0.010
Aliphatic TPH >C8-C10	N	2680	mg/kg	0.10	[B] < 0.10
Aliphatic TPH >C10-C12	N	2680	mg/kg	0.10	[B] < 0.10
Aliphatic TPH >C12-C16	N	2680	mg/kg	0.10	[B] < 0.10

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd	Chemtest Job No.: 22-47435				
Quotation No.: Q22-28455	Chemtest Sample ID.: 1562261				
	Sample Location: BH215				
	Sample Type: SOIL				
	Top Depth (m): 6.00				
	Date Sampled: 05-Dec-2022				
	Asbestos Lab: DURHAM				
Determinand	Accred.	SOP	Units	LOD	
Aliphatic TPH >C16-C21	N	2680	mg/kg	0.10	[B] < 0.10
Aliphatic TPH >C21-C35	N	2680	mg/kg	0.10	[B] < 0.10
Aliphatic TPH >C35-C44	N	2680	mg/kg	0.10	[B] < 0.10
Total Aliphatic Hydrocarbons	N	2680	mg/kg	1.0	[B] < 1.0
Aromatic TPH >C5-C7	N	2680	mg/kg	0.010	[B] < 0.010
Aromatic TPH >C7-C8	N	2680	mg/kg	0.010	[B] < 0.010
Aromatic TPH >C8-C10	N	2680	mg/kg	0.10	[B] < 0.10
Aromatic TPH >C10-C12	N	2680	mg/kg	0.10	[B] < 0.10
Aromatic TPH >C12-C16	N	2680	mg/kg	0.10	[B] < 0.10
Aromatic TPH >C16-C21	N	2680	mg/kg	0.10	[B] < 0.10
Aromatic TPH >C21-C35	N	2680	mg/kg	0.10	[B] < 0.10
Aromatic TPH >C35-C44	N	2680	mg/kg	0.10	[B] < 0.10
Total Aromatic Hydrocarbons	N	2680	mg/kg	1.0	[B] < 1.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	2.0	[B] < 2.0
Dichlorodifluoromethane	N	2760	µg/kg	0.20	[B] < 0.20
Chloromethane	N	2760	µg/kg	0.20	[B] < 0.20
Vinyl Chloride	N	2760	µg/kg	0.20	[B] < 0.20
Bromomethane	N	2760	µg/kg	0.20	[B] < 0.20
Chloroethane	N	2760	µg/kg	0.20	[B] < 0.20
Trichlorofluoromethane	N	2760	µg/kg	0.20	[B] < 0.20
1,1-Dichloroethene	N	2760	µg/kg	0.20	[B] < 0.20
Trans 1,2-Dichloroethene	N	2760	µg/kg	0.20	[B] < 0.20
1,1-Dichloroethane	N	2760	µg/kg	0.20	[B] < 0.20
cis 1,2-Dichloroethene	N	2760	µg/kg	0.20	[B] < 0.20
Bromochloromethane	N	2760	µg/kg	0.50	[B] < 0.50
Trichloromethane	N	2760	µg/kg	0.20	[B] < 0.20
1,1,1-Trichloroethane	N	2760	µg/kg	0.20	[B] < 0.20
Tetrachloromethane	N	2760	µg/kg	0.20	[B] < 0.20
1,1-Dichloropropene	N	2760	µg/kg	0.20	[B] < 0.20
Benzene	N	2760	µg/kg	0.20	[B] < 0.20
1,2-Dichloroethane	N	2760	µg/kg	0.20	[B] < 0.20
Trichloroethene	N	2760	µg/kg	0.20	[B] < 0.20
1,2-Dichloropropane	N	2760	µg/kg	0.20	[B] < 0.20
Dibromomethane	N	2760	µg/kg	0.20	[B] < 0.20
Bromodichloromethane	N	2760	µg/kg	0.20	[B] < 0.20
cis-1,3-Dichloropropene	N	2760	µg/kg	0.20	[B] < 0.20
Toluene	N	2760	µg/kg	0.20	[B] < 0.20
Trans-1,3-Dichloropropene	N	2760	µg/kg	0.20	[B] < 0.20
1,1,2-Trichloroethane	N	2760	µg/kg	0.20	[B] < 0.20

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd		Chemtest Job No.:		22-47435	
Quotation No.: Q22-28455		Chemtest Sample ID.:		1562261	
		Sample Location:		BH215	
		Sample Type:		SOIL	
		Top Depth (m):		6.00	
		Date Sampled:		05-Dec-2022	
		Asbestos Lab:		DURHAM	
Determinand	Accred.	SOP	Units	LOD	
Tetrachloroethene	N	2760	µg/kg	0.20	[B] < 0.20
1,3-Dichloropropane	N	2760	µg/kg	0.20	[B] < 0.20
Dibromochloromethane	N	2760	µg/kg	0.20	[B] < 0.20
1,2-Dibromoethane	N	2760	µg/kg	0.20	[B] < 0.20
Chlorobenzene	N	2760	µg/kg	0.20	[B] < 0.20
1,1,1,2-Tetrachloroethane	N	2760	µg/kg	0.20	[B] < 0.20
Ethylbenzene	N	2760	µg/kg	0.20	[B] < 0.20
m & p-Xylene	N	2760	µg/kg	0.20	[B] < 0.20
o-Xylene	N	2760	µg/kg	0.20	[B] < 0.20
Styrene	N	2760	µg/kg	0.20	[B] < 0.20
Tribromomethane	N	2760	µg/kg	0.20	[B] < 0.20
Isopropylbenzene	N	2760	µg/kg	0.20	[B] < 0.20
Bromobenzene	N	2760	µg/kg	0.20	[B] < 0.20
1,2,3-Trichloropropane	N	2760	µg/kg	0.20	[B] < 0.20
N-Propylbenzene	N	2760	µg/kg	0.20	[B] < 0.20
2-Chlorotoluene	N	2760	µg/kg	0.20	[B] < 0.20
1,3,5-Trimethylbenzene	N	2760	µg/kg	0.20	[B] < 0.20
4-Chlorotoluene	N	2760	µg/kg	0.20	[B] < 0.20
Tert-Butylbenzene	N	2760	µg/kg	0.20	[B] < 0.20
1,2,4-Trimethylbenzene	N	2760	µg/kg	0.20	[B] < 0.20
Sec-Butylbenzene	N	2760	µg/kg	0.20	[B] < 0.20
1,3-Dichlorobenzene	N	2760	µg/kg	0.20	[B] < 0.20
4-Isopropyltoluene	N	2760	µg/kg	0.20	[B] < 0.20
1,4-Dichlorobenzene	N	2760	µg/kg	0.20	[B] < 0.20
N-Butylbenzene	N	2760	µg/kg	0.20	[B] < 0.20
1,2-Dichlorobenzene	N	2760	µg/kg	0.20	[B] < 0.20
1,2-Dibromo-3-Chloropropane	N	2760	µg/kg	0.20	[B] < 0.20
1,2,4-Trichlorobenzene	N	2760	µg/kg	0.20	[B] < 0.20
Hexachlorobutadiene	N	2760	µg/kg	0.20	[B] < 0.20
1,2,3-Trichlorobenzene	N	2760	µg/kg	0.20	[B] < 0.20
Methyl Tert-Butyl Ether	N	2760	µg/kg	0.20	[B] < 0.20
N-Nitrosodimethylamine	N	2790	mg/kg	0.050	[B] < 0.050
Phenol	N	2790	mg/kg	0.050	[B] < 0.050
2-Chlorophenol	N	2790	mg/kg	0.050	[B] < 0.050
Bis-(2-Chloroethyl)Ether	N	2790	mg/kg	0.050	[B] < 0.050
1,3-Dichlorobenzene	N	2790	mg/kg	0.050	[B] < 0.050
1,4-Dichlorobenzene	N	2790	mg/kg	0.050	[B] < 0.050
1,2-Dichlorobenzene	N	2790	mg/kg	0.050	[B] < 0.050
2-Methylphenol	N	2790	mg/kg	0.050	[B] < 0.050

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd	Chemtest Job No.:		22-47435		
Quotation No.: Q22-28455	Chemtest Sample ID.:		1562261		
	Sample Location:		BH215		
	Sample Type:		SOIL		
	Top Depth (m):		6.00		
	Date Sampled:		05-Dec-2022		
	Asbestos Lab:		DURHAM		
Determinand	Accred.	SOP	Units	LOD	
Bis(2-Chloroisopropyl)Ether	N	2790	mg/kg	0.050	[B] < 0.050
Hexachloroethane	N	2790	mg/kg	0.050	[B] < 0.050
N-Nitrosodi-n-propylamine	N	2790	mg/kg	0.050	[B] < 0.050
4-Methylphenol	N	2790	mg/kg	0.050	[B] < 0.050
Nitrobenzene	N	2790	mg/kg	0.050	[B] < 0.050
Isophorone	N	2790	mg/kg	0.050	[B] < 0.050
2-Nitrophenol	N	2790	mg/kg	0.050	[B] < 0.050
2,4-Dimethylphenol	N	2790	mg/kg	0.050	[B] < 0.050
Bis(2-Chloroethoxy)Methane	N	2790	mg/kg	0.050	[B] < 0.050
2,4-Dichlorophenol	N	2790	mg/kg	0.050	[B] < 0.050
1,2,4-Trichlorobenzene	N	2790	mg/kg	0.050	[B] < 0.050
Naphthalene	N	2790	mg/kg	0.050	[B] < 0.050
4-Chloroaniline	N	2790	mg/kg	0.050	[B] < 0.050
Hexachlorobutadiene	N	2790	mg/kg	0.050	[B] < 0.050
4-Chloro-3-Methylphenol	N	2790	mg/kg	0.050	[B] < 0.050
2-Methylnaphthalene	N	2790	mg/kg	0.050	[B] < 0.050
Hexachlorocyclopentadiene	N	2790	mg/kg	0.050	[B] < 0.050
2,4,6-Trichlorophenol	N	2790	mg/kg	0.050	[B] < 0.050
2,4,5-Trichlorophenol	N	2790	mg/kg	0.050	[B] < 0.050
2-Chloronaphthalene	N	2790	mg/kg	0.050	[B] < 0.050
2-Nitroaniline	N	2790	mg/kg	0.050	[B] < 0.050
Acenaphthylene	N	2790	mg/kg	0.050	[B] < 0.050
Dimethylphthalate	N	2790	mg/kg	0.050	[B] < 0.050
2,6-Dinitrotoluene	N	2790	mg/kg	0.050	[B] < 0.050
Acenaphthene	N	2790	mg/kg	0.050	[B] < 0.050
3-Nitroaniline	N	2790	mg/kg	0.050	[B] < 0.050
Dibenzofuran	N	2790	mg/kg	0.050	[B] < 0.050
4-Chlorophenylphenylether	N	2790	mg/kg	0.050	[B] < 0.050
2,4-Dinitrotoluene	N	2790	mg/kg	0.050	[B] < 0.050
Fluorene	N	2790	mg/kg	0.050	[B] < 0.050
Diethyl Phthalate	N	2790	mg/kg	0.050	[B] < 0.050
4-Nitroaniline	N	2790	mg/kg	0.050	[B] < 0.050
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.050	[B] < 0.050
Azobenzene	N	2790	mg/kg	0.050	[B] < 0.050
4-Bromophenylphenyl Ether	N	2790	mg/kg	0.050	[B] < 0.050
Hexachlorobenzene	N	2790	mg/kg	0.050	[B] < 0.050
Pentachlorophenol	N	2790	mg/kg	0.050	[B] < 0.050
Phenanthrene	N	2790	mg/kg	0.050	[B] < 0.050
Anthracene	N	2790	mg/kg	0.050	[B] < 0.050

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd		Chemtest Job No.:		22-47435	
Quotation No.: Q22-28455		Chemtest Sample ID.:		1562261	
		Sample Location:		BH215	
		Sample Type:		SOIL	
		Top Depth (m):		6.00	
		Date Sampled:		05-Dec-2022	
		Asbestos Lab:		DURHAM	
Determinand	Accred.	SOP	Units	LOD	
Carbazole	N	2790	mg/kg	0.050	[B] < 0.050
Di-N-Butyl Phthalate	N	2790	mg/kg	0.050	[B] < 0.050
Fluoranthene	N	2790	mg/kg	0.050	[B] < 0.050
Pyrene	N	2790	mg/kg	0.050	[B] < 0.050
Butylbenzyl Phthalate	N	2790	mg/kg	0.050	[B] < 0.050
Benzo[a]anthracene	N	2790	mg/kg	0.050	[B] < 0.050
Chrysene	N	2790	mg/kg	0.050	[B] < 0.050
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.050	[B] < 0.050
Di-N-Octyl Phthalate	N	2790	mg/kg	0.050	[B] < 0.050
Benzo[b]fluoranthene	N	2790	mg/kg	0.050	[B] < 0.050
Benzo[k]fluoranthene	N	2790	mg/kg	0.050	[B] < 0.050
Benzo[a]pyrene	N	2790	mg/kg	0.050	[B] < 0.050
Indeno(1,2,3-c,d)Pyrene	N	2790	mg/kg	0.050	[B] < 0.050
Dibenz(a,h)Anthracene	N	2790	mg/kg	0.050	[B] < 0.050
Benzo[g,h,i]perylene	N	2790	mg/kg	0.050	[B] < 0.050
4-Nitrophenol	N	2790	mg/kg	0.050	[B] < 0.050
Naphthalene	N	2800	mg/kg	0.010	0.11
Acenaphthylene	N	2800	mg/kg	0.010	0.069
Acenaphthene	N	2800	mg/kg	0.010	0.067
Fluorene	N	2800	mg/kg	0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	0.71
Anthracene	N	2800	mg/kg	0.010	0.24
Fluoranthene	N	2800	mg/kg	0.010	1.4
Pyrene	N	2800	mg/kg	0.010	1.3
Benzo[a]anthracene	N	2800	mg/kg	0.010	0.74
Chrysene	N	2800	mg/kg	0.010	0.80
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	0.85
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	0.27
Benzo[a]pyrene	N	2800	mg/kg	0.010	0.83
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	0.47
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	0.098
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	0.45
Total Of 16 PAH's	N	2800	mg/kg	0.20	8.4
Resorcinol	U	2920	mg/kg	0.020	< 0.020
Phenol	U	2920	mg/kg	0.020	< 0.020
Cresols	U	2920	mg/kg	0.020	< 0.020
Xylenols	U	2920	mg/kg	0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020
Trimethylphenols	U	2920	mg/kg	0.020	< 0.020

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd	Chemtest Job No.: 22-47435				
Quotation No.: Q22-28455	Chemtest Sample ID.: 1562261				
	Sample Location:		BH215		
	Sample Type:		SOIL		
	Top Depth (m):		6.00		
	Date Sampled:		05-Dec-2022		
	Asbestos Lab:		DURHAM		
Determinand	Accred.	SOP	Units	LOD	
Total Phenols	U	2920	mg/kg	0.10	< 0.10

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1562261			BH215	05-Dec-2022	B	Amber Glass 250ml
1562261			BH215	05-Dec-2022	B	Amber Glass 60ml
1562261			BH215	05-Dec-2022	B	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
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
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'AquaKem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8- C10, >C10-C12, >C12-C16, >C16- C21, >C21- C35, >C35- C44	Dichloromethane extraction / GCxGC FID detection
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.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	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-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

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"
SOP	Standard operating procedure
LOD	Limit of detection

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 30 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

Final Report

Report No.: 22-47585-1
Initial Date of Issue: 12-Jan-2023
Client: Causeway Geotech Ltd
Client Address: 8 Drumahiskey Road
 Balnamore
 Ballymoney
 County Antrim
 BT53 7QL
Contact(s): Alistair McQuat
 Carin Cornwall
 Celine Rooney
 Colm Hurley
 Darren O'Mahony
 Dean McCloskey
 Gabriella Horan
 Joe Gervin
 John Cameron
 Lucy Newland
 Martin Gardiner
 Matthew Gilbert
 Neil Haggan
 Paul Dunlop
 Sean Ross
 Stephen Franey
 Stephen McCracken
Project: 22-1041B 3FM Planning Design GI
Quotation No.: Q22-28455
Order No.:
No. of Samples: 2
Turnaround (Wkdays): 8
Date Approved: 12-Jan-2023

Date Received: 12-Dec-2022

Date Instructed: 22-Dec-2022

Results Due: 09-Jan-2023

Approved By:



Details: Stuart Henderson, Technical
 Manager

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd		Chemtest Job No.:		22-47585	22-47585	
Quotation No.: Q22-28455		Chemtest Sample ID.:		1562837	1562840	
		Sample Location:		BH217	BH217	
		Sample Type:		SOIL	SOIL	
		Top Depth (m):		3.0	5.0	
		Date Sampled:		08-Dec-2022	08-Dec-2022	
		Asbestos Lab:		DURHAM	DURHAM	
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	21	25
Natural Moisture Content	N	2030	%	0.020	26	33
Soil Colour	N	2040		N/A	Brown	Brown
Other Material	N	2040		N/A	None	None
Soil Texture	N	2040		N/A	Sand	Clay
pH	U	2010		4.0	8.4	8.5
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.76	4.1
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.13	0.15
Total Sulphur	U	2175	%	0.010	0.12	0.70
Sulphur (Elemental)	U	2180	mg/kg	1.0	16	690
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Thiocyanate	U	2300	mg/kg	5.0	< 5.0	< 5.0
Aluminium (Total)	N	2430	mg/kg	100	3600	6500
Iron (Total)	N	2430	mg/kg	100	5800	8900
Arsenic	U	2455	mg/kg	0.5	1.5	5.6
Barium	U	2455	mg/kg	0	9	16
Beryllium	U	2455	mg/kg	0.5	< 0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	< 0.10	< 0.10
Chromium	U	2455	mg/kg	0.5	4.8	10
Manganese	U	2455	mg/kg	1.0	200	220
Copper	U	2455	mg/kg	0.50	1.9	13
Mercury	U	2455	mg/kg	0.05	< 0.05	0.26
Nickel	U	2455	mg/kg	0.50	5.1	9.3
Lead	U	2455	mg/kg	0.50	6.2	42
Selenium	U	2455	mg/kg	0.25	< 0.25	< 0.25
Vanadium	U	2455	mg/kg	0.5	6.7	13
Zinc	U	2455	mg/kg	0.50	16	51
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	< 0.40	1.3
Total Organic Carbon	U	2625	%	0.20	< 0.20	0.75
Aliphatic TPH >C5-C6	N	2680	mg/kg	0.010	< 0.010	< 0.010
Aliphatic TPH >C6-C8	N	2680	mg/kg	0.010	< 0.010	< 0.010
Aliphatic TPH >C8-C10	N	2680	mg/kg	0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	2680	mg/kg	0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	2680	mg/kg	0.10	< 0.10	< 0.10

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		Date Sampled:		08-Dec-2022	08-Dec-2022	
		Asbestos Lab:		DURHAM	DURHAM	
Determinand	Accred.	SOP	Units	LOD		
Aliphatic TPH >C16-C21	N	2680	mg/kg	0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	2680	mg/kg	0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	2680	mg/kg	0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C5-C7	N	2680	mg/kg	0.010	< 0.010	< 0.010
Aromatic TPH >C7-C8	N	2680	mg/kg	0.010	< 0.010	< 0.010
Aromatic TPH >C8-C10	N	2680	mg/kg	0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	2680	mg/kg	0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	2680	mg/kg	0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	2680	mg/kg	0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	2680	mg/kg	0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	2680	mg/kg	0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Chloromethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Vinyl Chloride	N	2760	µg/kg	0.20	< 0.20	< 0.20
Bromomethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Chloroethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Trichlorofluoromethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,1-Dichloroethene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Trans 1,2-Dichloroethene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,1-Dichloroethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
cis 1,2-Dichloroethene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Bromochloromethane	N	2760	µg/kg	0.50	< 0.50	< 0.50
Trichloromethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,1,1-Trichloroethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Tetrachloromethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,1-Dichloropropene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Benzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,2-Dichloroethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Trichloroethene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,2-Dichloropropane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Dibromomethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Bromodichloromethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
cis-1,3-Dichloropropene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Toluene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Trans-1,3-Dichloropropene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,1,2-Trichloroethane	N	2760	µg/kg	0.20	< 0.20	< 0.20

Results - Soil

Project: 22-1041B 3FM Planning Design GI

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		Sample Location:		BH217	BH217	
		Sample Type:		SOIL	SOIL	
		Top Depth (m):		3.0	5.0	
		Date Sampled:		08-Dec-2022	08-Dec-2022	
		Asbestos Lab:		DURHAM	DURHAM	
Determinand	Accred.	SOP	Units	LOD		
Tetrachloroethene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,3-Dichloropropane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Dibromochloromethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,2-Dibromoethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Chlorobenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,1,1,2-Tetrachloroethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Ethylbenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
m & p-Xylene	N	2760	µg/kg	0.20	< 0.20	< 0.20
o-Xylene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Styrene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Tribromomethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Isopropylbenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Bromobenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,2,3-Trichloropropane	N	2760	µg/kg	0.20	< 0.20	< 0.20
N-Propylbenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
2-Chlorotoluene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,3,5-Trimethylbenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
4-Chlorotoluene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Tert-Butylbenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,2,4-Trimethylbenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Sec-Butylbenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,3-Dichlorobenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
4-Isopropyltoluene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,4-Dichlorobenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
N-Butylbenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,2-Dichlorobenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,2-Dibromo-3-Chloropropane	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,2,4-Trichlorobenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Hexachlorobutadiene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,2,3-Trichlorobenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Methyl Tert-Butyl Ether	N	2760	µg/kg	0.20	< 0.20	< 0.20
N-Nitrosodimethylamine	N	2790	mg/kg	0.050	< 0.050	< 0.050
Phenol	N	2790	mg/kg	0.050	< 0.050	< 0.050
2-Chlorophenol	N	2790	mg/kg	0.050	< 0.050	< 0.050
Bis-(2-Chloroethyl)Ether	N	2790	mg/kg	0.050	< 0.050	< 0.050
1,3-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050	< 0.050
1,4-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050	< 0.050
1,2-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050	< 0.050
2-Methylphenol	N	2790	mg/kg	0.050	< 0.050	< 0.050

Results - Soil

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	Sample Type:		SOIL	SOIL		
	Top Depth (m):		3.0	5.0		
	Date Sampled:		08-Dec-2022	08-Dec-2022		
	Asbestos Lab:		DURHAM	DURHAM		
Determinand	Accred.	SOP	Units	LOD		
Bis(2-Chloroisopropyl)Ether	N	2790	mg/kg	0.050	< 0.050	< 0.050
Hexachloroethane	N	2790	mg/kg	0.050	< 0.050	< 0.050
N-Nitrosodi-n-propylamine	N	2790	mg/kg	0.050	< 0.050	< 0.050
4-Methylphenol	N	2790	mg/kg	0.050	< 0.050	< 0.050
Nitrobenzene	N	2790	mg/kg	0.050	< 0.050	< 0.050
Isophorone	N	2790	mg/kg	0.050	< 0.050	< 0.050
2-Nitrophenol	N	2790	mg/kg	0.050	< 0.050	< 0.050
2,4-Dimethylphenol	N	2790	mg/kg	0.050	< 0.050	< 0.050
Bis(2-Chloroethoxy)Methane	N	2790	mg/kg	0.050	< 0.050	< 0.050
2,4-Dichlorophenol	N	2790	mg/kg	0.050	< 0.050	< 0.050
1,2,4-Trichlorobenzene	N	2790	mg/kg	0.050	< 0.050	< 0.050
Naphthalene	N	2790	mg/kg	0.050	< 0.050	< 0.050
4-Chloroaniline	N	2790	mg/kg	0.050	< 0.050	< 0.050
Hexachlorobutadiene	N	2790	mg/kg	0.050	< 0.050	< 0.050
4-Chloro-3-Methylphenol	N	2790	mg/kg	0.050	< 0.050	< 0.050
2-Methylnaphthalene	N	2790	mg/kg	0.050	< 0.050	< 0.050
Hexachlorocyclopentadiene	N	2790	mg/kg	0.050	< 0.050	< 0.050
2,4,6-Trichlorophenol	N	2790	mg/kg	0.050	< 0.050	< 0.050
2,4,5-Trichlorophenol	N	2790	mg/kg	0.050	< 0.050	< 0.050
2-Chloronaphthalene	N	2790	mg/kg	0.050	< 0.050	< 0.050
2-Nitroaniline	N	2790	mg/kg	0.050	< 0.050	< 0.050
Acenaphthylene	N	2790	mg/kg	0.050	< 0.050	< 0.050
Dimethylphthalate	N	2790	mg/kg	0.050	< 0.050	< 0.050
2,6-Dinitrotoluene	N	2790	mg/kg	0.050	< 0.050	< 0.050
Acenaphthene	N	2790	mg/kg	0.050	< 0.050	< 0.050
3-Nitroaniline	N	2790	mg/kg	0.050	< 0.050	< 0.050
Dibenzofuran	N	2790	mg/kg	0.050	< 0.050	< 0.050
4-Chlorophenylphenylether	N	2790	mg/kg	0.050	< 0.050	< 0.050
2,4-Dinitrotoluene	N	2790	mg/kg	0.050	< 0.050	< 0.050
Fluorene	N	2790	mg/kg	0.050	< 0.050	< 0.050
Diethyl Phthalate	N	2790	mg/kg	0.050	< 0.050	< 0.050
4-Nitroaniline	N	2790	mg/kg	0.050	< 0.050	< 0.050
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.050	< 0.050	< 0.050
Azobenzene	N	2790	mg/kg	0.050	< 0.050	< 0.050
4-Bromophenylphenyl Ether	N	2790	mg/kg	0.050	< 0.050	< 0.050
Hexachlorobenzene	N	2790	mg/kg	0.050	< 0.050	< 0.050
Pentachlorophenol	N	2790	mg/kg	0.050	< 0.050	< 0.050
Phenanthrene	N	2790	mg/kg	0.050	< 0.050	0.19
Anthracene	N	2790	mg/kg	0.050	< 0.050	0.13

Results - Soil

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	Sample Type:		SOIL	SOIL	
	Top Depth (m):		3.0	5.0	
	Date Sampled:		08-Dec-2022	08-Dec-2022	
	Asbestos Lab:		DURHAM	DURHAM	
Determinand	Accred.	SOP	Units	LOD	
Carbazole	N	2790	mg/kg	0.050	< 0.050
Di-N-Butyl Phthalate	N	2790	mg/kg	0.050	< 0.050
Fluoranthene	N	2790	mg/kg	0.050	< 0.050
Pyrene	N	2790	mg/kg	0.050	< 0.050
Butylbenzyl Phthalate	N	2790	mg/kg	0.050	< 0.050
Benzo[a]anthracene	N	2790	mg/kg	0.050	< 0.050
Chrysene	N	2790	mg/kg	0.050	< 0.050
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.050	< 0.050
Di-N-Octyl Phthalate	N	2790	mg/kg	0.050	< 0.050
Benzo[b]fluoranthene	N	2790	mg/kg	0.050	< 0.050
Benzo[k]fluoranthene	N	2790	mg/kg	0.050	< 0.050
Benzo[a]pyrene	N	2790	mg/kg	0.050	< 0.050
Indeno(1,2,3-c,d)Pyrene	N	2790	mg/kg	0.050	< 0.050
Dibenz(a,h)Anthracene	N	2790	mg/kg	0.050	< 0.050
Benzo[g,h,i]perylene	N	2790	mg/kg	0.050	< 0.050
4-Nitrophenol	N	2790	mg/kg	0.050	< 0.050
Naphthalene	N	2800	mg/kg	0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010	0.094
Pyrene	N	2800	mg/kg	0.010	0.099
Benzo[a]anthracene	N	2800	mg/kg	0.010	< 0.010
Chrysene	N	2800	mg/kg	0.010	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	< 0.20
Resorcinol	U	2920	mg/kg	0.020	< 0.020
Phenol	U	2920	mg/kg	0.020	< 0.020
Cresols	U	2920	mg/kg	0.020	< 0.020
Xylenols	U	2920	mg/kg	0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020
Trimethylphenols	U	2920	mg/kg	0.020	< 0.020

Results - Soil

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Client: Causeway Geotech Ltd	Chemtest Job No.:				22-47585	22-47585
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	Sample Location:				BH217	BH217
	Sample Type:				SOIL	SOIL
	Top Depth (m):				3.0	5.0
	Date Sampled:				08-Dec-2022	08-Dec-2022
	Asbestos Lab:				DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD		
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10

Results - Single Stage WAC

Project: 22-1041B 3FM Planning Design GI

Chemtest Job No: 22-47585				Landfill Waste Acceptance Criteria Limits			
Chemtest Sample ID: 1562840							
Sample Ref:							
Sample ID:							
Sample Location: BH217							
Top Depth(m): 5.0				Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Bottom Depth(m):							
Sampling Date: 08-Dec-2022							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	U	%	0.75	3	5	6
Loss On Ignition	2610	U	%	1.1	--	--	10
Total BTEX	2760	U	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	U	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg	7.6	100	--	--
pH	2010	U		8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.021	--	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	1455	U	0.0008	0.0080	0.5	2	25
Barium	1455	U	0.006	0.064	20	100	300
Cadmium	1455	U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455	U	< 0.0005	< 0.0050	2	50	100
Mercury	1455	U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455	U	0.0026	0.026	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455	U	0.0012	0.012	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.025	4	50	200
Chloride	1220	U	320	3200	800	15000	25000
Fluoride	1220	U	0.11	1.1	10	150	500
Sulphate	1220	U	17	170	1000	20000	50000
Total Dissolved Solids	1020	N	820	8100	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	< 2.5	< 50	500	800	1000

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	25

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.
1455	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
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
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
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection

Test Methods

SOP	Title	Parameters included	Method summary
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.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	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-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest 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"
SOP	Standard operating procedure
LOD	Limit of detection

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 30 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

Final Report

Report No.: 22-48495-1
Initial Date of Issue: 16-Jan-2023
Client Causeway Geotech Ltd
Client Address: 8 Drumahiskey Road
 Balnamore
 Ballymoney
 County Antrim
 BT53 7QL
Contact(s): Alistair McQuat
 Carin Cornwall
 Celine Rooney
 Colm Hurley
 Darren O'Mahony
 Dean McCloskey
 Gabriella Horan
 Joe Gervin
 John Cameron
 Lucy Newland
 Martin Gardiner
 Matthew Gilbert
 Neil Haggan
 Paul Dunlop
 Sean Ross
 Stephen Franey
 Stephen McCracken
Project 22-1041B 3FM Planning Design GI
Quotation No.: Q22-28455
Order No.:
No. of Samples: 2
Turnaround (Wkdays): 8
Date Approved: 16-Jan-2023

Date Received: 20-Dec-2022
Date Instructed: 22-Dec-2022
Results Due: 09-Jan-2023

Approved By:



Details: Stuart Henderson, Technical
 Manager

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd		Chemtest Job No.:		22-48495	22-48495	
Quotation No.: Q22-28455		Chemtest Sample ID.:		1566712	1566715	
	Sample Location:		BH216	BH216		
	Sample Type:		SOIL	SOIL		
	Top Depth (m):		3.50	5.00		
	Date Sampled:		12-Dec-2022	12-Dec-2022		
	Asbestos Lab:		DURHAM	DURHAM		
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	28	28
Natural Moisture Content	N	2030	%	0.020	38	38
Soil Colour	N	2040		N/A	Brown	Brown
Other Material	N	2040		N/A	Stones	None
Soil Texture	N	2040		N/A	Sand	Sand
pH	U	2010		4.0	8.5	8.3
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	1.5	1.1
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.22	0.11
Total Sulphur	U	2175	%	0.010	0.16	0.094
Sulphur (Elemental)	U	2180	mg/kg	1.0	39	29
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Thiocyanate	U	2300	mg/kg	5.0	< 5.0	< 5.0
Aluminium (Total)	N	2430	mg/kg	100	4800	3700
Iron (Total)	N	2430	mg/kg	100	6200	5200
Arsenic	U	2455	mg/kg	0.5	1.9	2.5
Barium	U	2455	mg/kg	0	12	13
Beryllium	U	2455	mg/kg	0.5	< 0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	< 0.10	< 0.10
Chromium	U	2455	mg/kg	0.5	6.1	7.9
Manganese	U	2455	mg/kg	1.0	200	330
Copper	U	2455	mg/kg	0.50	3.4	3.1
Mercury	U	2455	mg/kg	0.05	0.08	< 0.05
Nickel	U	2455	mg/kg	0.50	6.2	7.9
Lead	U	2455	mg/kg	0.50	6.3	5.3
Selenium	U	2455	mg/kg	0.25	< 0.25	< 0.25
Vanadium	U	2455	mg/kg	0.5	8.0	9.7
Zinc	U	2455	mg/kg	0.50	22	22
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	0.60	< 0.40
Total Organic Carbon	U	2625	%	0.20	0.35	< 0.20
Aliphatic TPH >C5-C6	N	2680	mg/kg	0.010	< 0.010	< 0.010
Aliphatic TPH >C6-C8	N	2680	mg/kg	0.010	< 0.010	< 0.010
Aliphatic TPH >C8-C10	N	2680	mg/kg	0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	2680	mg/kg	0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	2680	mg/kg	0.10	< 0.10	< 0.10

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd		Chemtest Job No.:		22-48495	22-48495	
Quotation No.: Q22-28455		Chemtest Sample ID.:		1566712	1566715	
		Sample Location:		BH216	BH216	
		Sample Type:		SOIL	SOIL	
		Top Depth (m):		3.50	5.00	
		Date Sampled:		12-Dec-2022	12-Dec-2022	
		Asbestos Lab:		DURHAM	DURHAM	
Determinand	Accred.	SOP	Units	LOD		
Aliphatic TPH >C16-C21	N	2680	mg/kg	0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	2680	mg/kg	0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	2680	mg/kg	0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C5-C7	N	2680	mg/kg	0.010	< 0.010	< 0.010
Aromatic TPH >C7-C8	N	2680	mg/kg	0.010	< 0.010	< 0.010
Aromatic TPH >C8-C10	N	2680	mg/kg	0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	2680	mg/kg	0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	2680	mg/kg	0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	2680	mg/kg	0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	2680	mg/kg	0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	2680	mg/kg	0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Chloromethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Vinyl Chloride	N	2760	µg/kg	0.20	< 0.20	< 0.20
Bromomethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Chloroethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Trichlorofluoromethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,1-Dichloroethene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Trans 1,2-Dichloroethene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,1-Dichloroethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
cis 1,2-Dichloroethene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Bromochloromethane	N	2760	µg/kg	0.50	< 0.50	< 0.50
Trichloromethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,1,1-Trichloroethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Tetrachloromethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,1-Dichloropropene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Benzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,2-Dichloroethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Trichloroethene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,2-Dichloropropane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Dibromomethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Bromodichloromethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
cis-1,3-Dichloropropene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Toluene	N	2760	µg/kg	0.20	0.77	0.64
Trans-1,3-Dichloropropene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,1,2-Trichloroethane	N	2760	µg/kg	0.20	< 0.20	< 0.20

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd		Chemtest Job No.:		22-48495	22-48495	
Quotation No.: Q22-28455		Chemtest Sample ID.:		1566712	1566715	
		Sample Location:		BH216	BH216	
		Sample Type:		SOIL	SOIL	
		Top Depth (m):		3.50	5.00	
		Date Sampled:		12-Dec-2022	12-Dec-2022	
		Asbestos Lab:		DURHAM	DURHAM	
Determinand	Accred.	SOP	Units	LOD		
Tetrachloroethene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,3-Dichloropropane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Dibromochloromethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,2-Dibromoethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Chlorobenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,1,1,2-Tetrachloroethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Ethylbenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
m & p-Xylene	N	2760	µg/kg	0.20	< 0.20	0.30
o-Xylene	N	2760	µg/kg	0.20	< 0.20	0.30
Styrene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Tribromomethane	N	2760	µg/kg	0.20	< 0.20	< 0.20
Isopropylbenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Bromobenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,2,3-Trichloropropane	N	2760	µg/kg	0.20	< 0.20	< 0.20
N-Propylbenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
2-Chlorotoluene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,3,5-Trimethylbenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
4-Chlorotoluene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Tert-Butylbenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,2,4-Trimethylbenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Sec-Butylbenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,3-Dichlorobenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
4-Isopropyltoluene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,4-Dichlorobenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
N-Butylbenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,2-Dichlorobenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,2-Dibromo-3-Chloropropane	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,2,4-Trichlorobenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Hexachlorobutadiene	N	2760	µg/kg	0.20	< 0.20	< 0.20
1,2,3-Trichlorobenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20
Methyl Tert-Butyl Ether	N	2760	µg/kg	0.20	< 0.20	< 0.20
N-Nitrosodimethylamine	N	2790	mg/kg	0.050	< 0.050	< 0.050
Phenol	N	2790	mg/kg	0.050	< 0.050	< 0.050
2-Chlorophenol	N	2790	mg/kg	0.050	< 0.050	< 0.050
Bis-(2-Chloroethyl)Ether	N	2790	mg/kg	0.050	< 0.050	< 0.050
1,3-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050	< 0.050
1,4-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050	< 0.050
1,2-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050	< 0.050
2-Methylphenol	N	2790	mg/kg	0.050	< 0.050	< 0.050

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd		Chemtest Job No.:		22-48495	22-48495
Quotation No.: Q22-28455		Chemtest Sample ID.:		1566712	1566715
		Sample Location:		BH216	BH216
		Sample Type:		SOIL	SOIL
		Top Depth (m):		3.50	5.00
		Date Sampled:		12-Dec-2022	12-Dec-2022
		Asbestos Lab:		DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD	
Bis(2-Chloroisopropyl)Ether	N	2790	mg/kg	0.050	< 0.050
Hexachloroethane	N	2790	mg/kg	0.050	< 0.050
N-Nitrosodi-n-propylamine	N	2790	mg/kg	0.050	< 0.050
4-Methylphenol	N	2790	mg/kg	0.050	< 0.050
Nitrobenzene	N	2790	mg/kg	0.050	< 0.050
Isophorone	N	2790	mg/kg	0.050	< 0.050
2-Nitrophenol	N	2790	mg/kg	0.050	< 0.050
2,4-Dimethylphenol	N	2790	mg/kg	0.050	< 0.050
Bis(2-Chloroethoxy)Methane	N	2790	mg/kg	0.050	< 0.050
2,4-Dichlorophenol	N	2790	mg/kg	0.050	< 0.050
1,2,4-Trichlorobenzene	N	2790	mg/kg	0.050	< 0.050
Naphthalene	N	2790	mg/kg	0.050	< 0.050
4-Chloroaniline	N	2790	mg/kg	0.050	< 0.050
Hexachlorobutadiene	N	2790	mg/kg	0.050	< 0.050
4-Chloro-3-Methylphenol	N	2790	mg/kg	0.050	< 0.050
2-Methylnaphthalene	N	2790	mg/kg	0.050	< 0.050
Hexachlorocyclopentadiene	N	2790	mg/kg	0.050	< 0.050
2,4,6-Trichlorophenol	N	2790	mg/kg	0.050	< 0.050
2,4,5-Trichlorophenol	N	2790	mg/kg	0.050	< 0.050
2-Chloronaphthalene	N	2790	mg/kg	0.050	< 0.050
2-Nitroaniline	N	2790	mg/kg	0.050	< 0.050
Acenaphthylene	N	2790	mg/kg	0.050	< 0.050
Dimethylphthalate	N	2790	mg/kg	0.050	< 0.050
2,6-Dinitrotoluene	N	2790	mg/kg	0.050	< 0.050
Acenaphthene	N	2790	mg/kg	0.050	< 0.050
3-Nitroaniline	N	2790	mg/kg	0.050	< 0.050
Dibenzofuran	N	2790	mg/kg	0.050	< 0.050
4-Chlorophenylphenylether	N	2790	mg/kg	0.050	< 0.050
2,4-Dinitrotoluene	N	2790	mg/kg	0.050	< 0.050
Fluorene	N	2790	mg/kg	0.050	< 0.050
Diethyl Phthalate	N	2790	mg/kg	0.050	< 0.050
4-Nitroaniline	N	2790	mg/kg	0.050	< 0.050
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.050	< 0.050
Azobenzene	N	2790	mg/kg	0.050	< 0.050
4-Bromophenylphenyl Ether	N	2790	mg/kg	0.050	< 0.050
Hexachlorobenzene	N	2790	mg/kg	0.050	< 0.050
Pentachlorophenol	N	2790	mg/kg	0.050	< 0.050
Phenanthrene	N	2790	mg/kg	0.050	< 0.050
Anthracene	N	2790	mg/kg	0.050	< 0.050

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd		Chemtest Job No.:		22-48495	22-48495	
Quotation No.: Q22-28455		Chemtest Sample ID.:		1566712	1566715	
		Sample Location:		BH216	BH216	
		Sample Type:		SOIL	SOIL	
		Top Depth (m):		3.50	5.00	
		Date Sampled:		12-Dec-2022	12-Dec-2022	
		Asbestos Lab:		DURHAM	DURHAM	
Determinand	Accred.	SOP	Units	LOD		
Carbazole	N	2790	mg/kg	0.050	< 0.050	< 0.050
Di-N-Butyl Phthalate	N	2790	mg/kg	0.050	< 0.050	< 0.050
Fluoranthene	N	2790	mg/kg	0.050	< 0.050	< 0.050
Pyrene	N	2790	mg/kg	0.050	< 0.050	< 0.050
Butylbenzyl Phthalate	N	2790	mg/kg	0.050	< 0.050	< 0.050
Benzo[a]anthracene	N	2790	mg/kg	0.050	< 0.050	< 0.050
Chrysene	N	2790	mg/kg	0.050	< 0.050	< 0.050
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.050	< 0.050	< 0.050
Di-N-Octyl Phthalate	N	2790	mg/kg	0.050	< 0.050	< 0.050
Benzo[b]fluoranthene	N	2790	mg/kg	0.050	< 0.050	< 0.050
Benzo[k]fluoranthene	N	2790	mg/kg	0.050	< 0.050	< 0.050
Benzo[a]pyrene	N	2790	mg/kg	0.050	< 0.050	< 0.050
Indeno(1,2,3-c,d)Pyrene	N	2790	mg/kg	0.050	< 0.050	< 0.050
Dibenz(a,h)Anthracene	N	2790	mg/kg	0.050	< 0.050	< 0.050
Benzo[g,h,i]perylene	N	2790	mg/kg	0.050	< 0.050	< 0.050
4-Nitrophenol	N	2790	mg/kg	0.050	< 0.050	< 0.050
Naphthalene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010	0.11	< 0.010
Pyrene	N	2800	mg/kg	0.010	0.12	< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Chrysene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	0.23	< 0.20
Resorcinol	U	2920	mg/kg	0.020	< 0.020	< 0.020
Phenol	U	2920	mg/kg	0.020	< 0.020	< 0.020
Cresols	U	2920	mg/kg	0.020	< 0.020	< 0.020
Xylenols	U	2920	mg/kg	0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020
Trimethylphenols	U	2920	mg/kg	0.020	< 0.020	< 0.020

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd	Chemtest Job No.:				22-48495	22-48495
Quotation No.: Q22-28455	Chemtest Sample ID.:				1566712	1566715
	Sample Location:				BH216	BH216
	Sample Type:				SOIL	SOIL
	Top Depth (m):				3.50	5.00
	Date Sampled:				12-Dec-2022	12-Dec-2022
	Asbestos Lab:				DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD		
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10

Results - Single Stage WAC

Project: 22-1041B 3FM Planning Design GI

Chemtest Job No: 22-48495					Landfill Waste Acceptance Criteria Limits		
Chemtest Sample ID: 1566712							
Sample Ref:							
Sample ID:							
Sample Location: BH216							
Top Depth(m): 3.50							
Bottom Depth(m):				Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sampling Date: 12-Dec-2022							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	U	%	0.35	3	5	
Loss On Ignition	2610	U	%	1.1	--	10	
Total BTEX	2760	U	mg/kg	< 0.010	6	--	
Total PCBs (7 Congeners)	2815	U	mg/kg	< 0.10	1	--	
TPH Total WAC	2670	U	mg/kg	< 10	500	--	
Total (Of 17) PAH's	2700	N	mg/kg	< 2.0	100	--	
pH	2010	U		8.5	--	>6	
Acid Neutralisation Capacity	2015	N	mol/kg	0.010	--	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	1455	U	0.0045	0.044	0.5	2	
Barium	1455	U	< 0.005	< 0.050	20	100	
Cadmium	1455	U	< 0.00011	< 0.0011	0.04	1	
Chromium	1455	U	< 0.0005	< 0.0050	0.5	10	
Copper	1455	U	0.0007	0.0073	2	50	
Mercury	1455	U	< 0.00005	< 0.00050	0.01	0.2	
Molybdenum	1455	U	0.0019	0.019	0.5	10	
Nickel	1455	U	< 0.0005	< 0.0050	0.4	10	
Lead	1455	U	< 0.0005	< 0.0050	0.5	10	
Antimony	1455	U	0.0009	0.0087	0.06	0.7	
Selenium	1455	U	< 0.0005	< 0.0050	0.1	0.5	
Zinc	1455	U	< 0.003	< 0.025	4	50	
Chloride	1220	U	17	170	800	15000	
Fluoride	1220	U	0.10	1.0	10	150	
Sulphate	1220	U	9.8	98	1000	20000	
Total Dissolved Solids	1020	N	97	960	4000	60000	
Phenol Index	1920	U	< 0.030	< 0.30	1	-	
Dissolved Organic Carbon	1610	U	5.4	54	500	800	

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	28

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.
1455	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
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
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
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection

Test Methods

SOP	Title	Parameters included	Method summary
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.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	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-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest 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"
SOP	Standard operating procedure
LOD	Limit of detection

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 30 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

Final Report

Report No.: 23-02019-1
Initial Date of Issue: 02-Feb-2023
Client: Causeway Geotech Ltd
Client Address: 8 Drumahiskey Road
Balnamore
Ballymoney
County Antrim
BT53 7QL
Contact(s): Colm Hurley
Project: 22-1041B 3FM Planning Design GI
Quotation No.: Q22-28455 **Date Received:** 23-Jan-2023
Order No.: **Date Instructed:** 25-Jan-2023
No. of Samples: 1
Turnaround (Wkdays): 7 **Results Due:** 02-Feb-2023
Date Approved: 02-Feb-2023

Approved By:



Details: Stuart Henderson, Technical
Manager

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd	Chemtest Job No.:				23-02019
Quotation No.: Q22-28455	Chemtest Sample ID.:				1578089
	Sample Location:				BH208
	Sample Type:				SOIL
	Top Depth (m):				0.50
	Date Sampled:				18-Jan-2023
	Asbestos Lab:				DURHAM
Determinand	Accred.	SOP	Units	LOD	
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected
Moisture	N	2030	%	0.020	7.6
Natural Moisture Content	N	2030	%	0.020	8.2
Soil Colour	N	2040		N/A	Brown
Other Material	N	2040		N/A	Stones
Soil Texture	N	2040		N/A	Sand
pH	U	2010		4.0	8.4
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	2.0
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.25
Total Sulphur	U	2175	%	0.010	0.28
Sulphur (Elemental)	U	2180	mg/kg	1.0	2.2
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50
Thiocyanate	U	2300	mg/kg	5.0	< 5.0
Aluminium (Total)	N	2430	mg/kg	100	11000
Iron (Total)	N	2430	mg/kg	100	26000
Arsenic	U	2455	mg/kg	0.5	40
Barium	U	2455	mg/kg	0	190
Beryllium	U	2455	mg/kg	0.5	3.5
Cadmium	U	2455	mg/kg	0.10	3.3
Chromium	U	2455	mg/kg	0.5	28
Manganese	U	2455	mg/kg	1.0	650
Copper	U	2455	mg/kg	0.50	140
Mercury	U	2455	mg/kg	0.05	0.24
Nickel	U	2455	mg/kg	0.50	59
Lead	U	2455	mg/kg	0.50	400
Selenium	U	2455	mg/kg	0.25	1.9
Vanadium	U	2455	mg/kg	0.5	73
Zinc	U	2455	mg/kg	0.50	830
Chromium (Hexavalent)	N	2490	mg/kg	0.50	1.6
Organic Matter	U	2625	%	0.40	7.1
Total Organic Carbon	U	2625	%	0.20	4.1
Aliphatic TPH >C5-C6	N	2680	mg/kg	0.010	< 0.010
Aliphatic TPH >C6-C8	N	2680	mg/kg	0.010	< 0.010
Aliphatic TPH >C8-C10	N	2680	mg/kg	0.10	< 0.10
Aliphatic TPH >C10-C12	N	2680	mg/kg	0.10	< 0.10
Aliphatic TPH >C12-C16	N	2680	mg/kg	0.10	< 0.10

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd	Chemtest Job No.:				23-02019
Quotation No.: Q22-28455	Chemtest Sample ID.:				1578089
	Sample Location:				BH208
	Sample Type:				SOIL
	Top Depth (m):				0.50
	Date Sampled:				18-Jan-2023
	Asbestos Lab:				DURHAM
Determinand	Accred.	SOP	Units	LOD	
Aliphatic TPH >C16-C21	N	2680	mg/kg	0.10	< 0.10
Aliphatic TPH >C21-C35	N	2680	mg/kg	0.10	< 0.10
Aliphatic TPH >C35-C44	N	2680	mg/kg	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C5-C7	N	2680	mg/kg	0.010	< 0.010
Aromatic TPH >C7-C8	N	2680	mg/kg	0.010	< 0.010
Aromatic TPH >C8-C10	N	2680	mg/kg	0.10	< 0.10
Aromatic TPH >C10-C12	N	2680	mg/kg	0.10	< 0.10
Aromatic TPH >C12-C16	N	2680	mg/kg	0.10	< 0.10
Aromatic TPH >C16-C21	N	2680	mg/kg	0.10	< 0.10
Aromatic TPH >C21-C35	N	2680	mg/kg	0.10	< 0.10
Aromatic TPH >C35-C44	N	2680	mg/kg	0.10	< 0.10
Total Aromatic Hydrocarbons	N	2680	mg/kg	1.0	< 1.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	2.0	< 2.0
Dichlorodifluoromethane	N	2760	µg/kg	0.20	< 0.20
Chloromethane	N	2760	µg/kg	0.20	< 0.20
Vinyl Chloride	N	2760	µg/kg	0.20	< 0.20
Bromomethane	N	2760	µg/kg	0.20	< 0.20
Chloroethane	N	2760	µg/kg	0.20	< 0.20
Trichlorofluoromethane	N	2760	µg/kg	0.20	< 0.20
1,1-Dichloroethene	N	2760	µg/kg	0.20	< 0.20
Trans 1,2-Dichloroethene	N	2760	µg/kg	0.20	< 0.20
1,1-Dichloroethane	N	2760	µg/kg	0.20	< 0.20
cis 1,2-Dichloroethene	N	2760	µg/kg	0.20	< 0.20
Bromochloromethane	N	2760	µg/kg	0.50	< 0.50
Trichloromethane	N	2760	µg/kg	0.20	< 0.20
1,1,1-Trichloroethane	N	2760	µg/kg	0.20	< 0.20
Tetrachloromethane	N	2760	µg/kg	0.20	< 0.20
1,1-Dichloropropene	N	2760	µg/kg	0.20	< 0.20
Benzene	N	2760	µg/kg	0.20	< 0.20
1,2-Dichloroethane	N	2760	µg/kg	0.20	< 0.20
Trichloroethene	N	2760	µg/kg	0.20	< 0.20
1,2-Dichloropropane	N	2760	µg/kg	0.20	< 0.20
Dibromomethane	N	2760	µg/kg	0.20	< 0.20
Bromodichloromethane	N	2760	µg/kg	0.20	< 0.20
cis-1,3-Dichloropropene	N	2760	µg/kg	0.20	< 0.20
Toluene	N	2760	µg/kg	0.20	0.70
Trans-1,3-Dichloropropene	N	2760	µg/kg	0.20	< 0.20
1,1,2-Trichloroethane	N	2760	µg/kg	0.20	< 0.20

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd	Chemtest Job No.: 23-02019				
Quotation No.: Q22-28455	Chemtest Sample ID.: 1578089				
	Sample Location:		BH208		
	Sample Type:		SOIL		
	Top Depth (m):		0.50		
	Date Sampled:		18-Jan-2023		
	Asbestos Lab:		DURHAM		
Determinand	Accred.	SOP	Units	LOD	
Tetrachloroethene	N	2760	µg/kg	0.20	< 0.20
1,3-Dichloropropane	N	2760	µg/kg	0.20	< 0.20
Dibromochloromethane	N	2760	µg/kg	0.20	< 0.20
1,2-Dibromoethane	N	2760	µg/kg	0.20	< 0.20
Chlorobenzene	N	2760	µg/kg	0.20	< 0.20
1,1,1,2-Tetrachloroethane	N	2760	µg/kg	0.20	< 0.20
Ethylbenzene	N	2760	µg/kg	0.20	< 0.20
m & p-Xylene	N	2760	µg/kg	0.20	< 0.20
o-Xylene	N	2760	µg/kg	0.20	< 0.20
Styrene	N	2760	µg/kg	0.20	< 0.20
Tribromomethane	N	2760	µg/kg	0.20	< 0.20
Isopropylbenzene	N	2760	µg/kg	0.20	< 0.20
Bromobenzene	N	2760	µg/kg	0.20	< 0.20
1,2,3-Trichloropropane	N	2760	µg/kg	0.20	< 0.20
N-Propylbenzene	N	2760	µg/kg	0.20	< 0.20
2-Chlorotoluene	N	2760	µg/kg	0.20	< 0.20
1,3,5-Trimethylbenzene	N	2760	µg/kg	0.20	< 0.20
4-Chlorotoluene	N	2760	µg/kg	0.20	< 0.20
Tert-Butylbenzene	N	2760	µg/kg	0.20	< 0.20
1,2,4-Trimethylbenzene	N	2760	µg/kg	0.20	< 0.20
Sec-Butylbenzene	N	2760	µg/kg	0.20	< 0.20
1,3-Dichlorobenzene	N	2760	µg/kg	0.20	< 0.20
4-Isopropyltoluene	N	2760	µg/kg	0.20	< 0.20
1,4-Dichlorobenzene	N	2760	µg/kg	0.20	< 0.20
N-Butylbenzene	N	2760	µg/kg	0.20	< 0.20
1,2-Dichlorobenzene	N	2760	µg/kg	0.20	< 0.20
1,2-Dibromo-3-Chloropropane	N	2760	µg/kg	0.20	< 0.20
1,2,4-Trichlorobenzene	N	2760	µg/kg	0.20	< 0.20
Hexachlorobutadiene	N	2760	µg/kg	0.20	< 0.20
1,2,3-Trichlorobenzene	N	2760	µg/kg	0.20	< 0.20
Methyl Tert-Butyl Ether	N	2760	µg/kg	0.20	< 0.20
N-Nitrosodimethylamine	N	2790	mg/kg	0.050	< 0.050
Phenol	N	2790	mg/kg	0.050	< 0.050
2-Chlorophenol	N	2790	mg/kg	0.050	< 0.050
Bis-(2-Chloroethyl)Ether	N	2790	mg/kg	0.050	< 0.050
1,3-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050
1,4-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050
1,2-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050
2-Methylphenol	N	2790	mg/kg	0.050	< 0.050

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd	Chemtest Job No.:				23-02019
Quotation No.: Q22-28455	Chemtest Sample ID.:				1578089
	Sample Location:				BH208
	Sample Type:				SOIL
	Top Depth (m):				0.50
	Date Sampled:				18-Jan-2023
	Asbestos Lab:				DURHAM
Determinand	Accred.	SOP	Units	LOD	
Bis(2-Chloroisopropyl)Ether	N	2790	mg/kg	0.050	< 0.050
Hexachloroethane	N	2790	mg/kg	0.050	< 0.050
N-Nitrosodi-n-propylamine	N	2790	mg/kg	0.050	< 0.050
4-Methylphenol	N	2790	mg/kg	0.050	< 0.050
Nitrobenzene	N	2790	mg/kg	0.050	< 0.050
Isophorone	N	2790	mg/kg	0.050	< 0.050
2-Nitrophenol	N	2790	mg/kg	0.050	< 0.050
2,4-Dimethylphenol	N	2790	mg/kg	0.050	< 0.050
Bis(2-Chloroethoxy)Methane	N	2790	mg/kg	0.050	< 0.050
2,4-Dichlorophenol	N	2790	mg/kg	0.050	< 0.050
1,2,4-Trichlorobenzene	N	2790	mg/kg	0.050	< 0.050
Naphthalene	N	2790	mg/kg	0.050	< 0.050
4-Chloroaniline	N	2790	mg/kg	0.050	< 0.050
Hexachlorobutadiene	N	2790	mg/kg	0.050	< 0.050
4-Chloro-3-Methylphenol	N	2790	mg/kg	0.050	< 0.050
2-Methylnaphthalene	N	2790	mg/kg	0.050	< 0.050
Hexachlorocyclopentadiene	N	2790	mg/kg	0.050	< 0.050
2,4,6-Trichlorophenol	N	2790	mg/kg	0.050	< 0.050
2,4,5-Trichlorophenol	N	2790	mg/kg	0.050	< 0.050
2-Chloronaphthalene	N	2790	mg/kg	0.050	< 0.050
2-Nitroaniline	N	2790	mg/kg	0.050	< 0.050
Acenaphthylene	N	2790	mg/kg	0.050	< 0.050
Dimethylphthalate	N	2790	mg/kg	0.050	< 0.050
2,6-Dinitrotoluene	N	2790	mg/kg	0.050	< 0.050
Acenaphthene	N	2790	mg/kg	0.050	< 0.050
3-Nitroaniline	N	2790	mg/kg	0.050	< 0.050
Dibenzofuran	N	2790	mg/kg	0.050	< 0.050
4-Chlorophenylphenylether	N	2790	mg/kg	0.050	< 0.050
2,4-Dinitrotoluene	N	2790	mg/kg	0.050	< 0.050
Fluorene	N	2790	mg/kg	0.050	< 0.050
Diethyl Phthalate	N	2790	mg/kg	0.050	< 0.050
4-Nitroaniline	N	2790	mg/kg	0.050	< 0.050
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.050	< 0.050
Azobenzene	N	2790	mg/kg	0.050	< 0.050
4-Bromophenylphenyl Ether	N	2790	mg/kg	0.050	< 0.050
Hexachlorobenzene	N	2790	mg/kg	0.050	< 0.050
Pentachlorophenol	N	2790	mg/kg	0.050	< 0.050
Phenanthrene	N	2790	mg/kg	0.050	< 0.050
Anthracene	N	2790	mg/kg	0.050	< 0.050

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd	Chemtest Job No.:				23-02019
Quotation No.: Q22-28455	Chemtest Sample ID.:				1578089
	Sample Location:				BH208
	Sample Type:				SOIL
	Top Depth (m):				0.50
	Date Sampled:				18-Jan-2023
	Asbestos Lab:				DURHAM
Determinand	Accred.	SOP	Units	LOD	
Carbazole	N	2790	mg/kg	0.050	< 0.050
Di-N-Butyl Phthalate	N	2790	mg/kg	0.050	< 0.050
Fluoranthene	N	2790	mg/kg	0.050	< 0.050
Pyrene	N	2790	mg/kg	0.050	< 0.050
Butylbenzyl Phthalate	N	2790	mg/kg	0.050	< 0.050
Benzo[a]anthracene	N	2790	mg/kg	0.050	< 0.050
Chrysene	N	2790	mg/kg	0.050	< 0.050
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.050	< 0.050
Di-N-Octyl Phthalate	N	2790	mg/kg	0.050	< 0.050
Benzo[b]fluoranthene	N	2790	mg/kg	0.050	< 0.050
Benzo[k]fluoranthene	N	2790	mg/kg	0.050	< 0.050
Benzo[a]pyrene	N	2790	mg/kg	0.050	< 0.050
Indeno(1,2,3-c,d)Pyrene	N	2790	mg/kg	0.050	< 0.050
Dibenz(a,h)Anthracene	N	2790	mg/kg	0.050	< 0.050
Benzo[g,h,i]perylene	N	2790	mg/kg	0.050	< 0.050
4-Nitrophenol	N	2790	mg/kg	0.050	< 0.050
Naphthalene	N	2800	mg/kg	0.010	0.19
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	0.97
Anthracene	N	2800	mg/kg	0.010	0.29
Fluoranthene	N	2800	mg/kg	0.010	2.2
Pyrene	N	2800	mg/kg	0.010	1.7
Benzo[a]anthracene	N	2800	mg/kg	0.010	0.75
Chrysene	N	2800	mg/kg	0.010	0.68
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	0.97
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	0.27
Benzo[a]pyrene	N	2800	mg/kg	0.010	0.72
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	0.58
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	0.42
Total Of 16 PAH's	N	2800	mg/kg	0.20	9.7
PCB 81	N	2815	mg/kg	0.0010	< 0.0010
PCB 77	N	2815	mg/kg	0.0010	< 0.0010
PCB 105	N	2815	mg/kg	0.0010	< 0.0010
PCB 114	N	2815	mg/kg	0.0010	< 0.0010
PCB 118	N	2815	mg/kg	0.0010	< 0.0010
PCB 123	N	2815	mg/kg	0.0010	< 0.0010

Results - Soil

Project: 22-1041B 3FM Planning Design GI

Client: Causeway Geotech Ltd	Chemtest Job No.: 23-02019				
Quotation No.: Q22-28455	Chemtest Sample ID.: 1578089				
	Sample Location: BH208				
	Sample Type: SOIL				
	Top Depth (m): 0.50				
	Date Sampled: 18-Jan-2023				
	Asbestos Lab: DURHAM				
Determinand	Accred.	SOP	Units	LOD	
PCB 126	N	2815	mg/kg	0.0010	< 0.0010
PCB 156	N	2815	mg/kg	0.0010	< 0.0010
PCB 157	N	2815	mg/kg	0.0010	< 0.0010
PCB 167	N	2815	mg/kg	0.0010	< 0.0010
PCB 169	N	2815	mg/kg	0.0010	< 0.0010
PCB 189	N	2815	mg/kg	0.0010	< 0.0010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.0010	< 0.0010
Resorcinol	U	2920	mg/kg	0.020	< 0.020
Phenol	U	2920	mg/kg	0.020	< 0.020
Cresols	U	2920	mg/kg	0.020	< 0.020
Xylenols	U	2920	mg/kg	0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020
Trimethylphenols	U	2920	mg/kg	0.020	< 0.020
Total Phenols	U	2920	mg/kg	0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
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
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'AquaKem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8- C10, >C10-C12, >C12-C16, >C16- C21, >C21- C35, >C35- C44	Dichloromethane extraction / GCxGC FID detection
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.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	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-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

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"
SOP	Standard operating procedure
LOD	Limit of detection

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 30 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

Results - Single Stage WAC

Chemtest Job No: 22-47585				Landfill Waste Acceptance Criteria Limits			
Chemtest Sample ID: 1562840							
Sample Ref:							
Sample ID:							
Sample Location: BH217							
Top Depth(m): 5.0				Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Bottom Depth(m):							
Sampling Date: 08-Dec-2022							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	U	%	0.75	3	5	6
Loss On Ignition	2610	U	%	1.1	--	--	10
Total BTEX	2760	U	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	U	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg	7.6	100	--	--
pH	2010	U		8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.021	--	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	1455	U	0.0008	0.0080	0.5	2	25
Barium	1455	U	0.006	0.064	20	100	300
Cadmium	1455	U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455	U	< 0.0005	< 0.0050	2	50	100
Mercury	1455	U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455	U	0.0026	0.026	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455	U	0.0012	0.012	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.025	4	50	200
Chloride	1220	U	320	3200	800	15000	25000
Fluoride	1220	U	0.11	1.1	10	150	500
Sulphate	1220	U	17	170	1000	20000	50000
Total Dissolved Solids	1020	N	820	8100	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	< 2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	25

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

Chemtest Job No: 22-48495				Landfill Waste Acceptance Criteria Limits			
Chemtest Sample ID: 1566712							
Sample Ref:							
Sample ID:							
Sample Location: BH216							
Top Depth(m): 3.50				Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Bottom Depth(m):							
Sampling Date: 12-Dec-2022							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	U	%	0.35	3	5	6
Loss On Ignition	2610	U	%	1.1	--	--	10
Total BTEX	2760	U	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	U	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg	< 2.0	100	--	--
pH	2010	U		8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.010	--	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	1455	U	0.0045	0.044	0.5	2	25
Barium	1455	U	< 0.005	< 0.050	20	100	300
Cadmium	1455	U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455	U	0.0007	0.0073	2	50	100
Mercury	1455	U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455	U	0.0019	0.019	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455	U	0.0009	0.0087	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.025	4	50	200
Chloride	1220	U	17	170	800	15000	25000
Fluoride	1220	U	0.10	1.0	10	150	500
Sulphate	1220	U	9.8	98	1000	20000	50000
Total Dissolved Solids	1020	N	97	960	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	5.4	54	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	28

Waste Acceptance Criteria

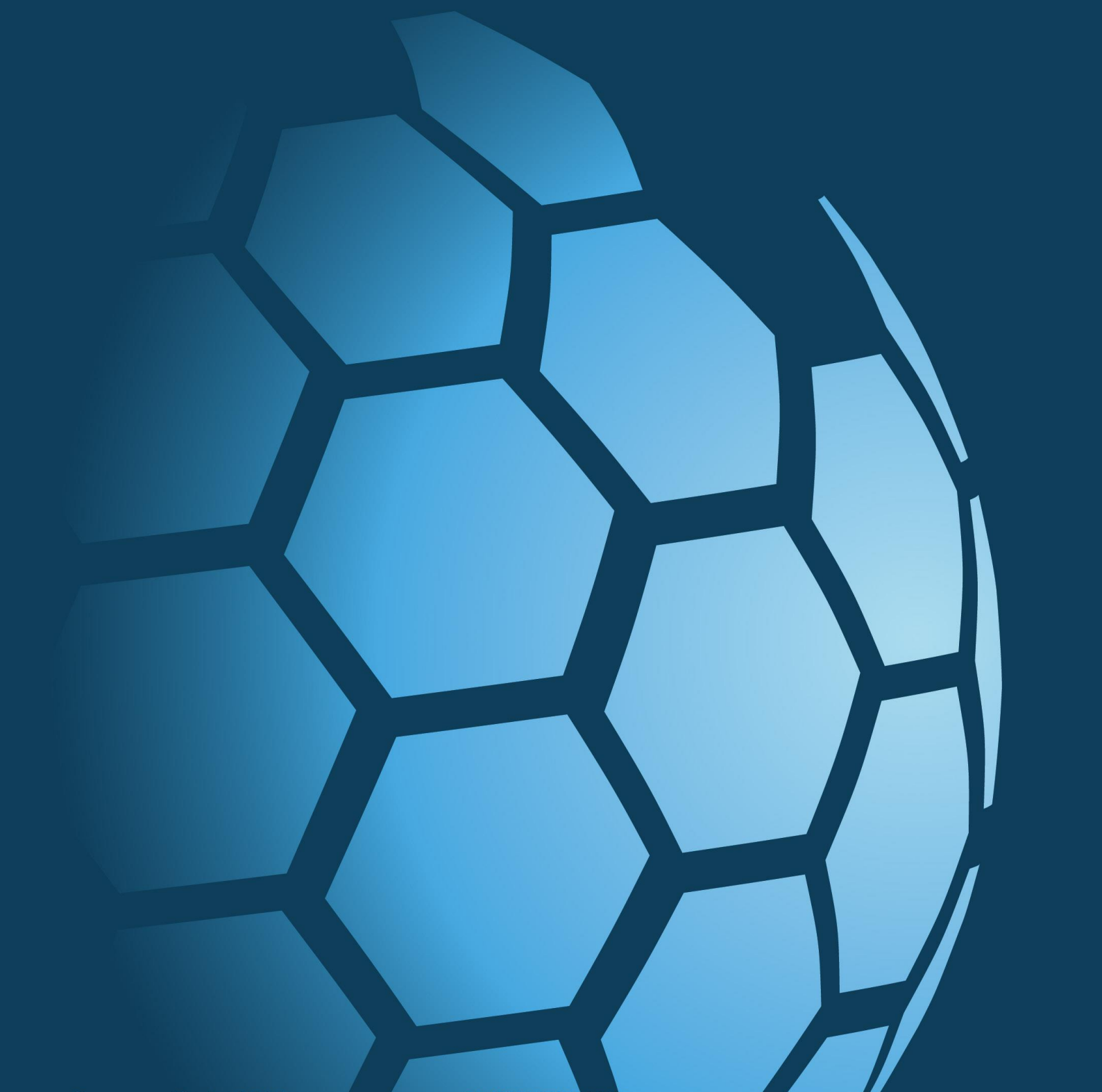
Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



CAUSEWAY
— GEOTECH

APPENDIX J

SPT HAMMER ENERGY MEASUREMENT REPORT



Project Number:		22-1041B
Project Name:		3FM Planning and Design GI Lot B 3rd Party Lands
BH Location	Driller	SPT Hammer No.
BH212	RW	1410
BH215	CC / GT	0197 / 0208
BH216	CC / GT	0197 / 0208
BH217	CC / GT	0197 / 0208

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Southern Testing
Unit 11
Charlwoods Road
East Grinstead
West Sussex
RH19 2HU

SPT Hammer Ref: 0197.
Test Date: 18/02/2023
Report Date: 20/02/2023
File Name: 0197..spt
Test Operator: RWS

Instrumented Rod Data

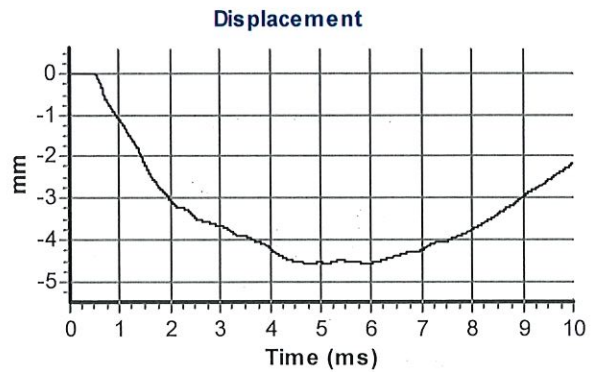
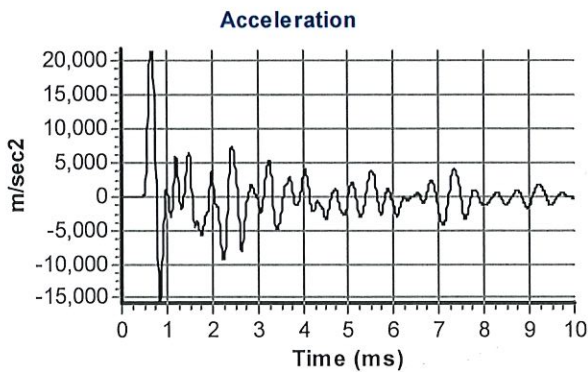
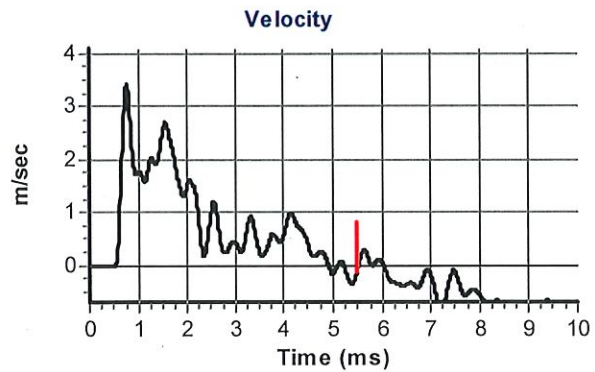
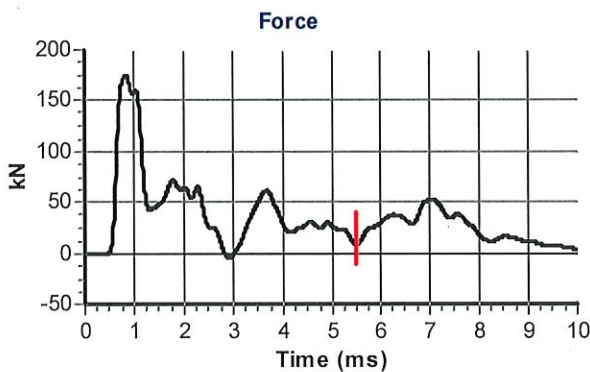
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.7
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 64786
Accelerometer No.2: 64789

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 10.0

Comments / Location

CAUSEWAY



Calculations

Area of Rod A (mm²): 996
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 356

Energy Ratio E_r (%): **75**

Signed: Bob Stewart
Title: Technician

The recommended calibration interval is 12 months

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Southern Testing
Unit 11
Charlwoods Road
East Grinstead
West Sussex
RH19 2HU

SPT Hammer Ref: 0208.
Test Date: 18/02/2023
Report Date: 20/02/2023
File Name: 0208..spt
Test Operator: RWS

Instrumented Rod Data

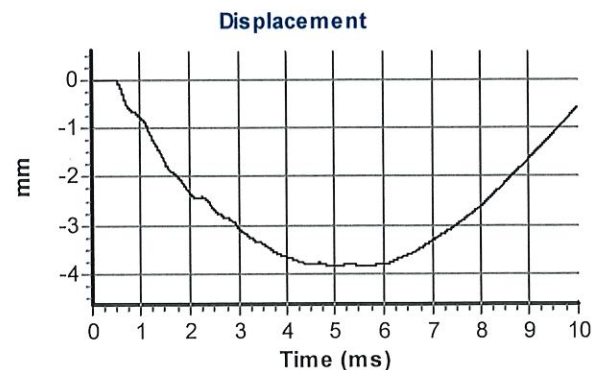
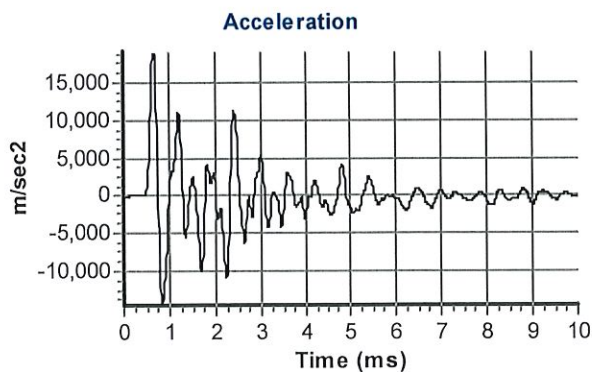
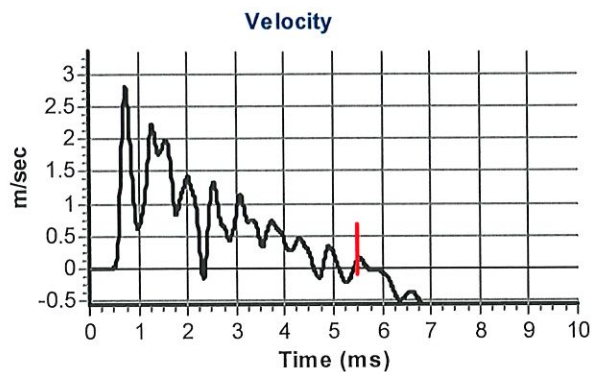
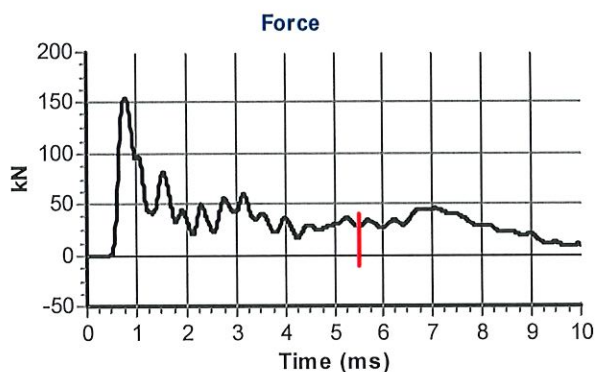
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.7
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 64786
Accelerometer No.2: 64789

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 10.0

Comments / Location

CAUSEWAY



Calculations

Area of Rod A (mm^2): 996
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 244

Energy Ratio E_r (%): **52**

Signed: Bob Stewart

Title: Technician

The recommended calibration interval is 12 months

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Southern Testing
Unit 11
Charlwoods Road
East Grinstead
West Sussex
RH19 2HU

SPT Hammer Ref: 1410.
Test Date: 18/02/2023
Report Date: 20/02/2023
File Name: 1410..spt
Test Operator: RWS

Instrumented Rod Data

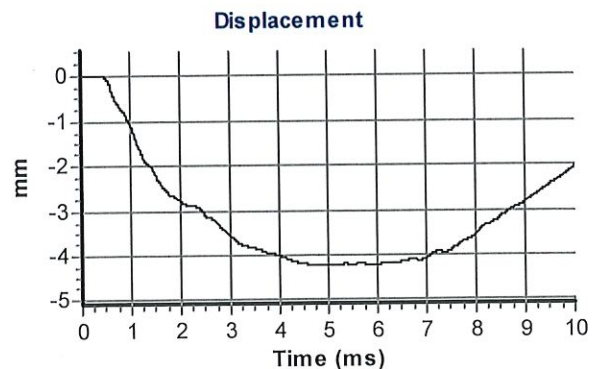
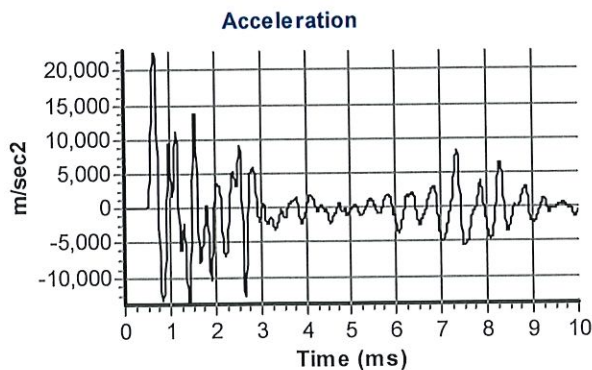
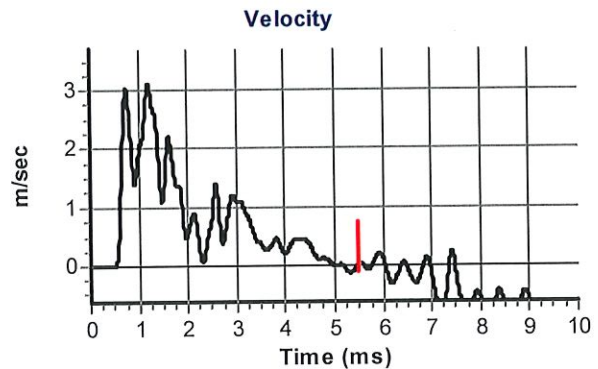
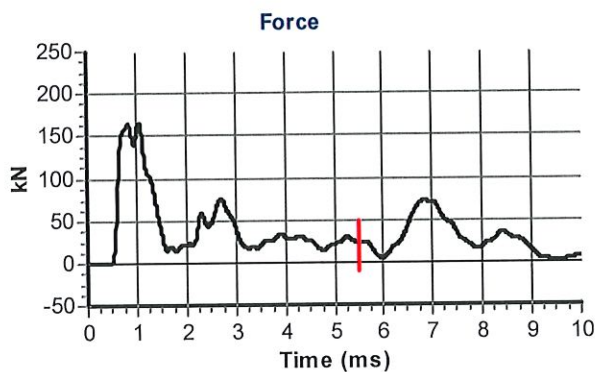
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.7
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 64786
Accelerometer No.2: 64789

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 10.0

Comments / Location

CAUSEWAY



Calculations

Area of Rod A (mm^2): 996
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 331

Energy Ratio E_r (%): 70

Signed: Bob Stewart

Title: Technician

The recommended calibration interval is 12 months



A&I GEOTECHNICAL

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

SPT Hammer Ref: AI2
 Test Date: 05/01/2023
 Report Date: 05/01/2023
 File Name: AI2.spt
 Test Operator: RC

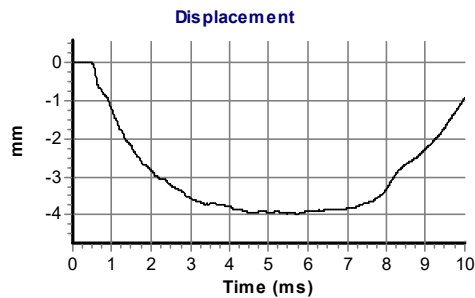
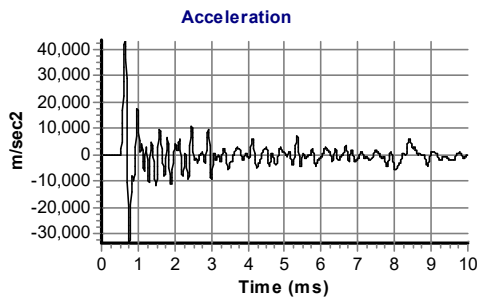
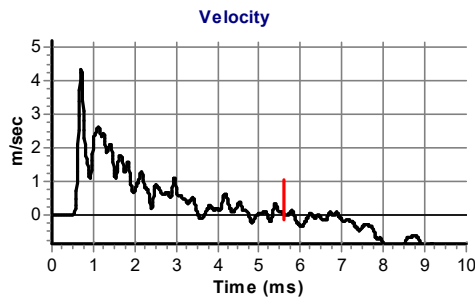
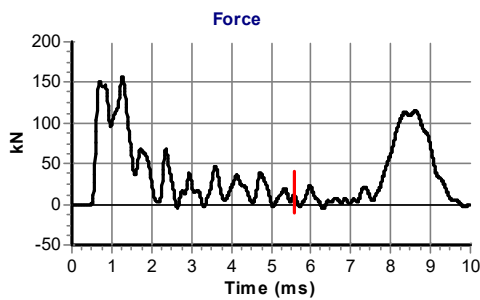
Instrumented Rod Data

Diameter d_r (mm): 54
 Wall Thickness t_r (mm): 6.5
 Assumed Modulus E_a (GPa): 208
 Accelerometer No.1: 69556
 Accelerometer No.2: 69558

SPT Hammer Information

Hammer Mass m (kg): 63.5
 Falling Height h (mm): 760
 SPT String Length L (m): 17.0

Comments / Location



Calculations

Area of Rod A (mm²): 970
 Theoretical Energy E_{theor} (J): 473
 Measured Energy E_{meas} (J): 352

Energy Ratio E_r (%): 74

Signed: *R. Cameron*
 Title: Principal Geotechnical Engineer



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3FM Plot L

GROUND INVESTIGATION REPORT

Report No.: 24-0316
Client: Dublin Port Company
Client's Representative: RPS
Date: June 2024
Report Status: Interim



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Appendix A	Site and exploratory hole location plans
Appendix B	Borehole logs
Appendix C	Trial pit logs
Appendix D	Trial pit photographs
Appendix E	Indirect in-situ CBR test results
Appendix F	Groundwater and ground gas monitoring
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Appendix I	SPT hammer energy measurement report



DOCUMENT CONTROL SHEET

PROJECT REF:		24-0316			
PROJECT NAME:		3FM Plot L			
CLIENT:		Dublin Port Company			
CLIENT'S REPRESENTATIVE		RPS			
REVISION	A00	STATUS	Interim	ISSUE DATE	16 th May 2024
REVISION	A01	STATUS	Final	ISSUE DATE	21 st June 2024
Prepared by:		Reviewed by:		Approved by:	
					
John Duggan BSc		John Duggan BSc		Sean Ross BSc MSc PGeo MIEI	

This report presents a factual account of the ground investigation in accordance with the Specification and Related Documents for Ground Investigation in Ireland 2nd Edition, published by Engineers Ireland (2016),



METHODS OF DESCRIBING SOILS AND ROCKS

Soil and rock descriptions are based on the guidance in BS5930:2015+A1:2020, The Code of Practice for Ground Investigation.

Abbreviations used on exploratory hole logs	
U	Nominal 100mm diameter undisturbed open tube sample (thick walled sampler).
UT	Nominal 100mm diameter undisturbed open tube sample (thin walled sampler).
P	Nominal 100mm diameter undisturbed piston sample.
B	Bulk disturbed sample.
LB	Large bulk disturbed sample.
D	Small disturbed sample.
C	Core sub-sample (displayed in the Field Records column on the logs).
L	Liner sample from dynamic sampled borehole.
W	Water sample.
ES / EW	Soil sample for environmental testing / Water sample for environmental testing.
SPT (s)	Standard penetration test using a split spoon sampler (small disturbed sample obtained).
SPT (c)	Standard penetration test using 60 degree solid cone.
(x,x/x,x,x,x)	Blows per increment during the standard penetration test. The initial two values relate to the seating drive (150mm) and the remaining four to the 75mm increments of the test length.
(Y for Z/ Y for Z)	Incomplete standard penetration test where the full test length was not achieved. The blows 'X' represent the total blows for the given seating or test length 'Z' (mm).
N=X	SPT blow count 'N' given by the summation of the blows 'X' required to drive the full test length (300mm).
HVP / HVR	Uncorrected in situ hand vane test result (HVP) and vane test residual result (HVR). Results presented in kPa.
V VR	Shear vane test (borehole). Shear strength stated in kPa. V: undisturbed vane shear strength VR: remoulded vane shear strength
Soil consistency description	In cohesive soils, where samples are disturbed and there are no suitable laboratory tests, N values may be used to indicate consistency on borehole logs – a median relationship of $N_{x5} = C_u$ is used (as set out in Stroud & Butler 1975).
dd-mm-yyyy	Date at the end and start of shifts, shown at the relevant borehole depth. Corresponding casing and water depths shown in the adjacent columns.
▽	Water strike: initial depth of strike.
▼	Water strike: depth water rose to.
Abbreviations relating to rock core – reference Clause 36.4.4 of BS 5930: 2015+A1:2020	
TCR (%)	Total Core Recovery: Ratio of rock/soil core recovered (both solid and non-intact) to the total length of core run.
SCR (%)	Solid Core Recovery: Ratio of solid core to the total length of core run. Solid core has a full diameter, uninterrupted by natural discontinuities, but not necessarily a full circumference and is measured along the core axis between natural fractures.
RQD (%)	Rock Quality Designation: Ratio of total length of solid core pieces greater than 100mm to the total length of core run.
FI	Fracture Index: Number of natural discontinuities per metre over an indicated length of core of similar intensity of fracturing.
NI	Non Intact: Used where the rock material was recovered fragmented, for example as fine to coarse gravel size particles.
AZCL	Assessed zone of core loss: The estimated depth range where core was not recovered.
DIF	Drilling induced fracture: A fracture of non-geological origin brought about by the rock coring.
(xxx/xxx/xxx)	Spacing between discontinuities (minimum/mode/maximum) measured in millimetres.



1 AUTHORITY

On the instructions of RPS, (“the Client’s Representative”), acting on the behalf of Dublin Port Company (“the Client”), a ground investigation was undertaken at the site to provide geotechnical and environmental information for input to the design and construction of a proposed container storage yard and associated services.

This report details the work carried out both on site and in the geotechnical and chemical testing laboratories; it contains a description of the site and the works undertaken, the exploratory hole logs and the laboratory test results.

All information given in this report is based upon the ground conditions encountered during the ground investigation works, and on the results of the laboratory and field tests performed. However, there may be conditions at the site that have not been taken into account, such as unpredictable soil strata, contaminant concentrations, and water conditions between or below exploratory holes. It should be noted that groundwater levels usually vary due to seasonal and/or other effects and may at times differ to those recorded during the investigation. No responsibility can be taken for conditions not encountered through the scope of work commissioned, for example between exploratory hole points, or beneath the termination depths achieved.

This report was prepared by Causeway Geotech Ltd for the use of the Client and the Client’s Representative in response to a particular set of instructions. Any other parties using the information contained in this report do so at their own risk and any duty of care to those parties is excluded.

2 PURPOSE, RATIONALE & SCOPE OF THE INVESTIGATION

The purpose of this investigation is to assess the ground conditions and to allow an evaluation of the geotechnical and environmental issues with the current site and proposed development.

The rationale has been determined by the Client’s Representative, with the extent of the investigation including boreholes, trial pits, soil sampling, environmental sampling, groundwater and ground gas monitoring, in-situ and laboratory testing, and the preparation of a factual account of the ground investigation findings.

3 DESCRIPTION OF SITE

The site is located at Irish Transverse Mercator 719791 733901 on the site of Hammond Lane Metal Recycling and Ecocem Ireland within Dublin Port. The site location is presented in Appendix A and is bounded to the south by Pidgeon House Road, to the north by Dublin Bay and to the east and west by industrial units within Dublin Port.

The site is flat with hardstanding across the entire site.



4 SITE OPERATIONS

4.1 SUMMARY OF SITE WORKS

Site operations, which were conducted between the 26th of March and the 17th of April 2024, comprised:

- thirteen sonic drilled boreholes
- a standpipe installation in twelve boreholes
- four machine-dug trial pits
- In-situ testing, including:
 - Standard Penetration Tests
 - Photoionization Detection (PID) testing
 - Indirect CBR (DCP) tests at four locations
- Ground Penetrating Radar (GPR) surveying
- Groundwater and ground gas monitoring

The exploratory holes and in-situ tests were located as instructed by the Client's Representative, and as shown on the exploratory hole location plan in Appendix A.

4.2 SONIC DRILLED BOREHOLES

Thirteen boreholes (3FM-BH301B, 3FM-BH302 to BH311 and 3FM-BH313 to BH 314) were put to their completion by sonic drilling techniques. The boreholes were completed using a Fraste CRS XL Duo and a Fraste XL Duo rubber-tracked sonic drilling rig.

Hand and machine dug inspection pits were carried out between ground level and 1.20m depth to ensure boreholes were put down at locations clear of services or subsurface obstructions.

Fully cased sonic drilling techniques were employed to advance the boreholes of nominal 180mm diameter to their completion depths.

Disturbed sonic samples were taken as the borehole advanced, with small bulk disturbed taken where appropriate and as directed within fine soils. Environmental samples were taken at standard intervals, as directed by the Client's Representative.

Appendix B presents the borehole logs.

4.3 TRIAL PITS

Four trial pits (3FM-TP301 to TP304) were excavated using a 3t tracked excavator fitted with a 600mm wide bucket, to depths of up to 1.5mbgl. Hand vane tests were not carried out due to unsuitability of the deposits encountered.

Environmental samples were taken at 0.50m intervals in each trial pit. Disturbed (small jar and bulk bag) samples were taken at standard depth intervals and at change of strata.

Any water strikes encountered during excavation were recorded and the stability of the trial pit walls was noted on completion.



Appendix C presents the trial pit logs with photographs of the pits and arisings provided in Appendix D. Please note that no photos are available for 3FM-TP301 due to an error on the part of the logging engineer.

4.4 STANDARD PENETRATION TESTS

Standard penetration tests were carried out in accordance with BS EN 22476-3:2005+A1:2011 (BSI, 2011) at standard depth intervals in selected boreholes only (3FM-BH304, 306, 307, 313 and 314) using the split spoon sampler (SPT_(s)) or solid cone attachment (SPT_(c)). The penetrations are stated for those tests for which the full 150mm seating drive or 300mm test drive was not possible.

The N-values provided on the borehole logs are uncorrected and no allowance has been made for energy ratio corrections. The SPT hammer energy measurement report is provided in Appendix I.

4.5 PHOTOIONIZATION DETECTION (PID) TESTING

PID testing was undertaken on small, disturbed samples recovered from all boreholes and trial pits using a hand-held PID meter, to determine if any volatile organic compound contamination was present in the overburden.

Results of the PID tests are presented on the individual borehole logs in Appendix B and trial pit logs in Appendix C.

4.6 INDIRECT CBR TESTS (DCP)

An indirect CBR test was conducted at four locations (3FM-TP301 to 304) using a Dynamic Cone Penetrometer (DCP). The equipment was developed in conjunction with the UK Transport Research Laboratory, and is discussed in CS229 (Highways England, 2020) which refers to the methodology described in TRL Overseas Road Note 18 (TRL, 1999).

The test results are presented in Appendix E in the form of plots of the variation with depth of the penetration per blow. Straight lines have been fitted to the plots and the CBR for each depth range estimated using the following relationship, which is taken from TRRL Overseas Road Note 8 (TRRL, 1990).

$$\text{Log CBR} = 2.48 - 1.057 \text{ Log (mm/blow)}$$

The frequently elevated CBR values are a consequence of the coarse-grained content of the penetrated soils and are often not representative of the soil matrix.

4.7 GROUND PENETRATING RADAR (GPR) SURVEY

An underground utilities detection Category Type B survey was undertaken using Ground Penetrating Radar (GPR) techniques in accordance with PAS 128 (BSI, 2014). The survey was carried out by Scantech at all exploratory hole locations to determine the location, depth and type of any underground services present within site.



4.8 SURVEYING

The as-built exploratory hole positions were surveyed following completion of site operations by a Site Engineer from Causeway Geotech. Surveying was carried out using a Trimble R10 GPS system employing VRS and real time kinetic (RTK) techniques.

The plan coordinates (Transverse Mercator) and ground elevation (mOD Malin) at each location are recorded on the individual exploratory hole logs. The exploratory hole location plan presented in Appendix A shows these as-built positions.

4.9 GROUNDWATER AND GROUND GAS MONITORING

Details of the individual groundwater strikes, along with any relative changes in levels as works proceeded, are presented on the exploratory hole logs for each location.

Seasonal variation in groundwater levels should also be factored into design considerations.

A groundwater monitoring standpipe was installed in eleven of the boreholes. The results of subsequent groundwater monitoring, as well as results of gas monitoring, are presented in Appendix F.

5 LABORATORY WORK

Laboratory testing is currently underway.

5.1 GEOTECHNICAL LABORATORY TESTING OF SOILS

Laboratory testing of soils comprised:

- **soil classification:** moisture content measurement, Atterberg Limit tests and particle size distribution analysis.
- **direct shear:** shear box tests.
- **compaction related:** California bearing ratio tests.

Laboratory testing of soils samples are carried out in accordance with BS 1377, Methods of test for soils for civil engineering purposes; Part 1 (BSI, 2016), and Parts 2-9 (BSI, 1990).

The test results will be presented in Appendix G of the final report.

5.2 ENVIRONMENTAL LABORATORY TESTING OF SOIL & WATER

Environmental testing, as specified by the Client's Representative, was conducted on selected environmental soil and water samples by Derwentside Environmental Testing Services in Consett, Durham.



Selected soil and water samples were tested for a range of determinants as instructed by the Client's Representative. At the time of writing some groundwater testing is still underway (COC18) and will be presented in the final report.

Testing was carried out in accordance with the following soil and water test suites as instructed by the Client's Representative:

- RPS Suite A
- RPS Suite B
- RPS Suite C
- RPS Suite D
- RPS Suite E
- RPS Suite F Leachability analysis
- Groundwater and Surface water analysis testing suite

Results of environmental laboratory testing are presented in Appendix E.

6 GROUND CONDITIONS

6.1 GENERAL GEOLOGY OF THE AREA

Published geological mapping from the online Geological Survey Ireland spatial resources database does not indicate an underlying superficial deposit. This is likely due to the fact that the site sits on land reclaimed from Dublin Bay. The underlying rock formation is shown to be limestone of the Lucan Formation.

6.2 GROUND TYPES ENCOUNTERED DURING INVESTIGATION OF THE SITE

A summary of the ground types encountered in the exploratory holes is listed below, in approximate stratigraphic order:

- **Paved surface:** concrete surfacing was encountered in all exploratory holes except in 3FM-BH303 where tarmac was encountered. Thickness of surfacing ranged from 0.20m to 0.50m.
- **Made Ground (fill):** encountered beneath surfacing in all exploratory holes. Descriptions varied greatly across the site however the majority of made ground was described as granular, mainly as a sand or gravel but also layers of cobbles and boulders with cohesive made ground also encountered at the site. 3FM-BH306 described landfill, however not enough sample was recovered to provide an engineering description of the material.
- **Marine deposits:** typically medium dense sands and gravels overlying with grey sandy silt or dark grey silty clay.



6.3 GROUNDWATER & GROUND GAS

Details of the individual groundwater strikes, along with any relative changes in levels as works proceeded, are presented on the exploratory hole logs for each location.

Groundwater was noted during drilling in five of the boreholes. It should be noted that the casing used in supporting the borehole walls during drilling may have sealed out additional groundwater strikes and the possibility of encountering groundwater during excavation works at these locations should not be ruled out.

Seasonal variation in groundwater levels should also be factored into design considerations.

Groundwater monitoring standpipes were installed in boreholes 3FM-BH301B, BH302, BH303, BH304, BH305, BH306, BH307, BH308, BH309, BH310, BH311 and BH313. The results of subsequent groundwater monitoring, as well as results of gas monitoring, are presented in Appendix F.

Continued monitoring of the installed standpipes is currently underway with the results of the subsequent monitoring to be presented in the final report.

7 REFERENCES

British Standards Institute (BSI). (1990) *BS 1377:1990: Methods of test for soils for civil engineering purposes – Parts 2-9.*

British Standards Institute (BSI). (2007) *BS EN 1997-2:2007: Eurocode 7 – Geotechnical Design – Part 2: Ground investigation and testing.*

British Standards Institute (BSI). (2011) *BS EN ISO 22476-3:2006+A1:2011 Geotechnical investigation and testing. Field testing – Standard penetration test.*

British Standards Institute (BSI). (2014) *PAS 128: Specification for underground utility detection, verification and location.*

British Standards Institute (BSI). (2016) *BS 1377-1:2016: Methods of test for soils for civil engineering purposes – Part 1: General requirements and sample preparation.*

British Standards Institute (BSI). (2018a) *BS EN ISO 14688-1:2018: Geotechnical investigation and testing. Identification and classification of soil. Part 1 Identification and description.*

British Standards Institute (BSI). (2018b) *BS EN ISO 14688-2:2018: Geotechnical investigation and testing. Identification and classification of soil. Part 2 Principles for a classification.*

British Standards Institute (BSI). (2020) *BS5930:2015+A1:2020: Code of practice for ground investigations.*

Geotechnical Society of Ireland. (2016) *Specification and Related Documents for Ground Investigation in Ireland.* 2nd Edition. Engineers Ireland.

Geological Survey Ireland (GSI). Geological Survey Ireland spatial resources database. Available at: <https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aac3c228>

Highways England. (2020) *CS 229 Data for pavement assessment.*



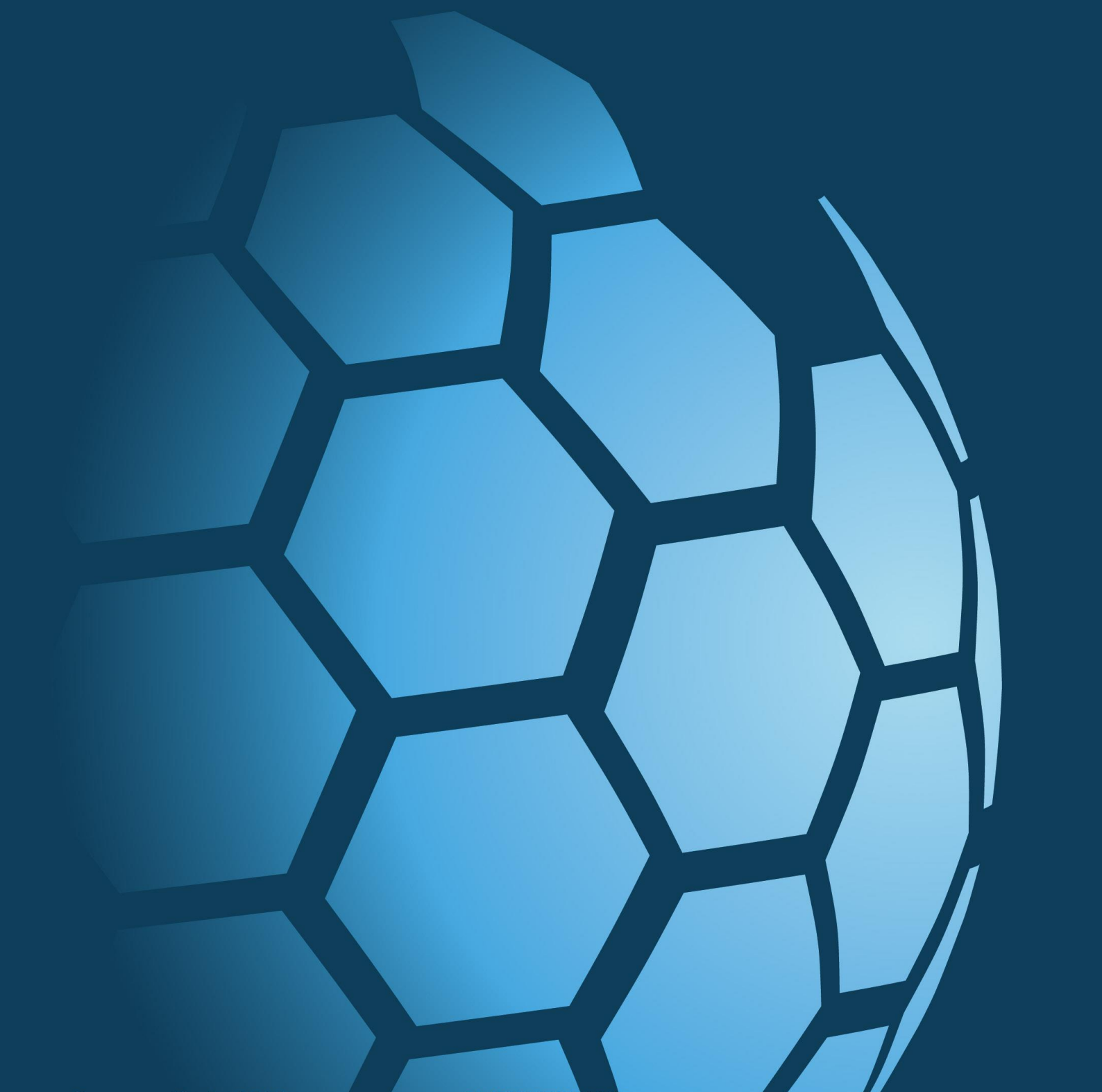
Transport Research Laboratory (TRL). (1999) *Overseas Road Note 18: A guide to the pavement evaluation and maintenance of bitumen-surfaced roads in tropical and sub-tropical countries.*

Transport and Road Research Laboratory (TRRL). (1990) *Overseas Road Note 8: A users manual for a program to analyse dynamic cone penetrometer data.*



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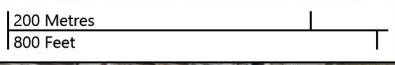
APPENDIX A
SITE AND EXPLORATORY HOLE LOCATION PLANS

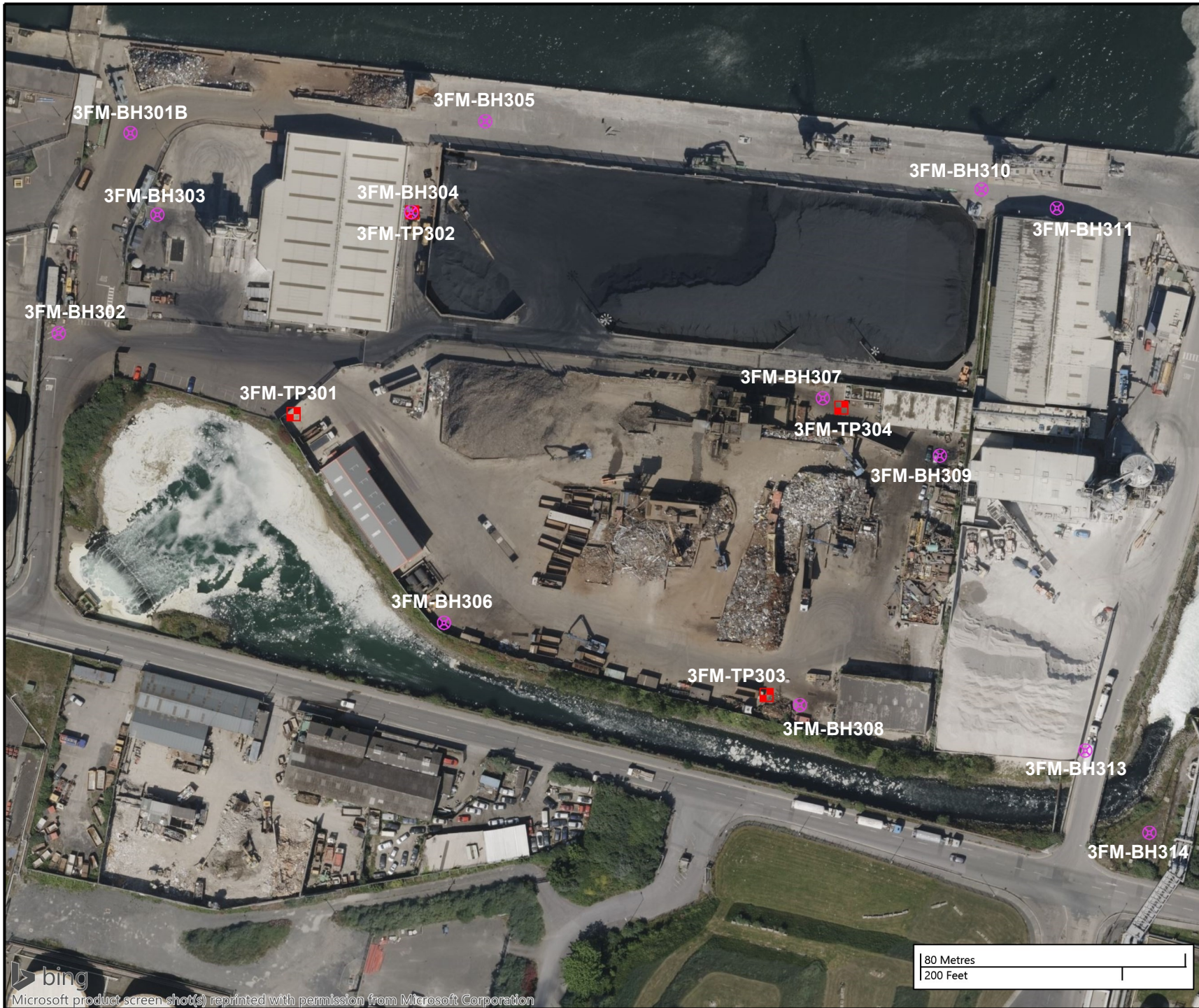




Site Location

Legend Key	
Project No.	24-0316
Client	Dublin Port Company
Client's Rep	RPS
Site Location Plan	
3FM Plot L Hammond Lane	
	
Last Revision	25/04/2024
Scale	1:5000





Legend Key
 ⊗ Locations By Type - SNC
 ⊠ Locations By Type - TP

Project No.	24-0316
Client	Dublin Port Company
Client's Rep	RPS

Exploratory Hole Location Plan
 3FM Plot L Hammonds Lane

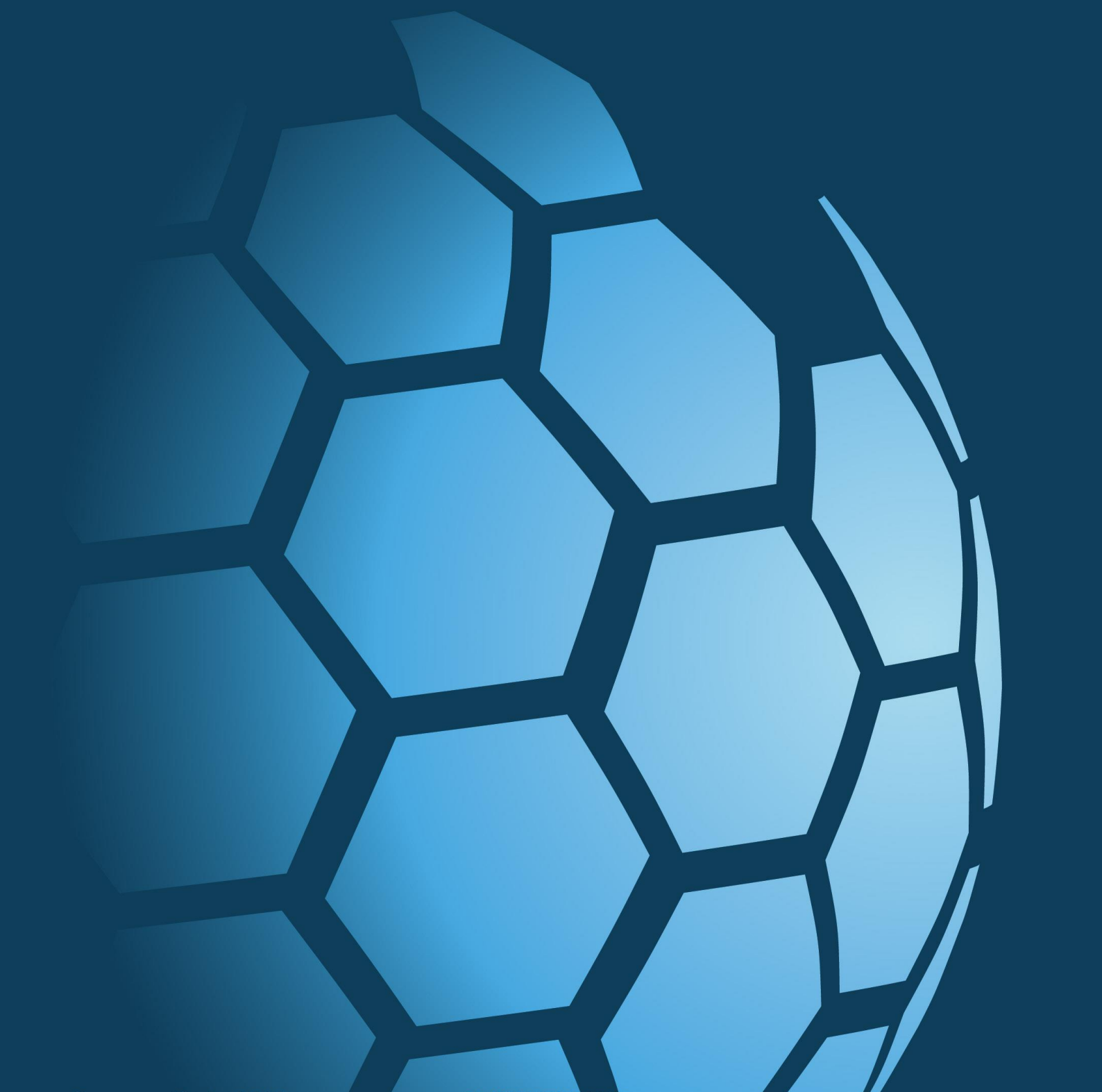


Last Revision	25/04/2024
Scale	1:1600



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APPENDIX B
BOREHOLE LOGS





Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 8.00 m	Start Date: 14/04/2024	Driller: C.T	Sheet 1 of 1 Scale: 1:49
Sonic Drilling	Fraste CRS-XL Duo	0.00	8.00	719643.04 E 733976.55 N	Elevation: 3.12 mOD	End Date: 14/04/2024	Logger: JD	

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.00		14-04-2024	0.00	0.00				CONCRETE		
0.50	D1				2.72	0.40		MADE GROUND: Dark greyish brown fine to coarse SAND and subangular to subrounded fine to coarse GRAVEL with occasional brick and concrete fragments and shale fragments.		
0.50	ES2	PID = 0.10ppm								
0.50										
1.00	D3									
1.00	ES4	PID = 0.00ppm								
1.20										
1.92	EW1									
2.00	D5									
2.00	ES6	PID = 0.10ppm								
2.00										
2.70	EW2									
2.76	D7									
3.00	ES8	PID = 0.10ppm								
3.00										
4.00	D9									
4.00	ES10	PID = 0.00ppm								
4.00										
4.20										
5.00	D11									
5.00	ES12	PID = 6.70ppm								
5.00										
5.70										
6.00	D13									
6.00	ES14	PID = 0.20ppm								
6.00										
6.00										
7.00	D15				-3.78	6.90		Dark brown fine to coarse SAND and subangular to subrounded fine to coarse GRAVEL with low cobble and boulder content.		
7.00	ES16	PID = 0.80ppm								
7.00										
7.50										
8.00	D17		8.00	4.60	-4.88	8.00		End of Borehole at 8.00m		
8.00	ES18	PID = 0.10ppm								
8.00		14-04-2024								
8.00										
8.00										

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.			
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
8.00	177						
				Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated on Engineer's instruction.	21/06/2024





Project No.
24-0316

Project Name: 3FM Plot L Hammond Lane

Client: Dublin Port Company

Client's Rep: RPS

Borehole ID
3FM-BH302

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 7.00 m	Start Date: 26/03/2024	Driller: SW	Sheet 1 of 1 Scale: 1:49
Sonic Drilling	Frastr CRS-XL Duo	0.00	7.00	719622.77 E 733915.23 N	Elevation: 3.56 mOD	End Date: 26/03/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
					3.26	0.30	[Pattern]	CONCRETE		
0.50	D9						[Pattern]	MADE GROUND: Dark brown slightly clayey fine to coarse SAND with frequent fragments of brick, concrete, and granite.		
0.50	ES1	PID = 0.30ppm								
1.00	D10						[Pattern]	MADE GROUND: Grey and brown fine to coarse SAND with medium cobble content.		
1.00	ES2	PID = 0.30ppm								
1.99	EW1									
2.00	D11									
2.00	ES4	PID = 0.20ppm								
2.00	EW2									
2.42										
3.00	D13									
3.00	ES3	PID = 0.30ppm								
3.00										
4.00	D5									
4.00	ES14	PID = 0.40ppm								
4.00										
					-0.94	4.50	[Pattern]	MADE GROUND: Brownish black silty fine to coarse SAND with occasional fragments of brick, concrete, and granite.		
5.00	D15									
5.00	ES6	PID = 0.20ppm								
5.00										
					-1.94	5.50	[Pattern]	Black silty fine to coarse SAND.		
6.00	D16									
6.00	ES7	PID = 0.30ppm								
6.00										
					-2.44	6.00	[Pattern]	Grey fine to medium SAND.		
7.00	D17									
7.00	ES8	PID = 0.10ppm								
7.00										
					-3.44	7.00		End of Borehole at 7.00m		
					-3.44					

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m			
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
				Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated on Engineer's instruction.	21/06/2024





Project No.
24-0316

Project Name: 3FM Plot L Hammond Lane

Client: Dublin Port Company

Client's Rep: RPS

Borehole ID
3FM-BH303

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 6.00 m	Start Date: 27/03/2024	Driller: SW	Sheet 1 of 1 Scale: 1:49
Sonic Drilling	Frastr CRS-XL Duo	0.00	6.00	719651.82 E 733951.96 N	Elevation: 3.73 mOD	End Date: 27/03/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.50	D2				3.23	0.50	TARMAC			
0.50	ES1	PID = 0.10ppm					MADE GROUND: Light yellowish brown slightly gravelly silty fine SAND with occasional shell fragments. Gravel is rounded fine.			
1.00	D4									
1.00	ES3	PID = 0.10ppm								
2.00	D6									
2.00	ES5	PID = 0.10ppm								
3.00	D8				1.03	2.70	MADE GROUND: BOULDERS and COBBLES			
3.00	ES7	PID = 0.10ppm								
4.00	D10				-0.47	4.20	MADE GROUND: Grey fine to coarse SAND and medium boulder content.			
4.00	ES9	PID = 0.30ppm								
5.00	D12				-1.97	5.70	Soft dark brownish grey slightly sandy gravelly silty CLAY. Sand is fine to coarse. Gravel is angular fine to medium.			
5.00	ES11	PID = 0.00ppm								
6.00	D14				-2.27	6.00	End of Borehole at 6.00m			
6.00	ES13	PID = 0.00ppm								

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m			
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
				Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated at scheduled depth.	21/06/2024





Project No.
24-0316

Project Name: 3FM Plot L Hammond Lane

Borehole ID
3FM-BH304

Client: Dublin Port Company

Client's Rep: RPS

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 30.15 m	Start Date: 06/04/2024	Driller: C.T	Sheet 1 of 4 Scale: 1:49
Sonic Drilling	Fraste CRS-XL Duo	0.00	30.15	719729.11 E 733954.65 N	Elevation: 3.49 mOD	End Date: 08/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.00		06-04-2024	0.00	0.00				CONCRETE		
0.50	D2				3.19	0.30		MADE GROUND: Medium dense dark grey fine to coarse SAND and subangular fine to coarse GRAVEL with fragments of concrete.		
0.50	ES1	PID = 0.50ppm								
1.00	D5									
1.00	ES4		1.20	Dry						
1.20 - 1.65	D46									
1.20 - 1.65	SPT (S)	N=35 (3,8/10,10,8,7)								
2.00	D8									
2.00	ES7	PID = 0.40ppm								
2.00										
2.70 - 3.15	D47		2.70	2.00	0.69	2.80		MADE GROUND: Medium dense light brown gravelly fine to coarse SAND. Gravel is subangular fine to coarse.		
2.70 - 4.20	B3									
2.70 - 3.15	SPT (S)	N=23 (8,11/11,3,4,5)								
2.70										
3.00	D11									
3.00	ES10	PID = 0.30ppm								
3.00										
3.85	EW1									
4.00	D14		4.20	2.50	-0.91	4.40		Very loose dark grey silty fine to coarse SAND.		
4.00	ES13	PID = 0.50ppm								
4.00										
4.20 - 5.70	B6									
4.20 - 4.65	SPT (C)	N=3 (1,0/0,1,1,1)								
4.20										
5.00	D17									
5.00	ES16	PID = 0.10ppm								
5.00										
5.70 - 6.15	D48		5.70	2.40						
5.70 - 7.20	B12									
5.70 - 6.15	SPT (S)	N=3 (1,1/0,1,1,1)								
5.70										
6.00	D19									
6.00	ES18	PID = 0.70ppm								
6.00										
7.00	D22		7.20	2.80						
7.00	ES21	PID = 0.00ppm								
7.00										
7.20 - 7.65	D49									
7.20 - 8.70	B15									
7.20 - 7.65	SPT (S)	N=3 (1,0/1,0,1,1)			-4.21	7.70		Medium dense dark orangish brown silty sandy subangular fine to coarse GRAVEL with low cobble and boulder content. Sand is fine to coarse.		
7.20										
8.00	D26									
8.00	ES25	PID = 0.10ppm								
8.00										
8.70 - 10.20	B30		8.70	3.00						
8.70 - 9.15	D50									
8.70 - 9.15	SPT (S)	N=14 (1,1/2,5,3,4)								

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.			
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
28.20	177						
				Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated at scheduled depth.	21/06/2024





Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 30.15 m	Start Date: 06/04/2024	Driller: C.T	Sheet 2 of 4 Scale: 1:49
Sonic Drilling	Fraste CRS-XL Duo	0.00	30.15	719729.11 E 733954.65 N	Elevation: 3.49 mOD	End Date: 08/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
8.70										
9.00	D29									
9.00	ES28	PID = 0.50ppm								
9.00										
10.00	D32									
10.00	ES31	PID = 0.10ppm	10.2	2.20						
10.00										
10.20 - 10.65	D51									
10.20 - 11.70	B33									
10.20 - 10.65	SPT (S)	N=14 (1,3/2,3,4,5)								
10.20										
11.00	D35									
11.00	ES34	PID = 0.00ppm								
11.00										
11.70 - 12.15	D53		11.7	3.40						
11.70 - 13.20	B36									
11.70 - 12.15	SPT (S)	N=21 (1,2/2,5,8,6)								
11.70										
12.00	D38									
12.00	ES37	PID = 0.00ppm								
12.00										
13.00	D41									
13.00	ES40	PID = 0.00ppm	13.2	2.50						
13.00										
13.20 - 13.65	D54									
13.20 - 14.70	B42									
13.20 - 13.65	SPT (S)	N=25 (2,4/8,4,6,7)								
13.20										
14.00	D44				-10.51	14.00				
14.00	ES43	PID = 0.20ppm						Dense dark orangish brown sandy slightly silty subangular fine to coarse GRAVEL with low cobble and boulder content. Sand is fine to coarse.		
14.00										
14.70 - 15.15	D55		14.7	3.00						
14.70 - 16.20	B44									
14.70 - 15.15	SPT (S)	N=36 (1,3/7,7,10,12)								
14.70										
15.00	D47									
15.00	ES46	PID = 0.10ppm								
15.00										
16.00	D49									
16.00	ES48	PID = 0.20ppm	16.2	4.00	-12.71	16.20		Dense dark grey gravelly silty fine to coarse SAND. Gravel is subangular fine to coarse.		
16.00										
16.20 - 16.65	D56									
16.20 - 17.70	B50									
16.20 - 16.65	SPT (S)	N=32 (3,2/5,9,10,8)								
16.20										
17.70 - 18.15	D57		17.7	4.00	-14.21	17.70				
17.70 - 19.20	B58									
17.70 - 18.15	SPT (S)	N=16 (2,3/4,4,4,4)						Medium dense dark grey silty fine to coarse SAND.		
17.70 - 18.15										

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.			
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
28.20	177						
				Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated at scheduled depth.	21/06/2024





Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 30.15 m	Start Date: 06/04/2024	Driller: C.T	Sheet 3 of 4 Scale: 1:49
Sonic Drilling	Fraste CRS-XL Duo	0.00	30.15	719729.11 E 733954.65 N	Elevation: 3.49 mOD	End Date: 08/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
17.70		06-04-2024								
17.70		07-04-2024								
17.70										
19.20 - 19.65	D59		19.2	4.60						
19.20 - 20.70	B60									
19.20 - 19.65	SPT (S)	N=16 (2,4/4,3,4,5)								
19.20										
20.70 - 21.15	D61		20.7	3.20						
20.70 - 22.20	B62									
20.70 - 21.15	SPT (S)	N=16 (2,4/3,4,5,4)								
20.70										
22.20 - 22.65	D63		22.2	3.00	-18.71	22.20				
22.20 - 23.70	B64							Stiff becoming very stiff dark grey slightly very silty CLAY. Sand is fine to coarse.		
22.20 - 22.65	SPT (S)	N=19 (1,2/3,4,4,8)								
22.20										
23.70 - 24.15	D65		23.7	3.70						
23.70 - 25.20	B66									
23.70 - 24.15	SPT (S)	N=16 (1,2/2,4,5,5)								
23.70										
25.20 - 25.65	D67		25.2	3.00						
25.20 - 26.70	B68									
25.20 - 25.65	SPT (S)	N=21 (2,3/4,4,6,7)								
25.20										
26.70 - 27.15	D69		26.7	2.50						
26.70 - 28.20	B70									
26.70 - 27.15	SPT (S)	N=29 (2,3/5,6,9,9)								

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)				
				Inspection pit hand dug to 1.20m.			
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
28.20	177						
				Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated at scheduled depth.	21/06/2024





Project No.
24-0316

Project Name: 3FM Plot L Hammond Lane

Borehole ID
3FM-BH304

Client: Dublin Port Company

Client's Rep: RPS

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 30.15 m	Start Date: 06/04/2024	Driller: C.T	Sheet 4 of 4 Scale: 1:49
Sonic Drilling	Fraste CRS-XL Duo	0.00	30.15	719729.11 E 733954.65 N	Elevation: 3.49 mOD	End Date: 08/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
26.70										
28.20 - 28.65	D71		28.2	2.50						
28.20 - 29.70	B72									
28.20 - 28.65	SPT (S)	N=30 (3,5/7,7,8,8)								
28.20										
29.70 - 30.15	D73		28.2	4.00						
29.70 - 30.15	SPT (S)	N=35 (3,6/7,8,10,10)								
29.70										
30.15		07-04-2024	28.2	6.40	-26.66	30.15		End of Borehole at 30.15m		

Water Strikes				Remarks						
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.						
Casing Details		Water Added								
To (m)	Diam (mm)	From (m)	To (m)							
28.20	177									
				Core Barrel	Flush Type	Termination Reason	Last Updated			
						Terminated at scheduled depth.	21/06/2024			



Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 6.00 m	Start Date: 16/04/2024	Driller: C.T	Sheet 1 of 1 Scale: 1:49
Sonic Drilling	Fraste CRS-XL Duo	0.00	6.00	719750.87 E 733982.79 N	Elevation: 3.41 mOD	End Date: 16/04/2024	Logger: JD	

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.00		16-04-2024	0.00	0.00				CONCRETE		
0.50	D8				3.01	0.40		MADE GROUND: Dark grey sandy gravelly CLAY with fragments of concrete and brick. Sand is fine to coarse. Gravel is subangular fine to coarse.		
0.50	ES1	PID = 0.30ppm								
1.00	D9									
1.00	ES2	PID = 0.10ppm								
1.20										
2.00	D10									
2.00	ES3	PID = 0.10ppm								
2.70										
3.00	D11									
3.00	ES4	PID = 0.00ppm								
3.00										
4.00	D12				-0.29	3.70		Grey fine to coarse SAND and fine to coarse subangular GRAVEL with low cobble and boulder content. Cobbles and boulders are subangular.		
4.00	ES5	PID = 0.00ppm								
4.20										
5.00	D13									
5.00	ES6	PID = 0.00ppm								
5.70										
6.00	D14		6.00	4.90	-2.59	6.00		End of Borehole at 6.00m		
6.00	ES7	PID = 0.00ppm								
6.00		16-04-2024								

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.			
4.80	4.80						
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
6.00	177			Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated at scheduled depth.	21/06/2024





Project No.
24-0316

Project Name: 3FM Plot L Hammond Lane

Borehole ID
3FM-BH306

Client: Dublin Port Company

Client's Rep: RPS

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth:	Start Date:	Driller:	Sheet 1 of 4
Sonic Drilling	Fraсте XL Duo	0.00	19.20	719742.20 E	29.70 m	15/04/2024	SW+RW	Scale: 1:49
Sonic Drilling	Fraсте CRS-XL Duo	19.20	29.70	733830.31 N	Elevation: 3.79 mOD	End Date: 18/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.50	ES10	PID = 0.20ppm			3.39	0.40	CONCRETE			
0.50							MADE GROUND: Landfill waste.			
1.00	ES11	PID = 0.10ppm	1.20	Dry						
1.20 - 1.65	SPT (S)	N=19 (6,4/4,5,6,4)								
2.00	ES12	PID = 0.30ppm								
2.00										
2.70 - 3.15	SPT (S)	N=13 (2,2/3,3,3,4)	2.70	1.65	1.09	2.70	Grey subangular COBBLES.			
3.00	ES13	PID = 0.20ppm								
3.00										
4.00	ES14	PID = 0.10ppm	4.20	2.32						
4.00										
4.20 - 4.65	SPT (S)	N=16 (4,4/6,4,2,4)								
4.20										
5.00	ES15	PID = 0.30ppm								
5.00										
5.70 - 6.15	SPT (S)	N=43 (5,10/9,10,12,12)	5.70	2.64	-1.91	5.70	Dense grey fine to coarse SAND and subangular fine to coarse GRAVEL.			
5.70										
6.00	ES16	PID = 0.20ppm								
6.00										
7.00	ES17	PID = 0.20ppm			-3.41	7.20	Medium dense grey fine to coarse SAND.			
7.00										
7.20										
8.00	ES18	PID = 0.10ppm								
8.00										
8.70 - 9.15	SPT (S)	N=12 (2,4/2,2,4,4)	8.70	4.25						
8.70										
9.00	ES19									

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)				
				Inspection pit hand dug to 1.20m. Due to in issue with original sonic drilling rig pump, a replacement rig was brought to site to progress hole from 19.20mbgl. Environmental samples only were recovered from ground level to 19.20mbgl.			
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
19.20	146			Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated at scheduled depth.	21/06/2024





Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 29.70 m	Start Date: 15/04/2024	Driller: SW+RW	Sheet 2 of 4 Scale: 1:49
Sonic Drilling Sonic Drilling	Fraste XL Duo Fraste CRS-XL Duo	0.00 19.20	19.20 29.70	719742.20 E 733830.31 N	Elevation: 3.79 mOD	End Date: 18/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
9.00		PID = 0.10ppm								
10.00	ES20	PID = 0.10ppm								
10.00 - 10.65	SPT (S)	N=26 (3,6/6,6,7,7)	10.2	4.72						
10.20										
11.00	ES21	PID = 0.00ppm								
11.00 - 11.45	SPT (S)	N=26 (3,6/6,6,7,7)	11.7	4.95						
11.00		PID = 0.00ppm								
11.70										
12.00	ES22	PID = 0.00ppm								
12.00										
13.00	ES23	PID = 0.00ppm								
13.00 - 13.65	SPT (S)	N=18 (2,4/5,4,5,4)	13.2	4.92	-9.41	13.20		Medium dense (locally dense) grey fine to coarse SAND and subrounded fine to coarse GRAVEL.		
13.20										
14.00	ES24	PID = 0.00ppm								
14.00										
14.70 - 15.15	SPT (S)	N=32 (6,6/7,7,9,9)	14.7	4.66						
14.70										
15.00	ES25	PID = 0.00ppm								
15.00										
16.00	ES26	PID = 0.00ppm								
16.00 - 16.65	SPT (S)	N=26 (5,6/6,7,6,7)	16.2	4.66						
16.20										
17.70 - 18.15	SPT (S)	N=29 (4,6/7,7,7,8)	17.7	4.69						
17.70										

Water Strikes				Remarks						
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m. Due to in issue with original sonic drilling rig pump, a replacement rig was brought to site to progress hole from 19.20mbgl. Environmental samples only were recovered from ground level to 19.20mbgl.						
Casing Details		Water Added								
To (m)	Diam (mm)	From (m)	To (m)							
19.20	146			Core Barrel		Flush Type	Termination Reason	Last Updated		
							Terminated at scheduled depth.	21/06/2024		



Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 29.70 m	Start Date: 15/04/2024	Driller: SW+RW	Sheet 3 of 4 Scale: 1:49
Sonic Drilling Sonic Drilling	Fraste XL Duo Fraste CRS-XL Duo	0.00 19.20	19.20 29.70	719742.20 E 733830.31 N	Elevation: 3.79 mOD	End Date: 18/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
19.20 - 20.70 19.20 - 19.65 19.20	B1 SPT (C)	N=30 (6,6/7,7,8,8)	19.2	4.65	-15.41	19.20	[Pattern]	Stiff (locally firm) grey sandy SILT. Sand is fine to coarse.		
20.70 - 22.00 20.70 - 21.15	B2 SPT (C)	N=17 (4,5/6,4,4,3) Hammer SN = 1353	20.7	5.00			[Pattern]			
22.20 - 23.70 22.20 - 22.65	B3 SPT (C)	N=17 (3,5/5,4,4,4) Hammer SN = 1353	22.2	5.40			[Pattern]			
23.70 - 24.10 23.70 - 25.20 23.70 - 24.15	D4 B5 SPT (C)	N=13 (2,2/3,3,3,4) Hammer SN = 1353	23.7	6.00			[Pattern]			
25.20 - 25.60 25.20 - 26.70 25.20 - 25.65	D6 B7 SPT (C)	N=14 (2,3/3,3,4,4) Hammer SN = 1353	25.2	5.60			[Pattern]			
26.70 - 28.20 26.70 - 27.15	B8 SPT (C)	N=18 (3,4/5,5,4,4) Hammer SN = 1353	26.7	6.00			[Pattern]			

Water Strikes				Remarks							
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m. Due to in issue with original sonic drilling rig pump, a replacement rig was brought to site to progress hole from 19.20mbgl. Environmental samples only were recovered from ground level to 19.20mbgl.							
Casing Details		Water Added		Core Barrel			Flush Type		Termination Reason		Last Updated
To (m)	Diam (mm)	From (m)	To (m)						Terminated at scheduled depth.		21/06/2024
19.20	146										



Project No.
24-0316

Project Name: 3FM Plot L Hammond Lane

Borehole ID
3FM-BH306

Client: Dublin Port Company

Client's Rep: RPS

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 29.70 m	Start Date: 15/04/2024	Driller: SW+RW	Sheet 4 of 4 Scale: 1:49
Sonic Drilling Sonic Drilling	Fraste XL Duo Fraste CRS-XL Duo	0.00 19.20	19.20 29.70	719742.20 E 733830.31 N	Elevation: 3.79 mOD	End Date: 18/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
28.20 - 29.70	B9				-25.91	29.70	X X X X	End of Borehole at 29.70m		

Water Strikes				Remarks						
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m. Due to in issue with original sonic drilling rig pump, a replacement rig was brought to site to progress hole from 19.20mbgl. Environmental samples only were recovered from ground level to 19.20mbgl.						
Casing Details		Water Added								
To (m)	Diam (mm)	From (m)	To (m)							
19.20	146			Core Barrel	Flush Type	Termination Reason	Last Updated			
						Terminated at scheduled depth.	21/06/2024			



Project No.
24-0316

Project Name: 3FM Plot L Hammond Lane

Client: Dublin Port Company

Client's Rep: RPS

Borehole ID
3FM-BH307

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 6.00 m	Start Date: 16/04/2024	Driller: C.T	Sheet 1 of 1 Scale: 1:49
Sonic Drilling	Frastr CRS-XL Duo	0.00	6.00	719855.56 E 733901.37 N	Elevation: 3.62 mOD	End Date: 16/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.00		16-04-2024	0.00	0.00	3.42	0.20	CONCRETE			
0.50	D8						MADE GROUND: Brown fine to coarse SAND and subangular fine to coarse GRAVEL.			
0.50	ES1	PID = 0.00ppm								
1.00	D9						Dark grey gravelly silty fine to coarse SAND. Gravel is subangular fine to coarse.			
1.00	ES2	PID = 0.10ppm								
2.00	D10						End of Borehole at 6.00m			
2.00	ES3	PID = 0.10ppm								
2.70										
3.00	D11				0.52	3.10				
3.00	ES4	PID = 0.30ppm								
4.00	D12									
4.00	ES5	PID = 0.20ppm								
4.20										
5.00	D13									
5.00	ES6	PID = 0.00ppm								
5.70										
6.00	D14		6.00	2.60	-2.38	6.00				
6.00	ES7	PID = 0.00ppm								
6.00		16-04-2024								

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.			
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
6.00	177						
		Core Barrel	Flush Type	Termination Reason		Last Updated	
				Terminated at scheduled depth.		21/06/2024	



Project No.
24-0316

Project Name: 3FM Plot L Hammond Lane

Client: Dublin Port Company

Client's Rep: RPS

Borehole ID
3FM-BH308

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 30.00 m	Start Date: 28/03/2024	Driller: CT + SW	Sheet 1 of 4 Scale: 1:49
Sonic Drilling	Fraste CRS-XL Duo	0.00	30.00	719850.99 E 733808.09 N	Elevation: 3.76 mOD	End Date: 05/04/2024	Logger: JD	

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
						3.46	0.30	CONCRETE		
0.50	D8							MADE GROUND: Yellow fine to medium SAND.		
0.50	ES7	PID = 0.00ppm								
1.00	D10									
1.00	ES9	PID = 0.00ppm								
2.00	D12									
2.00	ES11	PID = 0.00ppm								
2.99	EW1					1.06	2.70	Grey fine to medium SAND.		
3.00	D14									
3.00	ES13	PID = 7.00ppm								
3.65	EW2									
4.00	D16									
4.00	ES15	PID = 13.50ppm			-0.44	4.20		Grey gravelly fine to coarse SAND with low cobble and boulder content. Gravel is subangular fine to coarse.		
5.00	D18									
5.00	ES17	PID = 0.10ppm								
6.00	D20									
6.00	ES19	PID = 0.00ppm								
7.00	D22									
7.00	ES21	PID = 0.00ppm								
8.00	D24									
8.00	ES23	PID = 0.00ppm								
9.00	D26		9.00	3.50	-1.94	5.70		Grey fine to coarse SAND and subrounded fine to coarse GRAVEL.		

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.			
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
30.00	177						
		Core Barrel	Flush Type	Termination Reason		Last Updated	
				Terminated at scheduled depth.		21/06/2024	



Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 30.00 m	Start Date: 28/03/2024	Driller: CT + SW	Sheet 2 of 4 Scale: 1:49
Sonic Drilling	Fraste CRS-XL Duo	0.00	30.00	719850.99 E 733808.09 N	Elevation: 3.76 mOD	End Date: 05/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
9.00	ES25	PID = 0.00ppm 03-04-2024								
10.00	D27 ES28	PID = 0.00ppm								
11.00	D31 ES34	PID = 0.00ppm								
12.00	D35 ES39	PID = 0.10ppm								
13.00	D39 ES41	PID = 0.00ppm								
14.00	D43 ES44	PID = 0.10ppm								
15.00	D47 ES50	PID = 0.20ppm								
16.00	D52 ES54	PID = 0.00ppm								
16.50										
17.00										
17.50										
18.00					-13.84	17.60		Soft dark grey sandy CLAY. Sand is fine to coarse		

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.			
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
30.00	177						
		Core Barrel	Flush Type	Termination Reason		Last Updated	
				Terminated at scheduled depth.		21/06/2024	



Project No.
24-0316

Project Name: 3FM Plot L Hammond Lane

Borehole ID
3FM-BH308

Client: Dublin Port Company

Client's Rep: RPS

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 30.00 m	Start Date: 28/03/2024	Driller: CT + SW	Sheet 3 of 4 Scale: 1:49
Sonic Drilling	Fraste CRS-XL Duo	0.00	30.00	719850.99 E 733808.09 N	Elevation: 3.76 mOD	End Date: 05/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
19.50										
21.00		03-04-2024	21.0	3.00						
21.00		04-04-2024	21.0	3.50						
21.00										
22.50										
24.00										
25.50					-21.74	25.50		Firm dark grey silty CLAY.		
27.00										

Water Strikes				Remarks						
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.						
Casing Details		Water Added								
To (m)	Diam (mm)	From (m)	To (m)							
30.00	177									
				Core Barrel	Flush Type	Termination Reason	Last Updated			
						Terminated at scheduled depth.	21/06/2024			



Project No.
24-0316

Project Name: 3FM Plot L Hammond Lane

Borehole ID
3FM-BH309

Client: Dublin Port Company

Client's Rep: RPS

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 30.15 m	Start Date: 09/04/2024	Driller: SW/HK	Sheet 1 of 4 Scale: 1:49
Sonic Drilling	Frastr CRS-XL Duo	0.00	30.15	719891.81 E 733884.83 N	Elevation: 3.92 mOD	End Date: 11/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
						3.62	0.30	CONCRETE		
0.50	D2							MADE GROUND: Medium dense yellow slightly gravelly silty fine to coarse SAND. Gravel is subrounded fine to medium.		
0.50	ES1	PID = 1.00ppm								
1.00	D4							MADE GROUND: Medium dense yellow slightly gravelly silty fine to coarse SAND. Gravel is subrounded fine to medium.		
1.00	ES3	PID = 1.50ppm	1.20	Dry						
1.20	B36							MADE GROUND: Medium dense yellow slightly gravelly silty fine to coarse SAND. Gravel is subrounded fine to medium.		
1.20 - 1.65	D35									
1.20 - 1.65	SPT (S)	N=12 (1,1/3,3,3,3)						MADE GROUND: Medium dense yellow slightly gravelly silty fine to coarse SAND. Gravel is subrounded fine to medium.		
2.00	D6									
2.00	ES5	PID = 1.70ppm						MADE GROUND: Medium dense yellow slightly gravelly silty fine to coarse SAND. Gravel is subrounded fine to medium.		
2.00										
2.70	D37		2.70	2.65				MADE GROUND: Medium dense yellow slightly gravelly silty fine to coarse SAND. Gravel is subrounded fine to medium.		
2.70 - 3.15	B38									
2.70 - 3.15	SPT (S)	N=9 (1,1/3,2,2,2)						MADE GROUND: Medium dense yellow slightly gravelly silty fine to coarse SAND. Gravel is subrounded fine to medium.		
3.00	D8				0.82	3.10				
3.00	ES7	PID = 1.10ppm						Medium dense grey fine to medium SAND.		
3.00										
3.31	EW1							Medium dense grey fine to medium SAND.		
3.56	EW2									
4.00	D10							Medium dense grey fine to medium SAND.		
4.00	ES9	PID = 0.80ppm	4.20	2.90						
4.00								Medium dense grey fine to medium SAND.		
4.20	B40									
4.20 - 4.65	SPT (S)	N=15 (1,4/4,3,4,4)						Medium dense grey fine to medium SAND.		
5.00	D12									
5.00	ES11	PID = 0.70ppm						Medium dense grey fine to medium SAND.		
5.00										
5.70	B42		5.70	3.60	-1.78	5.70		Medium dense becoming dense grey gravelly slightly silty fine to coarse SAND. Gravel is subangular to subrounded fine to medium.		
5.70 - 6.15	D41									
5.70 - 6.15	SPT (S)	N=12 (1,1/3,3,3,3)						Medium dense becoming dense grey gravelly slightly silty fine to coarse SAND. Gravel is subangular to subrounded fine to medium.		
5.70	D14									
6.00	ES13	PID = 0.70ppm						Medium dense becoming dense grey gravelly slightly silty fine to coarse SAND. Gravel is subangular to subrounded fine to medium.		
6.00										
7.00	D16							Medium dense becoming dense grey gravelly slightly silty fine to coarse SAND. Gravel is subangular to subrounded fine to medium.		
7.00	ES15	PID = 0.20ppm	7.20	3.40						
7.00								Medium dense becoming dense grey gravelly slightly silty fine to coarse SAND. Gravel is subangular to subrounded fine to medium.		
7.20	B44									
7.20 - 7.65	SPT (S)	N=31 (2,3/6,8,8,9)						Medium dense becoming dense grey gravelly slightly silty fine to coarse SAND. Gravel is subangular to subrounded fine to medium.		
7.20										
8.00	D18							Medium dense becoming dense grey gravelly slightly silty fine to coarse SAND. Gravel is subangular to subrounded fine to medium.		
8.00	ES17	PID = 0.20ppm								
8.00								Medium dense becoming dense grey gravelly slightly silty fine to coarse SAND. Gravel is subangular to subrounded fine to medium.		
8.00										
8.70	B46		8.70	3.95	-4.78	8.70		Medium dense grey fine to medium SAND.		
8.70 - 9.15	D45									
8.70 - 9.15	SPT (S)	N=26 (5,7/5,8,6,7)								

Water Strikes				Chiselling Details			Remarks
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)	
3.20	3.20						Inspection pit hand dug to 1.20m.
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
				Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated at scheduled depth.	21/06/2024





Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth:	Start Date:	Driller:	Sheet 2 of 4
Sonic Drilling	Frastr CRS-XL Duo	0.00	30.15	719891.81 E 733884.83 N	30.15 m	09/04/2024	SW/HK	Scale: 1:49
					Elevation:	End Date:	Logger:	FINAL
					3.92 mOD	11/04/2024	JD	

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
8.70										
9.00	D20									
9.00	ES19	PID = 0.30ppm								
9.00										
10.00	D22									
10.00	ES21	PID = 0.10ppm	10.2	4.86	-6.28	10.20		Medium dense grey gravelly silty fine to coarse SAND. Gravel is subangular to subrounded fine to medium.		
10.00										
10.20	B48									
10.20 - 10.65	D47									
10.20 - 10.65	SPT (S)	N=19 (4,4/4,5,5,5)								
10.20										
11.00	D24									
11.00	ES23	PID = 0.10ppm								
11.00										
11.70	B50		11.7	5.16						
11.70 - 12.15	D49									
11.70 - 12.15	SPT (S)	N=23 (2,4/4,6,6,7)								
11.70										
12.00	D34									
12.00	ES25	PID = 0.00ppm								
12.00										
13.00	D27									
13.00	ES26	PID = 0.00ppm	13.2	5.90	-9.28	13.20		Medium dense grey sandy silty subangular fine to coarse GRAVEL. Sand is fine to coarse.		
13.00										
13.20	B52									
13.20 - 13.65	D51									
13.20 - 13.65	SPT (S)	N=12 (2,2/3,3,3,3)								
13.20										
14.00	D29									
14.00	ES28	PID = 0.10ppm								
14.00										
14.70	B54		14.7	1.90						
14.70 - 15.15	D53									
14.70 - 15.15	SPT (S)	N=19 (4,3/6,4,4,5)								
14.70										
15.00	D31									
15.00	ES30	PID = 0.00ppm								
15.00										
16.00	D33									
16.00	ES32	PID = 0.00ppm	16.2	2.80	-12.28	16.20		Stiff (locally very stiff) grey sandy silty CLAY. Sand is fine to medium.		
16.00										
16.20	B56									
16.20 - 16.65	D55									
16.20 - 16.65	SPT (S)	N=28 (5,5/8,6,6,8)								
16.20										
17.70	B56		17.7	4.40						
17.70 - 18.15	D55									
17.70 - 18.15	SPT (S)	N=44 (6,6/9,9,12,14)								

Water Strikes				Chiselling Details			Remarks
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)	
3.20	3.20						Inspection pit hand dug to 1.20m.
Casing Details				Water Added			
To (m)	Diam (mm)	From (m)	To (m)				
				Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated at scheduled depth.	21/06/2024





Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 30.15 m	Start Date: 09/04/2024	Driller: SW/HK	Sheet 3 of 4 Scale: 1:49
Sonic Drilling	Fraste CRS-XL Duo	0.00	30.15	719891.81 E 733884.83 N	Elevation: 3.92 mOD	End Date: 11/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
17.80										
19.20	B58		19.2	2.50						
19.20 - 19.65	D57									
19.20 - 19.65	SPT (S)	N=23 (2,4/6,5,7,5)								
19.20										
20.70	B60		20.7	3.60	-16.78	20.70				
20.70 - 21.15	D59									
20.70 - 21.15	SPT (S)	N=36 (6,6/8,8,10,10)						Very stiff grey silty CLAY.		
20.70										
22.20	B62		22.2	2.30	-18.28	22.20				
22.20 - 22.65	D61									
22.20 - 22.65	SPT (S)	N=23 (4,4/5,6,6,6)						Stiff grey sandy silty CLAY. Sand is fine to medium.		
22.20										
23.70	B64		23.7	2.40						
23.70 - 24.15	D63									
23.70 - 24.15	SPT (S)	N=24 (4,3/3,7,7,7)								
23.70										
25.20	B66		25.2	28.0						
25.20 - 25.65	D65									
25.20 - 25.65	SPT (S)	N=28 (6,6/8,9,5,6)								
25.20										
26.70	B68		26.7	30.0						
26.70 - 27.15	D67									
26.70 - 27.15	SPT (S)	N=30 (6,6/8,6,8,8)								

Water Strikes				Chiselling Details			Remarks	
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)		
3.20	3.20							Inspection pit hand dug to 1.20m.
Casing Details		Water Added		Core Barrel	Flush Type	Termination Reason	Last Updated	
To (m)	Diam (mm)	From (m)	To (m)					
						Terminated at scheduled depth.	21/06/2024	





Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 30.15 m	Start Date: 09/04/2024	Driller: SW/HK	Sheet 4 of 4 Scale: 1:49
Sonic Drilling	Fraste CRS-XL Duo	0.00	30.15	719891.81 E 733884.83 N	Elevation: 3.92 mOD	End Date: 11/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
26.70										
28.20	B70		28.2	30.0						
28.20 - 28.65	D69									
28.20 - 28.65	SPT (S)	N=30 (7,6/7,9,6,8)								
28.20										
29.70	B72		29.7	29.0						
29.70 - 30.15	D71									
29.70 - 30.15	SPT (S)	N=29 (4,4/9,8,6,6)								
29.70					-26.23	30.15		End of Borehole at 30.15m		

Water Strikes				Chiselling Details			Remarks	
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)		
3.20	3.20							Inspection pit hand dug to 1.20m.
Casing Details		Water Added		Core Barrel	Flush Type	Termination Reason	Last Updated	
To (m)	Diam (mm)	From (m)	To (m)					
						Terminated at scheduled depth.	21/06/2024	





Project No.
24-0316

Project Name: 3FM Plot L Hammond Lane

Client: Dublin Port Company

Client's Rep: RPS

Borehole ID
3FM-BH310

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 6.00 m	Start Date: 17/04/2024	Driller: RW	Sheet 1 of 1 Scale: 1:49
Sonic Drilling	Frastr CRS-XL Duo	0.00	6.00	719902.34 E 733965.94 N	Elevation: 3.47 mOD	End Date: 17/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.50	D8				3.07	0.40		CONCRETE		
0.50	ES1							MADE GROUND: Grey sandy subangular fine to coarse GRAVEL with low cobble content. Sand is fine to coarse.		
0.50		PID = 0.10ppm								
1.00	D9									
1.00	ES2									
1.00		PID = 0.00ppm								
2.00	D10									
2.00	ES3									
2.00		PID = 0.10ppm								
3.00	D11									
3.00	ES5									
3.00		PID = 0.40ppm								
4.00	D12									
4.00	ES4									
4.00		PID = 0.30ppm								
5.00	D13									
5.00	ES6									
5.00		PID = 0.10ppm								
6.00	D14				-2.53	6.00		End of Borehole at 6.00m		
6.00	ES7									
6.00		PID = 0.10ppm Water sitting at 4.70m								

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.			
6.00	6.00	5	4.70				
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
				Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated at scheduled depth.	21/06/2024





Project No.
24-0316

Project Name: 3FM Plot L Hammond Lane

Client: Dublin Port Company

Client's Rep: RPS

Borehole ID
3FM-BH311

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 6.00 m	Start Date: 17/04/2024	Driller: RW	Sheet 1 of 1
Sonic Drilling	Frastr CRS-XL Duo	0.00	6.00	719925.45 E 733960.84 N	Elevation: 3.44 mOD	End Date: 17/04/2024	Logger: JD	Scale: 1:49
								FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill	
0.50	D8	PID = 0.10ppm			3.04	0.40	[Pattern]	CONCRETE			
0.50	ES1						[Pattern]	MADE GROUND: Grey sandy clayey subangular fine to coarse GRAVEL. Sand is fine to coarse.			
0.50											
1.00	D9	PID = 0.00ppm			0.44		[Pattern]	Grey gravelly fine to coarse SAND with low cobble content. Gravel is subangular fine to coarse.			
1.00	ES2										
1.00											
2.00	D10	PID = 0.10ppm			-2.56		[Pattern]	End of Borehole at 6.00m			
2.00	ES3										
2.00											
3.00	D11	PID = 0.10ppm			-2.56		[Pattern]	End of Borehole at 6.00m			
3.00	ES4										
3.00											
4.00	D12	PID = 0.10ppm			-2.56		[Pattern]	End of Borehole at 6.00m			
4.00	ES5										
4.00											
5.00	D13	PID = 0.10ppm			-2.56		[Pattern]	End of Borehole at 6.00m			
5.00	ES6										
5.00											
6.00	D14	PID = 0.10ppm			-2.56		[Pattern]	End of Borehole at 6.00m			
6.00	ES7										
6.00											

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.			
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
				Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated at scheduled depth.	21/06/2024





Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 30.15 m	Start Date: 12/04/2024	Driller: CT	Sheet 1 of 4
Sonic Drilling	Frastr CRS-XL Duo	0.00	30.15	719938.13 E 733796.46 N	Elevation: 3.86 mOD	End Date: 13/04/2024	Logger: JD	Scale: 1:49
								FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.00		12-04-2024	0.00	0.00				CONCRETE		
0.50	ES1	PID = 0.40ppm			3.46	0.40		MADE GROUND: Dark grey sandy slightly silty angular to subrounded fine to coarse GRAVEL with occasional fragments of brick and concrete. Sand is fine to coarse.		
1.00	ES2	PID = 0.30ppm								
1.20	B38		1.20	0.00						
1.20 - 1.65	D18									
1.20 - 1.65	SPT (C)	N=23 (1,3/5,5,8)								
2.00	ES3	PID = 0.20ppm								
2.70	B39		2.70	0.00						
2.70 - 3.15	D19									
2.70 - 3.15	SPT (C)	N=26 (2,5/6,3,8,9)								
2.70										
2.98	EW1									
3.00	ES5	PID = 0.20ppm								
3.00										
3.05	EW2									
4.00	ES4	PID = 0.00ppm	4.20	2.00	-0.14	4.00		Medium dense (locally dense) brown very gravelly silty fine to coarse SAND with low cobble and boulder content. Gravel is subangular to subrounded fine to coarse.		
4.00										
4.20	B40									
4.20 - 4.65	D20									
4.20 - 4.65	SPT (S)	N=31 (4,10/10,8,7,6)								
4.20										
5.00	ES6	PID = 0.10ppm								
5.00										
5.70	B41		5.70	2.40						
5.70 - 6.15	D21									
5.70 - 6.15	SPT (S)	N=24 (4,5/5,7,6,6)								
5.70										
6.00	ES7	PID = 0.40ppm								
6.00										
7.00	ES8	PID = 0.20ppm	7.20	3.60						
7.00										
7.20	B42									
7.20 - 7.65	D22									
7.20 - 7.65	SPT (S)	N=24 (4,6/7,4,7,6)								
7.20										
8.00	ES9	PID = 0.00ppm								
8.00										
8.70	B43		8.70	6.00						
8.70 - 9.15	D23									
8.70 - 9.15	SPT (S)	N=17 (2,2/3,4,4,6)								

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.			
6.00	6.00						
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
28.70	177						
		Core Barrel	Flush Type	Termination Reason		Last Updated	
				Terminated at scheduled depth.		21/06/2024	





Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 30.15 m	Start Date: 12/04/2024	Driller: CT	Sheet 2 of 4 Scale: 1:49
Sonic Drilling	Frastr CRS-XL Duo	0.00	30.15	719938.13 E 733796.46 N	Elevation: 3.86 mOD	End Date: 13/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
8.70										
9.00	ES10	PID = 0.00ppm								
10.00	ES11	PID = 0.00ppm	10.2	5.80						
10.20	B44									
10.20 - 10.65	D24									
10.20 - 10.65	SPT (S)	N=17 (2,2/4,4,5,4)								
11.00	ES12	PID = 0.00ppm								
11.70	B45		11.7	5.50						
11.70 - 12.15	D25									
11.70 - 12.15	SPT (S)	N=16 (2,5/5,4,4,3)								
12.00	ES13	PID = 0.00ppm								
13.00	ES14	PID = 0.30ppm	13.2	6.00						
13.20	B46									
13.20	D26									
13.20 - 13.65	SPT (S)	N=19 (3,5/4,5,5,5)								
14.00	ES15	PID = 0.50ppm								
14.70	B47		14.7	6.10						
14.70 - 15.15	D27									
14.70 - 15.15	SPT (S)	N=25 (3,5/7,8,5,5)								
15.00	ES16	PID = 0.00ppm								
16.00	ES17	PID = 0.00ppm	16.2	4.90	-12.34	16.20				
16.20	B48							Medium dense brown sandy slightly silty subrounded fine to coarse GRAVEL. Sand is fine to coarse.		
16.20 - 16.65	D28									
16.20 - 16.65	SPT (S)	N=29 (5,6/6,10,7,6)								
17.70	B49		17.7	6.10						
17.70 - 18.15	D29									
17.70 - 18.15	SPT (S)	N=29 (6,7/8,8,7,6)								

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)				
6.00	6.00			Inspection pit hand dug to 1.20m.			
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
28.70	177			Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated at scheduled depth.	21/06/2024





Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 30.15 m	Start Date: 12/04/2024	Driller: CT	Sheet 3 of 4 Scale: 1:49
Sonic Drilling	Fraste CRS-XL Duo	0.00	30.15	719938.13 E 733796.46 N	Elevation: 3.86 mOD	End Date: 13/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
17.70					-14.54	18.40		Medium dense dark greyish brown silty fine to medium SAND.		
19.20	B50		19.2	6.00						
19.20 - 19.65	D30	N=23 (1,2/5,5,6,7)								
19.20 - 19.65	SPT (S)									
19.20										
20.70	B51		20.7	5.80						
20.70 - 21.15	D31	N=21 (2,4/4,5,4,8)	20.7	6.20						
20.70 - 21.15	SPT (S)		20.7	6.60						
20.70		12-04-2024								
20.70		13-04-2024								
20.70										
22.20	B52		22.2	6.00	-18.14	22.00		Firm becoming stiff dark greyish brown slightly sandy CLAY. Sand is fine to coarse.		
22.20 - 22.65	D32	N=14 (2,3/3,4,3,4)								
22.20 - 22.65	SPT (S)									
22.20										
23.70	B53		23.7	4.60						
23.70 - 24.15	D33	N=17 (2,3/4,4,5,4)								
23.70 - 24.15	SPT (S)									
23.70										
25.20	B54		25.2	6.60						
25.20 - 25.65	D34	N=23 (3,3/5,6,6,6)								
25.20 - 25.65	SPT (S)									
25.50										
26.70	B55		26.7	5.10						
26.70 - 27.15	D35									

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.			
6.00	6.00						
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
28.70	177						
		Core Barrel	Flush Type	Termination Reason		Last Updated	
				Terminated at scheduled depth.		21/06/2024	



Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 30.15 m	Start Date: 12/04/2024	Driller: CT	Sheet 4 of 4 Scale: 1:49
Sonic Drilling	Fraste CRS-XL Duo	0.00	30.15	719938.13 E 733796.46 N	Elevation: 3.86 mOD	End Date: 13/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
26.70 - 27.15 26.70	SPT (S)	N=17 (2,2/4,4,5,4) Hammer SN = .								
28.20 28.20 - 28.65 28.20 - 28.65 28.20	B56 D36 SPT (S)	N=19 (3,4/6,5,4,4) Hammer SN = .	28.8	6.00						
29.70 29.70 - 30.15 29.70 - 30.15 29.70 30.15	B57 D37 SPT (S)	N=21 (2,5/7,6,4,4) Hammer SN = . 13-04-2024	28.2	6.10	-26.29	30.15		End of Borehole at 30.15m		

Water Strikes				Remarks						
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.						
6.00	6.00									
Casing Details		Water Added								
To (m)	Diam (mm)	From (m)	To (m)							
28.70	177									
				Core Barrel	Flush Type	Termination Reason	Last Updated			
						Terminated at scheduled depth.	21/06/2024			



Project No.
24-0316

Project Name: 3FM Plot L Hammond Lane

Client: Dublin Port Company

Client's Rep: RPS

Borehole ID
3FM-BH314

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 30.15 m	Start Date: 10/04/2024	Driller: RW	Sheet 1 of 4 Scale: 1:49
Sonic Drilling	Frastr CRS-XL Duo	0.00	30.15	719958.24 E 733772.03 N	Elevation: 3.97 mOD	End Date: 11/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.50	D2	PID = 0.00ppm			3.57	0.40		CONCRETE		
0.50	ES1							MADE GROUND: Grey slightly sandy subangular to subrounded fine to coarse GRAVEL with high cobble content. Sand is fine to coarse.		
0.50										
1.00	D4	1.20 Dry		0.47	3.50		Medium dense brown gravelly fine to coarse SAND with low cobble content and shell fragments. Gravel is subangular to subrounded fine to coarse.			
1.00	ES3							PID = 0.10ppm		
1.00										
1.20	B35	N=17 (3,6/5,5,4,3) Hammer SN = 0140								
1.20 - 1.65	D36									
1.20 - 1.65	SPT (S)									
2.00	D6	PID = 0.80ppm			-3.03	7.00		Medium dense brown very gravelly slightly silty fine to coarse SAND with low cobble content. Gravel is subangular to subrounded fine to coarse.		
2.00	ES5									
2.00										
2.70	B40	N=13 (1,3/3,2,4,4) Hammer SN = 0140	2.70	1.00						
2.70 - 3.15	D37									
2.70 - 3.15	SPT (S)									
3.00	D8	PID = 0.10ppm								
3.00	ES7									
3.00										
3.40	EW1	PID = 0.20ppm								
4.00	D10									
4.00	ES9									
4.00		N=10 (2,2/2,2,3,3) Hammer SN = 0140								
4.20	B41									
4.20 - 4.65	D38									
4.20 - 4.65	SPT (S)	PID = 0.00ppm								
5.00	D12									
5.00	ES11									
5.00		N=11 (2,2/3,3,2,3) Hammer SN = 0140	5.70	2.70						
5.70	B42									
5.70 - 6.15	D39									
5.70 - 6.15	SPT (S)	PID = 0.30ppm								
6.00	D14									
6.00	ES13									
6.00		N=17 (3,4/4,5,4,4) Hammer SN = 0140								
7.00	D16									
7.00	ES15									
7.00		PID = 1.30ppm	7.20	3.60						
7.20	B44									
7.20 - 7.65	D43									
7.20 - 7.65	SPT (C)	PID = 0.50ppm								
8.00	D18									
8.00	ES17									
8.00		8.70	2.00							
8.70	B46									
8.70 - 9.15	D45									

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.			
5.00	5.00						
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
				Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated at scheduled depth.	21/06/2024





Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 30.15 m	Start Date: 10/04/2024	Driller: RW	Sheet 2 of 4 Scale: 1:49
Sonic Drilling	Fraсте CRS-XL Duo	0.00	30.15	719958.24 E 733772.03 N	Elevation: 3.97 mOD	End Date: 11/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
8.70 - 9.15	SPT (S)	N=17 (3,3/4,4,4,5) Hammer SN = 0140								
9.00	D20									
9.00	ES19	PID = 0.00ppm								
9.00										
10.00	D22									
10.00	ES21	PID = 0.00ppm	10.2	3.00						
10.00										
10.20	B48									
10.20 - 10.65	D47									
10.20 - 10.65	SPT (S)	N=19 (2,3/5,5,5,4) Hammer SN = 0140								
11.00	D24									
11.00	ES23	PID = 0.00ppm								
11.00										
11.70	B49		11.7	4.00						
11.70 - 12.15	D50									
11.70 - 12.15	SPT (S)	N=25 (6,8/8,6,6,5) Hammer SN = 0140								
12.00	D26									
12.00	ES25	PID = 0.00ppm								
12.00										
13.00	D28									
13.00	ES27	PID = 0.10ppm	13.2	3.60						
13.00										
13.20	B52									
13.20 - 13.65	D51									
13.20 - 13.65	SPT (S)	N=19 (3,5/6,5,4,4) Hammer SN = 0140								
14.00	D30									
14.00	ES29	PID = 0.20ppm								
14.00										
14.70	B54		14.7	4.50	-10.73	14.70				
14.70 - 15.15	D53							Medium dense brown sandy slightly silty subrounded fine to coarse GRAVEL with low cobble content. Sand is fine to coarse.		
14.70 - 15.15	SPT (S)	N=22 (2,4/4,6,6,6) Hammer SN = 0140								
15.00	D32									
15.00	ES31	PID = 0.20ppm								
15.00										
16.00	D34									
16.00	ES33	PID = 0.10ppm	16.2	4.00						
16.00										
16.20	B56									
16.20 - 16.65	D55									
16.20 - 16.65	SPT (S)	N=39 (2,4/7,9,11,12) Hammer SN = 0140								
17.00	B58		17.7	3.60						
17.70 - 18.15	D57									

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.			
5.00	5.00						
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
				Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated at scheduled depth.	21/06/2024





Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 30.15 m	Start Date: 10/04/2024	Driller: RW	Sheet 3 of 4 Scale: 1:49
Sonic Drilling	Fraste CRS-XL Duo	0.00	30.15	719958.24 E 733772.03 N	Elevation: 3.97 mOD	End Date: 11/04/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
17.70 - 18.15	SPT (S)	N=28 (4,6/6,8,7,7) Hammer SN = 0140								
19.20	B60 D59		19.2	3.60						
19.20 - 19.65	SPT (S)	N=16 (2,2/3,4,4,5) Hammer SN = 0140								
20.70	B62 D61		20.7	4.00	-16.03	20.00		Stiff (locally firm) grey slightly sandy CLAY. Sand is fine to coarse.		
20.70 - 21.15	SPT (S)	N=17 (2,3/3,4,5,5) Hammer SN = 0140								
22.20	B64 D63		22.2	5.30						
22.20 - 22.65	SPT (S)	N=19 (3,4/4,5,5,5) Hammer SN = 0140								
23.70	B66 D65		23.7	5.50						
23.70 - 24.15	SPT (S)	N=16 (3,2/3,4,4,5) Hammer SN = 0140								
25.20	B67 D68		25.2	5.00	-21.23	25.20		Stiff (locally firm) grey slightly sandy CLAY. Sand is fine.		
25.20 - 25.65	SPT (S)	N=14 (2,3/3,3,4,4) Hammer SN = 0140								
26.70	B70 D69		26.7	5.40						
26.70 - 27.15										

Water Strikes				Remarks						
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.						
5.00	5.00									
Casing Details		Water Added								
To (m)	Diam (mm)	From (m)	To (m)							
				Core Barrel	Flush Type	Termination Reason	Last Updated			
						Terminated at scheduled depth.	21/06/2024			



Project No.
24-0316

Project Name: 3FM Plot L Hammond Lane

Client: Dublin Port Company

Client's Rep: RPS

Borehole ID
3FM-BH314

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 30.15 m	Start Date: 10/04/2024	Driller: RW	Sheet 4 of 4 Scale: 1:49
Sonic Drilling	Fraste CRS-XL Duo	0.00	30.15	719958.24 E 733772.03 N	Elevation: 3.97 mOD	End Date: 11/04/2024	Logger: JD	FINAL

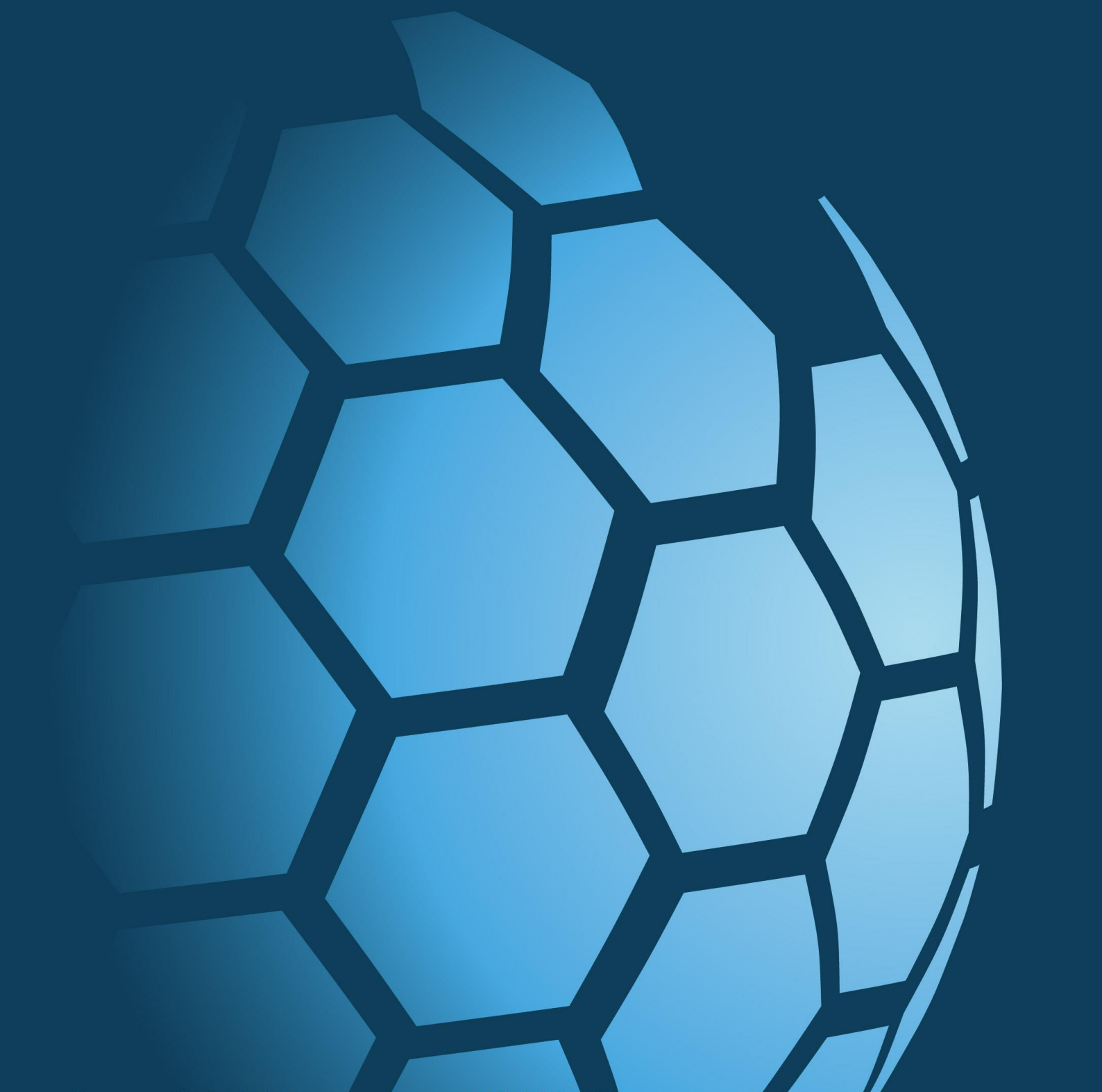
Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
26.70 - 27.15	SPT (S)	N=22 (2,4/5,5,6,6) Hammer SN = 0140								
28.20	B72		28.2	4.70						
28.20 - 28.65	D71									
28.20 - 28.65	SPT (S)	N=16 (2,3/3,5,4,4) Hammer SN = 0140								
29.70	B74		29.7	4.80						
29.70 - 30.15	D73									
29.70 - 30.15	SPT (S)	N=26 (3,5/6,6,7,7) Hammer SN = 0140			-26.18	30.15		End of Borehole at 30.15m		

Water Strikes				Remarks						
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.						
5.00	5.00									
Casing Details		Water Added								
To (m)	Diam (mm)	From (m)	To (m)							
				Core Barrel	Flush Type	Termination Reason	Last Updated			
						Terminated at scheduled depth.	21/06/2024			



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APPENDIX C
TRIAL PIT LOGS





Project No. 24-0316	Project Name: 3FM Plot L Hammond Lane	Trial Pit ID 3FM-TP301
Coordinates 719694.76 E 733892.50 N	Client: Dublin Port Company	Sheet 1 of 1 Scale: 1:25
	Client's Representative: RPS	
Method: Trial Pitting	Elevation 3.80 mOD	Date: 03/04/2024
Plant: 3t Tracked Excavator		Logger: MW
		FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
0.50	B3	PID = 0.00ppm	3.40	0.40	CONCRETE		
0.50	D2					MADE GROUND: Firm black sandy slightly clayey angular fine to coarse GRAVEL. Sand is fine to coarse.	0.5
0.50	ES1			3.15	0.65	MADE GROUND: Light yellowish brown silty fine to coarse SAND.	
1.00	B6	PID = 0.00ppm					1.0
1.00	D5						
1.00	ES4						
1.50	B9	PID = 0.00ppm	2.20	1.60		End of trial pit at 1.60m	1.5
1.50	D8						2.0
1.50	ES7						2.5
1.50							3.0
							3.5
							4.0
							4.5

Water Strikes		Depth: 1.60 Width: 0.30 Length: 1.10	Remarks: Material unsuitable for hand vane. No groundwater encountered.
Struck at (m)	Remarks		
		Stability: Stable	Termination Reason Terminated at scheduled depth.
		Last Updated 21/06/2024	



Project No. 24-0316	Project Name: 3FM Plot L Hammond Lane	Trial Pit ID 3FM-TP302
Coordinates 719729.39 E 733954.65 N	Client: Dublin Port Company	Sheet 1 of 1 Scale: 1:25
	Client's Representative: RPS	
Method: Trial Pitting	Elevation 3.49 mOD	Date: 04/04/2024
Plant: 3t Tracked Excavator		Logger: MW
		FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
			3.19	0.30	CONCRETE		
0.50	B3	PID = 0.10ppm	2.89	0.60		MADE GROUND: Black very gravelly clayey fine to coarse SAND with medium cobble content. Gravel is angular fine to medium. Cobbles are angular.	0.5
0.50	D2					MADE GROUND: Light brown very gravelly clayey fine to coarse SAND with low cobble and boulder content and construction waste (brick and concrete fragments). Gravel is angular fine to medium. Cobbles and boulders are angular.	1.0
0.50	ES1					End of trial pit at 1.20m	1.5
1.00	B6	PID = 0.00ppm	2.29	1.20			2.0
1.00	D5						2.5
1.00 - 1.00	ES4	PID = 0.10ppm					3.0
1.00	B9						3.5
1.20	D8						4.0
1.20							4.5
1.20							4.0
1.50 - 1.50	ES7						3.5

Water Strikes		Depth: 1.20 Width: 0.50 Length: 1.40	Remarks: Material unsuitable for hand vane. No groundwater encountered.
Struck at (m)	Remarks		
		Stability: Stable	Termination Reason Terminated at refusal on boulder.
		Last Updated 21/06/2024	



Project No. 24-0316	Project Name: 3FM Plot L Hammond Lane	Trial Pit ID 3FM-TP303
Coordinates 719840.87 E 733810.94 N	Client: Dublin Port Company	Sheet 1 of 1 Scale: 1:25
	Client's Representative: RPS	
Method: Trial Pitting	Elevation 3.79 mOD	Date: 04/04/2024
Plant: 3t Tracked Excavator		Logger: MW
		FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
			3.49	0.30	CONCRETE		
0.50 0.50 0.50 0.50	B3 D2 ES1	PID = 0.00ppm				MADE GROUND: Yellowish brown slightly gravelly clayey fine to coarse SAND with medium cobble content and some construction waste (concrete fragments and metal). Gravel is subangular fine to medium. Cobbles are subangular.	0.5
1.00 1.00 1.00 1.00	B6 D5 ES4	PID = 0.00ppm	2.79	1.00		MADE GROUND: Yellowish brown very gravelly clayey fine to coarse SAND with medium cobble content and some construction waste (concrete fragments and metal). Gravel is subangular fine to medium. Cobbles are subangular.	1.0
1.50 1.50 1.50 1.50	B9 D8 ES7	PID = 0.00ppm	2.29	1.50		End of trial pit at 1.50m	1.5
							2.0
							2.5
							3.0
							3.5
							4.0
							4.5

Water Strikes		Depth: 1.50 Width: 0.45 Length: 1.50	Remarks: Material unsuitable for hand vane. No groundwater encountered.
Struck at (m)	Remarks		
		Stability: Stable	Termination Reason Terminated at scheduled depth.
		Last Updated 21/06/2024	



Project No. 24-0316	Project Name: 3FM Plot L Hammond Lane		Trial Pit ID 3FM-TP304
Coordinates 719861.45 E 733898.69 N	Client: Dublin Port Company		
Method: Trial Pitting	Client's Representative: RPS		Sheet 1 of 1 Scale: 1:25
Plant: 3t Tracked Excavator	Elevation 3.65 mOD	Date: 05/04/2024	Logger: MW FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water	
					CONCRETE			
0.50	B3	PID = 0.00ppm	3.35	0.30		MADE GROUND: Brownish black sandy slightly clayey angular fine to coarse GRAVEL with occasional brick fragments and domestic waste (paper, plastic and other refuse). Sand is fine to coarse.	0.5	
0.50	D2							
0.50 - 0.50	ES1			2.95	0.70		MADE GROUND: Yellowish brown gravelly clayey fine to coarse SAND. Gravel is angular fine to medium.	1.0
0.50								
1.00	B6	PID = 0.00ppm				End of trial pit at 1.50m	1.5	
1.00	D5							
1.00	ES4							
1.50	B9	PID = 0.00ppm	2.15	1.50		End of trial pit at 1.50m	2.0	
1.50	D8							
1.50	ES7							
1.50								

Water Strikes		Depth: 1.50 Width: 0.45 Length: 1.40	Remarks: Material unsuitable for hand vane. No groundwater encountered.
Struck at (m)	Remarks		
		Stability: Stable	Termination Reason Terminated at scheduled depth.
			Last Updated 21/06/2024

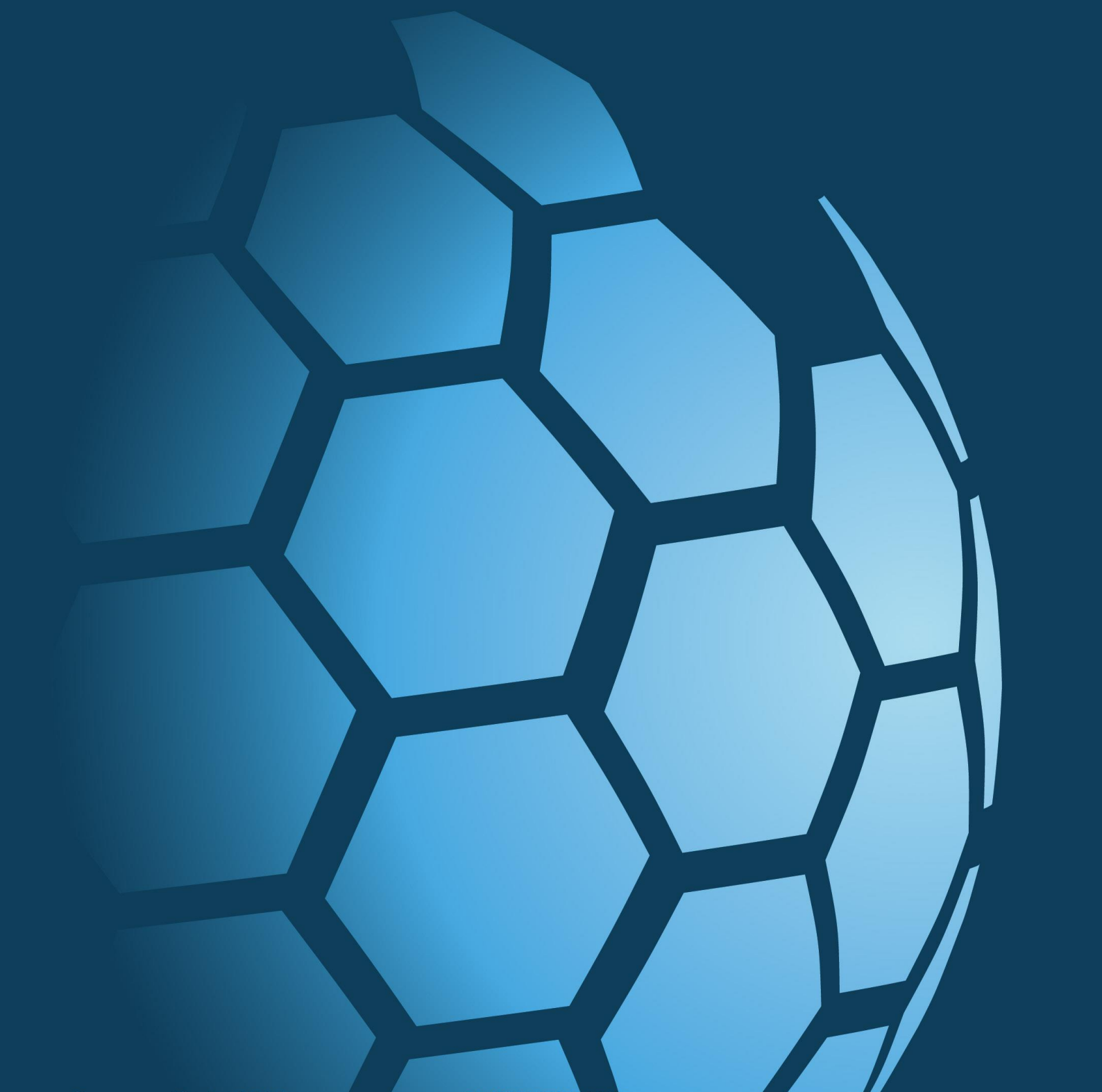




CAUSEWAY
— GEOTECH

APPENDIX D

TRIAL PIT PHOTOGRAPHS





3FM-TP302



3FM-TP302



3FM-TP302



3FM-TP302



3FM-TP303



3FM-TP303



3FM-TP303



3FM-TP304



3FM-TP304



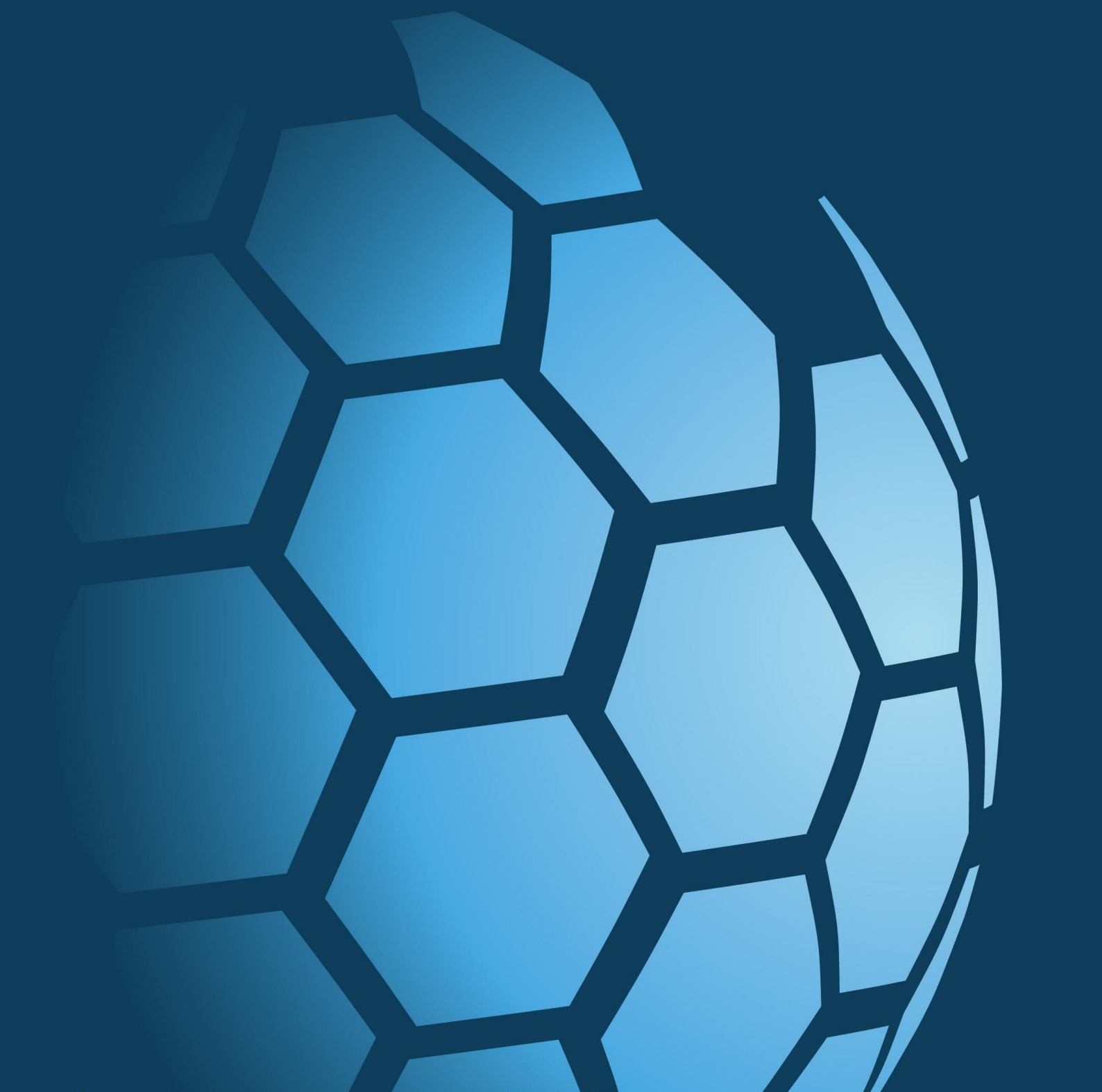
3FM-TP304



CAUSEWAY
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APPENDIX E

INDIRECT IN-SITU CBR TEST RESULTS

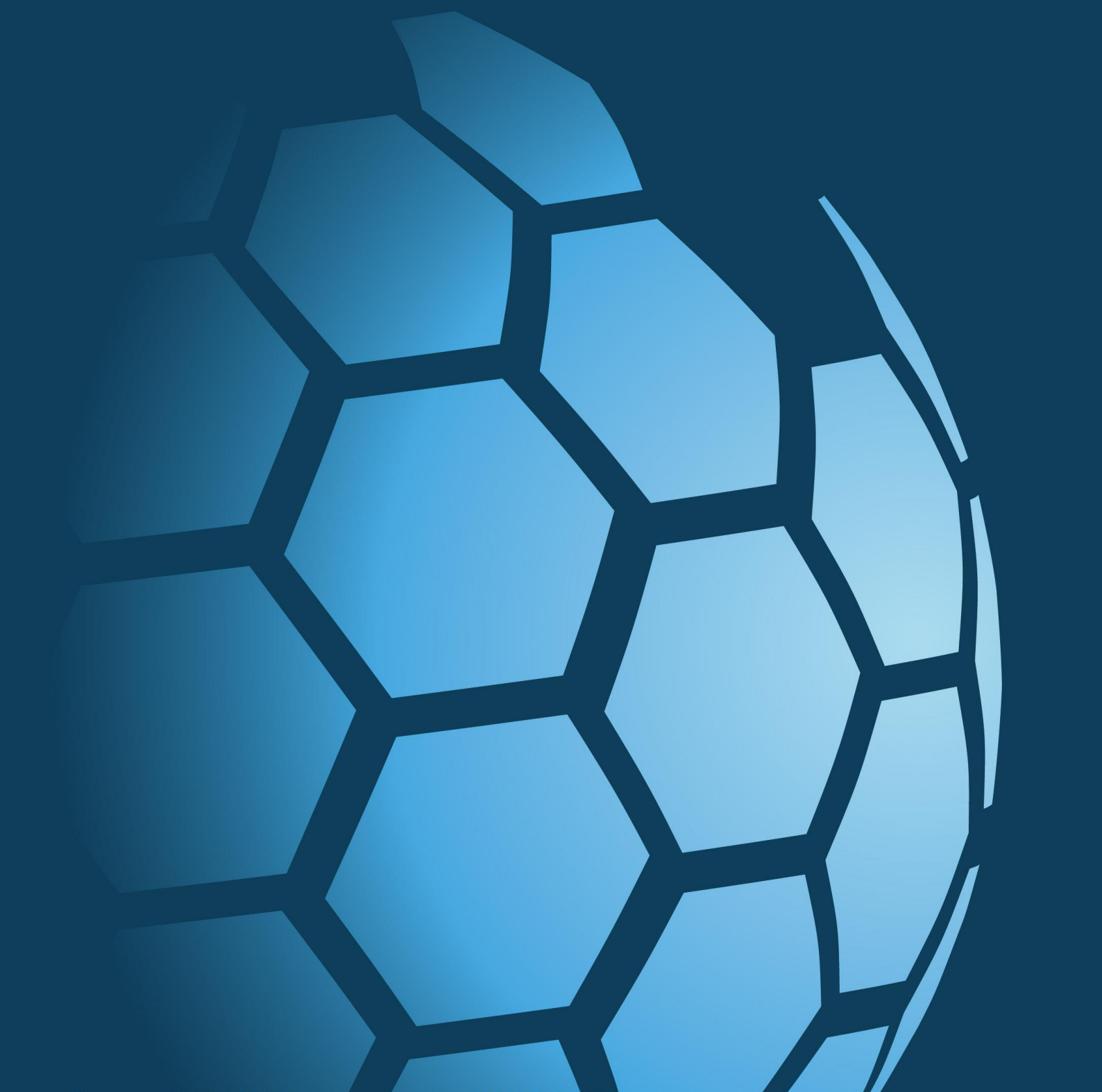




CAUSEWAY
— GEOTECH

APPENDIX F

GROUND WATER AND GAS MONITORING RECORDS



Groundwater Ground Gas Monitoring



Site:	3FM Plot L
Project No.:	24-0316
Date:	06/06/2024
Weather:	Dry
Engineer:	MRG
Monitoring Round:	Round 1

Equipment:		GA5000					
Ambient Conditions	Time	Barometric Pressure	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
Before:	07:30	1017	0.0	0.1	21.6	0	0
After:	17:00	1018	0.0	0.0	22.2	0	0

Borehole No.	3FM-BH301B	Time:	14:38:00		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30	0.0	0.0	20.9	1	0
60	0.0	0.0	20.9	0	0
90	0.0	0.0	20.9	0	0
120	0.0	0.0	20.9	1	0
150	0.0	0.0	20.9	0	0
180	0.0	0.0	20.9	0	0
240	0.0	0.0	20.9	0	0
300	0.0	0.0	20.9	0	0

Flow rates	
Time (sec)	Flow (l/h)
30	0.1
60	0.1
90	0.1
120	0.1
150	0.1
180	0.1
240	0.1
300	0.1

Groundwater monitoring	mbgl
Depth to top of water	2.54
Depth to bottom of BH	5.08
Sample collected (Y/N)	N
Sample depth	

Borehole No.	3FM-BH302	Time:	12:30:00		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30	0.0	0.1	20.6	1	0
60	0.0	0.1	21.2	1	0
90	0.0	0.1	21.3	1	0
120	0.0	0.0	2.4	1	0
150	0.0	0.0	2.4	1	0
180	0.0	0.0	2.4	1	0
240	0.0	0.0	2.4	1	0
300	0.0	0.0	2.4	1	0

Flow rates	
Time (sec)	Flow (l/h)
30	0.2
60	0.2
90	0.2
120	0.2
150	0.2
180	0.2
240	0.2
300	0.2

Groundwater monitoring	mbgl
Depth to top of water	1.85
Depth to bottom of BH	4.88
Sample collected (Y/N)	N
Sample depth	

Borehole No.	3FM-BH303	Time:	16:47:00		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30	0.0	0.0	21.7	0	0
60	0.0	0.0	21.8	1	0
90	0.0	0.0	21.8	0	0
120	0.0	0.0	21.8	0	0
150	0.0	0.0	21.8	0	0
180	0.0	0.0	21.8	0	0
240	0.0	0.0	21.8	0	0
300	0.0	0.0	21.8	0	0

Flow rates	
Time (sec)	Flow (l/h)
30	0.1
60	0.1
90	0.1
120	0.1
150	0.1
180	0.1
240	0.1
300	0.1

Groundwater monitoring	mbgl
Depth to top of water	Dry
Depth to bottom of BH	2.97
Sample collected (Y/N)	N
Sample depth	

Borehole No.	3FM-BH304	Time:	16:30:00		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30	0.0	0.0	21.7	0	0
60	0.0	0.0	21.8	1	0
90	0.0	0.0	21.8	0	0
120	0.0	0.0	21.8	0	0
150	0.0	0.0	21.8	0	0
180	0.0	0.0	21.8	0	0
240	0.0	0.0	21.8	0	0
300	0.0	0.0	21.8	0	0

Flow rates	
Time (sec)	Flow (l/h)
30	0.1
60	0.1
90	0.1
120	0.1
150	0.1
180	0.1
240	0.1
300	0.1

Groundwater monitoring	mbgl
Depth to top of water	3.19
Depth to bottom of BH	3.85
Sample collected (Y/N)	N
Sample depth	

Borehole No.	3FM-BH305	Time:	No access due to machinery blocking access to borehole		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30					
60					
90					
120					
150					
180					
240					

Flow rates	
Time (sec)	Flow (l/h)
30	
60	
90	
120	
150	
180	
240	

Groundwater monitoring	mbgl
Depth to top of water	
Depth to bottom of BH	
Sample collected (Y/N)	
Sample depth	

Groundwater Ground Gas Monitoring



Site:	3FM Plot L
Project No.:	24-0316
Date:	06/06/2024
Weather:	Dry
Engineer:	MRG
Monitoring Round:	Round 1
300	

Equipment:		GA5000					
Ambient Conditions	Time	Barometric Pressure	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
Before:	07:30	1017	0.0	0.1	21.6	0	0
After:	17:00	1018	0.0	0.0	22.2	0	0
300							

Groundwater Ground Gas Monitoring



Site:	3FM Plot L
Project No.:	24-0316
Date:	06/06/2024
Weather:	Dry
Engineer:	MRG
Monitoring Round:	Round 1

Equipment:		GA5000					
Ambient Conditions	Time	Barometric Pressure	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
Before:	07:30	1017	0.0	0.1	21.6	0	0
After:	17:00	1018	0.0	0.0	22.2	0	0

Borehole No.	3FM-BH306	Time:	14:17:00		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30	0.0	4.8	13.5	1	0
60	0.0	4.6	13.7	1	0
90	0.0	4.5	13.6	1	0
120	0.0	4.5	13.6	1	0
150	0.0	4.5	13.7	1	0
180	0.0	4.5	13.7	1	0
240	0.0	4.5	13.7	1	0
300	0.0	4.5	13.7	1	0

Flow rates	
Time (sec)	Flow (l/h)
30	0.2
60	0.1
90	0.1
120	0.1
150	0.1
180	0.1
240	0.1
300	0.1

Groundwater monitoring	mbgl
Depth to top of water	2.62
Depth to bottom of BH	2.75
Sample collected (Y/N)	
Sample depth	

Borehole No.	3FM-BH307	Time:	13:25:00		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30	0.0	2.5	16.9	1	0
60	0.0	2.8	16.1	1	0
90	0.0	3.1	15.5	1	0
120	0.0	3.0	15.7	1	0
150	0.0	3.0	15.7	1	0
180	0.0	3.0	15.7	1	0
240	0.0	3.0	15.7	1	0
300	0.0	3.0	15.7	1	0

Flow rates	
Time (sec)	Flow (l/h)
30	0.1
60	0.1
90	0.1
120	0.1
150	0.1
180	0.1
240	0.1
300	0.1

Groundwater monitoring	mbgl
Depth to top of water	DRY
Depth to bottom of BH	2.98
Sample collected (Y/N)	
Sample depth	

Borehole No.	3FM-BH308	Time:	13:45:00		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30	0.0	5.7	11.2	1	0
60	0.0	5.6	11.8	1	0
90	0.0	5.6	11.8	1	0
120	0.0	5.6	11.8	1	0
150	0.0	5.6	11.8	1	0
180	0.0	5.6	11.8	1	0
240	0.0	5.6	11.8	1	0
300	0.0	5.6	11.8	1	0

Flow rates	
Time (sec)	Flow (l/h)
30	0.1
60	0.1
90	0.1
120	0.1
150	0.1
180	0.1
240	0.1
300	0.1

Groundwater monitoring	mbgl
Depth to top of water	2.92
Depth to bottom of BH	10.58
Sample collected (Y/N)	
Sample depth	

Borehole No.	3FM-BH309	Time:	13:00:00		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30	0.0	2.9	16.9	1	0
60	0.0	2.9	16.7	1	0
90	0.0	2.9	16.7	1	0
120	0.0	2.9	16.7	1	0
150	0.0	2.9	16.7	1	0
180	0.0	2.9	16.7	1	0
240	0.0	2.9	16.7	1	0
300	0.0	2.9	16.7	1	0

Flow rates	
Time (sec)	Flow (l/h)
30	0.1
60	0.2
90	0.2
120	0.2
150	0.2
180	0.2
240	0.2
300	0.2

Groundwater monitoring	mbgl
Depth to top of water	3.28
Depth to bottom of BH	7.98
Sample collected (Y/N)	N
Sample depth	

Borehole No.	3FM-BH310	Time:	14:55:00		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30	0.0	0.2	19.9	9	0
60	0.0	0.2	19.8	3	0
90	0.0	0.2	19.8	3	0
120	0.0	0.2	19.8	3	0
150	0.0	0.2	19.8	3	0
180	0.0	0.2	19.8	3	0
240	0.0	0.2	19.8	3	0

Flow rates	
Time (sec)	Flow (l/h)
30	0.1
60	0.1
90	0.1
120	0.1
150	0.1
180	0.1
240	0.1

Groundwater monitoring	mbgl
Depth to top of water	3.45
Depth to bottom of BH	5.15
Sample collected (Y/N)	
Sample depth	

Site:	3FM Plot L					
Project No.:	24-0316					
Date:	06/06/2024					
Weather:	Dry					
Engineer:	MRG					
Monitoring Round:	Round 1					
	300	0.0	0.2	19.8	3	0

Equipment:		GA5000					
Ambient Conditions	Time	Barometric Pressure	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
Before:	07:30	1017	0.0	0.1	21.6	0	0
After:	17:00	1018	0.0	0.0	22.2	0	0
	300	0.1					

Site:	3FM Plot L
Project No.:	24-0316
Date:	06/06/2024
Weather:	Dry
Engineer:	MRG
Monitoring Round:	Round 1

Equipment:		GA5000					
Ambient Conditions	Time	Barometric Pressure	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
Before:	07:30	1017	0.0	0.1	21.6	0	0
After:	17:00	1018	0.0	0.0	22.2	0	0

Borehole No.	3FM-BH311	Time:			
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30					
60					
90					
120					
150					
180					
240					
300					

Top of pipe damaged unable to monitor

Flow rates	
Time (sec)	Flow (l/h)
30	
60	
90	
120	
150	
180	
240	
300	

Groundwater monitoring	mbgl
Depth to top of water	
Depth to bottom of BH	
Sample collected (Y/N)	
Sample depth	

Borehole No.	3FM-BH313	Time:	15:40:00		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30	0.0	0.1	20.7	0	0
60	0.0	0.1	20.7	0	0
90	0.0	0.1	20.7	0	0
120	0.0	0.1	20.9	0	0
150	0.0	0.1	20.9	0	0
180	0.0	0.1	20.9	0	0
240	0.0	0.2	20.9	0	0
300	0.0	0.2	20.9	0	0

Flow rates	
Time (sec)	Flow (l/h)
30	0.2
60	0.1
90	0.1
120	0.1
150	0.1
180	0.1
240	0.1
300	0.1

Groundwater monitoring	mbgl
Depth to top of water	2.97
Depth to bottom of BH	7.54
Sample collected (Y/N)	N
Sample depth	

Borehole No.	3FM-BH314	Time:	16:00:00		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30	0.0	0.1	20.9	1	0
60	0.0	0.1	20.9	0	0
90	0.0	0.1	20.9	0	0
120	0.0	0.0	20.9	0	0
150	0.0	0.0	20.9	0	0
180	0.0	0.0	20.9	0	0
240	0.0	0.0	20.9	0	0
300	0.0	0.0	20.9	0	0

Flow rates	
Time (sec)	Flow (l/h)
30	0.2
60	0.2
90	0.2
120	0.2
150	0.2
180	0.2
240	0.2
300	0.2

Groundwater monitoring	mbgl
Depth to top of water	3.27
Depth to bottom of BH	
Sample collected (Y/N)	N
Sample depth	

Groundwater Ground Gas Monitoring



Site:	3FM Plot L
Project No.:	24-0316
Date:	14/06/2024
Weather:	Dry
Engineer:	MRG
Monitoring Round:	Round 2

Equipment:		GA5000					
Ambient Conditions	Time	Barometric Pressure	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
Before:	07:30	991	0.0	0.1	20.6	0	0
After:	12:30	995	0.0	0.0	21.3	0	0

Borehole No.	3FM-BH301B					Time:	11:22:00
Gas readings							
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)		
30	0.0	0.1	20.4	0	0		
60	0.0	0.1	20.3	0	0		
90	0.0	0.1	20.2	0	0		
120	0.0	0.1	20.0	0	0		
150	0.0	0.1	20.0	0	0		
180	0.0	0.1	20.0	0	0		
240	0.0	0.1	20.0	0	0		
300	0.0	0.1	20.0	0	0		

Flow rates	
Time (sec)	Flow (l/h)
30	0.1
60	0.1
90	0.1
120	0.1
150	0.1
180	0.1
240	0.1
300	0.1

Groundwater monitoring	mbgl
Depth to top of water	2.73
Depth to bottom of BH	5.08
Sample collected (Y/N)	N
Sample depth	

Borehole No.	3FM-BH302					Time:	11:00:00
Gas readings							
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)		
30	0.0	0.0	20.8	0	0		
60	0.0	0.0	20.4	0	0		
90	0.0	0.0	20.4	0	0		
120	0.0	0.0	20.2	0	0		
150	0.0	0.0	20.2	0	0		
180	0.0	0.0	20.0	0	0		
240	0.0	0.0	20.0	0	0		
300	0.0	0.0	20.0	0	0		

Flow rates	
Time (sec)	Flow (l/h)
30	0.1
60	0.1
90	0.1
120	0.1
150	0.1
180	0.1
240	0.1
300	0.1

Groundwater monitoring	mbgl
Depth to top of water	1.85
Depth to bottom of BH	4.88
Sample collected (Y/N)	N
Sample depth	

Borehole No.	3FM-BH303					Time:	08:30:00
Gas readings							
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)		
30	0.0	0.1	21.0	0	0		
60	0.0	0.1	21.1	0	0		
90	0.0	0.1	21.1	0	0		
120	0.0	0.1	21.1	0	0		
150	0.0	0.0	21.1	0	0		
180	0.0	0.0	21.1	0	0		
240	0.0	0.0	21.1	0	0		
300	0.0	0.0	21.1	0	0		

Flow rates	
Time (sec)	Flow (l/h)
30	0.1
60	0.1
90	0.1
120	0.1
150	0.1
180	0.1
240	0.1
300	0.1

Groundwater monitoring	mbgl
Depth to top of water	Dry
Depth to bottom of BH	2.97
Sample collected (Y/N)	N
Sample depth	

Borehole No.	3FM-BH304					Time:	08:45:00
Gas readings							
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)		
30	0.0	0.0	21.4	0	0		
60	0.0	0.0	21.4	1	0		
90	0.0	0.0	21.4	0	0		
120	0.0	0.0	21.4	0	0		
150	0.0	0.0	21.4	0	0		
180	0.0	0.0	21.3	0	0		
240	0.0	0.0	21.3	0	0		
300	0.0	0.0	21.3	0	0		

Flow rates	
Time (sec)	Flow (l/h)
30	0.1
60	0.1
90	0.1
120	0.1
150	0.1
180	0.1
240	0.1
300	0.1

Groundwater monitoring	mbgl
Depth to top of water	3.25
Depth to bottom of BH	3.85
Sample collected (Y/N)	N
Sample depth	

Borehole No.	3FM-BH305					Time:	No access due to machinery (crane)
Gas readings							
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)		
30							
60							
90							
120							
150							
180							
240							

Flow rates	
Time (sec)	Flow (l/h)
30	
60	
90	
120	
150	
180	
240	

Groundwater monitoring	mbgl
Depth to top of water	
Depth to bottom of BH	
Sample collected (Y/N)	
Sample depth	

Groundwater Ground Gas Monitoring



Site:	3FM Plot L				
Project No.:	24-0316				
Date:	14/06/2024				
Weather:	Dry				
Engineer:	MRG				
Monitoring Round:	Round 2				
300					

Equipment:		GA5000					
Ambient Conditions	Time	Barometric Pressure	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
Before:	07:30	991	0.0	0.1	20.6	0	0
After:	12:30	995	0.0	0.0	21.3	0	0
300							

Groundwater Ground Gas Monitoring



Site:	3FM Plot L
Project No.:	24-0316
Date:	14/06/2024
Weather:	Dry
Engineer:	MRG
Monitoring Round:	Round 2

Equipment:		GA5000					
Ambient Conditions	Time	Barometric Pressure	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
Before:	07:30	991	0.0	0.1	20.6	0	0
After:	12:30	995	0.0	0.0	21.3	0	0

Borehole No.	3FM-BH306	Time:	09:15:00		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30	0.0	4.2	14.2	0	0
60	0.0	4.2	14.1	1	0
90	0.0	4.3	13.8	1	0
120	0.0	4.3	13.8	1	0
150	0.0	4.3	13.8	1	0
180	0.0	4.3	13.7	1	0
240	0.0	4.3	13.7	1	0
300	0.0	4.3	13.7	1	0

Flow rates	
Time (sec)	Flow (l/h)
30	0.1
60	0.1
90	0.1
120	0.1
150	0.1
180	0.1
240	0.1
300	0.1

Groundwater monitoring	mbgl
Depth to top of water	2.52
Depth to bottom of BH	2.75
Sample collected (Y/N)	
Sample depth	

Borehole No.	3FM-BH307	Time:	No Access due to crusher in operation		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30					
60					
90					
120					
150					
180					
240					
300					

Flow rates	
Time (sec)	Flow (l/h)
30	
60	
90	
120	
150	
180	
240	
300	

Groundwater monitoring	mbgl
Depth to top of water	
Depth to bottom of BH	
Sample collected (Y/N)	
Sample depth	

Borehole No.	3FM-BH308	Time:	09:25:00		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30	0.0	5.4	13.2	1	0
60	0.0	5.5	13.5	1	0
90	0.0	5.5	13.4	1	0
120	0.0	5.5	13.4	1	0
150	0.0	5.5	13.3	1	0
180	0.0	5.5	13.3	1	0
240	0.0	5.6	13.3	1	0
300	0.0	5.6	13.3	1	0

Flow rates	
Time (sec)	Flow (l/h)
30	0.1
60	0.1
90	0.1
120	0.1
150	0.1
180	0.1
240	0.1
300	0.1

Groundwater monitoring	mbgl
Depth to top of water	2.87
Depth to bottom of BH	10.58
Sample collected (Y/N)	
Sample depth	

Borehole No.	3FM-BH309	Time:	No Access - crusher in operation		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30					
60					
90					
120					
150					
180					
240					
300					

Flow rates	
Time (sec)	Flow (l/h)
30	
60	
90	
120	
150	
180	
240	
300	

Groundwater monitoring	mbgl
Depth to top of water	
Depth to bottom of BH	
Sample collected (Y/N)	
Sample depth	

Borehole No.	3FM-BH310	Time:	No access due ships loading on quay		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30					
60					
90					
120					
150					
180					
240					

Flow rates	
Time (sec)	Flow (l/h)
30	
60	
90	
120	
150	
180	
240	

Groundwater monitoring	mbgl
Depth to top of water	
Depth to bottom of BH	
Sample collected (Y/N)	
Sample depth	

Groundwater Ground Gas Monitoring



Site:	3FM Plot L
Project No.:	24-0316
Date:	14/06/2024
Weather:	Dry
Engineer:	MRG
Monitoring Round:	Round 2
300	

Equipment:		GA5000					
Ambient Conditions	Time	Barometric Pressure	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
Before:	07:30	991	0.0	0.1	20.6	0	0
After:	12:30	995	0.0	0.0	21.3	0	0
300							

Groundwater Ground Gas Monitoring



Site:	3FM Plot L
Project No.:	24-0316
Date:	14/06/2024
Weather:	Dry
Engineer:	MRG
Monitoring Round:	Round 2

Equipment:		GA5000					
Ambient Conditions	Time	Barometric Pressure	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
Before:	07:30	991	0.0	0.1	20.6	0	0
After:	12:30	995	0.0	0.0	21.3	0	0

Borehole No.	3FM-BH311	Time:				
Gas readings						
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)	
30						
60						
90						
120						
150						
180						
240						
300						

No access due ships loading on quay

Flow rates	
Time (sec)	Flow (l/h)
30	
60	
90	
120	
150	
180	
240	
300	

Groundwater monitoring	mbgl
Depth to top of water	
Depth to bottom of BH	
Sample collected (Y/N)	
Sample depth	

Borehole No.	3FM-BH313	Time:	11:40:00		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30	0.0	0.1	20.7	0	0
60	0.0	0.1	20.7	0	0
90	0.0	0.1	20.8	0	0
120	0.0	0.1	20.8	0	0
150	0.0	0.1	20.8	0	0
180	0.0	0.1	20.8	0	0
240	0.0	0.2	20.8	0	0
300	0.0	0.2	20.8	0	0

Flow rates	
Time (sec)	Flow (l/h)
30	0.1
60	0.1
90	0.1
120	0.1
150	0.1
180	0.1
240	0.1
300	0.1

Groundwater monitoring	mbgl
Depth to top of water	3.90
Depth to bottom of BH	7.54
Sample collected (Y/N)	N
Sample depth	

Borehole No.	3FM-BH314	Time:	12:05:00		
Gas readings					
Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CO (ppm)	H ₂ S (ppm)
30	0.0	0.0	21.1	0	0
60	0.0	0.0	21.1	0	0
90	0.0	0.0	21.1	0	0
120	0.0	0.0	21.1	0	0
150	0.0	0.0	21.1	0	0
180	0.0	0.0	21.1	0	0
240	0.0	0.0	21.1	0	0
300	0.0	0.0	21.1	0	0

Flow rates	
Time (sec)	Flow (l/h)
30	0.0
60	0.1
90	0.1
120	0.1
150	0.1
180	0.1
240	0.1
300	0.1

Groundwater monitoring	mbgl
Depth to top of water	3.90
Depth to bottom of BH	
Sample collected (Y/N)	N
Sample depth	



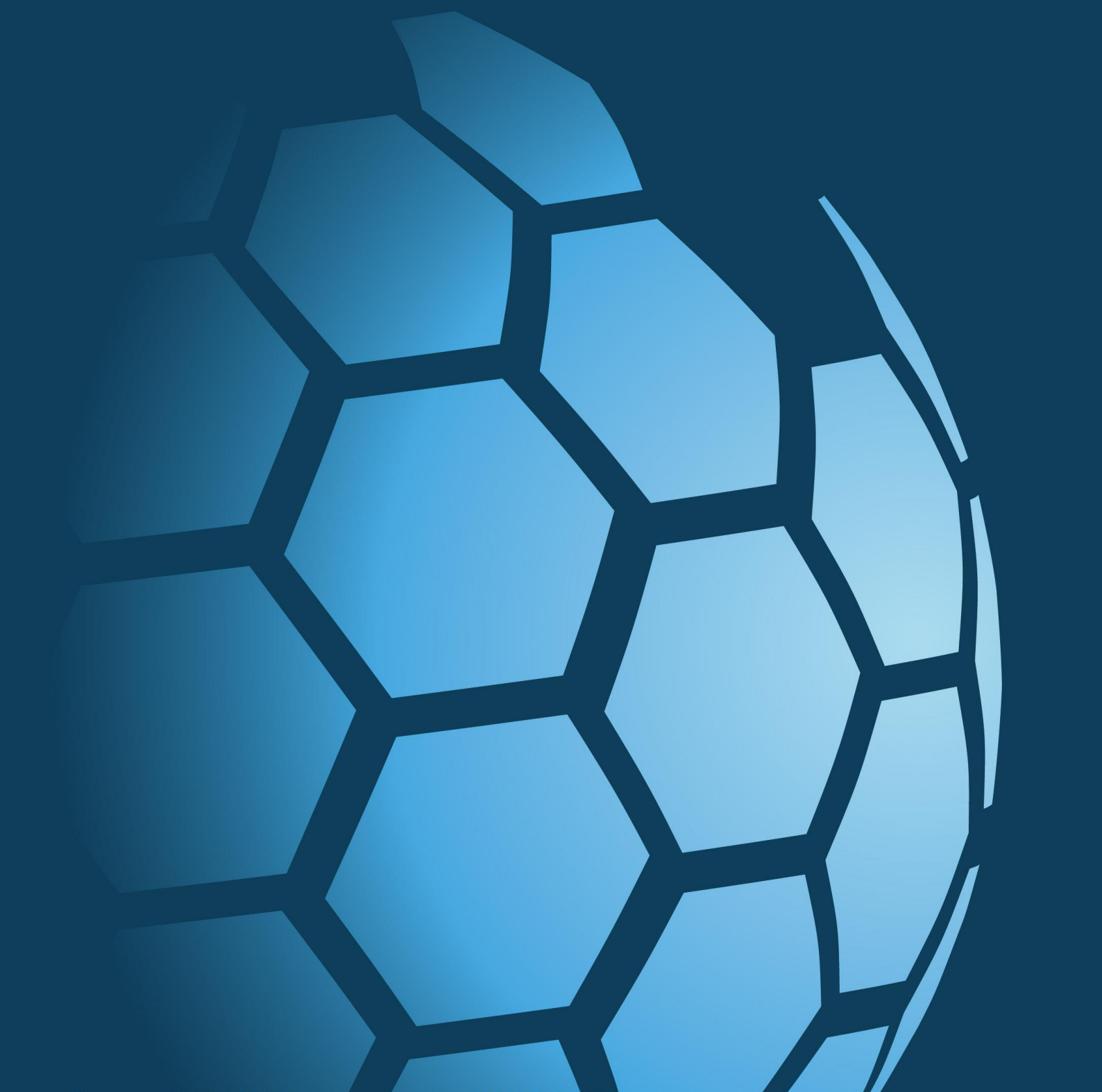
Groundwater/Gas Readings					
BH ID	BH Depth	25/04/2024	08/05/24 & 09/05/24	06/06/2024	14/06/2024
		GW (mbgl)	GW (mbgl)	GW (mbgl)	GW (mbgl)
3FM-BH301B	5.08	1.92	2.76	2.54	2.73
3FM-BH302	4.88	1.99	2.42	1.85	1.85
3FM-BH303	2.97	2.74	Dry	Dry	Dry
3FM-BH304	3.85	3.19	3.23	3.19	3.25
3FM-BH305	2.55	2.31	Dry	No access	No access
3FM-BH306	2.75	2.58	2.65	2.62	2.52
3FM-BH307	2.98	Dry	2.95	Dry	No access
3FM-BH308	10.58	2.99	3.65	2.92	2.87
3FM-BH309	7.98	3.31	3.56	3.28	No access
3FM-BH310	No access	No access	No access	3.45	No access
3FM-BH311	No access	No access	No access	No access	No access
3FM-BH313	7.54	2.98	3.05	2.97	3.9
3FM-BH314		No access	3.4	3.27	3.9



CAUSEWAY
— GEOTECH

APPENDIX G

GEOTECHNICAL LABORATORY TEST RESULTS





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

27 May 2024

Project Name:	3FM Plot L Hammond Lane
Project No.:	24-0316
Client:	Dublin Port Company
Engineer:	RPS

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). This testing was performed between 26/04/2024 and 27/05/2024.

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: 3FM Plot L Hammond Lane

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.


The results contained in this report relate to the sample(s) as received. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. This report shall not be reproduced other than in full, without the prior written approval of the laboratory.

Material tested	Type of test/Properties measured/Range of measurement	Standard specifications	No. of results included in the report
SOIL	Water Content of Soil	<i>BS 1377-2: 2022: Cl 4</i>	7
SOIL	Liquid and Plastic Limits of soil-4-point cone penetrometer method	<i>BS 1377-2: 2022: Cl 5.2</i>	6
SOIL	Particle size distribution - wet sieving	<i>BS 1377-2: 2022: Cl 10</i>	26
SOIL	Particle size distribution - sedimentation hydrometer method	<i>BS 1377-2: 2022: Cl 10</i>	7
SOIL	California Bearing Ratio (CBR)	<i>BS 1377-2: 2022: Cl 15</i>	4
SOIL	Direct Shear Test using 60mm Small Shearbox (up to 3 days)	<i>BS EN ISO 17892-10:2018</i>	17
	Extra over days (more than initial 3 days)		12

Summary of Classification Test Results

Project No. 24-0316		Project Name 3FM Plot L HAMMOND LANE												
Hole No.	Sample				Specimen Description	Density		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Casagrande Classification
	Ref	Top	Base	Type		bulk Mg/m3	dry							
3FM-BH304	68	25.20	26.70	B	Grey silty CLAY.			23	100	29	17	12		CL
3FM-BH309	62	22.20		B	Grey sandy silty CLAY.			20	99	21	15	6		ML/CL
3FM-BH313	53	23.70		B	Grey silty CLAY.			22	100	33	19	14		CL
3FM-BH314	67	25.20		B	Brown silty CLAY.			25	99	35	19	16		CL/CI
3FM-TP301	3	0.50		B	Grey gravelly slightly clayey fine to coarse SAND.			3.9	23	27	19	8		CL
3FM-TP302	3	0.50		B	Brown slightly gravelly slightly silty fine to coarse SAND.			8.2	72	29 -1pt	NP			
3FM-TP304	3	0.50		B	Brown slightly sandy subangular fine to coarse GRAVEL.			5.9						

All tests performed in accordance with BS1377-2:2022 unless specified otherwise
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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;">25/05/2024</p>	Approved By <p style="text-align: center;">Stephen Watson</p>	 10122
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------	-----------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------



PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-BH304**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **30**

Specimen Description **Dark brown gravelly clayey fine to coarse SAND.**

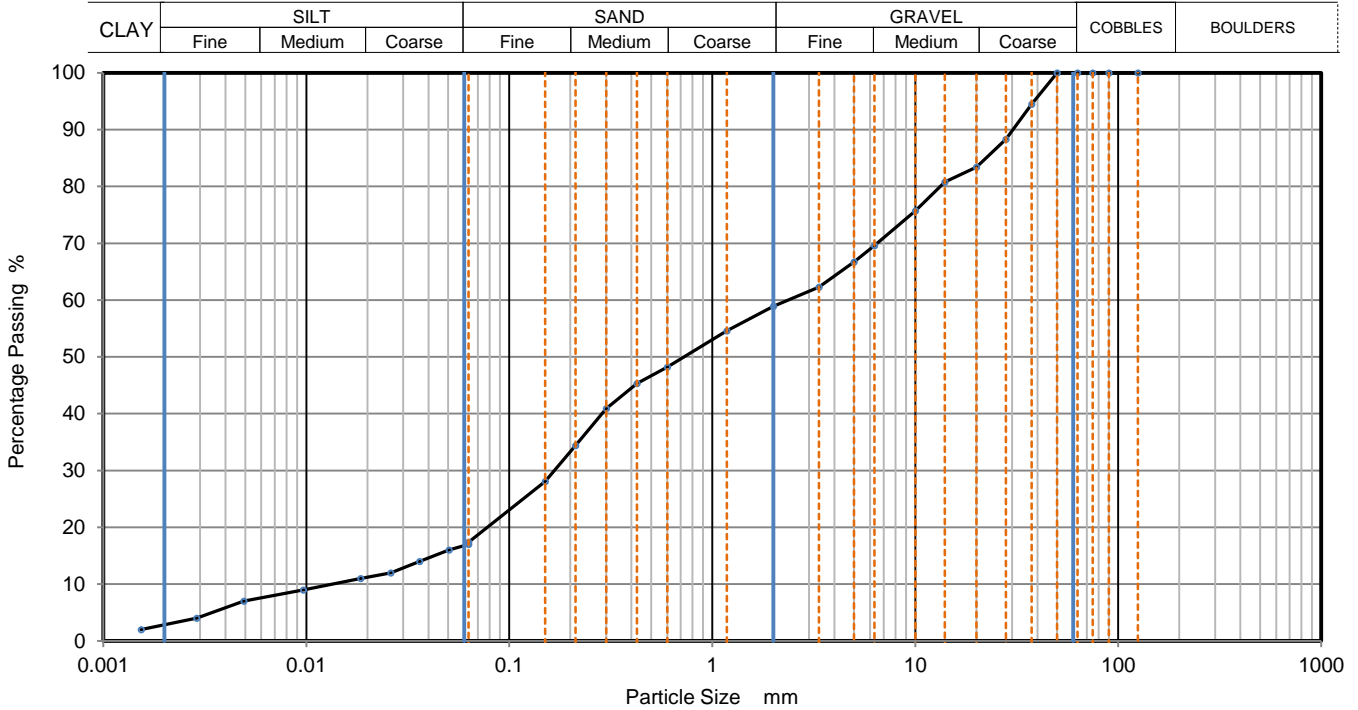
Sample Depth (m) **8.70**
 Top
 Base

Specimen Reference **3** Specimen Depth **8.7** m

Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042645**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	17
90	100	0.05059	16
75	100	0.03621	14
63	100	0.02606	12
50	100	0.01853	11
37.5	95	0.00968	9
28	88	0.00492	7
20	83	0.00289	4
14	81	0.00153	2
10	76		
6.3	70		
5	67		
3.35	62		
2	59		
1.18	55		
0.6	48	Particle density (assumed) 2.65 Mg/m3	
0.425	45		
0.3	41		
0.212	34		
0.15	28		
0.063	17		

Dry Mass of sample, g

2785

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	41.1
Sand	41.4
Silt	14.3
Clay	3.2

Grading Analysis	
D100	mm
D60	mm 2.38
D30	mm 0.166
D10	mm 0.0137
Uniformity Coefficient	170
Curvature Coefficient	0.85

Remarks
 Preparation and testing in accordance with BS1377-2 :2022 Cl 10



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10122

Approved

Stephen Watson



PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-BH304**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **44**

Specimen Description **Brown slightly sandy subangular fine to coarse GRAVEL.**

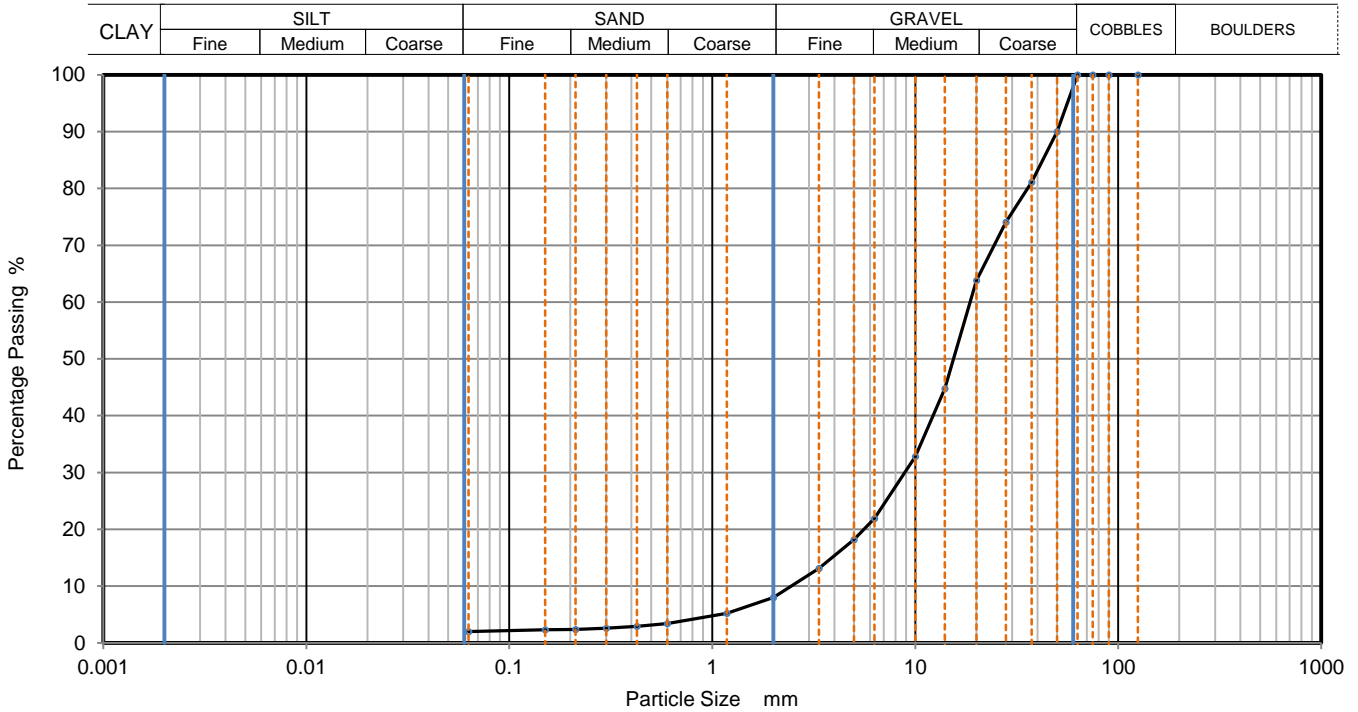
Sample Depth (m)	Top	14.70
	Base	

Specimen Reference	3	Specimen Depth	14.7	m
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Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042647**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	90		
37.5	81		
28	74		
20	64		
14	45		
10	33		
6.3	22		
5	18		
3.35	13		
2	8		
1.18	5		
0.6	3		
0.425	3		
0.3	3		
0.212	2		
0.15	2		
0.063	2		

Dry Mass of sample, g **12339**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	92.0
Sand	6.0
Fines <0.063mm	2.0

Grading Analysis	
D100	mm
D60	mm 18.6
D30	mm 8.89
D10	mm 2.44
Uniformity Coefficient	7.6
Curvature Coefficient	1.7

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10



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Approved

Stephen Watson



PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-BH304**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **68**

Specimen Description **Grey silty CLAY.**

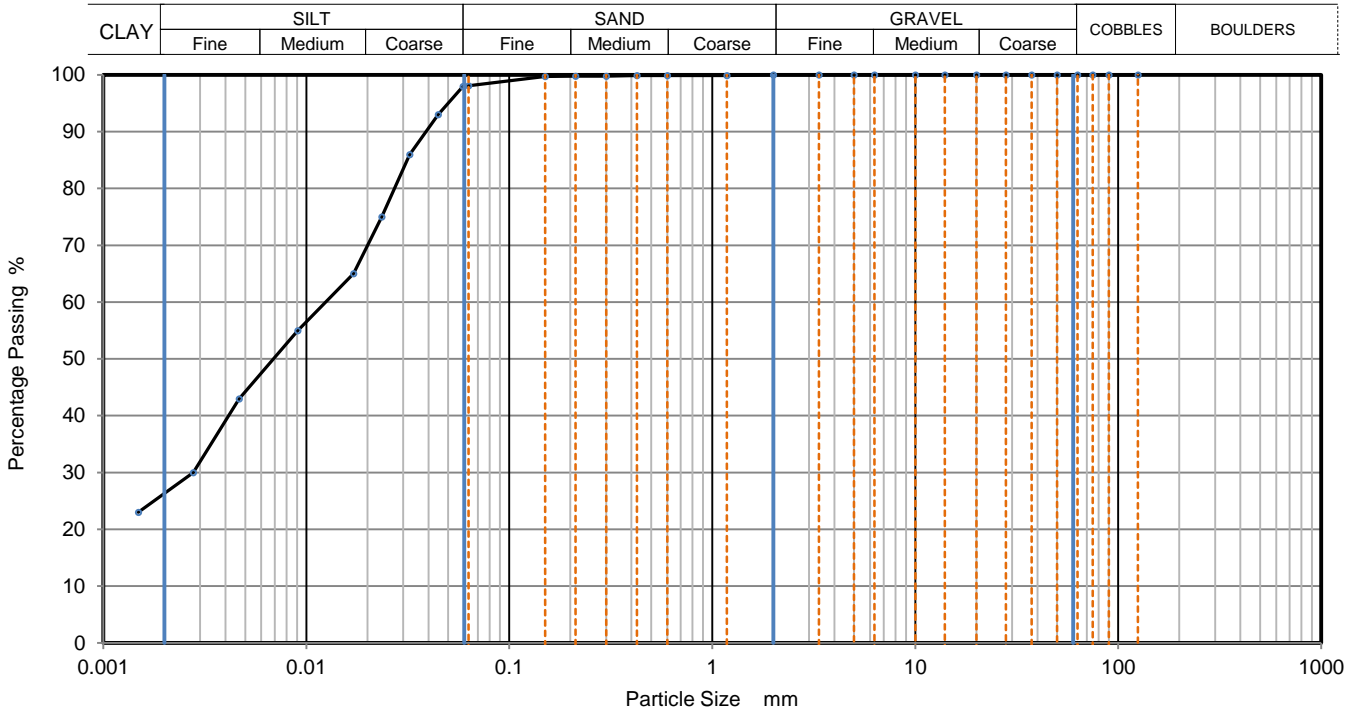
Sample Depth (m)	Top	25.20
	Base	26.70

Specimen Reference	9	Specimen Depth	25.2	m
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Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042649**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.05908	98
90	100	0.04464	93
75	100	0.03230	86
63	100	0.02352	75
50	100	0.01710	65
37.5	100	0.00906	55
28	100	0.00467	43
20	100	0.00278	30
14	100	0.00149	23
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100	Particle density (assumed) 2.65 Mg/m ³	
0.425	100		
0.3	100		
0.212	100		
0.15	100		
0.063	98		

Dry Mass of sample, g **221**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	0.0
Sand	1.8
Silt	72.0
Clay	26.2

Grading Analysis	
D100	mm
D60	mm 0.0122
D30	mm 0.00274
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10



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Stephen Watson



PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-BH309**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **36**

Specimen Description **Brown slightly gravelly silty fine to coarse SAND with shells and shell fragments.**

Sample Depth (m) **1.20**

Top

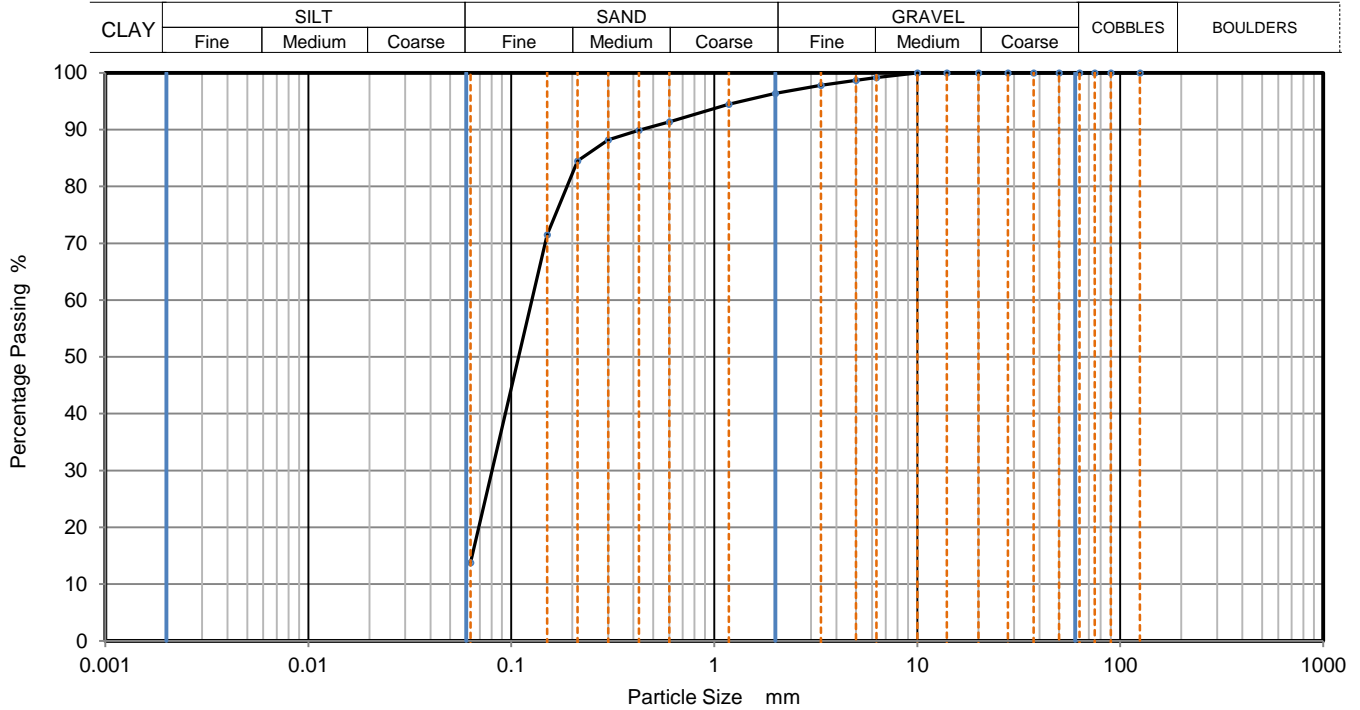
Base

Specimen Reference **7** Specimen Depth **1.2** m

Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042657**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	99		
3.35	98		
2	96		
1.18	95		
0.6	91		
0.425	90		
0.3	88		
0.212	85		
0.15	72		
0.063	14		

Dry Mass of sample, g **218**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	3.6
Sand	82.7
Fines <0.063mm	14.0

Grading Analysis	
D100	mm
D60	mm 0.126
D30	mm 0.0804
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10

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Stephen Watson

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PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-BH309**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **42**

Specimen Description **Brown slightly gravelly slightly silty fine to coarse SAND with shells and shell fragments.**

Sample Depth (m) **Top 5.70**

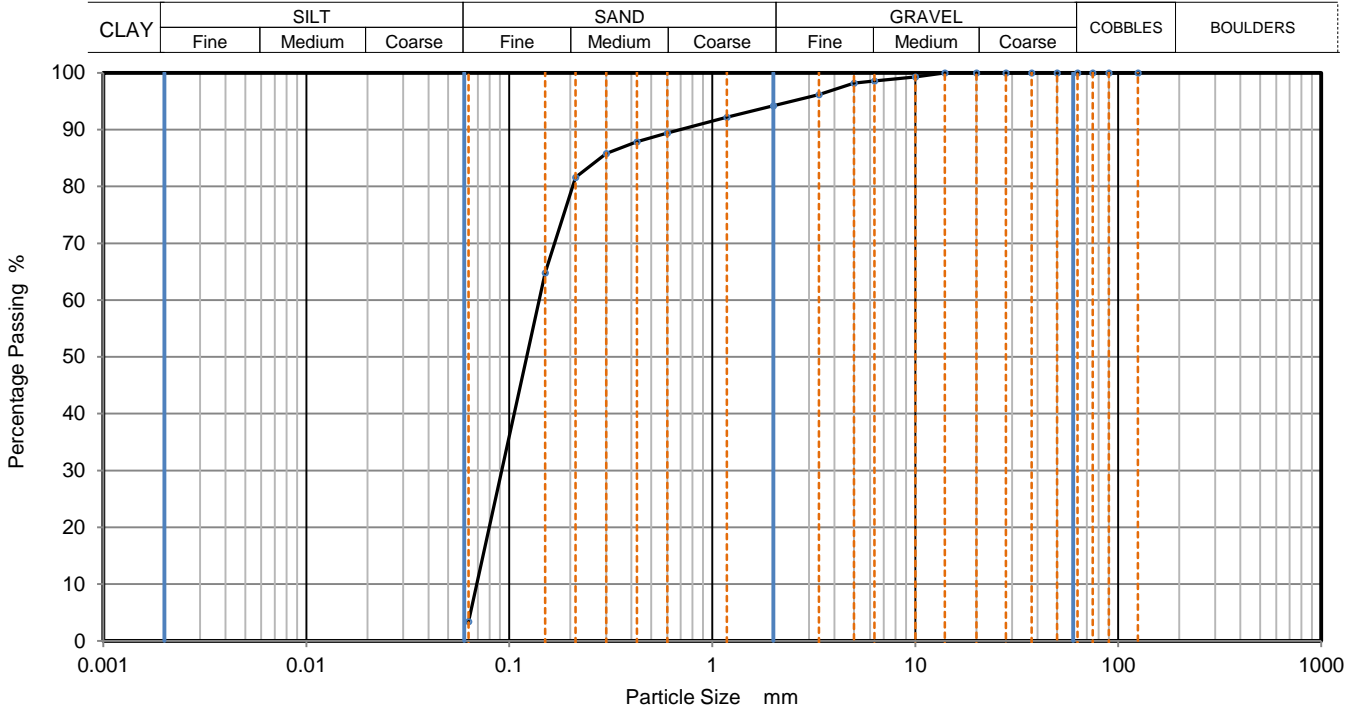
Sample Depth (m) **Base**

Specimen Reference **5** Specimen Depth **5.7** m

Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042658**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	99		
5	98		
3.35	96		
2	94		
1.18	92		
0.6	89		
0.425	88		
0.3	86		
0.212	82		
0.15	65		
0.063	3		

Dry Mass of sample, g **215**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	5.8
Sand	90.9
Fines <0.063mm	3.0

Grading Analysis	
D100	mm
D60	mm 0.14
D30	mm 0.0917
D10	mm 0.0692
Uniformity Coefficient	2
Curvature Coefficient	0.87

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10



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10122

Approved

Stephen Watson



PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-BH309**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **48**

Specimen Description **Brown slightly gravelly slightly silty fine to coarse SAND with shells and shell fragments.**

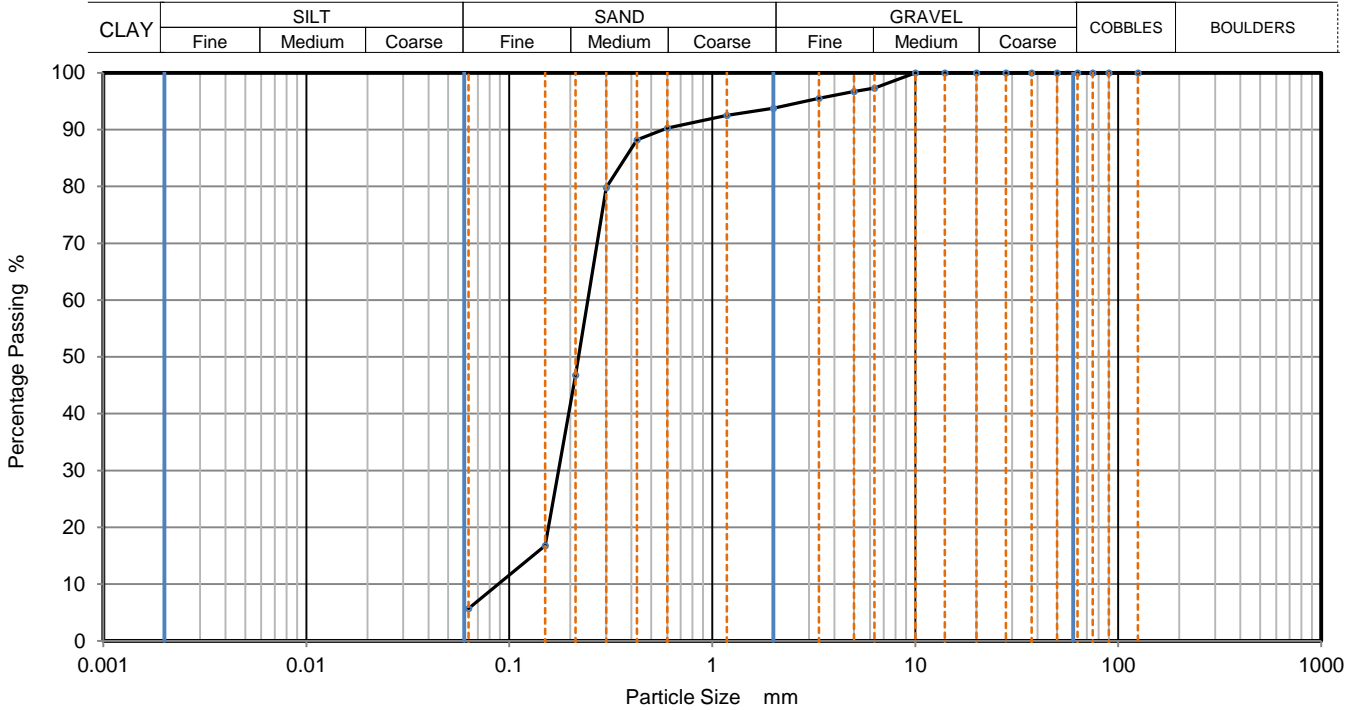
Sample Depth (m) **10.20**
 Top
 Base

Specimen Reference **3** Specimen Depth **10.2** m

Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042659**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	97		
5	97		
3.35	96		
2	94		
1.18	93		
0.6	90		
0.425	88		
0.3	80		
0.212	47		
0.15	17		
0.063	6		

Dry Mass of sample, g **220**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	6.2
Sand	88.1
Fines <0.063mm	6.0

Grading Analysis	
D100	mm
D60	mm 0.244
D30	mm 0.175
D10	mm 0.0883
Uniformity Coefficient	2.8
Curvature Coefficient	1.4

Remarks
 Preparation and testing in accordance with BS1377-2 :2022 Cl 10

Approved
 Stephen Watson

LAB 30R - Version 1



10122



PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-BH309**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **52**

Specimen Description **Brown gravelly slightly silty fine to coarse SAND.**

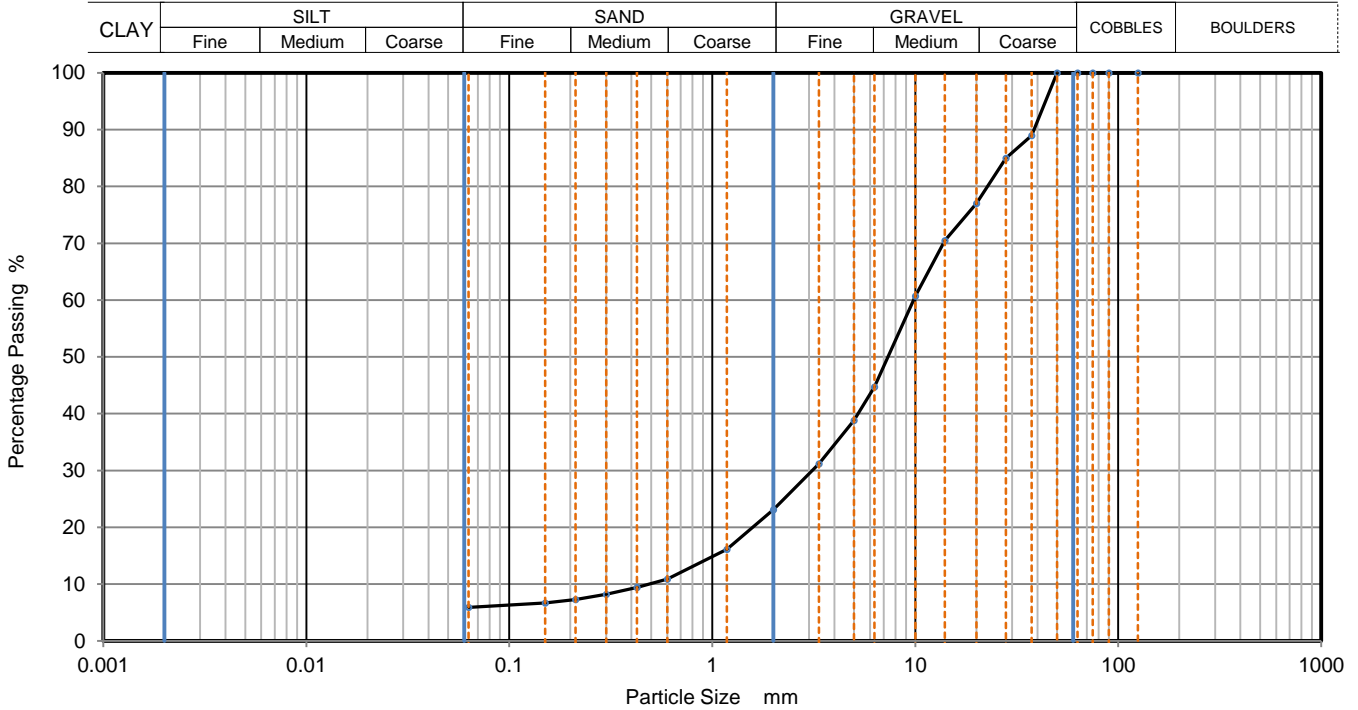
Sample Depth (m)	Top	13.20
	Base	

Specimen Reference	3	Specimen Depth	13.2	m
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Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042660**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	89		
28	85		
20	77		
14	71		
10	61		
6.3	45		
5	39		
3.35	31		
2	23		
1.18	16		
0.6	11		
0.425	9		
0.3	8		
0.212	7		
0.15	7		
0.063	6		

Dry Mass of sample, g

3642

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	76.9
Sand	17.2
Fines <0.063mm	6.0

Grading Analysis	
D100	mm
D60	mm 9.81
D30	mm 3.11
D10	mm 0.486
Uniformity Coefficient	20
Curvature Coefficient	2

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10



LAB 30R - Version 1

10122

Approved

Stephen Watson



PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-BH309**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **56**

Specimen Description **Greyish brown clayey fine to coarse SAND.**

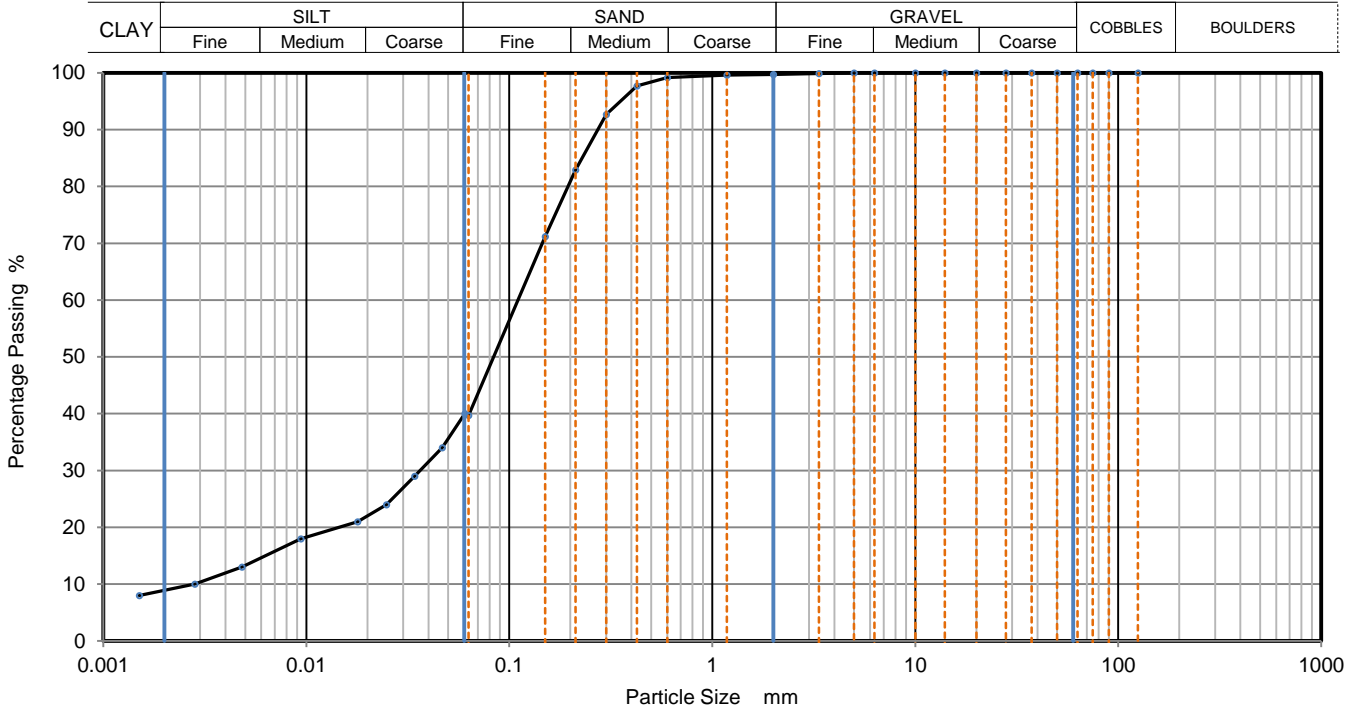
Sample Depth (m)	Top	17.70
	Base	

Specimen Reference	3	Specimen Depth	17.7	m
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Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042663**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06050	40
90	100	0.04671	34
75	100	0.03420	29
63	100	0.02482	24
50	100	0.01789	21
37.5	100	0.00940	18
28	100	0.00481	13
20	100	0.00283	10
14	100	0.00150	8
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99	Particle density (assumed) 2.65 Mg/m3	
0.425	98		
0.3	93		
0.212	83		
0.15	71		
0.063	40		

Dry Mass of sample, g **228**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	0.3
Sand	60.0
Silt	31.0
Clay	8.7

Grading Analysis	
D100	mm
D60	mm 0.11
D30	mm 0.0369
D10	mm 0.00286
Uniformity Coefficient	39
Curvature Coefficient	4.3

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10



LAB 30R - Version 1

10122

Approved

Stephen Watson



PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-BH313**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **39**

Specimen Description **Brown slightly sandy slightly clayey subangular fine to coarse GRAVEL.**

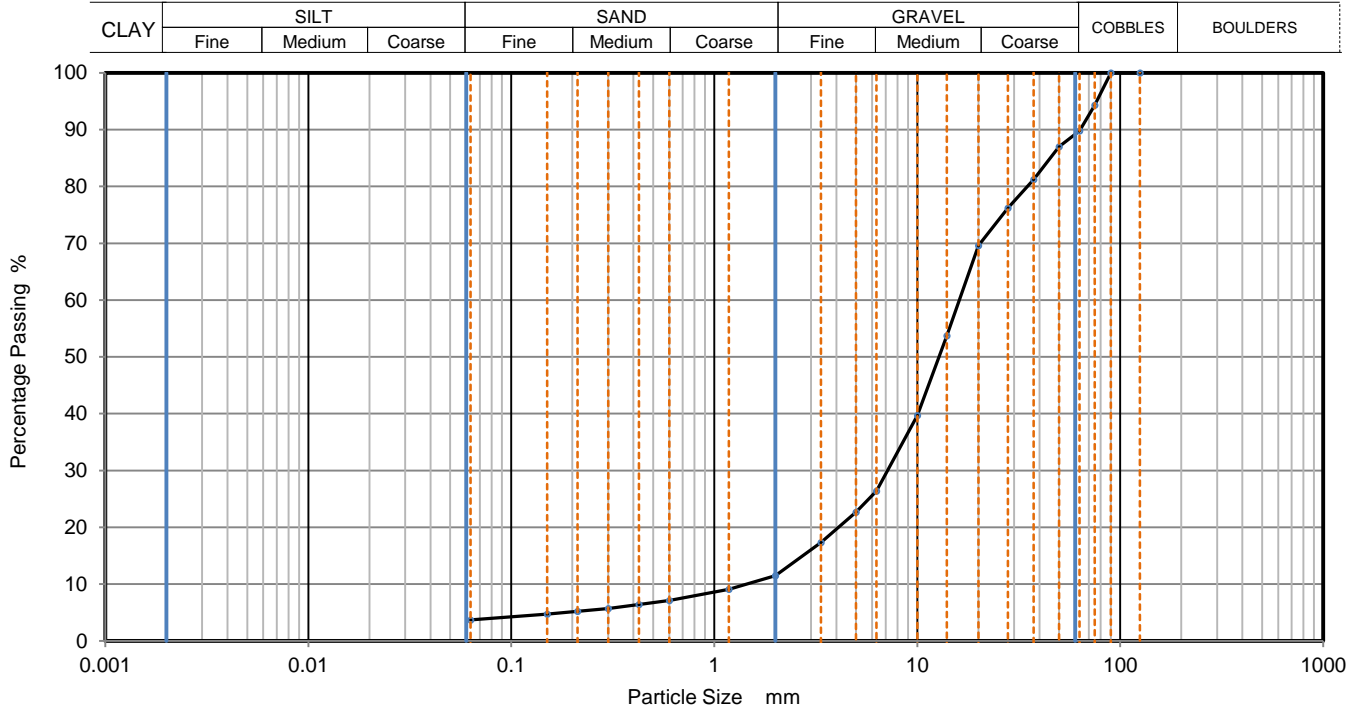
Sample Depth (m) **2.70**
 Top
 Base

Specimen Reference **3** Specimen Depth **2.7** m

Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042667**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	94		
63	90		
50	87		
37.5	81		
28	76		
20	70		
14	54		
10	40		
6.3	26		
5	23		
3.35	17		
2	12		
1.18	9		
0.6	7		
0.425	6		
0.3	6		
0.212	5		
0.15	5		
0.063	4		

Dry Mass of sample, g **9949**

Sample Proportions	% dry mass
Cobbles	10.2
Gravel	78.3
Sand	7.8
Fines <0.063mm	4.0

Grading Analysis	
D100	mm
D60	mm 16.1
D30	mm 7.14
D10	mm 1.44
Uniformity Coefficient	11
Curvature Coefficient	2.2

Remarks
 Preparation and testing in accordance with BS1377-2 :2022 Cl 10

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PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-BH313**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **43**

Specimen Description **Grey slightly gravelly slightly clayey fine to coarse SAND.**

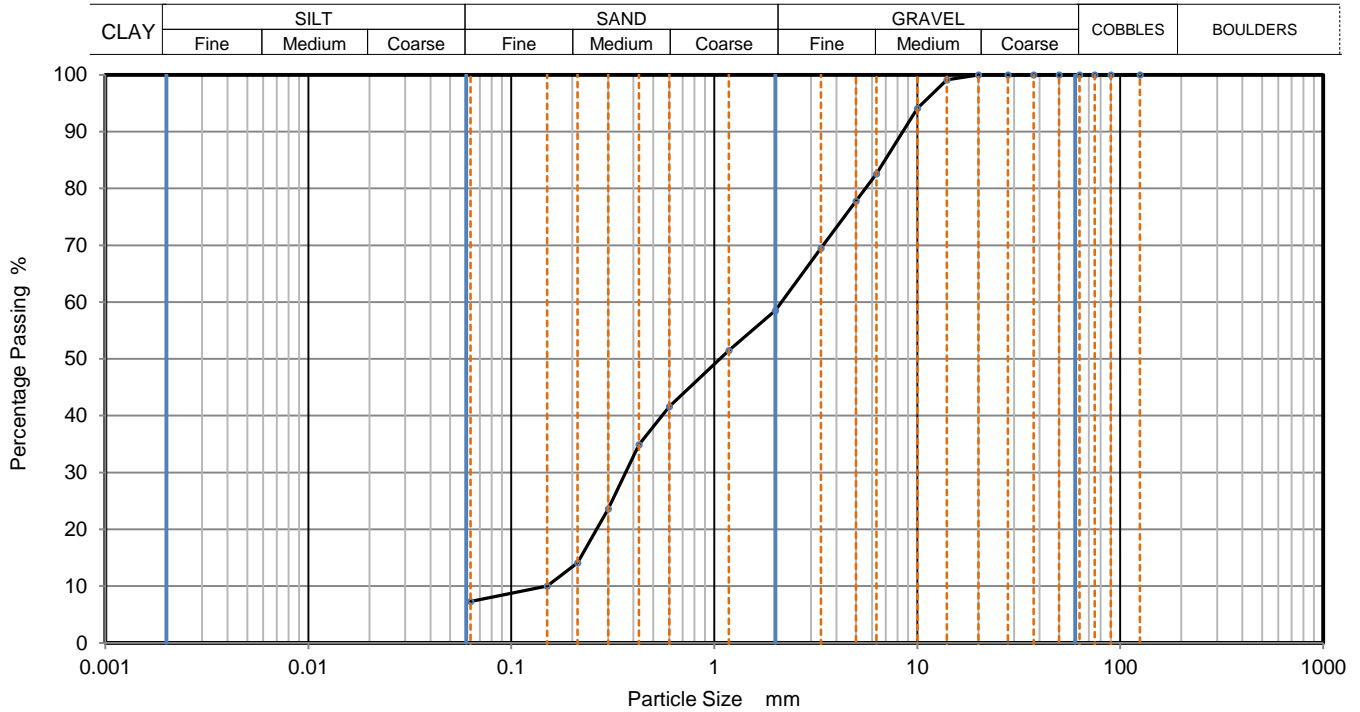
Sample Depth (m)	Top	8.70
	Base	

Specimen Reference	5	Specimen Depth	8.7	m
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Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042669**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	94		
6.3	83		
5	78		
3.35	70		
2	59		
1.18	52		
0.6	42		
0.425	35		
0.3	24		
0.212	14		
0.15	10		
0.063	7		

Dry Mass of sample, g **517**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	41.5
Sand	51.2
Fines <0.063mm	7.0

Grading Analysis	
D100	mm
D60	mm 2.15
D30	mm 0.366
D10	mm 0.15
Uniformity Coefficient	14
Curvature Coefficient	0.41

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10

Approved
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PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-BH313**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **48**

Specimen Description **Greyish brown gravelly slightly silty fine to coarse SAND.**

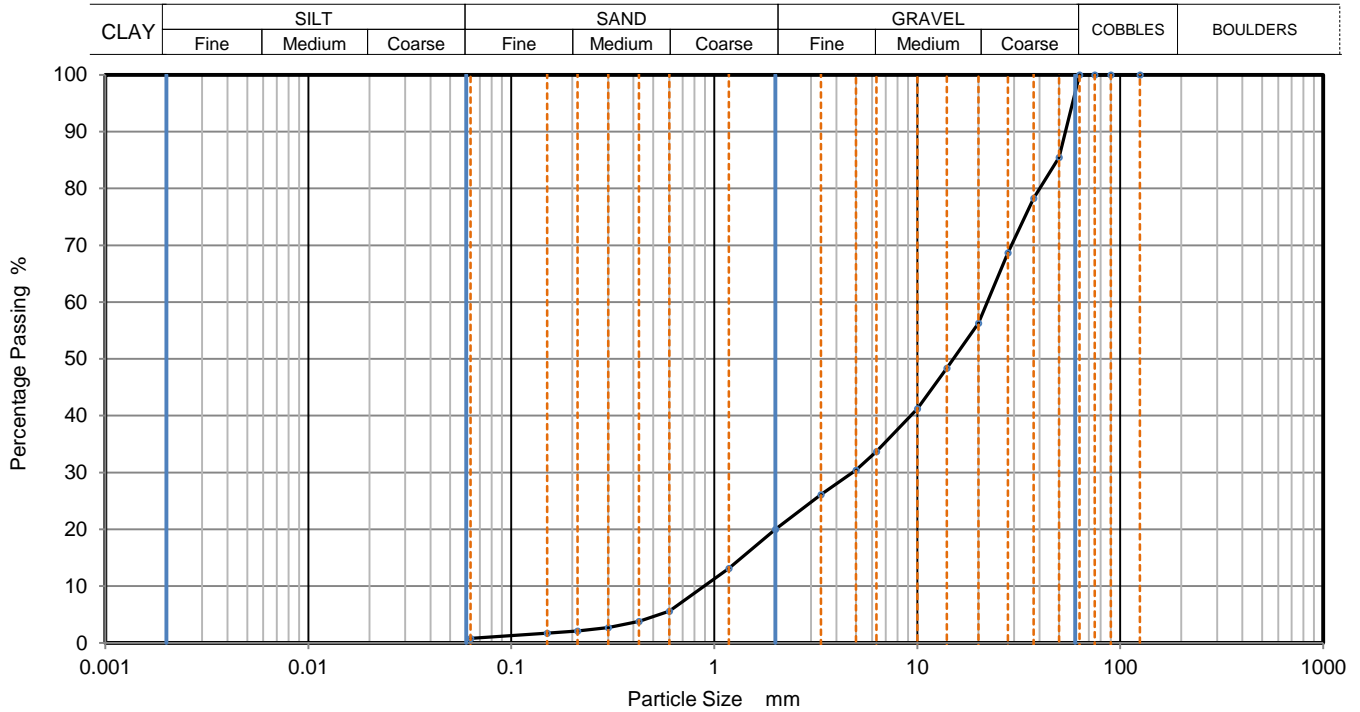
Sample Depth (m) **16.20**
 Top
 Base

Specimen Reference **5** Specimen Depth **16.2** m

Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042670**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	86		
37.5	78		
28	69		
20	56		
14	48		
10	41		
6.3	34		
5	30		
3.35	26		
2	20		
1.18	13		
0.6	6		
0.425	4		
0.3	3		
0.212	2		
0.15	2		
0.063	1		

Dry Mass of sample, g **4028**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	80.0
Sand	19.2
Fines <0.063mm	1.0

Grading Analysis	
D100	mm
D60	mm 22.1
D30	mm 4.8
D10	mm 0.889
Uniformity Coefficient	25
Curvature Coefficient	1.2

Remarks
 Preparation and testing in accordance with BS1377-2 :2022 Cl 10

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PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-BH313**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **53**

Specimen Description **Grey silty CLAY.**

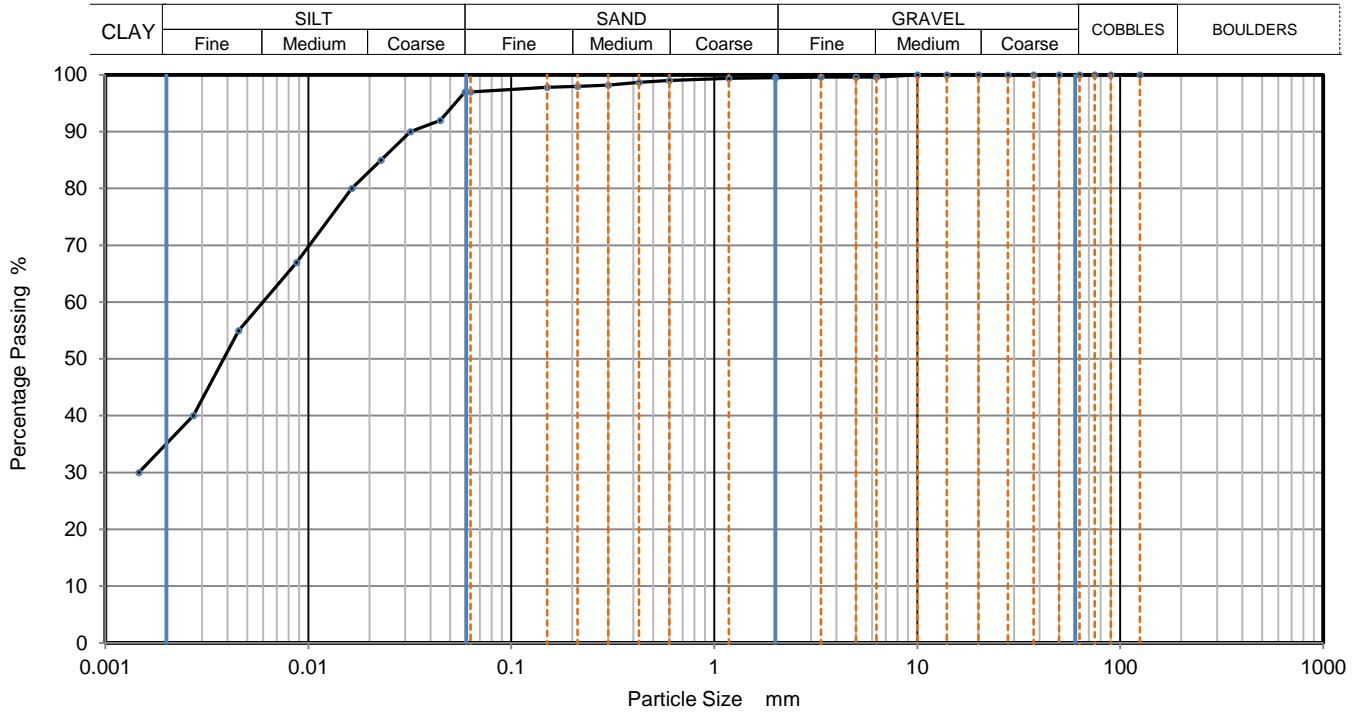
Sample Depth (m)	Top	23.70
	Base	

Specimen Reference	7	Specimen Depth	23.7	m
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Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042671**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.05908	97
90	100	0.04464	92
75	100	0.03181	90
63	100	0.02284	85
50	100	0.01639	80
37.5	100	0.00877	67
28	100	0.00453	55
20	100	0.00271	40
14	100	0.00146	30
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	99	Particle density (assumed)	
0.425	99	2.65	Mg/m3
0.3	98		
0.212	98		
0.15	98		
0.063	97		

Dry Mass of sample, g **217**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	0.5
Sand	2.5
Silt	62.1
Clay	34.9

Grading Analysis	
D100	mm
D60	mm 0.006
D30	mm 0.00148
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10

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PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-BH314**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **40**

Specimen Description **Grey COBBLES with some subangular fine to medium gravel.**

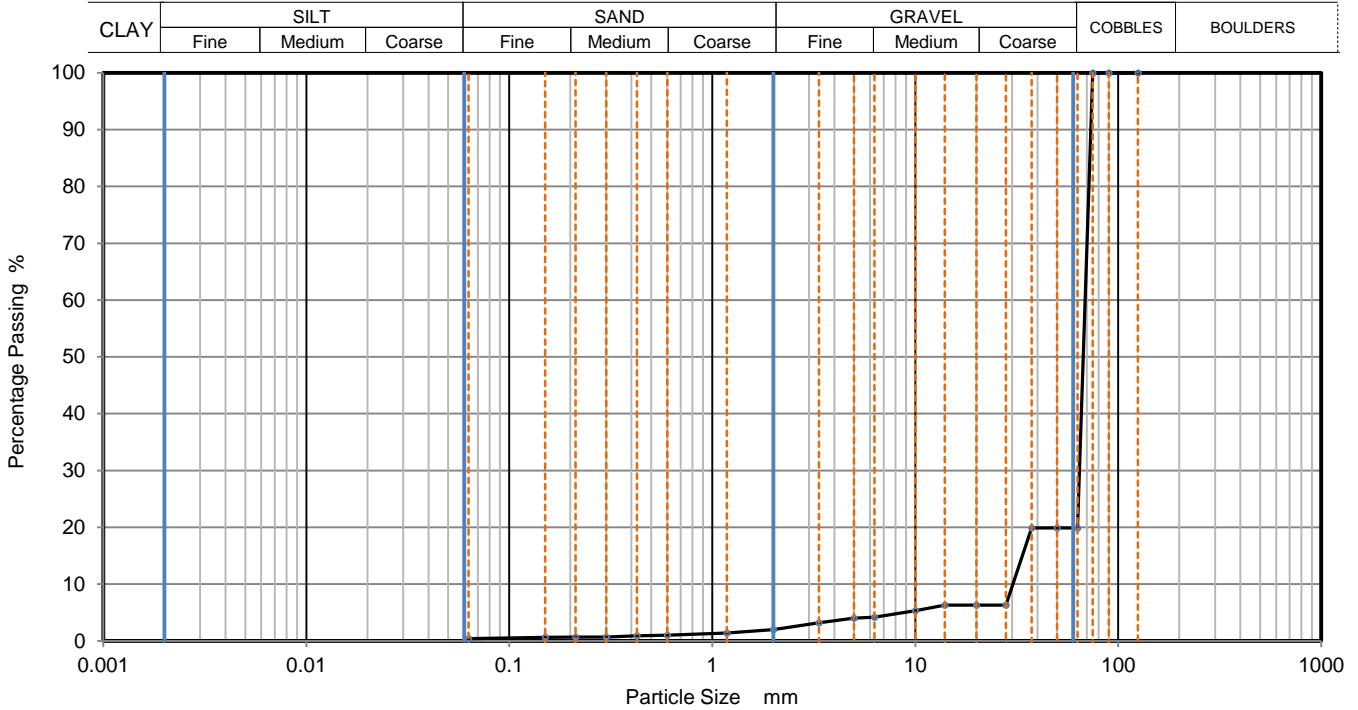
Sample Depth (m)	Top	2.70
	Base	

Specimen Reference	7	Specimen Depth	2.7	m
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Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042674**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	20		
50	20		
37.5	20		
28	6		
20	6		
14	6		
10	5		
6.3	4		
5	4		
3.35	3		
2	2		
1.18	1		
0.6	1		
0.425	1		
0.3	1		
0.212	1		
0.15	1		
0.063	0		

Dry Mass of sample, g **458**

Sample Proportions	% dry mass
Cobbles	80.1
Gravel	17.9
Sand	1.6
Fines <0.063mm	0.0

Grading Analysis	
D100	mm
D60	mm 68.7
D30	mm 64.4
D10	mm 30.3
Uniformity Coefficient	2.3
Curvature Coefficient	2

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10

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PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-BH314**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **48**

Specimen Description **Brown slightly gravelly slightly silty fine to coarse SAND.**

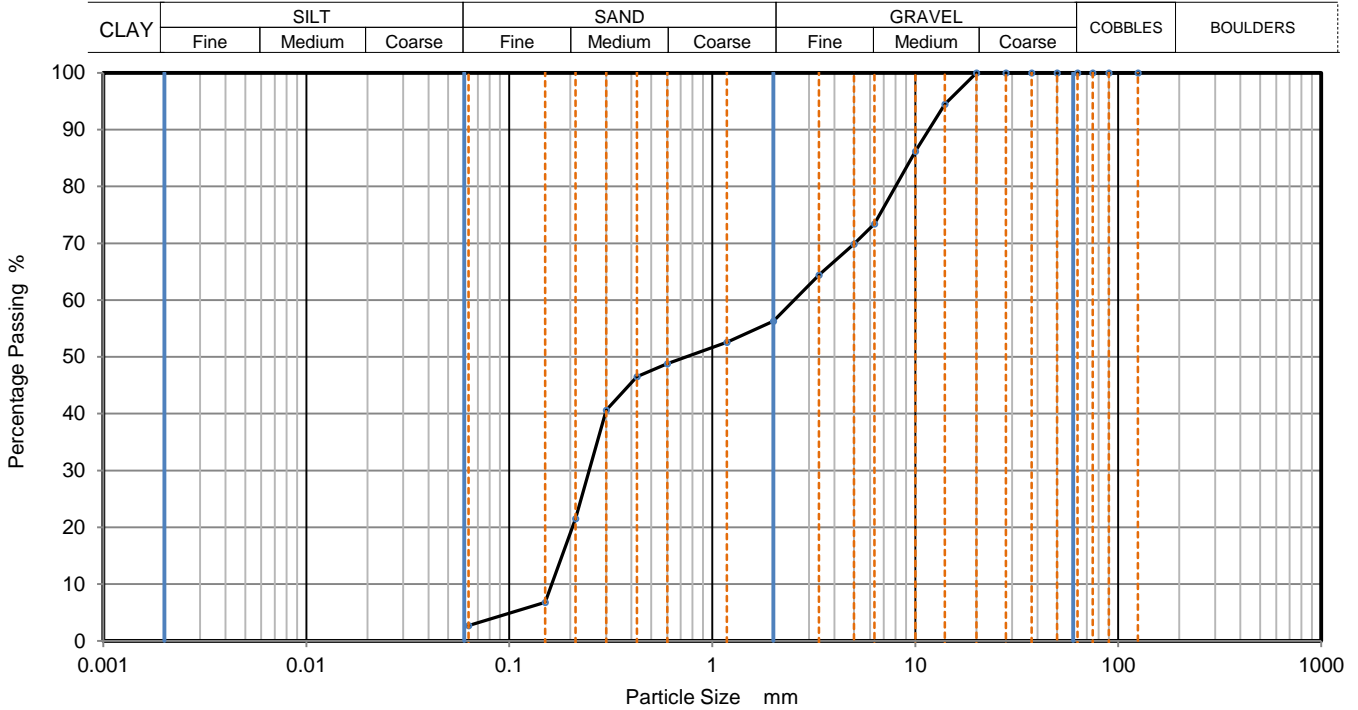
Sample Depth (m)	Top	10.20
	Base	

Specimen Reference	5	Specimen Depth	10.2	m
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Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042676**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	95		
10	86		
6.3	73		
5	70		
3.35	64		
2	56		
1.18	53		
0.6	49		
0.425	47		
0.3	41		
0.212	22		
0.15	7		
0.063	3		

Dry Mass of sample, g **516**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	43.7
Sand	53.6
Fines <0.063mm	3.0

Grading Analysis	
D100	mm
D60	mm 2.53
D30	mm 0.247
D10	mm 0.162
Uniformity Coefficient	16
Curvature Coefficient	0.15

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10



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PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-BH314**

Site Name **3FM Plot L HAMMOND LANE**

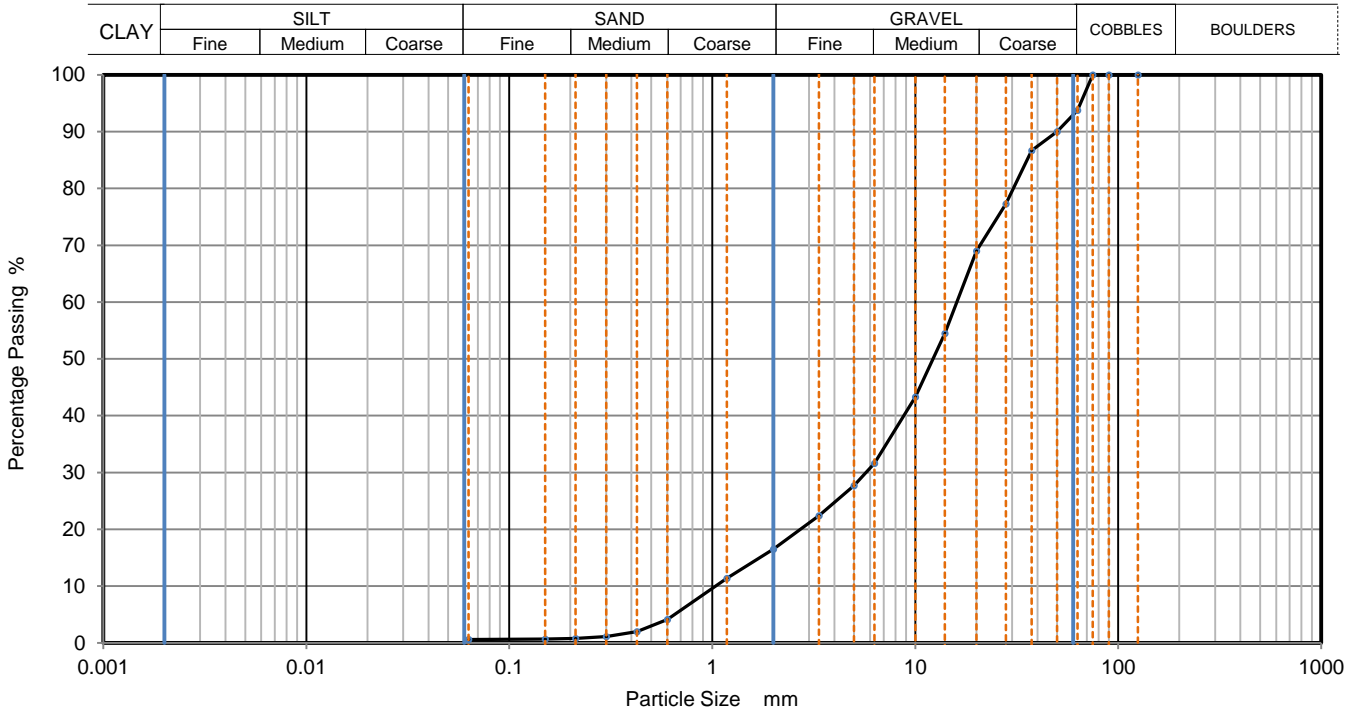
Sample No. **54**

Specimen Description **Grey very gravelly slightly silty fine to coarse SAND.**

Sample Depth (m)	Top	14.70
	Base	

Specimen Reference	3	Specimen Depth	14.7	m	Sample Type	B
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Test Method	BS1377-2:2022 Clause 10	KeyLAB ID	Caus2024042677
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Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	94		
50	90		
37.5	87		
28	77		
20	69		
14	55		
10	43		
6.3	32		
5	28		
3.35	22		
2	17		
1.18	11		
0.6	4		
0.425	2		
0.3	1		
0.212	1		
0.15	1		
0.063	1		

Dry Mass of sample, g **10378**

Sample Proportions	% dry mass
Cobbles	6.2
Gravel	77.3
Sand	15.8
Fines <0.063mm	1.0

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	15
Curvature Coefficient	2

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10



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PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-BH314**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **62**

Specimen Description **Grey slightly sandy silty CLAY.**

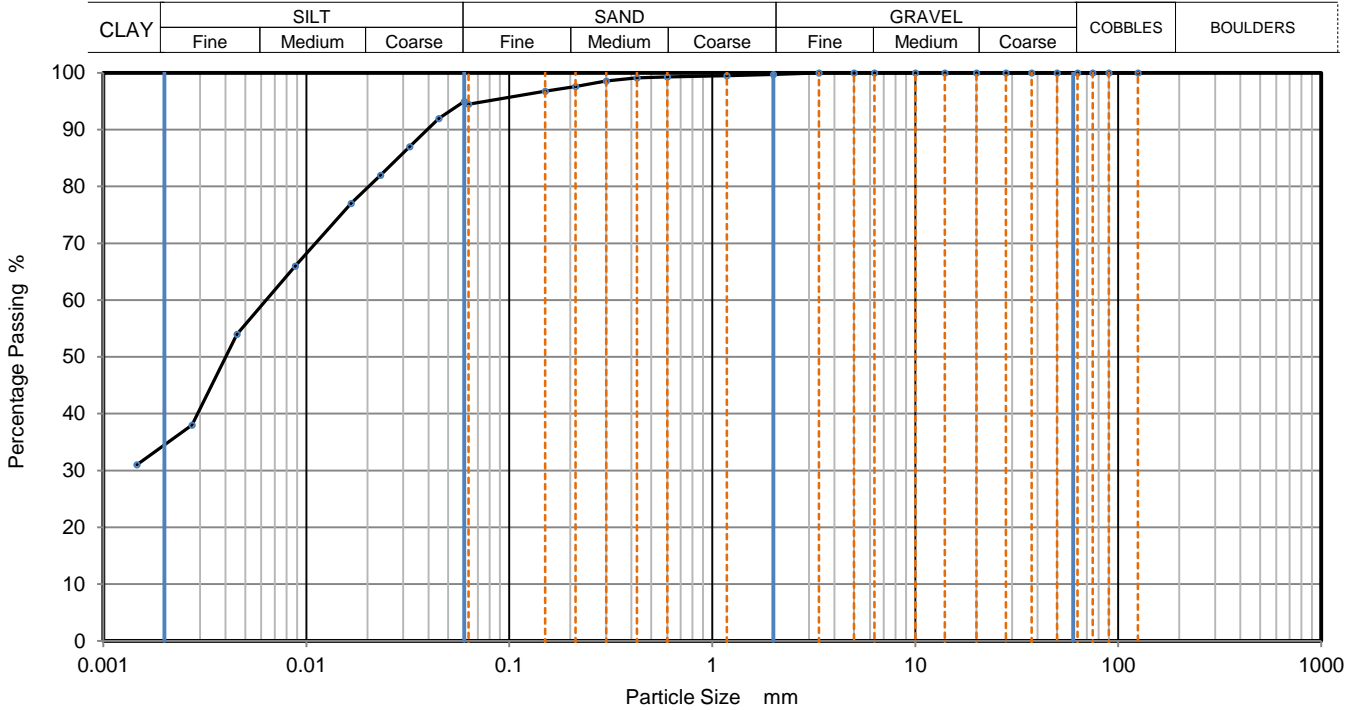
Sample Depth (m)	Top	20.70
	Base	

Specimen Reference	3	Specimen Depth	20.7	m
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Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042678**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06003	95
90	100	0.04499	92
75	100	0.03230	87
63	100	0.02318	82
50	100	0.01663	77
37.5	100	0.00883	66
28	100	0.00456	54
20	100	0.00273	38
14	100	0.00146	31
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99	Particle density (assumed) 2.65 Mg/m3	
0.425	99		
0.3	99		
0.212	98		
0.15	97		
0.063	95		

Dry Mass of sample, g **218**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	0.3
Sand	5.2
Silt	60.0
Clay	34.5

Grading Analysis	
D100	mm
D60	mm 0.00634
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10



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PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-BH314**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **67**

Specimen Description **Brown silty CLAY.**

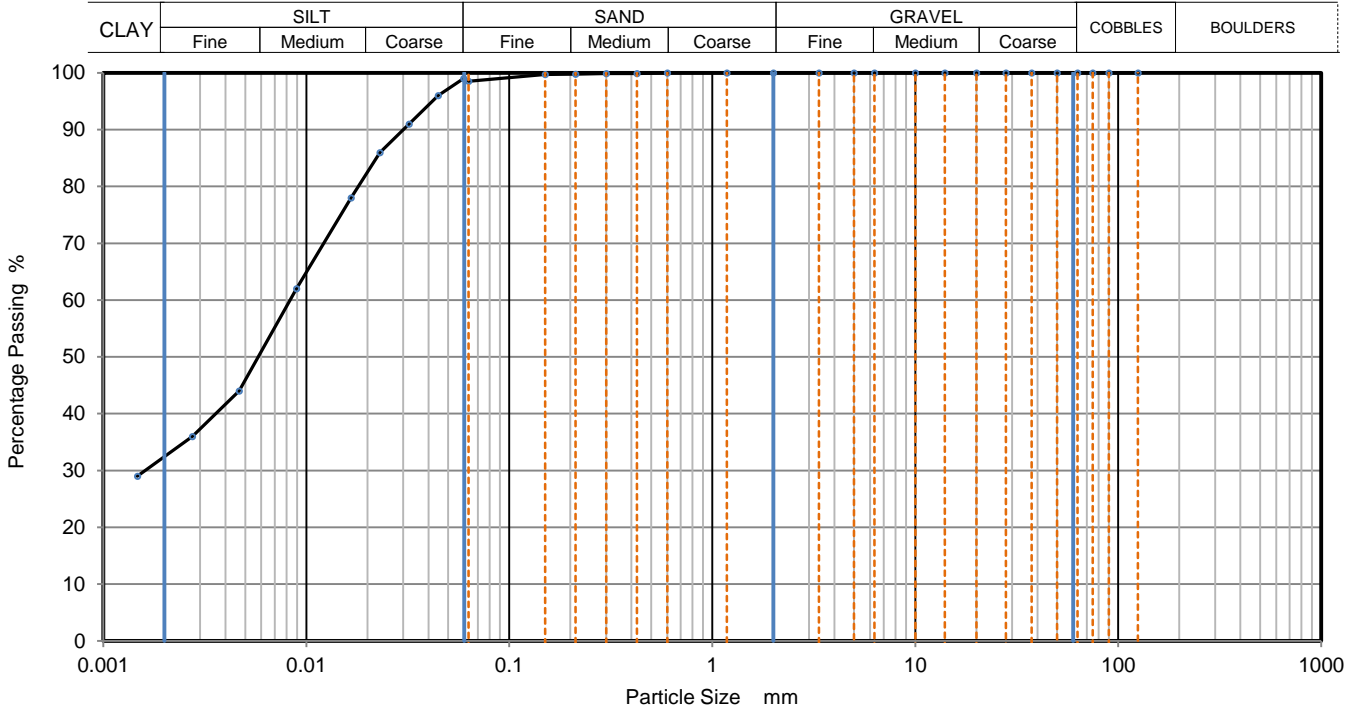
Sample Depth (m) **Top: 25.20**
Base:

Specimen Reference **7** Specimen Depth **25.2** m

Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042680**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.05956	99
90	100	0.04464	96
75	100	0.03206	91
63	100	0.02301	86
50	100	0.01663	78
37.5	100	0.00895	62
28	100	0.00467	44
20	100	0.00275	36
14	100	0.00147	29
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100	Particle density (assumed)	
0.425	100	2.65	Mg/m ³
0.3	100		
0.212	100		
0.15	100		
0.063	99		

Dry Mass of sample, g **211**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	0.0
Sand	1.5
Silt	66.2
Clay	32.3

Grading Analysis	
D100	mm
D60	mm 0.00827
D30	mm 0.00166
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10



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PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-TP301**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **3**

Specimen Description **Grey gravelly slightly clayey fine to coarse SAND.**

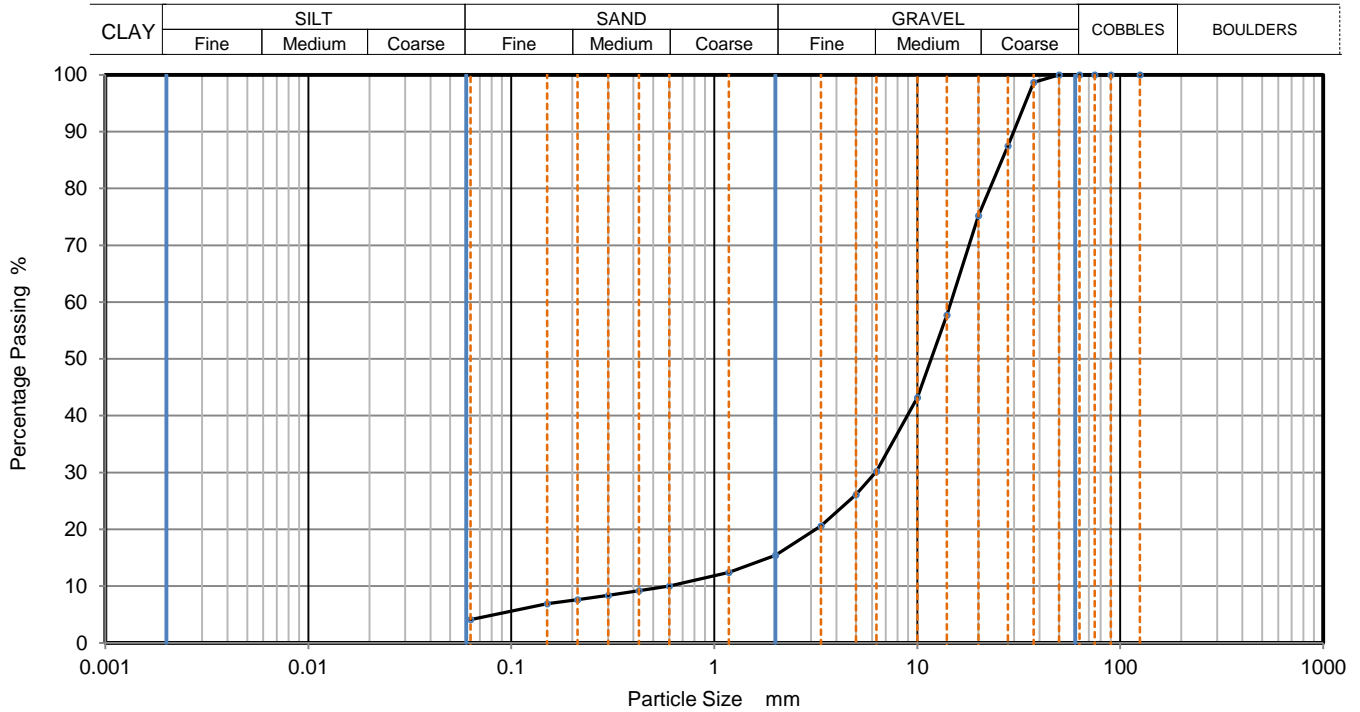
Sample Depth (m)	Top	0.50
	Base	

Specimen Reference	7	Specimen Depth	0.5	m
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Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042682**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	99		
28	88		
20	75		
14	58		
10	43		
6.3	30		
5	26		
3.35	21		
2	15		
1.18	12		
0.6	10		
0.425	9		
0.3	8		
0.212	8		
0.15	7		
0.063	4		

Dry Mass of sample, g **3480**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	84.6
Sand	11.3
Fines <0.063mm	4.0

Grading Analysis	
D100	mm
D60	mm 14.7
D30	mm 6.23
D10	mm 0.592
Uniformity Coefficient	25
Curvature Coefficient	4.5

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10



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PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-TP301**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **9**

Specimen Description **Brown slightly silty fine to coarse SAND.**

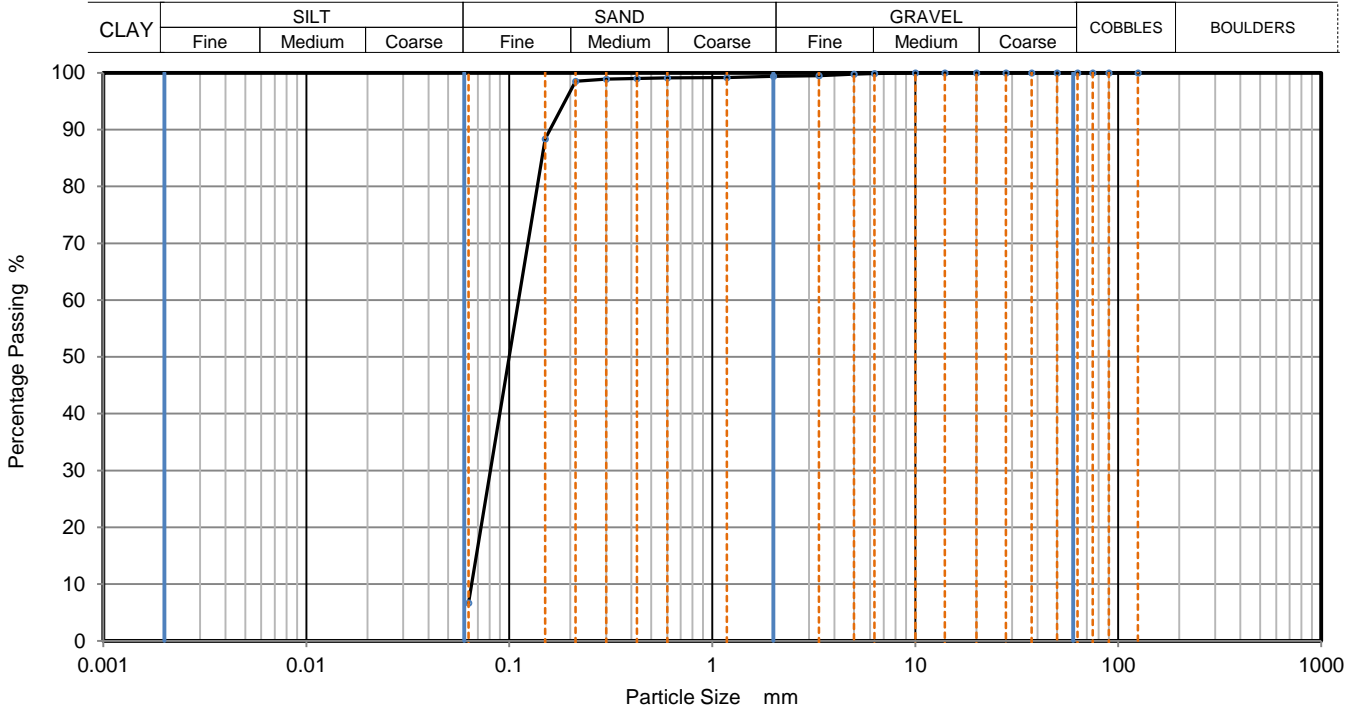
Sample Depth (m)	Top	1.50
	Base	

Specimen Reference	5	Specimen Depth	1.5	m
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Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042683**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	99		
0.6	99		
0.425	99		
0.3	99		
0.212	99		
0.15	88		
0.063	7		

Dry Mass of sample, g **237**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	0.6
Sand	92.7
Fines <0.063mm	7.0

Grading Analysis	
D100	mm
D60	mm 0.111
D30	mm 0.0807
D10	mm 0.0653
Uniformity Coefficient	1.7
Curvature Coefficient	0.9

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10



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PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-TP302**

Site Name **3FM Plot L HAMMOND LANE**

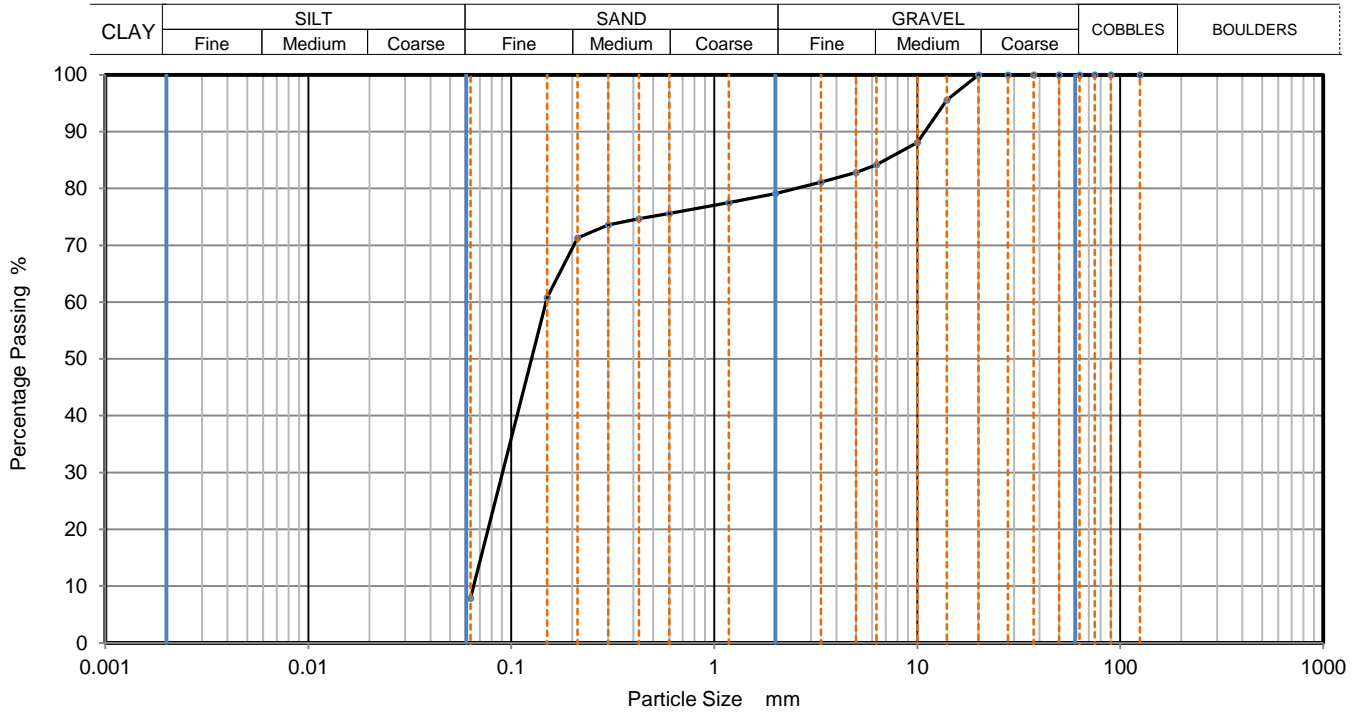
Sample No. **3**

Specimen Description **Brown slightly gravelly slightly silty fine to coarse SAND.**

Sample Depth (m)	Top	0.50
	Base	

Specimen Reference	7	Specimen Depth	0.5	m	Sample Type	B
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Test Method	BS1377-2:2022 Clause 10	KeyLAB ID	Caus2024042684
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Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	96		
10	88		
6.3	84		
5	83		
3.35	81		
2	79		
1.18	78		
0.6	76		
0.425	75		
0.3	74		
0.212	71		
0.15	61		
0.063	8		

Dry Mass of sample, g 321

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	20.9
Sand	71.2
Fines <0.063mm	8.0

Grading Analysis	
D100	mm
D60	mm 0.148
D30	mm 0.0905
D10	mm 0.0652
Uniformity Coefficient	2.3
Curvature Coefficient	0.85

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10

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Stephen Watson

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PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-TP302**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **6**

Specimen Description **Brown slightly gravelly slightly silty fine to coarse SAND.**

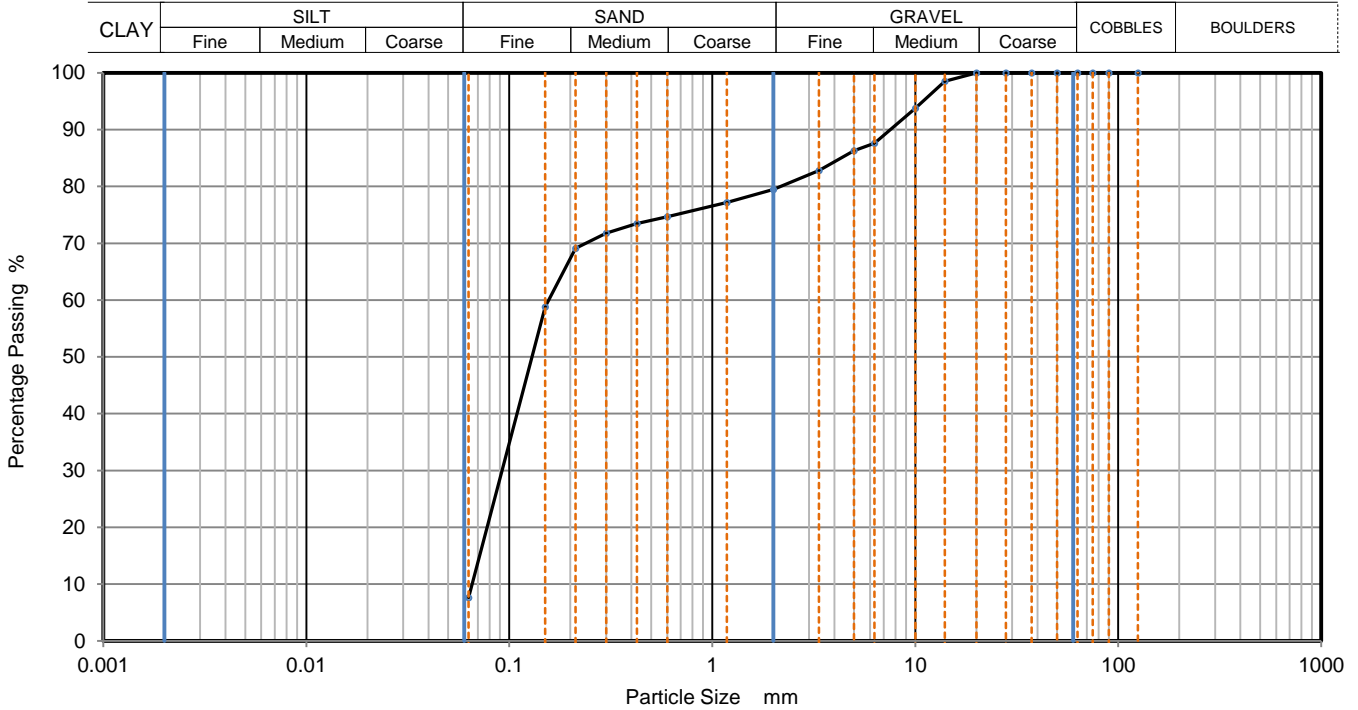
Sample Depth (m)	Top	1.00
	Base	

Specimen Reference	5	Specimen Depth	1	m
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Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042685**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	94		
6.3	88		
5	86		
3.35	83		
2	80		
1.18	77		
0.6	75		
0.425	74		
0.3	72		
0.212	69		
0.15	59		
0.063	8		

Dry Mass of sample, g 302

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	20.5
Sand	71.9
Fines <0.063mm	8.0

Grading Analysis	
D100	mm
D60	mm 0.156
D30	mm 0.0921
D10	mm 0.0656
Uniformity Coefficient	2.4
Curvature Coefficient	0.83

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10

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Stephen Watson

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PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-TP303**

Site Name **3FM Plot L HAMMOND LANE**

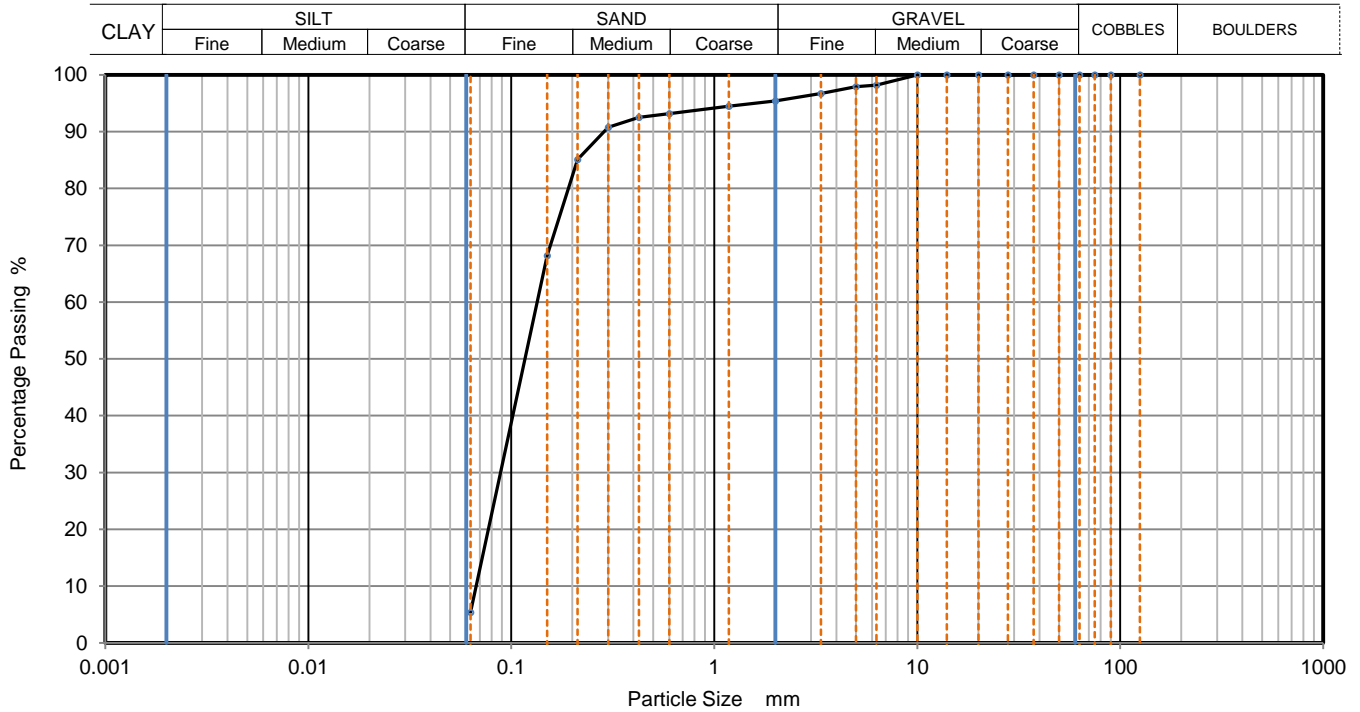
Sample No. **3**

Specimen Description **Brown slightly gravelly slightly silty fine to coarse SAND.**

Sample Depth (m)	Top	0.50
	Base	

Specimen Reference	3	Specimen Depth	0.5	m	Sample Type	B
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Test Method	BS1377-2:2022 Clause 10	KeyLAB ID	Caus2024042686
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Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	98		
5	98		
3.35	97		
2	95		
1.18	95		
0.6	93		
0.425	93		
0.3	91		
0.212	85		
0.15	68		
0.063	5		

Dry Mass of sample, g 213

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	4.6
Sand	90.0
Fines <0.063mm	5.0

Grading Analysis	
D100	mm
D60	mm 0.134
D30	mm 0.0885
D10	mm 0.0671
Uniformity Coefficient	2
Curvature Coefficient	0.87

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10



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Approved

Stephen Watson



PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-TP303**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **9**

Specimen Description **Brown slightly gravelly slightly silty fine to coarse SAND.**

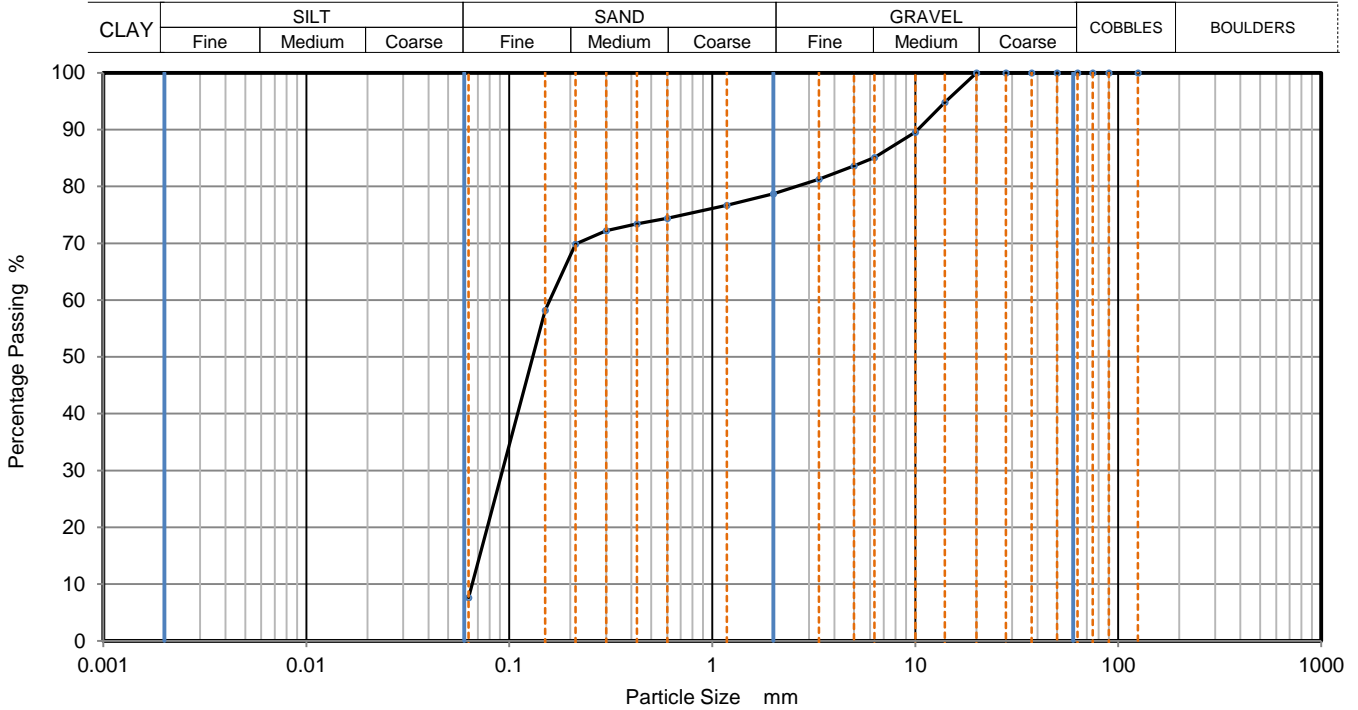
Sample Depth (m)	Top	1.50
	Base	

Specimen Reference	3	Specimen Depth	1.5	m
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Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042688**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	95		
10	90		
6.3	85		
5	84		
3.35	81		
2	79		
1.18	77		
0.6	74		
0.425	73		
0.3	72		
0.212	70		
0.15	58		
0.063	8		

Dry Mass of sample, g **513**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	21.3
Sand	71.1
Fines <0.063mm	8.0

Grading Analysis	
D100	mm
D60	mm 0.158
D30	mm 0.0925
D10	mm 0.0656
Uniformity Coefficient	2.4
Curvature Coefficient	0.82

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10

Approved

Stephen Watson

LAB 30R - Version 1



10122



PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-TP304**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **3**

Specimen Description **Brown slightly sandy subangular fine to coarse GRAVEL.**

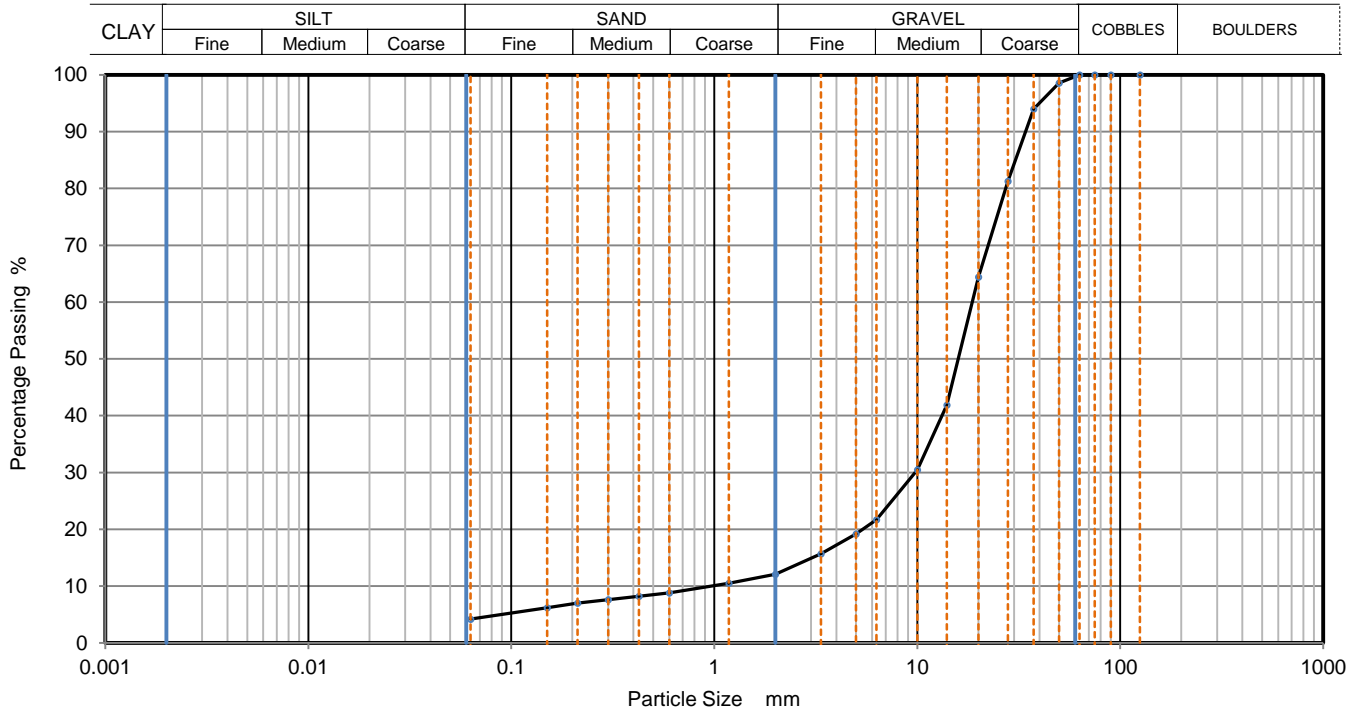
Sample Depth (m)	Top	0.50
	Base	

Specimen Reference	7	Specimen Depth	0.5	m
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Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042689**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	99		
37.5	94		
28	81		
20	64		
14	42		
10	31		
6.3	22		
5	19		
3.35	16		
2	12		
1.18	11		
0.6	9		
0.425	8		
0.3	8		
0.212	7		
0.15	6		
0.063	4		

Dry Mass of sample, g 13349

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	87.9
Sand	7.8
Fines <0.063mm	4.0

Grading Analysis	
D100	mm
D60	mm 18.7
D30	mm 9.75
D10	mm 0.966
Uniformity Coefficient	19
Curvature Coefficient	5.3

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10

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Stephen Watson

LAB 30R - Version 1



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PARTICLE SIZE DISTRIBUTION

Job Ref **24-0316**

Borehole/Pit No. **3FM-TP304**

Site Name **3FM Plot L HAMMOND LANE**

Sample No. **6**

Specimen Description **Brown slightly silty slightly gravelly fine to coarse SAND.**

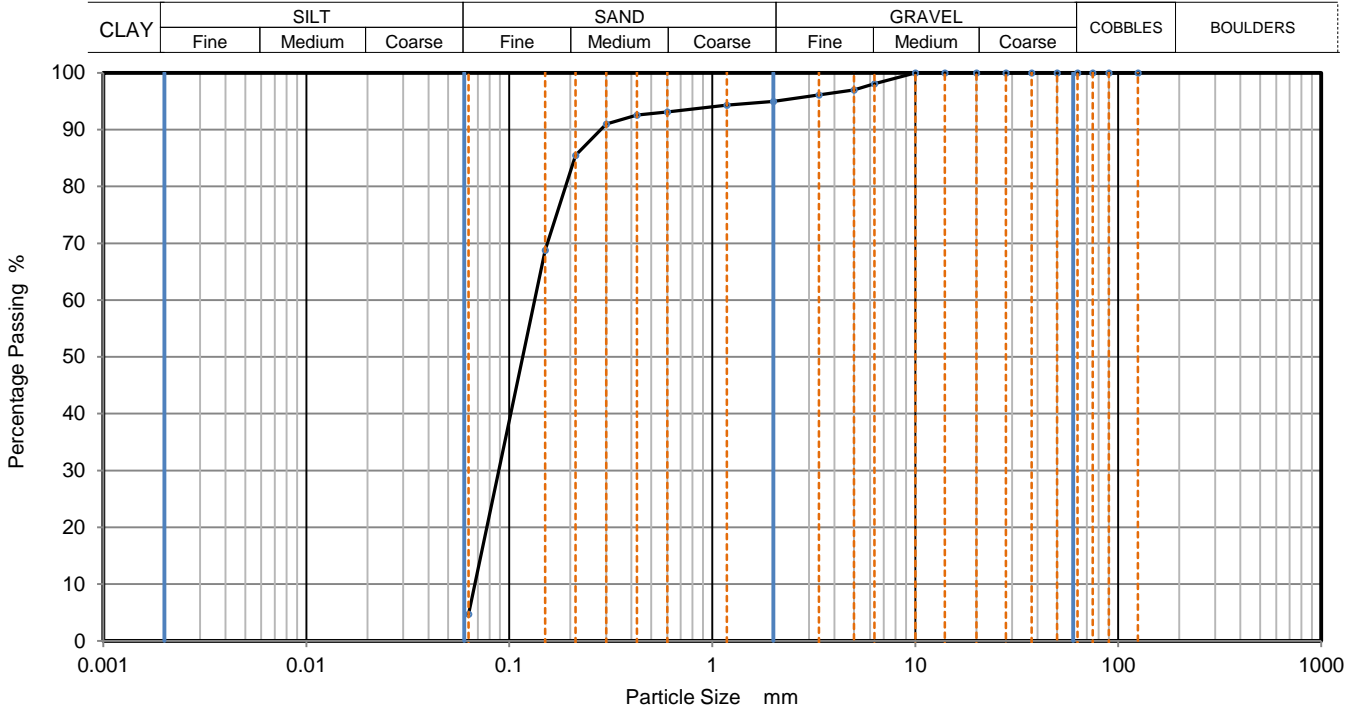
Sample Depth (m)	Top	1.00
	Base	

Specimen Reference	5	Specimen Depth	1	m
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Sample Type **B**

Test Method **BS1377-2:2022 Clause 10**

KeyLAB ID **Caus2024042690**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	98		
5	97		
3.35	96		
2	95		
1.18	94		
0.6	93		
0.425	93		
0.3	91		
0.212	86		
0.15	69		
0.063	5		

Dry Mass of sample, g **204**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	5.0
Sand	90.3
Fines <0.063mm	5.0

Grading Analysis	
D100	mm
D60	mm 0.133
D30	mm 0.0887
D10	mm 0.0677
Uniformity Coefficient	2
Curvature Coefficient	0.87

Remarks
Preparation and testing in accordance with BS1377-2 :2022 Cl 10



LAB 30R - Version 1

10122

Approved

Stephen Watson



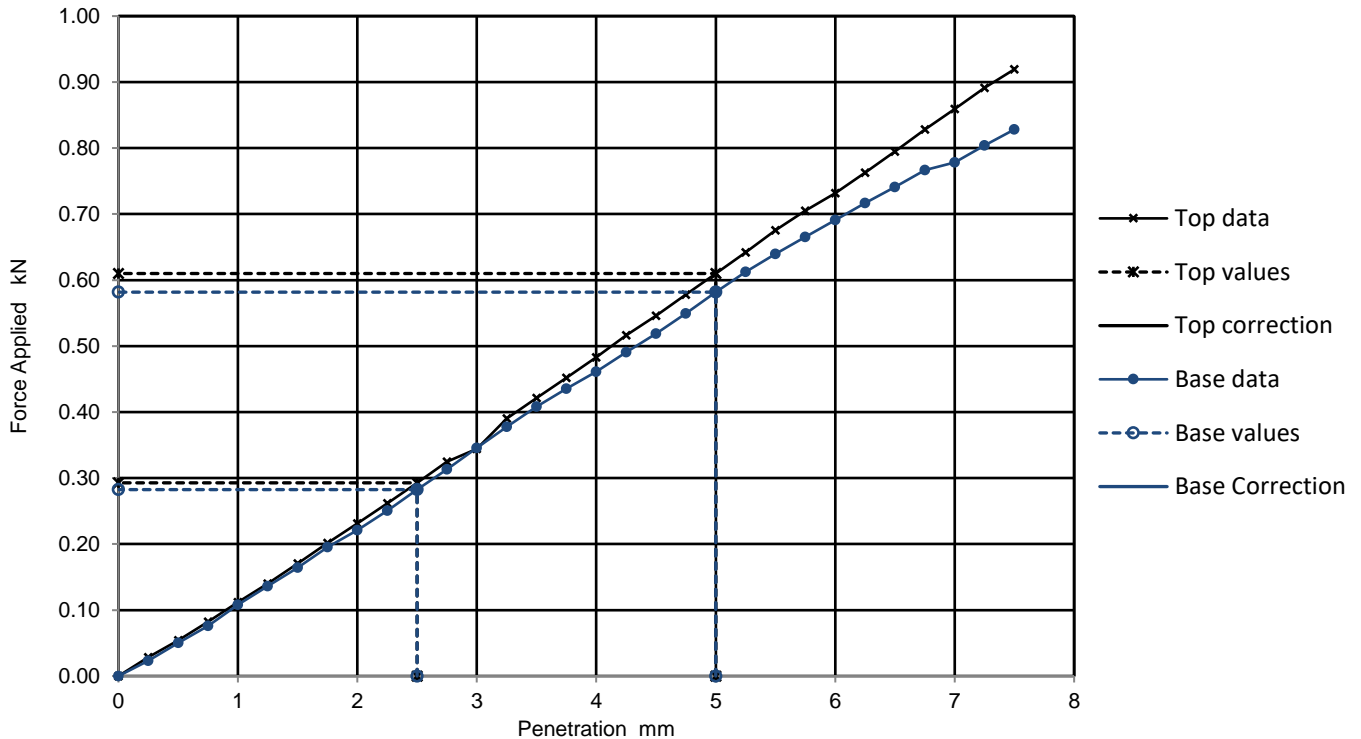
California Bearing Ratio (CBR)

Job Ref	24-0316
Borehole/Pit No.	3FM-BH309
Sample No.	36
Depth m	1.20
Sample Type	B
KeyLAB ID	Caus2024042657
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	1 %	Dry density after soaking	Mg/m3
Initial Specimen details		Surcharge applied	4.5 kg
	Bulk density 1.91 Mg/m3		3 kPa
	Dry density 1.57 Mg/m3		
	Water content 22 %		

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Water Content %
		2.5mm	5mm	Highest	Average	
TOP	No	2.2	3.0	3.0	3.0	22
BASE	No	2.1	2.9	2.9		20

General remarks

Test specific remarks

Approved

Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson
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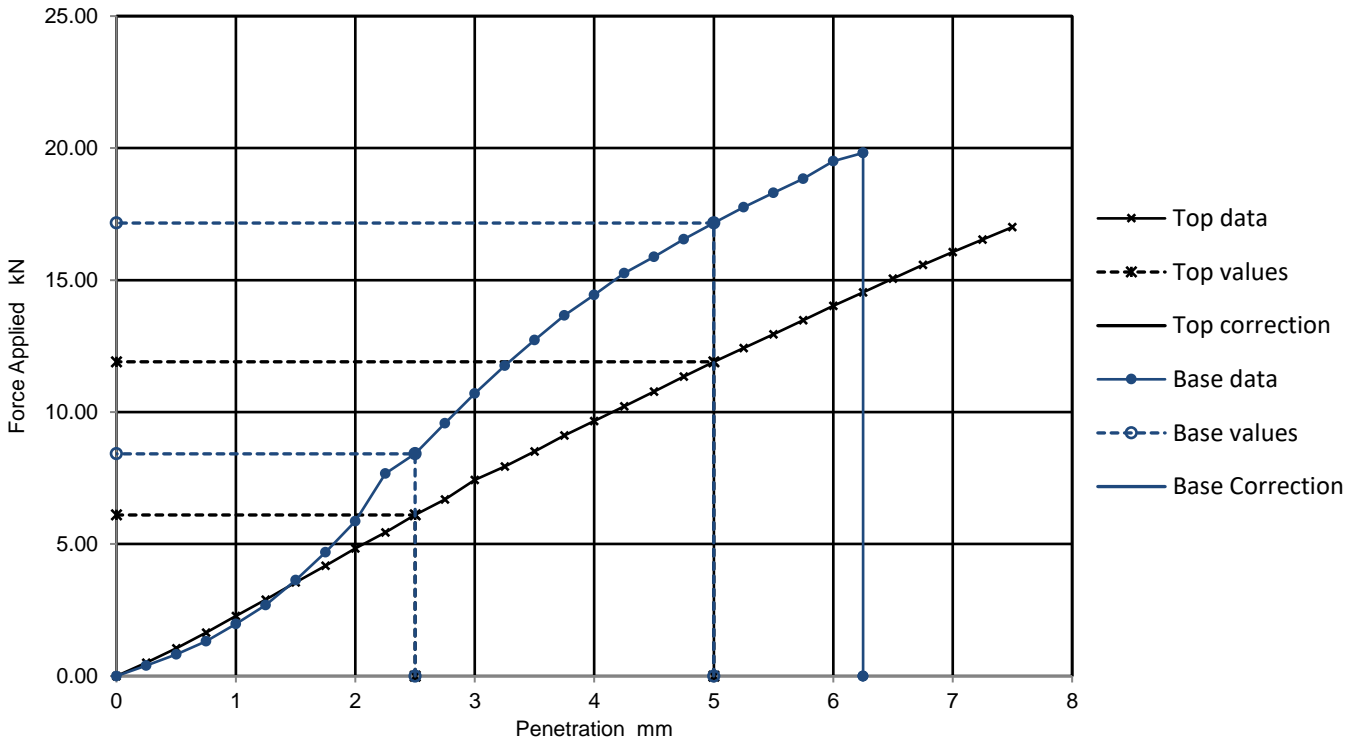
California Bearing Ratio (CBR)

Job Ref	24-0316
Borehole/Pit No.	3FM-BH313
Site Name	3FM Plot L HAMMOND LANE
Sample No.	38
Soil Description	Grey gravelly silty fine to coarse SAND.
Depth m	1.20
Specimen Reference	Specimen Depth m
Sample Type	B
Specimen Description	Grey gravelly silty fine to coarse SAND.
KeyLAB ID	Caus2024042666
Test Method	BS1377-2: 2022 Clause 15
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	14 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density 2.19 Mg/m3	Surcharge applied	4.5 kg
	Dry density 2.02 Mg/m3		3 kPa
	Water content 8.2 %		

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Water Content %
		2.5mm	5mm	Highest	Average	
TOP	No	46.0	60.0	60.0		8.2
BASE	No	64.0	86.0	86.0		8.3

General remarks

Test specific remarks

Approved

Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson
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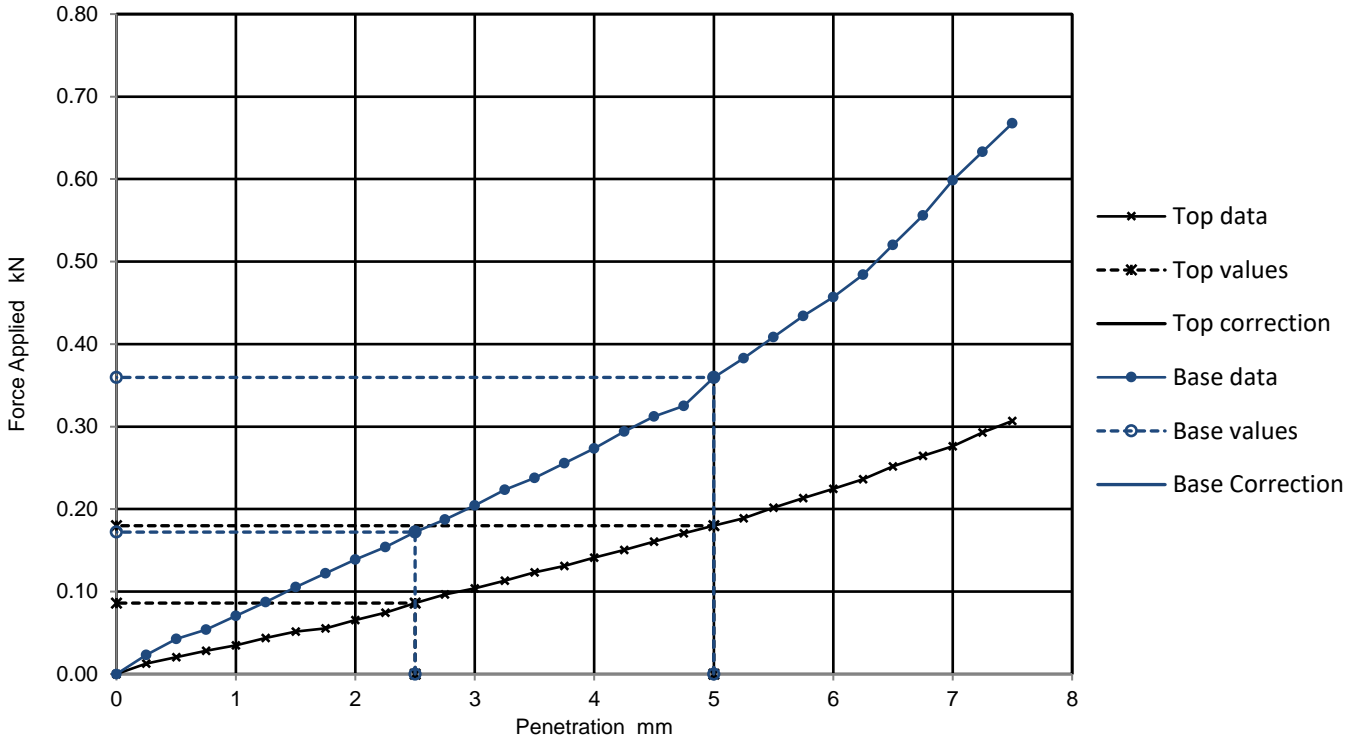
California Bearing Ratio (CBR)

Job Ref	24-0316
Borehole/Pit No.	3FM-BH314
Site Name	3FM Plot L HAMMOND LANE
Sample No.	35
Soil Description	Dark grey gravelly silty fine to coarse SAND.
Depth m	1.20
Specimen Reference	Specimen Depth m
Sample Type	B
Specimen Description	Dark grey gravelly silty fine to coarse SAND.
KeyLAB ID	Caus2024042673
Test Method	BS1377-2: 2022 Clause 15
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	6 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density 2.24 Mg/m3	Surcharge applied	4.5 kg
	Dry density 1.99 Mg/m3		3 kPa
	Water content 13 %		

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Water Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.7	0.9	0.9	13	
BASE	No	1.3	1.8	1.8		

General remarks

Test specific remarks

Approved

Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson
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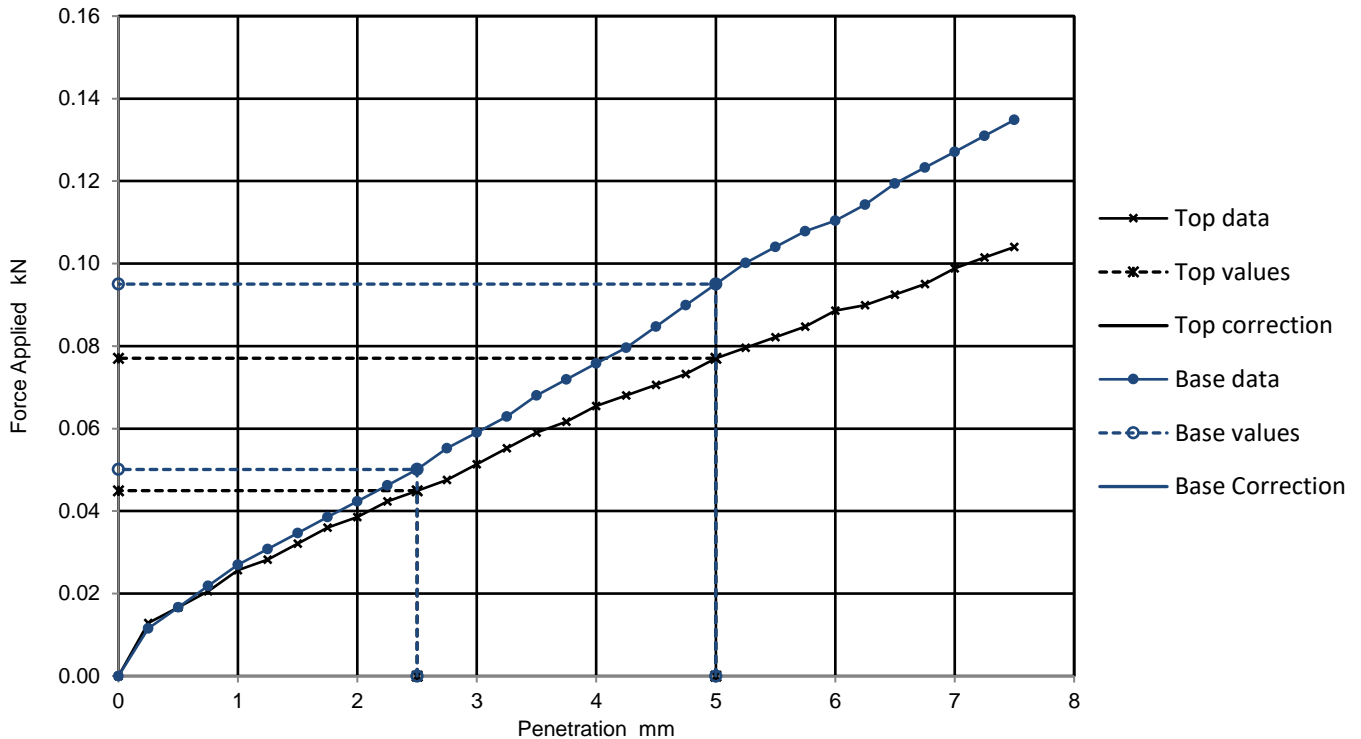
California Bearing Ratio (CBR)

Job Ref	24-0316
Borehole/Pit No.	3FM-BH314
Sample No.	74
Depth m	29.70
Sample Type	B
KeyLAB ID	Caus2024042681
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	0 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density	1.96 Mg/m3	Surcharge applied
	Dry density	1.55 Mg/m3	4.5 kg
	Water content	27 %	3 kPa

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Water Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.3	0.4	0.4	27	
BASE	No	0.4	0.5	0.5		
					26	

General remarks	Test specific remarks	Approved
Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson



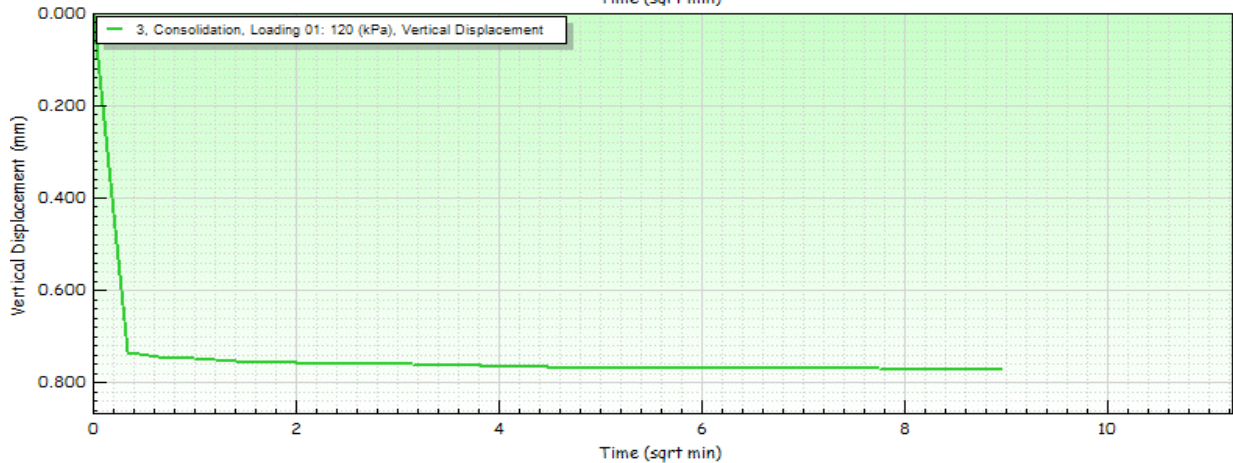
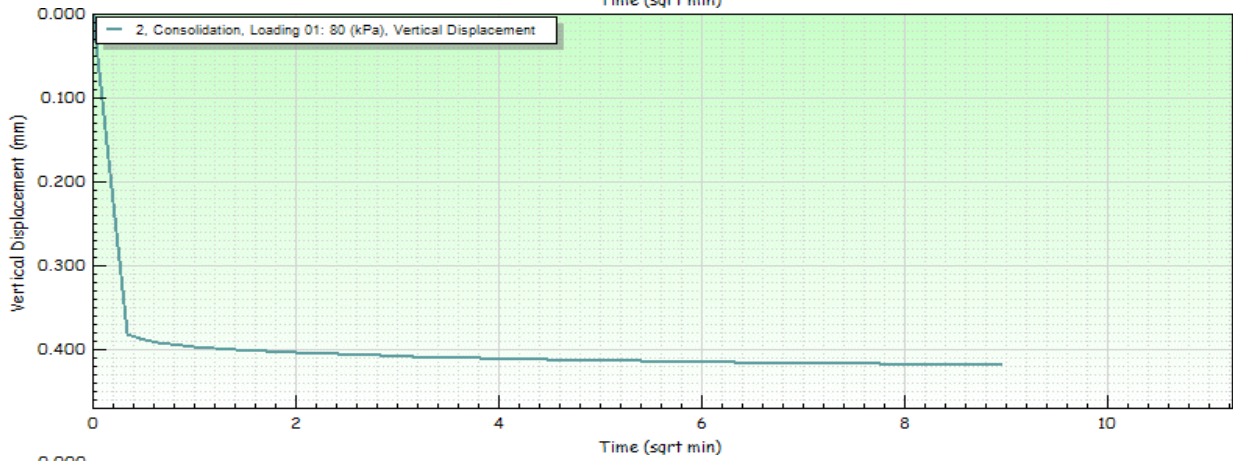
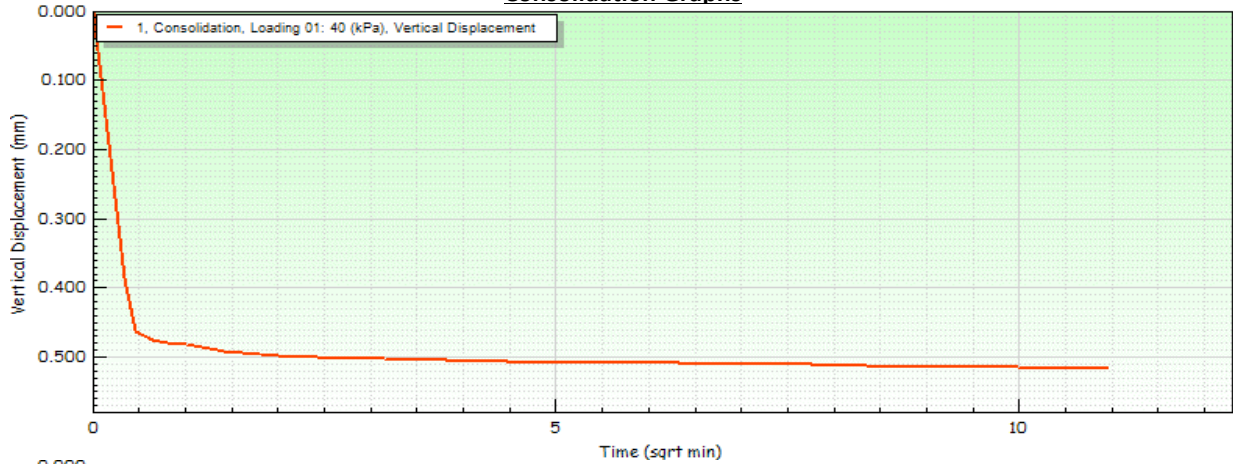
Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L Hammond Lane	
Location Number	BH301B	Sample Reference	5	
Depth (m)	2.00	Sample Submerged?	Yes	No
Sample Type	D	Particle Density (Mg/m ³)	2.65	Assumed
Description	Greyish brown gravelly clayey fine to coarse SAND.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
		Stage	1	2
Initial Conditions				
Height (mm)			20.0	20.0
Diameter (mm)			60.0	60.0
Water Content (%)			14.0	14.0
Bulk Density (Mg/m ³)			1.86	1.88
Dry Density (Mg/m ³)			1.63	1.64
Voids Ratio			0.630	0.613
Consolidation				
Normal Pressure (kPa)			40	80
Vertical Displacement (mm)			0.516	0.418
Shearing				
Rate of Strain (mm/min)			0.600	0.600
Peak Shear Stress (kPa)			45.9	76.8
Hoz Displacement (mm)			10.2	10.2
Hoz Displacement at Peak Shear Stress (mm)			2.103	1.857
Final Conditions				
Water Content (%)			18.0	19.0
Dry Density (Mg/m ³)			1.69	1.70
Voids Ratio			0.590	0.558

 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L Hammond Lane	
Location Number	BH301B	Sample Reference	5	
Depth (m)	2.00	Sample Submerged?	Yes	No
Sample Type	D	Particle Density (Mg/m ³)	2.65	Assumed

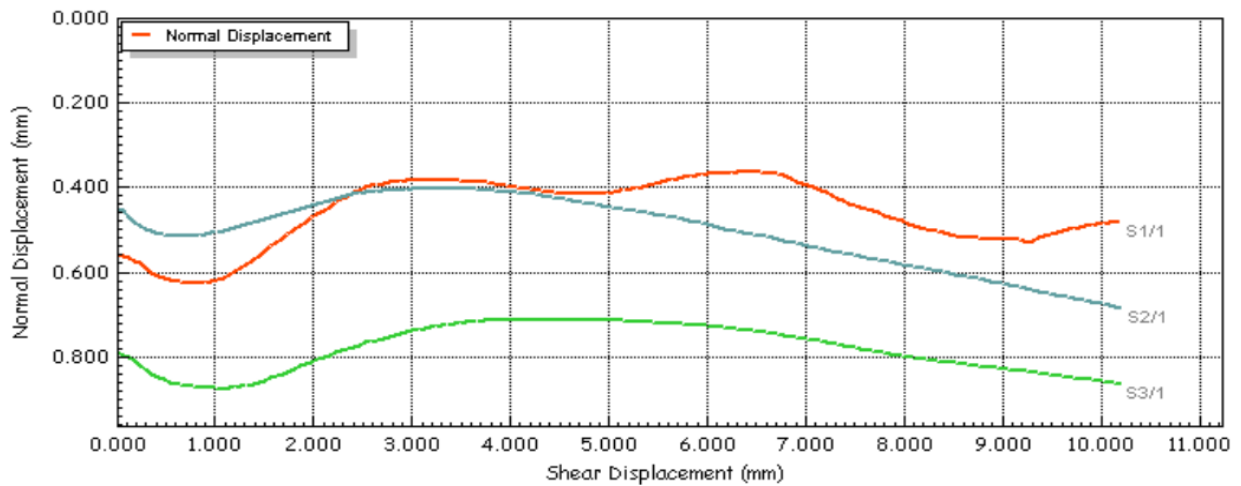
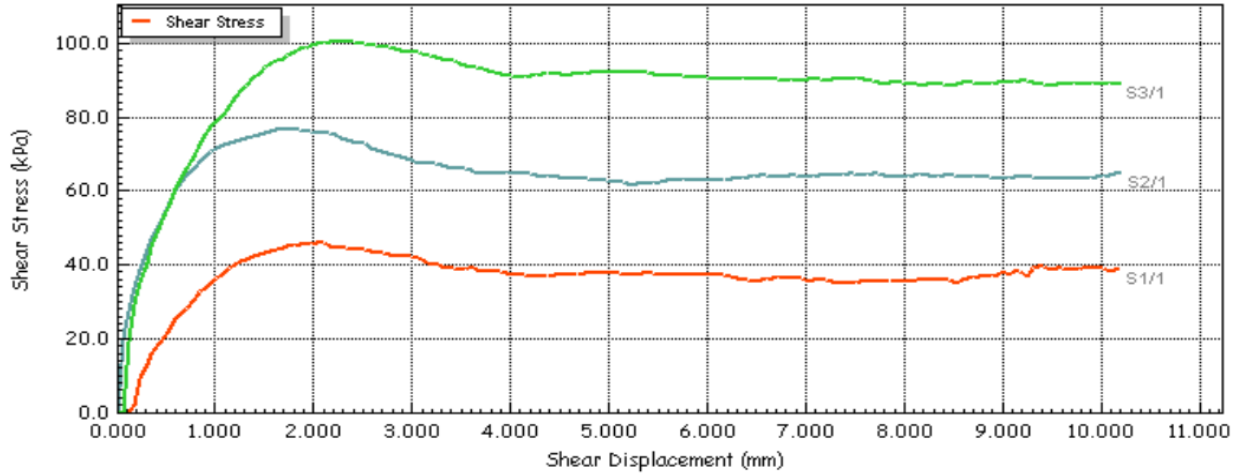
Consolidation Graphs



 10122		Tested	Approved
		Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L Hammond Lane	
Location Number	BH301B	Sample Reference	5	
Depth (m)	2.00	Sample Submerged?	Yes	No
Sample Type	D	Particle Density (Mg/m ³)	2.65	Assumed

Shear Stage

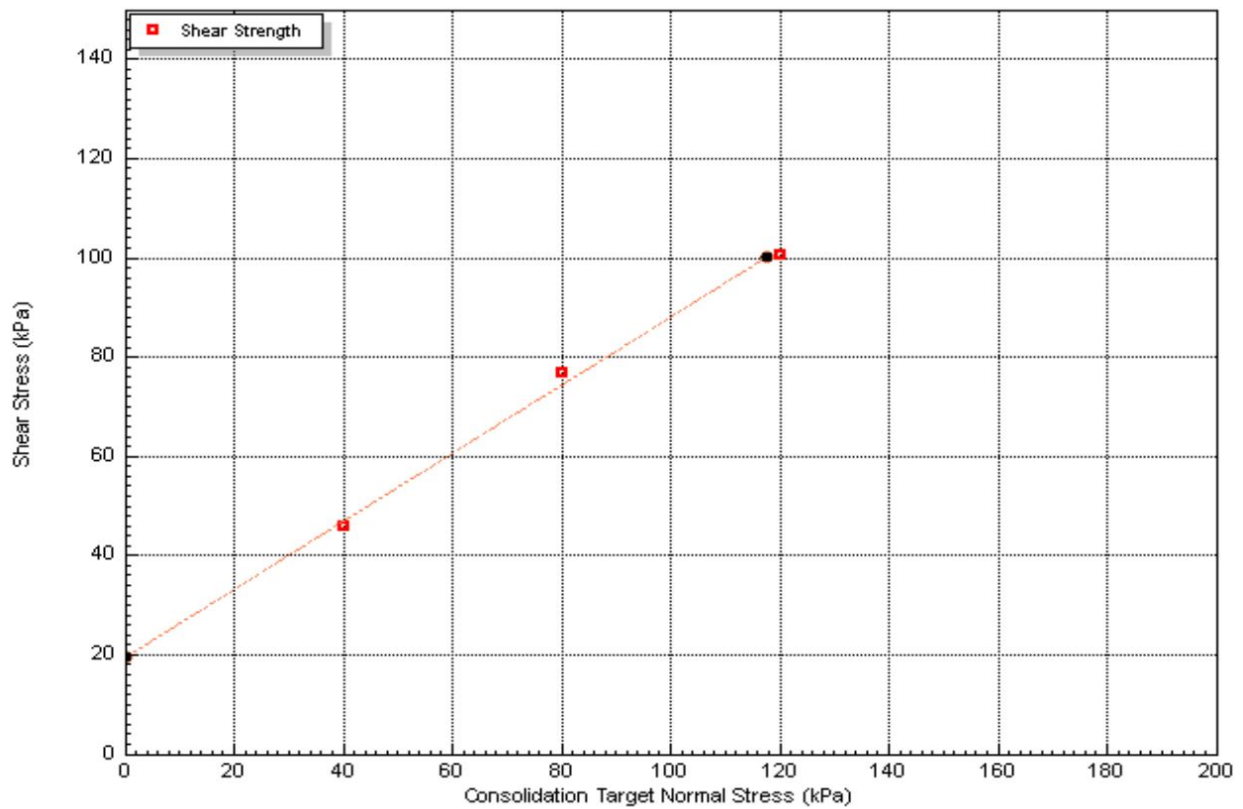


 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L Hammond Lane	
Location Number	BH301B	Sample Reference	5	
Depth (m)	2.00	Sample Submerged?	Yes	No
Sample Type	D	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		20		
Angle of Shearing Resistance (°)		34.5		



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

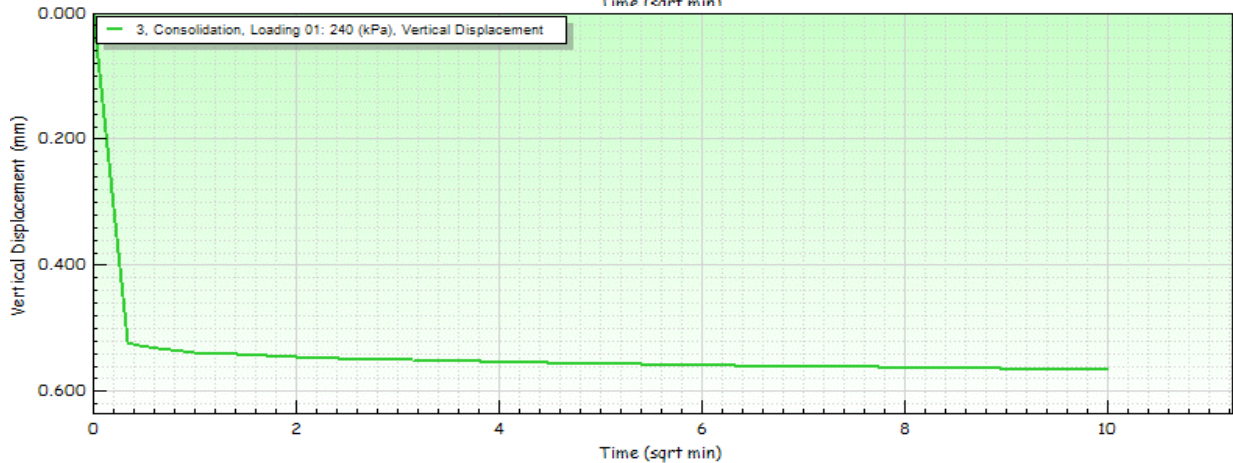
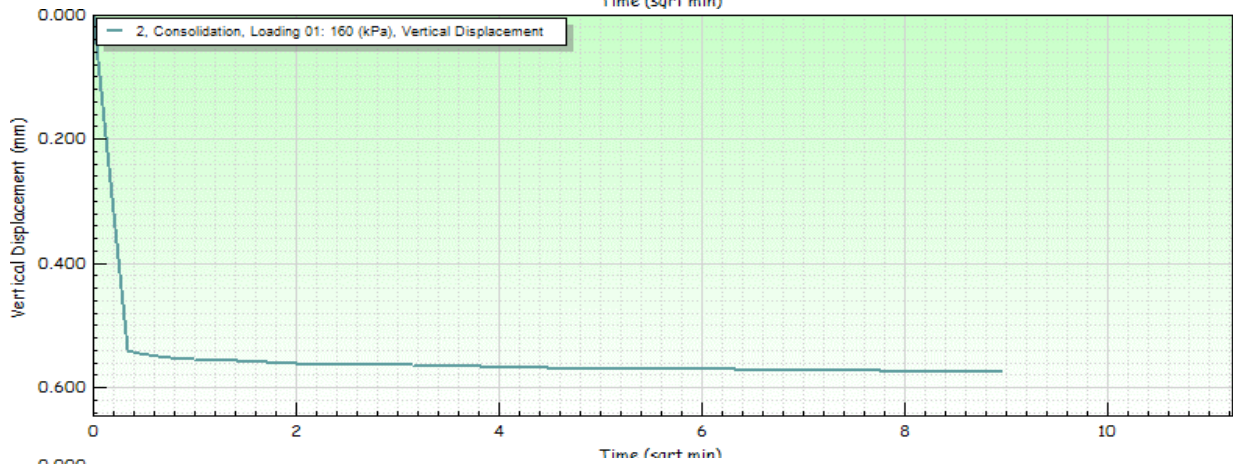
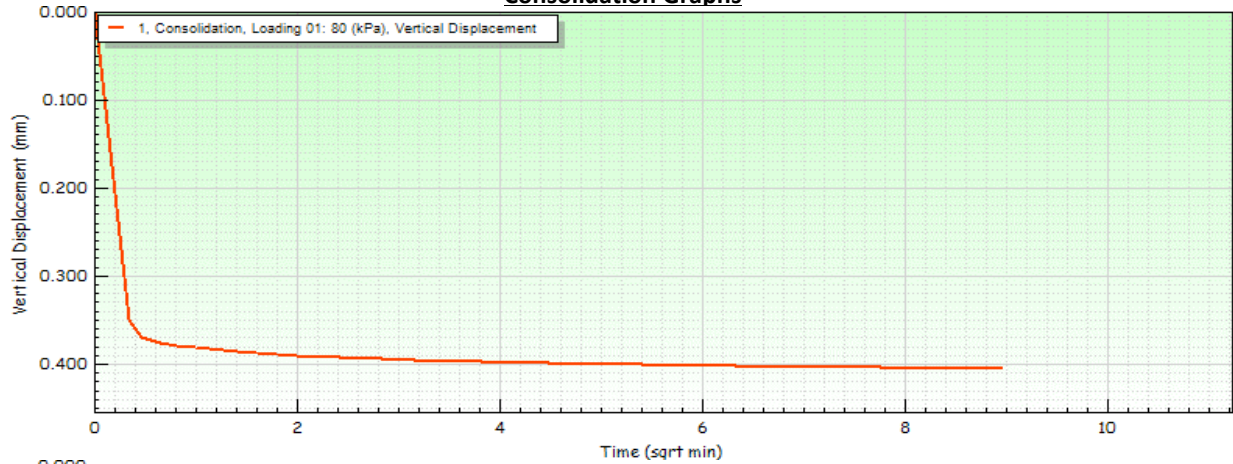
Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH304	Sample Reference	12	
Depth (m)	5.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Grey slightly gravelly slightly silty fine to coarse SAND.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	23.0	23.0	23.0
	Bulk Density (Mg/m ³)	1.91	1.92	1.90
	Dry Density (Mg/m ³)	1.56	1.56	1.55
	Voids Ratio	0.699	0.696	0.715
Consolidation				
	Normal Pressure (kPa)	80	160	240
	Vertical Displacement (mm)	0.405	0.574	0.565
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	77.6	129.0	173.5
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	2.163	2.103	3.663
Final Conditions				
	Water Content (%)	24.0	24.0	25.0
	Dry Density (Mg/m ³)	1.56	1.61	1.60
	Voids Ratio	0.686	0.654	0.659

 	Tested	Approved
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Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH304	Sample Reference	12	
Depth (m)	5.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

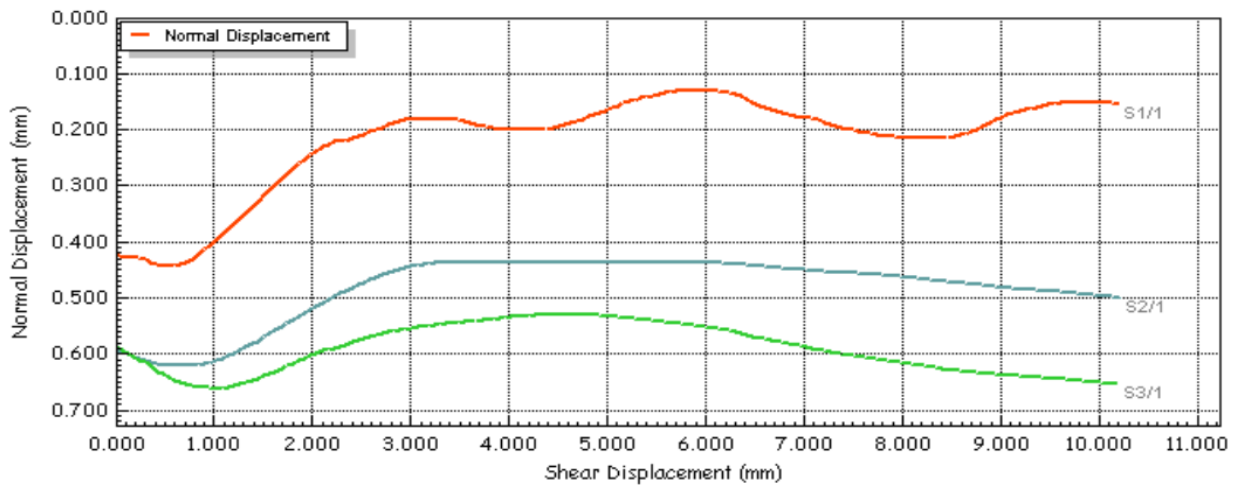
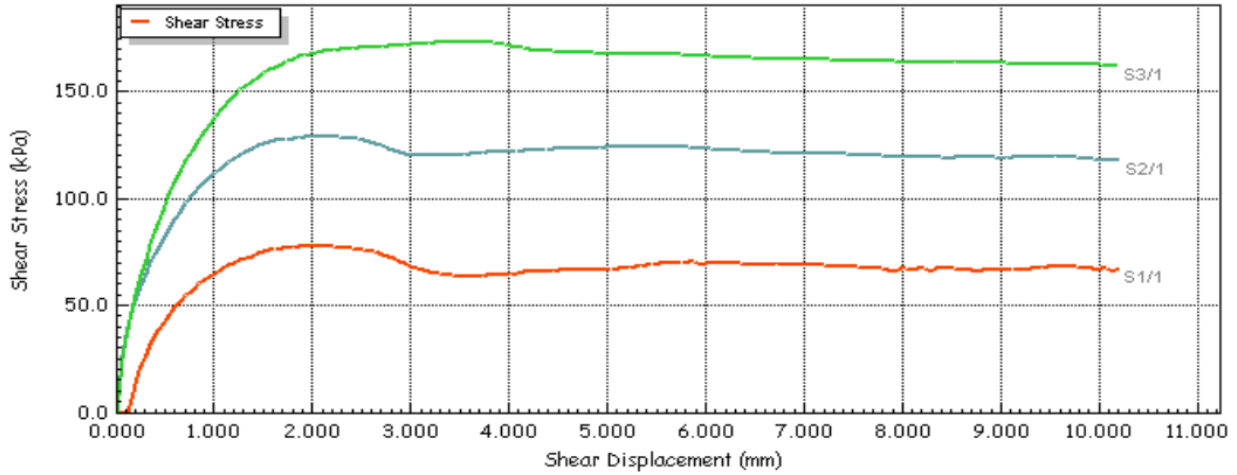
Consolidation Graphs



  10122	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH304	Sample Reference	12	
Depth (m)	5.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

Shear Stage

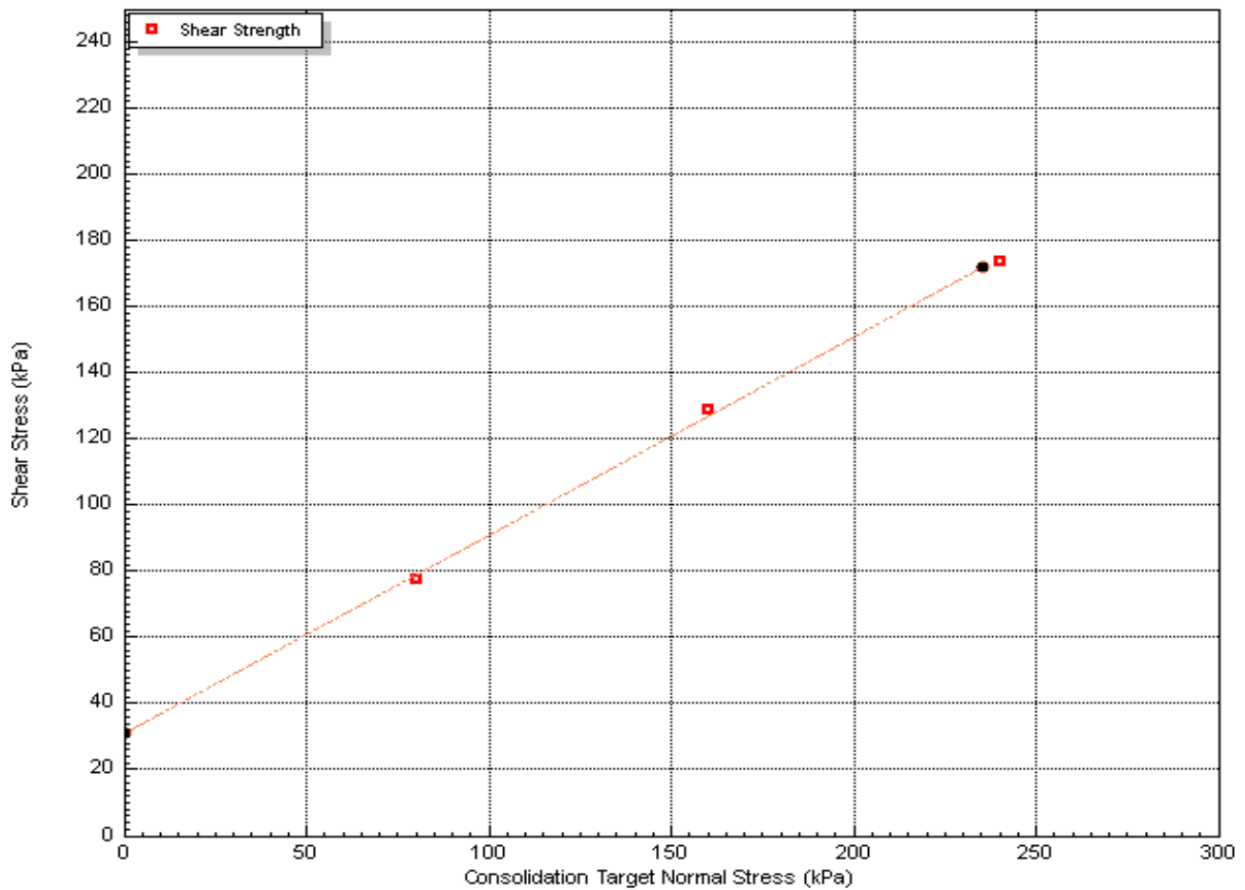


 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH304	Sample Reference	12	
Depth (m)	5.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		31		
Angle of Shearing Resistance (°)		31.0		



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

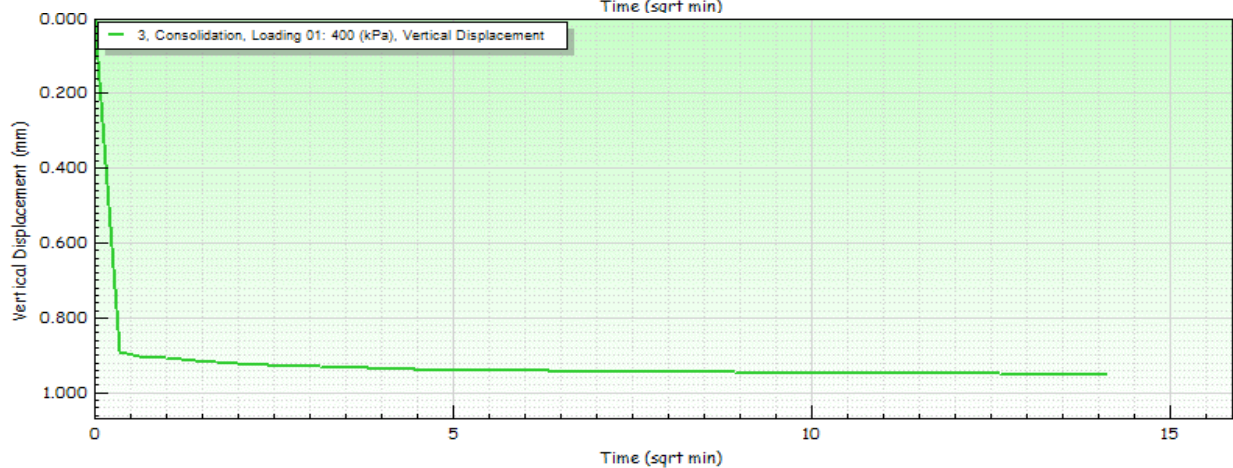
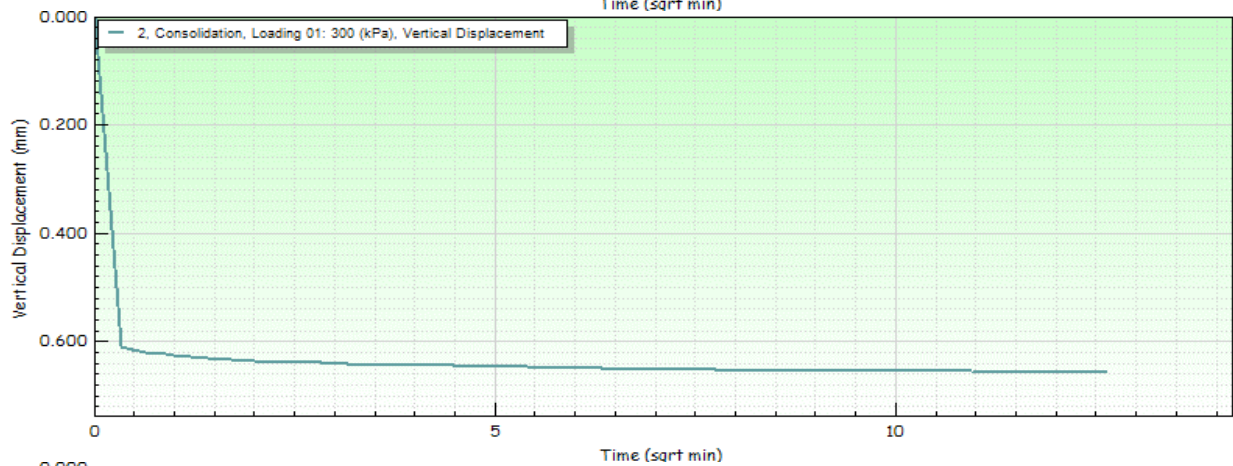
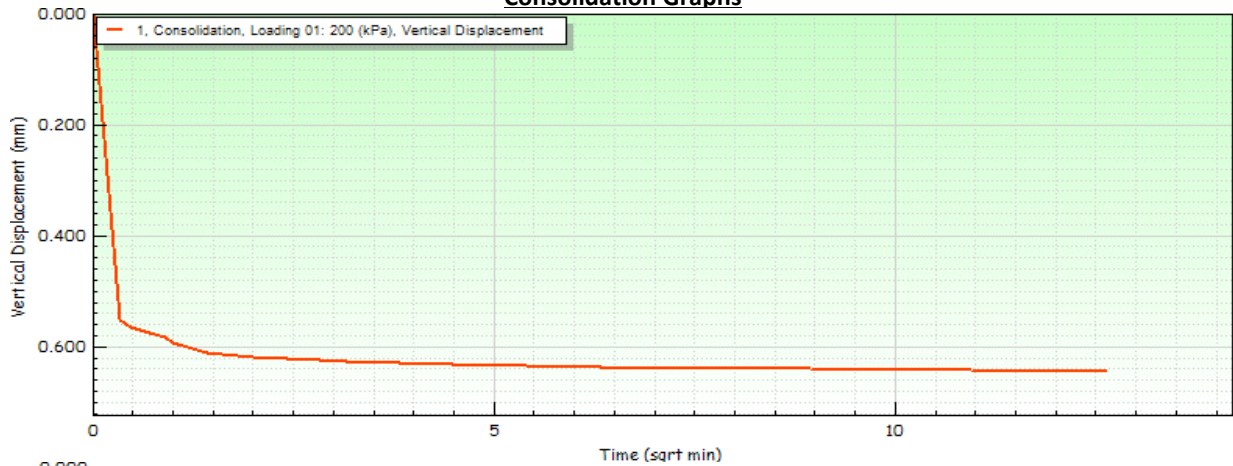
Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L Hammond Lane	
Location Number	BH304	Sample Reference	33	
Depth (m)	10.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Dark brown gravelly clayey fine to coarse SAND.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	11.0	11.0	11.0
	Bulk Density (Mg/m ³)	1.78	1.79	1.78
	Dry Density (Mg/m ³)	1.60	1.61	1.60
	Voids Ratio	0.653	0.646	0.653
Consolidation				
	Normal Pressure (kPa)	200	300	400
	Vertical Displacement (mm)	0.644	0.656	0.951
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	173.1	235.1	289.0
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	2.157	1.863	2.577
Final Conditions				
	Water Content (%)	21.0	21.0	21.0
	Dry Density (Mg/m ³)	1.69	1.71	1.78
	Voids Ratio	0.597	0.578	0.536



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L Hammond Lane	
Location Number	BH304	Sample Reference	33	
Depth (m)	10.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

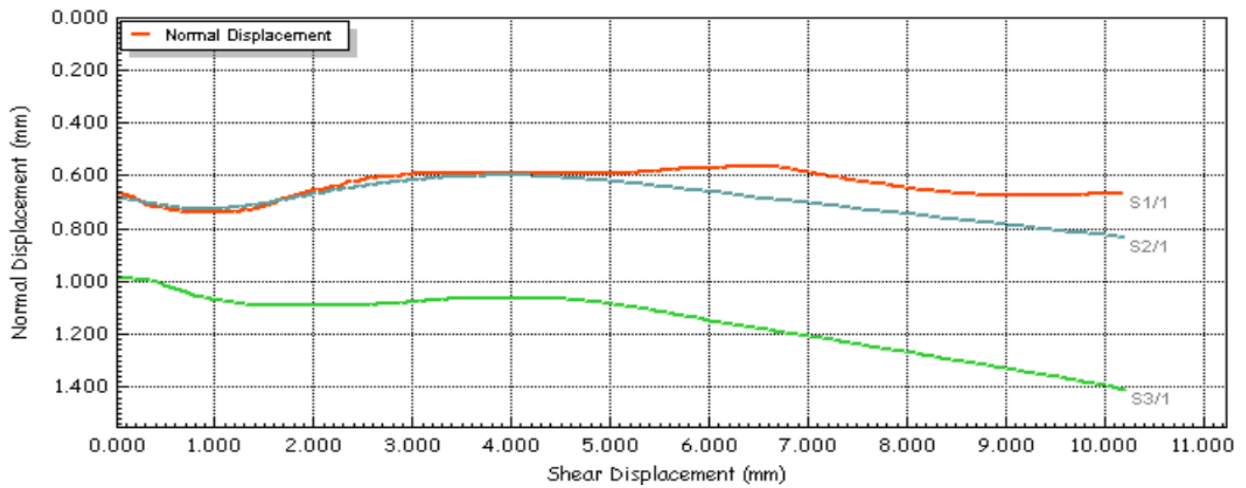
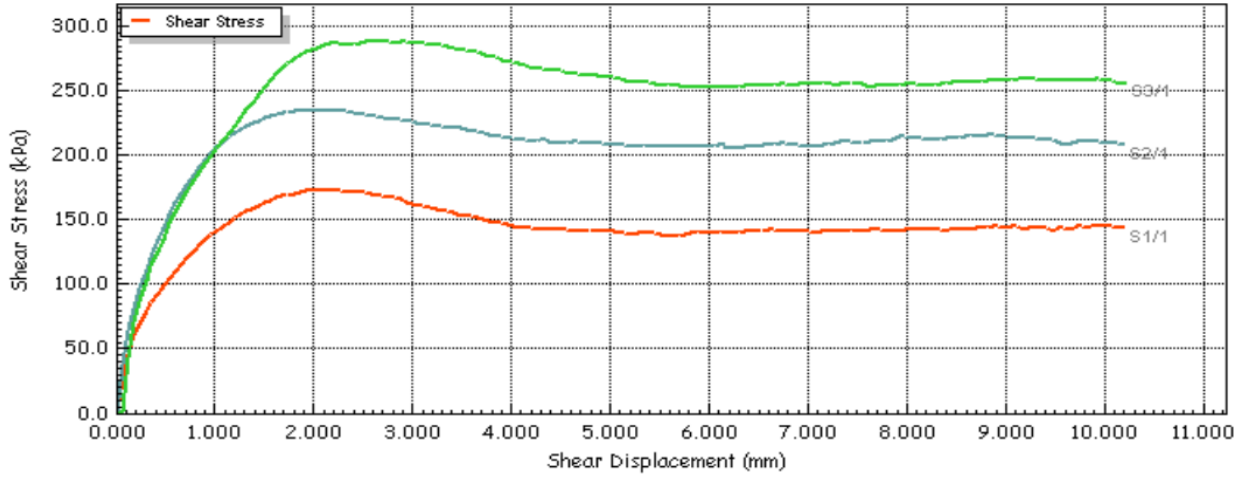
Consolidation Graphs



 10122		Tested	Approved
		Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L Hammond Lane	
Location Number	BH304	Sample Reference	33	
Depth (m)	10.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

Shear Stage

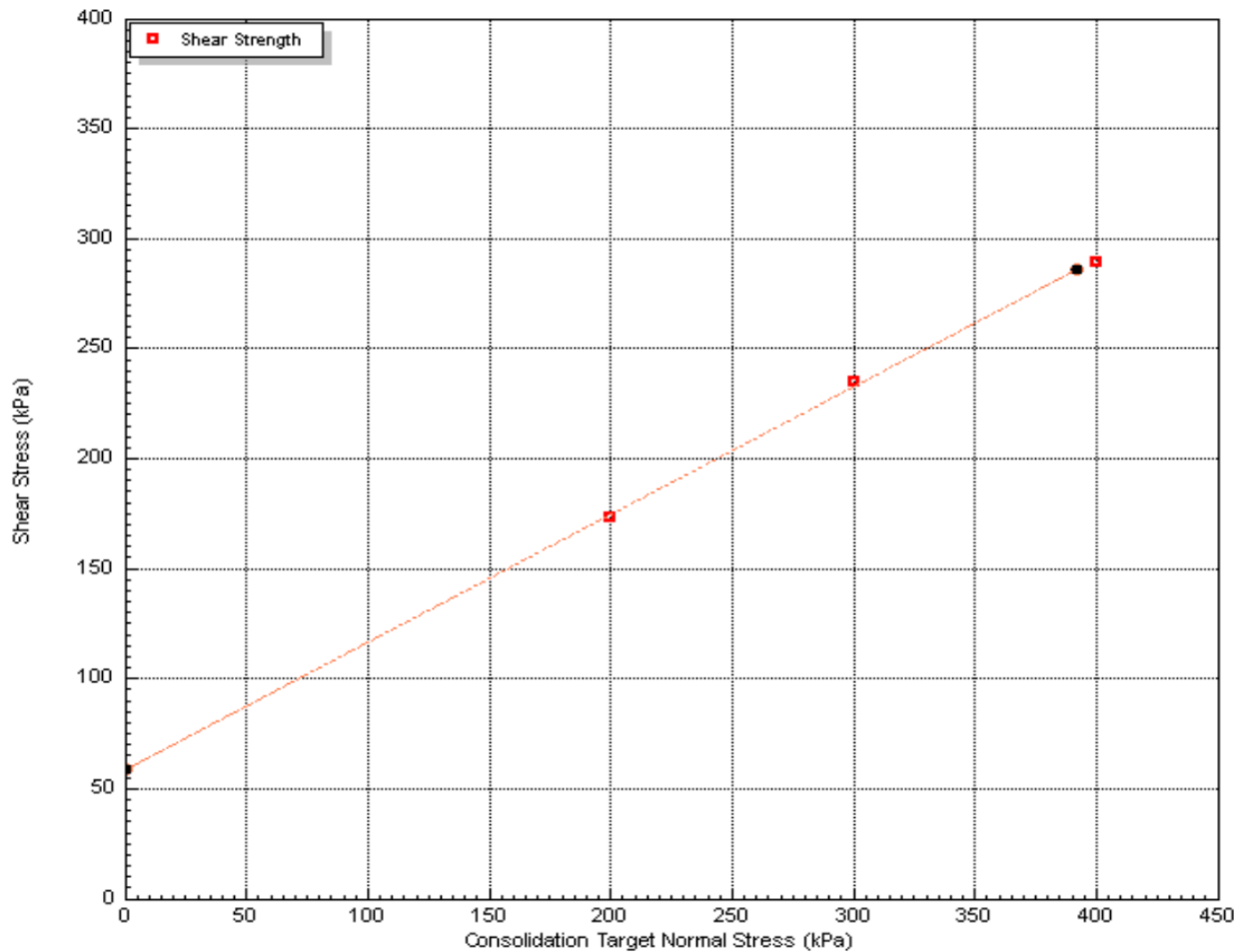


 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L Hammond Lane	
Location Number	BH304	Sample Reference	33	
Depth (m)	10.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		59		
Angle of Shearing Resistance (°)		30.0		



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

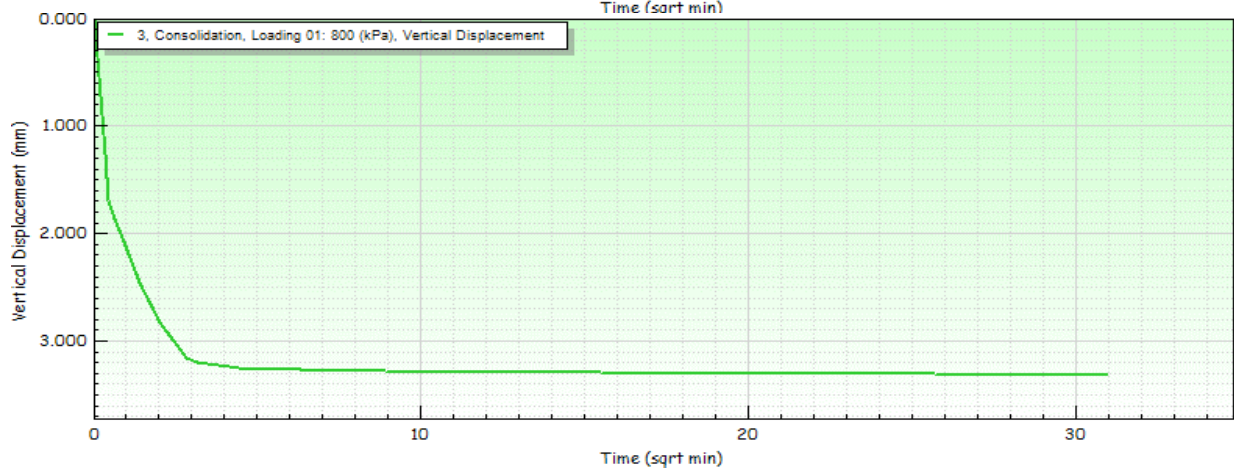
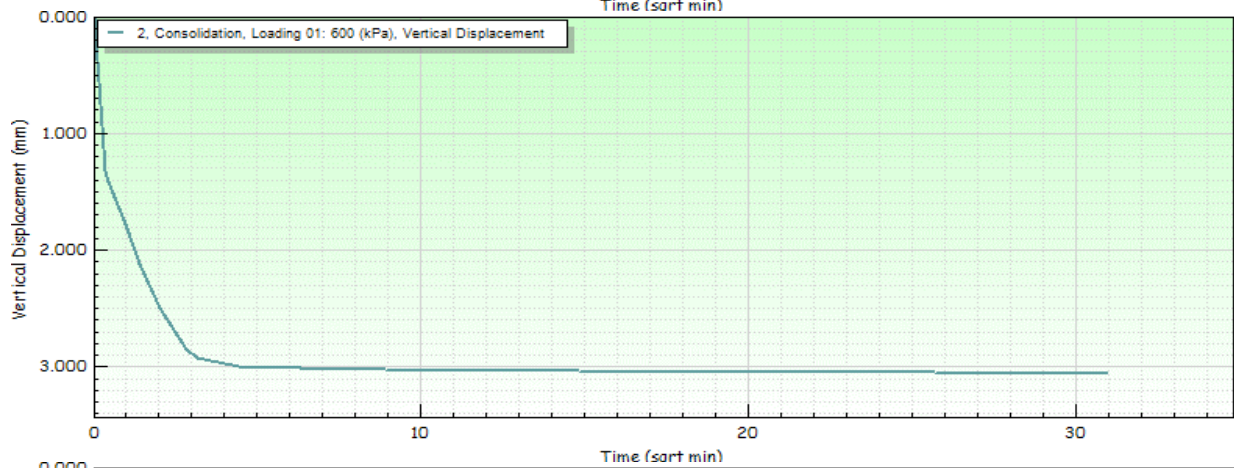
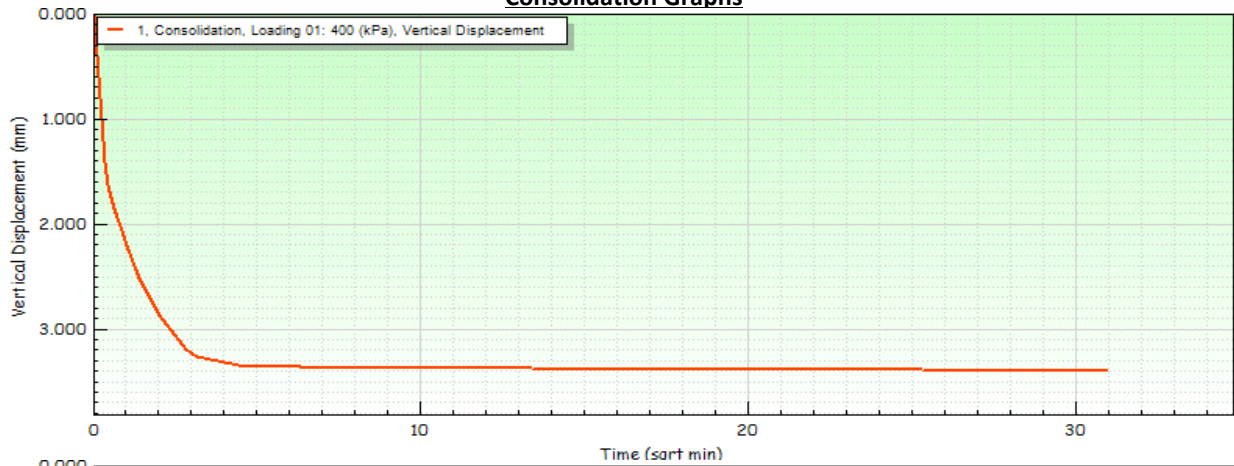
Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH304	Sample Reference	62	
Depth (m)	20.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Grey silty CLAY.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	21.0	21.0	21.0
	Bulk Density (Mg/m ³)	2.04	2.04	2.04
	Dry Density (Mg/m ³)	1.68	1.68	1.68
	Voids Ratio	0.579	0.575	0.577
Consolidation				
	Normal Pressure (kPa)	400	600	800
	Vertical Displacement (mm)	3.395	3.054	3.314
Shearing				
	Rate of Strain (mm/min)	0.081	0.081	0.081
	Peak Shear Stress (kPa)	233.8	374.9	486.5
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	5.157	4.563	4.503
Final Conditions				
	Water Content (%)	21.0	21.0	19.0
	Dry Density (Mg/m ³)	2.46	2.38	2.48
	Voids Ratio	0.274	0.311	0.292

 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH304	Sample Reference	62	
Depth (m)	20.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

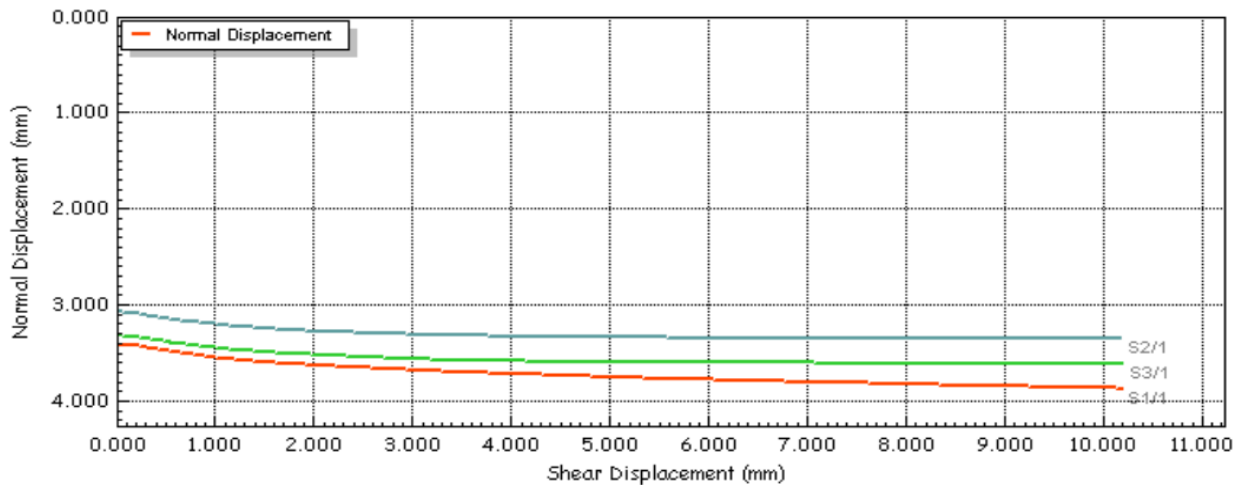
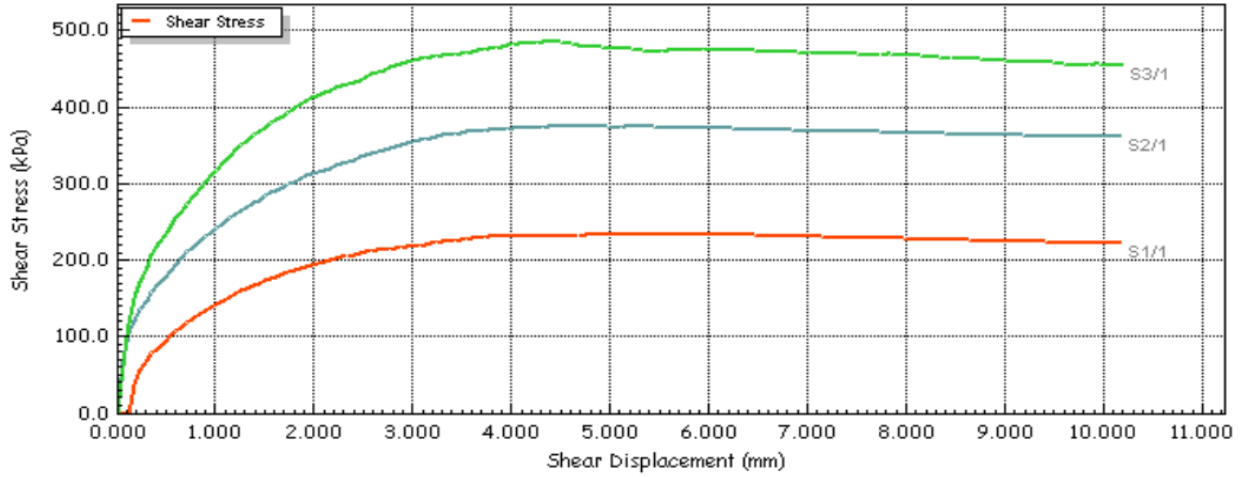
Consolidation Graphs



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH304	Sample Reference	62	
Depth (m)	20.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

Shear Stage

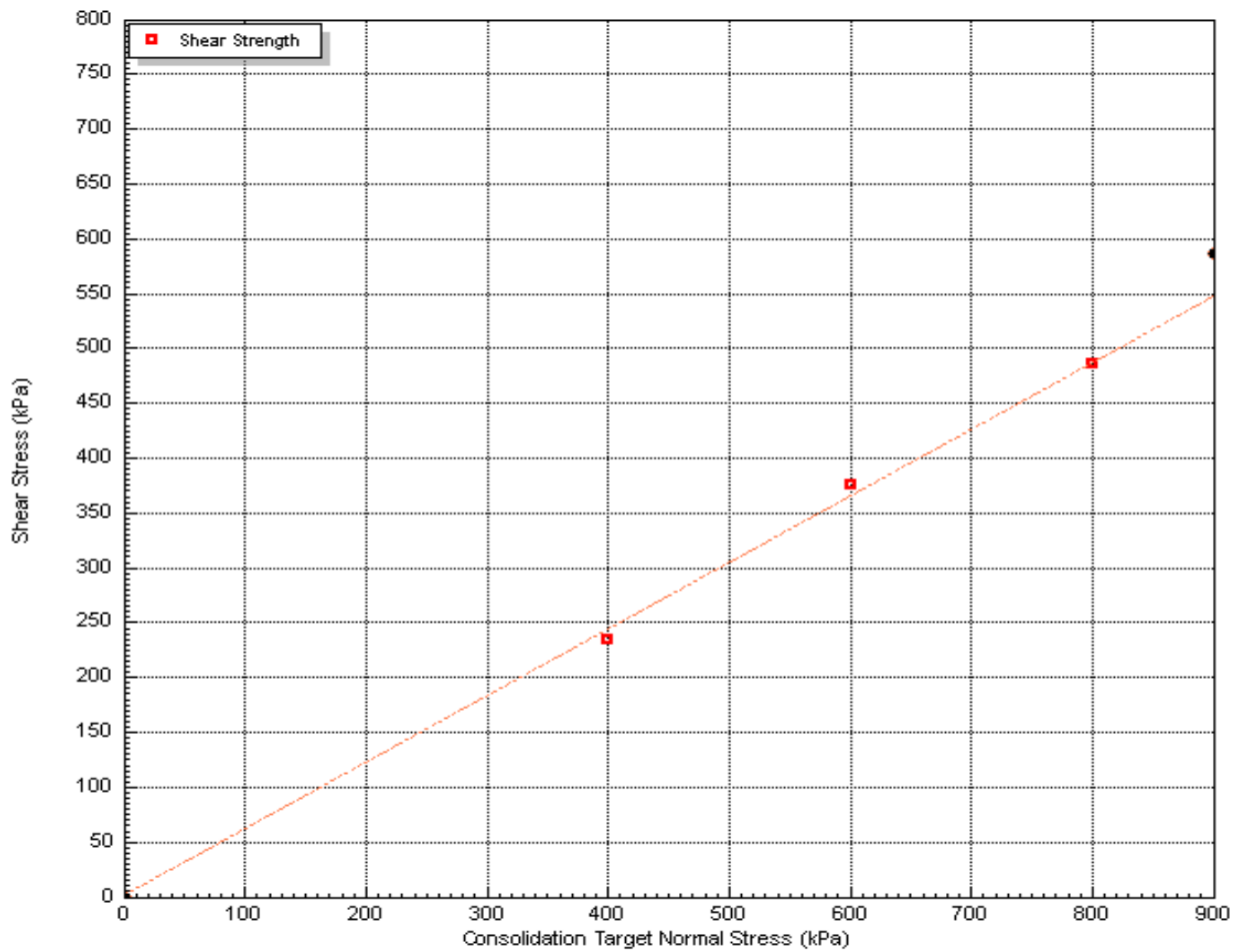


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Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH304	Sample Reference	62	
Depth (m)	20.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		1		
Angle of Shearing Resistance (°)		31.5		



 	Tested	Approved
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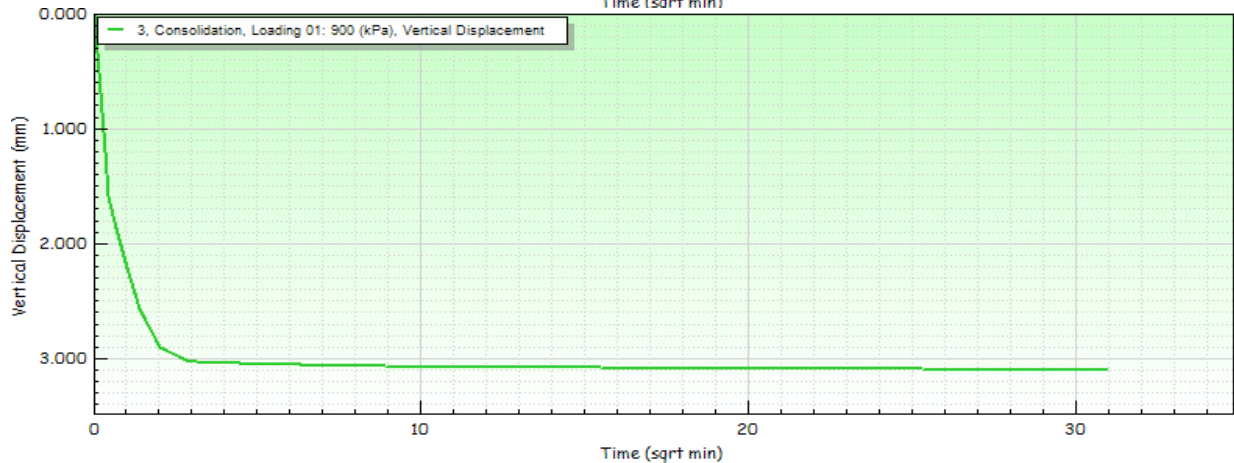
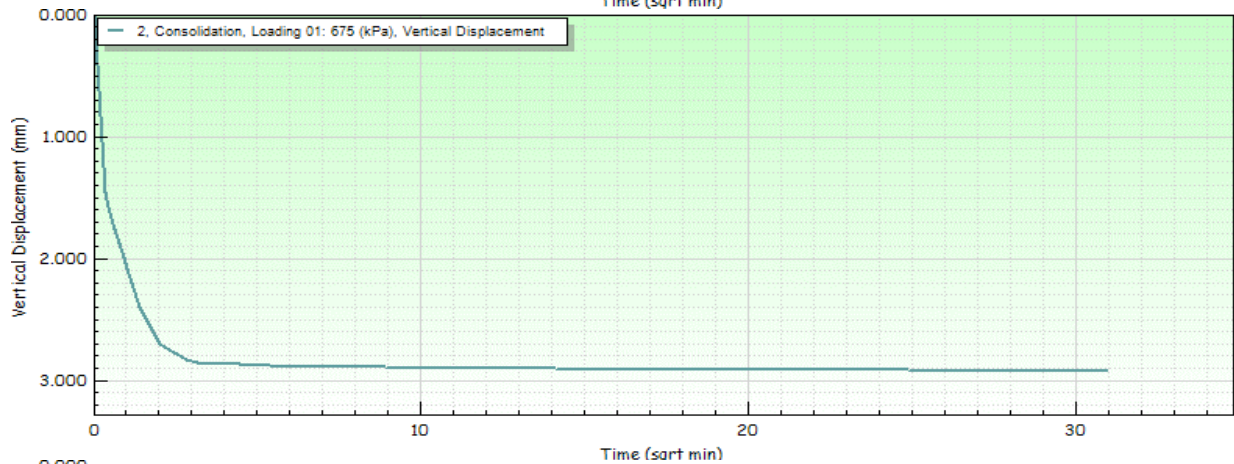
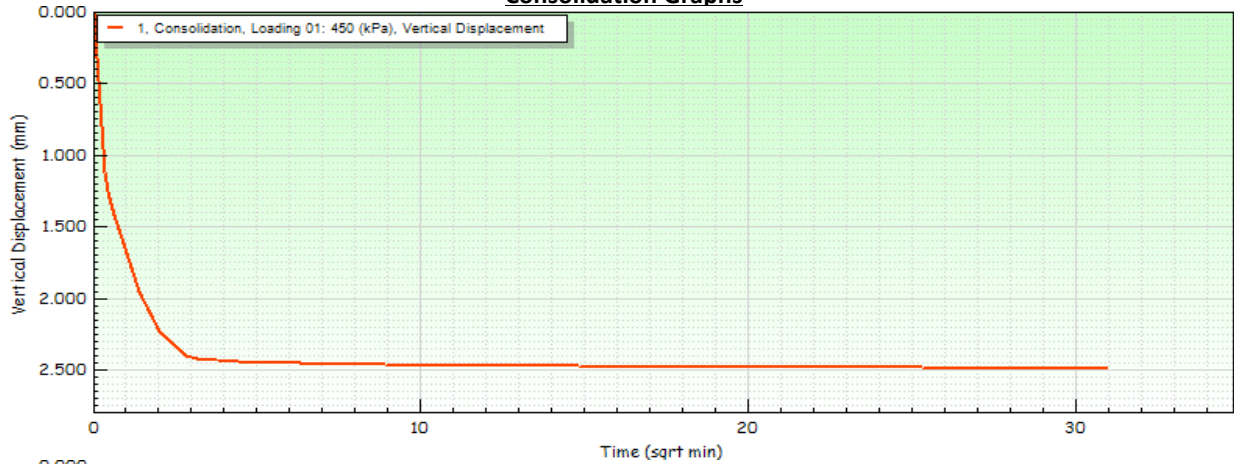
Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH304	Sample Reference	68	
Depth (m)	25.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Grey silty CLAY.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
Height (mm)		20.0	20.0	20.0
Diameter (mm)		60.0	60.0	60.0
Water Content (%)		19.0	19.0	19.0
Bulk Density (Mg/m ³)		2.09	2.11	2.09
Dry Density (Mg/m ³)		1.75	1.76	1.75
Voids Ratio		0.517	0.503	0.517
Consolidation				
Normal Pressure (kPa)		450	675	900
Vertical Displacement (mm)		2.486	2.921	3.098
Shearing				
Rate of Strain (mm/min)		0.073	0.073	0.073
Peak Shear Stress (kPa)		306.9	479.1	614.2
Hoz Displacement (mm)		10.2	10.2	10.2
Hoz Displacement at Peak Shear Stress (mm)		3.477	5.403	4.803
Final Conditions				
Water Content (%)		18.0	18.0	19.0
Dry Density (Mg/m ³)		2.27	2.46	2.52
Voids Ratio		0.308	0.259	0.257



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Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH304	Sample Reference	68	
Depth (m)	25.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

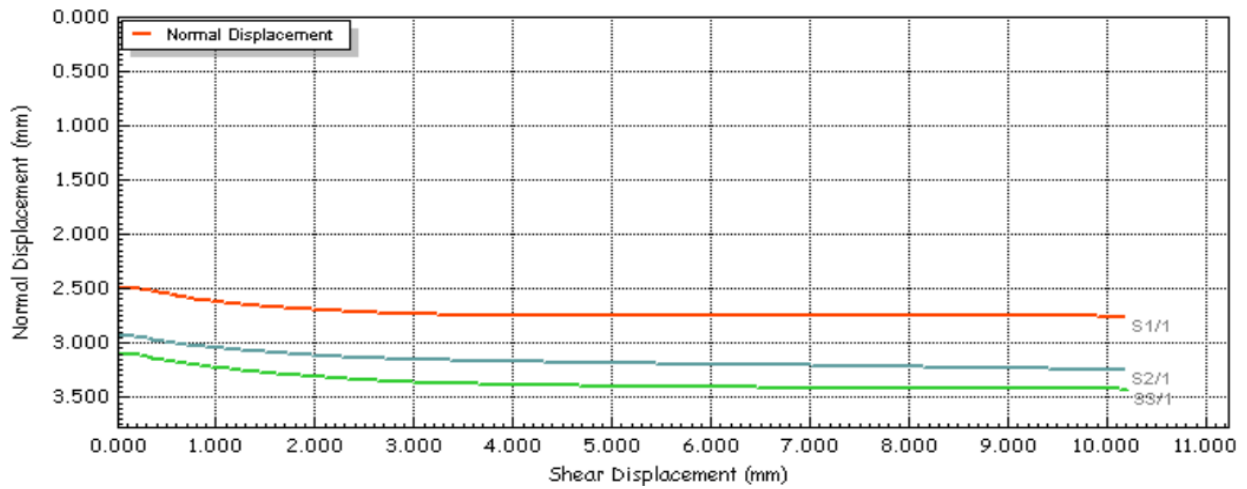
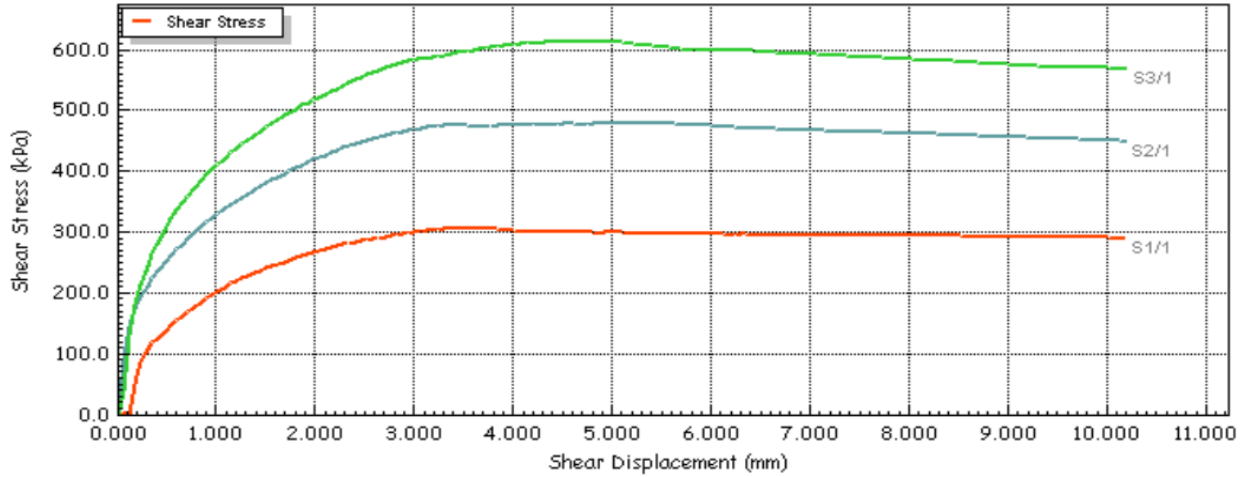
Consolidation Graphs



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH304	Sample Reference	68	
Depth (m)	25.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

Shear Stage

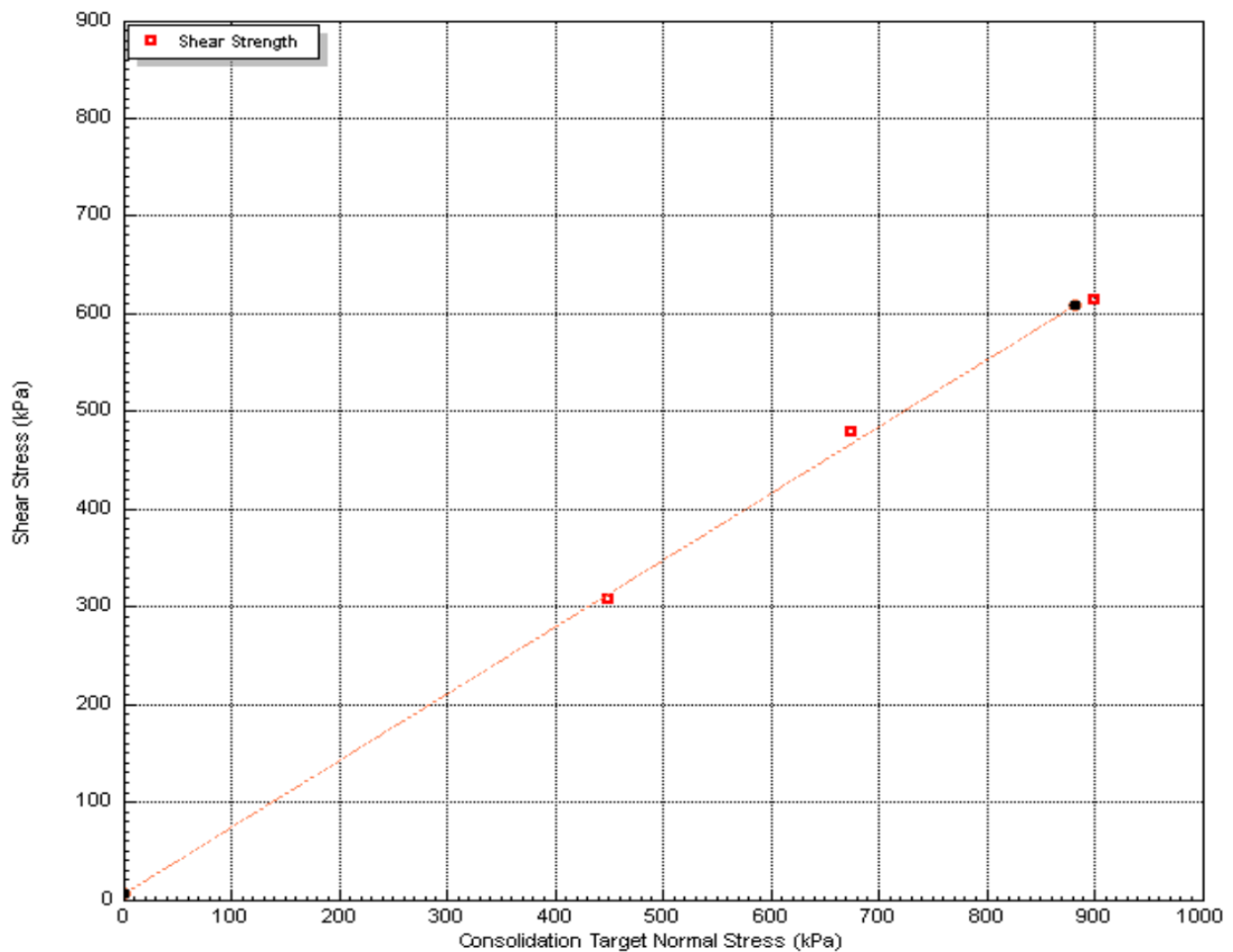


 	Tested	Approved
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Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH304	Sample Reference	68	
Depth (m)	25.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		6		
Angle of Shearing Resistance (°)		34.5		



 	Tested	Approved
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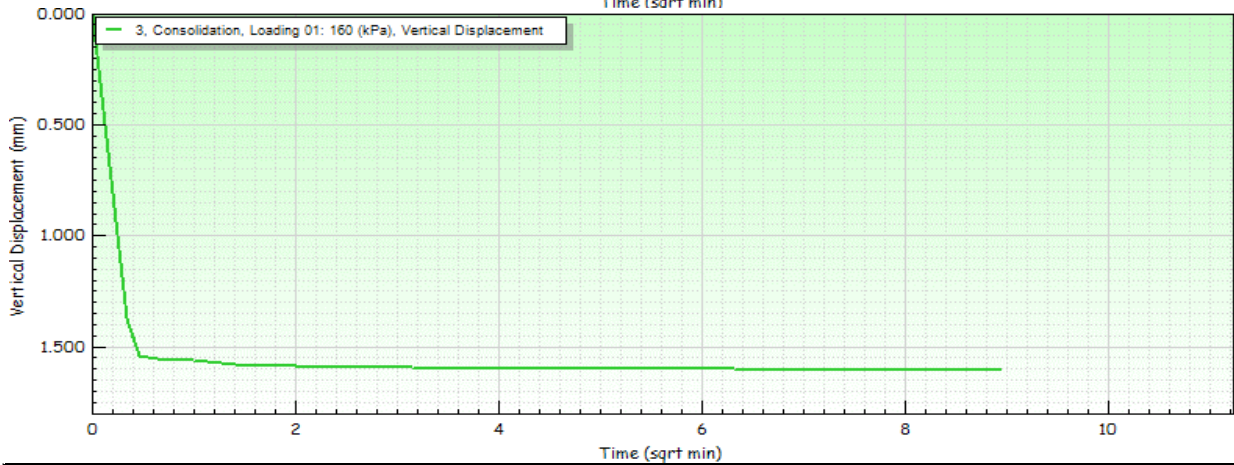
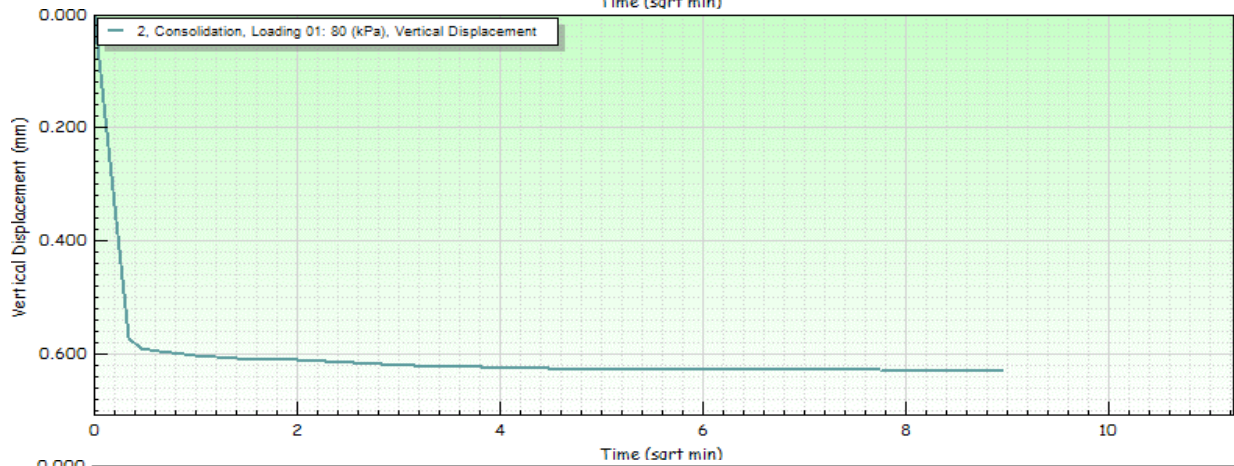
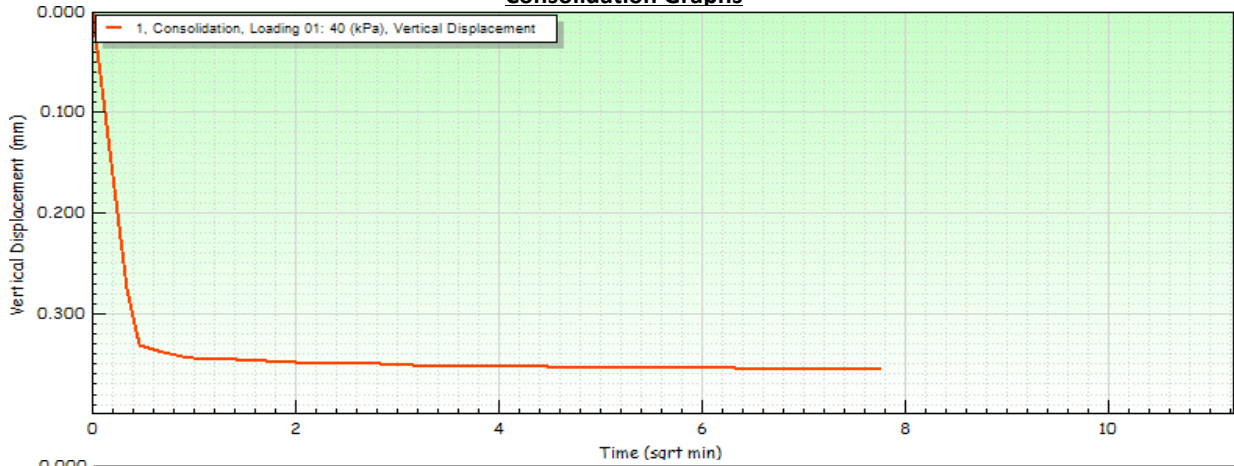
Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	36	
Depth (m)	1.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Brown slightly gravelly silty fine to coarse SAND with shells and shell fragments.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	8.6	8.7	8.6
	Bulk Density (Mg/m ³)	1.55	1.56	1.54
	Dry Density (Mg/m ³)	1.42	1.43	1.42
	Voids Ratio	0.861	0.851	0.869
Consolidation				
	Normal Pressure (kPa)	40	80	160
	Vertical Displacement (mm)	0.355	0.630	1.604
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	30.1	63.0	113.8
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	1.737	5.223	9.303
Final Conditions				
	Water Content (%)	27.0	27.0	26.0
	Dry Density (Mg/m ³)	1.43	1.48	1.63
	Voids Ratio	0.811	0.780	0.702

 	Tested	Approved
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Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	36	
Depth (m)	1.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

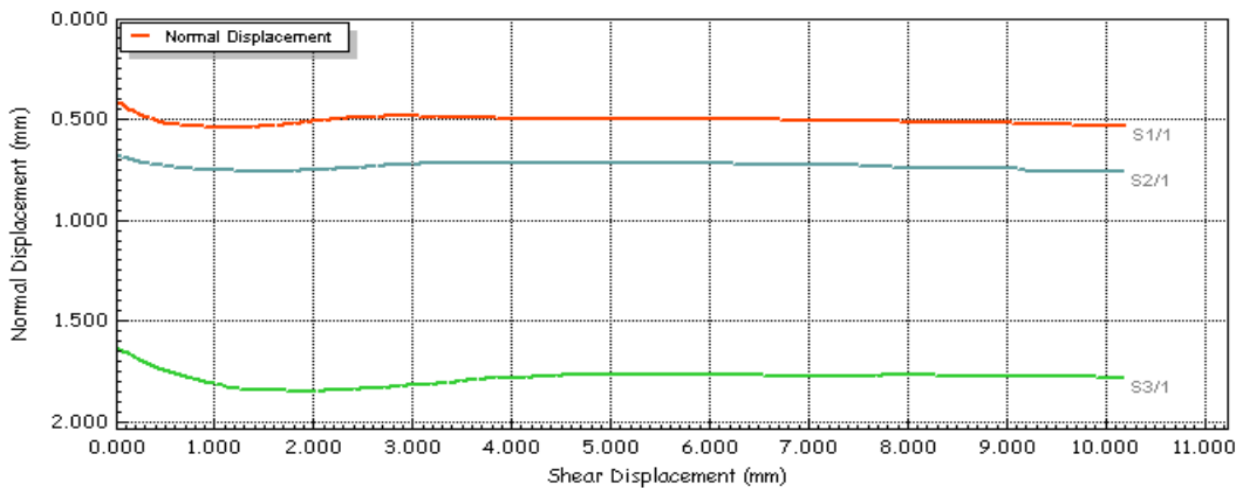
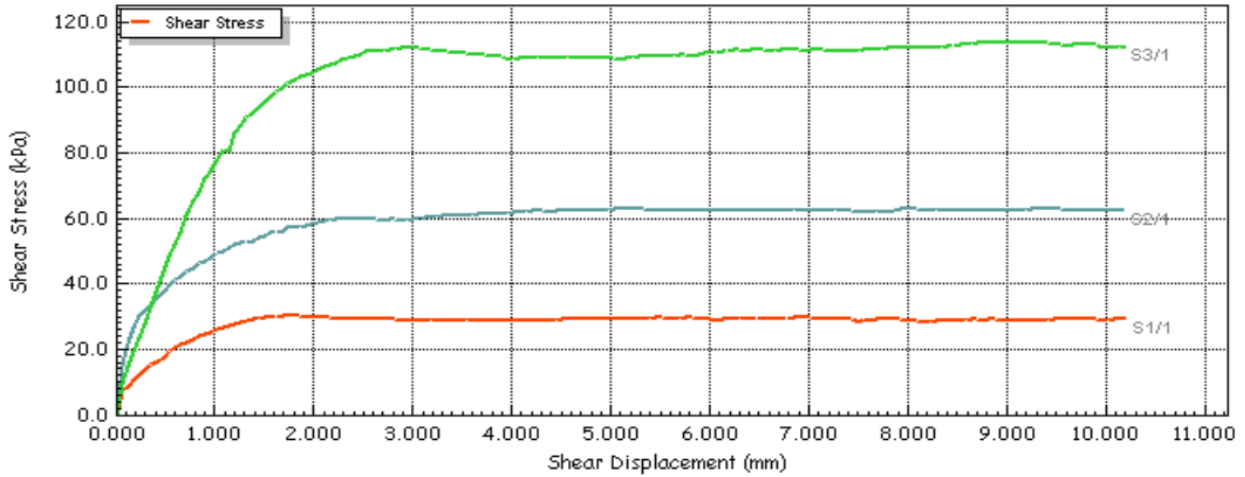
Consolidation Graphs



 10122		Tested	Approved
		Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	36	
Depth (m)	1.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

Shear Stage

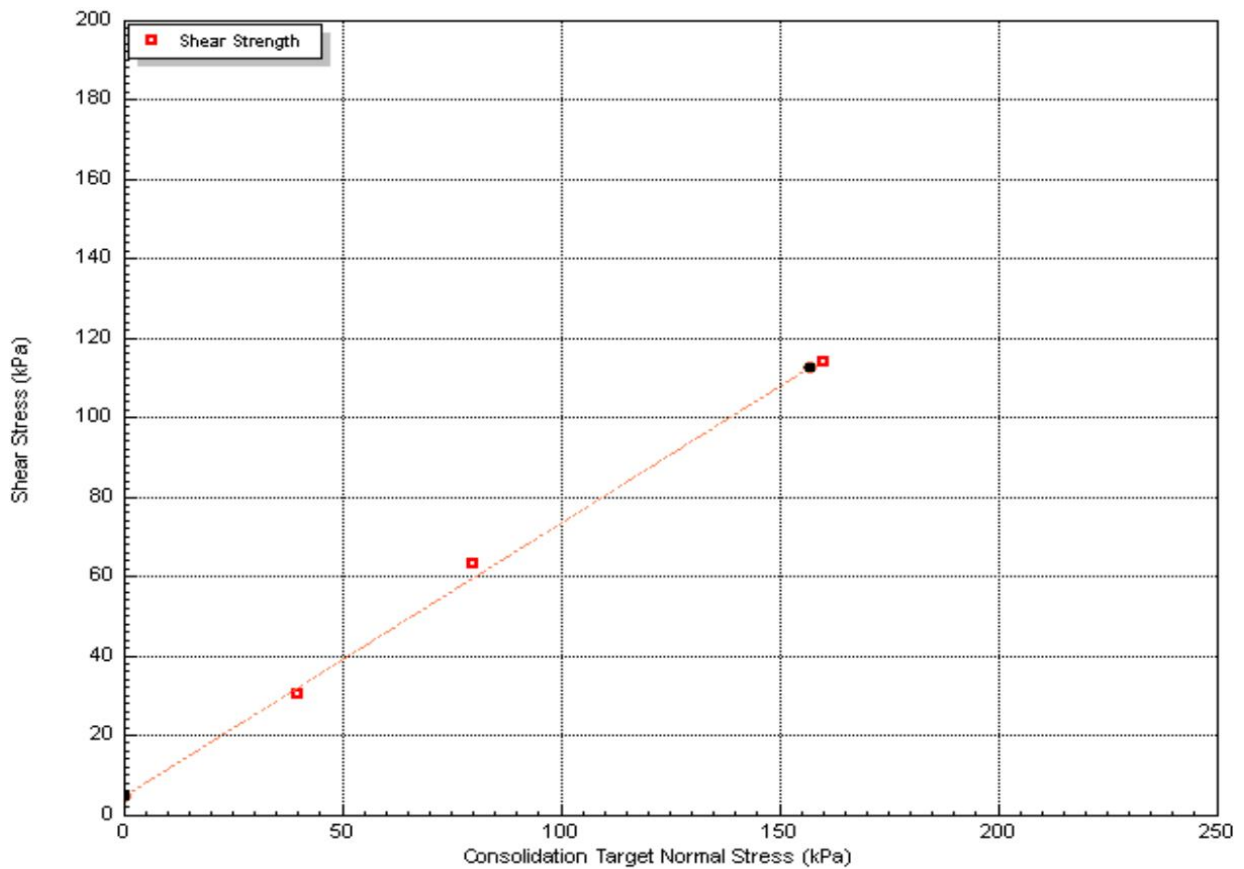


 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	36	
Depth (m)	1.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		5		
Angle of Shearing Resistance (°)		34.5		



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

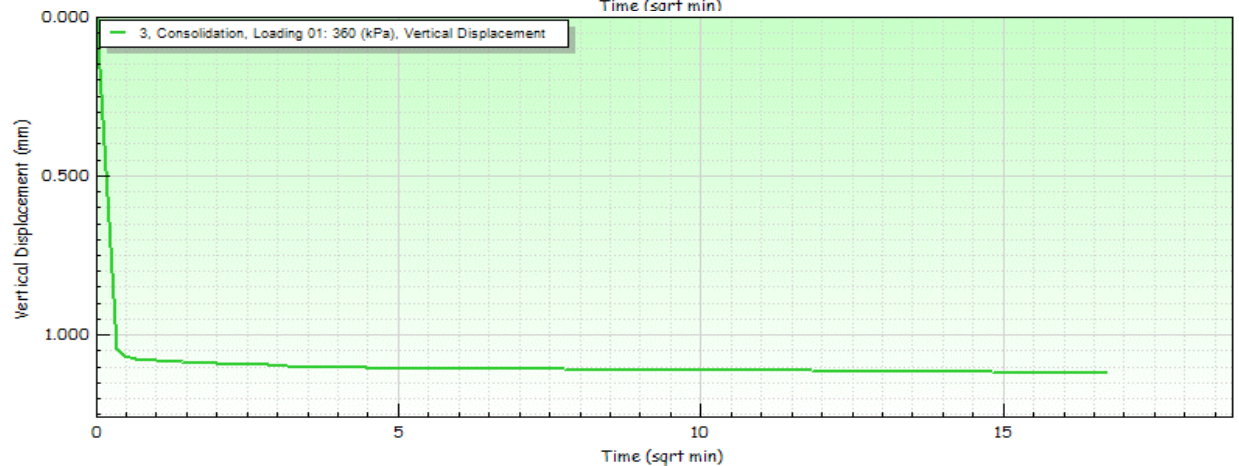
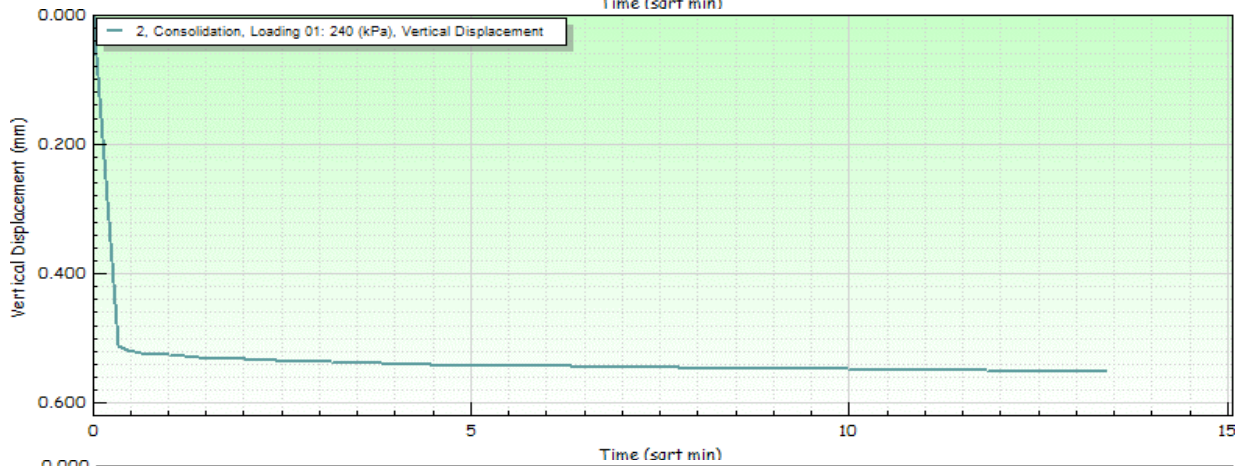
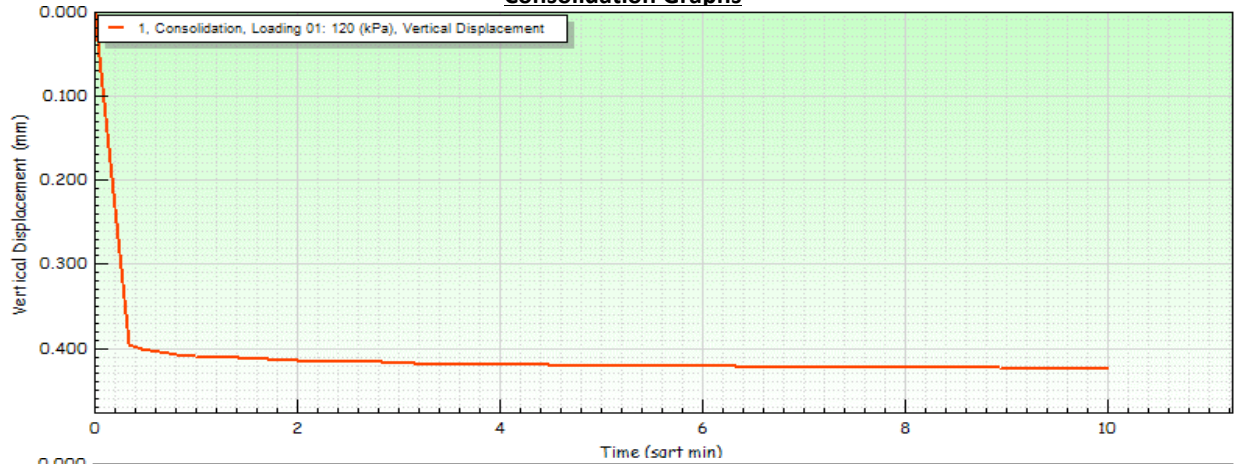
Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	42	
Depth (m)	5.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Brown slightly gravelly slightly silty fine to coarse SAND with shells and shell fragments.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	22.0	22.0	22.0
	Bulk Density (Mg/m ³)	1.77	1.76	1.75
	Dry Density (Mg/m ³)	1.45	1.45	1.43
	Voids Ratio	0.826	0.833	0.848
Consolidation				
	Normal Pressure (kPa)	120	240	360
	Vertical Displacement (mm)	0.424	0.551	1.119
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	91.0	191.0	261.2
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	1.977	2.217	2.337
Final Conditions				
	Water Content (%)	28.0	28.0	27.0
	Dry Density (Mg/m ³)	1.44	1.47	1.53
	Voids Ratio	0.809	0.780	0.740


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Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	42	
Depth (m)	5.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

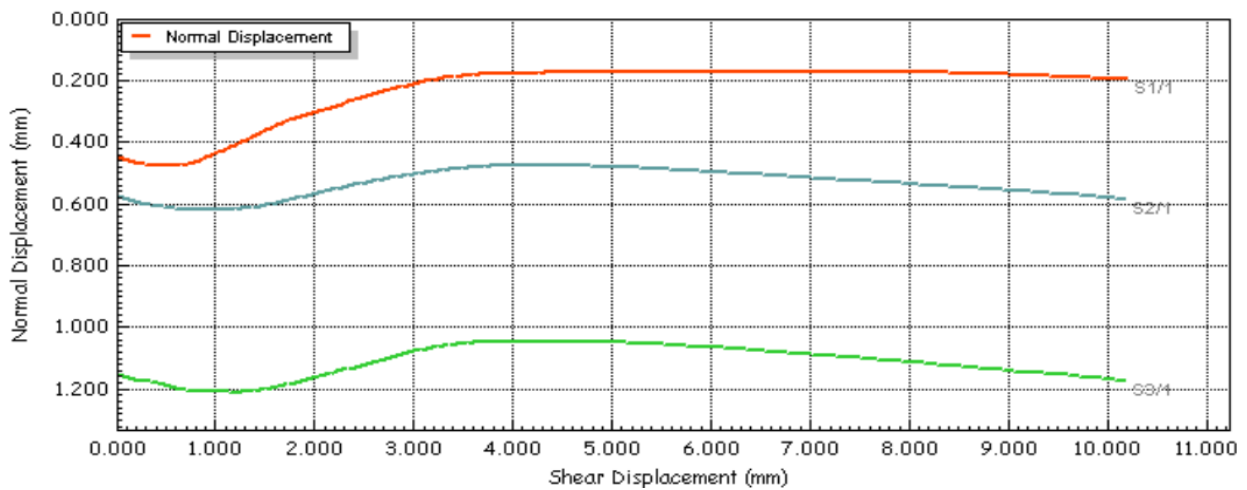
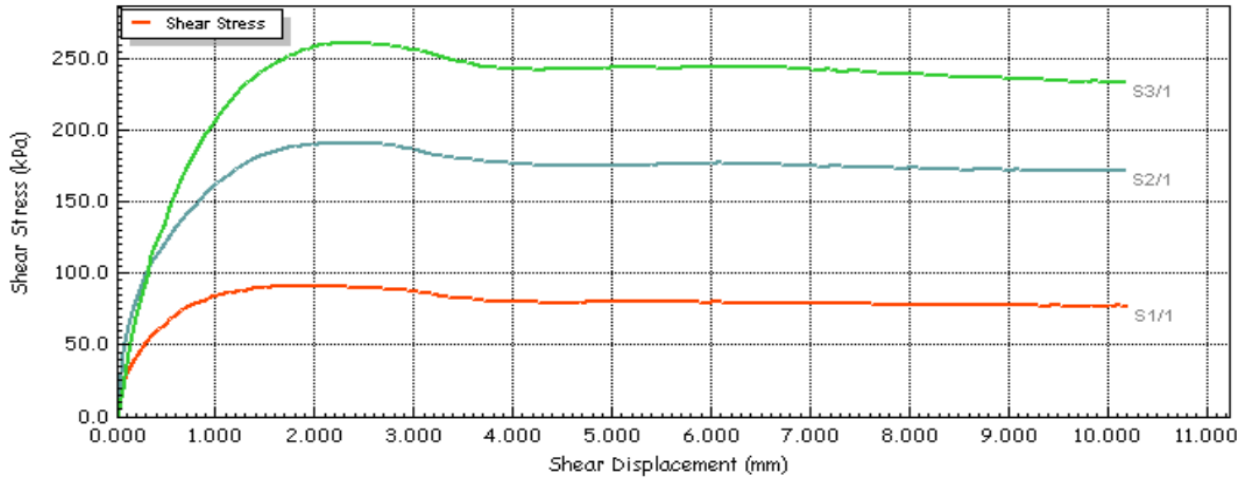
Consolidation Graphs



  10122	Tested	Approved
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Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	42	
Depth (m)	5.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

Shear Stage

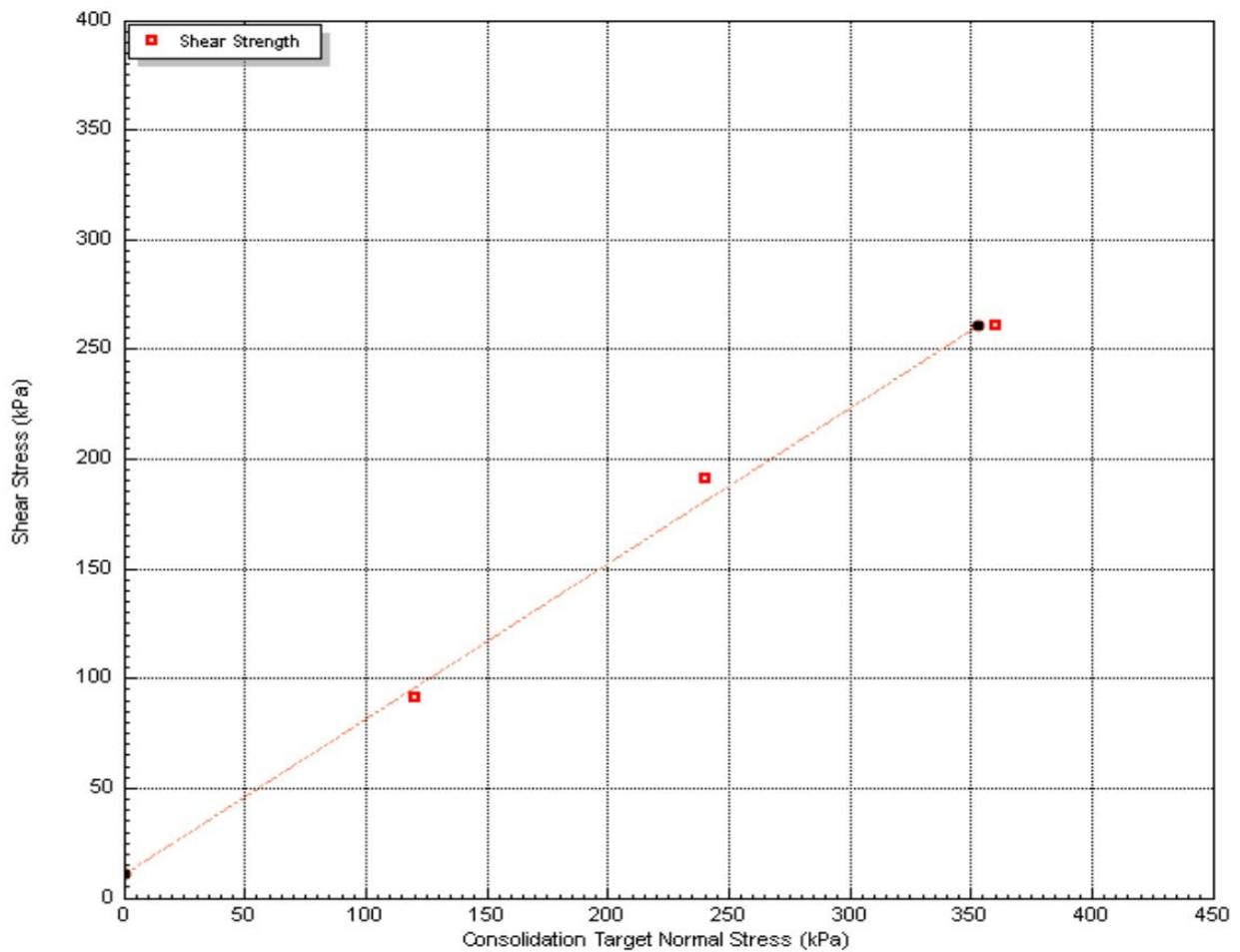


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	Aaron Nutt	Joseph Nicholl

Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	42	
Depth (m)	5.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		50		
Angle of Shearing Resistance (°)		34.5		



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

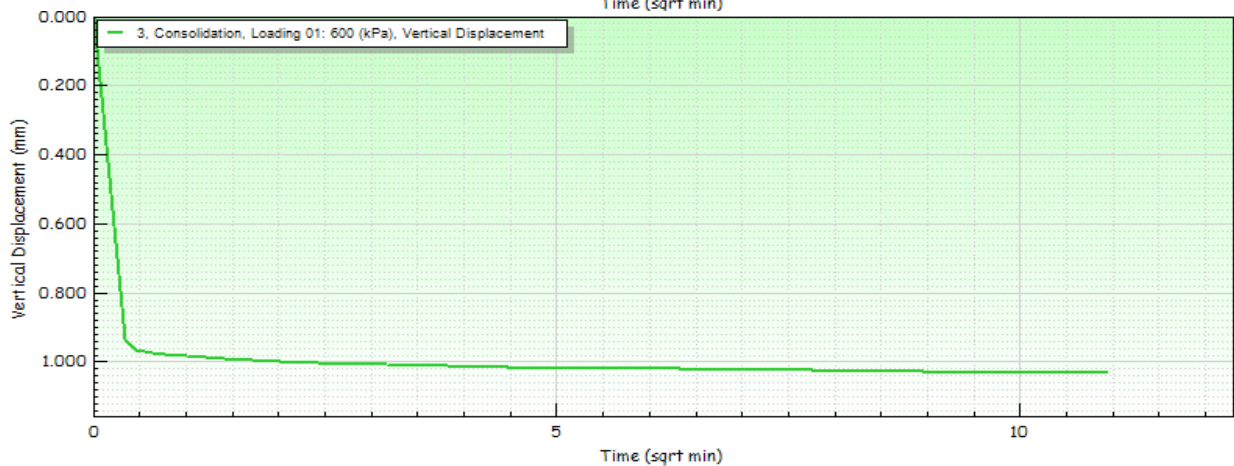
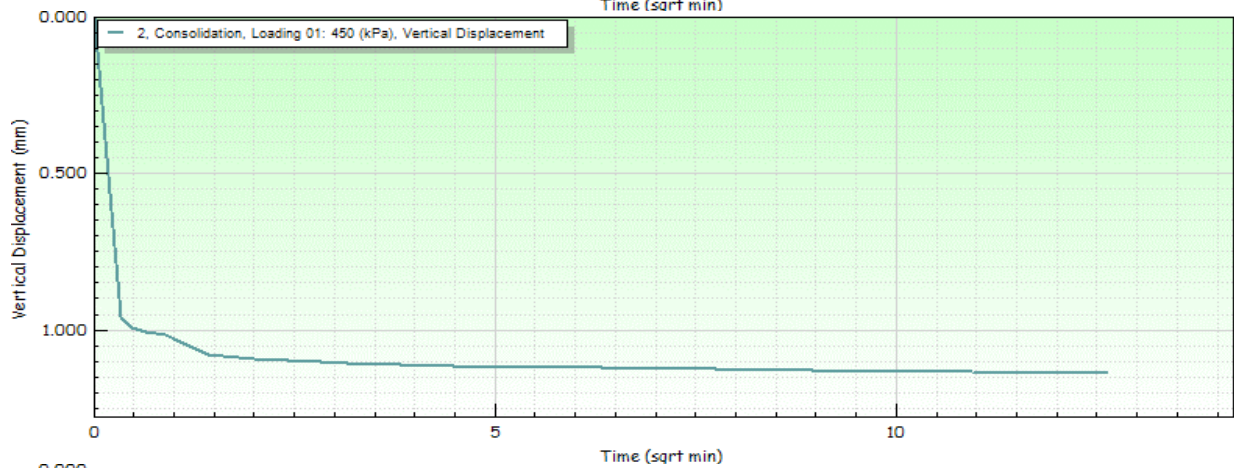
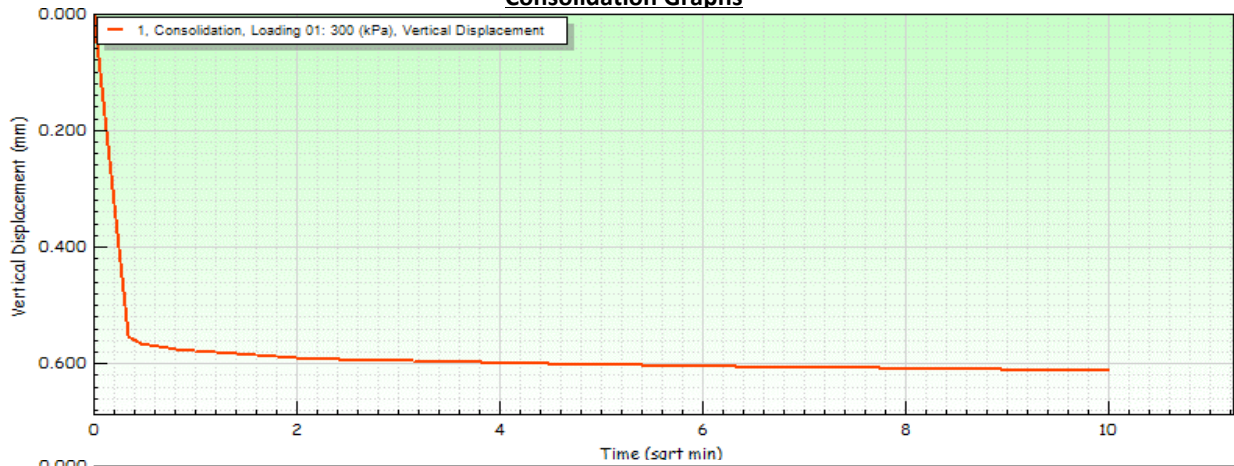
Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	54	
Depth (m)	14.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Brown gravelly slightly silty fine to coarse SAND.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	15.0	15.0	15.0
	Bulk Density (Mg/m ³)	1.87	1.88	1.88
	Dry Density (Mg/m ³)	1.63	1.64	1.63
	Voids Ratio	0.628	0.616	0.622
Consolidation				
	Normal Pressure (kPa)	300	450	600
	Vertical Displacement (mm)	0.611	1.137	1.030
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	223.4	296.9	421.2
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	3.003	5.577	3.777
Final Conditions				
	Water Content (%)	17.0	17.0	19.0
	Dry Density (Mg/m ³)	1.77	1.93	1.85
	Voids Ratio	0.566	0.468	0.509

 	Tested	Approved
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Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	54	
Depth (m)	14.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

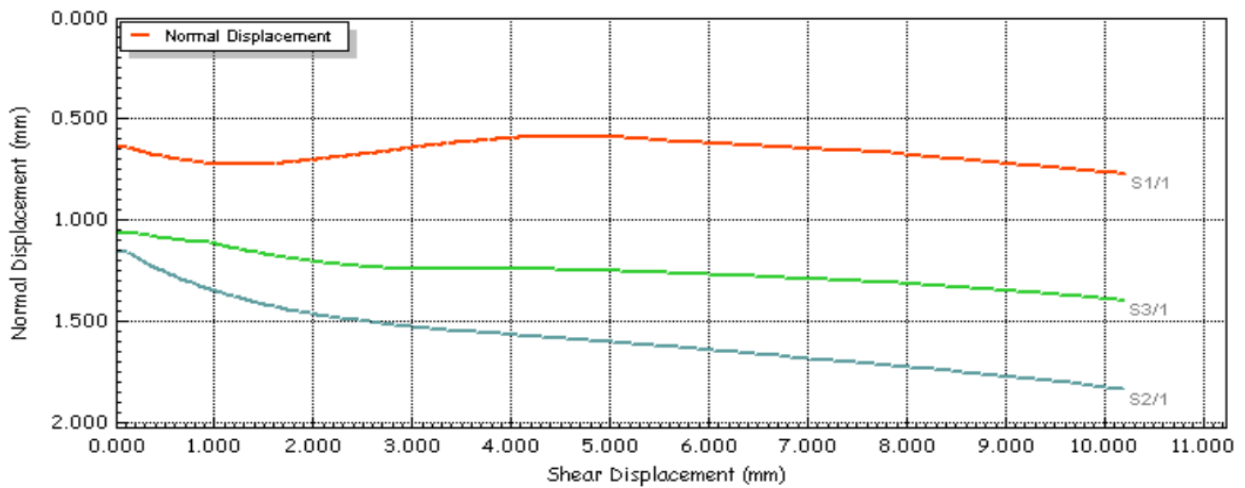
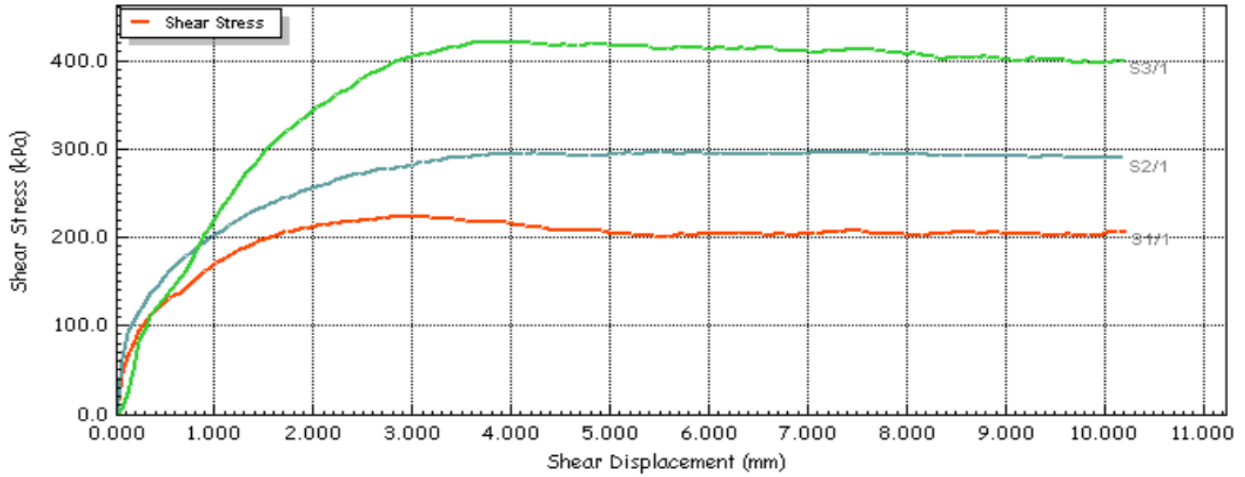
Consolidation Graphs



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	54	
Depth (m)	14.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

Shear Stage

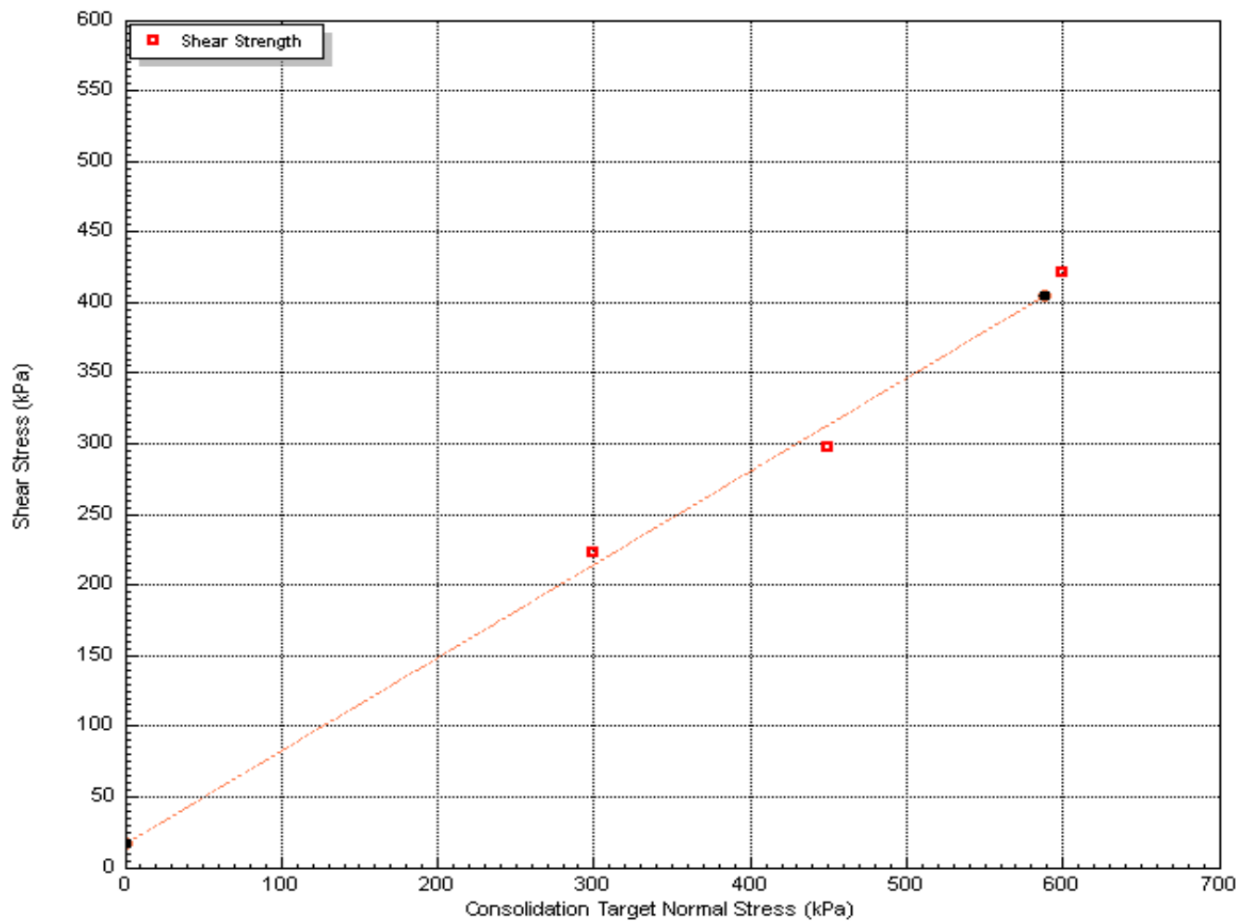


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	Aaron Nutt	Joseph Nicholl

Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	54	
Depth (m)	14.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		17		
Angle of Shearing Resistance (°)		33.5		



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

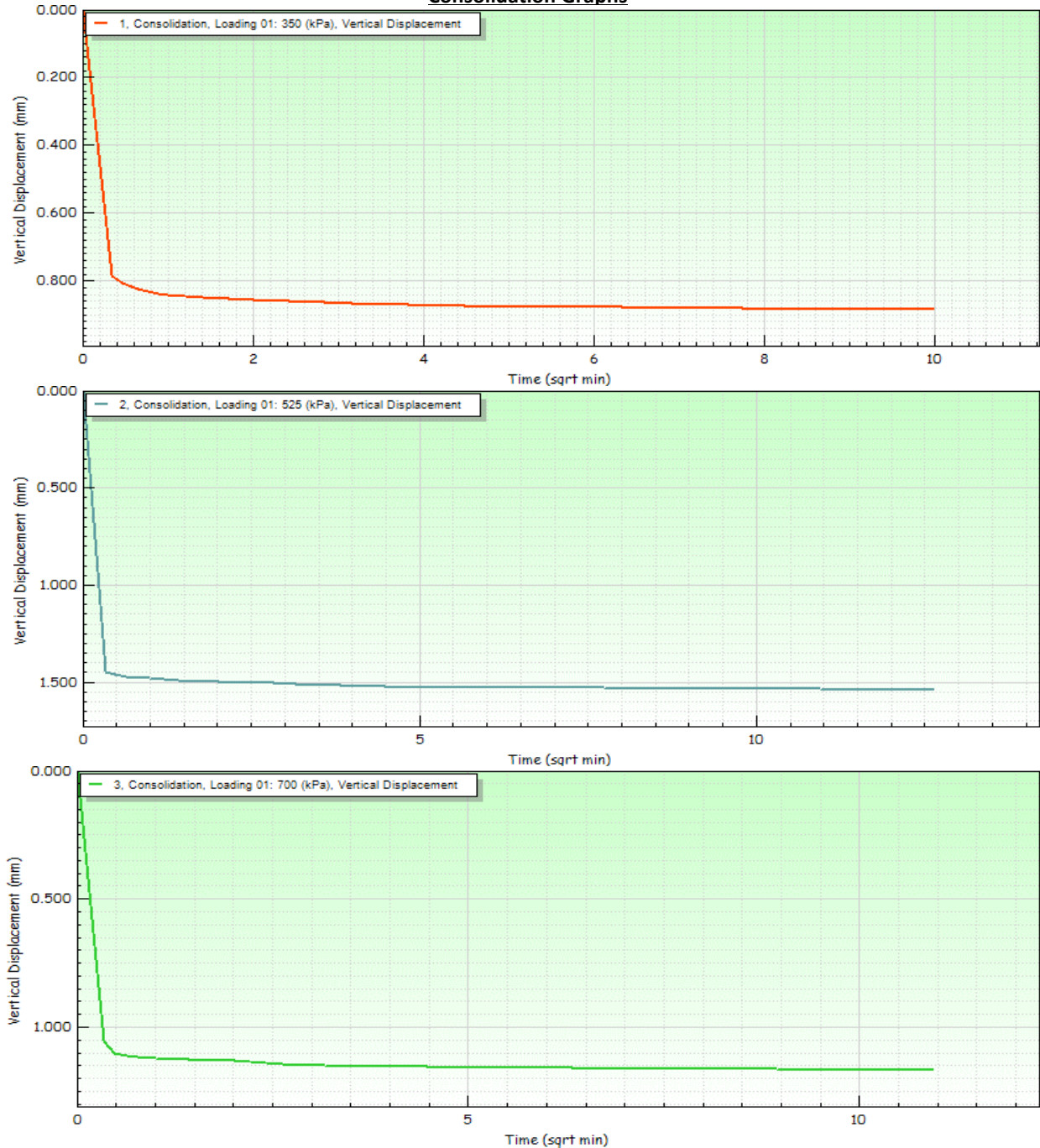
Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	56	
Depth (m)	16.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Greyish brown clayey fine to coarse SAND.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	6.2	6.2	6.2
	Bulk Density (Mg/m ³)	1.71	1.73	1.71
	Dry Density (Mg/m ³)	1.61	1.63	1.61
	Voids Ratio	0.642	0.626	0.646
Consolidation				
	Normal Pressure (kPa)	350	525	700
	Vertical Displacement (mm)	0.883	1.538	1.166
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	258.3	421.7	524.1
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	6.417	7.257	10.017
Final Conditions				
	Water Content (%)	18.0	19.0	17.0
	Dry Density (Mg/m ³)	1.80	1.96	1.79
	Voids Ratio	0.513	0.456	0.510

 	Tested	Approved
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Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	56	
Depth (m)	16.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

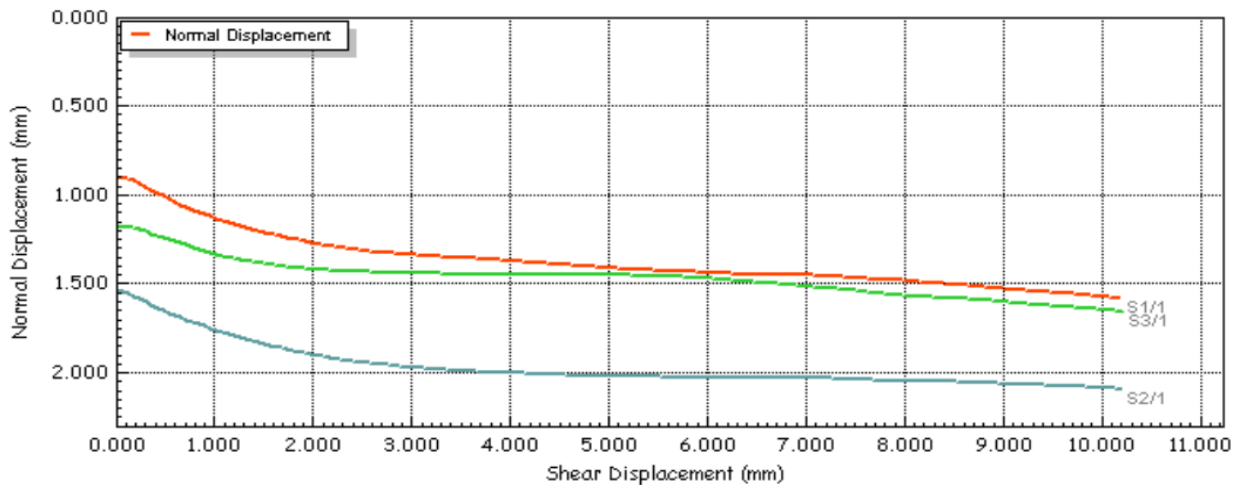
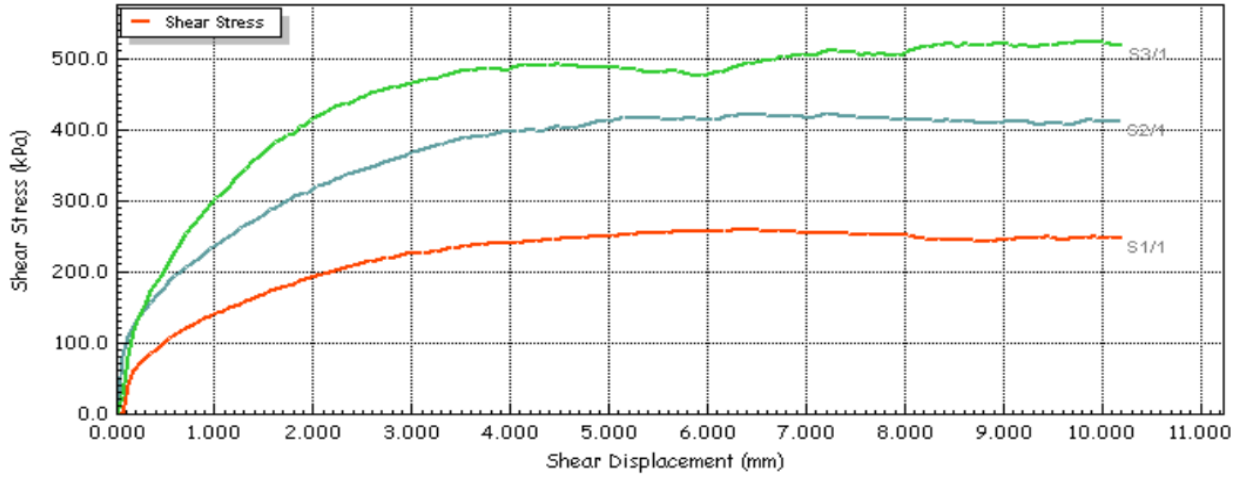
Consolidation Graphs



  10122	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	56	
Depth (m)	16.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

Shear Stage

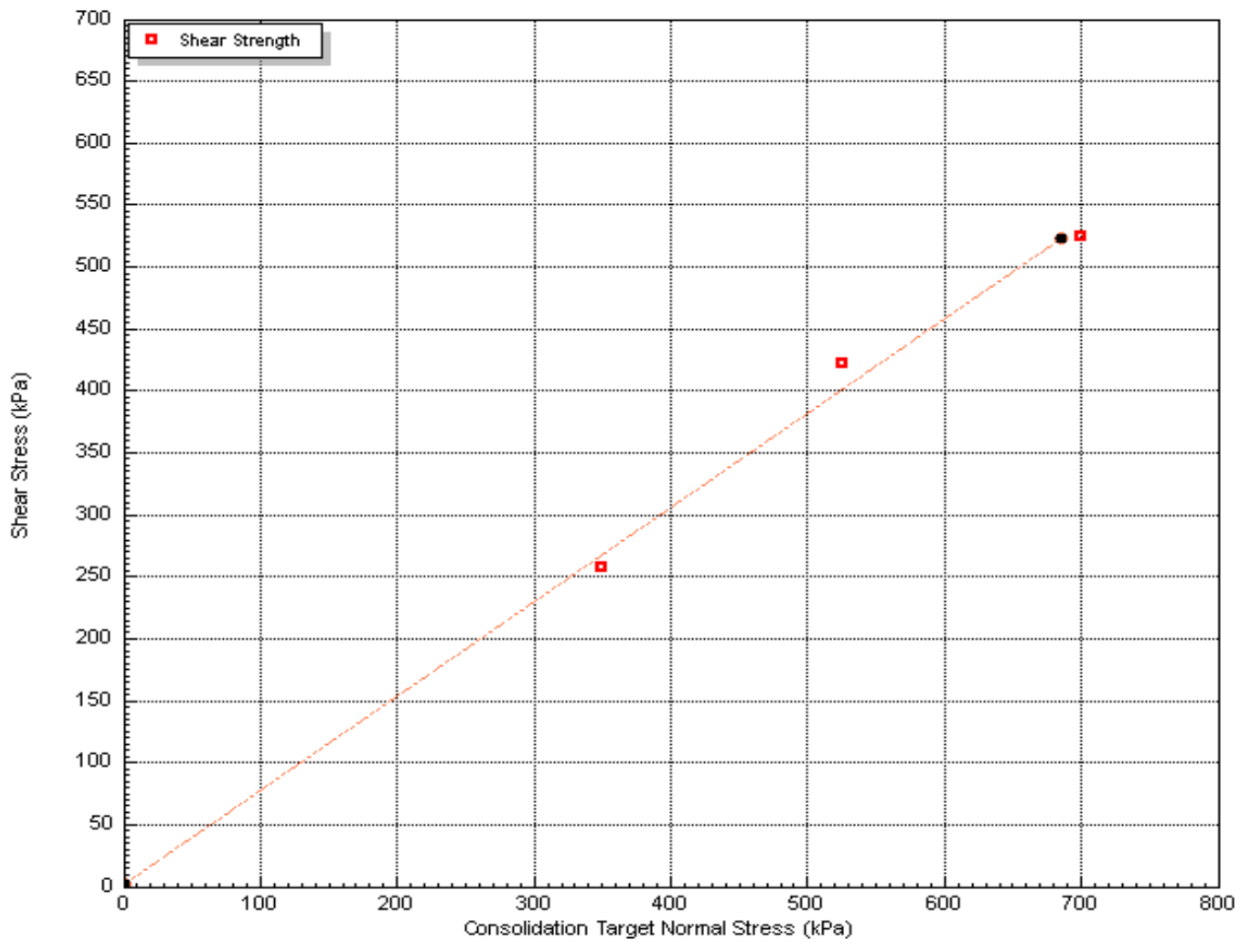


 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	56	
Depth (m)	16.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		3		
Angle of Shearing Resistance (°)		37.0		



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Lab Sheet Reference : LAB25R - Version 4

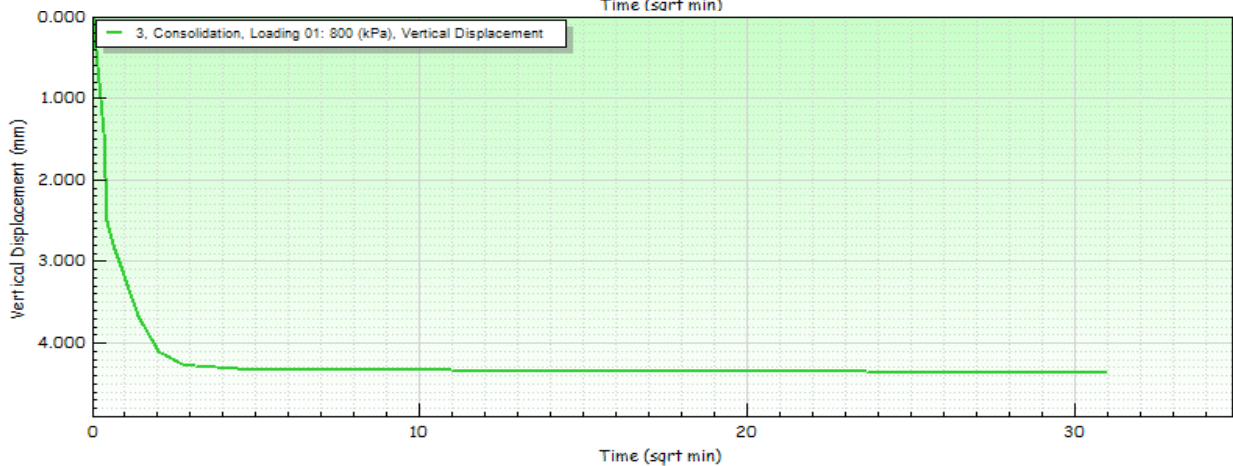
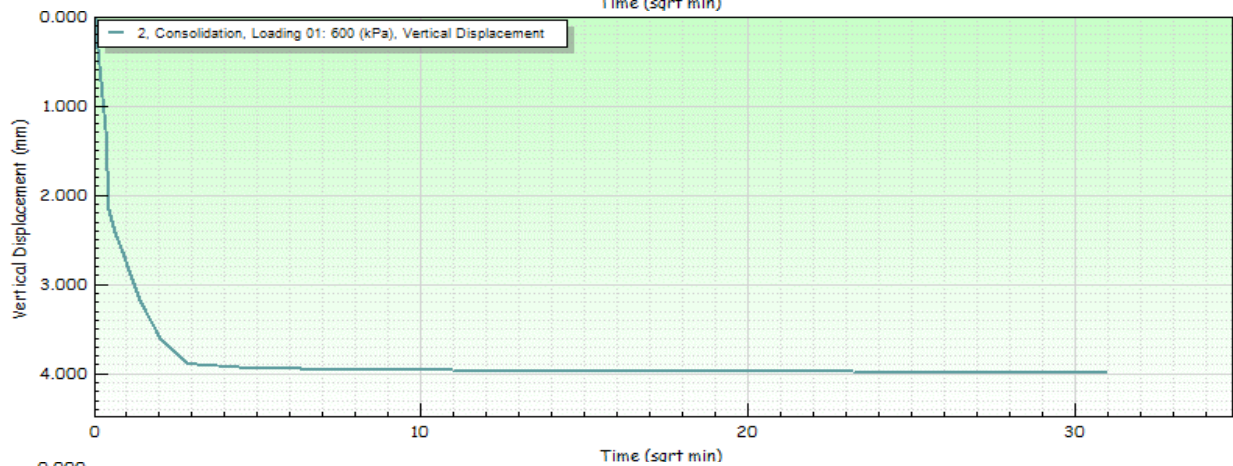
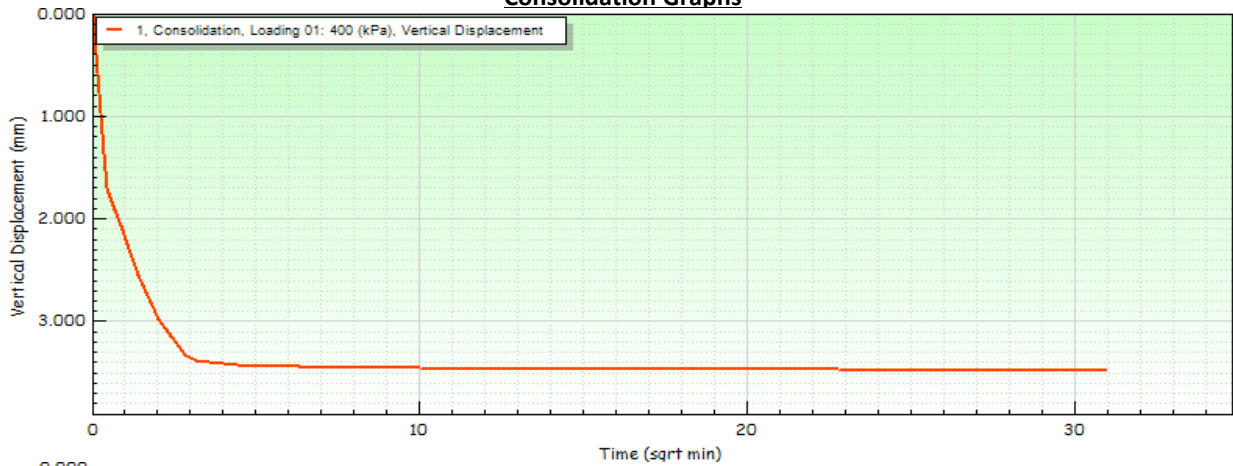
Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	60	
Depth (m)	20.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Grey sandy silty CLAY.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	22.0	22.0	22.0
	Bulk Density (Mg/m ³)	2.05	2.05	2.05
	Dry Density (Mg/m ³)	1.69	1.69	1.69
	Voids Ratio	0.567	0.571	0.570
Consolidation				
	Normal Pressure (kPa)	400	600	800
	Vertical Displacement (mm)	3.475	3.986	4.361
Shearing				
	Rate of Strain (mm/min)	0.077	0.077	0.077
	Peak Shear Stress (kPa)	271.9	409.7	553.7
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	6.303	4.557	7.623
Final Conditions				
	Water Content (%)	17.0	17.0	16.0
	Dry Density (Mg/m ³)	2.61	2.72	2.90
	Voids Ratio	0.262	0.232	0.191


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Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	60	
Depth (m)	20.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

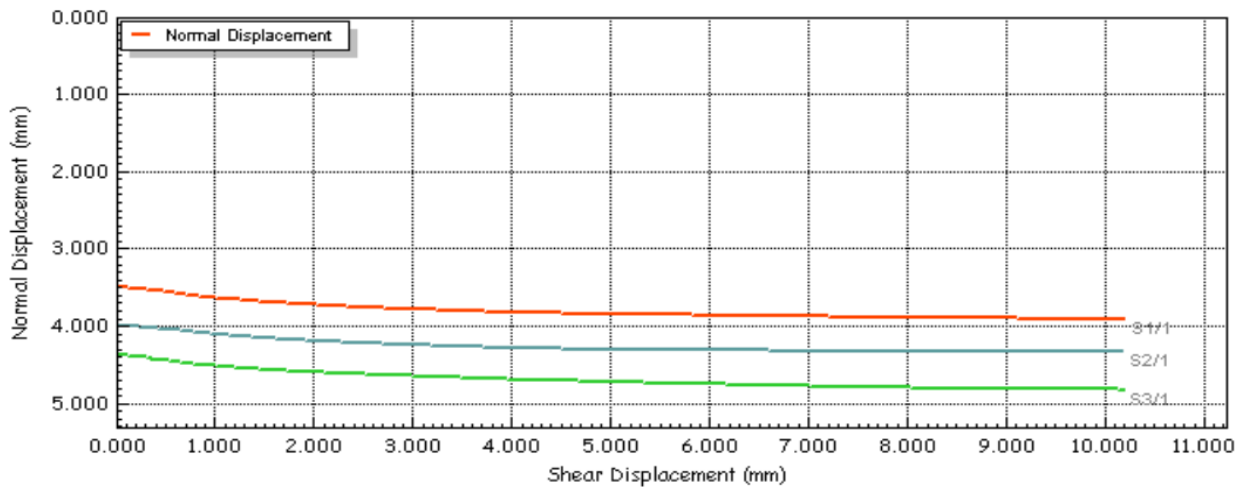
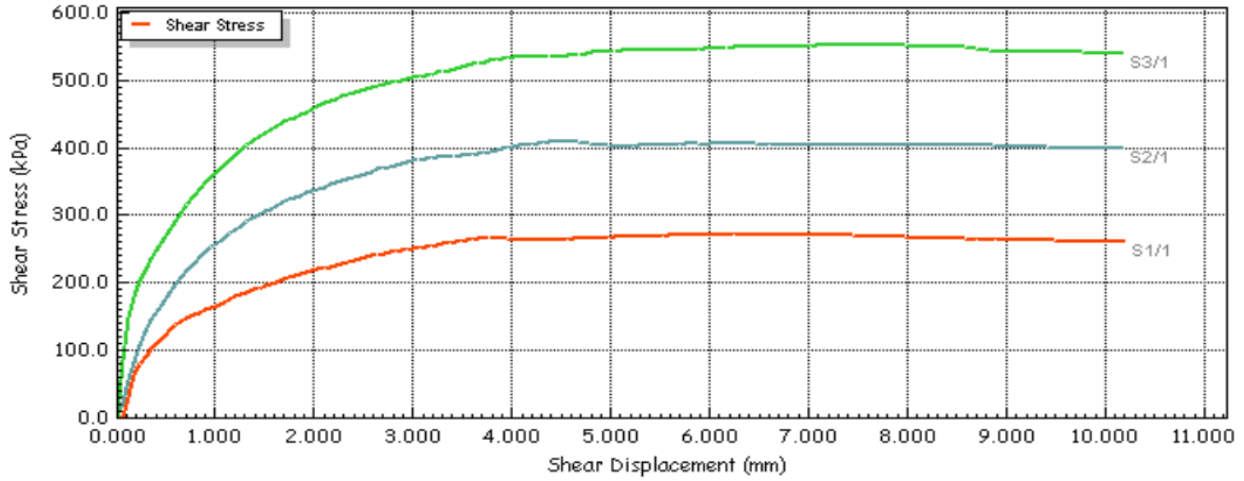
Consolidation Graphs



 10122		Tested	Approved
		Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	60	
Depth (m)	20.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

Shear Stage

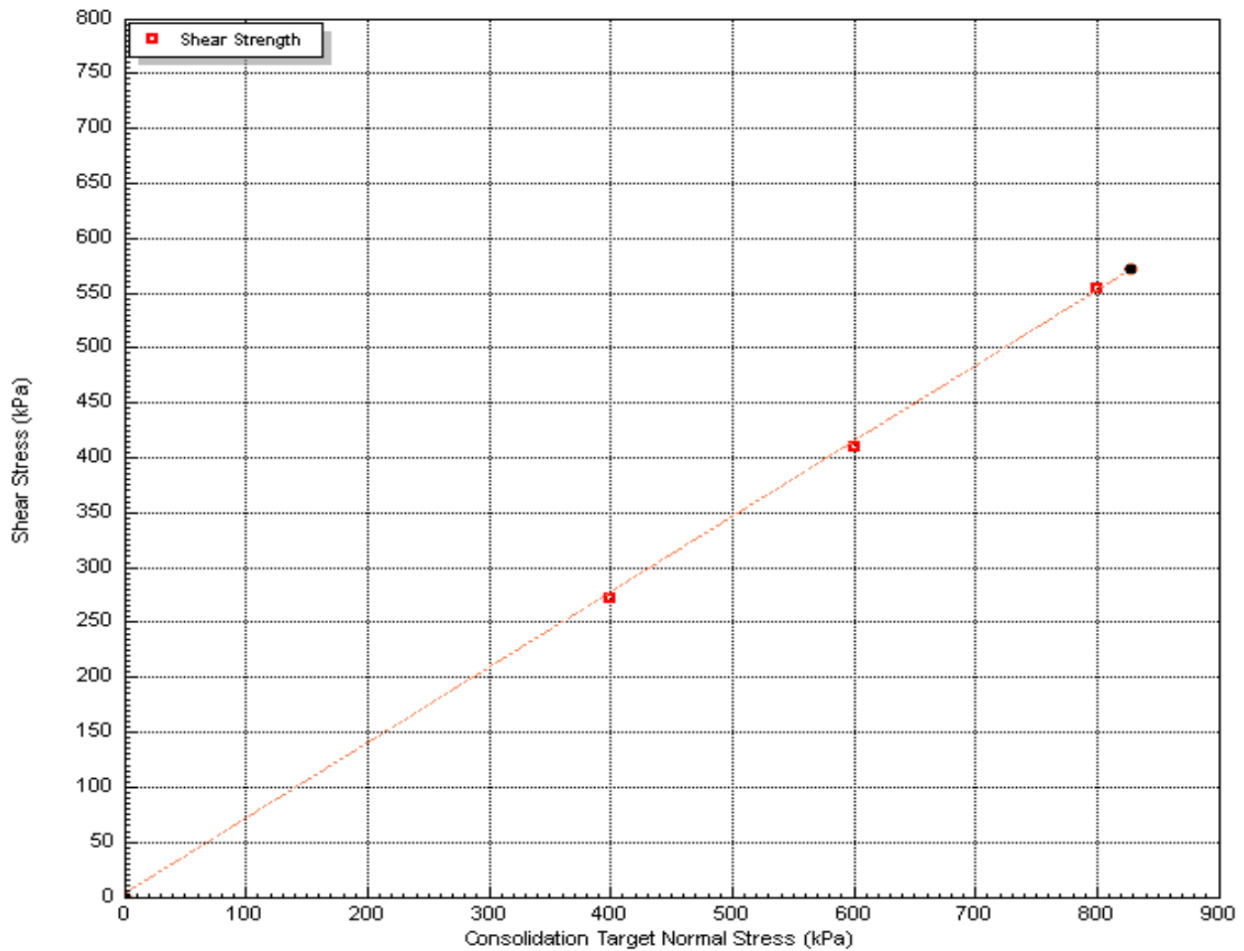


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Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH309	Sample Reference	60	
Depth (m)	20.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		3		
Angle of Shearing Resistance (°)		34.5		



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

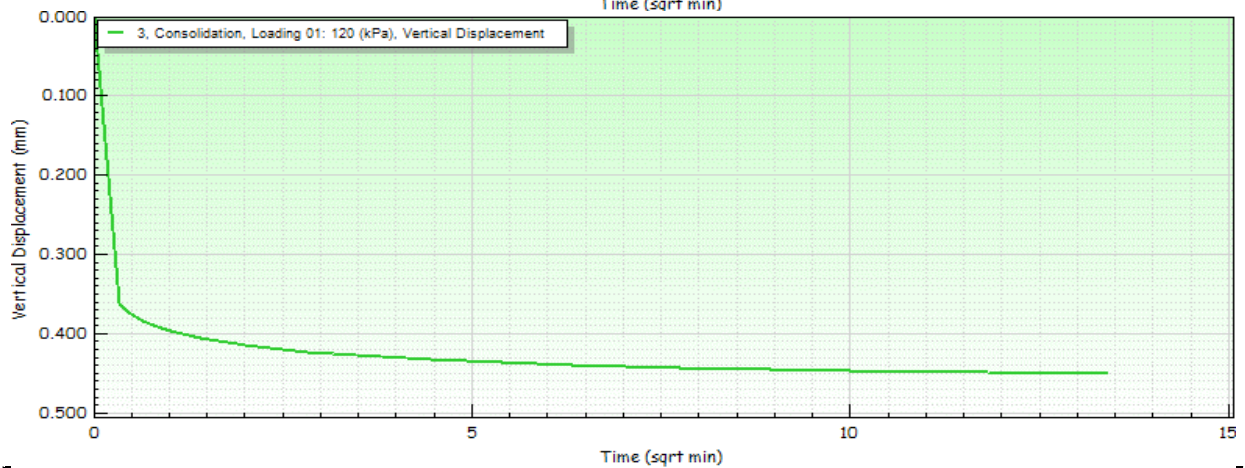
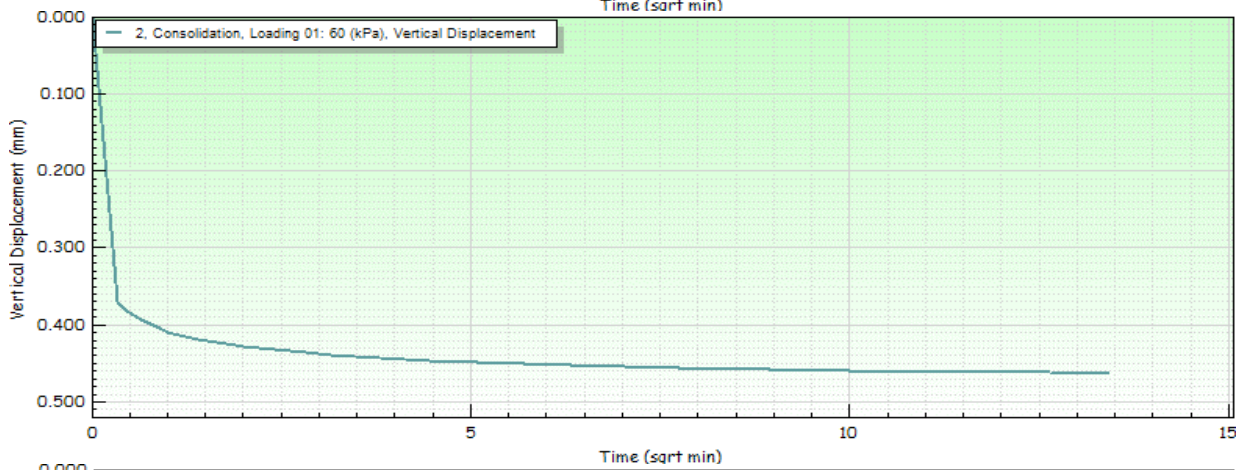
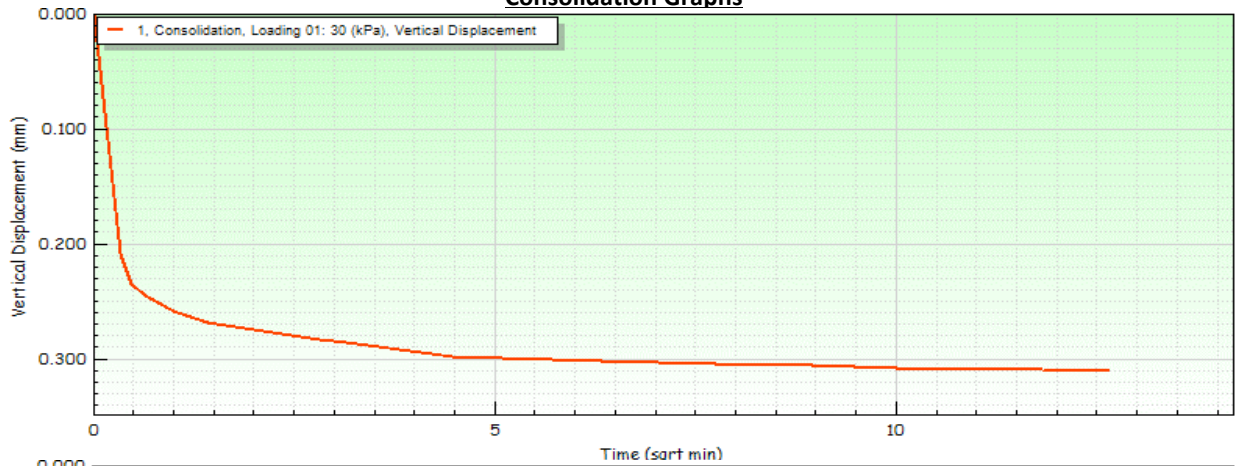
Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH313	Sample Reference	38	
Depth (m)	1.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Dark greyish brown silty SAND			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	11.0	11.0	11.0
	Bulk Density (Mg/m ³)	1.72	1.74	1.73
	Dry Density (Mg/m ³)	1.54	1.57	1.56
	Voids Ratio	0.717	0.693	0.703
Consolidation				
	Normal Pressure (kPa)	30	60	120
	Vertical Displacement (mm)	0.310	0.463	0.450
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	36.4	66.2	112.1
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	9.423	2.463	2.337
Final Conditions				
	Water Content (%)	25.0	25.0	23.0
	Dry Density (Mg/m ³)	1.53	1.59	1.59
	Voids Ratio	0.719	0.688	0.685


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Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH313	Sample Reference	38	
Depth (m)	1.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

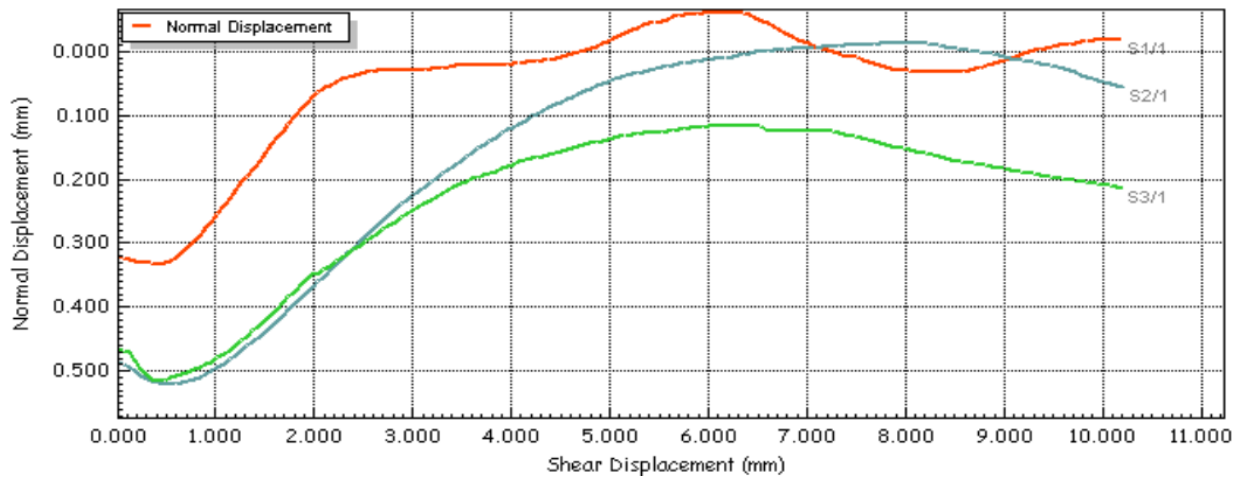
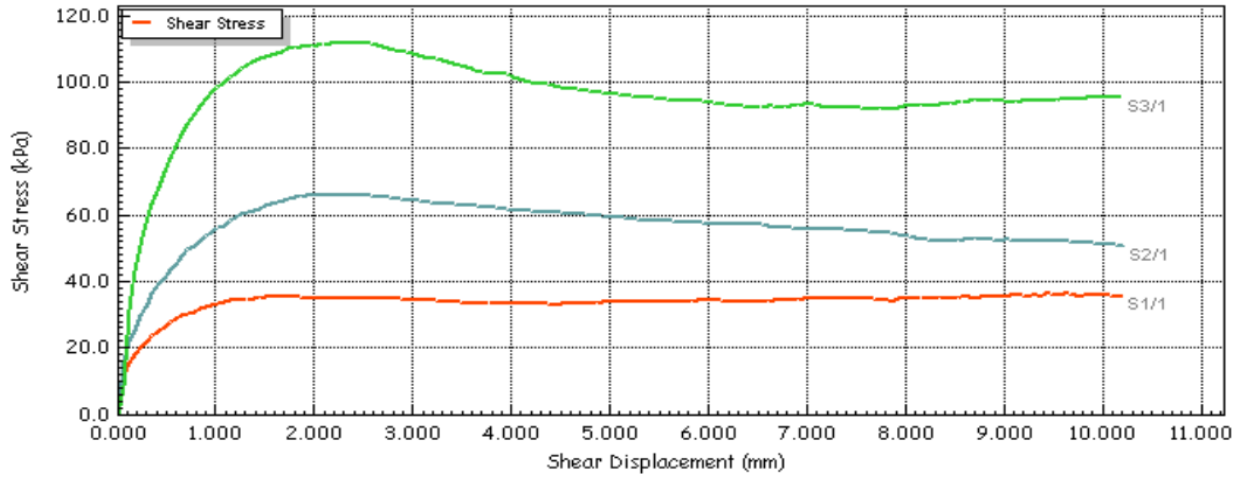
Consolidation Graphs



  10122	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH313	Sample Reference	38	
Depth (m)	1.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

Shear Stage

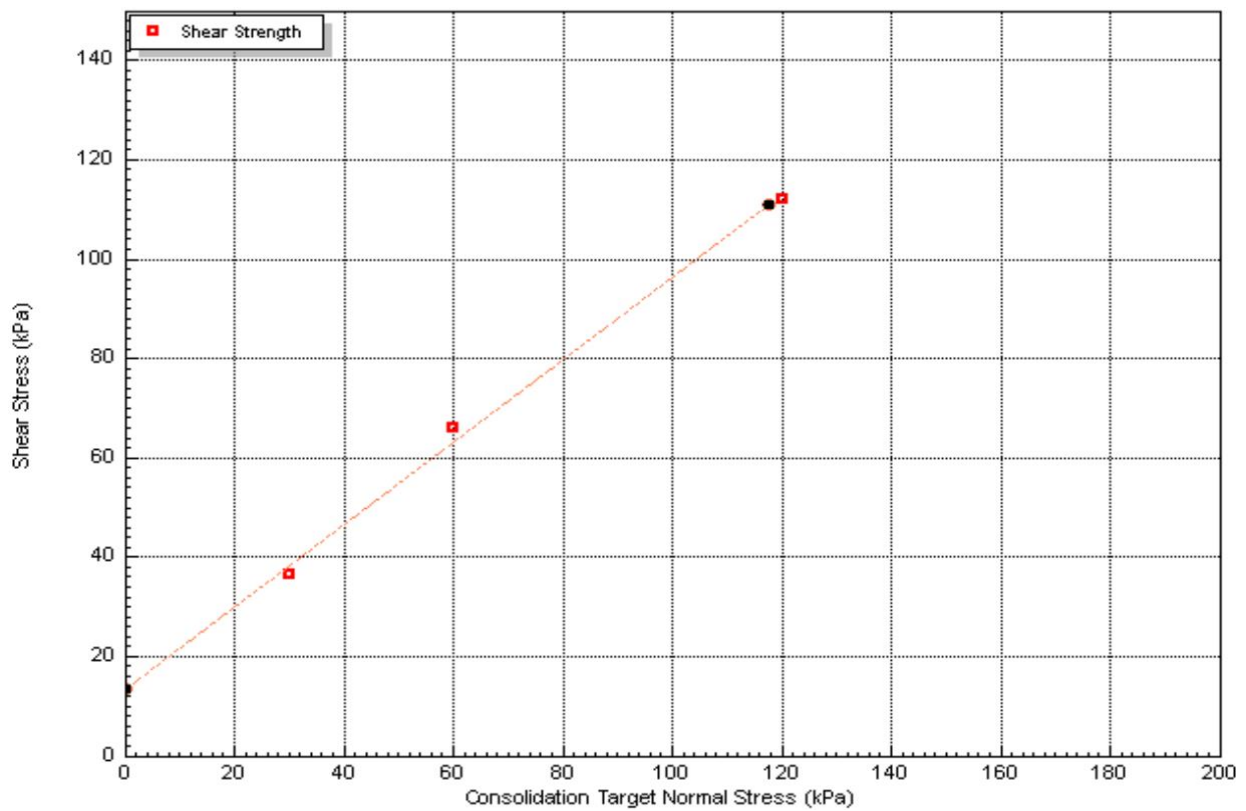


 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH313	Sample Reference	38	
Depth (m)	1.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		13		
Angle of Shearing Resistance (°)		39.5		



 	Tested	Approved
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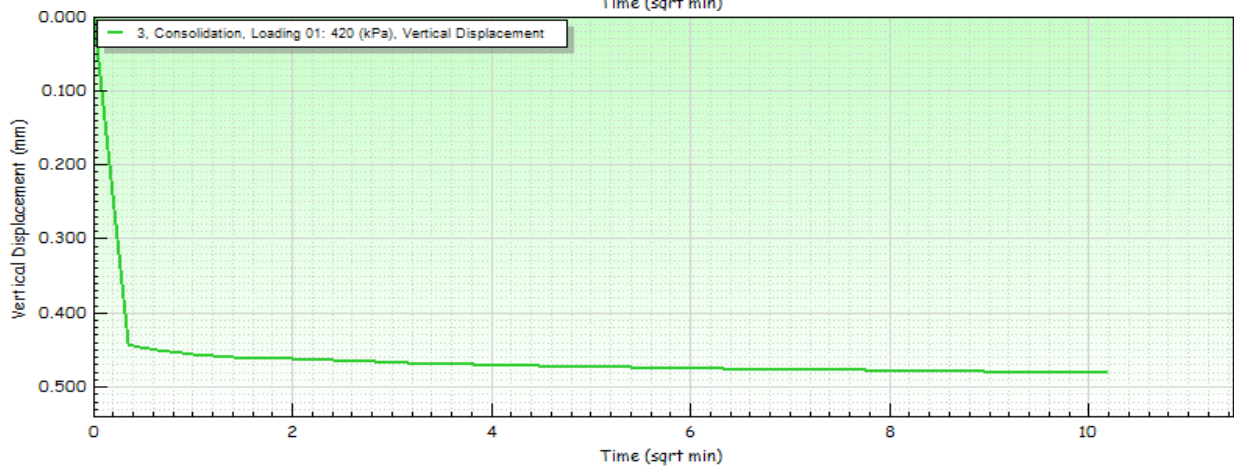
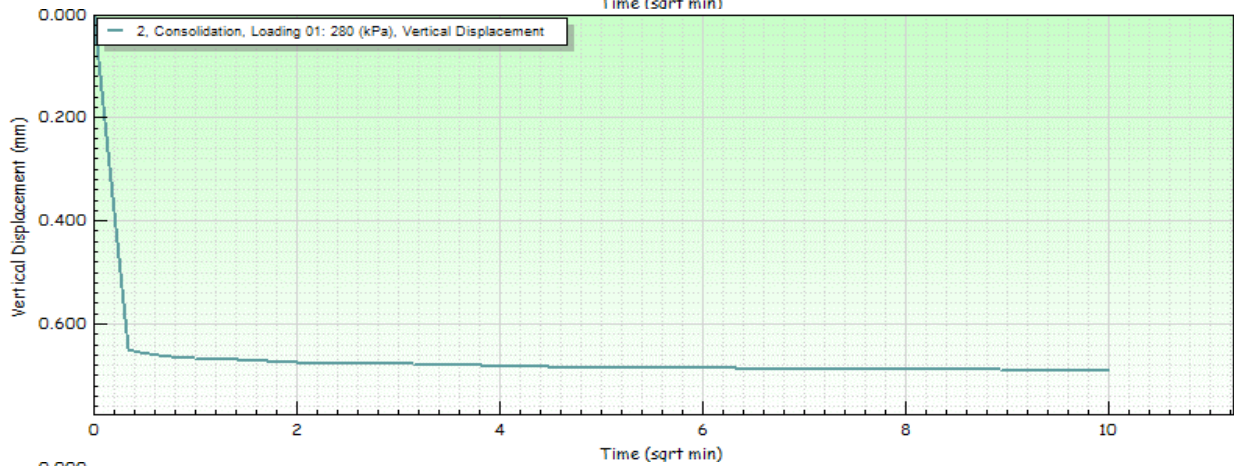
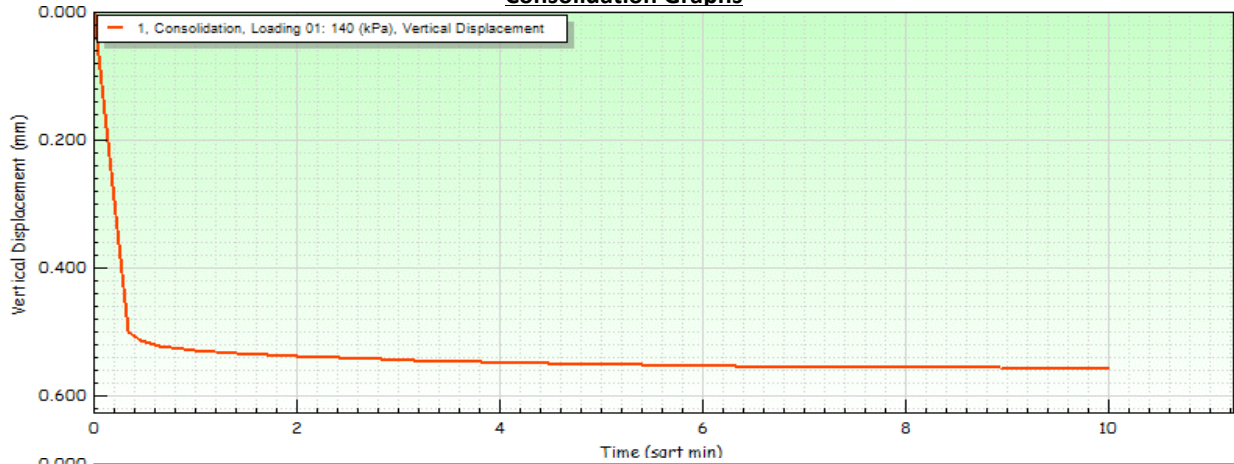
Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH313	Sample Reference	43	
Depth (m)	8.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Grey slightly gravelly slightly clayey fine to coarse SAND.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	14.0	14.0	14.0
	Bulk Density (Mg/m ³)	2.09	2.07	2.08
	Dry Density (Mg/m ³)	1.83	1.81	1.82
	Voids Ratio	0.447	0.465	0.454
Consolidation				
	Normal Pressure (kPa)	140	280	420
	Vertical Displacement (mm)	0.558	0.690	0.480
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	123.6	270.1	367.8
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	2.283	2.337	2.523
Final Conditions				
	Water Content (%)	16.0	16.0	16.0
	Dry Density (Mg/m ³)	1.86	1.83	1.85
	Voids Ratio	0.423	0.429	0.423

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Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH313	Sample Reference	43	
Depth (m)	8.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

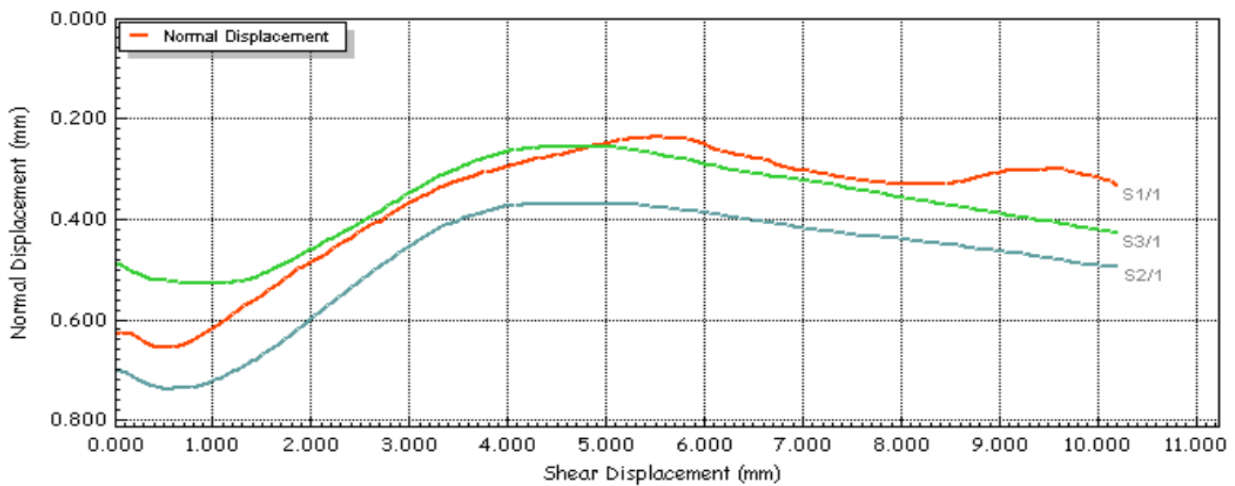
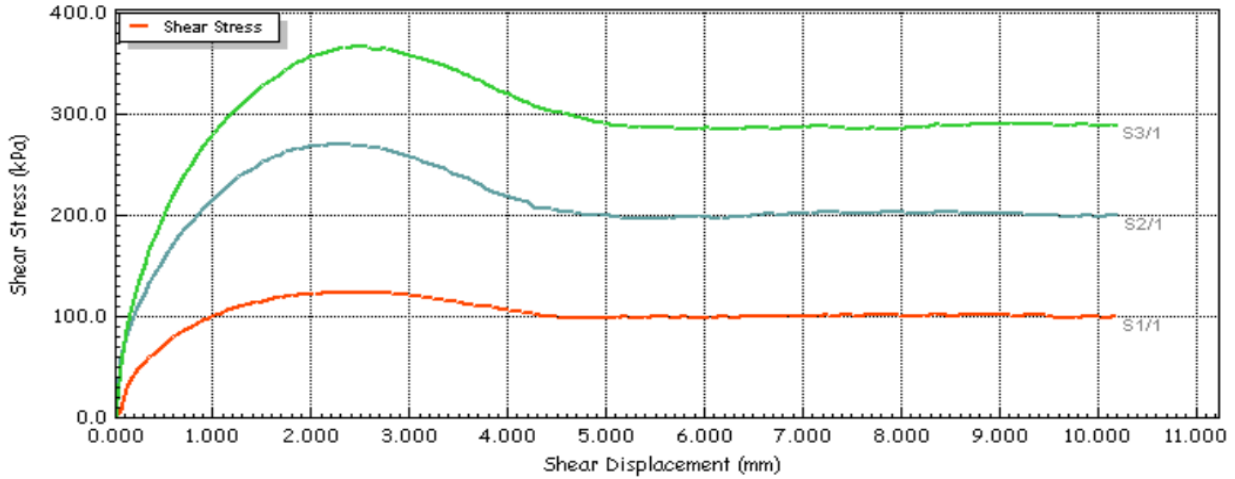
Consolidation Graphs



 10122		Tested	Approved
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Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH313	Sample Reference	43	
Depth (m)	8.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

Shear Stage

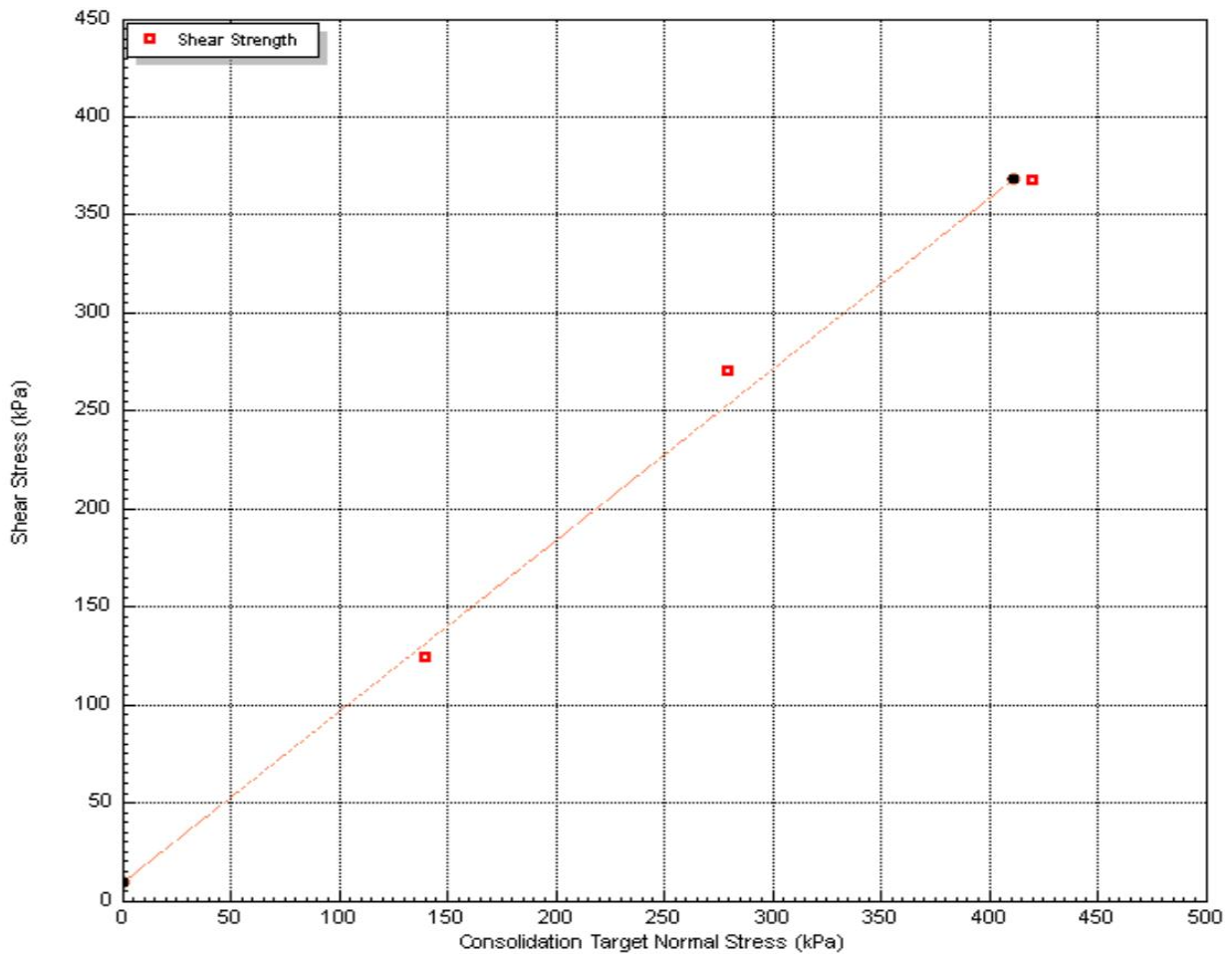


 	Tested	Approved
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Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH313	Sample Reference	43	
Depth (m)	8.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		10		
Angle of Shearing Resistance (°)		41.0		



 	Tested	Approved
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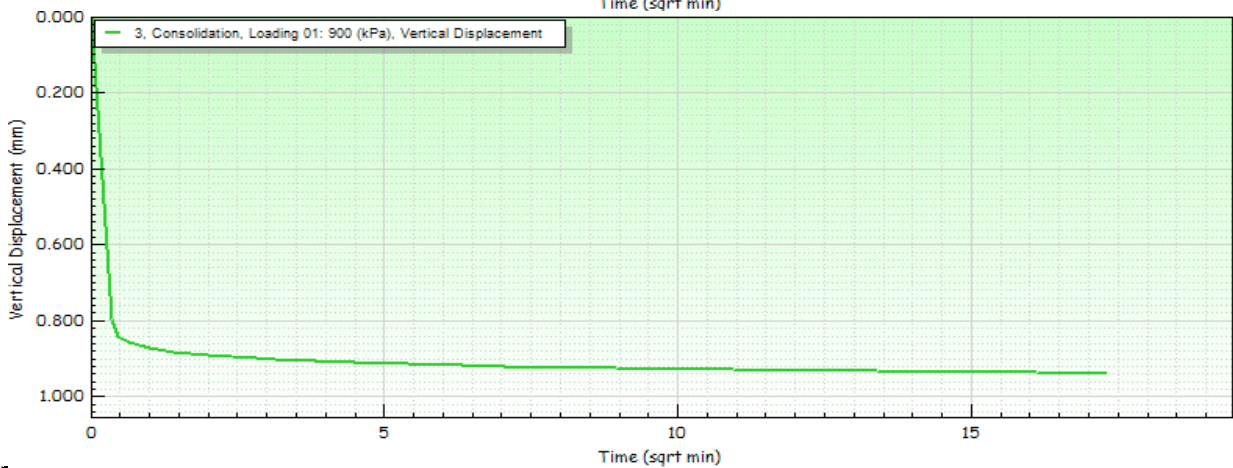
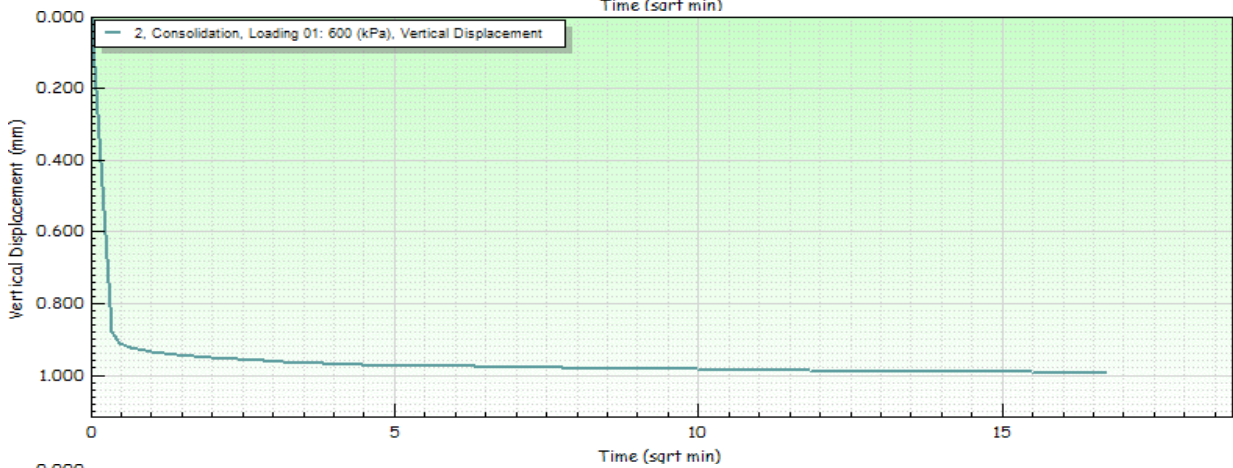
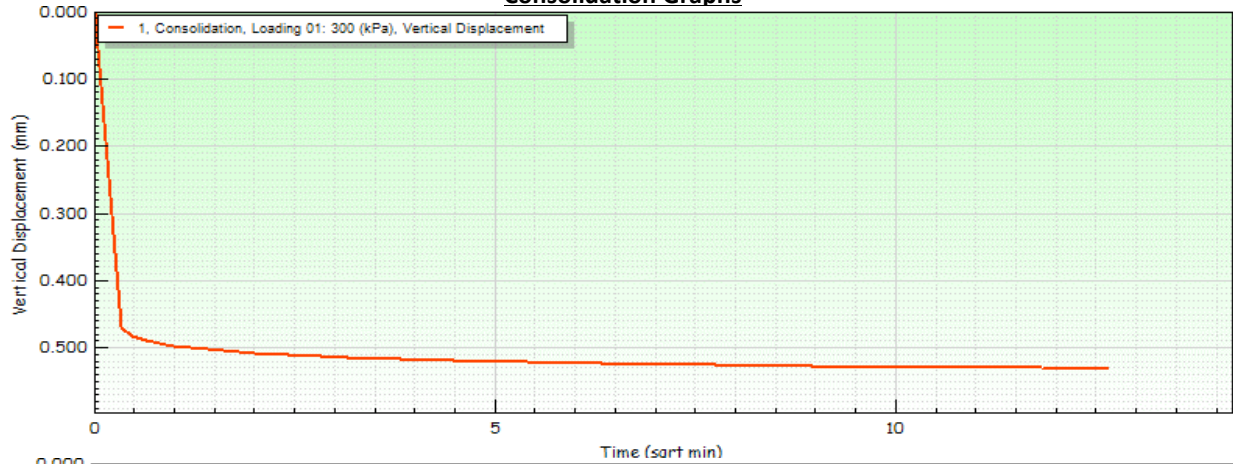
Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH313	Sample Reference	48	
Depth (m)	16.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Greyish brown gravelly slightly silty fine to coarse SAND.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	6.2	6.2	6.2
	Bulk Density (Mg/m ³)	1.65	1.67	1.66
	Dry Density (Mg/m ³)	1.56	1.58	1.57
	Voids Ratio	0.703	0.680	0.692
Consolidation				
	Normal Pressure (kPa)	300	600	900
	Vertical Displacement (mm)	0.531	0.993	0.938
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	235.6	445.3	709.4
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	10.200	7.743	7.203
Final Conditions				
	Water Content (%)	22.0	21.0	21.0
	Dry Density (Mg/m ³)	1.64	1.76	1.75
	Voids Ratio	0.626	0.544	0.541

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Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH313	Sample Reference	48	
Depth (m)	16.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

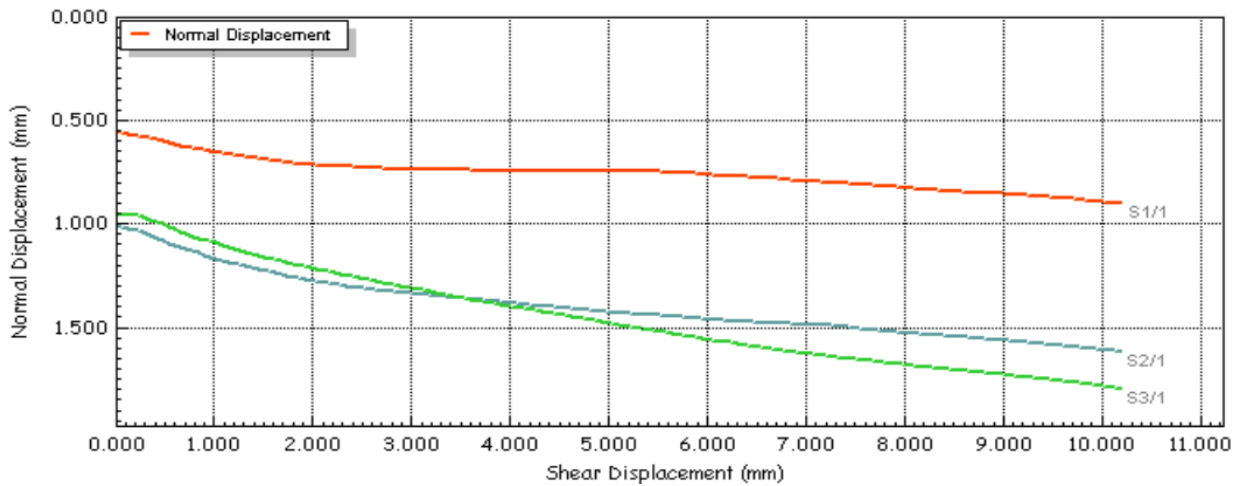
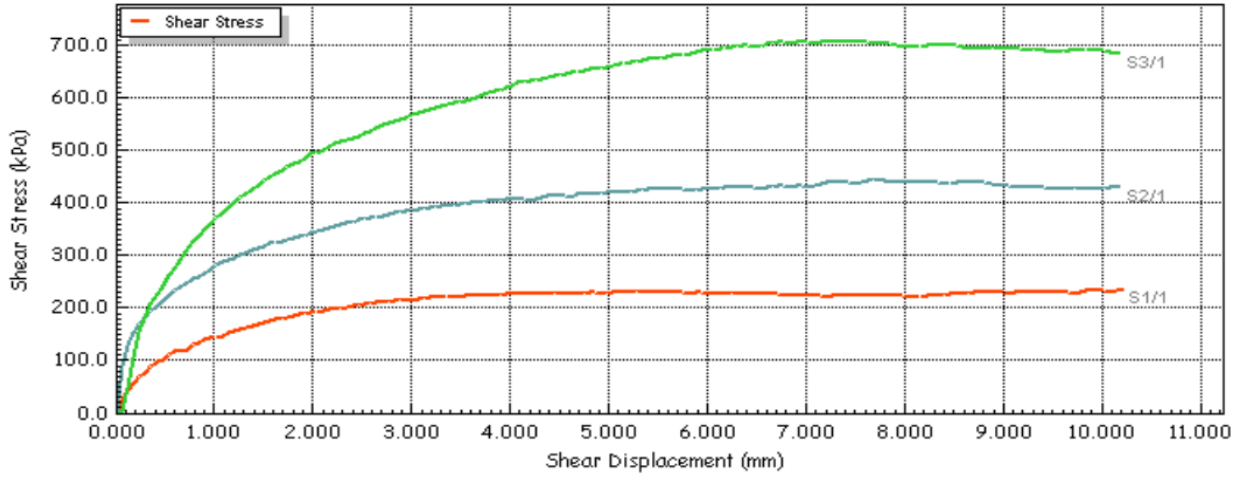
Consolidation Graphs



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Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH313	Sample Reference	48	
Depth (m)	16.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

Shear Stage

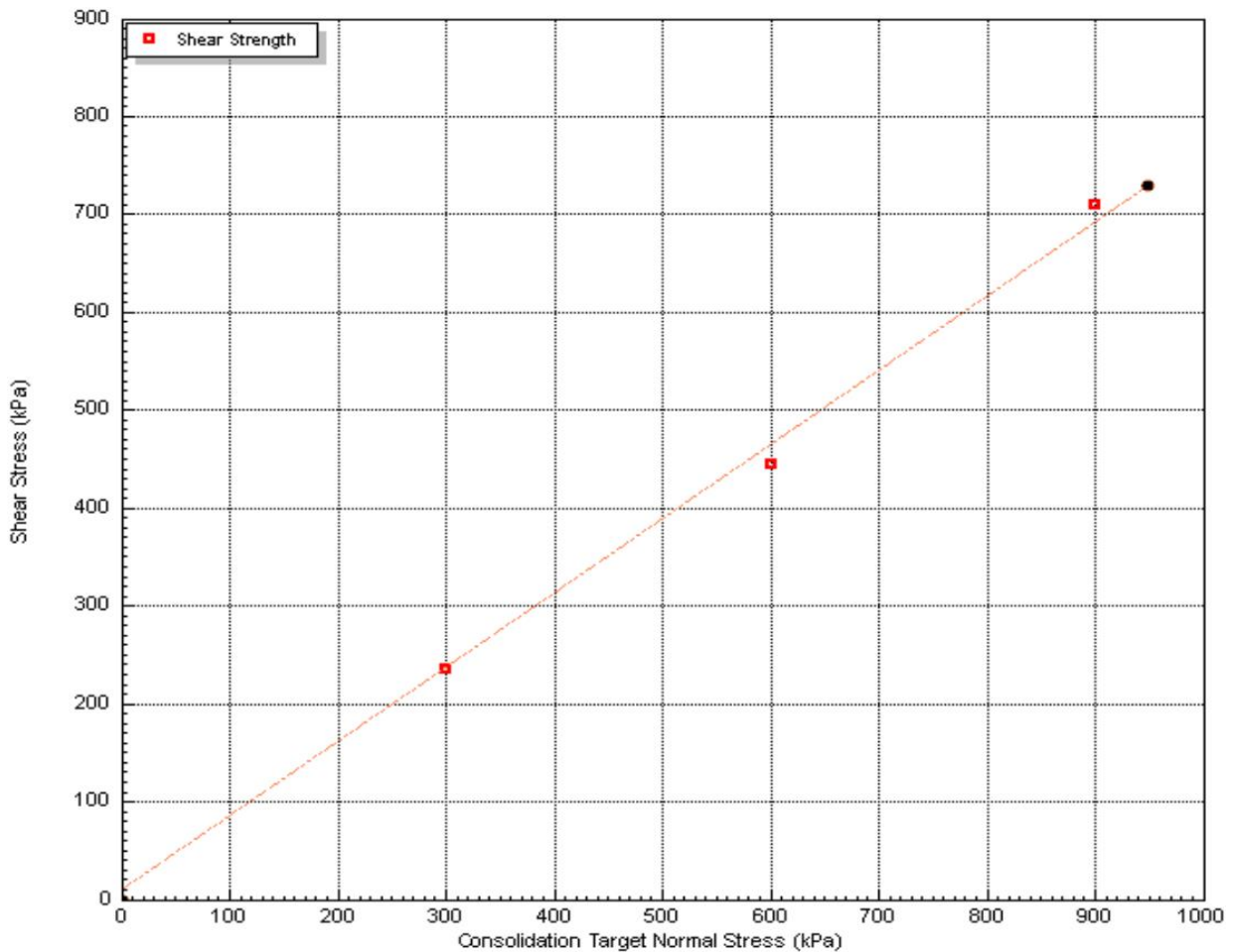


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Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH313	Sample Reference	48	
Depth (m)	16.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		10		
Angle of Shearing Resistance (°)		37.0		



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

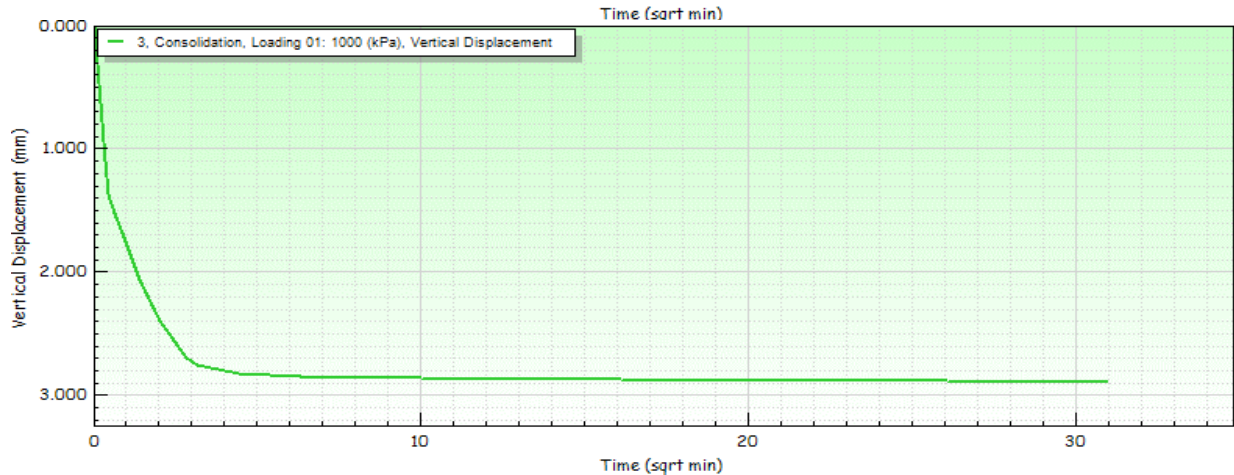
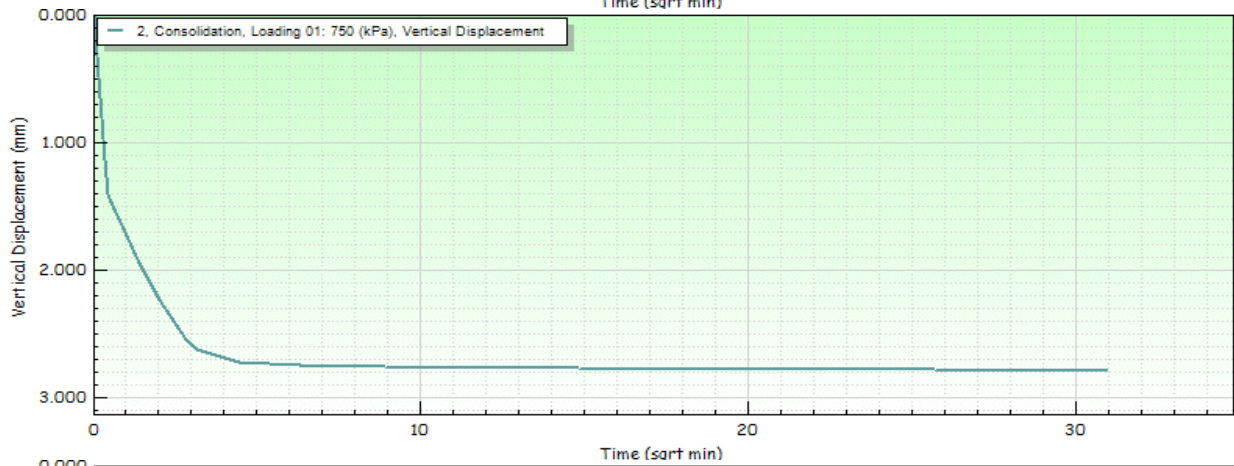
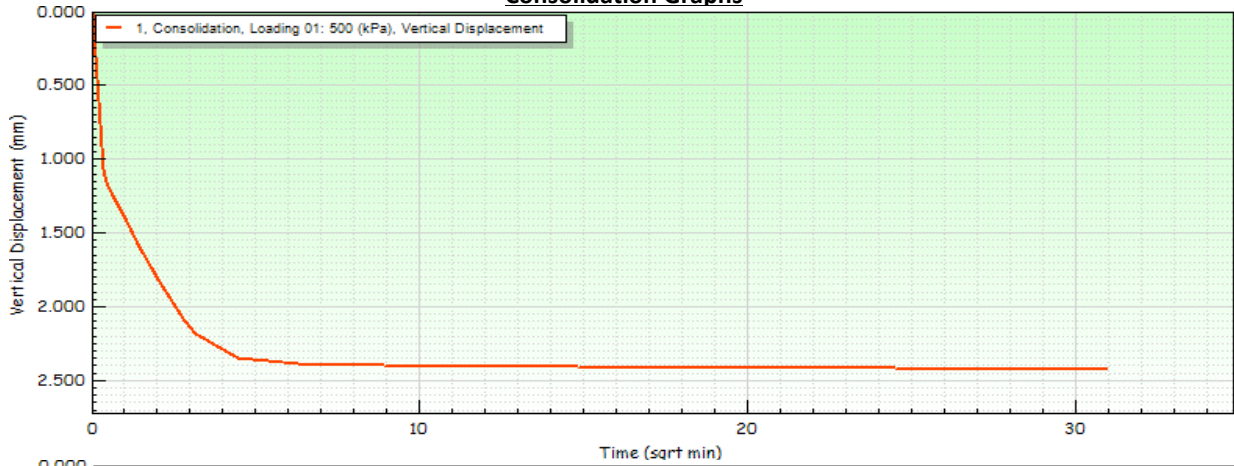
Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH313	Sample Reference	55	
Depth (m)	26.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Grey silty CLAY.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
Height (mm)		20.0	20.0	20.0
Diameter (mm)		60.0	60.0	60.0
Water Content (%)		20.0	20.0	20.0
Bulk Density (Mg/m ³)		2.08	2.08	2.08
Dry Density (Mg/m ³)		1.73	1.73	1.72
Voids Ratio		0.531	0.533	0.536
Consolidation				
Normal Pressure (kPa)		500	750	1000
Vertical Displacement (mm)		2.423	2.788	2.889
Shearing				
Rate of Strain (mm/min)		0.068	0.068	0.068
Peak Shear Stress (kPa)		285.2	446.1	596.1
Hoz Displacement (mm)		10.2	10.2	10.2
Hoz Displacement at Peak Shear Stress (mm)		5.823	4.077	5.277
Final Conditions				
Water Content (%)		20.0	21.0	20.0
Dry Density (Mg/m ³)		2.25	2.31	2.40
Voids Ratio		0.325	0.293	0.292

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Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH313	Sample Reference	55	
Depth (m)	26.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

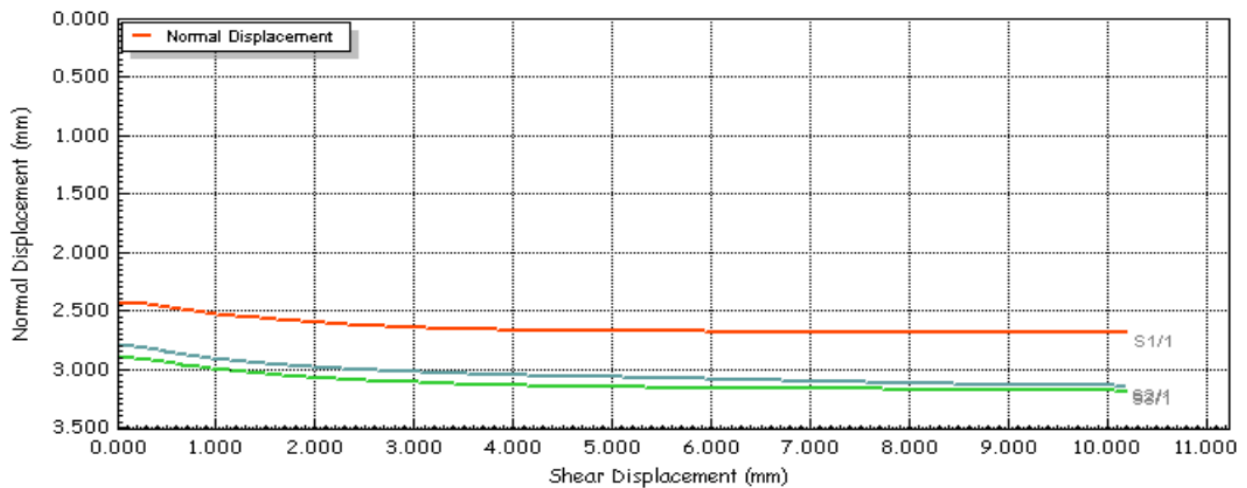
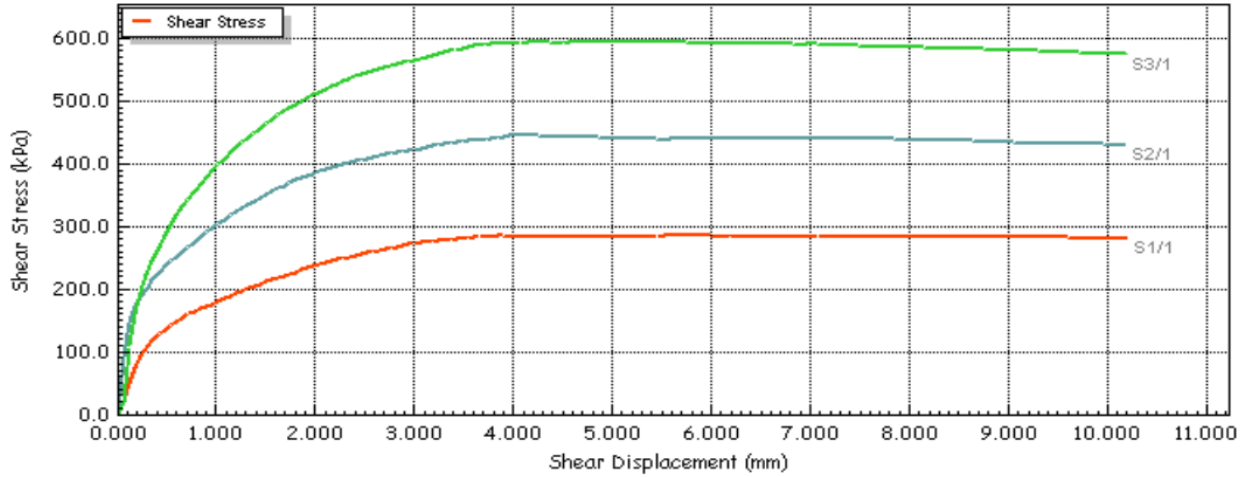
Consolidation Graphs



 10122		Tested	Approved
		Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH313	Sample Reference	55	
Depth (m)	26.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

Shear Stage

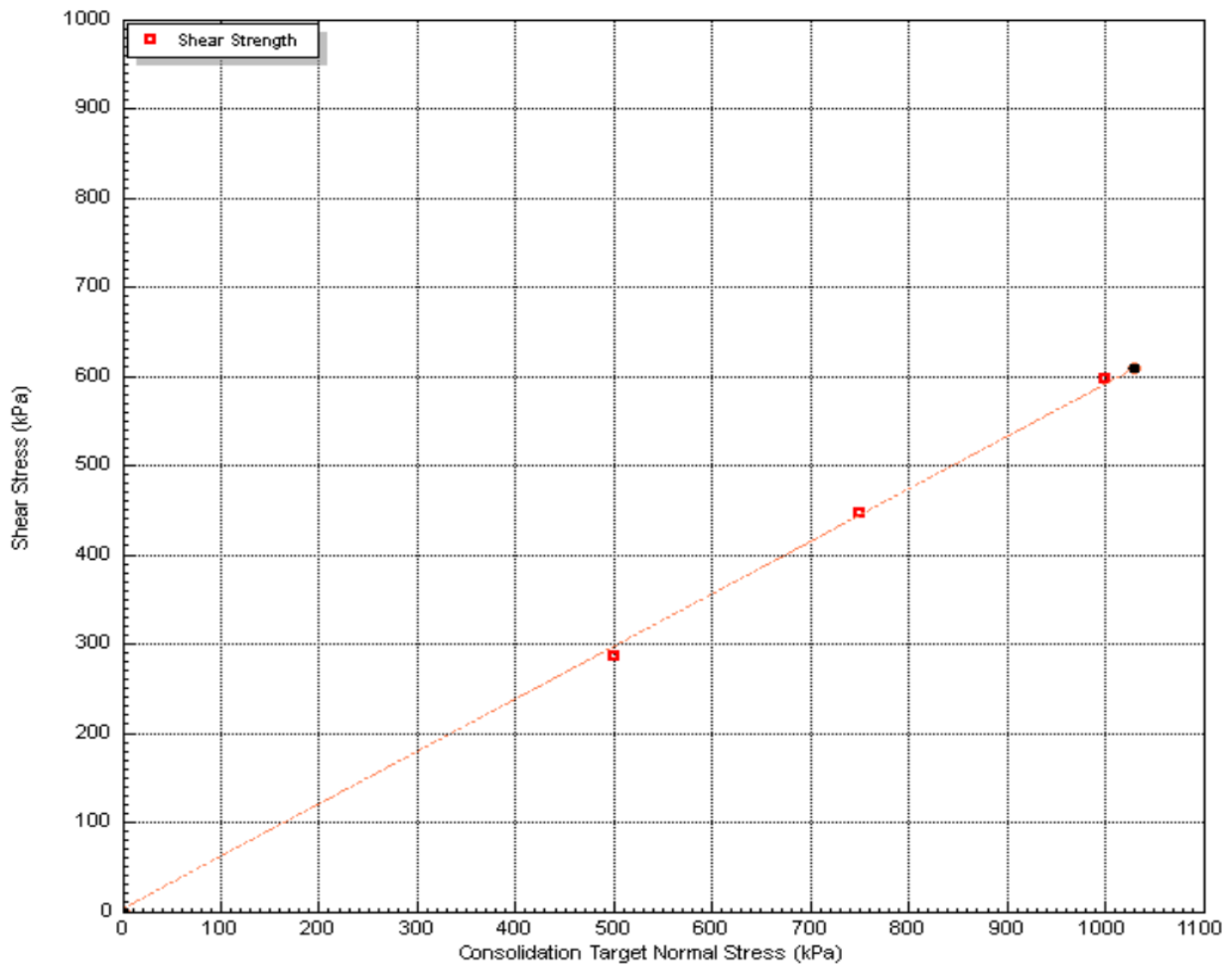


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Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH313	Sample Reference	55	
Depth (m)	26.70	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		3		
Angle of Shearing Resistance (°)		30.5		



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

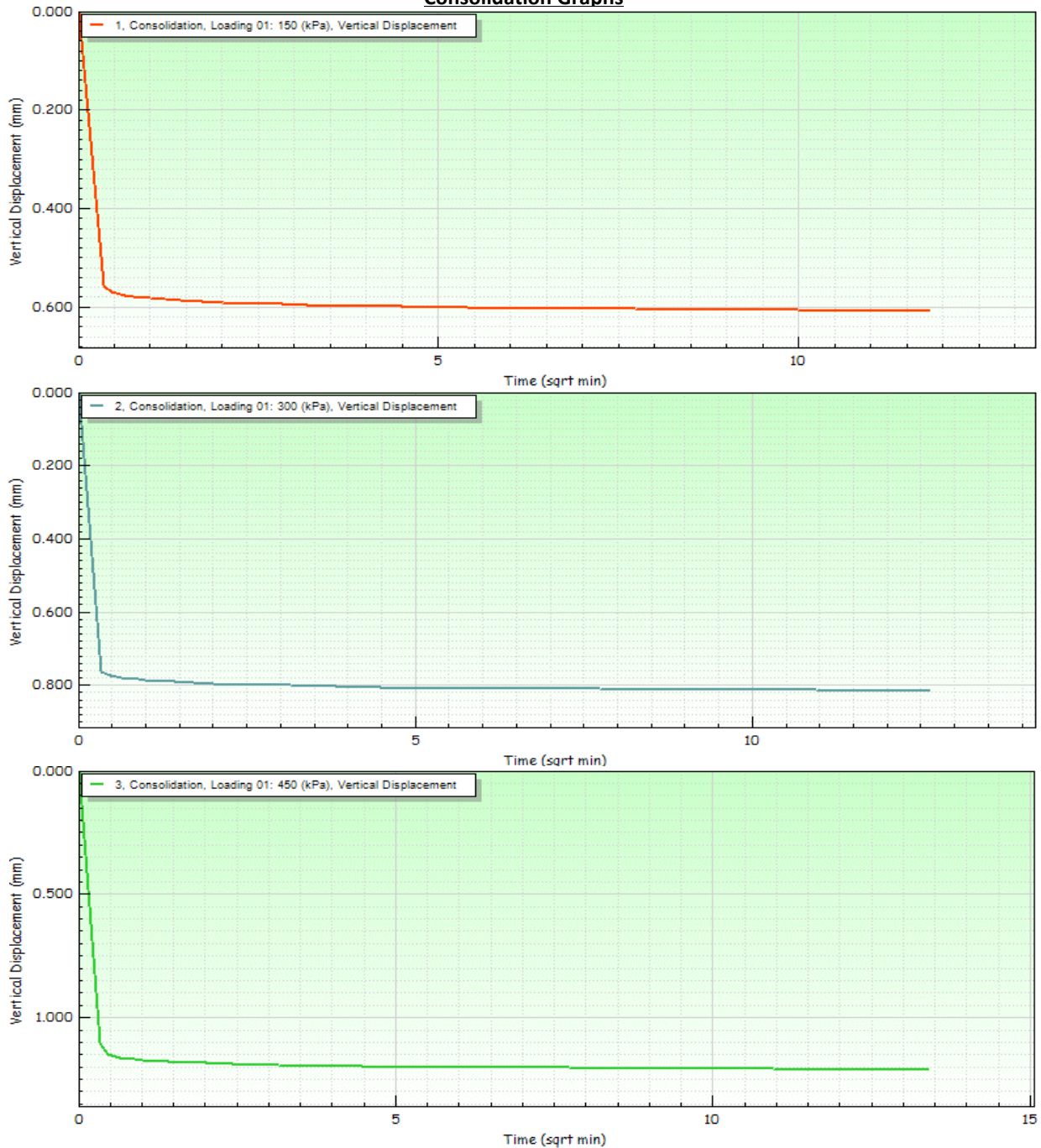
Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH314	Sample Reference	41	
Depth (m)	4.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Brown slightly gravelly slightly silty fine to coarse SAND.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	15.0	15.0	15.0
	Bulk Density (Mg/m ³)	2.05	2.04	2.03
	Dry Density (Mg/m ³)	1.78	1.77	1.76
	Voids Ratio	0.491	0.496	0.508
Consolidation				
	Normal Pressure (kPa)	150	300	450
	Vertical Displacement (mm)	0.607	0.815	1.210
Shearing				
	Rate of Strain (mm/min)	0.600	0.600	0.600
	Peak Shear Stress (kPa)	142.6	279.0	349.0
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	2.637	2.997	3.663
Final Conditions				
	Water Content (%)	19.0	19.0	19.0
	Dry Density (Mg/m ³)	1.84	1.88	1.93
	Voids Ratio	0.459	0.449	0.409

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Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH314	Sample Reference	41	
Depth (m)	4.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

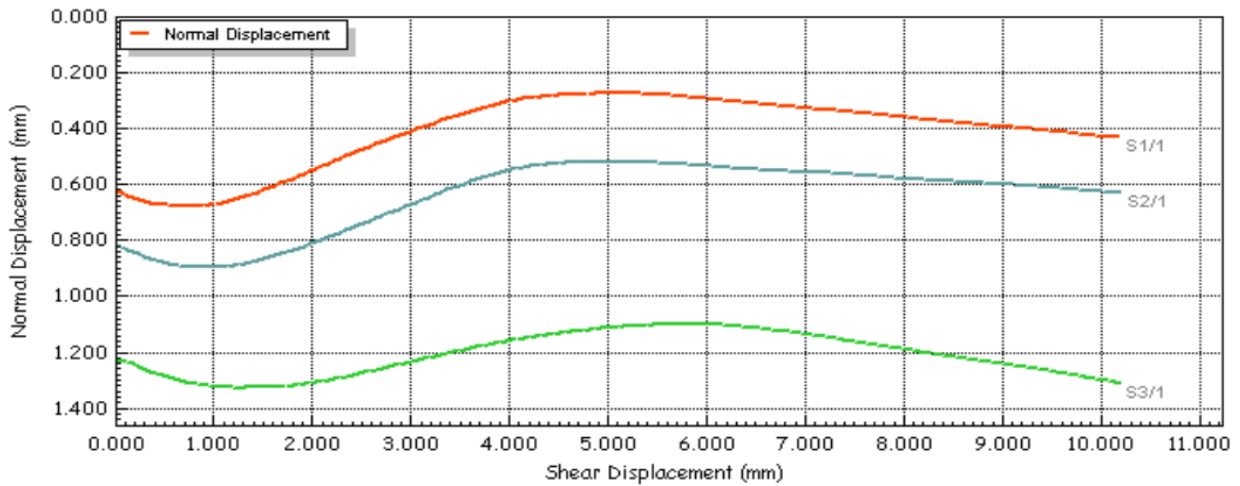
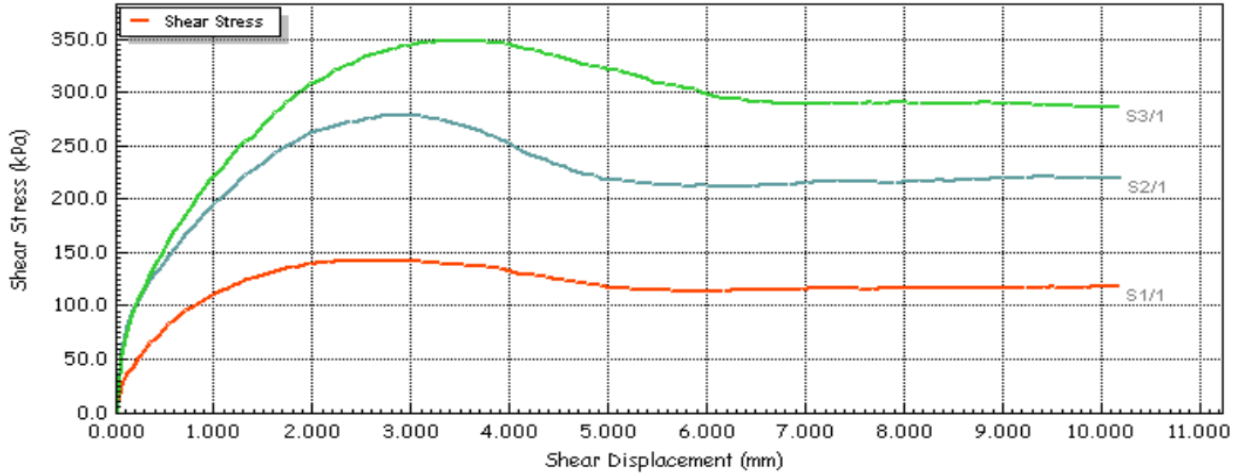
Consolidation Graphs



  10122	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH314	Sample Reference	41	
Depth (m)	4.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

Shear Stage

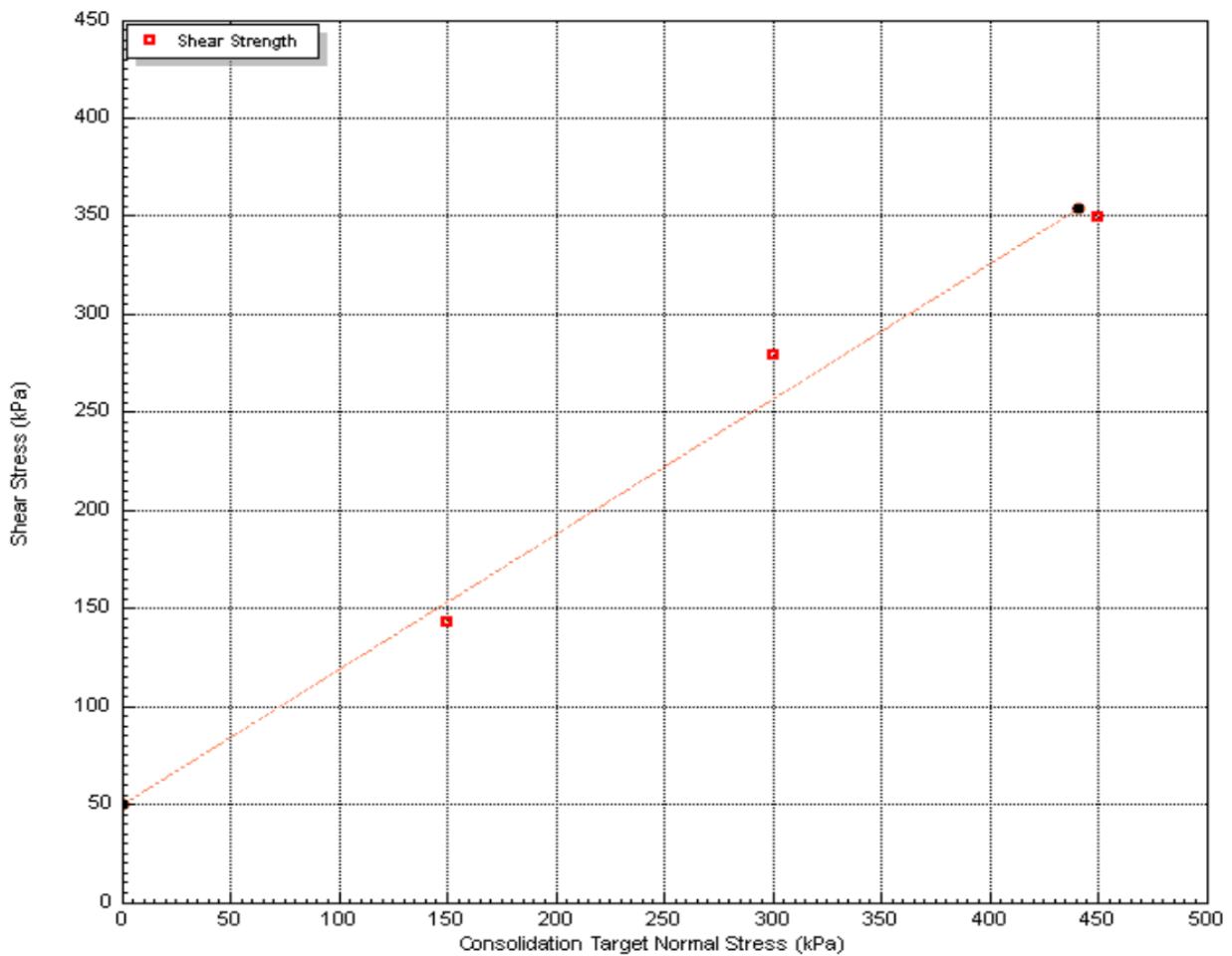


 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH314	Sample Reference	41	
Depth (m)	4.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		50		
Angle of Shearing Resistance (°)		34.5		



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

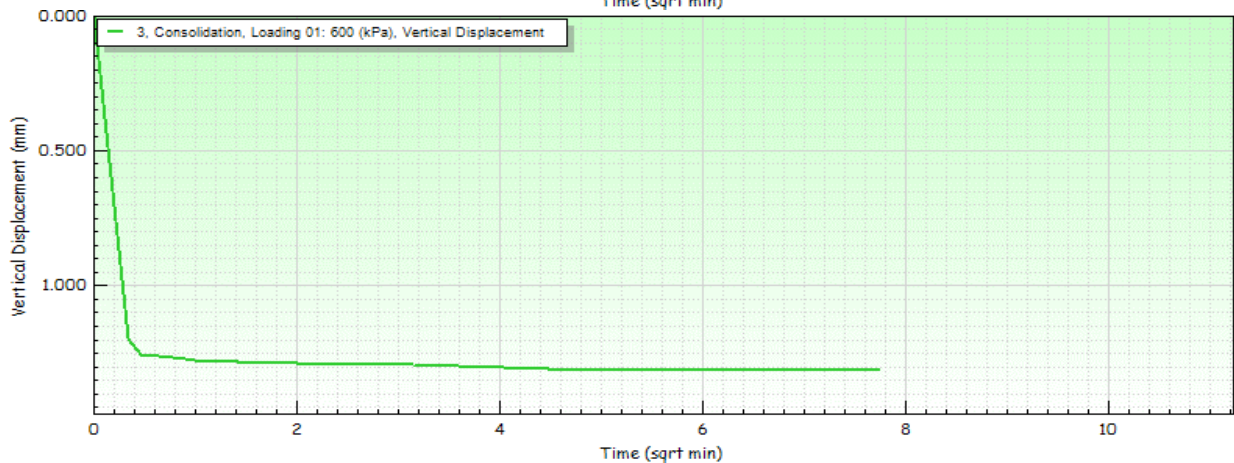
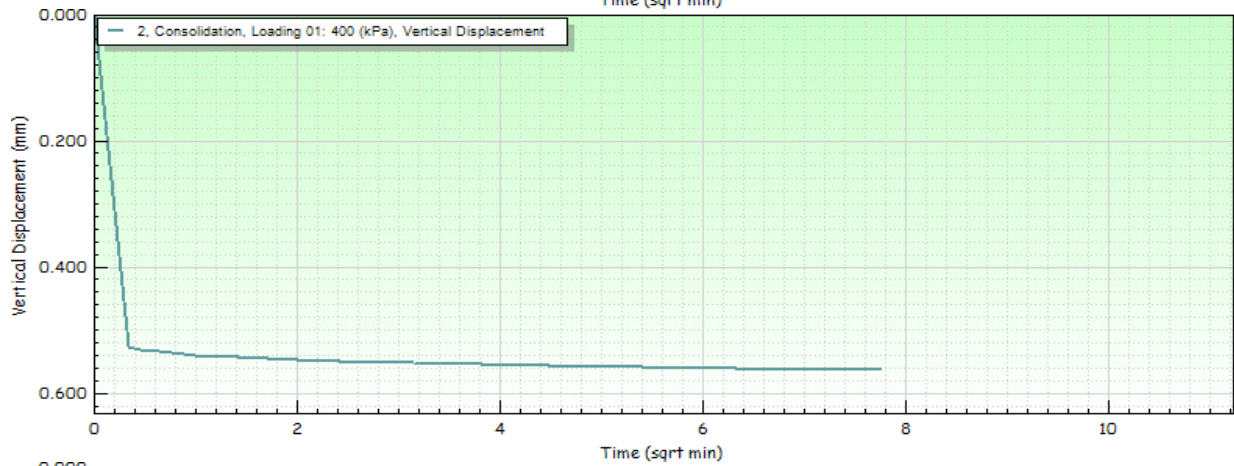
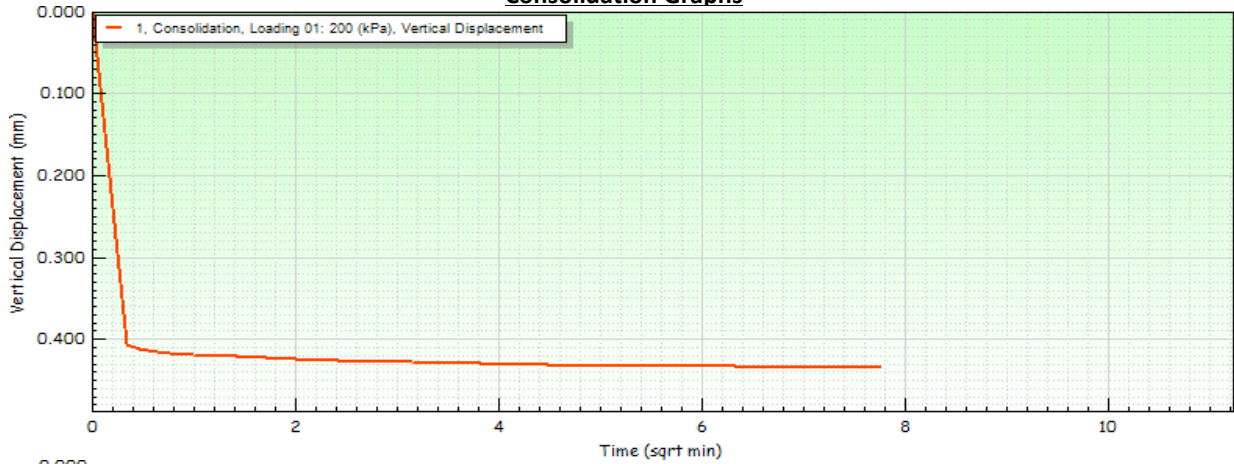
Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH314	Sample Reference	48	
Depth (m)	10.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Brown slightly gravelly slightly silty fine to coarse SAND.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
Height (mm)		20.0	20.0	20.0
Diameter (mm)		60.0	60.0	60.0
Water Content (%)		13.0	13.0	13.0
Bulk Density (Mg/m ³)		1.71	1.72	1.71
Dry Density (Mg/m ³)		1.52	1.52	1.52
Voids Ratio		0.740	0.739	0.740
Consolidation				
Normal Pressure (kPa)		200	400	600
Vertical Displacement (mm)		0.434	0.563	1.312
Shearing				
Rate of Strain (mm/min)		0.600	0.600	0.600
Peak Shear Stress (kPa)		163.0	307.7	422.1
Hoz Displacement (mm)		10.2	10.2	10.2
Hoz Displacement at Peak Shear Stress (mm)		6.723	2.463	3.237
Final Conditions				
Water Content (%)		22.0	22.0	22.0
Dry Density (Mg/m ³)		1.56	1.56	1.70
Voids Ratio		0.701	0.688	0.603



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH314	Sample Reference	48	
Depth (m)	10.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

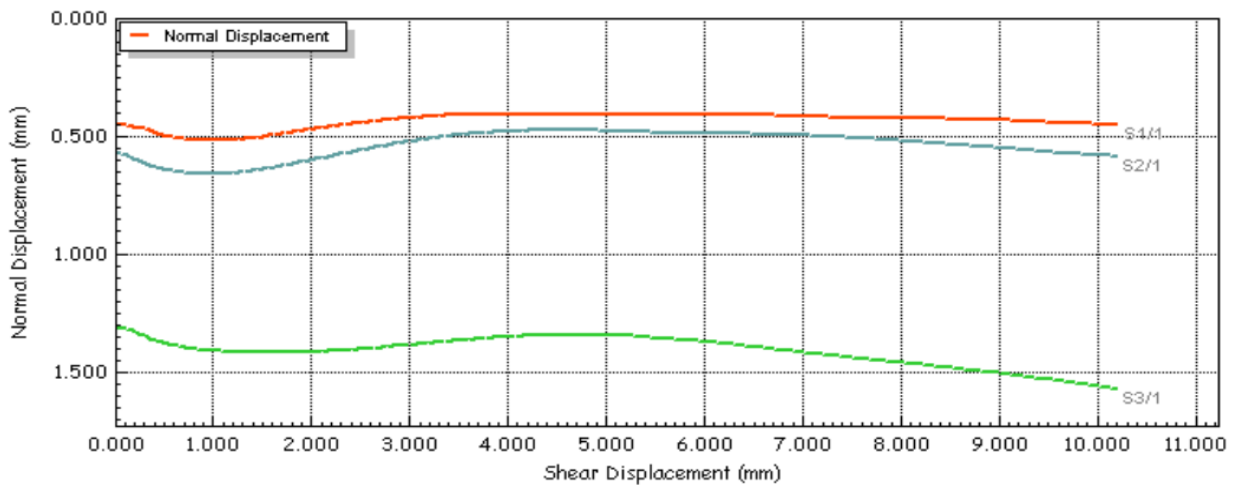
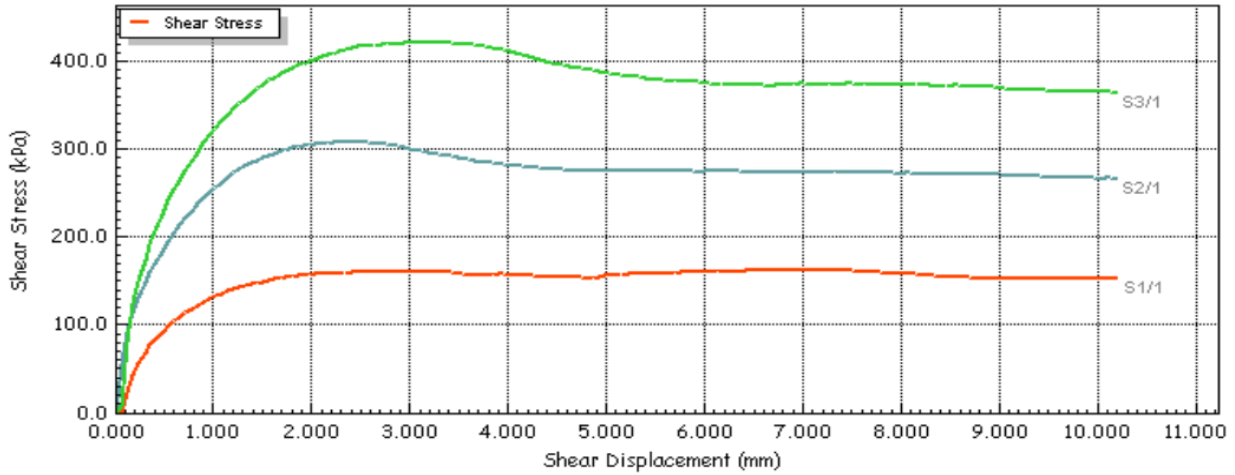
Consolidation Graphs



  10122	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH314	Sample Reference	48	
Depth (m)	10.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

Shear Stage

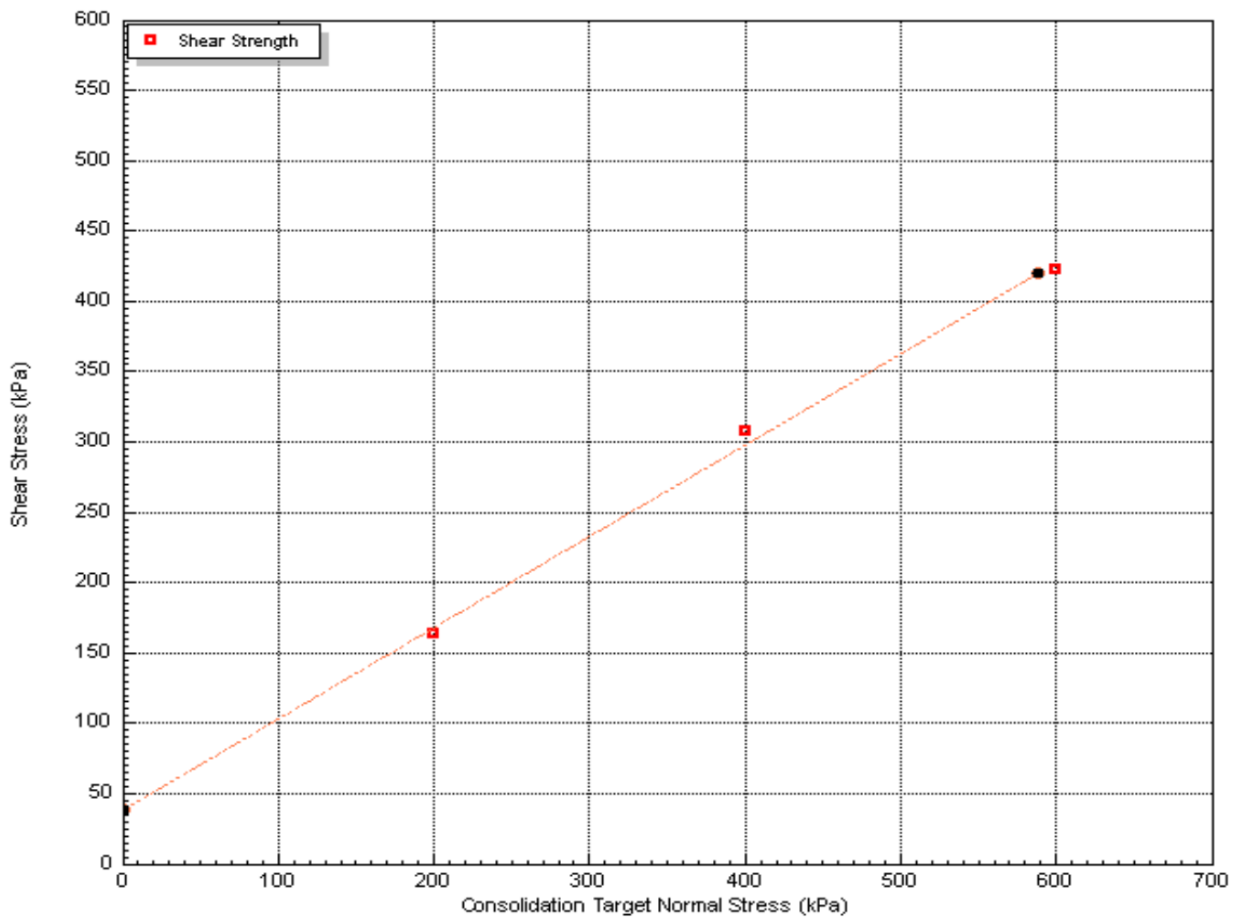


 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH314	Sample Reference	48	
Depth (m)	10.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		38		
Angle of Shearing Resistance (°)		33.0		



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

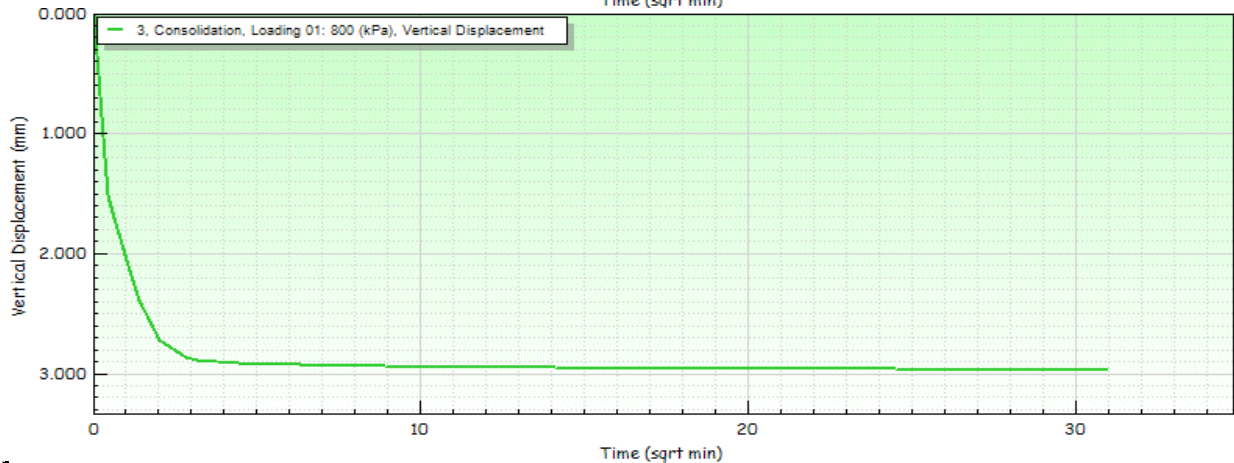
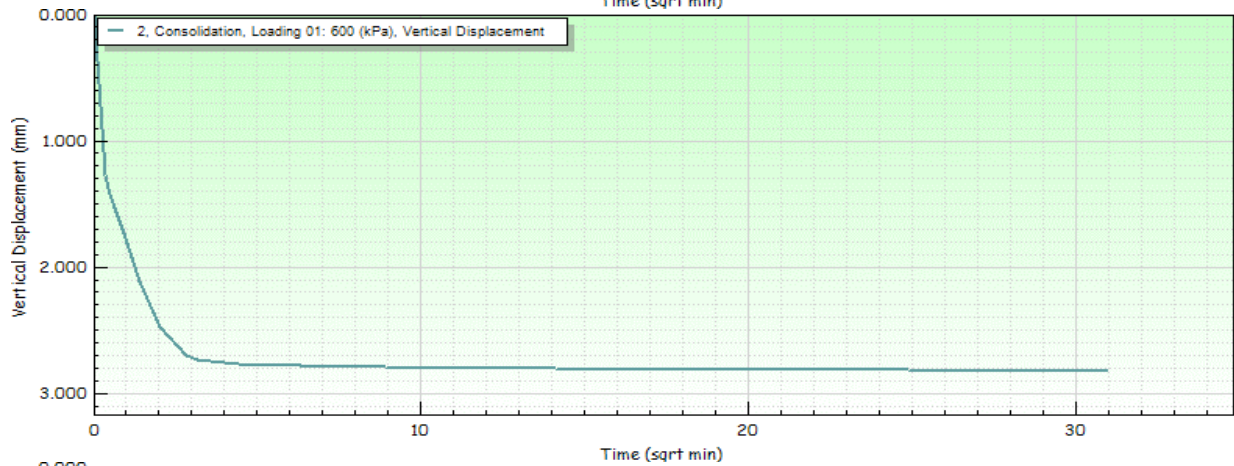
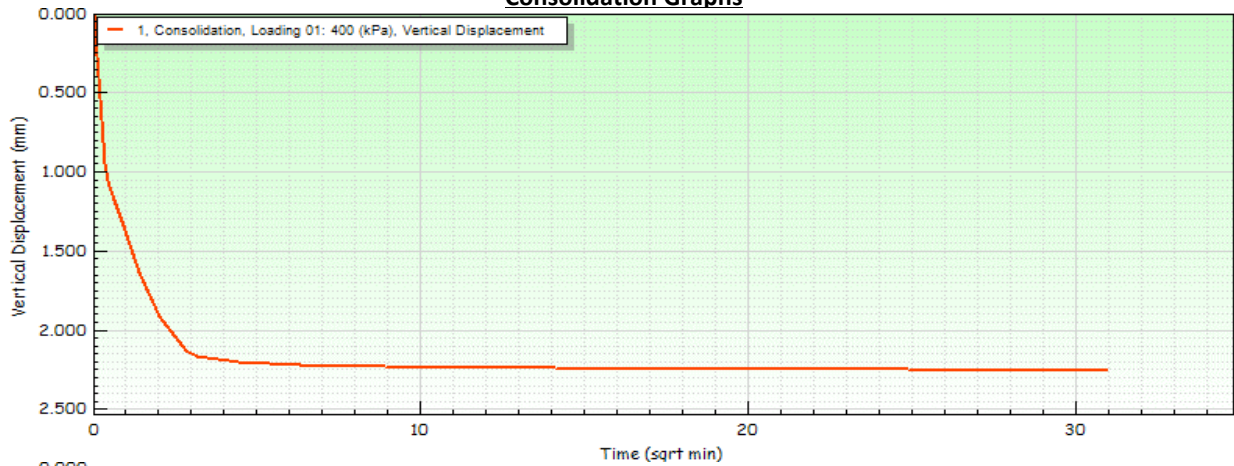
Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH314	Sample Reference	64	
Depth (m)	22.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed
Description	Brown silty CLAY.			
Sample Preparation	Sample is recompacted using material passing 2mm test sieve			
	Stage	1	2	3
Initial Conditions				
	Height (mm)	20.0	20.0	20.0
	Diameter (mm)	60.0	60.0	60.0
	Water Content (%)	19.0	19.0	19.0
	Bulk Density (Mg/m ³)	2.09	2.10	2.10
	Dry Density (Mg/m ³)	1.76	1.76	1.76
	Voids Ratio	0.509	0.503	0.504
Consolidation				
	Normal Pressure (kPa)	400	600	800
	Vertical Displacement (mm)	2.253	2.822	2.968
Shearing				
	Rate of Strain (mm/min)	0.059	0.059	0.059
	Peak Shear Stress (kPa)	264.7	414.2	502.7
	Hoz Displacement (mm)	10.2	10.2	10.2
	Hoz Displacement at Peak Shear Stress (mm)	6.177	4.743	7.203
Final Conditions				
	Water Content (%)	19.0	22.0	18.0
	Dry Density (Mg/m ³)	2.26	2.45	2.48
	Voids Ratio	0.311	0.258	0.252



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH314	Sample Reference	64	
Depth (m)	22.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

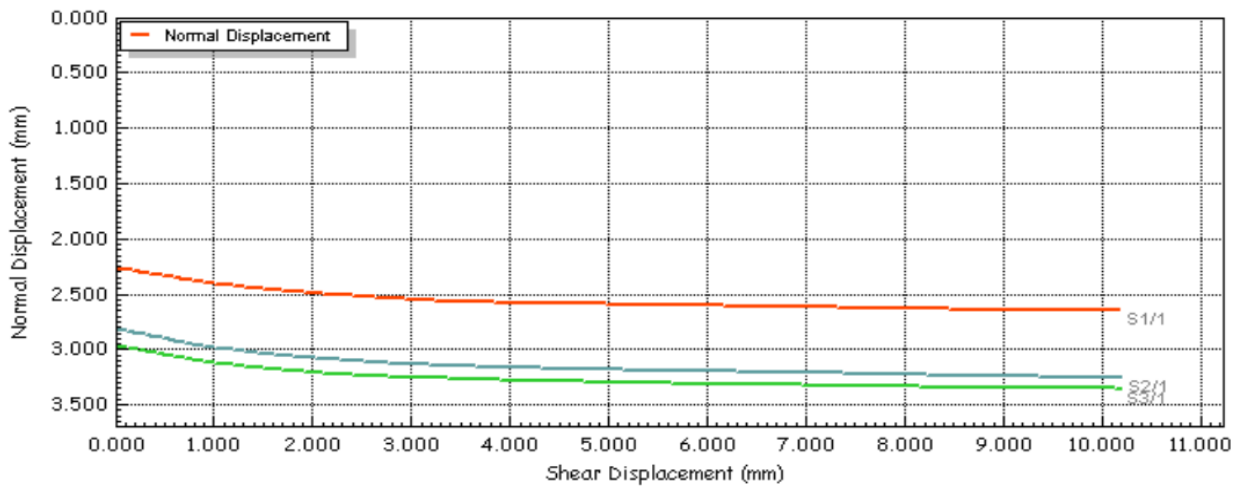
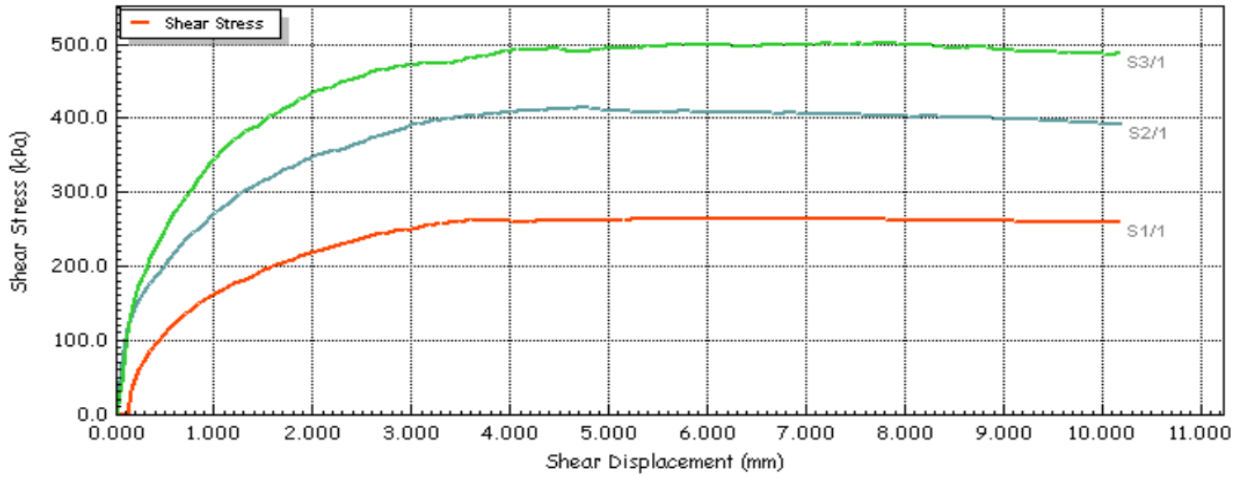
Consolidation Graphs



  10122	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH314	Sample Reference	64	
Depth (m)	22.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

Shear Stage

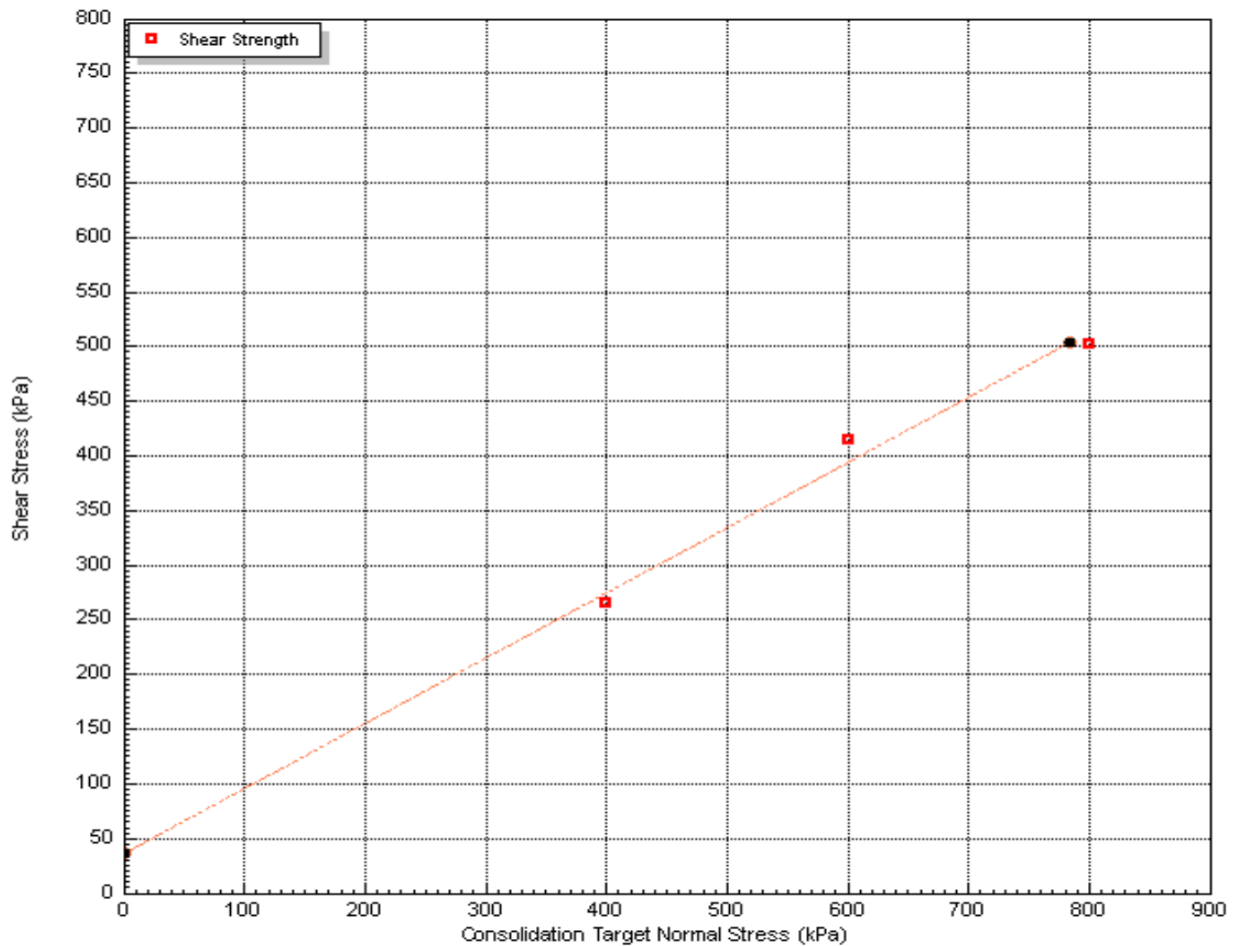


 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

Lab Sheet Reference : LAB25R - Version 4

Direct Shear Test BS EN ISO 17892-10:2018				
Project Number	24-0316	Project	3FM Plot L HAMMOND LANE	
Location Number	BH314	Sample Reference	64	
Depth (m)	22.20	Sample Submerged?	Yes	No
Sample Type	B	Particle Density (Mg/m ³)	2.65	Assumed

	Stage	1	2	3
Envelope Failure Results				
Apparent Cohesion (kPa)		37		
Angle of Shearing Resistance (°)		31.0		



 	Tested	Approved
	Aaron Nutt	Joseph Nicholl

LABORATORY RESTRICTION REPORT

Project Reference	24-0316	To	John Duggan
Project Name	3FM Plot L Hammond Lane	Position	Project Manager
TR reference	24-0316 /	From	Joseph Nicholl
		Position	Laboratory Quality Manager

The following sample(s) and test(s) are restricted as detailed below. Could you please complete the "Required Action" column and return the completed form to the laboratory.

Hole Number	Sample			Test Type	Reason for Restriction	Required Action
	Number	Depth (m)	Type			
BH304	3	2.70	B	CBR	Insufficient material for test Unsuitable material for test - GRAVEL	CANCEL
BH313	40	4.20	B	CBR	Unsuitable material for test - GRAVEL	CANCEL
BH314	40	2.70	B	CBR, Shearbox	Insufficient material for test Unsuitable material for test - GRAVEL	CANCEL
TP301	9	1.50	B	CBR	Unsuitable material for test - SAND	CANCEL
TP302	6	1.00	B	CBR	Unsuitable material for test - SAND	CANCEL
TP303	6	1.00	B	CBR	Unsuitable material for test - SAND	CANCEL
TP304	3	0.50	B	Atterberg limits	Unsuitable material for test - GRAVEL	CANCEL
TP304	6	1.00	B	CBR	Unsuitable material for test - SAND	CANCEL

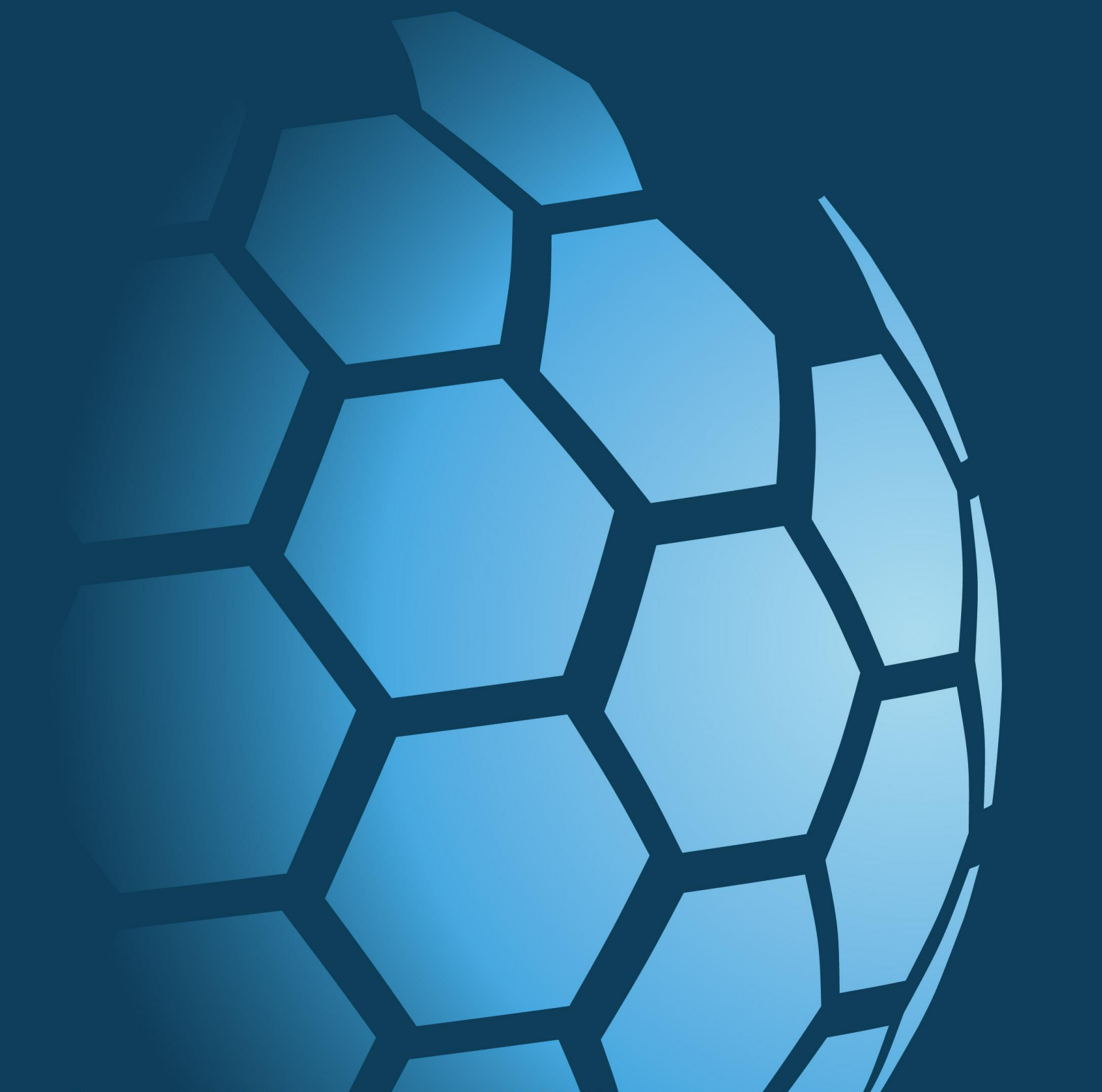
For electronic reporting a form of electronic signature or printed name is acceptable

Laboratory Signature Joseph Nicholl	Project Manager Signature John Duggan
Date 02 May 2024	Date 24 May 2024



CAUSEWAY
— GEOTECH

APPENDIX H
ENVIRONMENTAL LABORATORY TEST RESULTS





DETS

Certificate of Analysis

Certificate Number 24-06933

Issued: 15-Apr-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-06933

Client Reference ~ 24-0316

Order No ~ (not supplied)

Contract Title ~ 3FM Plot L Hammond

Description 4 Soil samples, 1 Leachate prepared by DETS sample.

Date Received 04-Apr-24

Date Started 04-Apr-24

Date Completed 15-Apr-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 12

Summary of Chemical Analysis

Soil Samples

Our Ref 24-06933

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond

Lab No	2320767	2320768	2320769
Sample ID ~	3FM-BH302	3FM-BH302	3FM-BH302
Depth ~	1.00	3.00	5.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	26/03/2024	26/03/2024	26/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Aluminium	DETSC 2301*	1	mg/kg	10000	9900	6100
Arsenic	DETSC 2301#	0.2	mg/kg	9.3	3.9	4.7
Barium	DETSC 2301#	1.5	mg/kg	22	10	16
Beryllium	DETSC 2301#	0.2	mg/kg	0.7	< 0.2	0.5
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.4	0.6	1.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	0.2	0.2
Chromium	DETSC 2301#	0.15	mg/kg	22	28	6.1
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	13	33	8.1
Iron	DETSC 2301	25	mg/kg	25000	21000	8600
Lead	DETSC 2301#	0.3	mg/kg	28	5.6	13
Manganese	DETSC 2301#	20	mg/kg	410	300	260
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	23	24	8.6
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	32	39	110
Zinc	DETSC 2301#	1	mg/kg	71	43	49
Inorganics						
pH	DETSC 2008#		pH	11.3	9.8	10.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.4	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Total Organic Carbon	DETSC 2084#	0.5	%	2.2	< 0.5	< 0.5
Organic matter	DETSC 2002#	0.1	%	1.9	0.2	0.3
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076*	0.001	%	0.0	0.0	0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	10
Sulphur as S, Total	DETSC 2320	0.01	%	0.51	0.04	0.11
Petroleum Hydrocarbons						
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 15.00	< 1.50	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 12.00	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 15.00	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	< 3.40	< 3.40	< 3.40
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	44.63	< 10.00	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 9.00	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 5.00	< 0.50	< 0.50

Summary of Chemical Analysis

Soil Samples

Our Ref 24-06933
 Client Ref ~ 24-0316
 Contract Title ~ 3FM Plot L Hammond

Lab No	2320767	2320768	2320769
Sample ID ~	3FM-BH302	3FM-BH302	3FM-BH302
Depth ~	1.00	3.00	5.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	26/03/2024	26/03/2024	26/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	30.42	0.62	< 0.60
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	55.20	< 1.40	< 1.40
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	100.5	< 10.00	< 10.00
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	145.1	< 10.00	< 10.00
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
PAHs						
Naphthalene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	1.2	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	1.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	9.0	0.2	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	2.4	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	11	0.4	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	10	0.4	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	5.7	0.4	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	5.3	0.2	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	3.3	0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	2.2	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	4.4	0.2	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	2.2	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	0.8	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	2.4	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	61	1.8	< 1.6
PCBs						
PCB 77	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 81	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 105	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 114	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01		
PCB 123	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 126	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 156	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 157	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 167	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 169	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 189	DETSC 3401*	0.01	mg/kg	< 0.01		
Phenols						
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-06933

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond

Lab No	2320767	2320768	2320769
Sample ID ~	3FM-BH302	3FM-BH302	3FM-BH302
Depth ~	1.00	3.00	5.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	26/03/2024	26/03/2024	26/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	0.02	< 0.01	< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	0.09	< 0.01	< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-06933

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond

Lab No	2320767	2320768	2320769
Sample ID ~	3FM-BH302	3FM-BH302	3FM-BH302
Depth ~	1.00	3.00	5.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	26/03/2024	26/03/2024	26/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-06933

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond

Lab No	2320767	2320768	2320769
Sample ID ~	3FM-BH302	3FM-BH302	3FM-BH302
Depth ~	1.00	3.00	5.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	26/03/2024	26/03/2024	26/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
SVOCs						
Aniline	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 1.0	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 1.0	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 1.0	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 1.0	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 1.0	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 1.0	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 1.0	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 1.0	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 1.0	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 1.0	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 1.0	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 1.0	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 1.0	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 1.0	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 1.0	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1



Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-06933

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond

Lab No	2320767	2320768	2320769
Sample ID ~	3FM-BH302	3FM-BH302	3FM-BH302
Depth ~	1.00	3.00	5.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	26/03/2024	26/03/2024	26/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 1.0	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 1.0	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 1.0	< 0.1	< 0.1

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-06933

Client Ref 24-0316

Contract Title 3FM Plot L Hammond

Sample Id 3FM-BH302 0.50

Sample Numbers 2320766 2320770

Date Analysed 12/04/2024

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	4.5	3	5	6
DETSC 2003# Loss On Ignition	%	4.2	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	680.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	40.0	100	n/a	n/a
DETSC 2008# pH	pH Units	11.1	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	2.4	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	4	0.04	0.5	2	25
DETSC 2306 Barium as Ba	4.9	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	9.8	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	2.5	0.025	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	1.2	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	0.46	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.55	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	< 1.3	< 0.01	4	50	200
DETSC 2055 Chloride as Cl	2500	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	26000	260	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	91000	910	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

Additional Information

DETSC 2008 pH	8.5
DETSC 2009 Conductivity uS/cm	130.0
* Temperature*	16.0
Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.101
Stage 1	
Volume of Leachant L2*	0.998
Volume of Eluate VE1*	0.95

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-06933

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2320767	3FM-BH302 1.00	SOIL	NAD	none	Ben Rose
2320768	3FM-BH302 3.00	SOIL	NAD	none	Ben Rose
2320769	3FM-BH302 5.00	SOIL	NAD	none	Ben Rose

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-06933

Client Ref ~ 24-0316

Contract ~ 3FM Plot L Hammond

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2320766	3FM-BH302 0.50 SOIL	26/03/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2320767	3FM-BH302 1.00 SOIL	26/03/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2320768	3FM-BH302 3.00 SOIL	26/03/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2320769	3FM-BH302 5.00 SOIL	26/03/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2320770	3FM-BH302 0.50 LEACHATE	26/03/24	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total
TPH (C10-C40)	EH_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.



t/f -to follow.

nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-07104

Issued: 19-Apr-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-07104

Client Reference ~ 24-0316

Order No ~ (not supplied)

Contract Title ~ 3FM Plot L Hammond Lane

Description 6 Soil samples, 1 Leachate prepared by DETS sample.

Date Received 06-Apr-24

Date Started 08-Apr-24

Date Completed 19-Apr-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-07104

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2321781	2321782	2321783	2321784	2321785	2321786
Sample ID ~	3FM-BH303	3FM-BH303	3FM-BH303	3FM-BH308	3FM-BH308	3FM-BH308
Depth ~	0.50	2.00	3.00	0.50	1.00	3.00
Other ID ~						
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	27/03/2024	27/03/2024	27/03/2024	28/03/2024	28/03/2024	28/03/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Aluminium	DETSC 2301*	1	mg/kg	3200	3100	2700	2200	2200	2000
Arsenic	DETSC 2301#	0.2	mg/kg	5.0	4.2	3.4	3.2	3.6	3.3
Barium	DETSC 2301#	1.5	mg/kg	28	21	13	8.5	15	6.4
Beryllium	DETSC 2301#	0.2	mg/kg	0.2	0.3	< 0.2	< 0.2	< 0.2	< 0.2
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.6	0.5	0.4	0.4	0.5	1.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1	< 0.1	0.6
Chromium	DETSC 2301#	0.15	mg/kg	9.1	7.1	9.5	6.4	6.4	5.7
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	16	10	4.6	4.3	6.0	37
Iron	DETSC 2301	25	mg/kg	8300	7900	6700	5900	6000	5100
Lead	DETSC 2301#	0.3	mg/kg	50	8.2	6.5	12	12	240
Manganese	DETSC 2301#	20	mg/kg	240	230	300	200	210	190
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	9.8	9.5	6.1	5.6	7.1	6.2
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	14	14	14	11	10	9.4
Zinc	DETSC 2301#	1	mg/kg	37	25	25	24	26	35
Inorganics									
pH	DETSC 2008#		pH	8.6	8.6	8.7	8.7	8.6	8.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Total Organic Carbon	DETSC 2084#	0.5	%	1.0	1.6	0.6	< 0.5	0.5	< 0.5
Organic matter	DETSC 2002#	0.1	%	0.4	0.6	< 0.1	0.2	0.2	0.4
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076*	0.001	%	0.0	0.0	0.0	0.0	0.0	0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	43
Sulphur as S, Total	DETSC 2320	0.01	%	0.05	0.04	0.03	0.02	0.03	0.13
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50	58.81
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20	< 1.20	< 1.20	< 1.20	298.1
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	8.07	< 1.50	< 1.50	< 1.50	380.1
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	< 3.40	20.67	< 3.40	< 3.40	< 3.40	140.9
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00	28.74	< 10.00	< 10.00	< 10.00	877.9
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90	19.38
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	128.7



Summary of Chemical Analysis

Soil Samples

Our Ref 24-07104

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2321781	2321782	2321783	2321784	2321785	2321786
Sample ID ~	3FM-BH303	3FM-BH303	3FM-BH303	3FM-BH308	3FM-BH308	3FM-BH308
Depth ~	0.50	2.00	3.00	0.50	1.00	3.00
Other ID ~						
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	27/03/2024	27/03/2024	27/03/2024	28/03/2024	28/03/2024	28/03/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	< 0.60	1.22	< 0.60	< 0.60	3.10	65.04
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	< 1.40	9.87	< 1.40	48.88	201.1	13.57
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00	11.09	< 10.00	48.88	204.2	226.6
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	< 10.00	39.83	< 10.00	48.88	204.2	1105
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.5
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	0.1	< 0.1	< 0.1	< 0.1	0.7
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	2.0
Fluoranthene	DETSC 3301	0.1	mg/kg	0.2	0.1	0.1	< 0.1	< 0.1	29
Pyrene	DETSC 3301	0.1	mg/kg	0.2	0.2	0.2	< 0.1	< 0.1	27
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	21
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	22
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	22
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	14
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	35
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	19
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	3.8
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	21
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	220
PCBs									
PCB 77	DETSC 3401*	0.01	mg/kg	< 0.01				< 0.01	
PCB 81	DETSC 3401*	0.01	mg/kg	< 0.01				< 0.01	
PCB 105	DETSC 3401*	0.01	mg/kg	< 0.01				< 0.01	
PCB 114	DETSC 3401*	0.01	mg/kg	< 0.01				< 0.01	
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01				< 0.01	
PCB 123	DETSC 3401*	0.01	mg/kg	< 0.01				< 0.01	
PCB 126	DETSC 3401*	0.01	mg/kg	< 0.01				< 0.01	
PCB 156	DETSC 3401*	0.01	mg/kg	< 0.01				< 0.01	
PCB 157	DETSC 3401*	0.01	mg/kg	< 0.01				< 0.01	
PCB 167	DETSC 3401*	0.01	mg/kg	< 0.01				< 0.01	
PCB 169	DETSC 3401*	0.01	mg/kg	< 0.01				< 0.01	
PCB 189	DETSC 3401*	0.01	mg/kg	< 0.01				< 0.01	
Phenols									
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01



Summary of Chemical Analysis

Soil Samples

Our Ref 24-07104

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2321781	2321782	2321783	2321784	2321785	2321786
Sample ID ~	3FM-BH303	3FM-BH303	3FM-BH303	3FM-BH308	3FM-BH308	3FM-BH308
Depth ~	0.50	2.00	3.00	0.50	1.00	3.00
Other ID ~						
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	27/03/2024	27/03/2024	27/03/2024	28/03/2024	28/03/2024	28/03/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01



Summary of Chemical Analysis

Soil Samples

Our Ref 24-07104

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2321781	2321782	2321783	2321784	2321785	2321786
Sample ID ~	3FM-BH303	3FM-BH303	3FM-BH303	3FM-BH308	3FM-BH308	3FM-BH308
Depth ~	0.50	2.00	3.00	0.50	1.00	3.00
Other ID ~						
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	27/03/2024	27/03/2024	27/03/2024	28/03/2024	28/03/2024	28/03/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
VOCs									
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.04
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.04
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.03
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01



Summary of Chemical Analysis

Soil Samples

Our Ref 24-07104

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2321781	2321782	2321783	2321784	2321785	2321786
Sample ID ~	3FM-BH303	3FM-BH303	3FM-BH303	3FM-BH308	3FM-BH308	3FM-BH308
Depth ~	0.50	2.00	3.00	0.50	1.00	3.00
Other ID ~						
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	27/03/2024	27/03/2024	27/03/2024	28/03/2024	28/03/2024	28/03/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.10
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.04
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.04
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOCs									
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1



Summary of Chemical Analysis

Soil Samples

Our Ref 24-07104

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2321781	2321782	2321783	2321784	2321785	2321786
Sample ID ~	3FM-BH303	3FM-BH303	3FM-BH303	3FM-BH308	3FM-BH308	3FM-BH308
Depth ~	0.50	2.00	3.00	0.50	1.00	3.00
Other ID ~						
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	27/03/2024	27/03/2024	27/03/2024	28/03/2024	28/03/2024	28/03/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-07104

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2321787
Sample ID ~	3FM-BH308
Depth ~	2.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	28/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Preparation				
BS EN 12457 10:1	DETSC 1009*			Y
Metals				
Aluminium, Dissolved	DETSC 2306	10	ug/l	81
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.98
Barium, Dissolved	DETSC 2306	0.26	ug/l	8.8
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	37
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.9
Iron, Dissolved	DETSC 2306	5.5	ug/l	< 5.5
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.37
Manganese, Dissolved	DETSC 2306	0.22	ug/l	1.5
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	< 0.6
Zinc, Dissolved	DETSC 2306	1.3	ug/l	1.5
Inorganics				
pH	DETSC 2008		pH	8.8
Cyanide, Total	DETSC 2130	40	ug/l	< 40
Cyanide, Free	DETSC 2130	20	ug/l	< 20
Ortho Phosphate as P	DETSC 2205	0.01	mg/l	< 0.01
Sulphide	DETSC 2208	0.01	mg/l	0.01
Sulphur (free)	DETSC 3049*	84	ug/l	< 84
Sulphur as S, Total	DETSC 2320*	10	mg/l	< 10
Petroleum Hydrocarbons				
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	ug/l	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-07104

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2321787
Sample ID ~	3FM-BH308
Depth ~	2.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	28/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	ug/l	< 10
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	ug/l	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.01
Anthracene	DETSC 3304	0.01	ug/l	0.03
Fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Pyrene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20
PCBs				
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0
Phenols				
Phenol	DETSC 3451*	0.1	ug/l	< 0.10
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-07104

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2321787
Sample ID ~	3FM-BH308
Depth ~	2.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	28/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-07104

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2321787
Sample ID ~	3FM-BH308
Depth ~	2.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	28/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4
Chloroform	DETSC 3432	1	ug/l	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1
Benzene	DETSC 3432	1	ug/l	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
Toluene	DETSC 3432	1	ug/l	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1
Styrene	DETSC 3432	1	ug/l	< 1
Bromoform	DETSC 3432	1	ug/l	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-07104

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2321787
Sample ID ~	3FM-BH308
Depth ~	2.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	28/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1
MTBE	DETSC 3432*	1	ug/l	< 1
SVOCs				
Aniline	DETSC 3434*	1	ug/l	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0

Summary of Chemical Analysis Leachate Samples

Our Ref 24-07104

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2321787
Sample ID ~	3FM-BH308
Depth ~	2.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	28/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-07104

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2321781	3FM-BH303 0.50	SOIL	NAD	none	Vicky Convery
2321782	3FM-BH303 2.00	SOIL	NAD	none	Vicky Convery
2321783	3FM-BH303 3.00	SOIL	NAD	none	Vicky Convery
2321784	3FM-BH308 0.50	SOIL	NAD	none	Vicky Convery
2321785	3FM-BH308 1.00	SOIL	NAD	none	Vicky Convery
2321786	3FM-BH308 3.00	SOIL	NAD	none	Vicky Convery

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-07104
 Client Ref ~ 24-0316
 Contract ~ 3FM Plot L Hammond Lane

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2321781	3FM-BH303 0.50 SOIL	27/03/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2321782	3FM-BH303 2.00 SOIL	27/03/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2321783	3FM-BH303 3.00 SOIL	27/03/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2321784	3FM-BH308 0.50 SOIL	28/03/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2321785	3FM-BH308 1.00 SOIL	28/03/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2321786	3FM-BH308 3.00 SOIL	28/03/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2321787	3FM-BH308 2.00 LEACHATE	28/03/24	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C5-C35	EH_CU+HS_1D_AL
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C5-C35	EH_CU+HS_1D_AR



TPH Ali/Aro Total C5-C35

EH_CU+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-07251

Issued: 17-Apr-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-07251

Client Reference ~ 24-0316

Order No ~ (not supplied)

Contract Title ~ 3FM Plot L Hammond Lane

Description 2 Soil samples.

Date Received 09-Apr-24

Date Started 09-Apr-24

Date Completed 17-Apr-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-07251

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322487	2322488
Sample ID ~	3FM-TP302	3FM-TP302
Depth ~	1.00	1.50
Other ID ~	7	
Sample Type ~	ES	ES
Sampling Date ~	04/04/2024	04/04/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Metals					
Aluminium	DETSC 2301*	1	mg/kg	5600	3300
Arsenic	DETSC 2301#	0.2	mg/kg	6.7	5.0
Barium	DETSC 2301#	1.5	mg/kg	160	48
Beryllium	DETSC 2301#	0.2	mg/kg	0.6	0.2
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	1.2	0.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.3
Chromium	DETSC 2301#	0.15	mg/kg	15	9.6
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	21	8.5
Iron	DETSC 2301	25	mg/kg	13000	9000
Lead	DETSC 2301#	0.3	mg/kg	56	11
Manganese	DETSC 2301#	20	mg/kg	700	400
Mercury	DETSC 2325#	0.05	mg/kg	0.07	< 0.05
Nickel	DETSC 2301#	1	mg/kg	18	12
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	27	15
Zinc	DETSC 2301#	1	mg/kg	86	53
Inorganics					
pH	DETSC 2008#		pH	8.5	9.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6
Total Organic Carbon	DETSC 2084#	0.5	%	1.6	1.1
Organic matter	DETSC 2002#	0.1	%	1.0	0.4
Sulphate Aqueous Extract as SO ₄ (2:1)	DETSC 2076*	0.001	%	0.0	0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	1.1	< 0.75
Sulphur as S, Total	DETSC 2320	0.01	%	0.10	0.06
Petroleum Hydrocarbons					
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	2.19	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	1.71	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	< 3.40	< 3.40
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	1.69	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50	< 0.50

Summary of Chemical Analysis

Soil Samples

Our Ref 24-07251

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322487	2322488
Sample ID ~	3FM-TP302	3FM-TP302
Depth ~	1.00	1.50
Other ID ~	7	
Sample Type ~	ES	ES
Sampling Date ~	04/04/2024	04/04/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	1.44	6.18
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	6.94	3.81
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	10.07	< 10.00
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	10.07	< 10.00
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
PAHs					
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	0.2	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	0.3	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6
Phenols					
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-07251

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322487	2322488
Sample ID ~	3FM-TP302	3FM-TP302
Depth ~	1.00	1.50
Other ID ~	7	
Sample Type ~	ES	ES
Sampling Date ~	04/04/2024	04/04/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-07251

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322487	2322488
Sample ID ~	3FM-TP302	3FM-TP302
Depth ~	1.00	1.50
Other ID ~	7	
Sample Type ~	ES	ES
Sampling Date ~	04/04/2024	04/04/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
SVOCs					
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1



Summary of Chemical Analysis Soil Samples

Our Ref 24-07251

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322487	2322488
Sample ID ~	3FM-TP302	3FM-TP302
Depth ~	1.00	1.50
Other ID ~	7	
Sample Type ~	ES	ES
Sampling Date ~	04/04/2024	04/04/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-07251

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2322487	3FM-TP302 7 1.00	SOIL	NAD	none	Lee Kerridge
2322488	3FM-TP302 1.50	SOIL	NAD	none	Lee Kerridge

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref ~ 24-07251
 Client Ref ~ 24-0316
 Contract ~ 3FM Plot L Hammond Lane

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2322487	3FM-TP302 1.00 SOIL	04/04/24	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
2322488	3FM-TP302 1.50 SOIL	04/04/24	GJ 250ml x2, GJ 60ml x2, PT 1L x2		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
 Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
 The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.



nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-07331

Issued: 17-Apr-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-07331

Client Reference ~ 24-0316

Order No ~ (not supplied)

Contract Title ~ 3FM Plot L Hammond Lane

Description One Soil sample.

Date Received 10-Apr-24

Date Started 10-Apr-24

Date Completed 17-Apr-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-07331

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322899
Sample ID ~	3FM - TP304
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	05/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Metals				
Aluminium	DETSC 2301*	1	mg/kg	4800
Arsenic	DETSC 2301#	0.2	mg/kg	18
Barium	DETSC 2301#	1.5	mg/kg	22
Beryllium	DETSC 2301#	0.2	mg/kg	0.5
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.1
Chromium	DETSC 2301#	0.15	mg/kg	19
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	24
Iron	DETSC 2301	25	mg/kg	16000
Lead	DETSC 2301#	0.3	mg/kg	18
Manganese	DETSC 2301#	20	mg/kg	670
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05
Nickel	DETSC 2301#	1	mg/kg	20
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	16
Zinc	DETSC 2301#	1	mg/kg	85
Inorganics				
pH	DETSC 2008#		pH	7.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6
Total Organic Carbon	DETSC 2084#	0.5	%	1.3
Organic matter	DETSC 2002#	0.1	%	0.3
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076*	0.001	%	0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75
Sulphur as S, Total	DETSC 2320	0.01	%	0.20
Petroleum Hydrocarbons				
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	< 3.40
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90

Summary of Chemical Analysis

Soil Samples

Our Ref 24-07331

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322899
Sample ID ~	3FM - TP304
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	05/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	< 0.60
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	3.89
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	< 10.00
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01
PAHs				
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6
Phenols				
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-07331

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322899
Sample ID ~	3FM - TP304
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	05/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-07331

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322899
Sample ID ~	3FM - TP304
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	05/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01
SVOCs				
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1

Summary of Chemical Analysis

Soil Samples

Our Ref 24-07331

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322899
Sample ID ~	3FM - TP304
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	05/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-07331

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2322899	3FM - TP304 0.50	SOIL	NAD	none	Ben Barsby

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref ~ 24-07331
 Client Ref ~ 24-0316
 Contract ~ 3FM Plot L Hammond Lane

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2322899	3FM - TP304 0.50 SOIL	05/04/24	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
 Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
 The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.



nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-07334

Issued: 24-Apr-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-07334

Client Reference ~ 24-0316

Order No ~ (not supplied)

Contract Title ~ 3FM Plot L Hammond Lane

Description 4 Soil samples, 2 Leachate prepared by DETS samples.

Date Received 10-Apr-24

Date Started 10-Apr-24

Date Completed 24-Apr-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-07334

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322904	2322905	2322906
Sample ID ~	BH-304	BH-304	BH-304
Depth ~	1.00	2.00	3.00
Other ID ~	4	7	10
Sample Type ~	ES	ES	ES
Sampling Date ~	05/04/2024	05/04/2024	05/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Aluminium	DETSC 2301*	1	mg/kg	1400	3100	3000
Arsenic	DETSC 2301#	0.2	mg/kg	1.9	3.1	4.1
Barium	DETSC 2301#	1.5	mg/kg	20	40	18
Beryllium	DETSC 2301#	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.8	0.8	1.0
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	0.5	0.1
Chromium	DETSC 2301#	0.15	mg/kg	3.7	6.6	7.9
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	6.6	11	5.8
Iron	DETSC 2301	25	mg/kg	3200	5800	7500
Lead	DETSC 2301#	0.3	mg/kg	4.3	7.4	8.6
Manganese	DETSC 2301#	20	mg/kg	110	170	210
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	6.3	9.1	8.9
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	6.9	11	13
Zinc	DETSC 2301#	1	mg/kg	31	53	30
Inorganics						
pH	DETSC 2008#		pH	11.8	11.9	10.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Total Organic Carbon	DETSC 2084#	0.5	%	6.0	3.6	< 0.5
Organic matter	DETSC 2002#	0.1	%	1.4	0.4	0.4
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076*	0.001	%	0.0	0.0	0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	3.0
Sulphur as S, Total	DETSC 2320	0.01	%	0.06	0.12	0.09
Petroleum Hydrocarbons						
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	37.39	41.68	< 3.40
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	37.39	41.68	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50	< 0.50	< 0.50



Summary of Chemical Analysis

Soil Samples

Our Ref 24-07334

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322904	2322905	2322906
Sample ID ~	BH-304	BH-304	BH-304
Depth ~	1.00	2.00	3.00
Other ID ~	4	7	10
Sample Type ~	ES	ES	ES
Sampling Date ~	05/04/2024	05/04/2024	05/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	0.91	0.79	< 0.60
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	2.66	3.51	< 1.40
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	37.39	41.68	< 10.00
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
PAHs						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6
PCBs						
PCB 77	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 81	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 105	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 114	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01		
PCB 123	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 126	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 156	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 157	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 167	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 169	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 189	DETSC 3401*	0.01	mg/kg	< 0.01		
Phenols						
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01



Summary of Chemical Analysis

Soil Samples

Our Ref 24-07334

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322904	2322905	2322906
Sample ID ~	BH-304	BH-304	BH-304
Depth ~	1.00	2.00	3.00
Other ID ~	4	7	10
Sample Type ~	ES	ES	ES
Sampling Date ~	05/04/2024	05/04/2024	05/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01



Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-07334

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322904	2322905	2322906
Sample ID ~	BH-304	BH-304	BH-304
Depth ~	1.00	2.00	3.00
Other ID ~	4	7	10
Sample Type ~	ES	ES	ES
Sampling Date ~	05/04/2024	05/04/2024	05/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	0.02
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	0.02	0.02	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-07334

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322904	2322905	2322906
Sample ID ~	BH-304	BH-304	BH-304
Depth ~	1.00	2.00	3.00
Other ID ~	4	7	10
Sample Type ~	ES	ES	ES
Sampling Date ~	05/04/2024	05/04/2024	05/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
SVOCs						
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1



Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-07334

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322904	2322905	2322906
Sample ID ~	BH-304	BH-304	BH-304
Depth ~	1.00	2.00	3.00
Other ID ~	4	7	10
Sample Type ~	ES	ES	ES
Sampling Date ~	05/04/2024	05/04/2024	05/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-07334

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322907
Sample ID ~	BH-304
Depth ~	2.00
Other ID ~	7
Sample Type ~	ES
Sampling Date ~	05/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Preparation				
BS EN 12457 10:1	DETSC 1009*			Y
Metals				
Aluminium, Dissolved	DETSC 2306	10	ug/l	1100
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.66
Barium, Dissolved	DETSC 2306	0.26	ug/l	37
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	19
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	1.5
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	2.4
Iron, Dissolved	DETSC 2306	5.5	ug/l	130
Lead, Dissolved	DETSC 2306	0.09	ug/l	1.5
Manganese, Dissolved	DETSC 2306	0.22	ug/l	1.1
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	0.6
Selenium, Dissolved	DETSC 2306	0.25	ug/l	1.7
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	2.3
Zinc, Dissolved	DETSC 2306	1.3	ug/l	2.5
Inorganics				
pH	DETSC 2008		pH	11.6
Cyanide, Total	DETSC 2130	40	ug/l	< 40
Cyanide, Free	DETSC 2130	20	ug/l	< 20
Ortho Phosphate as P	DETSC 2205	0.01	mg/l	< 0.01
Sulphide	DETSC 2208	0.01	mg/l	< 0.01
Sulphur (free)	DETSC 3049*	84	ug/l	< 84
Sulphur as S, Total	DETSC 2320*	10	mg/l	< 10
Petroleum Hydrocarbons				
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	ug/l	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-07334

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322907
Sample ID ~	BH-304
Depth ~	2.00
Other ID ~	7
Sample Type ~	ES
Sampling Date ~	05/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	ug/l	< 10
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	ug/l	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.01
Anthracene	DETSC 3304	0.01	ug/l	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Pyrene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20
PCBs				
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0
Phenols				
Phenol	DETSC 3451*	0.1	ug/l	< 0.10
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10



Summary of Chemical Analysis

Leachate Samples

Our Ref 24-07334

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322907
Sample ID ~	BH-304
Depth ~	2.00
Other ID ~	7
Sample Type ~	ES
Sampling Date ~	05/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10

Summary of Chemical Analysis

Leachate VOC/SVOC Samples

Our Ref 24-07334

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322907
Sample ID ~	BH-304
Depth ~	2.00
Other ID ~	7
Sample Type ~	ES
Sampling Date ~	05/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4
Chloroform	DETSC 3432	1	ug/l	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1
Benzene	DETSC 3432	1	ug/l	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
Toluene	DETSC 3432	1	ug/l	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1
Styrene	DETSC 3432	1	ug/l	< 1
Bromoform	DETSC 3432	1	ug/l	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1

Summary of Chemical Analysis

Leachate VOC/SVOC Samples

Our Ref 24-07334
 Client Ref ~ 24-0316
 Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322907
Sample ID ~	BH-304
Depth ~	2.00
Other ID ~	7
Sample Type ~	ES
Sampling Date ~	05/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1
MTBE	DETSC 3432*	1	ug/l	< 1
SVOCs				
Aniline	DETSC 3434*	1	ug/l	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0



Summary of Chemical Analysis

Leachate VOC/SVOC Samples

Our Ref 24-07334

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2322907
Sample ID ~	BH-304
Depth ~	2.00
Other ID ~	7
Sample Type ~	ES
Sampling Date ~	05/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-07334

Client Ref 24-0316

Contract Title 3FM Plot L Hammond Lane

Sample Id BH-304 1 0.50

Sample Numbers 2322903 2322908

Date Analysed 17/04/2024

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084# Total Organic Carbon	%	5.8
DETSC 2003# Loss On Ignition	%	4.2
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	32.0
DETSC 3301 PAHs	mg/kg	< 1.6
DETSC 2008# pH	pH Units	12.0
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	2.2	0.022
DETSC 2306 Barium as Ba	16	0.16
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02
DETSC 2306 Chromium as Cr	2.2	< 0.1
DETSC 2306 Copper as Cu	12	0.12
DETSC 2306 Mercury as Hg	< 0.010	< 0.002
DETSC 2306 Molybdenum as Mo	1.7	< 0.1
DETSC 2306 Nickel as Ni	0.8	< 0.1
DETSC 2306 Lead as Pb	7.7	0.08
DETSC 2306 Antimony as Sb	0.38	< 0.05
DETSC 2306 Selenium as Se	1.7	< 0.03
DETSC 2306 Zinc as Zn	8.3	0.083
DETSC 2055 Chloride as Cl	1900	< 100
DETSC 2055* Fluoride as F	110	1.1
DETSC 2055 Sulphate as SO4	12000	120
DETSC 2009* Total Dissolved Solids	220000	2200
DETSC 2130 Phenol Index	< 100	< 1
DETSC 2085 Dissolved Organic Carbon	4400	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information	
DETSC 2008 pH	11.2
DETSC 2009 Conductivity uS/cm	310.0
* Temperature*	12.0
Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.097
Stage 1	
Volume of Leachant L2*	0.96
Volume of Eluate VE1*	0.932

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-07334

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2322904	BH-304 4 1.00	SOIL	NAD	none	Ben Barsby
2322905	BH-304 7 2.00	SOIL	NAD	none	Ben Barsby
2322906	BH-304 10 3.00	SOIL	NAD	none	Ben Barsby

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-07334
 Client Ref ~ 24-0316
 Contract ~ 3FM Plot L Hammond Lane

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2322903	BH-304 0.50 SOIL	05/04/24	GJ 250ml, GJ 60ml, PT 1L		
2322904	BH-304 1.00 SOIL	05/04/24	GJ 250ml, GJ 60ml, PT 1L		
2322905	BH-304 2.00 SOIL	05/04/24	GJ 250ml, GJ 60ml, PT 1L		
2322906	BH-304 3.00 SOIL	05/04/24	GJ 250ml, GJ 60ml, PT 1L		
2322907	BH-304 2.00 LEACHATE	05/04/24	GJ 250ml, GJ 60ml, PT 1L		
2322908	BH-304 0.50 LEACHATE	05/04/24	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total
TPH (C10-C40)	EH_1D_Total
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C5-C35	EH_CU+HS_1D_AL
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR



Aromatic C5-C35
TPH Ali/Aro Total C5-C35

EH_CU+HS_1D_AR
EH_CU+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-07859

Issued: 24-Apr-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-07859

Client Reference ~ 24-0316

Order No ~ (not supplied)

Contract Title ~ 3FM Plot L Hammond Lane

Description 3 Soil samples.

Date Received 17-Apr-24

Date Started 17-Apr-24

Date Completed 24-Apr-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-07859

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325753	2325754	2325755
Sample ID ~	BH-309	BH-309	BH-309
Depth ~	0.50	1.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	09/04/2024	09/04/2024	09/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units		
Metals					
Aluminium	DETSC 2301*	1	mg/kg	3100	2600
Arsenic	DETSC 2301#	0.2	mg/kg	5.9	3.6
Barium	DETSC 2301#	1.5	mg/kg	28	11
Beryllium	DETSC 2301#	0.2	mg/kg	0.2	< 0.2
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.3	0.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	8.2	7.1
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	11	3.9
Iron	DETSC 2301	25	mg/kg	7300	6600
Lead	DETSC 2301#	0.3	mg/kg	9.5	6.1
Manganese	DETSC 2301#	20	mg/kg	250	210
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	9.7	6.6
Selenium	DETSC 2301#	0.5	mg/kg	0.6	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	17	11
Zinc	DETSC 2301#	1	mg/kg	40	26
Inorganics					
pH	DETSC 2008#		pH	11.1	8.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6
Total Organic Carbon	DETSC 2084#	0.5	%	2.2	< 0.5
Organic matter	DETSC 2002#	0.1	%	0.7	0.1
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076*	0.001	%	0.0	0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	1.4
Sulphur as S, Total	DETSC 2320	0.01	%	0.06	0.01
Petroleum Hydrocarbons					
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	26.49	< 3.40
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	26.49	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50	< 0.50



Summary of Chemical Analysis

Soil Samples

Our Ref 24-07859
 Client Ref ~ 24-0316
 Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325753	2325754	2325755
Sample ID ~	BH-309	BH-309	BH-309
Depth ~	0.50	1.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	09/04/2024	09/04/2024	09/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units		
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	< 0.60	< 0.60
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	< 1.40	< 1.40
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00	< 10.00
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	26.49	< 10.00
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
PAHs					
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6
PCBs					
PCB 77	DETSC 3401*	0.01	mg/kg	< 0.01	< 0.01
PCB 81	DETSC 3401*	0.01	mg/kg	< 0.01	< 0.01
PCB 105	DETSC 3401*	0.01	mg/kg	< 0.01	< 0.01
PCB 114	DETSC 3401*	0.01	mg/kg	< 0.01	< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01
PCB 123	DETSC 3401*	0.01	mg/kg	< 0.01	< 0.01
PCB 126	DETSC 3401*	0.01	mg/kg	< 0.01	< 0.01
PCB 156	DETSC 3401*	0.01	mg/kg	< 0.01	< 0.01
PCB 157	DETSC 3401*	0.01	mg/kg	< 0.01	< 0.01
PCB 167	DETSC 3401*	0.01	mg/kg	< 0.01	< 0.01
PCB 169	DETSC 3401*	0.01	mg/kg	< 0.01	< 0.01
PCB 189	DETSC 3401*	0.01	mg/kg	< 0.01	< 0.01
Phenols					
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01



Summary of Chemical Analysis

Soil Samples

Our Ref 24-07859

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325753	2325754	2325755
Sample ID ~	BH-309	BH-309	BH-309
Depth ~	0.50	1.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	09/04/2024	09/04/2024	09/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-07859

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325753	2325755
Sample ID ~	BH-309	BH-309
Depth ~	0.50	4.00
Other ID ~		
Sample Type ~	ES	ES
Sampling Date ~	09/04/2024	09/04/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-07859

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325753	2325755
Sample ID ~	BH-309	BH-309
Depth ~	0.50	4.00
Other ID ~		
Sample Type ~	ES	ES
Sampling Date ~	09/04/2024	09/04/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
SVOCs					
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1



Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 24-07859

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325753	2325755
Sample ID ~	BH-309	BH-309
Depth ~	0.50	4.00
Other ID ~		
Sample Type ~	ES	ES
Sampling Date ~	09/04/2024	09/04/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-07859

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2325753	BH-309 0.50	SOIL	NAD	none	Josh Best
2325755	BH-309 4.00	SOIL	NAD	none	Josh Best

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-07859

Client Ref ~ 24-0316

Contract ~ 3FM Plot L Hammond Lane

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2325753	BH-309 0.50 SOIL	09/04/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2325754	BH-309 1.00 SOIL	09/04/24	GJ 250ml, GJ 60ml, PT 1L		
2325755	BH-309 4.00 SOIL	09/04/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.



nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-07857

Issued: 24-Apr-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-07857

Client Reference ~ 24-0316

Order No ~ (not supplied)

Contract Title ~ 3FM Plot L Hammond Lane

Description 4 Soil samples, 1 Leachate prepared by DETS sample.

Date Received 17-Apr-24

Date Started 17-Apr-24

Date Completed 24-Apr-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-07857

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325742	2325743	2325744	2325745
Sample ID ~	BH-314	BH-314	BH-314	BH-314
Depth ~	0.50	1.00	2.00	4.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	10/04/2024	10/04/2024	10/04/2024	10/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Metals							
Aluminium	DETSC 2301*	1	mg/kg	4600		4900	7600
Arsenic	DETSC 2301#	0.2	mg/kg	5.4		4.7	11
Barium	DETSC 2301#	1.5	mg/kg	41		44	38
Beryllium	DETSC 2301#	0.2	mg/kg	0.3		< 0.2	0.7
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	< 0.2		< 0.2	3.4
Cadmium	DETSC 2301#	0.1	mg/kg	1.0		0.7	1.7
Chromium	DETSC 2301#	0.15	mg/kg	21		14	18
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	16		12	35
Iron	DETSC 2301	25	mg/kg	9700		9200	19000
Lead	DETSC 2301#	0.3	mg/kg	15		7.3	20
Manganese	DETSC 2301#	20	mg/kg	420		330	780
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05		< 0.05	0.07
Nickel	DETSC 2301#	1	mg/kg	17		12	47
Selenium	DETSC 2301#	0.5	mg/kg	0.8		< 0.5	1.8
Vanadium	DETSC 2301#	0.8	mg/kg	12		14	29
Zinc	DETSC 2301#	1	mg/kg	120		49	110
Inorganics							
pH	DETSC 2008#		pH	10.5		12.0	9.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6		< 0.6	2.5
Total Organic Carbon	DETSC 2084#	0.5	%	5.0		0.5	1.4
Organic matter	DETSC 2002#	0.1	%	1.0		0.5	1.6
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076*	0.001	%	0.0		0.0	0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	0.79		< 0.75	0.79
Sulphur as S, Total	DETSC 2320	0.01	%	0.13		0.11	0.20
Petroleum Hydrocarbons							
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50		< 1.50	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20		< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50		< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	< 3.40		32.94	12.19
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00		32.94	12.19
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90		< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50		< 0.50	< 0.50



Summary of Chemical Analysis

Soil Samples

Our Ref 24-07857
 Client Ref ~ 24-0316
 Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325742	2325743	2325744	2325745
Sample ID ~	BH-314	BH-314	BH-314	BH-314
Depth ~	0.50	1.00	2.00	4.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	10/04/2024	10/04/2024	10/04/2024	10/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	< 0.60		0.80	< 0.60
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	< 1.40		2.20	< 1.40
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00		< 10.00	< 10.00
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	< 10.00		32.94	12.19
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01	< 0.01
PAHs							
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6		< 1.6	< 1.6
PCBs							
PCB 77	DETSC 3401*	0.01	mg/kg		< 0.01		
PCB 81	DETSC 3401*	0.01	mg/kg		< 0.01		
PCB 105	DETSC 3401*	0.01	mg/kg		< 0.01		
PCB 114	DETSC 3401*	0.01	mg/kg		< 0.01		
PCB 118	DETSC 3401#	0.01	mg/kg		< 0.01		
PCB 123	DETSC 3401*	0.01	mg/kg		< 0.01		
PCB 126	DETSC 3401*	0.01	mg/kg		< 0.01		
PCB 156	DETSC 3401*	0.01	mg/kg		< 0.01		
PCB 157	DETSC 3401*	0.01	mg/kg		< 0.01		
PCB 167	DETSC 3401*	0.01	mg/kg		< 0.01		
PCB 169	DETSC 3401*	0.01	mg/kg		< 0.01		
PCB 189	DETSC 3401*	0.01	mg/kg		< 0.01		
Phenols							
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01



Summary of Chemical Analysis

Soil Samples

Our Ref 24-07857

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325742	2325743	2325744	2325745
Sample ID ~	BH-314	BH-314	BH-314	BH-314
Depth ~	0.50	1.00	2.00	4.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	10/04/2024	10/04/2024	10/04/2024	10/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	0.01		< 0.01	< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01



Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-07857

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325742	2325744	2325745
Sample ID ~	BH-314	BH-314	BH-314
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	10/04/2024	10/04/2024	10/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01



Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-07857

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325742	2325744	2325745
Sample ID ~	BH-314	BH-314	BH-314
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	10/04/2024	10/04/2024	10/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
SVOCs						
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1



Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-07857

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325742	2325744	2325745
Sample ID ~	BH-314	BH-314	BH-314
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	10/04/2024	10/04/2024	10/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-07857

Client Ref 24-0316

Contract Title 3FM Plot L Hammond Lane

Sample Id BH-314 1.00

Sample Numbers 2325743 2325746

Date Analysed 24/04/2024

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	5.1	3	5	6
DETSC 2003# Loss On Ignition	%	1.3	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	12.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	8.6	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	3.7	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.96	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	11	0.11	20	100	300
DETSC 2306 Cadmium as Cd	0.11	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	0.72	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	3.3	0.033	2	50	100
DETSC 2306 Mercury as Hg	0.022	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	7.8	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	1.6	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	1.8	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	0.7	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	1.8	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	10	0.1	4	50	200
DETSC 2055 Chloride as Cl	1800	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	5800	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	60000	600	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	3100	< 50	500	800	1000

Additional Information	
DETSC 2008 pH	8.2
DETSC 2009 Conductivity uS/cm	86.2
* Temperature*	17.0
Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.096
Stage 1	
Volume of Leachant L2*	0.943
Volume of Eluate VE1*	0.901

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-07857

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2325742	BH-314 0.50	SOIL	NAD	none	Ben Rose
2325744	BH-314 2.00	SOIL	NAD	none	Ben Rose
2325745	BH-314 4.00	SOIL	NAD	none	Ben Rose

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-07857
 Client Ref ~ 24-0316
 Contract ~ 3FM Plot L Hammond Lane

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2325742	BH-314 0.50 SOIL	10/04/24	GJ 250ml, GJ 60ml, PT 1L		
2325743	BH-314 1.00 SOIL	10/04/24	GJ 250ml, GJ 60ml, PT 1L		
2325744	BH-314 2.00 SOIL	10/04/24	GJ 250ml, GJ 60ml, PT 1L		
2325745	BH-314 4.00 SOIL	10/04/24	GJ 250ml, GJ 60ml, PT 1L		
2325746	BH-314 1.00 LEACHATE	10/04/24	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total
TPH (C10-C40)	EH_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.



t/f -to follow.

nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-07860

Issued: 30-Apr-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-07860

Client Reference ~ 24-0316

Order No ~ (not supplied)

Contract Title ~ 3FM Plot L Hammond Lane

Description 4 Soil samples, 1 Leachate prepared by DETS sample.

Date Received 17-Apr-24

Date Started 17-Apr-24

Date Completed 30-Apr-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-07860

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325756	2325757	2325758	2325759
Sample ID ~	BH-313	BH-313	BH-313	BH-313
Depth ~	0.50	1.00	2.00	4.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	12/04/2024	12/04/2024	12/04/2024	12/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Metals							
Aluminium	DETSC 2301*	1	mg/kg	3800		15000	10000
Arsenic	DETSC 2301#	0.2	mg/kg	7.0		18	14
Barium	DETSC 2301#	1.5	mg/kg	38		220	150
Beryllium	DETSC 2301#	0.2	mg/kg	0.3		0.5	0.3
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	3.1		0.3	0.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.6		0.2	0.2
Chromium	DETSC 2301#	0.15	mg/kg	12		66	59
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	19		31	24
Iron	DETSC 2301	25	mg/kg	9600		17000	16000
Lead	DETSC 2301#	0.3	mg/kg	28		16	18
Manganese	DETSC 2301#	20	mg/kg	340		560	600
Mercury	DETSC 2325#	0.05	mg/kg	0.23		< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	13		41	38
Selenium	DETSC 2301#	0.5	mg/kg	0.6		< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	17		42	41
Zinc	DETSC 2301#	1	mg/kg	51		62	86
Inorganics							
pH	DETSC 2008#		pH	8.3		10.4	11.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1		< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6		< 0.6	< 0.6
Total Organic Carbon	DETSC 2084#	0.5	%	1.3		4.0	3.6
Organic matter	DETSC 2002#	0.1	%	1.2		2.9	1.9
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076*	0.001	%	0.0		0.1	0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 15.00		< 15.00	4.8
Sulphur as S, Total	DETSC 2320	0.01	%	0.22		0.17	0.18
Petroleum Hydrocarbons							
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	2.00		1.81	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	3.22		1.27	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	3.46		< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	39.18		37.51	< 3.40
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	47.87		40.60	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90		< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	15.47		0.98	< 0.50



Summary of Chemical Analysis

Soil Samples

Our Ref 24-07860

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325756	2325757	2325758	2325759
Sample ID ~	BH-313	BH-313	BH-313	BH-313
Depth ~	0.50	1.00	2.00	4.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	12/04/2024	12/04/2024	12/04/2024	12/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units			
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	36.04	2.95	1.14
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	553.0	75.90	< 1.40
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	604.5	79.82	< 10.00
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	652.4	120.4	< 10.00
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
PAHs						
Naphthalene	DETSC 3301	0.1	mg/kg	< 2.0	< 2.0	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 2.0	< 2.0	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 2.0	< 2.0	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 2.0	< 2.0	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 2.0	< 2.0	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 2.0	< 2.0	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 2.0	< 2.0	0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 2.0	< 2.0	0.2
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 2.0	< 2.0	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 2.0	< 2.0	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 2.0	< 2.0	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 2.0	< 2.0	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 2.0	< 2.0	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 2.0	< 2.0	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 2.0	< 2.0	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 2.0	< 2.0	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 32.0	< 32.0	< 1.6
PCBs						
PCB 77	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 81	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 105	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 114	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 118	DETSC 3401#	0.01	mg/kg		< 0.01	
PCB 123	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 126	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 156	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 157	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 167	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 169	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 189	DETSC 3401*	0.01	mg/kg		< 0.01	
Phenols						
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01



Summary of Chemical Analysis Soil Samples

Our Ref 24-07860

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325756	2325757	2325758	2325759
Sample ID ~	BH-313	BH-313	BH-313	BH-313
Depth ~	0.50	1.00	2.00	4.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	12/04/2024	12/04/2024	12/04/2024	12/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01



Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-07860

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325756	2325758	2325759
Sample ID ~	BH-313	BH-313	BH-313
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	12/04/2024	12/04/2024	12/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-07860

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325756	2325758	2325759
Sample ID ~	BH-313	BH-313	BH-313
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	12/04/2024	12/04/2024	12/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
SVOCs						
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1



Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-07860

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325756	2325758	2325759
Sample ID ~	BH-313	BH-313	BH-313
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	12/04/2024	12/04/2024	12/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-07860

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325760
Sample ID ~	BH-313
Depth ~	1.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	12/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Preparation				
BS EN 12457 10:1	DETSC 1009*			Y
Metals				
Aluminium, Dissolved	DETSC 2306	10	ug/l	51
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	4.4
Barium, Dissolved	DETSC 2306	0.26	ug/l	17
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	18
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.43
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.6
Iron, Dissolved	DETSC 2306	5.5	ug/l	9.0
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.15
Manganese, Dissolved	DETSC 2306	0.22	ug/l	4.8
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.76
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	1.0
Zinc, Dissolved	DETSC 2306	1.3	ug/l	4.7
Inorganics				
pH	DETSC 2008		pH	8.1
Cyanide, Total	DETSC 2130	40	ug/l	< 40
Cyanide, Free	DETSC 2130	20	ug/l	< 20
Ortho Phosphate as P	DETSC 2205	0.01	mg/l	< 0.01
Sulphide	DETSC 2208	0.01	mg/l	< 0.01
Sulphur (free)	DETSC 3049*	84	ug/l	< 84
Sulphur as S, Total	DETSC 2320*	10	mg/l	55
Petroleum Hydrocarbons				
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	ug/l	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-07860

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325760
Sample ID ~	BH-313
Depth ~	1.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	12/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	ug/l	< 10
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	ug/l	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	0.08
Acenaphthylene	DETSC 3304	0.01	ug/l	0.01
Acenaphthene	DETSC 3304	0.01	ug/l	0.13
Fluorene	DETSC 3304	0.01	ug/l	0.05
Phenanthrene	DETSC 3304	0.01	ug/l	0.04
Anthracene	DETSC 3304	0.01	ug/l	0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.04
Pyrene	DETSC 3304	0.01	ug/l	0.02
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	0.38
PCBs				
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0
Phenols				
Phenol	DETSC 3451*	0.1	ug/l	< 0.10
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10



Summary of Chemical Analysis

Leachate Samples

Our Ref 24-07860

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325760
Sample ID ~	BH-313
Depth ~	1.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	12/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-07860

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325760
Sample ID ~	BH-313
Depth ~	1.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	12/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Dichlorodifluoromethane	DETSC 3432	1	ug/l	2
Chloromethane	DETSC 3432	1	ug/l	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4
Chloroform	DETSC 3432	1	ug/l	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	2
Carbon tetrachloride	DETSC 3432	1	ug/l	3
Benzene	DETSC 3432	1	ug/l	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
Toluene	DETSC 3432	1	ug/l	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1
Styrene	DETSC 3432	1	ug/l	< 1
Bromoform	DETSC 3432	1	ug/l	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-07860

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325760
Sample ID ~	BH-313
Depth ~	1.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	12/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1
MTBE	DETSC 3432*	1	ug/l	< 1
SVOCs				
Aniline	DETSC 3434*	1	ug/l	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	1.7
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-07860

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2325760
Sample ID ~	BH-313
Depth ~	1.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	12/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-07860

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2325756	BH-313 0.50	SOIL	NAD	none	Josh Best
2325758	BH-313 2.00	SOIL	NAD	none	Josh Best
2325759	BH-313 4.00	SOIL	NAD	none	Josh Best

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-07860
 Client Ref ~ 24-0316
 Contract ~ 3FM Plot L Hammond Lane

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2325756	BH-313 0.50 SOIL	12/04/24	GJ 250ml, GJ 60ml, PT 1L		
2325757	BH-313 1.00 SOIL	12/04/24	GJ 250ml, GJ 60ml, PT 1L		
2325758	BH-313 2.00 SOIL	12/04/24	GJ 250ml, GJ 60ml, PT 1L		
2325759	BH-313 4.00 SOIL	12/04/24	GJ 250ml, GJ 60ml, PT 1L		
2325760	BH-313 1.00 LEACHATE	12/04/24	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C5-C35	EH_CU+HS_1D_AL
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C5-C35	EH_CU+HS_1D_AR



TPH Ali/Aro Total C5-C35

EH_CU+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-08362

Issued: 07-May-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-08362

Client Reference ~ 24-0316

Order No ~ (not supplied)

Contract Title ~ 3FM Plot L Hammond Lane

Description 4 Soil samples, 2 Leachate prepared by DETS samples.

Date Received 24-Apr-24

Date Started 24-Apr-24

Date Completed 07-May-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



2139

Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-08362

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328740	2328741	2328742	2328743
Sample ID ~	3FM-BH301B	3FM-BH301B	3FM-BH301B	3FM-BH301B
Depth ~	0.50	1.00	2.00	5.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	14/04/2024	14/04/2024	14/04/2024	14/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Metals							
Aluminium	DETSC 2301*	1	mg/kg	11000	12000	17000	
Arsenic	DETSC 2301#	0.2	mg/kg	7.5	15	13	
Barium	DETSC 2301#	1.5	mg/kg	62	75	240	
Beryllium	DETSC 2301#	0.2	mg/kg	0.4	0.4	1.6	
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	1.7	1.9	4.4	
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.1	0.1	
Chromium	DETSC 2301#	0.15	mg/kg	22	19	17	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	50	35	79	
Iron	DETSC 2301	25	mg/kg	26000	29000	36000	
Lead	DETSC 2301#	0.3	mg/kg	14	19	98	
Manganese	DETSC 2301#	20	mg/kg	600	820	300	
Mercury	DETSC 2325#	0.05	mg/kg	0.05	< 0.05	0.22	
Nickel	DETSC 2301#	1	mg/kg	24	24	42	
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	0.6	0.6	
Vanadium	DETSC 2301#	0.8	mg/kg	72	44	150	
Zinc	DETSC 2301#	1	mg/kg	58	56	100	
Inorganics							
pH	DETSC 2008#		pH	8.4	8.4	7.9	
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	0.2	
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	
Total Organic Carbon	DETSC 2084#	0.5	%	3.9	3.4	28	
Organic matter	DETSC 2002#	0.1	%	4.6	3.7	5.1	
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076*	0.001	%	0.0	0.1	0.0	
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 15.00	< 0.75	4.8	
Sulphur as S, Total	DETSC 2320	0.01	%	0.18	0.23	0.10	
Petroleum Hydrocarbons							
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	2.03	2.18	< 1.20	
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	7.74	8.95	< 1.50	
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	162.8	173.9	8.97	
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	172.6	185.0	< 10.00	
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90	

Summary of Chemical Analysis

Soil Samples

Our Ref 24-08362

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328740	2328741	2328742	2328743
Sample ID ~	3FM-BH301B	3FM-BH301B	3FM-BH301B	3FM-BH301B
Depth ~	0.50	1.00	2.00	5.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	14/04/2024	14/04/2024	14/04/2024	14/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	0.78		0.57	< 0.50
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	3.33		2.71	1.51
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	206.7		90.30	< 1.40
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	210.8		93.57	< 10.00
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	383.4		278.6	< 10.00
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01	< 0.01
PAHs							
Naphthalene	DETSC 3301	0.1	mg/kg	< 2.0		< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 2.0		< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 2.0		< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 2.0		< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	3.5		< 0.1	0.2
Anthracene	DETSC 3301	0.1	mg/kg	< 2.0		< 0.1	0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 2.0		< 0.1	0.2
Pyrene	DETSC 3301	0.1	mg/kg	< 2.0		< 0.1	0.3
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 2.0		< 0.1	0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 2.0		< 0.1	0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 2.0		< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 2.0		< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 2.0		< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 2.0		< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 2.0		< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 2.0		< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	35		< 1.6	< 1.6
PCBs							
PCB 77	DETSC 3401*	0.01	mg/kg			< 0.01	
PCB 81	DETSC 3401*	0.01	mg/kg			< 0.01	
PCB 105	DETSC 3401*	0.01	mg/kg			< 0.01	
PCB 114	DETSC 3401*	0.01	mg/kg			< 0.01	
PCB 118	DETSC 3401#	0.01	mg/kg			< 0.01	
PCB 123	DETSC 3401*	0.01	mg/kg			< 0.01	
PCB 126	DETSC 3401*	0.01	mg/kg			< 0.01	
PCB 156	DETSC 3401*	0.01	mg/kg			< 0.01	
PCB 157	DETSC 3401*	0.01	mg/kg			< 0.01	
PCB 167	DETSC 3401*	0.01	mg/kg			< 0.01	
PCB 169	DETSC 3401*	0.01	mg/kg			< 0.01	
PCB 189	DETSC 3401*	0.01	mg/kg			< 0.01	

Summary of Chemical Analysis

Soil Samples

Our Ref 24-08362

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328740	2328741	2328742	2328743
Sample ID ~	3FM-BH301B	3FM-BH301B	3FM-BH301B	3FM-BH301B
Depth ~	0.50	1.00	2.00	5.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	14/04/2024	14/04/2024	14/04/2024	14/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Phenols							
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-08362

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328740	2328742	2328743
Sample ID ~	3FM-BH301B	3FM-BH301B	3FM-BH301B
Depth ~	0.50	2.00	5.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	14/04/2024	14/04/2024	14/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-08362

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328740	2328742	2328743
Sample ID ~	3FM-BH301B	3FM-BH301B	3FM-BH301B
Depth ~	0.50	2.00	5.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	14/04/2024	14/04/2024	14/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
SVOCs						
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-08362

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328740	2328742	2328743
Sample ID ~	3FM-BH301B	3FM-BH301B	3FM-BH301B
Depth ~	0.50	2.00	5.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	14/04/2024	14/04/2024	14/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-08362

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328744
Sample ID ~	3FM-BH301B
Depth ~	2.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	14/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Preparation				
BS EN 12457 10:1	DETSC 1009*			Y
Metals				
Aluminium, Dissolved	DETSC 2306	10	ug/l	62
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.61
Barium, Dissolved	DETSC 2306	0.26	ug/l	9.7
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	84
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.06
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.9
Iron, Dissolved	DETSC 2306	5.5	ug/l	< 5.5
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.19
Manganese, Dissolved	DETSC 2306	0.22	ug/l	5.2
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.33
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	0.8
Zinc, Dissolved	DETSC 2306	1.3	ug/l	3.2
Inorganics				
pH	DETSC 2008		pH	8.4
Cyanide, Total	DETSC 2130	40	ug/l	< 40
Cyanide, Free	DETSC 2130	20	ug/l	< 20
Ortho Phosphate as P	DETSC 2205	0.01	mg/l	< 0.01
Sulphide	DETSC 2208	0.01	mg/l	< 0.01
Sulphur (free)	DETSC 3049*	84	ug/l	< 84
Sulphur as S, Total	DETSC 2320*	10	mg/l	43
Petroleum Hydrocarbons				
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	ug/l	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-08362

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328744
Sample ID ~	3FM-BH301B
Depth ~	2.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	14/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	ug/l	< 10
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	ug/l	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	0.38
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.04
Anthracene	DETSC 3304	0.01	ug/l	0.02
Fluoranthene	DETSC 3304	0.01	ug/l	0.09
Pyrene	DETSC 3304	0.01	ug/l	0.10
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	0.05
Chrysene	DETSC 3304	0.01	ug/l	0.06
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.09
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.03
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.07
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.06
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.05
PAH Total	DETSC 3304	0.2	ug/l	1.1
PCBs				
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0
Phenols				
Phenol	DETSC 3451*	0.1	ug/l	< 0.10
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-08362

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328744
Sample ID ~	3FM-BH301B
Depth ~	2.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	14/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10

Summary of Chemical Analysis

Leachate VOC/SVOC Samples

Our Ref 24-08362

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328744
Sample ID ~	3FM-BH301B
Depth ~	2.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	14/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4
Chloroform	DETSC 3432	1	ug/l	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1
Benzene	DETSC 3432	1	ug/l	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
Toluene	DETSC 3432	1	ug/l	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1
Styrene	DETSC 3432	1	ug/l	< 1
Bromoform	DETSC 3432	1	ug/l	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1

Summary of Chemical Analysis Leachate VOC/SVOC Samples

Our Ref 24-08362

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328744
Sample ID ~	3FM- BH301B
Depth ~	2.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	14/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Bromobenzene	DETSC 3432	1	ug/l	< 1
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1
MTBE	DETSC 3432*	1	ug/l	< 1
SVOCs				
Aniline	DETSC 3434*	1	ug/l	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0

Summary of Chemical Analysis Leachate VOC/SVOC Samples

Our Ref 24-08362

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328744
Sample ID ~	3FM- BH301B
Depth ~	2.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	14/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-08362

Client Ref 24-0316

Contract Title 3FM Plot L Hammond Lane

Sample Id 3FM-BH301B 1.00

Sample Numbers 2328741 2328745

Date Analysed 30/04/2024

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084# Total Organic Carbon	%	7.3
DETSC 2003# Loss On Ignition	%	4.8
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	400.0
DETSC 3301 PAHs	mg/kg	< 33.8
DETSC 2008# pH	pH Units	8.3
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	0.66	< 0.01
DETSC 2306 Barium as Ba	18	0.18
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02
DETSC 2306 Chromium as Cr	< 0.25	< 0.1
DETSC 2306 Copper as Cu	0.55	< 0.02
DETSC 2306 Mercury as Hg	< 0.010	< 0.002
DETSC 2306 Molybdenum as Mo	1.3	< 0.1
DETSC 2306 Nickel as Ni	< 0.50	< 0.1
DETSC 2306 Lead as Pb	15	0.15
DETSC 2306 Antimony as Sb	< 0.17	< 0.05
DETSC 2306 Selenium as Se	0.55	< 0.03
DETSC 2306 Zinc as Zn	< 1.3	< 0.01
DETSC 2055 Chloride as Cl	110000	1100
DETSC 2055* Fluoride as F	< 100	< 0.1
DETSC 2055 Sulphate as SO4	95000	950
DETSC 2009* Total Dissolved Solids	250000	2500
DETSC 2130 Phenol Index	< 100	< 1
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information	
DETSC 2008 pH	8.0
DETSC 2009 Conductivity uS/cm	352.0
* Temperature*	17.0
Mass of Sample Kg*	0.100
Mass of dry Sample Kg*	0.093
Stage 1	
Volume of Leachant L2*	0.921
Volume of Eluate VE1*	0.88

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-08362

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2328740	3FM-BH301B 0.50	SOIL	Chrysotile Amosite	Chrysotile & Amosite present as fibre bundles	Ben Barsby
2328742	3FM-BH301B 2.00	SOIL	NAD	none	Ben Barsby
2328743	3FM-BH301B 5.00	SOIL	NAD	none	Ben Barsby

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-08362

Client Ref ~ 24-0316

Contract ~ 3FM Plot L Hammond Lane

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2328740	3FM-BH301B 0.50 SOIL	14/04/24	GJ 250ml, GJ 60ml	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2328741	3FM-BH301B 1.00 SOIL	14/04/24	GJ 250ml, GJ 60ml	pH + Conductivity (7 days)	
2328742	3FM-BH301B 2.00 SOIL	14/04/24	GJ 250ml, GJ 60ml	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2328743	3FM-BH301B 5.00 SOIL	14/04/24	GJ 250ml, GJ 60ml	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2328744	3FM-BH301B 2.00 LEACHATE	14/04/24	GJ 250ml, GJ 60ml	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Sulphur (free) (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days), PCB (7 days), SVOC (7 days)	VOC
2328745	3FM-BH301B 1.00 LEACHATE	14/04/24	GJ 250ml, GJ 60ml	pH/Cond (1 days)	

Key: G-Glass J-Jar

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total
TPH (C10-C40)	EH_1D_Total
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C5-C35	EH_CU+HS_1D_AL
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR



Aromatic C5-C35
TPH Ali/Aro Total C5-C35

EH_CU+HS_1D_AR
EH_CU+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-09268

Issued: 14-May-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-09268

Client Reference ~ 24-0316

Order No ~ (not supplied)

Contract Title ~ 3FM Plot L Hammond Lane

Description 4 Soil samples, 2 Leachate prepared by DETS samples.

Date Received 07-May-24

Date Started 07-May-24

Date Completed 14-May-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



2139

Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-09268

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2333686	2333687	2333688	2333689
Sample ID ~	3FM-BH306	3FM-BH306	3FM-BH306	3FM-BH306
Depth ~	1.00	2.00	3.00	6.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	15/04/2024	15/04/2024	15/04/2024	15/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Metals							
Aluminium	DETSC 2301*	1	mg/kg	5100	2900	4600	4700
Arsenic	DETSC 2301#	0.2	mg/kg	8.0	3.4	5.9	6.0
Barium	DETSC 2301#	1.5	mg/kg	19	17	74	22
Beryllium	DETSC 2301#	0.2	mg/kg	0.3	< 0.2	0.5	0.2
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.3	0.4	1.7	1.1
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	< 0.1	1.4	0.3
Chromium	DETSC 2301#	0.15	mg/kg	11	7.5	9.3	15
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	13	4.9	26	8.1
Iron	DETSC 2301	25	mg/kg	14000	6700	16000	11000
Lead	DETSC 2301#	0.3	mg/kg	9.8	6.4	7.1	4.4
Manganese	DETSC 2301#	20	mg/kg	430	200	2700	560
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	14	6.2	20	14
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	1.7	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	15	10	39	13
Zinc	DETSC 2301#	1	mg/kg	67	31	130	40
Inorganics							
pH	DETSC 2008#		pH	11.7	9.9	9.3	9.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6
Total Organic Carbon	DETSC 2084#	0.5	%	< 0.5	0.6	3.4	1.6
Organic matter	DETSC 2002#	0.1	%	1.1	0.9	0.8	0.3
Sulphate Aqueous Extract as SO ₄ (2:1)	DETSC 2076*	0.001	%	0.0	0.0	0.0	0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75
Sulphur as S, Total	DETSC 2320	0.01	%	0.29	0.03	0.11	0.03
Petroleum Hydrocarbons							
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	1.97	1.71	1.70
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50	< 0.50	< 0.50	< 0.50

Summary of Chemical Analysis

Soil Samples

Our Ref 24-09268

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2333686	2333687	2333688	2333689
Sample ID ~	3FM-BH306	3FM-BH306	3FM-BH306	3FM-BH306
Depth ~	1.00	2.00	3.00	6.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	15/04/2024	15/04/2024	15/04/2024	15/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	< 0.60	< 0.60	< 0.60	< 0.60
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
PAHs							
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6
PCBs							
PCB 77	DETSC 3401*	0.01	mg/kg	< 0.01			
PCB 81	DETSC 3401*	0.01	mg/kg	< 0.01			
PCB 105	DETSC 3401*	0.01	mg/kg	< 0.01			
PCB 114	DETSC 3401*	0.01	mg/kg	< 0.01			
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01			
PCB 123	DETSC 3401*	0.01	mg/kg	< 0.01			
PCB 126	DETSC 3401*	0.01	mg/kg	< 0.01			
PCB 156	DETSC 3401*	0.01	mg/kg	< 0.01			
PCB 157	DETSC 3401*	0.01	mg/kg	< 0.01			
PCB 167	DETSC 3401*	0.01	mg/kg	< 0.01			
PCB 169	DETSC 3401*	0.01	mg/kg	< 0.01			
PCB 189	DETSC 3401*	0.01	mg/kg	< 0.01			
Phenols							
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-09268

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2333686	2333687	2333688	2333689
Sample ID ~	3FM-BH306	3FM-BH306	3FM-BH306	3FM-BH306
Depth ~	1.00	2.00	3.00	6.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	15/04/2024	15/04/2024	15/04/2024	15/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-09268

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2333686	2333687	2333688	2333689
Sample ID ~	3FM-BH306	3FM-BH306	3FM-BH306	3FM-BH306
Depth ~	1.00	2.00	3.00	6.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	15/04/2024	15/04/2024	15/04/2024	15/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
VOCs							
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-09268

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2333686	2333687	2333688	2333689
Sample ID ~	3FM-BH306	3FM-BH306	3FM-BH306	3FM-BH306
Depth ~	1.00	2.00	3.00	6.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	15/04/2024	15/04/2024	15/04/2024	15/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
SVOCs							
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis

Soil Samples

Our Ref 24-09268

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2333686	2333687	2333688	2333689
Sample ID ~	3FM-BH306	3FM-BH306	3FM-BH306	3FM-BH306
Depth ~	1.00	2.00	3.00	6.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	15/04/2024	15/04/2024	15/04/2024	15/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-09268

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2333690
Sample ID ~	3FM-BH306
Depth ~	2.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	15/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Preparation				
BS EN 12457 10:1	DETSC 1009*			Y
BS EN 12457 10:1	DETSC 1009*			
Metals				
Aluminium, Dissolved	DETSC 2306	10	ug/l	84
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.30
Barium, Dissolved	DETSC 2306	0.26	ug/l	8.3
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	19
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.8
Iron, Dissolved	DETSC 2306	5.5	ug/l	240
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.19
Manganese, Dissolved	DETSC 2306	0.22	ug/l	1.3
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	< 0.6
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3
Inorganics				
pH	DETSC 2008		pH	7.4
Cyanide, Total	DETSC 2130	40	ug/l	< 40
Cyanide, Free	DETSC 2130	20	ug/l	< 20
Ortho Phosphate as P	DETSC 2205	0.01	mg/l	< 0.01
Sulphide	DETSC 2208	0.01	mg/l	0.01
Sulphur (free)	DETSC 3049*	84	ug/l	< 84
Sulphur as S, Total	DETSC 2320*	10	mg/l	15
Petroleum Hydrocarbons				
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	ug/l	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-09268

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2333690
Sample ID ~	3FM-BH306
Depth ~	2.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	15/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	ug/l	< 10
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	ug/l	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.02
Anthracene	DETSC 3304	0.01	ug/l	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.03
Pyrene	DETSC 3304	0.01	ug/l	0.03
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.02
PAH Total	DETSC 3304	0.2	ug/l	< 0.20
PCBs				
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0
Phenols				
Phenol	DETSC 3451*	0.1	ug/l	< 0.10
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-09268

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2333690
Sample ID ~	3FM-BH306
Depth ~	2.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	15/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10

Summary of Chemical Analysis

Leachate VOC/SVOC Samples

Our Ref 24-09268

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2333690
Sample ID ~	3FM-BH306
Depth ~	2.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	15/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4
Chloroform	DETSC 3432	1	ug/l	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1
Benzene	DETSC 3432	1	ug/l	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
Toluene	DETSC 3432	1	ug/l	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1
Styrene	DETSC 3432	1	ug/l	< 1
Bromoform	DETSC 3432	1	ug/l	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1

Summary of Chemical Analysis

Leachate VOC/SVOC Samples

Our Ref 24-09268

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2333690
Sample ID ~	3FM-BH306
Depth ~	2.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	15/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1
MTBE	DETSC 3432*	1	ug/l	< 1
SVOCs				
Aniline	DETSC 3434*	1	ug/l	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0

Summary of Chemical Analysis

Leachate VOC/SVOC Samples

Our Ref 24-09268

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2333690
Sample ID ~	3FM-BH306
Depth ~	2.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	15/04/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-09268

Client Ref 24-0316

Contract Title 3FM Plot L Hammond Lane

Sample Id 3FM-BH306 1.00

Sample Numbers 2333686 2333691

Date Analysed 14/05/2024

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	< 0.5	3	5	6
DETSC 2003# Loss On Ignition	%	1.5	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	11.7	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	1.4	0.014	0.5	2	25
DETSC 2306 Barium as Ba	4.3	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	1.3	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.12	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.34	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	< 1.3	< 0.01	4	50	200
DETSC 2055 Chloride as Cl	8800	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	5700	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	45000	450	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

Additional Information	
DETSC 2008 pH	9.4
DETSC 2009 Conductivity uS/cm	63.6
* Temperature*	18.0
Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.096
Stage 1	
Volume of Leachant L2*	0.946
Volume of Eluate VE1*	0.902

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-09268

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2333686	3FM-BH306 1.00	SOIL	NAD	none	Pierce Booth
2333687	3FM-BH306 2.00	SOIL	NAD	none	Pierce Booth
2333688	3FM-BH306 3.00	SOIL	NAD	none	Pierce Booth
2333689	3FM-BH306 6.00	SOIL	NAD	none	Pierce Booth

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-09268

Client Ref ~ 24-0316

Contract ~ 3FM Plot L Hammond Lane

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2333686	3FM-BH306 1.00 SOIL	15/04/24	PT 1L	BTEX / C5-C10 (14 days), Sulphur (free) (7 days), EPH/Aliphatic/Aromatic (14 days), Total Sulphur ICP (7 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Phenols MS (14 days), Cyanide/Mono pHoh (14 days), SVOC (14 days), EPH/TPH (14 days)	BTEX / C5-C10, EPH/Aliphatic/Aromatic, Naphthalene, PAH FID, PCB, Phenols MS, SVOC, EPH/TPH
2333687	3FM-BH306 2.00 SOIL	15/04/24	PT 1L	BTEX / C5-C10 (14 days), Sulphur (free) (7 days), EPH/Aliphatic/Aromatic (14 days), Total Sulphur ICP (7 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Phenols MS (14 days), Cyanide/Mono pHoh (14 days), SVOC (14 days)	BTEX / C5-C10, EPH/Aliphatic/Aromatic, Naphthalene, PAH FID, Phenols MS, SVOC
2333688	3FM-BH306 3.00 SOIL	15/04/24	PT 1L	BTEX / C5-C10 (14 days), Sulphur (free) (7 days), EPH/Aliphatic/Aromatic (14 days), Total Sulphur ICP (7 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Phenols MS (14 days), Cyanide/Mono pHoh (14 days), SVOC (14 days)	BTEX / C5-C10, EPH/Aliphatic/Aromatic, Naphthalene, PAH FID, Phenols MS, SVOC
2333689	3FM-BH306 6.00 SOIL	15/04/24	PT 1L	BTEX / C5-C10 (14 days), Sulphur (free) (7 days), EPH/Aliphatic/Aromatic (14 days), Total Sulphur ICP (7 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Phenols MS (14 days), Cyanide/Mono pHoh (14 days), SVOC (14 days)	BTEX / C5-C10, EPH/Aliphatic/Aromatic, Naphthalene, PAH FID, Phenols MS, SVOC

Information in Support of the Analytical Results

Our Ref ~ 24-09268
 Client Ref ~ 24-0316
 Contract ~ 3FM Plot L Hammond Lane

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2333690	3FM-BH306 2.00 LEACHATE	15/04/24	PT 1L	Aliphatics/Aromatics (4 days), BTEX / C5-C10 (14 days), Chromium, Hexavalent (4 days), Sulphur (free) (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), Naphthalene (14 days), PAH MS (4 days), PCB (7 days), Phenols MS (21 days), Cyanide/Mono pHoh (14 days), SVOC (7 days)	Aliphatics/Aromatics, BTEX / C5-C10, Metals (Soluble) ICPMS, Naphthalene, PAH MS, PCB, Phenols MS, SVOC
2333691	3FM-BH306 1.00 LEACHATE	15/04/24	PT 1L	pH/Cond (1 days), Cyanide/Mono pHoh (14 days)	Metals (Soluble) ICPMS

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total
TPH (C10-C40)	EH_1D_Total
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C5-C35	EH_CU+HS_1D_AL
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR



Aromatic C5-C35
TPH Ali/Aro Total C5-C35

EH_CU+HS_1D_AR
EH_CU+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report



Certificate of Analysis

Certificate Number 24-08363

Issued: 01-May-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-08363

Client Reference ~ 24-0316

Order No ~ (not supplied)

Contract Title ~ 3FM Plot L Hammond Lane

Description 3 Soil samples.

Date Received 24-Apr-24

Date Started 24-Apr-24

Date Completed 01-May-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By

A handwritten signature in black ink, appearing to read "Kirk Bridgewood".

Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-08363

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328746	2328747	2328748
Sample ID ~	3FM-BH305	3FM-BH305	3FM-BH305
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	16/04/2024	16/04/2024	16/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Aluminium	DETSC 2301*	1	mg/kg	2500	6200	1300
Arsenic	DETSC 2301#	0.2	mg/kg	7.5	14	17
Barium	DETSC 2301#	1.5	mg/kg	20	78	24
Beryllium	DETSC 2301#	0.2	mg/kg	< 0.2	0.5	< 0.2
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	1.2	2.4	0.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	4.3	2.3
Chromium	DETSC 2301#	0.15	mg/kg	3.6	9.0	1.8
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	20	26	18
Iron	DETSC 2301	25	mg/kg	10000	14000	5500
Lead	DETSC 2301#	0.3	mg/kg	110	37	19
Manganese	DETSC 2301#	20	mg/kg	880	730	650
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.56	< 0.05
Nickel	DETSC 2301#	1	mg/kg	7.3	17	5.0
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	5.3	28	2.3
Zinc	DETSC 2301#	1	mg/kg	73	1200	190
Inorganics						
pH	DETSC 2008#		pH	9.1	10.3	9.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Total Organic Carbon	DETSC 2084#	0.5	%	5.9	13	7.1
Organic matter	DETSC 2002#	0.1	%	1.2	1.7	0.3
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076*	0.001	%	0.0	0.0	0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75
Sulphur as S, Total	DETSC 2320	0.01	%	0.03	0.16	0.02
Petroleum Hydrocarbons						
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	3.59	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	37.13	141.6	< 3.40
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	37.13	145.2	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50	< 0.50	< 0.50
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	< 0.60	5.39	< 0.60

Summary of Chemical Analysis

Soil Samples

Our Ref 24-08363

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328746	2328747	2328748
Sample ID ~	3FM-BH305	3FM-BH305	3FM-BH305
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	16/04/2024	16/04/2024	16/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	1.76	18.14	< 1.40
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00	23.53	< 10.00
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	37.13	168.7	< 10.00
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
PAHs						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.2
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	4.8
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	5.1
Phenols						
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-08363

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328746	2328747	2328748
Sample ID ~	3FM-BH305	3FM-BH305	3FM-BH305
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	16/04/2024	16/04/2024	16/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-08363

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328746	2328747	2328748
Sample ID ~	3FM-BH305	3FM-BH305	3FM-BH305
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	16/04/2024	16/04/2024	16/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
SVOCs						
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis Soil Samples

Our Ref 24-08363

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328746	2328747	2328748
Sample ID ~	3FM-BH305	3FM-BH305	3FM-BH305
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	16/04/2024	16/04/2024	16/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Asbestos Analysis Soil Samples

Our Ref 24-08363

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2328746	3FM-BH305 0.50	SOIL	NAD	none	Josh Best
2328747	3FM-BH305 2.00	SOIL	Chrysotile Amosite	Amosite and Chrysotile present as fibre bundles	Josh Best
2328748	3FM-BH305 4.00	SOIL	NAD	none	Josh Best

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-08363
 Client Ref ~ 24-0316
 Contract ~ 3FM Plot L Hammond Lane

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2328746	3FM-BH305 0.50 SOIL	16/04/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2328747	3FM-BH305 2.00 SOIL	16/04/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2328748	3FM-BH305 4.00 SOIL	16/04/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-08365

Issued: 01-May-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-08365

Client Reference ~ 24-0316

Order No ~ (not supplied)

Contract Title ~ 3FM Plot L Hammond Lane

Description 3 Soil samples.

Date Received 24-Apr-24

Date Started 24-Apr-24

Date Completed 01-May-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-08365

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328750	2328751	2328752
Sample ID ~	3FM-BH307	3FM-BH307	3FM-BH307
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	14/04/2024	16/04/2024	16/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Aluminium	DETSC 2301*	1	mg/kg	13000	15000	3000
Arsenic	DETSC 2301#	0.2	mg/kg	14	4.4	4.1
Barium	DETSC 2301#	1.5	mg/kg	22	14	16
Beryllium	DETSC 2301#	0.2	mg/kg	0.6	< 0.2	< 0.2
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.3	1.5	0.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.1	0.1
Chromium	DETSC 2301#	0.15	mg/kg	40	8.1	8.3
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	23	5.9	5.1
Iron	DETSC 2301	25	mg/kg	25000	42000	8800
Lead	DETSC 2301#	0.3	mg/kg	22	7.5	8.0
Manganese	DETSC 2301#	20	mg/kg	590	220	220
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	22	6.9	6.4
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	49	12	12
Zinc	DETSC 2301#	1	mg/kg	70	24	23
Inorganics						
pH	DETSC 2008#		pH	11.7	9.0	9.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Total Organic Carbon	DETSC 2084#	0.5	%	< 0.5	0.6	1.3
Organic matter	DETSC 2002#	0.1	%	6.4	0.3	0.3
Sulphate Aqueous Extract as SO ₄ (2:1)	DETSC 2076*	0.001	%	0.0	0.0	0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	6.0
Sulphur as S, Total	DETSC 2320	0.01	%	0.09	0.03	0.06
Petroleum Hydrocarbons						
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	3.61	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	16.01	< 3.40	< 3.40
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	19.62	< 10.00	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50	< 0.50	< 0.50

Summary of Chemical Analysis

Soil Samples

Our Ref 24-08365

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328750	2328751	2328752
Sample ID ~	3FM-BH307	3FM-BH307	3FM-BH307
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	14/04/2024	16/04/2024	16/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	< 0.60	< 0.60	< 0.60
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	< 1.40	< 1.40	< 1.40
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	19.62	< 10.00	< 10.00
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
PAHs						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6
Phenols						
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-08365

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328750	2328751	2328752
Sample ID ~	3FM-BH307	3FM-BH307	3FM-BH307
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	14/04/2024	16/04/2024	16/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	0.02	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	0.04	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	0.17	0.12	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	0.03	0.06	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	0.48	0.07	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	0.02	0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	0.03	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	0.02	0.12	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	0.08	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	0.04	0.21	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	0.02	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	0.06	0.03	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	0.03	0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	0.11	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	0.04	0.02	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	0.02	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	0.11	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	0.03	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	0.06	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	0.02	0.02	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	0.04	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	0.04	0.02	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	0.07	0.06	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	0.07	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	0.04	0.05	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	0.07	0.02	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	0.08	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	0.07	0.06	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	0.01	0.04	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	0.02	0.03	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	0.04	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	0.02	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	0.05	0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	0.04	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-08365

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328750	2328751	2328752
Sample ID ~	3FM-BH307	3FM-BH307	3FM-BH307
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	14/04/2024	16/04/2024	16/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	0.02	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	0.03	0.04	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	0.13	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	0.04	0.03	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	0.21	< 0.01
SVOCs						
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis Soil Samples

Our Ref 24-08365

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328750	2328751	2328752
Sample ID ~	3FM-BH307	3FM-BH307	3FM-BH307
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	14/04/2024	16/04/2024	16/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-08365

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2328750	3FM-BH307 0.50	SOIL	NAD	none	Darryl Fletcher
2328751	3FM-BH307 2.00	SOIL	NAD	none	Darryl Fletcher
2328752	3FM-BH307 4.00	SOIL	NAD	none	Darryl Fletcher

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref ~ 24-08365
 Client Ref ~ 24-0316
 Contract ~ 3FM Plot L Hammond Lane

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2328750	3FM-BH307 0.50 SOIL	14/04/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2328751	3FM-BH307 2.00 SOIL	16/04/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2328752	3FM-BH307 4.00 SOIL	16/04/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.



nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-08366

Issued: 01-May-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-08366

Client Reference ~ 24-0316

Order No ~ (not supplied)

Contract Title ~ 3FM Plot L Hammond Lane

Description 3 Soil samples.

Date Received 24-Apr-24

Date Started 24-Apr-24

Date Completed 01-May-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



Normec DETS Limited

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-08366

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328753	2328754	2328755
Sample ID ~	3FM-BH310	3FM-BH310	3FM-BH310
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	17/04/2024	17/04/2024	17/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Aluminium	DETSC 2301*	1	mg/kg	11000	10000	6200
Arsenic	DETSC 2301#	0.2	mg/kg	11	9.7	7.3
Barium	DETSC 2301#	1.5	mg/kg	230	68	130
Beryllium	DETSC 2301#	0.2	mg/kg	1.4	0.5	0.6
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	3.0	3.3	3.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.5	0.2
Chromium	DETSC 2301#	0.15	mg/kg	14	11	9.8
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	62	38	30
Iron	DETSC 2301	25	mg/kg	19000	28000	19000
Lead	DETSC 2301#	0.3	mg/kg	41	35	39
Manganese	DETSC 2301#	20	mg/kg	240	230	300
Mercury	DETSC 2325#	0.05	mg/kg	0.11	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	33	23	18
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	0.9	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	52	21	25
Zinc	DETSC 2301#	1	mg/kg	74	73	47
Inorganics						
pH	DETSC 2008#		pH	9.2	10.5	10.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.6	< 0.6	< 0.6
Total Organic Carbon	DETSC 2084#	0.5	%	30	8.6	15
Organic matter	DETSC 2002#	0.1	%	14	3.8	3.8
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076*	0.001	%	0.0	0.0	0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75
Sulphur as S, Total	DETSC 2320	0.01	%	0.09	0.64	0.20
Petroleum Hydrocarbons						
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	4.65	6.39	37.54
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	37.54
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	1.62	< 0.50	0.82

Summary of Chemical Analysis

Soil Samples

Our Ref 24-08366

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328753	2328754	2328755
Sample ID ~	3FM-BH310	3FM-BH310	3FM-BH310
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	17/04/2024	17/04/2024	17/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	4.26	< 0.60	1.14
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	2.41	< 1.40	< 1.40
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	37.54
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
PAHs						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	0.3	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	0.3	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6
Phenols						
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-08366

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328753	2328754	2328755
Sample ID ~	3FM-BH310	3FM-BH310	3FM-BH310
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	17/04/2024	17/04/2024	17/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis Soil Samples

Our Ref 24-08366

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328753	2328754	2328755
Sample ID ~	3FM-BH310	3FM-BH310	3FM-BH310
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	17/04/2024	17/04/2024	17/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
SVOCs						
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis Soil Samples

Our Ref 24-08366

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2328753	2328754	2328755
Sample ID ~	3FM-BH310	3FM-BH310	3FM-BH310
Depth ~	0.50	2.00	4.00
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	17/04/2024	17/04/2024	17/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-08366

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2328753	3FM-BH310 0.50	SOIL	NAD	none	Ben Barsby
2328754	3FM-BH310 2.00	SOIL	NAD	none	Ben Barsby
2328755	3FM-BH310 4.00	SOIL	NAD	none	Ben Barsby

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-08366
 Client Ref ~ 24-0316
 Contract ~ 3FM Plot L Hammond Lane

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2328753	3FM-BH310 0.50 SOIL	17/04/24	GJ 250ml, GJ 60ml, PT 1L		
2328754	3FM-BH310 2.00 SOIL	17/04/24	GJ 250ml, GJ 60ml, PT 1L		
2328755	3FM-BH310 4.00 SOIL	17/04/24	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub
 DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
 Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
 The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.



nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-09269

Issued: 14-May-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-09269

Client Reference ~ 24-0316

Order No ~ (not supplied)

Contract Title ~ 3FM Plot L Hammond Lane

Description 4 Soil samples.

Date Received 07-May-24

Date Started 07-May-24

Date Completed 14-May-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



2139

Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 10

Summary of Chemical Analysis

Soil Samples

Our Ref 24-09269

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2333692	2333693	2333694	2333695
Sample ID ~	3FM-BH311	3FM-BH311	3FM-BH311	3FM-BH311
Depth ~		1.00	2.00	4.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	17/04/2024	17/04/2024	17/04/2024	17/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Metals							
Aluminium	DETSC 2301*	1	mg/kg	10000	5300	45000	4300
Arsenic	DETSC 2301#	0.2	mg/kg	12	13	12	5.3
Barium	DETSC 2301#	1.5	mg/kg	390	260	190	41
Beryllium	DETSC 2301#	0.2	mg/kg	1.1	0.5	1.0	0.3
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.7	0.4	7.1	2.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.6	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	14	11	14	10
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	49	34	56	12
Iron	DETSC 2301	25	mg/kg	17000	10000	23000	9100
Lead	DETSC 2301#	0.3	mg/kg	19	34	13	17
Manganese	DETSC 2301#	20	mg/kg	310	690	200	120
Mercury	DETSC 2325#	0.05	mg/kg	0.07	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	28	16	26	9.9
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	40	22	38	15
Zinc	DETSC 2301#	1	mg/kg	60	140	39	39
Inorganics							
pH	DETSC 2008#		pH	10.8	12.0	7.5	8.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6
Total Organic Carbon	DETSC 2084#	0.5	%	24	4.6	37	7.3
Organic matter	DETSC 2002#	0.1	%	6.1	2.4	1.4	3.0
Sulphate Aqueous Extract as SO ₄ (2:1)	DETSC 2076*	0.001	%	0.0	0.0	0.1	0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75
Sulphur as S, Total	DETSC 2320	0.01	%	0.11	0.17	0.13	0.04
Petroleum Hydrocarbons							
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	10.13	20.18	6.78	< 3.40
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	10.13	20.18	< 10.00	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	0.70	< 0.50	1.01	< 0.50

Summary of Chemical Analysis

Soil Samples

Our Ref 24-09269

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2333692	2333693	2333694	2333695
Sample ID ~	3FM-BH311	3FM-BH311	3FM-BH311	3FM-BH311
Depth ~		1.00	2.00	4.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	17/04/2024	17/04/2024	17/04/2024	17/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	< 0.60	< 0.60	< 0.60	< 0.60
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	10.13	20.18	< 10.00	< 10.00
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
PAHs							
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6
Phenols							
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-09269

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2333692	2333693	2333694	2333695
Sample ID ~	3FM-BH311	3FM-BH311	3FM-BH311	3FM-BH311
Depth ~		1.00	2.00	4.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	17/04/2024	17/04/2024	17/04/2024	17/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
VOCs							
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-09269

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2333692	2333693	2333694	2333695
Sample ID ~	3FM-BH311	3FM-BH311	3FM-BH311	3FM-BH311
Depth ~		1.00	2.00	4.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	17/04/2024	17/04/2024	17/04/2024	17/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
SVOCs							
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis

Soil Samples

Our Ref 24-09269

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2333692	2333693	2333694	2333695
Sample ID ~	3FM-BH311	3FM-BH311	3FM-BH311	3FM-BH311
Depth ~		1.00	2.00	4.00
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	17/04/2024	17/04/2024	17/04/2024	17/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-09269

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2333692	3FM-BH311	SOIL	NAD	none	Pierce Booth
2333693	3FM-BH311 1.00	SOIL	NAD	none	Pierce Booth
2333694	3FM-BH311 2.00	SOIL	NAD	none	Pierce Booth
2333695	3FM-BH311 4.00	SOIL	NAD	none	Pierce Booth

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-09269
 Client Ref ~ 24-0316
 Contract ~ 3FM Plot L Hammond Lane

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2333692	3FM-BH311 SOIL	17/04/24	GJ 250ml, GJ 60ml, PT 1L	BTEX / C5-C10 (14 days), Sulphur (free) (7 days), EPH/Aliphatic/Aromatic (14 days), Total Sulphur ICP (7 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Phenols MS (14 days), Cyanide/Mono pHoh (14 days), SVOC (14 days)	
2333693	3FM-BH311 1.00 SOIL	17/04/24	GJ 250ml, GJ 60ml, PT 1L	BTEX / C5-C10 (14 days), Sulphur (free) (7 days), EPH/Aliphatic/Aromatic (14 days), Total Sulphur ICP (7 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Phenols MS (14 days), Cyanide/Mono pHoh (14 days), SVOC (14 days)	
2333694	3FM-BH311 2.00 SOIL	17/04/24	GJ 250ml, GJ 60ml, PT 1L	BTEX / C5-C10 (14 days), Sulphur (free) (7 days), EPH/Aliphatic/Aromatic (14 days), Total Sulphur ICP (7 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Phenols MS (14 days), Cyanide/Mono pHoh (14 days), SVOC (14 days)	
2333695	3FM-BH311 4.00 SOIL	17/04/24	GJ 250ml, GJ 60ml, PT 1L	BTEX / C5-C10 (14 days), Sulphur (free) (7 days), EPH/Aliphatic/Aromatic (14 days), Total Sulphur ICP (7 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Phenols MS (14 days), Cyanide/Mono pHoh (14 days), SVOC (14 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.



nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-08939

Issued: 16-May-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-08939

Client Reference ~ 24-0316

Order No ~ (not supplied)

Contract Title ~ 3FM PLOT L HAMMOND LANE

Description 6 Other Water samples.

Date Received 01-May-24

Date Started 01-May-24

Date Completed 16-May-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



2139

Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Water Samples

Our Ref 24-08939

Client Ref ~ 24-0316

Contract Title ~ 3FM PLOT L HAMMOND LANE

Lab No	2331738	2331739	2331740	2331741	2331742	2331743
Sample ID ~	BH313	BH309	BH308	BH304	BH302	BH301A
Depth ~	2.98	3.31	2.99	3.85	1.99	1.92
Other ID ~						
Sample Type ~	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER
Sampling Date ~	25/04/2024	25/04/2024	25/04/2024	25/04/2024	25/04/2024	25/04/2024
Sampling Time ~	1449	1221	1159	1307	1335	1404

Test	Method	LOD	Units						
Metals									
Aluminium, Dissolved	DETS 2306	10	ug/l	29	16	29	23	41	16
Arsenic, Dissolved	DETS 2306	0.16	ug/l	1.4	1.3	6.8	1.8	1.4	1.2
Barium, Dissolved	DETS 2306	0.26	ug/l	150	250	270	410	120	140
Beryllium, Dissolved	DETS 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron, Dissolved	DETS 2306*	12	ug/l	1800	1500	630	1200	1800	1700
Cadmium, Dissolved	DETS 2306	0.03	ug/l	0.25	0.66	0.14	0.35	0.06	0.13
Calcium, Dissolved	DETS 2306	0.09	mg/l	420	490	200	590	490	400
Chromium, Dissolved	DETS 2306	0.25	ug/l	0.41	< 0.25	2.2	< 0.25	0.42	0.36
Chromium, Hexavalent	DETS 2203	7	ug/l	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
Copper, Dissolved	DETS 2306	0.4	ug/l	2.3	2.4	1.2	2.8	1.9	2.6
Iron, Dissolved	DETS 2306	5.5	ug/l	31	15	60	18	25	12
Lead, Dissolved	DETS 2306	0.09	ug/l	0.48	0.15	2.7	0.34	0.29	0.55
Manganese, Dissolved	DETS 2306	0.22	ug/l	42	2500	1100	1700	59	13
Mercury, Dissolved	DETS 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETS 2306	0.5	ug/l	4.7	25	5.5	13	2.5	5.4
Selenium, Dissolved	DETS 2306	0.25	ug/l	0.41	1.0	8.4	1.2	0.35	3.2
Vanadium, Dissolved	DETS 2306	0.6	ug/l	1.4	1.9	2.7	1.4	1.9	4.9
Zinc, Dissolved	DETS 2306	1.3	ug/l	52	42	96	68	37	69
Inorganics									
pH	DETS 2008		pH	7.2	7.1	7.3	7.6	7.7	7.5
Alkalinity as CaCO3 (Automated)	DETS 2030	10	mg/l	180	370	260	140	130	160
Cyanide, Total	DETS 2130	40	ug/l	< 40	< 40	< 40	< 40	< 40	< 40
Cyanide, Free	DETS 2130	20	ug/l	< 20	< 20	< 20	< 20	< 20	< 20
Dissolved, Oxygen	DETS 2048*	0.1	mg/l	9.9	7.4	8.8	4.5	9.6	9.6
Dissolved Organic Carbon	DETS 2085	2	mg/l	< 2.0	5.2	60	3.8	< 2.0	< 2.0
Total Hardness as CaCO3	DETS 2303	0.1	mg/l	4690	4940	1360	5550	4550	4480
Ortho Phosphate as P	DETS 2205	0.01	mg/l	0.05	0.08	0.01	0.04	0.04	0.03
Sulphide	DETS 2208	0.01	mg/l	0.02	0.02	0.02	0.02	0.02	0.02
Sulphur (free)	DETS 3049*	84	ug/l	< 84	< 200.0	< 84	< 200.0	< 200.0	< 200.0
Sulphur as S, Total	DETS 2320*	10	mg/l	870	730	200	770	940	960
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETS 3322	0.1	ug/l	31	< 0.1	55	140	< 0.1	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	57	130	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	92	1100	< 1.0	< 1.0	1.5
Aliphatic C16-C21: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	340	1600	< 1.0	< 1.0	8.2
Aliphatic C21-C35: EH_CU_1D_AL	DETS 3072*	1	ug/l	21	4000	560	< 1.0	< 1.0	56
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETS 3072*	10	ug/l	53	4500	3400	140	< 10	66
Aromatic C5-C7: HS_1D_AR	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8: HS_1D_AR	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1



Summary of Chemical Analysis

Water Samples

Our Ref 24-08939

Client Ref ~ 24-0316

Contract Title ~ 3FM PLOT L HAMMOND LANE

Lab No	2331738	2331739	2331740	2331741	2331742	2331743
Sample ID ~	BH313	BH309	BH308	BH304	BH302	BH301A
Depth ~	2.98	3.31	2.99	3.85	1.99	1.92
Other ID ~						
Sample Type ~	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER
Sampling Date ~	25/04/2024	25/04/2024	25/04/2024	25/04/2024	25/04/2024	25/04/2024
Sampling Time ~	1449	1221	1159	1307	1335	1404

Test	Method	LOD	Units						
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	9.1	300	1.3	< 1.0	< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	76	1300	15	< 1.0	< 1.0
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	120	1300	16	< 1.0	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	720	510	40	< 1.0	< 1.0
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	ug/l	< 10	930	3500	72	< 10	< 10
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	ug/l	53	5400	6900	210	< 10	66
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
PAHs									
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05	< 5.00	< 5.00	< 0.50	0.10
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	0.02	30	1.5	1.1	0.02
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01	0.03	65	1.5	0.21	0.02
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	0.03	110	2.4	0.22	0.02
Phenanthrene	DETSC 3304	0.01	ug/l	< 0.01	0.07	210	7.9	2.0	0.19
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 1.00	< 1.00	0.57	0.02
Fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	0.03	< 1.00	5.0	10	0.29
Pyrene	DETSC 3304	0.01	ug/l	0.01	0.03	76	7.6	10	0.53
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01	< 0.01	< 1.00	2.9	7.2	0.27
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 1.00	3.4	5.7	0.20
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	1.7	6.5	11	0.34
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 1.00	2.1	3.7	0.13
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 1.00	4.0	9.5	0.32
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 1.00	2.5	5.7	0.18
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 1.00	< 1.00	0.92	0.04
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	1.3	4.1	5.6	0.25
PAH Total	DETSC 3304	0.2	ug/l	< 0.20	0.20	490	52	74	2.9
PCBs									
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3	< 0.3	< 0.3	< 2.0	< 0.3	< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 2.0	< 0.2	< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3	< 0.3	< 0.3	< 2.0	< 0.3	< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6	< 0.6	< 0.6	< 6.0	< 0.6	< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 2.0	< 0.2	< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 2.0	< 0.2	< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 2.0	< 0.2	< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0



Summary of Chemical Analysis

Water Samples

Our Ref 24-08939

Client Ref ~ 24-0316

Contract Title ~ 3FM PLOT L HAMMOND LANE

Lab No	2331738	2331739	2331740	2331741	2331742	2331743
Sample ID ~	BH313	BH309	BH308	BH304	BH302	BH301A
Depth ~	2.98	3.31	2.99	3.85	1.99	1.92
Other ID ~						
Sample Type ~	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER
Sampling Date ~	25/04/2024	25/04/2024	25/04/2024	25/04/2024	25/04/2024	25/04/2024
Sampling Time ~	1449	1221	1159	1307	1335	1404

Test	Method	LOD	Units						
Phenols									
Phenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10



Summary of Chemical Analysis

Water Samples

Our Ref 24-08939

Client Ref ~ 24-0316

Contract Title ~ 3FM PLOT L HAMMOND LANE

Lab No	2331738	2331739	2331740	2331741	2331742	2331743
Sample ID ~	BH313	BH309	BH308	BH304	BH302	BH301A
Depth ~	2.98	3.31	2.99	3.85	1.99	1.92
Other ID ~						
Sample Type ~	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER
Sampling Date ~	25/04/2024	25/04/2024	25/04/2024	25/04/2024	25/04/2024	25/04/2024
Sampling Time ~	1449	1221	1159	1307	1335	1404

Test	Method	LOD	Units						
VOCs									
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	4	3
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27	< 27	< 27	< 27	< 27	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	6	4
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	< 1	9	2	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	2	2
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	5	8
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	3	4
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	2	3
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	28	37
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	51	59
Styrene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	8	12
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1



Summary of Chemical Analysis

Water Samples

Our Ref 24-08939

Client Ref ~ 24-0316

Contract Title ~ 3FM PLOT L HAMMOND LANE

Lab No	2331738	2331739	2331740	2331741	2331742	2331743
Sample ID ~	BH313	BH309	BH308	BH304	BH302	BH301A
Depth ~	2.98	3.31	2.99	3.85	1.99	1.92
Other ID ~						
Sample Type ~	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER
Sampling Date ~	25/04/2024	25/04/2024	25/04/2024	25/04/2024	25/04/2024	25/04/2024
Sampling Time ~	1449	1221	1159	1307	1335	1404

Test	Method	LOD	Units						
1,2,3-trichloropropane	DETC 3432	1	ug/l	< 1	< 1	< 1	< 1	5	< 1
n-propylbenzene	DETC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	11
2-chlorotoluene	DETC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3,5-trimethylbenzene	DETC 3432	1	ug/l	< 1	< 1	< 1	< 1	100	< 5
4-chlorotoluene	DETC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Tert-butylbenzene	DETC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 5
1,2,4-trimethylbenzene	DETC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 5	< 5
sec-butylbenzene	DETC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
p-isopropyltoluene	DETC 3432	1	ug/l	< 1	< 1	< 1	< 1	9	< 1
1,3-dichlorobenzene	DETC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
1,4-dichlorobenzene	DETC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	1
n-butylbenzene	DETC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichlorobenzene	DETC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETC 3432	1	ug/l	< 1	< 1	< 1	< 1	2	2
Hexachlorobutadiene	DETC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
MTBE	DETC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
SVOCs									
Aniline	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
2-Chlorophenol	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
Benzyl Alcohol	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
2-Methylphenol	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
Bis(2-chloroisopropyl)ether	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
3&4-Methylphenol	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
Bis(2-chloroethoxy)methane	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
Hexachlorocyclopentadiene	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
2,4,5-Trichlorophenol	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
2-Nitroaniline	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
2,4-Dinitrotoluene	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
3-Nitroaniline	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
4-Nitrophenol	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
Dibenzofuran	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
2,6-Dinitrotoluene	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
2,3,4,6-Tetrachlorophenol	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
Diethylphthalate	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
4-Chlorophenylphenylether	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
4-Nitroaniline	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
Diphenylamine	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
4-Bromophenylphenylether	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
Hexachlorobenzene	DETC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0



Summary of Chemical Analysis

Water Samples

Our Ref 24-08939

Client Ref ~ 24-0316

Contract Title ~ 3FM PLOT L HAMMOND LANE

Lab No	2331738	2331739	2331740	2331741	2331742	2331743
Sample ID ~	BH313	BH309	BH308	BH304	BH302	BH301A
Depth ~	2.98	3.31	2.99	3.85	1.99	1.92
Other ID ~						
Sample Type ~	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER
Sampling Date ~	25/04/2024	25/04/2024	25/04/2024	25/04/2024	25/04/2024	25/04/2024
Sampling Time ~	1449	1221	1159	1307	1335	1404

Test	Method	LOD	Units						
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0	< 10.0	2.0	< 10.0	< 1.0	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0

Subcontracted Analysis									
Dissolved Methane	\$*	<1		<1	15	<1	6	<1	<1
Dissolved Carbon Dioxide	\$*	<1		30849	143450	46785	23026	21277	27141

2331738, 2331739, 2331740, 2331741, 2331742, 2331743 - WATER OTHER testing is not accredited

Information in Support of the Analytical Results

Our Ref 24-08939
 Client Ref ~ 24-0316
 Contract ~ 3FM PLOT L HAMMOND LANE

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2331738	BH313 2.98 WATER	25/04/24	GB 1L, GV, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days)	
2331739	BH309 3.31 WATER	25/04/24	GB 1L, GV, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days)	
2331740	BH308 2.99 WATER	25/04/24	GB 1L, GV, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days)	
2331741	BH304 3.85 WATER	25/04/24	GB 1L, GV, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days)	
2331742	BH302 1.99 WATER	25/04/24	GB 1L, GV, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days)	
2331743	BH301A 1.92 WATER	25/04/24	GB 1L, GV, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days)	

Key: G-Glass P-Plastic B-Bottle V-Vial

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Information in Support of the Analytical Results

Our Ref 24-08939

Client Ref ~ 24-0316

Contract ~ 3FM PLOT L HAMMOND LANE

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425 μ m sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C5-C35	EH_CU+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C5-C35	EH_CU+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_CU+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.



nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-10022

Issued: 03-Jun-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-10022

Client Reference ~ 24-0316

Order No ~ (not supplied)

Contract Title ~ 3FM Plot L Hammond Lane

Description 6 Other Water samples.

Date Received 16-May-24

Date Started 16-May-24

Date Completed 03-Jun-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



2139

Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 17



Summary of Chemical Analysis

Water Samples

Our Ref 24-10022

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2338233	2338234	2338236	2338237	2338238
Sample ID ~	3FM-BH301B	3FM-BH302	3FM-BH308	3FM-BH309	3FM-BH313
Depth ~	2.76	2.42	3.65	3.56	3.05
Other ID ~					
Sample Type ~	EW	EW	EW	EW	EW
Sampling Date ~	09/05/2024	08/05/2024	09/05/2024	09/05/2024	08/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	2338233	2338234	2338236	2338237	2338238	
Metals									
Aluminium, Dissolved	DETSC 2306	10	ug/l	31	46	23	12	24	
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.4	1.5	6.0	1.1	1.3	
Barium, Dissolved	DETSC 2306	0.26	ug/l	56	79	190	160	67	
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Boron, Dissolved	DETSC 2306*	12	ug/l	2600	2700	900	1400	2600	
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.06	0.04	< 0.03	< 0.03	0.20	
Calcium, Dissolved	DETSC 2306	0.09	mg/l	450	520	210	460	500	
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	0.36	1.7	< 0.25	< 0.25	
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.9	1.3	0.5	0.5	2.2	
Iron, Dissolved	DETSC 2306	5.5	ug/l	13	31	2300	60	11	
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.35	0.17	0.76	< 0.09	0.59	
Manganese, Dissolved	DETSC 2306	0.22	ug/l	14	44	1000	2200	8.9	
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Nickel, Dissolved	DETSC 2306	0.5	ug/l	2.2	1.2	5.2	13	1.6	
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.33	< 0.25	1.6	0.39	< 0.25	
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	1.7	2.0	3.2	< 0.6	1.2	
Zinc, Dissolved	DETSC 2306	1.3	ug/l	47	44	100	41	49	
Inorganics									
pH	DETSC 2008		pH	7.3	7.5	7.4	7.2	7.2	
Alkalinity as CaCO3 (Automated)	DETSC 2030	10	mg/l	120	92	420	360	130	
Cyanide, Total	DETSC 2130	40	ug/l	< 40	< 40	< 40	< 40	< 40	
Cyanide, Free	DETSC 2130	20	ug/l	< 20	< 20	< 20	< 20	< 20	
Dissolved, Oxygen	DETSC 2048*	0.1	mg/l	10.5	10.4	9.3	7.1	10.5	
Dissolved Organic Carbon	DETSC 2085	2	mg/l	< 2.0	< 2.0	64	8.0	< 2.0	
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l	4760	5370	2330	2810	1730	
Ortho Phosphate as P	DETSC 2205	0.01	mg/l	0.05	0.04	0.01	0.02	0.05	
Sulphide	DETSC 2208	0.01	mg/l	0.02	0.04	0.07	0.05	0.02	
Sulphur (free)	DETSC 3049*	84	ug/l	< 84	< 84	< 84	530	< 84	
Sulphur as S, Total	DETSC 2320*	10	mg/l	590	610	340	330	590	
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	< 1.0	3400	21	< 1.0	
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	< 1.0	15000	120	< 1.0	
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	< 1.0	15000	120	< 1.0	
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	< 1.0	4700	150	< 1.0	
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	ug/l	< 10	< 10	38000	420	< 10	
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	



Summary of Chemical Analysis

Water Samples

Our Ref 24-10022

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2338233	2338234	2338236	2338237	2338238
Sample ID ~	3FM-BH301B	3FM-BH302	3FM-BH308	3FM-BH309	3FM-BH313
Depth ~	2.76	2.42	3.65	3.56	3.05
Other ID ~					
Sample Type ~	EW	EW	EW	EW	EW
Sampling Date ~	09/05/2024	08/05/2024	09/05/2024	09/05/2024	08/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	770	74	< 1.0	< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	6000	120	< 1.0	< 1.0
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	8700	130	< 1.0	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	3100	50	< 1.0	< 1.0
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	ug/l	< 10	< 10	18000	370	< 10	< 10
TPH Aliq/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	ug/l	< 10	< 10	56000	790	< 10	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
PAHs									
Naphthalene	DETSC 3304	0.05	ug/l	< 0.50	1.1	< 500.00	6.8	0.19	
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.10	4.6	110	4.6	0.06	
Acenaphthene	DETSC 3304	0.01	ug/l	0.14	0.56	220	5.8	0.04	
Fluorene	DETSC 3304	0.01	ug/l	0.12	0.82	370	14	0.05	
Phenanthrene	DETSC 3304	0.01	ug/l	1.2	7.6	470	39	0.38	
Anthracene	DETSC 3304	0.01	ug/l	0.21	3.6	< 100.00	5.0	0.08	
Fluoranthene	DETSC 3304	0.01	ug/l	1.9	32	< 100.00	21	0.50	
Pyrene	DETSC 3304	0.01	ug/l	1.8	33	160	22	0.51	
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	1.1	19	< 100.00	8.8	0.30	
Chrysene	DETSC 3304	0.01	ug/l	0.91	22	< 100.00	6.9	0.21	
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	1.5	37	< 100.00	9.7	0.42	
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.47	16	< 100.00	3.6	0.18	
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	1.2	32	< 100.00	8.4	0.41	
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.66	24	< 100.00	4.0	0.20	
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	0.22	4.2	< 100.00	1.3	0.06	
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.79	22	< 100.00	4.7	0.24	
PAH Total	DETSC 3304	0.2	ug/l	12	260	< 2000.00	170	3.8	
PCBs									
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3	< 0.3	< 0.3	< 2.0	< 0.3	
PCB 52	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 2.0	< 0.2	
PCB 101	DETSC 3402	0.3	ug/l	< 0.3	< 0.3	< 0.3	< 2.0	< 0.3	
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6	< 0.6	< 0.6	< 6.0	< 0.6	
PCB 138	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 2.0	< 0.2	
PCB 153	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 2.0	< 0.2	
PCB 180	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 2.0	< 0.2	
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Phenols									



Summary of Chemical Analysis

Water Samples

Our Ref 24-10022

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2338233	2338234	2338236	2338237	2338238
Sample ID ~	3FM-BH301B	3FM-BH302	3FM-BH308	3FM-BH309	3FM-BH313
Depth ~	2.76	2.42	3.65	3.56	3.05
Other ID ~					
Sample Type ~	EW	EW	EW	EW	EW
Sampling Date ~	09/05/2024	08/05/2024	09/05/2024	09/05/2024	08/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Phenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Subcontracted Analysis								
Dissolved, Methane	\$*	<1	ug/l	< 1.00	< 1.00	< 1.00	5.00	< 1.00
Dissolved Carbon Dioxide	\$*	<1	ug/l	19633	17595	91959	>>166620	21700



Summary of Chemical Analysis

Water Samples

Our Ref 24-10022

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2338233	2338234	2338236	2338237	2338238
Sample ID ~	3FM-BH301B	3FM-BH302	3FM-BH308	3FM-BH309	3FM-BH313
Depth ~	2.76	2.42	3.65	3.56	3.05
Other ID ~					
Sample Type ~	EW	EW	EW	EW	EW
Sampling Date ~	09/05/2024	08/05/2024	09/05/2024	09/05/2024	08/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	2338233	2338234	2338236	2338237	2338238
VOCs								
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27	< 27	< 27	< 27	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2	< 2	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	< 1	4	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1



Summary of Chemical Analysis

Water Samples

Our Ref 24-10022
 Client Ref ~ 24-0316
 Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2338233	2338234	2338236	2338237	2338238
Sample ID ~	3FM-BH301B	3FM-BH302	3FM-BH308	3FM-BH309	3FM-BH313
Depth ~	2.76	2.42	3.65	3.56	3.05
Other ID ~					
Sample Type ~	EW	EW	EW	EW	EW
Sampling Date ~	09/05/2024	08/05/2024	09/05/2024	09/05/2024	08/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	2338233	2338234	2338236	2338237	2338238
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	1	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
MTBE	DETSC 3432*	1	ug/l	< 1	< 1	< 1	3	< 1
SVOCs								
Aniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0



Summary of Chemical Analysis

Water Samples

Our Ref 24-10022

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2338233	2338234	2338236	2338237	2338238
Sample ID ~	3FM-BH301B	3FM-BH302	3FM-BH308	3FM-BH309	3FM-BH313
Depth ~	2.76	2.42	3.65	3.56	3.05
Other ID ~					
Sample Type ~	EW	EW	EW	EW	EW
Sampling Date ~	09/05/2024	08/05/2024	09/05/2024	09/05/2024	08/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2338233, 2338234, 2338236, 2338237, 2338238, 2338239 - WATER OTHER testing is not accredited								

Summary of Chemical Analysis

Water Samples

Our Ref 24-10022

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2338239
Sample ID ~	3FM-BH314
Depth ~	3.40
Other ID ~	
Sample Type ~	EW
Sampling Date ~	08/05/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Metals				
Aluminium, Dissolved	DETSC 2306	10	ug/l	20
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.8
Barium, Dissolved	DETSC 2306	0.26	ug/l	150
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	2100
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.60
Calcium, Dissolved	DETSC 2306	0.09	mg/l	250
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	2.3
Iron, Dissolved	DETSC 2306	5.5	ug/l	12
Lead, Dissolved	DETSC 2306	0.09	ug/l	2.4
Manganese, Dissolved	DETSC 2306	0.22	ug/l	560
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	5.7
Selenium, Dissolved	DETSC 2306	0.25	ug/l	2.4
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	1.1
Zinc, Dissolved	DETSC 2306	1.3	ug/l	49
Inorganics				
pH	DETSC 2008		pH	7.1
Alkalinity as CaCO3 (Automated)	DETSC 2030	10	mg/l	130
Cyanide, Total	DETSC 2130	40	ug/l	< 40
Cyanide, Free	DETSC 2130	20	ug/l	< 20
Dissolved, Oxygen	DETSC 2048*	0.1	mg/l	10.5
Dissolved Organic Carbon	DETSC 2085	2	mg/l	2.8
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l	3760
Ortho Phosphate as P	DETSC 2205	0.01	mg/l	0.05
Sulphide	DETSC 2208	0.01	mg/l	0.03
Sulphur (free)	DETSC 3049*	84	ug/l	< 84
Sulphur as S, Total	DETSC 2320*	10	mg/l	470
Petroleum Hydrocarbons				
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	ug/l	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1

Summary of Chemical Analysis

Water Samples

Our Ref 24-10022

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2338239
Sample ID ~	3FM-BH314
Depth ~	3.40
Other ID ~	
Sample Type ~	EW
Sampling Date ~	08/05/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	ug/l	< 10
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	ug/l	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	0.09
Acenaphthylene	DETSC 3304	0.01	ug/l	0.03
Acenaphthene	DETSC 3304	0.01	ug/l	0.03
Fluorene	DETSC 3304	0.01	ug/l	0.03
Phenanthrene	DETSC 3304	0.01	ug/l	0.18
Anthracene	DETSC 3304	0.01	ug/l	0.06
Fluoranthene	DETSC 3304	0.01	ug/l	0.28
Pyrene	DETSC 3304	0.01	ug/l	0.26
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	0.17
Chrysene	DETSC 3304	0.01	ug/l	0.13
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.20
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.07
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.23
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.09
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	0.04
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.14
PAH Total	DETSC 3304	0.2	ug/l	2.0
PCBs				
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0
Phenols				

Summary of Chemical Analysis

Water Samples

Our Ref 24-10022

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2338239
Sample ID ~	3FM-BH314
Depth ~	3.40
Other ID ~	
Sample Type ~	EW
Sampling Date ~	08/05/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Phenol	DETSC 3451*	0.1	ug/l	< 0.10
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
Subcontracted Analysis				
Dissolved, Methane	\$*	<1	ug/l	< 1.00
Dissolved Carbon Dioxide	\$*	<1	ug/l	20952

Summary of Chemical Analysis

Water Samples

Our Ref 24-10022

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2338239
Sample ID ~	3FM-BH314
Depth ~	3.40
Other ID ~	
Sample Type ~	EW
Sampling Date ~	08/05/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4
Chloroform	DETSC 3432	1	ug/l	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1
Benzene	DETSC 3432	1	ug/l	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
Toluene	DETSC 3432	1	ug/l	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1
Styrene	DETSC 3432	1	ug/l	< 1
Bromoform	DETSC 3432	1	ug/l	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1

Summary of Chemical Analysis

Water Samples

Our Ref 24-10022

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2338239
Sample ID ~	3FM-BH314
Depth ~	3.40
Other ID ~	
Sample Type ~	EW
Sampling Date ~	08/05/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Bromobenzene	DETSC 3432	1	ug/l	< 1
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1
MTBE	DETSC 3432*	1	ug/l	< 1
SVOCs				
Aniline	DETSC 3434*	1	ug/l	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0

Summary of Chemical Analysis

Water Samples

Our Ref 24-10022

Client Ref ~ 24-0316

Contract Title ~ 3FM Plot L Hammond Lane

Lab No	2338239
Sample ID ~	3FM-BH314
Depth ~	3.40
Other ID ~	
Sample Type ~	EW
Sampling Date ~	08/05/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0
2338233, 2338234, 2338236, 2338237, 2338238, 2338239 - WATER OTHER testing is not accredited				

Information in Support of the Analytical Results

Our Ref 24-10022
 Client Ref ~ 24-0316
 Contract ~ 3FM Plot L Hammond Lane

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2338233	3FM-BH301B 2.76 WATER	09/05/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days)	
2338234	3FM-BH302 2.42 WATER	08/05/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Sulphur (free) (7 days), Hardness (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days), PCB (7 days), SVOC (7 days)	
2338235	3FM-BH304 3.23 WATER	09/05/24	GV x2		
2338236	3FM-BH308 3.65 WATER	09/05/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days)	
2338237	3FM-BH309 3.56 WATER	09/05/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days)	
2338238	3FM-BH313 3.05 WATER	08/05/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Sulphur (free) (7 days), Hardness (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days), PCB (7 days), SVOC (7 days)	
2338239	3FM-BH314 3.40 WATER	08/05/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Sulphur (free) (7 days), Hardness (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days), PCB (7 days), SVOC (7 days)	

Key: G-Glass P-Plastic B-Bottle V-Vial

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Information in Support of the Analytical Results

Our Ref 24-10022
Client Ref ~ 24-0316
Contract ~ 3FM Plot L Hammond Lane

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C5-C35	EH_CU+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C5-C35	EH_CU+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_CU+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.



nd -not detected.

End of Report



CAUSEWAY
—**GEOTECH**

3FM Plot 0 South Banks – Ground Investigation

Client: Dublin Port Company

Client's Representative: RPS

Report No.: 24-0317

Date: June 2024

Status: Final for Issue



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Document Control Sheet




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APPENDICES

Appendix A	Site and exploratory hole location plans
Appendix B	Borehole logs
Appendix C	Environmental laboratory test results
Appendix D	Ground gas monitoring records

Document Control Sheet

Report No.:		24-0317			
Project Title:		3FM Plot O South Banks – Ground Investigation			
Client:		Dublin Port Company			
Client's Representative:		RPS			
Revision:	A00	Status:	Final for issue	Issue Date:	27 th May 2024
Revision:	A01	Status:	Final for issue	Issue Date:	27 th June 2024
Prepared by:		Reviewed by:		Approved by:	
 Robert Sheehy BSc		 Carin Cornwall BSc MSc PhD		 Sean Ross BSc MSc PGeo MIEI	

The works were conducted in accordance with:

UK Specification for Ground Investigation 2nd Edition, published by ICE Publishing (2012)

British Standards Institute (2015) BS 5930:2015+A1:2020, Code of practice for ground investigations.

Geotechnical Society of Ireland (2016), Specification & Related Documents for Ground Investigation in Ireland

Laboratory testing was conducted in accordance with:

British Standards Institute BS 1377:1990 parts 2, 4, 5, 7 and 9

METHODS OF DESCRIBING SOILS AND ROCKS

Soil and rock descriptions are based on the guidance in BS5930:2015+A1:2020, The Code of Practice for Ground Investigation.

Abbreviations used on exploratory hole logs	
U	Nominal 100mm diameter undisturbed open tube sample (thick walled sampler).
UT	Nominal 100mm diameter undisturbed open tube sample (thin walled sampler).
P	Nominal 100mm diameter undisturbed piston sample.
B	Bulk disturbed sample.
LB	Large bulk disturbed sample.
SB	Sonic bulk disturbed sample.
D	Small disturbed sample.
C	Core sub-sample (displayed in the Field Records column on the logs).
L	Liner sample from dynamic sampled borehole.
W	Water sample.
ES / EW	Soil sample for environmental testing / Water sample for environmental testing.
SPT (s)	Standard penetration test using a split spoon sampler (small disturbed sample obtained).
SPT (c)	Standard penetration test using 60 degree solid cone.
(x,x/x,x,x,x)	Blows per increment during the standard penetration test. The initial two values relate to the seating drive (150mm) and the remaining four to the 75mm increments of the test length.
(Y for Z/ Y for Z)	Incomplete standard penetration test where the full test length was not achieved. The blows 'X' represent the total blows for the given seating or test length 'Z' (mm).
N=X	SPT blow count 'N' given by the summation of the blows 'X' required to drive the full test length (300mm).
HVP / HVR	In situ hand vane test result (HVP) and vane test residual result (HVR). Results presented in kPa.
V	Shear vane test (borehole). Shear strength stated in kPa.
VR	V: undisturbed vane shear strength VR: remoulded vane shear strength
Soil consistency description	In cohesive soils, where samples are disturbed and there are no suitable laboratory tests, N values may be used to indicate consistency on borehole logs – a median relationship of $N \times 5 = C_u$ is used (as set out in Stroud & Butler 1975).
dd-mm-yyyy	Date at the end and start of shifts, shown at the relevant borehole depth. Corresponding casing and water depths shown in the adjacent columns.
▽	Water strike: initial depth of strike.
▼	Water strike: depth water rose to.
Abbreviations relating to rock core – reference Clause 36.4.4 of BS 5930: 2015+A1:2020	
TCR (%)	Total Core Recovery: Ratio of rock/soil core recovered (both solid and non-intact) to the total length of core run.
SCR (%)	Solid Core Recovery: Ratio of solid core to the total length of core run. Solid core has a full diameter, uninterrupted by natural discontinuities, but not necessarily a full circumference and is measured along the core axis between natural fractures.
RQD (%)	Rock Quality Designation: Ratio of total length of solid core pieces greater than 100mm to the total length of core run.
FI	Fracture Index: Number of natural discontinuities per metre over an indicated length of core of similar intensity of fracturing.
NI	Non Intact: Used where the rock material was recovered fragmented, for example as fine to coarse gravel size particles.
AZCL	Assessed zone of core loss: The estimated depth range where core was not recovered.
DIF	Drilling induced fracture: A fracture of non-geological origin brought about by the rock coring.
(xxx/xxx/xxx)	Spacing between discontinuities (minimum/average/maximum) measured in millimetres.

3FM Plot O South Banks

1 AUTHORITY

On the instructions of RPS Consulting Engineers, (“the Client’s Representative”), acting on the behalf of Dublin Port Company (“the Client”), a ground investigation was undertaken at the above location to provide environmental information for input to the design and construction of a proposed container storage yard or RoRo parking area.

This report details the work carried out both on site and in the chemical testing laboratory; it contains a description of the site and the works undertaken, the exploratory hole logs and the laboratory test results.

All information given in this report is based upon the ground conditions encountered during the ground investigation works, and on the results of the laboratory and field tests performed. However, there may be conditions at the site that have not been taken into account, such as unpredictable soil strata, contaminant concentrations, and water conditions between or below exploratory holes. It should be noted that groundwater levels usually vary due to seasonal and/or other effects and may at times differ to those recorded during the investigation. No responsibility can be taken for conditions not encountered through the scope of work commissioned, for example between exploratory hole points, or beneath the termination depths achieved.

This report was prepared by Causeway Geotech Ltd for the use of the Client and the Client’s Representative in response to a particular set of instructions. Any other parties using the information contained in this report do so at their own risk and any duty of care to those parties is excluded.

2 SCOPE

The extent of the investigation, as instructed by the Client’s Representative, included boreholes, soil sampling and laboratory testing, and the preparation of a factual report on the findings.

3 DESCRIPTION OF SITE

As shown on the site location plan in Appendix A, the works were conducted across multiple neighbouring sites currently being used as compounds, located in the southern port lands of Dublin Port. The sites are bordered by a public park to the south and east. Dublin Waste to Energy Ltd, South Bank Road and a vacant compound are located along the northern boundary. And the western boundary consists of an access road between South Bank Road and the public park and a factory compound. A Kilsaran concrete plant is located between the sites.

The site is flat within the areas of the compounds, with an overgrown embankment to the south and east.

4 SITE OPERATIONS

4.1 Summary of site works

Site operations, which were conducted between the 19th and 27th of March 2024, comprised:

- eight boreholes
 - three light cable percussion boreholes
 - five sonic boreholes
- a standpipe installation in seven boreholes

The exploratory holes were located as instructed by the Client's Representative, and as shown on the exploratory hole location plan in Appendix A.

4.2 Boreholes

A total of eight boreholes were put down in a minimum diameter of 150mm through soils to their completion depths by a combination of methods, including, light cable percussion boring by a Dando 2500 rig, and sonic drilling by a Fraste CRS XL Duo rubber-tracked sonic drilling rig.

The borehole logs state the methodology and plant used for each location, as well as the appropriate depth ranges.

A summary of the boreholes, subdivided by category in accordance with the methods employed for their completion, is presented in the following sub-sections.

4.2.1 Light cable percussion boreholes

Three boreholes (3FM-BH315 to 3FM-BH317) were put down to completion in minimum 200mm diameter using a Dando 2500 light cable percussion boring rig. All boreholes were terminated at their scheduled completion depths.

Hand dug inspection pits were carried out between ground level and 1.20m depth to ensure boreholes were put down at locations clear of services or subsurface obstructions.

Disturbed (small bag) samples were taken within the encountered strata. Environmental samples were taken at standard intervals, as directed by the Client's Representative.

Any water strikes encountered during boring were recorded along with any changes in their levels as the borehole proceeded.

Appendix B presents the borehole logs.

4.2.2 Sonic drilled boreholes

Five boreholes (3FM-BH318 to 3FM-BH322) were put to their completion by sonic drilling techniques only. The boreholes were completed using a Fraste CRS-XL Duo rubber-tracked sonic drilling rig.

Hand dug inspection pits were carried out between ground level and 1.20m depth to ensure boreholes were put down at locations clear of services or subsurface obstructions. Fully cased sonic drilling techniques were employed to advance the boreholes of nominal 200mm diameter to a specific depth.

Environmental samples were taken at suitable depths as instructed by the Client's Representative.

Appendix B presents the borehole logs.

4.3 Standpipe installations

A groundwater monitoring standpipe was installed in boreholes 3FM-BH315, 3FM-BH316, and 3FM-BH318 to 3FM-BH322.

Details of the installations, including the depth range of the response zone, are provided in Appendix B on the individual borehole logs.

4.4 PID tests

PID (Photo ionizing detection) testing was undertaken on small, disturbed samples recovered from all boreholes using a hand-held PID meter, to determine if any volatile organic compound contamination was present in the overburden.

Results of the PID tests are presented on the individual borehole logs in Appendix B.

4.5 Surveying

The as-built exploratory hole positions were surveyed following completion of site operations by a Site Engineer from Causeway Geotech. Surveying was carried out using a Trimble R10 GPS system employing VRS and real time kinetic (RTK) techniques.

The plan coordinates Irish Transverse Mercator and ground elevation (mOD Malin) at each location are recorded on the individual exploratory hole logs. The exploratory hole location plan presented in Appendix A shows these as-built positions.

4.6 Groundwater monitoring

Following completion of site works, data loggers were installed in seven boreholes. Monitoring data is downloaded and issued electronically at regular intervals and is not issued as part of this report.

Ground gas measurements were carried out using a GA5000 gas meter over three rounds.

The ground gas monitoring records are presented in Appendix D.

5 LABORATORY WORK

Upon their receipt in the laboratory, all disturbed samples were carefully examined and accurately described, and their descriptions incorporated into the borehole logs.

5.1 Environmental laboratory testing of soils

Environmental testing, as specified by the Client's Representative was conducted on selected soil and water samples by Derwentside Environmental Testing Services in Consett, Durham.

Testing was carried out according to RPS Soil Testing Suites A, B, C, D and E. This included testing for a range of determinants, including:

Testing was carried out for a range of determinants, including:

- Metals
- Speciated total petroleum hydrocarbons (TPH)
- Speciated polycyclic aromatic hydrocarbons (PAH)
- BTEX compounds
- Volatile Organic Compounds (VOCs)
- Semi-Volatile Organic Compounds (SVOCs)
- Polychlorinated biphenyls (PCBs)
- Phenols
- Organic matter
- Total Organic Carbon (TOC)
- Cyanides
- Asbestos screen
- Sulphate and sulphide
- Sulphur
- Phosphate
- Calcium
- pH
- Waste acceptance criteria (WAC)

Results of environmental laboratory testing are presented in Appendix C.

6 GROUND CONDITIONS

6.1 General geology of the area

Published geological mapping indicate the superficial deposits underlying the site comprise of urban sediments overlying marine deposits. These deposits are underlain by limestone and shale of the Lucan Formation.

6.2 Ground types encountered during investigation of the site

A summary of the ground types encountered in the exploratory holes is listed below, in approximate stratigraphic order:

- **Paved surface:** boreholes 3FM-BH315-317 encountered 200mm-300mm of concrete or bitmac surfacing.
- **Made Ground (fill):** reworked sandy gravelly silty clay fill or gravel or sand fill with landfill waste including red brick, concrete, glass, wood, rubber and plastic fragments as well as newspapers extending to a maximum depth of 4.9m.
- **Marine Deposits:** typically gravelly silty sands with occasional shell fragments and sandy silty gravels with occasional shell fragments.

6.3 Groundwater

Details of the individual groundwater strikes, along with any relative changes in levels as works proceeded, are presented on the exploratory hole logs for each location.

Groundwater was encountered during percussion boring through soil as water strikes at 1.5-4.5m in boreholes 3FM-BH315-317, and at 3.6m in 3FM-BH320.

Groundwater was not noted during drilling at four of the borehole locations. However, it should be noted that the casing used in supporting the borehole walls during drilling may have sealed out any groundwater strikes and the possibility of encountering groundwater during excavation works should not be ruled out.

Continued monitoring of the installed standpipes will give an indication of the seasonal variation in groundwater level which should be factored into design considerations.

7 REFERENCES

Geotechnical Society of Ireland (2016), Specification & Related Documents for Ground Investigation in Ireland.

IS EN 1997-2: 2007: Eurocode 7 - Geotechnical design - Part 2 Ground investigation and testing. National Standards Authority of Ireland.

BS 5930: 2015+A1:2020: Code of practice for ground investigations. British Standards Institution.

BS EN ISO 14688-1:2018: Geotechnical investigation and testing. Identification and classification of soil. Part 1 Identification and description.

BS EN ISO 14688-2:2018: Geotechnical investigation and testing. Identification and classification of soil. Part 2 Principles for a classification.

BS 1377: 1990: Methods of test for soils for civil engineering purposes. British Standards Institution.

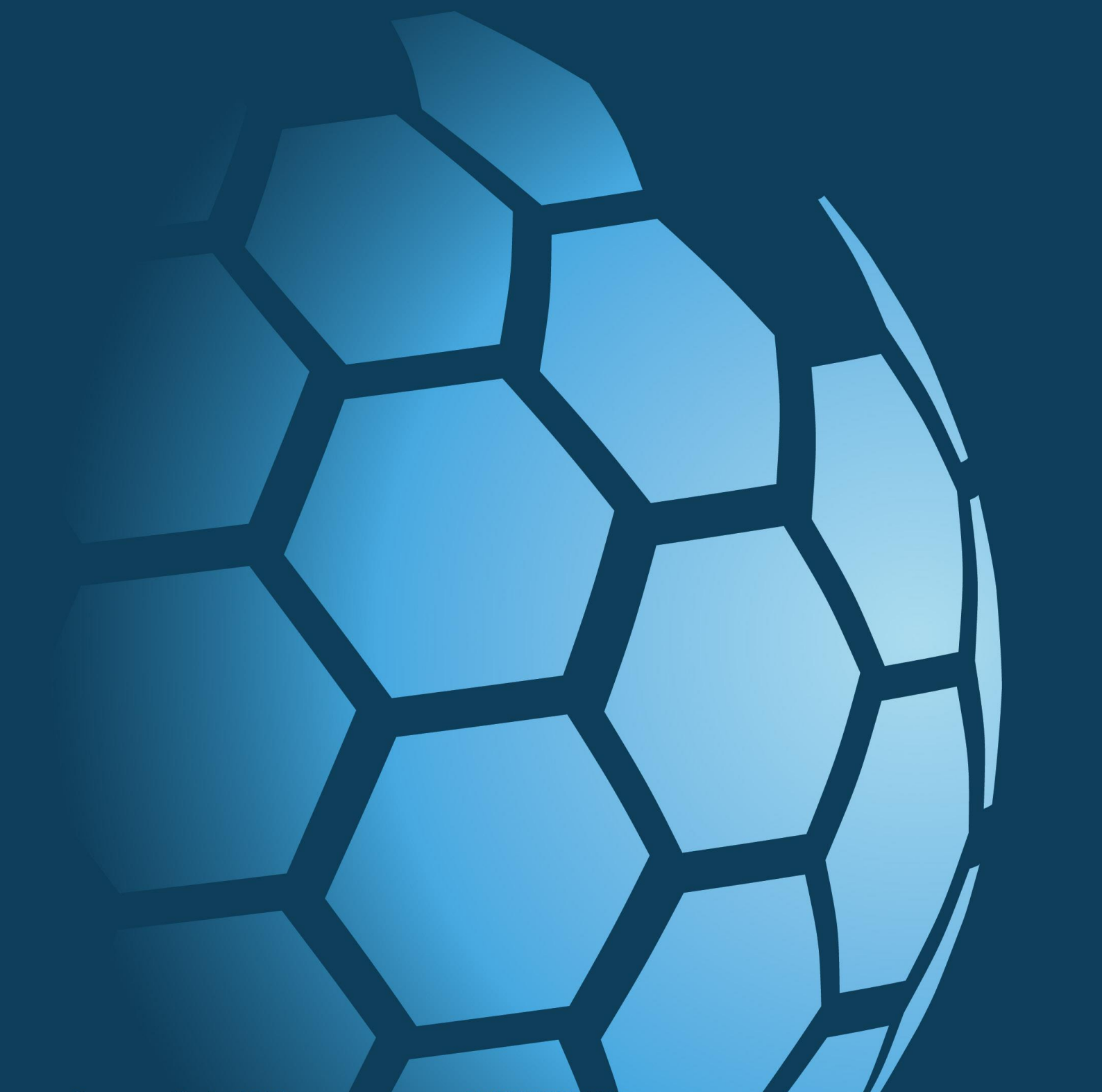
BS EN ISO 22282-2: 2012: Geotechnical investigation and testing. Geohydraulic testing – Part 2: Water permeability tests in a borehole using open systems.

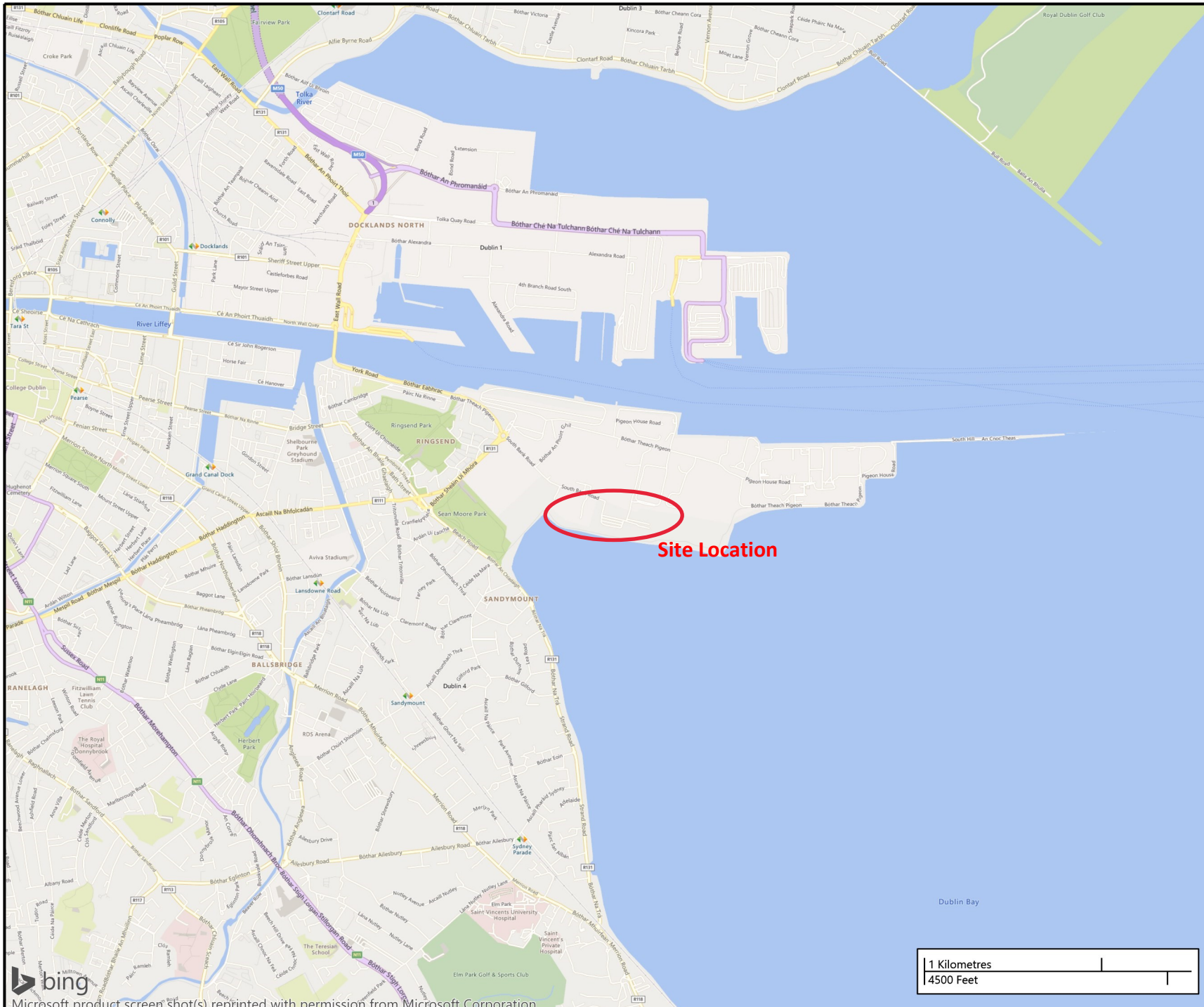
Land contamination risk management (LCRM), (2020) Environment Agency.



CAUSEWAY
— GEOTECH

APPENDIX A
SITE AND EXPLORATORY HOLE LOCATION PLANS





Site Location



Legend Key	
Project No.	24-0317
Client	Dublin Port
Client's Rep	RPS
Site Location Plan	
3FM Plot O - South Banks Road	
	
Last Revision	27/05/2024
Scale	1:30000



Legend Key
 ● Locations By Type - CP
 ⊗ Locations By Type - SNC

Project No.	24-0317
Client	Dublin Port
Client's Rep	RPS

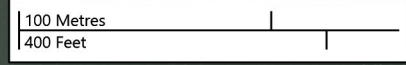
Exploratory Hole Location Plan

3FM Plot O - South Banks Road



Last Revision	27/05/2024
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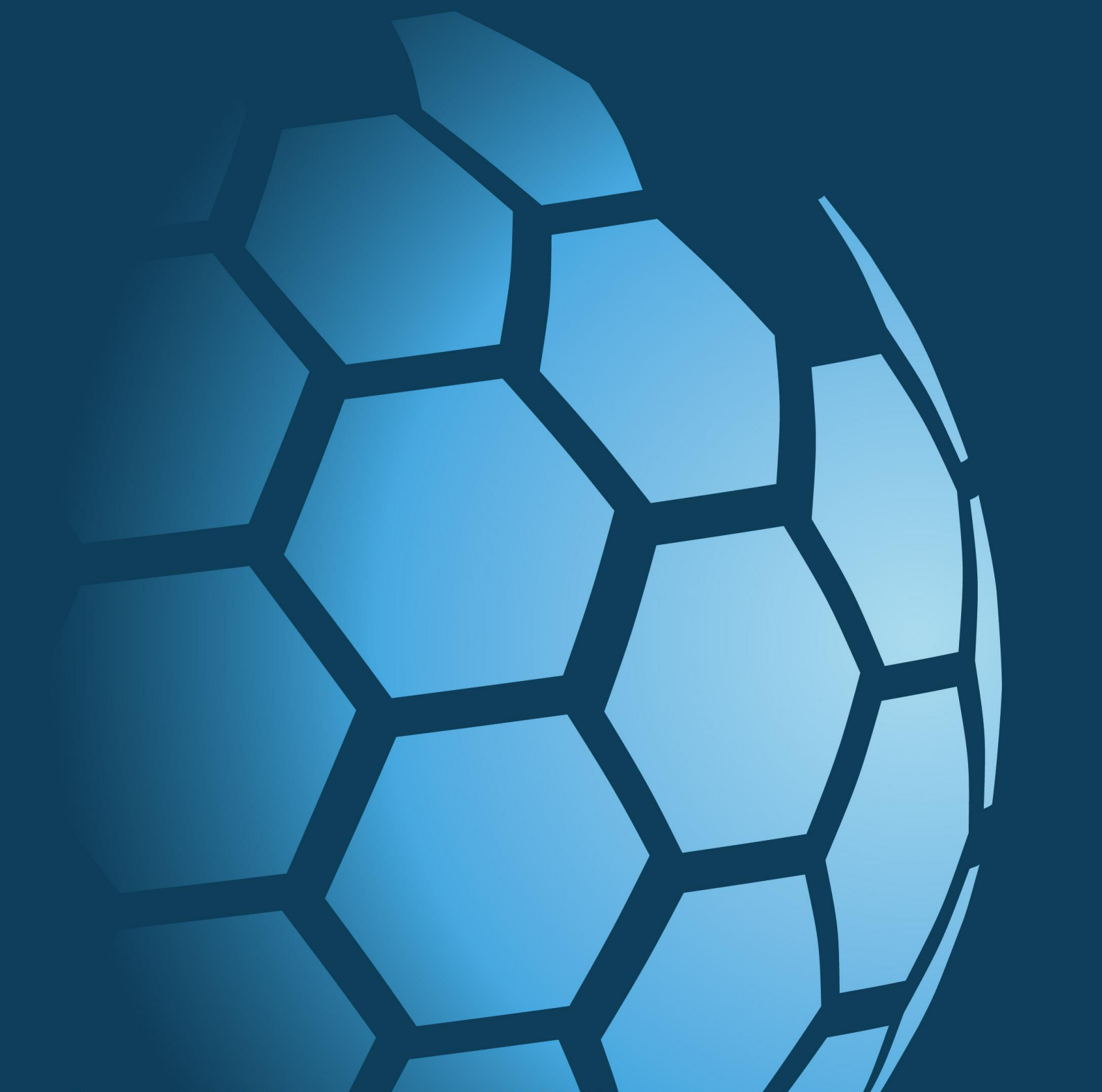
Scale	1:3000
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CAUSEWAY
— GEOTECH

APPENDIX B
BOREHOLE LOGS





Project No.
24-0317

Project Name: 3FM Plot O - South Banks Road

Borehole ID
3FM-BH315

Client: Dublin Port

Client's Rep: RPS

Method Cable Percussion	Plant Used Dando 2500	Top (m) 0.00	Base (m) 8.00	Coordinates 719287.32 E 733452.41 N	Final Depth: 8.00 m	Start Date: 19/03/2024	Driller: MK	Sheet 1 of 2 Scale: 1:40
					Elevation: 3.48 mOD	End Date: 20/03/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.00		19-03-2024	0.00	Dry				MADE GROUND: CONCRETE		
0.50 - 0.60	D3	PID = 0.10ppm			3.18	0.30		MADE GROUND: Greyish black gravelly silty fine to coarse SAND with medium cobble content and occasional brick fragments.		
0.50 - 0.60	ES1									
0.50										
1.00 - 1.10	D4	PID = 0.10ppm								
1.00 - 1.10	ES2									
1.00										
2.00 - 2.10	D7	PID = 0.30ppm								
2.00 - 2.10	ES5									
2.00										
2.65	EW2									
3.00 - 3.10	D8	PID = 0.10ppm								
3.00 - 3.10	ES6									
3.00										
3.42 - 3.75	EW1									
4.00 - 4.10	D13	PID = 0.60ppm			-0.32	3.80		Grey gravelly silty fine to coarse SAND with occasional shell fragments. Gravel is subangular fine to medium.		
4.00 - 4.10	ES9									
4.00										
5.00 - 5.10	D14	PID = 12.70ppm								
5.00 - 5.10	ES10									
5.00										
6.50 - 6.60	D15	PID = 0.50ppm			-3.32	6.80		Grey sandy silty subangular fine to medium GRAVEL with occasional shell fragments. Sand is fine to coarse.		
6.50 - 6.60	ES11									
6.50										
					-3.72	7.20		Grey sandy silty subangular fine to coarse GRAVEL with low cobble and boulder content. Sand is fine to coarse.		

Water Strikes				Chiselling Details			Remarks	
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)		
		20	1.50					Inspection pit hand dug to 1.20m. standing 8:30 to 12:00 + 8:00 to 10 install
Casing Details				Water Added				
To (m)	Diameter	From (m)	To (m)					
8.00	200						Termination Reason Terminated at scheduled depth.	
							Last Updated 27/06/2024	





Project No.
24-0317

Project Name: 3FM Plot O - South Banks Road

Borehole ID
3FM-BH315

Client: Dublin Port

Client's Rep: RPS

Method Cable Percussion	Plant Used Dando 2500	Top (m) 0.00	Base (m) 8.00	Coordinates 719287.32 E 733452.41 N	Final Depth: 8.00 m	Start Date: 19/03/2024	Driller: MK	Sheet 2 of 2 Scale: 1:40
					Elevation: 3.48 mOD	End Date: 20/03/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
8.00 - 8.10	D16	PID = 0.10ppm 19-03-2024 20-03-2024	8.00	4.00	-4.53	8.00		End of Borehole at 8.00m		
8.00 - 8.10	ES12									
8.00										
8.00										
8.00										

Water Strikes				Chiselling Details			Remarks Inspection pit hand dug to 1.20m. standing 8:30 to 12:00 + 8:00 to 10 install
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)	
		20	1.50				
Casing Details		Water Added					
To (m)	Diameter	From (m)	To (m)				
8.00	200						
Termination Reason Terminated at scheduled depth.							Last Updated 27/06/2024





Method Cable Percussion	Plant Used Dando 2500	Top (m) 0.00	Base (m) 8.00	Coordinates 719331.70 E 733394.44 N	Final Depth: 8.00 m	Start Date: 20/03/2024	Driller: MK	Sheet 1 of 2 Scale: 1:40
					Elevation: 4.28 mOD	End Date: 21/03/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.00		20-03-2024	0.00	Dry				MADE GROUND: TARMAC		
0.50 - 0.60	D2	PID = 0.70ppm			4.08	0.20		MADE GROUND: Soft to firm greyish black sandy gravelly silty CLAY with medium cobble content and occasional brick and concrete fragments. Sand is fine to coarse. Gravel is subangular fine to coarse.		
0.50 - 0.60	ES1									
0.50										
1.00 - 1.10	D4	PID = 0.20ppm								
1.00 - 1.10	ES3									
1.00										
2.00 - 2.10	D14	PID = 1.60ppm			1.98	2.30		MADE GROUND: Soft greyish black very gravelly silty CLAY with fragments of glass, wood, newspaper, and household waste. Gravel is subangular fine to coarse.		
2.00 - 2.10	ES13									
2.00										
3.00 - 3.10	D6	PID = 3.20ppm								
3.00 - 3.10	ES5									
3.00										
3.28 - 3.55	EW1									
3.50	EW2									
4.00 - 4.10	D8	PID = 0.90ppm								
4.00 - 4.10	ES7									
4.00										
5.00 - 5.10	D10	PID = 0.20ppm			-0.52	4.80		Grey sandy silty subangular fine to coarse GRAVEL with occasional shell fragments. Sand is fine to coarse. Gravel is subangular fine to medium.		
5.00 - 5.10	ES9									
5.00										
6.00 - 6.10	D12	PID = 0.40ppm								
6.00										
6.40 - 6.50	ES11									

Water Strikes				Chiselling Details			Remarks
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)	
4.00	4.00	20	2.50	1.50	2.00	01:00	
Casing Details		Water Added		Inspection pit hand dug to 1.20m. move and set up 1hr standing time 4 :00 to 5:00 for install at 9:00			
To (m)	Diameter	From (m)	To (m)				
8.00	200						
Termination Reason Terminated at scheduled depth.							Last Updated 27/06/2024





Method Cable Percussion	Plant Used Dando 2500	Top (m) 0.00	Base (m) 8.00	Coordinates 719331.70 E 733394.44 N	Final Depth: 8.00 m	Start Date: 20/03/2024	Driller: MK	Sheet 2 of 2 Scale: 1:40
					Elevation: 4.28 mOD	End Date: 21/03/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
8.00 - 8.10 8.00 - 8.10 8.00 8.00	D16 ES15	PID = 8.90ppm 20-03-2024	8.00	4.00	-3.72	8.00		End of Borehole at 8.00m		

Water Strikes				Chiselling Details			Remarks Inspection pit hand dug to 1.20m. move and set up 1hr standing time 4 :00 to 5:00 for install at 9:00	
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)		
4.00	4.00	20	2.50	1.50	2.00	01:00		
Casing Details		Water Added						
To (m)	Diameter	From (m)	To (m)					
8.00	200							
Termination Reason Terminated at scheduled depth.							Last Updated 27/06/2024	



Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 8.00 m	Start Date: 21/03/2024	Driller: MK	Sheet 1 of 2 Scale: 1:40
Cable Percussion	Dando 2500	0.00	8.00	719418.38 E 733487.72 N	Elevation: 4.40 mOD	End Date: 22/03/2024	Logger: JD	

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill	
0.00		21-03-2024	0.00	Dry				MADE GROUND: CONCRETE			
0.50 - 0.60	D2	PID = 5.40ppm			4.10	0.30		MADE GROUND: Soft to firm greyish black sandy gravelly silty CLAY with medium cobble content and occasional fragments of brick and concrete. Sand is fine to coarse. Gravel is subangular fine to coarse.			
0.50 - 0.60	ES1										
0.50											
1.00 - 1.10	D4	PID = 0.60ppm									
1.00 - 1.10	ES3										
1.00											
2.00 - 2.10	D6	PID = 3.90ppm									
2.00 - 2.10	ES5										
2.00											
2.45 - 3.45	EW1				1.80	2.60		MADE GROUND: Firm black sandy gravelly silty CLAY with fragments of brick, glass, wood, and household waste. Sand is fine to coarse. Gravel is subangular fine to coarse.			
3.00 - 3.10	D8	PID = 10.40ppm									
3.00 - 3.10	ES7										
3.00											
3.69	EW2										
4.00 - 4.10	D10	PID = 0.10ppm									
4.00 - 4.10	ES9										
4.00											
5.00 - 5.10	D12	PID = 0.30ppm			-0.40	4.80		Greyish black gravelly silty fine to coarse SAND with occasional shell fragments. Gravel is subrounded fine to medium.			
5.00 - 5.10	ES11										
5.00											
6.50 - 6.60	D14	PID = 3.60ppm			-1.90	6.30		Grey sandy silty subangular fine to medium GRAVEL. Sand is fine to coarse.			
6.50 - 6.60	ES13										
6.50											

Water Strikes				Chiselling Details			Remarks Inspection pit hand dug to 1.20m.
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)	
		20	3.40				
Casing Details		Water Added					
To (m)	Diameter	From (m)	To (m)				
8.00	200						
Termination Reason							Last Updated
Terminated at scheduled depth.							27/06/2024





Project No.
24-0317

Project Name: 3FM Plot O - South Banks Road

Client: Dublin Port

Client's Rep: RPS

Borehole ID
3FM-BH317

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 8.00 m	Start Date: 21/03/2024	Driller: MK	Sheet 2 of 2 Scale: 1:40
Cable Percussion	Dando 2500	0.00	8.00	719418.38 E 733487.72 N	Elevation: 4.40 mOD	End Date: 22/03/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
8.00 - 8.10 8.00 - 8.10 8.00	D16 ES15	PID = 7.80ppm			-3.60	8.00		End of Borehole at 8.00m		

Water Strikes				Chiselling Details			Remarks Inspection pit hand dug to 1.20m.
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)	
		20	3.40				
Casing Details		Water Added					
To (m)	Diameter	From (m)	To (m)				
8.00	200						
Termination Reason							Last Updated
Terminated at scheduled depth.							27/06/2024





Project No.
24-0317

Project Name: 3FM Plot O - South Banks Road

Client: Dublin Port

Client's Rep: RPS

Borehole ID
3FM-BH318

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 8.00 m	Start Date: 22/03/2024	Driller: SW	Sheet 1 of 1 Scale: 1:49
Sonic Drilling	Frastr CRS-XL Duo	0.00	8.00	719468.52 E 733350.94 N	Elevation: 4.72 mOD	End Date: 22/03/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.00 - 1.20	B1							MADE GROUND: Firm brown sandy CLAY with frequent fragments of glass and household waste. Sand is fine to coarse.		
0.50	D15									
0.50 - 0.60	ES7	PID = 0.00ppm								
0.50										
1.00	D16									
1.00 - 1.10	ES8	PID = 0.10ppm								
1.00										
1.20 - 2.70	B2									
2.00	D17									
2.00	ES9	PID = 0.00ppm								
2.00										
2.70 - 4.20	B3									
3.00	D18									
3.00 - 3.10	ES10	PID = 3.20ppm								
3.00										
4.00	D19									
4.00 - 4.10	ES11	PID = 2.70ppm			0.52	4.20		Grey silty fine to coarse SAND.		
4.00										
4.13 - 4.20	EW1									
4.20 - 5.70	B4									
5.00	D20									
5.00	ES12	PID = 0.10ppm								
5.00										
5.70 - 7.20	B5									
6.50	D21									
6.50	ES13	PID = 0.00ppm								
6.50										
7.20 - 8.00	B6									
8.00	D22				-3.28	8.00		End of Borehole at 8.00m		
8.00	ES14	PID = 0.10ppm								
8.00										

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m			
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
8.00	200						
				Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated at scheduled depth.	27/06/2024





Project No.
24-0317

Project Name: 3FM Plot O - South Banks Road

Client: Dublin Port

Client's Rep: RPS

Borehole ID
3FM-BH319

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 8.00 m	Start Date: 23/03/2024	Driller: SW	Sheet 1 of 1 Scale: 1:49
Sonic Drilling	Frastr CRS-XL Duo	0.00	8.00	719556.50 E 733431.70 N	Elevation: 4.83 mOD	End Date: 23/03/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.50	D2	PID = 0.10ppm						MADE GROUND: Firm brown sandy CLAY with frequent fragments of glass, wood, and household waste. Sand is fine to coarse.		
0.50 - 0.60	ES1									
0.50										
1.00	D4	PID = 0.10ppm								
1.00 - 1.10	ES3									
1.00										
2.00	D6	PID = 0.10ppm								
2.00 - 2.10	ES5									
2.00										
3.00	D8	PID = 0.10ppm								
3.00 - 3.10	ES7									
3.00										
3.15 - 3.20	EW1									
4.00	D10	PID = 0.20ppm			0.03	4.80				
4.00	ES9									
4.00										
4.19	EW2									
5.00	D12	PID = 0.10ppm						Grey silty fine to coarse SAND.		
5.00 - 5.10	ES11									
5.00										
6.50	D14	PID = 0.10ppm								
6.50	ES13									
6.50										
8.00	D16	PID = 0.10ppm			-3.17	8.00		End of Borehole at 8.00m		
8.00	ES15									
8.00										

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m			
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
8.00	200						
		Core Barrel	Flush Type	Termination Reason		Last Updated	
				Terminated at scheduled depth.		27/06/2024	



Project No.
24-0317

Project Name: 3FM Plot O - South Banks Road

Client: Dublin Port

Client's Rep: RPS

Borehole ID
3FM-BH320

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 8.00 m	Start Date: 24/03/2024	Driller: SW	Sheet 1 of 1 Scale: 1:49
Sonic Drilling	Frastr CRS-XL Duo	0.00	8.00	719667.39 E 733426.32 N	Elevation: 4.77 mOD	End Date: 24/03/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.00 - 1.20	B1							MADE GROUND: Firm brown sandy gravelly CLAY with frequent fragments of glass and household waste. Sand is fine to coarse. Gravel is subangular fine to medium.		
0.50	D15									
0.50 - 0.60	ES7	PID = 0.10ppm								
0.50										
1.00	D16									
1.00 - 1.10	ES8	PID = 0.00ppm			3.57	1.20		MADE GROUND: Firm to stiff brown sandy CLAY with fragments of glass, paper, and wood. Sand is fine to coarse.		
1.00										
1.20 - 2.70	B2									
2.00	D17									
2.00 - 2.10	ES9	PID = 0.10ppm								
2.00										
2.70 - 4.20	B3									
3.00	D18									
3.00 - 3.10	ES10	PID = 0.10ppm								
3.00										
		Water strike at 3.60m								
3.88 - 3.96	EW1									
4.00	D19									
4.00	ES11	PID = 0.20ppm			0.57	4.20		Grey silty fine to coarse SAND.		
4.00										
4.15	EW2									
5.00	D20									
5.00 - 5.10	ES12	PID = 0.40ppm								
5.00										
5.20 - 5.70	B4									
5.70 - 7.20	B5									
6.50	D21									
6.50	ES13	PID = 0.10ppm								
6.50										
7.20 - 8.00	B6									
8.00	D22									
8.00	ES14	PID = 0.20ppm			-3.23	8.00		End of Borehole at 8.00m		
8.00										

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)				
3.60	3.60	20	3.60	Inspection pit hand dug to 1.20m			
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
8.00	200			Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated at scheduled depth.	27/06/2024





Project No.
24-0317

Project Name: 3FM Plot O - South Banks Road

Client: Dublin Port

Client's Rep: RPS

Borehole ID
3FM-BH321

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 8.00 m	Start Date: 21/03/2024	Driller: SW	Sheet 1 of 1 Scale: 1:49
Sonic Drilling	Frastr CRS-XL Duo	0.00	8.00	719679.10 E 733320.83 N	Elevation: 4.99 mOD	End Date: 21/03/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.50	D9	PID = 0.10ppm						MADE GROUND: Soft dark brownish black slightly sandy gravelly CLAY with low cobble content and fragments of concrete, brick, plastic, rubber, and household waste. Sand is fine to coarse. Gravel is subangular fine to coarse. Cobbles are subangular.		
0.50	ES1									
0.50										
1.00	D10	PID = 0.10ppm								
1.00 - 1.10	ES2									
1.00										
2.00	D11	PID = 0.10ppm								
2.00	ES3									
2.00										
3.00	D12	PID = 0.60ppm								
3.00 - 3.10	ES4									
3.00										
3.93 - 4.01	EW1	PID = 0.20ppm			1.09	3.90		Greyish black silty fine SAND with occasional shell fragments.		
4.00	D13									
4.00 - 4.10	ES5									
4.00										
4.20	EW2									
5.00	D14	PID = 0.10ppm								
5.00	ES6									
5.00										
5.70					-0.41	5.40		Greyish black very sandy subangular fine to coarse GRAVEL with low cobble content and occasional shell fragments. Sand is fine to coarse. Cobbles are subangular.		
6.50	D15	PID = 0.30ppm								
6.50	ES7									
6.50										
7.20										
8.00	D16	PID = 0.10ppm								
8.00	ES8									
8.00										
8.00										
8.00					-3.01	8.00		End of Borehole at 8.00m		

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m			
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
8.00	200						
				Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated at scheduled depth.	27/06/2024





Project No.
24-0317

Project Name: 3FM Plot O - South Banks Road

Client: Dublin Port

Client's Rep: RPS

Borehole ID
3FM-BH322

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 8.00 m	Start Date: 25/03/2024	Driller: SW	Sheet 1 of 1 Scale: 1:49
Sonic Drilling	Fraste CRS-XL Duo	0.00	8.00	719845.30 E 733392.90 N	Elevation: 4.98 mOD	End Date: 25/03/2024	Logger: JD	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.50	D9	PID = 0.10ppm						MADE GROUND: Soft dark brownish black slightly sandy gravelly CLAY with low cobble content and fragments of concrete, brick, plastic, rubber, and household waste. Sand is fine to coarse. Gravel is subangular fine to coarse. Cobbles are subangular.		
0.50 - 0.60	ES1									
0.50										
1.00	D10	PID = 0.10ppm								
1.00 - 1.10	ES2									
1.00										
2.00	D11	PID = 0.10ppm								
2.00 - 2.10	ES3									
2.00										
3.00	D12	PID = 0.20ppm Seepage at 3.30m								
3.00 - 3.10	ES8									
3.00										
3.43 - 4.10	EW1									
4.00	D13									
4.00	ES4									
4.00		PID = 0.30ppm								
4.21	EW2									
5.00	D14	PID = 0.20ppm			0.08	4.90		Grey gravelly silty fine to coarse SAND. Gravel is subangular fine.		
5.00	ES5									
5.00										
6.00	ES6									
6.50	D15									
6.50										
		PID = 0.10ppm								
8.00	D16									
8.00	ES7									
8.00					-3.02	8.00		End of Borehole at 8.00m		

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m.			
3.30	4.20						
Casing Details		Water Added					
To (m)	Diam (mm)	From (m)	To (m)				
				Core Barrel	Flush Type	Termination Reason	Last Updated
						Terminated at scheduled depth.	27/06/2024

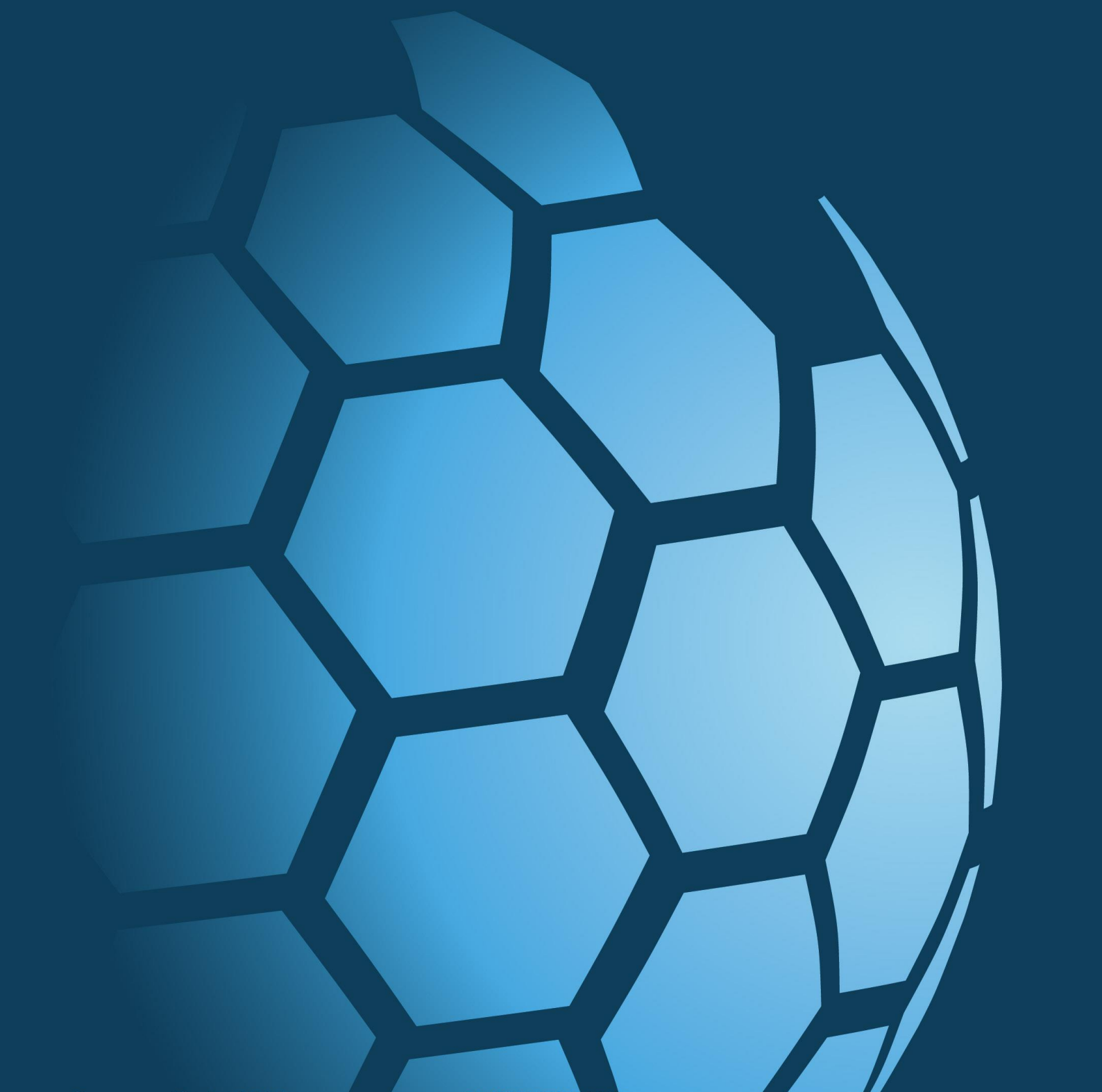




CAUSEWAY
— GEOTECH

APPENDIX C

ENVIRONMENTAL LABORATORY TEST RESULTS





DETS

Certificate of Analysis

Certificate Number 24-06247

Issued: 02-Apr-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-06247

Client Reference ~ 24-0317

Order No ~ (not supplied)

Contract Title ~ 3FM Plot O South Banks

Description 2 Soil samples, 1 Leachate prepared by DETS sample.

Date Received 23-Mar-24

Date Started 25-Mar-24

Date Completed 02-Apr-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-06247

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316735	2316736
Sample ID ~	3FM-BH315	3FM-BH315
Depth ~	1.00-1.10	2.00-2.10
Other ID ~		
Sample Type ~	ES	ES
Sampling Date ~	19/03/2024	19/03/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Metals					
Aluminium	DETSC 2301*	1	mg/kg	8500	5700
Arsenic	DETSC 2301#	0.2	mg/kg	19	18
Barium	DETSC 2301#	1.5	mg/kg	120	240
Beryllium	DETSC 2301#	0.2	mg/kg	0.5	1.2
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.9	1.8
Cadmium	DETSC 2301#	0.1	mg/kg	3.1	1.6
Chromium	DETSC 2301#	0.15	mg/kg	25	36
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	140	210
Iron	DETSC 2301	25	mg/kg	30000	23000
Lead	DETSC 2301#	0.3	mg/kg	150	380
Manganese	DETSC 2301#	20	mg/kg	640	660
Mercury	DETSC 2325#	0.05	mg/kg	0.32	1.4
Nickel	DETSC 2301#	1	mg/kg	27	34
Selenium	DETSC 2301#	0.5	mg/kg	0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	28	31
Zinc	DETSC 2301#	1	mg/kg	150	280
Inorganics					
pH	DETSC 2008#		pH	8.2	8.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.7	2.0
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.6	1.5
Total Organic Carbon	DETSC 2084#	0.5	%	4.7	8.4
Organic matter	DETSC 2002#	0.1	%	2.5	6.0
Sulphate Aqueous Extract as SO ₄ (2:1)	DETSC 2076*	0.001	%	0.0	0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75
Sulphur as S, Total	DETSC 2320	0.01	%	0.21	0.30
Petroleum Hydrocarbons					
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	0.17
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	0.43	26
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	< 3.40	< 3.40
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00	26.61
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50	< 0.50

Summary of Chemical Analysis

Soil Samples

Our Ref 24-06247

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316735	2316736
Sample ID ~	3FM-BH315	3FM-BH315
Depth ~	1.00-1.10	2.00-2.10
Other ID ~		
Sample Type ~	ES	ES
Sampling Date ~	19/03/2024	19/03/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	1.36	< 0.60
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	4.01	< 1.40
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00	< 10.00
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	< 10.00	26.61
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	2.2
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	0.05
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	13
PAHs					
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	6.7
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	15
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	1.2
Phenanthrene	DETSC 3301	0.1	mg/kg	0.2	7.5
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	1.9
Fluoranthene	DETSC 3301	0.1	mg/kg	0.3	4.9
Pyrene	DETSC 3301	0.1	mg/kg	0.5	6.3
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.9	2.5
Chrysene	DETSC 3301	0.1	mg/kg	0.2	1.8
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	0.5
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	0.4
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	2.0
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	0.8
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	0.8
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	1.3
PAH 16 Total	DETSC 3301	1.6	mg/kg	2.1	53
Phenols					
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-06247

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316735	2316736
Sample ID ~	3FM-BH315	3FM-BH315
Depth ~	1.00-1.10	2.00-2.10
Other ID ~		
Sample Type ~	ES	ES
Sampling Date ~	19/03/2024	19/03/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	0.03
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	0.92
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	3.9
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	2.2
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	0.56
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	0.53
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	2.6
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	0.78
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	3.1

Summary of Chemical Analysis

Soil Samples

Our Ref 24-06247

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316735	2316736
Sample ID ~	3FM-BH315	3FM-BH315
Depth ~	1.00-1.10	2.00-2.10
Other ID ~		
Sample Type ~	ES	ES
Sampling Date ~	19/03/2024	19/03/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	0.77
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	0.02
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
SVOCs					
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	1.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1

Summary of Chemical Analysis Soil Samples

Our Ref 24-06247

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316735	2316736
Sample ID ~	3FM-BH315	3FM-BH315
Depth ~	1.00-1.10	2.00-2.10
Other ID ~		
Sample Type ~	ES	ES
Sampling Date ~	19/03/2024	19/03/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-06247

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316737
Sample ID ~	3FM-BH315
Depth ~	3.00-3.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	19/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Preparation				
BS EN 12457 10:1	DETSC 1009*			Y
Metals				
Aluminium, Dissolved	DETSC 2306	10	ug/l	130
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	2.1
Barium, Dissolved	DETSC 2306	0.26	ug/l	20
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	170
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.34
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.0
Iron, Dissolved	DETSC 2306	5.5	ug/l	18
Lead, Dissolved	DETSC 2306	0.09	ug/l	1.1
Manganese, Dissolved	DETSC 2306	0.22	ug/l	20
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	2.7
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.47
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	< 0.6
Zinc, Dissolved	DETSC 2306	1.3	ug/l	5.9
Inorganics				
pH	DETSC 2008		pH	8.0
Cyanide, Total	DETSC 2130	40	ug/l	< 40
Cyanide, Free	DETSC 2130	20	ug/l	< 20
Ortho Phosphate as P	DETSC 2205	0.01	mg/l	< 0.01
Sulphide	DETSC 2208	0.01	mg/l	< 0.01
Sulphur (free)	DETSC 3049*	84	ug/l	130
Sulphur as S, Total	DETSC 2320*	10	mg/l	10
Petroleum Hydrocarbons				
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	ug/l	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-06247

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316737
Sample ID ~	3FM-BH315
Depth ~	3.00-3.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	19/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	ug/l	< 10
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	ug/l	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	0.76
Acenaphthylene	DETSC 3304	0.01	ug/l	0.01
Acenaphthene	DETSC 3304	0.01	ug/l	0.23
Fluorene	DETSC 3304	0.01	ug/l	0.10
Phenanthrene	DETSC 3304	0.01	ug/l	0.15
Anthracene	DETSC 3304	0.01	ug/l	0.02
Fluoranthene	DETSC 3304	0.01	ug/l	0.06
Pyrene	DETSC 3304	0.01	ug/l	0.06
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	0.01
Chrysene	DETSC 3304	0.01	ug/l	0.02
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.02
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.01
PAH Total	DETSC 3304	0.2	ug/l	1.5
PCBs				
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0
Phenols				
Phenol	DETSC 3451*	0.1	ug/l	< 0.10
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-06247

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316737
Sample ID ~	3FM-BH315
Depth ~	3.00-3.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	19/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-06247

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316737
Sample ID ~	3FM-BH315
Depth ~	3.00-3.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	19/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4
Chloroform	DETSC 3432	1	ug/l	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1
Benzene	DETSC 3432	1	ug/l	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
Toluene	DETSC 3432	1	ug/l	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Ethylbenzene	DETSC 3432	1	ug/l	1
m+p-Xylene	DETSC 3432	2	ug/l	< 2
o-Xylene	DETSC 3432	1	ug/l	4
Styrene	DETSC 3432	1	ug/l	< 1
Bromoform	DETSC 3432	1	ug/l	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-06247

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316737
Sample ID ~	3FM-BH315
Depth ~	3.00-3.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	19/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	3
4-chlorotoluene	DETSC 3432	1	ug/l	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1
MTBE	DETSC 3432*	1	ug/l	< 1
SVOCs				
Aniline	DETSC 3434*	1	ug/l	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-06247

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316737
Sample ID ~	3FM-BH315
Depth ~	3.00-3.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	19/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-06247

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2316735	3FM-BH315 1.00-1.10	SOIL	NAD	none	Lee Kerridge
2316736	3FM-BH315 2.00-2.10	SOIL	NAD	none	Lee Kerridge

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-06247
 Client Ref ~ 24-0317
 Contract ~ 3FM Plot O South Banks

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2316735	3FM-BH315 1.00-1.10 SOIL	19/03/24	GJ 250ml, GJ 60ml, PT 1L		
2316736	3FM-BH315 2.00-2.10 SOIL	19/03/24	GJ 250ml, GJ 60ml, PT 1L		
2316737	3FM-BH315 3.00-3.10 LEACHATE	19/03/24	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C5-C35	EH_CU+HS_1D_AL
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C5-C35	EH_CU+HS_1D_AR



TPH Ali/Aro Total C5-C35

EH_CU+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-06249

Issued: 08-Apr-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-06249

Client Reference ~ 24-0317

Order No ~ (not supplied)

Contract Title ~ 3FM Plot O South Banks

Description 3 Soil samples, 2 Leachate prepared by DETS samples.

Date Received 23-Mar-24

Date Started 25-Mar-24

Date Completed 08-Apr-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-06249

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316764	2316765	2316766
Sample ID ~	3FM-BH316	3FM-BH316	3FM-BH316
Depth ~	1.00-1.10	2.00-2.10	3.00-3.10
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	20/03/2024	20/03/2024	20/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Aluminium	DETSC 2301*	1	mg/kg	8100		24000
Arsenic	DETSC 2301#	0.2	mg/kg	8.3		17
Barium	DETSC 2301#	1.5	mg/kg	95		690
Beryllium	DETSC 2301#	0.2	mg/kg	0.4		1.2
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	1.2		6.3
Cadmium	DETSC 2301#	0.1	mg/kg	2.0		3.8
Chromium	DETSC 2301#	0.15	mg/kg	18		52
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0
Copper	DETSC 2301#	0.2	mg/kg	73		240
Iron	DETSC 2301	25	mg/kg	64000		42000
Lead	DETSC 2301#	0.3	mg/kg	93		540
Manganese	DETSC 2301#	20	mg/kg	540		1000
Mercury	DETSC 2325#	0.05	mg/kg	0.19		1.1
Nickel	DETSC 2301#	1	mg/kg	22		42
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5		< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	25		27
Zinc	DETSC 2301#	1	mg/kg	140		3100
Inorganics						
pH	DETSC 2008#		pH	8.6		8.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	1.1		6.5
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1		0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6		2.5
Total Organic Carbon	DETSC 2084#	0.5	%	4.1		18
Organic matter	DETSC 2002#	0.1	%	2.6		14
Sulphate Aqueous Extract as SO ₄ (2:1)	DETSC 2076*	0.001	%	0.0		0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75		270
Sulphur as S, Total	DETSC 2320	0.01	%	0.12		0.36
Petroleum Hydrocarbons						
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50		7.40
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20		12.14
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50		31.31
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	< 3.40		298.0
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00		348.8
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90		2.33
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50		1.90

Summary of Chemical Analysis

Soil Samples

Our Ref 24-06249

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316764	2316765	2316766
Sample ID ~	3FM-BH316	3FM-BH316	3FM-BH316
Depth ~	1.00-1.10	2.00-2.10	3.00-3.10
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	20/03/2024	20/03/2024	20/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	1.22		11.46
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	6.35		52.61
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00		68.29
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	< 10.00		417.1
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01
PAHs						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1		0.3
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1		0.6
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1		0.5
Phenanthrene	DETSC 3301	0.1	mg/kg	0.1		1.5
Anthracene	DETSC 3301	0.1	mg/kg	0.2		0.5
Fluoranthene	DETSC 3301	0.1	mg/kg	0.4		0.4
Pyrene	DETSC 3301	0.1	mg/kg	0.5		0.3
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.2		1.5
Chrysene	DETSC 3301	0.1	mg/kg	0.3		0.4
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1		1.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1		0.5
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6		7.6
PCBs						
PCB 77	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 81	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 105	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 114	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 118	DETSC 3401#	0.01	mg/kg		< 0.01	
PCB 123	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 126	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 156	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 157	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 167	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 169	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 189	DETSC 3401*	0.01	mg/kg		< 0.01	
Phenols						
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01

Summary of Chemical Analysis Soil Samples

Our Ref 24-06249

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316764	2316765	2316766
Sample ID ~	3FM-BH316	3FM-BH316	3FM-BH316
Depth ~	1.00-1.10	2.00-2.10	3.00-3.10
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	20/03/2024	20/03/2024	20/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01		0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01		< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-06249

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316764	2316766
Sample ID ~	3FM-BH316	3FM-BH316
Depth ~	1.00-1.10	3.00-3.10
Other ID ~		
Sample Type ~	ES	ES
Sampling Date ~	20/03/2024	20/03/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	0.03
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	0.06
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	0.08
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	0.08
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	0.05

Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 24-06249

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316764	2316766
Sample ID ~	3FM-BH316	3FM-BH316
Depth ~	1.00-1.10	3.00-3.10
Other ID ~		
Sample Type ~	ES	ES
Sampling Date ~	20/03/2024	20/03/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	0.04
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
SVOCs					
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	0.3
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	1.5
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1

Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 24-06249

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316764	2316766
Sample ID ~	3FM-BH316	3FM-BH316
Depth ~	1.00-1.10	3.00-3.10
Other ID ~		
Sample Type ~	ES	ES
Sampling Date ~	20/03/2024	20/03/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-06249

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316767
Sample ID ~	3FM-BH316
Depth ~	4.00-4.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	20/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Preparation				
BS EN 12457 10:1	DETSC 1009*			Y
Metals				
Aluminium, Dissolved	DETSC 2306	10	ug/l	58
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	2.0
Barium, Dissolved	DETSC 2306	0.26	ug/l	12
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	39
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.7
Iron, Dissolved	DETSC 2306	5.5	ug/l	27
Lead, Dissolved	DETSC 2306	0.09	ug/l	8.4
Manganese, Dissolved	DETSC 2306	0.22	ug/l	7.6
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	< 0.6
Zinc, Dissolved	DETSC 2306	1.3	ug/l	16
Inorganics				
pH	DETSC 2008		pH	7.6
Cyanide, Total	DETSC 2130	40	ug/l	< 40
Cyanide, Free	DETSC 2130	20	ug/l	< 20
Ortho Phosphate as P	DETSC 2205	0.01	mg/l	< 0.01
Sulphide	DETSC 2208	0.01	mg/l	< 0.01
Sulphur (free)	DETSC 3049*	84	ug/l	< 84
Sulphur as S, Total	DETSC 2320*	10	mg/l	< 10
Petroleum Hydrocarbons				
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	ug/l	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-06249

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316767
Sample ID ~	3FM-BH316
Depth ~	4.00-4.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	20/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	ug/l	< 10
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	ug/l	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	0.09
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	0.10
Fluorene	DETSC 3304	0.01	ug/l	0.04
Phenanthrene	DETSC 3304	0.01	ug/l	0.08
Anthracene	DETSC 3304	0.01	ug/l	0.02
Fluoranthene	DETSC 3304	0.01	ug/l	0.07
Pyrene	DETSC 3304	0.01	ug/l	0.06
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	0.02
Chrysene	DETSC 3304	0.01	ug/l	0.02
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.04
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.02
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.02
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.02
PAH Total	DETSC 3304	0.2	ug/l	0.62
PCBs				
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0
Phenols				
Phenol	DETSC 3451*	0.1	ug/l	< 0.10
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-06249

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316767
Sample ID ~	3FM-BH316
Depth ~	4.00-4.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	20/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10

Summary of Chemical Analysis

Leachate VOC/SVOC Samples

Our Ref 24-06249

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316767
Sample ID ~	3FM-BH316
Depth ~	4.00-4.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	20/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4
Chloroform	DETSC 3432	1	ug/l	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1
Benzene	DETSC 3432	1	ug/l	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
Toluene	DETSC 3432	1	ug/l	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1
Styrene	DETSC 3432	1	ug/l	< 1
Bromoform	DETSC 3432	1	ug/l	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1

Summary of Chemical Analysis

Leachate VOC/SVOC Samples

Our Ref 24-06249

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316767
Sample ID ~	3FM-BH316
Depth ~	4.00-4.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	20/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1
MTBE	DETSC 3432*	1	ug/l	< 1
SVOCs				
Aniline	DETSC 3434*	1	ug/l	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0

Summary of Chemical Analysis Leachate VOC/SVOC Samples

Our Ref 24-06249

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2316767
Sample ID ~	3FM-BH316
Depth ~	4.00-4.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	20/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-06249

Client Ref 24-0317

Contract Title 3FM Plot O South Banks

Sample Id 3FM-BH316 2.00-2.10

Sample Numbers 2316765 2316768

Date Analysed 02/04/2024

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084# Total Organic Carbon	%	11.0
DETSC 2003# Loss On Ignition	%	13.0
DETSC 3321# BTEX	mg/kg	11.0
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	15000.0
DETSC 3301 PAHs	mg/kg	140.0
DETSC 2008# pH	pH Units	8.4
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	2	0.02
DETSC 2306 Barium as Ba	16	0.16
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02
DETSC 2306 Chromium as Cr	< 0.25	< 0.1
DETSC 2306 Copper as Cu	2.3	0.023
DETSC 2306 Mercury as Hg	0.013	< 0.002
DETSC 2306 Molybdenum as Mo	9	< 0.1
DETSC 2306 Nickel as Ni	0.8	< 0.1
DETSC 2306 Lead as Pb	5.2	0.05
DETSC 2306 Antimony as Sb	1.1	< 0.05
DETSC 2306 Selenium as Se	< 0.25	< 0.03
DETSC 2306 Zinc as Zn	5.1	0.051
DETSC 2055 Chloride as Cl	1200	< 100
DETSC 2055* Fluoride as F	190	1.9
DETSC 2055 Sulphate as SO4	2700	< 100
DETSC 2009* Total Dissolved Solids	51000	510
DETSC 2130 Phenol Index	< 100	< 1
DETSC 2085 Dissolved Organic Carbon	3800	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information	
DETSC 2008 pH	7.7
DETSC 2009 Conductivity uS/cm	72.3
* Temperature*	16.0
Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.098
Stage 1	
Volume of Leachant L2*	0.96
Volume of Eluate VE1*	0.9

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-06249

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2316764	3FM-BH316 1.00-1.10	SOIL	NAD	none	Ben Rose
2316766	3FM-BH316 3.00-3.10	SOIL	NAD	none	Ben Rose

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-06249

Client Ref ~ 24-0317

Contract ~ 3FM Plot O South Banks

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2316764	3FM-BH316 1.00-1.10 SOIL	20/03/24	GJ 250ml, GJ 60ml, PT 1L		
2316765	3FM-BH316 2.00-2.10 SOIL	20/03/24	GJ 250ml, GJ 60ml, PT 1L		
2316766	3FM-BH316 3.00-3.10 SOIL	20/03/24	GJ 250ml, GJ 60ml, PT 1L		
2316767	3FM-BH316 4.00-4.10 LEACHATE	20/03/24	GJ 250ml, GJ 60ml, PT 1L		
2316768	3FM-BH316 2.00-2.10 LEACHATE	20/03/24	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total
TPH (C10-C40)	EH_1D_Total
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C5-C35	EH_CU+HS_1D_AL
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR



Aromatic C5-C35
TPH Ali/Aro Total C5-C35

EH_CU+HS_1D_AR
EH_CU+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-06428

Issued: 08-Apr-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-06428

Client Reference ~ 24-0317

Order No ~ (not supplied)

Contract Title ~ 3FM Plot O South Banks

Description 6 Soil samples.

Date Received 27-Mar-24

Date Started 27-Mar-24

Date Completed 08-Apr-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-06428

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2317944	2317945	2317946	2317947	2317948	2317949
Sample ID ~	3FM-BH317	3FM-BH317	3FM-BH317	3FM-BH321	3FM-BH321	3FM-BH321
Depth ~	0.50-0.60	2.00-2.10	4.00-4.10	1.00-1.10	3.00-3.10	4.00-4.10
Other ID ~						
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	21/03/2024	21/03/2024	21/03/2024	21/03/2024	21/03/2024	21/03/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Aluminium	DETSC 2301*	1	mg/kg	6900	4800	5500	2300	5100	7900
Arsenic	DETSC 2301#	0.2	mg/kg	11	9.2	8.9	5.1	13	16
Barium	DETSC 2301#	1.5	mg/kg	120	44	270	17	60	190
Beryllium	DETSC 2301#	0.2	mg/kg	0.4	0.5	0.5	< 0.2	0.4	0.9
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.5	0.9	2.0	0.9	1.3	0.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.9	2.2	0.6	< 0.1	0.8	1.1
Chromium	DETSC 2301#	0.15	mg/kg	31	9.7	13	5.6	9.4	17
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	50	25	40	4.1	30	46
Iron	DETSC 2301	25	mg/kg	14000	14000	22000	5300	12000	20000
Lead	DETSC 2301#	0.3	mg/kg	140	40	120	4.4	38	230
Manganese	DETSC 2301#	20	mg/kg	530	1100	880	140	670	850
Mercury	DETSC 2325#	0.05	mg/kg	0.28	0.06	0.24	< 0.05	0.12	0.33
Nickel	DETSC 2301#	1	mg/kg	25	26	17	5.5	16	29
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	1.7	< 0.5	< 0.5	0.6	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	30	19	18	7.9	17	30
Zinc	DETSC 2301#	1	mg/kg	200	140	210	25	62	160
Inorganics									
pH	DETSC 2008#		pH	11.5	8.5	8.2	9.3	10.1	8.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	< 0.1	1.2	0.1	1.3	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.7	< 0.6	1.4	< 0.6	2.1	< 0.6
Total Organic Carbon	DETSC 2084#	0.5	%	3.8	3.1	9.2	1.4	5.2	< 0.5
Organic matter	DETSC 2002#	0.1	%	1.8	1.0	7.8	1.1	3.9	0.3
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076*	0.001	%	0.0	0.0	0.1	0.0	0.0	0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	86	12	74	3.3	9.4	< 0.75
Sulphur as S, Total	DETSC 2320	0.01	%	0.24	0.33	0.85	0.11	0.17	0.40
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	9.04	< 1.50	3.43	< 1.50	< 1.50	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	56.24	< 1.20	7.18	< 1.20	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	107.1	< 1.50	14.47	< 1.50	2.85	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	71.85	< 3.40	73.78	< 3.40	< 3.40	< 3.40
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	244.2	< 10.00	98.87	< 10.00	< 10.00	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	17.32	< 0.90	1.23	< 0.90	1.53	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	96.35	< 0.50	2.61	< 0.50	23.00	< 0.50



Summary of Chemical Analysis

Soil Samples

Our Ref 24-06428

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2317944	2317945	2317946	2317947	2317948	2317949
Sample ID ~	3FM-BH317	3FM-BH317	3FM-BH317	3FM-BH321	3FM-BH321	3FM-BH321
Depth ~	0.50-0.60	2.00-2.10	4.00-4.10	1.00-1.10	3.00-3.10	4.00-4.10
Other ID ~						
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	21/03/2024	21/03/2024	21/03/2024	21/03/2024	21/03/2024	21/03/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	93.51	0.77	7.16	1.49	12.71	< 0.60
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	54.05	< 1.40	21.30	< 1.40	16.59	< 1.40
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	261.2	< 10.00	32.29	< 10.00	53.82	< 10.00
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	505.4	< 10.00	131.2	< 10.00	53.82	< 10.00
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	0.6	< 0.1	0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	0.1	0.8	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	1.8	0.4	0.2	0.3	0.6	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	0.4	0.2	< 0.1	< 0.1	0.2	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	1.0	0.8	0.4	0.5	0.8	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	1.3	0.8	0.5	0.4	0.7	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.8	0.5	0.3	0.2	0.5	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	0.6	0.4	0.3	0.2	0.4	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	0.4	0.2	< 0.1	0.1	0.2	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.3	< 0.1	< 0.1	< 0.1	0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	0.7	0.3	< 0.1	0.2	0.3	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	0.3	0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	0.3	0.2	< 0.1	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	8.8	3.9	2.5	< 1.6	3.7	< 1.6
Phenols									
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	0.15	< 0.01	0.07	< 0.01	0.01	< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01



Summary of Chemical Analysis

Soil Samples

Our Ref 24-06428

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2317944	2317945	2317946	2317947	2317948	2317949
Sample ID ~	3FM-BH317	3FM-BH317	3FM-BH317	3FM-BH321	3FM-BH321	3FM-BH321
Depth ~	0.50-0.60	2.00-2.10	4.00-4.10	1.00-1.10	3.00-3.10	4.00-4.10
Other ID ~						
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	21/03/2024	21/03/2024	21/03/2024	21/03/2024	21/03/2024	21/03/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
VOCs									
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-06428

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2317944	2317945	2317946	2317947	2317948	2317949
Sample ID ~	3FM-BH317	3FM-BH317	3FM-BH317	3FM-BH321	3FM-BH321	3FM-BH321
Depth ~	0.50-0.60	2.00-2.10	4.00-4.10	1.00-1.10	3.00-3.10	4.00-4.10
Other ID ~						
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	21/03/2024	21/03/2024	21/03/2024	21/03/2024	21/03/2024	21/03/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOCs									
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.1	0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	0.3	0.2	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	1.1	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	0.5	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	0.7	0.1	0.7	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1



Summary of Chemical Analysis Soil Samples

Our Ref 24-06428

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2317944	2317945	2317946	2317947	2317948	2317949
Sample ID ~	3FM-BH317	3FM-BH317	3FM-BH317	3FM-BH321	3FM-BH321	3FM-BH321
Depth ~	0.50-0.60	2.00-2.10	4.00-4.10	1.00-1.10	3.00-3.10	4.00-4.10
Other ID ~						
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	21/03/2024	21/03/2024	21/03/2024	21/03/2024	21/03/2024	21/03/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	0.4	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-06428

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2317944	3FM-BH317 0.50-0.60	SOIL	Chrysotile	Chrysotile present as fibre bundles	Pierce Booth
2317945	3FM-BH317 2.00-2.10	SOIL	NAD	none	Pierce Booth
2317946	3FM-BH317 4.00-4.10	SOIL	NAD	none	Pierce Booth
2317947	3FM-BH321 1.00-1.10	SOIL	NAD	none	Pierce Booth
2317948	3FM-BH321 3.00-3.10	SOIL	NAD	none	Pierce Booth
2317949	3FM-BH321 4.00-4.10	SOIL	NAD	none	Pierce Booth

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-06428
 Client Ref ~ 24-0317
 Contract ~ 3FM Plot O South Banks

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2317944	3FM-BH317 0.50-0.60 SOIL	21/03/24	GJ 250ml, GJ 60ml, PT 1L		
2317945	3FM-BH317 2.00-2.10 SOIL	21/03/24	GJ 250ml, GJ 60ml, PT 1L		
2317946	3FM-BH317 4.00-4.10 SOIL	21/03/24	GJ 250ml, GJ 60ml, PT 1L		
2317947	3FM-BH321 1.00-1.10 SOIL	21/03/24	GJ 250ml, GJ 60ml, PT 1L		
2317948	3FM-BH321 3.00-3.10 SOIL	21/03/24	GJ 250ml, GJ 60ml, PT 1L		
2317949	3FM-BH321 4.00-4.10 SOIL	21/03/24	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub
 DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
 Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
 The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.



nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-06431

Issued: 08-Apr-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-06431

Client Reference ~ 24-0317

Order No ~ (not supplied)

Contract Title ~ 3FM Plot O South Banks

Description 4 Soil samples, 2 Leachate prepared by DETS samples.

Date Received 27-Mar-24

Date Started 27-Mar-24

Date Completed 08-Apr-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-06431

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2317956	2317957	2317958
Sample ID ~	3FM-BH318	3FM-BH318	3FM-BH318
Depth ~	1.00-1.10	3.00-3.10	4.00-4.10
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	22/03/2024	22/03/2024	22/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Aluminium	DETSC 2301*	1	mg/kg	5200	8400	7600
Arsenic	DETSC 2301#	0.2	mg/kg	11	11	31
Barium	DETSC 2301#	1.5	mg/kg	62	280	300
Beryllium	DETSC 2301#	0.2	mg/kg	0.4	0.8	1.1
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.4	5.1	0.3
Cadmium	DETSC 2301#	0.1	mg/kg	1.1	1.7	1.1
Chromium	DETSC 2301#	0.15	mg/kg	11	23	24
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	33	67	140
Iron	DETSC 2301	25	mg/kg	12000	26000	92000
Lead	DETSC 2301#	0.3	mg/kg	48	370	190
Manganese	DETSC 2301#	20	mg/kg	870	550	590
Mercury	DETSC 2325#	0.05	mg/kg	0.17	0.46	0.33
Nickel	DETSC 2301#	1	mg/kg	21	23	32
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	22	34	24
Zinc	DETSC 2301#	1	mg/kg	76	260	1300
Inorganics						
pH	DETSC 2008#		pH	10.2	8.5	8.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	2.3	3.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	3.6	3.0
Total Organic Carbon	DETSC 2084#	0.5	%	2.8	11	22
Organic matter	DETSC 2002#	0.1	%	1.8	8.3	8.1
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076*	0.001	%	0.0	0.1	0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	1.9	180	11
Sulphur as S, Total	DETSC 2320	0.01	%	0.09	0.51	0.23
Petroleum Hydrocarbons						
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	12.39	7.65
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	18.13	4.78
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	37.24	14.15
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	< 3.40	335.4	115.3
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00	403.2	141.9
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	9.94	3.69
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50	16.33	2.92

Summary of Chemical Analysis

Soil Samples

Our Ref 24-06431

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2317956	2317957	2317958
Sample ID ~	3FM-BH318	3FM-BH318	3FM-BH318
Depth ~	1.00-1.10	3.00-3.10	4.00-4.10
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	22/03/2024	22/03/2024	22/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	1.31	29.37	18.88
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	4.25	63.05	54.47
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00	118.7	79.97
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	< 10.00	521.9	221.8
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
PAHs						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	0.9	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	0.1	0.7	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	0.4	0.9	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	0.1	0.2	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	0.7	0.9	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	0.9	0.7	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.7	< 0.1	0.9
Chrysene	DETSC 3301	0.1	mg/kg	0.5	0.5	0.5
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	0.3	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	0.4	1.2	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	0.3	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	0.3	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	5.1	5.9	< 1.6
PCBs						
PCB 77	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 81	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 105	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 114	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01		
PCB 123	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 126	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 156	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 157	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 167	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 169	DETSC 3401*	0.01	mg/kg	< 0.01		
PCB 189	DETSC 3401*	0.01	mg/kg	< 0.01		
Phenols						
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis Soil Samples

Our Ref 24-06431

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2317956	2317957	2317958
Sample ID ~	3FM-BH318	3FM-BH318	3FM-BH318
Depth ~	1.00-1.10	3.00-3.10	4.00-4.10
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	22/03/2024	22/03/2024	22/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	0.11	< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	< 0.01	0.83	< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-06431

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2317956	2317957	2317958
Sample ID ~	3FM-BH318	3FM-BH318	3FM-BH318
Depth ~	1.00-1.10	3.00-3.10	4.00-4.10
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	22/03/2024	22/03/2024	22/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	0.03	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	0.02	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	0.01	< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-06431

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2317956	2317957	2317958
Sample ID ~	3FM-BH318	3FM-BH318	3FM-BH318
Depth ~	1.00-1.10	3.00-3.10	4.00-4.10
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	22/03/2024	22/03/2024	22/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	0.03	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
SVOCs						
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	0.9	0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	0.2	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	0.3
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	2.2	0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	0.7	1.2	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	1.8	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-06431

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2317956	2317957	2317958
Sample ID ~	3FM-BH318	3FM-BH318	3FM-BH318
Depth ~	1.00-1.10	3.00-3.10	4.00-4.10
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	22/03/2024	22/03/2024	22/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-06431

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2317959	2317960
Sample ID ~	3FM-BH318	3FM-BH318
Depth ~	4.00-4.10	0.50-0.60
Other ID ~		
Sample Type ~	ES	ES
Sampling Date ~	22/03/2024	22/03/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Preparation					
BS EN 12457 10:1	DETSC 1009*			Y	
BS EN 12457 10:1	DETSC 1009*				Y
Metals					
Aluminium, Dissolved	DETSC 2306	10	ug/l	26	
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	3.4	
Barium, Dissolved	DETSC 2306	0.26	ug/l	17	
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	
Boron, Dissolved	DETSC 2306*	12	ug/l	< 12	
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.29	
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	
Copper, Dissolved	DETSC 2306	0.4	ug/l	5.4	
Iron, Dissolved	DETSC 2306	5.5	ug/l	61	
Lead, Dissolved	DETSC 2306	0.09	ug/l	6.5	
Manganese, Dissolved	DETSC 2306	0.22	ug/l	11	
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.02	
Nickel, Dissolved	DETSC 2306	0.5	ug/l	2.1	
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.61	
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	2.5	
Zinc, Dissolved	DETSC 2306	1.3	ug/l	3.2	
Inorganics					
pH	DETSC 2008		pH	6.5	
Cyanide, Total	DETSC 2130	40	ug/l	< 40	
Cyanide, Free	DETSC 2130	20	ug/l	< 20	
Ortho Phosphate as P	DETSC 2205	0.01	mg/l	< 0.01	
Sulphide	DETSC 2208	0.01	mg/l	< 0.01	
Sulphur (free)	DETSC 3049*	84	ug/l	120	
Sulphur as S, Total	DETSC 2320*	10	mg/l	< 10	
Petroleum Hydrocarbons					
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	ug/l	< 10	
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-06431

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2317959	2317960
Sample ID ~	3FM-BH318	3FM-BH318
Depth ~	4.00-4.10	0.50-0.60
Other ID ~		
Sample Type ~	ES	ES
Sampling Date ~	22/03/2024	22/03/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	ug/l	< 10	
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	ug/l	< 10	
Benzene	DETSC 3322	1	ug/l	< 1.0	
Toluene	DETSC 3322	1	ug/l	< 1.0	
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	
Xylene	DETSC 3322	1	ug/l	< 1.0	
PAHs					
Naphthalene	DETSC 3304	0.05	ug/l	0.07	
Acenaphthylene	DETSC 3304	0.01	ug/l	0.01	
Acenaphthene	DETSC 3304	0.01	ug/l	0.01	
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	
Phenanthrene	DETSC 3304	0.01	ug/l	0.01	
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	
Fluoranthene	DETSC 3304	0.01	ug/l	0.01	
Pyrene	DETSC 3304	0.01	ug/l	0.01	
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01	
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.01	
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.01	
PAH Total	DETSC 3304	0.2	ug/l	< 0.20	
PCBs					
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3	
PCB 52	DETSC 3402	0.2	ug/l	< 0.2	
PCB 101	DETSC 3402	0.3	ug/l	< 0.3	
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6	
PCB 138	DETSC 3402	0.2	ug/l	< 0.2	
PCB 153	DETSC 3402	0.2	ug/l	< 0.2	
PCB 180	DETSC 3402	0.2	ug/l	< 0.2	
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0	
Phenols					
Phenol	DETSC 3451*	0.1	ug/l	< 0.10	
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10	
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10	

Summary of Chemical Analysis Leachate Samples

Our Ref 24-06431

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2317959	2317960
Sample ID ~	3FM-BH318	3FM-BH318
Depth ~	4.00-4.10	0.50-0.60
Other ID ~		
Sample Type ~	ES	ES
Sampling Date ~	22/03/2024	22/03/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10	
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10	
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	

Summary of Chemical Analysis Leachate VOC/SVOC Samples

Our Ref 24-06431

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2317959
Sample ID ~	3FM-BH318
Depth ~	4.00-4.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	22/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4
Chloroform	DETSC 3432	1	ug/l	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1
Benzene	DETSC 3432	1	ug/l	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
Toluene	DETSC 3432	1	ug/l	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1
Styrene	DETSC 3432	1	ug/l	< 1
Bromoform	DETSC 3432	1	ug/l	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1

Summary of Chemical Analysis

Leachate VOC/SVOC Samples

Our Ref 24-06431

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2317959
Sample ID ~	3FM-BH318
Depth ~	4.00-4.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	22/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1
MTBE	DETSC 3432*	1	ug/l	< 1
SVOCs				
Aniline	DETSC 3434*	1	ug/l	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0

Summary of Chemical Analysis Leachate VOC/SVOC Samples

Our Ref 24-06431

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2317959
Sample ID ~	3FM-BH318
Depth ~	4.00-4.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	22/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-06431

Client Ref 24-0317

Contract Title 3FM Plot O South Banks

Sample Id 3FM-BH318 0.50-0.60

Sample Numbers 2317955 2317960

Date Analysed 05/04/2024

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	3.8	3	5	6
DETSC 2003# Loss On Ignition	%	5.3	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	36.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	2.0	100	n/a	n/a
DETSC 2008# pH	pH Units	10.4	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	5.2	0.052	0.5	2	25
DETSC 2306 Barium as Ba	19	0.19	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	1.9	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	0.013	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	14	0.14	0.5	10	30
DETSC 2306 Nickel as Ni	2.4	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	5.8	0.06	0.5	10	50
DETSC 2306 Antimony as Sb	3.1	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.35	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	25	0.25	4	50	200
DETSC 2055 Chloride as Cl	< 100	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	17000	170	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	81000	810	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	18000	180	500	800	1000

Additional Information	
DETSC 2008 pH	6.4
DETSC 2009 Conductivity uS/cm	116.0
* Temperature*	16.0
Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.096
Stage 1	
Volume of Leachant L2*	0.932
Volume of Eluate VE1*	0.88

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-06431

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2317956	3FM-BH318 1.00-1.10	SOIL	NAD	none	Pierce Booth
2317957	3FM-BH318 3.00-3.10	SOIL	NAD	none	Pierce Booth
2317958	3FM-BH318 4.00-4.10	SOIL	NAD	none	Pierce Booth

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-06431

Client Ref ~ 24-0317

Contract ~ 3FM Plot O South Banks

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2317955	3FM-BH318 0.50-0.60 SOIL	22/03/24	GJ 250ml, GJ 60ml, PT 1L		
2317956	3FM-BH318 1.00-1.10 SOIL	22/03/24	GJ 250ml, GJ 60ml, PT 1L		
2317957	3FM-BH318 3.00-3.10 SOIL	22/03/24	GJ 250ml, GJ 60ml, PT 1L		
2317958	3FM-BH318 4.00-4.10 SOIL	22/03/24	GJ 250ml, GJ 60ml, PT 1L		
2317959	3FM-BH318 4.00-4.10 LEACHATE	22/03/24	GJ 250ml, GJ 60ml, PT 1L		
2317960	3FM-BH318 0.50-0.60 LEACHATE	22/03/24	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total
TPH (C10-C40)	EH_1D_Total
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C5-C35	EH_CU+HS_1D_AL
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR



Aromatic C5-C35
TPH Ali/Aro Total C5-C35

EH_CU+HS_1D_AR
EH_CU+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-06847

Issued: 17-Apr-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-06847

Client Reference ~ 24-0317

Order No ~ (not supplied)

Contract Title ~ 3FM Plot O South Banks

Description 9 Soil samples, 4 Leachate prepared by DETS samples.

Date Received 03-Apr-24

Date Started 03-Apr-24

Date Completed 17-Apr-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 22

Summary of Chemical Analysis

Soil Samples

Our Ref 24-06847

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2320216	2320217	2320218	2320219	2320220	2320222	2320223
Sample ID ~	3FM-BH319	3FM-BH319	3FM-BH319	3FM-BH320	3FM-BH320	3FM-BH320	3FM-BH320
Depth ~	1.00-1.10	3.00-3.10	5.00-5.10	0.50-0.60	1.00-1.10	3.00-3.10	5.00-5.10
Other ID ~							
Sample Type ~	ES	ES	ES	ES	ES	ES	ES
Sampling Date ~	23/03/2024	23/03/2024	23/03/2024	24/03/2024	24/03/2024	24/03/2024	24/03/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Metals										
Aluminium	DETSC 2301*	1	mg/kg	7300	4900	2500	6200	6500	5400	3100
Arsenic	DETSC 2301#	0.2	mg/kg	17	9.8	6.5	15	13	11	5.1
Barium	DETSC 2301#	1.5	mg/kg	230	66	20	140	120	70	84
Beryllium	DETSC 2301#	0.2	mg/kg	0.9	0.5	0.2	0.7	0.6	0.6	0.2
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	4.3	1.3	0.7	0.9	2.4	0.7	0.8
Cadmium	DETSC 2301#	0.1	mg/kg	1.2	1.7	0.2	1.2	1.2	1.7	0.3
Chromium	DETSC 2301#	0.15	mg/kg	17	11	7.5	15	22	12	15
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	64	32	7.9	40	38	34	10
Iron	DETSC 2301	25	mg/kg	24000	16000	6700	16000	18000	17000	7700
Lead	DETSC 2301#	0.3	mg/kg	140	32	11	260	150	47	43
Manganese	DETSC 2301#	20	mg/kg	720	1000	270	800	830	1200	220
Mercury	DETSC 2325#	0.05	mg/kg	0.39	0.11	< 0.05	0.37	0.36	0.15	0.06
Nickel	DETSC 2301#	1	mg/kg	25	28	8.2	25	30	31	8.2
Selenium	DETSC 2301#	0.5	mg/kg	0.7	1.9	< 0.5	0.9	0.7	1.1	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	29	20	10	27	28	24	14
Zinc	DETSC 2301#	1	mg/kg	160	84	35	250	170	97	92
Inorganics										
pH	DETSC 2008#		pH	8.6	8.8	8.7	9.4	8.9	8.5	8.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	1.5	0.1	0.2	0.7	0.8	0.5	0.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.8	< 0.6	< 0.6	6.9	1.2	1.0	< 0.6
Total Organic Carbon	DETSC 2084#	0.5	%	7.2	2.7	0.8	2.8	3.7	2.0	1.6
Organic matter	DETSC 2002#	0.1	%	3.8	1.4	0.4	2.6	3.3	1.7	1.0
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076*	0.001	%	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	30	7.9	< 0.75	< 0.75	19	1.4	32
Sulphur as S, Total	DETSC 2320	0.01	%	0.46	0.32	0.18	0.13	0.22	0.05	0.18
Petroleum Hydrocarbons										
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20	< 1.20	< 1.20	< 1.20	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50	0.69	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Summary of Chemical Analysis

Soil Samples

Our Ref 24-06847

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2320216	2320217	2320218	2320219	2320220	2320222	2320223
Sample ID ~	3FM-BH319	3FM-BH319	3FM-BH319	3FM-BH320	3FM-BH320	3FM-BH320	3FM-BH320
Depth ~	1.00-1.10	3.00-3.10	5.00-5.10	0.50-0.60	1.00-1.10	3.00-3.10	5.00-5.10
Other ID ~							
Sample Type ~	ES	ES	ES	ES	ES	ES	ES
Sampling Date ~	23/03/2024	23/03/2024	23/03/2024	24/03/2024	24/03/2024	24/03/2024	24/03/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Aromatic >EC16-EC21: EH_2D_AR	DETS 3521#	0.6	mg/kg	3.98	2.11	< 0.60	2.16	2.69	1.08	< 0.60
Aromatic >EC21-EC35: EH_2D_AR	DETS 3521#	1.4	mg/kg	6.12	< 1.40	< 1.40	2.05	2.30	< 1.40	< 1.40
Aromatic C5-C35: EH_2D+HS_1D_AR	DETS 3521*	10	mg/kg	10.10	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
TPH Alii/Aro Total C5-C35: EH_2D+HS_1D_Total	DETS 3521*	10	mg/kg	10.10	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
Benzene	DETS 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETS 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETS 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETS 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAHs										
Naphthalene	DETS 3301	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETS 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETS 3301	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1
Fluorene	DETS 3301	0.1	mg/kg	0.4	< 0.1	< 0.1	0.1	0.3	< 0.1	< 0.1
Phenanthrene	DETS 3301	0.1	mg/kg	1.7	0.4	< 0.1	0.5	0.9	0.2	< 0.1
Anthracene	DETS 3301	0.1	mg/kg	0.5	0.1	< 0.1	0.1	0.3	< 0.1	< 0.1
Fluoranthene	DETS 3301	0.1	mg/kg	2.1	0.5	< 0.1	0.8	1.3	0.3	< 0.1
Pyrene	DETS 3301	0.1	mg/kg	2.0	0.5	< 0.1	1.0	1.6	0.4	< 0.1
Benzo(a)anthracene	DETS 3301	0.1	mg/kg	1.1	0.2	< 0.1	0.5	0.8	0.2	< 0.1
Chrysene	DETS 3301	0.1	mg/kg	1.1	0.2	< 0.1	0.6	0.6	0.2	< 0.1
Benzo(b)fluoranthene	DETS 3301	0.1	mg/kg	0.7	0.1	< 0.1	0.3	0.4	< 0.1	< 0.1
Benzo(k)fluoranthene	DETS 3301	0.1	mg/kg	0.5	< 0.1	< 0.1	0.2	0.3	< 0.1	< 0.1
Benzo(a)pyrene	DETS 3301	0.1	mg/kg	1.1	0.2	< 0.1	0.6	0.5	0.2	< 0.1
Indeno(1,2,3-c,d)pyrene	DETS 3301	0.1	mg/kg	0.5	< 0.1	< 0.1	0.1	0.3	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETS 3301	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETS 3301	0.1	mg/kg	0.5	< 0.1	< 0.1	0.2	0.3	< 0.1	< 0.1
PAH 16 Total	DETS 3301	1.6	mg/kg	12	2.4	< 1.6	5.0	7.8	< 1.6	< 1.6
PCBs										
PCB 77	DETS 3401*	0.01	mg/kg					< 0.01		
PCB 81	DETS 3401*	0.01	mg/kg					< 0.01		
PCB 105	DETS 3401*	0.01	mg/kg					< 0.01		
PCB 114	DETS 3401*	0.01	mg/kg					< 0.01		
PCB 118	DETS 3401#	0.01	mg/kg					< 0.01		
PCB 123	DETS 3401*	0.01	mg/kg					< 0.01		
PCB 126	DETS 3401*	0.01	mg/kg					< 0.01		
PCB 156	DETS 3401*	0.01	mg/kg					< 0.01		
PCB 157	DETS 3401*	0.01	mg/kg					< 0.01		
PCB 167	DETS 3401*	0.01	mg/kg					< 0.01		
PCB 169	DETS 3401*	0.01	mg/kg					< 0.01		
PCB 189	DETS 3401*	0.01	mg/kg					< 0.01		
Phenols										
Phenol	DETS 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01



Summary of Chemical Analysis

Soil Samples

Our Ref 24-06847

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2320216	2320217	2320218	2320219	2320220	2320222	2320223
Sample ID ~	3FM-BH319	3FM-BH319	3FM-BH319	3FM-BH320	3FM-BH320	3FM-BH320	3FM-BH320
Depth ~	1.00-1.10	3.00-3.10	5.00-5.10	0.50-0.60	1.00-1.10	3.00-3.10	5.00-5.10
Other ID ~							
Sample Type ~	ES	ES	ES	ES	ES	ES	ES
Sampling Date ~	23/03/2024	23/03/2024	23/03/2024	24/03/2024	24/03/2024	24/03/2024	24/03/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-06847

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2320216	2320217	2320218	2320219	2320220	2320222	2320223
Sample ID ~	3FM-BH319	3FM-BH319	3FM-BH319	3FM-BH320	3FM-BH320	3FM-BH320	3FM-BH320
Depth ~	1.00-1.10	3.00-3.10	5.00-5.10	0.50-0.60	1.00-1.10	3.00-3.10	5.00-5.10
Other ID ~							
Sample Type ~	ES	ES	ES	ES	ES	ES	ES
Sampling Date ~	23/03/2024	23/03/2024	23/03/2024	24/03/2024	24/03/2024	24/03/2024	24/03/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units								
VOCs											
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-06847

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2320216	2320217	2320218	2320219	2320220	2320222	2320223
Sample ID ~	3FM-BH319	3FM-BH319	3FM-BH319	3FM-BH320	3FM-BH320	3FM-BH320	3FM-BH320
Depth ~	1.00-1.10	3.00-3.10	5.00-5.10	0.50-0.60	1.00-1.10	3.00-3.10	5.00-5.10
Other ID ~							
Sample Type ~	ES	ES	ES	ES	ES	ES	ES
Sampling Date ~	23/03/2024	23/03/2024	23/03/2024	24/03/2024	24/03/2024	24/03/2024	24/03/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOCs										
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1



Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-06847

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2320216	2320217	2320218	2320219	2320220	2320222	2320223
Sample ID ~	3FM-BH319	3FM-BH319	3FM-BH319	3FM-BH320	3FM-BH320	3FM-BH320	3FM-BH320
Depth ~	1.00-1.10	3.00-3.10	5.00-5.10	0.50-0.60	1.00-1.10	3.00-3.10	5.00-5.10
Other ID ~							
Sample Type ~	ES	ES	ES	ES	ES	ES	ES
Sampling Date ~	23/03/2024	23/03/2024	23/03/2024	24/03/2024	24/03/2024	24/03/2024	24/03/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-06847

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2320227
Sample ID ~	3FM-BH319
Depth ~	2.00-2.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	23/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Preparation				
BS EN 12457 10:1	DETSC 1009*			Y
BS EN 12457 10:1	DETSC 1009*			
Metals				
Aluminium, Dissolved	DETSC 2306	10	ug/l	19
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.50
Barium, Dissolved	DETSC 2306	0.26	ug/l	8.6
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	< 12
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.6
Iron, Dissolved	DETSC 2306	5.5	ug/l	110
Lead, Dissolved	DETSC 2306	0.09	ug/l	1.1
Manganese, Dissolved	DETSC 2306	0.22	ug/l	6.6
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	< 0.6
Zinc, Dissolved	DETSC 2306	1.3	ug/l	9.2
Inorganics				
pH	DETSC 2008		pH	7.4
Cyanide, Total	DETSC 2130	40	ug/l	< 40
Cyanide, Free	DETSC 2130	20	ug/l	< 20
Ortho Phosphate as P	DETSC 2205	0.01	mg/l	< 0.01
Sulphide	DETSC 2208	0.01	mg/l	< 0.01
Sulphur (free)	DETSC 3049*	84	ug/l	< 84
Sulphur as S, Total	DETSC 2320*	10	mg/l	< 10
Petroleum Hydrocarbons				
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	ug/l	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-06847

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2320227
Sample ID ~	3FM-BH319
Depth ~	2.00-2.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	23/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	ug/l	< 10
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	ug/l	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	0.05
Fluorene	DETSC 3304	0.01	ug/l	0.04
Phenanthrene	DETSC 3304	0.01	ug/l	0.14
Anthracene	DETSC 3304	0.01	ug/l	0.03
Fluoranthene	DETSC 3304	0.01	ug/l	0.15
Pyrene	DETSC 3304	0.01	ug/l	0.14
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	0.07
Chrysene	DETSC 3304	0.01	ug/l	0.06
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.10
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.06
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.04
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.08
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.08
PAH Total	DETSC 3304	0.2	ug/l	1.0
PCBs				
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0
Phenols				
Phenol	DETSC 3451*	0.1	ug/l	< 0.10
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-06847

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2320227
Sample ID ~	3FM-BH319
Depth ~	2.00-2.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	23/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10

Summary of Chemical Analysis

Leachate VOC/SVOC Samples

Our Ref 24-06847

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2320227
Sample ID ~	3FM-BH319
Depth ~	2.00-2.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	23/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4
Chloroform	DETSC 3432	1	ug/l	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1
Benzene	DETSC 3432	1	ug/l	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
Toluene	DETSC 3432	1	ug/l	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1
Styrene	DETSC 3432	1	ug/l	< 1
Bromoform	DETSC 3432	1	ug/l	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1

Summary of Chemical Analysis Leachate VOC/SVOC Samples

Our Ref 24-06847

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2320227
Sample ID ~	3FM-BH319
Depth ~	2.00-2.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	23/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1
MTBE	DETSC 3432*	1	ug/l	< 1
SVOCs				
Aniline	DETSC 3434*	1	ug/l	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0

Summary of Chemical Analysis

Leachate VOC/SVOC Samples

Our Ref 24-06847

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2320227
Sample ID ~	3FM-BH319
Depth ~	2.00-2.10
Other ID ~	
Sample Type ~	ES
Sampling Date ~	23/03/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-06847

Client Ref 24-0317

Contract Title 3FM Plot O South Banks

Sample Id 3FM-BH319 0.50-0.60

Sample Numbers 2320215 2320224

Date Analysed 12/04/2024

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	4.0	3	5	6
DETSC 2003# Loss On Ignition	%	5.0	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	75.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	13.0	100	n/a	n/a
DETSC 2008# pH	pH Units	9.6	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	1.4	0.014	0.5	2	25
DETSC 2306 Barium as Ba	24	0.24	20	100	300
DETSC 2306 Cadmium as Cd	0.11	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	1.3	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	3.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	1.6	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	1.5	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.31	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	17	0.17	4	50	200
DETSC 2055 Chloride as Cl	2800	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	54000	540	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	130000	1300	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

Additional Information	
DETSC 2008 pH	6.4
DETSC 2009 Conductivity uS/cm	190.0
* Temperature*	16.0
Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.096
Stage 1	
Volume of Leachant L2*	0.942
Volume of Eluate VE1*	0.89

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-06847

Client Ref 24-0317

Contract Title 3FM Plot O South Banks

Sample Id 3FM-BH320 0.50-0.60

Sample Numbers 2320219 2320225

Date Analysed 15/04/2024

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	2.8	3	5	6
DETSC 2003# Loss On Ignition	%	4.4	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	0.06	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	36.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	5.0	100	n/a	n/a
DETSC 2008# pH	pH Units	9.4	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	3.8	0.038	0.5	2	25
DETSC 2306 Barium as Ba	19	0.19	20	100	300
DETSC 2306 Cadmium as Cd	0.1	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	0.27	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	2.9	0.029	2	50	100
DETSC 2306 Mercury as Hg	0.01	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	16	0.16	0.5	10	30
DETSC 2306 Nickel as Ni	0.99	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	11	0.11	0.5	10	50
DETSC 2306 Antimony as Sb	3.2	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.86	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	23	0.23	4	50	200
DETSC 2055 Chloride as Cl	8700	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	28000	280	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	110000	1100	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	3700	< 50	500	800	1000

Additional Information	
DETSC 2008 pH	7.2
DETSC 2009 Conductivity uS/cm	158.0
* Temperature*	16.0
Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.094
Stage 1	
Volume of Leachant L2*	0.926
Volume of Eluate VE1*	0.87

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-06847

Client Ref 24-0317

Contract Title 3FM Plot O South Banks

Sample Id 3FM-BH320 2.00-2.10

Sample Numbers 2320221 2320226

Date Analysed 15/04/2024

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	3.7	3	5	6
DETSC 2003# Loss On Ignition	%	5.5	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	39.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	5.5	100	n/a	n/a
DETSC 2008# pH	pH Units	8.4	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	2.4	0.024	0.5	2	25
DETSC 2306 Barium as Ba	30	0.3	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	1.4	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	15	0.15	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	2.4	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	2.4	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.37	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	8.5	0.085	4	50	200
DETSC 2055 Chloride as Cl	6100	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	110	1.1	10	150	500
DETSC 2055 Sulphate as SO4	39000	390	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	130000	1300	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	2200	< 50	500	800	1000

Additional Information	
DETSC 2008 pH	7.1
DETSC 2009 Conductivity uS/cm	179.0
* Temperature*	16.0
Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.098
Stage 1	
Volume of Leachant L2*	0.962
Volume of Eluate VE1*	0.91

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

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Summary of Asbestos Analysis Soil Samples

Our Ref 24-06847

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2320216	3FM-BH319 1.00-1.10	SOIL	NAD	none	Ben Rose
2320217	3FM-BH319 3.00-3.10	SOIL	NAD	none	Ben Rose
2320218	3FM-BH319 5.00-5.10	SOIL	NAD	none	Ben Rose
2320219	3FM-BH320 0.50-0.60	SOIL	Chrysotile	Chrysotile present as fibre bundles	Ben Rose
2320220	3FM-BH320 1.00-1.10	SOIL	NAD	none	Ben Rose
2320222	3FM-BH320 3.00-3.10	SOIL	NAD	none	Ben Rose
2320223	3FM-BH320 5.00-5.10	SOIL	NAD	none	Ben Rose

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-06847
 Client Ref ~ 24-0317
 Contract ~ 3FM Plot O South Banks

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date		Containers Received	Holding time exceeded for tests	Inappropriate container for tests
		Sampled ~				
2320215	3FM-BH319 0.50-0.60 SOIL	23/03/24		GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2320216	3FM-BH319 1.00-1.10 SOIL	23/03/24		GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2320217	3FM-BH319 3.00-3.10 SOIL	23/03/24		GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2320218	3FM-BH319 5.00-5.10 SOIL	23/03/24		GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2320219	3FM-BH320 0.50-0.60 SOIL	24/03/24		GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2320220	3FM-BH320 1.00-1.10 SOIL	24/03/24		GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2320221	3FM-BH320 2.00-2.10 SOIL	24/03/24		GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2320222	3FM-BH320 3.00-3.10 SOIL	24/03/24		GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2320223	3FM-BH320 5.00-5.10 SOIL	24/03/24		GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2320224	3FM-BH319 0.50-0.60 LEACHATE	23/03/24		GJ 250ml, GJ 60ml, PT 1L		
2320225	3FM-BH320 0.50-0.60 LEACHATE	24/03/24		GJ 250ml, GJ 60ml, PT 1L		
2320226	3FM-BH320 2.00-2.10 LEACHATE	24/03/24		GJ 250ml, GJ 60ml, PT 1L		
2320227	3FM-BH319 2.00-2.10 LEACHATE	23/03/24		GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Information in Support of the Analytical Results

Our Ref 24-06847

Client Ref ~ 24-0317

Contract ~ 3FM Plot O South Banks

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425 μ m sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total
TPH (C10-C40)	EH_1D_Total
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C5-C35	EH_CU+HS_1D_AL
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR



Aromatic C5-C35
TPH Ali/Aro Total C5-C35

EH_CU+HS_1D_AR
EH_CU+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-06934

Issued: 17-Apr-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-06934

Client Reference ~ 24-0317

Order No ~ (not supplied)

Contract Title ~ 3FM Plot O South Banks

Description 4 Soil samples, 1 Leachate prepared by DETS sample.

Date Received 04-Apr-24

Date Started 04-Apr-24

Date Completed 17-Apr-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-06934

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2320771	2320772	2320774
Sample ID ~	3FM-BH322	3FM-BH322	3FM-BH322
Depth ~	0.50-0.60	1.00-1.10	3.00-3.10
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	25/03/2024	25/03/2024	25/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Aluminium	DETSC 2301*	1	mg/kg	5400	2600	8000
Arsenic	DETSC 2301#	0.2	mg/kg	11	12	34
Barium	DETSC 2301#	1.5	mg/kg	160	62	270
Beryllium	DETSC 2301#	0.2	mg/kg	0.5	0.3	0.9
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	1.2	0.5	5.8
Cadmium	DETSC 2301#	0.1	mg/kg	1.2	0.4	1.8
Chromium	DETSC 2301#	0.15	mg/kg	14	8.6	32
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	49	27	290
Iron	DETSC 2301	25	mg/kg	15000	7600	26000
Lead	DETSC 2301#	0.3	mg/kg	170	90	610
Manganese	DETSC 2301#	20	mg/kg	670	740	1000
Mercury	DETSC 2325#	0.05	mg/kg	0.21	0.08	0.67
Nickel	DETSC 2301#	1	mg/kg	19	10	33
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	22	12	38
Zinc	DETSC 2301#	1	mg/kg	190	71	540
Inorganics						
pH	DETSC 2008#		pH	9.7	9.0	8.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.8	< 0.1	0.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	8.3	< 0.6	< 0.6
Total Organic Carbon	DETSC 2084#	0.5	%	3.4	4.0	8.8
Organic matter	DETSC 2002#	0.1	%	2.3	0.8	4.5
Sulphate Aqueous Extract as SO ₄ (2:1)	DETSC 2076*	0.001	%	0.0	0.0	0.0
Sulphur (free)	DETSC 3049#	0.75	mg/kg	22	1.2	78
Sulphur as S, Total	DETSC 2320	0.01	%	0.24	0.17	0.28
Petroleum Hydrocarbons						
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	< 3.40	< 3.40	< 3.40
Aliphatic C5-C35: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	1.19	< 0.50	< 0.50

Summary of Chemical Analysis

Soil Samples

Our Ref 24-06934

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2320771	2320772	2320774
Sample ID ~	3FM-BH322	3FM-BH322	3FM-BH322
Depth ~	0.50-0.60	1.00-1.10	3.00-3.10
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	25/03/2024	25/03/2024	25/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	4.63	1.89	0.81
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	2.76	< 1.40	< 1.40
Aromatic C5-C35: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00
TPH Ali/Aro Total C5-C35: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
PAHs						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.3
Phenanthrene	DETSC 3301	0.1	mg/kg	1.0	0.4	0.5
Anthracene	DETSC 3301	0.1	mg/kg	0.2	0.1	0.2
Fluoranthene	DETSC 3301	0.1	mg/kg	1.1	0.5	1.1
Pyrene	DETSC 3301	0.1	mg/kg	1.1	0.6	1.3
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	1.0	0.8	1.1
Chrysene	DETSC 3301	0.1	mg/kg	0.6	0.3	0.8
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	0.3	0.2	0.4
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.1	< 0.1	0.2
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	0.5	0.3	0.9
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	0.4
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	0.5	< 0.1	0.5
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	0.3	< 0.1	0.5
PAH 16 Total	DETSC 3301	1.6	mg/kg	6.8	3.1	8.4
PCBs						
PCB 77	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 81	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 105	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 114	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 118	DETSC 3401#	0.01	mg/kg		< 0.01	
PCB 123	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 126	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 156	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 157	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 167	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 169	DETSC 3401*	0.01	mg/kg		< 0.01	
PCB 189	DETSC 3401*	0.01	mg/kg		< 0.01	
Phenols						
Phenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-06934

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2320771	2320772	2320774
Sample ID ~	3FM-BH322	3FM-BH322	3FM-BH322
Depth ~	0.50-0.60	1.00-1.10	3.00-3.10
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	25/03/2024	25/03/2024	25/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
4-Chloro-3-methylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-cresol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,6-Dimethylphenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,6-Dichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	DETSC 3451*	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-06934

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2320771	2320772	2320774
Sample ID ~	3FM-BH322	3FM-BH322	3FM-BH322
Depth ~	0.50-0.60	1.00-1.10	3.00-3.10
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	25/03/2024	25/03/2024	25/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-06934

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2320771	2320772	2320774
Sample ID ~	3FM-BH322	3FM-BH322	3FM-BH322
Depth ~	0.50-0.60	1.00-1.10	3.00-3.10
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	25/03/2024	25/03/2024	25/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
SVOCs						
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	2.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1



Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 24-06934

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2320771	2320772	2320774
Sample ID ~	3FM-BH322	3FM-BH322	3FM-BH322
Depth ~	0.50-0.60	1.00-1.10	3.00-3.10
Other ID ~			
Sample Type ~	ES	ES	ES
Sampling Date ~	25/03/2024	25/03/2024	25/03/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-06934

Client Ref 24-0317

Contract Title 3FM Plot O South Banks

Sample Id 3FM-BH322 2.00-2.10

Sample Numbers 2320773 2320775

Date Analysed 17/04/2024

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084# Total Organic Carbon	%	5.0
DETSC 2003# Loss On Ignition	%	5.6
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	83.0
DETSC 3301 PAHs	mg/kg	5.2
DETSC 2008# pH	pH Units	9.9
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	1.3	0.013
DETSC 2306 Barium as Ba	8.5	< 0.1
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02
DETSC 2306 Chromium as Cr	0.65	< 0.1
DETSC 2306 Copper as Cu	1	< 0.02
DETSC 2306 Mercury as Hg	< 0.010	< 0.002
DETSC 2306 Molybdenum as Mo	5.5	< 0.1
DETSC 2306 Nickel as Ni	< 0.50	< 0.1
DETSC 2306 Lead as Pb	0.74	< 0.05
DETSC 2306 Antimony as Sb	1.8	< 0.05
DETSC 2306 Selenium as Se	< 0.25	< 0.03
DETSC 2306 Zinc as Zn	4.4	0.044
DETSC 2055 Chloride as Cl	12000	120
DETSC 2055* Fluoride as F	160	1.6
DETSC 2055 Sulphate as SO4	37000	370
DETSC 2009* Total Dissolved Solids	110000	1100
DETSC 2130 Phenol Index	< 100	< 1
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information	
DETSC 2008 pH	7.8
DETSC 2009 Conductivity uS/cm	157.0
* Temperature*	16.0

Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.101
Stage 1	
Volume of Leachant L2*	0.987
Volume of Eluate VE1*	0.93

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-06934

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2320771	3FM-BH322 0.50-0.60	SOIL	Chrysotile	Chrysotile present as fibre bundles	Ben Rose
2320772	3FM-BH322 1.00-1.10	SOIL	NAD	none	Ben Rose
2320774	3FM-BH322 3.00-3.10	SOIL	Chrysotile	Chrysotile present as fibre bundles	Ben Rose

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-06934

Client Ref ~ 24-0317

Contract ~ 3FM Plot O South Banks

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2320771	3FM-BH322 0.50-0.60 SOIL	25/03/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2320772	3FM-BH322 1.00-1.10 SOIL	25/03/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2320773	3FM-BH322 2.00-2.10 SOIL	25/03/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2320774	3FM-BH322 3.00-3.10 SOIL	25/03/24	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days), VOC (7 days)	
2320775	3FM-BH322 2.00-2.10 LEACHATE	25/03/24	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic C5-C35	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic C5-C35	EH_2D+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_2D+HS_1D_Total
TPH (C10-C40)	EH_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.



t/f -to follow.

nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-07770

Issued: 01-May-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-07770

Client Reference ~ 24-0317

Order No ~ (not supplied)

Contract Title ~ 3FM PLOT O SOUTH BANKS

Description 8 Other Water samples.

Date Received 16-Apr-24

Date Started 16-Apr-24

Date Completed 01-May-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



2139

Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Water Samples

Our Ref 24-07770

Client Ref ~ 24-0317

Contract Title ~ 3FM PLOT O SOUTH BANKS

Lab No	2325314	2325315	2325316	2325317	2325318
Sample ID ~	3FM-BH315	3FM-BH316	3FM-BH317	3FM-BH318	3FM-BH319
Depth ~	3.42-3.75	3.28-3.55	2.45-3.45	4.13-4.20	3.15-3.20
Other ID ~					
Sample Type ~	W	W	W	W	W
Sampling Date ~	08/04/2024	08/04/2024	10/04/2024	08/04/2024	08/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Subcon to Jones-Liquid	\$	0		I/S	I/S	I/S	I/S	I/S
Metals								
Aluminium, Dissolved	DETSC 2306	10	ug/l	< 10	< 10	< 10	< 10	12
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.3	0.94	1.5	1.7	2.5
Barium, Dissolved	DETSC 2306	0.26	ug/l	290	670	320	240	410
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	260	290	720	530	1000
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.03	< 0.03	< 0.03	< 0.03	< 0.03
Calcium, Dissolved	DETSC 2306	0.09	mg/l	190	230	240	220	240
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.44	1.1	0.52	0.97	0.42
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.0	1.5	0.6	0.5	0.6
Iron, Dissolved	DETSC 2306	5.5	ug/l	120	22	420	8400	130
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.29	0.67	0.22	0.35	0.28
Manganese, Dissolved	DETSC 2306	0.22	ug/l	3100	4600	3600	4400	2100
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.02	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	6.7	8.5	9.6	13	7.2
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.95	0.56	0.67	0.66	0.43
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	< 0.6	< 0.6	< 0.6	< 0.6	0.9
Zinc, Dissolved	DETSC 2306	1.3	ug/l	71	130	51	45	89
Inorganics								
pH	DETSC 2008		pH	6.8	7.0	6.8	6.9	7.1
Alkalinity as CaCO3 (Automated)	DETSC 2030	10	mg/l	400	670	760	720	720
Cyanide, Total	DETSC 2130	40	ug/l	< 40	< 40	< 40	< 40	< 40
Cyanide, Free	DETSC 2130	20	ug/l	< 20	< 20	< 20	< 20	< 20
Dissolved, Oxygen	DETSC 2048*	0.1	mg/l	0.2	1.5	0.4	0.1	7.1
Dissolved Organic Carbon	DETSC 2085	2	mg/l	4.8	8.9	12	15	8.7
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l	532	653	777	663	859
Ortho Phosphate as P	DETSC 2205	0.01	mg/l	< 0.01	0.02	0.01	0.02	< 0.01
Sulphide	DETSC 2208	0.01	mg/l	0.03	0.09	0.08	0.14	0.11
Sulphur (free)	DETSC 3049*	84	ug/l	620	130	2500	< 84	< 84
Sulphur as S, Total	DETSC 2320*	10	mg/l	81	19	20	51	67
Petroleum Hydrocarbons								
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	68	51	15	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	63	26	< 1.0	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	210	11	< 1.0	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l	3.2	200	18	5.1	< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l	62	140	210	92	< 1.0
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	ug/l	66	680	310	110	< 10

Summary of Chemical Analysis

Water Samples

Our Ref 24-07770

Client Ref ~ 24-0317

Contract Title ~ 3FM PLOT O SOUTH BANKS

Lab No	2325314	2325315	2325316	2325317	2325318
Sample ID ~	3FM-BH315	3FM-BH316	3FM-BH317	3FM-BH318	3FM-BH319
Depth ~	3.42-3.75	3.28-3.55	2.45-3.45	4.13-4.20	3.15-3.20
Other ID ~					
Sample Type ~	W	W	W	W	W
Sampling Date ~	08/04/2024	08/04/2024	10/04/2024	08/04/2024	08/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	120	110	61	< 0.1	
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	47	28	17	14	19	
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	28	120	8.8	4.5	9.2	
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	25	380	7.1	1.7	5.8	
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	34	< 1.0	< 1.0	< 1.0	
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	ug/l	100	680	140	81	34	
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	ug/l	170	1400	450	190	35	
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Xylene	DETSC 3322	1	ug/l	< 1.0	27	< 1.0	61	< 1.0	
PAHs									
Naphthalene	DETSC 3304	0.05	ug/l	25	< 5.00	33	660	4.1	
Acenaphthylene	DETSC 3304	0.01	ug/l	2.3	1.3	11	18	1.8	
Acenaphthene	DETSC 3304	0.01	ug/l	6.5	4.1	230	41	4.5	
Fluorene	DETSC 3304	0.01	ug/l	4.0	5.6	61	37	4.4	
Phenanthrene	DETSC 3304	0.01	ug/l	12	19	430	460	28	
Anthracene	DETSC 3304	0.01	ug/l	5.1	2.7	73	63	6.7	
Fluoranthene	DETSC 3304	0.01	ug/l	27	31	730	750	47	
Pyrene	DETSC 3304	0.01	ug/l	26	28	600	730	42	
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	17	13	300	460	25	
Chrysene	DETSC 3304	0.01	ug/l	12	9.5	290	290	21	
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	20	12	400	500	29	
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	6.5	4.5	71	85	15	
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	15	8.2	< 1.00	< 1.00	< 0.50	
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	11	4.5	110	250	11	
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	1.9	< 1.00	21	26	1.8	
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	11	5.1	170	280	10	
PAH Total	DETSC 3304	0.2	ug/l	200	150	3500	4700	250	
PCBs									
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	
PCB 52	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	
PCB 101	DETSC 3402	0.3	ug/l	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	
PCB 138	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	
PCB 153	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	
PCB 180	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	

Summary of Chemical Analysis

Water Samples

Our Ref 24-07770

Client Ref ~ 24-0317

Contract Title ~ 3FM PLOT O SOUTH BANKS

Lab No	2325314	2325315	2325316	2325317	2325318
Sample ID ~	3FM-BH315	3FM-BH316	3FM-BH317	3FM-BH318	3FM-BH319
Depth ~	3.42-3.75	3.28-3.55	2.45-3.45	4.13-4.20	3.15-3.20
Other ID ~					
Sample Type ~	W	W	W	W	W
Sampling Date ~	08/04/2024	08/04/2024	10/04/2024	08/04/2024	08/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Phenols								
Phenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Subcontracted Analysis								
Dissolved CO2	\$*	1	ug/l	I/S	I/S	I/S	I/S	I/S
Dissolved methane	\$*	1	ug/l	I/S	I/S	I/S	I/S	I/S

Summary of Chemical Analysis

Water Samples

Our Ref 24-07770

Client Ref ~ 24-0317

Contract Title ~ 3FM PLOT O SOUTH BANKS

Lab No	2325314	2325315	2325316	2325317	2325318
Sample ID ~	3FM-BH315	3FM-BH316	3FM-BH317	3FM-BH318	3FM-BH319
Depth ~	3.42-3.75	3.28-3.55	2.45-3.45	4.13-4.20	3.15-3.20
Other ID ~					
Sample Type ~	W	W	W	W	W
Sampling Date ~	08/04/2024	08/04/2024	10/04/2024	08/04/2024	08/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	2325314	2325315	2325316	2325317	2325318
VOCs								
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27	< 27	< 27	< 27	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	1	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2	< 2	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	5	< 1	< 1	6	< 1
m+p-Xylene	DETSC 3432	2	ug/l	40	< 2	< 2	66	< 2
o-Xylene	DETSC 3432	1	ug/l	19	< 1	< 1	23	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	2	< 1	< 1	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1

Summary of Chemical Analysis

Water Samples

Our Ref 24-07770

Client Ref ~ 24-0317

Contract Title ~ 3FM PLOT O SOUTH BANKS

Lab No	2325314	2325315	2325316	2325317	2325318
Sample ID ~	3FM-BH315	3FM-BH316	3FM-BH317	3FM-BH318	3FM-BH319
Depth ~	3.42-3.75	3.28-3.55	2.45-3.45	4.13-4.20	3.15-3.20
Other ID ~					
Sample Type ~	W	W	W	W	W
Sampling Date ~	08/04/2024	08/04/2024	10/04/2024	08/04/2024	08/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	2325314	2325315	2325316	2325317	2325318	
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	10	< 1	< 1	2	< 1	
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	
Tert-butylbenzene	DETSC 3432	1	ug/l	1	< 1	2	< 1	< 1	
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	14	< 1	2	6	< 1	
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	
p-isopropyltoluene	DETSC 3432	1	ug/l	2	< 1	2	< 1	< 1	
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	
MTBE	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	
SVOCs									
Aniline	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
2-Chlorophenol	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
2-Methylphenol	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
2-Nitroaniline	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
3-Nitroaniline	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
4-Nitrophenol	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
Dibenzofuran	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	7.6	
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
Diethylphthalate	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
4-Nitroaniline	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
Diphenylamine	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	

Summary of Chemical Analysis Water Samples

Our Ref 24-07770

Client Ref ~ 24-0317

Contract Title ~ 3FM PLOT O SOUTH BANKS

Lab No	2325314	2325315	2325316	2325317	2325318
Sample ID ~	3FM-BH315	3FM-BH316	3FM-BH317	3FM-BH318	3FM-BH319
Depth ~	3.42-3.75	3.28-3.55	2.45-3.45	4.13-4.20	3.15-3.20
Other ID ~					
Sample Type ~	W	W	W	W	W
Sampling Date ~	08/04/2024	08/04/2024	10/04/2024	08/04/2024	08/04/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	2325314	2325315	2325316	2325317	2325318
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Pentachlorophenol	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 5.0	15	< 5.0	< 5.0	< 5.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Azobenzene	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbazole	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	8.3

2325314, 2325315, 2325316, 2325317, 2325318,
2325319, 2325320, 2325321 - WATER OTHER
testing is not accredited

Summary of Chemical Analysis

Water Samples

Our Ref 24-07770

Client Ref ~ 24-0317

Contract Title ~ 3FM PLOT O SOUTH BANKS

Lab No	2325319	2325320	2325321
Sample ID ~	3FM-BH320	3FM-BH321	3FM-BH322
Depth ~	3.88-3.96	3.93-4.01	3.43-4.10
Other ID ~			
Sample Type ~	W	W	W
Sampling Date ~	08/04/2024	08/04/2024	08/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Subcon to Jones-Liquid	\$	0		I/S	I/S	I/S
Metals						
Aluminium, Dissolved	DETSC 2306	10	ug/l	12	< 10	< 10
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.8	1.6	1.1
Barium, Dissolved	DETSC 2306	0.26	ug/l	660	590	200
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	490	580	180
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.03	< 0.03	< 0.03
Calcium, Dissolved	DETSC 2306	0.09	mg/l	250	220	170
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.67	0.65	0.34
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.5	3.1	0.9
Iron, Dissolved	DETSC 2306	5.5	ug/l	390	190	99
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.69	0.19	0.15
Manganese, Dissolved	DETSC 2306	0.22	ug/l	1900	1200	630
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	14	5.1	3.0
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.39	0.32	0.27
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	2.1	< 0.6	0.7
Zinc, Dissolved	DETSC 2306	1.3	ug/l	130	100	39
Inorganics						
pH	DETSC 2008		pH	7.0	7.0	7.4
Alkalinity as CaCO3 (Automated)	DETSC 2030	10	mg/l	700	920	420
Cyanide, Total	DETSC 2130	40	ug/l	< 40	< 40	< 40
Cyanide, Free	DETSC 2130	20	ug/l	< 20	< 20	< 20
Dissolved, Oxygen	DETSC 2048*	0.1	mg/l	6.6	8.2	8.2
Dissolved Organic Carbon	DETSC 2085	2	mg/l	8.3	7.3	5.7
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l	802	762	483
Ortho Phosphate as P	DETSC 2205	0.01	mg/l	< 0.01	< 0.01	< 0.01
Sulphide	DETSC 2208	0.01	mg/l	0.10	0.08	0.09
Sulphur (free)	DETSC 3049*	84	ug/l	150	< 84	< 84
Sulphur as S, Total	DETSC 2320*	10	mg/l	37	< 10	41
Petroleum Hydrocarbons						
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	2.9	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	31	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	65	5.1
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	83	76
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	ug/l	< 10	180	81

Summary of Chemical Analysis

Water Samples

Our Ref 24-07770

Client Ref ~ 24-0317

Contract Title ~ 3FM PLOT O SOUTH BANKS

Lab No	2325319	2325320	2325321
Sample ID ~	3FM-BH320	3FM-BH321	3FM-BH322
Depth ~	3.88-3.96	3.93-4.01	3.43-4.10
Other ID ~			
Sample Type ~	W	W	W
Sampling Date ~	08/04/2024	08/04/2024	08/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	12	15	8.8
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	4.1	18	3.2
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	1.4	23	1.2
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	6.5	< 1.0
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	ug/l	18	62	14
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	ug/l	18	240	94
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
PAHs						
Naphthalene	DETSC 3304	0.05	ug/l	130	3.1	2.1
Acenaphthylene	DETSC 3304	0.01	ug/l	9.3	0.76	2.4
Acenaphthene	DETSC 3304	0.01	ug/l	82	4.3	1.5
Fluorene	DETSC 3304	0.01	ug/l	100	3.6	1.5
Phenanthrene	DETSC 3304	0.01	ug/l	530	18	9.8
Anthracene	DETSC 3304	0.01	ug/l	190	5.1	3.7
Fluoranthene	DETSC 3304	0.01	ug/l	890	32	37
Pyrene	DETSC 3304	0.01	ug/l	780	27	38
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	450	19	32
Chrysene	DETSC 3304	0.01	ug/l	380	8.3	9.9
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	640	15	33
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	260	4.5	6.2
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 1.00	11	29
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	300	6.2	9.9
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	79	1.1	1.9
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	320	6.5	11
PAH Total	DETSC 3304	0.2	ug/l	5100	170	230
PCBs						
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3	< 0.3	< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3	< 0.3	< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6	< 0.6	< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0	< 1.0	< 1.0

Summary of Chemical Analysis

Water Samples

Our Ref 24-07770

Client Ref ~ 24-0317

Contract Title ~ 3FM PLOT O SOUTH BANKS

Lab No	2325319	2325320	2325321
Sample ID ~	3FM-BH320	3FM-BH321	3FM-BH322
Depth ~	3.88-3.96	3.93-4.01	3.43-4.10
Other ID ~			
Sample Type ~	W	W	W
Sampling Date ~	08/04/2024	08/04/2024	08/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Phenols						
Phenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10
Subcontracted Analysis						
Dissolved CO2	\$*	1	ug/l	I/S	I/S	I/S
Dissolved methane	\$*	1	ug/l	I/S	I/S	I/S

Summary of Chemical Analysis

Water Samples

Our Ref ~ 24-07770

Client Ref ~ 24-0317

Contract Title ~ 3FM PLOT O SOUTH BANKS

Lab No	2325319	2325320	2325321
Sample ID ~	3FM-BH320	3FM-BH321	3FM-BH322
Depth ~	3.88-3.96	3.93-4.01	3.43-4.10
Other ID ~			
Sample Type ~	W	W	W
Sampling Date ~	08/04/2024	08/04/2024	08/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27	< 27	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	3	2	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1

Summary of Chemical Analysis

Water Samples

Our Ref 24-07770

Client Ref ~ 24-0317

Contract Title ~ 3FM PLOT O SOUTH BANKS

Lab No	2325319	2325320	2325321
Sample ID ~	3FM-BH320	3FM-BH321	3FM-BH322
Depth ~	3.88-3.96	3.93-4.01	3.43-4.10
Other ID ~			
Sample Type ~	W	W	W
Sampling Date ~	08/04/2024	08/04/2024	08/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
MTBE	DETSC 3432*	1	ug/l	< 1	< 1	< 1
SVOCs						
Aniline	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 5.0	11	< 1.0

Summary of Chemical Analysis Water Samples

Our Ref 24-07770

Client Ref ~ 24-0317

Contract Title ~ 3FM PLOT O SOUTH BANKS

Lab No	2325319	2325320	2325321
Sample ID ~	3FM-BH320	3FM-BH321	3FM-BH322
Depth ~	3.88-3.96	3.93-4.01	3.43-4.10
Other ID ~			
Sample Type ~	W	W	W
Sampling Date ~	08/04/2024	08/04/2024	08/04/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
Pentachlorophenol	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 5.0	< 5.0	< 1.0

2325314, 2325315, 2325316, 2325317, 2325318,
2325319, 2325320, 2325321 - WATER OTHER
testing is not accredited

Information in Support of the Analytical Results

Our Ref 24-07770
 Client Ref ~ 24-0317
 Contract ~ 3FM PLOT O SOUTH BANKS

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2325314	3FM-BH315 3.42-3.75 WATER	08/04/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Sulphur (free) (7 days), Hardness (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days), PCB (7 days), SVOC (7 days)	
2325315	3FM-BH316 3.28-3.55 WATER	08/04/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Sulphur (free) (7 days), Hardness (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days), PCB (7 days), SVOC (7 days)	
2325316	3FM-BH317 2.45-3.45 WATER	10/04/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days)	
2325317	3FM-BH318 4.13-4.20 WATER	08/04/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Sulphur (free) (7 days), Hardness (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days), PCB (7 days), SVOC (7 days)	
2325318	3FM-BH319 3.15-3.20 WATER	08/04/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Sulphur (free) (7 days), Hardness (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days), PCB (7 days), SVOC (7 days)	
2325319	3FM-BH320 3.88-3.96 WATER	08/04/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Sulphur (free) (7 days), Hardness (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days), PCB (7 days), SVOC (7 days)	
2325320	3FM-BH321 3.93-4.01 WATER	08/04/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Sulphur (free) (7 days), Hardness (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days), PCB (7 days), SVOC (7 days)	
2325321	3FM-BH322 3.43-4.10 WATER	08/04/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Sulphur (free) (7 days), Hardness (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days), PCB (7 days), SVOC (7 days)	

Information in Support of the Analytical Results

Our Ref 24-07770

Client Ref ~ 24-0317

Contract ~ 3FM PLOT O SOUTH BANKS

Key: G-Glass P-Plastic B-Bottle V-Vial

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C5-C35	EH_CU+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C5-C35	EH_CU+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_CU+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report



DETS

Certificate of Analysis

Certificate Number 24-10029

Issued: 03-Jun-24

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 24-10029

Client Reference ~ 24-0317

Order No ~ (not supplied)

Contract Title ~ 3FM Plot O South Banks

Description 7 Other Water samples.

Date Received 16-May-24

Date Started 16-May-24

Date Completed 03-Jun-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By



Kirk Bridgewood
General Manager



2139

Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Water Samples

Our Ref 24-10029

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2338273	2338274	2338275	2338277	2338278
Sample ID ~	3FM-BH315	3FM-BH316	3FM-BH317	3FM-BH320	3FM-BH321
Depth ~	2.65	3.50	3.69	4.15	4.20
Other ID ~					
Sample Type ~	EW	EW	EW	EW	EW
Sampling Date ~	08/05/2024	08/05/2024	08/05/2024	08/05/2024	08/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Metals								
Aluminium, Dissolved	DETSC 2306	10	ug/l	< 10	19	< 10	< 10	< 10
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	3.5	14	29	1.3	4.6
Barium, Dissolved	DETSC 2306	0.26	ug/l	900	290	360	360	470
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	220	200	690	330	660
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	0.03	< 0.03
Calcium, Dissolved	DETSC 2306	0.09	mg/l	260	130	270	180	240
Chromium, Dissolved	DETSC 2306	0.25	ug/l	1.1	0.82	0.69	0.44	1.2
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	< 0.4	< 0.4	0.5	1.0	< 0.4
Iron, Dissolved	DETSC 2306	5.5	ug/l	28000	10000	20000	140	8800
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.22	3.3	0.19	0.51	0.11
Manganese, Dissolved	DETSC 2306	0.22	ug/l	2700	2400	4500	930	1200
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	7.4	4.7	15	12	7.0
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	0.54	0.30	0.29	< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	1.2	1.6	1.3	1.2	1.5
Zinc, Dissolved	DETSC 2306	1.3	ug/l	51	81	50	60	51
Inorganics								
pH	DETSC 2008		pH	6.9	7.2	7.0	7.2	7.1
Alkalinity as CaCO3 (Automated)	DETSC 2030	10	mg/l	720	530	890	460	880
Cyanide, Total	DETSC 2130	40	ug/l	< 40	< 40	< 40	< 40	< 40
Cyanide, Free	DETSC 2130	20	ug/l	< 20	< 20	< 20	< 20	< 20
Dissolved, Oxygen	DETSC 2048*	0.1	mg/l	0.3	0.7	2.7	7.1	4.3
Dissolved Organic Carbon	DETSC 2085	2	mg/l	7.4	7.3	13	6.3	11
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l	756	458	838	590	954
Ortho Phosphate as P	DETSC 2205	0.01	mg/l	0.05	0.07	0.03	< 0.01	0.11
Sulphide	DETSC 2208	0.01	mg/l	0.12	0.04	0.04	0.06	0.09
Sulphur (free)	DETSC 3049*	84	ug/l	< 84	< 84	250	< 84	< 84
Sulphur as S, Total	DETSC 2320*	10	mg/l	260	120	96	26	31
Petroleum Hydrocarbons								
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	120	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l	300	110	< 1.0	< 1.0	16
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l	900	360	16	< 1.0	110
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l	30	1600	610	< 1.0	160
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	ug/l	1200	2200	630	< 10	300
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1



Summary of Chemical Analysis

Water Samples

Our Ref 24-10029

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2338273	2338274	2338275	2338277	2338278
Sample ID ~	3FM-BH315	3FM-BH316	3FM-BH317	3FM-BH320	3FM-BH321
Depth ~	2.65	3.50	3.69	4.15	4.20
Other ID ~					
Sample Type ~	EW	EW	EW	EW	EW
Sampling Date ~	08/05/2024	08/05/2024	08/05/2024	08/05/2024	08/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Aromatic C8-C10: HS_1D_AR	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETS 3072*	1	ug/l	< 1.0	5.9	< 1.0	< 1.0	< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETS 3072*	1	ug/l	170	73	< 1.0	< 1.0	65
Aromatic C16-C21: EH_CU_1D_AR	DETS 3072*	1	ug/l	710	320	45	< 1.0	300
Aromatic C21-C35: EH_CU_1D_AR	DETS 3072*	1	ug/l	29	990	310	< 1.0	530
Aromatic C5-C35: EH_CU+HS_1D_AR	DETS 3072*	10	ug/l	910	1400	350	< 10	900
TPH Aliq/Aro Total C5-C35: EH_CU+HS_1D_Total	DETS 3072*	10	ug/l	2100	3600	980	< 10	1200
Benzene	DETS 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	DETS 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETS 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene	DETS 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
PAHs								
Naphthalene	DETS 3304	0.05	ug/l	15	44	1.5	0.24	1.4
Acenaphthylene	DETS 3304	0.01	ug/l	8.4	15	0.59	0.12	0.23
Acenaphthene	DETS 3304	0.01	ug/l	100	26	7.4	0.60	6.4
Fluorene	DETS 3304	0.01	ug/l	82	20	3.1	0.36	1.8
Phenanthrene	DETS 3304	0.01	ug/l	190	180	9.2	1.0	2.8
Anthracene	DETS 3304	0.01	ug/l	35	41	3.2	0.33	0.97
Fluoranthene	DETS 3304	0.01	ug/l	380	280	16	1.4	2.8
Pyrene	DETS 3304	0.01	ug/l	270	230	13	1.2	2.0
Benzo(a)anthracene	DETS 3304*	0.01	ug/l	87	130	6.8	0.73	0.65
Chrysene	DETS 3304	0.01	ug/l	62	87	4.4	0.49	0.48
Benzo(b)fluoranthene	DETS 3304	0.01	ug/l	87	150	6.3	0.89	0.58
Benzo(k)fluoranthene	DETS 3304	0.01	ug/l	31	71	2.9	0.40	0.23
Benzo(a)pyrene	DETS 3304	0.01	ug/l	77	130	5.5	0.85	0.47
Indeno(1,2,3-c,d)pyrene	DETS 3304	0.01	ug/l	32	74	2.6	0.50	0.32
Dibenzo(a,h)anthracene	DETS 3304	0.01	ug/l	7.4	16	0.60	0.10	< 0.10
Dibenzo(g,h,i)perylene	DETS 3304	0.01	ug/l	31	66	2.5	0.45	0.33
PAH Total	DETS 3304	0.2	ug/l	1500	1600	86	9.7	21
PCBs								
PCB 28 + PCB 31	DETS 3402	0.3	ug/l	< 2.0	< 0.3	< 2.0	< 2.0	< 0.3
PCB 52	DETS 3402	0.2	ug/l	< 2.0	0.2	< 2.0	< 2.0	< 0.2
PCB 101	DETS 3402	0.3	ug/l	< 2.0	< 0.3	< 2.0	< 2.0	< 0.3
PCB 118 + PCB 123	DETS 3402	0.6	ug/l	< 6.0	< 0.6	< 6.0	< 6.0	< 0.6
PCB 138	DETS 3402	0.2	ug/l	< 2.0	< 0.2	< 2.0	< 2.0	< 0.2
PCB 153	DETS 3402	0.2	ug/l	< 2.0	< 0.2	< 2.0	< 2.0	< 0.2
PCB 180	DETS 3402	0.2	ug/l	< 2.0	< 0.2	< 2.0	< 2.0	< 0.2
PCB 7 Total	DETS 3402	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0



Summary of Chemical Analysis

Water Samples

Our Ref 24-10029

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2338273	2338274	2338275	2338277	2338278
Sample ID ~	3FM-BH315	3FM-BH316	3FM-BH317	3FM-BH320	3FM-BH321
Depth ~	2.65	3.50	3.69	4.15	4.20
Other ID ~					
Sample Type ~	EW	EW	EW	EW	EW
Sampling Date ~	08/05/2024	08/05/2024	08/05/2024	08/05/2024	08/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Phenols								
Phenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Subcontracted Analysis								
Dissolved, Methane	\$*	<1	ug/l	6.00	< 1.00	69.00	< 1.00	569.0
Dissolved Carbon Dioxide	\$*	<1	ug/l	>>295678	>>339466	>>546885	>>237791	>>515924



Summary of Chemical Analysis

Water Samples

Our Ref 24-10029

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2338273	2338274	2338275	2338277	2338278
Sample ID ~	3FM-BH315	3FM-BH316	3FM-BH317	3FM-BH320	3FM-BH321
Depth ~	2.65	3.50	3.69	4.15	4.20
Other ID ~					
Sample Type ~	EW	EW	EW	EW	EW
Sampling Date ~	08/05/2024	08/05/2024	08/05/2024	08/05/2024	08/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	2338273	2338274	2338275	2338277	2338278
VOCs								
Dichlorodifluoromethane	DETS 3432	1	ug/l	< 1	< 1	3	< 10	< 1
Chloromethane	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Vinyl Chloride	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Bromomethane	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Chloroethane	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Trichlorofluoromethane	DETS 3432*	1	ug/l	< 1	< 1	< 1	< 10	< 1
1,1-dichloroethylene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Methylene Chloride	DETS 3432*	27	ug/l	< 27	< 27	< 27	< 270	< 27
Trans-1,2-dichloroethylene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
1,1-dichloroethane	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Cis-1,2-dichloroethylene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
2,2-dichloropropane	DETS 3432*	2	ug/l	< 2	< 2	< 2	< 20	< 2
Bromochloromethane	DETS 3432	4	ug/l	< 4	< 4	< 4	< 40	< 4
Chloroform	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
1,1,1-trichloroethane	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
1,1-dichloropropene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Carbon tetrachloride	DETS 3432	1	ug/l	< 1	< 1	3	< 10	< 1
Benzene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
1,2-dichloroethane	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Trichloroethylene	DETS 3432*	1	ug/l	< 1	< 1	< 1	< 10	< 1
1,2-dichloropropane	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Dibromomethane	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Bromodichloromethane	DETS 3432	4	ug/l	< 4	< 4	< 4	< 40	< 4
cis-1,3-dichloropropene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Toluene	DETS 3432	1	ug/l	< 1	1	< 1	< 10	< 1
trans-1,3-dichloropropene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
1,1,2-trichloroethane	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Tetrachloroethylene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
1,3-dichloropropane	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Dibromochloromethane	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
1,2-dibromoethane	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Chlorobenzene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	1
1,1,1,2-tetrachloroethane	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Ethylbenzene	DETS 3432	1	ug/l	< 1	1	< 1	< 10	< 1
m+p-Xylene	DETS 3432	2	ug/l	< 2	6	< 2	< 20	< 2
o-Xylene	DETS 3432	1	ug/l	< 1	5	< 1	< 10	< 1
Styrene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Bromoform	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Isopropylbenzene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
1,1,2,2-tetrachloroethane	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Bromobenzene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1



Summary of Chemical Analysis

Water Samples

Our Ref 24-10029

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2338273	2338274	2338275	2338277	2338278
Sample ID ~	3FM-BH315	3FM-BH316	3FM-BH317	3FM-BH320	3FM-BH321
Depth ~	2.65	3.50	3.69	4.15	4.20
Other ID ~					
Sample Type ~	EW	EW	EW	EW	EW
Sampling Date ~	08/05/2024	08/05/2024	08/05/2024	08/05/2024	08/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
1,2,3-trichloropropane	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
n-propylbenzene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
2-chlorotoluene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
1,3,5-trimethylbenzene	DETS 3432	1	ug/l	< 1	4	< 1	< 10	< 1
4-chlorotoluene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Tert-butylbenzene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
1,2,4-trimethylbenzene	DETS 3432	1	ug/l	< 1	3	< 1	< 10	< 1
sec-butylbenzene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
p-isopropyltoluene	DETS 3432	1	ug/l	< 1	1	< 1	< 10	< 1
1,3-dichlorobenzene	DETS 3432	2	ug/l	< 2	< 2	< 2	< 20	< 2
1,4-dichlorobenzene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
n-butylbenzene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
1,2-dichlorobenzene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
1,2-dibromo-3-chloropropane	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
1,2,4-trichlorobenzene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
Hexachlorobutadiene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
1,2,3-trichlorobenzene	DETS 3432	1	ug/l	< 1	< 1	< 1	< 10	< 1
MTBE	DETS 3432*	1	ug/l	< 1	< 1	< 1	< 10	< 1
SVOCs								
Aniline	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorophenol	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzyl Alcohol	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Methylphenol	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bis(2-chloroisopropyl)ether	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
3&4-Methylphenol	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bis(2-chloroethoxy)methane	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorocyclopentadiene	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4,5-Trichlorophenol	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Nitroaniline	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4-Dinitrotoluene	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
3-Nitroaniline	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Nitrophenol	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibenzofuran	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,6-Dinitrotoluene	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,3,4,6-Tetrachlorophenol	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Diethylphthalate	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorophenylphenylether	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Nitroaniline	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Diphenylamine	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Bromophenylphenylether	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobenzene	DETS 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0



Summary of Chemical Analysis

Water Samples

Our Ref 24-10029

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2338273	2338274	2338275	2338277	2338278
Sample ID ~	3FM-BH315	3FM-BH316	3FM-BH317	3FM-BH320	3FM-BH321
Depth ~	2.65	3.50	3.69	4.15	4.20
Other ID ~					
Sample Type ~	EW	EW	EW	EW	EW
Sampling Date ~	08/05/2024	08/05/2024	08/05/2024	08/05/2024	08/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0	1.3	< 1.0	< 1.0	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

2338273, 2338274, 2338275, 2338277,
 2338278, 2338279, 2338284 - WATER
 OTHER testing is not accredited

Summary of Chemical Analysis

Water Samples

Our Ref 24-10029

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2338279	2338284
Sample ID ~	3FM-BH322	3FM-BH319
Depth ~	4.21	4.19
Other ID ~		
Sample Type ~	EW	EW
Sampling Date ~	08/05/2024	08/05/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Metals					
Aluminium, Dissolved	DETSC 2306	10	ug/l	< 10	< 10
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	3.7	11
Barium, Dissolved	DETSC 2306	0.26	ug/l	200	300
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	1100	890
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03
Calcium, Dissolved	DETSC 2306	0.09	mg/l	150	220
Chromium, Dissolved	DETSC 2306	0.25	ug/l	1.5	0.29
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.6	< 0.4
Iron, Dissolved	DETSC 2306	5.5	ug/l	1100	9300
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.25	0.23
Manganese, Dissolved	DETSC 2306	0.22	ug/l	960	1800
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	3.9	9.6
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.42	0.33
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	3.4	1.3
Zinc, Dissolved	DETSC 2306	1.3	ug/l	54	54
Inorganics					
pH	DETSC 2008		pH	7.5	7.3
Alkalinity as CaCO ₃ (Automated)	DETSC 2030	10	mg/l	540	680
Cyanide, Total	DETSC 2130	40	ug/l	< 40	< 40
Cyanide, Free	DETSC 2130	20	ug/l	< 20	< 20
Dissolved, Oxygen	DETSC 2048*	0.1	mg/l	1.9	2.6
Dissolved Organic Carbon	DETSC 2085	2	mg/l	24	9.3
Total Hardness as CaCO ₃	DETSC 2303	0.1	mg/l	584	783
Ortho Phosphate as P	DETSC 2205	0.01	mg/l	0.04	< 0.01
Sulphide	DETSC 2208	0.01	mg/l	0.02	0.05
Sulphur (free)	DETSC 3049*	84	ug/l	< 84	< 84
Sulphur as S, Total	DETSC 2320*	10	mg/l	95	97
Petroleum Hydrocarbons					
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l	6.2	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l	17	< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l	53	< 1.0
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	ug/l	77	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1

Summary of Chemical Analysis

Water Samples

Our Ref 24-10029

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2338279	2338284
Sample ID ~	3FM-BH322	3FM-BH319
Depth ~	4.21	4.19
Other ID ~		
Sample Type ~	EW	EW
Sampling Date ~	08/05/2024	08/05/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	ug/l	< 10	< 10
TPH Aliq/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	ug/l	77	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0
PAHs					
Naphthalene	DETSC 3304	0.05	ug/l	0.59	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	0.48	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	0.53	0.01
Fluorene	DETSC 3304	0.01	ug/l	0.47	0.01
Phenanthrene	DETSC 3304	0.01	ug/l	2.3	0.05
Anthracene	DETSC 3304	0.01	ug/l	0.69	0.01
Fluoranthene	DETSC 3304	0.01	ug/l	3.0	0.05
Pyrene	DETSC 3304	0.01	ug/l	2.7	0.04
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	1.5	0.01
Chrysene	DETSC 3304	0.01	ug/l	1.2	0.02
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	1.9	0.02
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.74	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	1.7	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	1.1	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	0.27	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	1.3	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	20	0.23
PCBs					
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3	< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2	< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3	< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6	< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2	< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2	< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2	< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0	< 1.0

Summary of Chemical Analysis

Water Samples

Our Ref 24-10029

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2338279	2338284
Sample ID ~	3FM-BH322	3FM-BH319
Depth ~	4.21	4.19
Other ID ~		
Sample Type ~	EW	EW
Sampling Date ~	08/05/2024	08/05/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Phenols					
Phenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10
Subcontracted Analysis					
Dissolved, Methane	\$*	<1	ug/l	< 1.00	< 1.00
Dissolved Carbon Dioxide	\$*	<1	ug/l	>>156239	>>280757

Summary of Chemical Analysis

Water Samples

Our Ref 24-10029

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2338279	2338284
Sample ID ~	3FM-BH322	3FM-BH319
Depth ~	4.21	4.19
Other ID ~		
Sample Type ~	EW	EW
Sampling Date ~	08/05/2024	08/05/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 10
Chloromethane	DETSC 3432	1	ug/l	< 1	< 10
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 10
Bromomethane	DETSC 3432	1	ug/l	< 1	< 10
Chloroethane	DETSC 3432	1	ug/l	< 1	< 10
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 10
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 10
Methylene Chloride	DETSC 3432*	27	ug/l	< 27	< 270
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 10
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 10
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 10
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2	< 20
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 40
Chloroform	DETSC 3432	1	ug/l	< 1	< 10
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 10
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 10
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 10
Benzene	DETSC 3432	1	ug/l	< 1	< 10
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 10
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 10
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 10
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 10
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 40
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 10
Toluene	DETSC 3432	1	ug/l	< 1	< 10
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 10
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 10
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 10
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 10
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 10
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 10
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 10
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 10
Ethylbenzene	DETSC 3432	1	ug/l	< 1	< 10
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 20
o-Xylene	DETSC 3432	1	ug/l	< 1	< 10
Styrene	DETSC 3432	1	ug/l	< 1	< 10
Bromoform	DETSC 3432	1	ug/l	< 1	< 10
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 10
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 10
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 10

Summary of Chemical Analysis

Water Samples

Our Ref 24-10029

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2338279	2338284
Sample ID ~	3FM-BH322	3FM-BH319
Depth ~	4.21	4.19
Other ID ~		
Sample Type ~	EW	EW
Sampling Date ~	08/05/2024	08/05/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 10
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 10
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 10
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 10
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 10
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 10
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 10
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 10
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 10
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 20
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 10
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 10
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 10
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 10
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 10
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 10
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 10
MTBE	DETSC 3432*	1	ug/l	< 1	< 10
SVOCs					
Aniline	DETSC 3434*	1	ug/l	< 1.0	< 5.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0	< 5.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0	< 5.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0	< 5.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0	< 5.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0	< 5.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 5.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0	< 5.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 5.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0	< 5.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0	< 5.0
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 5.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0	< 5.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 5.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0	< 5.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0	< 5.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0	< 5.0

Summary of Chemical Analysis

Water Samples

Our Ref 24-10029

Client Ref ~ 24-0317

Contract Title ~ 3FM Plot O South Banks

Lab No	2338279	2338284
Sample ID ~	3FM-BH322	3FM-BH319
Depth ~	4.21	4.19
Other ID ~		
Sample Type ~	EW	EW
Sampling Date ~	08/05/2024	08/05/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 5.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 5.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0	< 5.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 5.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 5.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 5.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 5.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0	< 5.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0	12
2338273, 2338274, 2338275, 2338277, 2338278, 2338279, 2338284 - WATER OTHER testing is not accredited					

Information in Support of the Analytical Results

Our Ref 24-10029
 Client Ref ~ 24-0317
 Contract ~ 3FM Plot O South Banks

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
		Sampled ~			
2338273	3FM-BH315 2.65 WATER	08/05/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Sulphur (free) (7 days), Hardness (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days), PCB (7 days), SVOC (7 days)	
2338274	3FM-BH316 3.50 WATER	08/05/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Sulphur (free) (7 days), Hardness (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days), PCB (7 days), SVOC (7 days)	
2338275	3FM-BH317 3.69 WATER	08/05/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Sulphur (free) (7 days), Hardness (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days), PCB (7 days), SVOC (7 days)	
2338276	3FM-BH318 3.94 WATER	08/05/24	GV x2, PB 1L		
2338277	3FM-BH320 4.15 WATER	08/05/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Sulphur (free) (7 days), Hardness (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days), PCB (7 days), SVOC (7 days)	
2338278	3FM-BH321 4.20 WATER	08/05/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Sulphur (free) (7 days), Hardness (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days), PCB (7 days), SVOC (7 days)	
2338279	3FM-BH322 4.21 WATER	08/05/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Sulphur (free) (7 days), Hardness (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days), PCB (7 days), SVOC (7 days)	
2338284	3FM-BH319 4.19 WATER	08/05/24	GB 1L, GV x2, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Dissolved Oxygen (2 days), Sulphur (free) (7 days), Hardness (7 days), Kone (4 days), Kone PO4 (5 days), Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days), PCB (7 days), SVOC (7 days)	

Information in Support of the Analytical Results

Our Ref 24-10029

Client Ref ~ 24-0317

Contract ~ 3FM Plot O South Banks

Key: G-Glass P-Plastic B-Bottle V-Vial

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C5-C35	EH_CU+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C5-C35	EH_CU+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_CU+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.



nd -not detected.

End of Report

Appendix C




















Borehole Cross Sections

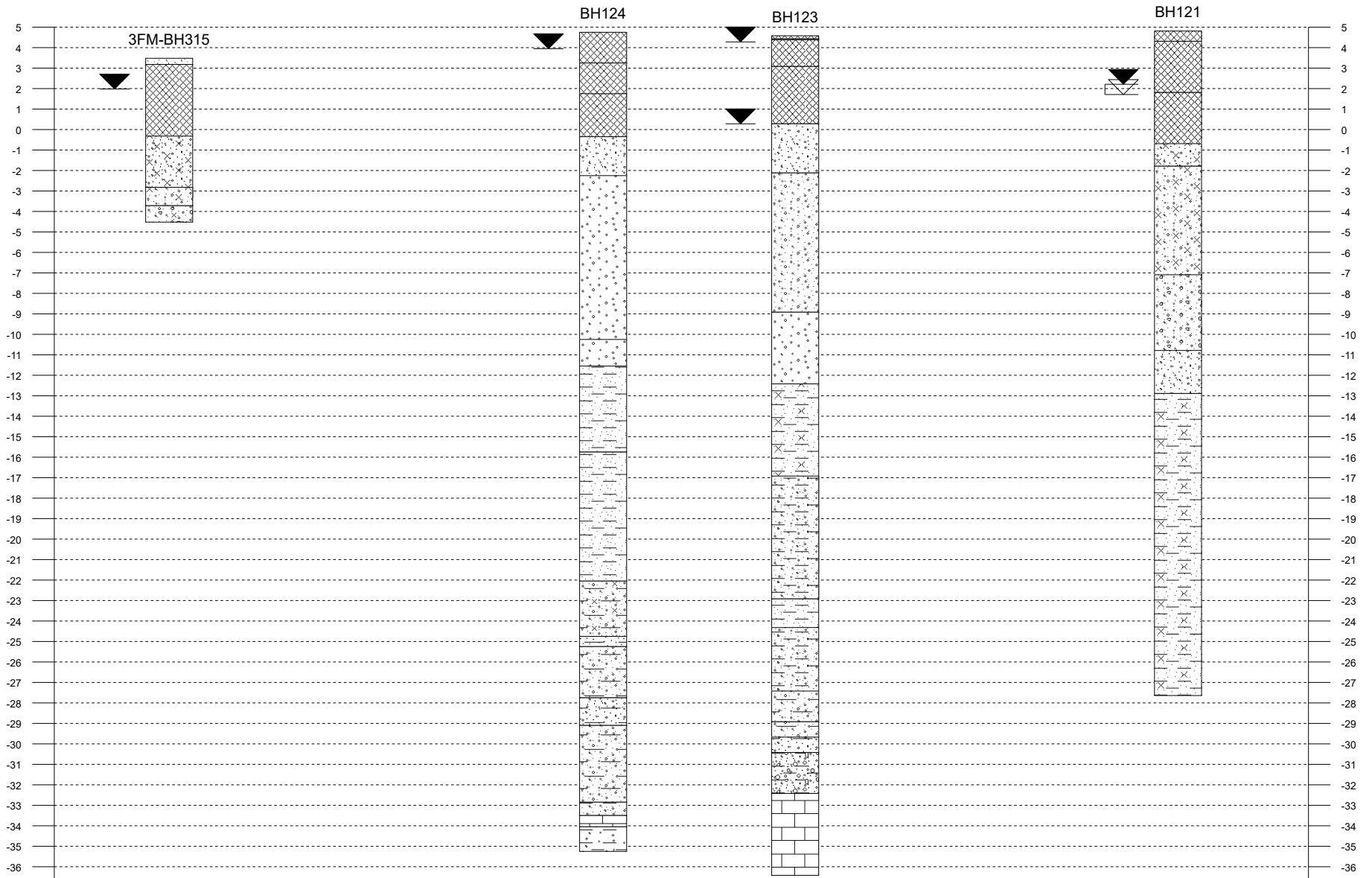
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 Project Title: 3FM Plots O and L
 Location: Dublin
 Client:

Title: Section line 1
 Vertical Scale: 1:275
 Horizontal Scale: 1:3087
 Engineer: Debra Telford



Legend Key

-  MADE GROUND
-  CONCRETE
-  Gravelly SAND
-  Silty gravelly SAND
-  Silty sandy GRAVEL
-  Sandy GRAVEL
-  GRAVEL
-  Silty sandy cobbly GRAVEL
-  Sandy cobbly GRAVEL
-  Sandy CLAY
-  Silty sandy CLAY
-  Sandy gravelly CLAY
-  Clayey silty sandy GRAVEL
-  Clayey SAND
-  Clayey sandy GRAVEL
-  Clayey gravelly SAND
-  Sandy gravelly cobbly CLAY
-  LIMESTONE
-  Gravelly CLAY

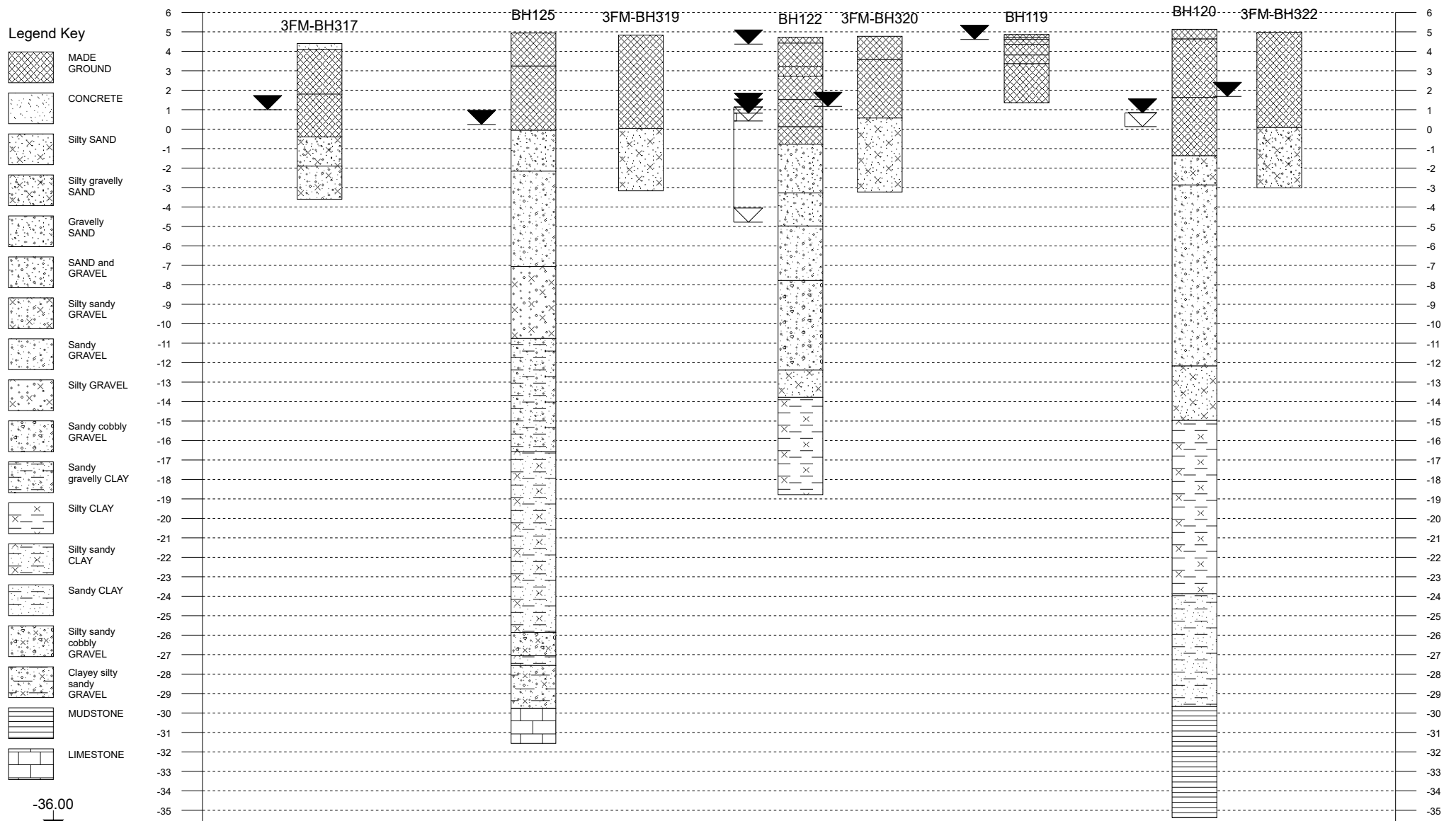


-37.00

Chainage (m)	4.97	242.93	348.24	558.17
Elevation (mAO)	3.48	4.75	4.58	4.81

Project Id: 794-NI-WAE-02239
 Project Title: 3FM Plots O and L
 Location: Dublin
 Client:

Title: Section line 1
 Vertical Scale: 1:275
 Horizontal Scale: 1:2484
 Engineer: Debra Telford

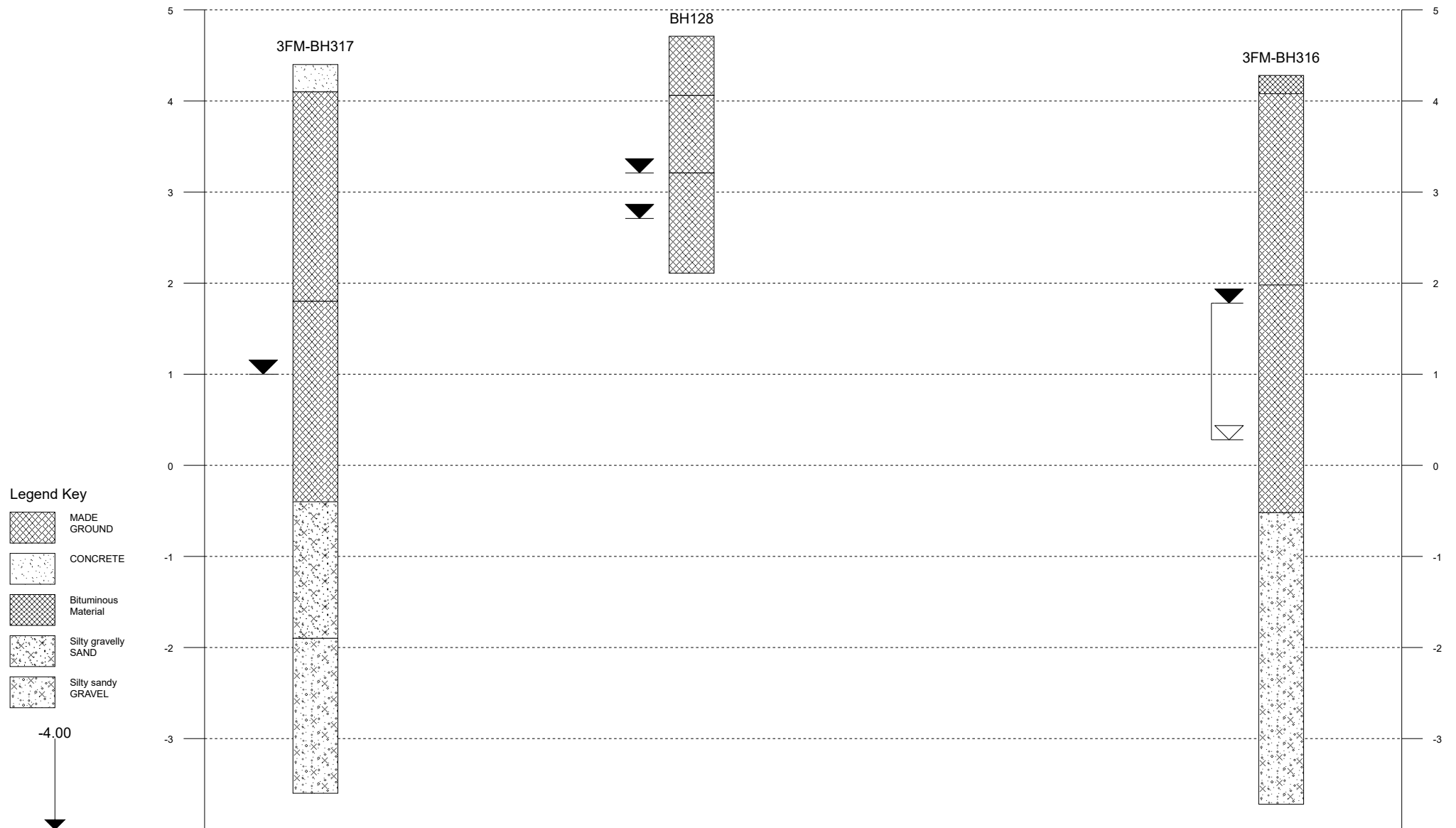







-36.00

Chainage (m)	7.61	106.83	156.65	230.66	267.46	335.55	413.42	452.77
Elevation (mAOD)	4.40	4.94	4.83	4.72	4.77	4.86	5.13	4.98

Project Id: 794-NI-WAE-02239
 Project Title: 3FM Plots O and L
 Location: Dublin
 Client:

Title: Section line 1
 Vertical Scale: 1:59
 Horizontal Scale: 1:732
 Engineer: Debra Telford



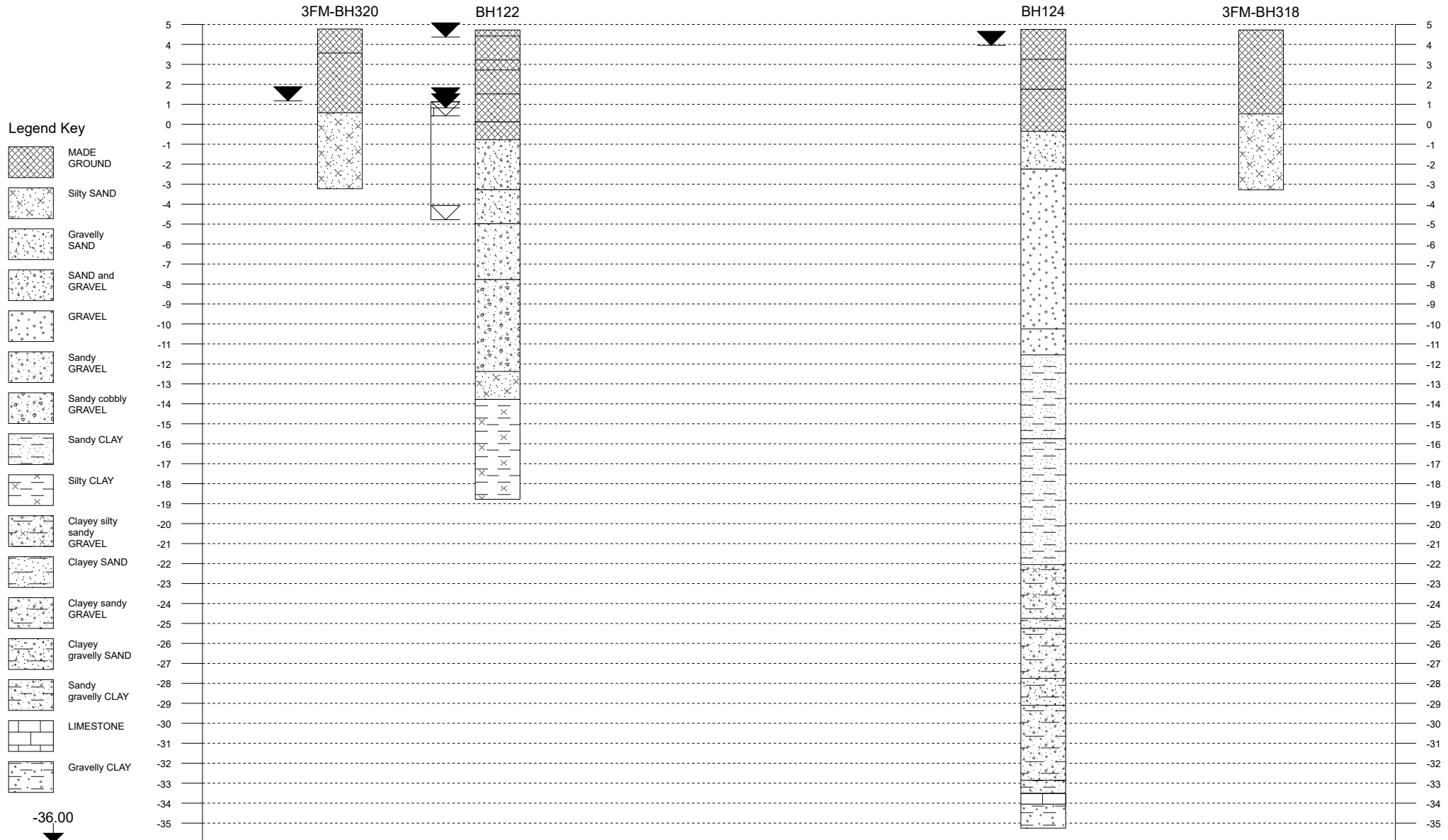
- Legend Key**
-  MADE GROUND
 -  CONCRETE
 -  Bituminous Material
 -  Silty gravelly SAND
 -  Silty sandy GRAVEL

-4.00


Chainage (m)	1.34	52.59	132.89
Elevation (mAOD)	4.40	4.71	4.28

Project Id: 794-NI-WAE-02239
 Project Title: 3FM Plots O and L
 Location: Dublin
 Client:

Title: Section line 1
 Vertical Scale: 1:268
 Horizontal Scale: 1:1252
 Engineer: Debra Telford

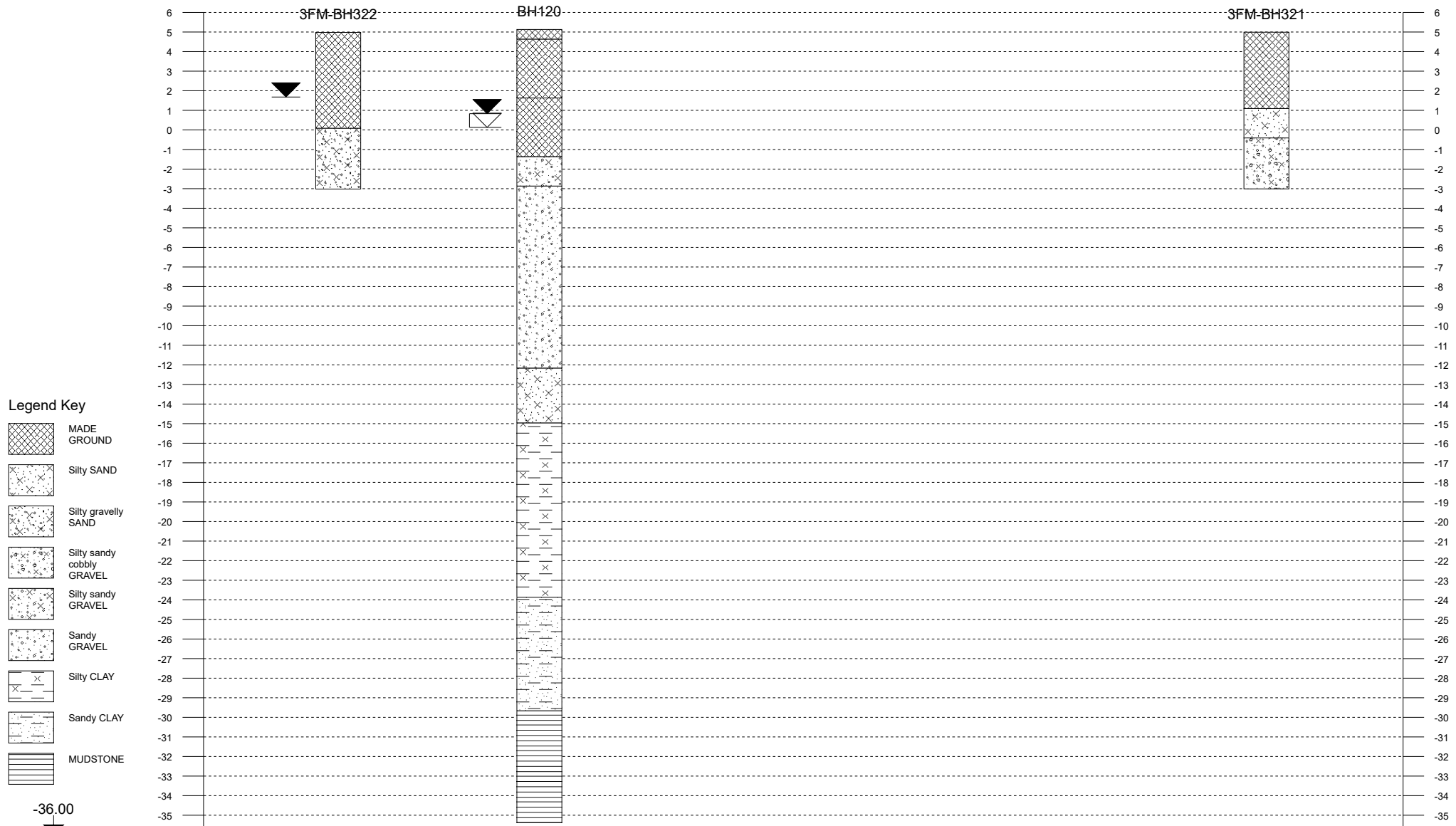


-36.00

Chainage (m)	8.60	45.48	173.07	223.98
Elevation (mAOD)	4.77	4.72	4.75	4.72

Project Id: 794-NI-WAE-02239
 Project Title: 3FM Plots O and L
 Location: Dublin
 Client:

Title: Section line 1
 Vertical Scale: 1:275
 Horizontal Scale: 1:1058
 Engineer: Debra Telford



- Legend Key**
- MADE GROUND
 - Silty SAND
 - Silty gravelly SAND
 - Silty sandy cobbly GRAVEL
 - Silty sandy GRAVEL
 - Sandy GRAVEL
 - Silty CLAY
 - Sandy CLAY
 - MUDSTONE

-36.00

Chainage (m)	6.57	46.10	188.96	
Elevation (mAOD)	4.98	5.13	4.99	

Appendix D
Soil Screening Table

Appendix E

Groundwater Screening Table

Sample ID	Sample Date	Chemtest Sample ID	Sample No.	Orthophosphate as PO4	Total Cyanide	pH	Dissolved Oxygen	METALS													
								Aluminium	Arsenic	Barium	Beryllium	Boron	Calcium	Copper	Chromium	Chromium (hexavalent)	Iron	Lead	Manganese		
3FM Groundwater results Area O March 2023				mg/l	mg/l	pH Units	mg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l		
BH120	07-Mar-2023	1605673	1	0.07	0.05	7.0	6.3	12	1.3	230	1	3100	0.11	2.2	0.52	0.10	5	0.5	3900		
BH121	07-Mar-2023	1605674	2	0.06	0.05	7.4	6.5	5	2.2	140	1	1400	0.15	5.1	2.1	0.10	5	0.5	1700		
BH123	07-Mar-2023	1605675	3	0.06	0.05	7.5	7.3	5	1.1	250	1	3200	0.11	2.3	0.5	0.10	5	0.5	4100		
BH125	07-Mar-2023	1605676	4	0.06	0.05	7.2	7.3	5	1.2	280	1	1300	0.11	1.4	0.70	0.10	9.2	0.5	740		
3FM Surface water results Port Park March 2023																					
BH128	07-Mar-2023	1605677	5	0.06	0.050	7.3	6.9	5	3.5	100	1	310	2.3	620	0.5	0.10	5	180	1100		
3FM Surface water results March 2023																					
SW1	07-Mar-2023	1605678	1	0.16	0.05	7.2	6.4	53	1.7	63	1	3800	0.12	14	0.5	0.10	5	4.1	34		
SW2	07-Mar-2023	1605679	2	0.16	0.05	7.3	6.1	32	1.6	54	1	4200	0.11	1.2	0.5	0.10	5	0.5	7.7		
SW3	07-Mar-2023	1605680	3	0.15	0.05	7.4	6.2	31	1.6	60	1	4100	0.11	0.98	0.5	0.10	5	0.5	7.4		
3FM Groundwater results Area L Round 1 - April 2024																					
BH301A	25-Apr-2024	2331743	6	0.03	40	7.5	9.6	16	1.2	140	0.1	1700	0.13	2.60	0.36	7	12	0.55	13		
BH302	25-Apr-2024	2331742	7	0.04	40	7.7	9.6	41	1.4	120	0.1	1800	0.06	1.90	0.42	7	25	0.29	59		
BH304	25-Apr-2024	2331741	8	0.04	40	7.6	4.5	23	1.8	410	0.1	1200	0.35	2.80	0.25	7	18	0.34	1700		
BH308	25-Apr-2024	2331740	9	0.01	40	7.3	8.8	29	6.8	270	0.1	630	0.14	1.20	2.2	7	60	2.7	1100		
BH309	25-Apr-2024	2331739	10	0.08	40	7.1	7.4	16	1.3	250	0.1	1500	0.66	2.40	0.25	7	15	0.15	2500		
BH313	25-Apr-2024	2331738	11	0.05	40	7.2	9.9	29	1.4	150	0.1	1800	0.25	2.30	0.41	7	31	0.48	42		
3FM Groundwater results Area L Round 2 - May 2024																					
BH301B	09-May-2024	2338233	12	0.05	40	7.3	10.5	31	1.4	56	1	2600	0.06	1.9	0.25	7	13	0.35	14		
BH302	09-May-2024	2338234	13	0.04	40	7.5	10.4	46	1.5	79	1	2700	0.04	1.3	0.36	7	31	0.17	44		
BH308	09-May-2024	2338236	14	0.01	40	7.4	9.3	23	6	190	1	900	0.03	0.5	1.7	7	2300	0.76	1000		
BH309	09-May-2024	2338237	15	0.02	40	7.2	7.1	12	1.1	160	1	1400	0.03	0.5	0.25	7	60	0.09	2200		
BH313	09-May-2024	2338238	16	0.05	40	7.2	10.5	24	1.3	67	1	2600	0.2	2.2	0.25	7	11	0.59	8.9		
BH314	09-May-2024	2338239	17	0.05	40	7.1	10.5	20	1.8	150	1	2100	0.6	2.3	0.25	7	12	2.4	560		
3FM Groundwater results Port Park April 2024																					
BH315	08-Apr-2024	2325314	18	0.01	40	6.8	0.2	10	1.3	290	0.1	260	0.03	1.00	0.44	7	120	0.29	3100		
BH316	08-Apr-2024	2325315	19	0.02	40	7.0	1.5	10	0.94	670	0.1	290	0	1.50	1.1	7	22	0.67	4600		
BH317	08-Apr-2024	2325316	20	0.01	40	6.8	0.4	10	1.5	320	0.1	720	0	0.60	0.52	7	420	0.22	3600		
3FM Groundwater results Port Park May 2024																					
BH315	08-May-2024	2338273	21	0.05	40	6.9	0.3	< 10	3.5	900	< 0.1	220	0.03	0.4	1.1	7	28000	0.22	2700		
BH316	08-May-2024	2338274	22	0.07	40	7.2	0.7	19	14	290	< 0.1	200	0.03	0.4	0.82	7	10000	3.3	2400		
BH317	08-May-2024	2338275	23	0.03	40	7.0	2.7	< 10	29	360	< 0.1	690	0.03	0.5	0.69	7	20000	0.19	4500		
3FM Groundwater results Area O Round 1 - April 2024																					
BH318	08-Apr-2024	2325317	24	0.02	40	6.9	0.1	10	1.7	240	0.1	530	0	0.50	0.97	7	8400	0.35	4400		
BH319	08-Apr-2024	2325318	25	0.01	40	7.1	7.1	12	2.5	410	0.1	1000	0	0.60	0.42	7	130	0.28	2100		
BH320	08-Apr-2024	2325319	26	0.01	40	7.0	6.6	12	1.8	660	0.1	490	0.03	0.50	0.67	7	390	0.69	1900		
BH321	08-Apr-2024	2325320	27	0.01	40	7.0	8.2	10	1.6	590	0.1	580	0	3.10	0.65	7	190	0.19	1200		
BH322	08-Apr-2024	2325321	28	0.01	40	7.4	8.2	10	1.1	200	0.1	180	0	0.90	0.34	7	99	0.15	630		
3FM Groundwater results Area O Round 2 - May 2024																					
BH318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH319	08-May-2024	2325318	29	< 0.01	40	7.2	7.1	< 10	1.3	360	0.1	330	0.03	1.0	0.44	7	140	0.51	930		
BH320	08-May-2024	2325319	30	0.11	40	7.1	4.3	< 10	4.6	470	0.1	660	0.03	< 0.4	1.2	7	8800	0.11	1200		
BH321	08-May-2024	2325320	31	0.04	40	7.5	1.9	< 10	3.7	200	0.1	1100	0.03	0.6	1.5	7	1100	0.25	960		
BH322	08-May-2024	2325321	32	< 0.01	40	7.3	2.6	< 10	11	300	0.1	890	0.03	< 0.4	0.29	7	9300	0.23	1800		
1. WHO Health 2011									10	700		2400	3	2000	50				10		
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016								150	7.5						37.5	7.5			7.5		
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2015 (AA-EQS Other surface water)												0.2							1.3		
4. Environmental Protection Agency Interim Guideline Values 2003				0.03	10	≥6.5 and ≤9.5		200	10	100		1000	5	30	30		200	10	50		
6. SoBRA GAC for Assessing Vapour Risks to Human Health From Volatile Contaminants in Groundwater (Commercial GAC)																					

Sample ID	Sample Date	Chemtest Sample ID	Sample No.	Mercury	Nickel	Selenium	Vanadium	Zinc	Sodium	Aliphatics >C5-C6	Aliphatics >C6-C8	Aliphatics >C8-C10	Aliphatics >C10-C12	Aliphatics >C12-C16	Aliphatics >C16-C21	Aliphatics >C21-C35	Aliphatics >C35-C44	Total Aliphatics	Aromatics >C5-C7	Aromatics >C7-C8	
				µg/l	µg/l	µg/l	µg/l	µg/l	µg/l												µg/l
3FM Groundwater results Area O March 2023																					
BH120	07-Mar-2023	1605673	1	0.05	23	1.5	0.5	3.7	-	0.01	0.01	0.1	0.1	0.1	0.1	0.1	0.1	1	0.01	0.01	
BH121	07-Mar-2023	1605674	2	0.05	12	1.4	1.4	19	-	0.01	0.01	0.1	0.1	0.1	0.1	0.1	0.1	1	0.01	0.01	
BH123	07-Mar-2023	1605675	3	0.05	23	1.3	0.5	4.0	-	0.01	0.01	0.1	0.1	0.1	0.1	0.1	0.1	1	0.01	0.01	
BH125	07-Mar-2023	1605676	4	0.05	21	0.79	0.50	35	-	0.01	0.01	0.1	0.1	0.1	0.1	0.1	0.1	1	0.01	0.01	
3FM Surface water results Port Park March 2023																					
BH128	07-Mar-2023	1605677	5	0.05	44	1.2	0.5	820	-	0.01	0.01	0.1	0.1	0.1	0.1	0.1	0.1	1	0.01	0.01	
3FM Surface water results March 2023																					
SW1	07-Mar-2023	1605678	1	0.05	1.5	1.2	0.90	24	-	0.01	0.01	0.1	0.1	0.1	0.1	0.1	0.1	1	0.01	0.01	
SW2	07-Mar-2023	1605679	2	0.05	0.52	1.5	0.87	7.3	-	0.01	0.01	0.1	0.1	0.1	0.1	0.1	0.1	1	0.01	0.01	
SW3	07-Mar-2023	1605680	3	0.05	0.75	1.2	0.92	6.0	-	0.01	0.01	0.1	0.1	0.1	0.1	0.1	0.1	1	0.01	0.01	
3FM Groundwater results Area L Round 1 - April 2024																					
BH301A	25-Apr-2024	2331743	6	0.01	5.4	3.2	4.9	69	-	0.1	0.1	0.1	1	1.5	8.2	56	-	66	1	1	
BH302	25-Apr-2024	2331742	7	0.01	2.5	0.35	1.9	37	-	0.1	0.1	0.1	1	1	1	1	-	10	1	1	
BH304	25-Apr-2024	2331741	8	0.01	13	1.2	1.4	68	-	0.1	0.1	140	1	1	1	1	-	140	1	1	
BH308	25-Apr-2024	2331740	9	0.01	5.5	8.4	2.7	96	-	0.1	0.1	55	130	1100	1600	500	-	3400	1	1	
BH309	25-Apr-2024	2331739	10	0.01	25	1	1.9	42	-	0.1	0.1	0.1	57	92	340	4000	-	4500	1	1	
BH313	25-Apr-2024	2331738	11	0.01	4.7	0.41	1.4	52	-	0.1	0.1	31	1	1	1	21	-	53	1	1	
3FM Groundwater results Area L Round 2 - May 2024																					
BH301B	09-May-2024	2338233	12	0.01	2.2	0.33	1.7	47	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-	10	0.1	0.1	
BH302	08-May-2024	2338234	13	0.01	1.2	0.25	2	44	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-	10	0.1	0.1	
BH308	09-May-2024	2338236	14	0.01	5.2	1.6	3.2	100	-	0.1	0.1	0.1	3400	15000	15000	4700	-	3800	0.1	0.1	
BH309	09-May-2024	2338237	15	0.01	13	0.39	0.6	41	-	0.1	0.1	0.1	21	120	120	150	-	420	0.1	0.1	
BH313	08-May-2024	2338238	16	0.01	1.6	0.25	1.2	49	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-	10	0.1	0.1	
BH314	08-May-2024	2338239	17	0.01	5.7	2.4	1.1	49	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-	10	0.1	0.1	
3FM Groundwater results Port Park April 2024																					
BH315	08-Apr-2024	2325314	18	0.02	6.7	0.95	0.6	71	-	0.1	0.1	0.1	0.1	0.1	3.2	62	-	66	0.1	0.1	
BH316	08-Apr-2024	2325315	19	0.01	8.5	0.56	0.6	130	-	0.1	0.1	68	63	210	200	140	-	680	0.1	0.1	
BH317	08-Apr-2024	2325316	20	0.01	9.6	0.67	0.6	51	-	0.1	0.1	51	26	11	18	210	-	310	0.1	0.1	
3FM Groundwater results Port Park May 2024																					
BH315	08-May-2024	2338273	21	0.01	7.4	< 0.25	1.2	51	-	< 0.1	< 0.1	< 0.1	< 1.0	300	900	30	-	1200	< 0.1	< 0.1	
BH316	08-May-2024	2338274	22	0.01	4.7	0.54	1.6	81	-	< 0.1	< 0.1	< 0.1	120	110	360	1600	-	2200	< 0.1	< 0.1	
BH317	08-May-2024	2338275	23	0.01	15	0.30	1.3	50	-	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	16	610	-	630	< 0.1	< 0.1	
3FM Groundwater results Area O Round 1 - April 2024																					
BH318	08-Apr-2024	2325317	24	0.01	13	0.66	0.6	45	-	0.1	0.1	15	1	1	5.1	92	-	110	0.1	0.1	
BH319	08-Apr-2024	2325318	25	0.01	7.2	0.43	0.9	89	-	0.1	0.1	0.1	1	1	1	1	-	10	0.1	0.1	
BH320	08-Apr-2024	2325319	26	0.01	14	0.39	2.1	130	-	0.1	0.1	0.1	1	1	1	1	-	10	0.1	0.1	
BH321	08-Apr-2024	2325320	27	0.01	5.1	0.32	0.6	100	-	0.1	0.1	0.1	2.9	31	65	83	-	180	0.1	0.1	
BH322	08-Apr-2024	2325321	28	0.01	3	0.27	0.7	39	-	0.1	0.1	0.1	1	1	5.1	76	-	81	0.1	0.1	
3FM Groundwater results Area O Round 2 - May 2024																					
BH318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH319	08-May-2024	2325318	29	0.01	12	0.29	1.2	60	-	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 1.0	< 1.0	-	< 10	0.1	0.1	
BH320	08-May-2024	2325319	30	0.01	7.0	< 0.25	1.5	51	-	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	16	110	160	300	< 0.1	< 0.1	
BH321	08-May-2024	2325320	31	0.01	3.9	0.42	3.4	54	-	< 0.1	< 0.1	< 0.1	< 1.0	6.2	17	53	-	77	< 0.1	< 0.1	
BH322	08-May-2024	2325321	32	0.01	9.6	0.33	1.3	54	-	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 1.0	< 1.0	-	< 10	< 0.1	< 0.1	
1. WHO Health 2011				6	70	40															
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016				0.75				75													
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2015 (AA-EQS Other surface water)					8.6																
4. Environmental Protection Agency Interim Guideline Values 2003				1	20			100	150000												
6. SoBRA GAC for Assessing Vapour Risks to Human Health From Volatile Contaminants in Groundwater (Commercial GAC)				9.5						150000	5700	3600							20,000,000	21,000,000	

PETROLEUM HYDROCARBONS

Sample ID	Sample Date	Chemtest Sample ID	Sample No.	PCB 126	PCB 138	PCB 153	PCB 156	PCB 157	PCB 167	PCB 169	PCB 180	PCB 189	Total PCBs (7 Congeners)	Resorcinol	Phenol	Creosols	Xylenols	1-Naphthol	Trimethylphenols	Total Phenols
				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l							
3FM Groundwater results Area O March 2023																				
BH120	07-Mar-2023	1605673	1	0.01	-	-	0.01	0.01	0.01	0.01	-	0.01	0.01	-	-	-	-	-	-	-
BH121	07-Mar-2023	1605674	2	0.01	-	-	0.01	0.01	0.01	0.01	-	0.01	0.01	-	-	-	-	-	-	-
BH123	07-Mar-2023	1605675	3	0.01	-	-	0.01	0.01	0.01	0.01	-	0.01	0.01	-	-	-	-	-	-	-
BH125	07-Mar-2023	1605676	4	0.01	-	-	0.01	0.01	0.01	0.01	-	0.01	0.01	-	-	-	-	-	-	-
3FM Surface water results Port Park March 2023																				
BH128	07-Mar-2023	1605677	5	0.01	-	-	0.01	0.01	0.01	0.01	-	0.01	0.01	-	-	-	-	-	-	-
3FM Surface water results March 2023																				
SW1	07-Mar-2023	1605678	1	0.01	-	-	0.01	0.01	0.01	0.01	-	0.01	0.01	-	-	-	-	-	-	-
SW2	07-Mar-2023	1605679	2	0.01	-	-	0.01	0.01	0.01	0.01	-	0.01	0.01	-	-	-	-	-	-	-
SW3	07-Mar-2023	1605680	3	0.01	-	-	0.01	0.01	0.01	0.01	-	0.01	0.01	-	-	-	-	-	-	-
3FM Groundwater results Area L Round 1 - April 2024																				
BH301A	25-Apr-2024	2331743	6	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH302	25-Apr-2024	2331742	7	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH304	25-Apr-2024	2331741	8	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH308	25-Apr-2024	2331740	9	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH309	25-Apr-2024	2331739	10	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH313	25-Apr-2024	2331738	11	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
3FM Groundwater results Area L Round 2 - May 2024																				
BH301B	09-May-2024	2338233	12	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH302	08-May-2024	2338234	13	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH308	09-May-2024	2338236	14	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH309	09-May-2024	2338237	15	-	2	2	-	-	-	-	2	-	1	-	0.1	-	-	-	-	-
BH313	08-May-2024	2338238	16	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH314	08-May-2024	2338239	17	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
3FM Groundwater results Port Park April 2024																				
BH315	08-Apr-2024	2325314	18	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH316	08-Apr-2024	2325315	19	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH317	08-Apr-2024	2325316	20	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
3FM Groundwater results Port Park May 2024																				
BH315	08-May-2024	2338273	21	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH316	08-May-2024	2338274	22	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH317	08-May-2024	2338275	23	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
3FM Groundwater results Area O Round 1 - April 2024																				
BH318	08-Apr-2024	2325317	24	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH319	08-Apr-2024	2325318	25	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH320	08-Apr-2024	2325319	26	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH321	08-Apr-2024	2325320	24	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH322	08-Apr-2024	2325321	25	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
3FM Groundwater results Area O Round 2 - May 2024																				
BH318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-
BH319	08-May-2024	2325318	26	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH320	08-May-2024	2325319	27	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH321	08-May-2024	2325320	24	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
BH322	08-May-2024	2325321	25	-	0.2	0.2	-	-	-	-	0.2	-	1	-	0.1	-	-	-	-	-
1. WHO Health 2011																				
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016																				
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2015 (AA-EQS Other surface water)																				
4. Environmental Protection Agency Interim Guideline Values 2003																				
6. SoBRA GAC for Assessing Vapour Risks to Human Health From Volatile Contaminants in Groundwater (Commercial GAC)																				

Sample ID	Sample Date	Chemist/ Sample ID	Sample No.	SVOCs	Methyl Tert-Butyl Ether	N-Nitrosodimethylaniline	2-Chlorophenol	bis(2-Chloroethyl)Ether	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichlorobenzene	2-Methylphenol (o-Cresol)	Bis(2-Chloroisopropyl)Ether	Hexachlorocyclohexane	n-Nitroso-n-di-propylamine	4-Methylphenol	Nitrobenzene	Isophorone	2-Nitrophenol	2,4-Dimethylphenol	bis(2-Chloroethoxy)methane		
					µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
3FM Groundwater results Area O March 2023																							
BH120	07-Mar-2023	1605673	1		0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
BH121	07-Mar-2023	1605674	2		0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
BH123	07-Mar-2023	1605675	3		0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
BH125	07-Mar-2023	1605676	4		0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
3FM Surface water results Port Park March 2023																							
BH128	07-Mar-2023	1605677	5		0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
3FM Surface water results March 2023																							
SW1	07-Mar-2023	1605678	1		0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
SW2	07-Mar-2023	1605679	2		0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
SW3	07-Mar-2023	1605680	3		0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
3FM Groundwater results Area L Round 1 - April 2024																							
BH301A	25-Apr-2024	2331743	6		1	-	1	-	2	1	1	1	1	-	-	1	-	-	-	0.1	1	1	
BH302	25-Apr-2024	2331742	7		1	-	1	-	2	1	1	1	1	-	-	1	-	-	-	0.1	1	1	
BH304	25-Apr-2024	2331741	8		1	-	10	-	2	1	1	10	10	-	-	10	-	-	-	0.1	10	10	
BH308	25-Apr-2024	2331740	9		1	-	1	-	2	1	1	1	1	-	-	1	-	-	-	0.1	1	1	
BH309	25-Apr-2024	2331739	10		1	-	10	-	2	1	1	10	10	-	-	10	-	-	-	0.1	10	10	
BH313	25-Apr-2024	2331738	11		1	-	1	-	2	1	1	1	1	-	-	1	-	-	-	0.1	1	1	
3FM Groundwater results Area L Round 2 - May 2024																							
BH301B	09-May-2024	2338233	12		1	-	1	-	2	1	1	1	1	-	-	1	-	-	-	0.1	1	1	
BH302	08-May-2024	2338234	13		1	-	1	-	2	1	1	1	1	-	-	1	-	-	-	0.1	1	1	
BH308	09-May-2024	2338236	14		1	-	1	-	2	1	1	1	1	-	-	1	-	-	-	0.1	1	1	
BH309	09-May-2024	2338237	15		3	-	1	-	2	1	1	1	1	-	-	1	-	-	-	0.1	1	1	
BH313	08-May-2024	2338238	16		1	-	1	-	2	1	1	1	1	-	-	1	-	-	-	0.1	1	1	
BH314	08-May-2024	2338239	17		1	-	1	-	2	1	1	1	1	-	-	1	-	-	-	0.1	1	1	
3FM Groundwater results Port Park April 2024																							
BH315	08-Apr-2024	2325314	18		1	-	5	-	2	1	1	5	5	-	-	5	-	-	-	0.1	5	5	
BH316	08-Apr-2024	2325315	19		1	-	5	-	2	1	1	5	5	-	-	5	-	-	-	0.1	5	5	
BH317	08-Apr-2024	2325316	20		1	-	5	-	2	1	1	5	5	-	-	5	-	-	-	0.1	5	5	
3FM Groundwater results Port Park May 2024																							
BH315	08-May-2024	2338273	21		1	-	5	-	2	1	1	5	5	-	-	5	-	-	-	0.1	5	5	
BH316	08-May-2024	2338274	22		1	-	5	-	2	1	1	5	5	-	-	5	-	-	-	0.1	5	5	
BH317	08-May-2024	2338275	23		1	-	5	-	2	1	1	5	5	-	-	5	-	-	-	0.1	5	5	
3FM Groundwater results Area O Round 1 - April 2024																							
BH318	08-Apr-2024	2325317	24		1	-	5	-	2	1	1	5	5	-	-	5	-	-	-	0.1	5	5	
BH319	08-Apr-2024	2325318	25		1	-	5	-	2	1	1	5	5	-	-	5	-	-	-	0.1	5	5	
BH320	08-Apr-2024	2325319	26		1	-	5	-	2	1	1	5	5	-	-	5	-	-	-	0.1	5	5	
BH321	08-Apr-2024	2325320	27		1	-	5	-	2	1	1	5	5	-	-	5	-	-	-	0.1	5	5	
BH322	08-Apr-2024	2325321	28		1	-	1	-	2	1	1	1	1	-	-	1	-	-	-	0.1	1	1	
3FM Groundwater results Area O Round 2 - May 2024																							
BH318	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH319	08-May-2024	2325318	29		1	-	5	-	2	1	1	5	5	-	-	5	-	-	-	0.1	5	5	
BH320	08-May-2024	2325319	30		1	-	5	-	2	1	1	5	5	-	-	5	-	-	-	0.1	5	5	
BH321	08-May-2024	2325320	31		1	-	5	-	2	1	1	5	5	-	-	5	-	-	-	0.1	5	5	
BH322	08-May-2024	2325321	32		1	-	5	-	2	1	1	5	5	-	-	5	-	-	-	0.1	5	5	
1. WHO Health 2011																							
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016					10																		
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2015 (AA-EQS Other surface water)																							
4. Environmental Protection Agency Interim Guideline Values 2003					30		200				10						10						
6. SoBRA GAC for Assessing Vapour Risks to Human Health From Volatile Contaminants in Groundwater (Commercial GAC)									2,800	460,000	220,000			740									

Sample ID	Sample Date	Chemical Sample ID	Sample No.	2,4-Dichlorophenol	1,2,4-Trichlorobenzene	4-Chloroaniline	Hexachlorocyclopentadiene	4-Chloro-3-methylphenol	2-Methylnaphthalene	Hexachlorocyclopentadiene	2,4,6-Trichlorophenol	2,4,5-Trichlorophenol	2-Chloronaphthalene	2-Nitroaniline	Dimethyl phthalate	2,6-Dinitrotoluene	3-Nitroaniline	Dibenzofuran	4-Chlorophenylphenylether	2,4-Dinitrotoluene	Diethyl phthalate
				µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
3FM Groundwater results Area O March 2023																					
BH120	07-Mar-2023	1605673	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
BH121	07-Mar-2023	1605674	2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
BH123	07-Mar-2023	1605675	3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
BH125	07-Mar-2023	1605676	4	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
3FM Surface water results Port Park March 2023																					
BH128	07-Mar-2023	1605677	5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
3FM Surface water results March 2023																					
SW1	07-Mar-2023	1605678	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
SW2	07-Mar-2023	1605679	2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
SW3	07-Mar-2023	1605680	3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
3FM Groundwater results Area L Round 1 - April 2024																					
BH301A	25-Apr-2024	2331743	6	0.1	2	-	1	0.1	-	1	0.1	1	-	1	1	1	1	1	1	1	1
BH302	25-Apr-2024	2331742	7	0.1	2	-	1	0.1	-	1	0.1	1	-	1	1	1	1	1	1	1	1
BH304	25-Apr-2024	2331741	8	0.1	1	-	1	0.1	-	10	0.1	10	-	10	10	10	10	10	10	10	10
BH308	25-Apr-2024	2331740	9	0.1	1	-	1	0.1	-	1	0.1	1	-	1	1	1	1	1	1	1	1
BH309	25-Apr-2024	2331739	10	0.1	1	-	1	0.1	-	10	0.1	10	-	10	10	10	10	10	10	10	10
BH313	25-Apr-2024	2331738	11	0.1	1	-	1	0.1	-	1	0.1	1	-	1	1	1	1	1	1	1	1
3FM Groundwater results Area L Round 2 - May 2024																					
BH301B	09-May-2024	2338233	12	0.1	1	-	1	0.1	-	1	0.1	1	-	1	1	1	1	1	1	1	1
BH302	09-May-2024	2338234	13	0.1	1	-	1	0.1	-	1	0.1	1	-	1	1	1	1	1	1	1	1
BH308	09-May-2024	2338236	14	0.1	1	-	1	0.1	-	1	0.1	1	-	1	1	1	1	1	1	1	1
BH309	09-May-2024	2338237	15	0.1	1	-	1	0.1	-	1	0.1	1	-	1	1	1	1	1	1	1	1
BH313	09-May-2024	2338238	16	0.1	1	-	1	0.1	-	1	0.1	1	-	1	1	1	1	1	1	1	1
BH314	09-May-2024	2338239	17	0.1	1	-	1	0.1	-	1	0.1	1	-	1	1	1	1	1	1	1	1
3FM Groundwater results Port Park April 2024																					
BH315	08-Apr-2024	2325314	18	0.1	5	-	1.0	0.1	-	5	0.1	5	-	5	5	5	5	5	5	5	5
BH316	08-Apr-2024	2325315	19	0.1	5	-	1.0	0.1	-	5	0.1	5	-	5	5	5	5	5	5	5	5
BH317	08-Apr-2024	2325316	20	0.1	5	-	1.0	0.1	-	5	0.1	5	-	5	5	5	5	5	5	5	5
3FM Groundwater results Port Park May 2024																					
BH315	08-May-2024	2338273	21	0.1	1	-	1.0	0.1	-	1.0	1.0	1.0	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH316	08-May-2024	2338274	22	0.1	1	-	1.0	0.1	-	1.0	1.0	1.0	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH317	08-May-2024	2338275	23	0.1	1	-	1.0	0.1	-	1.0	1.0	1.0	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
3FM Groundwater results Area O Round 1 - April 2024																					
BH318	08-Apr-2024	2325317	24	0.1	5	-	1.0	0.1	-	5	0.1	5	-	5	5	5	5	5	5	5	5
BH319	08-Apr-2024	2325318	25	0.1	5	-	1.0	0.1	-	5	0.1	5	-	5	5	5	5	7.6	5	5	5
BH320	08-Apr-2024	2325319	26	0.1	5	-	1.0	0.1	-	5	0.1	5	-	5	5	5	5	5	5	5	5
BH321	08-Apr-2024	2325320	27	0.1	5	-	1.0	0.1	-	5	0.1	5	-	5	5	5	5	5	5	5	5
BH322	08-Apr-2024	2325321	28	0.1	1	-	1.0	0.1	-	1	0.1	1	-	1	1	1	1	1	1	1.0	1.0
3FM Groundwater results Area O Round 2 - May 2024																					
BH318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH319	08-May-2024	2325318	29	0.1	1	-	1.0	0.1	-	1.0	1.0	1.0	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH320	08-May-2024	2325319	30	0.1	1	-	1.0	0.1	-	1.0	1.0	1.0	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH321	08-May-2024	2325320	31	0.1	1	-	1.0	0.1	-	1.0	1.0	1.0	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH322	08-May-2024	2325321	32	0.1	1	-	1.0	0.1	-	1.0	1.0	1.0	-	5	5	5	5	5	5	5	5
1. WHO Health 2011																					
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016																					
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2015 (AA-EQS Other surface water)																					
4. Environmental Protection Agency Interim Guideline Values 2003																					
6. SoBRA GAC for Assessing Vapour Risks to Human Health From Volatile Contaminants in Groundwater (Commercial GAC)																					

Sample ID	Sample Date	Chemist Sample ID	Sample No.	4-Nitroaniline	2-Methyl-4-6-Dinitrophenol	Azobenzene	4-Bromophenylphenylether	Hexachlorobenzene	Pentachlorophenol	n-Butyl phthalate	Bis(2-ethylhexyl) phthalate	Diethyl phthalate	4-Nitrophenol	Dichlorodifluoromethane	Chloromethane	Vinyl chloride	Bromomethane	Chloroethane	Trichloroethane
				µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
3FM Groundwater results Area O March 2023																			
BH120	07-Mar-2023	1605673	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	2	0.2	0.1
BH121	07-Mar-2023	1605674	2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	2	0.2	0.1
BH123	07-Mar-2023	1605675	3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	2	0.2	0.1
BH125	07-Mar-2023	1605676	4	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	2	0.2	0.1
3FM Surface water results Port Park March 2023																			
BH128	07-Mar-2023	1605677	5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	2	0.2	0.1
3FM Surface water results March 2023																			
SW1	07-Mar-2023	1605678	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	2	0.2	0.1
SW2	07-Mar-2023	1605679	2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	2	0.2	0.1
SW3	07-Mar-2023	1605680	3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	2	0.2	0.1
3FM Groundwater results Area L Round 1 - April 2024																			
BH301A	25-Apr-2024	2331743	6	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BH302	25-Apr-2024	2331742	7	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BH304	25-Apr-2024	2331741	8	10	-	10	10	10	10	10	10	10	10	10	10	10	10	10	10
BH308	25-Apr-2024	2331740	9	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BH309	25-Apr-2024	2331739	10	10	-	10	10	10	10	10	10	10	10	10	10	10	10	10	10
BH313	25-Apr-2024	2331738	11	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3FM Groundwater results Area L Round 2 - May 2024																			
BH301B	09-May-2024	2338233	12	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BH302	08-May-2024	2338234	13	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BH308	09-May-2024	2338236	14	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BH309	09-May-2024	2338237	15	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BH313	08-May-2024	2338238	16	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BH314	08-May-2024	2338239	17	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3FM Groundwater results Port Park April 2024																			
BH315	08-Apr-2024	2325314	18	5	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BH316	08-Apr-2024	2325315	19	5	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BH317	08-Apr-2024	2325316	20	5	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5
3FM Groundwater results Port Park May 2024																			
BH315	08-May-2024	2338273	21	1.0	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH316	08-May-2024	2338274	22	1.0	-	1.0	1.0	1.0	1.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH317	08-May-2024	2338275	23	1.0	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
3FM Groundwater results Area O Round 1 - April 2024																			
BH318	08-Apr-2024	2325317	24	5	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BH319	08-Apr-2024	2325318	25	5	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BH320	08-Apr-2024	2325319	26	5	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BH321	08-Apr-2024	2325320	27	5	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BH322	08-Apr-2024	2325321	28	1.0	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
3FM Groundwater results Area O Round 2 - May 2024																			
BH318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH319	08-May-2024	2325318	29	1.0	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH320	08-May-2024	2325319	30	1.0	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH321	08-May-2024	2325320	31	1.0	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH322	08-May-2024	2325321	32	5	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1. WHO Health 2011																			
9																			
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016																			
6																			
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2015 (AA-EQS Other surface water)																			
0.4																			
4. Environmental Protection Agency Interim Guideline Values 2003																			
0.03, 2, 2, 8																			
6. SoBRA GAC for Assessing Vapour Risks to Human Health From Volatile Contaminants in Groundwater (Commercial GAC)																			
1,400, 63, 1,000,000																			

VOCs

Sample ID	Sample Date	Chemist/ Sample ID	Sample No.	1,1-Dichloroethane	trans-1,2-Dichloroethane	1,1-Dichloroethane	cis-1,2-Dichloroethane	Bromo-chloromethane	Chloroform	1,1,1-Trichloroethane	Carbon-tetrachloride	1,1-Dichloropropene	Benzene	1,2-Dichloroethane	Trichloroethene	1,2-Dichloropropane	Dibromomethane	Bromodichloromethane	cis-1,3-Dichloropropene	Toluene	trans-1,3-Dichloropropene	
				µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	
3FM Groundwater results Area O March 2023																						
BH120	07-Mar-2023	1605673	1	0.1	0.1	0.1	0.1	0.5	-	0.1	0.1	-	0.1	0.2	12	0.1	0.1	0.5	1	0.1	1	
BH121	07-Mar-2023	1605674	2	0.1	0.1	0.1	0.1	0.5	-	0.1	0.1	-	0.1	0.2	0.1	0.1	0.1	0.5	1	0.1	1	
BH123	07-Mar-2023	1605675	3	0.1	0.1	0.1	0.1	0.5	-	0.1	0.1	-	0.1	0.2	11	0.1	0.1	0.5	1	0.1	1	
BH125	07-Mar-2023	1605676	4	0.1	0.1	0.1	0.1	0.5	-	0.1	0.1	-	0.1	0.2	0.1	0.1	0.1	0.5	1	0.1	1	
3FM Surface water results Port Park March 2023																						
BH128	07-Mar-2023	1605677	5	0.1	0.1	0.1	0.1	0.5	-	0.1	0.1	-	0.1	0.2	0.1	0.1	0.1	0.5	1	0.1	1	
3FM Surface water results March 2023																						
SW1	07-Mar-2023	1605678	1	0.1	0.1	0.1	0.1	0.5	-	0.1	0.1	-	0.1	0.2	0.1	0.1	0.1	0.5	1	0.1	1	
SW2	07-Mar-2023	1605679	2	0.1	0.1	0.1	0.1	0.5	-	0.1	0.1	-	0.1	0.2	0.1	0.1	0.1	0.5	1	0.1	1	
SW3	07-Mar-2023	1605680	3	0.1	0.1	0.1	0.1	0.5	-	0.1	0.1	-	0.1	0.2	0.1	0.1	0.1	0.5	1	0.1	1	
3FM Groundwater results Area L Round 1 - April 2024																						
BH301A	25-Apr-2024	2331743	6	1	1	1	1	4	1	1	1	1	1	1	1	1	1	4	1	2	1	
BH302	25-Apr-2024	2331742	7	1	1	1	1	4	1	1	1	1	1	1	1	1	1	4	1	2	1	
BH304	25-Apr-2024	2331741	8	1	1	1	1	4	1	1	1	1	1	1	1	1	1	4	1	1	1	
BH308	25-Apr-2024	2331740	9	1	1	1	1	4	1	1	1	1	1	1	1	1	1	4	1	1	1	
BH309	25-Apr-2024	2331739	10	1	1	1	1	4	1	1	1	1	1	1	1	1	1	4	1	1	1	
BH313	25-Apr-2024	2331738	11	1	1	1	1	4	1	1	1	1	1	1	1	1	1	4	1	1	1	
3FM Groundwater results Area L Round 2 - May 2024																						
BH301B	09-May-2024	2338233	12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
BH302	08-May-2024	2338234	13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
BH308	09-May-2024	2338236	14	1	1	1	1	1	4	1	1	1	1	1	1	1	1	1	1	1	1	
BH309	09-May-2024	2338237	15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
BH313	08-May-2024	2338238	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
BH314	08-May-2024	2338239	17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
3FM Groundwater results Port Park April 2024																						
BH315	08-Apr-2024	2325314	18	1	1	1	1	4	1	1	1	1	1	1	1	1	1	4	1	1	1	
BH316	08-Apr-2024	2325315	19	1	1	1	1	4	1	1	1	1	1	1	1	1	1	4	1	1	1	
BH317	08-Apr-2024	2325316	20	1	1	1	1	4	1	1	1	1	1	1	1	1	1	4	1	1	1	
3FM Groundwater results Port Park May 2024																						
BH315	08-May-2024	2338273	21	1	1	1	1	4	1	1	1	1	1	1	1	1	1	4	1	1	1	
BH316	08-May-2024	2338274	22	1	1	1	1	4	1	1	1	1	1	1	1	1	1	4	1	1	1	
BH317	08-May-2024	2338275	23	1	1	1	1	4	1	1	3	1	1	1	1	1	1	4	1	1	1	
3FM Groundwater results Area O Round 1 - April 2024																						
BH318	08-Apr-2024	2325317	24	1	1	1	1	4	1	1	1	1	1	1	1	1	1	4	1	1	1	
BH319	08-Apr-2024	2325318	25	1	1	1	1	4	1	1	1	1	1	1	1	1	1	4	1	1	1	
BH320	08-Apr-2024	2325319	26	1	1	1	1	4	1	1	1	1	1	1	1	1	1	4	1	1	1	
BH321	08-Apr-2024	2325320	27	1	1	1	1	4	1	1	1	1	1	1	1	1	1	4	1	1	1	
BH322	08-Apr-2024	2325321	28	1	1	1	1	4	1	1	1	1	1	1	1	1	1	4	1	1	1	
3FM Groundwater results Area O Round 2 - May 2024																						
BH318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH319	08-May-2024	2325318	29	10	10	10	10	40	10	10	10	10	10	10	10	10	10	40	10	10	10	
BH320	08-May-2024	2325319	30	1	1	1	1	4	1	1	1	1	1	1	1	1	1	4	1	1	1	
BH321	08-May-2024	2325320	31	1	1	1	1	4	1	1	1	1	1	1	1	1	1	4	1	1	1	
BH322	08-May-2024	2325321	32	10	10	10	10	40	10	10	10	10	10	10	10	10	10	40	10	10	10	
1. WHO Health 2011							50		300		4		10	30	20	40		60		700	20	
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016							0.375						0.75	2.25	7.5=						525	
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2015 (AA-EQS Other surface water)											12		8	10								
4. Environmental Protection Agency Interim Guideline Values 2003									12	500			1	3	70						10	
6. SoBRA GAC for Assessing Vapour Risks to Human Health From Volatile Contaminants in Groundwater (Commercial GAC)				16,000		260,000	13,000			290,000				850	530	2,600		1,600				

Sample ID	Sample Date	Chemtest Sample ID	Sample No.	1,1,2-Trichloroethane	Tetrachloroethene	1,3-Dichloropropane	Dibromochloroethane	1,2-Dibromoethane	Chlorobenzene	1,1,1,2-Tetrachloroethane	Ethylbenzene	m,p-Xylene	o-Xylene	Styrene	Bromoforn	Isopropylbenzene	Bromobenzene	1,2,5-Trichloropropane	n-Propylbenzene	2-Chlorotoluene	1,3,5-Trimethylbenzene
				µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
3FM Groundwater results Area O March 2023																					
BH120	07-Mar-2023	1605673	1	0.1	0.1	0.2	1	0.5	0.1	0.2	0.1	0.1	0.1	0.1	-	-	0.1	5	0.1	0.1	0.1
BH121	07-Mar-2023	1605674	2	0.1	0.1	0.2	1	0.5	0.1	0.2	0.1	0.1	0.1	0.1	-	-	0.1	5	0.1	0.1	0.1
BH123	07-Mar-2023	1605675	3	0.1	0.1	0.2	1	0.5	0.1	0.2	0.1	0.1	0.1	0.1	-	-	0.1	5	0.1	0.1	0.1
BH125	07-Mar-2023	1605676	4	0.1	0.1	0.2	1	0.5	0.1	0.2	0.1	0.1	0.1	0.1	-	-	0.1	5	0.1	0.1	0.1
3FM Surface water results Port Park March 2023																					
BH128	07-Mar-2023	1605677	5	0.1	0.1	0.2	1	0.5	0.1	0.2	0.1	0.1	0.1	0.1	-	-	0.1	5	0.1	0.1	0.1
3FM Surface water results March 2023																					
SW1	07-Mar-2023	1605678	1	0.1	0.1	0.2	1	0.5	0.1	0.2	0.1	0.1	0.1	0.1			0.1	5	0.1	0.1	0.1
SW2	07-Mar-2023	1605679	2	0.1	0.1	0.2	1	0.5	0.1	0.2	0.1	0.1	0.1	0.1			0.1	5	0.1	0.1	0.1
SW3	07-Mar-2023	1605680	3	0.1	0.1	0.2	1	0.5	0.1	0.2	0.1	0.1	0.1	0.1			0.1	5	0.1	0.1	0.1
3FM Groundwater results Area L Round 1 - April 2024																					
BH301A	25-Apr-2024	2331743	6	1	1	1	1	1	4	1	3	37	59	1	1	12	1	1	11	1	5
BH302	25-Apr-2024	2331742	7	1	1	1	1	1	3	1	2	28	51	1	1	8	1	5	1	1	100
BH304	25-Apr-2024	2331741	8	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1
BH308	25-Apr-2024	2331740	9	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1
BH309	25-Apr-2024	2331739	10	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1
BH313	25-Apr-2024	2331738	11	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1
3FM Groundwater results Area L Round 2 - May 2024																					
BH301B	09-May-2024	2338233	12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BH302	08-May-2024	2338234	13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BH308	09-May-2024	2338236	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BH309	09-May-2024	2338237	15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BH313	08-May-2024	2338238	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BH314	08-May-2024	2338239	17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3FM Groundwater results Port Park April 2024																					
BH315	08-Apr-2024	2325314	18	1	1	1	1	1	1	5	40	1	1	1	1	2	1	1	1	1	1
BH316	08-Apr-2024	2325315	19	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1
BH317	08-Apr-2024	2325316	20	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1
3FM Groundwater results Port Park May 2024																					
BH315	08-May-2024	2338273	21	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1
BH316	08-May-2024	2338274	22	1	1	1	1	1	1	1	6	5	1	1	1	1	1	1	1	1	4
BH317	08-May-2024	2338275	23	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1
3FM Groundwater results Area O Round 1 - April 2024																					
BH318	08-Apr-2024	2325317	24	1	1	1	1	1	1	6	66	1	1	1	1	1	1	1	1	1	1
BH319	08-Apr-2024	2325318	25	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1
BH320	08-Apr-2024	2325319	26	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1
BH321	08-Apr-2024	2325320	24	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1
BH322	08-Apr-2024	2325321	25	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1
3FM Groundwater results Area O Round 2 - May 2024																					
BH318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH319	08-May-2024	2325318	26	10	10	10	10	10	10	10	10	20	10	10	10	10	10	10	10	10	10
BH320	08-May-2024	2325319	27	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1
BH321	08-May-2024	2325320	24	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1
BH322	08-May-2024	2325321	25	10	10	10	10	10	10	10	20	10	10	10	10	10	10	10	10	10	10
1. WHO Health 2011					40		100				300		Total 500	20	100						
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016					7.5=																
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2015 (AA-EQS Other surface water)																					
4. Environmental Protection Agency Interim Guideline Values 2003					40				1		10		10								
6. SoBRA GAC for Assessing Vapour Risks to Human Health From Volatile Contaminants in Groundwater (Commercial GAC)				49,000	4,600				15,000	22,000				810000		86000	20,000				

Sample ID	Sample Date	Chemtest Sample ID	Sample No.	4-Chlorobutene	tert-Butylbenzene	1,2,4-Trinitrobenzene	sec-Butylbenzene	1,3-Dichlorobenzene	4-iso-Propyltoluene	1,4-Dichlorobenzene	n-Butylbenzene	1,2-Dichlorobenzene	1,2-Dibromo-3-chloropropane	1,2,4-Trichlorobenzene	Hexachlorocyclopentadiene	1,2,5-Trichlorobenzene
				µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
3FM Groundwater results Area O March 2023																
BH120	07-Mar-2023	1605673	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5	0.1	0.1	0.2
BH121	07-Mar-2023	1605674	2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5	0.1	0.1	0.2
BH123	07-Mar-2023	1605675	3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5	0.1	0.1	0.2
BH125	07-Mar-2023	1605676	4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5	0.1	0.1	0.2
3FM Surface water results Port Park March 2023																
BH128	07-Mar-2023	1605677	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5	0.1	0.1	0.2
3FM Surface water results March 2023																
SW1	07-Mar-2023	1605678	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5	0.1	0.1	0.2
SW2	07-Mar-2023	1605679	2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5	0.1	0.1	0.2
SW3	07-Mar-2023	1605680	3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5	0.1	0.1	0.2
3FM Groundwater results Area L Round 1 - April 2024																
BH301A	25-Apr-2024	2331743	6	1	5	5	1	2	1	1	1	1	1	2	1	1
BH302	25-Apr-2024	2331742	7	1	1	5	1	2	9	1	1	1	1	2	1	1
BH304	25-Apr-2024	2331741	8	1	1	1	1	2	1	1	1	1	1	1	1	1
BH308	25-Apr-2024	2331740	9	1	1	1	1	2	1	1	1	1	1	1	1	1
BH309	25-Apr-2024	2331739	10	1	1	1	1	2	1	1	1	1	1	1	1	1
BH313	25-Apr-2024	2331738	11	1	1	1	1	2	1	1	1	1	1	1	1	1
3FM Groundwater results Area L Round 2 - May 2024																
BH301B	09-May-2024	2338233	12	1	1	1	1	1	1	1	1	1	1	1	1	1
BH302	08-May-2024	2338234	13	1	1	1	1	1	1	1	1	1	1	1	1	1
BH308	09-May-2024	2338236	14	1	1	1	1	1	1	1	1	1	1	1	1	1
BH309	09-May-2024	2338237	15	1	1	1	1	1	1	1	1	1	1	1	1	1
BH313	08-May-2024	2338238	16	1	1	1	1	1	1	1	1	1	1	1	1	1
BH314	08-May-2024	2338239	17	1	1	1	1	1	1	1	1	1	1	1	1	1
3FM Groundwater results Port Park April 2024																
BH315	08-Apr-2024	2325314	18	1	1	1	1	1	1	1	1	1	1	1	1	1
BH316	08-Apr-2024	2325315	19	1	1	1	1	1	1	1	1	1	1	1	1	1
BH317	08-Apr-2024	2325316	20	1	1	1	1	1	1	1	1	1	1	1	1	1
3FM Groundwater results Port Park May 2024																
BH315	08-May-2024	2338273	21	1	1	1	1	2	1	1	1	1	1	1	1	1
BH316	08-May-2024	2338274	22	1	1	3	1	2	1	1	1	1	1	1	1	1
BH317	08-May-2024	2338275	23	1	1	1	1	2	1	1	1	1	1	1	1	1
3FM Groundwater results Area O Round 1 - April 2024																
BH318	08-Apr-2024	2325317	24	1	1	1	1	1	1	1	1	1	1	1	1	1
BH319	08-Apr-2024	2325318	25	1	1	1	1	1	1	1	1	1	1	1	1	1
BH320	08-Apr-2024	2325319	26	1	1	1	1	1	1	1	1	1	1	1	1	1
BH321	08-Apr-2024	2325320	24	1	1	1	1	1	1	1	1	1	1	1	1	1
BH322	08-Apr-2024	2325321	25	1	1	1	1	1	1	1	1	1	1	1	1	1
3FM Groundwater results Area O Round 2 - May 2024																
BH318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH319	08-May-2024	2325318	26	10	10	10	10	20	10	10	10	10	10	10	10	10
BH320	08-May-2024	2325319	27	1	1	1	1	2	1	1	1	1	1	1	1	1
BH321	08-May-2024	2325320	24	1	1	1	1	2	1	1	1	1	1	1	1	1
BH322	08-May-2024	2325321	25	10	10	10	10	20	10	10	10	10	10	10	10	10
1. WHO Health 2011																
										300		1000	1		0.6	
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016																
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2015 (AA-EQS Other surface water)																
														0.4		0.4
4. Environmental Protection Agency Interim Guideline Values 2003																
												10		0.4	0.1	
6. SoBRA GAC for Assessing Vapour Risks to Human Health From Volatile Contaminants in Groundwater (Commercial GAC)																
						2,200		2,800		460,000		220,000		7,200	230	3,100

Appendix F

Leachability Screening Table

Sample ID	Depth (m bgl)	Sample Date	Chemtest Sample ID	Sample No.	Phosphate as P	Free Cyanide	Total Cyanide	pH	Aluminium	Arsenic	Barium	Beryllium	Boron	Cadmium	Copper	Chromium	
					mg/l	mg/l	mg/l	pH Units	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	
Area O Leachate Results 2023																	
BH121	1.0	15-Nov-2022	1548481	1	0.05	0.05	0.05	8.5	32	2.6	46	1	120	0.11	2.5	0.5	
BH125	1.0	18-Nov-2022	1550635	2	0.05	0.05	0.16	8.4	30	5.6	25	1	120	0.11	3.5	0.71	
BH120	1.0	21-Nov-2022	1551502	3	0.05	0.05	0.05	7.8	44	3.3	42	1	35	0.11	1.1	0.5	
BH123	4.0	22-Nov-2022	1552425	4	0.05	0.05	0.050	8.4	130	8.7	28	1	130	0.11	0.5	0.5	
BH122	2.0	14-Dec-2022	1566614	5	0.05	0.05	0.05	8.1	29	6.6	43	1	160	0.11	1.8	0.5	
Area L Leachate Results 2024																	
BH308	2.0	28-Mar-2024	2321787	6	0.01	20	40	8.8	81	1.0	8.8	0.1	37	0.0	0.9	0.3	
BH301B	2.00	14-Apr-2024	2328744	7	0.01	20	40	8.4	62	0.6	9.7	0.1	84	0.1	0.9	0.3	
BH306	2.00	15-Apr-2024	2333690	8	0.01	20	40	7.4	84	0.3	8.3	0.1	19	0.0	0.8	0.3	
BH304	2.00	05-Apr-2024	2322907	9	0.01	20	40	11.6	1100	0.7	37	0.1	19	0.0	2.4	1.5	
BH313	1.00	12-Apr-2024	2325760	10	0.01	20	40	8.1	51	4.4	17	0.1	18	0.0	0.6	0.4	
Port Park Leachate Results 2024																	
BH315	3.00-3.10	19-Mar-2024	2316737	11	0.0	20	40	8	130	2.1	20	0.1	170	0.0	1.0	0.3	
BH316	4.00-4.10	20-Mar-2024	2316767	12	0.0	20	40	7.6	58	2.0	12	0.1	39	0.0	1.7	0.3	
Area O Leachate Results 2024																	
BH318	4.00-4.10	22-Mar-2024	2317959	13	0.0	20	40	6.5	26	3.4	17	0.1	12	0.0	5.4	0.3	
BH319	2.00-2.10	23-Mar-2024	2320227	14	0.0	20	40	7.4	19	0.5	9	0.1	12	0.0	0.6	0.3	
1. WHO Health 2011										10	700		2400	3	2000	50	
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016									150	7.5						37.5	
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (AA-EQS Other surface water)														0.2			
4. Environmental Protection Agency Interim Guideline Values 2003							10	≥6.5 and ≤9.5	200	10	100		1000	5	30	30	

*, =, +, - sum of values

Sample ID	Depth (m bgl)	Sample Date	Chemtest Sample ID	Sample No.	Chromium (hexavalent)	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc	Aliphatics >C5-C6	Aliphatics >C6-C8	Aliphatics >C8-C10
					µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l			
Area O Leachate Results 2023																
BH121	1.0	15-Nov-2022	1548481	1	0.1	12	0.51	20	0.05	2.4	1.5	1.0	3.0	0.01	0.01	0.1
BH125	1.0	18-Nov-2022	1550635	2	0.34	19	1.5	15	0.05	3.8	1.7	5.1	2.5	0.01	0.01	0.1
BH120	1.0	21-Nov-2022	1551502	3	0.1	8.4	0.72	67	0.05	1.8	2.1	1.1	3.0	0.01	0.01	0.1
BH123	4.0	22-Nov-2022	1552425	4	0.1	16	2.7	31	0.05	3.2	0.5	0.91	2.9	[B] 0.010	[B] 0.010	[B] 0.10
BH122	2.0	14-Dec-2022	1566614	5	0.1	11	4.7	130	0.05	3.9	0.83	2.0	2.5	0.01	0.01	0.1
Area L Leachate Results 2024																
BH308	2.0	28-Mar-2024	2321787	6	7.0	5.5	0.4	1.5	0.0	0.5	0.3	0.6	1.5	0.1	0.1	0.1
BH301B	2.00	14-Apr-2024	2328744	7	7.0	5.5	0.2	5.2	0.0	0.5	0.3	0.8	3.2	0.1	0.1	0.1
BH306	2.00	15-Apr-2024	2333690	8	7.0	240	0.2	1.3	0.0	0.5	0.3	0.6	1.3	0.1	0.1	0.1
BH304	2.00	05-Apr-2024	2322907	9	7.0	130	1.5	1.1	0.0	0.6	1.7	2.3	2.5	0.1	0.1	0.1
BH313	1.00	12-Apr-2024	2325760	10	7.0	9	0.2	4.8	0.0	0.5	0.8	1.0	4.7	0.1	0.1	0.1
Port Park Leachate Results 2024																
BH315	3.00-3.10	19-Mar-2024	2316737	11	7.0	18	1.1	20	0.0	2.7	0.5	0.6	5.9	0.1	0.1	0.1
BH316	4.00-4.10	20-Mar-2024	2316767	12	7.0	27	8.4	7.6	0.0	0.5	0.3	0.6	16	0.1	0.1	0.1
Area O Leachate Results 2024																
BH318	4.00-4.10	22-Mar-2024	2317959	13	7.0	61	6.5	11	0.0	2.1	0.6	2.5	3.2	0.1	0.1	0.1
BH319	2.00-2.10	23-Mar-2024	2320227	14	7.0	110	1.1	6.6	0.0	0.5	0.3	0.6	9.2	0.1	0.1	0.1
1. WHO Health 2011							10		6	70	40					
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016					7.5		7.5		0.75				75			
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (AA-EQS Other surface water)							1.3			8.6						
4. Environmental Protection Agency Interim Guideline Values 2003						200	10	50	1	20			100			

*, =, +, - sum of values

Sample ID	Depth (m bgl)	Sample Date	Chemtest Sample ID	Sample No.	Aliphatics >C10-C12	Aliphatics >C12-C16	Aliphatics >C16-C21	Aliphatics >C21-C35	Aliphatics >C35-C44	Total Aliphatics	Aromatics >C5-C7	Aromatics >C7-C8	Aromatics >EC8-EC10	Aromatics >EC10-EC12	Aromatics >EC12-EC16	Aromatics >EC16-EC21	Aromatics >EC21-EC35
					µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
Area O Leachate Results 2023																	
BH121	1.0	15-Nov-2022	1548481	1	0.1	0.1	0.1	0.1	0.1	1	0.01	0.01	0.1	0.1	0.1	0.1	0.1
BH125	1.0	18-Nov-2022	1550635	2	0.1	0.1	0.1	0.1	0.1	1	0.01	0.01	0.1	0.1	0.1	0.1	0.1
BH120	1.0	21-Nov-2022	1551502	3	0.1	0.1	0.1	0.1	0.1	1	0.01	0.01	0.1	0.1	0.1	0.1	0.1
BH123	4.0	22-Nov-2022	1552425	4	[B] 41	[B] 21	[B] 0.10	[B] 100	[B] 0.10	[B] 170	[B] 0.010	[B] 0.010	[B] 0.10	[B] 55	[B] 67	[B] 0.10	[B] 28
BH122	2.0	14-Dec-2022	1566614	5	0.1	0.1	0.1	0.1	0.1	1	0.01	0.01	0.1	0.1	0.1	0.1	0.1
Area L Leachate Results 2024																	
BH308	2.0	28-Mar-2024	2321787	6	1	1	1	1	1	10	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BH301B	2.00	14-Apr-2024	2328744	7	1	1	1	1	1	10	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BH306	2.00	15-Apr-2024	2333690	8	1	1	1	1	1	10	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BH304	2.00	05-Apr-2024	2322907	9	1	1	1	1	1	10	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BH313	1.00	12-Apr-2024	2325760	10	1	1	1	1	1	10	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Port Park Leachate Results 2024																	
BH315	3.00-3.10	19-Mar-2024	2316737	11	1	1	1	1	1	10	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BH316	4.00-4.10	20-Mar-2024	2316767	12	1	1	1	1	1	10	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Area O Leachate Results 2024																	
BH318	4.00-4.10	22-Mar-2024	2317959	13	1	1	1	1	1	10	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BH319	2.00-2.10	23-Mar-2024	2320227	14	1	1	1	1	1	10	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1. WHO Health 2011																	
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016																	
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (AA-EQS Other surface water)																	
4. Environmental Protection Agency Interim Guideline Values 2003																	

*, =, +, - sum of values

Sample ID	Depth (m bgl)	Sample Date	Chemtest Sample ID	Sample No.	Total Aromatics	TPH (All & Aro)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Coronene	
					µg/l	µg/l											µg/l
Area O Leachate Results 2023																	
BH121	1.0	15-Nov-2022	1548481	1	1	2	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	
BH125	1.0	18-Nov-2022	1550635	2	1	2	2.4	4.8	1.7	0.01	0.01	0.01	0.01	0.01	0.01	-	
BH120	1.0	21-Nov-2022	1551502	3	1	2	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	
BH123	4.0	22-Nov-2022	1552425	4	[B] 150	[B] 320	0.52	0.31	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	
BH122	2.0	14-Dec-2022	1566614	5	1	2	1.5	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	
Area L Leachate Results 2024																	
BH308	2.0	28-Mar-2024	2321787	6	10	10	0.01	0.01	0.03	0.01	0.01	0.01	0.01	0.01	0.01	-	
BH301B	2.00	14-Apr-2024	2328744	7	10	10	0.01	0.01	0.02	0.05	0.07	0.09	0.03	0.05	0.06	-	
BH306	2.00	15-Apr-2024	2333690	8	10	10	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	-	
BH304	2.00	05-Apr-2024	2322907	9	10	10	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	
BH313	1.00	12-Apr-2024	2325760	10	10	10	0.13	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	
Port Park Leachate Results 2024																	
BH315	3.00-3.10	19-Mar-2024	2316737	11	10	10	0.23	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.02	-	
BH316	4.00-4.10	20-Mar-2024	2316767	12	10	10	0.1	0.01	0.02	0.02	0.03	0.04	0.02	0.02	0.02	-	
Area O Leachate Results 2024																	
BH318	4.00-4.10	22-Mar-2024	2317959	13	10	10	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	
BH319	2.00-2.10	23-Mar-2024	2320227	14	10	10	0.05	0.01	0.03	0.07	0.04	0.1	0.06	0.08	0.06	-	
1. WHO Health 2011											0.7						
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016											0.0075						
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (AA-EQS Other surface water)									0.1		0.00017						
4. Environmental Protection Agency Interim Guideline Values 2003									10000		0.01	0.5	0.05	0.05			

*, =, +, - sum of values

Sample ID	Depth (m bgl)	Sample Date	Chemtest Sample ID	Sample No.	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total of 16 PAHs	PCB 28+31	PCB 52	PCB 81	PCB 77
					µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l				
Area O Leachate Results 2023																
BH121	1.0	15-Nov-2022	1548481	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.2	-	-	0.01	0.01
BH125	1.0	18-Nov-2022	1550635	2	0.01	3.4	3.0	0.01	1.6	5.8	2.6	25	-	-	0.01	0.01
BH120	1.0	21-Nov-2022	1551502	3	0.01	0.01	0.01	0.01	1.1	0.01	0.01	0.01	-	-	0.01	0.01
BH123	4.0	22-Nov-2022	1552425	4	0.01	0.01	0.20	0.01	0.74	0.21	0.01	2.0	-	-	0.01	0.01
BH122	2.0	14-Dec-2022	1566614	5	0.01	0.01	0.01	0.01	0.01	0.01	0.01	1.5	-	-	0.01	0.01
Area L Leachate Results 2024																
BH308	2.0	28-Mar-2024	2321787	6	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.2	0.3	0.2	-	-
BH301B	2.00	14-Apr-2024	2328744	7	0.01	0.09	0.01	0.06	0.38	0.04	0.1	1.1	0.3	0.2	-	-
BH306	2.00	15-Apr-2024	2333690	8	0.01	0.03	0.01	0.01	0.05	0.02	0.03	0.2	0.3	0.2	-	-
BH304	2.00	05-Apr-2024	2322907	9	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.2	0.3	0.2	-	-
BH313	1.00	12-Apr-2024	2325760	10	0.01	0.04	0.05	0.01	0.08	0.04	0.02	0.4	0.3	0.2	-	-
Port Park Leachate Results 2024																
BH315	3.00-3.10	19-Mar-2024	2316737	11	0.01	0.06	0.1	0.01	0.76	0.15	0.06	1.5	0.3	0.2	-	-
BH316	4.00-4.10	20-Mar-2024	2316767	12	0.01	0.01	0.04	0.02	0.09	0.08	0.06	0.6	0.3	0.2	-	-
Area O Leachate Results 2024																
BH318	4.00-4.10	22-Mar-2024	2317959	13	0.01	0.01	0.01	0.01	0.07	0.01	0.01	0.2	0.3	0.2	-	-
BH319	2.00-2.10	23-Mar-2024	2320227	14	0.01	0.15	0.04	0.08	0.05	0.14	0.14	1.0	0.3	0.2	-	-
1. WHO Health 2011																
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016																
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (AA-EQS Other surface water)																
4. Environmental Protection Agency Interim Guideline Values 2003																

*, =, +, - sum of values

Sample ID	Depth (m bgl)	Sample Date	Chemtest Sample ID	Sample No.	PCB 101	PCB 105	PCB 114	PCB 118	PCB 123	PCB 118+123	PCB 126	PCB 138	PCB 153	PCB 156	PCB 157	PCB 167	PCB 169
					ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Area O Leachate Results 2023																	
BH121	1.0	15-Nov-2022	1548481	1	-	0.01	0.01	0.01	0.01	-	0.01	-	-	0.01	0.01	0.01	0.01
BH125	1.0	18-Nov-2022	1550635	2	-	0.01	0.01	0.01	0.01	-	0.01	-	-	0.01	0.01	0.01	0.01
BH120	1.0	21-Nov-2022	1551502	3	-	0.01	0.01	0.01	0.01	-	0.01	-	-	0.01	0.01	0.01	0.01
BH123	4.0	22-Nov-2022	1552425	4	-	0.01	0.01	0.01	0.01	-	0.01	-	-	0.01	0.01	0.01	0.01
BH122	2.0	14-Dec-2022	1566614	5	-	0.01	0.01	0.01	0.01	-	0.01	-	-	0.01	0.01	0.01	0.01
Area L Leachate Results 2024																	
BH308	2.0	28-Mar-2024	2321787	6	0.3	-	-	-	-	0.6	-	0.2	0.2	-	-	-	-
BH301B	2.00	14-Apr-2024	2328744	7	0.3	-	-	-	-	0.6	-	0.2	0.2	-	-	-	-
BH306	2.00	15-Apr-2024	2333690	8	0.3	-	-	-	-	0.6	-	0.2	0.2	-	-	-	-
BH304	2.00	05-Apr-2024	2322907	9	0.3	-	-	-	-	0.6	-	0.2	0.2	-	-	-	-
BH313	1.00	12-Apr-2024	2325760	10	0.3	-	-	-	-	0.6	-	0.2	0.2	-	-	-	-
Port Park Leachate Results 2024																	
BH315	3.00-3.10	19-Mar-2024	2316737	11	0.3	-	-	-	-	0.6	-	0.2	0.2	-	-	-	-
BH316	4.00-4.10	20-Mar-2024	2316767	12	0.3	-	-	-	-	0.6	-	0.2	0.2	-	-	-	-
Area O Leachate Results 2024																	
BH318	4.00-4.10	22-Mar-2024	2317959	13	0.3	-	-	-	-	0.6	-	0.2	0.2	-	-	-	-
BH319	2.00-2.10	23-Mar-2024	2320227	14	0.3	-	-	-	-	0.6	-	0.2	0.2	-	-	-	-
1. WHO Health 2011																	
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016																	
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (AA-EQS Other surface water)																	
4. Environmental Protection Agency Interim Guideline Values 2003																	

*, =, +, - sum of values

Sample ID	Depth (m bgl)	Sample Date	Chemtest Sample ID	Sample No.	PCB 180	PCB 189	PCB 7 Total	Total PCBs (12 Congeners)	Resorcinol	Phenol	Cresols	Xylenols	1-Naphthol	Trimethylphenols	Total Phenols
					ug/l	ug/l	ug/l	ug/l							
Area O Leachate Results 2023															
BH121	1.0	15-Nov-2022	1548481	1	-	0.01	-	0.01	-	-	-	-	-	-	-
BH125	1.0	18-Nov-2022	1550635	2	-	0.01	-	0.01	-	-	-	-	-	-	-
BH120	1.0	21-Nov-2022	1551502	3	-	0.01	-	0.01	-	-	-	-	-	-	-
BH123	4.0	22-Nov-2022	1552425	4	-	0.01	-	0.01	-	-	-	-	-	-	-
BH122	2.0	14-Dec-2022	1566614	5	-	0.01	-	0.01	-	-	-	-	-	-	-
Area L Leachate Results 2024															
BH308	2.0	28-Mar-2024	2321787	6	0.2	-	1.0	-	-	0.1	-	-	-	-	-
BH301B	2.00	14-Apr-2024	2328744	7	0.2	-	1.0	-	-	0.1	-	-	-	-	-
BH306	2.00	15-Apr-2024	2333690	8	0.2	-	1.0	-	-	0.1	-	-	-	-	-
BH304	2.00	05-Apr-2024	2322907	9	0.2	-	1.0	-	-	0.1	-	-	-	-	-
BH313	1.00	12-Apr-2024	2325760	10	0.2	-	1.0	-	-	0.1	-	-	-	-	-
Port Park Leachate Results 2024															
BH315	3.00-3.10	19-Mar-2024	2316737	11	0.2	-	1.0	-	-	0.1	-	-	-	-	-
BH316	4.00-4.10	20-Mar-2024	2316767	12	0.2	-	1.0	-	-	0.1	-	-	-	-	-
Area O Leachate Results 2024															
BH318	4.00-4.10	22-Mar-2024	2317959	13	0.2	-	1.0	-	-	0.1	-	-	-	-	-
BH319	2.00-2.10	23-Mar-2024	2320227	14	0.2	-	1.0	-	-	0.1	-	-	-	-	-
1. WHO Health 2011															
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016															
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (AA-EQS Other surface water)															
4. Environmental Protection Agency Interim Guideline Values 2003															0.01

*, =, +, - sum of values

Sample ID	Depth (m bgl)	Sample Date	Chemtest Sample ID	Sample No.	Phenol	2-Chlorophenol	bis(2-Chloroethyl)ether	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichlorobenzene	2-Methylphenol (o-Cresol)	Bis(2-Chloroisopropyl)ether	Hexachloroethane	n-Nitroso-n-dipropylamine	4-Methylphenol	Nitrobenzene	Isophorone
					µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
Area O Leachate Results 2023																	
BH121	1.0	15-Nov-2022	1548481	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
BH125	1.0	18-Nov-2022	1550635	2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
BH120	1.0	21-Nov-2022	1551502	3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
BH123	4.0	22-Nov-2022	1552425	4	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
BH122	2.0	14-Dec-2022	1566614	5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Area L Leachate Results 2024																	
BH308	2.0	28-Mar-2024	2321787	6	0.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH301B	2.00	14-Apr-2024	2328744	7	0.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH306	2.00	15-Apr-2024	2333690	8	0.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH304	2.00	05-Apr-2024	2322907	9	0.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH313	1.00	12-Apr-2024	2325760	10	0.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Port Park Leachate Results 2024																	
BH315	3.00-3.10	19-Mar-2024	2316737	11	0.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH316	4.00-4.10	20-Mar-2024	2316767	12	0.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Area O Leachate Results 2024																	
BH318	4.00-4.10	22-Mar-2024	2317959	13	0.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH319	2.00-2.10	23-Mar-2024	2320227	14	0.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
1. WHO Health 2011									300	1000							
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016																	
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (AA-EQS Other surface water)																	
4. Environmental Protection Agency Interim Guideline Values 2003					0.5	200				10						10	

*, =, +, - sum of values

Sample ID	Depth (m bgl)	Sample Date	Chemtest Sample ID	Sample No.	2-Nitrophenol	2,4-Dinitrophenol	bis(2-Chloroethoxy)methane	2,4-Dichlorophenol	1,2,4-Trichlorobenzene	Naphthalene	4-Chloroaniline	Hexachlorobutadiene	4-Chloro-3-methylphenol	2-Methylnaphthalene	Hexachlorocyclopentadiene	2,4,6-Trichlorophenol	2,4,5-Trichlorophenol
					µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
Area O Leachate Results 2023																	
BH121	1.0	15-Nov-2022	1548481	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
BH125	1.0	18-Nov-2022	1550635	2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
BH120	1.0	21-Nov-2022	1551502	3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
BH123	4.0	22-Nov-2022	1552425	4	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
BH122	2.0	14-Dec-2022	1566614	5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Area L Leachate Results 2024																	
BH308	2.0	28-Mar-2024	2321787	6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH301B	2.00	14-Apr-2024	2328744	7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH306	2.00	15-Apr-2024	2333690	8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH304	2.00	05-Apr-2024	2322907	9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH313	1.00	12-Apr-2024	2325760	10	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Port Park Leachate Results 2024																	
BH315	3.00-3.10	19-Mar-2024	2316737	11	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH316	4.00-4.10	20-Mar-2024	2316767	12	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Area O Leachate Results 2024																	
BH318	4.00-4.10	22-Mar-2024	2317959	13	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH319	2.00-2.10	23-Mar-2024	2320227	14	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
1. WHO Health 2011												0.6				200	
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016																	
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (AA-EQS Other surface water)									0.4	2							
4. Environmental Protection Agency Interim Guideline Values 2003										1							200

*, =, +, - sum of values

Sample ID	Depth (m bgl)	Sample Date	Chemtest Sample ID	Sample No.	2-Chloronaphthalene	2-Nitroaniline	Acenaphthylene	Dimethyl phthalate	2,6-Dinitrotoluene	Acenaphthene	3-Nitroaniline	Dibenzofuran	4-Chlorophenylphenylether	2,4-Dinitrotoluene	Fluorene	Diethyl phthalate	4-Nitroaniline
					µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
Area O Leachate Results 2023																	
BH121	1.0	15-Nov-2022	1548481	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
BH125	1.0	18-Nov-2022	1550635	2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
BH120	1.0	21-Nov-2022	1551502	3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
BH123	4.0	22-Nov-2022	1552425	4	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
BH122	2.0	14-Dec-2022	1566614	5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Area L Leachate Results 2024																	
BH308	2.0	28-Mar-2024	2321787	6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH301B	2.00	14-Apr-2024	2328744	7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH306	2.00	15-Apr-2024	2333690	8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH304	2.00	05-Apr-2024	2322907	9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH313	1.00	12-Apr-2024	2325760	10	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Port Park Leachate Results 2024																	
BH315	3.00-3.10	19-Mar-2024	2316737	11	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH316	4.00-4.10	20-Mar-2024	2316767	12	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Area O Leachate Results 2024																	
BH318	4.00-4.10	22-Mar-2024	2317959	13	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH319	2.00-2.10	23-Mar-2024	2320227	14	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
1. WHO Health 2011																	
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016																	
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (AA-EQS Other surface water)																	
4. Environmental Protection Agency Interim Guideline Values 2003																	

*, =, +, - sum of values

Sample ID	Depth (m bgl)	Sample Date	Chemtest Sample ID	Sample No.	2-Methyl-4,6-Dinitrophenol	Azobenzene	4-Bromophenylphenylether	Hexachlorobenzene	Pentachlorophenol	Phenanthrene	Anthracene	Carbazole	n-Dibutyl phthalate	Fluoranthene	Pyrene	Butylbenzyl phthalate	Benzof[<i>a</i>]anthracene
					µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
Area O Leachate Results 2023																	
BH121	1.0	15-Nov-2022	1548481	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
BH125	1.0	18-Nov-2022	1550635	2	0.05	0.05	0.05	0.05	0.05	5.3	1.2	1.7	0.05	2.7	2.5	0.05	0.05
BH120	1.0	21-Nov-2022	1551502	3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
BH123	4.0	22-Nov-2022	1552425	4	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
BH122	2.0	14-Dec-2022	1566614	5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Area L Leachate Results 2024																	
BH308	2.0	28-Mar-2024	2321787	6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH301B	2.00	14-Apr-2024	2328744	7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH306	2.00	15-Apr-2024	2333690	8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH304	2.00	05-Apr-2024	2322907	9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH313	1.00	12-Apr-2024	2325760	10	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Port Park Leachate Results 2024																	
BH315	3.00-3.10	19-Mar-2024	2316737	11	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH316	4.00-4.10	20-Mar-2024	2316767	12	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Area O Leachate Results 2024																	
BH318	4.00-4.10	22-Mar-2024	2317959	13	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH319	2.00-2.10	23-Mar-2024	2320227	14	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
1. WHO Health 2011									9								
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016																	
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (AA-EQS Other surface water)									0.4		0.1			0.0063			
4. Environmental Protection Agency Interim Guideline Values 2003								0.03	2		10000		2	1			

*, =, +, - sum of values

Sample ID	Depth (m bgl)	Sample Date	Chemtest Sample ID	Sample No.	Chrysene	bis(2-Ethylhexyl) phthalate	n-Diethyl phthalate	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[a]pyrene	Indeno[1,2,3-c,d]Pyrene	Dibenz[a,h]Anthracene	Benzo[ghi,perylene]		Dichlorodifluoromethane	Chloromethane	Vinyl chloride	
																		µg/l
Area O Leachate Results 2023																		
BH121	1.0	15-Nov-2022	1548481	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05		0.1	0.1	0.1	
BH125	1.0	18-Nov-2022	1550635	2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05		0.1	0.1	0.1	
BH120	1.0	21-Nov-2022	1551502	3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05		0.1	0.1	0.1	
BH123	4.0	22-Nov-2022	1552425	4	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05		[B] 0.10	[B] 0.10	[B] 0.10	
BH122	2.0	14-Dec-2022	1566614	5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05		0.1	0.1	0.1	
Area L Leachate Results 2024																		
BH308	2.0	28-Mar-2024	2321787	6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	
BH301B	2.00	14-Apr-2024	2328744	7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	
BH306	2.00	15-Apr-2024	2333690	8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	
BH304	2.00	05-Apr-2024	2322907	9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	
BH313	1.00	12-Apr-2024	2325760	10	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	
Port Park Leachate Results 2024																		
BH315	3.00-3.10	19-Mar-2024	2316737	11	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	
BH316	4.00-4.10	20-Mar-2024	2316767	12	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	
Area O Leachate Results 2024																		
BH318	4.00-4.10	22-Mar-2024	2317959	13	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	
BH319	2.00-2.10	23-Mar-2024	2320227	14	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	
1. WHO Health 2011										0.7							0.3	
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016						6				0.0075								0.375
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (AA-EQS Other surface water)						1.3				0.00017								
4. Environmental Protection Agency Interim Guideline Values 2003						8		0.5	0.05	0.01	0.05		0.05					

*, =, +, - sum of values

Sample ID	Depth (m bgl)	Sample Date	Chemtest Sample ID	Sample No.	Bromomethane	Chloroethane	Trichlorofluoromethane	1,1-Dichloroethane	Dichloromethane	1,1-Dichloroethane	cis-1,2-Dichloroethene	Bromochloromethane	Trichloromethane	Chloroform	1,1,1-Trichloroethane	Carbon tetrachloride	1,1-Dichloropropene
					µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
Area O Leachate Results 2023																	
BH121	1.0	15-Nov-2022	1548481	1	2	0.2	0.1	0.1	50	0.1	0.1	0.5	0.1		0.1		0.1
BH125	1.0	18-Nov-2022	1550635	2	2	0.2	0.1	0.1	50	0.1	0.1	0.5	0.1		0.1		0.1
BH120	1.0	21-Nov-2022	1551502	3	2	0.2	0.1	0.1	50	0.1	0.1	0.5	0.1		0.1		0.1
BH123	4.0	22-Nov-2022	1552425	4	[B] 2.0	[B] 0.20	[B] 0.10	[B] 0.10	[B] 50	[B] 0.10	[B] 0.10	[B] 0.50	0.1		[B] 0.10		[B] 0.10
BH122	2.0	14-Dec-2022	1566614	5	2	0.2	0.1	0.1	50	0.1	0.1	0.5	0.1		0.1		0.1
Area L Leachate Results 2024																	
BH308	2.0	28-Mar-2024	2321787	6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH301B	2.00	14-Apr-2024	2328744	7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH306	2.00	15-Apr-2024	2333690	8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH304	2.00	05-Apr-2024	2322907	9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH313	1.00	12-Apr-2024	2325760	10	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Port Park Leachate Results 2024																	
BH315	3.00-3.10	19-Mar-2024	2316737	11	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH316	4.00-4.10	20-Mar-2024	2316767	12	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Area O Leachate Results 2024																	
BH318	4.00-4.10	22-Mar-2024	2317959	13	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH319	2.00-2.10	23-Mar-2024	2320227	14	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
1. WHO Health 2011									20		50			300		4	
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016									15		0.375						
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (AA-EQS Other surface water)									20							12	
4. Environmental Protection Agency Interim Guideline Values 2003									10					12	500		

*, =, +, - sum of values

Sample ID	Depth (m bgl)	Sample Date	Chemtest Sample ID	Sample No.	Benzene	1,2-Dichloroethane	Trichloroethane	1,2-Dichloropropane	Dibromomethane	Bromodichloromethane	cis-1,3-Dichloropropene	Toluene	trans-1,3-Dichloropropene	1,1,2-Trichloroethane	Tetrachloroethene	1,3-Dichloropropane	Dibromochloromethane	
					µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
Area O Leachate Results 2023																		
BH121	1.0	15-Nov-2022	1548481	1	0.1	0.2	1.3	0.1	0.1	0.5	1	0.1	1	1	0.1	0.2	1	
BH125	1.0	18-Nov-2022	1550635	2	0.1	0.2	0.1	0.1	0.1	0.5	1	0.1	1	1	0.1	0.2	1	
BH120	1.0	21-Nov-2022	1551502	3	0.1	0.2	0.1	0.1	0.1	0.5	1	0.1	1	1	0.1	0.2	1	
BH123	4.0	22-Nov-2022	1552425	4	[B] 0.10	[B] 0.20	[B] 0.10	[B] 0.10	[B] 0.10	[B] 0.50	[B] 1.0	[B] 0.10	[B] 1.0	[B] 1.0	[B] 0.10	[B] 0.20	[B] 1.0	
BH122	2.0	14-Dec-2022	1566614	5	0.1	0.2	0.1	0.1	0.1	0.5	1	0.1	1	1	0.1	0.2	1	
Area L Leachate Results 2024																		
BH308	2.0	28-Mar-2024	2321787	6	1.0	1.0	1.0	1.0	1.0	4.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
BH301B	2.00	14-Apr-2024	2328744	7	1.0	1.0	1.0	1.0	1.0	4.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
BH306	2.00	15-Apr-2024	2333690	8	1.0	1.0	1.0	1.0	1.0	4.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
BH304	2.00	05-Apr-2024	2322907	9	1.0	1.0	1.0	1.0	1.0	4.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
BH313	1.00	12-Apr-2024	2325760	10	1.0	1.0	1.0	1.0	1.0	4.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Port Park Leachate Results 2024																		
BH315	3.00-3.10	19-Mar-2024	2316737	11	1.0	1.0	1.0	1.0	1.0	4.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
BH316	4.00-4.10	20-Mar-2024	2316767	12	1.0	1.0	1.0	1.0	1.0	4.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Area O Leachate Results 2024																		
BH318	4.00-4.10	22-Mar-2024	2317959	13	1.0	1.0	1.0	1.0	1.0	4.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
BH319	2.00-2.10	23-Mar-2024	2320227	14	1.0	1.0	1.0	1.0	1.0	4.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
1. WHO Health 2011					10	30	20	40		60		700	20		40		100	
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016					0.75	2.25	7.5=					525				7.5=		
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (AA-EQS Other surface water)					8	10												
4. Environmental Protection Agency Interim Guideline Values 2003					1	3	70					10			40			

*, =, +, - sum of values

Sample ID	Depth (m bgl)	Sample Date	Chemtest Sample ID	Sample No.	1,2-Dibromoethane	Chlorobenzene	1,1,1,2-Tetrachloroethane	Ethylbenzene	m,p-Xylene	o-Xylene	Styrene	Tribromomethane	Isopropylbenzene	Bromoform	Bromobenzene	1,2,3-Trichloropropane	n-Propylbenzene
					µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
Area O Leachate Results 2023																	
BH121	1.0	15-Nov-2022	1548481	1	0.5	0.1	0.2	0.1	0.1	0.1	0.1	1	0.1		0.1	5	0.1
BH125	1.0	18-Nov-2022	1550635	2	0.5	0.1	0.2	0.1	0.1	0.1	0.1	1	0.1		0.1	5	0.1
BH120	1.0	21-Nov-2022	1551502	3	0.5	0.1	0.2	0.1	0.1	0.1	0.1	1	0.1		0.1	5	0.1
BH123	4.0	22-Nov-2022	1552425	4	[B] 0.50	[B] 39	[B] 0.20	[B] 0.10	[B] 0.10	[B] 0.10	[B] 0.10	1	[B] 0.10		[B] 0.10	[B] 5.0	[B] 0.10
BH122	2.0	14-Dec-2022	1566614	5	0.5	0.1	0.2	0.1	0.1	0.1	0.1	1	0.1		0.1	5	0.1
Area L Leachate Results 2024																	
BH308	2.0	28-Mar-2024	2321787	6	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH301B	2.00	14-Apr-2024	2328744	7	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH306	2.00	15-Apr-2024	2333690	8	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH304	2.00	05-Apr-2024	2322907	9	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH313	1.00	12-Apr-2024	2325760	10	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Port Park Leachate Results 2024																	
BH315	3.00-3.10	19-Mar-2024	2316737	11	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH316	4.00-4.10	20-Mar-2024	2316767	12	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Area O Leachate Results 2024																	
BH318	4.00-4.10	22-Mar-2024	2317959	13	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BH319	2.00-2.10	23-Mar-2024	2320227	14	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
1. WHO Health 2011								300	Total 500	20				100			
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016																	
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (AA-EQS Other surface water)																	
4. Environmental Protection Agency Interim Guideline Values 2003						1		10	10								

*, =, +, - sum of values

Sample ID	Depth (m bgl)	Sample Date	Chemtest Sample ID	Sample No.	2-Chlorotoluene	1,3,5-Trimethylbenzene	4-Chlorotoluene	tert-Butylbenzene	1,2,4-Trimethylbenzene	sec-Butylbenzene	1,3-Dichlorobenzene	4-iso-Propyltoluene	1,4-Dichlorobenzene	n-Butylbenzene	1,2-Dichlorobenzene	1,2-Dibromo-3-chloropropane	1,2,4-Trichlorobenzene
					µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
Area O Leachate Results 2023																	
BH121	1.0	15-Nov-2022	1548481	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5	0.1
BH125	1.0	18-Nov-2022	1550635	2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5	0.1
BH120	1.0	21-Nov-2022	1551502	3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5	0.1
BH123	4.0	22-Nov-2022	1552425	4	[B] 0.10	[B] 0.10	[B] 0.10	[B] 0.10	[B] 0.10	[B] 0.10	[B] 0.10	[B] 0.10	[B] 0.10	[B] 0.10	[B] 0.10	[B] 5.0	[B] 0.10
BH122	2.0	14-Dec-2022	1566614	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5	0.1
Area L Leachate Results 2024																	
BH308	2.0	28-Mar-2024	2321787	6	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
BH301B	2.00	14-Apr-2024	2328744	7	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
BH306	2.00	15-Apr-2024	2333690	8	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
BH304	2.00	05-Apr-2024	2322907	9	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
BH313	1.00	12-Apr-2024	2325760	10	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
Port Park Leachate Results 2024																	
BH315	3.00-3.10	19-Mar-2024	2316737	11	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
BH316	4.00-4.10	20-Mar-2024	2316767	12	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
Area O Leachate Results 2024																	
BH318	4.00-4.10	22-Mar-2024	2317959	13	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
BH319	2.00-2.10	23-Mar-2024	2320227	14	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
1. WHO Health 2011													300		1000	1	
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016																	
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (AA-EQS Other surface water)																	0.4
4. Environmental Protection Agency Interim Guideline Values 2003															10		0.4

*, =, +, - sum of values

Sample ID	Depth (m bgl)	Sample Date	Chemtest Sample ID	Sample No.	Hexachlorobutadiene	1,2,3-Trichlorobenzene
					µg/l	µg/l
Area O Leachate Results 2023						
BH121	1.0	15-Nov-2022	1548481	1	0.1	0.2
BH125	1.0	18-Nov-2022	1550635	2	0.1	0.2
BH120	1.0	21-Nov-2022	1551502	3	0.1	0.2
BH123	4.0	22-Nov-2022	1552425	4	[B] 0.10	[B] 0.20
BH122	2.0	14-Dec-2022	1566614	5	0.1	0.2
Area L Leachate Results 2024						
BH308	2.0	28-Mar-2024	2321787	6	1.0	1.0
BH301B	2.00	14-Apr-2024	2328744	7	1.0	1.0
BH306	2.00	15-Apr-2024	2333690	8	1.0	1.0
BH304	2.00	05-Apr-2024	2322907	9	1.0	1.0
BH313	1.00	12-Apr-2024	2325760	10	1.0	1.0
Port Park Leachate Results 2024						
BH315	3.00-3.10	19-Mar-2024	2316737	11	1.0	1.0
BH316	4.00-4.10	20-Mar-2024	2316767	12	1.0	1.0
Area O Leachate Results 2024						
BH318	4.00-4.10	22-Mar-2024	2317959	13	1.0	1.0
BH319	2.00-2.10	23-Mar-2024	2320227	14	1.0	1.0
1. WHO Health 2011					0.6	
2. European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016						
3. European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (AA-EQS Other surface water)						0.4
4. Environmental Protection Agency Interim Guideline Values 2003					0.1	

*, =, +, - sum of values

Appendix G

Ground Gas Screening Tables

Borehole location	Week Number	Date	Weather	Atmospheric pressure (mb)	Borehole flow rate (l/hr)	Methane	Carbon dioxide	Min. concentration of Oxygen (%vol/vol)	Ground water level (m)
						Max. concentration (%vol/vol)	Max. concentration (%vol/vol)		
BH112 MADE GROUND	Week 1	16/03/2023	Dry	994	0.2	0.0	6.6	12.5	DRY
	Week 2	14/04/2023	Dry	1000	0.1	0.0	0.1	20.8	DRY
	Week 3	08/08/2023	Dry; low tide	1015	0.1	0.1	4.0	15.8	3.00
	Week 4	09/08/2023	Dry; high tide	1017	0.1	0.1	0.1	20.7	3.00
BH120 SANDS & GRAVELS	Week 1	16/03/2023	Dry	994	-4.7	49.5	6.0	3.2	4.02
	Week 2	14/04/2023	Dry	1000	10.8	59.4	7.8	4.5	4.64
	Week 3	08/08/2023	Dry; low tide	1015	4.8	33.7	12.8	5.5	4.18
	Week 4	09/08/2023	Dry; high tide	1017	5.5	40.1	14.6	3.8	4.40
BH121 MADE GROUND	Week 1	16/03/2023	Dry	994	0.1	0.0	1.3	14.7	3.93
	Week 2	14/04/2023	Dry	1000	0.1	0.0	2.1	14.8	4.1
	Week 3	08/08/2023	Dry; low tide	1015	0.3	0.0	1.9	13.0	3.72
	Week 4	09/08/2023	Dry; high tide	1017	0.3	0.0	1.9	14.9	3.72
BH123 SANDS	Week 1	16/03/2023	Dry	994	-15.7	6.2	2.1	17.7	3.8
	Week 2	14/04/2023	Dry	1000	5.7	2.9	1.3	18.7	3.75
	Week 3	08/08/2023	NO ACCESS						
	Week 4	09/08/2023	NO ACCESS						
BH124 MADE GROUND	Week 1	16/03/2023	Dry	994	0.2	45.9	11.3	0.1	0.95
	Week 2	14/04/2023	Dry	1000	0.1	6.9	5.6	0.1	0.98
	Week 3	08/08/2023	Dry; low tide	1015	0.1	10.0	3.3	0.1	0.7
	Week 4	09/08/2023	Dry; high tide	1017	3.1	0.1	4.0	0.3	0.87

BH125 MADE GROUND	Week 1	16/03/2023	Dry	994	0.3	14.4	16.4	0.3	4.28
	Week 2	14/04/2023	Dry	1000	5.2	0.0	0.4	20.1	4.42
	Week 3	08/08/2023	Dry; low tide	1015	0.2	12.0	14.4	6.6	4.32
	Week 4	09/08/2023	Dry; high tide	1017	0.1	1.1	11.5	5.7	4.28
BH102 MADE GROUND	Week 1	16/03/2023	Dry	994	0.1	0.0	0.3	20.9	2.04
	Week 2	14/04/2023	Dry	1000	0.1	0.0	0.1	20.7	DRY
	Week 3	08/08/2023	Dry; low tide	1015	0.1	0.1	0.1	21.0	DRY
	Week 4	09/08/2023	Dry; high tide	1017	0.1	0.1	1.0	18.1	DRY
BH103 MADE GROUND	Week 1	16/03/2023	NO ACCESS						
	Week 2	14/04/2023	NO ACCESS						
	Week 3	08/08/2023	NO ACCESS						
	Week 4	09/08/2023	NO ACCESS						
BH105 MADE GROUND	Week 1	16/03/2023	NO ACCESS						
	Week 2	14/04/2023	NO ACCESS						
	Week 3	08/08/2023	NO ACCESS						
	Week 4	09/08/2023	NO ACCESS						
BH126 MADE GROUND	Week 1	16/03/2023	NO ACCESS						
	Week 2	14/04/2023	NO ACCESS						
	Week 3	08/08/2023	NO ACCESS						
	Week 4	09/08/2023	NO ACCESS						
BH127 MADE GROUND	Week 1	16/03/2023	NO ACCESS						
	Week 2	14/04/2023	NO ACCESS						
	Week 3	08/08/2023	NO ACCESS						
	Week 4	09/08/2023	NO ACCESS						
BH128 MADE	Week 1	16/03/2023	NO ACCESS						
	Week 2	14/04/2023	NO ACCESS						

MADE GROUND	Week 3	08/08/2023	NO ACCESS						
	Week 4	09/08/2023	NO ACCESS						
BH301B MADE GROUND	Round 1	06/06/2024	Dry	1017	0.1	0.1	0.1	20.9	2.54
	Round 2	13/06/2024	Heavy rain	1001	0.1	0.1	0.1	20.4	2.85
	Round 3	14/06/2024	Dry	991	0.1	0.1	0.1	20.0	2.73
	Round 4	18/06/2024	Dry	1019	0	0.1	1.5	17.6	2.82
BH302 MADE GROUND	Round 1	06/06/2024	Dry	1017	0.2	0.1	0.1	20.4	1.85
	Round 2	13/06/2024	Heavy rain	1002	0.1	0.2	0.3	20.6	2.37
	Round 3	14/06/2024	Dry	991	0.1	0.1	0.1	20.0	1.85
	Round 4	18/06/2024	Dry	1019	0.1	0.1	0.3	20.0	2.23
BH303 MADE GROUND	Round 1	06/06/2024	Dry	1017	0.1	0.1	0.1	21.7	DRY
	Round 2	13/06/2024	Heavy rain	1001	0.1	0.1	0.1	20.9	DRY
	Round 3	14/06/2024	Dry	991	0.1	0.1	0.1	21.0	Dry
	Round 4	18/06/2024	Dry	1019	0.1	0.1	0.7	19.1	DRY
BH304 MADE GROUND	Round 1	06/06/2024	Dry	1017	0.1	0.1	0.1	21.7	3.19
	Round 2	13/06/2024	Heavy rain	999	0.1	0.1	0.6	19.4	3.14
	Round 3	14/06/2024	Dry	991	0.1	0.1	0.1	21.3	3.25
	Round 4	18/06/2024	Dry	1019	0.1	0.1	0.6	19.3	3.04
BH305 MADE GROUND	Round 1	06/06/2024	Could not access						
	Round 2	13/06/2024	Could not access						
	Round 3	14/06/2024	Could not access						
	Round 4	18/06/2024	Could not access						
BH306 MADE GROUND	Round 1	06/06/2024	Dry	1017	0.2	0.1	4.8	13.5	2.62
	Round 2	13/06/2024	Heavy rain	999	0.1	0.1	0.5	20.3	DRY
	Round 3	14/06/2024	Dry	991	0.1	0.1	4.3	13.7	2.52
	Round 4	18/06/2024	Dry	1019	0.2	0.1	4.8	13.0	DRY
BH307 MADE	Round 1	06/06/2024	Dry	1017	0.1	0.1	3.1	15.1	Dry
	Round 2	13/06/2024	Heavy rain	997	0.1	0.1	4.3	13.6	DRY

MADE GROUND	Round 3	14/06/2024	Could not access						
	Round 4	18/06/2024	Dry	1019	0.1	0.1	2.4	16.7	DRY
BH308 SANDS & GRAVELS	Round 1	06/06/2024	Dry	1017	0.1	0.1	5.7	11.2	2.92
	Round 2	13/06/2024	Heavy rain	997	0.1	0.1	0.6	20.3	3.55
	Round 3	14/06/2024	Dry	991	0.1	0.1	5.6	13.2	2.87
	Round 4	18/06/2024	Dry	1019	0.1	0.1	6.3	11.8	3.2
BH309 SANDS & GRAVELS	Round 1	06/06/2024	Dry	1017	0.2	0.1	2.9	16.7	3.28
	Round 2	13/06/2024	Heavy rain	997	0.1	0.1	0.1	20.7	3.56
	Round 3	14/06/2024	Could not access						
	Round 4	18/06/2024	Dry	1019	0.1	0.1	1.3	18.8	3.4
BH310 MADE GROUND	Round 1	06/06/2024	Dry	1017	0.1	0.1	0.2	19.8	3.45
	Round 2	13/06/2024	Heavy rain	997	0.1	0.1	0.4	20.4	3.44
	Round 3	14/06/2024	Could not access						
	Round 4	18/06/2024	Dry	1019	0.2	0.1	1.2	17.9	3.4
BH311 MADE GROUND	Round 1	06/06/2024	Dry	1017	Borehole blocked				
	Round 2	13/06/2024	Heavy rain	997	Borehole blocked				
	Round 3	14/06/2024	Dry	991	Borehole blocked				
	Round 4	18/06/2024	Dry	1019	Borehole blocked				
BH312	Round 1	No Install							
	Round 2								
	Round 3								
	Round 4								
BH313 SANDS & GRAVELS	Round 1	06/06/2024	Dry	1017	0.2	0.1	0.2	20.7	2.97
	Round 2	13/06/2024	Heavy rain	998	0.1	0.1	0.3	20.3	3.72
	Round 3	14/06/2024	Dry	991	0.1	0.1	0.2	20.7	3.9
	Round 4	18/06/2024	Dry	1019	0.1	0.1	0.4	20.0	3.7
BH314 MADE	Week 1	06/06/2024	Dry	1017	0.2	0.1	0.1	20.9	3.27
	Week 2	13/06/2024	Could not access						

MADE GROUND	Week 3	14/06/2024	Dry	991	0.1	0.1	0.1	21.1	3.9
	Week 4	18/06/2024	Could not access						
BH318 MADE GROUND	Week 1	18/06/2024	Dry	1018	0.2	0.3	0.2	20.8	3.33
	Week 2								
	Week 3								
	Week 4								
BH319 MADE GROUND	Week 1	18/06/2024	Dry	1018	0.1	0.1	0.5	20.7	2.58
	Week 2								
	Week 3								
	Week 4								

Maximum concentration overall site (%vol/vol)
made ground = 10.8 59.4 16.4

GSV = 6.4152 (CS4)

Under Wilson & Card this falls within a **Characteristic Situation 4**

Borehole location	Week Number	Date	Weather	Atmospheric pressure (mb)	Borehole flow rate (l/hr)	Methane	Carbon dioxide	Min. concentration of Oxygen (%vol/vol)	Ground water level (m)
						Max. concentration (%vol/vol)	Max. concentration (%vol/vol)		
BH301B MADE GROUND	Round 1	06/06/2024	Dry	1017	0.1	0.1	0.1	20.9	2.54
	Round 2	13/06/2024	Heavy rain	1001	0.1	0.1	0.1	20.4	2.85
	Round 3	14/06/2024	Dry	991	0.1	0.1	0.1	20.0	2.73
	Round 4	18/06/2024	Dry	1019	0	0.1	1.5	17.6	2.82
BH302 MADE GROUND	Round 1	06/06/2024	Dry	1017	0.2	0.1	0.1	20.4	1.85
	Round 2	13/06/2024	Heavy rain	1002	0.1	0.2	0.3	20.6	2.37
	Round 3	14/06/2024	Dry	991	0.1	0.1	0.1	20.0	1.85
	Round 4	18/06/2024	Dry	1019	0.1	0.1	0.3	20.0	2.23
BH303 MADE GROUND	Round 1	06/06/2024	Dry	1017	0.1	0.1	0.1	21.7	DRY
	Round 2	13/06/2024	Heavy rain	1001	0.1	0.1	0.1	20.9	DRY
	Round 3	14/06/2024	Dry	991	0.1	0.1	0.1	21.0	Dry
	Round 4	18/06/2024	Dry	1019	0.1	0.1	0.7	19.1	DRY
BH304 MADE GROUND	Round 1	06/06/2024	Dry	1017	0.1	0.1	0.1	21.7	3.19
	Round 2	13/06/2024	Heavy rain	999	0.1	0.1	0.6	19.4	3.14
	Round 3	14/06/2024	Dry	991	0.1	0.1	0.1	21.3	3.25
	Round 4	18/06/2024	Dry	1019	0.1	0.1	0.6	19.3	3.04
BH305 MADE GROUND	Round 1	06/06/2024	Could not access						
	Round 2	13/06/2024	Could not access						
	Round 3	14/06/2024	Could not access						
	Round 4	18/06/2024	Could not access						
BH306 MADE GROUND	Round 1	06/06/2024	Dry	1017	0.2	0.1	4.8	13.5	2.62
	Round 2	13/06/2024	Heavy rain	999	0.1	0.1	0.5	20.3	DRY
	Round 3	14/06/2024	Dry	991	0.1	0.1	4.3	13.7	2.52
	Round 4	18/06/2024	Dry	1019	0.2	0.1	4.8	13.0	DRY

BH307 MADE GROUND	Round 1	06/06/2024	Dry	1017	0.1	0.1	3.1	15.1	Dry
	Round 2	13/06/2024	Heavy rain	997	0.1	0.1	4.3	13.6	DRY
	Round 3	14/06/2024	Could not access						
	Round 4	18/06/2024	Dry	1019	0.1	0.1	2.4	16.7	DRY
BH308 SANDS & GRAVELS	Round 1	06/06/2024	Dry	1017	0.1	0.1	5.7	11.2	2.92
	Round 2	13/06/2024	Heavy rain	997	0.1	0.1	0.6	20.3	3.55
	Round 3	14/06/2024	Dry	991	0.1	0.1	5.6	13.2	2.87
	Round 4	18/06/2024	Dry	1019	0.1	0.1	6.3	11.8	3.2
BH309 SANDS & GRAVELS	Round 1	06/06/2024	Dry	1017	0.2	0.1	2.9	16.7	3.28
	Round 2	13/06/2024	Heavy rain	997	0.1	0.1	0.1	20.7	3.56
	Round 3	14/06/2024	Could not access						
	Round 4	18/06/2024	Dry	1019	0.1	0.1	1.3	18.8	3.4
BH310 MADE GROUND	Round 1	06/06/2024	Dry	1017	0.1	0.1	0.2	19.8	3.45
	Round 2	13/06/2024	Heavy rain	997	0.1	0.1	0.4	20.4	3.44
	Round 3	14/06/2024	Could not access						
	Round 4	18/06/2024	Dry	1019	0.2	0.1	1.2	17.9	3.4
BH311 MADE GROUND	Round 1	06/06/2024	Dry	1017	Borehole blocked				
	Round 2	13/06/2024	Heavy rain	997	Borehole blocked				
	Round 3	14/06/2024	Dry	991	Borehole blocked				
	Round 4	18/06/2024	Dry	1019	Borehole blocked				
BH312	Round 1	No Install							
	Round 2								
	Round 3								
	Round 4								
BH313 SANDS & GRAVELS	Round 1	06/06/2024	Dry	1017	0.2	0.1	0.2	20.7	2.97
	Round 2	13/06/2024	Heavy rain	998	0.1	0.1	0.3	20.3	3.72
	Round 3	14/06/2024	Dry	991	0.1	0.1	0.2	20.7	3.9
	Round 4	18/06/2024	Dry	1019	0.1	0.1	0.4	20.0	3.7

BH314 MADE GROUND	Week 1	06/06/2024	Dry	1017	0.2	0.1	0.1	20.9	3.27
	Week 2	13/06/2024	Could not access						
	Week 3	14/06/2024	Dry	991	0.1	0.1	0.1	21.1	3.9
	Week 4	18/06/2024	Could not access						


Maximum concentration overall site (%vol/vol)

= 0.2 0.2 6.3

GSV = 0.0126 (CS2)

Under Wilson & Card this falls within a **Characteristic Situation 2, due to CO2 levels recorded as >5% over three rounds**

Borehole location	Week Number	Date	Weather	Atmospheric pressure (mb)	Borehole flow rate (l/hr)	Methane	Carbon dioxide	Min. concentration of Oxygen (%vol/vol)	Ground water level (m)
						Max. concentration (%vol/vol)	Max. concentration (%vol/vol)		
BH120 SANDS & GRAVELS	Week 1	16/03/2023	Dry	994	-4.7	49.5	6.0	3.2	4.02
	Week 2	14/04/2023	Dry	1000	10.8	59.4	7.8	4.5	4.64
	Week 3	08/08/2023	Dry; low tide	1015	4.8	33.7	12.8	5.5	4.18
	Week 4	09/08/2023	Dry; high tide	1017	5.5	40.1	14.6	3.8	4.40
BH121 MADE GROUND	Week 1	16/03/2023	Dry	994	0.1	0.0	1.3	14.7	3.93
	Week 2	14/04/2023	Dry	1000	0.1	0.0	2.1	14.8	4.1
	Week 3	08/08/2023	Dry; low tide	1015	0.3	0.0	1.9	13.0	3.72
	Week 4	09/08/2023	Dry; high tide	1017	0.3	0.0	1.9	14.9	3.72
BH123 SANDS	Week 1	16/03/2023	Dry	994	-15.7	6.2	2.1	17.7	3.8
	Week 2	14/04/2023	Dry	1000	5.7	2.9	1.3	18.7	3.75
	Week 3	08/08/2023	NO ACCESS						
	Week 4	09/08/2023	NO ACCESS						
BH124 MADE GROUND	Week 1	16/03/2023	Dry	994	0.2	45.9	11.3	0.1	0.95
	Week 2	14/04/2023	Dry	1000	0.1	6.9	5.6	0.1	0.98
	Week 3	08/08/2023	Dry; low tide	1015	0.1	10.0	3.3	0.1	0.7
	Week 4	09/08/2023	Dry; high tide	1017	3.1	0.1	4.0	0.3	0.87
BH125 MADE GROUND	Week 1	16/03/2023	Dry	994	0.3	14.4	16.4	0.3	4.28
	Week 2	14/04/2023	Dry	1000	5.2	0.0	0.4	20.1	4.42
	Week 3	08/08/2023	Dry; low tide	1015	0.2	12.0	14.4	6.6	4.32
	Week 4	09/08/2023	Dry; high tide	1017	0.1	1.1	11.5	5.7	4.28



Maximum concentration overall site (%vol/vol) made ground	=	10.8	59.4	16.4
GSV = 6.4152 (CS4)				
Under Wilson & Card this falls within a Characteristic Situation 4				

Borehole location	Week Number	Date	Weather	Atmospheric pressure (mb)	Borehole flow rate (l/hr)	Methane	Carbon dioxide	Min. concentration of Oxygen (%vol/vol)	Ground water level (m)
						Max. concentration (%vol/vol)	Max. concentration (%vol/vol)		
BH102 MADE GROUND	Week 1	16/03/2023	Dry	994	0.1	0.0	0.3	20.9	2.04
	Week 2	14/04/2023	Dry	1000	0.1	0.0	0.1	20.7	DRY
	Week 3	08/08/2023	Dry; low tide	1015	0.1	0.1	0.1	21.0	DRY
	Week 4	09/08/2023	Dry; high tide	1017	0.1	0.1	1.0	18.1	DRY
BH103 MADE GROUND	Week 1	16/03/2023	NO ACCESS						
	Week 2	14/04/2023	NO ACCESS						
	Week 3	08/08/2023	NO ACCESS						
	Week 4	09/08/2023	NO ACCESS						

Maximum concentration overall site (%vol/vol)
made ground = 0.1 0.1 0.3

GSV = 0.0003 (CS1)

Under Wilson & Card this falls within a **Characteristic Situation 1**

Characteristic Situation (CIRIA R149)	Comparable partners in technology gas regime	Risk classification	Gas screening value (CH ₄ or CO ₂) (l/hr) Threshold	Additional Limiting Factors	Typical Source of Gas Generation
1	A	Very low risk	<0.07	Methane <1% and Carbon Dioxide <5% Otherwise consider increase to Situation 2.	Natural soils with low organic content 'Typical' made ground
2	B	Low risk	<0.7	Borehole air flow rate >70l/hr increase to Characteristic Situation 3	Natural soil, high peat/organic content 'Typical' made ground
3	C	Moderate risk	<3.5		Old landfill, inert waste, mine working flooded
4	D	Moderate to high risk	<15	Quantitative risk assessment required to evaluate scope of protection measures	Mine working susceptible to flooding, completed landfill, inert waste (WMP 26B criteria)
5	E	High risk	<70		Mine working unflooded inactive
6	F	Very high risk	>70		Recent landfill site