



12 Royal Scot Road
Pride Park
Derby
DE24 8AJ
UK

Telephone: +44 (0)1332 542740
Fax: +44 (0)1332 542760
www.rsk.co.uk

Our ref: T301924 L06(00)TC

5 September 2018

Harworth Estates Investments Ltd
Advantage House
Poplar Way
Rotherham
South Yorkshire
S60 5TR

For the attention of Adam O'Brien

Site Former Thoresby Colliery
Services Detailed Outline Earthworks Strategy

Dear Adam

This letter sets out an outline earthworks strategy for the Thoresby site. It gives an overview of the following aspects and their relation to the proposed development in terms of bulk earthworks:

- Existing Site Topography
- Required Site Topography
- Sources of Fill
- Suitability of Fill

Background

The site comprises the former Thoresby Colliery and adjacent farmland and colliery spoil heaps. The site is proposed for redevelopment, primarily as 800 residential units, plus employment (Classes B1a, B1c and B2) land and a primary school. The site currently has outline planning permission (16/02173/OUTM). The current site Masterplan and phasing are included as Appendix A.

Ground investigations have been undertaken across Phases 1 to 4 of the proposed development. In addition, investigations have also been undertaken in selected areas of the colliery spoil heaps. The information from these investigations has been used for this report and relevant information is included as appendices.

Existing Site Topography

In general, the site slopes from the colliery spoil heaps in the north to Ollerton Road in the south. The colliery spoil heaps by their nature have slopes which are around 1 in 4 to 1 in 3. The remainder of the site slopes gently southwards. However, much of the agricultural field which forms Phase 2 of the development is lower than the surrounding land by up to 4m.



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Registered in Scotland No. 115530
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Required Site Topography

A site-wide foul and surface water drainage strategy is currently in development by the project infrastructure engineers, SCP. This indicates that the foul and surface water connections to the site are along the southern boundary of Phase 1. Therefore, assuming that similar cover levels will be maintained, levels across the Phase 2 area will need to be raised by up to 4m above existing ground levels in order to achieve gravity drainage of the site. This results in a requirement for approximately 100,000 to 120,000m³ of engineered fill. We understand that the Phase 1 area will remain at or very close to existing levels and so will not require any cut or fill. A bund running east-west currently separates Phases 1 and 4 (Coal Stocking Yard Bund). This will be removed as part of the enabling works and reused elsewhere on site as engineered fill.

Sources of Fill

The site currently has a number of areas which could be used as sources of fill to facilitate the development. These are shown on Figure 1, included in Appendix B, and are listed in Table 1 below:

Source Name	Typical Description	Estimated Volume (m ³)
Coal Stocking Yard Bund	Slightly gravelly slightly silty fine to coarse SAND with a low cobble content (Reworked Weathered Chester Formation)	37,000
Western Ridge	Slightly gravelly slightly silty fine to coarse SAND with a low cobble content (Reworked Weathered Chester Formation)	100,000*
East Tip	Firm to stiff very gravelly friable CLAY with a low to moderate cobble content (Colliery Spoil)	55,000+
West Tip	Firm very gravelly friable CLAY with a low to moderate cobble content (Colliery Spoil)	85,000+
* Subject to required finished ground levels.		
+ Subject to slope stability investigation and assessment. Currently based on cut to 1 in 4 slope.		

Therefore, approximately 277,000m³ of fill could potentially be available for raising the site levels in the Phase 2 area.

Suitability of Fill

There are two main types of fill available within the site; Reworked Weathered Chester Formation and Colliery Spoil. Their suitability for reuse has been assessed in accordance with the Specification for Highways Works (SHW) and against RSK Generic Assessment Criteria (GAC) for Residential with Plant Uptake.

Reworked Weathered Chester Formation

These materials are present on site within the 'Western Ridge' and the 'Coal Stocking Yard Bund'. They generally fall into Class 1A (Well Graded Granular Material) or Class 1B (Uniformly Graded Granular Material), both of which are suitable as general fill. Relevant geotechnical laboratory certificates for these materials are included as Appendix C.

None of the samples tested for contamination exceeded any of the RSK GACs. Therefore the materials are considered to be uncontaminated. Relevant chemical laboratory certificates for these materials are included as Appendix D.

Colliery Spoil

These materials are present on site within the spoil heaps surrounding the northern part of the site and in limited quantities around other previously developed parts of the site. They generally fall into Class 2C (Stony Cohesive Material), which is suitable as general fill. It should be noted that several grading results indicate a predominantly gravelly material. However, the gravel comprises very weak mudstone which is likely to break down during excavation, placement and compaction to a Class 2C material. Relevant geotechnical laboratory certificates for these materials are included as Appendix E.

A small number of samples obtained from the Colliery Spoil marginally exceeded some of the RSK GACs. However, when considered on a statistical basis, these exceedances are generally considered to be acceptable. Relevant chemical laboratory certificates for these materials are included as Appendix F.

Conclusions

The basic fill requirements to construct the proposed development are around 100,000m³ to 120,000m³, based on current estimates. The volume of fill potentially available across the site is in the region of 277,000m³. In general, all of this material is considered to be suitable for reuse as fill on the site, both from a geotechnical and chemical point of view. Therefore, it is demonstrable that the site can be redeveloped without the need for imported bulk fill.

It should be noted that this letter report constitutes only a high level review of the available information. A detailed earthworks specification and cut/fill model will need to be developed once all necessary information is available (e.g. finished ground levels). It is expected that this further work will make recommendations regarding exactly which fill types will be most suitable in different areas.

Yours sincerely

For RSK Environment Limited



Tim Cawood

Associate Director

Enclosures:

Appendix A – Masterplan and Development Phasing

Appendix B – Site Layout

Appendix C – Geotechnical Laboratory Certificates for Chester Formation

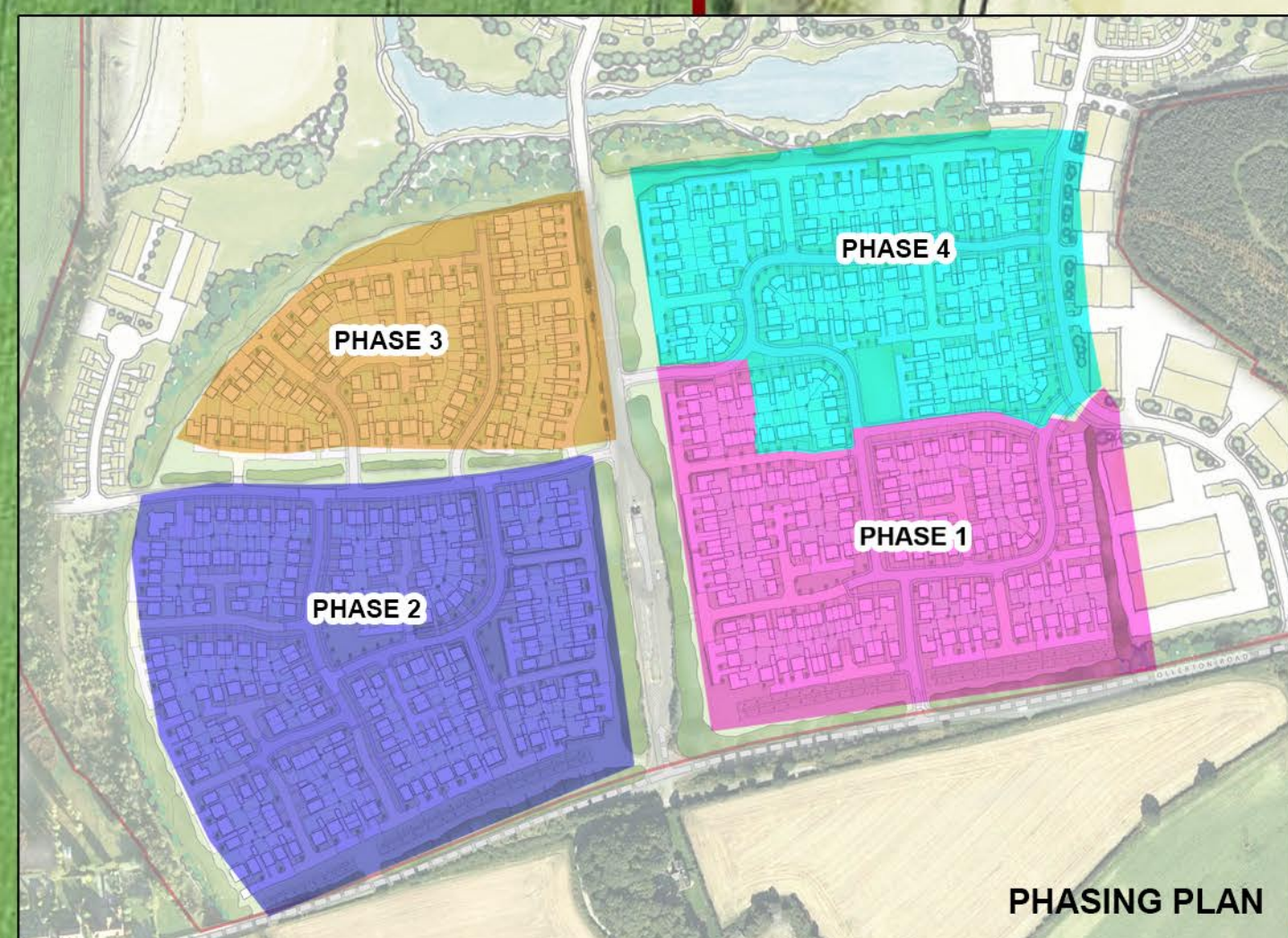
Appendix D – Chemical Laboratory Certificates for Chester Formation

Appendix E – Geotechnical Laboratory Certificates for Colliery Spoil

Appendix F – Chemical Laboratory Certificates for Colliery Spoil

APPENDIX A

Masterplan and Development Phasing



APPENDIX B

Site Layout



	07.06.18	DRAFT FOR COMMENT	TJC		
REV.	DATE	DESCRIPTION	BY	CHD.	APR.
Dimensions		Projection	Scale	Orig. Size	
mAOD			1:4,000	A2	

RSK

CLIENT		HARWORTH			
PROJECT		THORESBY COLLIERY			
TITLE		SITE LAYOUT			
JOB No.:		DRAWING FILE:			
301924					
BY:	DATE:	CONTRACT NO.	FIGURE	REV:	
TJC	07.06.18		1		



APPENDIX C

Geotechnical Laboratory Certificates for Chester Formation



STRUCTURAL SOILS LTD
TEST REPORT



Report No. 782954 R1

1774

Date 06-February-2018 Contract Thoresby

Client RSK Environment Ltd
Address Spring Lodge
172 Chester Road
Helsby
Cheshire WA6 0AR

For the Attention of Anthony Jordan

Samples submitted by client 16/01/2018
Testing Started 23/01/2018
Testing Completed 29/01/2018

Client Reference 301924
Client Order No.
Instruction Type Written

Ukas Accredited Tests Underatken

Moisture Content (oven drying method) BS1377:Part 2:1990,clause 3.2 (superseded)**
Liquid Limit (definitive method) BS1377:Part 2:1990,clause 4.3
Liquid Limit (one point method) BS1377:Part 2:1990,clause 4.4
Plastic Limit BS1377:Part 2:1990,clause 5.3
Plasticity Index Derivation BS1377:Part 2:1990,clause 5.4
Particle Size Distribution wet sieve method BS1377:Part 2:1990,clause 9.2
Particle Density gas jar method BS1377:Part 2:1990,clause 8.2
Dry density/moisture content relationship 4.5kg rammer method BS1377:Part 4:1990
clause 3.5/3.6

Non Ukas Accredited Tests Undertaken

California Bearing Ratio BS1377:Part 4:1990,clause 7.4

* This clause of BS1377 is no longer the most up to date method due to the publication of ISO17892

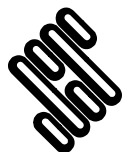
Please Note: Remaining samples will be retained for a period of one month from today and will then be disposed of.
Test were undertaken on samples 'as received' unless otherwise stated.
Opinions and interpretations expressed in this report are outside the scope of accreditation for this laboratory.

Structural Soils Ltd, The Potteries, Pottery Street, Castleford, WF10 1NJ Tel.01977 552255. E-mail mark.athorne@soils.co.uk

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Particle Density Mg/m ³	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
CP101	11	SPTLS	9.40	20		29	19	10	65	Black/grey slightly sandy gravelly slightly organic CLAY
CP102	6	B	6.50	19		26	20	6	40	Black/grey silty CLAY
CP103	6	B	7.30	23		35	19	16	62	Orange brown slightly sandy slightly gravelly CLAY
TP102	2	D	1.00	6.5		38	15	23	31	Black/grey clayey sandy GRAVEL
TP102	3	D	1.50		2.56					Black/grey clayey very sandy GRAVEL
TP106	1	D	2.30		2.63					Orange brown clayey gravelly SAND
TP109	1	D	1.50	10						Brown gravelly SAND
TP206	1	D	0.50	8.6						Orange brown clayey gravelly SAND



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Thoresby

Contract Ref:

782954

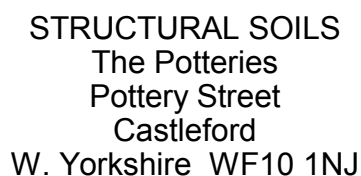


In accordance with BS5930:2015
Testing in accordance with BS1377-2:1990



<p># Tested in accordance with the following clauses of BS1377-2:1990.</p> <p>3.2 - Moisture Content 4.3 - Cone Penetrometer Method 4.4 - One Point Cone Penetrometer Method 4.6 - One Point Casagrande Method 5.3 - Plastic Limit Method 5.4 - Plasticity Index</p>	<p>+ Tested in accordance with the following clauses of BS1377-2:1990.</p> <p>4.2.3 - Natural State 4.2.4 - Wet Sieved</p> <p>Key: * = Non-standard test, NP = Non plastic.</p>
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Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)



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Date _____

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06/02/18

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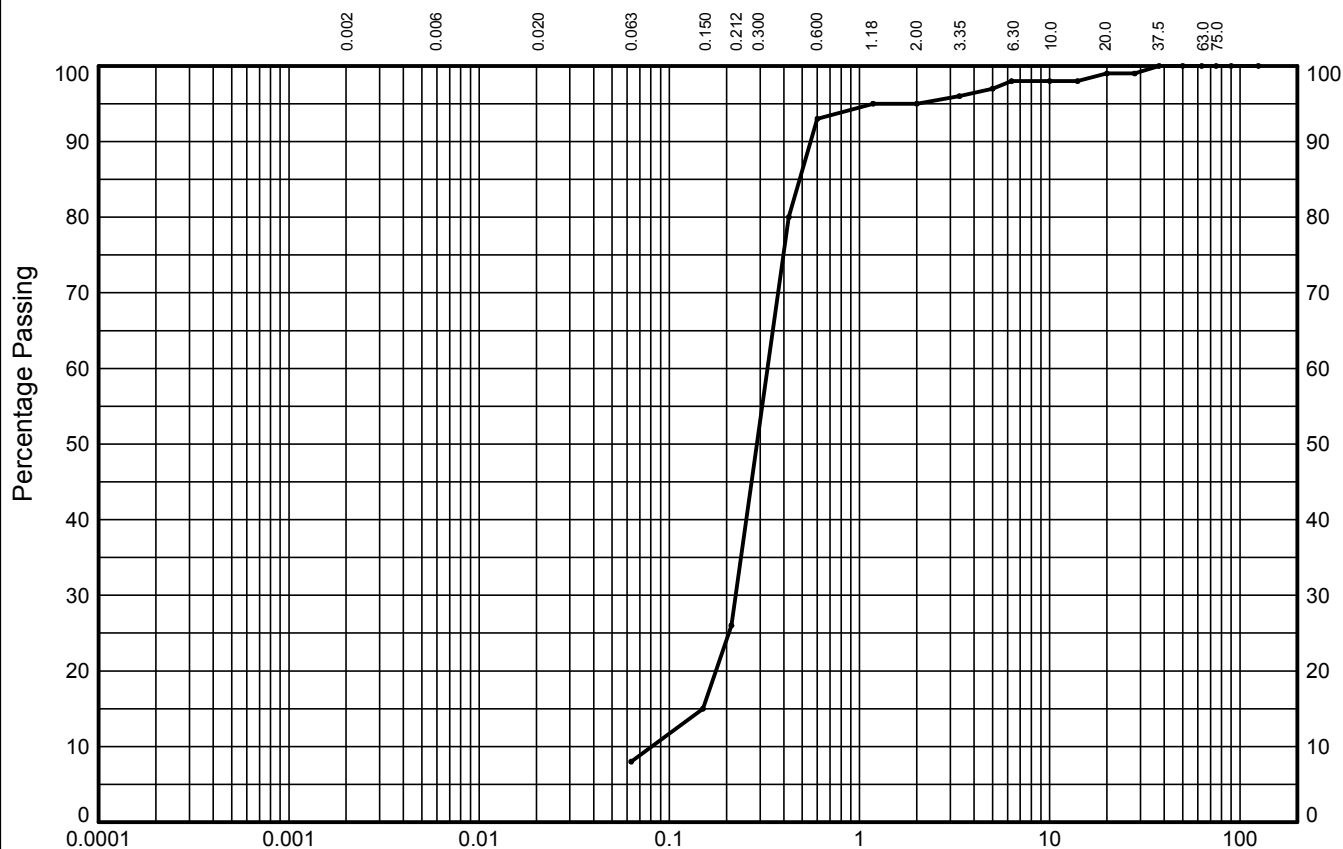
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In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **6.00**



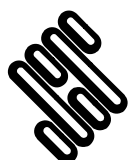
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	100
37.5	100
28	99
20	99
14	98
10	98
6.3	98
5	97
3.35	96
2	95
1.18	95
0.6	93
0.425	80
0.212	26
0.15	15
0.063	8

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	5
SAND	87
SILT/CLAY	8

Orange brown clayey gravelly SAND



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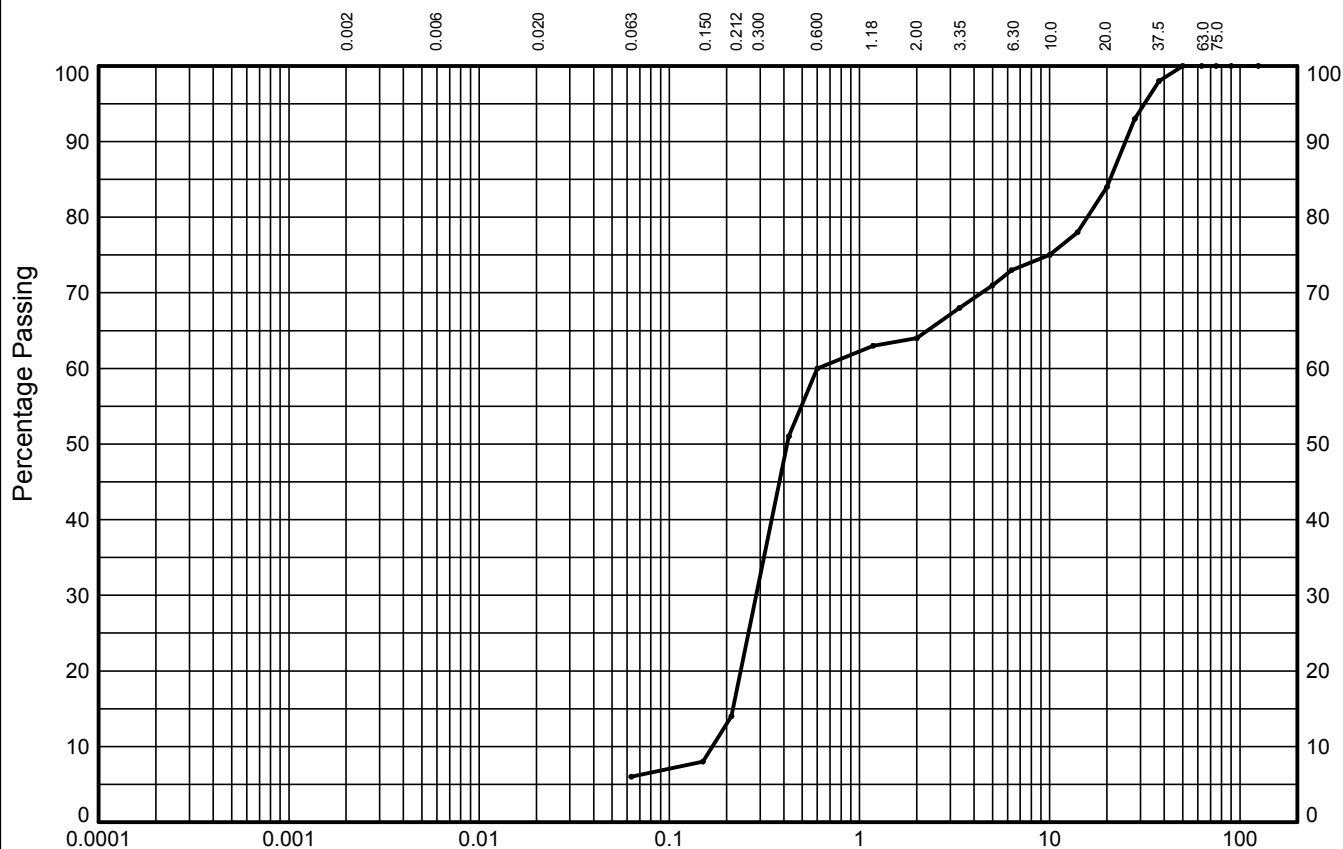
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In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **5.00**



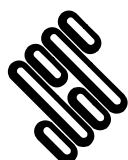
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	100
37.5	98
28	93
20	84
14	78
10	75
6.3	73
5	71
3.35	68
2	64
1.18	63
0.6	60
0.425	51
0.212	14
0.15	8
0.063	6

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	36
SAND	58
SILT/CLAY	6

Orange brown clayey very gravelly SAND



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PARTICLE SIZE DISTRIBUTION TEST

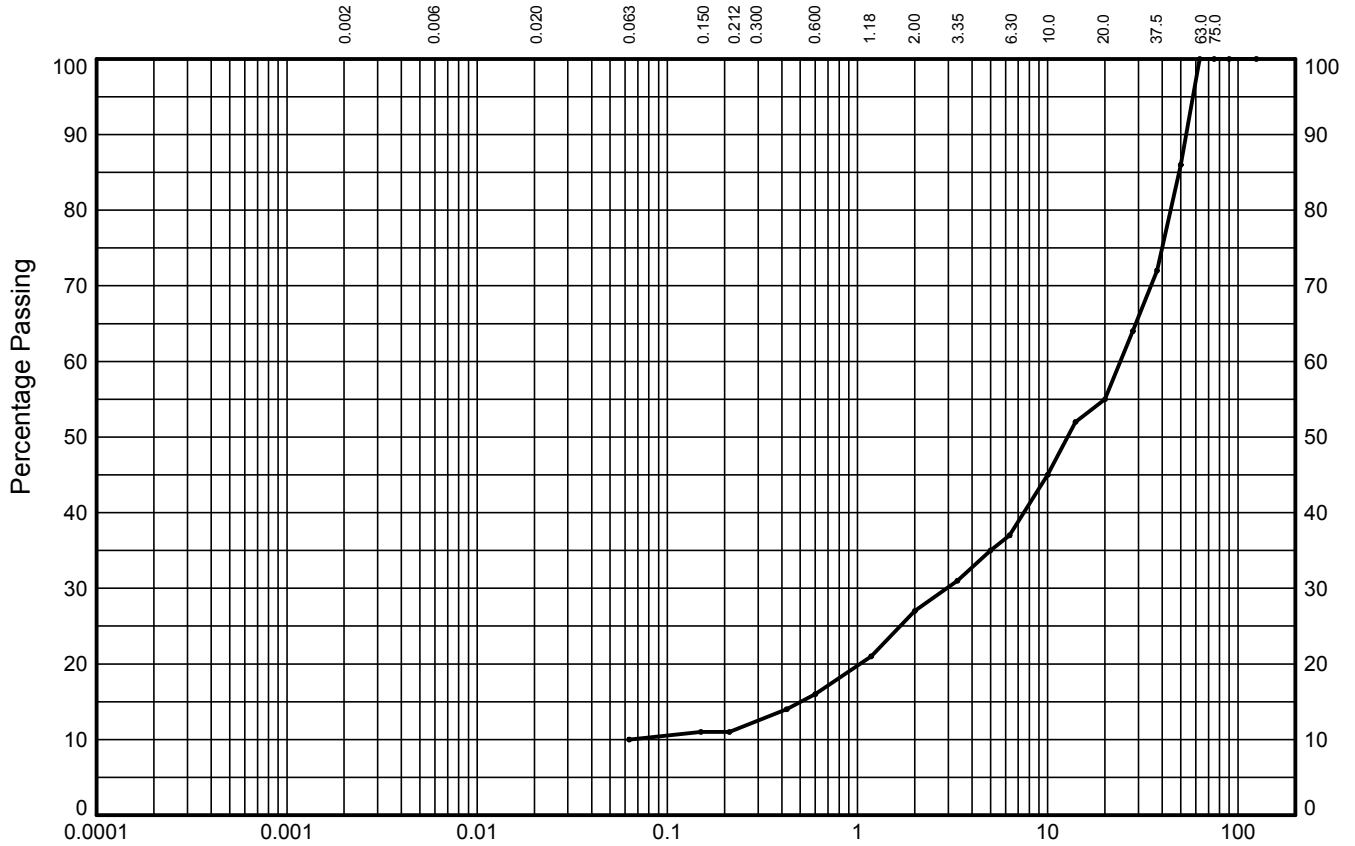
In accordance with clauses 9.2 of BS1377:Part 2:1990

Trial Pit: **TP102**

Sample Ref: **2**

Sample Type: **D**

Depth (m): **1.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

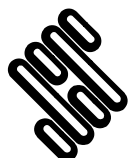
BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	86
37.5	72
28	64
20	55
14	52
10	45
6.3	37
5	35
3.35	31
2	27
1.18	21
0.6	16
0.425	14
0.212	11
0.15	11
0.063	10

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	73
SAND	17
SILT/CLAY	10

Soil Description:

Black/grey clayey sandy GRAVEL



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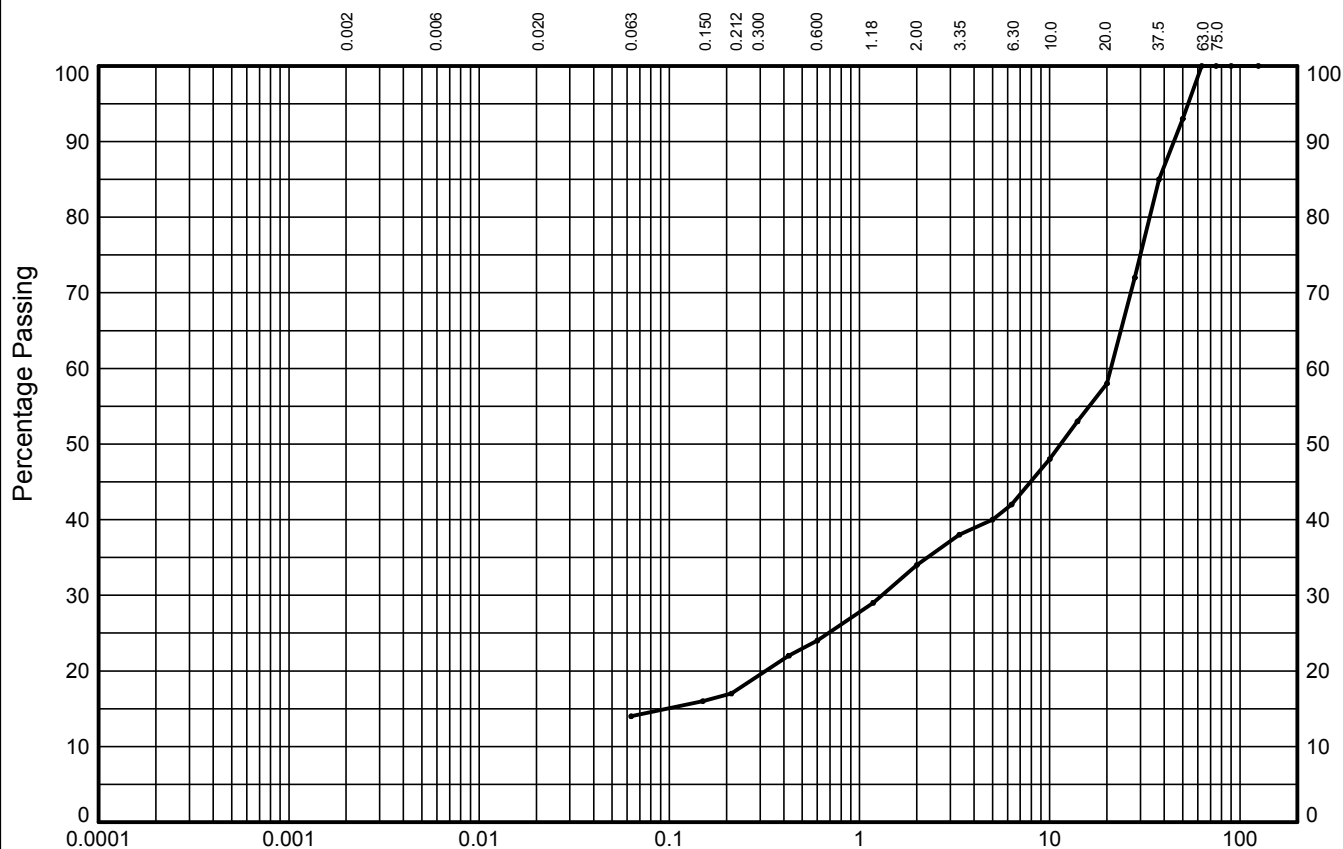
Contract Ref:

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In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **1.50**



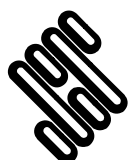
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	93
37.5	85
28	72
20	58
14	53
10	48
6.3	42
5	40
3.35	38
2	34
1.18	29
0.6	24
0.425	22
0.212	17
0.15	16
0.063	14

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	66
SAND	20
SILT/CLAY	14

Black/grey clayey very sandy GRAVEL



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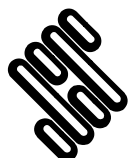


In accordance with clauses 9.2 of BS1377:Part 2:1990

The graph displays the particle size distribution of a sample that is 100% passing No. 10 sieve. The x-axis represents Particle Size (mm) on a logarithmic scale, and the y-axis represents Percentage Passing on a linear scale. The curve shows that the sample is composed of particles primarily between 0.1 mm and 1 mm, with a significant portion passing through the No. 10 sieve (0.175 mm).

Particle Size (mm)	Percentage Passing (%)
0.075	11
0.150	15
0.300	23
0.600	86
1.18	88
2.50	88
5.00	89
10.0	91
20.0	95
37.5	100
75.0	100

Test Sieve (mm)	Percent Passing (%)	Particle Diameter (mm)	Percent Passing (%)	Soil Fraction	Sieve Percentage (%)
125.0	100			GRAVEL	12
75.0	100				
63.0	100				
37.5	100			SAND	77
20.0	95				
10.0	91				
6.30	90			SILT/CLAY	11
3.35	89				
2.00	88				
1.18	88				
0.600	86	Sedimentation sample was not pre-treated			
0.425	73	Soil Description: Orange brown clayey gravelly SAND			
0.212	23				
0.150	15				
0.063	11				



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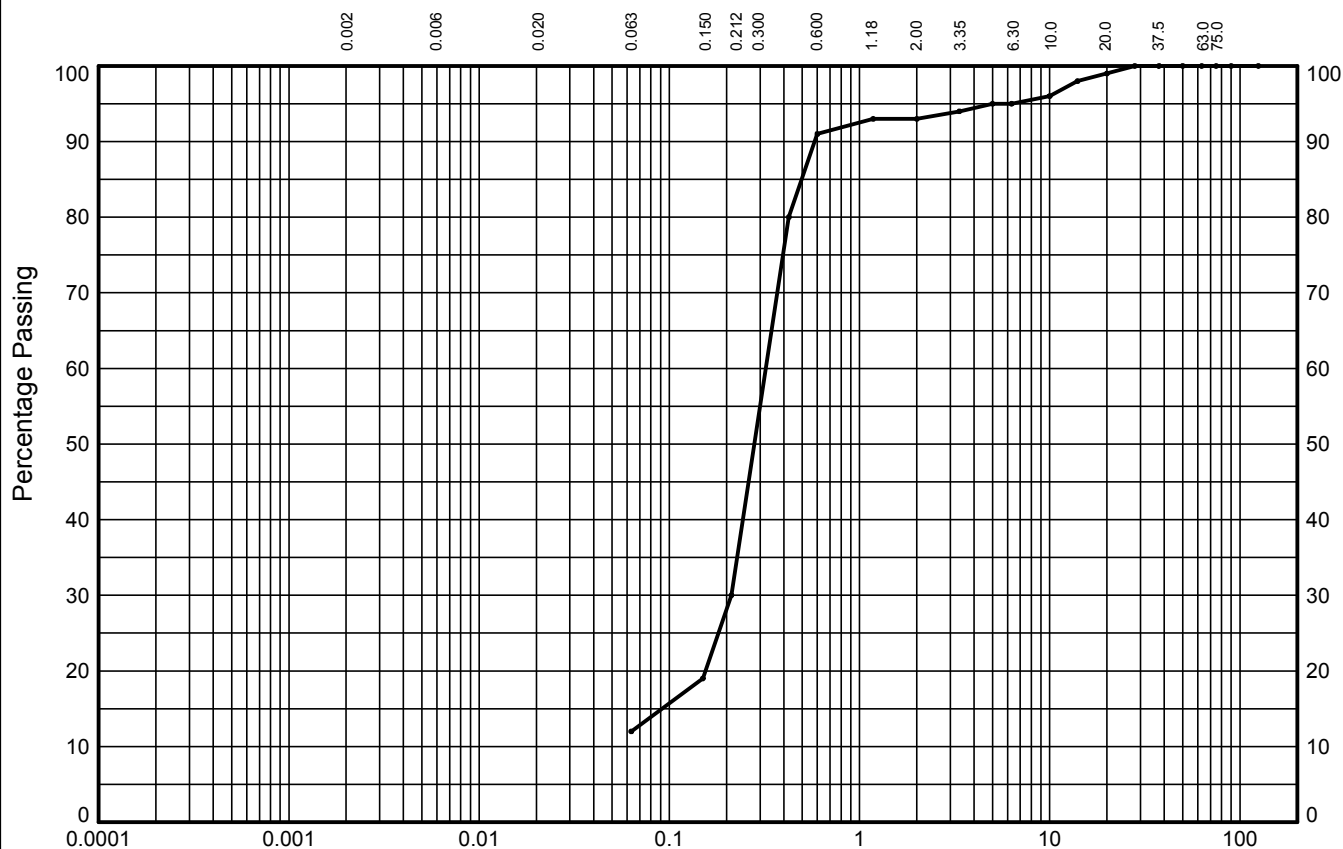
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In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **2.30**



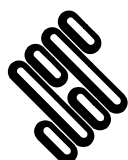
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	100
37.5	100
28	100
20	99
14	98
10	96
6.3	95
5	95
3.35	94
2	93
1.18	93
0.6	91
0.425	80
0.212	30
0.15	19
0.063	12

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	7
SAND	81
SILT/CLAY	12

Orange brown clayey gravelly SAND



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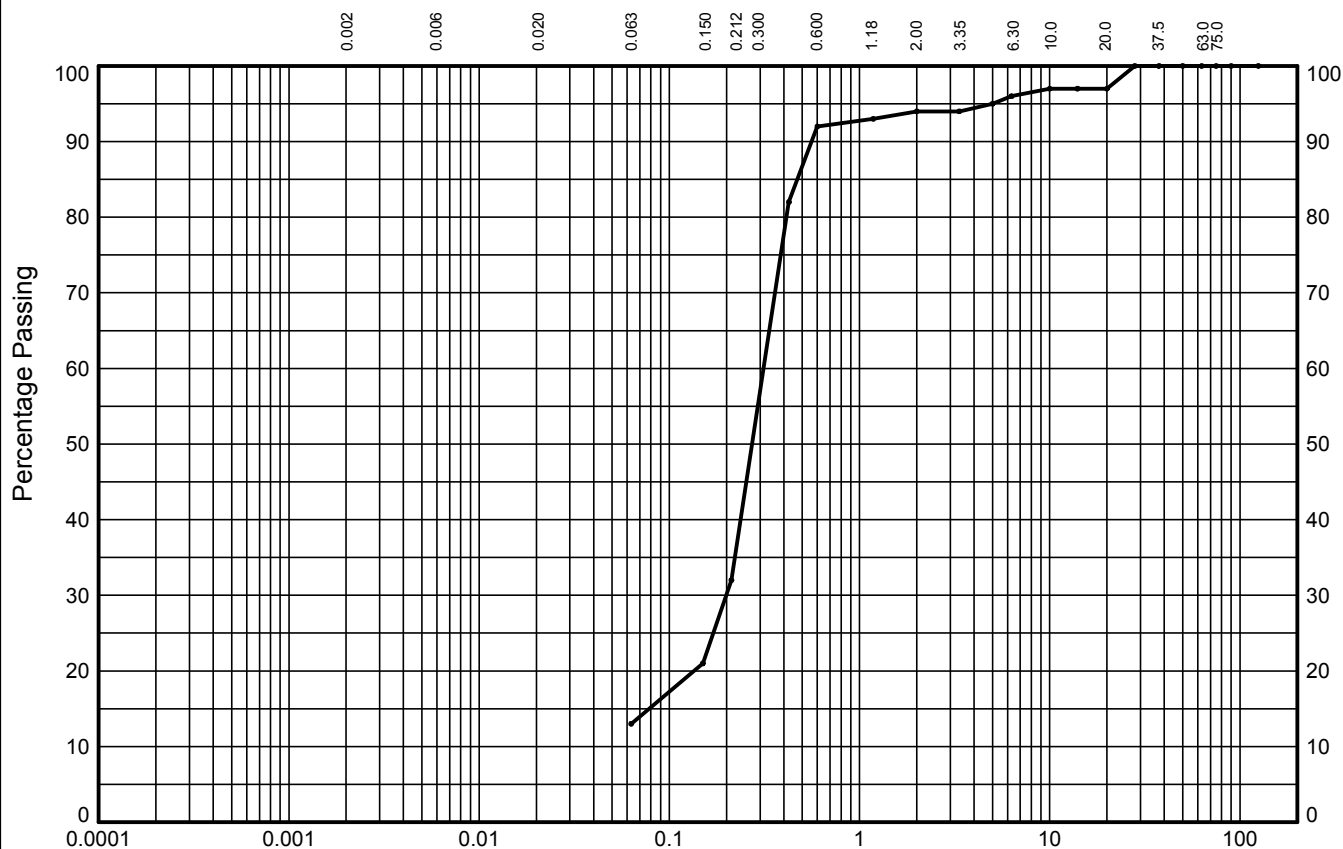
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In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **2.20**



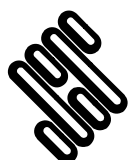
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	100
37.5	100
28	100
20	97
14	97
10	97
6.3	96
5	95
3.35	94
2	94
1.18	93
0.6	92
0.425	82
0.212	32
0.15	21
0.063	13

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	6
SAND	81
SILT/CLAY	13

Orange brown clayey gravelly SAND



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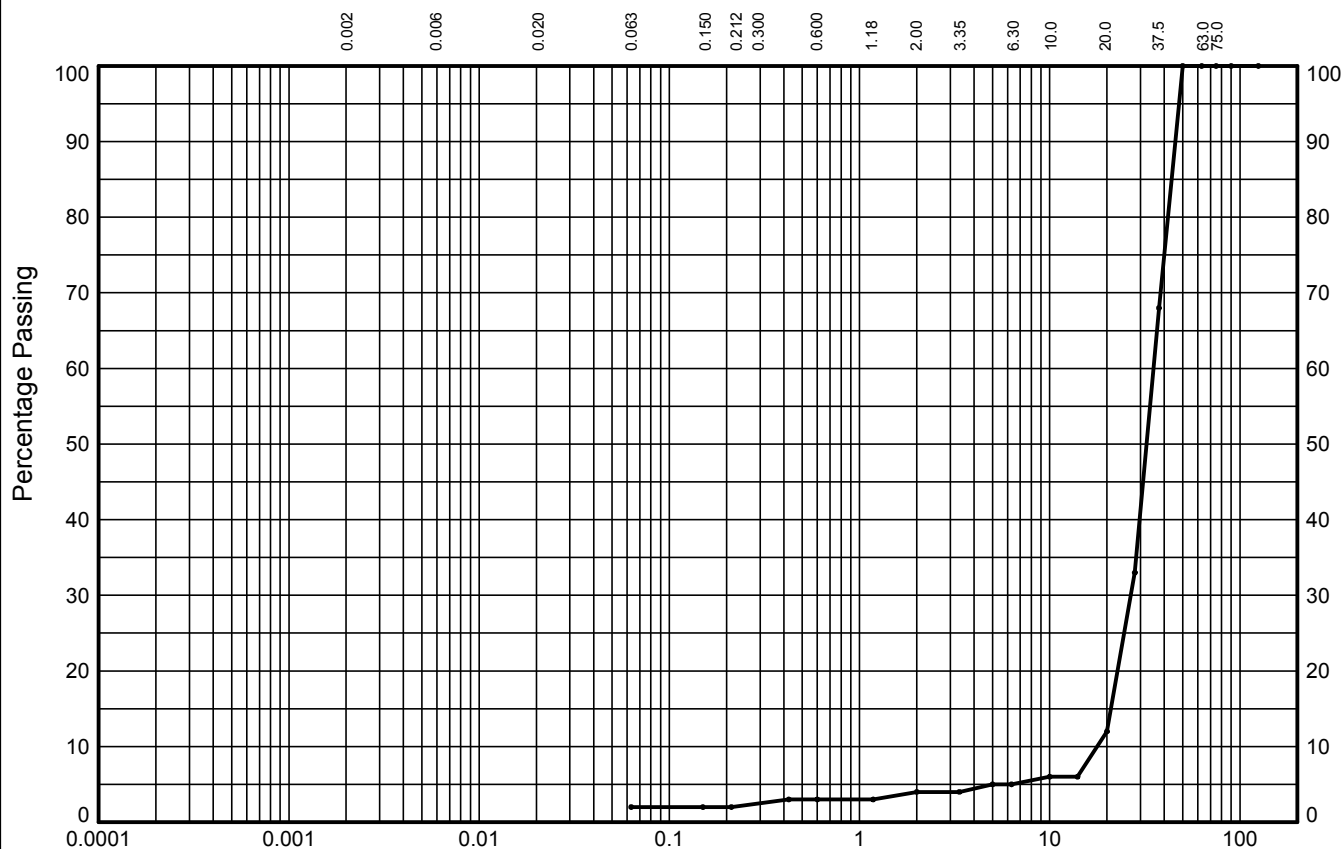
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In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **0.50**



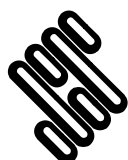
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	100
37.5	68
28	33
20	12
14	6
10	6
6.3	5
5	5
3.35	4
2	4
1.18	3
0.6	3
0.425	3
0.212	2
0.15	2
0.063	2

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	96
SAND	2
SILT/CLAY	2

Black/grey slightly clayey slightly sandy GRAVEL



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In accordance with clauses 9.2 of BS1377:Part 2:1990

The plot displays the cumulative distribution of particle sizes. The x-axis represents sieve size in micrometers (μm) on a logarithmic scale, with major ticks at 0.0001, 0.001, 0.01, 0.1, 1, 10, and 100. The y-axis represents the percentage of particles passing through the sieve, ranging from 0 to 100. The curve shows that approximately 1% of the material passes through a 0.075 mm sieve, and about 10% passes through a 20 μm sieve. A sharp increase in the percentage passing occurs between 20 and 30 μm , reaching 100% at approximately 42.5 μm .

Sieve Size (μm)	Percentage Passing (%)
0.075	1
0.150	1
0.300	2
0.600	3
1.18	4
2.50	5
5.00	6
10.0	8
20.0	10
30.0	45
42.5	100

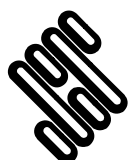
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	100
37.5	86
28	44
20	19
14	10
10	8
6.3	7
5	6
3.35	6
2	5
1.18	4
0.6	4
0.425	3
0.212	3
0.15	2
0.063	2

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	95
SAND	3
SILT/CLAY	2

Black/grey slightly clayey slightly sandy GRAVEL



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M. Fisher.

Thoresby

782954

06/02/18



In accordance with clauses 9.2 of BS1377:Part 2:1990

The plot displays the cumulative distribution of particle sizes. The x-axis represents sieve size in micrometers, and the y-axis represents the percentage of particles that pass through the sieve. The data points are as follows:

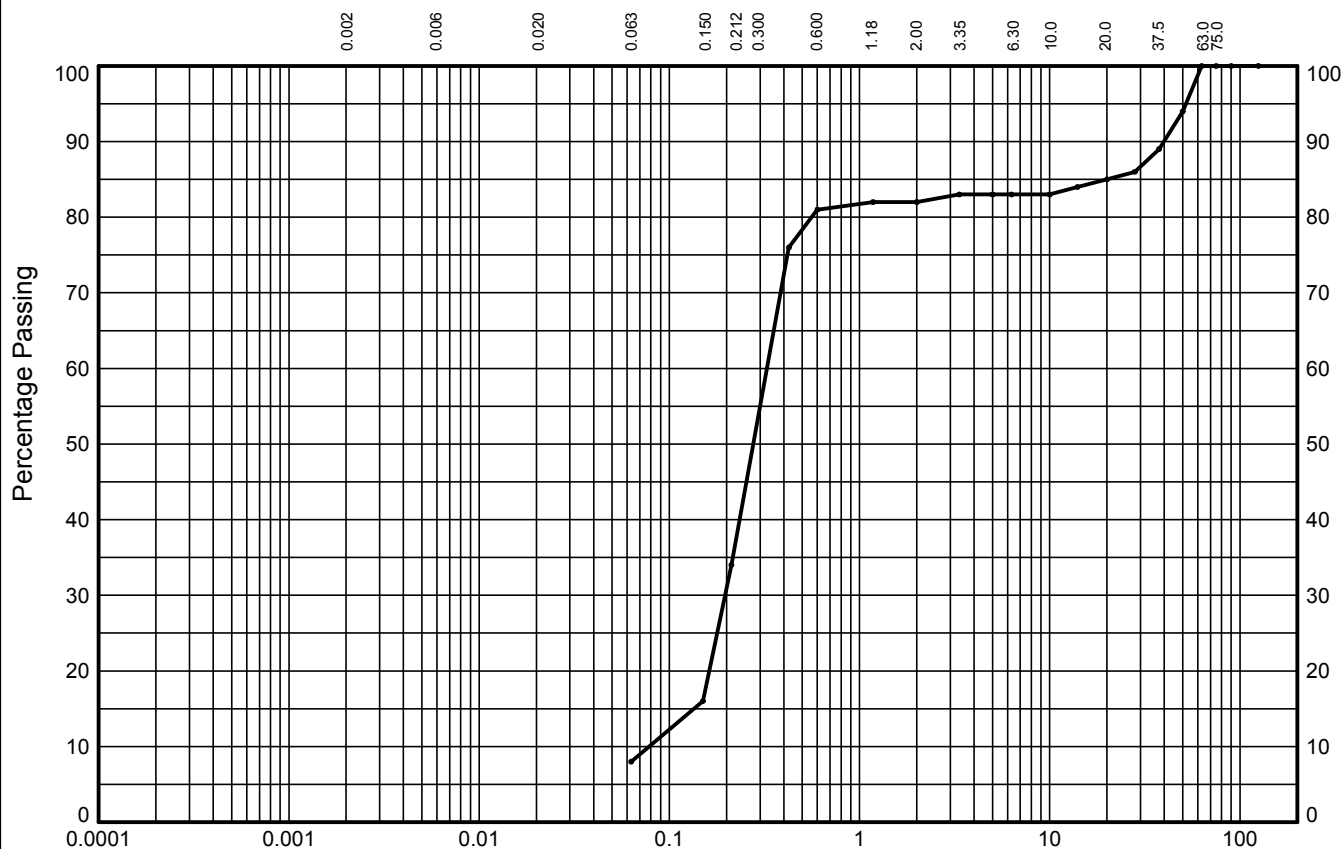
Sieve Size (micrometers)	Percentage Passing (%)
0.075	0.5
0.150	0.5
0.300	0.5
0.600	1.5
1.18	1.5
2.50	1.5
5.00	1.5
10.0	3.0
20.0	10.0
37.5	37.0
75.0	100.0

Black/grey slightly clayey slightly sandy GRAVEL



In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **2.20**



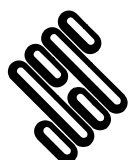
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	94
37.5	89
28	86
20	85
14	84
10	83
6.3	83
5	83
3.35	83
2	82
1.18	82
0.6	81
0.425	76
0.212	34
0.15	16
0.063	8

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	18
SAND	74
SILT/CLAY	8

Orange brown clayey gravelly SAND



STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Date _____

M. Fisher

MAUREEN FISHER

06/02/18

Contract Ref:

Thoresby

782954

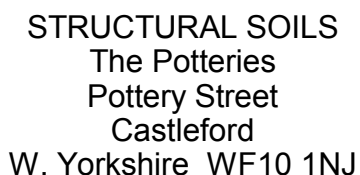


In accordance with clauses 9.2 of BS1377:Part 2:1990

The graph displays the cumulative distribution of particle sizes. The x-axis represents sieve size in micrometers on a logarithmic scale, with major ticks at 0.0001, 0.001, 0.01, 0.1, 1, 10, and 100. The y-axis represents the percentage of particles passing through the sieve, ranging from 0 to 100. The curve starts at approximately 13% passing for a 0.075 mm sieve and rises steeply, reaching about 31% at 0.15 mm, 91% at 0.6 mm, and 100% at 1.18 mm, remaining at 100% for all larger sieve sizes.

Sieve Size (micrometers)	Percentage Passing (%)
0.075	13
0.15	31
0.3	53
0.6	91
1.18	99
2.0	100
4.75	100
7.5	100
15	100
30	100
60	100
100	100

Orange brown clayey slightly gravelly SAND

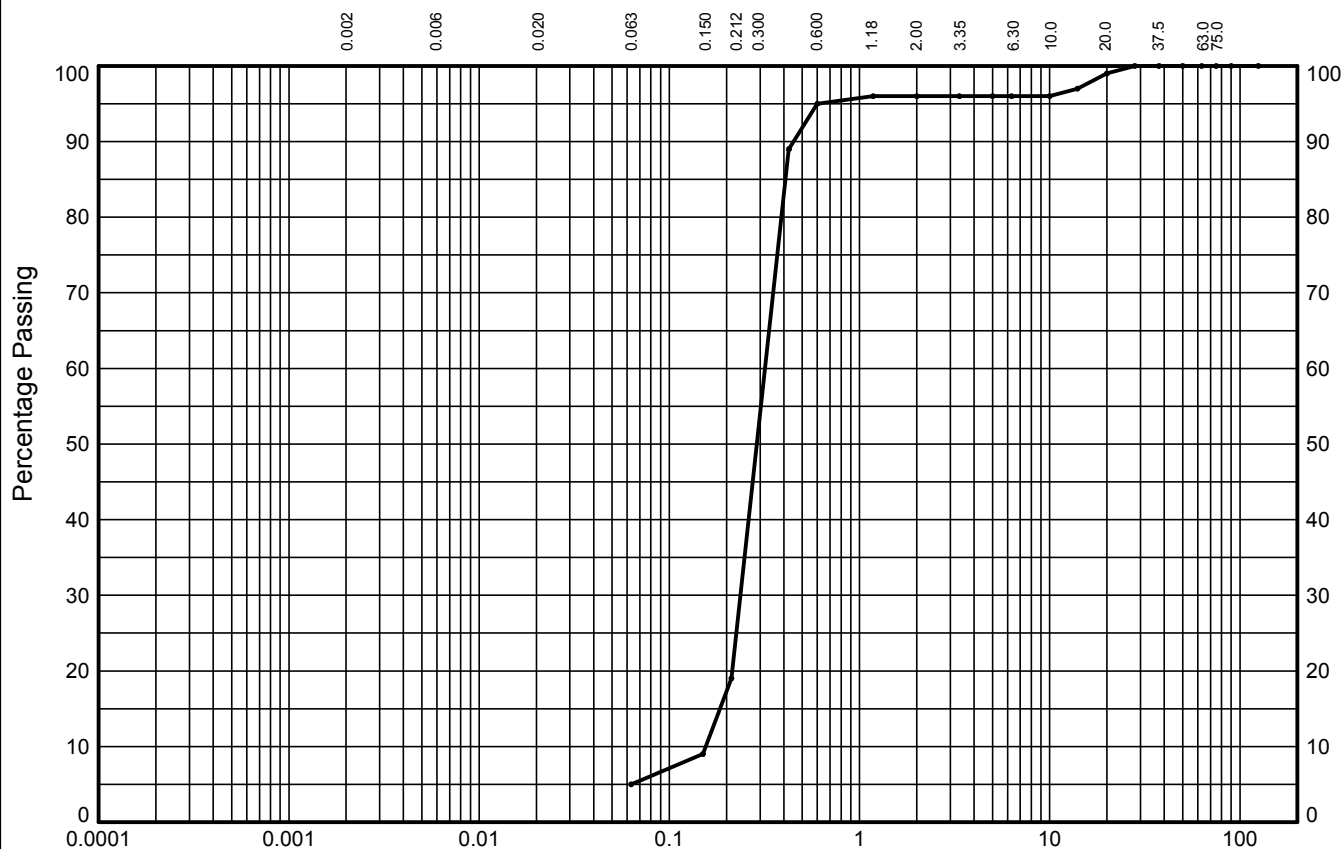


782954



In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **1.50**



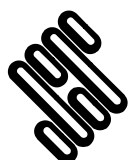
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	100
37.5	100
28	100
20	99
14	97
10	96
6.3	96
5	96
3.35	96
2	96
1.18	96
0.6	95
0.425	89
0.212	19
0.15	9
0.063	5

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	4
SAND	91
SILT/CLAY	5

Orange brown clayey slightly gravelly SAND



STRUCTURAL SOILS
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Pottery Street
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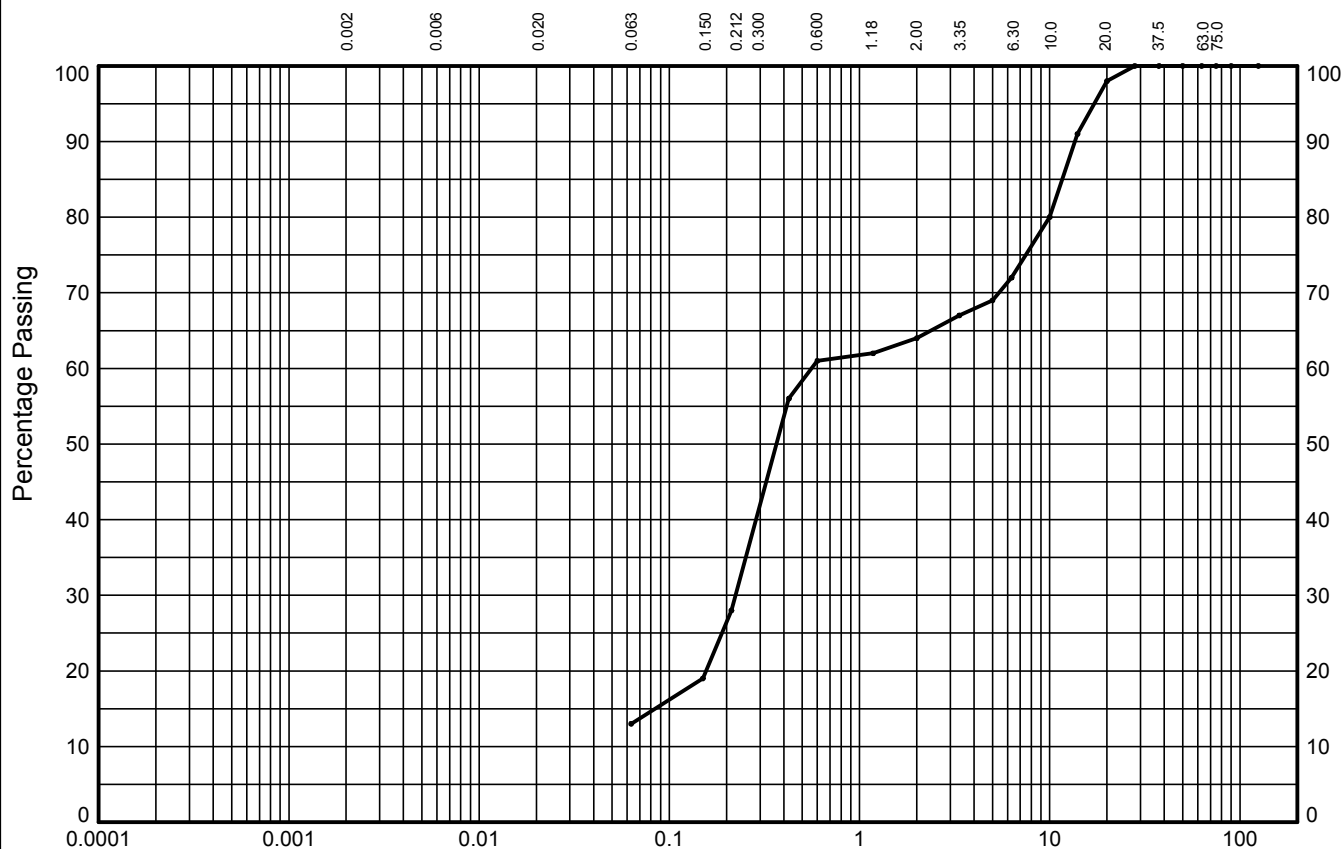
Thoresby

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In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **0.80**



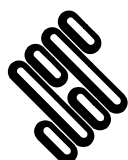
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	100
37.5	100
28	100
20	98
14	91
10	80
6.3	72
5	69
3.35	67
2	64
1.18	62
0.6	61
0.425	56
0.212	28
0.15	19
0.063	13

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	36
SAND	51
SILT/CLAY	13

Orange brown clayey very gravelly SAND



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In accordance with clauses 9.2 of BS1377:Part 2:1990

The graph displays the cumulative distribution of particle sizes. The x-axis represents sieve size in micrometers (μm) on a logarithmic scale, with major ticks at 0.0001, 0.001, 0.01, 0.1, 1, 10, and 100. The y-axis represents the percentage of particles passing through the sieve, ranging from 0 to 100. The curve starts at approximately 6% passing for a 0.075 μm sieve, remains relatively flat until about 0.15 μm , then rises sharply to about 97% passing at 0.6 μm , and finally levels off to 100% passing at 20 μm and above.

Sieve Size (μm)	Percentage Passing (%)
0.075	6
0.15	9
0.3	15
0.6	97
1.18	98
2.0	98
3.35	98
6.3	99
10	100
20	100
37.5	100
63	100
75	100

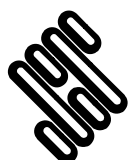
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	100
37.5	100
28	100
20	100
14	99
10	99
6.3	98
5	98
3.35	97
2	97
1.18	97
0.6	96
0.425	82
0.212	15
0.15	9
0.063	6

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	3
SAND	91
SILT/CLAY	6

Orange brown clayey slightly gravelly SAND



STRUCTURAL SOILS
The Potteries
Pottery Street
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W. Yorkshire WF10 1NJ

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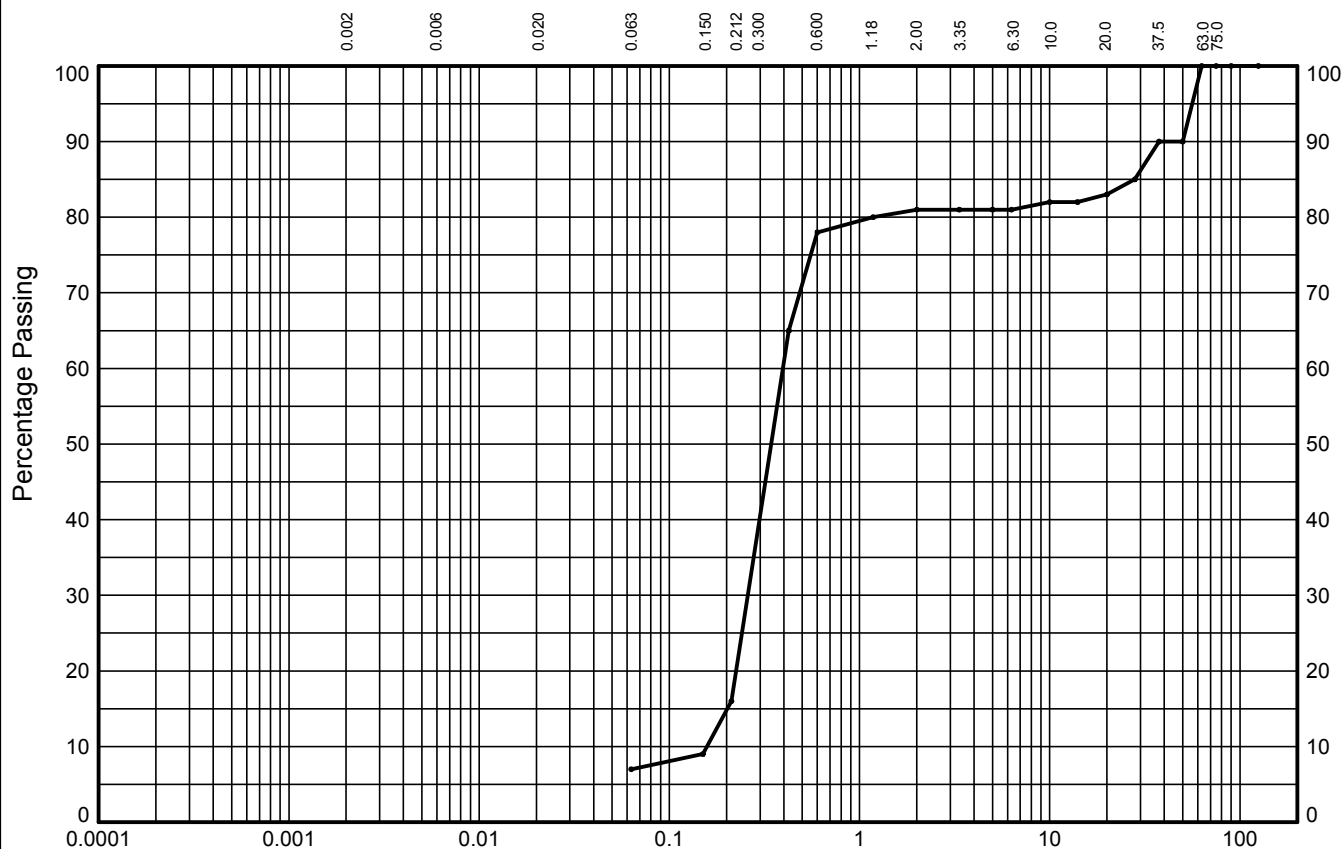
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In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **1.00**

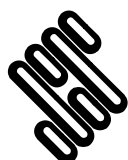
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	90
37.5	90
28	85
20	83
14	82
10	82
6.3	81
5	81
3.35	81
2	81
1.18	80
0.6	78
0.425	65
0.212	16
0.15	9
0.063	7

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	19
SAND	74
SILT/CLAY	7

Orange brown clayey gravelly SAND



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The Potteries
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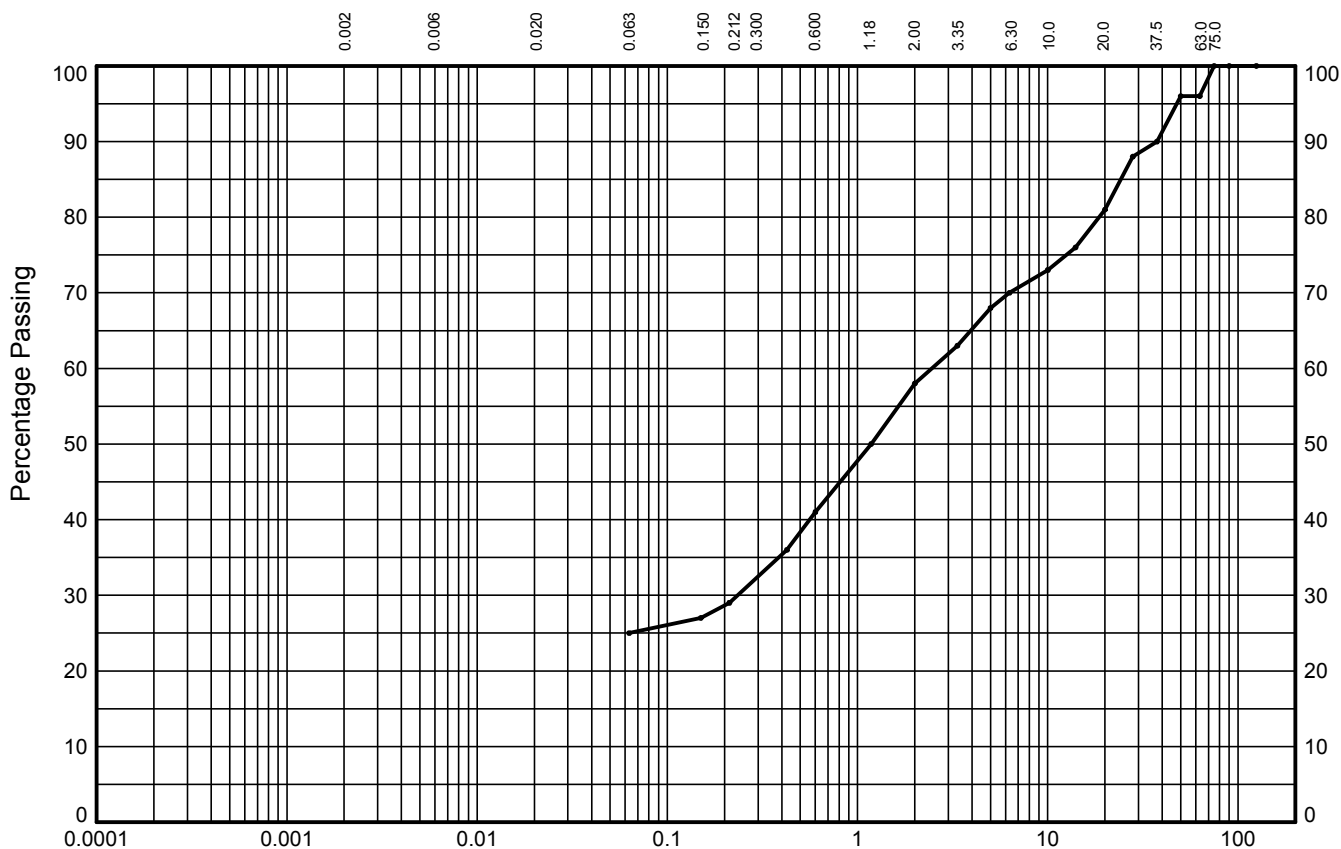
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In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **0.10**



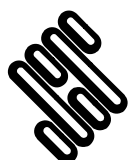
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	96
50	96
37.5	90
28	88
20	81
14	76
10	73
6.3	70
5	68
3.35	63
2	58
1.18	50
0.6	41
0.425	36
0.212	29
0.15	27
0.063	25

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
COBBLES	4
GRAVEL	38
SAND	33
SILT/CLAY	25

Black/grey slightly sandy gravelly CLAY with occasional cobbles



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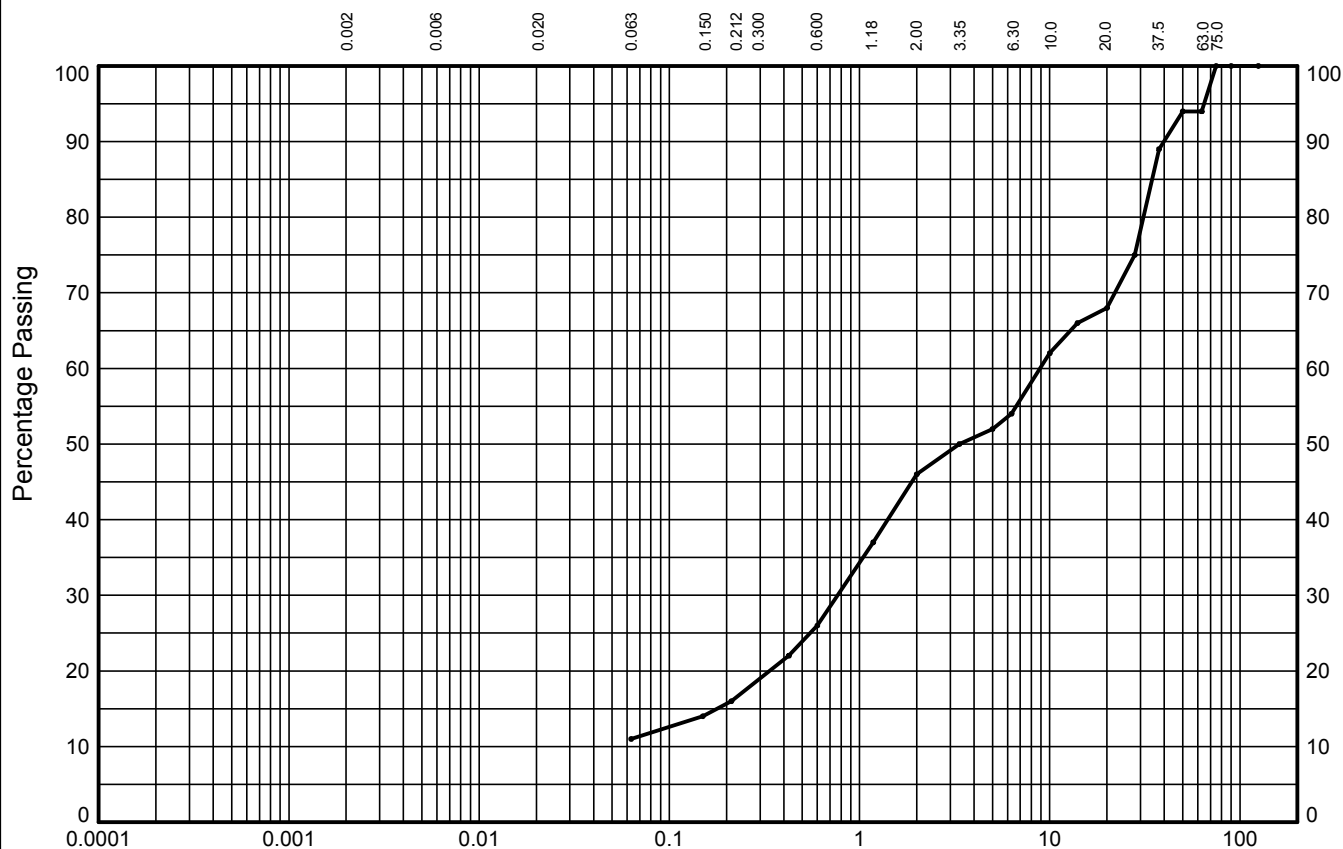
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In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **0.30**



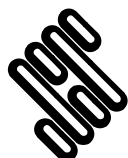
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	94
50	94
37.5	89
28	75
20	68
14	66
10	62
6.3	54
5	52
3.35	50
2	46
1.18	37
0.6	26
0.425	22
0.212	16
0.15	14
0.063	11

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
COBBLES	6
GRAVEL	48
SAND	35
SILT/CLAY	11

Black/grey clayey very sandy GRAVEL with some cobbles



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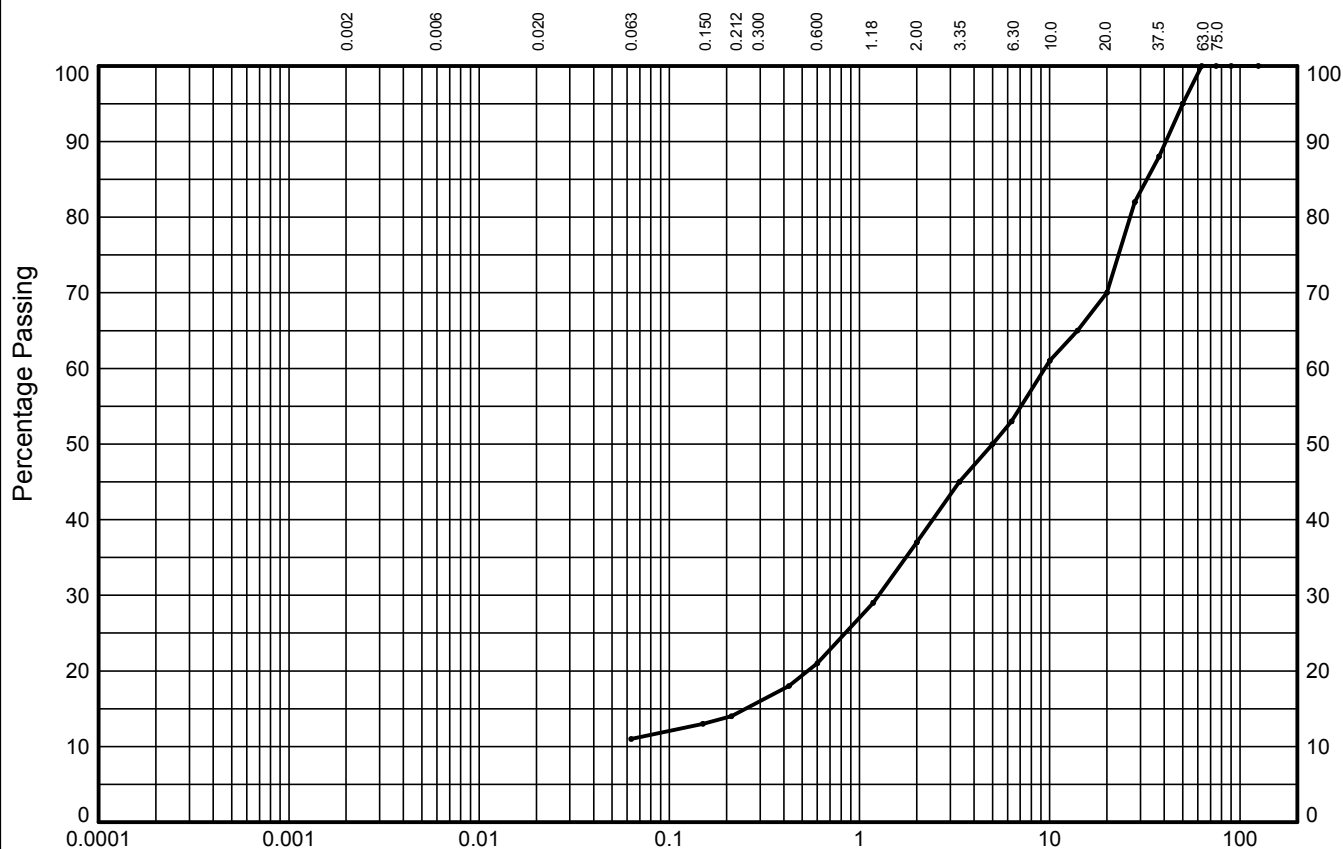
Contract Ref:

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In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **0.40**

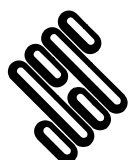
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	95
37.5	88
28	82
20	70
14	65
10	61
6.3	53
5	50
3.35	45
2	37
1.18	29
0.6	21
0.425	18
0.212	14
0.15	13
0.063	11

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	63
SAND	26
SILT/CLAY	11

Black/grey clayey very sandy GRAVEL



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In accordance with clauses 9.2 of BS1377:Part 2:1990

The graph displays the cumulative distribution of particle sizes. The x-axis represents sieve size in micrometers, ranging from 0.0001 to 100. The y-axis represents the percentage of particles passing through the sieve, ranging from 0 to 100. The curve starts at approximately 37% passing for a 0.063 micrometer sieve and reaches 100% passing at a 75.0 micrometer sieve.

Sieve Size (micrometers)	Percentage Passing (%)
0.063	37
0.150	40
0.300	45
0.600	55
1.18	66
2.00	70
3.35	75
6.30	85
10.0	88
20.0	95
37.5	98
75.0	100

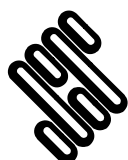
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	100
37.5	96
28	95
20	87
14	86
10	84
6.3	79
5	75
3.35	70
2	66
1.18	58
0.6	49
0.425	45
0.212	40
0.15	39
0.063	37

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	34
SAND	29
SILT/CLAY	37

Grey brown slightly sandy slightly gravelly CLAY



STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

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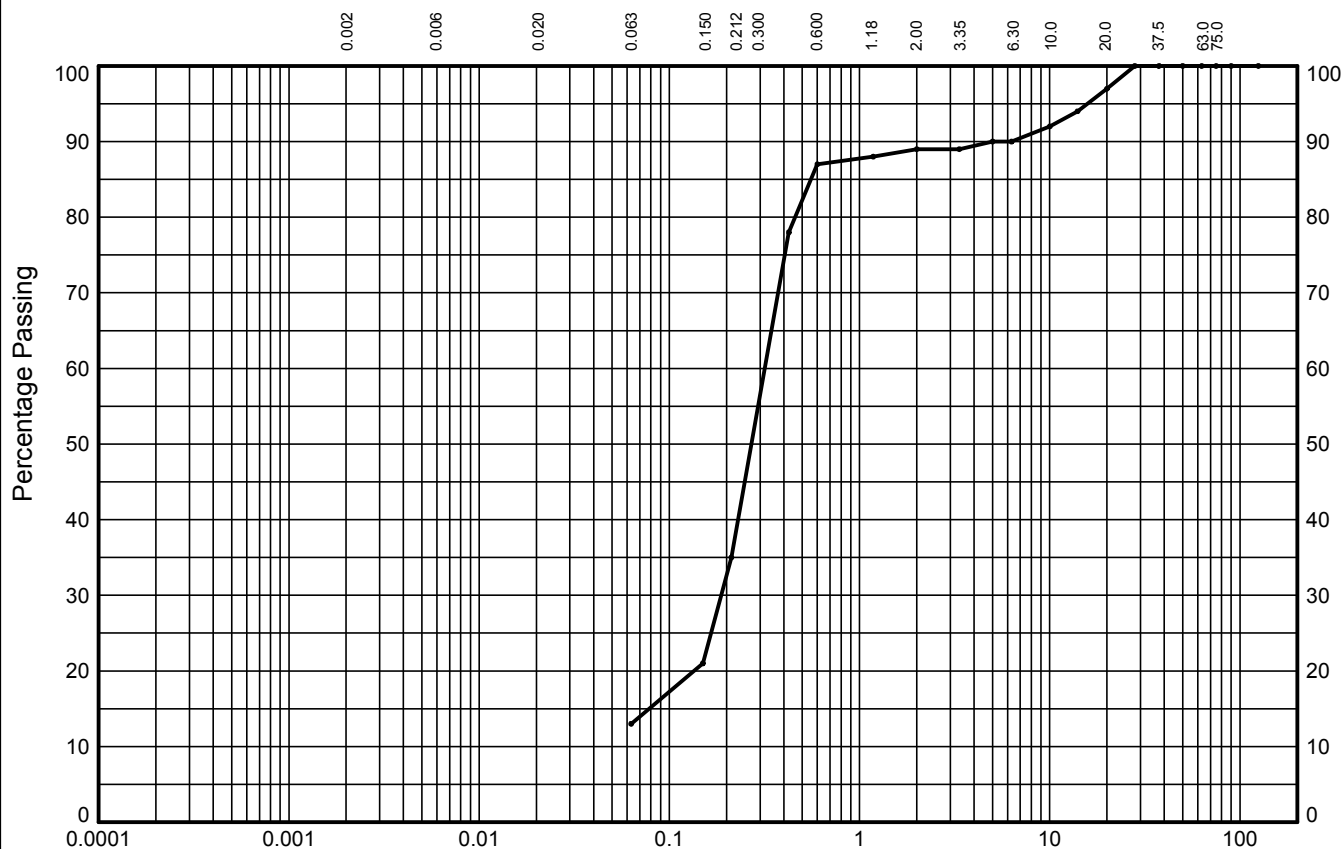
Contract Ref:

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In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **0.80**



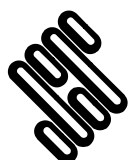
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	100
37.5	100
28	100
20	97
14	94
10	92
6.3	90
5	90
3.35	89
2	89
1.18	88
0.6	87
0.425	78
0.212	35
0.15	21
0.063	13

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	11
SAND	76
SILT/CLAY	13

Orange brown clayey gravelly SAND



STRUCTURAL SOILS
The Potteries
Pottery Street
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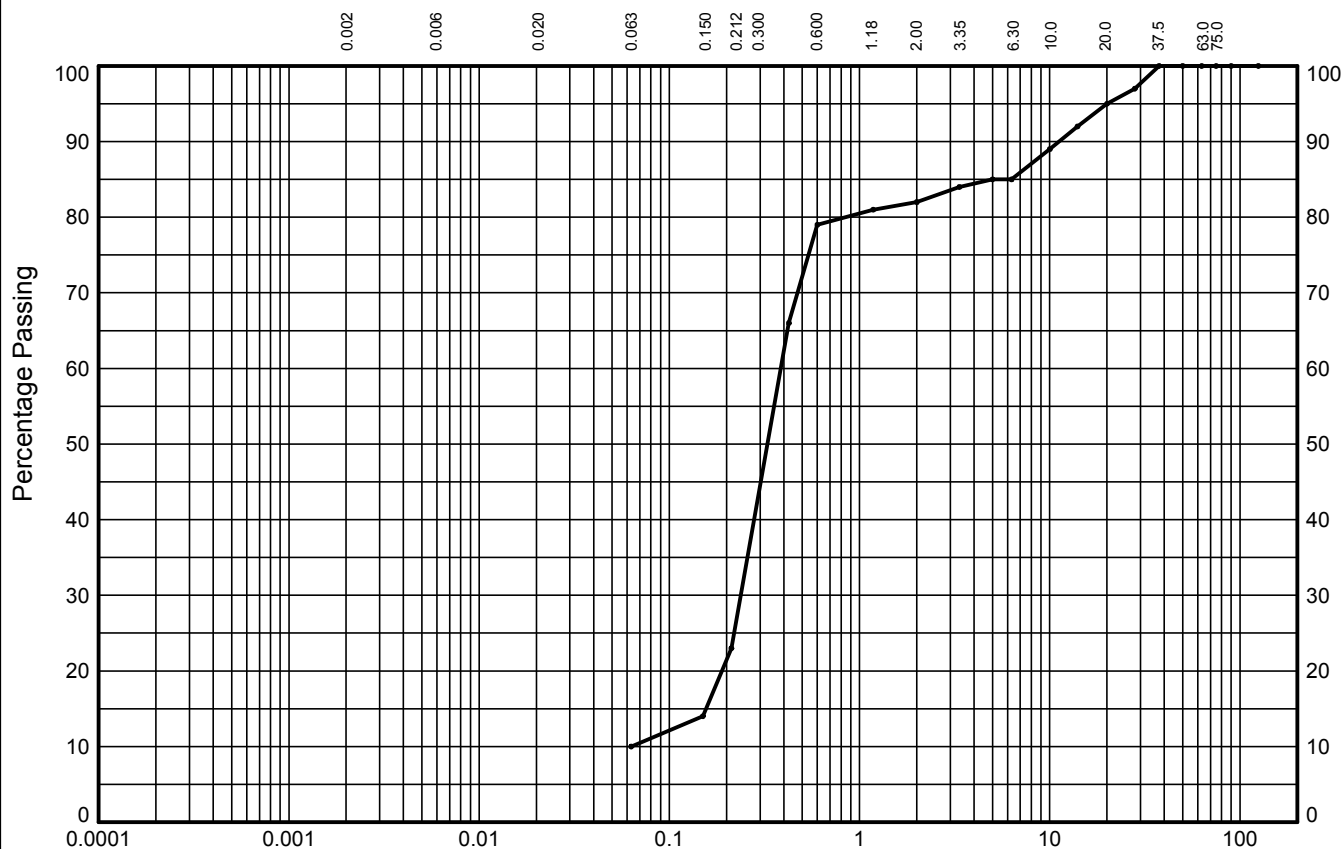
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In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **0.50**



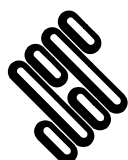
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	100
37.5	100
28	97
20	95
14	92
10	89
6.3	85
5	85
3.35	84
2	82
1.18	81
0.6	79
0.425	66
0.212	23
0.15	14
0.063	10

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	18
SAND	72
SILT/CLAY	10

Orange brown clayey gravelly SAND



STRUCTURAL SOILS
The Potteries
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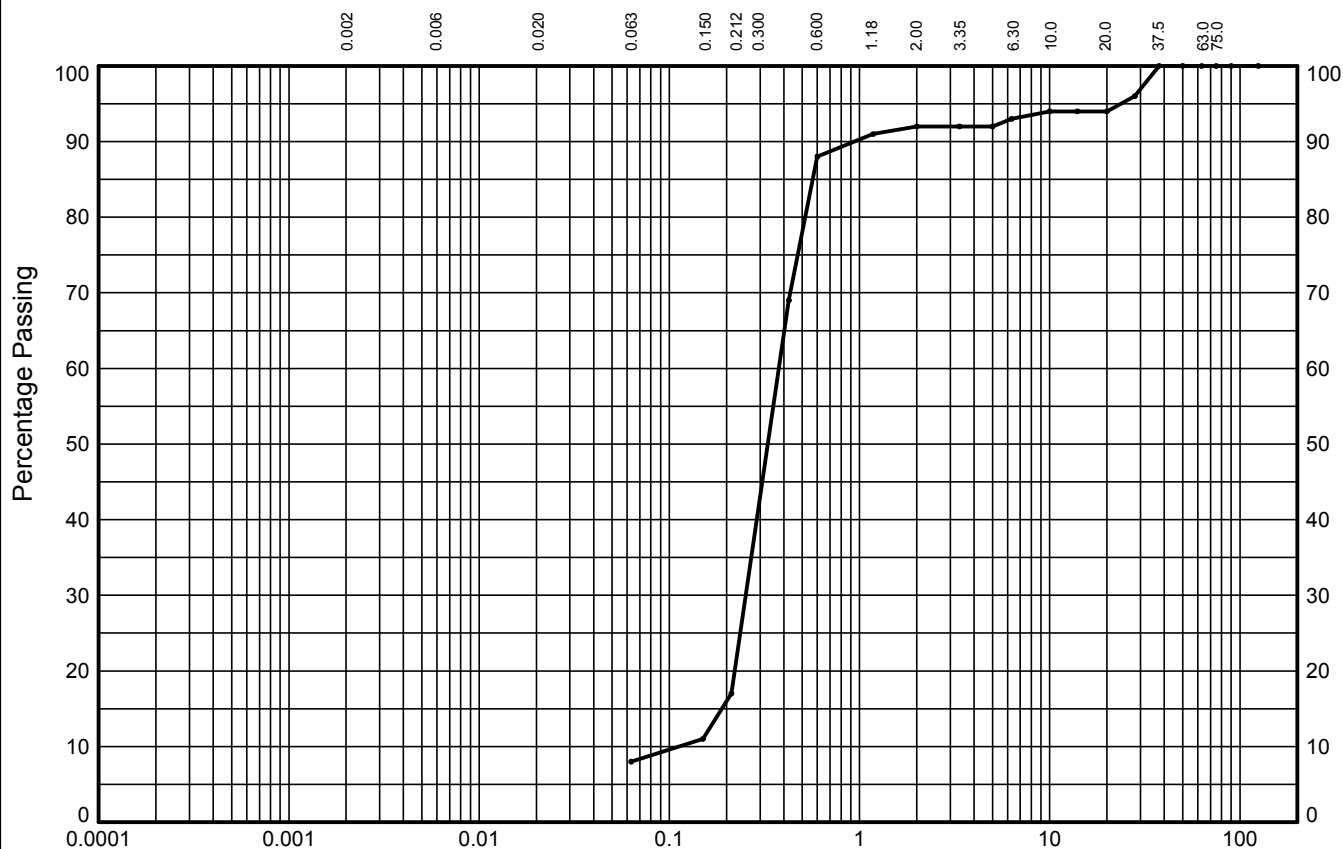
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In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **0.70**



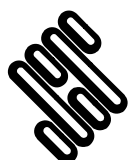
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	100
37.5	100
28	96
20	94
14	94
10	94
6.3	93
5	92
3.35	92
2	92
1.18	91
0.6	88
0.425	69
0.212	17
0.15	11
0.063	8

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	8
SAND	84
SILT/CLAY	8

Orange brown clayey gravelly SAND



STRUCTURAL SOILS
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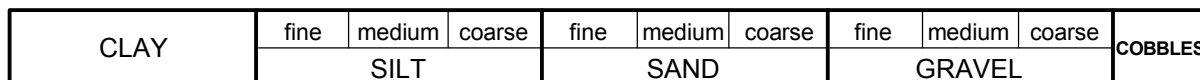
Thoresby

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In accordance with clauses 9.2 of BS1377:Part 2:1990

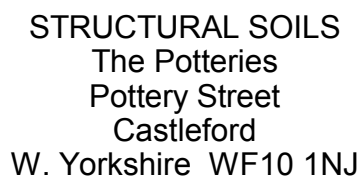
Depth (m): **0.80**



Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Soil Fraction	Sieve Percentage (%)
GRAVEL	9
SAND	79
SILT/CLAY	12

Orange brown clayey gravelly SAND



Date _____

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06/02/18

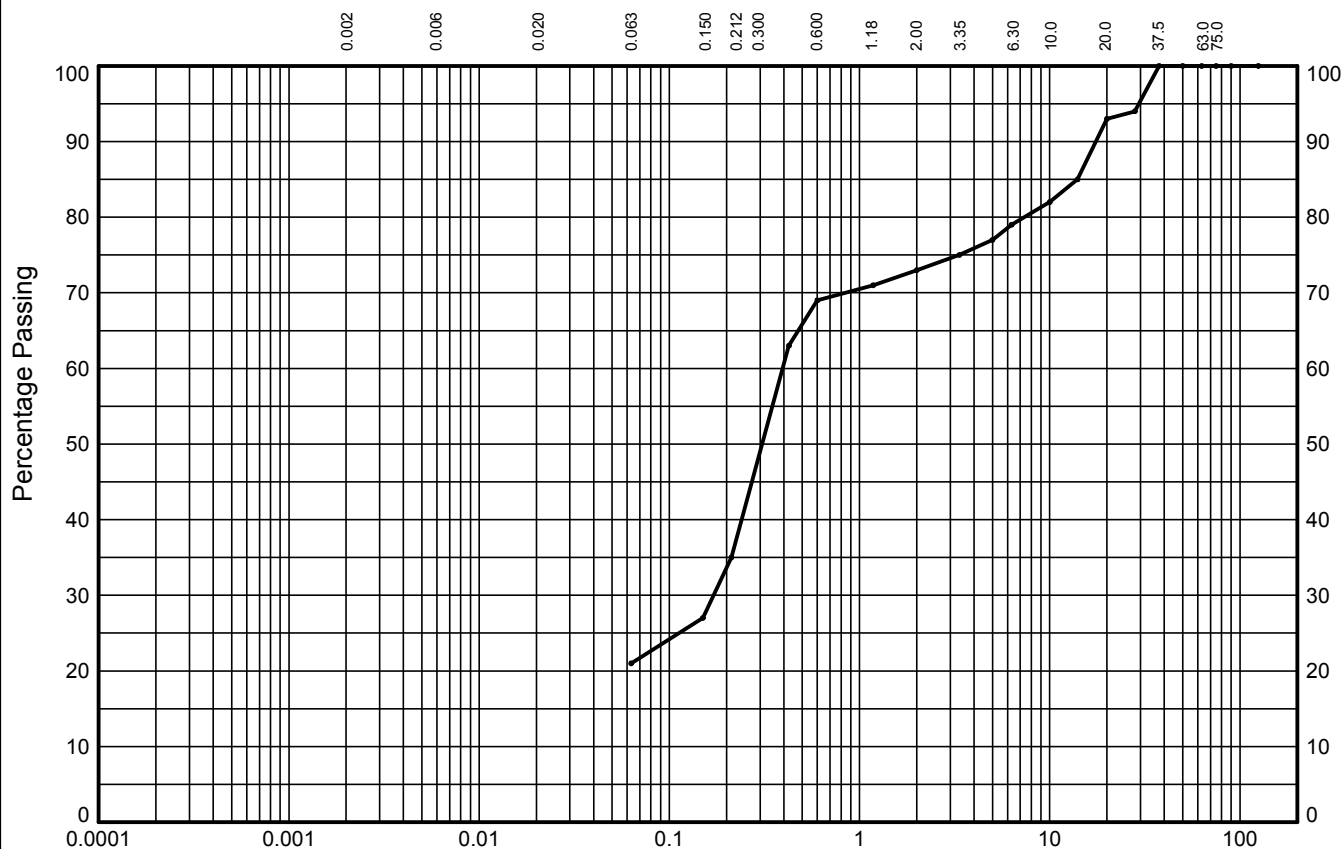
Contract Ref:

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In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **0.60**



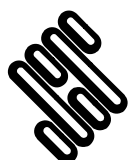
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125	100
90	100
75	100
63	100
50	100
37.5	100
28	94
20	93
14	85
10	82
6.3	79
5	77
3.35	75
2	73
1.18	71
0.6	69
0.425	63
0.212	35
0.15	27
0.063	21

Particle Diameter	Percentage Passing

Soil Fraction	Sieve Percentage
GRAVEL	27
SAND	52
SILT/CLAY	21

Orange brown clayey very gravelly SAND



STRUCTURAL SOILS
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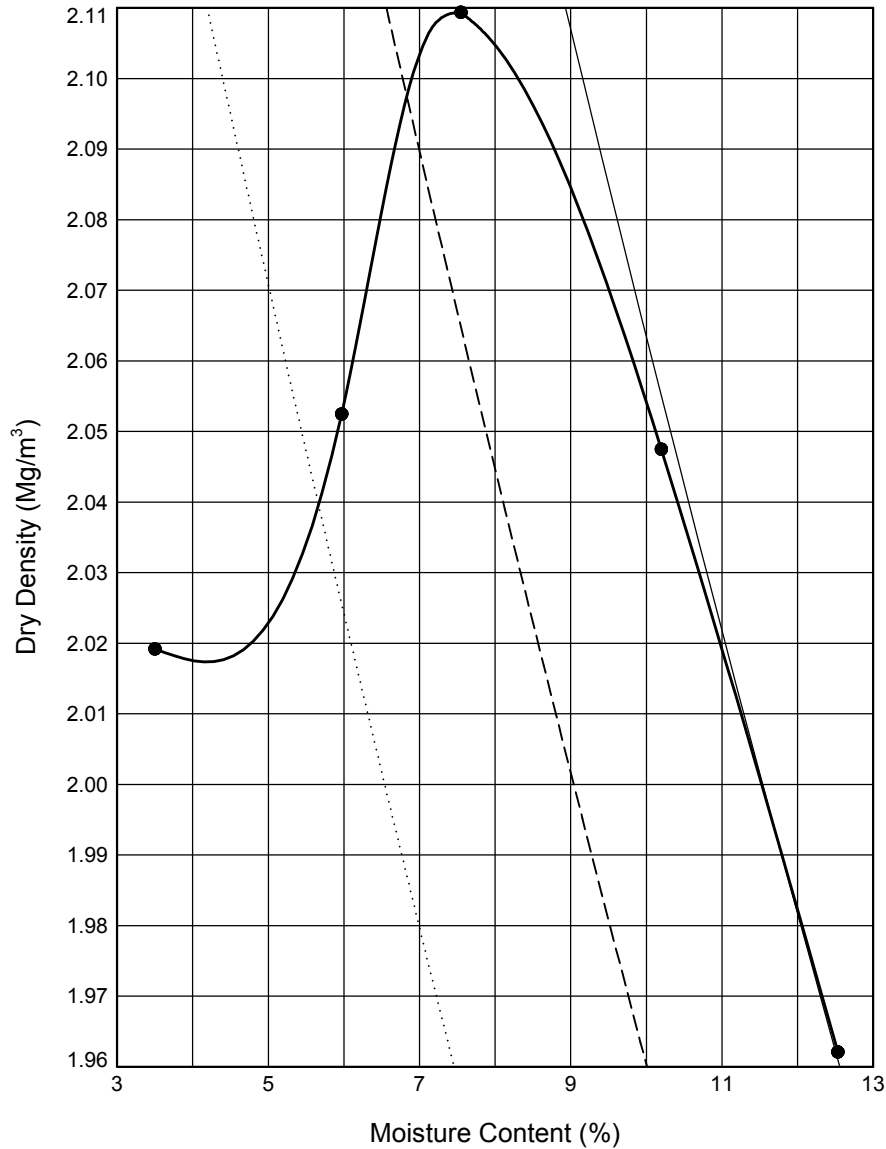
782954



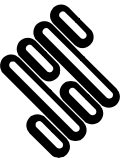
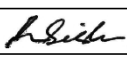
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP102** Sample Ref: **2** Sample Type: **D** Depth (m): **1.00**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: 7.5	Compaction Type	: Heavy	Maximum Dry Density (Mg/m³)	: 2.11
% Retained on 37.5mm BS Sieve	: 11	Mass of Rammer (kg):	4.5	Optimum Moisture Content (%)	: 7.5
% Retained on 20.0mm BS Sieve	: 26	Type of Mould	: CBR	Method Used:	Clause 3.6
Particle Density - assumed (Mg/m³)	: 2.60	Remarks:			
Size of Soil Pieces	: <10mm				
Sample Description			Key to Air Voids Lines		
Black/grey clayey sandy GRAVEL			——— 0%	----- 5% 10%

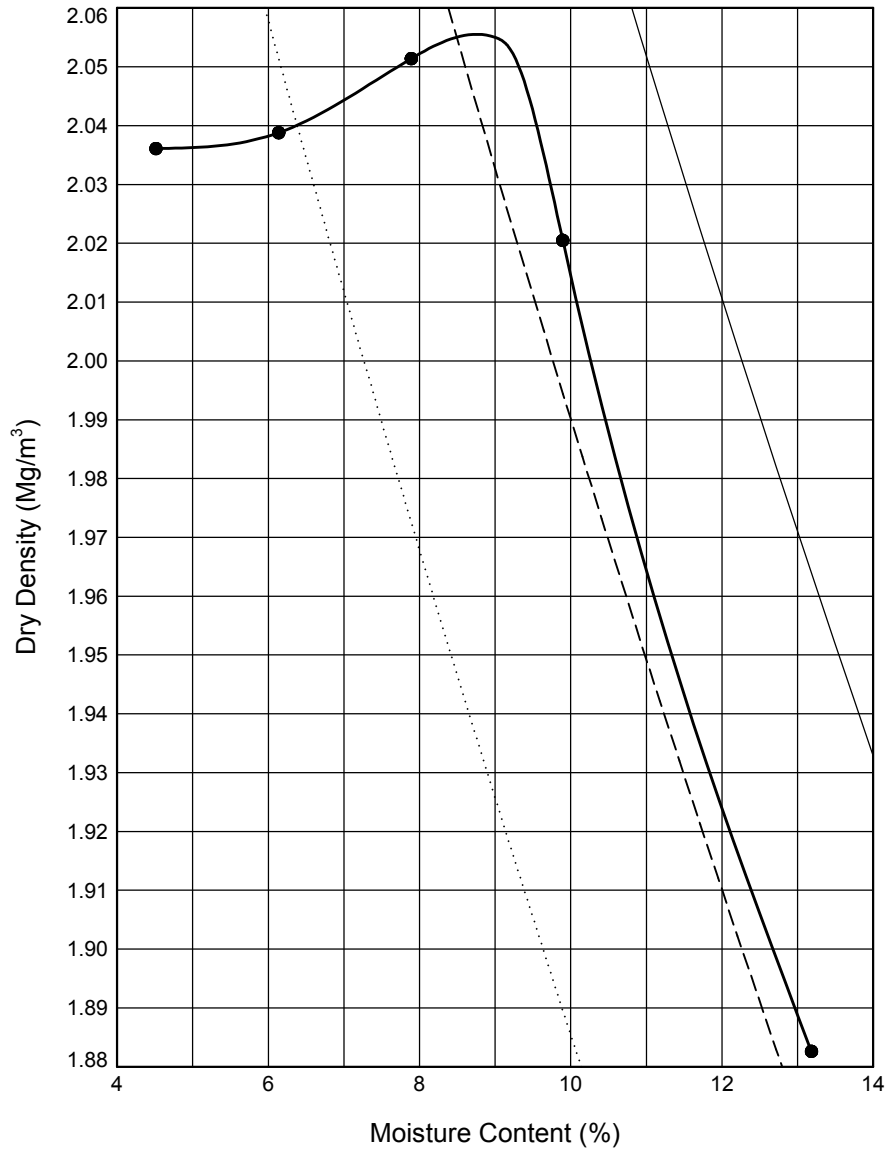
 STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
	 LUKE FISHER		06/02/18
	Contract Thoresby		Contract Ref: 782954



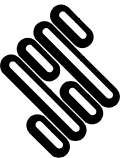
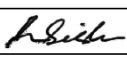

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP102** Sample Ref: **3** Sample Type: **D** Depth (m): **1.50**



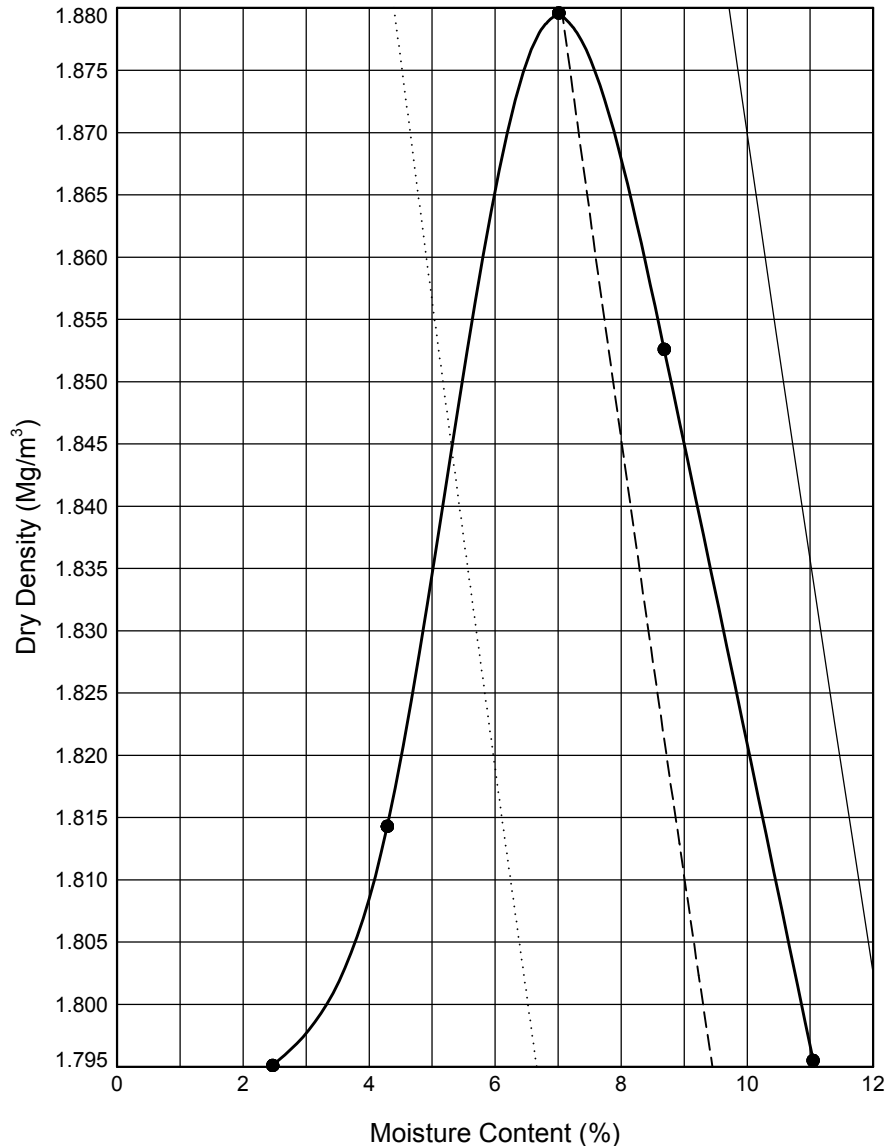
Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: 7.9	Compaction Type	: Heavy	Maximum Dry Density (Mg/m³)	: 2.06
% Retained on 37.5mm BS Sieve	: 18	Mass of Rammer (kg):	4.5	Optimum Moisture Content (%)	: 9
% Retained on 20.0mm BS Sieve	: 31	Type of Mould	: CBR	Method Used:	Clause 3.6
Particle Density - assumed (Mg/m³)	: 2.65	Remarks:			
Size of Soil Pieces	: <20mm				
Sample Description			Key to Air Voids Lines		
Black clayey sandy GRAVEL			———— 0%	----- 5% 10%

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			06/02/18
	Contract Thoresby		Contract Ref: 782954 

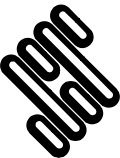
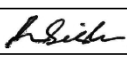

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP103** Sample Ref: **1** Sample Type: **D** Depth (m): **2.00**



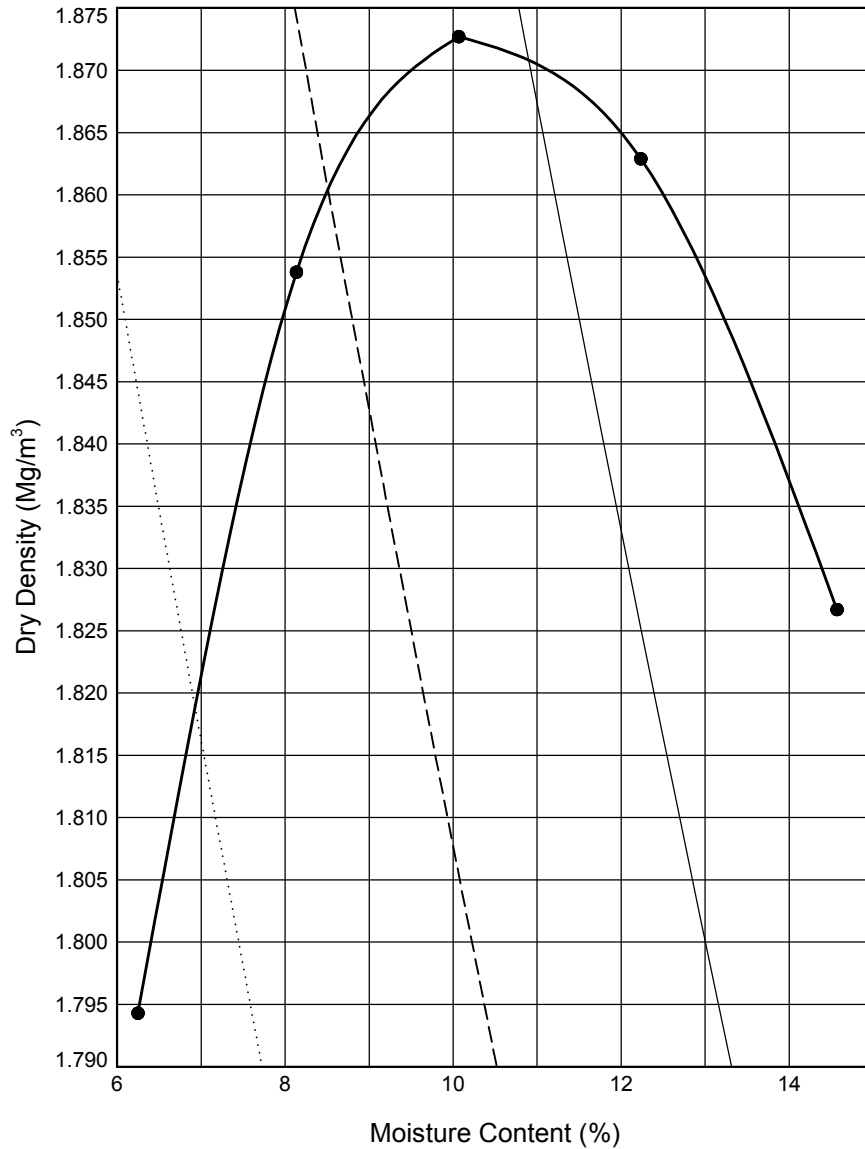
Initial Sample Conditions	Test Details	Test Results
Initial Moisture Content (%) : 8.7	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.88
% Retained on 37.5mm BS Sieve : 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 7
% Retained on 20.0mm BS Sieve : 1	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m³) : 2.30		Remarks:
Size of Soil Pieces : >20mm	Separate samples were used.	
Sample Description		Key to Air Voids Lines
Orange brown clayey gravelly SAND		<div>———— 0%</div> <div>----- 5%</div> <div>..... 10%</div>

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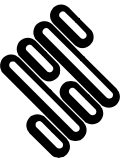
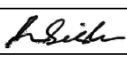

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP106** Sample Ref: **1** Sample Type: **D** Depth (m): **2.30**



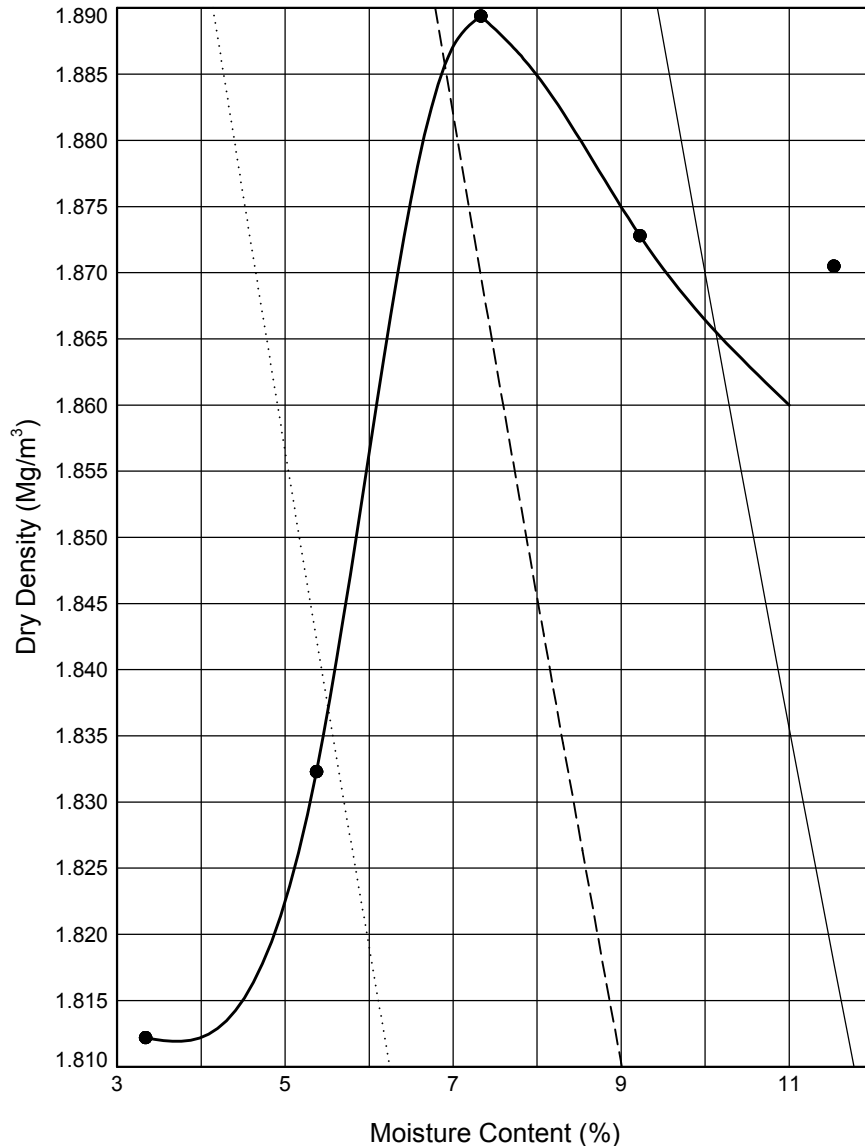
Initial Sample Conditions	Test Details	Test Results
Initial Moisture Content (%) : 1396	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.87
% Retained on 37.5mm BS Sieve : 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 10
% Retained on 20.0mm BS Sieve : 406	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m³) : 2.35		Remarks:
Size of Soil Pieces : >20mm	Separate samples were used.	
Sample Description		Key to Air Voids Lines
Orange brown clayey gravelly SAND		<div>———— 0%</div> <div>----- 5%</div> <div>..... 10%</div>

 STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
			06/02/18
	Contract	Contract Ref:	
	Thoresby	782954	

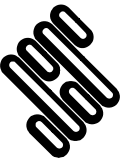
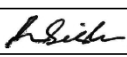

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP107** Sample Ref: **2** Sample Type: **D** Depth (m): **2.20**



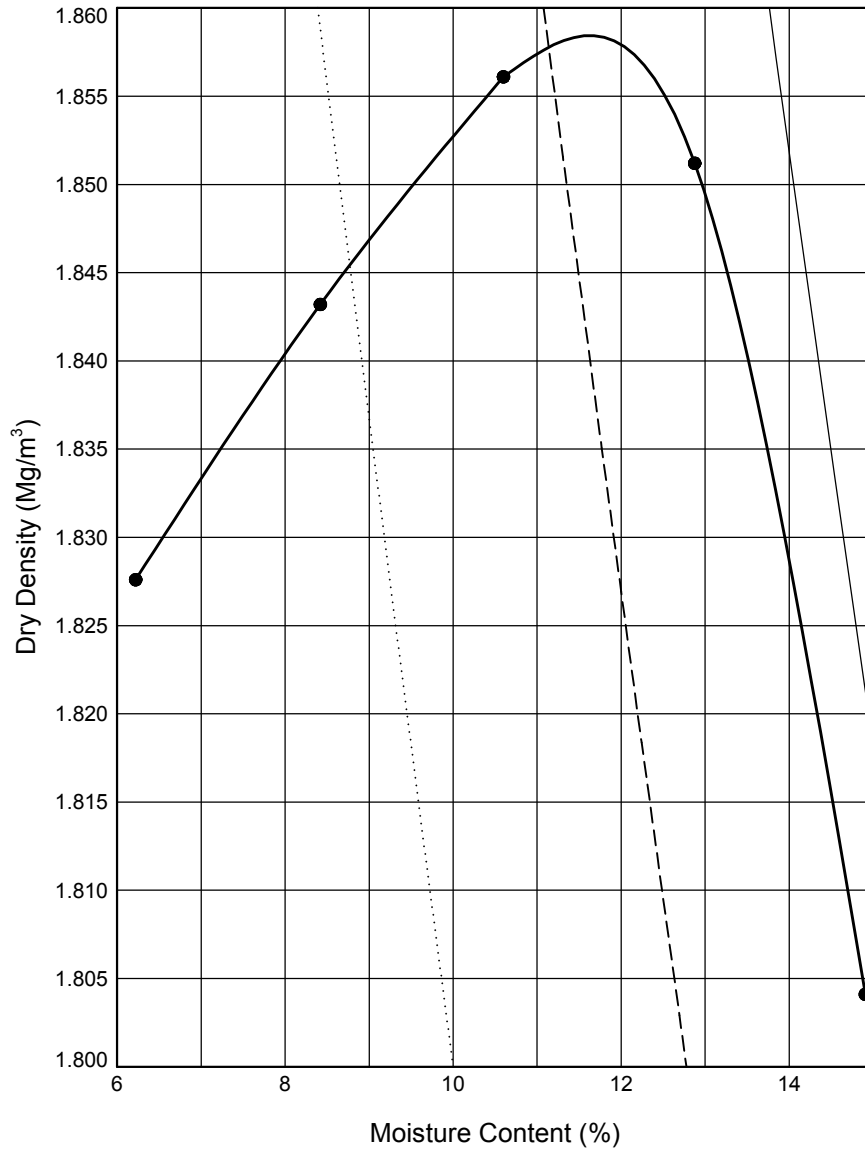
Initial Sample Conditions	Test Details	Test Results
Initial Moisture Content (%) : 9.2	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.89
% Retained on 37.5mm BS Sieve : 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 7.3
% Retained on 20.0mm BS Sieve : 46	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m³) : 2.30		Remarks:
Size of Soil Pieces : >20mm	Separate samples were used.	
Sample Description		Key to Air Voids Lines
Orange brown clayey gravelly SAND		<div>———— 0%</div> <div>----- 5%</div> <div>..... 10%</div>

 STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
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	Contract	Contract Ref:	
	Thoresby	782954	

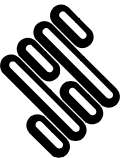
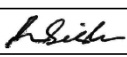

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP115** Sample Ref: **1** Sample Type: **D** Depth (m): **1.20**



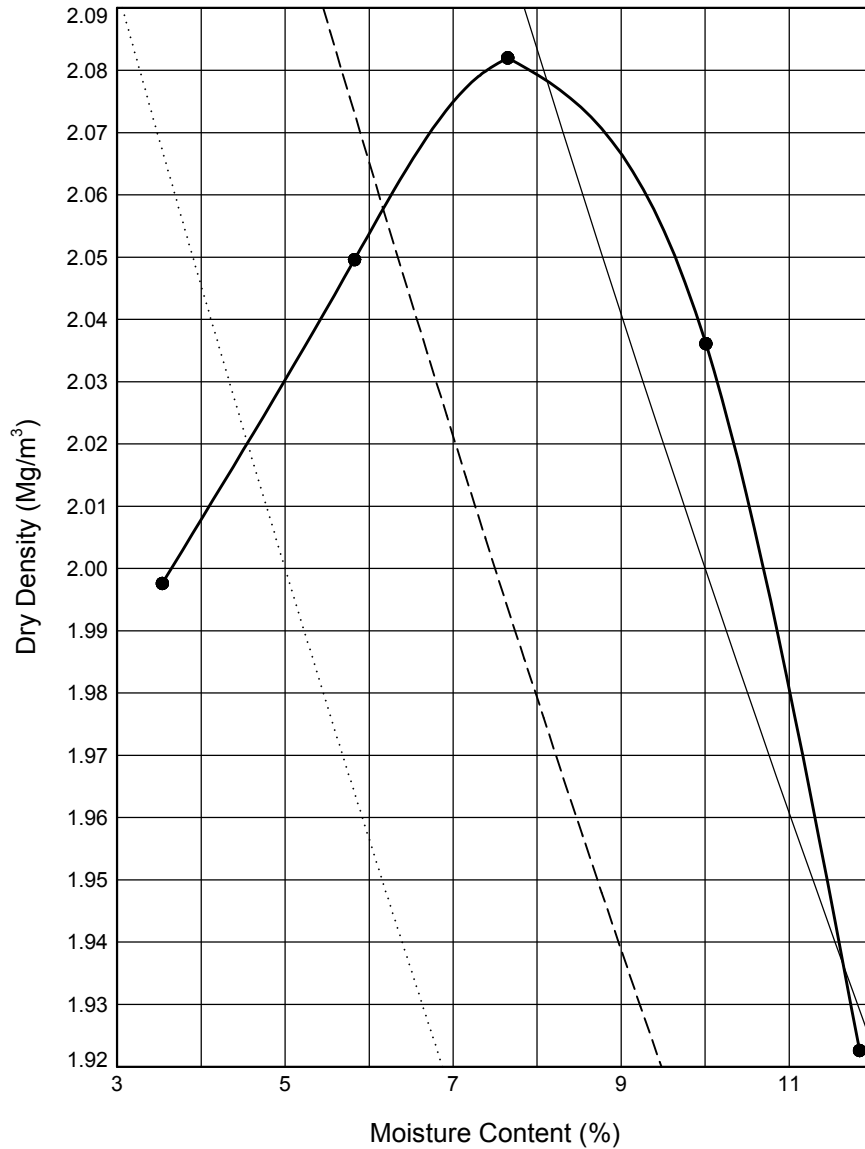
Initial Sample Conditions	Test Details	Test Results
Initial Moisture Content (%) : 6.2	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.86
% Retained on 37.5mm BS Sieve : 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 11
% Retained on 20.0mm BS Sieve : 2	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m³) : 2.50		Remarks:
Size of Soil Pieces : <20mm	Separate samples were used.	
Sample Description		Key to Air Voids Lines
Orange brown clayey slightly gravelly SAND		<div>———— 0%</div> <div>----- 5%</div> <div>..... 10%</div>

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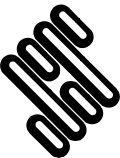
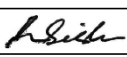

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP117** Sample Ref: **2** Sample Type: **D** Depth (m): **0.80**



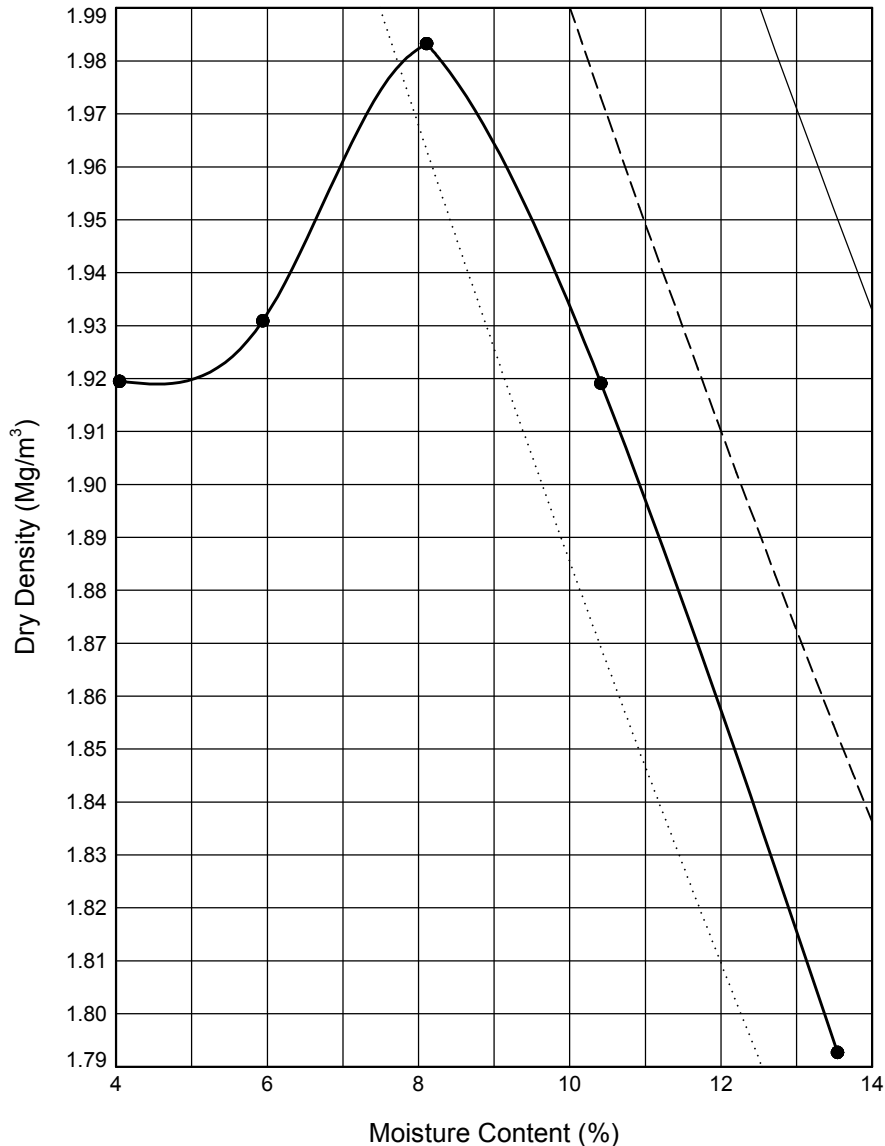
Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: 7.6	Compaction Type	: Heavy	Maximum Dry Density (Mg/m³)	: 2.08
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg):	4.5	Optimum Moisture Content (%)	: 7.6
% Retained on 20.0mm BS Sieve	: 1	Type of Mould	: Proctor	Method Used:	Clause 3.5
Particle Density - assumed (Mg/m³)	: 2.50	Remarks:			
Size of Soil Pieces	: <20mm				
Sample Description			Key to Air Voids Lines		
Orange brown clayey very gravelly SAND			—— 0%	---- 5% 10%

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	Contract	Contract Ref:	
	Thoresby	782954	

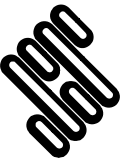
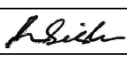

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP130** Sample Ref: **1** Sample Type: **D** Depth (m): **0.10**



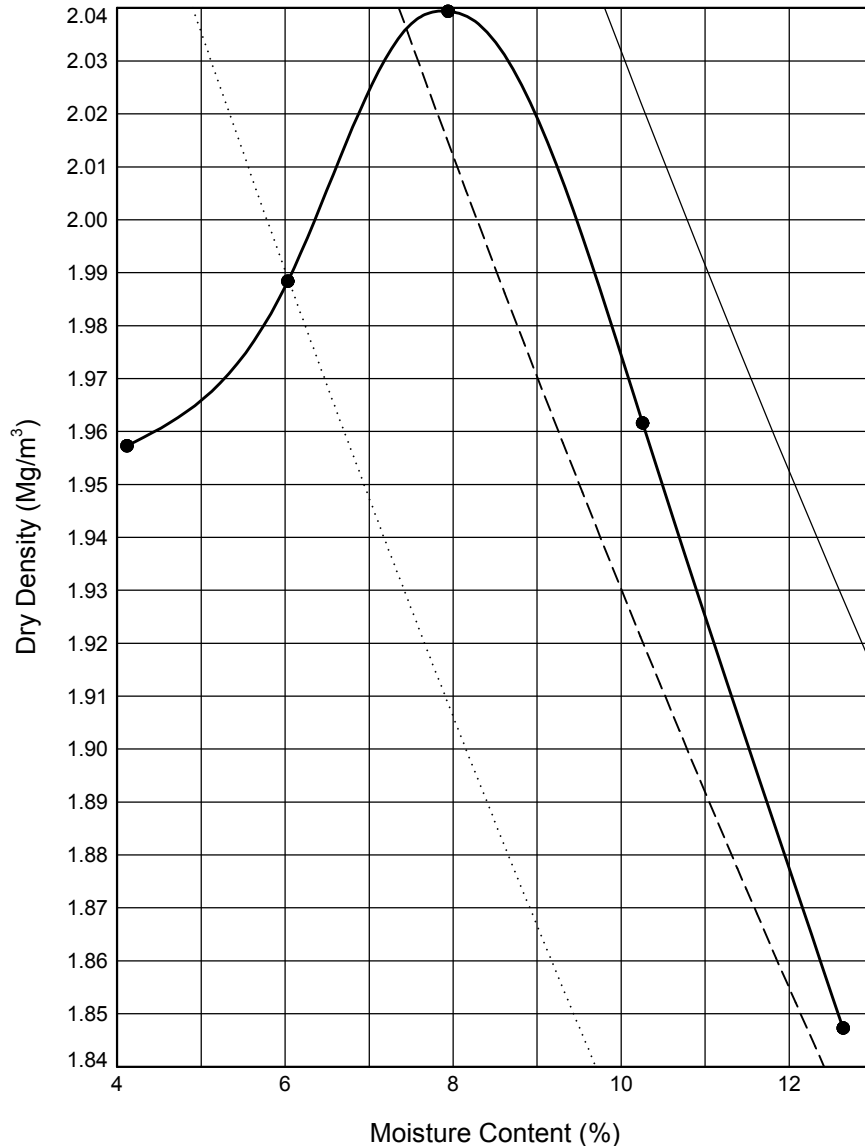
Initial Sample Conditions		Test Details		Test Results		
Initial Moisture Content (%)	: 8.1	Compaction Type	: Heavy	Maximum Dry Density (Mg/m³) : 1.98		
% Retained on 37.5mm BS Sieve	: 2	Mass of Rammer (kg):	4.5	Optimum Moisture Content (%) : 8		
% Retained on 20.0mm BS Sieve	: 18	Type of Mould	: CBR	Method Used: Clause 3.6		
Particle Density - assumed (Mg/m³)	: 2.65	Separate samples were used.		Remarks:		
Size of Soil Pieces	: <20mm					
Sample Description				Key to Air Voids Lines		
Black/grey slightly sandy gravelly CLAY with occasional cobbles				——— 0%	— — — — 5% 10%

 STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
			06/02/18
	Contract Thoresby		Contract Ref: 782954 

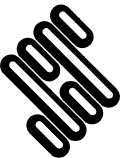
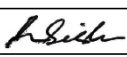
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP132** Sample Ref: **1** Sample Type: **D** Depth (m): **0.30**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: 10.0	Compaction Type	: Heavy	Maximum Dry Density (Mg/m³)	: 2.04
% Retained on 37.5mm BS Sieve	: 12	Mass of Rammer (kg):	4.5	Optimum Moisture Content (%)	: 8
% Retained on 20.0mm BS Sieve	: 241	Type of Mould	: CBR	Method Used:	Clause 3.6
Particle Density - assumed (Mg/m³)	: 2.55	Remarks:			
Size of Soil Pieces	: <20mm				
Sample Description			Key to Air Voids Lines		
Grey gravelly sandy CLAY					
			———— 0%	— — — — 5% 10%

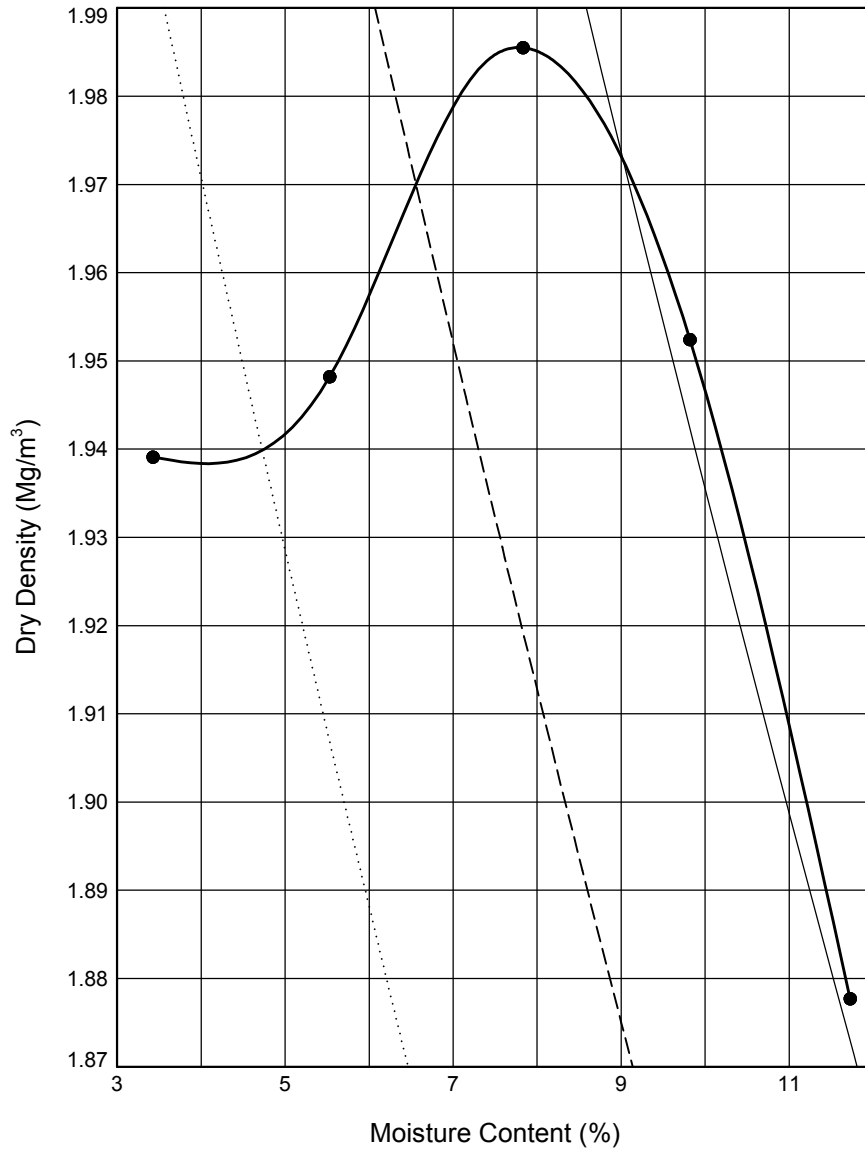
 STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
	 LUKE FISHER		06/02/18
	Contract Thoresby		Contract Ref: 782954



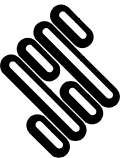
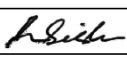
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP134** Sample Ref: **1** Sample Type: **D** Depth (m): **0.40**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: 7.8	Compaction Type	: Heavy	Maximum Dry Density (Mg/m³)	: 1.99
% Retained on 37.5mm BS Sieve	: 7	Mass of Rammer (kg):	4.5	Optimum Moisture Content (%)	: 7.8
% Retained on 20.0mm BS Sieve	: 19	Type of Mould	: CBR	Method Used:	Clause 3.6
Particle Density - assumed (Mg/m³)	: 2.40	Separate samples were used.		Remarks:	
Size of Soil Pieces	: <20mm				
Sample Description			Key to Air Voids Lines		
Black clayey sandy GRAVEL			<div>———— 0%<div>----- 5%<div>..... 10%</div></div></div>		

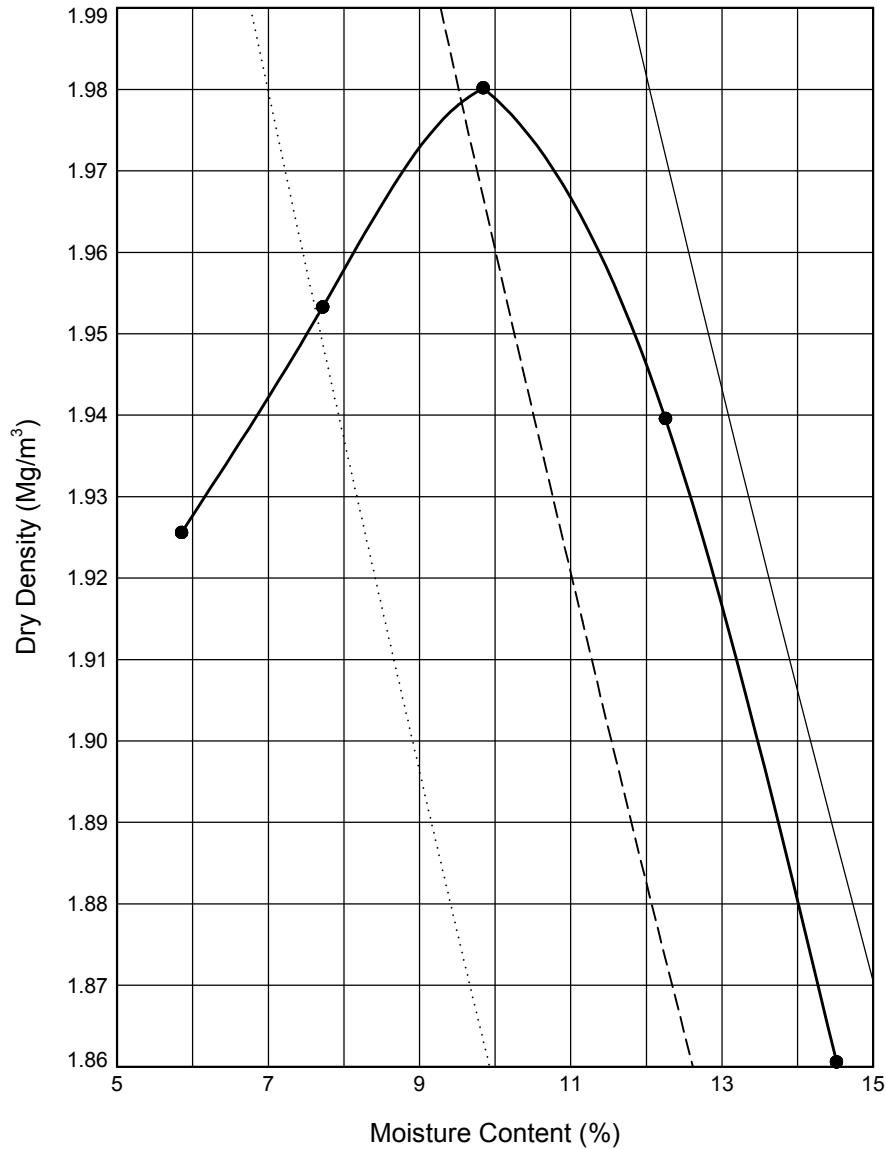
 STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
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	Contract Thoresby		Contract Ref: 782954



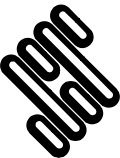
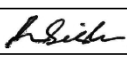

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP203** Sample Ref: **1** Sample Type: **D** Depth (m): **0.80**



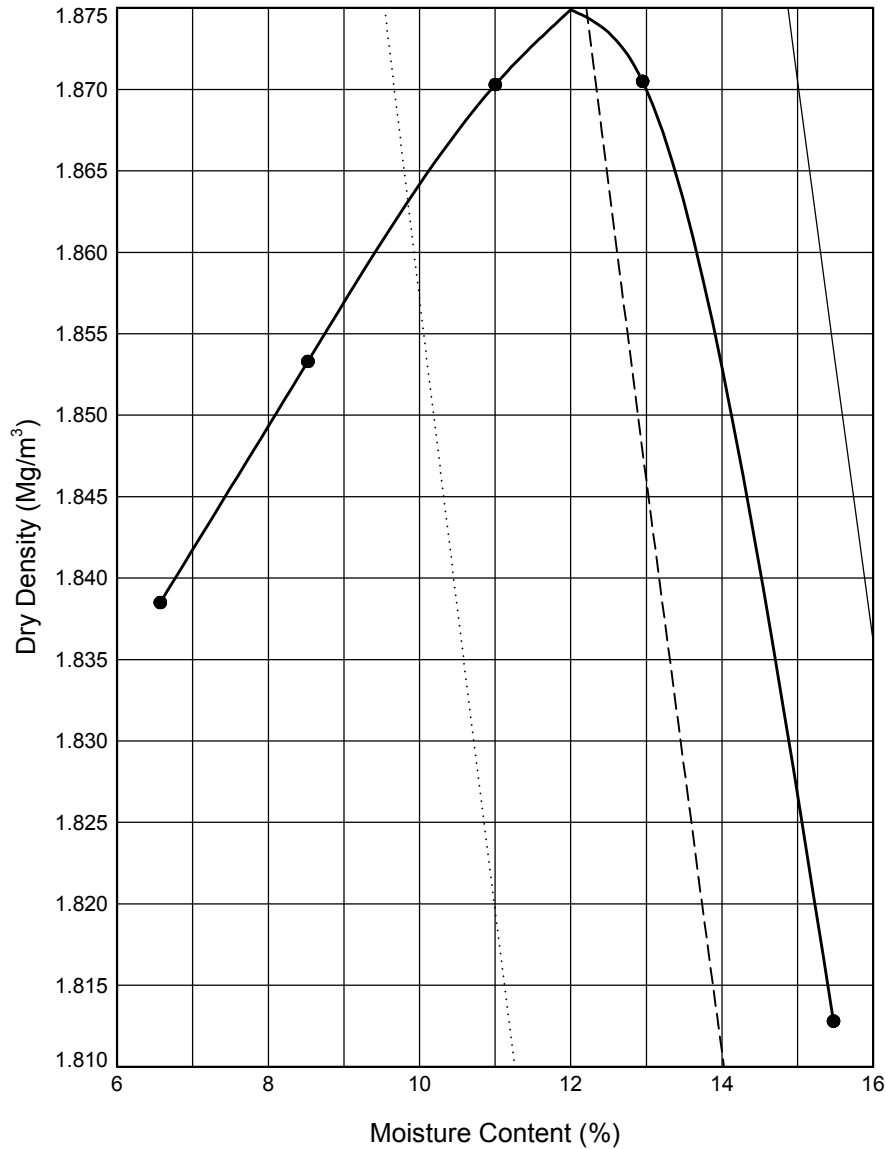
Initial Sample Conditions	Test Details	Test Results
Initial Moisture Content (%) : 9.8	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.98
% Retained on 37.5mm BS Sieve : 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 10
% Retained on 20.0mm BS Sieve : 31	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m³) : 2.60		Remarks:
Size of Soil Pieces : <20mm	Separate samples were used.	
Sample Description		Key to Air Voids Lines
Orange brown clayey gravelly SAND		<div>——— 0%</div> <div>----- 5%</div> <div>..... 10%</div>

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	Thoresby	782954	


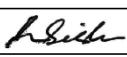
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP211** Sample Ref: **2** Sample Type: **D** Depth (m): **0.80**



Initial Sample Conditions		Test Details		Test Results		
Initial Moisture Content (%)	: 11	Compaction Type	: Heavy	Maximum Dry Density (Mg/m³) : 1.87		
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg):	4.5	Optimum Moisture Content (%) : 12		
% Retained on 20.0mm BS Sieve	: 5	Type of Mould	: Proctor	Method Used: Clause 3.5		
Particle Density - assumed (Mg/m³)	: 2.60	Separate samples were used.		Remarks:		
Size of Soil Pieces	: <20mm					
Sample Description				Key to Air Voids Lines		
Orange brown clayey gravelly SAND				———— 0%		
				— — — — 5%		
			 10%		

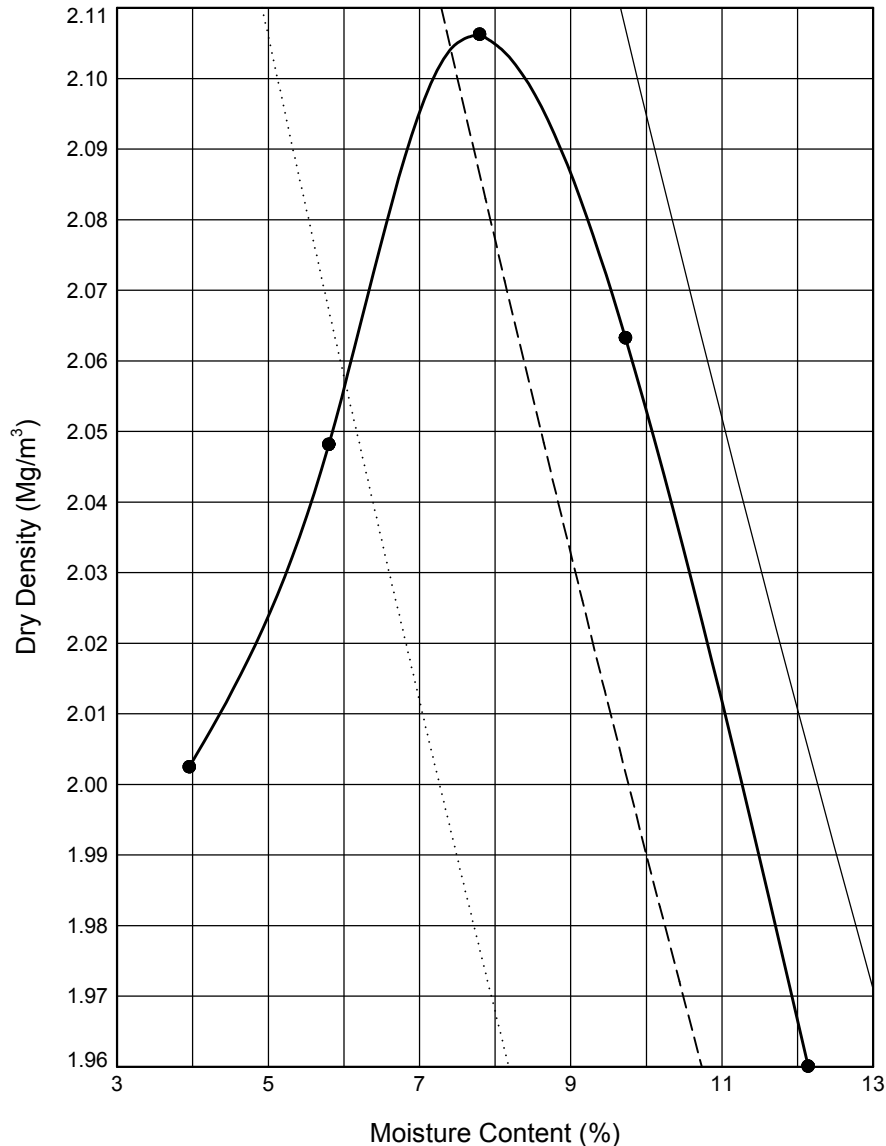
 STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
			06/02/18
	Contract Thoresby		Contract Ref: 782954



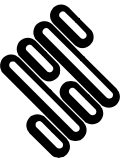
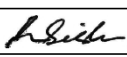

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP218** Sample Ref: **1** Sample Type: **D** Depth (m): **0.60**



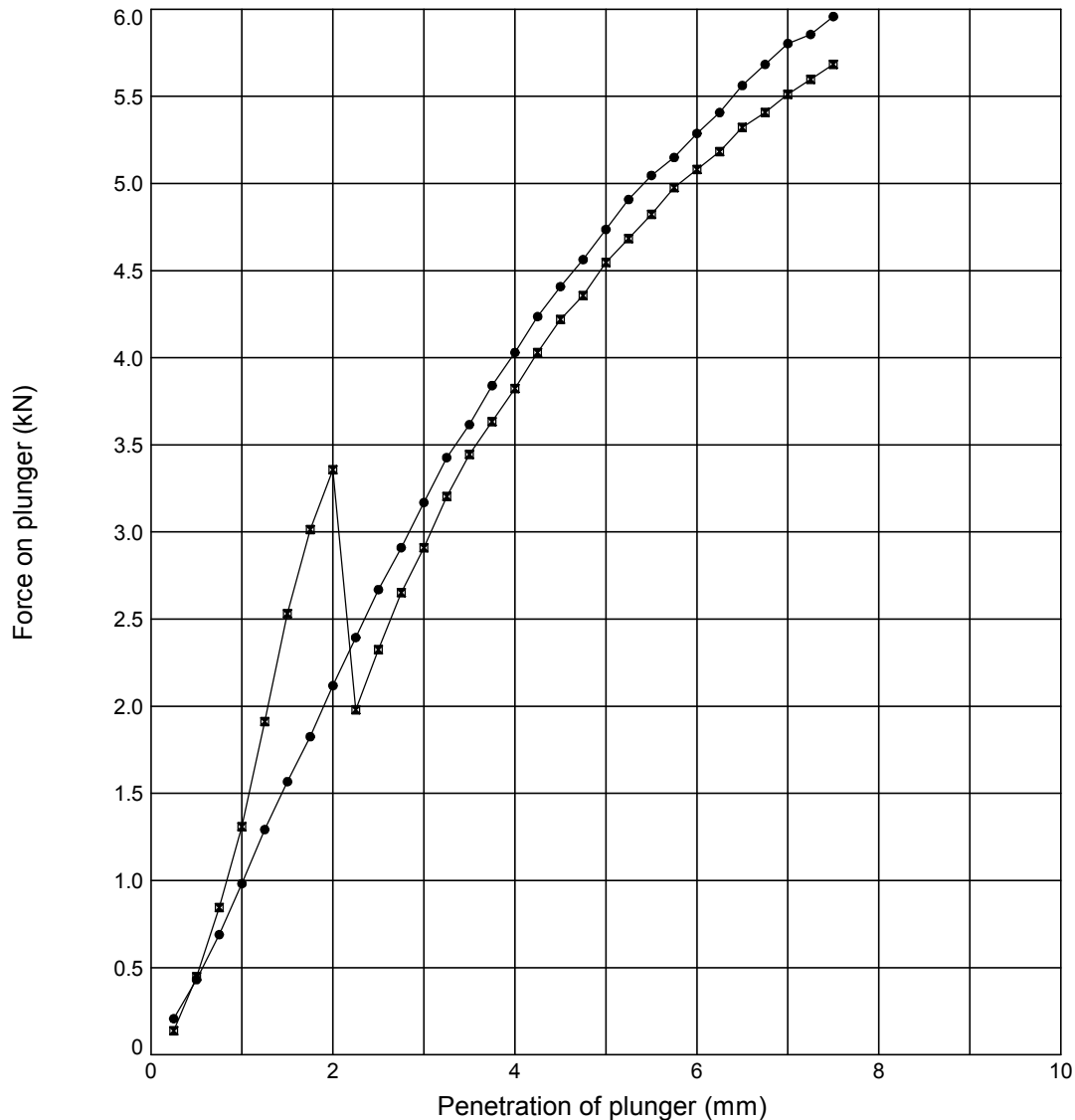
Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: 9.7	Compaction Type	: Heavy	Maximum Dry Density (Mg/m³)	: 2.11
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg):	4.5	Optimum Moisture Content (%)	: 7.8
% Retained on 20.0mm BS Sieve	: 5	Type of Mould	: Proctor	Method Used:	Clause 3.5
Particle Density - assumed (Mg/m³)	: 2.65	Remarks:			
Size of Soil Pieces	: <20mm				
Sample Description				Key to Air Voids Lines	
Orange brown clayey very gravelly SAND				———— 0%	— — — — 5%
			 10%	

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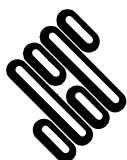
LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP102** Sample Ref: **3** Sample Type: **D** Depth (m): **1.50**



Initial Sample Conditions		Test Details		Test Results		Top	Base
Initial Moisture Content (%)	: 8.2	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)		9.4	9.2
Initial Bulk Density (Mg/m ³)	: 2.18	Surcharge (kg)	: 4.0	CBR value (%)		24	23
Initial Dry Density (Mg/m ³)	: 2.01	Soaking Time (hrs)	: -	Remarks: Gravel under plunger caused anomalies in readings			
% retained on 20mm sieve	: 0	Swelling (mm)	: -				
Sample Description				Key			
Black slightly gravelly CLAY				● Top ⊠ Base			



STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By

Handwritten signature

LUKE FISHER

Date

06/02/18

Contract

Thoresby

Contract Ref:

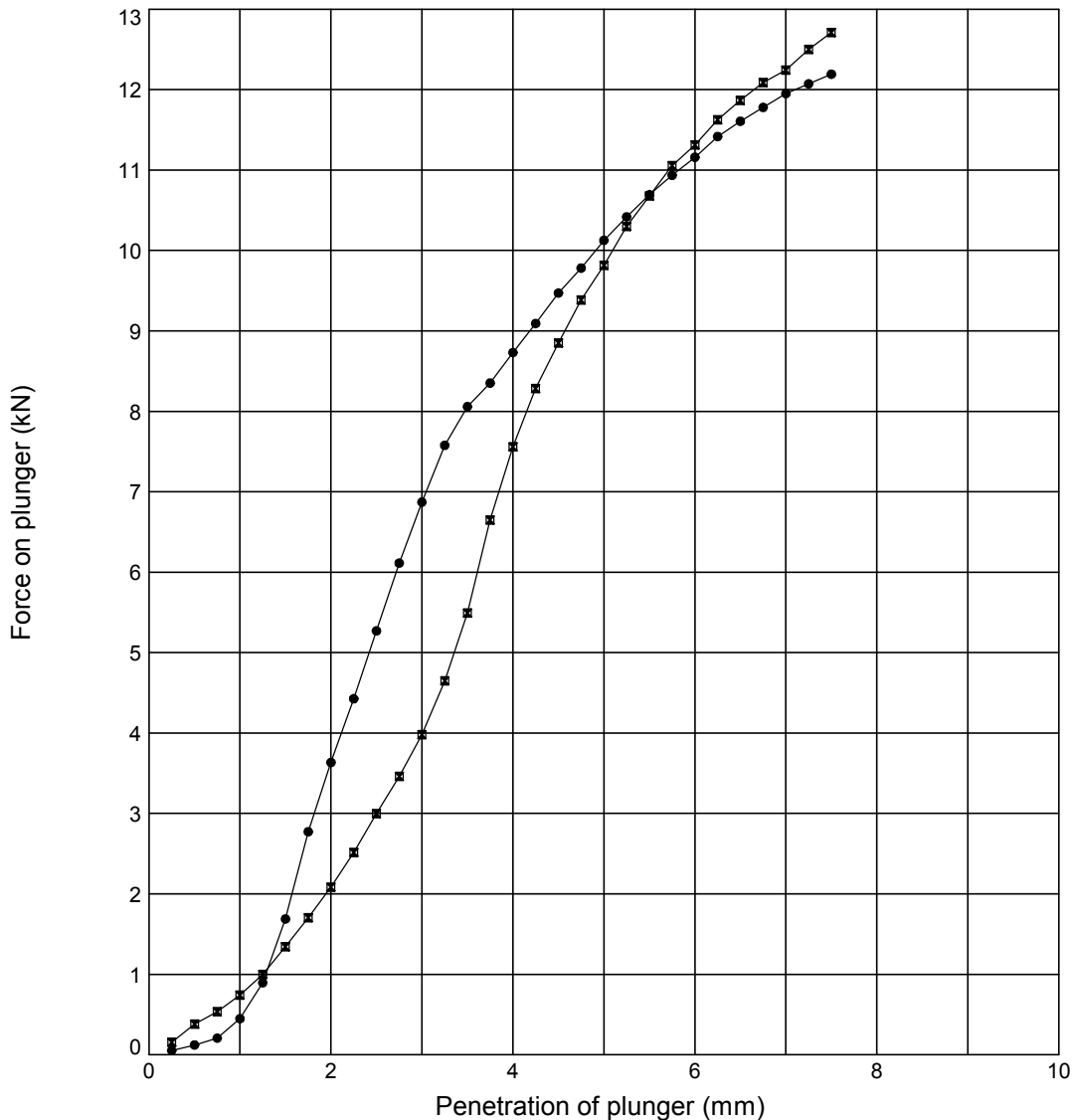
782954



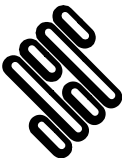
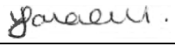
LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP130** Sample Ref: **1** Sample Type: **D** Depth (m): **0.10**



Initial Sample Conditions		Test Details		Test Results		Top	Base
Initial Moisture Content (%)	: 7.4	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)		7.8	8.0
Initial Bulk Density (Mg/m ³)	: 2.10	Surcharge (kg)	: 4.0	CBR value (%)		51	49
Initial Dry Density (Mg/m ³)	: 1.95	Soaking Time (hrs)	: -	Remarks: None			
% retained on 20mm sieve	: 0	Swelling (mm)	: -				
Sample Description				Key			
Black/grey slightly sandy gravelly CLAY with occasional cobbles				<div>● Top</div> <div>⊠ Base</div>			

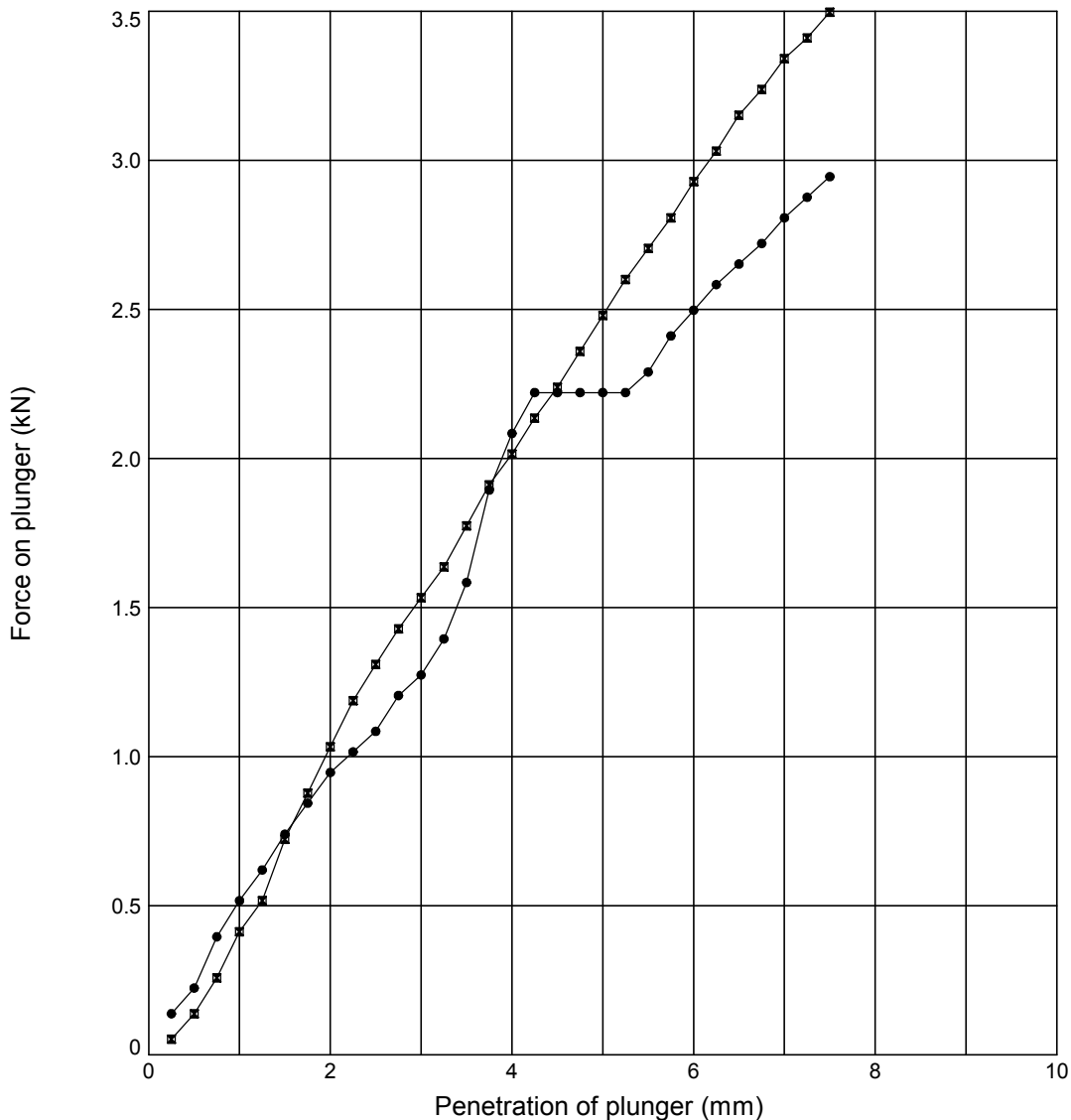
 STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
			06/02/18
	Contract	Thoresby	Contract Ref: 782954



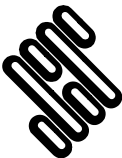
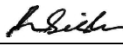

LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP132** Sample Ref: **1** Sample Type: **D** Depth (m): **0.30**



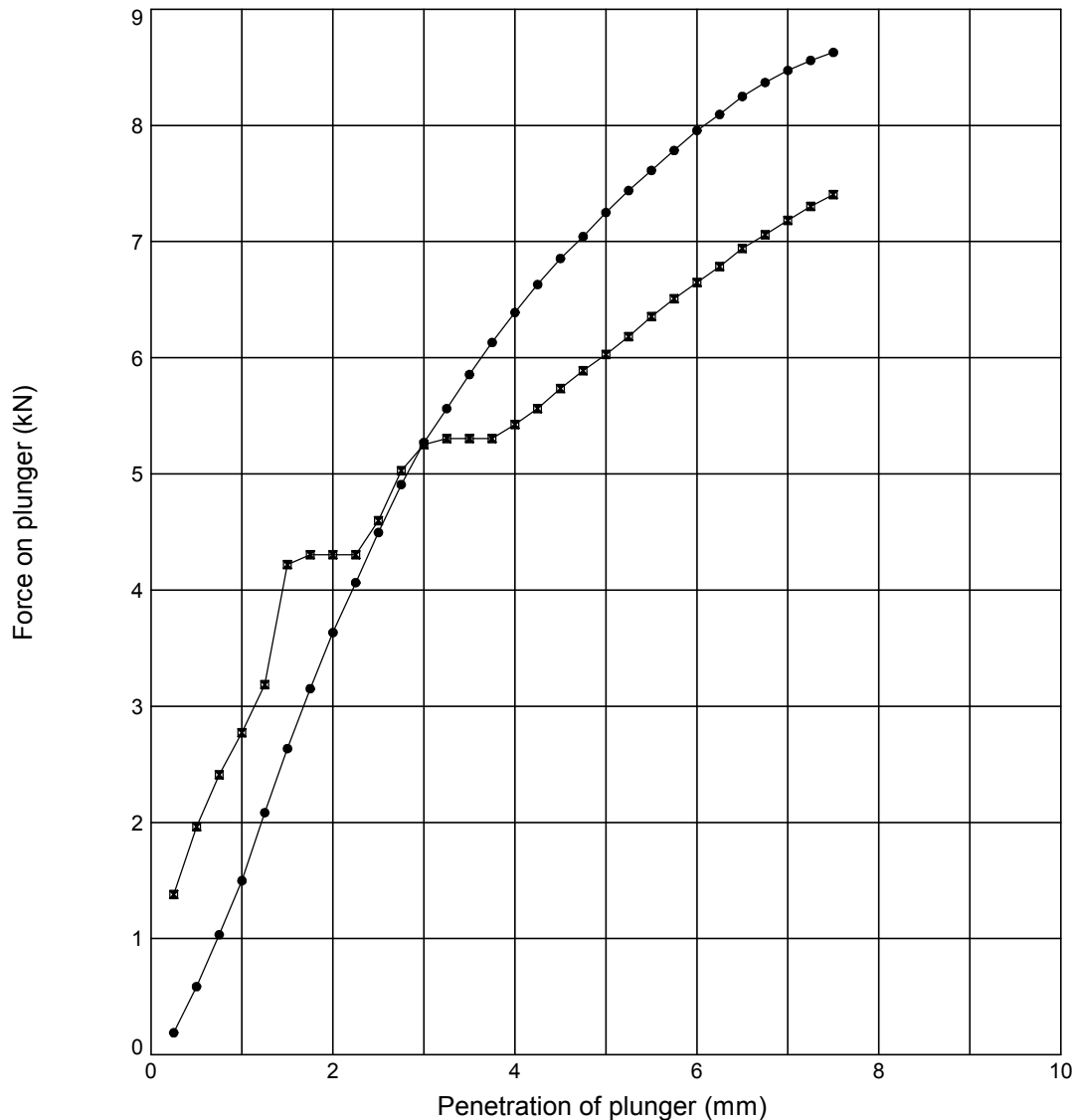
Initial Sample Conditions		Test Details		Test Results		Top	Base
Initial Moisture Content (%)	: 11	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)		11	11
Initial Bulk Density (Mg/m ³)	: 2.12	Surcharge (kg)	: 4.0	CBR value (%)		11	12
Initial Dry Density (Mg/m ³)	: 1.91	Soaking Time (hrs)	: -	Remarks: Gravel under plunger caused anomalies in readings			
% retained on 20mm sieve	: 0	Swelling (mm)	: -				
Sample Description				Key			
Black/grey clayey very sandy GRAVEL with some cobbles				<div>● Top</div> <div>⊠ Base</div>			

 STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
			LUKE FISHER
	Contract		Contract Ref:
Thoresby		782954	
			

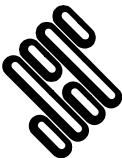
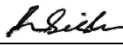
LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP134** Sample Ref: **1** Sample Type: **D** Depth (m): **0.40**



Initial Sample Conditions		Test Details		Test Results		Top	Base
Initial Moisture Content (%)	: 8.2	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)		8.3	8.3
Initial Bulk Density (Mg/m ³)	: 2.12	Surcharge (kg)	: 4.0	CBR value (%)		36	35
Initial Dry Density (Mg/m ³)	: 1.96	Soaking Time (hrs)	: -	Remarks: Gravel under plunger caused anomalies in readings			
% retained on 20mm sieve	: 0	Swelling (mm)	: -				
Sample Description				Key			
Black/grey clayey very sandy GRAVEL				<div>● Top</div> <div>⊠ Base</div>			

 STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
			06/02/18
	Contract	Thoresby	Contract Ref: 782954



TESTING VERIFICATION CERTIFICATE



1774

The test results included in this report are certified as:-

ISSUE STATUS: **FINAL**

In accordance with the Structural Soils Ltd Laboratory Quality Management System, results sheets and summaries of results issued by the laboratory are checked by an approved signatory. The integrity of the test data and results are ensured by control of the computer system employed by the laboratory as part of the Software Verification Program as detailed in the Laboratory Quality Manual.

This testing verification certificate covers all testing compiled on or before the following datetime: **07/02/2018 07:08:10**.

Testing reported after this date is not covered by this Verification Certificate.

Approved Signatory
Luke Fisher (Materials Laboratory Manager)

(Head Office)
Bristol Laboratory
Unit 1A, Princess Street
Bedminster
Bristol
BS3 4AG

Castleford Laboratory
The Potteries, Pottery Street
Castleford
West Yorkshire
WF10 1NJ

Hemel Laboratory
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Tonbridge Laboratory
Anerley Court, Half Moon Lane
Hildenborough
Tonbridge
TN11 9HU



**STRUCTURAL
SOILS LTD**

Contract:

Thoresby

Job No:

782954



APPENDIX D

Chemical Laboratory Certificates for Chester Formation

FINAL ANALYTICAL TEST REPORT

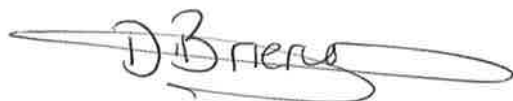
Envirolab Job Number: 17/08337
Issue Number: 1

Date: 05 January, 2018

Client: RSK Environment Ltd Derby
12 Royal Scot Road
Pride Park
Derby
Derbyshire
UK
DE24 8AJ

Project Manager: Anthony Jordan
Project Name: Thoresby Area B
Project Ref: 301924
Order No: N/A
Date Samples Received: 05/12/17
Date Instructions Received: 08/12/17
Date Analysis Completed: 04/01/18

Prepared by:



Danielle Brierley
Client Manager

Approved by:



Iain Haslock
Analytical Consultant

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/1	17/08337/2	17/08337/4	17/08337/5	17/08337/6	17/08337/7	17/08337/8	17/08337/9	Units	Method ref
Client Sample No	1	2	4	5	1	2	1	2		
Client Sample ID	TP101	TP101	TP101	TP101	TP102	TP102	TP103	TP103		
Depth to Top	0.4	1.2	2.2	2.5	1.5	3.8	0.5	2.4		
Depth To Bottom	0.50									
Date Sampled	23-Nov-17	23-Nov-17	23-Nov-17	23-Nov-17	22-Nov-17	22-Nov-17	22-Nov-17	22-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	5A	1A	4A	4A	4A	4A	4A	5A		
% Stones >10mm _A	13.6	0.4	20.1	7.6	17.1	17.1	0.4	10.3		
pH _D	6.91	7.67	6.99	6.60	6.18	6.47	6.93	6.89	pH	A-T-031s
Phenols - Total by HPLC _A	-	-	-	<0.2	-	-	-	<0.2	mg/kg	A-T-050s
Loss on ignition (550degC) _D	2.1	-	-	-	-	-	-	-	% w/w	A-T-030s
Total Organic Carbon _D ^{M#}	0.75	0.07	-	-	4.19	-	1.36	-	% w/w	A-T-032s
Calorific Value (Gross/Total) _A	299	-	-	-	-	-	-	-	kJ/kg	Subcon
Arsenic _D ^{M#}	<1	<1	3	3	9	7	2	2	mg/kg	A-T-024s
Cadmium _D ^{M#}	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	A-T-024s
Copper _D ^{M#}	2	4	9	13	27	20	7	7	mg/kg	A-T-024s
Chromium _D ^{M#}	7	7	10	6	17	14	8	8	mg/kg	A-T-024s
Lead _D ^{M#}	14	2	12	31	22	18	7	7	mg/kg	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	mg/kg	A-T-024s
Nickel _D ^{M#}	3	6	10	5	27	21	8	8	mg/kg	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	2	2	<1	<1	<1	mg/kg	A-T-024s
Zinc _D ^{M#}	11	13	18	25	31	29	17	15	mg/kg	A-T-024s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/1	17/08337/2	17/08337/4	17/08337/5	17/08337/6	17/08337/7	17/08337/8	17/08337/9	Units	Method ref
Client Sample No	1	2	4	5	1	2	1	2		
Client Sample ID	TP101	TP101	TP101	TP101	TP102	TP102	TP103	TP103		
Depth to Top	0.4	1.2	2.2	2.5	1.5	3.8	0.5	2.4		
Depth To Bottom	0.50									
Date Sampled	23-Nov-17	23-Nov-17	23-Nov-17	23-Nov-17	22-Nov-17	22-Nov-17	22-Nov-17	22-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	5A	1A	4A	4A	4A	4A	4A	5A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/1	17/08337/2	17/08337/4	17/08337/5	17/08337/6	17/08337/7	17/08337/8	17/08337/9	Units	Method ref
Client Sample No	1	2	4	5	1	2	1	2		
Client Sample ID	TP101	TP101	TP101	TP101	TP102	TP102	TP103	TP103		
Depth to Top	0.4	1.2	2.2	2.5	1.5	3.8	0.5	2.4		
Depth To Bottom	0.50									
Date Sampled	23-Nov-17	23-Nov-17	23-Nov-17	23-Nov-17	22-Nov-17	22-Nov-17	22-Nov-17	22-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	5A	1A	4A	4A	4A	4A	4A	5A		
PAH 16										
Acenaphthene _A ^{M#}	<0.01	<0.01	0.02	0.09	<0.01	0.67	<0.01	<0.01	mg/kg	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	mg/kg	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	0.06	0.70	<0.02	1.87	0.02	0.03	mg/kg	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	<0.04	0.06	1.07	<0.04	0.88	<0.04	<0.04	mg/kg	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	<0.04	0.06	2.08	<0.04	0.66	<0.04	<0.04	mg/kg	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	<0.05	0.06	2.03	<0.05	0.66	<0.05	<0.05	mg/kg	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	0.07	2.87	<0.05	0.73	<0.05	<0.05	mg/kg	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07	0.84	<0.07	0.24	<0.07	<0.07	mg/kg	A-T-019s
Chrysene _A ^{M#}	<0.06	<0.06	0.08	1.13	<0.06	0.54	<0.06	<0.06	mg/kg	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04	0.23	<0.04	0.07	<0.04	<0.04	mg/kg	A-T-019s
Fluoranthene _A ^{M#}	<0.08	<0.08	<0.08	0.82	<0.08	0.92	<0.08	<0.08	mg/kg	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	0.04	0.22	<0.01	1.32	<0.01	0.02	mg/kg	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	<0.03	0.93	<0.03	0.20	<0.03	<0.03	mg/kg	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	0.16	0.35	0.23	2.10	0.08	0.28	mg/kg	A-T-019s
Phenanthrene _A ^{M#}	<0.03	<0.03	0.15	1.04	0.10	2.12	0.07	0.12	mg/kg	A-T-019s
Pyrene _A ^{M#}	<0.07	<0.07	0.08	1.65	<0.07	1.32	<0.07	<0.07	mg/kg	A-T-019s
PAH (total 16) _A ^{M#}	<0.08	<0.08	0.85	16.1	0.34	14.3	0.17	0.43	mg/kg	A-T-019s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/1	17/08337/2	17/08337/4	17/08337/5	17/08337/6	17/08337/7	17/08337/8	17/08337/9	Units	Method ref
Client Sample No	1	2	4	5	1	2	1	2		
Client Sample ID	TP101	TP101	TP101	TP101	TP102	TP102	TP103	TP103		
Depth to Top	0.4	1.2	2.2	2.5	1.5	3.8	0.5	2.4		
Depth To Bottom	0.50									
Date Sampled	23-Nov-17	23-Nov-17	23-Nov-17	23-Nov-17	22-Nov-17	22-Nov-17	22-Nov-17	22-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	5A	1A	4A	4A	4A	4A	4A	5A		
TPH CWG										
Ali >C5-C6 _A [#]	<0.01	<0.01	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-022s
Ali >C6-C8 _A [#]	<0.01	<0.01	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-022s
Ali >C8-C10 _A [#]	<0.01	<0.01	<0.05	<0.01	<0.05	0.15	<0.05	<0.05	mg/kg	A-T-022s
Ali >C10-C12 _A [#]	<0.1	<0.1	<0.1	0.5	0.5	3.4	<0.1	<0.1	mg/kg	A-T-023s
Ali >C12-C16 _A [#]	<0.1	<0.1	3.8	14.3	3.3	46.5	<0.1	1.4	mg/kg	A-T-023s
Ali >C16-C21 _A [#]	<0.1	<0.1	6.6	51.7	3.8	63.4	<0.1	2.0	mg/kg	A-T-023s
Ali >C21-C35 _A [#]	<0.1	<0.1	9.2	170	1.4	85.9	<0.1	1.9	mg/kg	A-T-023s
Total Aliphatics _A	<0.1	<0.1	19.7	237	8.9	199	<0.1	5.2	mg/kg	A-T-023s
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-022s
Aro >C8-C9 _A [#]	<0.01	<0.01	<0.05	<0.01	<0.05	0.11	<0.05	<0.05	mg/kg	A-T-022s
Aro >C9-C10 _A [#]	<0.01	<0.01	<0.05	<0.01	<0.05	0.74	<0.05	<0.05	mg/kg	A-T-022s
Aro >C10-C12 _A [#]	<0.1	<0.1	<0.1	0.7	0.5	9.0	<0.1	0.4	mg/kg	A-T-023s
Aro >C12-C16 _A [#]	<0.1	<0.1	1.7	14.7	3.1	108	0.9	2.8	mg/kg	A-T-023s
Aro >C16-C21 _A [#]	<0.1	<0.1	5.3	71.6	2.0	195	1.3	2.3	mg/kg	A-T-023s
Aro >C21-C35 _A [#]	<0.1	<0.1	9.7	222	1.4	255	0.3	0.6	mg/kg	A-T-023s
Total Aromatics _A	<0.1	<0.1	16.6	309	6.8	567	2.6	6.0	mg/kg	A-T-023s
TPH (Ali & Aro) _A	<0.1	<0.1	36.3	546	15.7	766	2.6	11.2	mg/kg	A-T-023s
BTEX - Benzene _A [#]	<0.01	<0.01	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-022s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/11	17/08337/12	17/08337/14	17/08337/16	17/08337/18	17/08337/19	17/08337/21	17/08337/22	Units	Method ref
Client Sample No	1	1	3	1	2	1	1	1		
Client Sample ID	TP104	TP105	TP105	TP106	TP108	TP109	TP113	WS101		
Depth to Top	1.2	1.5	3	2	4.2	0.8	0.3	0.7		
Depth To Bottom								1		
Date Sampled	23-Nov-17	22-Nov-17	22-Nov-17	22-Nov-17	20-Nov-17	20-Nov-17	21-Nov-17	20-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	1A	1A	1A	1A	1A	5A	4AE	4		
% Stones >10mm _A	0.7	3.1	7.2	11.7	3.7	5.9	2.2	<0.1	% w/w	A-T-044
pH _D	7.30	6.85	6.85	6.52	6.73	6.19	5.55	5.81	pH	A-T-031s
Phenols - Total by HPLC _A	<0.2	-	<0.2	-	-	<0.2	-	<0.2	mg/kg	A-T-050s
Total Organic Carbon _D ^{M#}	0.18	-	-	0.27	-	0.89	-	-	% w/w	A-T-032s
Arsenic _D ^{M#}	<1	<1	<1	<1	<1	7	11	1	mg/kg	A-T-024s
Cadmium _D ^{M#}	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	A-T-024s
Copper _D ^{M#}	4	4	3	4	4	5	20	4	mg/kg	A-T-024s
Chromium _D ^{M#}	7	7	6	5	7	8	6	5	mg/kg	A-T-024s
Lead _D ^{M#}	2	4	3	3	2	10	9	2	mg/kg	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	<0.17	0.19	<0.17	<0.17	<0.17	mg/kg	A-T-024s
Nickel _D ^{M#}	6	6	6	5	6	6	13	6	mg/kg	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	A-T-024s
Zinc _D ^{M#}	11	12	10	11	11	15	13	10	mg/kg	A-T-024s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/11	17/08337/12	17/08337/14	17/08337/16	17/08337/18	17/08337/19	17/08337/21	17/08337/22	Units	Method ref
Client Sample No	1	1	3	1	2	1	1	1		
Client Sample ID	TP104	TP105	TP105	TP106	TP108	TP109	TP113	WS101		
Depth to Top	1.2	1.5	3	2	4.2	0.8	0.3	0.7		
Depth To Bottom								1		
Date Sampled	23-Nov-17	22-Nov-17	22-Nov-17	22-Nov-17	20-Nov-17	20-Nov-17	21-Nov-17	20-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	1A	1A	1A	1A	1A	5A	4AE	4		
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/11	17/08337/12	17/08337/14	17/08337/16	17/08337/18	17/08337/19	17/08337/21	17/08337/22	Units	Method ref
Client Sample No	1	1	3	1	2	1	1	1		
Client Sample ID	TP104	TP105	TP105	TP106	TP108	TP109	TP113	WS101		
Depth to Top	1.2	1.5	3	2	4.2	0.8	0.3	0.7		
Depth To Bottom								1		
Date Sampled	23-Nov-17	22-Nov-17	22-Nov-17	22-Nov-17	20-Nov-17	20-Nov-17	21-Nov-17	20-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	1A	1A	1A	1A	1A	5A	4AE	4		
PAH 16										
Acenaphthene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	mg/kg	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	A-T-019s
Chrysene _A ^{M#}	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	mg/kg	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	A-T-019s
Fluoranthene _A ^{M#}	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	mg/kg	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03	<0.03	<0.03	0.07	0.11	<0.03	mg/kg	A-T-019s
Phenanthrene _A ^{M#}	<0.03	0.04	<0.03	<0.03	<0.03	0.06	<0.03	<0.03	mg/kg	A-T-019s
Pyrene _A ^{M#}	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	A-T-019s
PAH (total 16) _A ^{M#}	<0.08	<0.08	<0.08	<0.08	<0.08	0.16	0.11	<0.08	mg/kg	A-T-019s

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Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/11	17/08337/12	17/08337/14	17/08337/16	17/08337/18	17/08337/19	17/08337/21	17/08337/22	Units	Method ref
Client Sample No	1	1	3	1	2	1	1	1		
Client Sample ID	TP104	TP105	TP105	TP106	TP108	TP109	TP113	WS101		
Depth to Top	1.2	1.5	3	2	4.2	0.8	0.3	0.7		
Depth To Bottom								1		
Date Sampled	23-Nov-17	22-Nov-17	22-Nov-17	22-Nov-17	20-Nov-17	20-Nov-17	21-Nov-17	20-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	1A	1A	1A	1A	1A	5A	4AE	4		
TPH CWG										
Ali >C5-C6 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Ali >C6-C8 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Ali >C8-C10 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Ali >C10-C12 _A [#]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Ali >C12-C16 _A [#]	<0.1	<0.1	<0.1	2.6	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Ali >C16-C21 _A [#]	<0.1	<0.1	<0.1	6.4	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Ali >C21-C35 _A [#]	<0.1	<0.1	<0.1	2.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Total Aliphatics _A	<0.1	<0.1	<0.1	11.2	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Aro >C8-C9 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	mg/kg	A-T-022s
Aro >C9-C10 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Aro >C10-C12 _A [#]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	mg/kg	A-T-023s
Aro >C12-C16 _A [#]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.4	<0.1	mg/kg	A-T-023s
Aro >C16-C21 _A [#]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	mg/kg	A-T-023s
Aro >C21-C35 _A [#]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Total Aromatics _A	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.1	<0.1	mg/kg	A-T-023s
TPH (Ali & Aro) _A	<0.1	<0.1	<0.1	11.2	<0.1	<0.1	3.1	<0.1	mg/kg	A-T-023s
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s

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Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/29	17/08337/31	17/08337/34	17/08337/36	17/08337/38	17/08337/40	17/08337/41	17/08337/42	Units	Method ref
Client Sample No	2	2	3	1	1	3	4	1		
Client Sample ID	WS106	WS107	WS108	WS110	TP115	TP115	TP115	TP116		
Depth to Top	4	1.7	4	1.6	0.10	0.60	0.80	0.20		
Depth To Bottom	4.5	2	4.1	1.9						
Date Sampled	21-Nov-17	21-Nov-17	21-Nov-17	21-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	6A	6A	4A	4A	4ED	4A	5	4AE		
% Stones >10mm _A	4.2	19.6	2.0	9.2	3.6	<0.1	<0.1	<0.1	% w/w	A-T-044
pH _D	7.27	7.86	-	-	6.98	7.71	7.58	7.49	pH	A-T-031s
pH BRE _D	7.27	7.86	7.12	7.40	-	7.71	7.58	-	pH	A-T-031s
Sulphate BRE (water sol 2:1) _D ^{M#}	106	145	<10	129	-	<10	<10	-	mg/l	A-T-026s
Sulphate BRE (acid sol) _D ^{M#}	0.07	0.05	<0.02	0.06	-	0.06	<0.02	-	% w/w	A-T-028s
Sulphur BRE (total) _D	0.28	0.80	<0.01	0.09	-	0.09	<0.01	-	% w/w	A-T-024s
Phenols - Total by HPLC _A	10.3	1.6	-	-	-	<0.2	-	-	mg/kg	A-T-050s
Loss on ignition (550degC) _D	13.7	16.6	-	-	-	21.3	-	-	% w/w	A-T-030s
Total Organic Carbon _D ^{M#}	-	11.4	-	-	4.88	10.7	-	-	% w/w	A-T-032s
Calorific Value (Gross/Total) _A	5250	3320	-	-	-	-	-	-	kJ/kg	Subcon
Arsenic _D ^{M#}	6	18	-	-	6	4	<1	2	mg/kg	A-T-024s
Cadmium _D ^{M#}	<0.5	<0.5	-	-	<0.5	0.8	<0.5	<0.5	mg/kg	A-T-024s
Copper _D ^{M#}	17	32	-	-	13	59	2	14	mg/kg	A-T-024s
Chromium _D ^{M#}	10	24	-	-	9	30	9	9	mg/kg	A-T-024s
Lead _D ^{M#}	11	24	-	-	38	98	4	24	mg/kg	A-T-024s
Mercury _D	<0.17	0.21	-	-	<0.17	0.44	<0.17	<0.17	mg/kg	A-T-024s
Nickel _D ^{M#}	12	25	-	-	8	37	8	8	mg/kg	A-T-024s
Selenium _D ^{M#}	<1	<1	-	-	<1	1	<1	<1	mg/kg	A-T-024s
Zinc _D ^{M#}	21	24	-	-	41	166	16	27	mg/kg	A-T-024s

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Lab Sample ID	17/08337/29	17/08337/31	17/08337/34	17/08337/36	17/08337/38	17/08337/40	17/08337/41	17/08337/42	Units	Method ref
Client Sample No	2	2	3	1	1	3	4	1		
Client Sample ID	WS106	WS107	WS108	WS110	TP115	TP115	TP115	TP116		
Depth to Top	4	1.7	4	1.6	0.10	0.60	0.80	0.20		
Depth To Bottom	4.5	2	4.1	1.9						
Date Sampled	21-Nov-17	21-Nov-17	21-Nov-17	21-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	6A	6A	4A	4A	4ED	4A	5	4AE		
Asbestos in Soil (inc. matrix)										
Asbestos in soil _A [#]	NAD	NAD	-	-	NAD	Chrysotile	NAD	Chrysotile		A-T-045
Asbestos Matrix (microscope) _A	-	-	-	-	-	Loose Fibres	-	Loose fibres		A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	N/A	N/A	-	-	N/A	N/A	N/A	N/A		
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing) ₀	-	-	-	-	-	<0.001	-	<0.001	% w/w	A-T-054

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Lab Sample ID	17/08337/29	17/08337/31	17/08337/34	17/08337/36	17/08337/38	17/08337/40	17/08337/41	17/08337/42	Units	Method ref
Client Sample No	2	2	3	1	1	3	4	1		
Client Sample ID	WS106	WS107	WS108	WS110	TP115	TP115	TP115	TP116		
Depth to Top	4	1.7	4	1.6	0.10	0.60	0.80	0.20		
Depth To Bottom	4.5	2	4.1	1.9						
Date Sampled	21-Nov-17	21-Nov-17	21-Nov-17	21-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	6A	6A	4A	4A	4ED	4A	5	4AE		
PAH 16										
Acenaphthene _A ^{M#}	1.20	<0.01	-	-	<0.01	0.04	<0.01	<0.01	mg/kg	A-T-019s
Acenaphthylene _A ^{M#}	0.08	<0.01	-	-	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-019s
Anthracene _A ^{M#}	4.65	0.05	-	-	0.09	0.15	<0.02	0.04	mg/kg	A-T-019s
Benzo(a)anthracene _A ^{M#}	2.07	<0.04	-	-	0.33	0.48	<0.04	0.13	mg/kg	A-T-019s
Benzo(a)pyrene _A ^{M#}	1.26	<0.04	-	-	0.38	0.49	<0.04	0.12	mg/kg	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	1.30	<0.05	-	-	0.45	0.72	<0.05	0.18	mg/kg	A-T-019s
Benzo(ghi)perylene _A ^{M#}	1.23	<0.05	-	-	0.22	0.25	<0.05	0.11	mg/kg	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.50	<0.07	-	-	0.19	0.30	<0.07	0.08	mg/kg	A-T-019s
Chrysene _A ^{M#}	1.08	<0.06	-	-	0.35	0.58	<0.06	0.15	mg/kg	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.10	<0.04	-	-	<0.04	0.04	<0.04	<0.04	mg/kg	A-T-019s
Fluoranthene _A ^{M#}	1.93	<0.08	-	-	0.46	0.86	<0.08	0.19	mg/kg	A-T-019s
Fluorene _A ^{M#}	2.90	0.03	-	-	<0.01	0.03	<0.01	<0.01	mg/kg	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.36	<0.03	-	-	0.24	0.27	<0.03	0.09	mg/kg	A-T-019s
Naphthalene _A ^{M#}	1.78	0.20	-	-	0.11	0.24	<0.03	0.06	mg/kg	A-T-019s
Phenanthrene _A ^{M#}	5.05	0.13	-	-	0.22	0.62	<0.03	0.09	mg/kg	A-T-019s
Pyrene _A ^{M#}	2.80	<0.07	-	-	0.41	0.75	<0.07	0.18	mg/kg	A-T-019s
PAH (total 16) _A ^{M#}	28.3	0.43	-	-	3.44	5.85	<0.08	1.40	mg/kg	A-T-019s

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Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/29	17/08337/31	17/08337/34	17/08337/36	17/08337/38	17/08337/40	17/08337/41	17/08337/42	Units	Method ref
Client Sample No	2	2	3	1	1	3	4	1		
Client Sample ID	WS106	WS107	WS108	WS110	TP115	TP115	TP115	TP116		
Depth to Top	4	1.7	4	1.6	0.10	0.60	0.80	0.20		
Depth To Bottom	4.5	2	4.1	1.9						
Date Sampled	21-Nov-17	21-Nov-17	21-Nov-17	21-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	6A	6A	4A	4A	4ED	4A	5	4AE		
TPH CWG										
Ali >C5-C6 _A [#]	<0.05	<0.05	-	-	<0.05	<0.05	<0.01	<0.01	mg/kg	A-T-022s
Ali >C6-C8 _A [#]	<0.05	<0.05	-	-	<0.05	<0.05	<0.01	<0.01	mg/kg	A-T-022s
Ali >C8-C10 _A [#]	<0.05	<0.05	-	-	<0.05	<0.05	<0.01	<0.01	mg/kg	A-T-022s
Ali >C10-C12 _A [#]	4.8	1.5	-	-	<0.1	1.1	1.1	<0.1	mg/kg	A-T-023s
Ali >C12-C16 _A [#]	36.1	5.5	-	-	0.8	4.5	2.4	<0.1	mg/kg	A-T-023s
Ali >C16-C21 _A [#]	73.4	9.2	-	-	0.7	8.1	2.0	<0.1	mg/kg	A-T-023s
Ali >C21-C35 _A [#]	99.9	12.0	-	-	0.6	43.1	<0.1	<0.1	mg/kg	A-T-023s
Total Aliphatics _A	214	28.2	-	-	2.1	56.8	5.4	<0.1	mg/kg	A-T-023s
Aro >C5-C7 _A [#]	<0.05	0.06	-	-	<0.05	<0.05	<0.01	<0.01	mg/kg	A-T-022s
Aro >C7-C8 _A [#]	<0.05	<0.05	-	-	<0.05	<0.05	<0.01	<0.01	mg/kg	A-T-022s
Aro >C8-C9 _A [#]	<0.05	<0.05	-	-	<0.05	<0.05	<0.01	<0.01	mg/kg	A-T-022s
Aro >C9-C10 _A [#]	0.11	<0.05	-	-	<0.05	<0.05	<0.01	<0.01	mg/kg	A-T-022s
Aro >C10-C12 _A [#]	2.2	0.4	-	-	<0.1	0.5	<0.1	<0.1	mg/kg	A-T-023s
Aro >C12-C16 _A [#]	70.2	4.2	-	-	3.3	18.9	<0.1	0.8	mg/kg	A-T-023s
Aro >C16-C21 _A [#]	148	3.4	-	-	2.5	8.0	<0.1	0.8	mg/kg	A-T-023s
Aro >C21-C35 _A [#]	175	3.4	-	-	2.4	16.1	<0.1	0.8	mg/kg	A-T-023s
Total Aromatics _A	396	11.6	-	-	8.1	43.7	<0.1	2.4	mg/kg	A-T-023s
TPH (Ali & Aro) _A	610	39.8	-	-	10.2	100	5.4	2.4	mg/kg	A-T-023s
BTEX - Benzene _A [#]	<0.05	0.06	-	-	<0.05	<0.05	<0.01	<0.01	mg/kg	A-T-022s
BTEX - Toluene _A [#]	<0.05	<0.05	-	-	<0.05	<0.05	<0.01	<0.01	mg/kg	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.05	<0.05	-	-	<0.05	<0.05	<0.01	<0.01	mg/kg	A-T-022s
BTEX - m & p Xylene _A [#]	<0.05	<0.05	-	-	<0.05	<0.05	<0.01	<0.01	mg/kg	A-T-022s
BTEX - o Xylene _A [#]	<0.05	<0.05	-	-	<0.05	<0.05	<0.01	<0.01	mg/kg	A-T-022s
MTBE _A [#]	<0.05	<0.05	-	-	<0.05	<0.05	<0.01	<0.01	mg/kg	A-T-022s

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Client Project Name: Thoresby Area B

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Lab Sample ID	17/08337/43	17/08337/44	17/08337/45	17/08337/46	17/08337/47	17/08337/48	17/08337/50	17/08337/51	Units	Method ref
Client Sample No	2	3	4		1	2	1	2		
Client Sample ID	TP116	TP116	TP116	TP116	TP117	TP117	TP118	TP118		
Depth to Top	0.60	1.10	1.50	1.10	0.20	0.30	0.10	0.40		
Depth To Bottom										
Date Sampled	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Solid - Fragment / Tile	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	4A	5AE	8	8	4AE	4A	4E	4E		
% Stones >10mm _A	7.3	1.7	<0.1	-	3.2	3.0	0.7	<0.1	% w/w	A-T-044
pH _D	7.42	8.17	-	-	7.45	7.29	6.77	-	pH	A-T-031s
pH BRE _D	7.42	-	7.82	-	-	7.29	-	6.54	pH	A-T-031s
Sulphate BRE (water sol 2:1) _D ^{M#}	22	-	<10	-	-	17	-	<10	mg/l	A-T-026s
Sulphate BRE (acid sol) _D ^{M#}	0.09	-	<0.02	-	-	0.05	-	<0.02	% w/w	A-T-028s
Sulphur BRE (total) _D	0.09	-	<0.01	-	-	0.08	-	<0.01	% w/w	A-T-024s
Phenols - Total by HPLC _A	<0.2	-	-	-	-	<0.2	-	-	mg/kg	A-T-050s
Loss on ignition (550degC) _D	30.1	-	-	-	-	37.2	-	-	% w/w	A-T-030s
Total Organic Carbon _D ^{M#}	-	-	-	-	7.60	23.2	-	-	% w/w	A-T-032s
Calorific Value (Gross/Total) _A	7820	-	-	-	-	9890	-	-	kJ/kg	Subcon
Arsenic _D ^{M#}	6	<1	-	-	3	4	<1	-	mg/kg	A-T-024s
Cadmium _D ^{M#}	0.6	<0.5	-	-	<0.5	<0.5	<0.5	-	mg/kg	A-T-024s
Copper _D ^{M#}	38	18	-	-	14	22	5	-	mg/kg	A-T-024s
Chromium _D ^{M#}	13	28	-	-	14	8	8	-	mg/kg	A-T-024s
Lead _D ^{M#}	21	11	-	-	30	23	8	-	mg/kg	A-T-024s
Mercury _D	<0.17	<0.17	-	-	<0.17	<0.17	<0.17	-	mg/kg	A-T-024s
Nickel _D ^{M#}	23	23	-	-	13	13	7	-	mg/kg	A-T-024s
Selenium _D ^{M#}	<1	<1	-	-	<1	<1	<1	-	mg/kg	A-T-024s
Zinc _D ^{M#}	73	45	-	-	38	31	21	-	mg/kg	A-T-024s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/43	17/08337/44	17/08337/45	17/08337/46	17/08337/47	17/08337/48	17/08337/50	17/08337/51	Units	Method ref
Client Sample No	2	3	4		1	2	1	2		
Client Sample ID	TP116	TP116	TP116	TP116	TP117	TP117	TP118	TP118		
Depth to Top	0.60	1.10	1.50	1.10	0.20	0.30	0.10	0.40		
Depth To Bottom										
Date Sampled	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Solid - Fragment / Tile	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	4A	5AE	8	8	4AE	4A	4E	4E		
Asbestos in Soil (inc. matrix)										
Asbestos in soil _A [#]	NAD	NAD	-	-	NAD	NAD	NAD	-		A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	N/A	N/A	-	-	N/A	N/A	N/A	-		
Asbestos Water Absorption Test										
Asbestos ACM - Water Absorption Test _D	-	-	-	3.9	-	-	-	-	% w/w	Gravimetry
Bulk Fibre ID (inc. matrix)										
Bulk Fibre Identification _A [#]	-	-	-	Chrysotile	-	-	-	-		A-T-045
Bulk Fibre Identification Matrix (visual) _A	-	-	-	Cement	-	-	-	-		A-T-045
Bulk Fibre Identification - Suitable for Water Absorption Test? _D	-	-	-	Yes	-	-	-	-		Gravimetry

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/43	17/08337/44	17/08337/45	17/08337/46	17/08337/47	17/08337/48	17/08337/50	17/08337/51	Units	Method ref
Client Sample No	2	3	4		1	2	1	2		
Client Sample ID	TP116	TP116	TP116	TP116	TP117	TP117	TP118	TP118		
Depth to Top	0.60	1.10	1.50	1.10	0.20	0.30	0.10	0.40		
Depth To Bottom										
Date Sampled	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Solid - Fragment / Tile	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	4A	5AE	8	8	4AE	4A	4E	4E		
PAH 16										
Acenaphthene _A ^{M#}	0.02	<0.01	-	-	<0.01	0.02	<0.01	-	mg/kg	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	-	-	<0.01	<0.01	<0.01	-	mg/kg	A-T-019s
Anthracene _A ^{M#}	0.13	<0.02	-	-	0.04	0.13	<0.02	-	mg/kg	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.14	<0.04	-	-	0.07	0.21	<0.04	-	mg/kg	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.12	<0.04	-	-	0.06	0.21	<0.04	-	mg/kg	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.23	<0.05	-	-	0.11	0.40	<0.05	-	mg/kg	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.08	<0.05	-	-	<0.05	0.16	<0.05	-	mg/kg	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.09	<0.07	-	-	<0.07	0.13	<0.07	-	mg/kg	A-T-019s
Chrysene _A ^{M#}	0.23	<0.06	-	-	0.11	0.34	<0.06	-	mg/kg	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	-	-	<0.04	<0.04	<0.04	-	mg/kg	A-T-019s
Fluoranthene _A ^{M#}	0.27	<0.08	-	-	0.11	0.35	<0.08	-	mg/kg	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	-	-	<0.01	<0.01	<0.01	-	mg/kg	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.07	<0.03	-	-	0.04	0.13	<0.03	-	mg/kg	A-T-019s
Naphthalene _A ^{M#}	0.34	<0.03	-	-	0.09	0.49	<0.03	-	mg/kg	A-T-019s
Phenanthrene _A ^{M#}	0.42	<0.03	-	-	0.11	0.49	<0.03	-	mg/kg	A-T-019s
Pyrene _A ^{M#}	0.22	<0.07	-	-	0.11	0.33	<0.07	-	mg/kg	A-T-019s
PAH (total 16) _A ^{M#}	2.37	<0.08	-	-	0.83	3.39	<0.08	-	mg/kg	A-T-019s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/43	17/08337/44	17/08337/45	17/08337/46	17/08337/47	17/08337/48	17/08337/50	17/08337/51	Units	Method ref
Client Sample No	2	3	4		1	2	1	2		
Client Sample ID	TP116	TP116	TP116	TP116	TP117	TP117	TP118	TP118		
Depth to Top	0.60	1.10	1.50	1.10	0.20	0.30	0.10	0.40		
Depth To Bottom										
Date Sampled	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17	27-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Solid - Fragment / Tile	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	4A	5AE	8	8	4AE	4A	4E	4E		
TPH CWG										
Ali >C5-C6 _A [#]	<0.05	<0.01	-	-	<0.05	<0.05	<0.01	-	mg/kg	A-T-022s
Ali >C6-C8 _A [#]	<0.05	<0.01	-	-	<0.05	<0.05	<0.01	-	mg/kg	A-T-022s
Ali >C8-C10 _A [#]	<0.05	<0.01	-	-	<0.05	<0.05	<0.01	-	mg/kg	A-T-022s
Ali >C10-C12 _A [#]	<0.1	<0.1	-	-	0.9	1.6	<0.1	-	mg/kg	A-T-023s
Ali >C12-C16 _A [#]	2.1	<0.1	-	-	0.5	1.5	<0.1	-	mg/kg	A-T-023s
Ali >C16-C21 _A [#]	4.5	<0.1	-	-	0.7	1.1	<0.1	-	mg/kg	A-T-023s
Ali >C21-C35 _A [#]	6.5	<0.1	-	-	<0.1	<0.1	<0.1	-	mg/kg	A-T-023s
Total Aliphatics _A	13.1	<0.1	-	-	2.1	4.1	<0.1	-	mg/kg	A-T-023s
Aro >C5-C7 _A [#]	<0.05	<0.01	-	-	<0.05	<0.05	<0.01	-	mg/kg	A-T-022s
Aro >C7-C8 _A [#]	<0.05	<0.01	-	-	<0.05	<0.05	<0.01	-	mg/kg	A-T-022s
Aro >C8-C9 _A [#]	<0.05	<0.01	-	-	<0.05	<0.05	<0.01	-	mg/kg	A-T-022s
Aro >C9-C10 _A [#]	<0.05	<0.01	-	-	<0.05	<0.05	<0.01	-	mg/kg	A-T-022s
Aro >C10-C12 _A [#]	<0.1	<0.1	-	-	0.6	1.0	<0.1	-	mg/kg	A-T-023s
Aro >C12-C16 _A [#]	2.3	<0.1	-	-	2.6	7.6	<0.1	-	mg/kg	A-T-023s
Aro >C16-C21 _A [#]	2.0	<0.1	-	-	1.3	7.3	<0.1	-	mg/kg	A-T-023s
Aro >C21-C35 _A [#]	0.7	<0.1	-	-	<0.1	3.4	<0.1	-	mg/kg	A-T-023s
Total Aromatics _A	4.9	<0.1	-	-	4.4	19.3	<0.1	-	mg/kg	A-T-023s
TPH (Ali & Aro) _A	18.0	<0.1	-	-	6.6	23.4	<0.1	-	mg/kg	A-T-023s
BTEX - Benzene _A [#]	<0.05	<0.01	-	-	<0.05	<0.05	<0.01	-	mg/kg	A-T-022s
BTEX - Toluene _A [#]	<0.05	<0.01	-	-	<0.05	<0.05	<0.01	-	mg/kg	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.05	<0.01	-	-	<0.05	<0.05	<0.01	-	mg/kg	A-T-022s
BTEX - m & p Xylene _A [#]	<0.05	<0.01	-	-	<0.05	<0.05	<0.01	-	mg/kg	A-T-022s
BTEX - o Xylene _A [#]	<0.05	<0.01	-	-	<0.05	<0.05	<0.01	-	mg/kg	A-T-022s
MTBE _A [#]	<0.05	<0.01	-	-	<0.05	<0.05	<0.01	-	mg/kg	A-T-022s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/52	17/08337/53	17/08337/59	17/08337/60	17/08337/61	17/08337/62	17/08337/63	17/08337/64	Units	Method ref
Client Sample No	1	1	1	2	1	2	1	1		
Client Sample ID	TP119	TP119	TP122	TP122	TP123	TP123	TP125	TP126		
Depth to Top	0.10	0.50	0.5	1.9	0.6	1.4	0.5	0.6		
Depth To Bottom										
Date Sampled	27-Nov-17	27-Nov-17	24-Nov-17	24-Nov-17	23-Nov-17	23-Nov-17	23-Nov-17	23-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	4E	5A	4A	4A4	5A	6A	6A	6A		
% Stones >10mm _A	<0.1	3.9	3.8	2.5	39.1	<0.1	18.1	23.8	% w/w	A-T-044
pH _D	6.84	8.04	7.50	-	6.14	7.25	-	7.31	pH	A-T-031s
pH BRE _D	-	8.04	-	7.62	-	-	7.70	-	pH	A-T-031s
Sulphate BRE (water sol 2:1) _D ^{M#}	-	<10	-	118	-	-	473	-	mg/l	A-T-026s
Sulphate BRE (acid sol) _D ^{M#}	-	<0.02	-	0.05	-	-	0.15	-	% w/w	A-T-028s
Sulphur BRE (total) _D	-	<0.01	-	0.03	-	-	0.42	-	% w/w	A-T-024s
Phenols - Total by HPLC _A	-	<0.2	-	-	-	<0.2	-	-	mg/kg	A-T-050s
Loss on ignition (550degC) _D	-	-	1.9	-	-	-	18.8	-	% w/w	A-T-030s
Total Organic Carbon _D ^{M#}	4.38	2.28	1.50	-	-	-	-	17.2	% w/w	A-T-032s
Calorific Value (Gross/Total) _A	-	-	1460	-	-	-	3800	-	kJ/kg	Subcon
Arsenic _D ^{M#}	2	<1	<1	-	8	18	-	9	mg/kg	A-T-024s
Cadmium _D ^{M#}	0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	mg/kg	A-T-024s
Copper _D ^{M#}	21	10	7	-	24	42	-	35	mg/kg	A-T-024s
Chromium _D ^{M#}	19	9	9	-	12	17	-	21	mg/kg	A-T-024s
Lead _D ^{M#}	39	12	6	-	15	21	-	18	mg/kg	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	-	<0.17	<0.17	-	<0.17	mg/kg	A-T-024s
Nickel _D ^{M#}	17	13	9	-	21	27	-	29	mg/kg	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	-	<1	2	-	2	mg/kg	A-T-024s
Zinc _D ^{M#}	70	22	19	-	21	20	-	24	mg/kg	A-T-024s

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Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/52	17/08337/53	17/08337/59	17/08337/60	17/08337/61	17/08337/62	17/08337/63	17/08337/64	Units	Method ref
Client Sample No	1	1	1	2	1	2	1	1		
Client Sample ID	TP119	TP119	TP122	TP122	TP123	TP123	TP125	TP126		
Depth to Top	0.10	0.50	0.5	1.9	0.6	1.4	0.5	0.6		
Depth To Bottom										
Date Sampled	27-Nov-17	27-Nov-17	24-Nov-17	24-Nov-17	23-Nov-17	23-Nov-17	23-Nov-17	23-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	4E	5A	4A	4A4	5A	6A	6A	6A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD	NAD	-	NAD	NAD	-	NAD		A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	N/A	N/A	N/A	-	N/A	N/A	-	N/A		

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/52	17/08337/53	17/08337/59	17/08337/60	17/08337/61	17/08337/62	17/08337/63	17/08337/64	Units	Method ref
Client Sample No	1	1	1	2	1	2	1	1		
Client Sample ID	TP119	TP119	TP122	TP122	TP123	TP123	TP125	TP126		
Depth to Top	0.10	0.50	0.5	1.9	0.6	1.4	0.5	0.6		
Depth To Bottom										
Date Sampled	27-Nov-17	27-Nov-17	24-Nov-17	24-Nov-17	23-Nov-17	23-Nov-17	23-Nov-17	23-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	4E	5A	4A	4A4	5A	6A	6A	6A		
PAH 16										
Acenaphthene _A ^{M#}	<0.01	<0.01	<0.01	-	<0.01	0.20	-	0.02	mg/kg	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	A-T-019s
Anthracene _A ^{M#}	0.04	0.02	0.04	-	0.03	0.35	-	0.06	mg/kg	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.07	<0.04	<0.04	-	<0.04	0.28	-	<0.04	mg/kg	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.09	<0.04	<0.04	-	<0.04	0.20	-	<0.04	mg/kg	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.09	0.05	<0.05	-	<0.05	0.20	-	<0.05	mg/kg	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	<0.05	-	<0.05	0.18	-	<0.05	mg/kg	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07	-	<0.07	<0.07	-	<0.07	mg/kg	A-T-019s
Chrysene _A ^{M#}	0.11	<0.06	<0.06	-	<0.06	0.32	-	<0.06	mg/kg	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04	-	<0.04	<0.04	-	<0.04	mg/kg	A-T-019s
Fluoranthene _A ^{M#}	0.17	<0.08	<0.08	-	<0.08	0.17	-	<0.08	mg/kg	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	0.01	-	<0.01	0.47	-	0.03	mg/kg	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	<0.03	-	<0.03	0.04	-	<0.03	mg/kg	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	0.20	-	0.22	9.45	-	0.93	mg/kg	A-T-019s
Phenanthrene _A ^{M#}	0.13	0.05	0.11	-	0.10	2.19	-	0.22	mg/kg	A-T-019s
Pyrene _A ^{M#}	0.14	<0.07	<0.07	-	<0.07	0.24	-	<0.07	mg/kg	A-T-019s
PAH (total 16) _A ^{M#}	0.85	0.13	0.35	-	0.36	14.3	-	1.26	mg/kg	A-T-019s

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Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/52	17/08337/53	17/08337/59	17/08337/60	17/08337/61	17/08337/62	17/08337/63	17/08337/64	Units	Method ref
Client Sample No	1	1	1	2	1	2	1	1		
Client Sample ID	TP119	TP119	TP122	TP122	TP123	TP123	TP125	TP126		
Depth to Top	0.10	0.50	0.5	1.9	0.6	1.4	0.5	0.6		
Depth To Bottom										
Date Sampled	27-Nov-17	27-Nov-17	24-Nov-17	24-Nov-17	23-Nov-17	23-Nov-17	23-Nov-17	23-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	4E	5A	4A	4A4	5A	6A	6A	6A		
TPH CWG										
Ali >C5-C6 _A [#]	<0.05	<0.01	<0.05	-	<0.05	<0.05	-	<0.05	mg/kg	A-T-022s
Ali >C6-C8 _A [#]	<0.05	<0.01	<0.05	-	<0.05	1.09	-	0.15	mg/kg	A-T-022s
Ali >C8-C10 _A [#]	<0.05	<0.01	<0.05	-	<0.05	3.62	-	0.06	mg/kg	A-T-022s
Ali >C10-C12 _A [#]	<0.1	0.5	<0.1	-	0.3	51.7	-	0.6	mg/kg	A-T-023s
Ali >C12-C16 _A [#]	<0.1	1.6	2.1	-	2.3	69.4	-	3.8	mg/kg	A-T-023s
Ali >C16-C21 _A [#]	<0.1	1.3	1.1	-	1.1	25.4	-	4.3	mg/kg	A-T-023s
Ali >C21-C35 _A [#]	<0.1	<0.1	2.0	-	1.1	52.8	-	17.7	mg/kg	A-T-023s
Total Aliphatics _A	<0.1	3.5	5.1	-	4.8	199	-	26.4	mg/kg	A-T-023s
Aro >C5-C7 _A [#]	<0.05	<0.01	<0.05	-	<0.05	3.03	-	0.17	mg/kg	A-T-022s
Aro >C7-C8 _A [#]	<0.05	<0.01	<0.05	-	<0.05	0.61	-	0.30	mg/kg	A-T-022s
Aro >C8-C9 _A [#]	<0.05	<0.01	<0.05	-	<0.05	2.83	-	0.43	mg/kg	A-T-022s
Aro >C9-C10 _A [#]	<0.05	<0.01	<0.05	-	<0.05	3.55	-	0.25	mg/kg	A-T-022s
Aro >C10-C12 _A [#]	<0.1	0.4	<0.1	-	0.5	29.6	-	3.2	mg/kg	A-T-023s
Aro >C12-C16 _A [#]	<0.1	1.3	2.7	-	4.6	72.9	-	8.4	mg/kg	A-T-023s
Aro >C16-C21 _A [#]	<0.1	<0.1	2.7	-	4.2	48.4	-	5.6	mg/kg	A-T-023s
Aro >C21-C35 _A [#]	<0.1	<0.1	1.1	-	1.2	56.1	-	3.3	mg/kg	A-T-023s
Total Aromatics _A	<0.1	1.8	6.5	-	10.4	207	-	20.5	mg/kg	A-T-023s
TPH (Ali & Aro) _A	<0.1	5.3	11.6	-	15.3	406	-	47.0	mg/kg	A-T-023s
BTEX - Benzene _A [#]	<0.05	<0.01	<0.05	-	<0.05	3.03	-	0.17	mg/kg	A-T-022s
BTEX - Toluene _A [#]	<0.05	<0.01	<0.05	-	<0.05	0.61	-	0.30	mg/kg	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.05	<0.01	<0.05	-	<0.05	0.68	-	0.07	mg/kg	A-T-022s
BTEX - m & p Xylene _A [#]	<0.05	<0.01	<0.05	-	<0.05	1.51	-	0.21	mg/kg	A-T-022s
BTEX - o Xylene _A [#]	<0.05	<0.01	<0.05	-	<0.05	0.41	-	0.12	mg/kg	A-T-022s
MTBE _A [#]	<0.05	<0.01	<0.05	-	<0.05	<0.05	-	<0.05	mg/kg	A-T-022s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/65	17/08337/66	17/08337/67	17/08337/68	17/08337/69	17/08337/71	17/08337/72	17/08337/73	Units	Method ref
Client Sample No	2	1	2	1	2	4	1	2		
Client Sample ID	TP126	TP127	TP127	TP128	TP128	TP128	TP129	TP129		
Depth to Top	0.9	0.5	0.9	0.6	1	1.5	0.7	1.3		
Depth To Bottom						1.70		1.50		
Date Sampled	23-Nov-17	24-Nov-17	24-Nov-17	23-Nov-17	23-Nov-17	23-Nov-17	24-Nov-17	24-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	6A	5A	4A	5A	6	5	6A	6		
% Stones >10mm _A	14.0	<0.1	22.8	16.0	<0.1	<0.1	<0.1	<0.1	% w/w	A-T-044
pH _D	-	3.51	-	-	7.16	-	7.93	7.54	pH	A-T-031s
pH BRE _D	7.31	-	7.06	7.56	-	8.15	-	-	pH	A-T-031s
Sulphate BRE (water sol 2:1) _D ^{M#}	1100	-	420	620	-	1540	-	-	mg/l	A-T-026s
Sulphate BRE (acid sol) _D ^{M#}	0.40	-	0.14	0.20	-	0.77	-	-	% w/w	A-T-028s
Sulphur BRE (total) _D	0.96	-	0.05	0.50	-	0.26	-	-	% w/w	A-T-024s
Phenols - Total by HPLC _A	-	-	-	-	<0.2	<0.2	-	-	mg/kg	A-T-050s
Loss on ignition (550degC) _D	17.7	-	-	12.9	-	-	-	-	% w/w	A-T-030s
Total Organic Carbon _D ^{M#}	-	-	-	-	-	-	10.9	-	% w/w	A-T-032s
Calorific Value (Gross/Total) _A	6130	-	-	3510	-	-	-	-	kJ/kg	Subcon
Arsenic _D ^{M#}	-	63	-	-	7	-	6	4	mg/kg	A-T-024s
Cadmium _D ^{M#}	-	0.6	-	-	<0.5	-	<0.5	<0.5	mg/kg	A-T-024s
Copper _D ^{M#}	-	35	-	-	52	-	33	29	mg/kg	A-T-024s
Chromium _D ^{M#}	-	12	-	-	10	-	10	27	mg/kg	A-T-024s
Lead _D ^{M#}	-	37	-	-	32	-	19	23	mg/kg	A-T-024s
Mercury _D	-	<0.17	-	-	<0.17	-	<0.17	<0.17	mg/kg	A-T-024s
Nickel _D ^{M#}	-	23	-	-	18	-	22	23	mg/kg	A-T-024s
Selenium _D ^{M#}	-	2	-	-	3	-	<1	2	mg/kg	A-T-024s
Zinc _D ^{M#}	-	24	-	-	13	-	27	26	mg/kg	A-T-024s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/65	17/08337/66	17/08337/67	17/08337/68	17/08337/69	17/08337/71	17/08337/72	17/08337/73	Units	Method ref
Client Sample No	2	1	2	1	2	4	1	2		
Client Sample ID	TP126	TP127	TP127	TP128	TP128	TP128	TP129	TP129		
Depth to Top	0.9	0.5	0.9	0.6	1	1.5	0.7	1.3		
Depth To Bottom						1.70		1.50		
Date Sampled	23-Nov-17	24-Nov-17	24-Nov-17	23-Nov-17	23-Nov-17	23-Nov-17	24-Nov-17	24-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	6A	5A	4A	5A	6	5	6A	6		
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	-	NAD	-	-	NAD	-	NAD	NAD		A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	-	N/A	-	-	N/A	-	N/A	N/A		

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/65	17/08337/66	17/08337/67	17/08337/68	17/08337/69	17/08337/71	17/08337/72	17/08337/73	Units	Method ref
Client Sample No	2	1	2	1	2	4	1	2		
Client Sample ID	TP126	TP127	TP127	TP128	TP128	TP128	TP129	TP129		
Depth to Top	0.9	0.5	0.9	0.6	1	1.5	0.7	1.3		
Depth To Bottom						1.70		1.50		
Date Sampled	23-Nov-17	24-Nov-17	24-Nov-17	23-Nov-17	23-Nov-17	23-Nov-17	24-Nov-17	24-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	6A	5A	4A	5A	6	5	6A	6		
PAH 16										
Acenaphthene _A ^{M#}	-	<0.01	-	-	0.09	-	<0.01	0.12	mg/kg	A-T-019s
Acenaphthylene _A ^{M#}	-	<0.01	-	-	0.01	-	<0.01	0.05	mg/kg	A-T-019s
Anthracene _A ^{M#}	-	<0.02	-	-	0.30	-	0.02	0.22	mg/kg	A-T-019s
Benzo(a)anthracene _A ^{M#}	-	<0.04	-	-	0.17	-	<0.04	0.14	mg/kg	A-T-019s
Benzo(a)pyrene _A ^{M#}	-	<0.04	-	-	0.10	-	<0.04	0.09	mg/kg	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	-	<0.05	-	-	0.22	-	<0.05	0.09	mg/kg	A-T-019s
Benzo(ghi)perylene _A ^{M#}	-	<0.05	-	-	0.14	-	<0.05	0.09	mg/kg	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	-	<0.07	-	-	<0.07	-	<0.07	<0.07	mg/kg	A-T-019s
Chrysene _A ^{M#}	-	<0.06	-	-	0.22	-	<0.06	0.13	mg/kg	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	-	<0.04	-	-	<0.04	-	<0.04	<0.04	mg/kg	A-T-019s
Fluoranthene _A ^{M#}	-	<0.08	-	-	0.26	-	<0.08	0.12	mg/kg	A-T-019s
Fluorene _A ^{M#}	-	<0.01	-	-	0.22	-	0.01	0.21	mg/kg	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	-	<0.03	-	-	0.05	-	<0.03	<0.03	mg/kg	A-T-019s
Naphthalene _A ^{M#}	-	0.29	-	-	2.84	-	0.35	3.08	mg/kg	A-T-019s
Phenanthrene _A ^{M#}	-	0.13	-	-	1.23	-	0.09	0.94	mg/kg	A-T-019s
Pyrene _A ^{M#}	-	<0.07	-	-	0.26	-	<0.07	0.15	mg/kg	A-T-019s
PAH (total 16) _A ^{M#}	-	0.41	-	-	6.12	-	0.49	5.42	mg/kg	A-T-019s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/65	17/08337/66	17/08337/67	17/08337/68	17/08337/69	17/08337/71	17/08337/72	17/08337/73	Units	Method ref
Client Sample No	2	1	2	1	2	4	1	2		
Client Sample ID	TP126	TP127	TP127	TP128	TP128	TP128	TP129	TP129		
Depth to Top	0.9	0.5	0.9	0.6	1	1.5	0.7	1.3		
Depth To Bottom						1.70		1.50		
Date Sampled	23-Nov-17	24-Nov-17	24-Nov-17	23-Nov-17	23-Nov-17	23-Nov-17	24-Nov-17	24-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	6A	5A	4A	5A	6	5	6A	6		
TPH CWG										
Ali >C5-C6 _A [#]	-	<0.05	-	-	<0.05	-	<0.05	<0.05	mg/kg	A-T-022s
Ali >C6-C8 _A [#]	-	<0.05	-	-	<0.05	-	<0.05	0.14	mg/kg	A-T-022s
Ali >C8-C10 _A [#]	-	<0.05	-	-	<0.05	-	<0.05	0.07	mg/kg	A-T-022s
Ali >C10-C12 _A [#]	-	<0.1	-	-	<0.1	-	1.5	4.3	mg/kg	A-T-023s
Ali >C12-C16 _A [#]	-	1.3	-	-	7.4	-	2.7	8.1	mg/kg	A-T-023s
Ali >C16-C21 _A [#]	-	<0.1	-	-	8.4	-	1.5	12.1	mg/kg	A-T-023s
Ali >C21-C35 _A [#]	-	<0.1	-	-	9.3	-	<0.1	21.1	mg/kg	A-T-023s
Total Aliphatics _A	-	1.3	-	-	25.2	-	5.9	45.7	mg/kg	A-T-023s
Aro >C5-C7 _A [#]	-	<0.05	-	-	0.08	-	<0.05	0.08	mg/kg	A-T-022s
Aro >C7-C8 _A [#]	-	<0.05	-	-	<0.05	-	<0.05	<0.05	mg/kg	A-T-022s
Aro >C8-C9 _A [#]	-	<0.05	-	-	0.12	-	<0.05	0.08	mg/kg	A-T-022s
Aro >C9-C10 _A [#]	-	<0.05	-	-	0.12	-	<0.05	0.08	mg/kg	A-T-022s
Aro >C10-C12 _A [#]	-	0.9	-	-	3.5	-	2.1	5.2	mg/kg	A-T-023s
Aro >C12-C16 _A [#]	-	3.7	-	-	16.0	-	5.3	20.0	mg/kg	A-T-023s
Aro >C16-C21 _A [#]	-	1.9	-	-	16.1	-	3.3	16.5	mg/kg	A-T-023s
Aro >C21-C35 _A [#]	-	<0.1	-	-	3.9	-	<0.1	7.8	mg/kg	A-T-023s
Total Aromatics _A	-	6.6	-	-	39.4	-	10.6	49.6	mg/kg	A-T-023s
TPH (Ali & Aro) _A	-	7.8	-	-	64.5	-	16.5	95.3	mg/kg	A-T-023s
BTEX - Benzene _A [#]	-	<0.05	-	-	0.08	-	<0.05	0.08	mg/kg	A-T-022s
BTEX - Toluene _A [#]	-	<0.05	-	-	<0.05	-	<0.05	<0.05	mg/kg	A-T-022s
BTEX - Ethyl Benzene _A [#]	-	<0.05	-	-	<0.05	-	<0.05	<0.05	mg/kg	A-T-022s
BTEX - m & p Xylene _A [#]	-	<0.05	-	-	<0.05	-	<0.05	<0.05	mg/kg	A-T-022s
BTEX - o Xylene _A [#]	-	<0.05	-	-	<0.05	-	<0.05	<0.05	mg/kg	A-T-022s
MTBE _A [#]	-	<0.05	-	-	<0.05	-	<0.05	<0.05	mg/kg	A-T-022s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/74	17/08337/76	17/08337/77	17/08337/78	17/08337/80	17/08337/81	17/08337/82	17/08337/83	Units	Method ref
Client Sample No	3	1	2	3	1	2	1	2		
Client Sample ID	TP129	TP130	TP130	TP130	TP131	TP131	TP132	TP132		
Depth to Top	2	0.7	0.3	1.3	0.5	1.3	0.5	1.9		
Depth To Bottom										
Date Sampled	24-Nov-17	24-Nov-17	24-Nov-17	24-Nov-17	24-Nov-17	24-Nov-17	28-Nov-17	28-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES	Soil - ES		
Sample Matrix Code	5A	6A	5A	5A	5A	7	6A	5		
% Stones >10mm _A	1.1	<0.1	11.6	14.8	39.0	<0.1	44.1	<0.1	% w/w	A-T-044
pH _D	-	6.70	7.48	-	6.97	9.36	8.56	-	pH	A-T-031s
pH BRE _D	3.98	-	-	6.94	-	-	-	8.59	pH	A-T-031s
Chloride BRE, SO ₄ equiv. (water sol 2:1) _D	411	-	-	-	-	-	-	-	mg/l	A-T-026s
Nitrate BRE, SO ₄ equiv. (water sol 2:1) _D	<0.4	-	-	-	-	-	-	-	mg/l	A-T-026s
Sulphate BRE (water sol 2:1) _D ^{M#}	2730	-	-	1350	-	-	-	45	mg/l	A-T-026s
Sulphate BRE (acid sol) _D ^{M#}	3.01	-	-	0.73	-	-	-	<0.02	% w/w	A-T-028s
Sulphur BRE (total) _D	0.91	-	-	1.99	-	-	-	<0.01	% w/w	A-T-024s
Phenols - Total by HPLC _A	-	-	-	-	-	<0.2	-	-	mg/kg	A-T-050s
Loss on ignition (550degC) _D	13.7	-	-	25.6	-	-	-	-	% w/w	A-T-030s
Total Organic Carbon _D ^{M#}	-	-	7.41	-	11	-	-	-	% w/w	A-T-032s
Calorific Value (Gross/Total) _A	2420	-	-	4860	-	-	-	-	kJ/kg	Subcon
Arsenic _D ^{M#}	-	6	9	-	9	<1	11	-	mg/kg	A-T-024s
Cadmium _D ^{M#}	-	<0.5	0.8	-	<0.5	<0.5	<0.5	-	mg/kg	A-T-024s
Copper _D ^{M#}	-	46	32	-	20	14	20	-	mg/kg	A-T-024s
Chromium _D ^{M#}	-	12	19	-	9	16	8	-	mg/kg	A-T-024s
Lead _D ^{M#}	-	29	23	-	16	<1	15	-	mg/kg	A-T-024s
Mercury _D	-	<0.17	<0.17	-	<0.17	0.21	<0.17	-	mg/kg	A-T-024s
Nickel _D ^{M#}	-	18	27	-	18	11	21	-	mg/kg	A-T-024s
Selenium _D ^{M#}	-	2	<1	-	<1	<1	1	-	mg/kg	A-T-024s
Zinc _D ^{M#}	-	30	45	-	18	20	20	-	mg/kg	A-T-024s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/74	17/08337/76	17/08337/77	17/08337/78	17/08337/80	17/08337/81	17/08337/82	17/08337/83	Units	Method ref
Client Sample No	3	1	2	3	1	2	1	2		
Client Sample ID	TP129	TP130	TP130	TP130	TP131	TP131	TP132	TP132		
Depth to Top	2	0.7	0.3	1.3	0.5	1.3	0.5	1.9		
Depth To Bottom										
Date Sampled	24-Nov-17	24-Nov-17	24-Nov-17	24-Nov-17	24-Nov-17	24-Nov-17	28-Nov-17	28-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES	Soil - ES		
Sample Matrix Code	5A	6A	5A	5A	5A	7	6A	5		
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	-	NAD	NAD	-	NAD	NAD	NAD	-		A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	-	N/A	N/A	-	N/A	N/A	N/A	-		

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/74	17/08337/76	17/08337/77	17/08337/78	17/08337/80	17/08337/81	17/08337/82	17/08337/83	Units	Method ref
Client Sample No	3	1	2	3	1	2	1	2		
Client Sample ID	TP129	TP130	TP130	TP130	TP131	TP131	TP132	TP132		
Depth to Top	2	0.7	0.3	1.3	0.5	1.3	0.5	1.9		
Depth To Bottom										
Date Sampled	24-Nov-17	24-Nov-17	24-Nov-17	24-Nov-17	24-Nov-17	24-Nov-17	28-Nov-17	28-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES	Soil - ES		
Sample Matrix Code	5A	6A	5A	5A	5A	7	6A	5		
PAH 16										
Acenaphthene _A ^{M#}	-	0.05	<0.01	-	0.02	<0.01	<0.01	-	mg/kg	A-T-019s
Acenaphthylene _A ^{M#}	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	mg/kg	A-T-019s
Anthracene _A ^{M#}	-	0.29	0.04	-	0.05	<0.02	<0.02	-	mg/kg	A-T-019s
Benzo(a)anthracene _A ^{M#}	-	0.15	<0.04	-	<0.04	<0.04	<0.04	-	mg/kg	A-T-019s
Benzo(a)pyrene _A ^{M#}	-	0.09	<0.04	-	<0.04	<0.04	<0.04	-	mg/kg	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	-	0.24	<0.05	-	<0.05	<0.05	<0.05	-	mg/kg	A-T-019s
Benzo(ghi)perylene _A ^{M#}	-	0.10	<0.05	-	<0.05	<0.05	<0.05	-	mg/kg	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	-	<0.07	<0.07	-	<0.07	<0.07	<0.07	-	mg/kg	A-T-019s
Chrysene _A ^{M#}	-	0.23	<0.06	-	<0.06	<0.06	<0.06	-	mg/kg	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	-	<0.04	<0.04	-	<0.04	<0.04	<0.04	-	mg/kg	A-T-019s
Fluoranthene _A ^{M#}	-	0.23	<0.08	-	<0.08	<0.08	<0.08	-	mg/kg	A-T-019s
Fluorene _A ^{M#}	-	0.06	0.02	-	0.04	<0.01	<0.01	-	mg/kg	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	-	0.05	<0.03	-	<0.03	<0.03	<0.03	-	mg/kg	A-T-019s
Naphthalene _A ^{M#}	-	1.07	0.63	-	1.03	<0.03	0.14	-	mg/kg	A-T-019s
Phenanthrene _A ^{M#}	-	0.99	0.15	-	0.22	<0.03	0.05	-	mg/kg	A-T-019s
Pyrene _A ^{M#}	-	0.22	<0.07	-	<0.07	<0.07	<0.07	-	mg/kg	A-T-019s
PAH (total 16) _A ^{M#}	-	3.78	0.85	-	1.36	<0.08	0.22	-	mg/kg	A-T-019s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/74	17/08337/76	17/08337/77	17/08337/78	17/08337/80	17/08337/81	17/08337/82	17/08337/83	Units	Method ref
Client Sample No	3	1	2	3	1	2	1	2		
Client Sample ID	TP129	TP130	TP130	TP130	TP131	TP131	TP132	TP132		
Depth to Top	2	0.7	0.3	1.3	0.5	1.3	0.5	1.9		
Depth To Bottom										
Date Sampled	24-Nov-17	24-Nov-17	24-Nov-17	24-Nov-17	24-Nov-17	24-Nov-17	28-Nov-17	28-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES	Soil - ES		
Sample Matrix Code	5A	6A	5A	5A	5A	7	6A	5		
TPH CWG										
Ali >C5-C6 _A [#]	-	<0.05	<0.05	-	<0.05	<0.01	<0.05	-	mg/kg	A-T-022s
Ali >C6-C8 _A [#]	-	0.06	<0.05	-	0.07	<0.01	<0.05	-	mg/kg	A-T-022s
Ali >C8-C10 _A [#]	-	<0.05	<0.05	-	<0.05	<0.01	<0.05	-	mg/kg	A-T-022s
Ali >C10-C12 _A [#]	-	1.7	0.9	-	0.5	<0.1	0.5	-	mg/kg	A-T-023s
Ali >C12-C16 _A [#]	-	11.5	1.3	-	1.2	<0.1	1.0	-	mg/kg	A-T-023s
Ali >C16-C21 _A [#]	-	11.4	0.7	-	2.0	<0.1	0.7	-	mg/kg	A-T-023s
Ali >C21-C35 _A [#]	-	9.8	0.8	-	0.9	<0.1	<0.1	-	mg/kg	A-T-023s
Total Aliphatics _A	-	34.5	3.6	-	4.5	<0.1	2.2	-	mg/kg	A-T-023s
Aro >C5-C7 _A [#]	-	<0.05	<0.05	-	0.27	<0.01	<0.05	-	mg/kg	A-T-022s
Aro >C7-C8 _A [#]	-	<0.05	0.06	-	0.14	<0.01	<0.05	-	mg/kg	A-T-022s
Aro >C8-C9 _A [#]	-	0.08	0.13	-	0.17	<0.01	<0.05	-	mg/kg	A-T-022s
Aro >C9-C10 _A [#]	-	<0.05	0.10	-	0.09	<0.01	<0.05	-	mg/kg	A-T-022s
Aro >C10-C12 _A [#]	-	1.3	0.7	-	1.0	<0.1	0.4	-	mg/kg	A-T-023s
Aro >C12-C16 _A [#]	-	12.5	4.5	-	5.4	<0.1	3.5	-	mg/kg	A-T-023s
Aro >C16-C21 _A [#]	-	15.5	3.6	-	4.1	<0.1	3.4	-	mg/kg	A-T-023s
Aro >C21-C35 _A [#]	-	7.3	1.0	-	0.7	<0.1	1.4	-	mg/kg	A-T-023s
Total Aromatics _A	-	36.4	9.6	-	11.3	<0.1	8.7	-	mg/kg	A-T-023s
TPH (Ali & Aro) _A	-	70.9	13.2	-	15.7	<0.1	10.9	-	mg/kg	A-T-023s
BTEX - Benzene _A [#]	-	<0.05	<0.05	-	0.27	<0.01	<0.05	-	mg/kg	A-T-022s
BTEX - Toluene _A [#]	-	<0.05	0.06	-	0.14	<0.01	<0.05	-	mg/kg	A-T-022s
BTEX - Ethyl Benzene _A [#]	-	<0.05	<0.05	-	<0.05	<0.01	<0.05	-	mg/kg	A-T-022s
BTEX - m & p Xylene _A [#]	-	<0.05	0.06	-	0.09	<0.01	<0.05	-	mg/kg	A-T-022s
BTEX - o Xylene _A [#]	-	<0.05	<0.05	-	<0.05	<0.01	<0.05	-	mg/kg	A-T-022s
MTBE _A [#]	-	<0.05	<0.05	-	<0.05	<0.01	<0.05	-	mg/kg	A-T-022s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/84	17/08337/86	17/08337/87	17/08337/88	17/08337/89	17/08337/91	17/08337/92	17/08337/95	Units	Method ref
Client Sample No	1	1	2	3	1	1	2	5		
Client Sample ID	TP133	TP134	TP134	TP134	TP135	TP136	TP136	TP136		
Depth to Top	0.5	0.7	1.6	3	0.4	0.2	0.6	3		
Depth To Bottom										
Date Sampled	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	6A	6A	6A	1	4A	6A	1A	5A		
% Stones >10mm _A	35.5	16.2	15.1	<0.1	14.1	11.5	6.6	<0.1	% w/w	A-T-044
pH _D	8.39	6.97	7.81	-	4.78	-	6.34	6.82	pH	A-T-031s
pH BRE _D	-	6.97	-	7.65	-	7.15	6.34	-	pH	A-T-031s
Sulphate BRE (water sol 2:1) _D ^{M#}	-	880	-	71	-	815	463	-	mg/l	A-T-026s
Sulphate BRE (acid sol) _D ^{M#}	-	0.28	-	0.42	-	0.23	0.24	-	% w/w	A-T-028s
Sulphur BRE (total) _D	-	1.17	-	0.14	-	0.22	0.10	-	% w/w	A-T-024s
Phenols - Total by HPLC _A	-	<0.2	-	-	<0.2	-	-	-	mg/kg	A-T-050s
Loss on ignition (550degC) _D	-	-	-	-	-	14.0	-	-	% w/w	A-T-030s
Total Organic Carbon _D ^{M#}	-	9.03	-	-	-	-	5.57	-	% w/w	A-T-032s
Calorific Value (Gross/Total) _A	-	-	-	-	-	2920	-	-	kJ/kg	Subcon
Arsenic _D ^{M#}	6	22	6	-	11	-	6	<1	mg/kg	A-T-024s
Cadmium _D ^{M#}	0.5	<0.5	<0.5	-	<0.5	-	<0.5	0.7	mg/kg	A-T-024s
Copper _D ^{M#}	26	34	15	-	21	-	10	22	mg/kg	A-T-024s
Chromium _D ^{M#}	12	10	8	-	9	-	7	36	mg/kg	A-T-024s
Lead _D ^{M#}	16	21	13	-	17	-	7	17	mg/kg	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	-	<0.17	-	<0.17	<0.17	mg/kg	A-T-024s
Nickel _D ^{M#}	25	31	12	-	12	-	10	32	mg/kg	A-T-024s
Selenium _D ^{M#}	<1	2	<1	-	<1	-	<1	1	mg/kg	A-T-024s
Zinc _D ^{M#}	81	26	20	-	21	-	13	60	mg/kg	A-T-024s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/84	17/08337/86	17/08337/87	17/08337/88	17/08337/89	17/08337/91	17/08337/92	17/08337/95	Units	Method ref
Client Sample No	1	1	2	3	1	1	2	5		
Client Sample ID	TP133	TP134	TP134	TP134	TP135	TP136	TP136	TP136		
Depth to Top	0.5	0.7	1.6	3	0.4	0.2	0.6	3		
Depth To Bottom										
Date Sampled	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	6A	6A	6A	1	4A	6A	1A	5A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD	NAD	-	NAD	-	NAD	NAD		A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	N/A	N/A	N/A	-	N/A	-	N/A	N/A		

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/84	17/08337/86	17/08337/87	17/08337/88	17/08337/89	17/08337/91	17/08337/92	17/08337/95	Units	Method ref
Client Sample No	1	1	2	3	1	1	2	5		
Client Sample ID	TP133	TP134	TP134	TP134	TP135	TP136	TP136	TP136		
Depth to Top	0.5	0.7	1.6	3	0.4	0.2	0.6	3		
Depth To Bottom										
Date Sampled	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	6A	6A	6A	1	4A	6A	1A	5A		
PAH 16										
Acenaphthene _A ^{M#}	<0.01	0.02	<0.01	-	<0.01	-	<0.01	<0.01	mg/kg	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	<0.01	mg/kg	A-T-019s
Anthracene _A ^{M#}	<0.02	0.05	0.07	-	0.04	-	0.04	<0.02	mg/kg	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	<0.04	<0.04	-	<0.04	-	<0.04	<0.04	mg/kg	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	<0.04	<0.04	-	<0.04	-	<0.04	<0.04	mg/kg	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	mg/kg	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	mg/kg	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07	-	<0.07	-	<0.07	<0.07	mg/kg	A-T-019s
Chrysene _A ^{M#}	<0.06	<0.06	0.07	-	<0.06	-	<0.06	<0.06	mg/kg	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04	-	<0.04	-	<0.04	<0.04	mg/kg	A-T-019s
Fluoranthene _A ^{M#}	<0.08	<0.08	<0.08	-	<0.08	-	<0.08	<0.08	mg/kg	A-T-019s
Fluorene _A ^{M#}	<0.01	0.04	0.03	-	<0.01	-	<0.01	<0.01	mg/kg	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	<0.03	-	<0.03	-	<0.03	<0.03	mg/kg	A-T-019s
Naphthalene _A ^{M#}	0.16	0.56	0.62	-	0.51	-	0.15	<0.03	mg/kg	A-T-019s
Phenanthrene _A ^{M#}	0.05	0.22	0.24	-	0.18	-	0.13	<0.03	mg/kg	A-T-019s
Pyrene _A ^{M#}	<0.07	<0.07	0.08	-	<0.07	-	<0.07	<0.07	mg/kg	A-T-019s
PAH (total 16) _A ^{M#}	0.21	0.89	1.16	-	0.73	-	0.33	<0.08	mg/kg	A-T-019s

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Lab Sample ID	17/08337/84	17/08337/86	17/08337/87	17/08337/88	17/08337/89	17/08337/91	17/08337/92	17/08337/95	Units	Method ref
Client Sample No	1	1	2	3	1	1	2	5		
Client Sample ID	TP133	TP134	TP134	TP134	TP135	TP136	TP136	TP136		
Depth to Top	0.5	0.7	1.6	3	0.4	0.2	0.6	3		
Depth To Bottom										
Date Sampled	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17	28-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	6A	6A	6A	1	4A	6A	1A	5A		
TPH CWG										
Ali >C5-C6 _A [#]	<0.05	<0.05	<0.05	-	<0.05	-	<0.01	<0.01	mg/kg	A-T-022s
Ali >C6-C8 _A [#]	<0.05	0.07	<0.05	-	<0.05	-	<0.01	<0.01	mg/kg	A-T-022s
Ali >C8-C10 _A [#]	<0.05	<0.05	<0.05	-	<0.05	-	<0.01	<0.01	mg/kg	A-T-022s
Ali >C10-C12 _A [#]	<0.1	0.5	0.6	-	<0.1	-	1.0	<0.1	mg/kg	A-T-023s
Ali >C12-C16 _A [#]	<0.1	0.8	1.9	-	1.0	-	1.8	<0.1	mg/kg	A-T-023s
Ali >C16-C21 _A [#]	<0.1	0.8	2.2	-	1.2	-	1.9	<0.1	mg/kg	A-T-023s
Ali >C21-C35 _A [#]	<0.1	<0.1	<0.1	-	<0.1	-	2.2	<0.1	mg/kg	A-T-023s
Total Aliphatics _A	<0.1	2.1	4.6	-	2.3	-	6.9	<0.1	mg/kg	A-T-023s
Aro >C5-C7 _A [#]	<0.05	0.08	<0.05	-	0.07	-	<0.01	<0.01	mg/kg	A-T-022s
Aro >C7-C8 _A [#]	<0.05	0.05	<0.05	-	<0.05	-	<0.01	<0.01	mg/kg	A-T-022s
Aro >C8-C9 _A [#]	<0.05	0.11	0.08	-	0.07	-	<0.01	<0.01	mg/kg	A-T-022s
Aro >C9-C10 _A [#]	<0.05	0.05	<0.05	-	<0.05	-	<0.01	<0.01	mg/kg	A-T-022s
Aro >C10-C12 _A [#]	<0.1	1.2	0.7	-	0.9	-	0.5	<0.1	mg/kg	A-T-023s
Aro >C12-C16 _A [#]	2.4	7.4	6.5	-	4.3	-	6.9	<0.1	mg/kg	A-T-023s
Aro >C16-C21 _A [#]	2.5	5.5	5.8	-	2.6	-	7.9	<0.1	mg/kg	A-T-023s
Aro >C21-C35 _A [#]	0.9	1.1	2.5	-	0.4	-	1.2	<0.1	mg/kg	A-T-023s
Total Aromatics _A	5.8	15.2	15.6	-	8.2	-	16.6	<0.1	mg/kg	A-T-023s
TPH (Ali & Aro) _A	5.8	17.4	20.2	-	10.6	-	23.6	<0.1	mg/kg	A-T-023s
BTEX - Benzene _A [#]	<0.05	0.08	<0.05	-	0.07	-	<0.01	<0.01	mg/kg	A-T-022s
BTEX - Toluene _A [#]	<0.05	0.05	<0.05	-	<0.05	-	<0.01	<0.01	mg/kg	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.05	<0.05	<0.05	-	<0.05	-	<0.01	<0.01	mg/kg	A-T-022s
BTEX - m & p Xylene _A [#]	<0.05	<0.05	<0.05	-	<0.05	-	<0.01	<0.01	mg/kg	A-T-022s
BTEX - o Xylene _A [#]	<0.05	<0.05	<0.05	-	<0.05	-	<0.01	<0.01	mg/kg	A-T-022s
MTBE _A [#]	<0.05	<0.05	<0.05	-	<0.05	-	<0.01	<0.01	mg/kg	A-T-022s

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Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/96	17/08337/98	17/08337/101	17/08337/102	17/08337/105	17/08337/107	17/08337/113	17/08337/114	Units	Method ref
Client Sample No	1	1	1	2	1	1	1	1		
Client Sample ID	TP138	TP139	TP140	TP140	TP141	TP142	WS119	WS120		
Depth to Top	0.7	0.6	0.4	0.9	0.5	0.6	0.5	0.6		
Depth To Bottom							0.7	0.8		
Date Sampled	29-Nov-17	29-Nov-17	29-Nov-17	29-Nov-17	29-Nov-17	28-Nov-17	23-Nov-17	23-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid		
Sample Matrix Code	4A	4A	4A	6A	5A	6A	5A	7		
% Stones >10mm _A	3.8	<0.1	14.9	4.7	3.0	1.3	<0.1	<0.1	% w/w	A-T-044
pH _D	-	7.40	7.75	-	4.37	-	-	-	pH	A-T-031s
pH BRE _D	7.47	7.40	-	7.69	-	4.26	-	6.69	pH	A-T-031s
Chloride BRE, SO ₄ equiv. (water sol 2:1) _D	-	-	-	-	-	12	-	-	mg/l	A-T-026s
Nitrate BRE, SO ₄ equiv. (water sol 2:1) _D	-	-	-	-	-	<0.4	-	-	mg/l	A-T-026s
Sulphate BRE (water sol 2:1) _D ^{M#}	80	154	-	199	-	2020	-	230	mg/l	A-T-026s
Sulphate BRE (acid sol) _D ^{M#}	0.05	0.08	-	0.11	-	0.86	-	0.09	% w/w	A-T-028s
Sulphur BRE (total) _D	0.03	0.04	-	0.27	-	0.49	-	3.36	% w/w	A-T-024s
Loss on ignition (550degC) _D	-	-	-	-	-	-	11.2	-	% w/w	A-T-030s
Total Organic Carbon _D ^{M#}	-	4.30	5.51	-	1.66	-	-	-	% w/w	A-T-032s
Calorific Value (Gross/Total) _A	-	-	-	-	-	-	5620	-	kJ/kg	Subcon
Arsenic _D ^{M#}	-	1	3	-	30	-	-	-	mg/kg	A-T-024s
Cadmium _D ^{M#}	-	<0.5	0.5	-	<0.5	-	-	-	mg/kg	A-T-024s
Copper _D ^{M#}	-	10	21	-	7	-	-	-	mg/kg	A-T-024s
Chromium _D ^{M#}	-	7	16	-	4	-	-	-	mg/kg	A-T-024s
Lead _D ^{M#}	-	11	16	-	18	-	-	-	mg/kg	A-T-024s
Mercury _D	-	<0.17	<0.17	-	<0.17	-	-	-	mg/kg	A-T-024s
Nickel _D ^{M#}	-	7	26	-	4	-	-	-	mg/kg	A-T-024s
Selenium _D ^{M#}	-	<1	<1	-	<1	-	-	-	mg/kg	A-T-024s
Zinc _D ^{M#}	-	17	55	-	8	-	-	-	mg/kg	A-T-024s

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Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/96	17/08337/98	17/08337/101	17/08337/102	17/08337/105	17/08337/107	17/08337/113	17/08337/114	Units	Method ref
Client Sample No	1	1	1	2	1	1	1	1		
Client Sample ID	TP138	TP139	TP140	TP140	TP141	TP142	WS119	WS120		
Depth to Top	0.7	0.6	0.4	0.9	0.5	0.6	0.5	0.6		
Depth To Bottom							0.7	0.8		
Date Sampled	29-Nov-17	29-Nov-17	29-Nov-17	29-Nov-17	29-Nov-17	28-Nov-17	23-Nov-17	23-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid		
Sample Matrix Code	4A	4A	4A	6A	5A	6A	5A	7		
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	-	NAD	NAD	-	NAD	-	-	-		A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	-	N/A	N/A	-	N/A	-	-	-		

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/96	17/08337/98	17/08337/101	17/08337/102	17/08337/105	17/08337/107	17/08337/113	17/08337/114	Units	Method ref
Client Sample No	1	1	1	2	1	1	1	1		
Client Sample ID	TP138	TP139	TP140	TP140	TP141	TP142	WS119	WS120		
Depth to Top	0.7	0.6	0.4	0.9	0.5	0.6	0.5	0.6		
Depth To Bottom							0.7	0.8		
Date Sampled	29-Nov-17	29-Nov-17	29-Nov-17	29-Nov-17	29-Nov-17	28-Nov-17	23-Nov-17	23-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid		
Sample Matrix Code	4A	4A	4A	6A	5A	6A	5A	7		
PAH 16										
Acenaphthene _A ^{M#}	-	<0.01	<0.01	-	<0.01	-	-	-	mg/kg	A-T-019s
Acenaphthylene _A ^{M#}	-	<0.01	<0.01	-	<0.01	-	-	-	mg/kg	A-T-019s
Anthracene _A ^{M#}	-	0.03	0.06	-	<0.02	-	-	-	mg/kg	A-T-019s
Benzo(a)anthracene _A ^{M#}	-	<0.04	<0.04	-	<0.04	-	-	-	mg/kg	A-T-019s
Benzo(a)pyrene _A ^{M#}	-	<0.04	<0.04	-	<0.04	-	-	-	mg/kg	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	-	<0.05	<0.05	-	<0.05	-	-	-	mg/kg	A-T-019s
Benzo(ghi)perylene _A ^{M#}	-	<0.05	<0.05	-	<0.05	-	-	-	mg/kg	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	-	<0.07	<0.07	-	<0.07	-	-	-	mg/kg	A-T-019s
Chrysene _A ^{M#}	-	<0.06	0.07	-	<0.06	-	-	-	mg/kg	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	-	<0.04	<0.04	-	<0.04	-	-	-	mg/kg	A-T-019s
Fluoranthene _A ^{M#}	-	<0.08	<0.08	-	<0.08	-	-	-	mg/kg	A-T-019s
Fluorene _A ^{M#}	-	<0.01	<0.01	-	<0.01	-	-	-	mg/kg	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	-	<0.03	<0.03	-	<0.03	-	-	-	mg/kg	A-T-019s
Naphthalene _A ^{M#}	-	0.16	0.16	-	0.04	-	-	-	mg/kg	A-T-019s
Phenanthrene _A ^{M#}	-	0.12	0.16	-	<0.03	-	-	-	mg/kg	A-T-019s
Pyrene _A ^{M#}	-	<0.07	<0.07	-	<0.07	-	-	-	mg/kg	A-T-019s
PAH (total 16) _A ^{M#}	-	0.31	0.49	-	<0.08	-	-	-	mg/kg	A-T-019s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/96	17/08337/98	17/08337/101	17/08337/102	17/08337/105	17/08337/107	17/08337/113	17/08337/114	Units	Method ref
Client Sample No	1	1	1	2	1	1	1	1		
Client Sample ID	TP138	TP139	TP140	TP140	TP141	TP142	WS119	WS120		
Depth to Top	0.7	0.6	0.4	0.9	0.5	0.6	0.5	0.6		
Depth To Bottom							0.7	0.8		
Date Sampled	29-Nov-17	29-Nov-17	29-Nov-17	29-Nov-17	29-Nov-17	28-Nov-17	23-Nov-17	23-Nov-17		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid		
Sample Matrix Code	4A	4A	4A	6A	5A	6A	5A	7		
TPH CWG										
Ali >C5-C6 _A [#]	-	<0.01	<0.05	-	<0.01	-	-	-	mg/kg	A-T-022s
Ali >C6-C8 _A [#]	-	<0.01	<0.05	-	<0.01	-	-	-	mg/kg	A-T-022s
Ali >C8-C10 _A [#]	-	0.01	<0.05	-	<0.01	-	-	-	mg/kg	A-T-022s
Ali >C10-C12 _A [#]	-	1.0	0.6	-	<0.1	-	-	-	mg/kg	A-T-023s
Ali >C12-C16 _A [#]	-	2.1	2.0	-	<0.1	-	-	-	mg/kg	A-T-023s
Ali >C16-C21 _A [#]	-	1.4	2.0	-	<0.1	-	-	-	mg/kg	A-T-023s
Ali >C21-C35 _A [#]	-	2.4	3.0	-	<0.1	-	-	-	mg/kg	A-T-023s
Total Aliphatics _A	-	7.0	7.5	-	<0.1	-	-	-	mg/kg	A-T-023s
Aro >C5-C7 _A [#]	-	<0.01	<0.05	-	<0.01	-	-	-	mg/kg	A-T-022s
Aro >C7-C8 _A [#]	-	<0.01	<0.05	-	<0.01	-	-	-	mg/kg	A-T-022s
Aro >C8-C9 _A [#]	-	0.02	<0.05	-	<0.01	-	-	-	mg/kg	A-T-022s
Aro >C9-C10 _A [#]	-	0.02	<0.05	-	<0.01	-	-	-	mg/kg	A-T-022s
Aro >C10-C12 _A [#]	-	0.6	0.4	-	<0.1	-	-	-	mg/kg	A-T-023s
Aro >C12-C16 _A [#]	-	5.5	3.7	-	2.2	-	-	-	mg/kg	A-T-023s
Aro >C16-C21 _A [#]	-	4.4	3.6	-	1.3	-	-	-	mg/kg	A-T-023s
Aro >C21-C35 _A [#]	-	1.1	1.5	-	<0.1	-	-	-	mg/kg	A-T-023s
Total Aromatics _A	-	11.6	9.2	-	3.6	-	-	-	mg/kg	A-T-023s
TPH (Ali & Aro) _A	-	18.6	16.8	-	3.6	-	-	-	mg/kg	A-T-023s
BTEX - Benzene _A [#]	-	<0.01	<0.05	-	<0.01	-	-	-	mg/kg	A-T-022s
BTEX - Toluene _A [#]	-	<0.01	<0.05	-	<0.01	-	-	-	mg/kg	A-T-022s
BTEX - Ethyl Benzene _A [#]	-	<0.01	<0.05	-	<0.01	-	-	-	mg/kg	A-T-022s
BTEX - m & p Xylene _A [#]	-	<0.01	<0.05	-	<0.01	-	-	-	mg/kg	A-T-022s
BTEX - o Xylene _A [#]	-	<0.01	<0.05	-	<0.01	-	-	-	mg/kg	A-T-022s
MTBE _A [#]	-	<0.01	<0.05	-	<0.01	-	-	-	mg/kg	A-T-022s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/116								Units	Method ref
Client Sample No	3									
Client Sample ID	WS120									
Depth to Top	2.3									
Depth To Bottom	2.50									
Date Sampled	23-Nov-17									
Sample Type	Solid									
Sample Matrix Code	7									
% Stones >10mm _A	<0.1								% w/w	A-T-044
pH _D	9.86								pH	A-T-031s
Arsenic _D ^{M#}	13								mg/kg	A-T-024s
Cadmium _D ^{M#}	<0.5								mg/kg	A-T-024s
Copper _D ^{M#}	20								mg/kg	A-T-024s
Chromium _D ^{M#}	20								mg/kg	A-T-024s
Lead _D ^{M#}	8								mg/kg	A-T-024s
Mercury _D	0.68								mg/kg	A-T-024s
Nickel _D ^{M#}	12								mg/kg	A-T-024s
Selenium _D ^{M#}	<1								mg/kg	A-T-024s
Zinc _D ^{M#}	22								mg/kg	A-T-024s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/116								Units	Method ref
Client Sample No	3									
Client Sample ID	WS120									
Depth to Top	2.3									
Depth To Bottom	2.50									
Date Sampled	23-Nov-17									
Sample Type	Solid									
Sample Matrix Code	7									
Asbestos in Soil (inc. matrix)										
Asbestos in soil _A [#]	NAD									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	N/A									

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/116								Units	Method ref
Client Sample No	3									
Client Sample ID	WS120									
Depth to Top	2.3									
Depth To Bottom	2.50									
Date Sampled	23-Nov-17									
Sample Type	Solid									
Sample Matrix Code	7									
PAH 16										
Acenaphthene _A ^{M#}	<0.01								mg/kg	A-T-019s
Acenaphthylene _A ^{M#}	<0.01								mg/kg	A-T-019s
Anthracene _A ^{M#}	0.09								mg/kg	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04								mg/kg	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04								mg/kg	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05								mg/kg	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05								mg/kg	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07								mg/kg	A-T-019s
Chrysene _A ^{M#}	<0.06								mg/kg	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04								mg/kg	A-T-019s
Fluoranthene _A ^{M#}	<0.08								mg/kg	A-T-019s
Fluorene _A ^{M#}	<0.01								mg/kg	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03								mg/kg	A-T-019s
Naphthalene _A ^{M#}	<0.03								mg/kg	A-T-019s
Phenanthrene _A ^{M#}	0.54								mg/kg	A-T-019s
Pyrene _A ^{M#}	<0.07								mg/kg	A-T-019s
PAH (total 16) _A ^{M#}	0.63								mg/kg	A-T-019s

Envirolab Job Number: 17/08337

Client Project Name: Thoresby Area B

Client Project Ref: 301924

Lab Sample ID	17/08337/116								Units	Method ref
Client Sample No	3									
Client Sample ID	WS120									
Depth to Top	2.3									
Depth To Bottom	2.50									
Date Sampled	23-Nov-17									
Sample Type	Solid									
Sample Matrix Code	7									
TPH CWG										
Ali >C5-C6 _A [#]	<0.01								mg/kg	A-T-022s
Ali >C6-C8 _A [#]	<0.01								mg/kg	A-T-022s
Ali >C8-C10 _A [#]	<0.01								mg/kg	A-T-022s
Ali >C10-C12 _A [#]	<0.1								mg/kg	A-T-023s
Ali >C12-C16 _A [#]	2.7								mg/kg	A-T-023s
Ali >C16-C21 _A [#]	26.7								mg/kg	A-T-023s
Ali >C21-C35 _A [#]	46.2								mg/kg	A-T-023s
Total Aliphatics _A	75.1								mg/kg	A-T-023s
Aro >C5-C7 _A [#]	<0.01								mg/kg	A-T-022s
Aro >C7-C8 _A [#]	<0.01								mg/kg	A-T-022s
Aro >C8-C9 _A [#]	<0.01								mg/kg	A-T-022s
Aro >C9-C10 _A [#]	<0.01								mg/kg	A-T-022s
Aro >C10-C12 _A [#]	<0.1								mg/kg	A-T-023s
Aro >C12-C16 _A [#]	<0.1								mg/kg	A-T-023s
Aro >C16-C21 _A [#]	<0.1								mg/kg	A-T-023s
Aro >C21-C35 _A [#]	<0.1								mg/kg	A-T-023s
Total Aromatics _A	<0.1								mg/kg	A-T-023s
TPH (Ali & Aro) _A	75.1								mg/kg	A-T-023s
BTEX - Benzene _A [#]	<0.01								mg/kg	A-T-022s
BTEX - Toluene _A [#]	<0.01								mg/kg	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01								mg/kg	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01								mg/kg	A-T-022s
BTEX - o Xylene _A [#]	<0.01								mg/kg	A-T-022s
MTBE _A [#]	<0.01								mg/kg	A-T-022s

REPORT NOTES

General:

This report shall not be reproduced, except in full, without written approval from Envirolab.

All samples contained within this report, and any received with the same delivery, will be disposed of one month after the date of this report.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

If results are in italic font they are associated with an AQC failure and there is insufficient sample to repeat the analysis. These are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Soil chemical analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

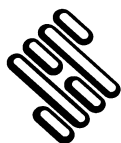
Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

APPENDIX E

Geotechnical Laboratory Certificates for Colliery Spoil



STRUCTURAL SOILS LTD
TEST REPORT



Report No. 783189 R1

1774

Date Contract Thoresby Area A Tip SI

Client RSK Environment Ltd
Address Spring Lodge
172 Chester Road
Helsby
Cheshire WA6 0AR

For the Attention of Anthony Jordan

Samples submitted by client	31/05/2018	Client Reference	301924
Testing Started	01/06/2018	Client Order No.	
Testing Completed	18/07/2018	Instruction Type	Written

Tests marked 'Not UKAS Accredited' in this report are not included in the UKAS Accreditation Schedule for our Laboratory.

Ukas Accredited Tests Underatken

Moisture Content (oven drying method) BS1377:Part 2:1990,clause 3.2 (superseded)**
Liquid Limit (one point method) BS1377:Part 2:1990,clause 4.4
Plastic Limit BS1377:Part 2:1990,clause 5.3
Plasticity Index Derivation BS1377:Part 2:1990,clause 5.4
Particle Density gas jar method BS1377:Part 2:1990,clause 8.2
Particle Size Distribution wet sieve method BS1377:Part 2:1990,clause 9.2
Dry Density/Moisture Content Relationship 4.5kg rammer method BS1377:Part 4:1990
clause 3.5/3.6
Moisture condition value/moisture content relationship BS1377:Part 4:1990,clause 5.5
California Bearing Ratio BS1377:Part 4:1990,clause 7.4
Maximum/minimum density BS1377:Part 4:1990,clause 4.2/4.4

* This clause of BS1377 is no longer the most up to date method due to the publication of ISO17892

Please Note: Remaining samples will be retained for a period of one month from today and will then be disposed of.

Test were undertaken on samples 'as received' unless otherwise stated.

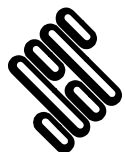
Opinions and interpretations expressed in this report are outside the scope of accreditation for this laboratory.

Structural Soils Ltd, The Potteries, Pottery Street, Castleford, WF10 1NJ Tel.01977 552255. E-mail mark.athorne@soils.co.uk

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Particle Density Mg/m ³	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
TP401	1	D	0.30	8.3		48	24	24	32	Grey slightly sandy slightly gravelly CLAY
TP401		AMAL	1.20		2.46					Black very sandy very clayey GRAVEL
										Amalgamation date: 26/06/2018. Amalgamation by: David Nickells. Amalgamation comprises: TP401
										Depth:1.20 Ref:3 Type:B + TP401 Depth:1.20 Ref:4 Type:D + TP401 Depth:2.20 Ref:5 Type:D
TP401	4	D	1.20	7.3		45	22	23	31	Grey slightly sandy slightly gravelly CLAY
TP401	5	D	2.20	9.3		43	21	22	52	Grey slightly sandy slightly gravelly CLAY
TP403	2	D	1.00	7.3		44	23	21	22	Dark grey slightly sandy slightly gravelly CLAY
TP403	4	B	1.00		2.54					Dark grey clayey very sandy GRAVEL
TP403	5	D	2.20	7.7		51	25	26	31	Dark grey slightly sandy slightly gravelly CLAY



**STRUCTURAL
SOILS LTD**

Contract:

Thoresby Area A

Contract Ref:

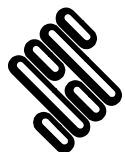
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SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Particle Density Mg/m ³	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
TP404	2	D	0.50	13	2.42	51	26	25	55	Grey clayey sandy GRAVEL
TP404	3	B	0.50	12		55	25	30	51	Grey clayey sandy GRAVEL
TP404	6	B	1.50		2.64					Orange brown clayey SAND
TP405	2	D	0.60	18		50	25	25	48	Grey slightly sandy slightly gravelly CLAY
TP405	5	D	1.50	22		48	24	24	67	Grey slightly sandy slightly gravelly CLAY
TP405	6	D	2.30	22		50	26	24	67	Grey slightly sandy slightly gravelly CLAY
TP406		AMAL	1.00		2.50					Black slightly sandy slightly gravelly CLAY
TP406	1	D	1.00	9.3		46	23	23	54	Dark grey slightly sandy slightly gravelly CLAY



**STRUCTURAL
SOILS LTD**

Contract:

Thoresby Area A

Contract Ref:

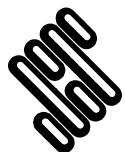
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SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Particle Density Mg/m ³	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
TP406	2	D	1.80	10		45	22	23	35	Grey slightly sandy slightly gravelly CLAY
TP406	5	D	2.50	11		43	21	22	36	Grey slightly sandy slightly gravelly CLAY
TP406	6	D	3.20	9.6		40	20	20	60	Grey slightly sandy slightly gravelly CLAY
TP407	1	D	1.00	12		39	20	19	30	Grey slightly sandy slightly gravelly CLAY
TP407	3	B	1.50	9.2	2.53	41	22	19	48	Dark grey sandy gravelly CLAY
TP407	4	D	2.00	9.6		40	19	21	56	Grey slightly sandy slightly gravelly CLAY
TP407	5	D	2.90	12		41	21	20	45	Grey slightly sandy slightly gravelly CLAY
TP407	6	D	4.00	6.9		44	21	23	43	Grey slightly sandy slightly gravelly CLAY



**STRUCTURAL
SOILS LTD**

Contract:

Thoresby Area A

Contract Ref:

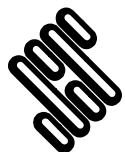
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SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Particle Density Mg/m ³	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
TP408	2	D	1.00	9.4		41	20	21	29	Grey slightly sandy slightly gravelly CLAY
TP408	4	B	2.00		2.49					Dark grey very gravelly clayey SAND
TP408	5	D	2.30	10		46	22	24	39	Brown slightly sandy slightly gravelly CLAY
TP409		B	0.50		2.27					Grey slightly sandy slightly gravelly CLAY
TP409A	1	D	1.00	13		39	22	17	45	Grey slightly sandy slightly gravelly CLAY
TP409A	3	D	2.00	12		42	20	22	56	Grey slightly sandy slightly gravelly CLAY
TP409A	4	D	2.70	16		48	22	26	22	Grey slightly sandy slightly gravelly CLAY
TP410	1	D	1.00	15		42	21	21	56	Grey slightly sandy slightly gravelly CLAY



**STRUCTURAL
SOILS LTD**

Contract:

Thoresby Area A

Contract Ref:

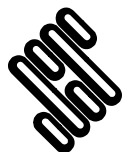
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SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Particle Density Mg/m ³	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
TP410	2	B	1.00		2.40					Grey slightly gravelly sandy CLAY
TP410	5	D	2.20	44		40	21	19	100	Dark grey CLAY
TP412		AMAL	1.00		2.48					Black very gravelly clayey SAND
										Amalgamation date: 25/06/2018. Amalgamation by: David Nickells. Amalgamation comprises: TP412
										Depth:1.00 Ref:4 Type:B + TP412 Depth:1.50 Ref:3 Type:D
TP412	6	D	2.00	19		30	14	16	75	Grey and red slightly sandy slightly gravelly CLAY
TP412	7	B	2.00		2.66					Reddish brown slightly sandy slightly gravelly CLAY
TP413	1	B	0.20		2.48					Dark brown gravelly very clayey SAND
TP414	1	B	0.20		2.58					Reddish brown gravelly clayey SAND



**STRUCTURAL
SOILS LTD**

Contract:

Thoresby Area A

Contract Ref:

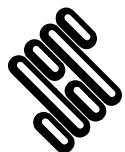
783189



SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Particle Density Mg/m ³	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
TP417	1	B	0.50		2.64					Orange brown clayey gravelly SAND
TP417	5	D	3.00	23		37	19	18	20	Dark grey slightly sandy gravelly CLAY
TP418	3	D	0.50	12		48	25	23	47	Dark grey slightly sandy slightly gravelly CLAY
TP418	4	B	0.50		2.39					Grey slightly sandy slightly gravelly CLAY
TP418	6	B	1.50		2.63					Orange brown clayey gravelly SAND
TP419	1	D	0.50	17		43	21	22	85	Dark grey slightly sandy silty CLAY



**STRUCTURAL
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Thoresby Area A

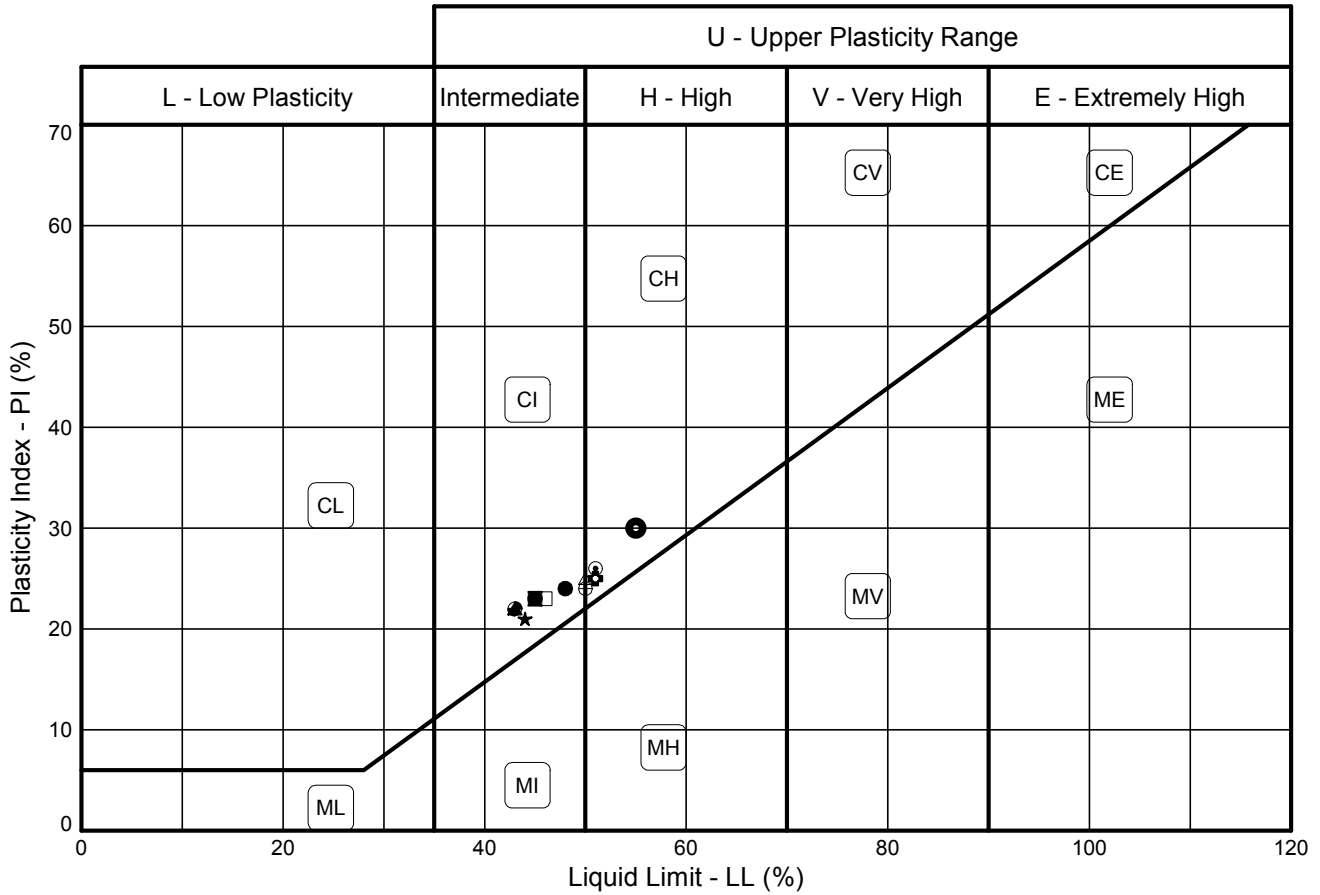
Contract Ref:

783189



PLASTICITY CHART - PI Vs LL

In accordance with BS5930:2015
Testing in accordance with BS1377-2:1990



Sample Identification				BS Test Method #	Preparation Method +	MC %	LL %	PL %	PI %	<425um %	Lab location
Exploratory Position ID	Sample	Depth (m)									
●	TP401	1D	0.30	3.2/4.4/5.3/5.4	4.2.4	8.3	48	24	24	32	C
⊠	TP401	4D	1.20	3.2/4.4/5.3/5.4	4.2.4	7.3	45	22	23	31	C
▲	TP401	5D	2.20	3.2/4.4/5.3/5.4	4.2.4	9.3	43	21	22	52	C
★	TP403	2D	1.00	3.2/4.4/5.3/5.4	4.2.4	7.3	44	23	21	22	C
⊙	TP403	5D	2.20	3.2/4.4/5.3/5.4	4.2.4	7.7	51	25	26	31	C
⊕	TP404	2D	0.50	3.2/4.4/5.3/5.4	4.2.4	13	51	26	25	55	C
⊗	TP404	3B	0.50	3.2/4.4/5.3/5.4	4.2.4	12	55	25	30	51	C
△	TP405	2D	0.60	3.2/4.4/5.3/5.4	4.2.4	18	50	25	25	48	C
⊗	TP405	5D	1.50	3.2/4.4/5.3/5.4	4.2.4	22	48	24	24	67	C
⊕	TP405	6D	2.30	3.2/4.4/5.3/5.4	4.2.4	22	50	26	24	67	C
□	TP406	1D	1.00	3.2/4.4/5.3/5.4	4.2.4	9.3	46	23	23	54	C
⊗	TP406	2D	1.80	3.2/4.4/5.3/5.4	4.2.4	10.0	45	22	23	35	C
⊕	TP406	5D	2.50	3.2/4.4/5.3/5.4	4.2.4	11	43	21	22	36	C

Tested in accordance with the following clauses of BS1377-2:1990.

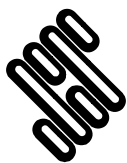
3.2 - Moisture Content
4.3 - Cone Penetrometer Method
4.4 - One Point Cone Penetrometer Method
4.6 - One Point Casagrande Method
5.3 - Plastic Limit Method
5.4 - Plasticity Index

+ Tested in accordance with the following clauses of BS1377-2:1990.

4.2.3 - Natural State
4.2.4 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)



STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By

M. Fisher

MAUREEN FISHER

Date

09/08/18

Contract

Thoresby Area A

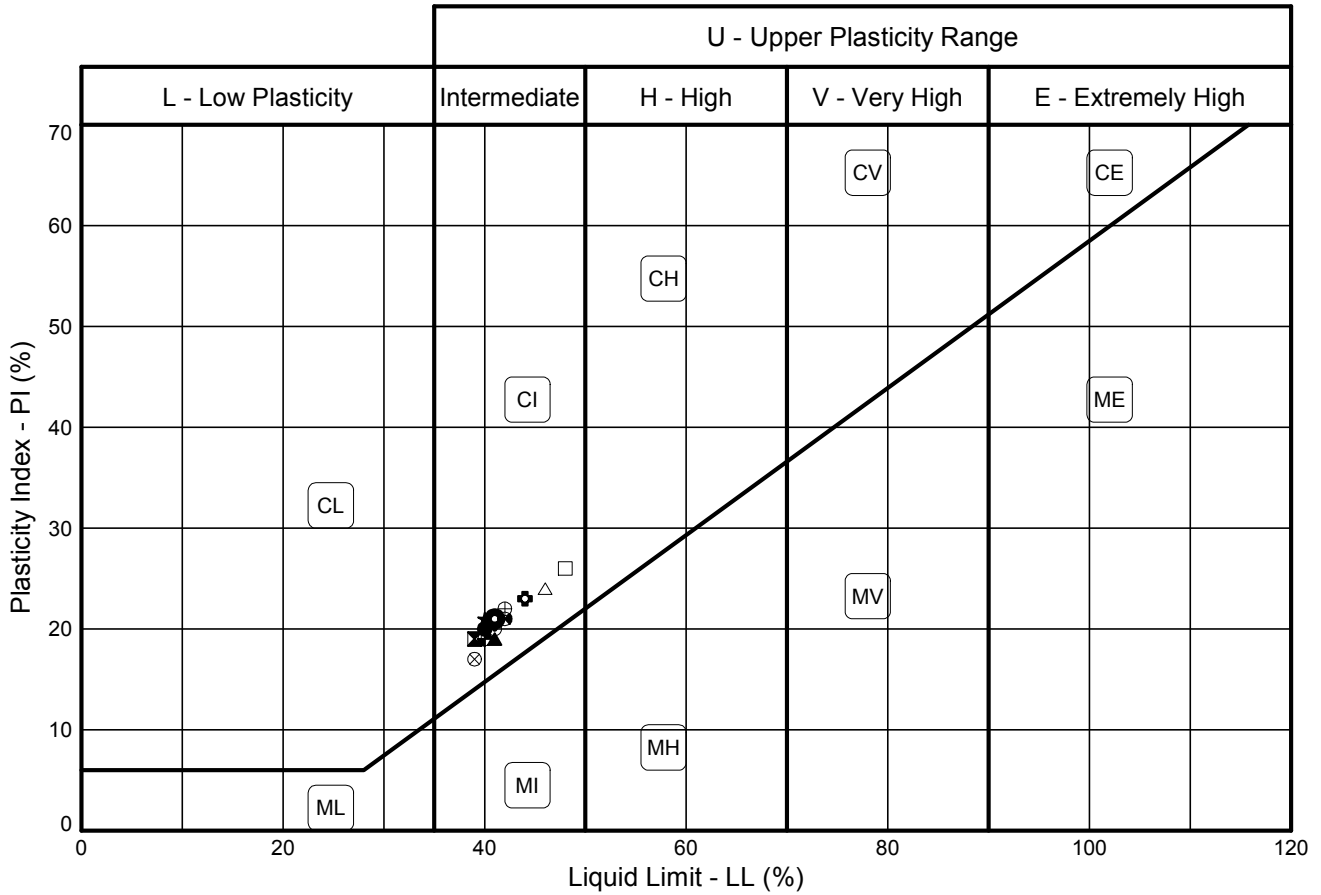
Contract Ref:

783189



PLASTICITY CHART - PI Vs LL

In accordance with BS5930:2015
Testing in accordance with BS1377-2:1990



Sample Identification				BS Test Method #	Preparation Method +	MC %	LL %	PL %	PI %	<425um %	Lab location
Exploratory Position ID	Sample	Depth (m)									
●	TP406	6D	3.20	3.2/4.4/5.3/5.4	4.2.4	9.6	40	20	20	60	C
⊗	TP407	1D	1.00	3.2/4.4/5.3/5.4	4.2.4	12	39	20	19	30	C
▲	TP407	3B	1.50	3.2/4.4/5.3/5.4	4.2.4	9.2	41	22	19	48	C
★	TP407	4D	2.00	3.2/4.4/5.3/5.4	4.2.4	9.6	40	19	21	56	C
⊙	TP407	5D	2.90	3.2/4.4/5.3/5.4	4.2.4	12	41	21	20	45	C
⊕	TP407	6D	4.00	3.2/4.4/5.3/5.4	4.2.4	6.9	44	21	23	43	C
⊖	TP408	2D	1.00	3.2/4.4/5.3/5.4	4.2.4	9.4	41	20	21	29	C
△	TP408	5D	2.30	3.2/4.4/5.3/5.4	4.2.4	10	46	22	24	39	C
⊗	TP409A	1D	1.00	3.2/4.4/5.3/5.4	4.2.4	13	39	22	17	45	C
⊕	TP409A	3D	2.00	3.2/4.4/5.3/5.4	4.2.4	12	42	20	22	56	C
□	TP409A	4D	2.70	3.2/4.4/5.3/5.4	4.2.4	16	48	22	26	22	C
⊗	TP410	1D	1.00	3.2/4.4/5.3/5.4	4.2.4	15	42	21	21	56	C
⊕	TP410	5D	2.20	3.2/4.4/5.3/5.4	4.2.3	44	40	21	19	100	C

Tested in accordance with the following clauses of BS1377-2:1990.

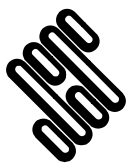
3.2 - Moisture Content
4.3 - Cone Penetrometer Method
4.4 - One Point Cone Penetrometer Method
4.6 - One Point Casagrande Method
5.3 - Plastic Limit Method
5.4 - Plasticity Index

+ Tested in accordance with the following clauses of BS1377-2:1990.

4.2.3 - Natural State
4.2.4 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)



STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By

M. Fisher

MAUREEN FISHER

Date

09/08/18

Contract

Thoresby Area A

Contract Ref:

783189



In accordance with BS5930:2015
Testing in accordance with BS1377-2:1990

<p># Tested in accordance with the following clauses of BS1377-2:1990.</p> <p>3.2 - Moisture Content 4.3 - Cone Penetrometer Method 4.4 - One Point Cone Penetrometer Method 4.6 - One Point Casagrande Method 5.3 - Plastic Limit Method 5.4 - Plasticity Index</p>	<p>+ Tested in accordance with the following clauses of BS1377-2:1990.</p> <p>4.2.3 - Natural State 4.2.4 - Wet Sieved</p> <p>Key: * = Non-standard test, NP = Non plastic.</p>
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STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

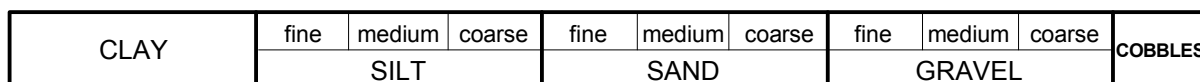
09/08/18



In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **1.20**

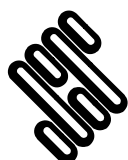
Amalgamation date: 26/06/2018. Amalgamation by: David Nickells. Amalgamation comprises: TP401 Depth:1.20 Ref:3 Type:B + TP401 Depth:1.20 Ref:4 Type:D + TP401 Depth:2.20 Ref:5 Type:D



Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Soil Fraction	Sieve Percentage (%)
GRAVEL	52
SAND	27
SILT/CLAY	21

Black very sandy very clayey GRAVEL



Date _____

56

SHARON CAIRNS

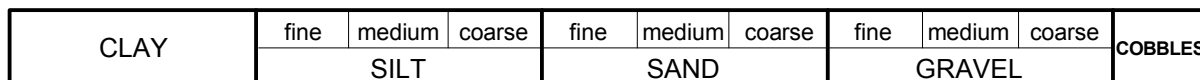
09/08/18

Contract Ref:

783189



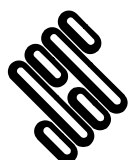
In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **1.00**

Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Soil Fraction	Sieve Percentage (%)
GRAVEL	65
SAND	28
SILT/CLAY	7

Dark grey clayey very sandy GRAVEL



Date _____

C. Cole

09/08/18

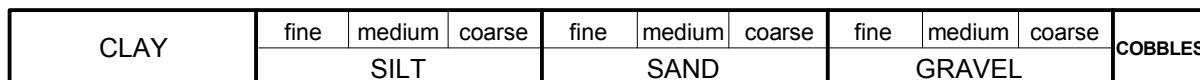
Contract Ref:

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In accordance with clauses 9.2 of BS1377:Part 2:1990

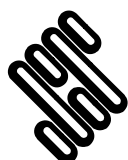
Depth (m): **0.50**



Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Soil Fraction	Sieve Percentage (%)
GRAVEL	67
SAND	17
SILT/CLAY	16

Soil Description:
Grey clayey sandy GRAVEL



Compiled By

M. Fisher

MAUREEN FISHER

Contract

Thoresby Area A

Contract Ref:

783189

Date _____

09/08/18



PARTICLE SIZE DISTRIBUTION TEST

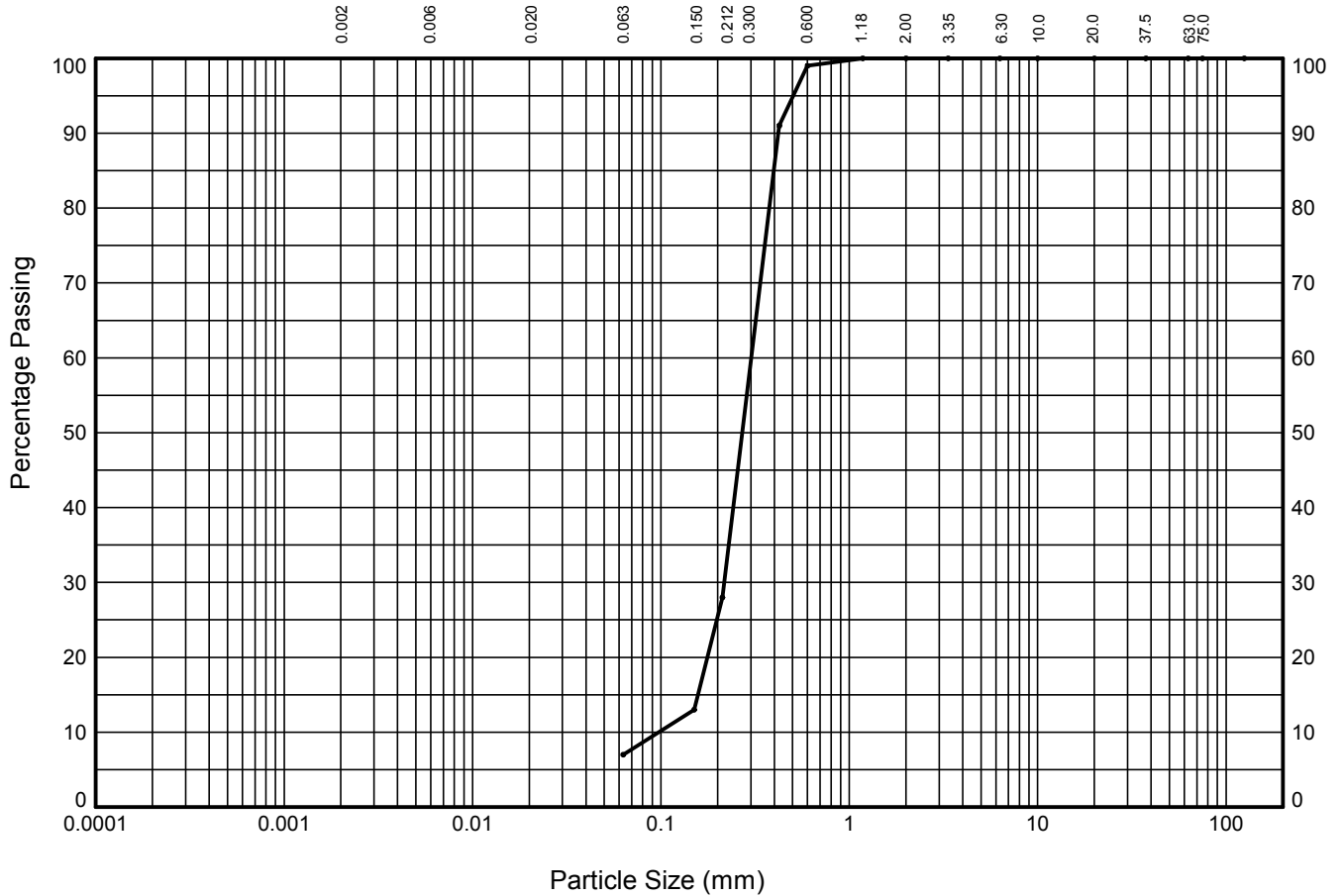
In accordance with clauses 9.2 of BS1377:Part 2:1990

Trial Pit: **TP404**

Sample Ref: **6**

Sample Type: **B**

Depth (m): **1.50**



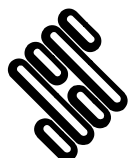
CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

Test Sieve (mm)	Percent Passing (%)
125.0	100
75.0	100
63.0	100
37.5	100
20.0	100
10.0	100
6.30	100
3.35	100
2.00	100
1.18	100
0.600	99
0.425	91
0.212	28
0.150	13
0.063	7

Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Soil Fraction	Sieve Percentage (%)
GRAVEL	0
SAND	93
SILT/CLAY	7

Soil Description:
Orange brown clayey SAND



STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By

Sarah Mundy

SARAH MUNDY

Date

09/08/18

Contract

Thoresby Area A

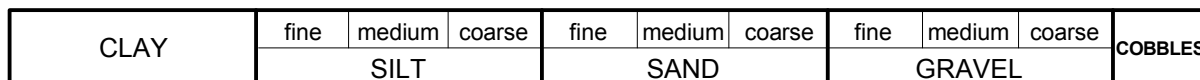
Contract Ref:

783189



In accordance with clauses 9.2 of BS1377:Part 2:1990

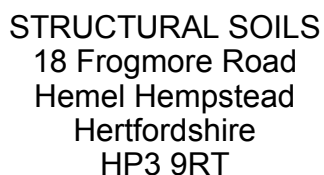
Depth (m): **0.50**



Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Soil Fraction	Sieve Percentage (%)
COBBLES	4
GRAVEL	33
SAND	9
SILT/CLAY	54

Grey mottled brown and yellow slightly sandy slightly gravelly
CLAY with a low cobble content. Gravel includes claystone



Date _____

09/08/18

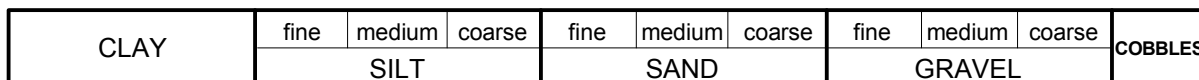
Contract Ref:

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In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **1.00**



Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Soil Fraction	Sieve Percentage (%)
GRAVEL	20
SAND	6
SILT/CLAY	74

Black slightly sandy slightly gravelly CLAY



Date _____

56

09/08/18

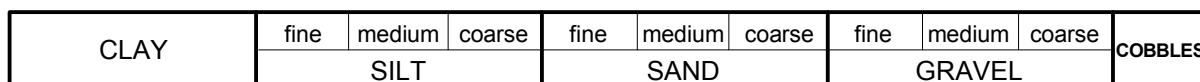
Contract Ref:

783189



In accordance with clauses 9.2 of BS1377:Part 2:1990

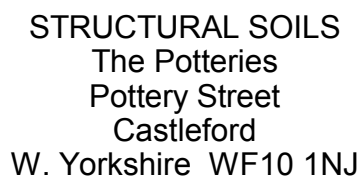
Depth (m): **1.50**



Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Soil Fraction	Sieve Percentage (%)
GRAVEL	39
SAND	40
SILT/CLAY	21

Dark grey sandy gravelly CLAY

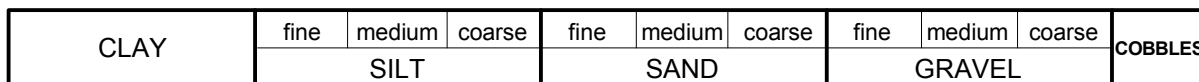


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In accordance with clauses 9.2 of BS1377:Part 2:1990

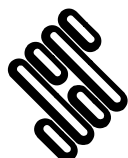
Depth (m): **2.00**



Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Soil Fraction	Sieve Percentage (%)
GRAVEL	40
SAND	46
SILT/CLAY	14

Dark grey very gravelly clayey SAND



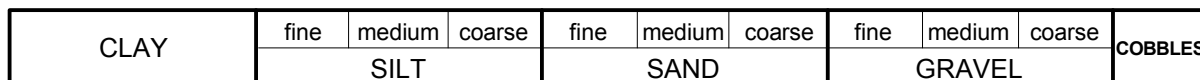
Date _____

Contract Ref:

783189



In accordance with clauses 9.2 of BS1377:Part 2:1990

Depth (m): **1.00**

Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Soil Fraction	Sieve Percentage (%)
GRAVEL	23
SAND	39
SILT/CLAY	38

Grey slightly gravelly sandy CLAY



Date _____

56

09/08/18

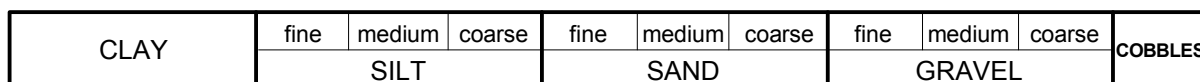
Contract Ref:

783189



In accordance with clauses 9.2 of BS1377:Part 2:1990

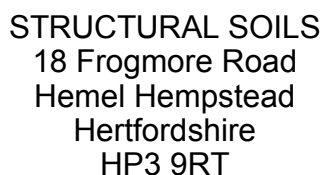
Amalgamation date: 25/06/2018. Amalgamation by: David Nickells. Amalgamation comprises: TP412 Depth:1.00 Ref:4 Type:B + TP412 Depth:1.50 Ref:3 Type:D



Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Soil Fraction	Sieve Percentage (%)
GRAVEL	37
SAND	49
SILT/CLAY	14

Black very gravelly clayey SAND. Gravel includes claystone



Date _____

Contract Ref:

783189



In accordance with clauses 9.2 of BS1377:Part 2:1990

The graph illustrates the particle size distribution of a sand sample. The data points are as follows:

Particle Size (mm)	Percentage Passing (%)
0.075	23
0.15	34
0.3	45
0.6	85
1.18	91
2.5	93
5.0	95
10.0	96
20.0	98
37.5	100

Soil Description:
Dark brown gravelly very clayey SAND

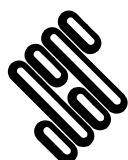


In accordance with clauses 9.2 of BS1377:Part 2:1990

The graph displays the cumulative percentage of sand particles passing through different sieve sizes. The x-axis is a logarithmic scale for particle size in millimeters, and the y-axis is a linear scale for the percentage of material passing. The data points are connected by a smooth curve, showing that approximately 17% of the sand passes through a No. 20 sieve (0.075 mm), and about 91% passes through a No. 20 sieve (0.6 mm). The sample is classified as well-sorted sand based on the uniformity of the particle sizes.

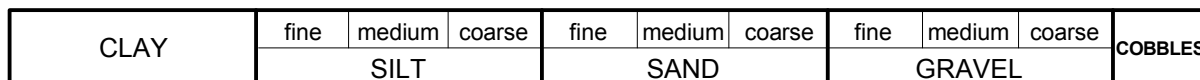
Particle Size (mm)	Percentage Passing (%)
0.075	17
0.150	24
0.300	34
0.600	84
1.18	91
2.50	93
5.00	94
10.0	95
20.0	98
40.0	100

Soil Description:
Reddish brown gravelly clayey SAND with some roots



In accordance with clauses 9.2 of BS1377:Part 2:1990

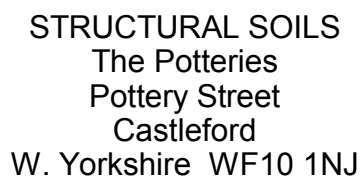
Depth (m): **0.50**



Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Soil Fraction	Sieve Percentage (%)
GRAVEL	9
SAND	83
SILT/CLAY	8

Orange brown clayey gravelly SAND



In accordance with clauses 9.2 of BS1377:Part 2:1990

The graph displays the cumulative distribution of particle sizes for a 100g sample of sand. The x-axis is a logarithmic scale for Particle Size (mm), and the y-axis is a linear scale for Percentage Passing. The curve starts at approximately 16% passing for a 0.075 mm sieve and reaches 100% passing at a 75.0 mm sieve.

Particle Size (mm)	Percentage Passing (%)
0.075	16
0.150	26
0.300	33
0.600	79
1.18	80
2.00	82
3.35	84
6.30	86
10.0	88
20.0	95
37.5	100
75.0	100

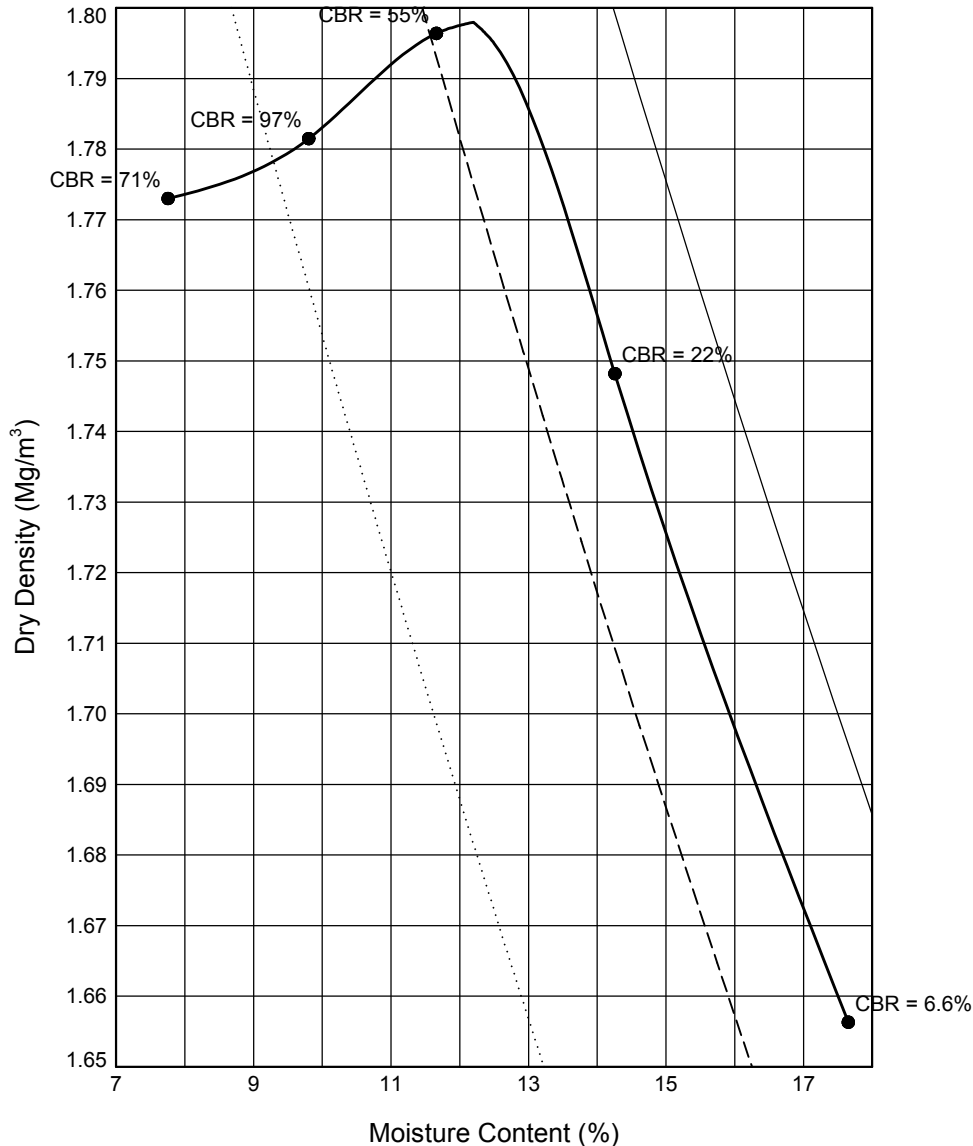
Soil Description:
Orange brown clayey gravelly SAND



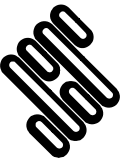
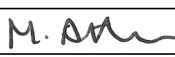
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP404** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



Initial Sample Conditions		Test Details		Test Results		
Initial Moisture Content (%)	: 14	Compaction Type	: Heavy	Maximum Dry Density (Mg/m³) : 1.80		
% Retained on 37.5mm BS Sieve	: 9	Mass of Rammer (kg):	4.5	Optimum Moisture Content (%) : 12		
% Retained on 20.0mm BS Sieve	: 4	Type of Mould	: CBR	Method Used: Clause 3.6		
Particle Density - measured (Mg/m³)	: 2.42	Remarks:				
Size of Soil Pieces	: <20mm					
Sample Description				Key to Air Voids Lines		
Brown slightly sandy slightly gravelly CLAY				———— 0%	— — — — 5% 10%

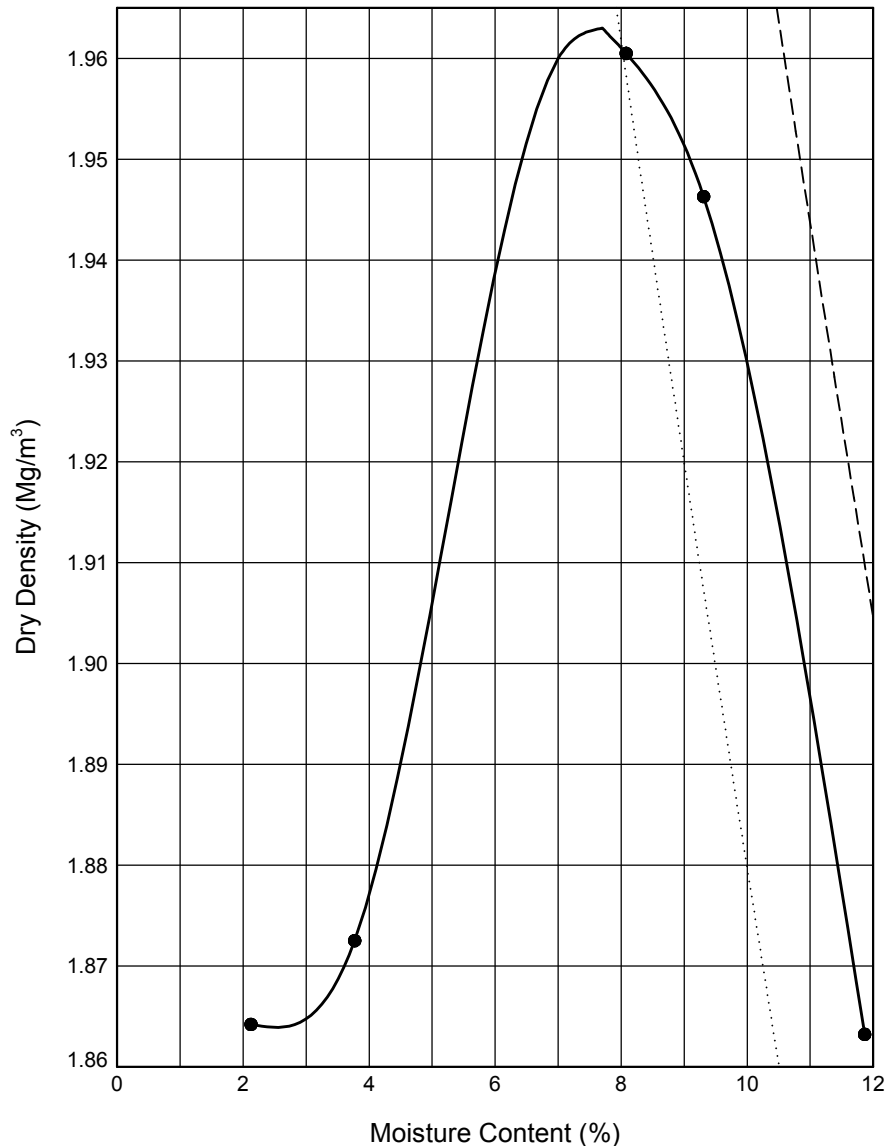
 STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
	 MARK ATHORNE		09/08/18
	Contract Thoresby Area A		Contract Ref: 783189



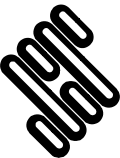
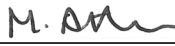

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP404** Sample Ref: **6** Sample Type: **B** Depth (m): **1.50**



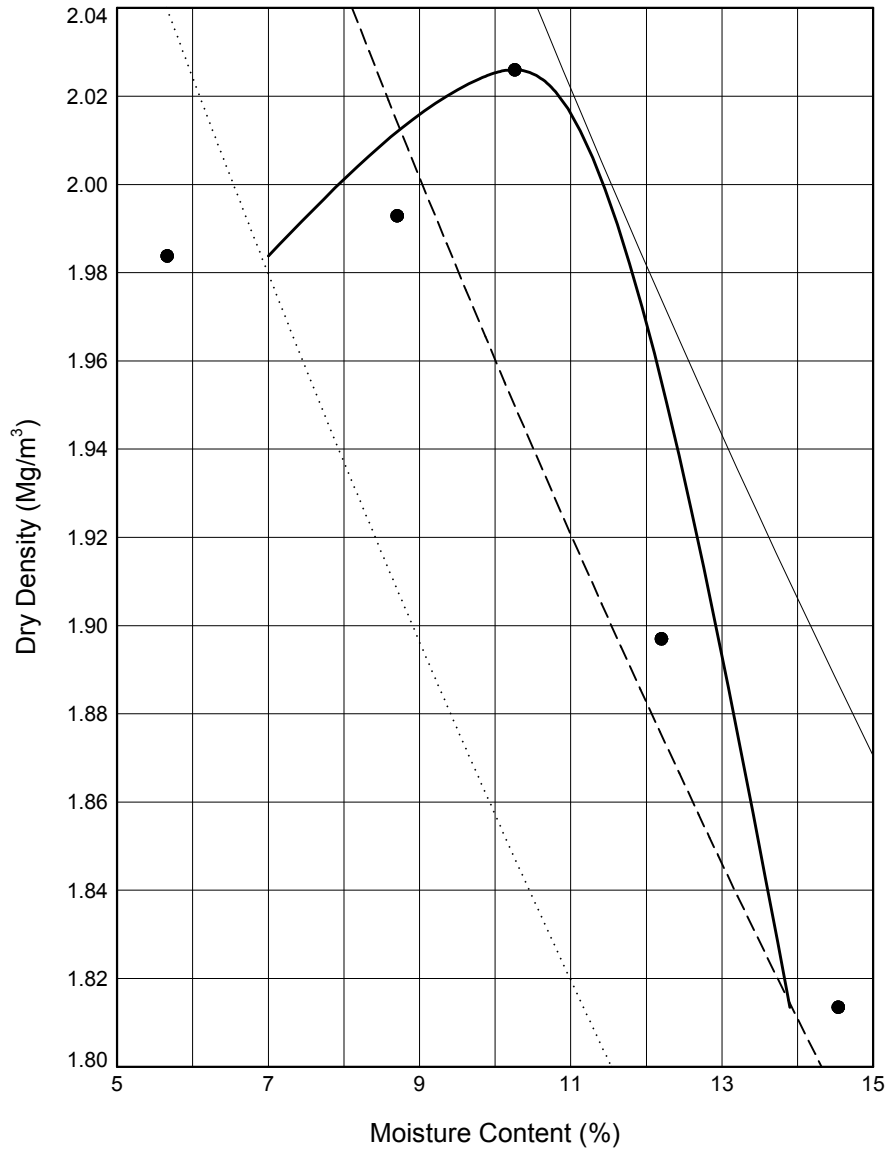
Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: 9.3	Compaction Type	: Heavy	Maximum Dry Density (Mg/m³)	: 1.96
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg):	4.5	Optimum Moisture Content (%)	: 8
% Retained on 20.0mm BS Sieve	: 5	Type of Mould	: Proctor	Method Used:	Clause 3.5
Particle Density - measured (Mg/m³)	: 2.64	Remarks:			
Size of Soil Pieces	: <20				
Sample Description			Key to Air Voids Lines		
Orange brown clayey SAND			———— 0%	— — — — 5% 10%

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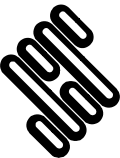


DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP406** Sample Ref: - Sample Type: **AMAL** Depth (m): **1.00**



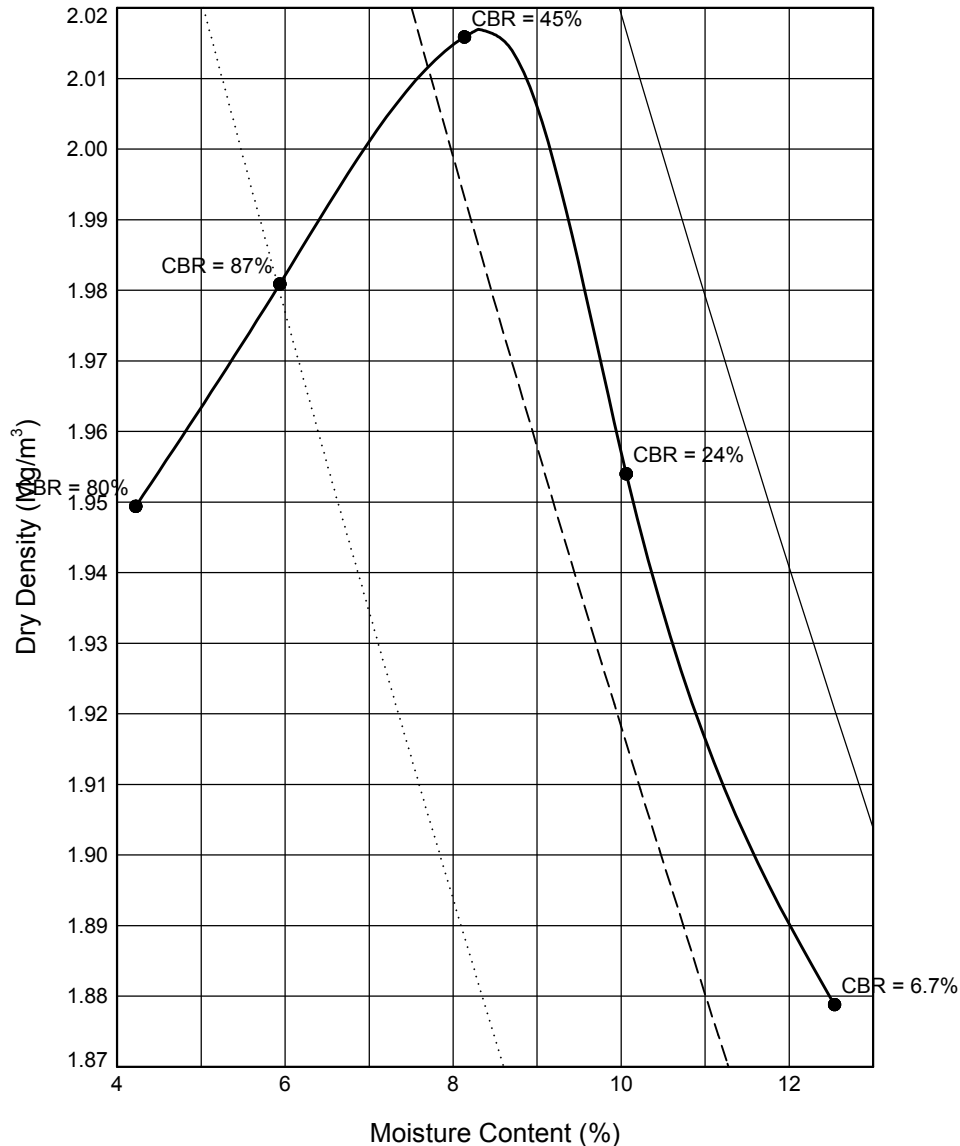
Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: 10.0	Compaction Type	: Heavy	Maximum Dry Density (Mg/m³)	: 2.03
% Retained on 37.5mm BS Sieve	: 3	Mass of Rammer (kg):	4.5	Optimum Moisture Content (%)	: 10
% Retained on 20.0mm BS Sieve	: 13	Type of Mould	: CBR	Method Used:	Clause 3.6
Particle Density - measured (Mg/m³)	: 2.60	Single sample was used.		Remarks:	
Size of Soil Pieces	: <20mm				
Sample Description			Key to Air Voids Lines		
Black slightly sandy slightly gravelly CLAY			———— 0%	----- 5% 10%

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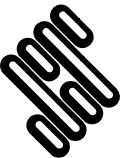
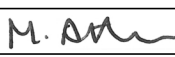
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP407** Sample Ref: **3** Sample Type: **B** Depth (m): **1.50**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: 9.8	Compaction Type	: Heavy	Maximum Dry Density (Mg/m³)	: 2.02
% Retained on 37.5mm BS Sieve	: 2	Mass of Rammer (kg):	4.5	Optimum Moisture Content (%)	: 8
% Retained on 20.0mm BS Sieve	: 4	Type of Mould	: CBR	Method Used:	Clause 3.6
Particle Density - measured (Mg/m³)	: 2.53	Remarks:			
Size of Soil Pieces	: <20mm				
Sample Description				Key to Air Voids Lines	
Dark grey slightly sandy slightly gravelly CLAY				———— 0%	— — — — 5%
			 10%	

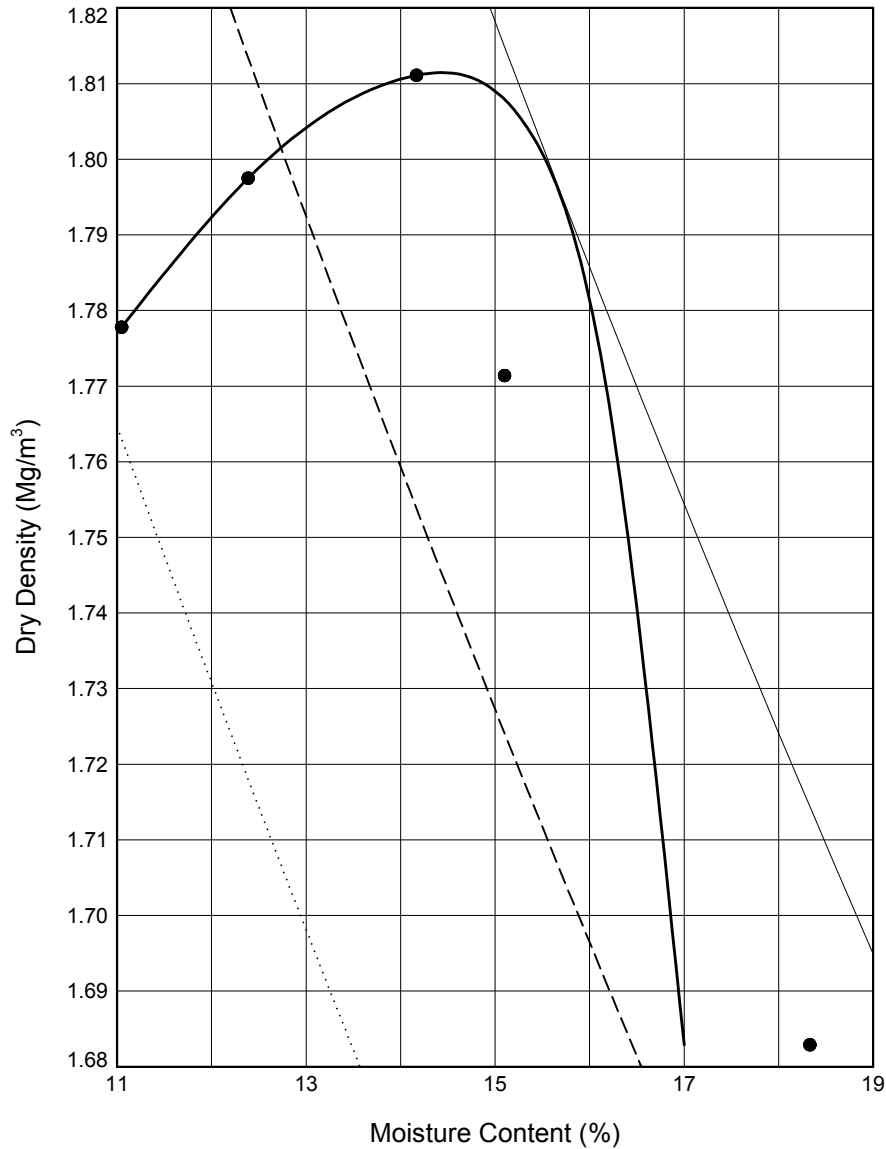
 STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
	 MARK ATHORNE		09/08/18
	Contract Thoresby Area A		Contract Ref: 783189



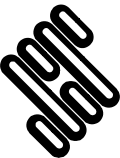


DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP413** Sample Ref: **1** Sample Type: **B** Depth (m): **0.20**



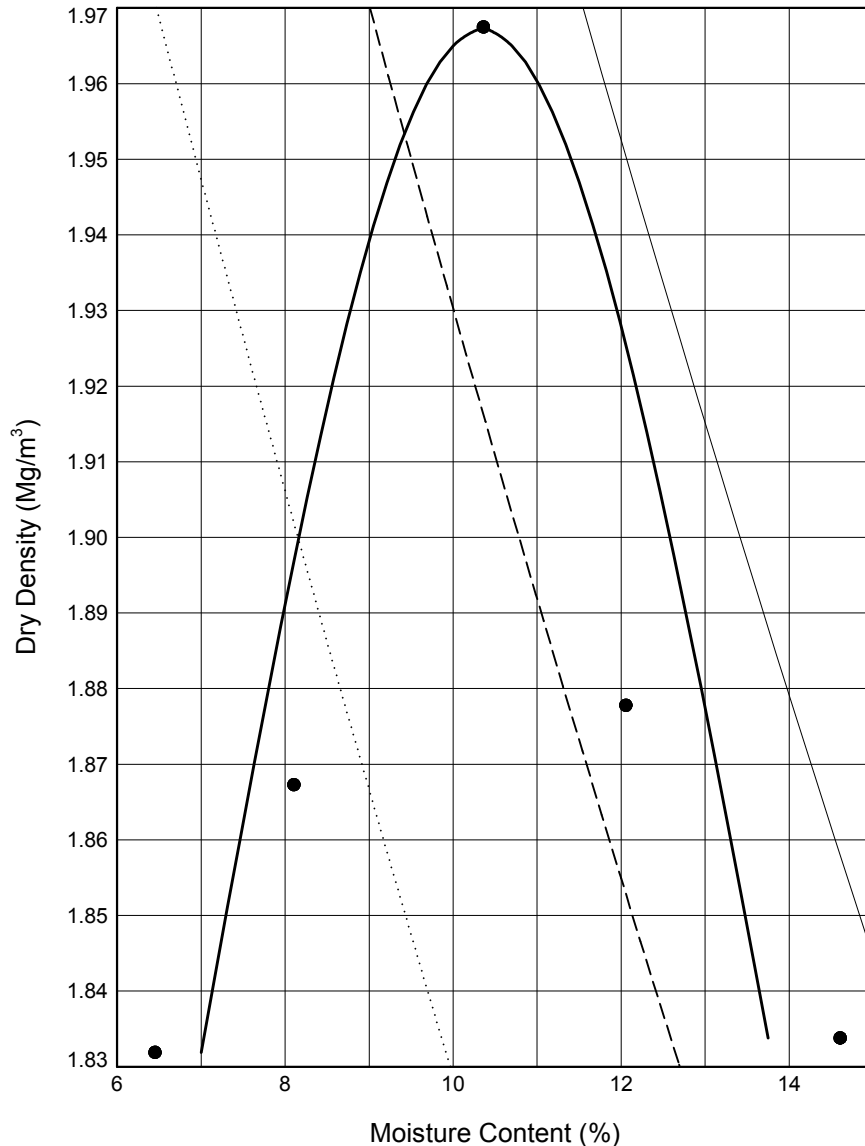
Initial Sample Conditions	Test Details	Test Results
Initial Moisture Content (%) : 15	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.81
% Retained on 37.5mm BS Sieve : 1	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 14
% Retained on 20.0mm BS Sieve : 3	Type of Mould : CBR	Method Used: Clause 3.6
Particle Density - measured (Mg/m³) : 2.50		Remarks:
Size of Soil Pieces : <20mm	Single sample was used.	
Sample Description		Key to Air Voids Lines
Dark brown gravelly very clayey SAND		<div>———— 0%</div> <div>----- 5%</div> <div>..... 10%</div>

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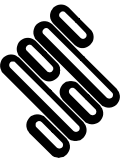


DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit: **TP414** Sample Ref: **1** Sample Type: **B** Depth (m): **0.20**



Initial Sample Conditions	Test Details	Test Results
Initial Moisture Content (%) : 7.8	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.97
% Retained on 37.5mm BS Sieve : 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 10
% Retained on 20.0mm BS Sieve : 3	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - measured (Mg/m³) : 2.55		Remarks:
Size of Soil Pieces : <20mm	Single sample was used.	
Sample Description		Key to Air Voids Lines
Reddish brown gravelly clayey SAND		<div>———— 0%</div> <div>----- 5%</div> <div>..... 10%</div>

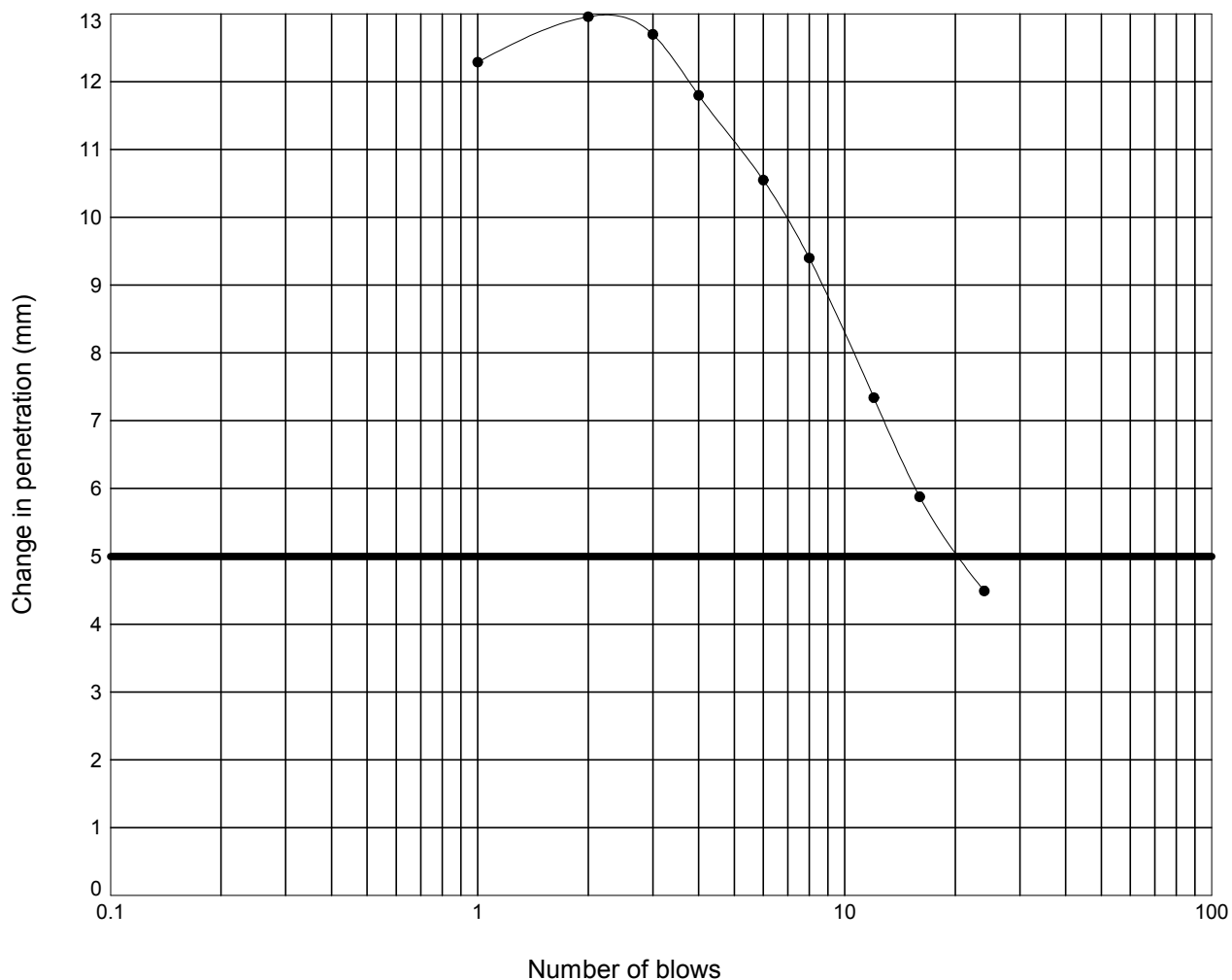
 STRUCTURAL SOILS 18 Frogmore Road Hemel Hempstead Hertfordshire HP3 9RT	Compiled By		Date
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	Contract	Contract Ref:	
	Thoresby Area A	783189	

MOISTURE CONDITION VALUE

In accordance with clause 5 of BS1377:Part 4:1990

Trial Pit: **TP404** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**

Description : **Grey clayey sandy GRAVEL**



Moisture Content : = 8.0 %
 Percentage retained on 20 mm sieve : = 12 %
 Moisture Condition Value : = 12.8
 Interpretation of curve: = Steepest straight line - Fig 9

Remarks : **-6**



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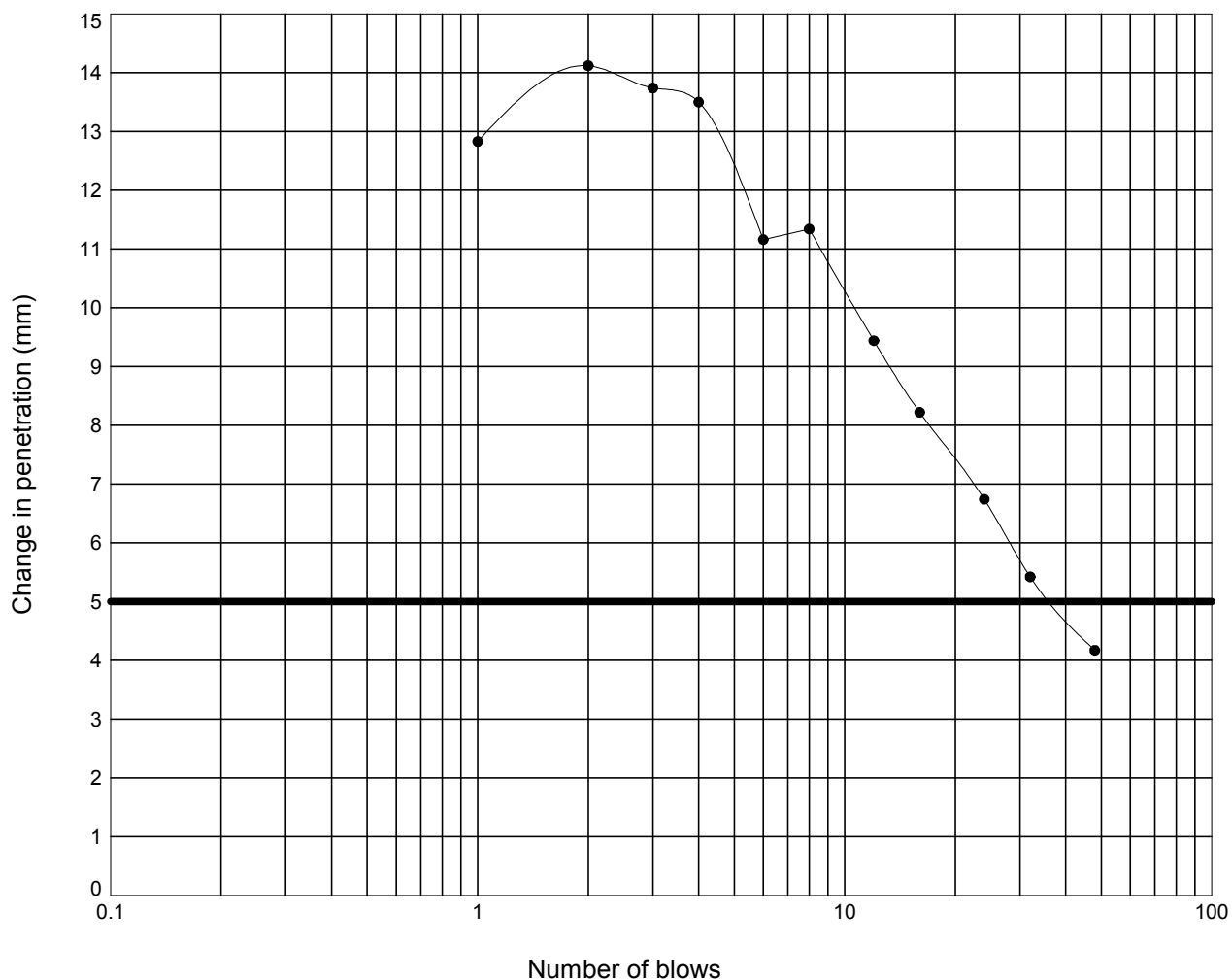
783189

MOISTURE CONDITION VALUE

In accordance with clause 5 of BS1377:Part 4:1990

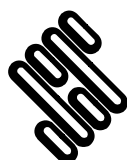
Trial Pit: **TP404** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**

Description : **Grey clayey sandy GRAVEL**



Moisture Content : = 10 %
 Percentage retained on 20 mm sieve : = 12 %
 Moisture Condition Value : = 12.4
 Interpretation of curve: = Steepest straight line - Fig 9

Remarks : **-4**



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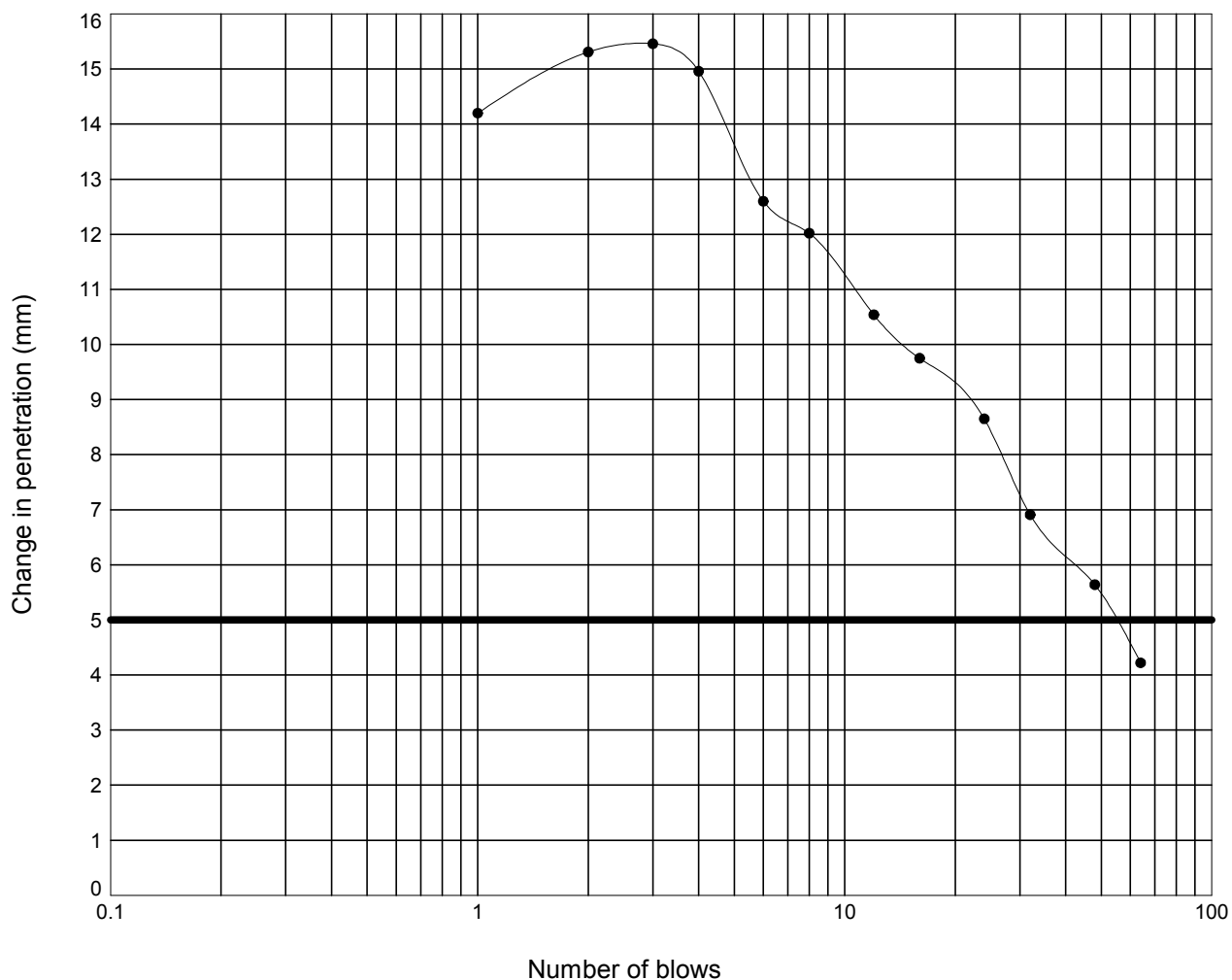
783189

MOISTURE CONDITION VALUE

In accordance with clause 5 of BS1377:Part 4:1990

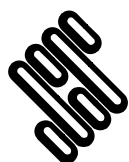
Trial Pit: **TP404** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**

Description : **Grey clayey sandy GRAVEL**



Moisture Content :	= 12	%
Percentage retained on 20 mm sieve :	= 12	%
Moisture Condition Value :	= 16.4	
Interpretation of curve:	= Steepest straight line - Fig 9	

Remarks : **-2**



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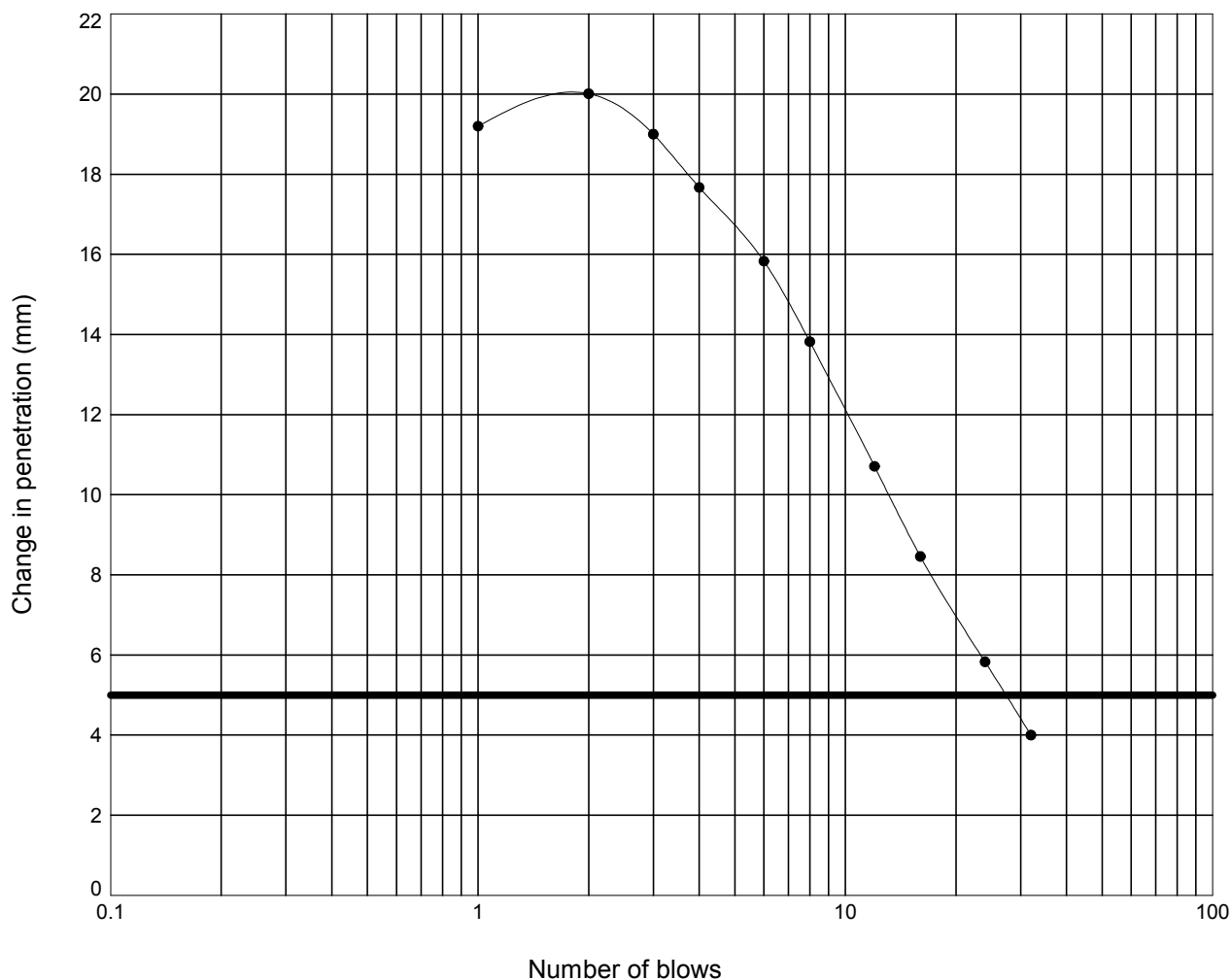
783189

MOISTURE CONDITION VALUE

In accordance with clause 5 of BS1377:Part 4:1990

Trial Pit: **TP404** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**

Description : **Grey clayey sandy GRAVEL**



Moisture Content :	= 15	%
Percentage retained on 20 mm sieve :	= 13	%
Moisture Condition Value :	= 14.0	
Interpretation of curve:	= Steepest straight line - Fig 9	

Remarks : **Natural**



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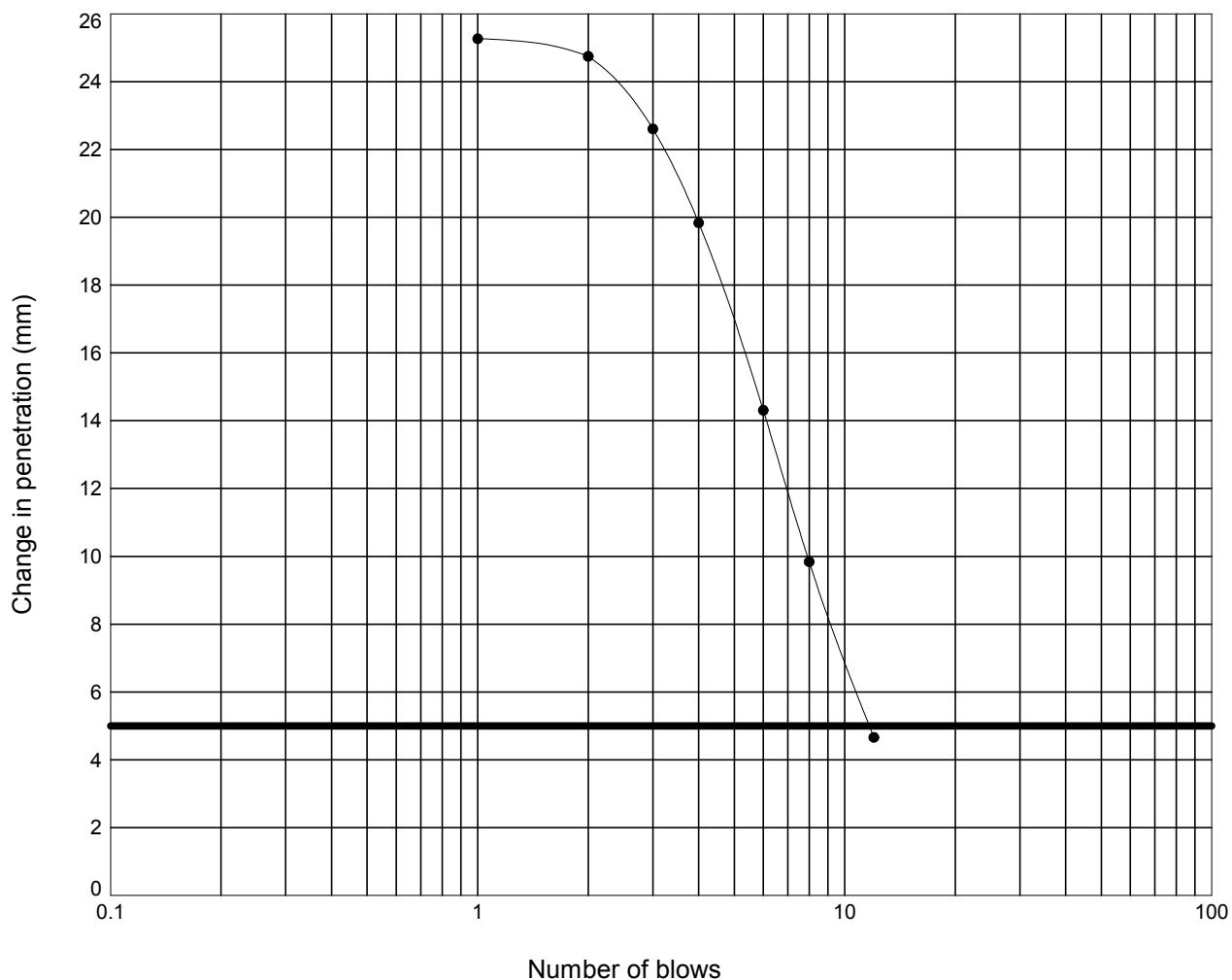
783189

MOISTURE CONDITION VALUE

In accordance with clause 5 of BS1377:Part 4:1990

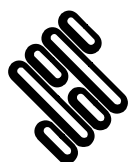
Trial Pit: **TP404** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**

Description : **Grey clayey sandy GRAVEL**



Moisture Content :	= 17	%
Percentage retained on 20 mm sieve :	= 13	%
Moisture Condition Value :	= 10.4	
Interpretation of curve:	= Steepest straight line - Fig 9	

Remarks : **+2**



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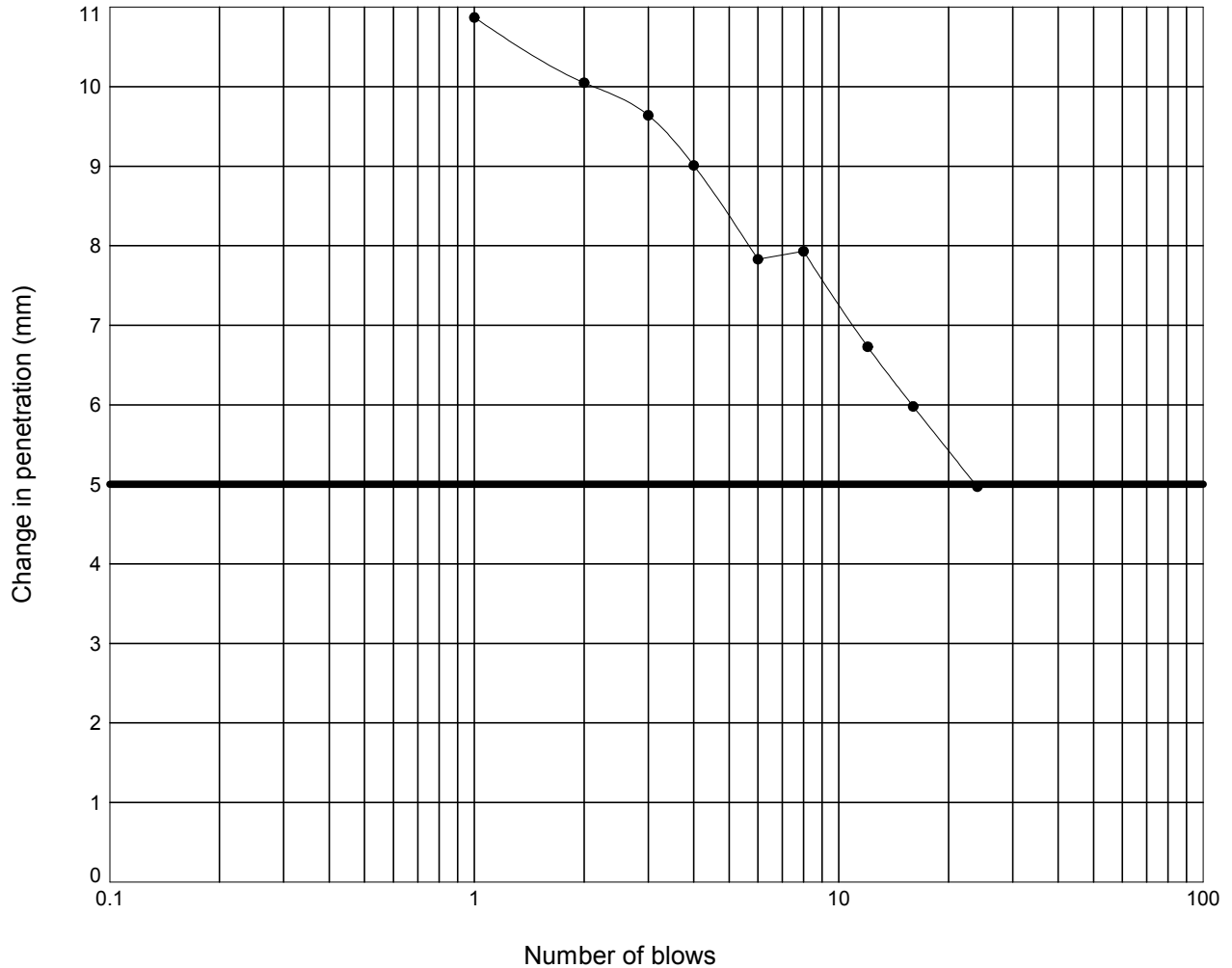
783189

MOISTURE CONDITION VALUE

In accordance with clause 5 of BS1377:Part 4:1990

Trial Pit: **TP407** Sample Ref: **3** Sample Type: **B** Depth (m): **1.50**

Description : **Dark grey slightly sandy slightly gravelly CLAY**



Moisture Content : = 4.2 %
 Percentage retained on 20 mm sieve : = 6 %
 Moisture Condition Value : = 12.0
 Interpretation of curve: = Steepest straight line - Fig 9

Remarks : **-6**



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Contract Ref:

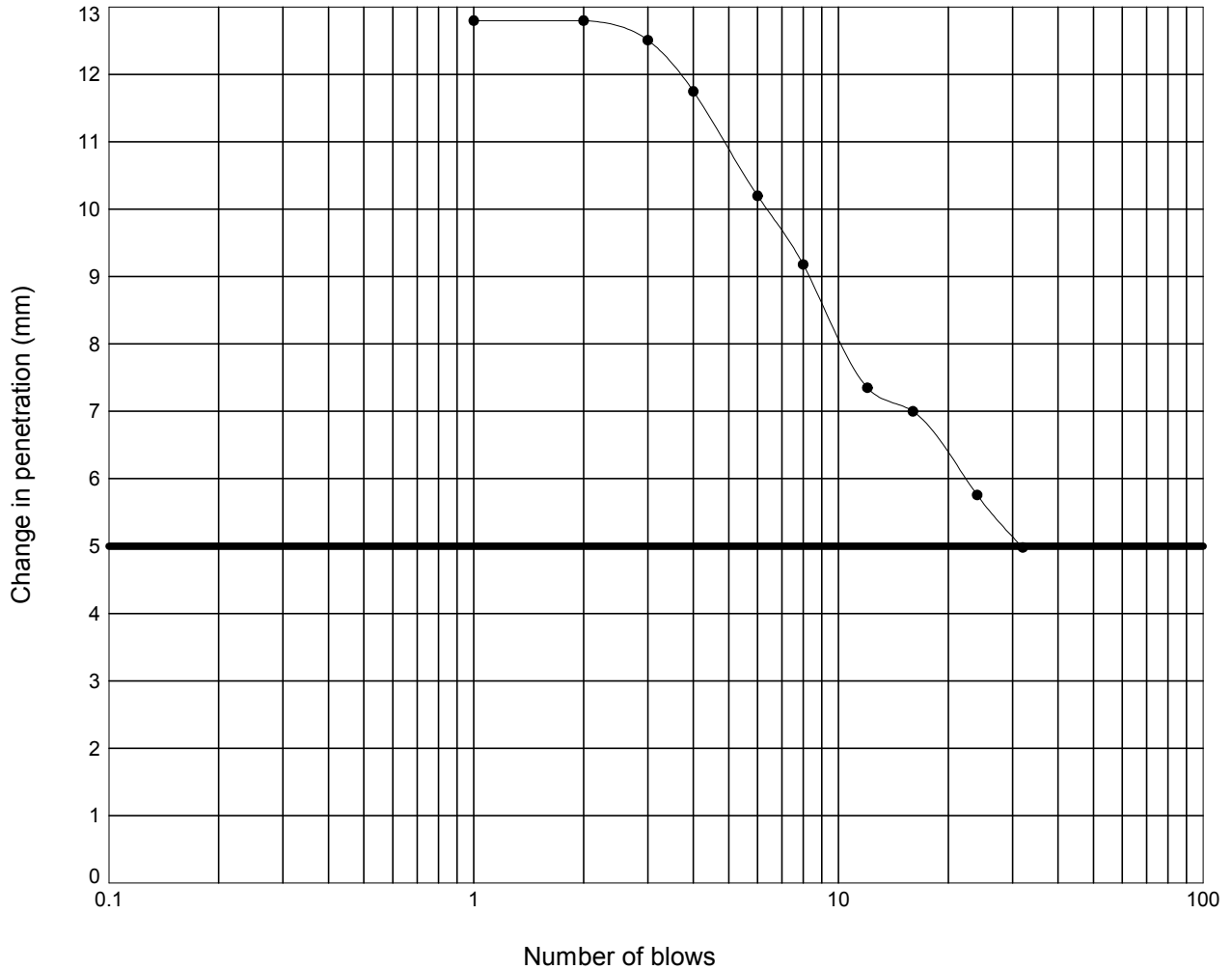
783189

MOISTURE CONDITION VALUE

In accordance with clause 5 of BS1377:Part 4:1990

Trial Pit: **TP407** Sample Ref: **3** Sample Type: **B** Depth (m): **1.50**

Description : **Dark grey slightly sandy slightly gravelly CLAY**



Moisture Content : = 6.0 %
Percentage retained on 20 mm sieve : = 6 %
Moisture Condition Value : = 13.1
Interpretation of curve: = Steepest straight line - Fig 9

Remarks : **-4**



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Contract Ref:

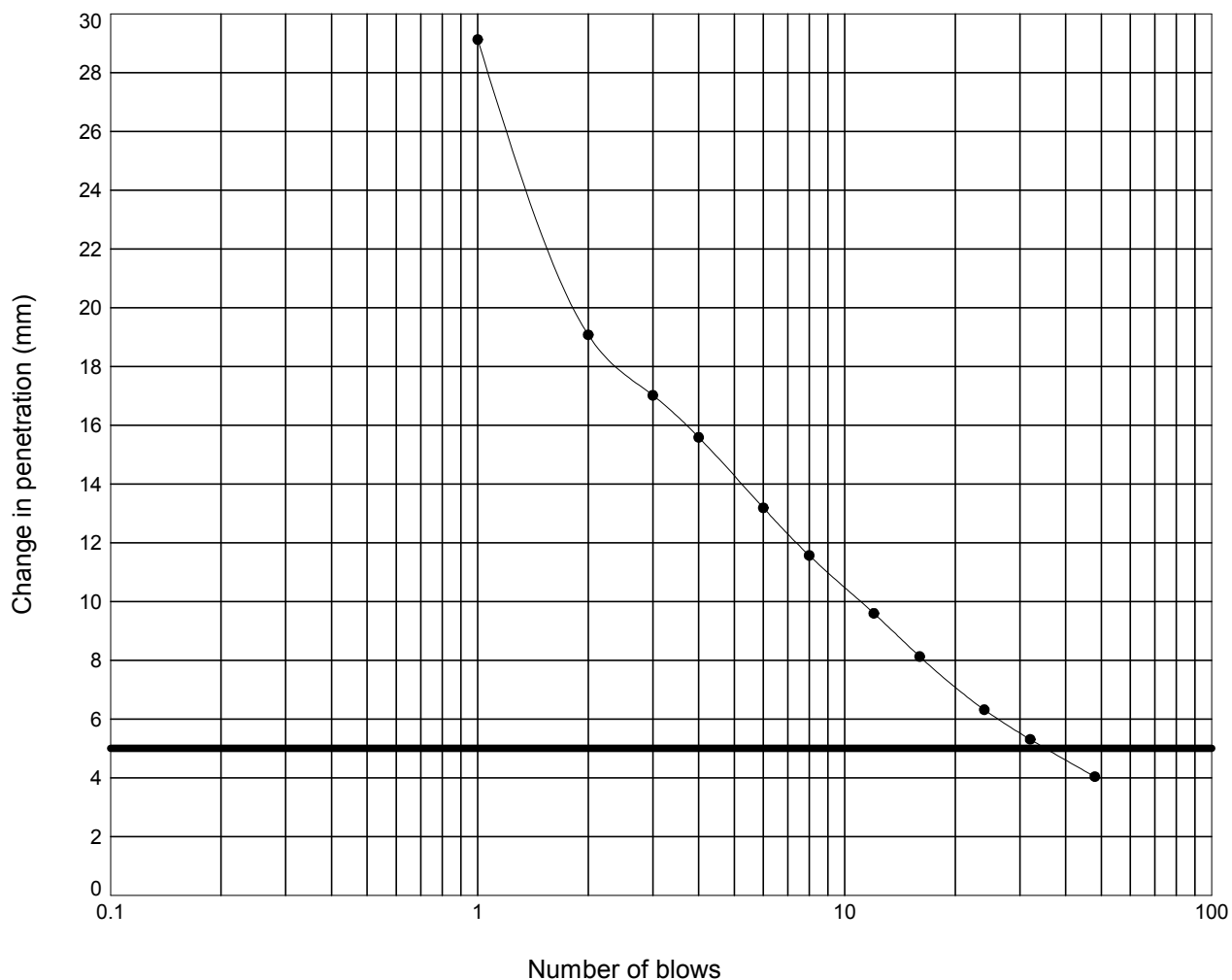
783189

MOISTURE CONDITION VALUE

In accordance with clause 5 of BS1377:Part 4:1990

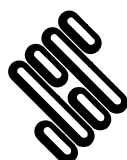
Trial Pit: **TP407** Sample Ref: **3** Sample Type: **B** Depth (m): **1.50**

Description : **Dark grey slightly sandy slightly gravelly CLAY**



Moisture Content : = 8.2 %
 Percentage retained on 20 mm sieve : = 6 %
 Moisture Condition Value : = 13.8
 Interpretation of curve: = Steepest straight line - Fig 9

Remarks : **-2**



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Contract Ref:

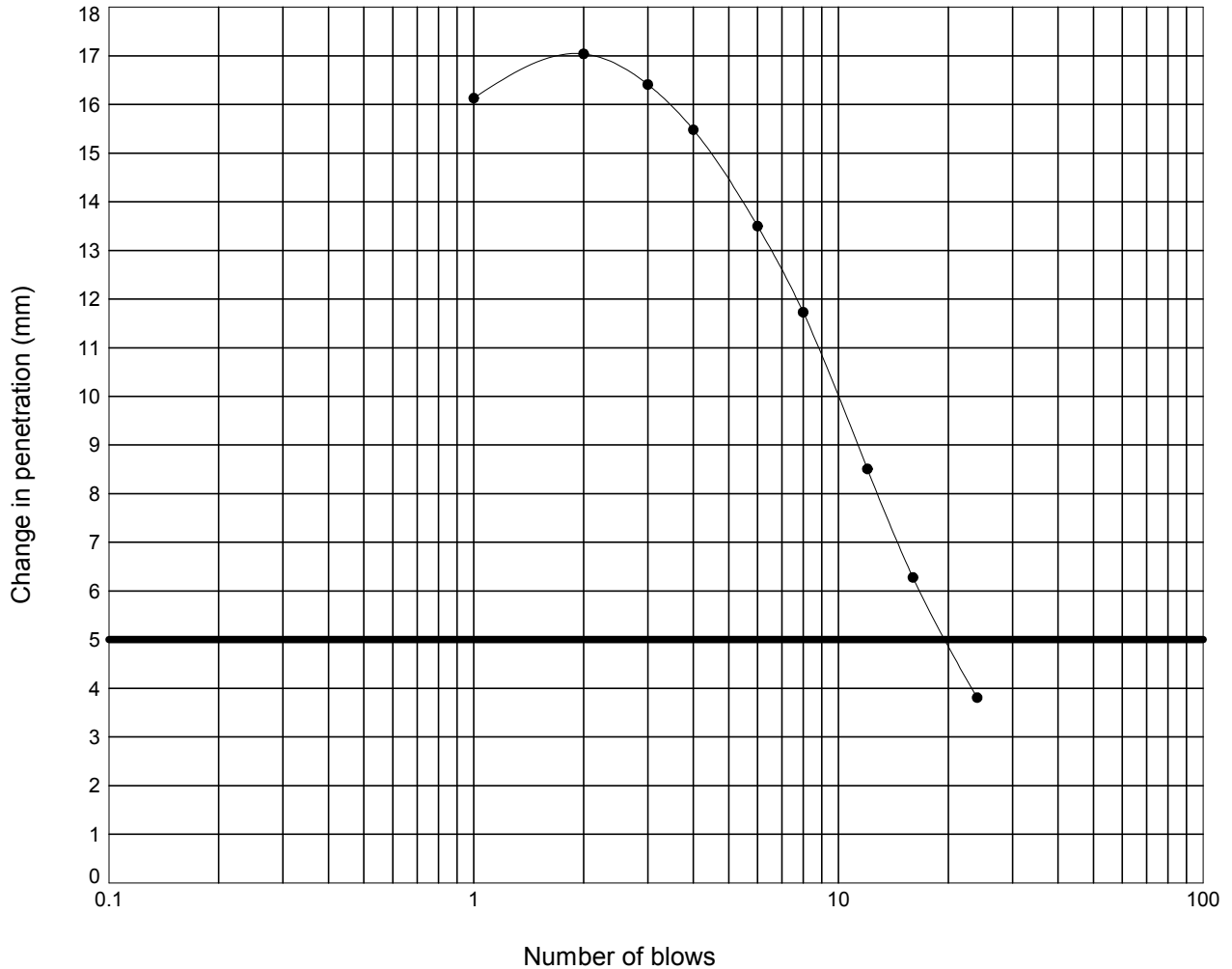
783189

MOISTURE CONDITION VALUE

In accordance with clause 5 of BS1377:Part 4:1990

Trial Pit: **TP407** Sample Ref: **3** Sample Type: **B** Depth (m): **1.50**

Description : **Dark grey slightly sandy slightly gravelly CLAY**



Moisture Content : = 11 %
 Percentage retained on 20 mm sieve : = 6 %
 Moisture Condition Value : = 12.7
 Interpretation of curve: = Steepest straight line - Fig 9

Remarks : **Natural**



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MOISTURE CONDITION VALUE

In accordance with clause 5 of BS1377:Part 4:1990

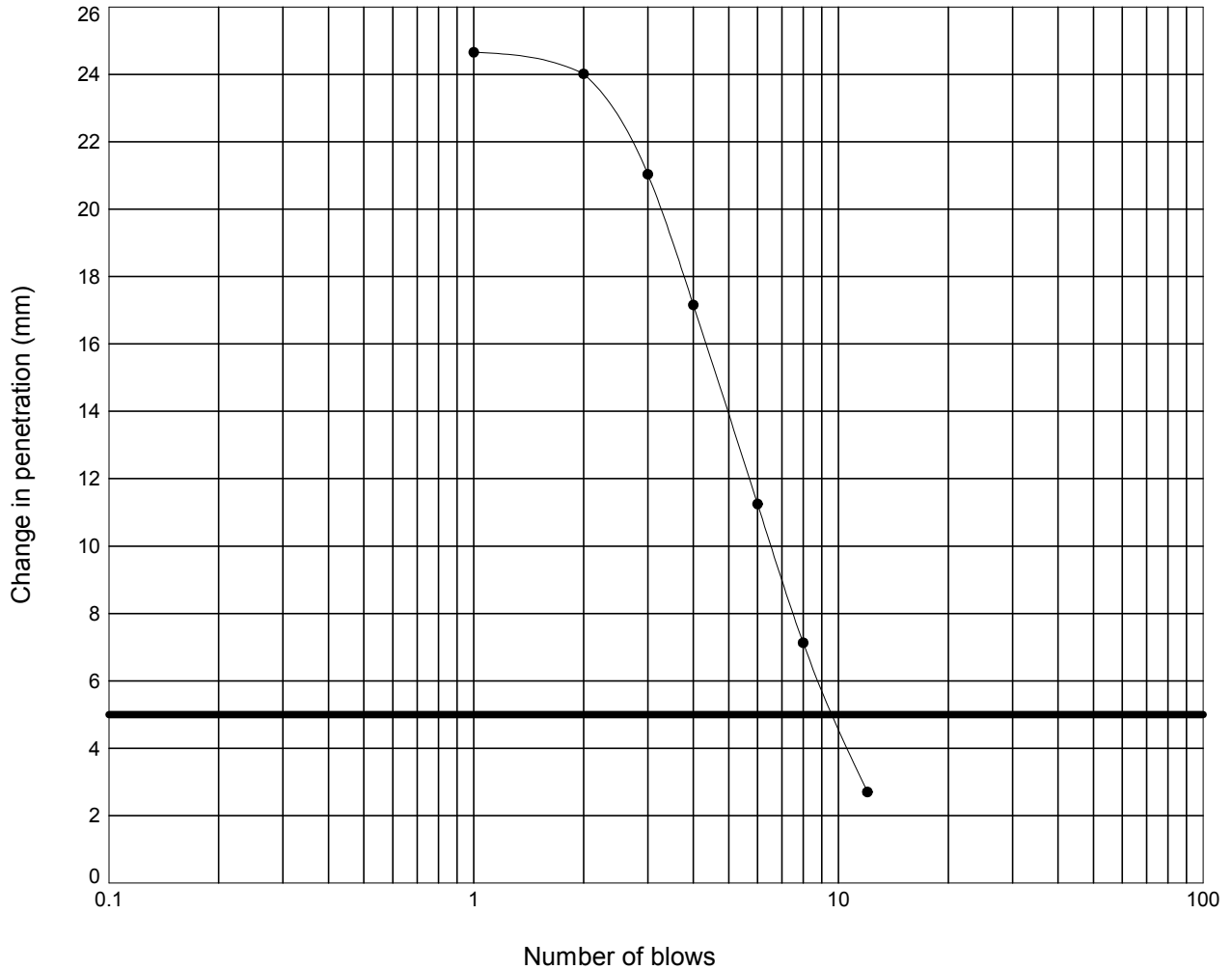
Trial Pit: **TP407**

Sample Ref: **3**

Sample Type: **B**

Depth (m): **1.50**

Description : **Dark grey slightly sandy slightly gravelly CLAY**



Moisture Content : = 13 %

Percentage retained on 20 mm sieve : = 6 %

Moisture Condition Value : = 9.6

Interpretation of curve: = Steepest straight line - Fig 9

Remarks : **+2**



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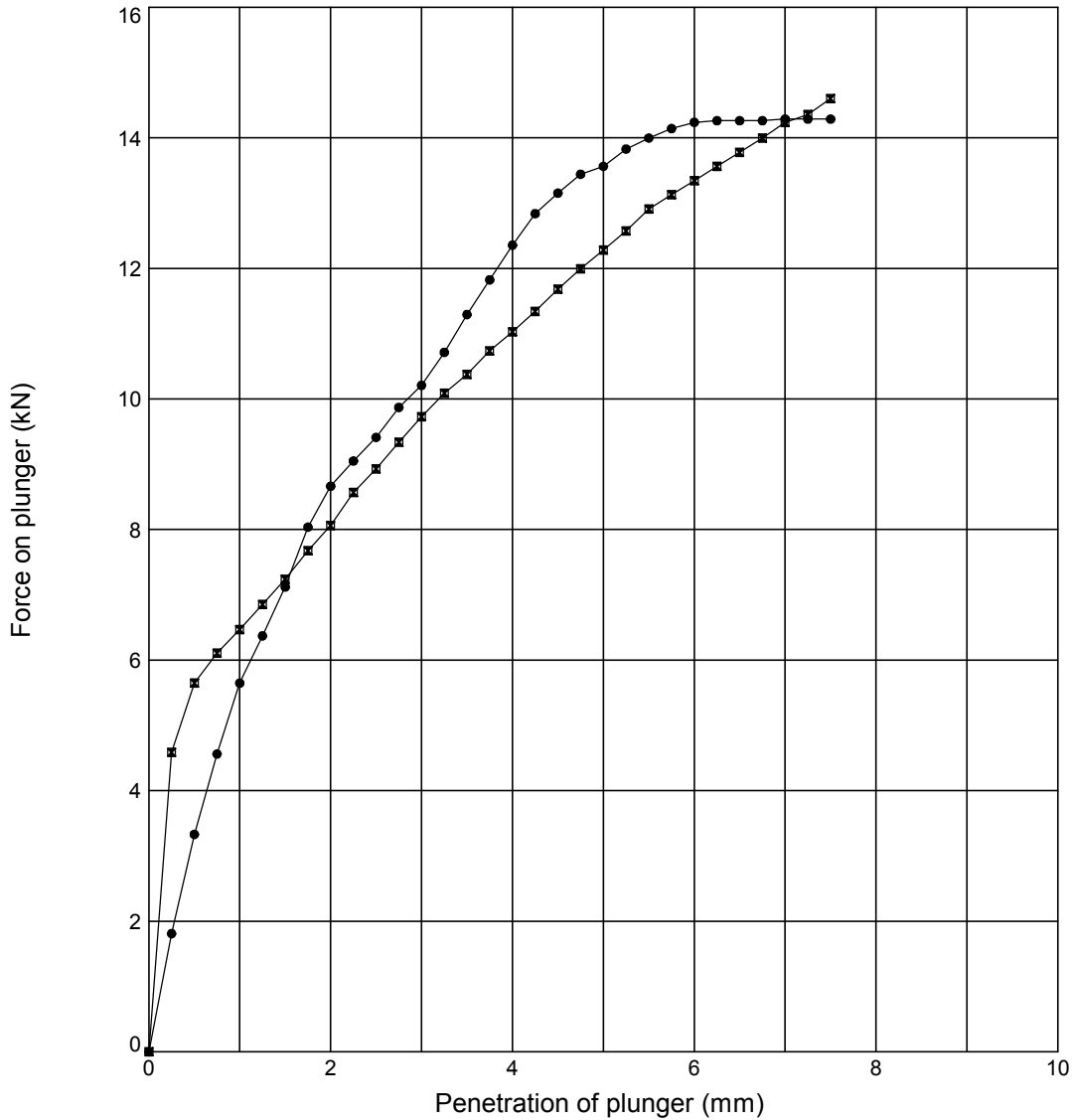
Contract Ref:

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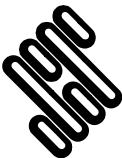

LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP404** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



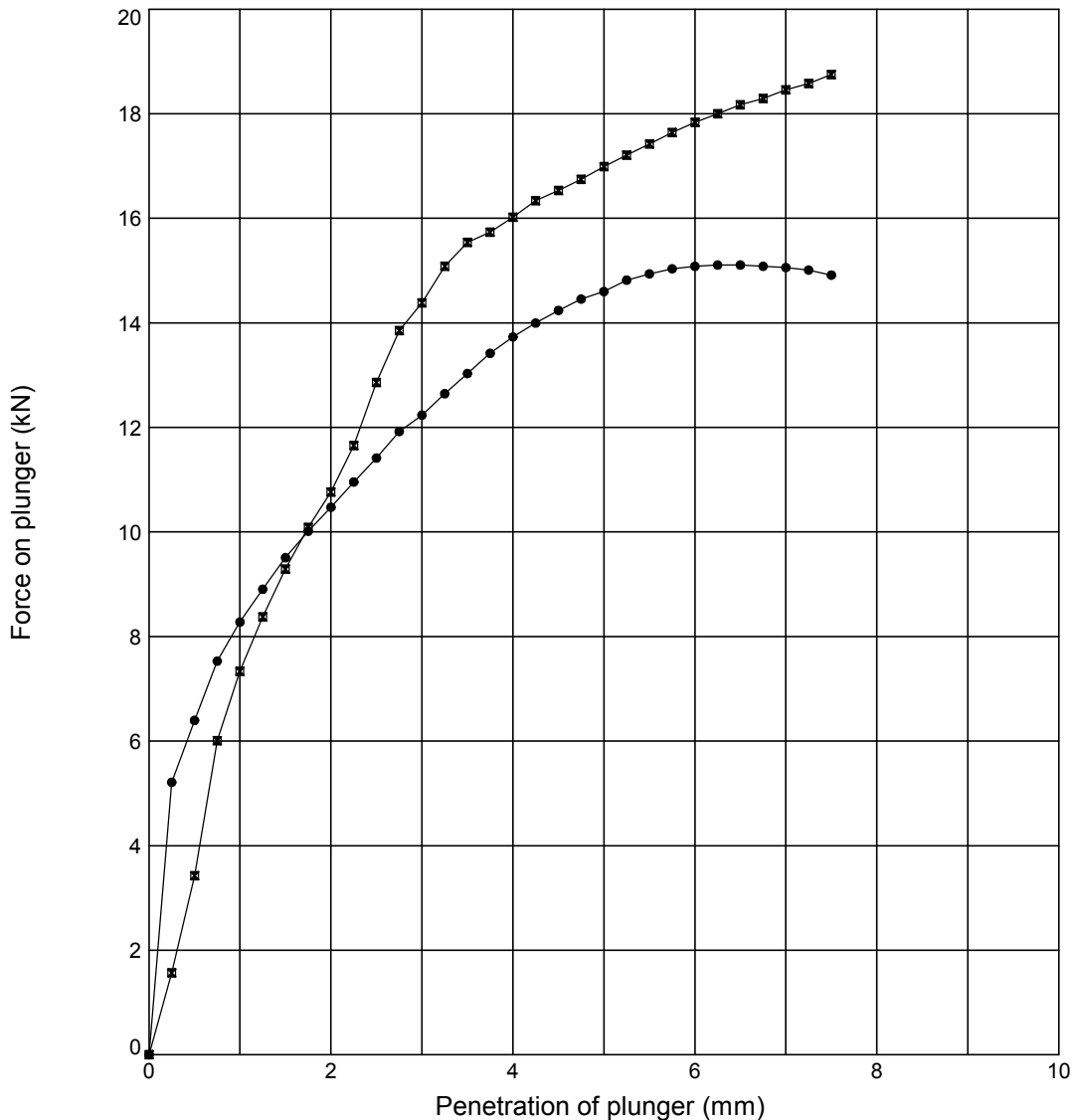
Initial Sample Conditions		Test Details		Test Results		Top	Base
Initial Moisture Content (%)	: 7.8	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)		8.2	7.2
Initial Bulk Density (Mg/m ³)	: 1.91	Surcharge (kg)	: 4.0	CBR value (%)		71	67
Initial Dry Density (Mg/m ³)	: 1.77	Soaking Time (hrs)	: -	Remarks: -6%			
% retained on 20mm sieve	: 11	Swelling (mm)	: -				
Sample Description				Key			
Grey clayey sandy GRAVEL				● Top ⊠ Base			

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	Contract		Contract Ref:
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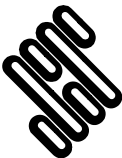

LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP404** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



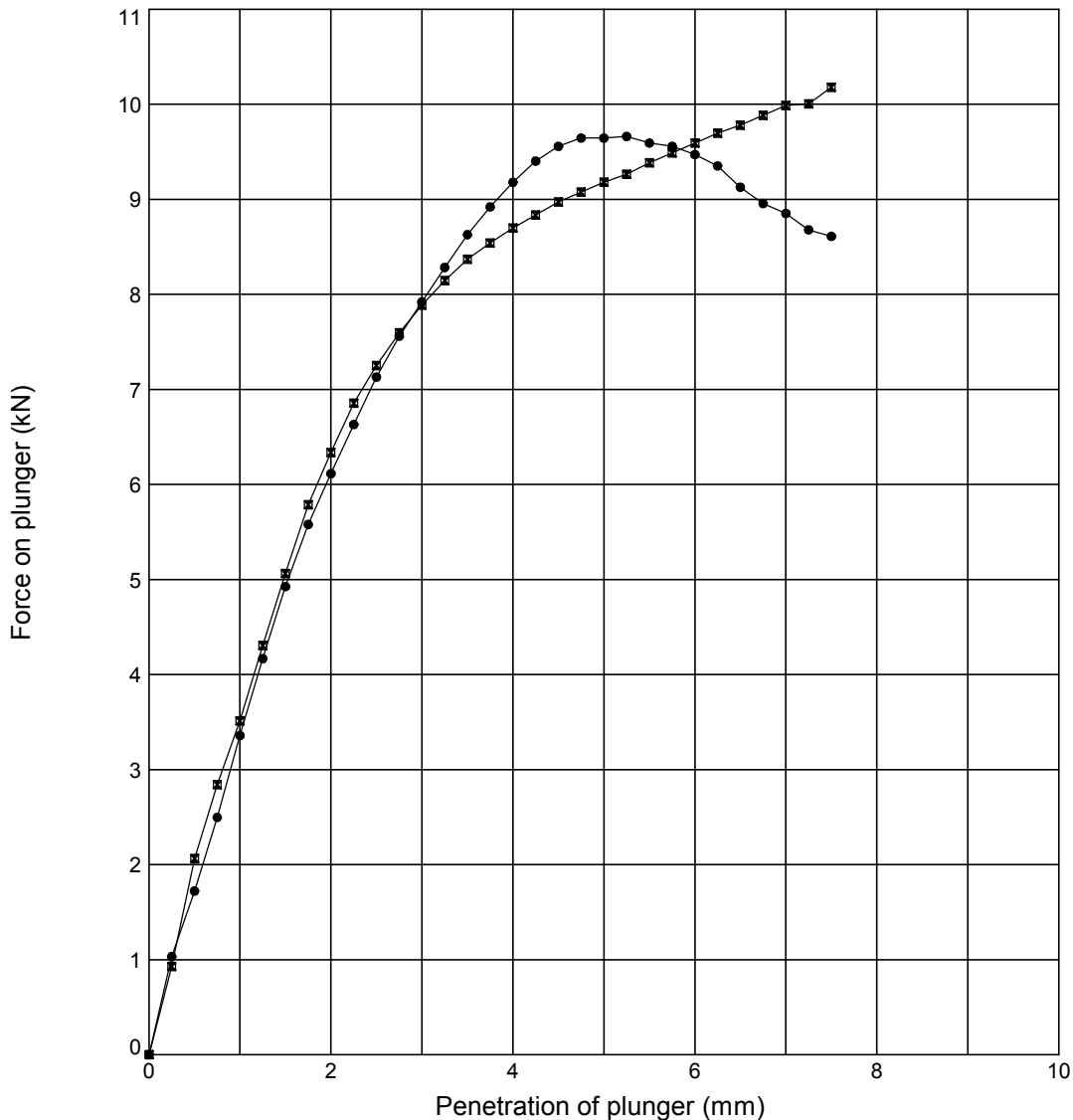
Initial Sample Conditions		Test Details		Test Results		Top	Base
Initial Moisture Content (%)	: 9.8	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)		10	9.8
Initial Bulk Density (Mg/m ³)	: 1.96	Surcharge (kg)	: 4.0	CBR value (%)		86	97
Initial Dry Density (Mg/m ³)	: 1.79	Soaking Time (hrs)	: -	Remarks: -4%			
% retained on 20mm sieve	: 11	Swelling (mm)	: -				
Sample Description				Key			
Grey clayey sandy GRAVEL				● Top ⊠ Base			

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	Contract		Contract Ref:
Thoresby Area A		783189	
			

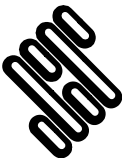

LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP404** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



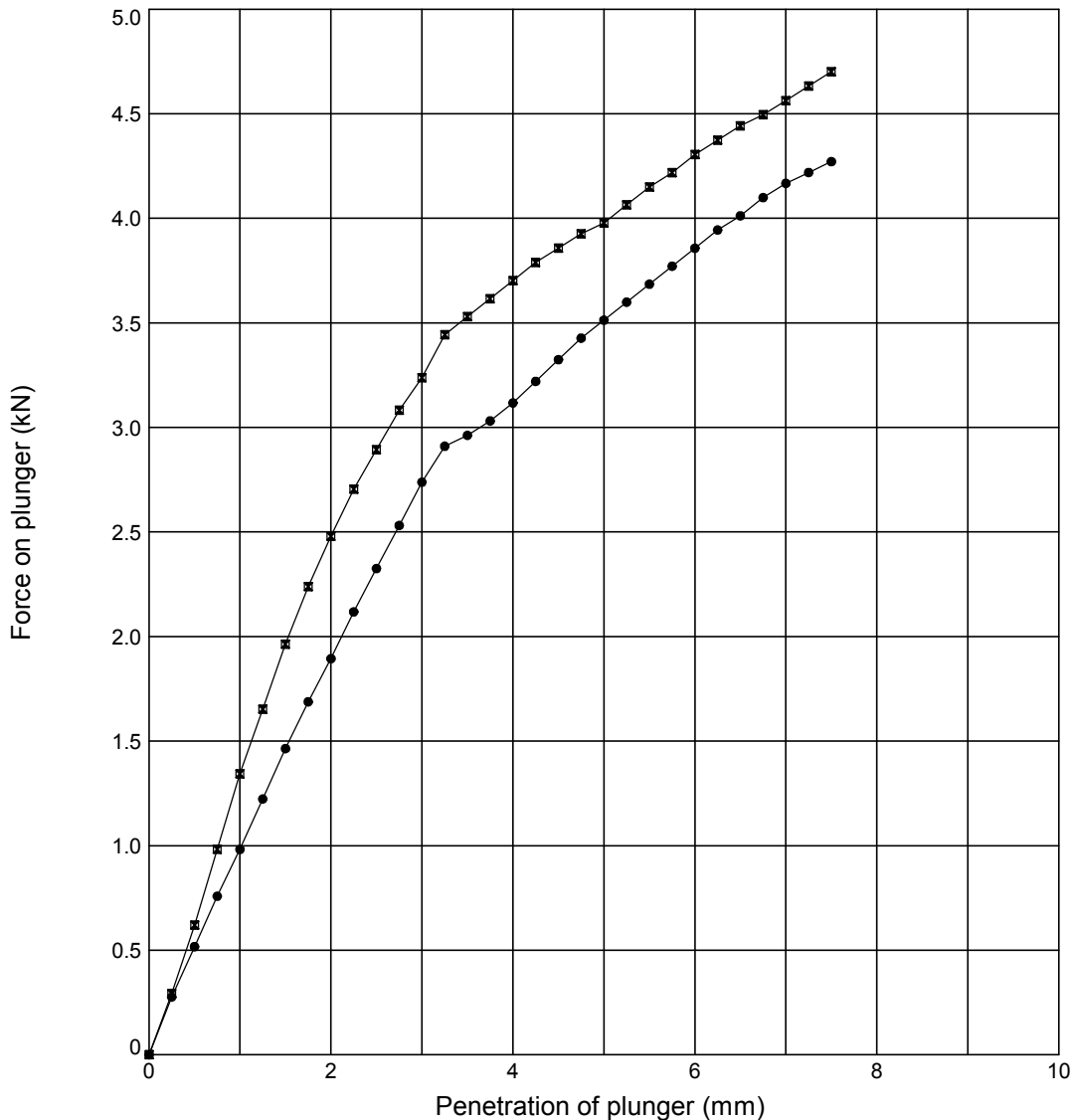
Initial Sample Conditions		Test Details		Test Results	Top	Base
Initial Moisture Content (%)	: 12	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)	12	13
Initial Bulk Density (Mg/m ³)	: 2.01	Surcharge (kg)	: 4.0	CBR value (%)	54	55
Initial Dry Density (Mg/m ³)	: 1.79	Soaking Time (hrs)	: -	Remarks: -2%		
% retained on 20mm sieve	: 11	Swelling (mm)	: -			
Sample Description				Key		
Grey clayey sandy GRAVEL				● Top ⊠ Base		

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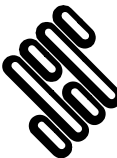

LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP404** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



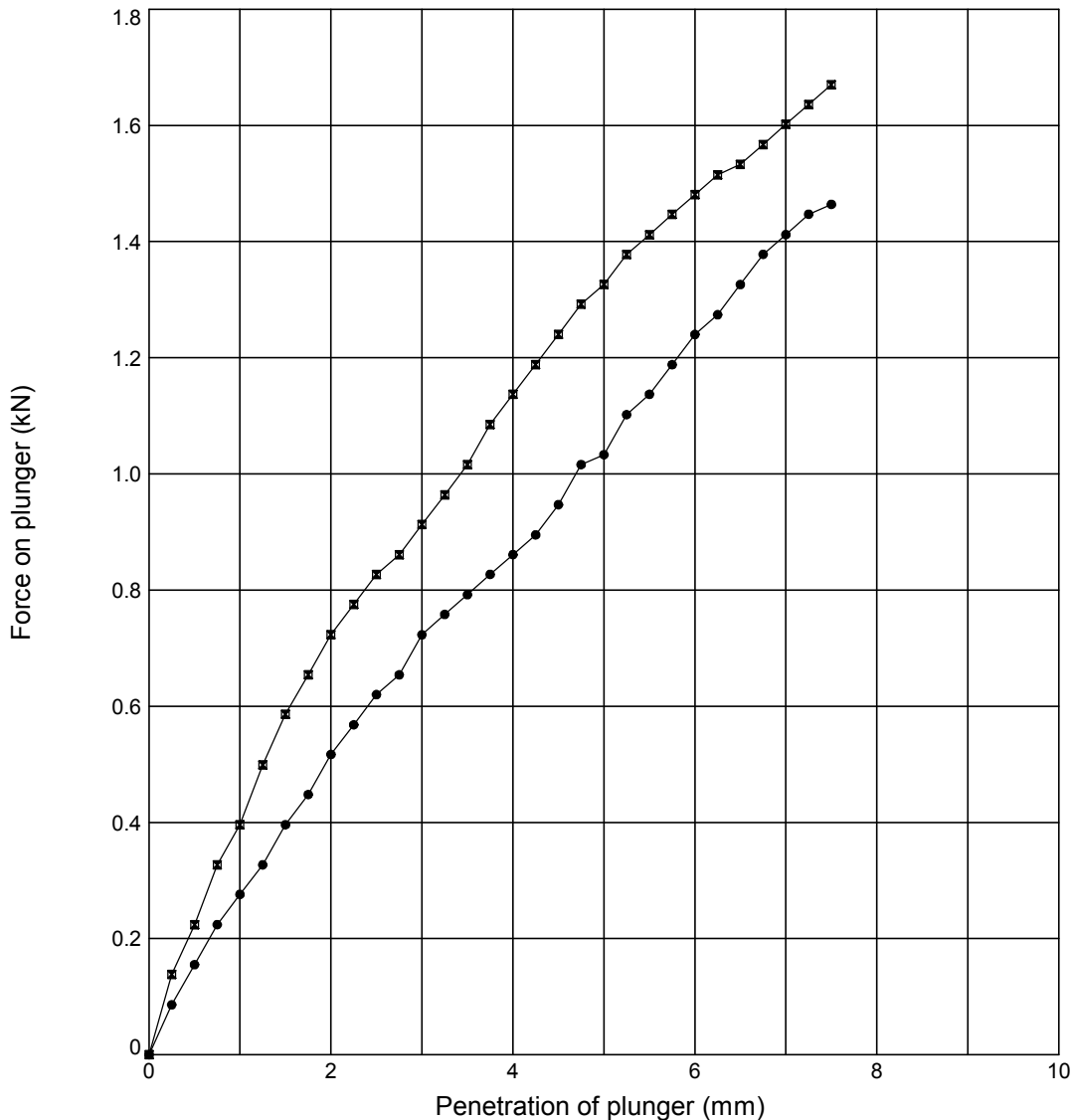
Initial Sample Conditions		Test Details		Test Results	Top	Base
Initial Moisture Content (%)	: 14	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)	15	15
Initial Bulk Density (Mg/m ³)	: 2.00	Surcharge (kg)	: 4.0	CBR value (%)	18	22
Initial Dry Density (Mg/m ³)	: 1.75	Soaking Time (hrs)	: -	Remarks: Natural		
% retained on 20mm sieve	: 11	Swelling (mm)	: -			
Sample Description				Key		
Grey clayey sandy GRAVEL				 Top Base		

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	<i>M. Fisher</i>		MAUREEN FISHER
	Contract		Contract Ref:
Thoresby Area A		783189	
			

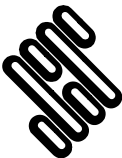

LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP404** Sample Ref: **3** Sample Type: **B** Depth (m): **0.50**



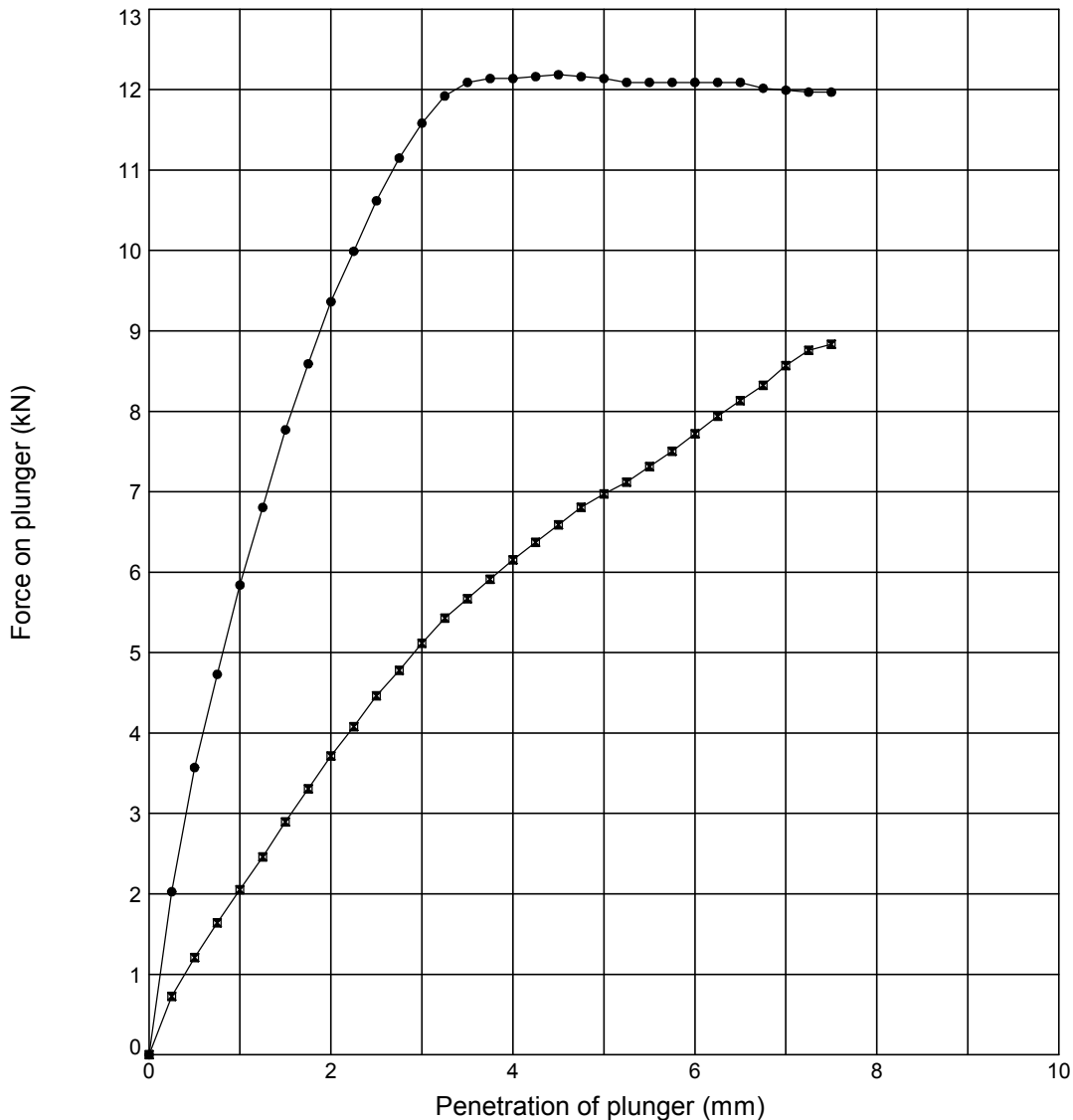
Initial Sample Conditions		Test Details		Test Results		Top	Base
Initial Moisture Content (%)	: 18	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)		18	18
Initial Bulk Density (Mg/m ³)	: 1.95	Surcharge (kg)	: 4.0	CBR value (%)		5.2	6.6
Initial Dry Density (Mg/m ³)	: 1.66	Soaking Time (hrs)	: -	Remarks: +2			
% retained on 20mm sieve	: 11	Swelling (mm)	: -				
Sample Description				Key			
Grey clayey sandy GRAVEL				<div>● Top</div> <div>⊠ Base</div>			

 STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
	<i>M. Fisher</i>		MAUREEN FISHER
	Contract		Contract Ref:
Thoresby Area A		783189	
			

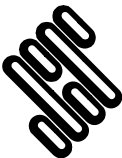

LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP407** Sample Ref: **3** Sample Type: **B** Depth (m): **1.50**



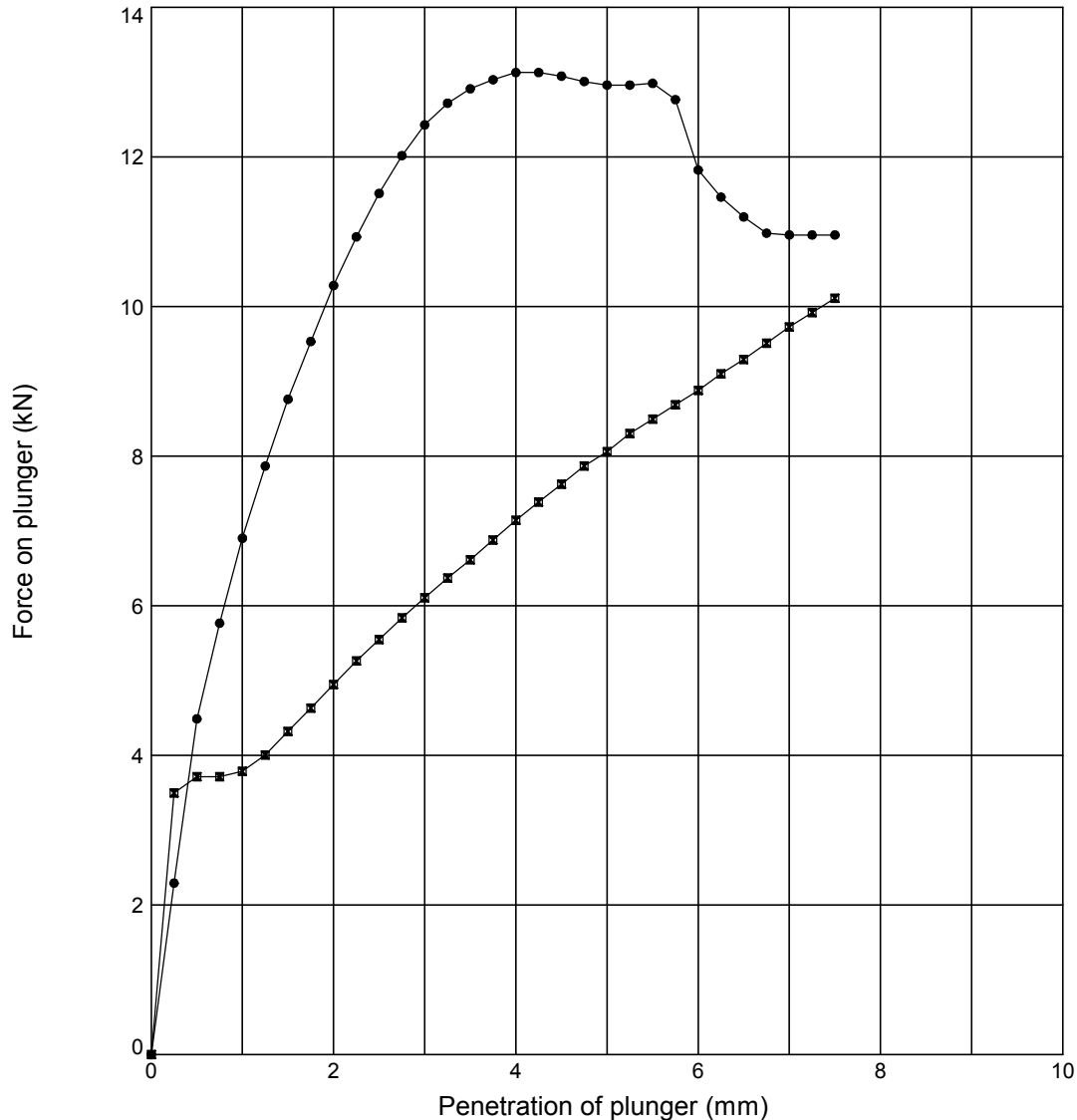
Initial Sample Conditions		Test Details		Test Results	Top	Base
Initial Moisture Content (%)	: 4.2	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)	4.2	4.2
Initial Bulk Density (Mg/m ³)	: 2.03	Surcharge (kg)	: 4.0	CBR value (%)	80	35
Initial Dry Density (Mg/m ³)	: 1.95	Soaking Time (hrs)	: -	Remarks: -6		
% retained on 20mm sieve	: 6	Swelling (mm)	: -			
Sample Description				Key		
Dark grey slightly sandy slightly gravelly CLAY				 Top Base		

 STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
	<i>M. Fisher</i>		MAUREEN FISHER
	Contract		Contract Ref:
Thoresby Area A		783189	
			

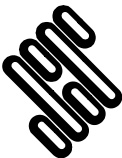

LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP407** Sample Ref: **3** Sample Type: **B** Depth (m): **1.50**



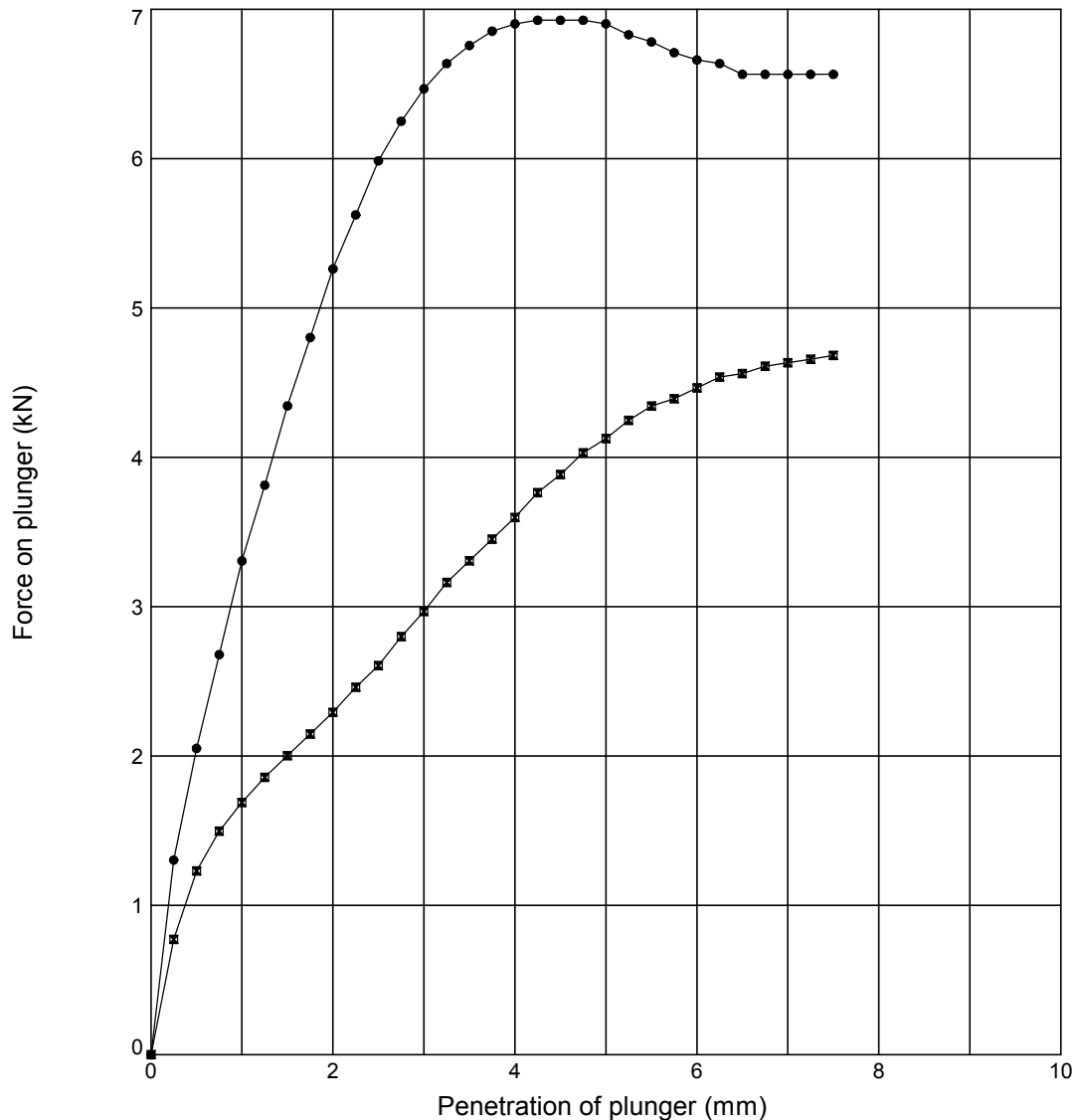
Initial Sample Conditions	Test Details	Test Results	Top	Base
Initial Moisture Content (%) : 5.9	Compaction Type : 4.5 kg Dynamic	Moisture Content (%)	5.7	6.3
Initial Bulk Density (Mg/m ³) : 2.10	Surcharge (kg) : 4.0	CBR value (%)	87	42
Initial Dry Density (Mg/m ³) : 1.98	Soaking Time (hrs) : -	Remarks: -4		
% retained on 20mm sieve : 6	Swelling (mm) : -			
Sample Description		Key		
Dark grey slightly sandy slightly gravelly CLAY		● Top ⊠ Base		

 STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
	<i>M. Fisher</i>		MAUREEN FISHER
	Contract		Contract Ref:
Thoresby Area A		783189	
			



LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP407** Sample Ref: **3** Sample Type: **B** Depth (m): **1.50**



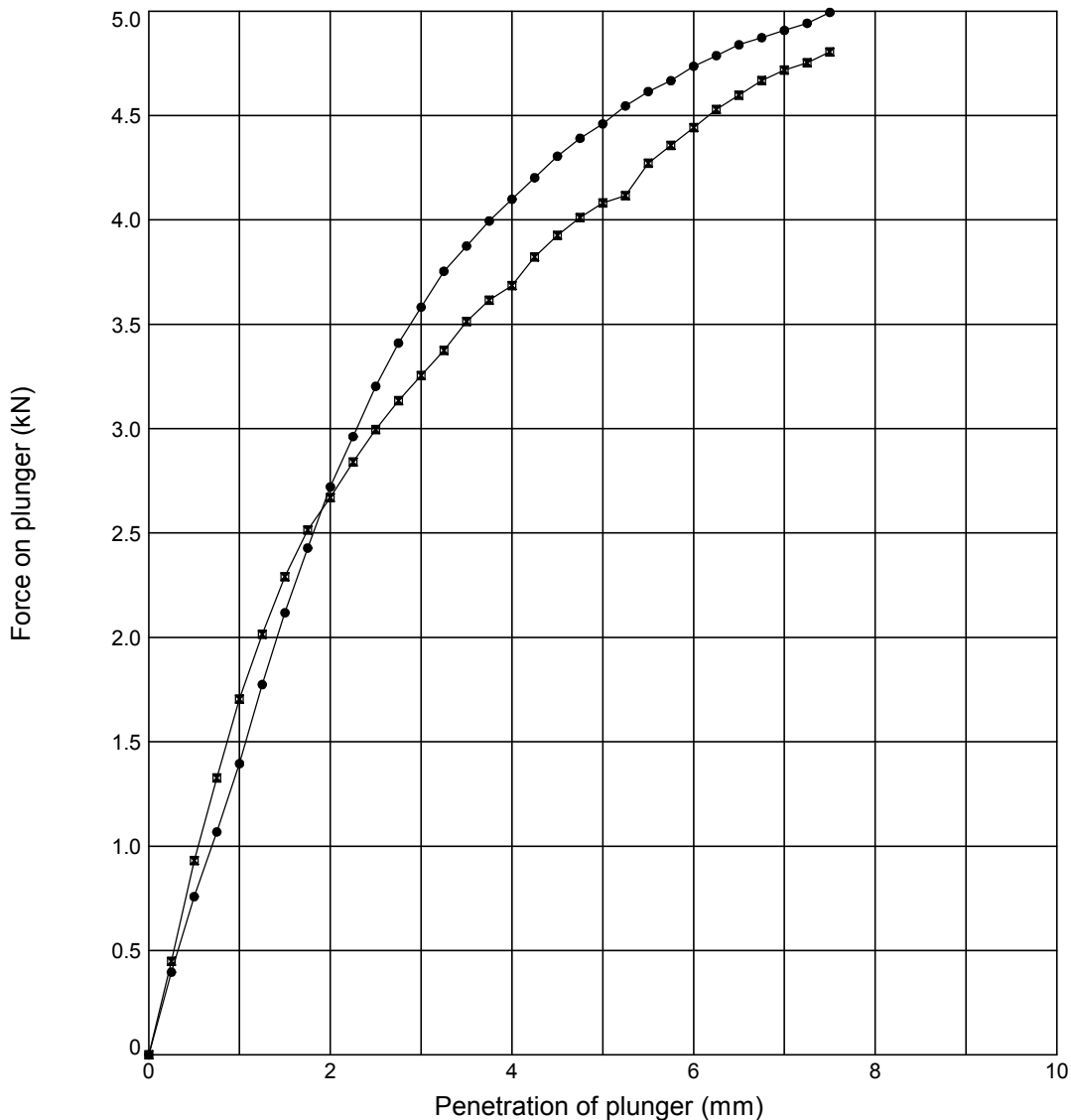
Initial Sample Conditions		Test Details		Test Results		Top	Base
Initial Moisture Content (%)	: 8.1	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)		8.0	9.1
Initial Bulk Density (Mg/m ³)	: 2.18	Surcharge (kg)	: 4.0	CBR value (%)		45	21
Initial Dry Density (Mg/m ³)	: 2.02	Soaking Time (hrs)	: -	Remarks: -2			
% retained on 20mm sieve	: 6	Swelling (mm)	: -				
Sample Description				Key			
Dark grey slightly sandy slightly gravelly CLAY				● Top ⊠ Base			

 STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
	<i>M. Fisher</i>		MAUREEN FISHER
	Contract		Contract Ref:
Thoresby Area A		783189	
			

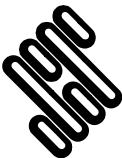

LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP407** Sample Ref: **3** Sample Type: **B** Depth (m): **1.50**



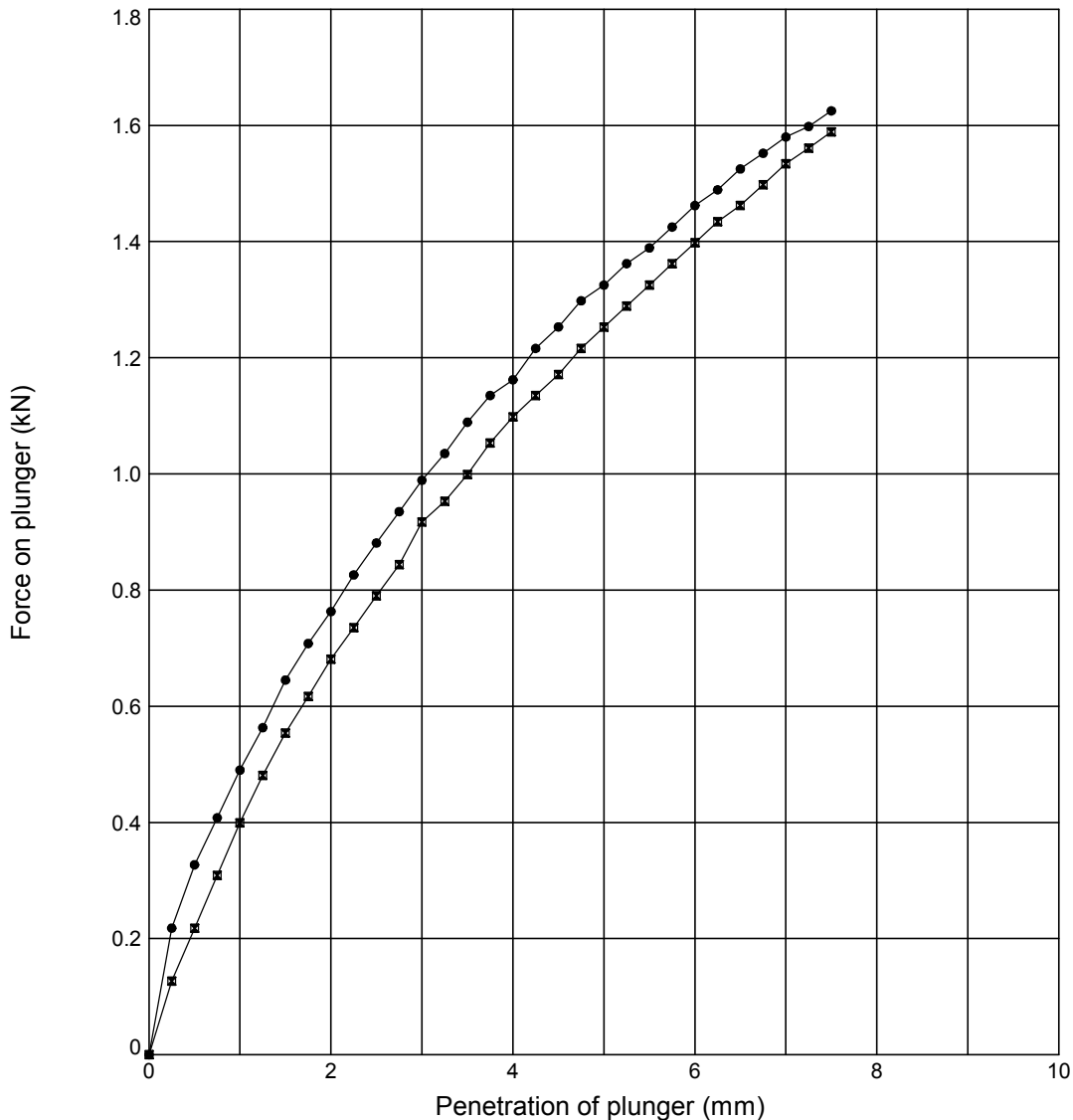
Initial Sample Conditions		Test Details		Test Results	Top	Base
Initial Moisture Content (%)	: 10	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)	11	11
Initial Bulk Density (Mg/m ³)	: 2.15	Surcharge (kg)	: 4.0	CBR value (%)	24	23
Initial Dry Density (Mg/m ³)	: 1.95	Soaking Time (hrs)	: -	Remarks: Natural		
% retained on 20mm sieve	: 6	Swelling (mm)	: -			
Sample Description				Key		
Dark grey slightly sandy slightly gravelly CLAY				● Top ⊠ Base		

 STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
	<i>M. Fisher</i>		MAUREEN FISHER
	Contract		Contract Ref:
Thoresby Area A		783189	
			

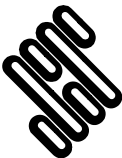

LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: **TP407** Sample Ref: **3** Sample Type: **B** Depth (m): **1.50**



Initial Sample Conditions		Test Details		Test Results		Top	Base
Initial Moisture Content (%)	: 13	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)		13	12
Initial Bulk Density (Mg/m ³)	: 2.11	Surcharge (kg)	: 4.0	CBR value (%)		6.7	6.3
Initial Dry Density (Mg/m ³)	: 1.87	Soaking Time (hrs)	: -	Remarks: +2			
% retained on 20mm sieve	: 6	Swelling (mm)	: -				
Sample Description				Key			
Dark grey slightly sandy slightly gravelly CLAY				● Top ⊠ Base			

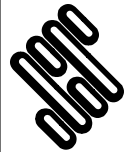

 STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
	<i>M. Fisher</i>		MAUREEN FISHER
	Contract		Contract Ref:
Thoresby Area A		783189	
			

SUMMARY OF MAXIMUM/MINIMUM DENSITY OF SAND TESTS

In accordance with BS1377:Part 4: Clauses 4.2 & 4.4:1990

Exploratory Position ID	Sample Ref.	Sample Type	Depth (m)	Minimum Dry Density (Mg/m³)	Maximum Dry Density (Mg/m³)	Percentage Retained on 6.3mm Sieve (%)	Percentage Retained on 2mm Sieve (%)	Description of Sample	Lab location
TP417	2	D	0.50	1.15	1.79	7.0	2.0	Orange brown clayey gravelly SAND	C

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

	STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date	Contract Ref: 783189 
		<i>M. Fisher</i>	MAUREEN FISHER	09.08.18	
		Contract: Thoresby Area A			

APPENDIX F

Chemical Laboratory Certificates for Chester Formation

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 18/03962
Issue Number: 1
Date: 19 June, 2018

Client: RSK Environment Ltd Derby
12 Royal Scot Road
Pride Park
Derby
Derbyshire
UK
DE24 8AJ

Project Manager: Anthony Jordan
Project Name: Thoresby
Project Ref: 301924
Order No: N/A
Date Samples Received: 18/05/18
Date Instructions Received: 22/05/18
Date Analysis Completed: 18/06/18

Prepared by:



Gill Walker
Director/Laboratory Manager

Approved by:



Iain Haslock
Analytical Consultant

Envirolab Job Number: 18/03962

Client Project Name: Thoresby

Client Project Ref: 301924

Lab Sample ID	18/03962/1	18/03962/3	18/03962/5	18/03962/9	18/03962/11	18/03962/12	18/03962/13	18/03962/14	Units	Method ref
Client Sample No										
Client Sample ID	TP401	TP403	TP404	TP406	TP408	TP409A	TP410	TP410		
Depth to Top	1.20	1.00	1.10	1.00	1.00	1.00	1.00	2.20		
Depth To Bottom				2.00						
Date Sampled	16-May-18	16-May-18	16-May-18	14-May-18	14-May-18	14-May-18	14-May-18	14-May-18		
Sample Type	Solid	Solid	Soil - ES	Solid	Solid	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	7	7	4A	7	7	6A	6A	4		
% Stones >10mm _A	<0.1	<0.1	8.1	<0.1	<0.1	12.4	9.9	<0.1	% w/w	A-T-044
pH _D ^{M#}	8.59	7.39	7.49	8.38	7.85	6.60	6.32	8.09	pH	A-T-031s
pH BRE _D ^{M#}	8.59	7.39	7.49	8.38	7.85	6.60	6.32	8.09	pH	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.32	1.34	1.00	0.33	0.49	0.95	2.14	0.17	g/l	A-T-026s
Sulphate BRE (water sol 2:1) _D ^{M#}	323	1340	1000	333	493	955	2140	175	mg/l	A-T-026s
Sulphate (acid soluble) _D ^{M#}	1500	8400	3100	1200	1700	6400	8200	1000	mg/kg	A-T-028s
Sulphate BRE (acid sol) _D ^{M#}	0.15	0.84	0.31	0.12	0.17	0.64	0.82	0.10	% w/w	A-T-028s
Sulphur BRE (total) _D	0.48	3.40	0.49	0.82	0.73	0.47	0.71	0.89	% w/w	A-T-024s
Arsenic _D ^{M#}	12	121	11	29	13	11	15	22	mg/kg	A-T-024s
Cadmium _D ^{M#}	0.7	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	A-T-024s
Copper _D ^{M#}	49	49	28	52	48	35	41	45	mg/kg	A-T-024s
Chromium _D ^{M#}	17	18	10	11	10	13	8	14	mg/kg	A-T-024s
Lead _D ^{M#}	18	66	19	25	22	18	25	23	mg/kg	A-T-024s
Mercury _D	<0.17	0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	mg/kg	A-T-024s
Nickel _D ^{M#}	38	44	30	38	35	28	35	32	mg/kg	A-T-024s
Selenium _D ^{M#}	1	8	2	1	<1	<1	<1	2	mg/kg	A-T-024s
Zinc _D ^{M#}	41	38	29	30	26	24	24	25	mg/kg	A-T-024s

Envirolab Job Number: 18/03962

Client Project Name: Thoresby

Client Project Ref: 301924

Lab Sample ID	18/03962/1	18/03962/3	18/03962/5	18/03962/9	18/03962/11	18/03962/12	18/03962/13	18/03962/14	Units	Method ref
Client Sample No										
Client Sample ID	TP401	TP403	TP404	TP406	TP408	TP409A	TP410	TP410		
Depth to Top	1.20	1.00	1.10	1.00	1.00	1.00	1.00	2.20		
Depth To Bottom				2.00						
Date Sampled	16-May-18	16-May-18	16-May-18	14-May-18	14-May-18	14-May-18	14-May-18	14-May-18		
Sample Type	Solid	Solid	Soil - ES	Solid	Solid	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	7	7	4A	7	7	6A	6A	4		
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

Envirolab Job Number: 18/03962

Client Project Name: Thoresby

Client Project Ref: 301924

Lab Sample ID	18/03962/1	18/03962/3	18/03962/5	18/03962/9	18/03962/11	18/03962/12	18/03962/13	18/03962/14	Units	Method ref
Client Sample No										
Client Sample ID	TP401	TP403	TP404	TP406	TP408	TP409A	TP410	TP410		
Depth to Top	1.20	1.00	1.10	1.00	1.00	1.00	1.00	2.20		
Depth To Bottom				2.00						
Date Sampled	16-May-18	16-May-18	16-May-18	14-May-18	14-May-18	14-May-18	14-May-18	14-May-18		
Sample Type	Solid	Solid	Soil - ES	Solid	Solid	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	7	7	4A	7	7	6A	6A	4		
PAH-16MS										
Acenaphthene _A ^{M#}	0.02	<0.01	0.16	<0.01	0.01	0.02	0.02	0.07	mg/kg	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	0.59	<0.02	<0.02	0.03	<0.02	0.07	mg/kg	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	<0.04	1.06	<0.04	<0.04	<0.04	<0.04	0.05	mg/kg	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	<0.04	0.91	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	<0.05	1.15	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	0.54	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	0.48	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	A-T-019s
Chrysene _A ^{M#}	<0.06	<0.06	1.08	<0.06	<0.06	<0.06	<0.06	<0.06	mg/kg	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	0.09	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	A-T-019s
Fluoranthene _A ^{M#}	<0.08	<0.08	2.31	<0.08	<0.08	<0.08	<0.08	<0.08	mg/kg	A-T-019s
Fluorene _A ^{M#}	0.05	0.01	0.27	0.02	0.03	0.05	0.03	0.17	mg/kg	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	0.45	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	A-T-019s
Naphthalene _A ^{M#}	1.03	0.45	3.65	0.67	0.92	1.34	1.25	4.91	mg/kg	A-T-019s
Phenanthrene _A ^{M#}	0.24	0.17	2.97	0.08	0.12	0.21	0.22	0.54	mg/kg	A-T-019s
Pyrene _A ^{M#}	<0.07	<0.07	2.01	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	A-T-019s
Total PAH-16MS _A ^{M#}	1.34	0.63	17.7	0.77	1.08	1.65	1.52	5.81	mg/kg	A-T-019s

Envirolab Job Number: 18/03962

Client Project Name: Thoresby

Client Project Ref: 301924

Lab Sample ID	18/03962/1	18/03962/3	18/03962/5	18/03962/9	18/03962/11	18/03962/12	18/03962/13	18/03962/14	Units	Method ref
Client Sample No										
Client Sample ID	TP401	TP403	TP404	TP406	TP408	TP409A	TP410	TP410		
Depth to Top	1.20	1.00	1.10	1.00	1.00	1.00	1.00	2.20		
Depth To Bottom				2.00						
Date Sampled	16-May-18	16-May-18	16-May-18	14-May-18	14-May-18	14-May-18	14-May-18	14-May-18		
Sample Type	Solid	Solid	Soil - ES	Solid	Solid	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	7	7	4A	7	7	6A	6A	4		
TPH CWG										
Ali >C5-C6 _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-022s
Ali >C6-C8 _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-022s
Ali >C8-C10 _A ^{M#}	3	2	10	2	1	3	2	3	mg/kg	A-T-055s
Ali >C10-C12 _A ^{M#}	2	1	10	1	<1	5	2	4	mg/kg	A-T-055s
Ali >C12-C16 _A ^{M#}	2	2	24	1	1	4	2	3	mg/kg	A-T-055s
Ali >C16-C21 _A ^{M#}	2	2	23	1	1	<1	<1	<1	mg/kg	A-T-055s
Ali >C21-C35 _A ^{M#}	1	<1	16	1	<1	<1	<1	<1	mg/kg	A-T-055s
Total Aliphatics >C5-C35 _A [#]	10	7	85	6	4	14	7	9	mg/kg	A-T-055s
Aro >C5-C7 _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.14	mg/kg	A-T-022s
Aro >C7-C8 _A [#]	<0.05	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-022s
Aro >C8-C10 _A ^{M#}	12	7	24	13	12	13	13	8	mg/kg	A-T-055s
Aro >C10-C12 _A ^{M#}	8	5	24	7	7	11	9	8	mg/kg	A-T-055s
Aro >C12-C16 _A ^{M#}	23	16	64	17	17	21	24	13	mg/kg	A-T-055s
Aro >C16-C21 _A ^{M#}	13	9	57	10	8	11	15	5	mg/kg	A-T-055s
Aro >C21-C35 _A ^{M#}	9	6	50	6	5	6	9	5	mg/kg	A-T-055s
Total Aromatics >C5-C35 _A [#]	66	44	217	52	50	60	69	39	mg/kg	A-T-055s
TPH (Ali & Aro >C5-C35) _A [#]	76	51	301	58	54	75	75	49	mg/kg	A-T-055s
BTEX - Benzene _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.14	mg/kg	A-T-022s
BTEX - Toluene _A [#]	<0.05	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-022s
BTEX - m & p Xylene _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-022s
BTEX - o Xylene _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-022s
MTBE _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-022s

Envirolab Job Number: 18/03962

Client Project Name: Thoresby

Client Project Ref: 301924

Lab Sample ID	18/03962/1	18/03962/3	18/03962/5	18/03962/9	18/03962/11	18/03962/12	18/03962/13	18/03962/14	Units	Method ref
Client Sample No										
Client Sample ID	TP401	TP403	TP404	TP406	TP408	TP409A	TP410	TP410		
Depth to Top	1.20	1.00	1.10	1.00	1.00	1.00	1.00	2.20		
Depth To Bottom				2.00						
Date Sampled	16-May-18	16-May-18	16-May-18	14-May-18	14-May-18	14-May-18	14-May-18	14-May-18		
Sample Type	Solid	Solid	Soil - ES	Solid	Solid	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	7	7	4A	7	7	6A	6A	4		
Leachate Prep BS EN 12457-1 (2:1) (1 no) _A	*	*	*	*	*	*	*	*		
pH (leachable) _A [#]	7.54	7.45	7.84	7.52	7.16	6.47	6.21	8.00	pH	A-T-031w
Alkalinity (total) (leachable) Colorimetry _A	62	59	72	25	27	22	33	125	mg/l Ca CO ₃	A-T-038w
Arsenic (leachable) _A [#]	<1	<1	<1	<1	<1	<1	<1	3	µg/l	A-T-025w
Cadmium (leachable) _A [#]	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-025w
Copper (leachable) _A [#]	<1	2	<1	<1	<1	3	2	<1	µg/l	A-T-025w
Chromium (leachable) _A [#]	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-025w
Lead (leachable) _A [#]	<1	<1	<1	<1	<1	3	<1	<1	µg/l	A-T-025w
Mercury (leachable) _A [#]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	µg/l	A-T-025w
Nickel (leachable) _A [#]	2	<1	7	2	8	257	461	5	µg/l	A-T-025w
Selenium (leachable) _A [#]	4	1	2	7	8	9	21	11	µg/l	A-T-025w
Zinc (leachable) _A [#]	9	13	28	7	24	67	58	48	µg/l	A-T-025w

Envirolab Job Number: 18/03962

Client Project Name: Thoresby

Client Project Ref: 301924

Lab Sample ID	18/03962/22	18/03962/25	18/03962/26						Units	Method ref
Client Sample No										
Client Sample ID	TP417	TP418	TP419							
Depth to Top	0.50	0.50	0.50							
Depth To Bottom	1.00	1.00								
Date Sampled	15-May-18	16-May-18	15-May-18							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	1	6AB	2							
% Stones >10mm _A	<0.1	16.2	<0.1						% w/w	A-T-044
pH _D ^{M#}	7.62	3.09	6.92						pH	A-T-031s
pH BRE _D ^{M#}	7.62	3.09	6.92						pH	A-T-031s
Chloride BRE, SO4 equiv. (water sol 2:1) _D	-	<7	-						mg/l	A-T-026s
Nitrate BRE, SO4 equiv. (water sol 2:1) _D	-	<0.4	-						mg/l	A-T-026s
Sulphate (water sol 2:1) _D ^{M#}	0.08	3.11	0.17						g/l	A-T-026s
Sulphate BRE (water sol 2:1) _D ^{M#}	78	3110	174						mg/l	A-T-026s
Sulphate (acid soluble) _D ^{M#}	230	31000	720						mg/kg	A-T-028s
Sulphate BRE (acid sol) _D ^{M#}	0.02	3.13	0.07						% w/w	A-T-028s
Sulphur BRE (total) _D	<0.01	1.04	1.31						% w/w	A-T-024s
Magnesium BRE (water sol 2:1) _D	-	591	-						mg/l	A-T-SOLMETs
Arsenic _D ^{M#}	3	49	14						mg/kg	A-T-024s
Cadmium _D ^{M#}	<0.5	0.6	<0.5						mg/kg	A-T-024s
Copper _D ^{M#}	4	36	65						mg/kg	A-T-024s
Chromium _D ^{M#}	5	12	16						mg/kg	A-T-024s
Lead _D ^{M#}	2	23	27						mg/kg	A-T-024s
Mercury _D	<0.17	<0.17	<0.17						mg/kg	A-T-024s
Nickel _D ^{M#}	5	30	34						mg/kg	A-T-024s
Selenium _D ^{M#}	<1	3	2						mg/kg	A-T-024s
Zinc _D ^{M#}	10	38	21						mg/kg	A-T-024s

Envirolab Job Number: 18/03962

Client Project Name: Thoresby

Client Project Ref: 301924

Lab Sample ID	18/03962/22	18/03962/25	18/03962/26						Units	Method ref
Client Sample No										
Client Sample ID	TP417	TP418	TP419							
Depth to Top	0.50	0.50	0.50							
Depth To Bottom	1.00	1.00								
Date Sampled	15-May-18	16-May-18	15-May-18							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	1	6AB	2							
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD	NAD							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	N/A	N/A	N/A							

Envirolab Job Number: 18/03962

Client Project Name: Thoresby

Client Project Ref: 301924

Lab Sample ID	18/03962/22	18/03962/25	18/03962/26						Units	Method ref
Client Sample No										
Client Sample ID	TP417	TP418	TP419							
Depth to Top	0.50	0.50	0.50							
Depth To Bottom	1.00	1.00								
Date Sampled	15-May-18	16-May-18	15-May-18							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	1	6AB	2							
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	0.02	0.05						mg/kg	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01						mg/kg	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	0.03						mg/kg	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	<0.04	<0.04						mg/kg	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	<0.04	<0.04						mg/kg	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	<0.05	<0.05						mg/kg	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	<0.05						mg/kg	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07						mg/kg	A-T-019s
Chrysene _A ^{M#}	<0.06	<0.06	<0.06						mg/kg	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04						mg/kg	A-T-019s
Fluoranthene _A ^{M#}	<0.08	<0.08	<0.08						mg/kg	A-T-019s
Fluorene _A ^{M#}	<0.01	0.02	0.12						mg/kg	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	<0.03						mg/kg	A-T-019s
Naphthalene _A ^{M#}	<0.03	0.57	3.36						mg/kg	A-T-019s
Phenanthrene _A ^{M#}	<0.03	0.28	0.34						mg/kg	A-T-019s
Pyrene _A ^{M#}	<0.07	<0.07	<0.07						mg/kg	A-T-019s
Total PAH-16MS _A ^{M#}	<0.08	0.89	3.90						mg/kg	A-T-019s

Envirolab Job Number: 18/03962

Client Project Name: Thoresby

Client Project Ref: 301924

Lab Sample ID	18/03962/22	18/03962/25	18/03962/26						Units	Method ref
Client Sample No										
Client Sample ID	TP417	TP418	TP419							
Depth to Top	0.50	0.50	0.50							
Depth To Bottom	1.00	1.00								
Date Sampled	15-May-18	16-May-18	15-May-18							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	1	6AB	2							
TPH CWG										
Ali >C5-C6 _A [#]	<0.01	<0.05	0.13						mg/kg	A-T-022s
Ali >C6-C8 _A [#]	<0.01	<0.05	0.10						mg/kg	A-T-022s
Ali >C8-C10 _A ^{M#}	<1	5	17						mg/kg	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	3	21						mg/kg	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	5	13						mg/kg	A-T-055s
Ali >C16-C21 _A ^{M#}	<1	5	13						mg/kg	A-T-055s
Ali >C21-C35 _A ^{M#}	<1	3	3						mg/kg	A-T-055s
Total Aliphatics >C5-C35 _A [#]	<1	18	65						mg/kg	A-T-055s
Aro >C5-C7 _A [#]	<0.01	<0.05	0.51						mg/kg	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.05	0.31						mg/kg	A-T-022s
Aro >C8-C10 _A ^{M#}	<1	13	52						mg/kg	A-T-055s
Aro >C10-C12 _A ^{M#}	<1	12	43						mg/kg	A-T-055s
Aro >C12-C16 _A ^{M#}	<1	36	57						mg/kg	A-T-055s
Aro >C16-C21 _A ^{M#}	<1	27	25						mg/kg	A-T-055s
Aro >C21-C35 _A ^{M#}	<1	15	14						mg/kg	A-T-055s
Total Aromatics >C5-C35 _A [#]	<1	102	193						mg/kg	A-T-055s
TPH (Ali & Aro >C5-C35) _A [#]	<1	120	257						mg/kg	A-T-055s
BTEX - Benzene _A [#]	<0.01	<0.05	0.51						mg/kg	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.05	0.31						mg/kg	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.05	0.14						mg/kg	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.05	0.26						mg/kg	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.05	0.13						mg/kg	A-T-022s
MTBE _A [#]	<0.01	<0.05	<0.05						mg/kg	A-T-022s

Envirolab Job Number: 18/03962

Client Project Name: Thoresby

Client Project Ref: 301924

Lab Sample ID	18/03962/22	18/03962/25	18/03962/26						Units	Method ref
Client Sample No										
Client Sample ID	TP417	TP418	TP419							
Depth to Top	0.50	0.50	0.50							
Depth To Bottom	1.00	1.00								
Date Sampled	15-May-18	16-May-18	15-May-18							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	1	6AB	2							
Leachate Prep BS EN 12457-1 (2:1) (1 no) _A	*	*	*							A-T-001
pH (leachable) _A [#]	6.67	3.27	8.03						pH	A-T-031w
Alkalinity (total) (leachable) Colorimetry _A	<20	<20	105						mg/l Ca CO ₃	A-T-038w
Arsenic (leachable) _A [#]	<1	5	2						µg/l	A-T-025w
Cadmium (leachable) _A [#]	<1	4	<1						µg/l	A-T-025w
Copper (leachable) _A [#]	4	143	2						µg/l	A-T-025w
Chromium (leachable) _A [#]	<1	12	<1						µg/l	A-T-025w
Lead (leachable) _A [#]	<1	53	<1						µg/l	A-T-025w
Mercury (leachable) _A [#]	<0.1	<0.1	<0.1						µg/l	A-T-025w
Nickel (leachable) _A [#]	<1	825	9						µg/l	A-T-025w
Selenium (leachable) _A [#]	<1	22	8						µg/l	A-T-025w
Zinc (leachable) _A [#]	18	444	13						µg/l	A-T-025w

REPORT NOTES

General:

This report shall not be reproduced, except in full, without written approval from Envirolab.

All samples contained within this report, and any received with the same delivery, will be disposed of one month after the date of this report.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

If results are in italic font they are associated with an AQC failure and there is insufficient sample to repeat the analysis. These are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Soil chemical analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.