

Laboratory Test Certificate

Form REP008 Rev 3

Geotechnics Ltd The Geotechnical Centre 203 Torrington Avenue Tile Hill Coventry, CV4 9AP		Date of issue	30.11.22
		Issue No.	1
		Client Ref. No.	N/A
		Samples / Material Source	
Testing Start Date	08.11.22	Samples Recv'd	02.11.22
Testing Complete	29.11.22	Sample State	As received
Comments			
Project No	PN224453		
Project Name	Wrexham FC : New Kop Stand - Ground Investigation.		

Summary of Tests

Standard	Test Description	Test Quantity	UKAS
BS EN ISO 17892-1:2014	Water Content	10	Yes
BS EN ISO 17892-12:2018 Cl. 5.3 & 5.5	Liquid Limit and Plastic Limit (4 Points Method)	10	Yes
BS EN ISO 17892-4:2016 Cl. 5.2	Particle Size Distribution by Sieving Method	14	Yes
BS EN ISO 17892-4:2016 Cl. 5.4	Particle Size Distribution by Pipette Method	8	Yes
BS EN ISO 17892-8:2018	Shear Strength by Unconsolidated Undrained Triaxial Test - Single Stage	1	Yes

Note: Any descriptions, opinions or interpretations are outside the scope of UKAS accreditation.
 The results within this report relate only to the samples tested and received from the client.



Test Results checked and approved for issue.
 Signed for and on behalf of Geotechnics Limited

Paul Smart (Laboratory Testing Manager)

GEOTECHNICS
 geotechnical and geoenvironmental specialists

203 Torrington Avenue, Tile Hill,
 Coventry, CV4 9UT

GEOTECHNICS geotechnical and geoenvironmental specialists					Summary of Classification Test Results							
Project Number: PN224453					Project Name: Wrexham FC : New Kop Stand - Ground Investigation							
Hole Number	Sample				Specimen Description	w %	Passing 425µm %	LL (Factor) %	PL %	PI %	Particle Density Mg/m³	Remarks
	Sample ID	Top (m)	Base (m)	Type								
BH100		7.50		D	Brown slightly gravelly CLAY	25.0	92	38-4pt	19	19		
BH100		13.50		D	Brown slightly sandy slightly gravelly CLAY	8.8	90	24-4pt	12	12		
BH100		26.00	26.45	D	Brown slightly sandy slightly gravelly CLAY	12.3	76	24-4pt	11	13		
BH101		10.50		D	Brown slightly sandy clayey SILT.	20.5	84	19-4pt	NP			
BH101		13.50		D	Brown slightly sandy slightly gravelly clayey SILT.	14.6	79	18-4pt	NP			
BH101		18.00		D	Brown sandy clayey SILT.	19.7	98	22-4pt	NP			
BH102		12.00		D	Brown slightly sandy slightly gravelly CLAY	16.1	75	28-4pt	13	15		
BH102		21.00		D	Brown slightly sandy CLAY	26.2	99	28-4pt	17	11		
BH102		27.00		D	Brown slightly sandy CLAY	11.4	77	26-4pt	12	14		
BH102		30.00		D	Brown slightly sandy CLAY	14.1	78	23-4pt	13	10		
All tests performed in accordance with BS EN ISO 17892 unless specified otherwise on the Test Certificate.												
Key		Density test				Liquid Limit		Particle density		Date Printed		Sheet
		Linear measurement unless				4pt 80g/30deg fall cone with increasing water content unless specified otherwise		sp - small pykno				
		wd - water displacement				Sample washed through 0.425mm sieve unless specified otherwise		gj - gas jar (BS1377)		09/12/2022		1
		wi - immersion in water				1pt - single point test						
		wi - immersion in water				* - BS1377 method						

Project No.	PN224453
Hole No.	BH102
Sample ID.	
Depth	21,50 - 21,95 m
Sample Type	UT
Date of Test	17.11.22

Project Name	Wrexham FC : New Kop Stand - Ground Investigation		
Specimen Reference	2	Specimen Depth	m
Specimen Description	Very high strength brown slightly sandy silty CLAY.		
Test Method	BS EN ISO 17892-8		

Test Number
Length
Diameter
Bulk Density
Water Content
Dry Density

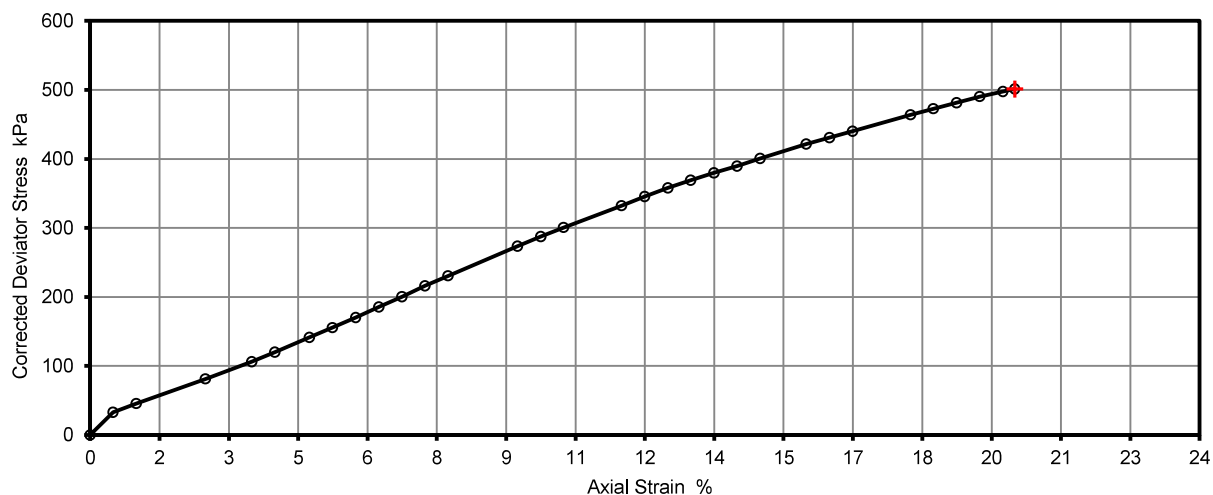
1
191.8
102.3
2.15
16.9
1.84

Rate of Strain
Cell Pressure
At failure

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

1.3
400
20.0
501
251
Plastic

Deviator Stress v Axial Strain



Remarks

WC at failure Zone = 18.9%

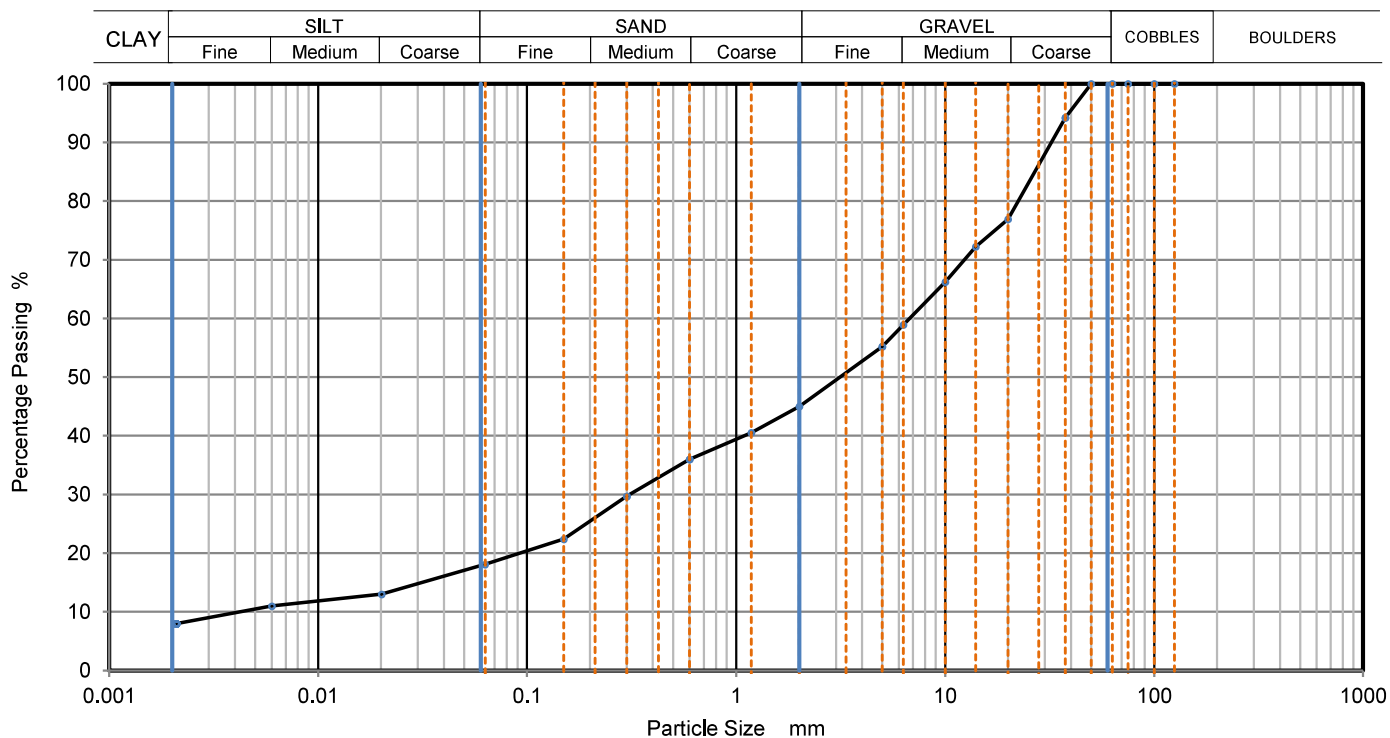
Printed

12/04/2023



PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.	BH100
Sample No.	
Depth	1.20 - 1.65 m
Sample Type	B
Specimen Description	Brown very sandy clayey GRAVEL.
Specimen Depth	m
Test Method	ISO 17892 -4, by sieving and pipette sedimentation



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	13
100	100	0.006	11
75	100	0.002	8
63	100		
50	100		
37.5	94		
20	77		
14	72		
10	66		
6.3	59		
5	55		
2	45		
1.18	41		
0.6	36		
0.3	30		
0.15	22	Particle density (assumed) 2.65 Mg/m ³	
0.063	18		

Sample Proportions	% dry mass
Cobbles	0
Gravel	55
Sand	27
Silt	10
Clay	8

Grading Analysis		
D100	mm	50
D60	mm	6.75
D30	mm	0.309
D10	mm	0.00462
Uniformity Coefficient		1500

Remarks

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PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.

BH100

Sample No.

Project Number:

PN224453

Depth

3.00 - 3.45 m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

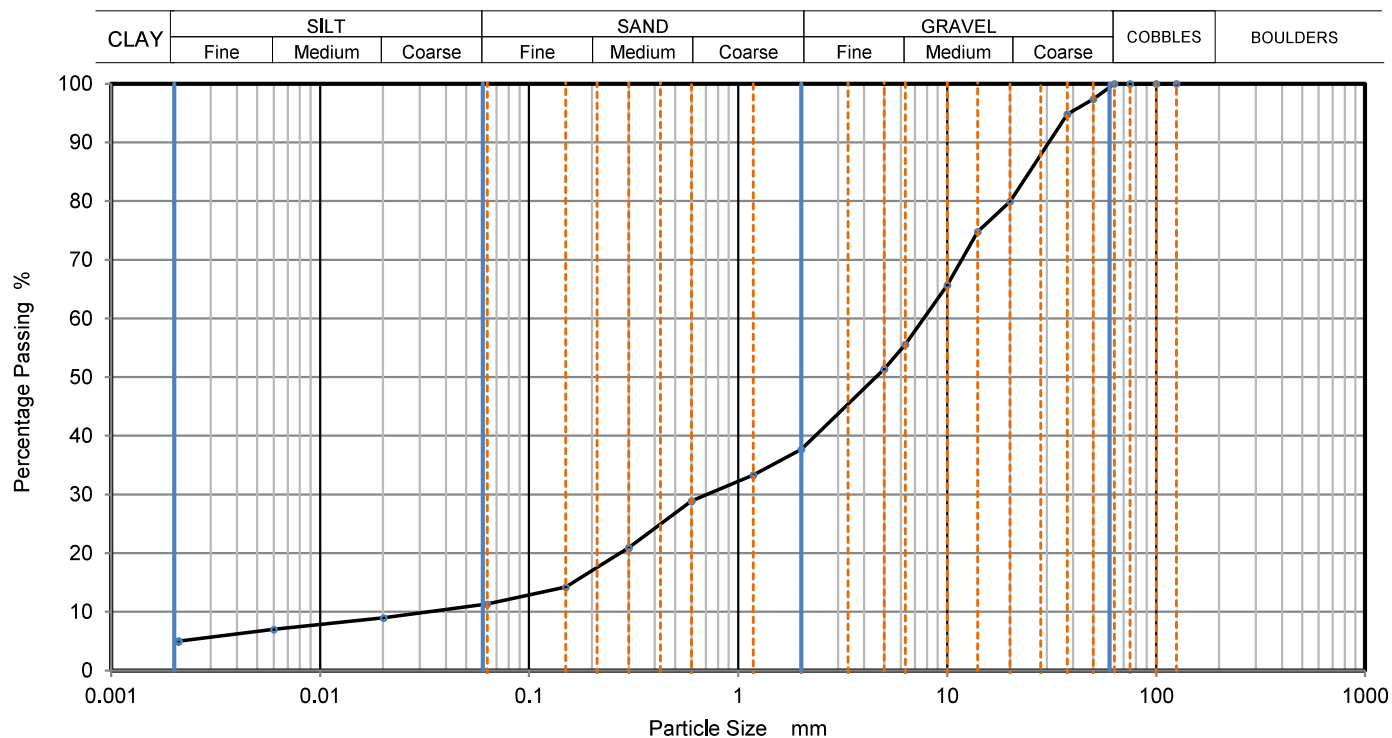
Brown very sandy clayey GRAVEL.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving and pipette sedimentation



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	9
100	100	0.006	7
75	100	0.002	5
63	100		
50	97		
37.5	95		
20	80		
14	75		
10	66		
6.3	56		
5	51		
2	38		
1.18	33		
0.6	29		
0.3	21		
0.15	14	Particle density (assumed) 2.65 Mg/m3	
0.063	11		

Sample Proportions	% dry mass
Cobbles	0
Gravel	62
Sand	26
Silt	7
Clay	5

Grading Analysis		
D100	mm	63
D60	mm	7.7
D30	mm	0.71
D10	mm	0.0323
Uniformity Coefficient		240

Remarks

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PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.

BH100

Sample No.

Project Number:

PN224453

Depth

6.50 - 6.95

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

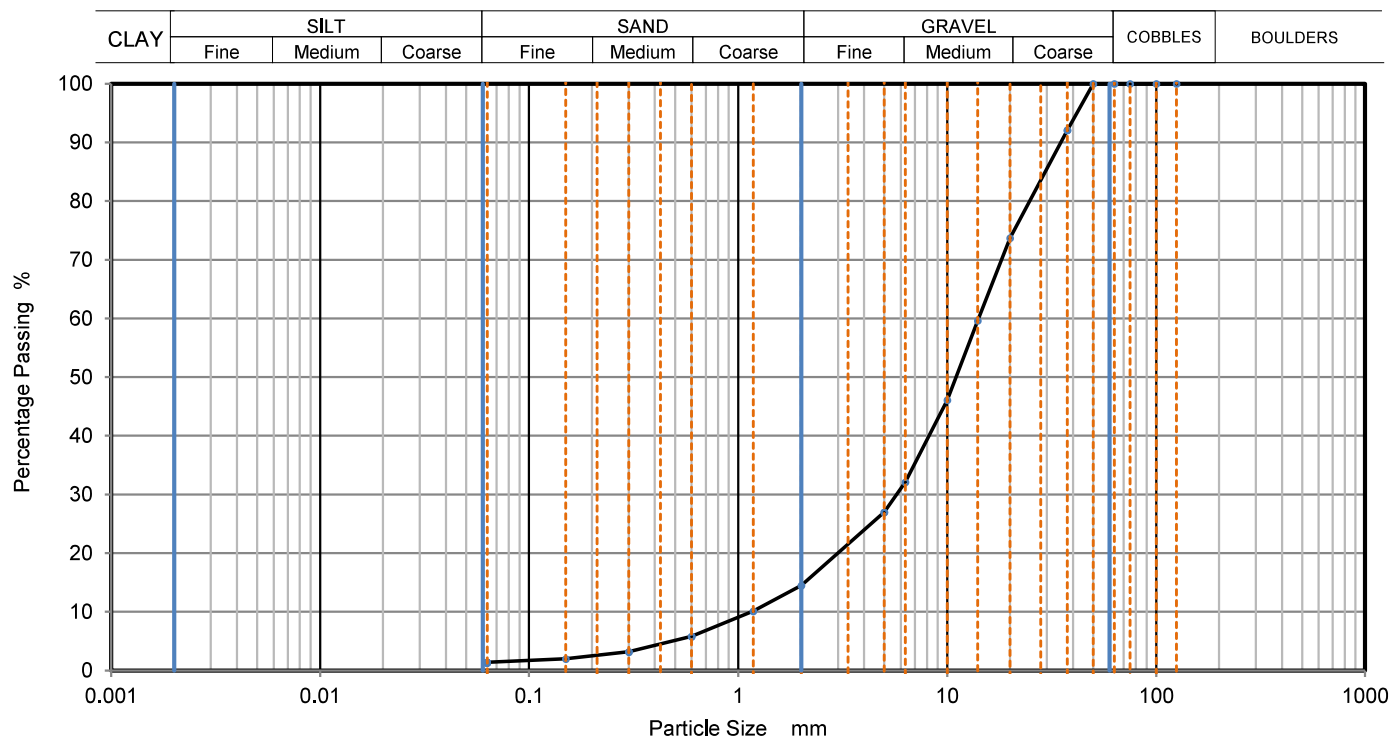
Brown sandy GRAVEL.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	92		
20	74		
14	60		
10	46		
6.3	32		
5	27		
2	15		
1.18	10		
0.6	6		
0.3	3		
0.15	2		
0.063	1		

Sample Proportions	% dry mass
Cobbles	0
Gravel	86
Sand	13
Fines <0.063mm	1

Grading Analysis		
D100	mm	50
D60	mm	14.1
D30	mm	5.73
D10	mm	1.16
Uniformity Coefficient		12

Remarks

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PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.

BH100

Sample No.

Project Number:

PN224453

Depth

11.00 - 11.45 m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

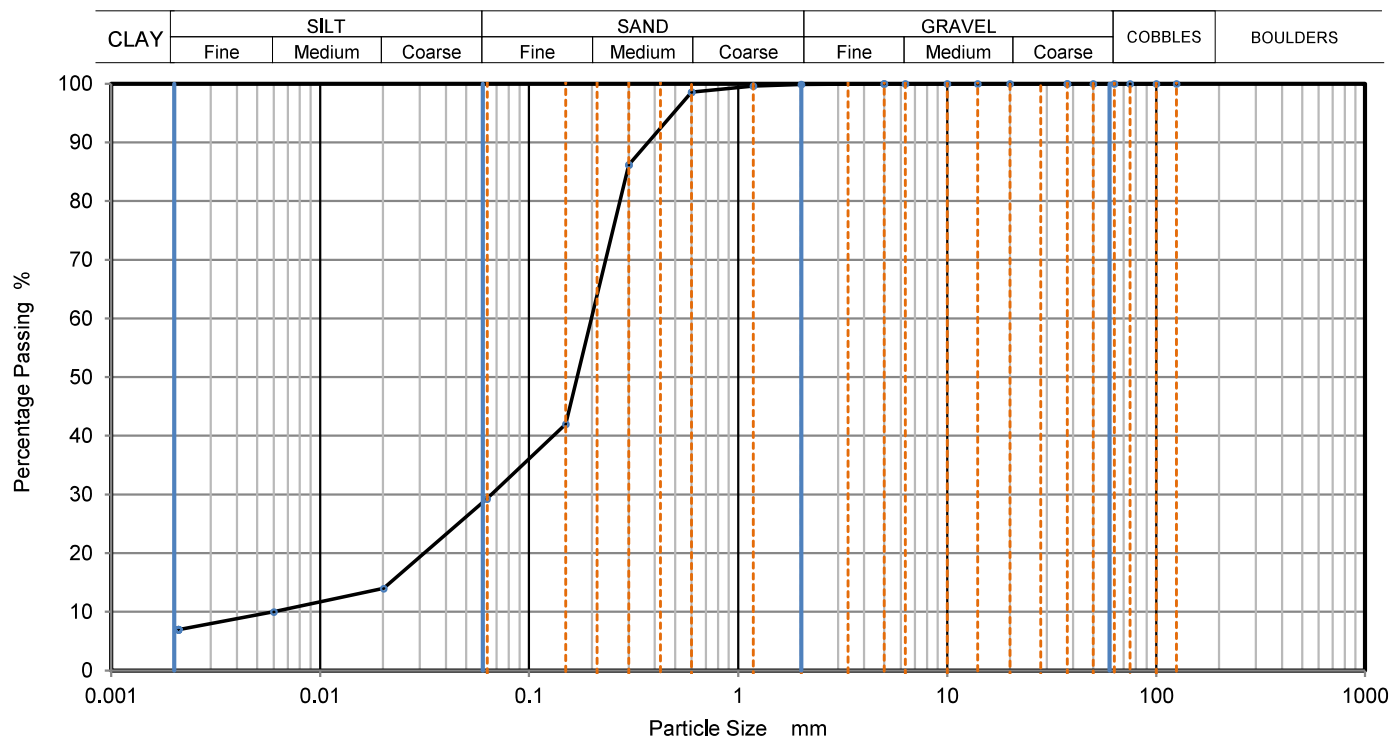
Brown very silty SAND.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving and pipette sedimentation



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	14
100	100	0.006	10
75	100	0.002	7
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	100		
0.6	99		
0.3	86		
0.15	42	Particle density (assumed) 2.65 Mg/m3	
0.063	29		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	70
Silt	23
Clay	7

Grading Analysis		
D100	mm	5
D60	mm	0.199
D30	mm	0.066
D10	mm	0.00628
Uniformity Coefficient		32

Remarks

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PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.

BH100

Sample No.

Project Number:

PN224453

Depth

17.00 - 17.45 m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

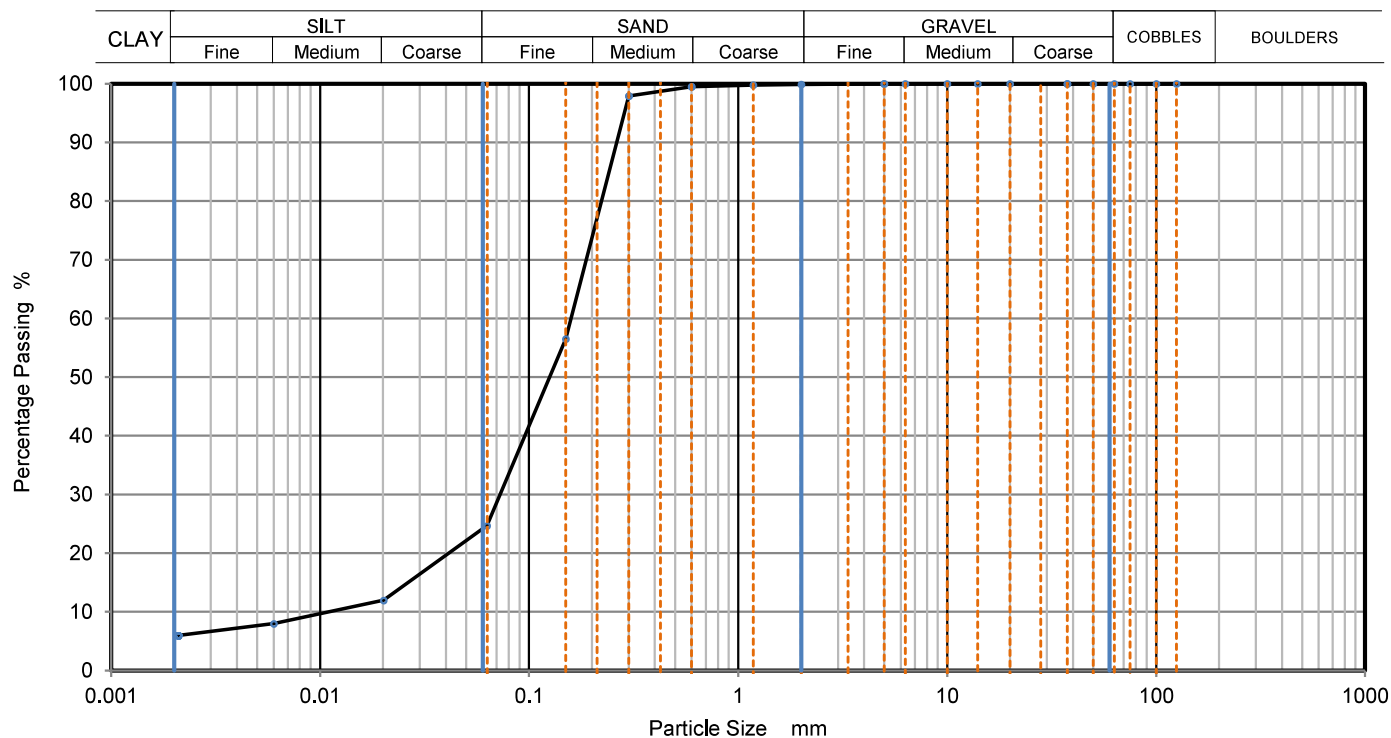
Brown very silty SAND.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving and pipette sedimentation



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	12
100	100	0.006	8
75	100	0.002	6
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	100		
0.6	100		
0.3	98		
0.15	57	Particle density (assumed) 2.65 Mg/m ³	
0.063	25		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	75
Silt	19
Clay	6

Grading Analysis		
D100	mm	5
D60	mm	0.159
D30	mm	0.0728
D10	mm	0.0107
Uniformity Coefficient		15

Remarks

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PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.

BH100

Sample No.

Project Number:

PN224453

Depth

24.50 - 24.95 m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

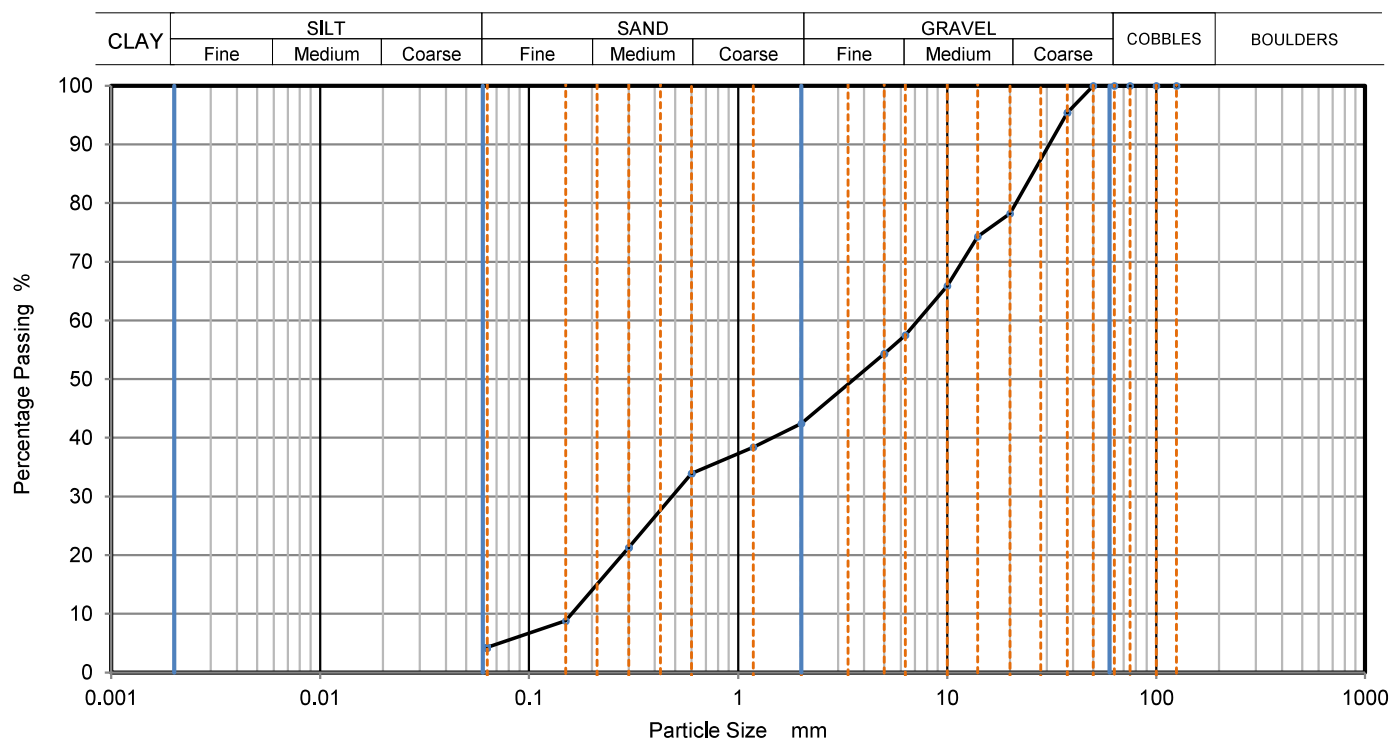
Brown very sandy slightly silty GRAVEL.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	95		
20	78		
14	74		
10	66		
6.3	58		
5	54		
2	42		
1.18	38		
0.6	34		
0.3	21		
0.15	9		
0.063	4		

Sample Proportions	% dry mass
Cobbles	0
Gravel	58
Sand	38
Fines <0.063mm	4

Grading Analysis		
D100	mm	50
D60	mm	7.23
D30	mm	0.485
D10	mm	0.16
Uniformity Coefficient		45

Remarks

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PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.

BH101

Sample No.

Project Number:

PN224453

Depth

2.00 - 2.45

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

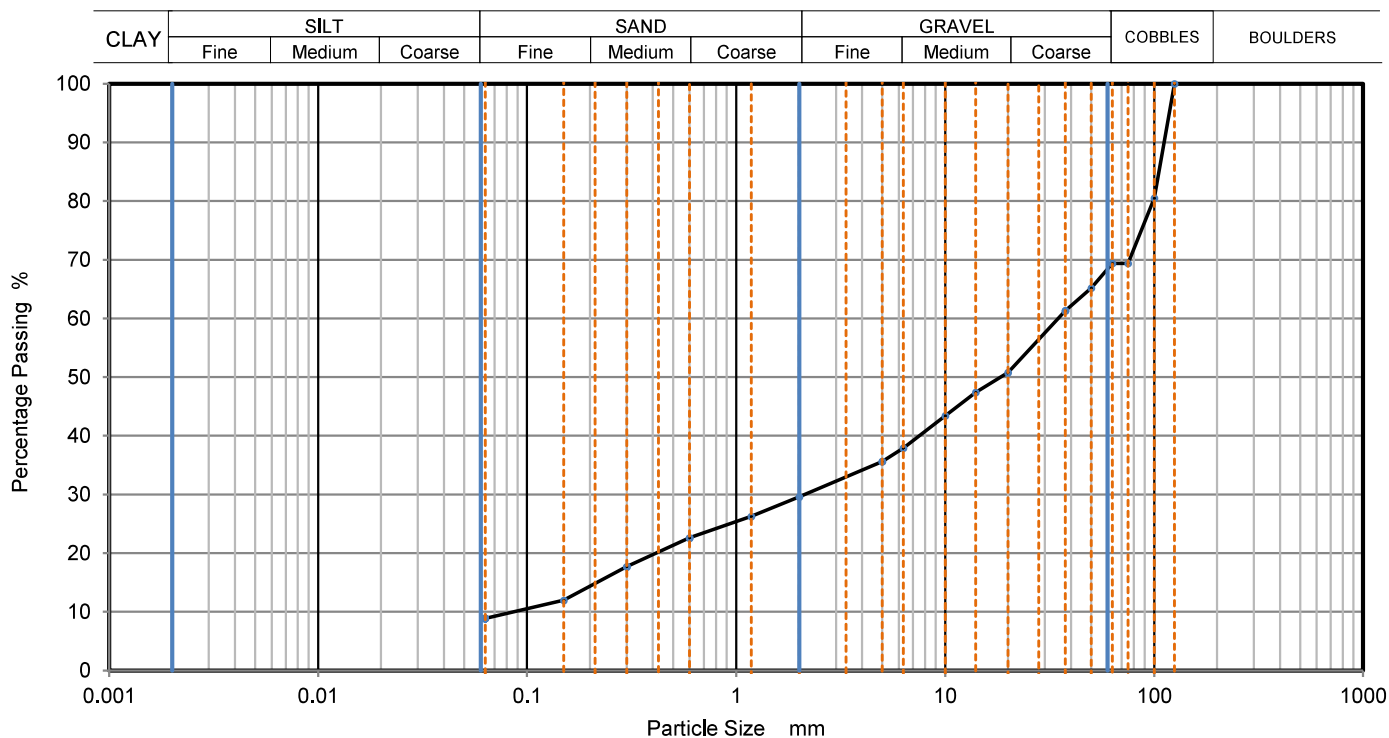
Brown very sandy clayey GRAVEL with a high cobble content.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	81		
75	69		
63	69		
50	65		
37.5	61		
20	51		
14	47		
10	43		
6.3	38		
5	36		
2	30		
1.18	26		
0.6	23		
0.3	18		
0.15	12		
0.063	9		

Sample Proportions	% dry mass
Cobbles	31
Gravel	39
Sand	21
Fines <0.063mm	9

Grading Analysis	
D100	mm 125
D60	mm 34.6
D30	mm 2.13
D10	mm 0.0861
Uniformity Coefficient	400

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

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PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.

BH101

Sample No.

Project Number:

PN224453

Depth

5.00 - 5.45 m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

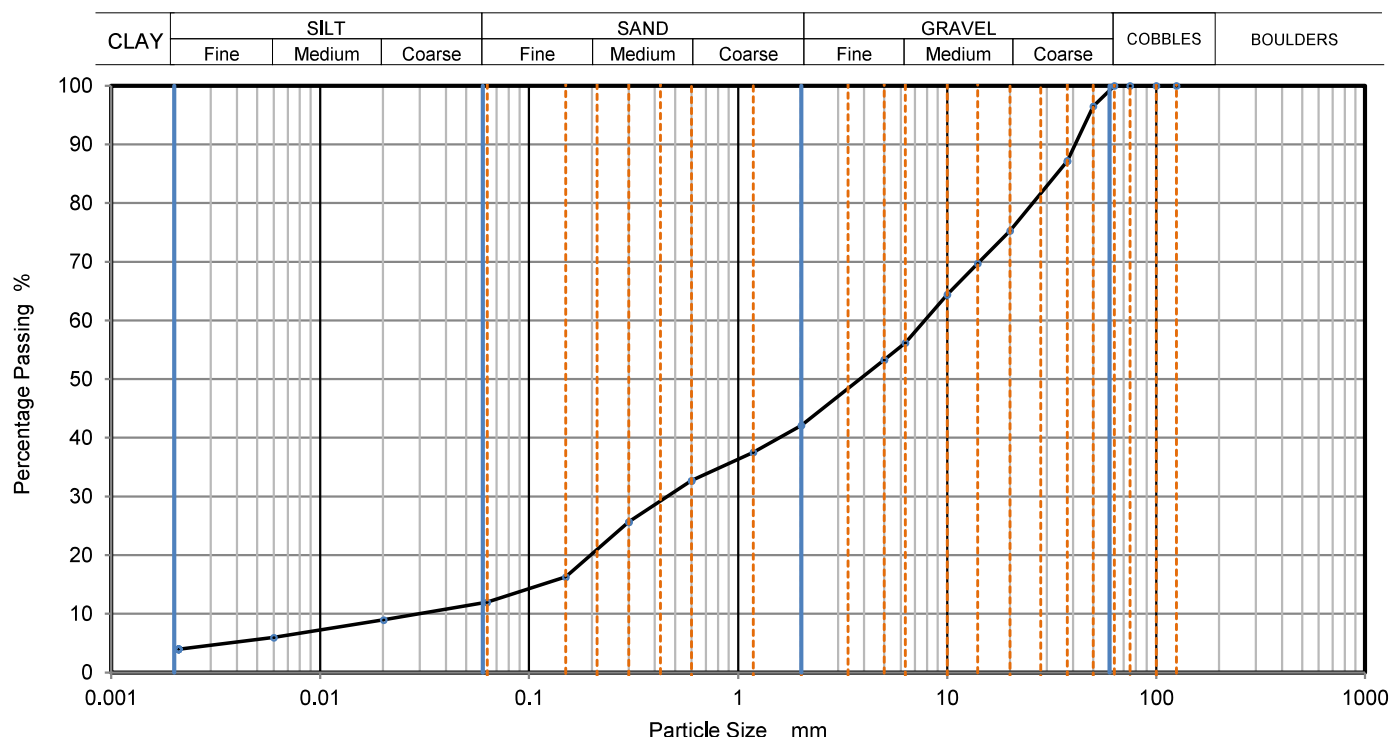
Brown very sandy clayey GRAVEL.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving and pipette sedimentation



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	9
100	100	0.006	6
75	100	0.002	4
63	100		
50	97		
37.5	87		
20	75		
14	70		
10	64		
6.3	56		
5	53		
2	42		
1.18	38		
0.6	33		
0.3	26		
0.15	16	Particle density (assumed) 2.65 Mg/m ³	
0.063	12		

Sample Proportions	% dry mass
Cobbles	0
Gravel	58
Sand	30
Silt	8
Clay	4

Grading Analysis		
D100	mm	63
D60	mm	7.8
D30	mm	0.458
D10	mm	0.0292
Uniformity Coefficient		270

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

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PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.

BH101

Sample No.

Project Number:

PN224453

Depth

8.00 - 8.45

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

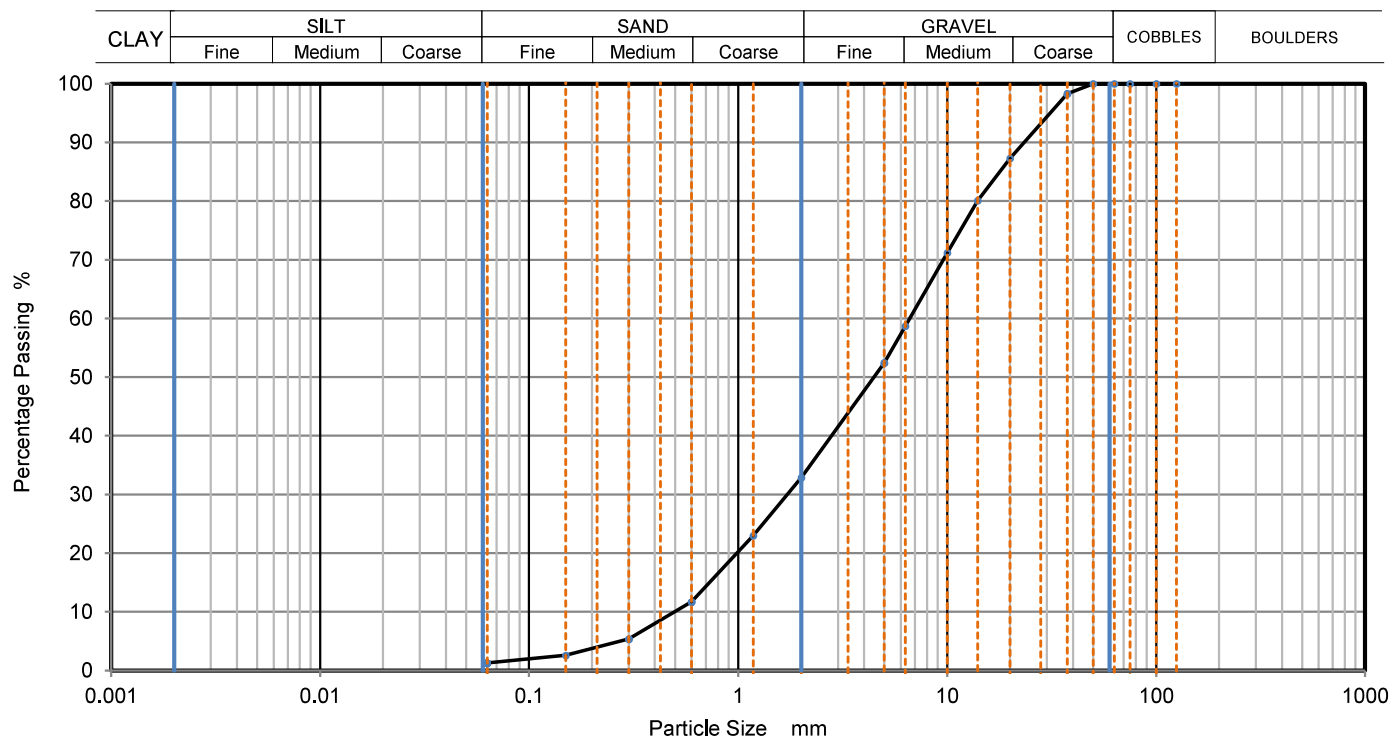
Brown very sandy GRAVEL.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	98		
20	87		
14	80		
10	71		
6.3	59		
5	52		
2	33		
1.18	23		
0.6	12		
0.3	5		
0.15	3		
0.063	1		

Sample Proportions	% dry mass
Cobbles	0
Gravel	67
Sand	32
Fines <0.063mm	1

Grading Analysis		
D100	mm	50
D60	mm	6.61
D30	mm	1.71
D10	mm	0.496
Uniformity Coefficient		13

Remarks

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PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.

BH101

Sample No.

Project Number:

PN224453

Depth

20.00 - 20.45 m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

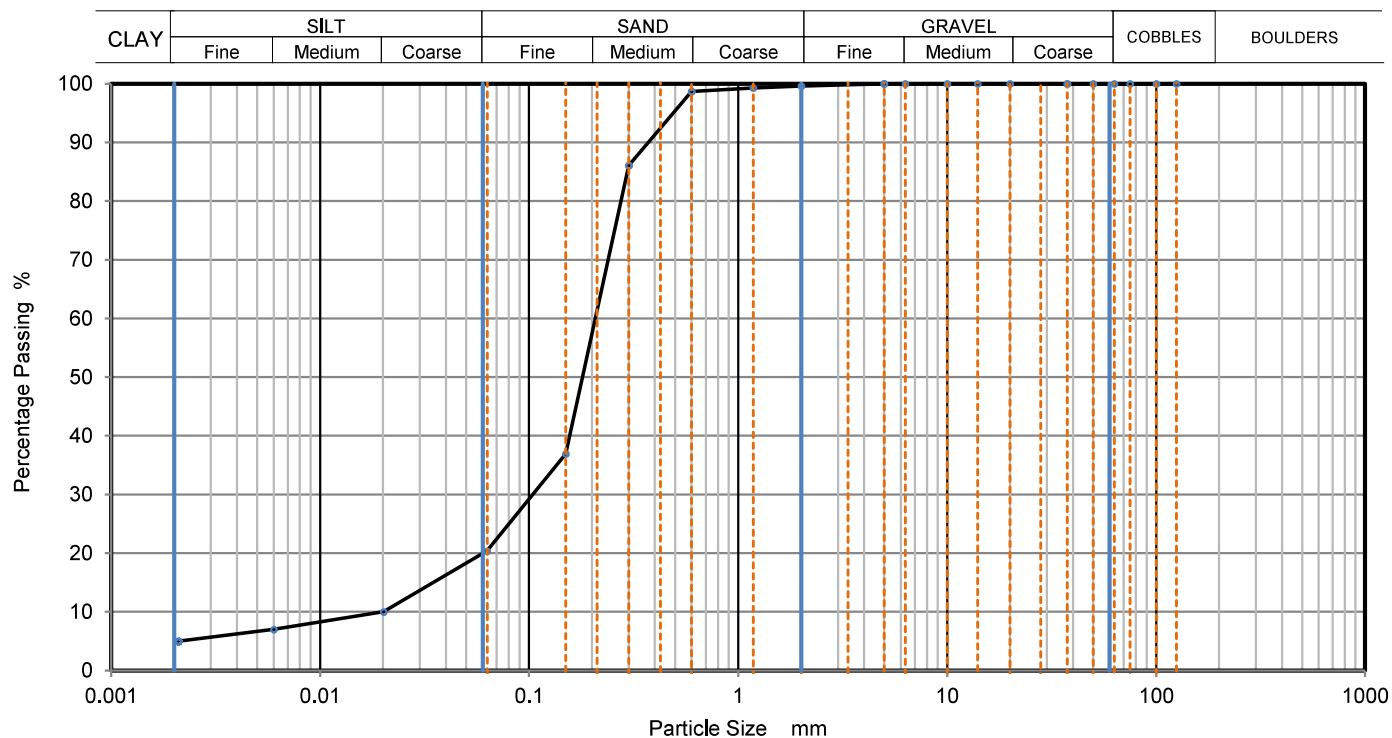
Brown very silty SAND.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving and pipette sedimentation



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	10
100	100	0.006	7
75	100	0.002	5
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	99		
0.6	99		
0.3	86		
0.15	37	Particle density (assumed) 2.65 Mg/m3	
0.063	20		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	79
Silt	16
Clay	5

Grading Analysis		
D100	mm	5
D60	mm	0.208
D30	mm	0.104
D10	mm	0.0207
Uniformity Coefficient		10

Remarks

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PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.

BH102

Sample No.

Project Number:

PN224453

Depth

2.00 - 2.45 m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

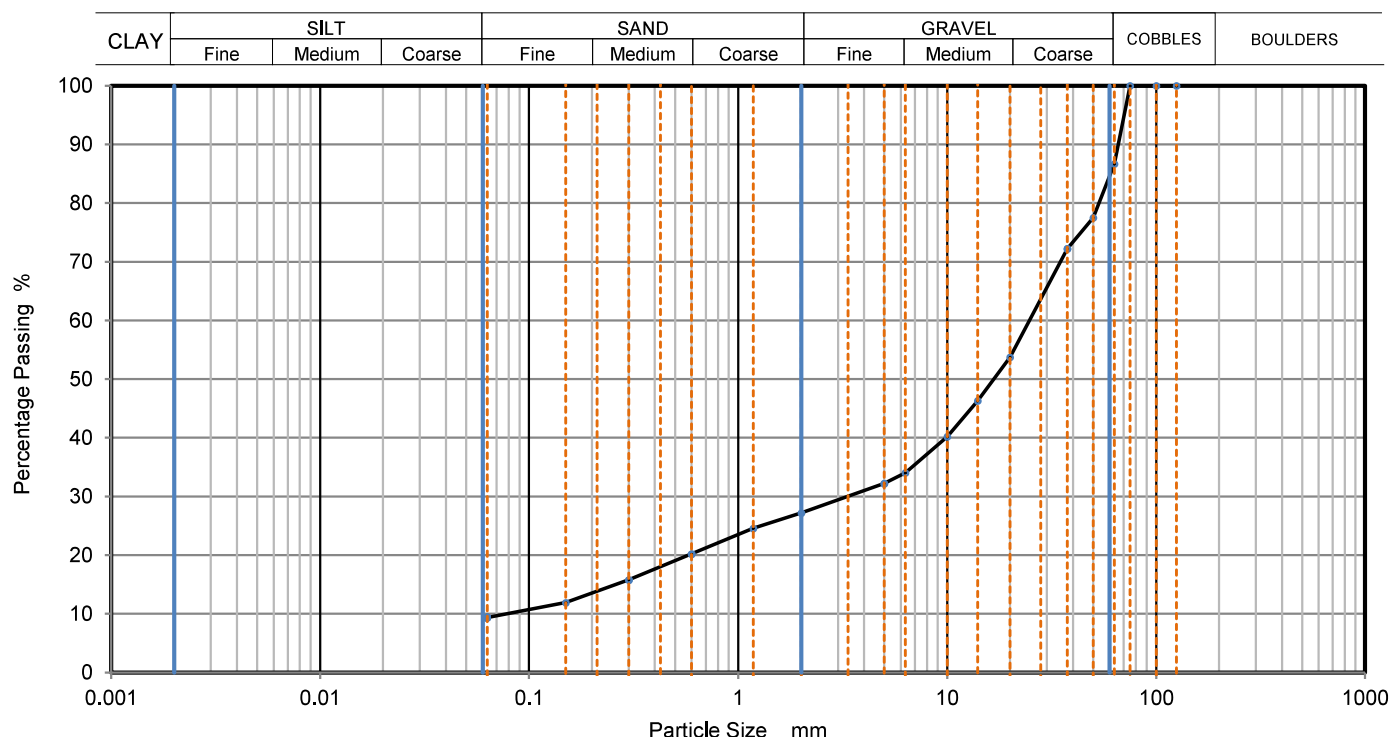
Brown very sandy clayey GRAVEL with a medium cobble content.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	87		
50	78		
37.5	72		
20	54		
14	46		
10	40		
6.3	34		
5	32		
2	27		
1.18	25		
0.6	20		
0.3	16		
0.15	12		
0.063	9		

Sample Proportions	% dry mass
Cobbles	13
Gravel	60
Sand	18
Fines <0.063mm	9

Grading Analysis		
D100	mm	75
D60	mm	24.8
D30	mm	3.34
D10	mm	0.0779
Uniformity Coefficient		320

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

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PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.

BH102

Sample No.

Project Number:

PN224453

Depth

6.50 - 6.95 m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

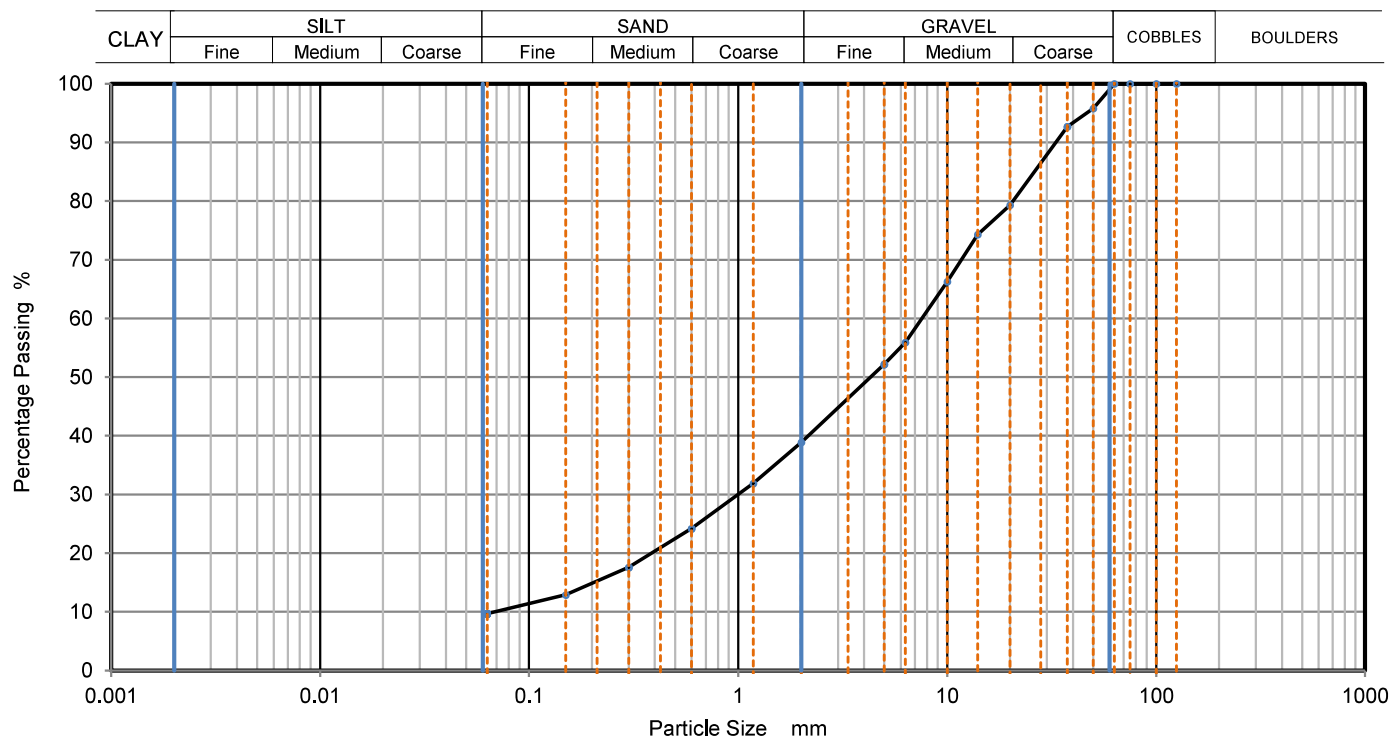
Grey very sandy clayey GRAVEL.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	96		
37.5	93		
20	79		
14	74		
10	66		
6.3	56		
5	52		
2	39		
1.18	32		
0.6	24		
0.3	18		
0.15	13		
0.063	10		

Sample Proportions	% dry mass
Cobbles	0
Gravel	61
Sand	29
Fines <0.063mm	10

Grading Analysis		
D100	mm	63
D60	mm	7.57
D30	mm	1
D10	mm	0.0686
Uniformity Coefficient		110

Remarks

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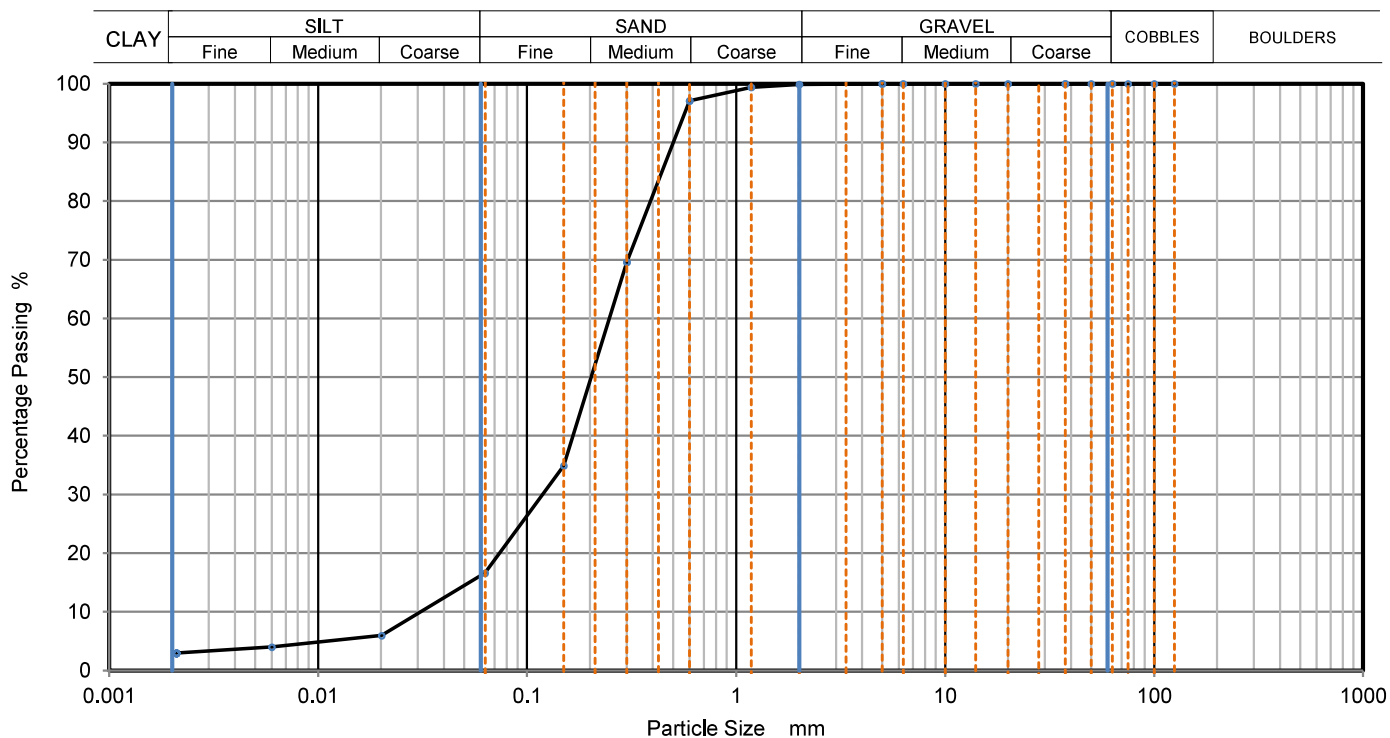
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PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.	BH102	
Sample No.		
Depth	15.50 - 15.95	m
Sample Type	B	
Specimen Depth		m



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	6
100	100	0.006	4
75	100	0.002	3
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	99		
0.6	97		
0.3	70		
0.15	35	Particle density (assumed) 2.65 Mg/m3	
0.063	17		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	83
Silt	14
Clay	3

Grading Analysis		
D100	mm	5
D60	mm	0.248
D30	mm	0.119
D10	mm	0.031
Uniformity Coefficient		8

Remarks

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Sheet

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13

PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.

BH102

Sample No.

Project Number:

PN224453

Depth

24.50 - 24.95 m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

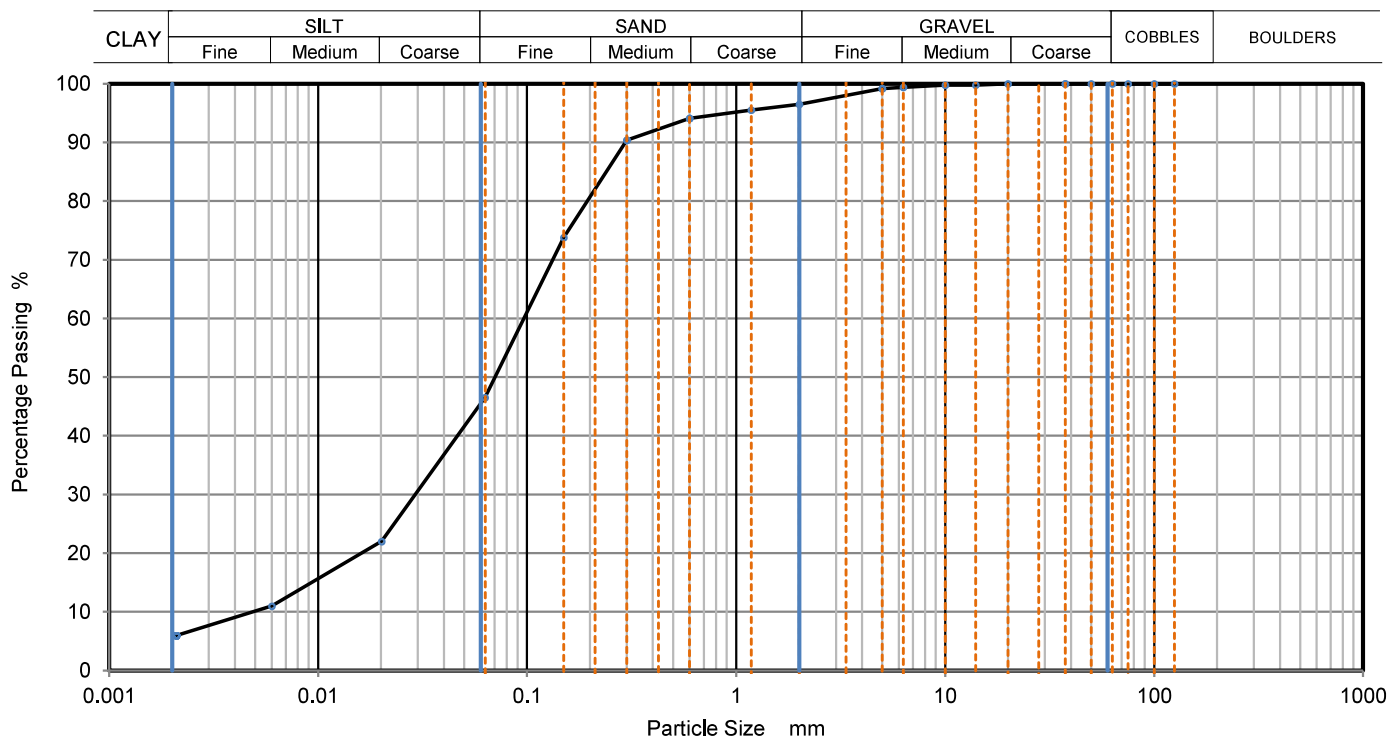
Brown slightly gravelly sandy SILT.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving and pipette sedimentation



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	22
100	100	0.006	11
75	100	0.002	6
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	99		
5	99		
2	97		
1.18	96		
0.6	94		
0.3	90		
0.15	74	Particle density (assumed) 2.65 Mg/m3	
0.063	47		

Sample Proportions	% dry mass
Cobbles	0
Gravel	4
Sand	50
Silt	40
Clay	6

Grading Analysis		
D100	mm	20
D60	mm	0.0967
D30	mm	0.029
D10	mm	0.00468
Uniformity Coefficient		21

Remarks

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Certificate of Analysis

Certificate Number 22-21834

Issued: 02-Nov-22

Client Geotechnics LTD
The Geotechnical Centre
Unit 1B Borders Ind. Park
River Lane
Saltney
Chester
CH4 8RJ

Our Reference 22-21834

Client Reference PN224453

Order No ON35179

Contract Title Wrexham AFC - Kop Stand Redevelopment

Description 9 Soil samples.

Date Received 28-Oct-22

Date Started 28-Oct-22

Date Completed 02-Nov-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "K. Bridgewood".

Kirk Bridgewood
General Manager





Summary of Chemical Analysis

Soil Samples

Our Ref 22-21834
Client Ref PN224453
Contract Title Wrexham AFC - Kop Stand Redevelopment

Test		Method	LOD	Units
Inorganics				
pH		DETSC 2008#		pH
Sulphate Aqueous Extract as SO4		DETSC 2076#	10	mg/l

2077750	2077751	2077752	2077753	2077754	2077755	2077756	2077757	2077758
BH100	BH100	BH100	BH100	BH101	BH101	BH101	BH102	BH102
1.20-1.65	3.00-3.45	13.50	26.00-26.45	2.00-2.45	10.50	13.50	2.00-2.45	15.50-15.95
SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
28/09/2022	28/09/2022	30/09/2022	30/09/2022	06/10/2022	07/10/2022	12/10/2022	12/10/2022	12/10/2022
n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Information in Support of the Analytical Results

Our Ref 22-21834
 Client Ref PN224453
 Contract Wrexham AFC - Kop Stand Redevelopment

Containers Received & Deviating Samples

Lab No	Sample ID	Date		Containers Received	Holding time exceeded for tests	Inappropriate container for tests
		Sampled				
2077750	BH100 1.20-1.65 SOIL	28/09/22	PT 1L		pH + Conductivity (7 days)	
2077751	BH100 3.00-3.45 SOIL	28/09/22	PT 1L		pH + Conductivity (7 days)	
2077752	BH100 13.50 SOIL	30/09/22	PT 1L		pH + Conductivity (7 days)	
2077753	BH100 26.00-26.45 SOIL	30/09/22	PT 1L		pH + Conductivity (7 days)	
2077754	BH101 2.00-2.45 SOIL	06/10/22	PT 1L		pH + Conductivity (7 days)	
2077755	BH101 10.50 SOIL	07/10/22	PT 1L		pH + Conductivity (7 days)	
2077756	BH101 13.50 SOIL	12/10/22	PT 1L		pH + Conductivity (7 days)	
2077757	BH102 2.00-2.45 SOIL	12/10/22	PT 1L		pH + Conductivity (7 days)	
2077758	BH102 15.50-15.95 SOIL	12/10/22	PT 1L		pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

Laboratory Test Certificate

Form REP008 Rev 3

Geotechnics Ltd The Geotechnical Centre 203 Torrington Avenue Tile Hill Coventry, CV4 9AP		Date of issue	06.04.2023
		Issue No.	1
		Client Ref. No.	N/A
		Samples / Material Source	
		Samples Recv'd	08.03.2023
Testing Start Date	13.03.2023	Sample State	As received
Testing Complete	04.04.2023	Sampled by	Geotechnics Limited
Comments			
Project No	PN224453		
Project Name	Wrexham FC : New Kop Stand - Ground Investigation - Schedule 3		
Summary of Tests			
Standard	Test Description	Test Quantity	UKAS
BS EN ISO 17892-1:2014	Water Content	3	Yes
BS EN ISO 17892-12:2018 Cl. 5.3 & 5.5	Liquid Limit and Plastic Limit (4 Points Method)	3	Yes
BS EN ISO 17892-4:2016 Cl. 5.2	Particle Size Distribution by Sieving Method	22	Yes
BS EN ISO 17892-4:2016 Cl. 5.4	Particle Size Distribution by Pipette Method	3	Yes
BS EN ISO 17892-8:2018	Shear Strength by Unconsolidated Undrained Triaxial Test - Single Stage	1	Yes

Note: Any descriptions, opinions or interpretations are outside the scope of UKAS accreditation.
 The results within this report relate only to the samples tested and received from the client.



Test Results checked and approved for issue.
 Signed for and on behalf of Geotechnics Limited

[Signature]
Will Elson (Laboratory Systems Manager)

GEOTECHNICS
 geotechnical and geoenvironmental specialists

203 Torrington Avenue, Tile Hill,
 Coventry, CV4 9UT

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

All tests performed in accordance with BS EN ISO 17892 unless specified otherwise.

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sp - small pykno

qi - gas jar (BS1377)

11/04/2023

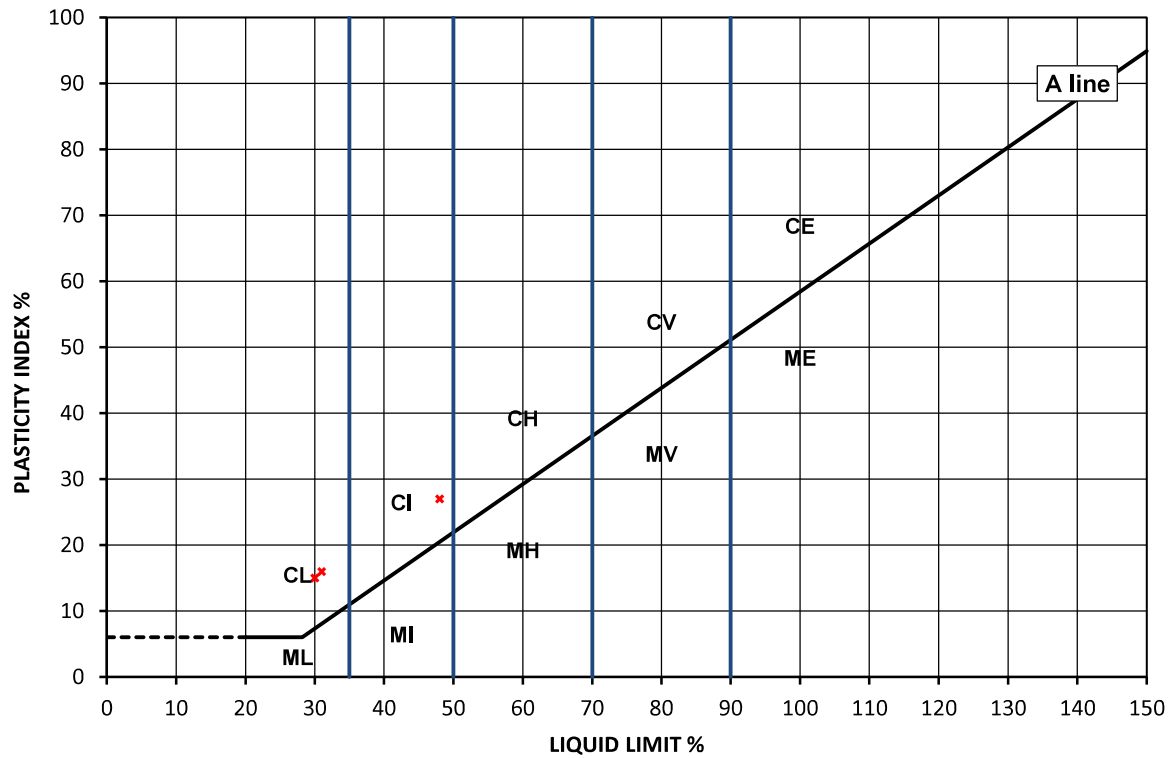


1365

Plasticity Chart

Project No.
PN224453 Phase 2

Project Name
Wrexham FC : New Kop Stand - Ground Investigation



Legend, based on BS 5930:1999 +A2: 2010 Code of practice for site investigations

Plasticity		Liquid Limit
C	Clay	L Low below 35
M	Silt	I Medium 35 to 50
		H High 50 to 70
		V Very high 70 to 90
		E Extremely high exceeding 90
Organic	O	append to classification for organic material (eg CHO)

Notes

Plotted test results from BS EN ISO 17892-12 includes 4pt and 1pt tests unless otherwise detailed on the classification summary report. See individual results for more detail.

A' line derivation above PI of 6, PI = 0.73 (LL-20)

Date Printed

06/04/2023

Sheet

1

Project No.	PN224453 Phase 2
Hole No.	BH106
Sample ID.	
Depth	14.00 m
Sample Type	UT
Date of Test	09/03/2023

Project Name	Wrexham FC : New Kop Stand - Ground Investigation		
Specimen Reference	2	Specimen Depth	14.24 m
Specimen Description	Extremely high strength reddish brown slightly sandy slightly gravelly CLAY.		
Test Method	BS EN ISO 17892-8		

Test Number
Length
Diameter
Bulk Density
Water Content
Dry Density

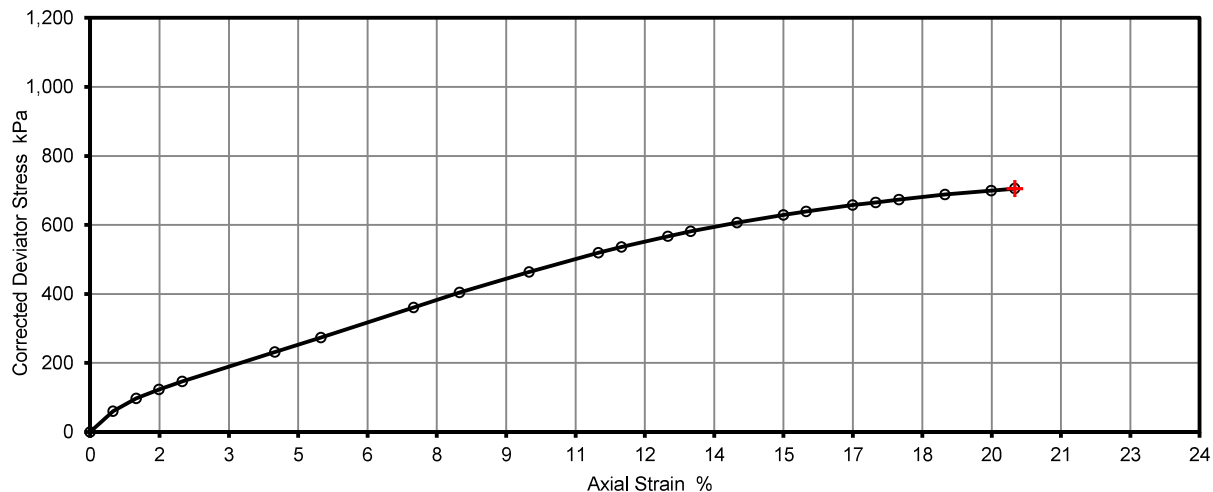
1	
210.3	mm
104.3	mm
2.24	Mg/m3
13.2	%
1.98	Mg/m3

Rate of Strain
Cell Pressure
At failure

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

1.8	%/min
275	kPa
20.0	%
705	kPa
353	kPa $\frac{1}{2}(\sigma_1 - \sigma_3)$ f
Plastic	

Deviator Stress v Axial Strain



Remarks

WC at failure zone = 13.5% Gravel larger than one sixth of the diameter of the sample present, this may affect the test result.

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PARTICLE SIZE DISTRIBUTION

Hole No.

BH104

Sample No.

Project Number:

PN224453 Phase 2

Depth

0.00 - 0.50

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

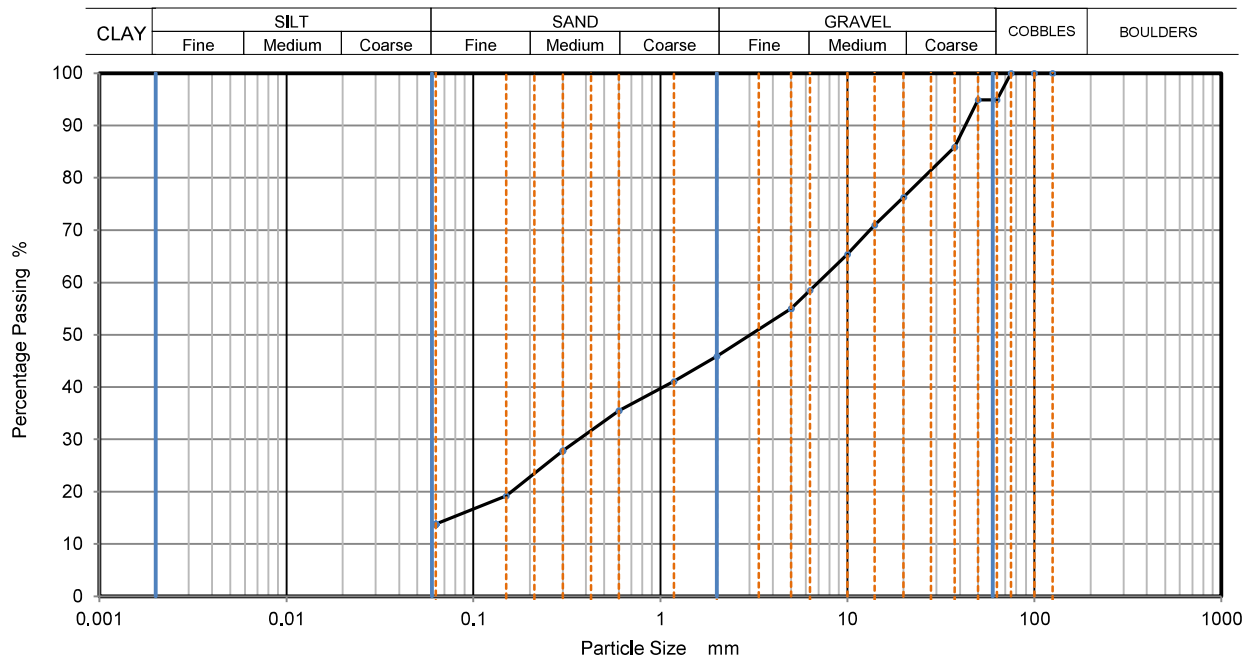
MADE GROUND: Dark brown very sandy clayey gravel with a medium cobble content.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	95		
50	95		
37.5	86		
20	76		
14	71		
10	65		
6.3	59		
5	55		
2	46		
1.18	41		
0.6	36		
0.3	28		
0.15	19		
0.063	14		

Sample Proportions		% dry mass
Cobbles		5
Gravel		49
Sand		32
Fines <0.063mm		14

Grading Analysis		
D100	mm	75
D60	mm	6.98
D30	mm	0.365
D10	mm	
Uniformity Coefficient		

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

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PARTICLE SIZE DISTRIBUTION

Hole No.

BH104

Sample No.

Project Number:

PN224453 Phase 2

Depth

1.20

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

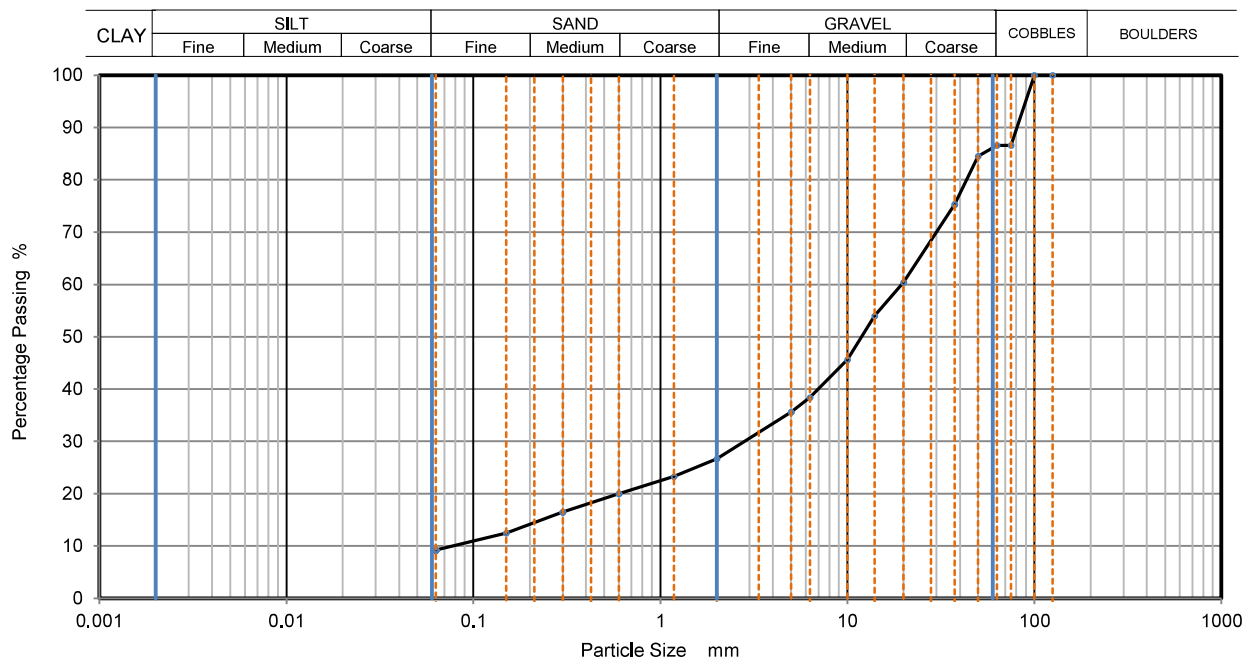
MADE GROUND: Brown sandy clayey gravel with a medium cobble content.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	87		
63	87		
50	85		
37.5	75		
20	60		
14	54		
10	46		
6.3	38		
5	36		
2	27		
1.18	23		
0.6	20		
0.3	17		
0.15	13		
0.063	9		

Sample Proportions		% dry mass
Cobbles		13
Gravel		60
Sand		18
Fines <0.063mm		9

Grading Analysis		
D100	mm	100
D60	mm	19.6
D30	mm	2.81
D10	mm	0.0784
Uniformity Coefficient		250

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

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PARTICLE SIZE DISTRIBUTION

Hole No.

BH104

Sample No.

Project Number:

PN224453 Phase 2

Depth

3.00

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

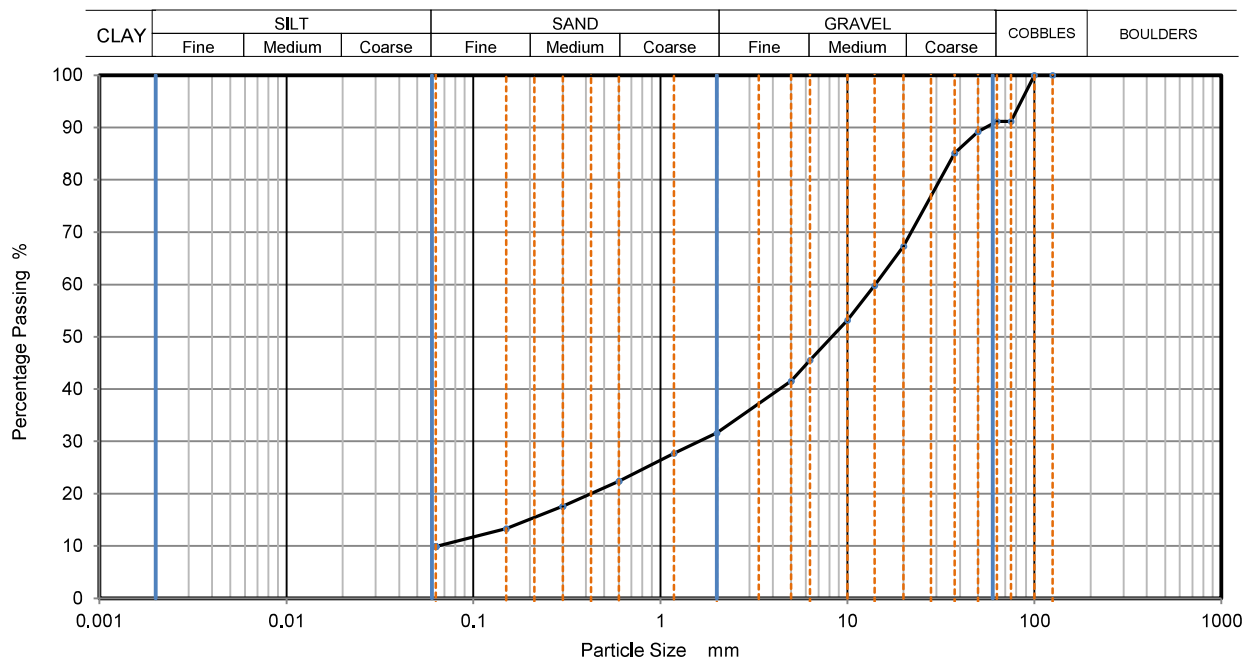
Brown very sandy clayey GRAVEL with a medium cobble content.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	91		
63	91		
50	89		
37.5	85		
20	67		
14	60		
10	53		
6.3	46		
5	42		
2	32		
1.18	28		
0.6	22		
0.3	18		
0.15	13		
0.063	10		

Sample Proportions		% dry mass
Cobbles		9
Gravel		59
Sand		22
Fines <0.063mm		10

Grading Analysis		
D100	mm	100
D60	mm	14.1
D30	mm	1.61
D10	mm	0.065
Uniformity Coefficient		220

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

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11/04/2023

PARTICLE SIZE DISTRIBUTION

Hole No.

BH104

Sample No.

Project Number:

PN224453 Phase 2

Depth

7.50

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

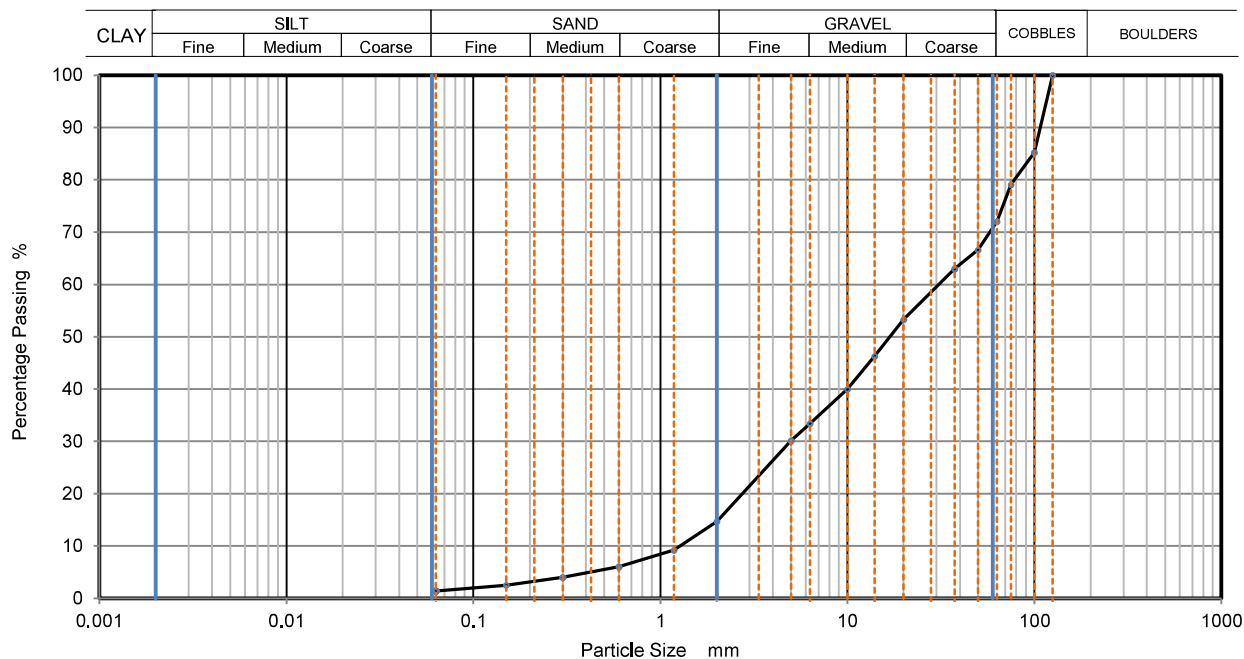
Brown sandy slightly clayey GRAVEL with a high cobble content.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	85		
75	79		
63	72		
50	67		
37.5	63		
20	53		
14	46		
10	40		
6.3	33		
5	30		
2	15		
1.18	9		
0.6	6		
0.3	4		
0.15	3		
0.063	1		

Sample Proportions		% dry mass
Cobbles		28
Gravel		58
Sand		13
Fines <0.063mm		1

Grading Analysis		
D100	mm	125
D60	mm	30.9
D30	mm	4.97
D10	mm	1.27
Uniformity Coefficient		24

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

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11/04/2023

PARTICLE SIZE DISTRIBUTION

Hole No.

BH104

Sample No.

Project Number:

PN224453 Phase 2

Depth

10,50

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

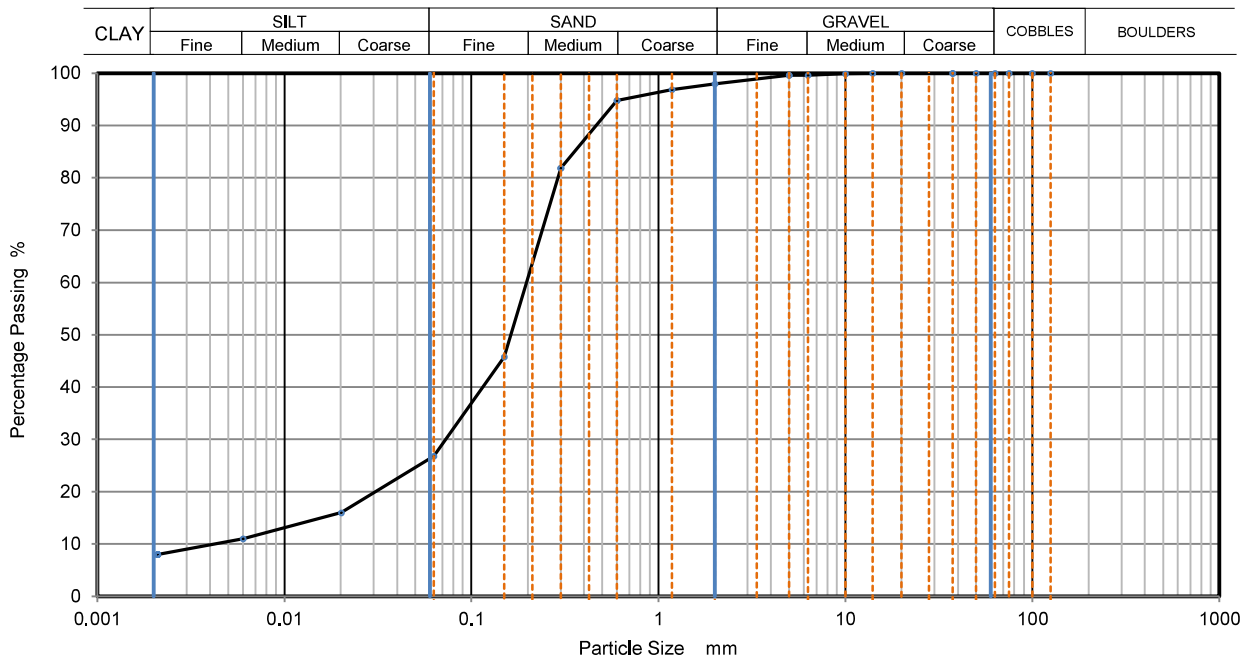
Brown very clayey SAND with traces of gravel.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving and pipette sedimentation



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	16
100	100	0.006	11
75	100	0.002	8
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	98		
1.18	97		
0.6	95		
0.3	82		
0.15	46	Particle density (assumed) 6.30 Mg/m ³	
0.063	27		

Sample Proportions		% dry mass
Cobbles		0
Gravel		2
Sand		71
Silt		19
Clay		8

Grading Analysis		
D100	mm	14
D60	mm	0.197
D30	mm	0.073
D10	mm	0.00469
Uniformity Coefficient		42

Remarks

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PARTICLE SIZE DISTRIBUTION

Hole No.

BH104

Sample No.

Project Number:

PN224453 Phase 2

Depth

13,50

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

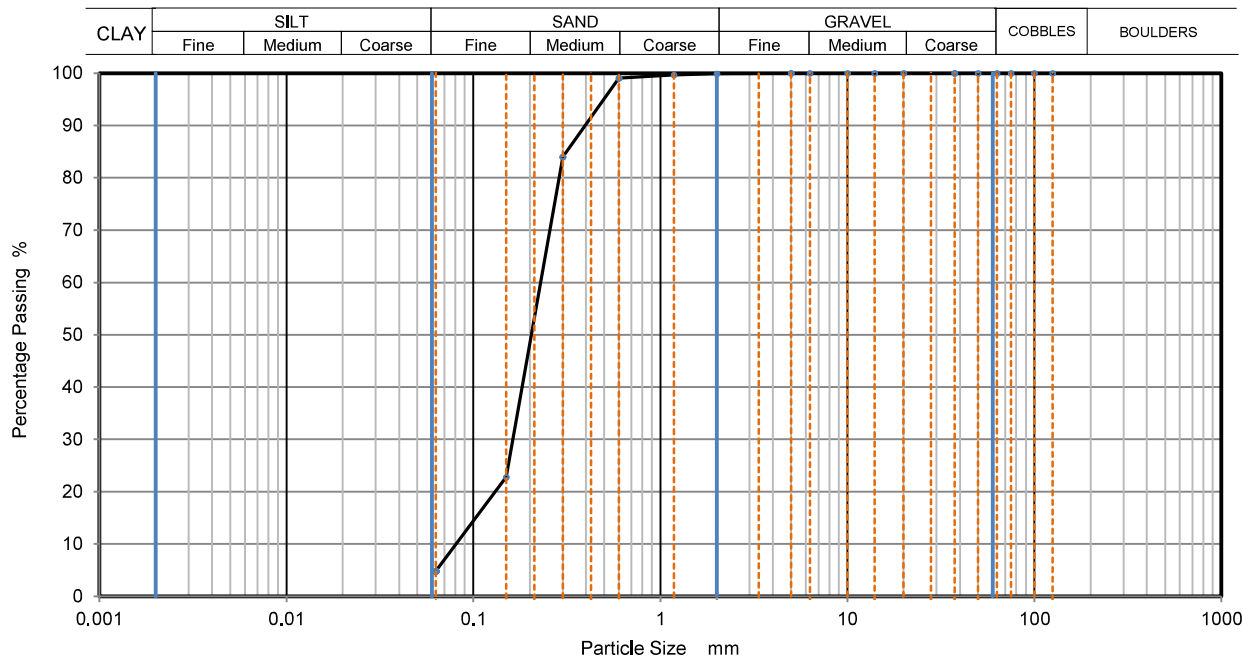
Brown clayey SAND.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	100		
0.6	99		
0.3	84		
0.15	23		
0.063	5		

Sample Proportions		% dry mass
Cobbles		0
Gravel		0
Sand		95
Fines <0.063mm		5

Grading Analysis		
D100	mm	5
D60	mm	0.229
D30	mm	0.163
D10	mm	0.0808
Uniformity Coefficient		2.8

Remarks

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11/04/2023

PARTICLE SIZE DISTRIBUTION

Hole No.

BH105

Sample No.

Project Number:

PN224453 Phase 2

Depth

0.00 - 0.50

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

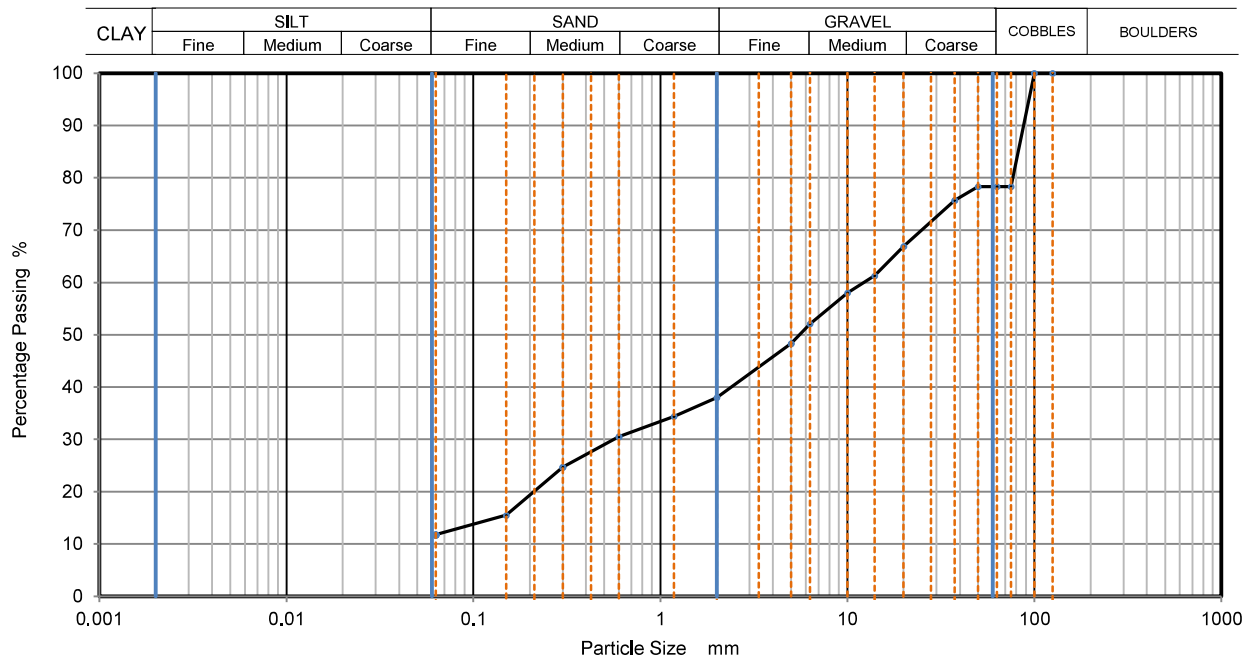
MADE GROUND: Dark brown very sandy clayey gravel with a high cobble content.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	78		
63	78		
50	78		
37.5	76		
20	67		
14	61		
10	58		
6.3	52		
5	48		
2	38		
1.18	34		
0.6	31		
0.3	25		
0.15	16		
0.063	12		

Sample Proportions		% dry mass
Cobbles		22
Gravel		40
Sand		26
Fines <0.063mm		12

Grading Analysis		
D100	mm	100
D60	mm	12.3
D30	mm	0.566
D10	mm	
Uniformity Coefficient		

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

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11/04/2023

PARTICLE SIZE DISTRIBUTION

Hole No.

BH105

Sample No.

Project Number:

PN224453 Phase 2

Depth

1.20

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

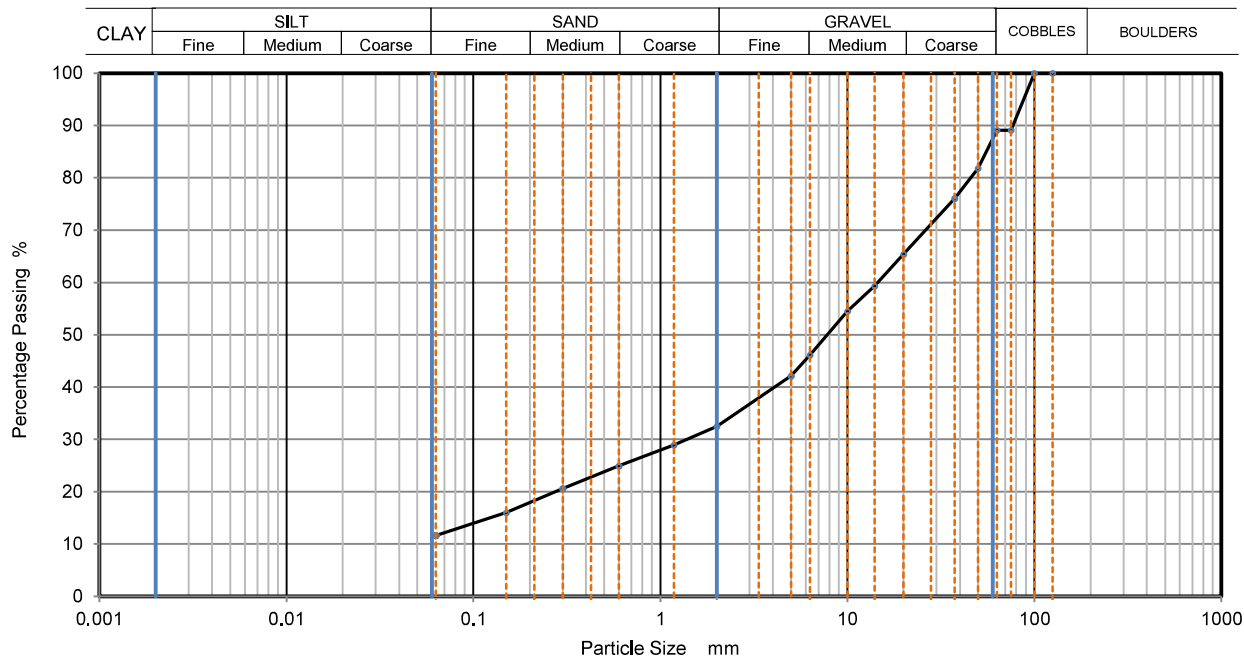
MADE GROUND: Dark brown very sandy clayey gravel with a medium cobble content.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	89		
63	89		
50	82		
37.5	76		
20	65		
14	59		
10	55		
6.3	46		
5	42		
2	33		
1.18	29		
0.6	25		
0.3	21		
0.15	16		
0.063	12		

Sample Proportions		% dry mass
Cobbles		11
Gravel		56
Sand		21
Fines <0.063mm		12

Grading Analysis		
D100	mm	100
D60	mm	14.6
D30	mm	1.38
D10	mm	
Uniformity Coefficient		

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

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11/04/2023

PARTICLE SIZE DISTRIBUTION

Hole No.

BH105

Sample No.

Project Number:

PN224453 Phase 2

Depth

2.00

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

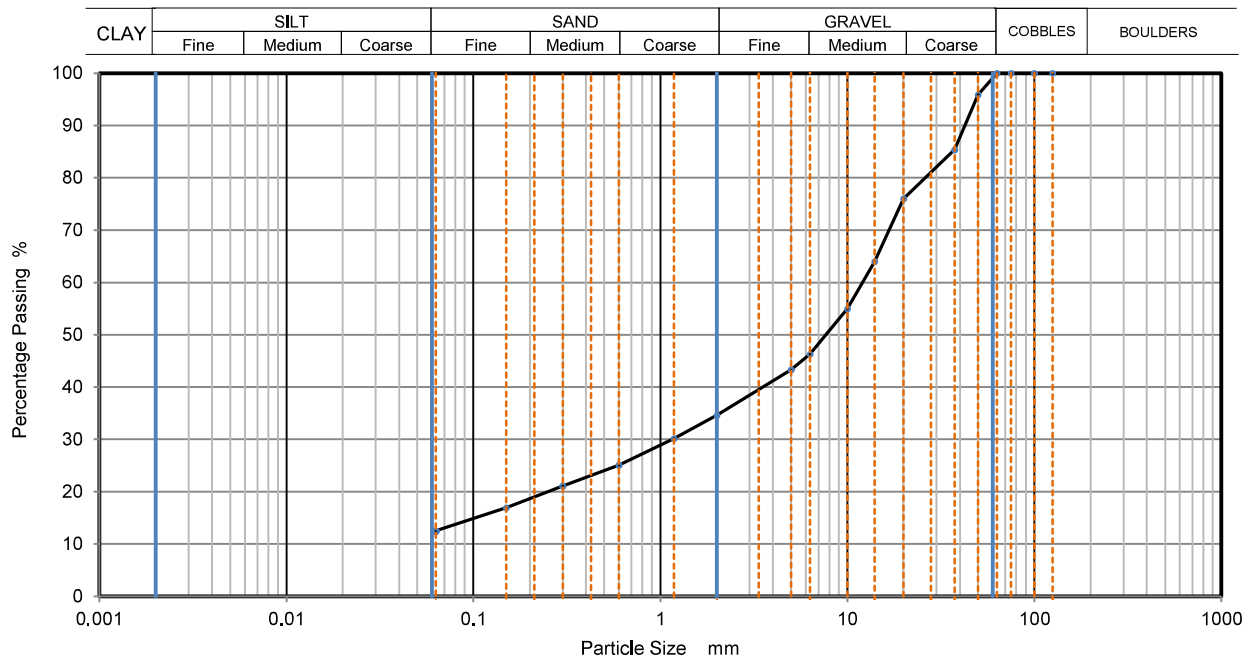
Brown very sandy clayey GRAVEL.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	96		
37.5	85		
20	76		
14	64		
10	55		
6.3	46		
5	43		
2	35		
1.18	30		
0.6	25		
0.3	21		
0.15	17		
0.063	13		

Sample Proportions		% dry mass
Cobbles		0
Gravel		65
Sand		22
Fines <0.063mm		13

Grading Analysis		
D100	mm	63
D60	mm	12
D30	mm	1.14
D10	mm	
Uniformity Coefficient		

Remarks

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11/04/2023

PARTICLE SIZE DISTRIBUTION

Hole No.

BH105

Sample No.

Project Number:

PN224453 Phase 2

Depth

5.00

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

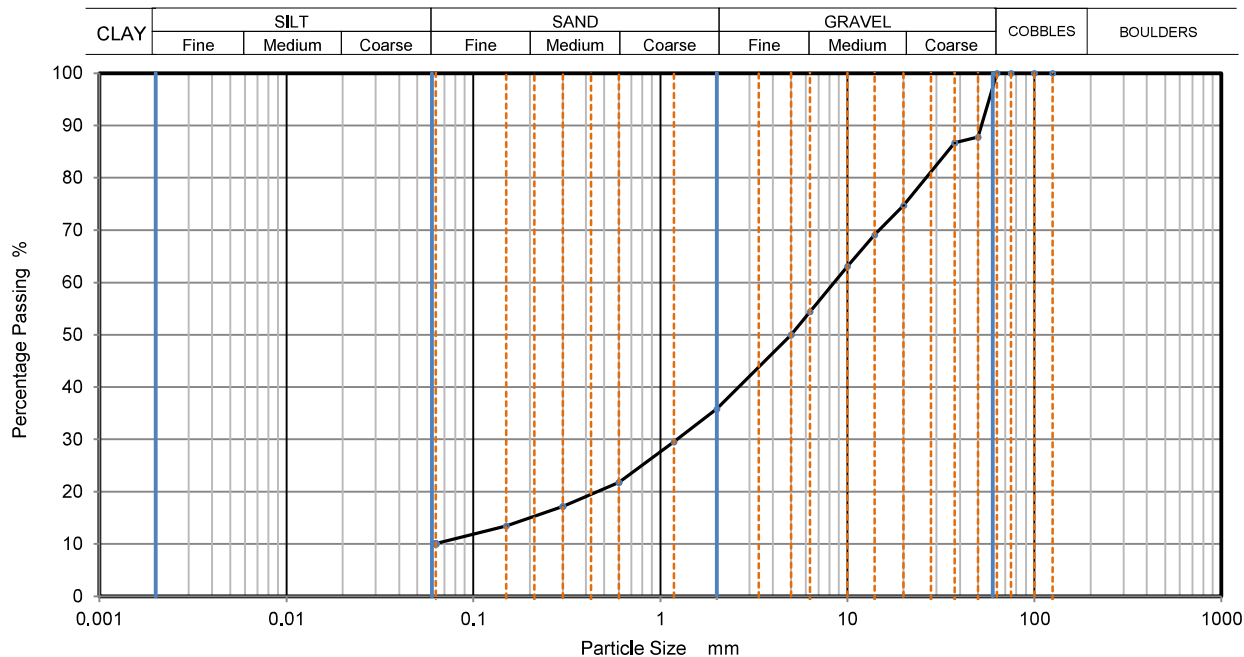
Brownish grey very sandy clayey GRAVEL.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	88		
37.5	87		
20	75		
14	69		
10	63		
6.3	54		
5	50		
2	36		
1.18	30		
0.6	22		
0.3	17		
0.15	14		
0.063	10		

Sample Proportions		% dry mass
Cobbles		0
Gravel		64
Sand		26
Fines <0.063mm		10

Grading Analysis		
D100	mm	63
D60	mm	8.48
D30	mm	1.23
D10	mm	
Uniformity Coefficient		

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

Printed

11/04/2023

PARTICLE SIZE DISTRIBUTION

Hole No.

BH105

Sample No.

Project Number:

PN224453 Phase 2

Depth

8.00

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

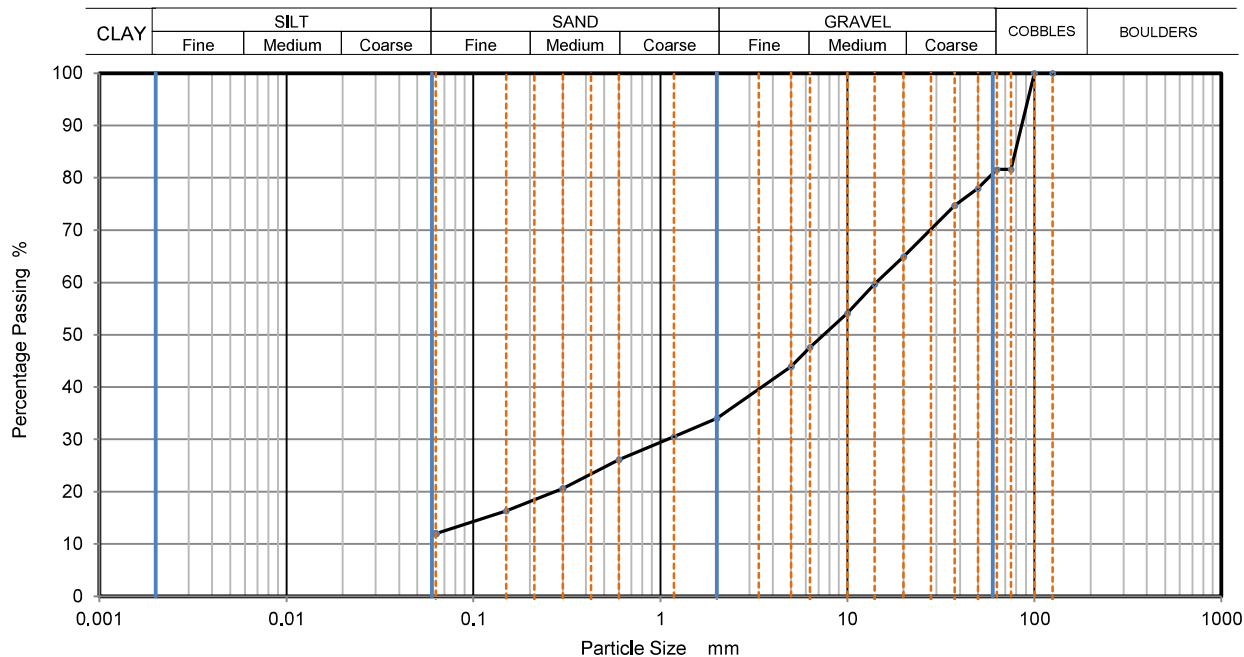
Dark brown very sandy clayey GRAVEL with a medium cobble content.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	82		
63	82		
50	78		
37.5	75		
20	65		
14	60		
10	54		
6.3	48		
5	44		
2	34		
1.18	31		
0.6	26		
0.3	21		
0.15	16		
0.063	12		

Sample Proportions		% dry mass
Cobbles		18
Gravel		48
Sand		22
Fines <0.063mm		12

Grading Analysis		
D100	mm	100
D60	mm	14.3
D30	mm	1.09
D10	mm	
Uniformity Coefficient		

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

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11/04/2023

PARTICLE SIZE DISTRIBUTION

Hole No.

BH105

Sample No.

Project Number:

PN224453 Phase 2

Depth

12.50

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

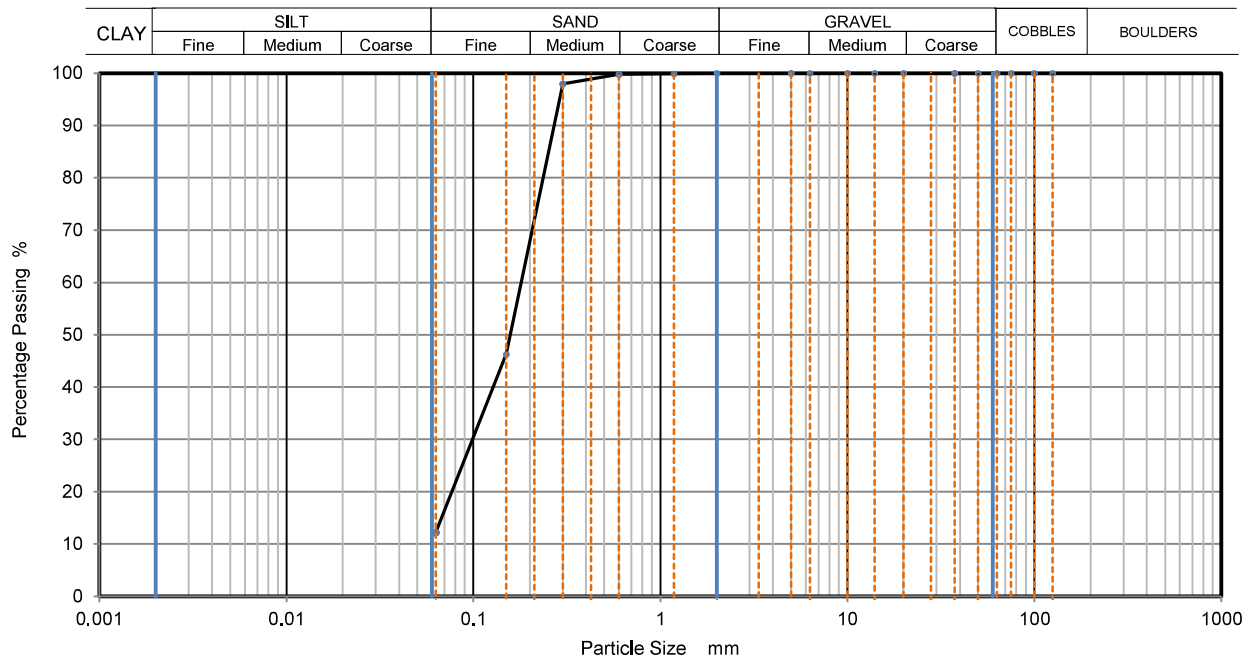
Brown clayey SAND.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	100		
0.6	100		
0.3	98		
0.15	46		
0.063	12		

Sample Proportions		% dry mass
Cobbles		0
Gravel		0
Sand		88
Fines <0.063mm		12

Grading Analysis		
D100	mm	2
D60	mm	0.18
D30	mm	0.0991
D10	mm	
Uniformity Coefficient		

Remarks

Printed

11/04/2023

PARTICLE SIZE DISTRIBUTION

Hole No.

BH105

Sample No.

Project Number:

PN224453 Phase 2

Depth

14.00

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

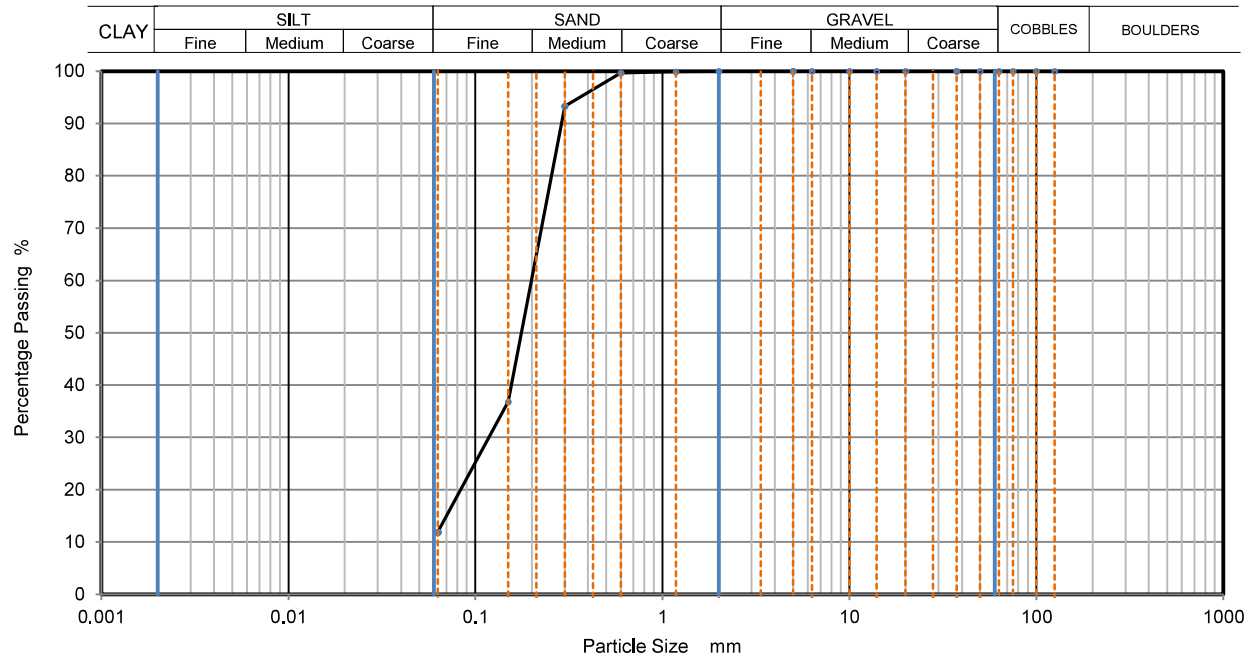
Brown clayey SAND.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	100		
0.6	100		
0.3	93		
0.15	37		
0.063	12		

Sample Proportions		% dry mass
Cobbles		0
Gravel		0
Sand		88
Fines <0.063mm		12

Grading Analysis		
D100	mm	2
D60	mm	0.199
D30	mm	0.118
D10	mm	
Uniformity Coefficient		

Remarks

Printed

11/04/2023

PARTICLE SIZE DISTRIBUTION

Hole No.

BH106

Sample No.

Project Number:

PN224453 Phase 2

Depth

0.00 - 0.50

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

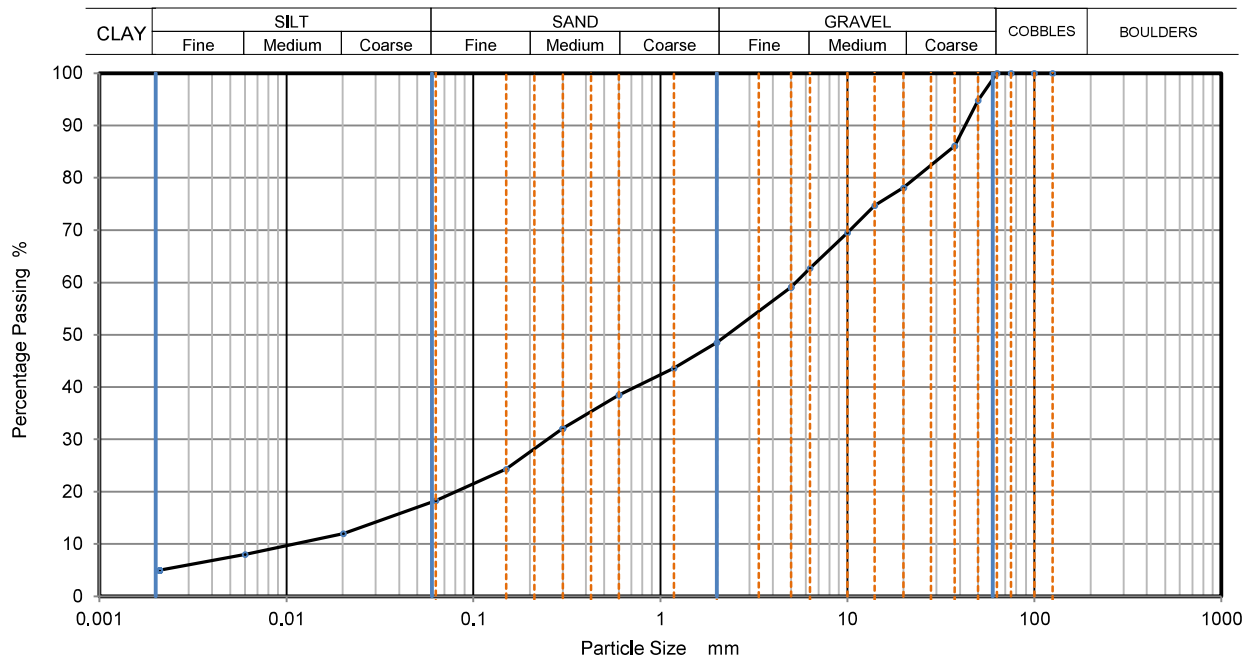
MADE GROUND: Dark brown very sandy clayey gravel.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving and pipette sedimentation



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	12
100	100	0.006	8
75	100	0.002	5
63	100		
50	95		
37.5	86		
20	78		
14	75		
10	70		
6.3	63		
5	59		
2	49		
1.18	44		
0.6	39		
0.3	32		
0.15	24	Particle density (assumed) 2.65 Mg/m ³	
0.063	18		

Sample Proportions		% dry mass
Cobbles		0
Gravel		52
Sand		30
Silt		13
Clay		5

Grading Analysis		
D100	mm	63
D60	mm	5.31
D30	mm	0.249
D10	mm	0.0106
Uniformity Coefficient		500

Remarks

Printed

11/04/2023

PARTICLE SIZE DISTRIBUTION

Hole No.

BH106

Sample No.

Project Number:

PN224453 Phase 2

Depth

1.20

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

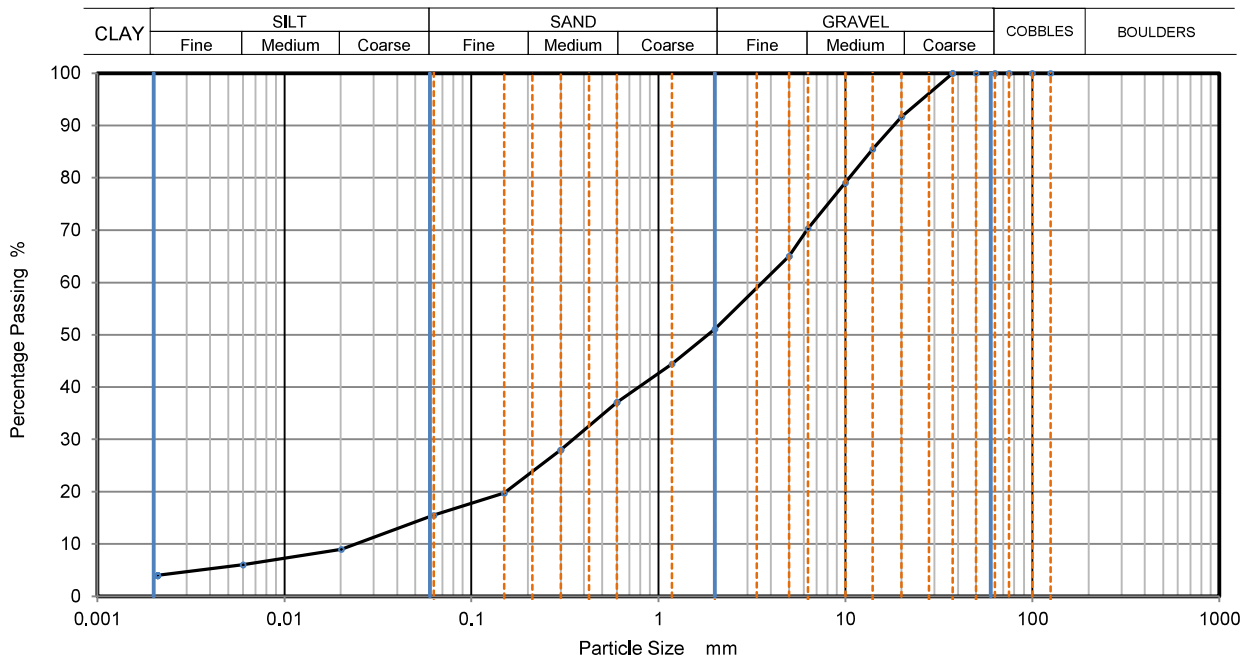
MADE GROUND: Brown very sandy clayey gravel.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving and pipette sedimentation



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	9
100	100	0.006	6
75	100	0.002	4
63	100		
50	100		
37.5	100		
20	92		
14	86		
10	79		
6.3	70		
5	65		
2	51		
1.18	44		
0.6	37		
0.3	28		
0.15	20	Particle density (assumed) 2.65 Mg/m3	
0.063	16		

Sample Proportions		% dry mass
Cobbles		0
Gravel		48
Sand		36
Silt		12
Clay		4

Grading Analysis		
D100	mm	37.5
D60	mm	3.6
D30	mm	0.35
D10	mm	0.0231
Uniformity Coefficient		160

Remarks

Printed

11/04/2023

PARTICLE SIZE DISTRIBUTION

Hole No.

BH106

Sample No.

Project Number:

PN224453 Phase 2

Depth

3.00

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

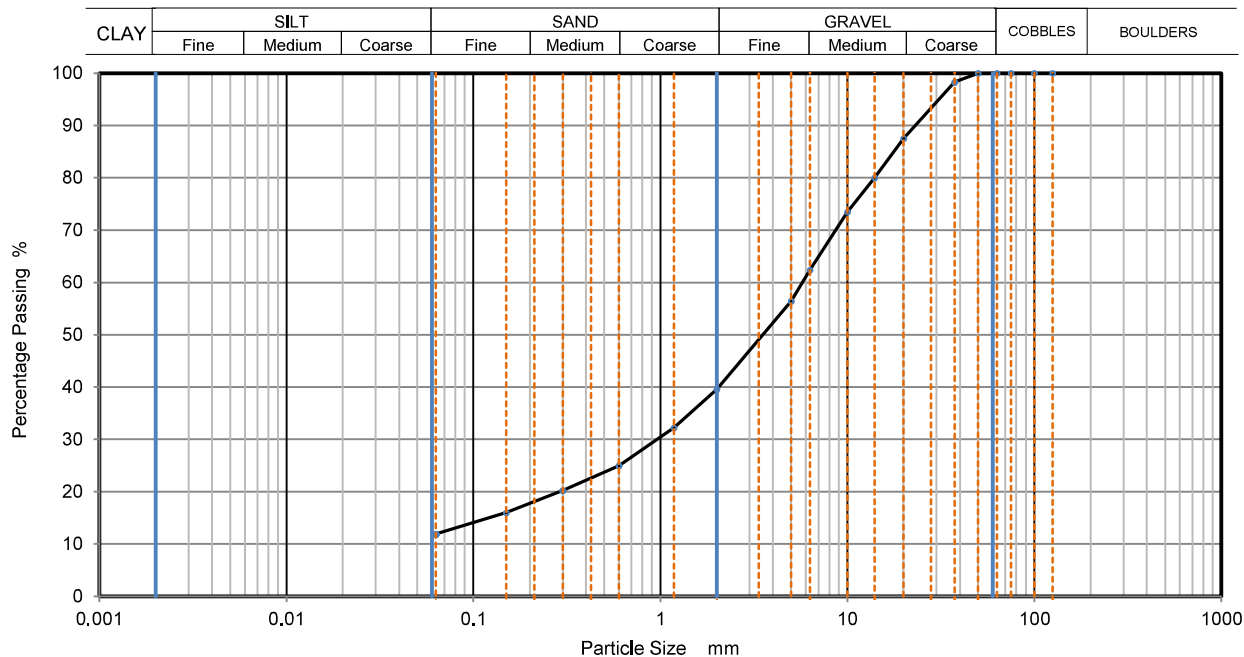
Brown very sandy clayey GRAVEL.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	98		
20	88		
14	80		
10	74		
6.3	62		
5	56		
2	40		
1.18	32		
0.6	25		
0.3	20		
0.15	16		
0.063	12		

Sample Proportions		% dry mass
Cobbles		0
Gravel		60
Sand		28
Fines <0.063mm		12

Grading Analysis		
D100	mm	50
D60	mm	5.74
D30	mm	0.96
D10	mm	
Uniformity Coefficient		

Remarks

Printed

11/04/2023

PARTICLE SIZE DISTRIBUTION

Hole No.

BH106

Sample No.

Project Number:

PN224453 Phase 2

Depth

4.00

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

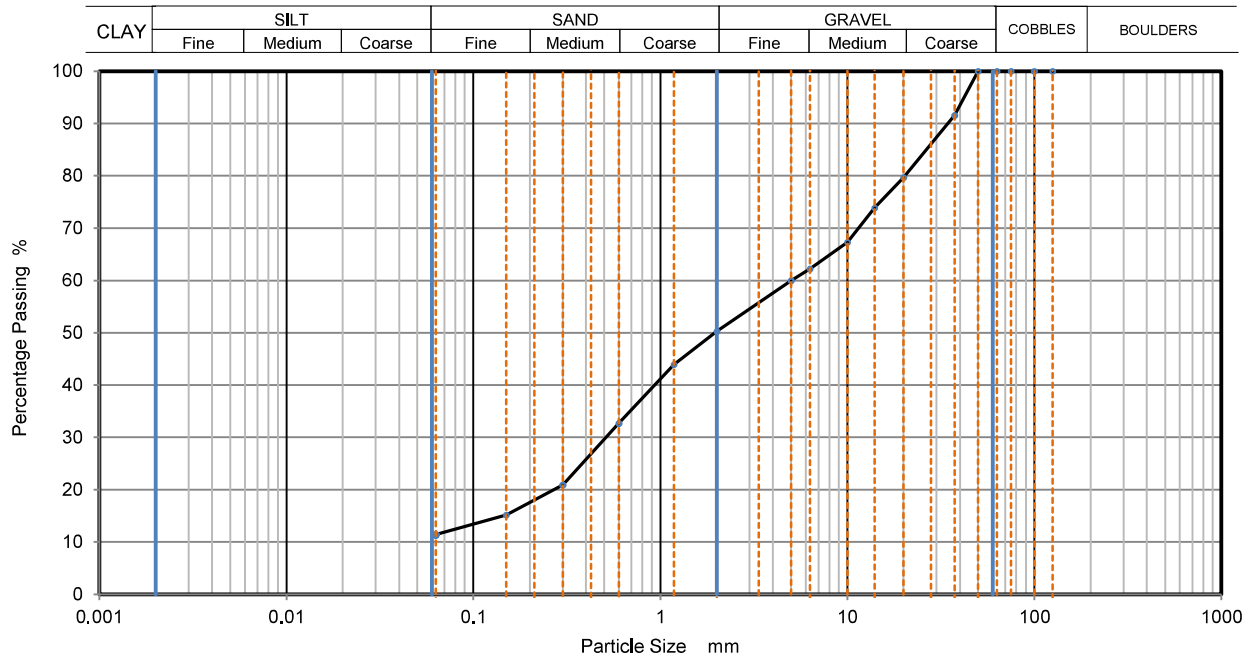
Brown very sandy clayey GRAVEL.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	92		
20	80		
14	74		
10	67		
6.3	62		
5	60		
2	50		
1.18	44		
0.6	33		
0.3	21		
0.15	15		
0.063	11		

Sample Proportions		% dry mass
Cobbles		0
Gravel		50
Sand		39
Fines <0.063mm		11

Grading Analysis		
D100	mm	50
D60	mm	5.01
D30	mm	0.511
D10	mm	
Uniformity Coefficient		

Remarks

Printed

11/04/2023

PARTICLE SIZE DISTRIBUTION

Hole No.

BH106

Sample No.

Project Number:

PN224453 Phase 2

Depth

6.50

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

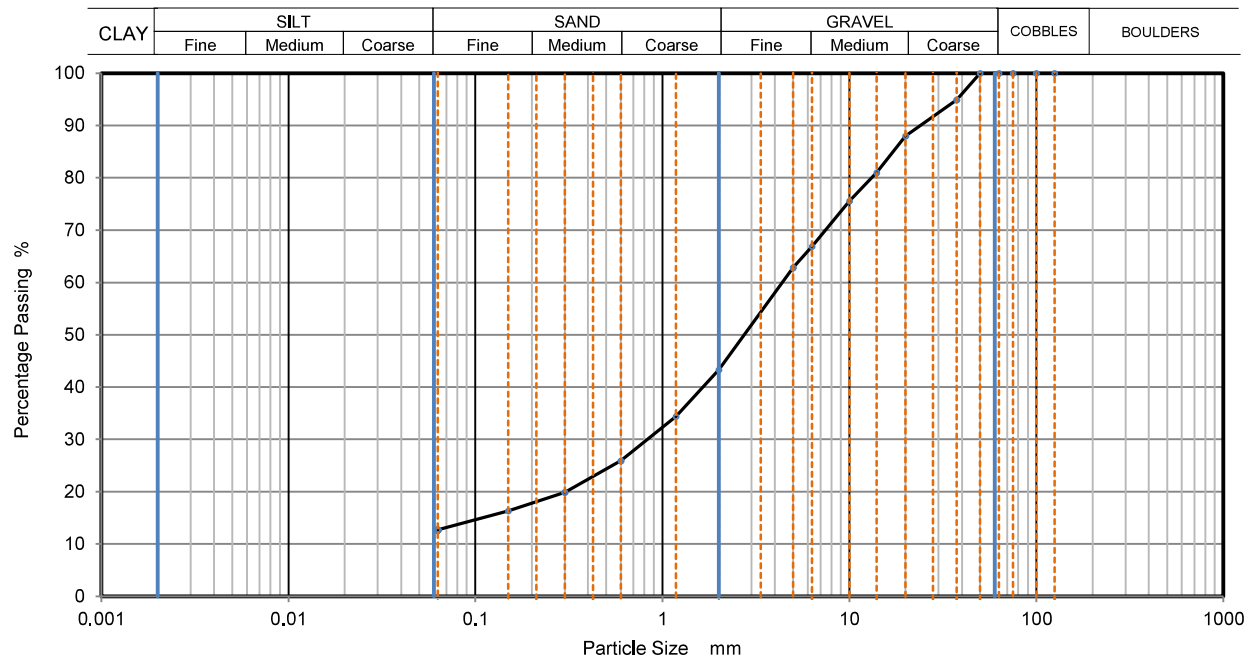
Dark brown very sandy clayey GRAVEL.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	95		
20	88		
14	81		
10	76		
6.3	67		
5	63		
2	43		
1.18	34		
0.6	26		
0.3	20		
0.15	16		
0.063	13		

Sample Proportions		% dry mass
Cobbles		0
Gravel		56
Sand		31
Fines <0.063mm		13

Grading Analysis		
D100	mm	50
D60	mm	4.39
D30	mm	0.834
D10	mm	
Uniformity Coefficient		

Remarks

Printed

11/04/2023

PARTICLE SIZE DISTRIBUTION

Hole No.

BH106

Sample No.

Project Number:

PN224453 Phase 2

Depth

8.00

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

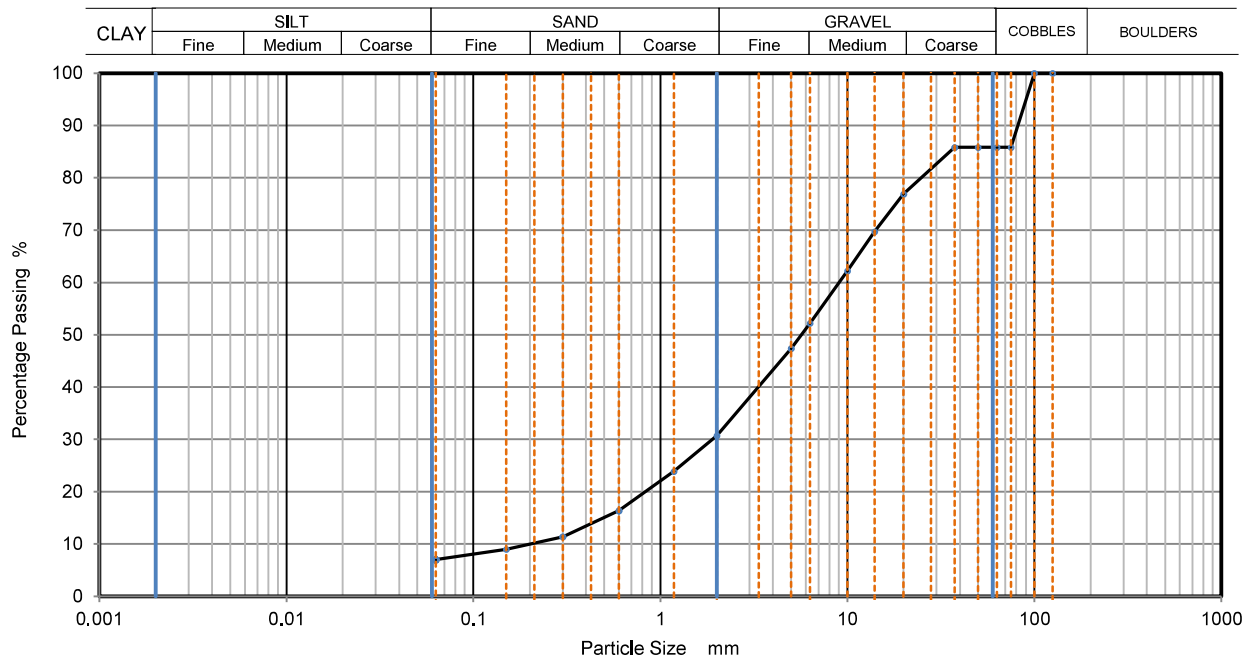
Dark brown very sandy clayey GRAVEL with a medium cobble content.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	86		
63	86		
50	86		
37.5	86		
20	77		
14	70		
10	62		
6.3	52		
5	47		
2	31		
1.18	24		
0.6	16		
0.3	11		
0.15	9		
0.063	7		

Sample Proportions		% dry mass
Cobbles		14
Gravel		55
Sand		24
Fines <0.063mm		7

Grading Analysis		
D100	mm	100
D60	mm	9.01
D30	mm	1.9
D10	mm	0.198
Uniformity Coefficient		46

Remarks

Printed

11/04/2023

PARTICLE SIZE DISTRIBUTION

Hole No.

BH106

Sample No.

Project Number:

PN224453 Phase 2

Depth

11.00

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

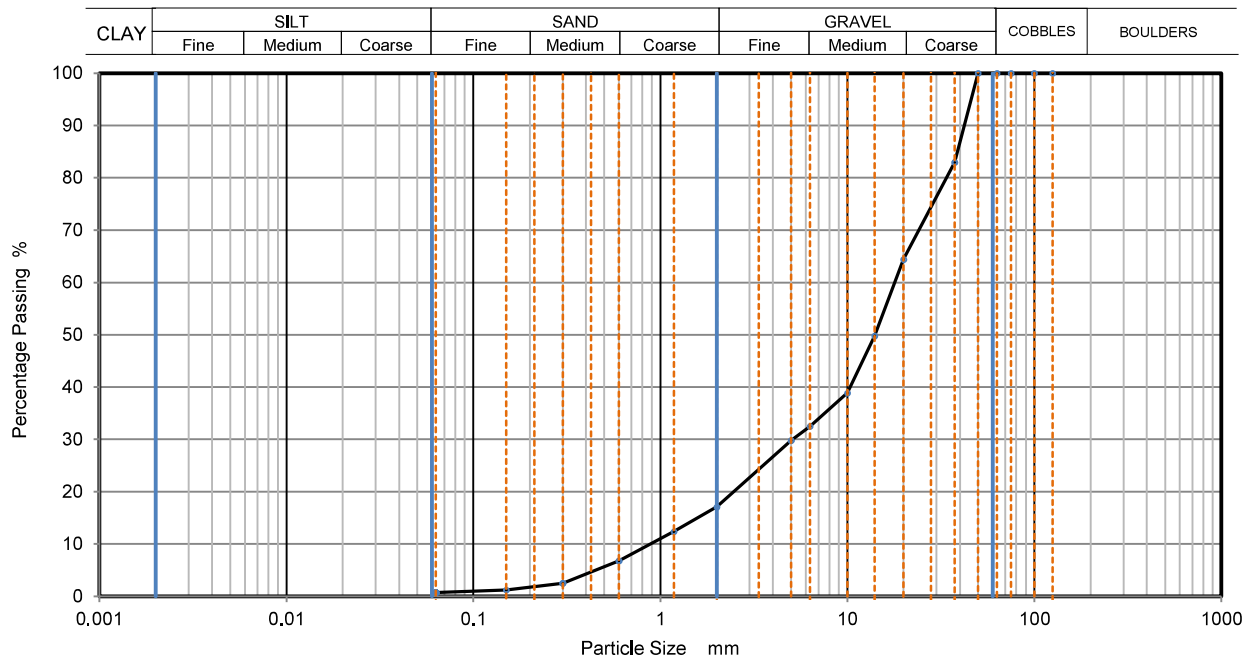
Brown sandy slightly clayey GRAVEL.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	83		
20	64		
14	50		
10	39		
6.3	33		
5	30		
2	17		
1.18	12		
0.6	7		
0.3	3		
0.15	1		
0.063	1		

Sample Proportions		% dry mass
Cobbles		0
Gravel		83
Sand		16
Fines <0.063mm		1

Grading Analysis		
D100	mm	50
D60	mm	18
D30	mm	5.11
D10	mm	0.886
Uniformity Coefficient		20

Remarks

Printed

11/04/2023

PARTICLE SIZE DISTRIBUTION

Hole No.

BH106

Sample No.

Project Number:

PN224453 Phase 2

Depth

15.50

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

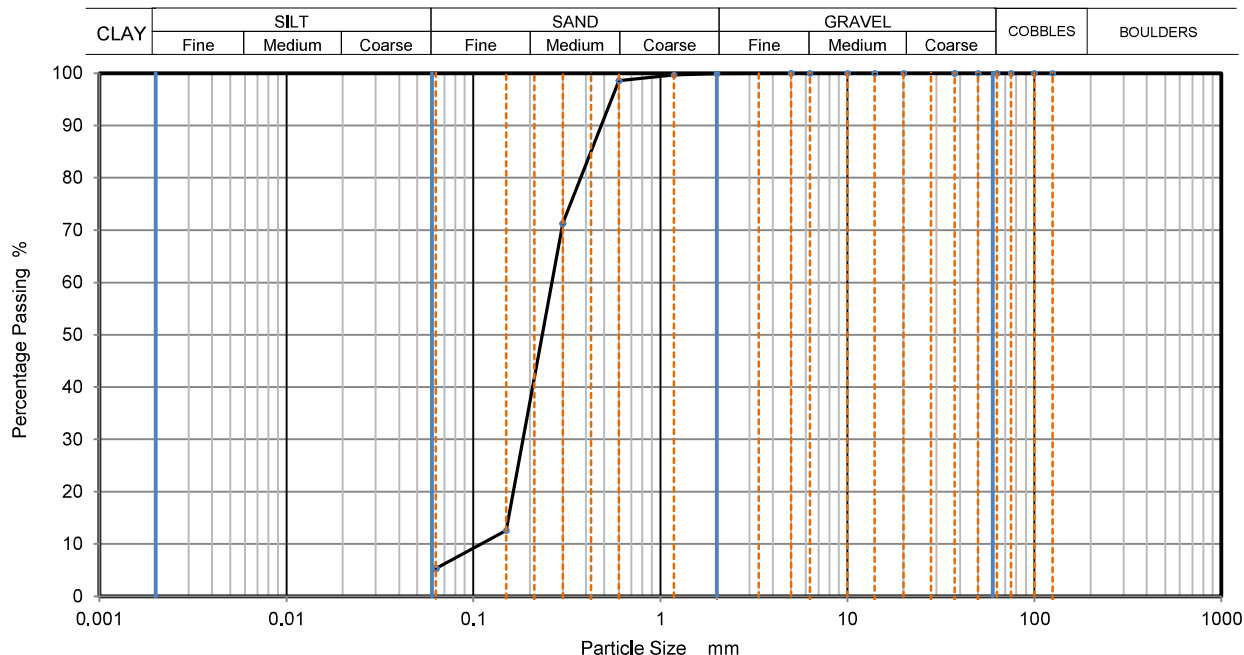
Brown clayey SAND.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	100		
0.6	99		
0.3	71		
0.15	13		
0.063	5		

Sample Proportions		% dry mass
Cobbles		0
Gravel		0
Sand		95
Fines <0.063mm		5

Grading Analysis		
D100	mm	5
D60	mm	0.262
D30	mm	0.184
D10	mm	0.11
Uniformity Coefficient		2.4

Remarks

Printed

11/04/2023

Form REP008 Rev 3

[illegible]

Note: Any descriptions, opinions or interpretations are outside the scope of UKAS accreditation.
The results within this report relate only to the samples tested and received from the client.



Test Results checked and approved for issue.
Signed for and on behalf of Geotechnics Limited

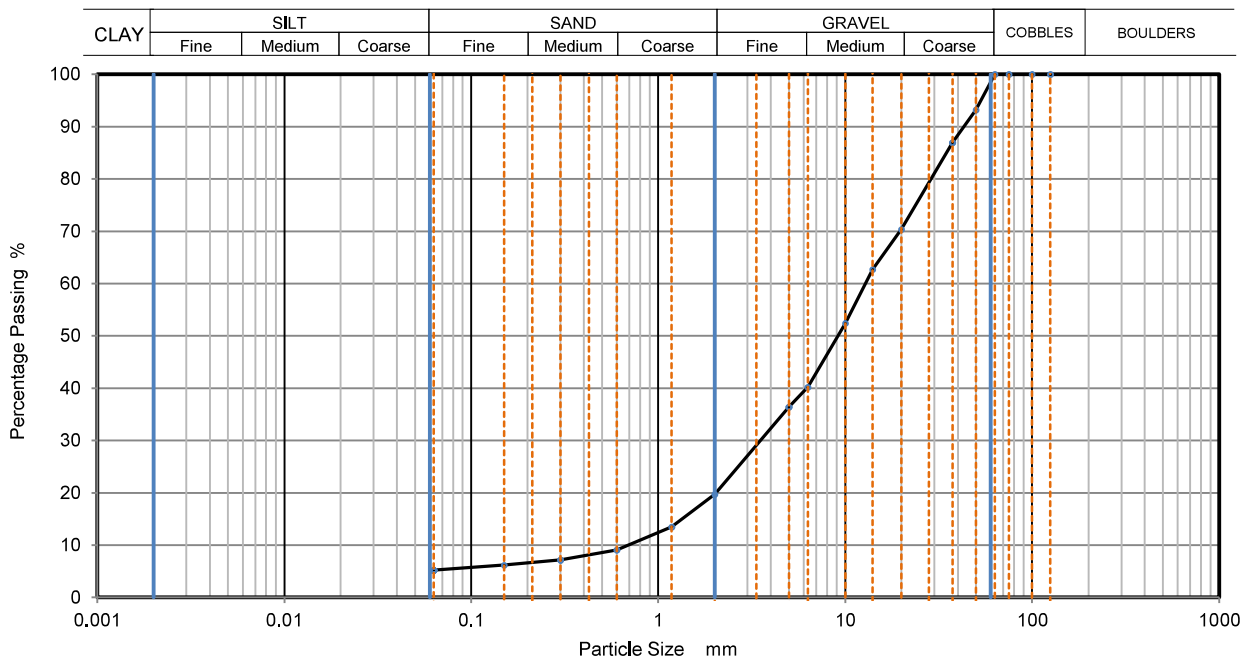

Will Elson (Laboratory Systems Manager)

GEOTECHNICS
geotechnical and geoenvironmental specialists

203 Torrington Avenue, Tile Hill,
Coventry, CV4 9UT

PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.	TP100
Sample No.	
Project Number:	PN224453 Phase 2
Depth	0.50 m
Project Name:	Wrexham FC : New Kop Stand - Ground Investigation
Sample Type	B
Specimen Description	Brown sandy clayey GRAVEL.
Specimen Depth	m
Test Method	ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	93		
37.5	87		
20	70		
14	63		
10	52		
6.3	40		
5	36		
2	20		
1.18	14		
0.6	9		
0.3	7		
0.15	6		
0.063	5		

Sample Proportions	% dry mass
Cobbles	0
Gravel	81
Sand	14
Fines <0.063mm	5

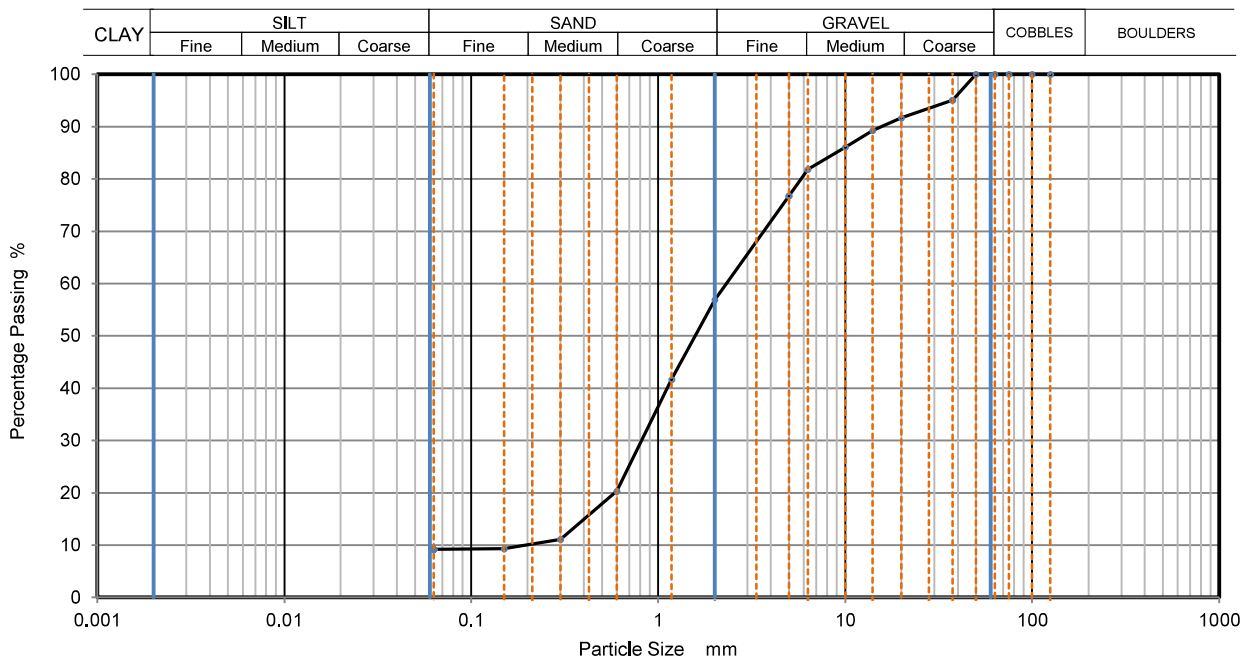
Grading Analysis	
D100	mm 63
D60	mm 12.8
D30	mm 3.53
D10	mm 0.692
Uniformity Coefficient	18

Initial sample mass less than BS EN ISO 17892 requirements

Remarks	Sheet printed	Sheet
	09/03/2023	1

PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.	TP100
Sample No.	
Depth	1.20 m
Sample Type	B
Specimen Depth	m



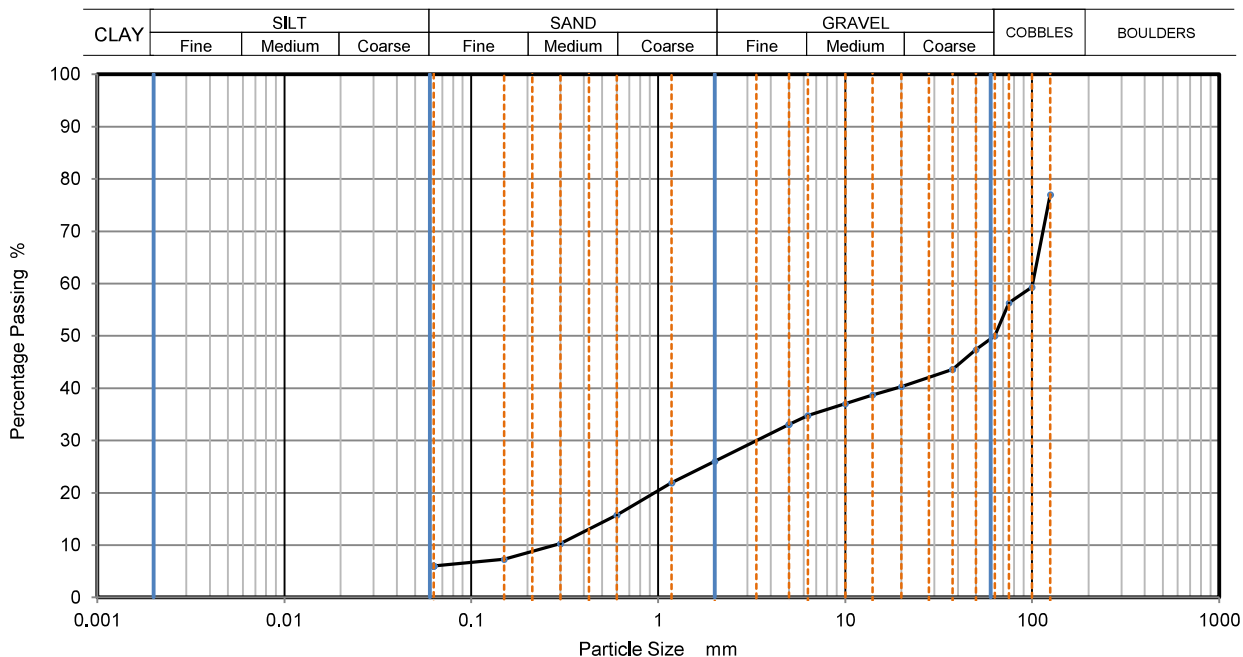
Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	95		
20	92		
14	89		
10	86		
6.3	82		
5	77		
2	57		
1.18	42		
0.6	20		
0.3	11		
0.15	9		
0.063	9		

Sample Proportions	% dry mass
Cobbles	0
Gravel	43
Sand	48
Fines <0.063mm	9

Grading Analysis	
D100	mm 50
D60	mm 2.3
D30	mm 0.815
D10	mm 0.197
Uniformity Coefficient	12

PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.	TP100
Sample No.	
Depth	2.50 m
Sample Type	B
Specimen Depth	m



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	77		
100	59		
75	56		
63	50		
50	47		
37.5	44		
20	40		
14	39		
10	37		
6.3	35		
5	33		
2	26		
1.18	22		
0.6	16		
0.3	10		
0.15	7		
0.063	6		

Sample Proportions	% dry mass
Cobbles	50
Gravel	24
Sand	20
Fines <0.063mm	6

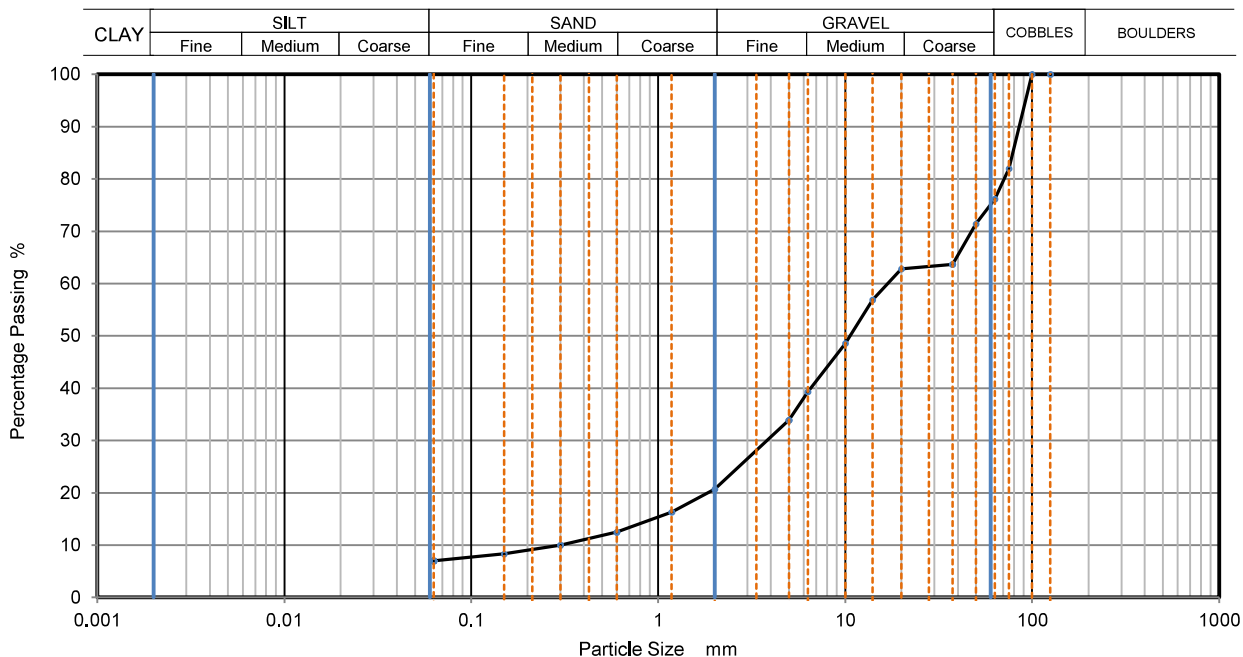
Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	

Initial sample mass less than BS EN ISO 17892 requirements

Remarks	Sheet printed	Sheet
	09/03/2023	3

PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.	TP101
Sample No.	
Depth	0.90 m
Sample Type	B
Specimen Depth	m



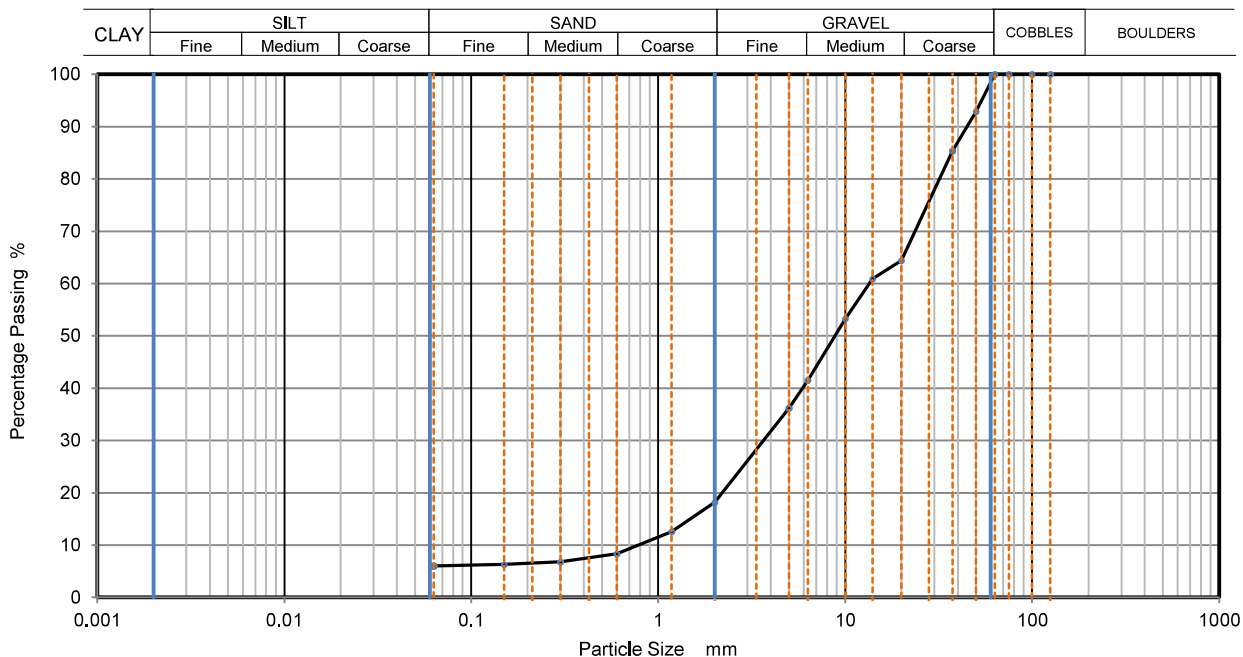
Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	82		
63	76		
50	71		
37.5	64		
20	63		
14	57		
10	49		
6.3	39		
5	34		
2	21		
1.18	16		
0.6	13		
0.3	10		
0.15	8		
0.063	7		

Sample Proportions	% dry mass
Cobbles	24
Gravel	55
Sand	14
Fines <0.063mm	7

Grading Analysis	
D100	mm 100
D60	mm 16.9
D30	mm 3.81
D10	mm 0.298
Uniformity Coefficient	57

PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.	TP101
Sample No.	
Depth	1.90 m
Sample Type	B
Specimen Depth	m



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	93		
37.5	85		
20	64		
14	61		
10	53		
6.3	42		
5	36		
2	18		
1.18	13		
0.6	8		
0.3	7		
0.15	6		
0.063	6		

Sample Proportions	% dry mass
Cobbles	0
Gravel	82
Sand	12
Fines <0.063mm	6

Grading Analysis	
D100	mm 63
D60	mm 13.4
D30	mm 3.65
D10	mm 0.786
Uniformity Coefficient	17

Initial sample mass less than BS EN ISO 17892 requirements

Remarks	Sheet printed	Sheet
	09/03/2023	5

PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.

TP102

Sample No.

Project Number:

PN224453 Phase 2

Depth

1.40

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

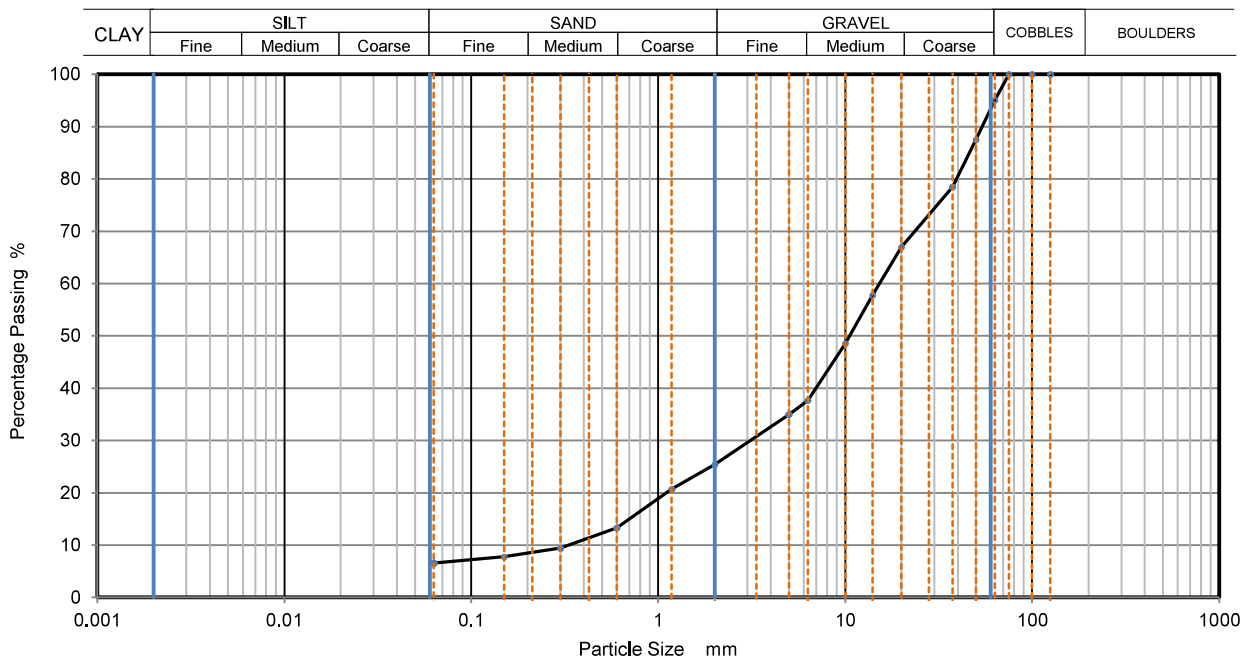
Dark brown sandy clayey GRAVEL with a medium cobble content.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	95		
50	88		
37.5	79		
20	67		
14	58		
10	49		
6.3	38		
5	35		
2	25		
1.18	21		
0.6	13		
0.3	9		
0.15	8		
0.063	7		

Sample Proportions	% dry mass
Cobbles	5
Gravel	69
Sand	19
Fines <0.063mm	7

Grading Analysis	
D100	mm 75
D60	mm 15.3
D30	mm 3.1
D10	mm 0.331
Uniformity Coefficient	46

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

Sheet printed

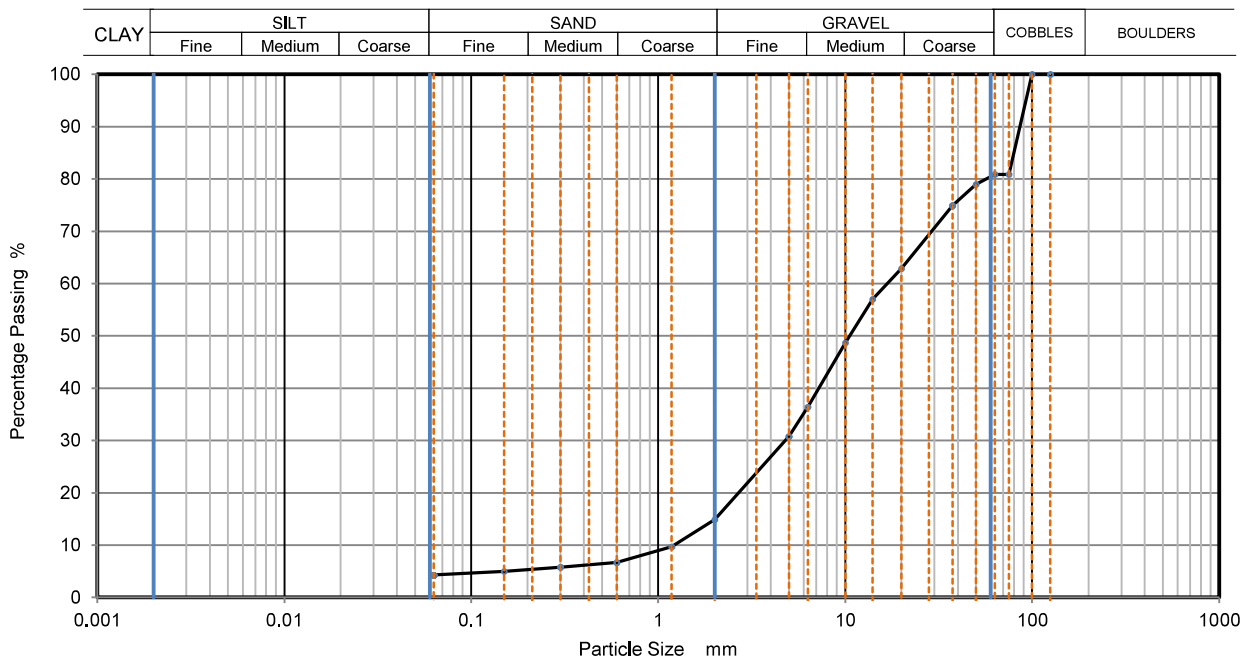
Sheet

09/03/2023

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PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.	TP103
Sample No.	
Project Number:	PN224453 Phase 2
Depth	0.90 m
Project Name:	Wrexham FC : New Kop Stand - Ground Investigation
Sample Type	B
Specimen Description	Brown sandy clayey GRAVEL with a medium cobble content.
Specimen Depth	m
Test Method	ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	81		
63	81		
50	79		
37.5	75		
20	63		
14	57		
10	49		
6.3	36		
5	31		
2	15		
1.18	10		
0.6	7		
0.3	6		
0.15	5		
0.063	4		

Sample Proportions	% dry mass
Cobbles	19
Gravel	66
Sand	11
Fines <0.063mm	4

Grading Analysis	
D100	mm 100
D60	mm 16.8
D30	mm 4.79
D10	mm 1.21
Uniformity Coefficient	14

Initial sample mass less than BS EN ISO 17892 requirements

Remarks	Sheet printed	Sheet
	09/03/2023	7

PARTICLE SIZE DISTRIBUTION

Exploratory Hole No.

TP104

Sample No.

Project Number:

PN224453 Phase 2

Depth

1.20

m

Project Name:

Wrexham FC : New Kop Stand - Ground Investigation

Sample Type

B

Specimen Description

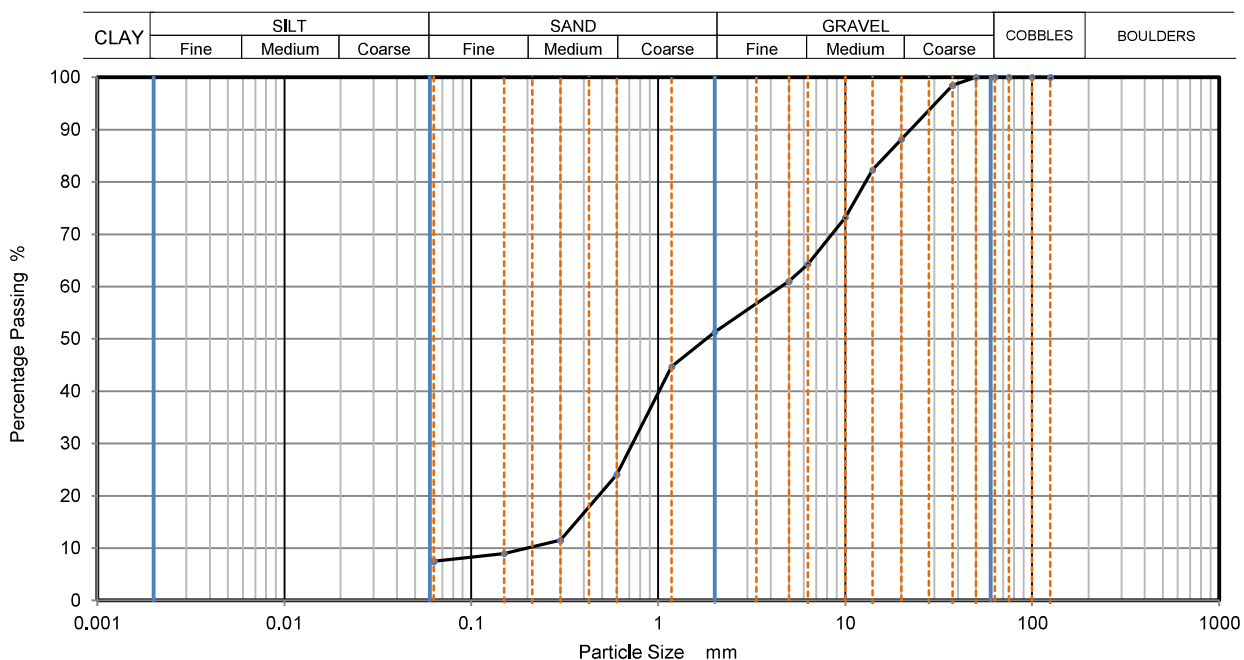
Brown clayey SAND and GRAVEL.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	99		
20	88		
14	82		
10	73		
6.3	64		
5	61		
2	51		
1.18	45		
0.6	24		
0.3	12		
0.15	9		
0.063	8		

Sample Proportions	% dry mass
Cobbles	0
Gravel	48
Sand	44
Fines <0.063mm	8

Grading Analysis	
D100	mm 50
D60	mm 4.55
D30	mm 0.728
D10	mm 0.199
Uniformity Coefficient	23

Remarks

Sheet printed

Sheet

09/03/2023

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APPENDIX 9

Laboratory Test Results - Contamination (Soil)



Certificate of Analysis

Certificate Number 22-19525

Issued: 11-Oct-22

Client Geotechnics LTD
The Geotechnical Centre
Unit 1B Borders Ind. Park
River Lane
Saltney
Chester
CH4 8RJ

Our Reference 22-19525

Client Reference PN224453

Order No ON34994

Contract Title Wrexham AFC - KOP Stand Redevelopment

Description 4 Soil samples, 4 Leachate samples.

Date Received 30-Sep-22

Date Started 30-Sep-22

Date Completed 11-Oct-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "K. Bridgewood".

Kirk Bridgewood
General Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 22-19525

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2065564	2065565	2065566	2065567
Sample ID	BH100	BH100	BH100	BH100
Depth	0.15	0.40	1.00	3.00
Other ID	2	4	8	15
Sample Type	ES	ES	ES	ES
Sampling Date	28/09/2022	28/09/2022	28/09/2022	28/09/2022
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Preparation							
Moisture Content	DETSC 1004	0.1	%	5.1	12	8.7	8.8
Metals							
Antimony	DETSC 2301*	1	mg/kg	< 1.0	1.8	2.2	2.7
Arsenic	DETSC 2301#	0.2	mg/kg	2.6	13	14	8.7
Barium	DETSC 2301#	1.5	mg/kg	24	150	53	82
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.3	0.3	< 0.1
Chromium III	DETSC 2301*	0.15	mg/kg	54	87	25	14
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	11	24	25	14
Lead	DETSC 2301#	0.3	mg/kg	21	22	60	17
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	4.8	14	25	18
Selenium	DETSC 2301#	0.5	mg/kg	0.9	1.1	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	18	41	29	27
Zinc	DETSC 2301#	1	mg/kg	61	55	87	68
Inorganics							
pH	DETSC 2008#		pH	10.2	8.2	7.0	7.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total Organic Carbon	DETSC 2084#	0.5	%	5.8	1.4	0.6	< 0.5
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg	0.93	1.0	1.7	0.96
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	17	30	35	22
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C10-C44	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4

Summary of Chemical Analysis Soil Samples

Our Ref 22-19525

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2065564	2065565	2065566	2065567
Sample ID	BH100	BH100	BH100	BH100
Depth	0.15	0.40	1.00	3.00
Other ID	2	4	8	15
Sample Type	ES	ES	ES	ES
Sampling Date	28/09/2022	28/09/2022	28/09/2022	28/09/2022
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Aromatic C10-C44	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
PAHs							
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 22-19525

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2065565	2065566	2065567
Sample ID	BH100	BH100	BH100
Depth	0.40	1.00	3.00
Other ID	4	8	15
Sample Type	ES	ES	ES
Sampling Date	28/09/2022	28/09/2022	28/09/2022
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 22-19525

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2065565	2065566	2065567
Sample ID	BH100	BH100	BH100
Depth	0.40	1.00	3.00
Other ID	4	8	15
Sample Type	ES	ES	ES
Sampling Date	28/09/2022	28/09/2022	28/09/2022
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
SVOCs						
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 22-19525

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2065565	2065566	2065567
Sample ID	BH100	BH100	BH100
Depth	0.40	1.00	3.00
Other ID	4	8	15
Sample Type	ES	ES	ES
Sampling Date	28/09/2022	28/09/2022	28/09/2022
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 22-19525

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2065568	2065569
Sample ID	BH100	BH100
Depth	0.40	1.00
Other ID	4	8
Sample Type	ES	ES
Sampling Date	28/09/2022	28/09/2022
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Preparation					
BS EN 12457 10:1	DETS 1009*			Y	Y
Metals					
Antimony, Dissolved	DETS 2306	0.17	ug/l	< 0.17	< 0.17
Arsenic, Dissolved	DETS 2306	0.16	ug/l	2.7	0.63
Barium, Dissolved	DETS 2306	0.26	ug/l	12	5.6
Boron, Dissolved	DETS 2306*	12	ug/l	< 12	< 12
Cadmium, Dissolved	DETS 2306	0.03	ug/l	< 0.03	< 0.03
Chromium III, Dissolved	DETS 2306*	1	ug/l	1.3	< 1.0
Chromium, Hexavalent	DETS 2203	7	ug/l	< 7.0	< 7.0
Copper, Dissolved	DETS 2306	0.4	ug/l	1.0	0.6
Lead, Dissolved	DETS 2306	0.09	ug/l	0.64	0.18
Mercury, Dissolved	DETS 2306	0.01	ug/l	0.07	< 0.01
Nickel, Dissolved	DETS 2306	0.5	ug/l	< 0.5	< 0.5
Selenium, Dissolved	DETS 2306	0.25	ug/l	0.33	< 0.25
Vanadium, Dissolved	DETS 2306	0.6	ug/l	6.5	0.9
Zinc, Dissolved	DETS 2306	1.3	ug/l	< 1.3	< 1.3
Inorganics					
Conductivity	DETS 2009	1	uS/cm	53.2	34.6
pH	DETS 2008		pH	7.0	6.9
Dissolved Organic Carbon	DETS 2085	2	mg/l	< 2.0	< 2.0
Total Hardness as CaCO3	DETS 2303	0.1	mg/l	29.7	13.8
Ammoniacal Nitrogen as N	DETS 2207	0.015	mg/l	0.042	0.015
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETS 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C6-C8	DETS 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C8-C10	DETS 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C10-C12	DETS 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C10-C44	DETS 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C12-C16	DETS 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C16-C21	DETS 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C21-C35	DETS 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C35-C44	DETS 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C5-C7	DETS 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C7-C8	DETS 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C8-C10	DETS 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C10-C12	DETS 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C12-C16	DETS 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C16-C21	DETS 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C21-C35	DETS 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C35-C44	DETS 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C10-C44	DETS 3072*	1	ug/l	< 1.0	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 22-19525

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2065568	2065569
Sample ID	BH100	BH100
Depth	0.40	1.00
Other ID	4	8
Sample Type	ES	ES
Sampling Date	28/09/2022	28/09/2022
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Ali/Aro C10-C44	DETSC 3072*	1	ug/l	< 1.0	< 1.0
PAHs					
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.02	0.01
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.03	0.02
Pyrene	DETSC 3304	0.01	ug/l	0.02	0.01
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20	< 0.20

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 22-19525

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Sample Id BH100 4 0.40

Sample Numbers 2065565 2065570

Date Analysed 10/10/2022

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084# Total Organic Carbon	%	1.4
DETSC 2003# Loss On Ignition	%	4.5
DETSC3321# BTEX	mg/kg	
DETSC3401# PCB's (7 congeners)	mg/kg	
DETSC3311# TPH (C10 - C40)	mg/kg	
DETSC3301/DETSC3303 PAH's	mg/kg	
DETSC2008# pH	pH Units	
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	5.7	0.057
DETSC 2306 Barium as Ba	6.5	< 0.1
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02
DETSC 2306 Chromium as Cr	1.9	< 0.1
DETSC 2306 Copper as Cu	2	0.02
DETSC 2306 Mercury as Hg	0.1	< 0.002
DETSC 2306 Molybdenum as Mo	2.4	< 0.1
DETSC 2306 Nickel as Ni	< 0.50	< 0.1
DETSC 2306 Lead as Pb	0.42	< 0.05
DETSC 2306 Antimony as Sb	< 0.17	< 0.05
DETSC 2306 Selenium as Se	0.32	< 0.03
DETSC 2306 Zinc as Zn	< 1.3	< 0.01
DETSC 2055 Chloride as Cl	670	< 100
DETSC 2055* Fluoride as F	860	8.6
DETSC 2055 Sulphate as SO4	2700	< 100
DETSC 2009* Total Dissolved Solids	34000	340
DETSC 2130 Phenol Index	< 100	< 1
DETSC 2085 Dissolved Organic Carbon	2900	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	6.8
DETSC 2009 Conductivity uS/cm	48.7
* Temperature*	18.0

Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.097

Stage 1

Volume of Leachant L2*	0.954
Volume of Eluate VE1*	0.904

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 22-19525

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Sample Id BH100 8 1.00

Sample Numbers 2065566 2065571

Date Analysed 10/10/2022

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084# Total Organic Carbon	%	0.6
DETSC 2003# Loss On Ignition	%	3.4
DETSC3321# BTEX	mg/kg	
DETSC3401# PCB's (7 congeners)	mg/kg	
DETSC3311# TPH (C10 - C40)	mg/kg	
DETSC3301/DETSC3303 PAH's	mg/kg	
DETSC2008# pH	pH Units	
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	0.86	< 0.01
DETSC 2306 Barium as Ba	3.1	< 0.1
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02
DETSC 2306 Chromium as Cr	< 0.25	< 0.1
DETSC 2306 Copper as Cu	0.48	< 0.02
DETSC 2306 Mercury as Hg	< 0.010	< 0.002
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1
DETSC 2306 Nickel as Ni	< 0.50	< 0.1
DETSC 2306 Lead as Pb	0.41	< 0.05
DETSC 2306 Antimony as Sb	< 0.17	< 0.05
DETSC 2306 Selenium as Se	< 0.25	< 0.03
DETSC 2306 Zinc as Zn	< 1.3	< 0.01
DETSC 2055 Chloride as Cl	1100	< 100
DETSC 2055* Fluoride as F	110	1.1
DETSC 2055 Sulphate as SO4	3500	< 100
DETSC 2009* Total Dissolved Solids	21000	210
DETSC 2130 Phenol Index	< 100	< 1
DETSC 2085 Dissolved Organic Carbon	2100	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	7.0
DETSC 2009 Conductivity uS/cm	29.7
* Temperature*	18.0

Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.100

Stage 1

Volume of Leachant L2*	0.994
Volume of Eluate VE1*	0.946

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

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Summary of Asbestos Analysis Soil Samples

Our Ref 22-19525

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2065565	BH100 4 0.40	SOIL	NAD	none	Keith Wilson
2065566	BH100 8 1.00	SOIL	NAD	none	Keith Wilson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 22-19525
 Client Ref PN224453
 Contract Wrexham AFC - KOP Stand Redevelopment

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2065564	BH100 0.15 SOIL	28/09/22	GJ 250ml, GJ 60ml, PT 1L		
2065565	BH100 0.40 SOIL	28/09/22	GJ 250ml, GJ 60ml, PT 1L		
2065566	BH100 1.00 SOIL	28/09/22	GJ 250ml, GJ 60ml, PT 1L		
2065567	BH100 3.00 SOIL	28/09/22	GJ 250ml, GJ 60ml, PT 1L		
2065568	BH100 0.40 LEACHATE	28/09/22	GJ 250ml, GJ 60ml, PT 1L		
2065569	BH100 1.00 LEACHATE	28/09/22	GJ 250ml, GJ 60ml, PT 1L		
2065570	BH100 0.40 LEACHATE	28/09/22	GJ 250ml, GJ 60ml, PT 1L		
2065571	BH100 1.00 LEACHATE	28/09/22	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report



Certificate of Analysis

Certificate Number 22-20189

Issued: 18-Oct-22

Client Geotechnics LTD
The Geotechnical Centre
Unit 1B Borders Ind. Park
River Lane
Saltney
Chester
CH4 8RJ

Our Reference 22-20189

Client Reference PN224453

Order No ON34994

Contract Title Wrexham AFC - KOP Stand Redevelopment

Description 5 Soil samples, 6 Leachate samples.

Date Received 10-Oct-22

Date Started 10-Oct-22

Date Completed 18-Oct-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in blue ink, appearing to read "K. Bridgwood".

Kirk Bridgwood
General Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 22-20189

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2068906	2068907	2068908	2068909	2068910
Sample ID	BH101	BH101	BH101	BH101	BH101
Depth	0.20	0.50	1.00	2.00	4.00
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	07/10/2022	07/10/2022	07/10/2022	07/10/2022	07/10/2022
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Preparation								
Moisture Content	DETSC 1004	0.1	%	11	13	9.5	7.1	8.5
Metals								
Antimony	DETSC 2301*	1	mg/kg	1.5	< 1.0	1.7	< 1.0	1.4
Arsenic	DETSC 2301#	0.2	mg/kg	6.3	6.3	12	3.2	7.6
Barium	DETSC 2301#	1.5	mg/kg	86	51	51	28	63
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.3	0.5	0.4	0.2	0.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	< 0.1	0.3	< 0.1	0.3
Chromium III	DETSC 2301*	0.15	mg/kg	12	13	20	4.9	9.8
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	31	15	25	5.5	15
Lead	DETSC 2301#	0.3	mg/kg	20	37	90	9.8	36
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	11	12	24	6.1	13
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	1.4	0.7	0.9
Vanadium	DETSC 2301#	0.8	mg/kg	18	23	24	5.0	12
Zinc	DETSC 2301#	1	mg/kg	56	49	84	16	60
Inorganics								
pH	DETSC 2008#		pH	9.4	7.5	7.7	8.6	8.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.3	0.2	0.1	0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Organic Carbon	DETSC 2084#	0.5	%	< 0.5	0.7	< 0.5	< 0.5	< 0.5
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg	1.1	2.3	2.2	0.76	0.76
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	84	26	12	11	23
Petroleum Hydrocarbons								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C10-C44	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4

Summary of Chemical Analysis Soil Samples

Our Ref 22-20189

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2068906	2068907	2068908	2068909	2068910
Sample ID	BH101	BH101	BH101	BH101	BH101
Depth	0.20	0.50	1.00	2.00	4.00
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	07/10/2022	07/10/2022	07/10/2022	07/10/2022	07/10/2022
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Aromatic C10-C44	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
PAHs								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Summary of Chemical Analysis

Soil Samples

Our Ref 22-20189

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2068906	2068907	2068908	2068909	2068910
Sample ID	BH101	BH101	BH101	BH101	BH101
Depth	0.20	0.50	1.00	2.00	4.00
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	07/10/2022	07/10/2022	07/10/2022	07/10/2022	07/10/2022
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
VOCs								
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 22-20189

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2068906	2068907	2068908	2068909	2068910
Sample ID	BH101	BH101	BH101	BH101	BH101
Depth	0.20	0.50	1.00	2.00	4.00
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	07/10/2022	07/10/2022	07/10/2022	07/10/2022	07/10/2022
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOCs								
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis Soil Samples

Our Ref 22-20189

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2068906	2068907	2068908	2068909	2068910
Sample ID	BH101	BH101	BH101	BH101	BH101
Depth	0.20	0.50	1.00	2.00	4.00
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	07/10/2022	07/10/2022	07/10/2022	07/10/2022	07/10/2022
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 22-20189

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2068911	2068912	2068913	2068914
Sample ID	BH101	BH101	BH101	BH101
Depth	0.20	0.50	2.00	4.00
Other ID				
Sample Type	ES	ES	ES	ES
Sampling Date	07/10/2022	07/10/2022	07/10/2022	07/10/2022
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Metals							
Antimony, Dissolved	DETSC 2306	0.17	ug/l	0.46	< 0.17	< 0.17	0.17
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	4.6	0.84	0.34	0.52
Barium, Dissolved	DETSC 2306	0.26	ug/l	5.7	3.8	3.1	3.7
Boron, Dissolved	DETSC 2306*	12	ug/l	14	19	17	17
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03
Chromium III, Dissolved	DETSC 2306*	1	ug/l	2.8	< 1.0	< 1.0	< 1.0
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	5.6	1.6	2.8	2.9
Lead, Dissolved	DETSC 2306	0.09	ug/l	1.3	1.3	0.76	0.27
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.44	0.32	0.30	< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	14	2.2	< 0.6	< 0.6
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	1.4	< 1.3	< 1.3
Inorganics							
Conductivity	DETSC 2009	1	uS/cm	71.1	28.5	23.3	42.8
pH	DETSC 2008		pH	9.5	8.4	6.7	6.6
Dissolved Organic Carbon	DETSC 2085	2	mg/l	4.7	4.1	3.9	2.7
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l	26.4	8.90	7.03	19.7
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.040	0.018	< 0.015	< 0.015
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C10-C44	DETSC 3072*	1	ug/l	< 1.0	1.9	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	1.9	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C35-C44	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C35-C44	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C10-C44	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Ali/Aro C10-C44	DETSC 3072*	1	ug/l	< 1.0	1.9	< 1.0	< 1.0
PAHs							

Summary of Chemical Analysis

Leachate Samples

Our Ref 22-20189

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2068911	2068912	2068913	2068914
Sample ID	BH101	BH101	BH101	BH101
Depth	0.20	0.50	2.00	4.00
Other ID				
Sample Type	ES	ES	ES	ES
Sampling Date	07/10/2022	07/10/2022	07/10/2022	07/10/2022
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Naphthalene	DETSC 3304	0.05	ug/l	0.12	0.17	< 0.05	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	0.01	0.02	< 0.01	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	0.02	0.04	0.01	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	0.02	0.03	0.01	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.08	< 0.01	< 0.01	0.02
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.02	0.02	0.02	0.02
Pyrene	DETSC 3304	0.01	ug/l	0.03	0.02	0.03	0.03
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	0.01	0.01	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	0.31	0.32	< 0.20	< 0.20

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 22-20189

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Sample Id BH101 0.50

Sample Numbers 2068907 2068915

Date Analysed 18/10/2022

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETS 2084# Total Organic Carbon	%	0.7	3	5	6
DETS 2003# Loss On Ignition	%	2.6	n/a	n/a	10
DETS 3321# BTEX	mg/kg		6	n/a	n/a
DETS 3401# PCB's (7 congeners)	mg/kg		1	n/a	n/a
DETS 3311# TPH (C10 - C40)	mg/kg		500	n/a	n/a
DETS 3301/DETS 3303 PAH's	mg/kg		100	n/a	n/a
DETS 2008# pH	pH Units		n/a	>6	n/a
DETS 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETS 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETS 2306 Arsenic as As	0.45	< 0.01	0.5	2	25
DETS 2306 Barium as Ba	4.1	< 0.1	20	100	300
DETS 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETS 2306 Chromium as Cr	0.74	< 0.1	0.5	10	70
DETS 2306 Copper as Cu	3.1	0.031	2	50	100
DETS 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETS 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETS 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETS 2306 Lead as Pb	1.6	< 0.05	0.5	10	50
DETS 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETS 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETS 2306 Zinc as Zn	1.9	0.019	4	50	200
DETS 2055 Chloride as Cl	1100	< 100	800	15,000	25,000
DETS 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETS 2055 Sulphate as SO4	1100	< 100	1000	20,000	50,000
DETS 2009* Total Dissolved Solids	14000	140	4000	60,000	100,000
DETS 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETS 2085 Dissolved Organic Carbon	3400	< 50	500	800	1000

Additional Information	
DETS 2008 pH	6.6
DETS 2009 Conductivity uS/cm	19.9
* Temperature*	15.0
Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.096
Stage 1	
Volume of Leachant L2*	0.948
Volume of Eluate VE1*	0.9

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 22-20189

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Sample Id BH101 1.00

Sample Numbers 2068908 2068916

Date Analysed 18/10/2022

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETS 2084# Total Organic Carbon	%	< 0.5	3	5	6
DETS 2003# Loss On Ignition	%	1.5	n/a	n/a	10
DETS 3321# BTEX	mg/kg		6	n/a	n/a
DETS 3401# PCB's (7 congeners)	mg/kg		1	n/a	n/a
DETS 3311# TPH (C10 - C40)	mg/kg		500	n/a	n/a
DETS 3301/DETS 3303 PAH's	mg/kg		100	n/a	n/a
DETS 2008# pH	pH Units		n/a	>6	n/a
DETS 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETS 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETS 2306 Arsenic as As	0.64	< 0.01	0.5	2	25
DETS 2306 Barium as Ba	2.1	< 0.1	20	100	300
DETS 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETS 2306 Chromium as Cr	0.4	< 0.1	0.5	10	70
DETS 2306 Copper as Cu	2.9	0.029	2	50	100
DETS 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETS 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETS 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETS 2306 Lead as Pb	1	< 0.05	0.5	10	50
DETS 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETS 2306 Selenium as Se	0.35	< 0.03	0.1	0.5	7
DETS 2306 Zinc as Zn	1.3	0.013	4	50	200
DETS 2055 Chloride as Cl	520	< 100	800	15,000	25,000
DETS 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETS 2055 Sulphate as SO4	530	< 100	1000	20,000	50,000
DETS 2009* Total Dissolved Solids	12000	120	4000	60,000	100,000
DETS 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETS 2085 Dissolved Organic Carbon	3200	< 50	500	800	1000

Additional Information	
DETS 2008 pH	6.5
DETS 2009 Conductivity uS/cm	17.6
* Temperature*	15.0
Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.100
Stage 1	
Volume of Leachant L2*	0.985
Volume of Eluate VE1*	0.94

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

Summary of Asbestos Analysis Soil Samples

Our Ref 22-20189

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2068906	BH101 0.20	SOIL	NAD	none	Lee Kerridge
2068907	BH101 0.50	SOIL	NAD	none	Lee Kerridge
2068908	BH101 1.00	SOIL	NAD	none	Lee Kerridge

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 22-20189
 Client Ref PN224453
 Contract Wrexham AFC - KOP Stand Redevelopment

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2068906	BH101 0.20 SOIL	07/10/22	GJ 250ml, GJ 60ml, PT 1L		
2068907	BH101 0.50 SOIL	07/10/22	GJ 250ml, GJ 60ml, PT 1L		
2068908	BH101 1.00 SOIL	07/10/22	GJ 250ml, GJ 60ml, PT 1L		
2068909	BH101 2.00 SOIL	07/10/22	GJ 250ml, GJ 60ml, PT 1L		
2068910	BH101 4.00 SOIL	07/10/22	GJ 250ml, GJ 60ml, PT 1L		
2068911	BH101 0.20 LEACHATE	07/10/22	GJ 250ml, GJ 60ml, PT 1L		
2068912	BH101 0.50 LEACHATE	07/10/22	GJ 250ml, GJ 60ml, PT 1L		
2068913	BH101 2.00 LEACHATE	07/10/22	GJ 250ml, GJ 60ml, PT 1L		
2068914	BH101 4.00 LEACHATE	07/10/22	GJ 250ml, GJ 60ml, PT 1L		
2068915	BH101 0.50 LEACHATE	07/10/22	GJ 250ml, GJ 60ml, PT 1L		
2068916	BH101 1.00 LEACHATE	07/10/22	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report



Certificate of Analysis

Certificate Number 22-20338

Issued: 17-Oct-22

Client Geotechnics LTD
The Geotechnical Centre
Unit 1B Borders Ind. Park
River Lane
Saltney
Chester
CH4 8RJ

Our Reference 22-20338

Client Reference PN224453

Order No ON34994

Contract Title Wrexham AFC - KOP Stand Redevelopment

Description 1 Soil sample, 1 Leachate sample.

Date Received 11-Oct-22

Date Started 11-Oct-22

Date Completed 17-Oct-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in blue ink, appearing to read "K. Bridgewood".

Kirk Bridgewood
General Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 22-20338

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2069738
Sample ID	BH101
Depth	6.00
Other ID	
Sample Type	ES
Sampling Date	07/10/2022
Sampling Time	n/s

Test	Method	LOD	Units	
Preparation				
Moisture Content	DETSC 1004	0.1	%	10
Metals				
Antimony	DETSC 2301*	1	mg/kg	2.2
Arsenic	DETSC 2301#	0.2	mg/kg	10
Barium	DETSC 2301#	1.5	mg/kg	110
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.2
Chromium III	DETSC 2301*	0.15	mg/kg	12
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	15
Lead	DETSC 2301#	0.3	mg/kg	18
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05
Nickel	DETSC 2301#	1	mg/kg	16
Selenium	DETSC 2301#	0.5	mg/kg	1.1
Vanadium	DETSC 2301#	0.8	mg/kg	21
Zinc	DETSC 2301#	1	mg/kg	43
Inorganics				
pH	DETSC 2008#		pH	7.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1
Total Organic Carbon	DETSC 2084#	0.5	%	< 0.5
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg	0.84
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	19
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	0.14
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	< 3.4
Aliphatic C10-C44	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	< 1.4

Summary of Chemical Analysis

Soil Samples

Our Ref 22-20338

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2069738
Sample ID	BH101
Depth	6.00
Other ID	
Sample Type	ES
Sampling Date	07/10/2022
Sampling Time	n/s

Test	Method	LOD	Units	
Aromatic C10-C44	DETSC 3072*	10	mg/kg	< 10
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg	< 10
PAHs				
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10

Summary of Chemical Analysis

Soil Samples

Our Ref 22-20338

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2069738
Sample ID	BH101
Depth	6.00
Other ID	
Sample Type	ES
Sampling Date	07/10/2022
Sampling Time	n/s

Test	Method	LOD	Units	
VOCs				
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 22-20338

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2069738
Sample ID	BH101
Depth	6.00
Other ID	
Sample Type	ES
Sampling Date	07/10/2022
Sampling Time	n/s

Test	Method	LOD	Units	
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01
SVOCs				
Phenol	DETSC 3433	0.1	mg/kg	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1

Summary of Chemical Analysis Soil Samples

Our Ref 22-20338

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2069738
Sample ID	BH101
Depth	6.00
Other ID	
Sample Type	ES
Sampling Date	07/10/2022
Sampling Time	n/s

Test	Method	LOD	Units	
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 22-20338

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2069739
Sample ID	BH101
Depth	6.00
Other ID	
Sample Type	ES
Sampling Date	07/10/2022
Sampling Time	n/s

Test	Method	LOD	Units	
Preparation				
BS EN 12457 10:1	DETS 1009*			Y
Metals				
Antimony, Dissolved	DETS 2306	0.17	ug/l	0.20
Arsenic, Dissolved	DETS 2306	0.16	ug/l	0.68
Barium, Dissolved	DETS 2306	0.26	ug/l	12
Boron, Dissolved	DETS 2306*	12	ug/l	< 12
Cadmium, Dissolved	DETS 2306	0.03	ug/l	0.05
Chromium III, Dissolved	DETS 2306*	1	ug/l	< 1.0
Chromium, Hexavalent	DETS 2203	7	ug/l	< 7.0
Copper, Dissolved	DETS 2306	0.4	ug/l	1.3
Lead, Dissolved	DETS 2306	0.09	ug/l	1.0
Mercury, Dissolved	DETS 2306	0.01	ug/l	0.03
Nickel, Dissolved	DETS 2306	0.5	ug/l	< 0.5
Selenium, Dissolved	DETS 2306	0.25	ug/l	1.5
Vanadium, Dissolved	DETS 2306	0.6	ug/l	0.8
Zinc, Dissolved	DETS 2306	1.3	ug/l	< 1.3
Inorganics				
Conductivity	DETS 2009	1	uS/cm	54.8
pH	DETS 2008		pH	6.8
Dissolved Organic Carbon	DETS 2085	2	mg/l	3.2
Total Hardness as CaCO ₃	DETS 2303	0.1	mg/l	53.8
Ammoniacal Nitrogen as N	DETS 2207	0.015	mg/l	< 0.015
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETS 3322	0.1	ug/l	< 0.1
Aliphatic C6-C8	DETS 3322	0.1	ug/l	< 0.1
Aliphatic C8-C10	DETS 3322	0.1	ug/l	< 0.1
Aliphatic C10-C12	DETS 3072*	1	ug/l	< 1.0
Aliphatic C10-C44	DETS 3072*	1	ug/l	< 1.0
Aliphatic C12-C16	DETS 3072*	1	ug/l	< 1.0
Aliphatic C16-C21	DETS 3072*	1	ug/l	< 1.0
Aliphatic C21-C35	DETS 3072*	1	ug/l	< 1.0
Aliphatic C35-C44	DETS 3072*	1	ug/l	< 1.0
Aromatic C5-C7	DETS 3322	0.1	ug/l	< 0.1
Aromatic C7-C8	DETS 3322	0.1	ug/l	< 0.1
Aromatic C8-C10	DETS 3322	0.1	ug/l	< 0.1
Aromatic C10-C12	DETS 3072*	1	ug/l	< 1.0
Aromatic C12-C16	DETS 3072*	1	ug/l	< 1.0
Aromatic C16-C21	DETS 3072*	1	ug/l	< 1.0
Aromatic C21-C35	DETS 3072*	1	ug/l	< 1.0
Aromatic C35-C44	DETS 3072*	1	ug/l	< 1.0
Aromatic C10-C44	DETS 3072*	1	ug/l	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 22-20338

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2069739
Sample ID	BH101
Depth	6.00
Other ID	
Sample Type	ES
Sampling Date	07/10/2022
Sampling Time	n/s

Test	Method	LOD	Units	
Ali/Aro C10-C44	DETSC 3072*	1	ug/l	< 1.0
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	0.11
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.03
Anthracene	DETSC 3304	0.01	ug/l	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.04
Pyrene	DETSC 3304	0.01	ug/l	0.04
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	0.01
Chrysene	DETSC 3304	0.01	ug/l	0.02
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	0.26

Information in Support of the Analytical Results

Our Ref 22-20338
Client Ref PN224453
Contract Wrexham AFC - KOP Stand Redevelopment

Containers Received & Deviating Samples

Lab No	Sample ID	Date		Containers Received	Holding time exceeded for tests	Inappropriate container for tests
		Sampled				
2069738	BH101 6.00 SOIL	07/10/22		GJ 250ml, GJ 60ml, PT 1L	Ammonia (3 days)	
2069739	BH101 6.00 LEACHATE	07/10/22		GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report



Certificate of Analysis

Certificate Number 22-20772

Issued: 24-Oct-22

Client Geotechnics LTD
The Geotechnical Centre
Unit 1B Borders Ind. Park
River Lane
Saltney
Chester
CH4 8RJ

Our Reference 22-20772

Client Reference PN224453

Order No ON34994

Contract Title Wrexham AFC - KOP Stand Redevelopment

Description 5 Soil samples, 3 Leachate samples.

Date Received 17-Oct-22

Date Started 17-Oct-22

Date Completed 24-Oct-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "K. Bridgewood".

Kirk Bridgewood
General Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 22-20772

Client Ref PN224453

Contract Title Wrexham AFC - KOP Stand Redevelopment

Lab No	2072155	2072156	2072157	2072158	2072159
Sample ID	BH102	BH102	BH102	BH102	BH102
Depth	0.10	0.50	1.00	3.00	5.00
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Preparation								
Moisture Content	DETSC 1004	0.1	%	8.7	13	12	8.8	7.3
Metals								
Antimony	DETSC 2301*	1	mg/kg	2.2	2.5	2.3	1.7	1.4
Arsenic	DETSC 2301#	0.2	mg/kg	8.6	15	11	8.6	12
Barium	DETSC 2301#	1.5	mg/kg	110	290	66	74	78
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.4	0.5	0.3	0.2	0.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	0.5	0.3	0.3	0.1
Chromium III	DETSC 2301*	0.15	mg/kg	14	13	18	13	14
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	31	73	23	20	17
Lead	DETSC 2301#	0.3	mg/kg	110	190	91	37	19
Mercury	DETSC 2325#	0.05	mg/kg	0.07	0.16	0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	18	29	20	20	16
Selenium	DETSC 2301#	0.5	mg/kg	0.8	0.5	0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	20	36	27	16	14
Zinc	DETSC 2301#	1	mg/kg	220	260	90	66	49
Inorganics								
pH	DETSC 2008#		pH	8.0	7.7	7.5	7.8	8.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.8	0.1	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Organic Carbon	DETSC 2084#	0.5	%	2.9	12	1.0	< 0.5	< 0.5
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg	2.6	1.8	4.1	1.6	1.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	21	26	15	12	16
Petroleum Hydrocarbons								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	2.2	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	1.5	4.7	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	1.7	5.0	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C10-C44	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	14	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4