



4041

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Environmental Science

Client: Delta Simons
Client Address: 3 Henley Office Park
Doddington Road
Lincoln
LN6 3QR
Contact: Jay Roche

Client Reference: DS72431
Job Number: 23-17315_1
Date Tested: 15/02/2023
Tested By: ZC

Weather Conditions: Clear

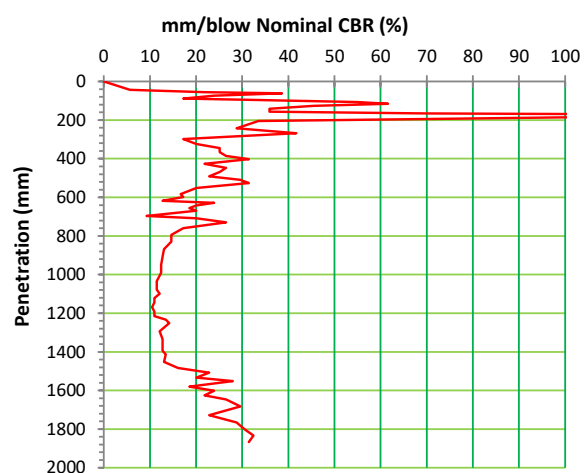
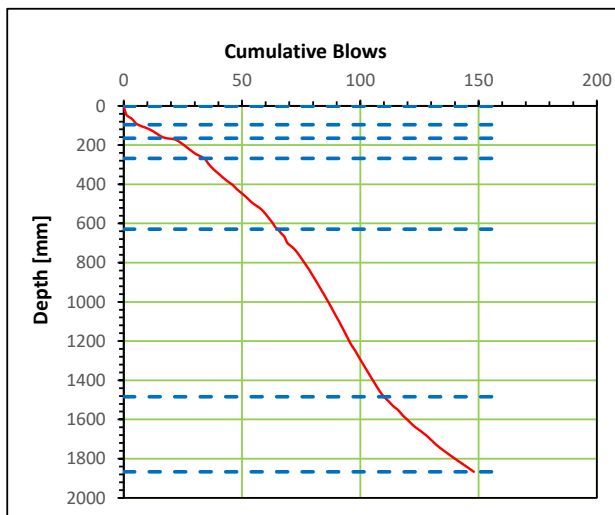
Testing Carried Out At: Unit A, Finlan Road, Stakehill Industrial Estate, M24 2SJ

Test Results

Test Reference: DCP 1
Test Location: DCP 1
Material Description: Sub-Base

DCP Zero at G/L Check [mm]: 81
Self Penetration [mm]: 0
Total Start Depth [mm]: 168

Layer	No of Blows	Cumulative Blows	CBR %	Layer Thickness mm	Total Depth mm
1	6	6	16	96	96
2	12	18	48	69	165
3	16	34	42	103	268
4	31	65	23	361	629
5	45	110	13	855	1484
6	38	148	26	383	1867



Notice: SHW Series 800 Clause 882 Equation 8/1 : $\text{Log}_{10}(\text{CBR}) = 2.480 - 1.057 \times \text{Log}_{10}(\text{Strength})$

Total Thickness Nominal CBR: Calculated from Cumulative blows of 148 and overall penetration of 1867mm : **20.7 %**

Remarks: G/L = Ground Level

Page 1 of 1

SSF82A.8

Date Reported: **20/02/2023**

Signed:

Craig Hawkes
Site Services Operations Supervisor

for and on behalf of i2 Analytical Ltd

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Client: Delta Simons
Client Address: 3 Henley Office Park
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LN6 3QR
Contact: Jay Roche

Client Reference: DS72431
Job Number: 23-17315_2
Date Tested: 15/02/2023
Tested By: ZC

Weather Conditions: Clear

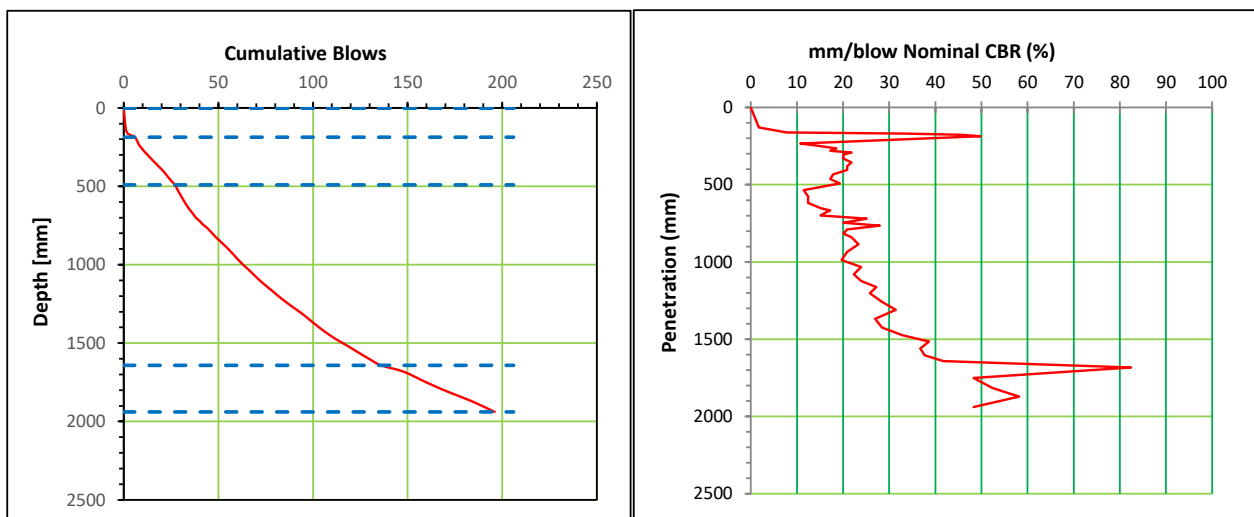
Testing Carried Out At: Unit A, Finlan Road, Stakehill Industrial Estate, M24 2SJ

Test Results

Test Reference: DCP 2
Test Location: DCP 2
Material Description: Sub-Base

DCP Zero at G/L Check [mm]: 81
Self Penetration [mm]: 0
Total Start Depth [mm]: 140

Layer	No of Blows	Cumulative Blows	CBR %	Layer Thickness mm	Total Depth mm
1	6	6	8	187	187
2	21	27	18	304	491
3	109	136	25	1151	1642
4	60	196	56	297	1939



Notice: SHW Series 800 Clause 882 Equation 8/1 : $\text{Log}_{10}(\text{CBR}) = 2.480 - 1.057 \times \text{Log}_{10}(\text{Strength})$

Total Thickness Nominal CBR: Calculated from Cumulative blows of 196 and overall penetration of 1939mm : **26.8 %**

Remarks: G/L = Ground Level

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SSF82A.8

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Lincoln
LN6 3QR
Contact: Jay Roche

Client Reference: DS72431
Job Number: 23-17315_3
Date Tested: 15/02/2023
Tested By: ZC

Weather Conditions: Clear

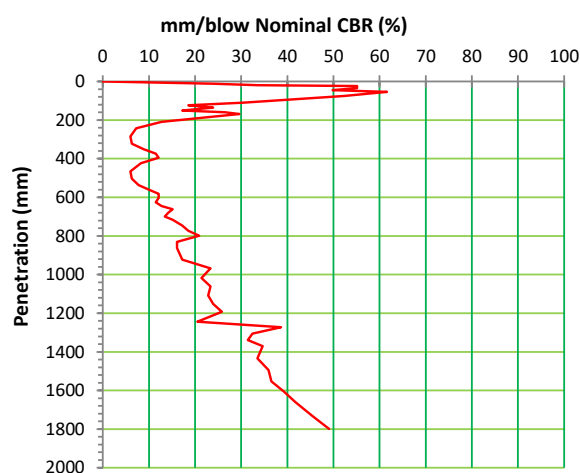
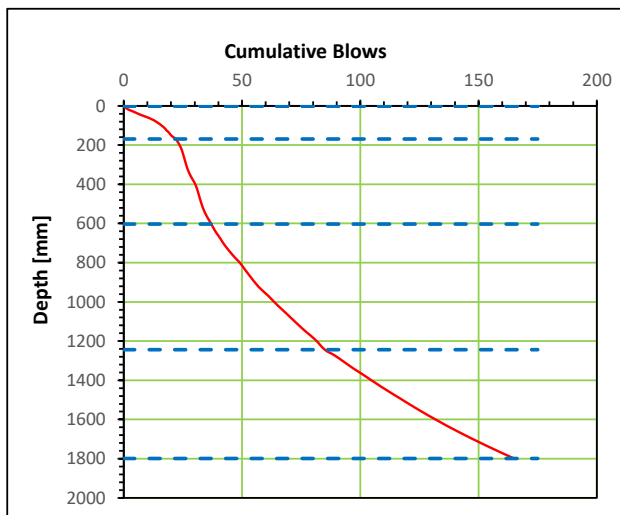
Testing Carried Out At: Unit A, Finlan Road, Stakehill Industrial Estate, M24 2SJ

Test Results

Test Reference: DCP 3
Test Location: DCP 3
Material Description: Sub-Base

DCP Zero at G/L Check [mm]: 81
Self Penetration [mm]: 0
Total Start Depth [mm]: 221

Layer	No of Blows	Cumulative Blows	CBR %	Layer Thickness mm	Total Depth mm
1	22	22	35	169	169
2	15	37	9	434	603
3	48	85	20	641	1244
4	80	165	39	555	1799



Notice: SHW Series 800 Clause 882 Equation 8/1 : $\text{Log}_{10}(\text{CBR}) = 2.480 - 1.057 \times \text{Log}_{10}(\text{Strength})$

Total Thickness Nominal CBR: Calculated from Cumulative blows of 165 and overall penetration of 1799mm : **24.2 %**

Remarks: G/L = Ground Level

Page 1 of 1

SSF82A.8

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Client: Delta Simons
Client Address: 3 Henley Office Park
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LN6 3QR
Contact: Jay Roche

Client Reference: DS72431
Job Number: 23-17315_4
Date Tested: 15/02/2023
Tested By: ZC

Weather Conditions: Clear

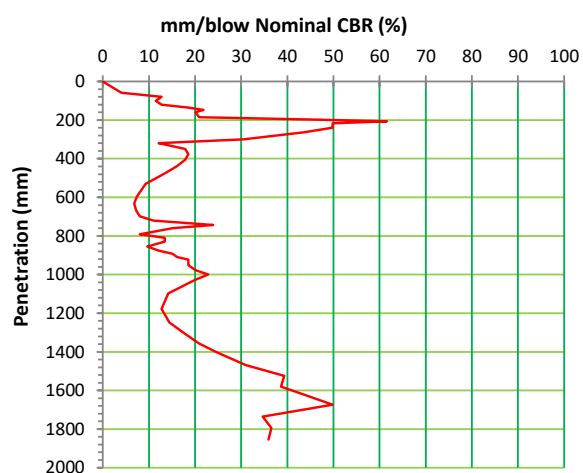
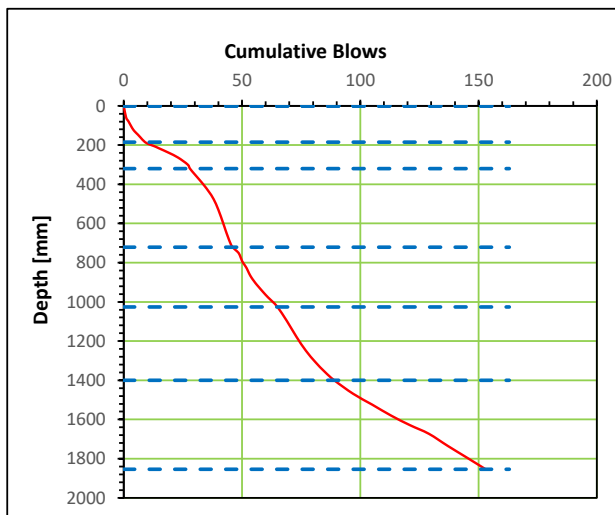
Testing Carried Out At: Unit A, Finlan Road, Stakehill Industrial Estate, M24 2SJ

Test Results

Test Reference: DCP 4
Test Location: DCP 4
Material Description: Sub-Base

DCP Zero at G/L Check [mm]: 0
Self Penetration [mm]: 0
Total Start Depth [mm]: 126

Layer	No of Blows	Cumulative Blows	CBR %	Layer Thickness mm	Total Depth mm
1	9	9	12	185	185
2	19	28	38	135	320
3	18	46	11	401	721
4	19	65	16	305	1026
5	24	89	17	374	1400
6	64	153	38	454	1854



Notice: SHW Series 800 Clause 882 Equation 8/1 : $\text{Log}_{10}(\text{CBR}) = 2.480 - 1.057 \times \text{Log}_{10}(\text{Strength})$

Total Thickness Nominal CBR: Calculated from Cumulative blows of 153 and overall penetration of 1854mm : **21.6 %**

Remarks: G/L = Ground Level

Page 1 of 1

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Lincoln
LN6 3QR
Contact: Jay Roche

Client Reference: DS72431
Job Number: 23-17315_5
Date Tested: 15/02/2023
Tested By: ZC

Weather Conditions: Clear

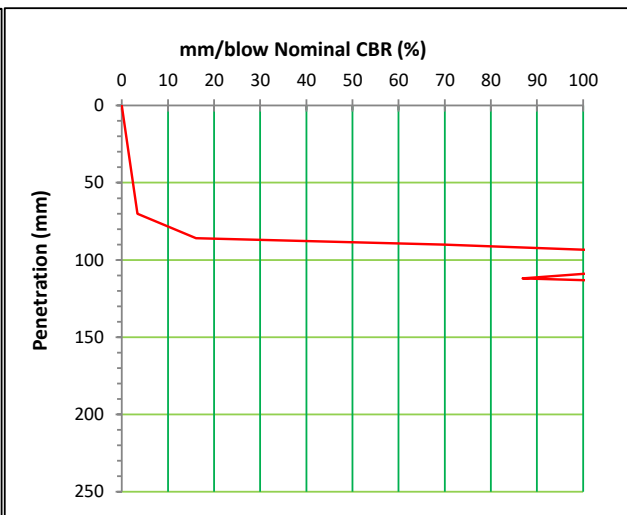
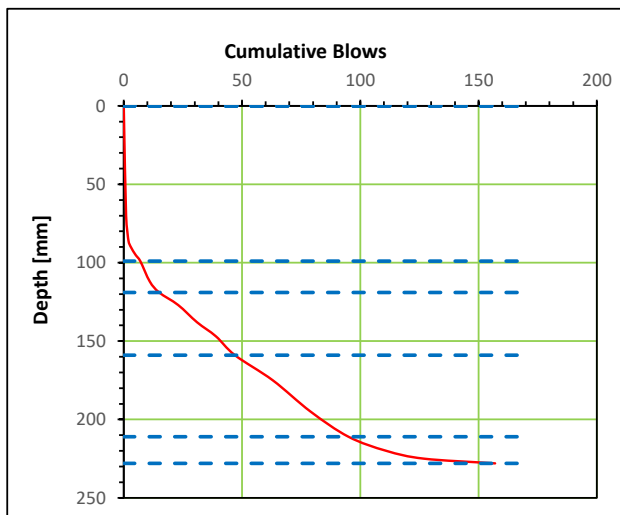
Testing Carried Out At: Unit A, Finlan Road, Stakehill Industrial Estate, M24 2SJ

Test Results

Test Reference: DCP 5
Test Location: DCP 5
Material Description: Sub-Base

DCP Zero at G/L Check [mm]: 81
Self Penetration [mm]: 0
Total Start Depth [mm]: 130

Layer	No of Blows	Cumulative Blows	CBR %	Layer Thickness mm	Total Depth mm
1	7	7	18	99	99
2	8	15	>100	20	119
3	32	47	>100	40	159
4	48	95	>100	52	211
5	62	157	>100	17	228



Notice: SHW Series 800 Clause 882 Equation 8/1 : $\text{Log}_{10}(\text{CBR}) = 2.480 - 1.057 \times \text{Log}_{10}(\text{Strength})$

Total Thickness Nominal CBR: Calculated from Cumulative blows of 157 and overall penetration of 228mm = **203.6 %**

Remarks: G/L = Ground Level

Page 1 of 1

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Environmental Science

Client: Delta Simons
Client Address: 3 Henley Office Park
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Lincoln
LN6 3QR
Contact: Jay Roche

Client Reference: DS72431
Job Number: 23-17315_6
Date Tested: 15/02/2023
Tested By: ZC

Weather Conditions: Clear

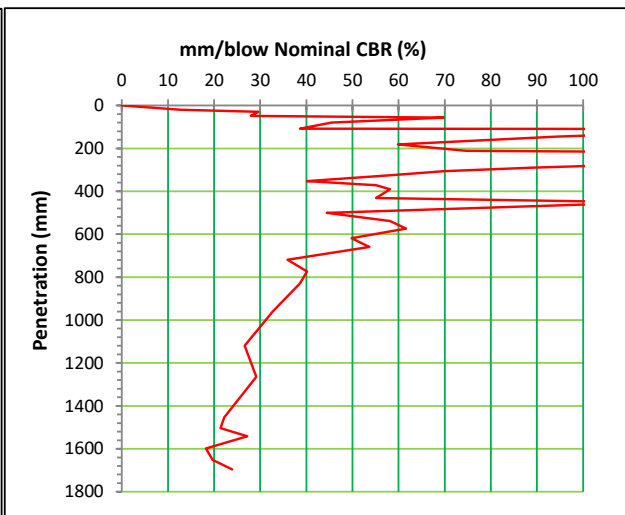
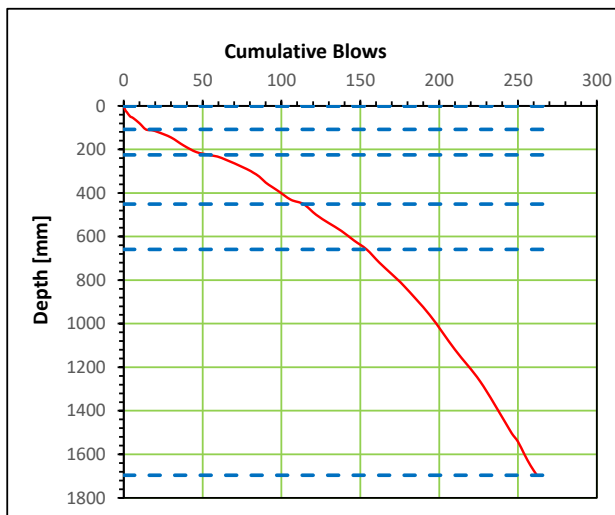
Testing Carried Out At: Unit A, Finlan Road, Stakehill Industrial Estate, M24 2SJ

Test Results

Test Reference: DCP 6
Test Location: DCP 6
Material Description: Sub-Base

DCP Zero at G/L Check [mm]: 81
Self Penetration [mm]: 0
Total Start Depth [mm]: 320

Layer	No of Blows	Cumulative Blows	CBR %	Layer Thickness mm	Total Depth mm
1	14	14	35	108	108
2	40	54	97	117	225
3	60	114	74	226	451
4	40	154	53	208	659
5	108	262	28	1037	1696



Notice: SHW Series 800 Clause 882 Equation 8/1 : $\text{Log}_{10}(\text{CBR}) = 2.480 - 1.057 \times \text{Log}_{10}(\text{Strength})$

Total Thickness Nominal CBR: Calculated from Cumulative blows of 262 and overall penetration of 1696mm : **41.9 %**

Remarks: G/L = Ground Level

Page 1 of 1

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Appendix D - Geotechnical Analysis Results

Client: Delta-Simons
Client Address: Suite C1, Joseph's Well,
Hanover Walk, Leeds,
LS3 1AB
Contact: Tom Bywater
Site Address: Stakehill

Client Reference: 554769
Job Number: 23-12187
Date Sampled: 13/01/2023
Date Received: 17/01/2023
Date Tested: 24/01/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

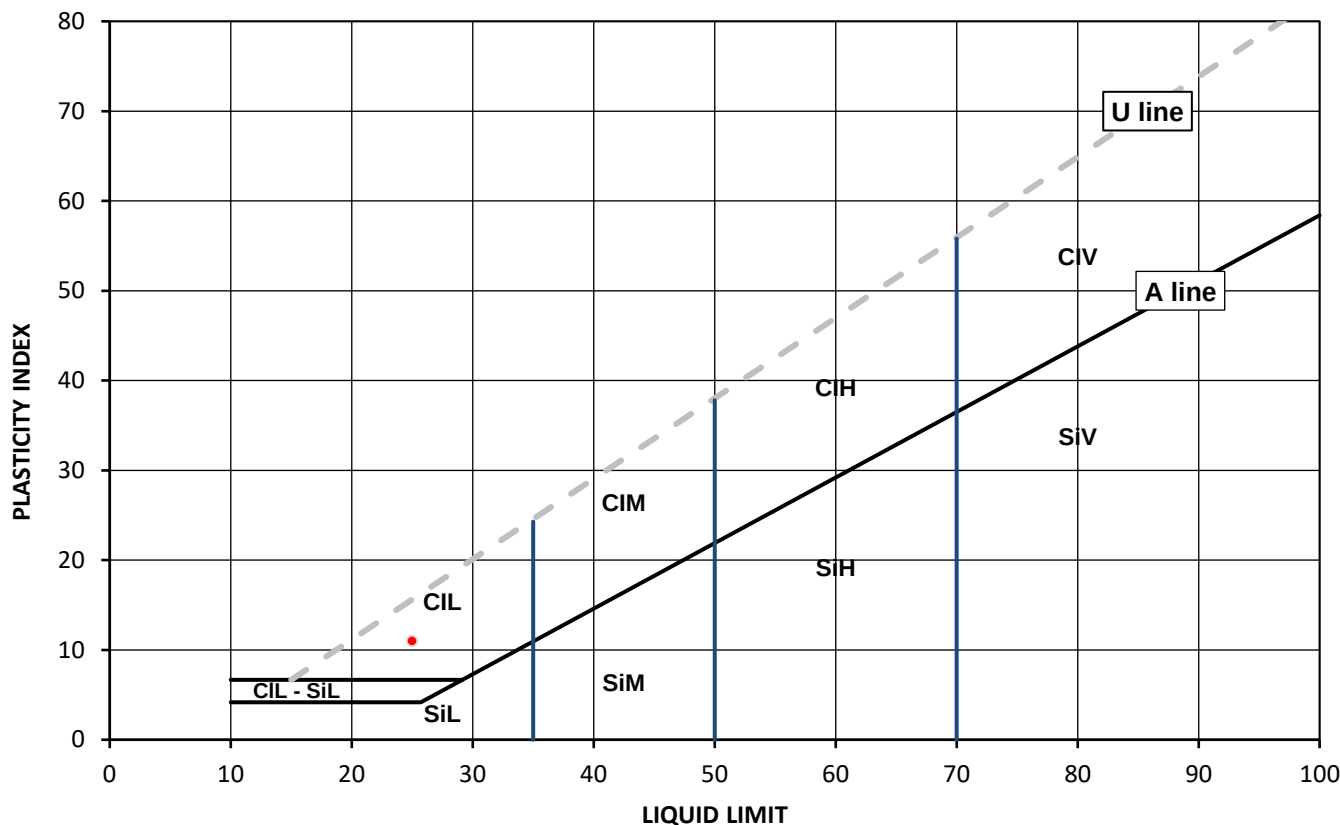
Test Results:

Laboratory Reference: 2556159
Hole No.: DS103
Sample Reference: Not Given
Sample Description: Brown gravelly clayey SAND

Depth Top [m]: 1.80
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
8.8	25	14	11	60



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

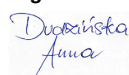
	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L Low	50 to 70
	M Medium	exceeding 70
	H High	append to classification for organic material (eg CIHO)
	V Very high	
	O Organic	

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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Signed:



Anna Dudzinska
PL Deputy Head of Reporting Team
for and on behalf of i2 Analytical Ltd

Client: Delta-Simons
Client Address: Suite C1, Joseph's Well,
Hanover Walk, Leeds,
LS3 1AB
Contact: Tom Bywater
Site Address: Stakehill

Client Reference: 554769
Job Number: 23-12187
Date Sampled: 13/01/2023
Date Received: 17/01/2023
Date Tested: 24/01/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

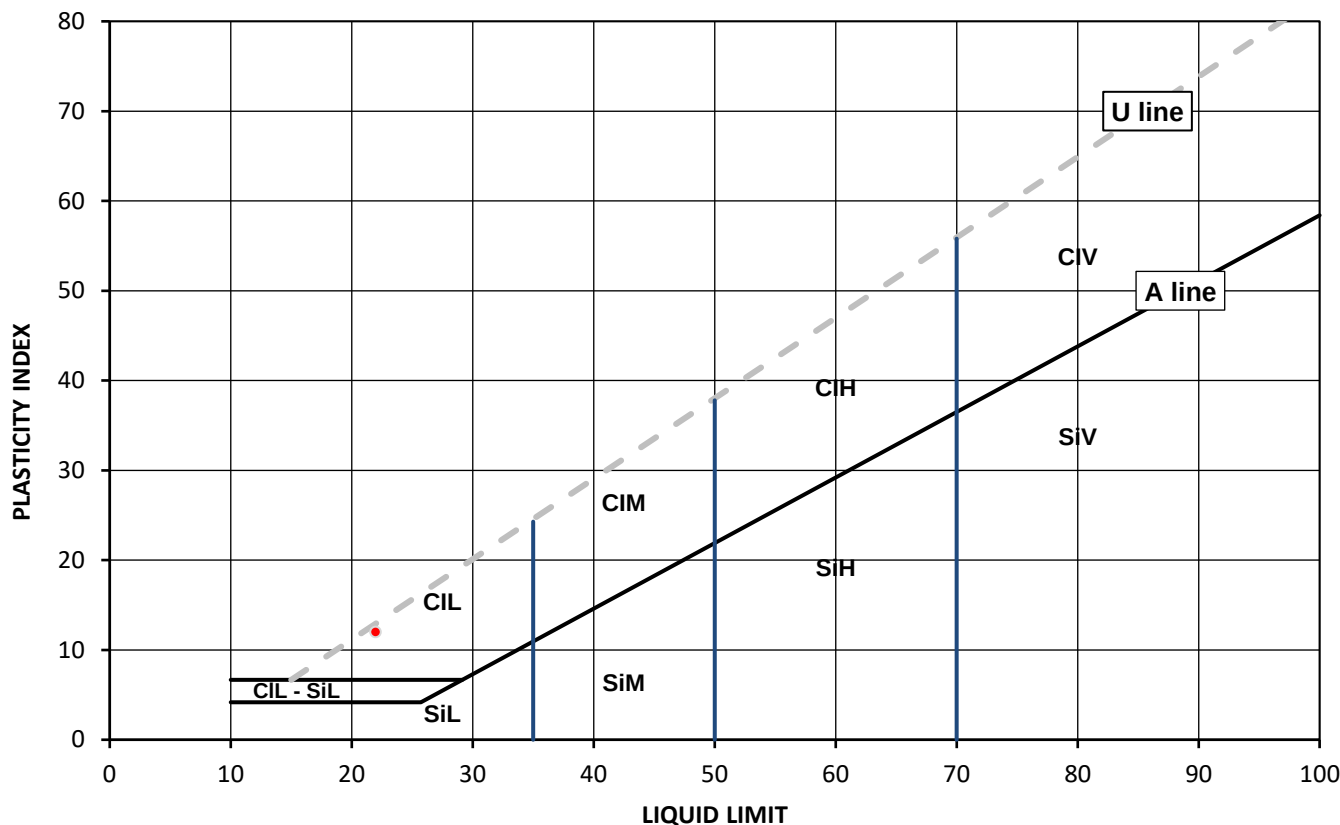
Test Results:

Laboratory Reference: 2556160
Hole No.: DS103
Sample Reference: Not Given
Sample Description: Brown slightly gravelly clayey SAND

Depth Top [m]: 3.20
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after >425um removed by hand

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
14	22	10	12	91



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

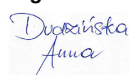
	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L	Low
	M	Medium
	H	High
	V	Very high
	O	Organic
		append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

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Anna Dudzinska
PL Deputy Head of Reporting Team
for and on behalf of i2 Analytical Ltd

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Client Address: Suite C1, Joseph's Well,
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LS3 1AB
Contact: Tom Bywater
Site Address: Stakehill

Client Reference: 554769
Job Number: 23-12187
Date Sampled: 13/01/2023
Date Received: 17/01/2023
Date Tested: 24/01/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

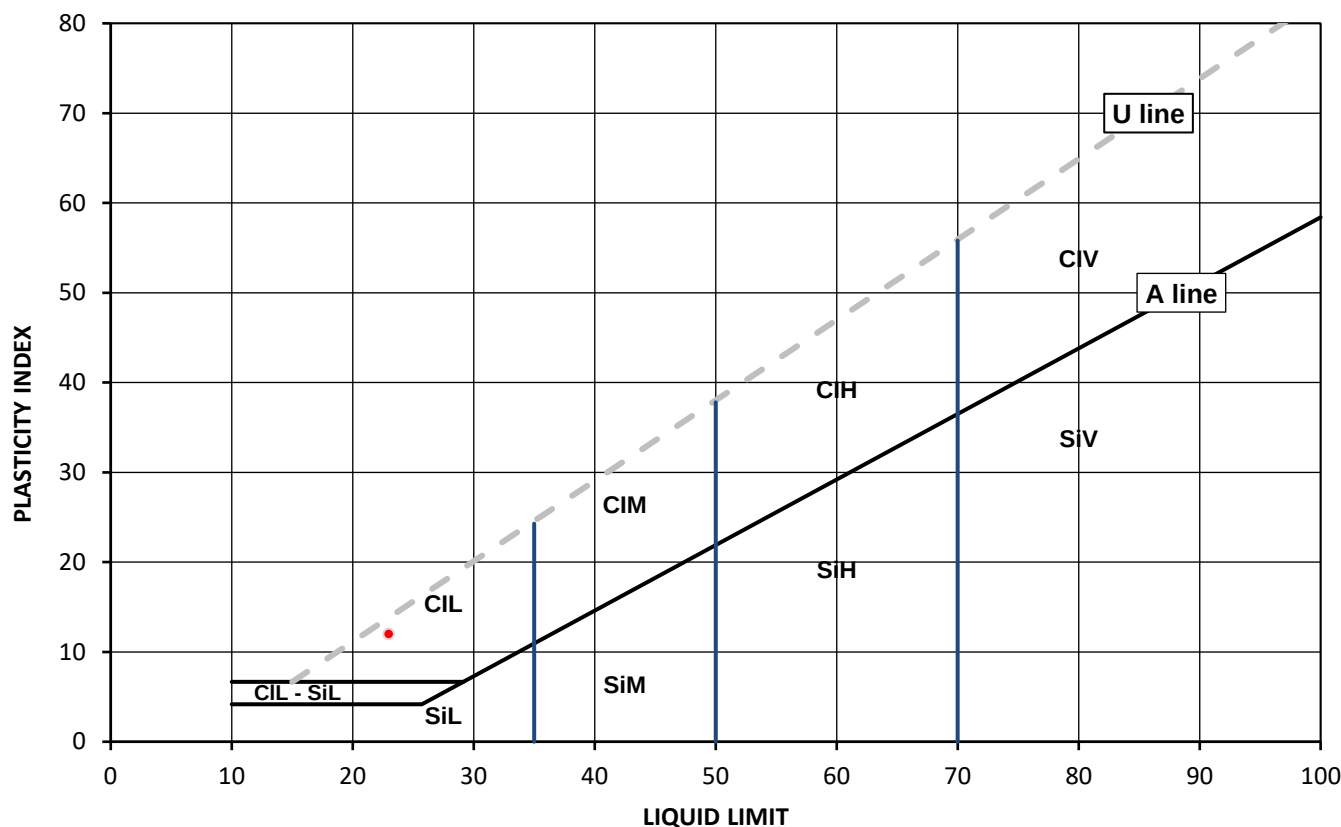
Test Results:

Laboratory Reference: 2556161
Hole No.: DS103
Sample Reference: Not Given
Sample Description: Brown slightly gravelly clayey SAND

Depth Top [m]: 4.00
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after >425um removed by hand

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
13	23	11	12	91



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

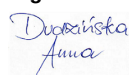
	Plasticity	Liquid Limit
Cl Clay	L Low	below 35
Si Silt	M Medium	35 to 50
	H High	50 to 70
	V Very high	exceeding 70
	O Organic	append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

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Client Address: Suite C1, Joseph's Well,
Hanover Walk, Leeds,
LS3 1AB
Contact: Tom Bywater
Site Address: Stakehill

Client Reference: 554769
Job Number: 23-12187
Date Sampled: 13/01/2023
Date Received: 17/01/2023
Date Tested: 24/01/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

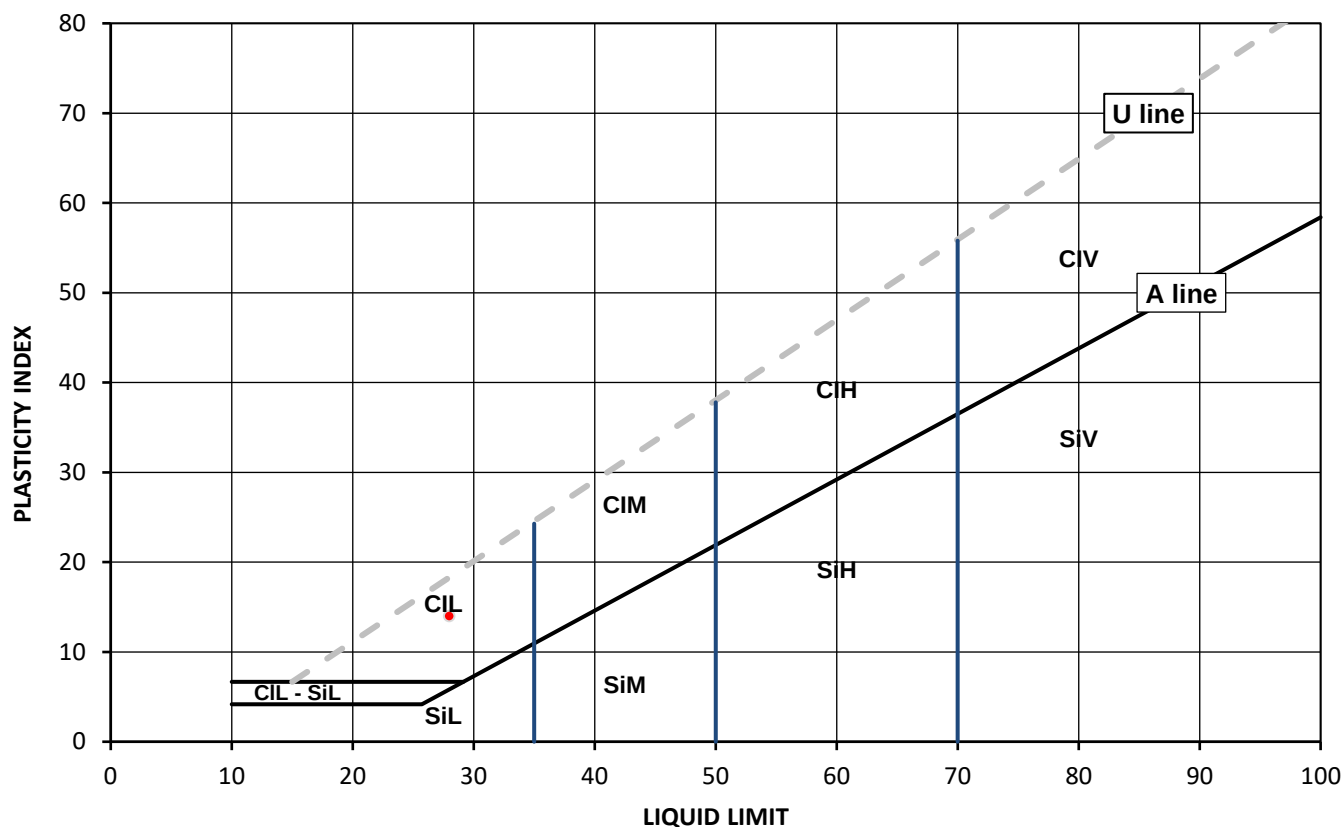
Test Results:

Laboratory Reference: 2556162
Hole No.: DS104
Sample Reference: Not Given
Sample Description: Brown very sandy CLAY

Depth Top [m]: 1.60
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
16	28	14	14	100



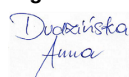
Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L Low	50 to 70
	M Medium	exceeding 70
	H High	
	V Very high	
	O Organic	append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS
Tested in Accordance with: BS 1377-2:1990: Clause 4.3 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Delta-Simons
Client Address: Suite C1, Joseph's Well,
Hanover Walk, Leeds,
LS3 1AB
Contact: Tom Bywater
Site Address: Stakehill

Client Reference: 554769
Job Number: 23-12187
Date Sampled: 13/01/2023
Date Received: 17/01/2023
Date Tested: 24/01/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

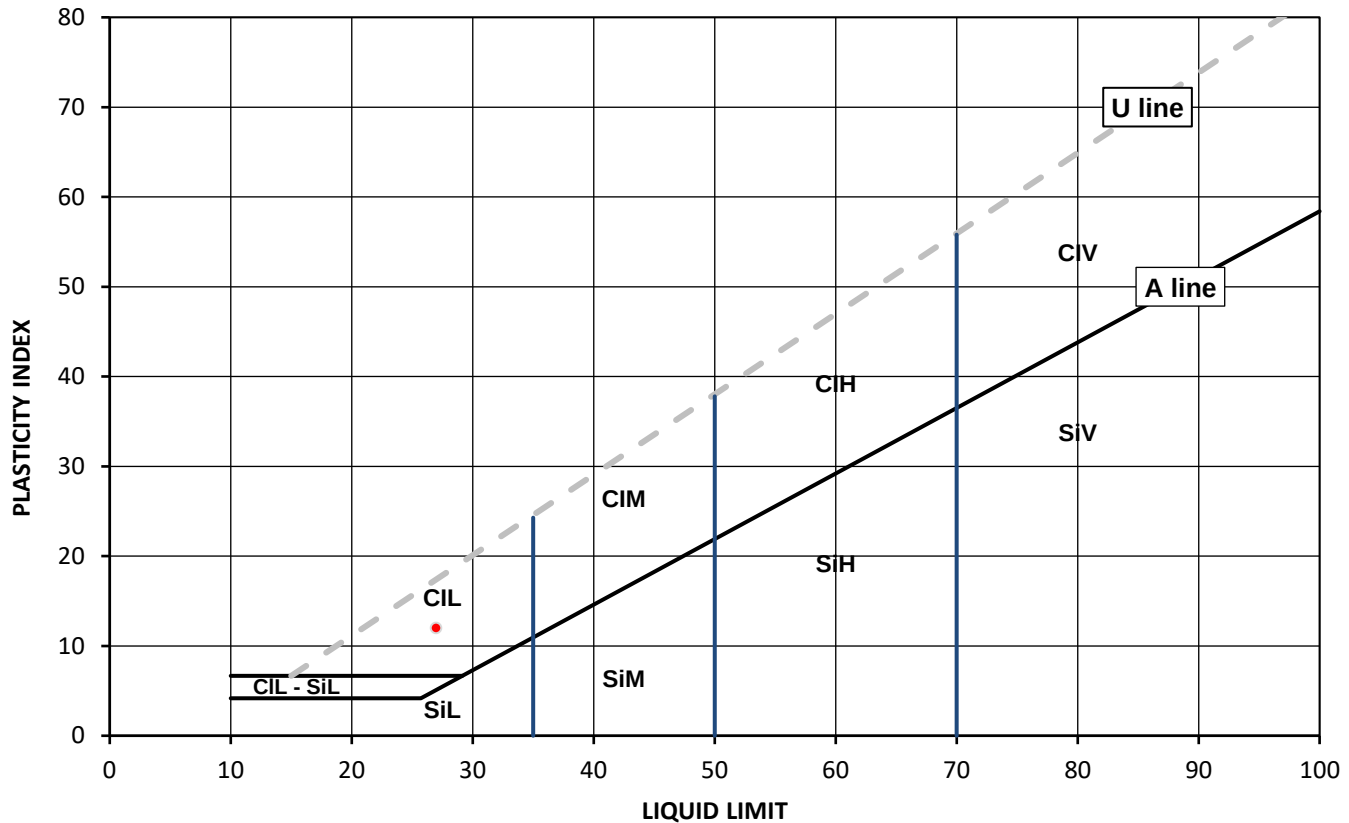
Test Results:

Laboratory Reference: 2556164
Hole No.: DS105
Sample Reference: Not Given
Sample Description: Brown slightly gravelly very sandy CLAY

Depth Top [m]: 1.50
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
16	27	15	12	80



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

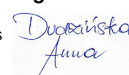
	Plasticity	Liquid Limit
Cl Clay	L Low	below 35
Si Silt	M Medium	35 to 50
	H High	50 to 70
	V Very high	exceeding 70
	O Organic	append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

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Client Address: Suite C1, Joseph's Well,
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LS3 1AB
Contact: Tom Bywater
Site Address: Stakehill

Client Reference: 554769
Job Number: 23-12187
Date Sampled: 13/01/2023
Date Received: 17/01/2023
Date Tested: 24/01/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

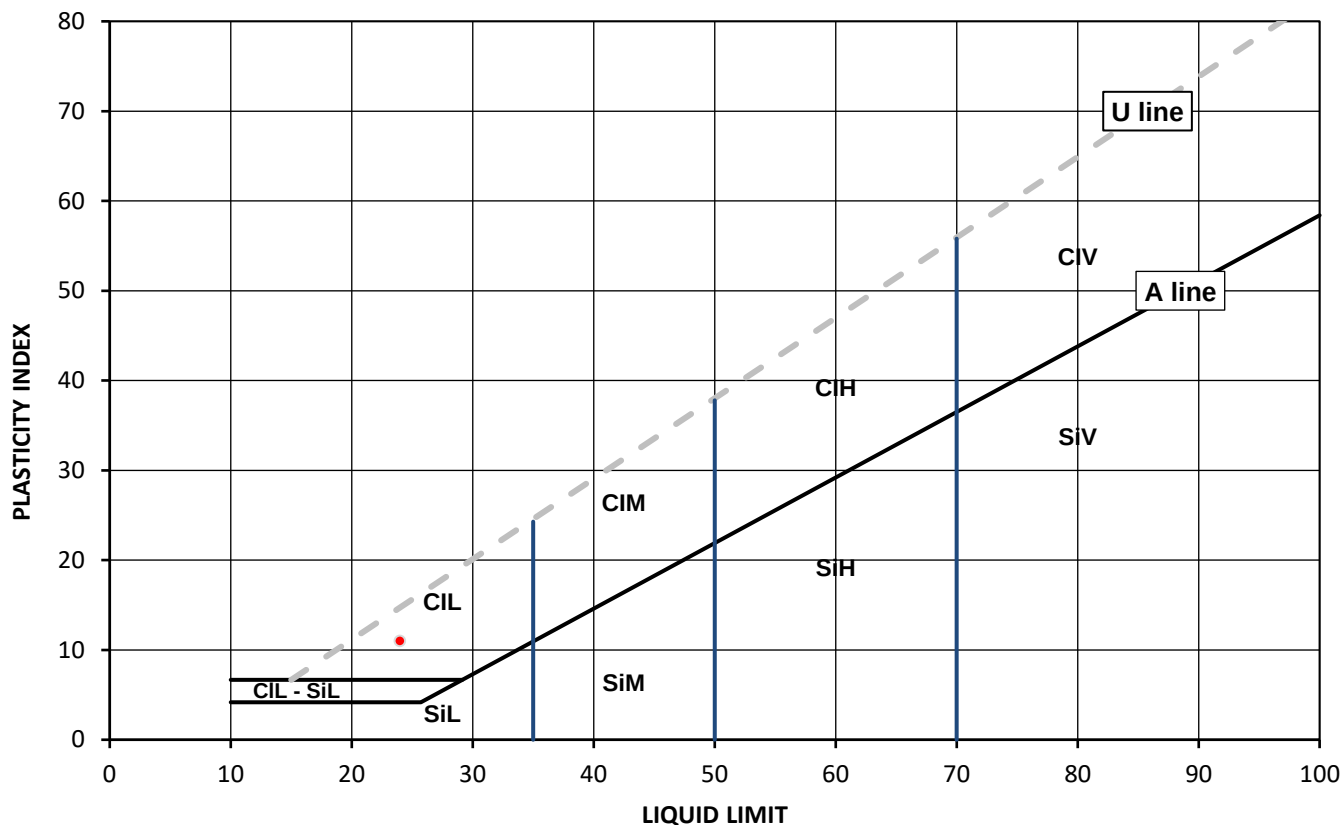
Test Results:

Laboratory Reference: 2556165
Hole No.: DS105
Sample Reference: Not Given
Sample Description: Brown slightly gravelly clayey SAND

Depth Top [m]: 2.80
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after >425um removed by hand

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
17	24	13	11	97



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

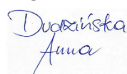
	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L Low	50 to 70
	M Medium	exceeding 70
	H High	append to classification for organic material (eg CIHO)
	V Very high	
	O Organic	

Note: Water Content by BS 1377-2: 1990: Clause 3.2

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.3 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Delta-Simons
Client Address: Suite C1, Joseph's Well,
Hanover Walk, Leeds,
LS3 1AB
Contact: Tom Bywater
Site Address: Stakehill

Client Reference: 554769
Job Number: 23-12187
Date Sampled: 13/01/2023
Date Received: 17/01/2023
Date Tested: 24/01/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

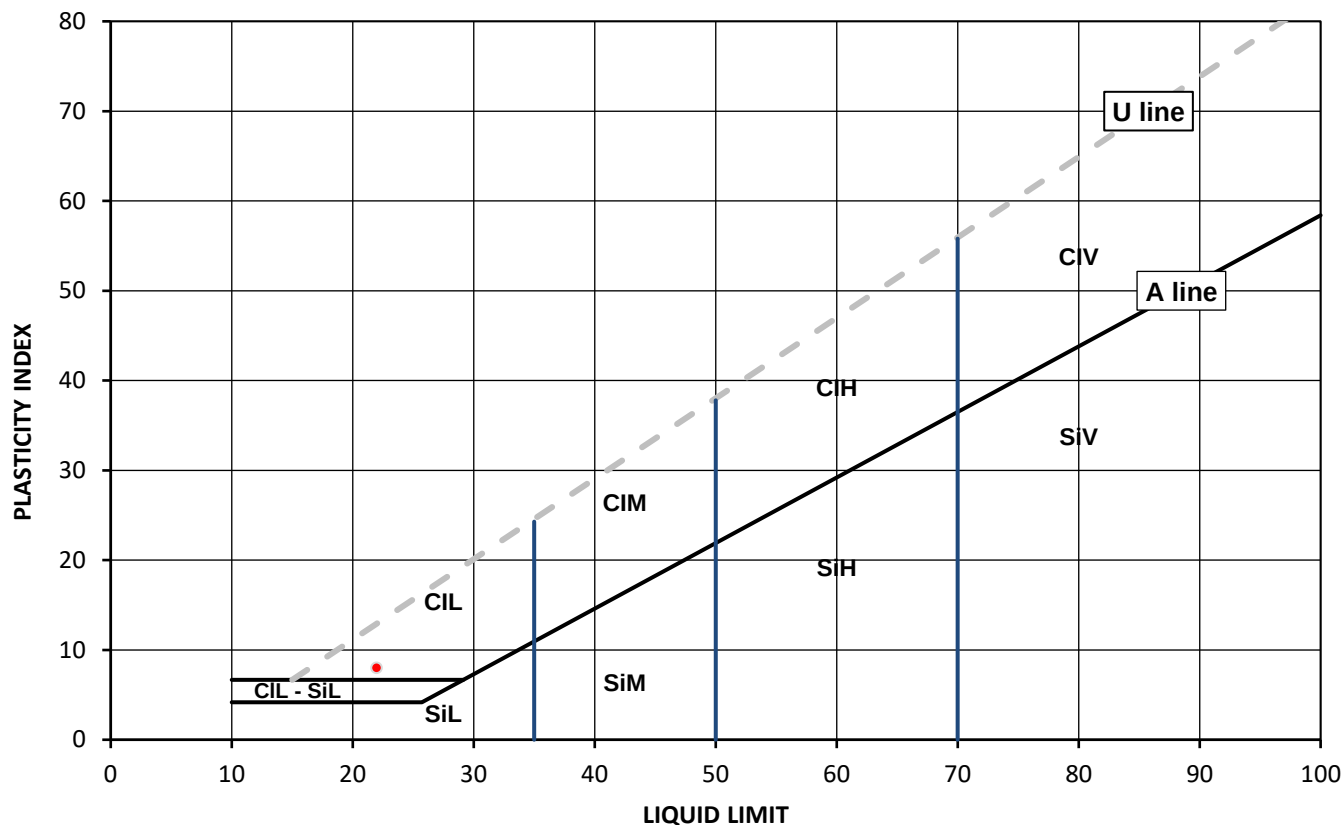
Test Results:

Laboratory Reference: 2556166
Hole No.: DS105
Sample Reference: Not Given
Sample Description: Brown slightly gravelly slightly clayey SAND

Depth Top [m]: 4.50
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after >425um removed by hand

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
16	22	14	8	77



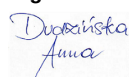
Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L Low	50 to 70
	M Medium	exceeding 70
	H High	append to classification for organic material (eg CIHO)
	V Very high	
	O Organic	

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:



Anna Dudzinska
PL Deputy Head of Reporting Team
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.3 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Delta-Simons
Client Address: Suite C1, Joseph's Well,
Hanover Walk, Leeds,
LS3 1AB
Contact: Tom Bywater
Site Address: Stakehill

Client Reference: 554769
Job Number: 23-12187
Date Sampled: 13/01/2023
Date Received: 17/01/2023
Date Tested: 24/01/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

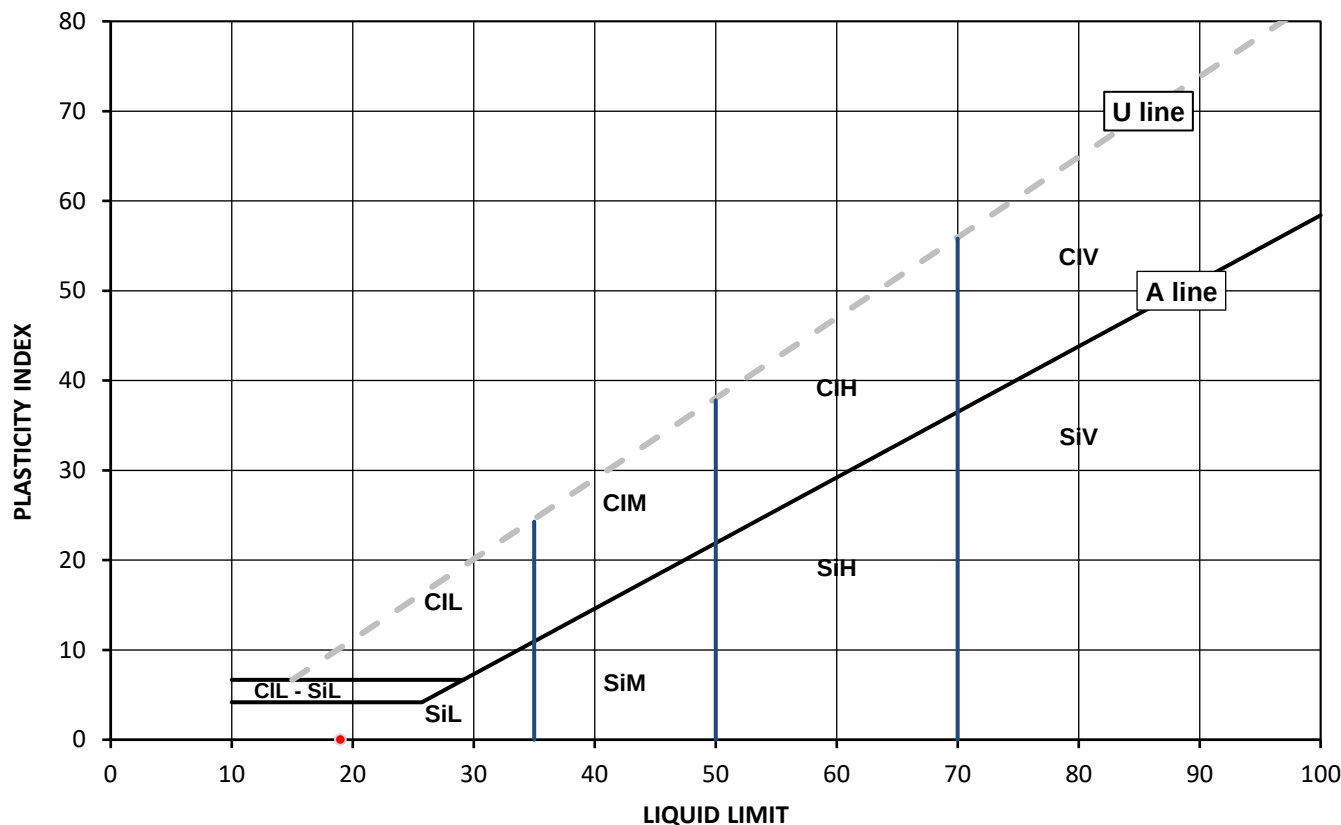
Test Results:

Laboratory Reference: 2556173
Hole No.: CP101
Sample Reference: Not Given
Sample Description: Dark brown slightly gravelly slightly clayey SAND

Depth Top [m]: 9.00
Depth Base [m]: 9.45
Sample Type: B

Sample Preparation: Tested after >425um removed by hand

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
19	19	NP	NP	98



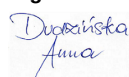
Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L	Low
	M	Medium
	H	High
	V	Very high
	O	Organic
		append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks: NP - non plastic

Signed:



Anna Dudzinska
PL Deputy Head of Reporting Team
for and on behalf of i2 Analytical Ltd

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4041

Client: Delta-Simons
 Client Address: Suite C1, Joseph's Well,
 Hanover Walk, Leeds,
 LS3 1AB
 Contact: Tom Bywater
 Site Address: Stakehill

SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

Water Content by BS 1377-2:1990: Clause 3.2; Atterberg by BS 1377-2: 1990:
 Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2:
 1990: Clause 8.2

i2 Analytical Ltd
 Unit 8 Harrowden Road
 Brackmills Industrial Estate
 Northampton NN4 7EB



Environmental Science

Client Reference: 554769
 Job Number: 23-12187
 Date Sampled: 13/01/2023
 Date Received: 17/01/2023
 Date Tested: 24/01/2023
 Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Water Content BS 1377-2 [W] %	Water Content BS EN ISO 17892-2 [W] %	Atterberg				Density			Total Porosity# %		
		Reference	Depth Top m	Depth Base m	Type					% Passing 425um %	WL %	Wp %	Ip %	bulk Mg/m3	dry Mg/m3	PD Mg/m3			
2556157	DS101	Not Given	3.00	Not Given	D	Brown SAND		9.8											
2556158	DS102	Not Given	2.50	Not Given	D	Brown slightly gravelly SAND		8.5											
2556159	DS103	Not Given	1.80	Not Given	D	Brown gravelly clayey SAND	Atterberg 4 Point	8.8		60	25	14	11						
2556160	DS103	Not Given	3.20	Not Given	D	Brown slightly gravelly clayey SAND	Atterberg 4 Point	14		91	22	10	12						
2556161	DS103	Not Given	4.00	Not Given	D	Brown slightly gravelly clayey SAND	Atterberg 4 Point	13		91	23	11	12						
2556162	DS104	Not Given	1.60	Not Given	D	Brown very sandy CLAY	Atterberg 4 Point	16		100	28	14	14						
2556163	DS104	Not Given	5.00	Not Given	D	Brown sandy CLAY		23											
2556164	DS105	Not Given	1.50	Not Given	D	Brown slightly gravelly very sandy CLAY	Atterberg 4 Point	16		80	27	15	12						
2556165	DS105	Not Given	2.80	Not Given	D	Brown slightly gravelly clayey SAND	Atterberg 4 Point	17		97	24	13	11						
2556166	DS105	Not Given	4.50	Not Given	D	Brown slightly gravelly slightly clayey SAND	Atterberg 4 Point	16		77	22	14	8						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Dudzińska Anna

Anna Dudzińska
 PL Deputy Head of Reporting Team
 for and on behalf of i2 Analytical Ltd

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SUMMARY REPORT
SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Client: Delta-Simons
Client Address: Suite C1, Joseph's Well,
Hanover Walk, Leeds,
LS3 1AB
Contact: Tom Bywater
Site Address: Stakehill

Water Content by BS 1377-2:1990: Clause 3.2; Atterberg by BS 1377-2: 1990:
Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2:
1990: Clause 8.2

Client Reference: 554769
Job Number: 23-12187
Date Sampled: 13/01/2023
Date Received: 17/01/2023
Date Tested: 24/01/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Water Content BS 1377-2 [W] %	Water Content BS EN ISO 17892-2 [W] %	Atterberg				Density			Total Porosity# %		
		Reference	Depth Top m	Depth Base m	Type					% Passing 425um %	WL %	Wp %	Ip %	bulk Mg/m3	dry Mg/m3	PD Mg/m3			
2556168	CP101	Not Given	1.20	1.65	D	Dark brown slightly clayey SAND		2.7											
2556173	CP101	Not Given	9.00	9.45	B	Dark brown slightly gravelly slightly clayey SAND	Atterberg 4 Point	19		98	19	NP	NP						

Note: # Non accredited; NP - Non plastic

Comments:

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Signed:

Dudzińska Anna

Anna Dudzińska
PL Deputy Head of Reporting Team
for and on behalf of i2 Analytical Ltd



4041

Client: Delta-Simons
 Client Address: Suite C1, Joseph's Well,
 Hanover Walk, Leeds,
 LS3 1AB
 Contact: Tom Bywater
 Site Address: Stakehill

SUMMARY REPORT**DETERMINATION OF WATER CONTENT**

Tested in Accordance with: BS 1377-2: 1990: Clause 3.2

i2 Analytical Ltd
 Unit 8 Harrowden Road
 Brackmills Industrial Estate
 Northampton NN4 7EB



Environmental Science

Client Reference: 554769
 Job Number: 23-12187
 Date Sampled: 13/01/2023
 Date Received: 17/01/2023
 Date Tested: 24/01/2023
 Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC	Sample preparation / Oven temperature at the time of testing			
		Reference	Depth Top m	Depth Base m	Type							
2556157	DS101	Not Given	3.00	Not Given	D	Brown SAND		9.8	Sample was quartered, oven dried at 106 °C			
2556158	DS102	Not Given	2.50	Not Given	D	Brown slightly gravelly SAND		8.5	Sample was quartered, oven dried at 106 °C			
2556159	DS103	Not Given	1.80	Not Given	D	Brown gravelly clayey SAND		8.8	Sample was quartered, oven dried at 106 °C			
2556160	DS103	Not Given	3.20	Not Given	D	Brown slightly gravelly clayey SAND		14	Sample was quartered, oven dried at 106 °C			
2556161	DS103	Not Given	4.00	Not Given	D	Brown slightly gravelly clayey SAND		13	Sample was quartered, oven dried at 106 °C			
2556162	DS104	Not Given	1.60	Not Given	D	Brown very sandy CLAY		16	Sample was quartered, oven dried at 106 °C			
2556163	DS104	Not Given	5.00	Not Given	D	Brown sandy CLAY		23	Sample was quartered, oven dried at 106 °C			
2556164	DS105	Not Given	1.50	Not Given	D	Brown slightly gravelly very sandy CLAY		16	Sample was quartered, oven dried at 106 °C			
2556165	DS105	Not Given	2.80	Not Given	D	Brown slightly gravelly clayey SAND		17	Sample was quartered, oven dried at 106 °C			
2556166	DS105	Not Given	4.50	Not Given	D	Brown slightly gravelly slightly clayey SAND		16	Sample was quartered, oven dried at 106 °C			

Comments:

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Signed:

Anna Dudzinska
 PL Deputy Head of Reporting Team
 for and on behalf of i2 Analytical Ltd



4041

Client: Delta-Simons
Client Address: Suite C1, Joseph's Well,
Hanover Walk, Leeds,
LS3 1AB
Contact: Tom Bywater
Site Address: Stakehill

SUMMARY REPORT

DETERMINATION OF WATER CONTENT

Tested in Accordance with: BS 1377-2: 1990: Clause 3.2

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

Client Reference: 554769
Job Number: 23-12187
Date Sampled: 13/01/2023
Date Received: 17/01/2023
Date Tested: 24/01/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC	Sample preparation / Oven temperature at the time of testing			
		Reference	Depth Top m	Depth Base m	Type							
2556168	CP101	Not Given	1.20	1.65	D	Dark brown slightly clayey SAND		2.7	Sample was quartered, oven dried at 106 °C			
2556173	CP101	Not Given	9.00	9.45	B	Dark brown slightly gravelly slightly clayey SAND		19	Sample was quartered, oven dried at 106 °C			

Comments:

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Signed:

Dudzińska Anna

Anna Dudzińska
PL Deputy Head of Reporting Team
for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Delta-Simons
Client Address: Suite C1, Joseph's Well,
Hanover Walk, Leeds,
LS3 1AB
Contact: Tom Bywater
Site Address: Stakehill

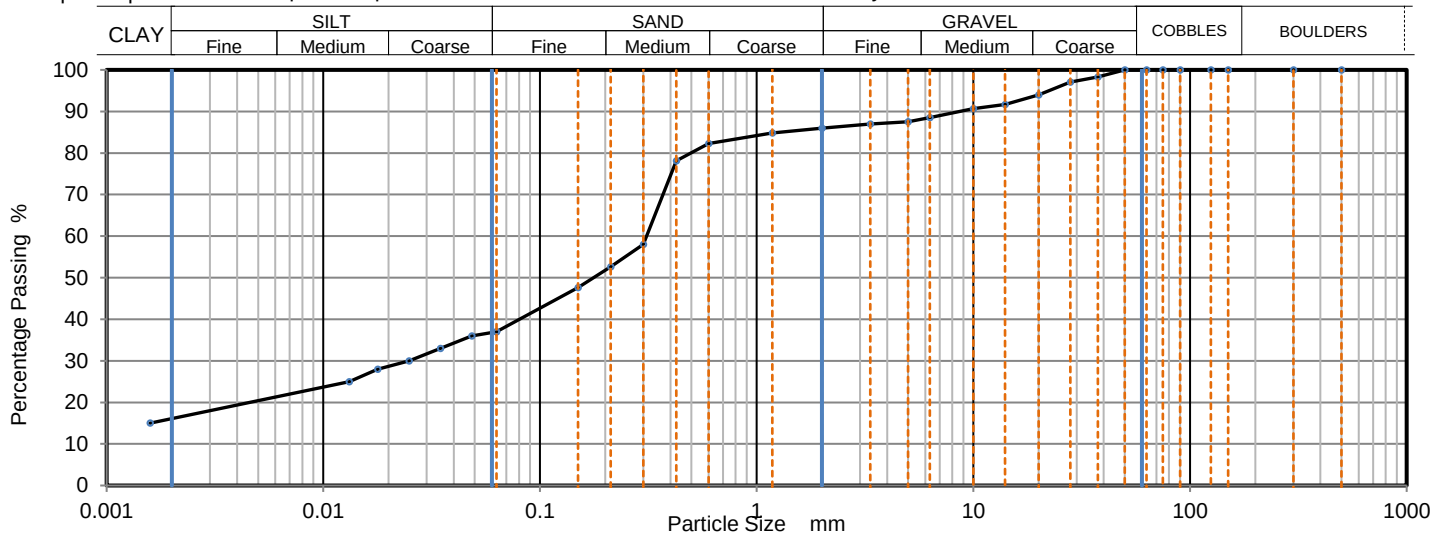
Client Reference: 554769
Job Number: 23-12187
Date Sampled: 13/01/2023
Date Received: 17/01/2023
Date Tested: 24/01/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2556167
Hole No.: CP101
Sample Reference: Not Given
Sample Description: Dark brown clayey SAND
Sample Preparation: Sample was quartered, oven dried at 106.0 °C and broken down by hand.

Depth Top [m]: 0.70
Depth Base [m]: 1.20
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	37
300	100	0.0484	36
150	100	0.0347	33
125	100	0.0249	30
90	100	0.0178	28
75	100	0.0132	25
63	100	0.0016	15
50	100		
37.5	98		
28	97		
20	94		
14	92		
10	91		
6.3	89		
5	88		
3.35	87	Particle density (assumed) 2.65 Mg/m3	
2	86		
1.18	85		
0.6	82		
0.425	78		
0.3	58		
0.212	53		
0.15	48		
0.063	37		

Sample Proportions	% dry mass
Very coarse	0
Gravel	14
Sand	49
Silt	21
Clay	16

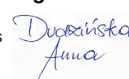
Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 200
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:



Anna Dudzinska
PL Deputy Head of Reporting Team
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Delta-Simons
Client Address: Suite C1, Joseph's Well,
Hanover Walk, Leeds,
LS3 1AB
Contact: Tom Bywater
Site Address: Stakehill

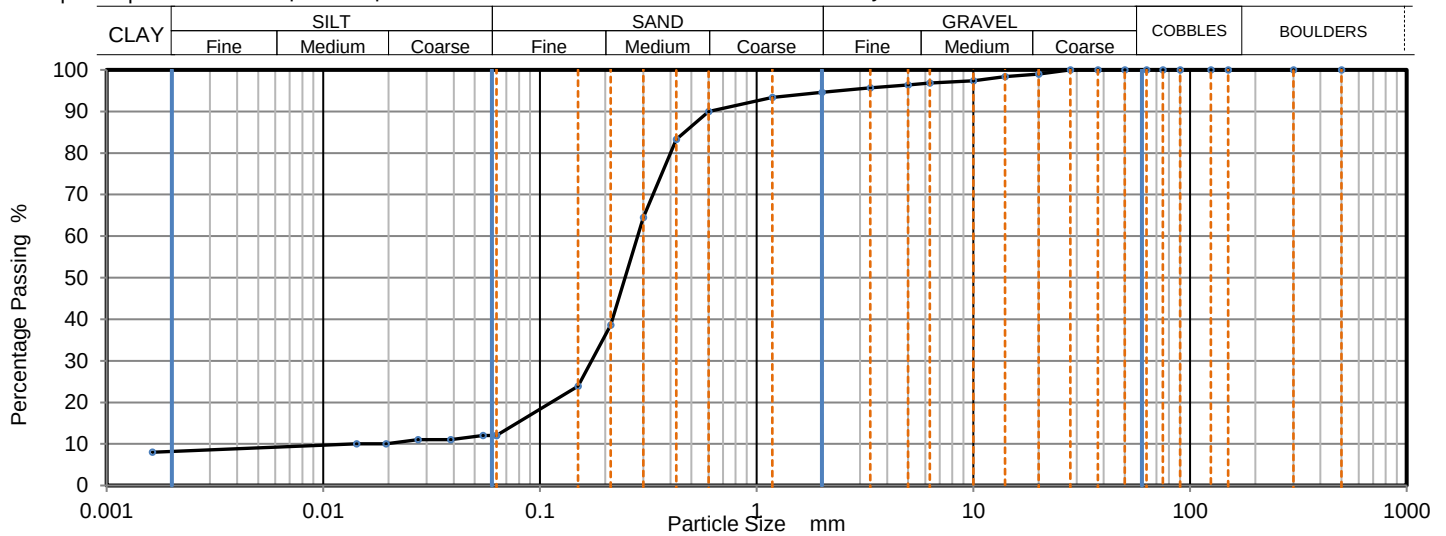
Client Reference: 554769
Job Number: 23-12187
Date Sampled: 13/01/2023
Date Received: 17/01/2023
Date Tested: 24/01/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2556169
Hole No.: CP101
Sample Reference: Not Given
Sample Description: Dark brown SAND
Sample Preparation: Sample was quartered, oven dried at 106.0 °C and broken down by hand.

Depth Top [m]: 2.00
Depth Base [m]: 2.45
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	12
300	100	0.0545	12
150	100	0.0387	11
125	100	0.0274	11
90	100	0.0195	10
75	100	0.0142	10
63	100	0.0016	8
50	100		
37.5	100		
28	100		
20	99		
14	98		
10	97		
6.3	97		
5	96		
3.35	96	Particle density (assumed) 2.65 Mg/m3	
2	95		
1.18	93		
0.6	90		
0.425	83		
0.3	65		
0.212	39		
0.15	24		
0.063	12		

Sample Proportions	% dry mass
Very coarse	0
Gravel	5
Sand	83
Silt	4
Clay	8

Grading Analysis		
D100	mm	28
D60	mm	0.282
D30	mm	0.173
D10	mm	0.02
Uniformity Coefficient		14
Curvature Coefficient		5.3

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

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Signed:

Anna Dudzinska
Anna

Anna Dudzinska
PL Deputy Head of Reporting Team
for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Delta-Simons
Client Address: Suite C1, Joseph's Well,
Hanover Walk, Leeds,
LS3 1AB
Contact: Tom Bywater
Site Address: Stakehill

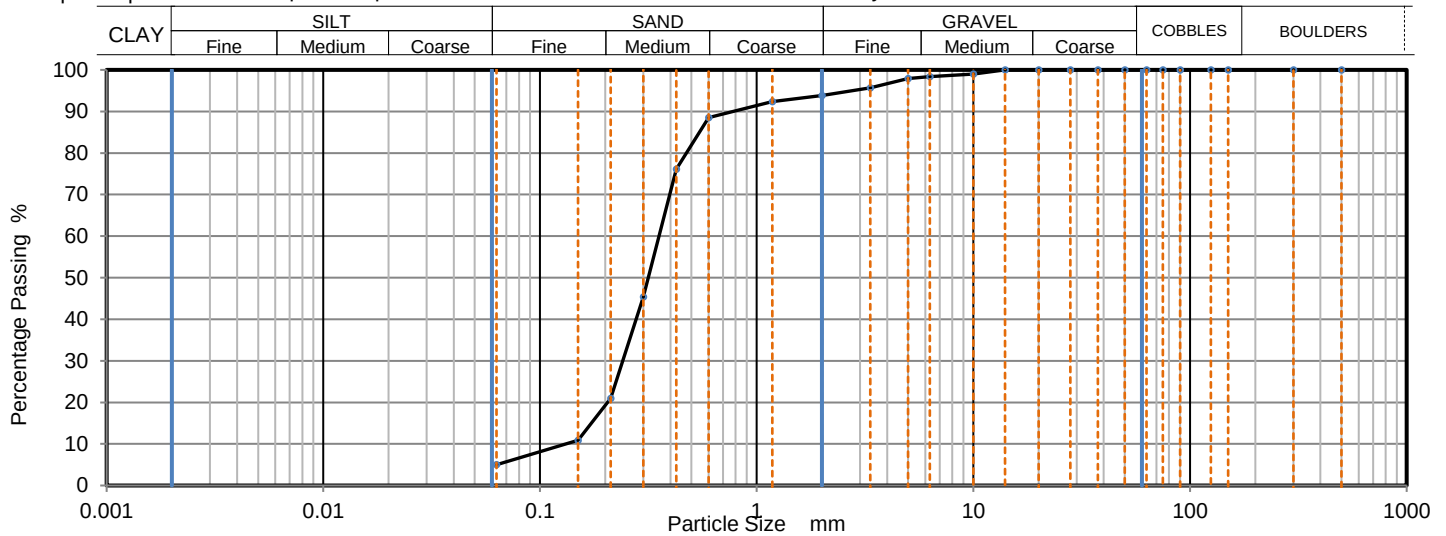
Client Reference: 554769
Job Number: 23-12187
Date Sampled: 13/01/2023
Date Received: 17/01/2023
Date Tested: 24/01/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2556170
Hole No.: CP101
Sample Reference: Not Given
Sample Description: Dark brown SAND
Sample Preparation: Sample was quartered, oven dried at 106.0 °C and broken down by hand.

Depth Top [m]: 4.00
Depth Base [m]: 4.45
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	98		
5	98		
3.35	96		
2	94		
1.18	92		
0.6	89		
0.425	76		
0.3	45		
0.212	21		
0.15	11		
0.063	6		

Sample Proportions	% dry mass
Very coarse	0
Gravel	6
Sand	88
Fines <0.063mm	6

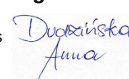
Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks:

Signed:



Anna Dudzinska
PL Deputy Head of Reporting Team
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Delta-Simons
Client Address: Suite C1, Joseph's Well,
Hanover Walk, Leeds,
LS3 1AB
Contact: Tom Bywater
Site Address: Stakehill

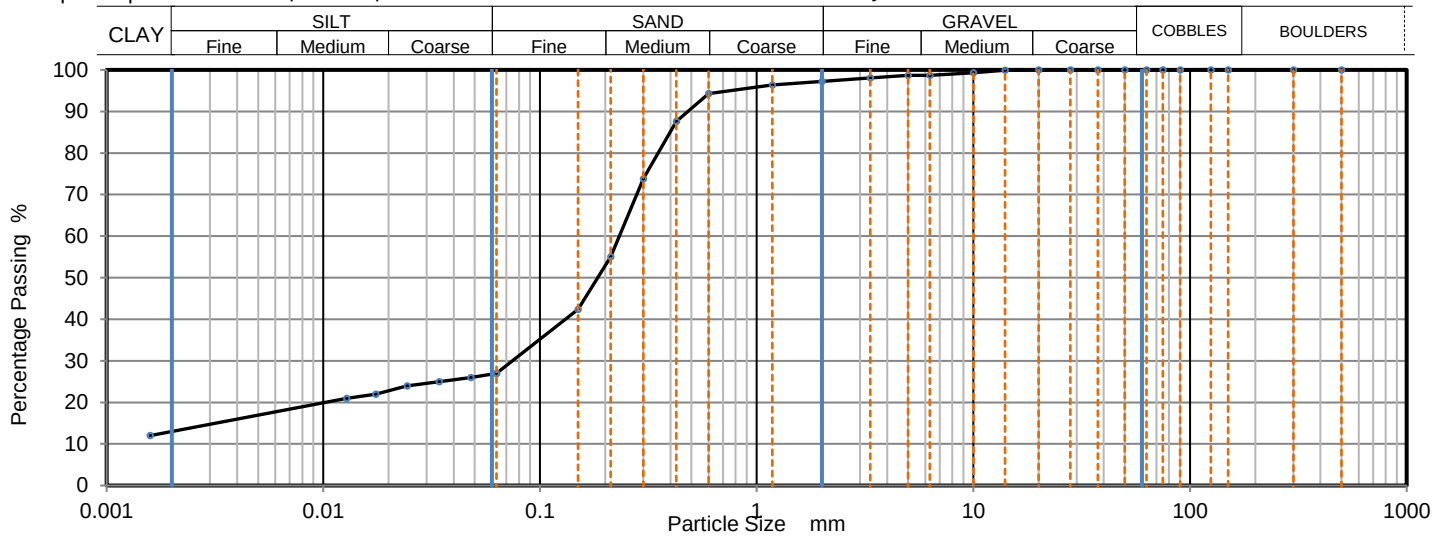
Client Reference: 554769
Job Number: 23-12187
Date Sampled: 13/01/2023
Date Received: 17/01/2023
Date Tested: 24/01/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2556171
Hole No.: CP101
Sample Reference: Not Given
Sample Description: Dark brown silty SAND
Sample Preparation: Sample was quartered, oven dried at 106.0 °C and broken down by hand.

Depth Top [m]: 6.00
Depth Base [m]: 6.45
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	27
300	100	0.0480	26
150	100	0.0342	25
125	100	0.0243	24
90	100	0.0174	22
75	100	0.0128	21
63	100	0.0016	12
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	99		
5	99		
3.35	98	Particle density (assumed) 2.65 Mg/m3	
2	97		
1.18	96		
0.6	94		
0.425	88		
0.3	74		
0.212	55		
0.15	42		
0.063	27		

Sample Proportions	% dry mass
Very coarse	0
Gravel	3
Sand	71
Silt	13
Clay	13

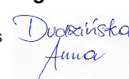
Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 150
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:



Anna Dudzinska
PL Deputy Head of Reporting Team
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF THE UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Tested in Accordance with: BS 1377-7: 1990: Clause 8

Client: Delta-Simons
Client Address: Suite C1, Joseph's Well,
Hanover Walk, Leeds,
LS3 1AB
Contact: Tom Bywater
Site Address: Stakehill

Client Reference: 554769
Job Number: 23-12187
Date Sampled: 13/01/2023
Date Received: 17/01/2023
Date Tested: 24/01/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

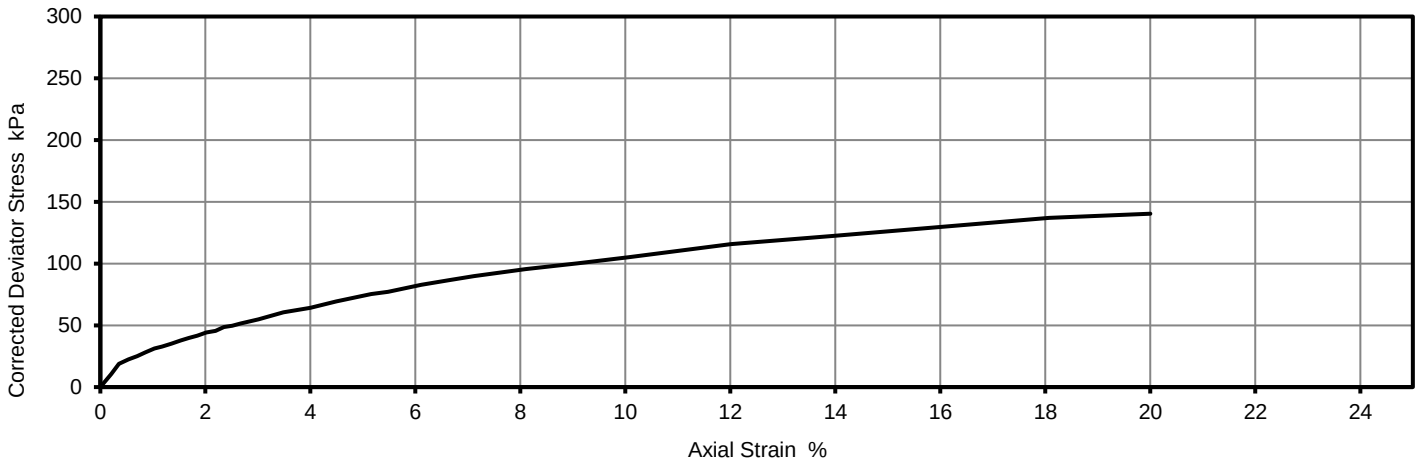
Test Results:

Laboratory Reference: 2556172
Hole No.: CP101
Sample Reference: Not Given
Sample Description: Brown slightly gravelly slightly sandy CLAY
Sample Preparation: Sample prepared in accordance with BS 1377-1:2016 Clause 9.1.1.

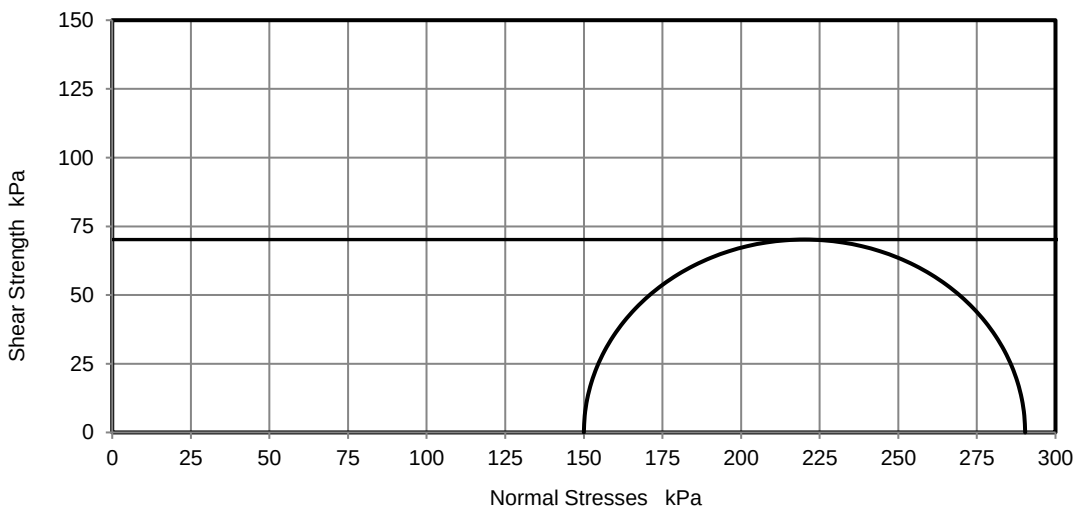
Depth Top [m]: 7.50
Depth Base [m]: 7.95
Sample Type: U

Test Number	1	Rate of Strain	2.00	%/min
Length	101.22	Cell Pressure	150	kPa
Diameter	49.16	Axial Strain at failure	20.0	%
Bulk Density	2.24	Deviator Stress, ($\sigma_1 - \sigma_3$) _f	140	kPa
Moisture Content	14	Undrained Shear Strength, c_u	70	kPa $\frac{1}{2}(\sigma_1 - \sigma_3)_f$
Dry Density	1.97	Mode of Failure	Compound	
Membrane Correction	1.61	Membrane thickness	0.21	mm

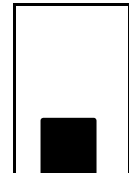
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

Remarks:

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

Signed:

Anna Dudzinska

Anna Dudzinska
PL Deputy Head of Reporting Team
for and on behalf of i2 Analytical Ltd

Appendix E - Soil Chemical Analysis Results

Tom Bywater
Delta-Simons
Suite C1
Joseph's Well
Hanover Walk
Leeds
LS3 1AB

e: tom.bywater@deltasimons.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 23-12216

Project / Site name:	Stakehill	Samples received on:	17/01/2023
Your job number:	554769	Samples instructed on/ Analysis started on:	17/01/2023
Your order number:	DS72083	Analysis completed by:	31/01/2023
Report Issue Number:	1	Report issued on:	31/01/2023
Samples Analysed:	6 soil samples		


Signed:

Adam Fenwick
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 23-12216
Project / Site name: Stakehill
Your Order No: DS72083

Lab Sample Number				2556223	2556224	2556225	2556226	2556227	2556228
Sample Reference				DS101	DS102	DS103	DS104	DS105	CP101
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.50	4.20	4.00	3.00	4.50	2.00-2.45
Date Sampled				13/01/2023	13/01/2023	13/01/2023	13/01/2023	13/01/2023	13/01/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status						
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	8.4	15	10	12	11	8.5
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3	0.3

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.6	8.1	8.6	8.1	7.6	8.2
Total Sulphate as SO ₄	%	0.005	MCERTS	0.006	0.008	0.017	0.022	0.012	0.01
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	6	2.9	18	47	18	14
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.003	0.0014	0.0091	0.024	0.0088	0.0069
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	3	1.4	9.1	23.7	8.8	6.9
Total Sulphur	%	0.005	MCERTS	< 0.005	0.021	0.009	0.068	0.006	0.006

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

Analytical Report Number : 23-12216

Project / Site name: Stakehill

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2556223	DS101	None Supplied	1.5	Brown sand with gravel.
2556224	DS102	None Supplied	4.2	Brown sand with gravel.
2556225	DS103	None Supplied	4	Brown clay and sand.
2556226	DS104	None Supplied	3	Brown clay and sand.
2556227	DS105	None Supplied	4.5	Brown clay and sand.
2556228	CP101	None Supplied	2.00-2.45	Brown sandy clay.

Analytical Report Number : 23-12216

Project / Site name: Stakehill

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture

correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Tom Bywater
Delta-Simons
Suite C1
Joseph's Well
Hanover Walk
Leeds
LS3 1AB

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

e: tom.bywater@deltasimons.com

Analytical Report Number : 23-12312

Project / Site name:	Stakehill	Samples received on:	17/01/2023
Your job number:	554769	Samples instructed on/ Analysis started on:	17/01/2023
Your order number:	DS72083	Analysis completed by:	27/01/2023
Report Issue Number:	1	Report issued on:	27/01/2023
Samples Analysed:	4 soil samples		


Signed:

Adam Fenwick
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 23-12312
Project / Site name: Stakehill
Your Order No: DS72083

Lab Sample Number				2556614	2556615	2556616	2556617
Sample Reference				DS101	DS102	DS105	CP101
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20-0.40	0.20-0.40	0.20-0.40	0.20-0.30
Date Sampled				13/01/2023	13/01/2023	13/01/2023	12/01/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	22	13	12	15
Total mass of sample received	kg	0.001	NONE	0.8	0.8	0.8	0.8

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.4	8.2	8.3	8.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	7	12	14	37
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0035	0.0059	0.0068	0.018
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	3.5	5.9	6.8	18.3

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.15	< 0.05	0.07	0.24
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.27	0.05	0.08	0.46
Pyrene	mg/kg	0.05	MCERTS	0.26	0.05	0.08	0.42
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.16	< 0.05	0.06	0.28
Chrysene	mg/kg	0.05	MCERTS	0.19	< 0.05	0.06	0.25
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.22	< 0.05	< 0.05	0.24
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.09	< 0.05	< 0.05	0.18
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.22
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	1.34	< 0.80	< 0.80	2.34
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	5.1	7.7	8.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.2	0.3
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	20	12	18	18
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	12	18	18
Copper (aqua regia extractable)	mg/kg	1	MCERTS	26	12	18	22
Lead (aqua regia extractable)	mg/kg	1	MCERTS	59	13	23	34
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	15	13	21	18
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	74	33	56	53

Monoaromatics & Oxygenates

Benzene	mg/kg	0.005	MCERTS	< 0.005	< 0.005	< 0.005	< 0.005
Toluene	mg/kg	0.005	MCERTS	< 0.005	< 0.005	< 0.005	< 0.005
Ethylbenzene	mg/kg	0.005	MCERTS	< 0.005	< 0.005	< 0.005	< 0.005
p & m-xylene	mg/kg	0.005	MCERTS	< 0.005	< 0.005	< 0.005	< 0.005
o-xylene	mg/kg	0.005	MCERTS	< 0.005	< 0.005	< 0.005	< 0.005
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.005	NONE	< 0.005	< 0.005	< 0.005	< 0.005

Analytical Report Number: 23-12312
Project / Site name: Stakehill
Your Order No: DS72083

Lab Sample Number	2556614	2556615	2556616	2556617
Sample Reference	DS101	DS102	DS105	CP101
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.20-0.40	0.20-0.40	0.20-0.40	0.20-0.30
Date Sampled	13/01/2023	13/01/2023	13/01/2023	12/01/2023
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_ID_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_ID_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_ID_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_ID_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_ID_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC35 - EC40 _{EH_CU_ID_AL}	mg/kg	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	< 10	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS_ID_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS_ID_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_ID_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_ID_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_ID_AR}	mg/kg	2	MCERTS	2	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	16	< 10	< 10	< 10
TPH-CWG - Aromatic >EC35 - EC40 _{EH_CU_ID_AR}	mg/kg	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_ID_AR}	mg/kg	10	NONE	24	< 10	< 10	14

TPH (C35 - C40) _{EH_CU_ID_TOTAL}	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
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VOCS

Chloromethane	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
Chloroethane	mg/kg	0.005	NONE	< 0.0050	< 0.0050	< 0.0050	-
Bromomethane	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
Vinyl Chloride	mg/kg	0.005	NONE	< 0.0050	< 0.0050	< 0.0050	-
Trichlorofluoromethane	mg/kg	0.005	NONE	< 0.0050	< 0.0050	< 0.0050	-
1,1-Dichloroethene	mg/kg	0.005	NONE	< 0.0050	< 0.0050	< 0.0050	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	mg/kg	0.005	NONE	< 0.0050	< 0.0050	< 0.0050	-
Cis-1,2-dichloroethene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.005	NONE	< 0.0050	< 0.0050	< 0.0050	-
1,1-Dichloroethane	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
2,2-Dichloropropane	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
Trichloromethane	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
1,1,1-Trichloroethane	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
1,2-Dichloroethane	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
1,1-Dichloropropene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
Trans-1,2-dichloroethene	mg/kg	0.005	NONE	< 0.0050	< 0.0050	< 0.0050	-
Benzene	mg/kg	0.005	MCERTS	< 0.0050	< 0.0050	< 0.0050	-
Tetrachloromethane	mg/kg	0.005	NONE	< 0.0050	< 0.0050	< 0.0050	-
1,2-Dichloropropane	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
Trichloroethene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
Dibromomethane	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
Bromodichloromethane	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
Cis-1,3-dichloropropene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
Trans-1,3-dichloropropene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
Toluene	mg/kg	0.005	MCERTS	< 0.0050	< 0.0050	< 0.0050	-
1,1,2-Trichloroethane	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
1,3-Dichloropropane	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
Dibromochloromethane	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
Tetrachloroethene	mg/kg	0.005	NONE	< 0.0050	< 0.0050	< 0.0050	-
1,2-Dibromoethane	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
Chlorobenzene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
1,1,1,2-Tetrachloroethane	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-

Analytical Report Number: 23-12312
 Project / Site name: Stakehill
 Your Order No: DS72083

Lab Sample Number				2556614	2556615	2556616	2556617
Sample Reference				DS101	DS102	DS105	CP101
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20-0.40	0.20-0.40	0.20-0.40	0.20-0.30
Date Sampled				13/01/2023	13/01/2023	13/01/2023	12/01/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Ethylbenzene	mg/kg	0.005	MCERTS	< 0.0050	< 0.0050	< 0.0050	-
p & m-Xylene	mg/kg	0.005	MCERTS	< 0.0050	< 0.0050	< 0.0050	-
Styrene	mg/kg	0.005	ISO 17025	< 0.005	< 0.005	< 0.005	-
Tribromomethane	mg/kg	0.005	NONE	< 0.0050	< 0.0050	< 0.0050	-
o-Xylene	mg/kg	0.005	MCERTS	< 0.0050	< 0.0050	< 0.0050	-
1,1,2,2-Tetrachloroethane	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
Isopropylbenzene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
Bromobenzene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
n-Propylbenzene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
2-Chlorotoluene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
4-Chlorotoluene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
1,3,5-Trimethylbenzene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
tert-Butylbenzene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
1,2,4-Trimethylbenzene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
sec-Butylbenzene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
1,3-Dichlorobenzene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
p-Isopropyltoluene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
1,2-Dichlorobenzene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
1,4-Dichlorobenzene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
Butylbenzene	mg/kg	0.005	NONE	< 0.0050	< 0.0050	< 0.0050	-
1,2-Dibromo-3-chloropropane	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
1,2,4-Trichlorobenzene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-
Hexachlorobutadiene	mg/kg	0.005	NONE	< 0.0050	< 0.0050	< 0.0050	-
1,2,3-Trichlorobenzene	mg/kg	0.005	ISO 17025	< 0.0050	< 0.0050	< 0.0050	-

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

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* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2556614	DS101	None Supplied	0.20-0.40	Brown clay and loam with vegetation.
2556615	DS102	None Supplied	0.20-0.40	Brown clay and loam with vegetation.
2556616	DS105	None Supplied	0.20-0.40	Brown clay and loam with vegetation.
2556617	CP101	None Supplied	0.20-0.30	Brown clay and loam with vegetation.

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Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
TPH Chromatogram in Soil	TPH Chromatogram in Soil.	In-house method	L064-PL	D	NONE
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

Analytical Report Number : 23-12312
Project / Site name: Stakehill

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
-	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

