



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 29/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

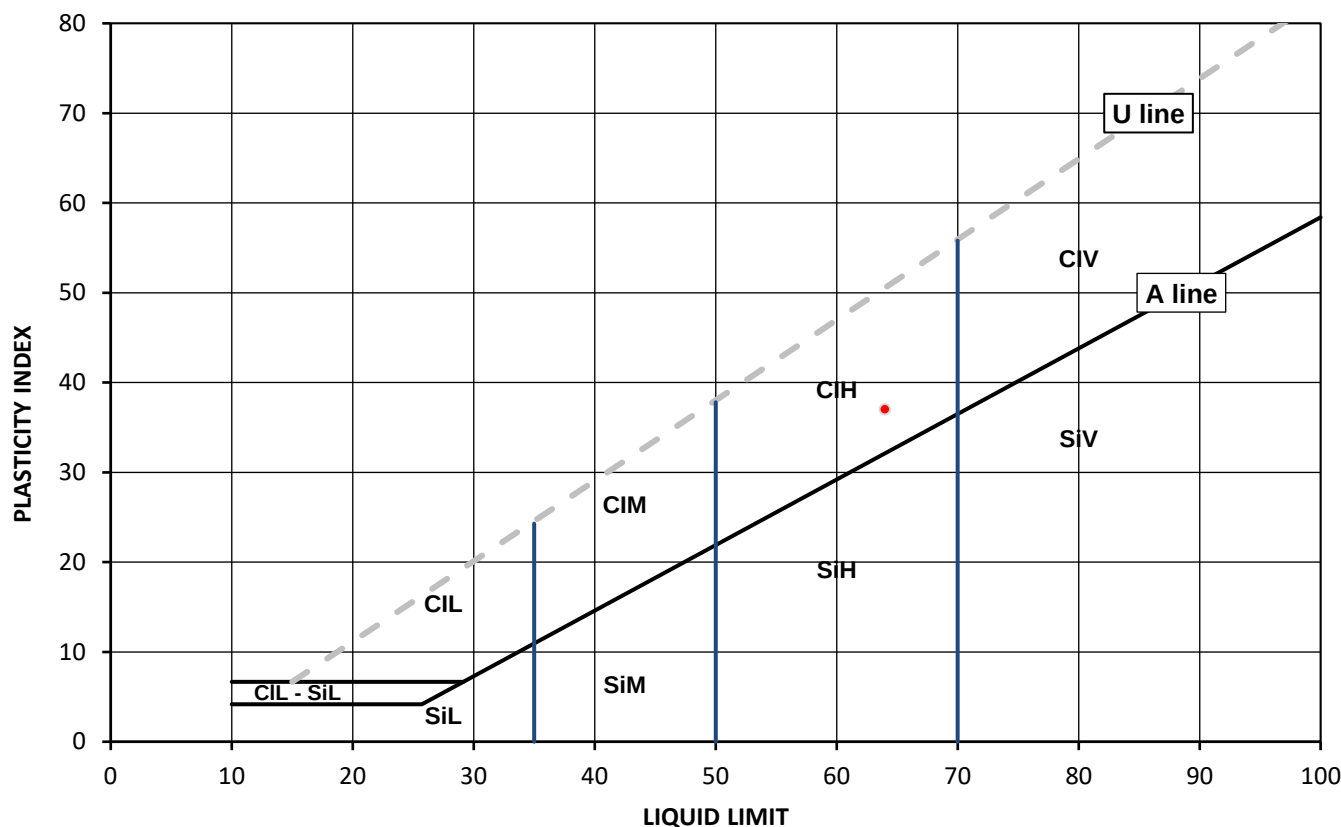
Test Results:

Laboratory Reference: 2784000
Hole No.: TP101
Sample Reference: Not Given
Sample Description: Brownish grey CLAY

Depth Top [m]: 2.00
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
30	64	27	37	100



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

	Clay	Plasticity	Liquid Limit
CI	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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.

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

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 29/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

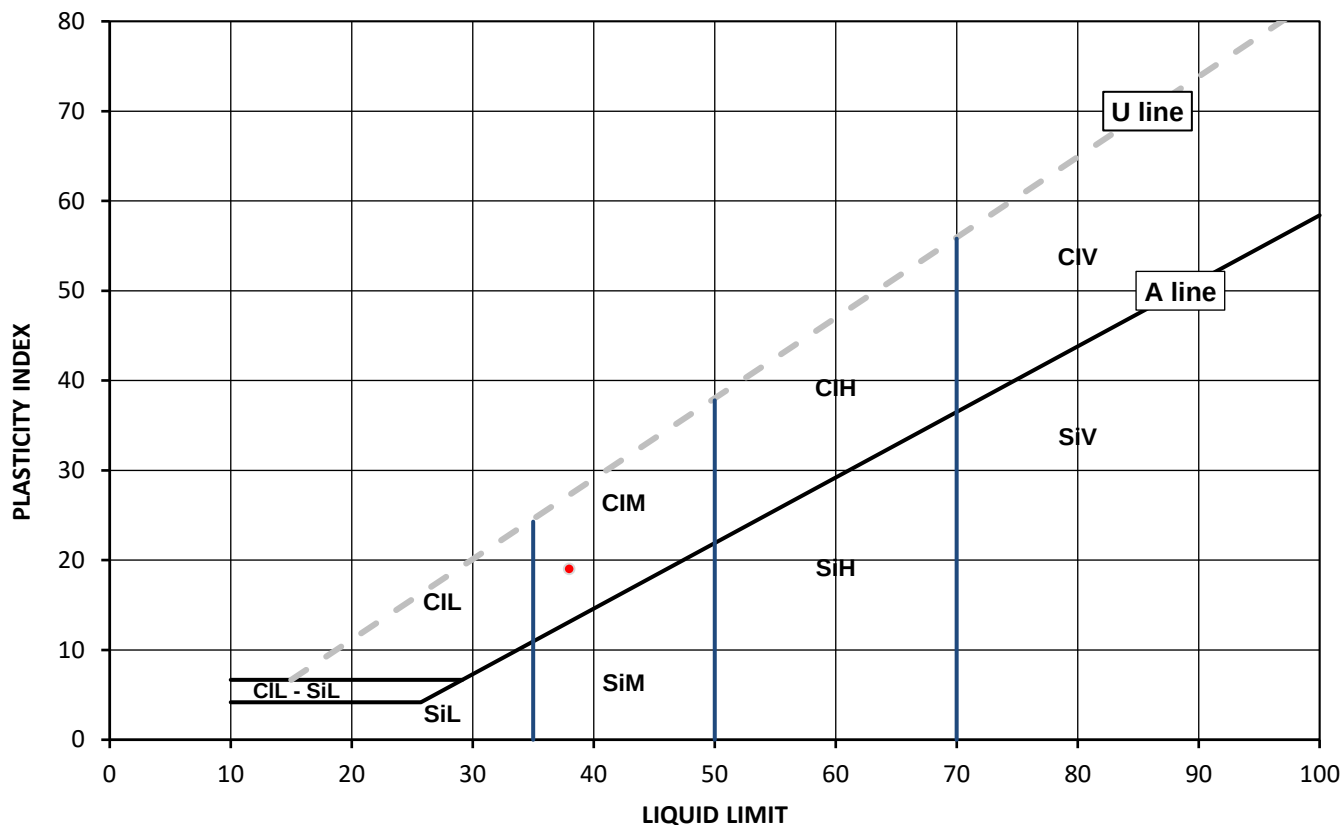
Test Results:

Laboratory Reference: 2784002
Hole No.: TP103
Sample Reference: Not Given
Sample Description: Yellowish brown slightly gravelly sandy CLAY

Depth Top [m]: 0.60
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
15	38	19	19	97



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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.

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

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

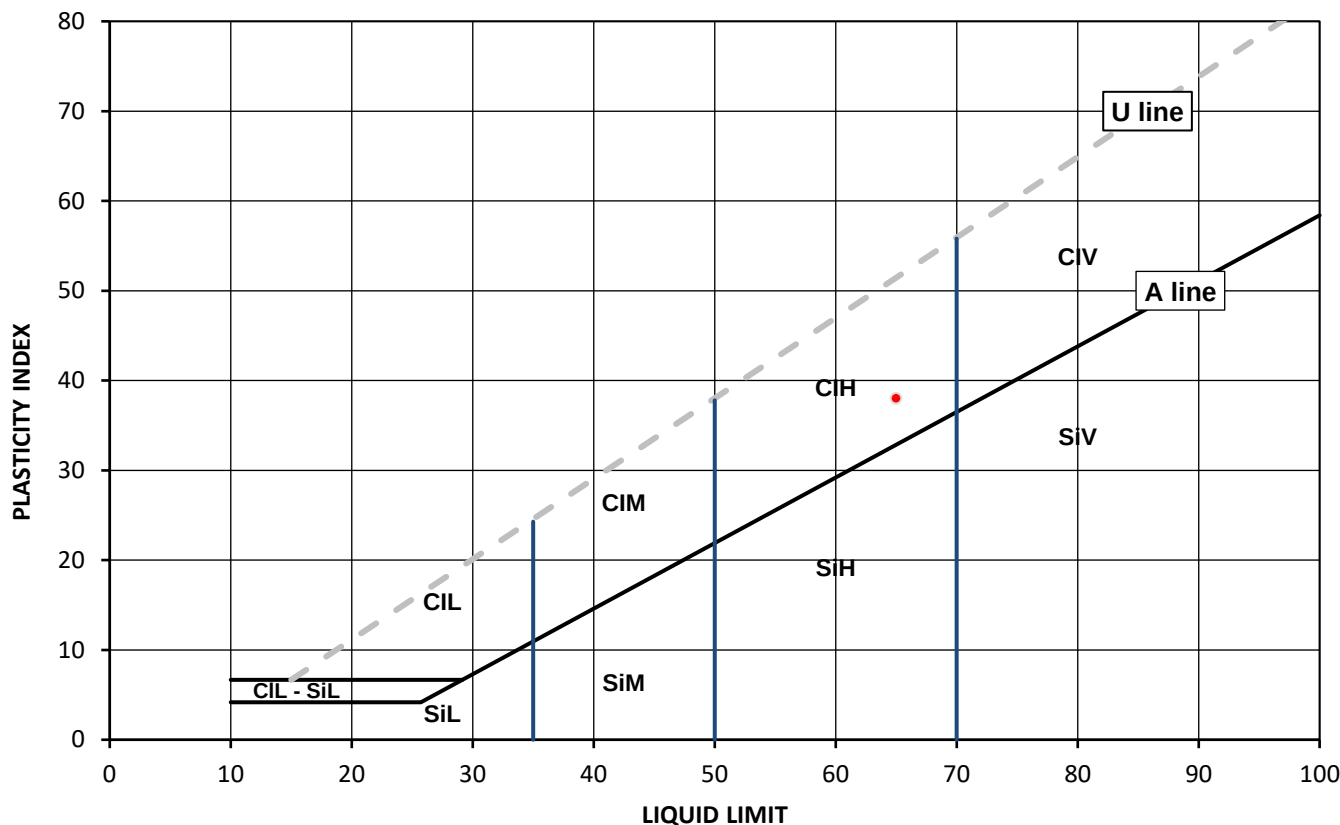
Test Results:

Laboratory Reference: 2784005
Hole No.: TP104
Sample Reference: Not Given
Sample Description: Yellowish brown gravelly 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
18	65	27	38	54



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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 27/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

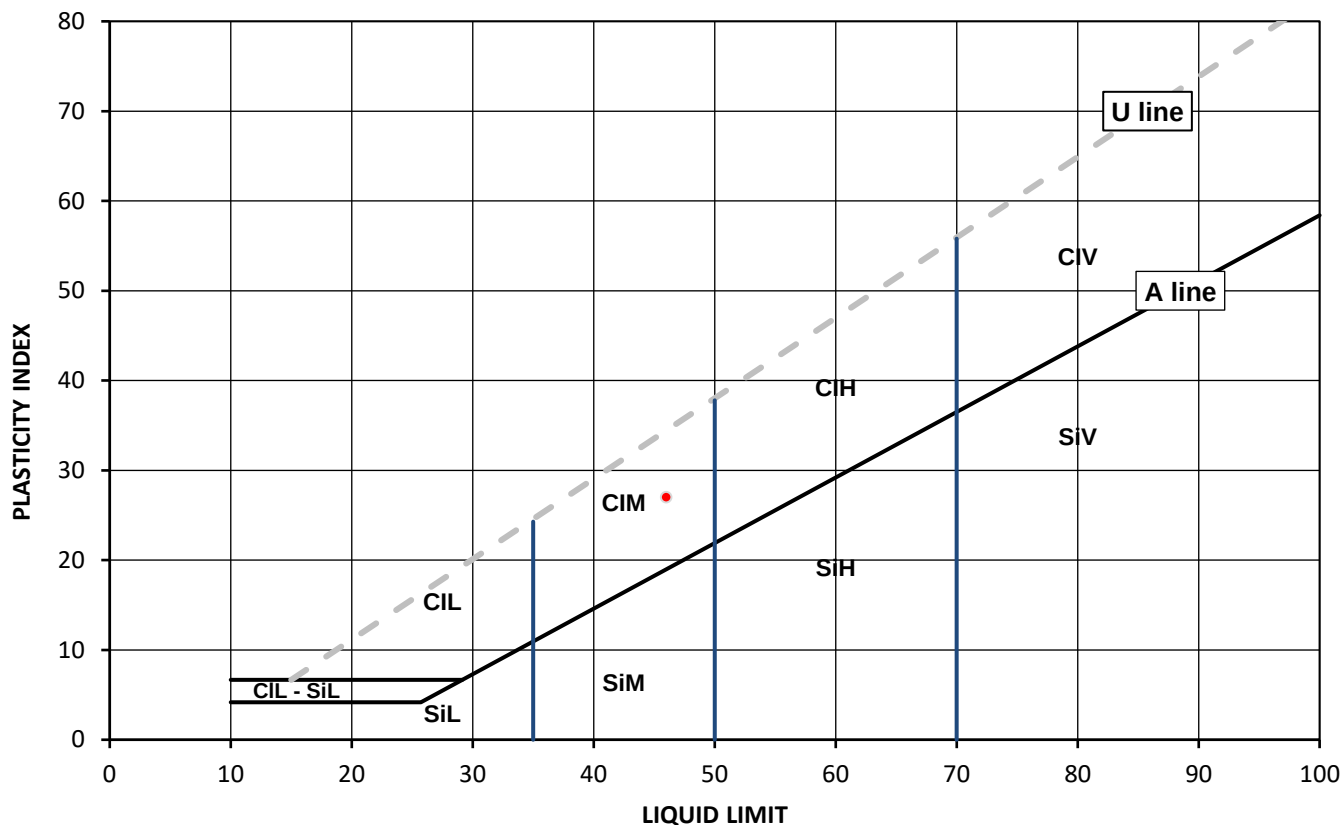
Test Results:

Laboratory Reference: 2784008
Hole No.: TP105
Sample Reference: Not Given
Sample Description: Yellowish brown slightly gravelly slightly sandy CLAY

Depth Top [m]: 1.90
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
21	46	19	27	83



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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 27/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

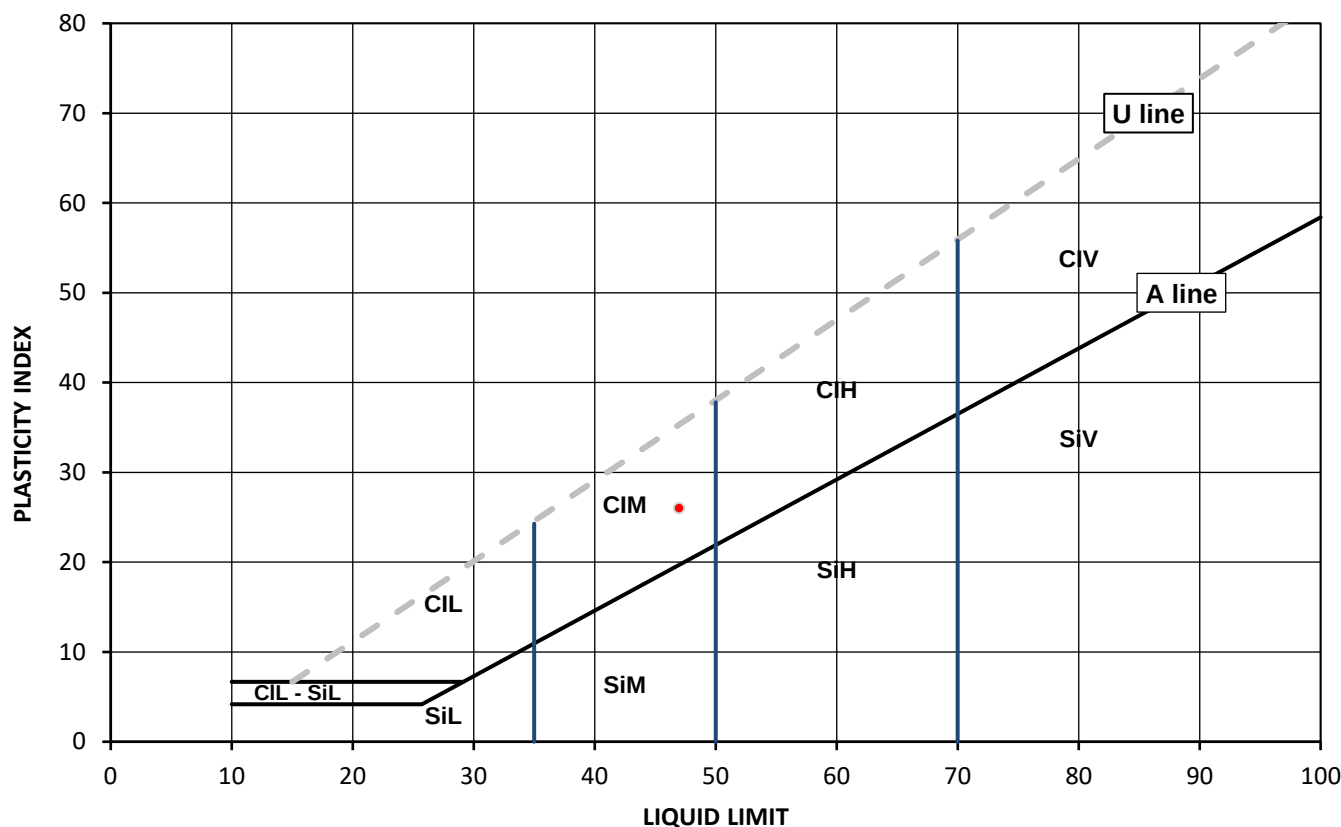
Test Results:

Laboratory Reference: 2784009
Hole No.: TP106
Sample Reference: Not Given
Sample Description: Light brown slightly sandy CLAY

Depth Top [m]: 0.80
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
26	47	21	26	100



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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 31/07/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

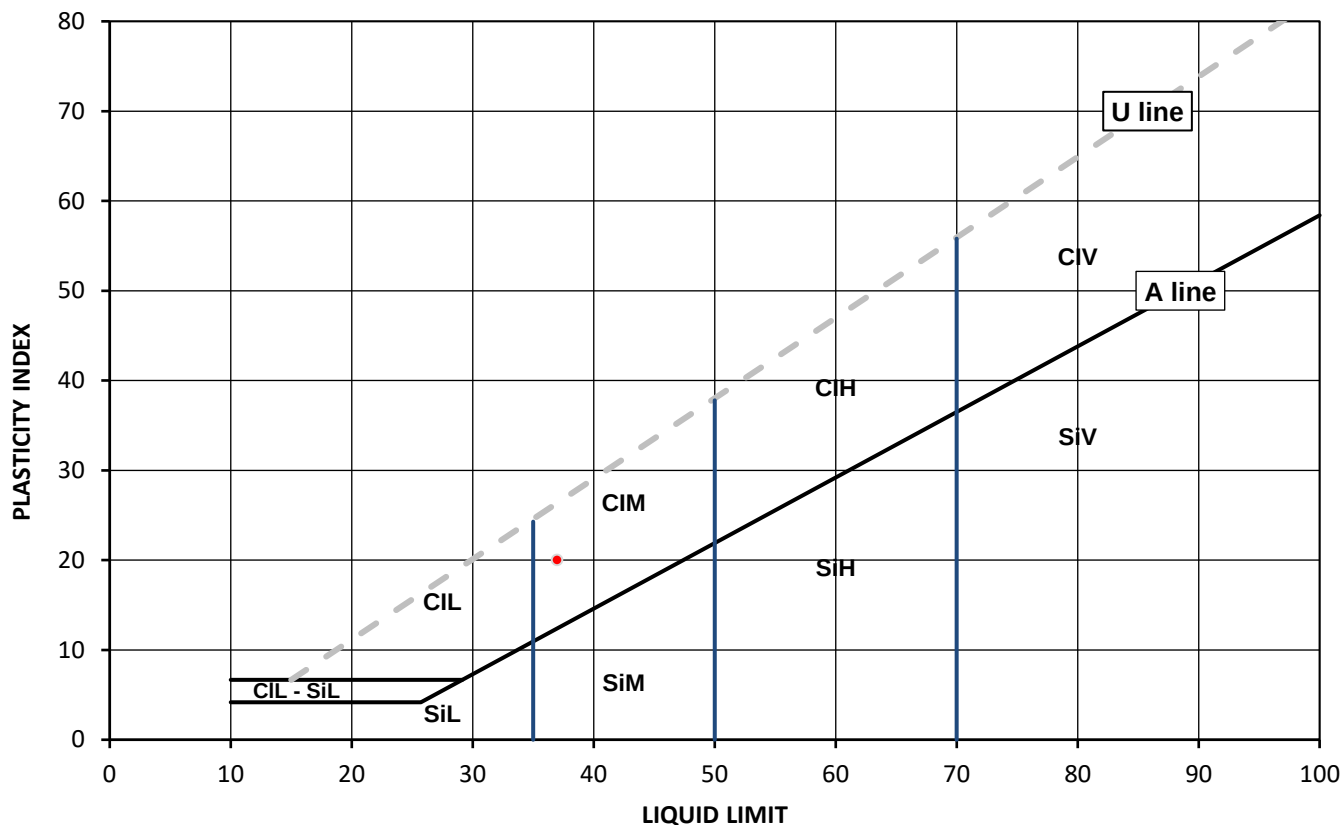
Test Results:

Laboratory Reference: 2784011
Hole No.: TP107
Sample Reference: Not Given
Sample Description: Yellowish brown sandy CLAY

Depth Top [m]: 2.80
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
32	37	17	20	100



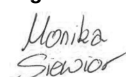
Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	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

Remarks:

Signed:



Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledean Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 31/07/2023
Date Received: 15/08/2023
Date Tested: 23/08/2023
Sampled By: Client- MR

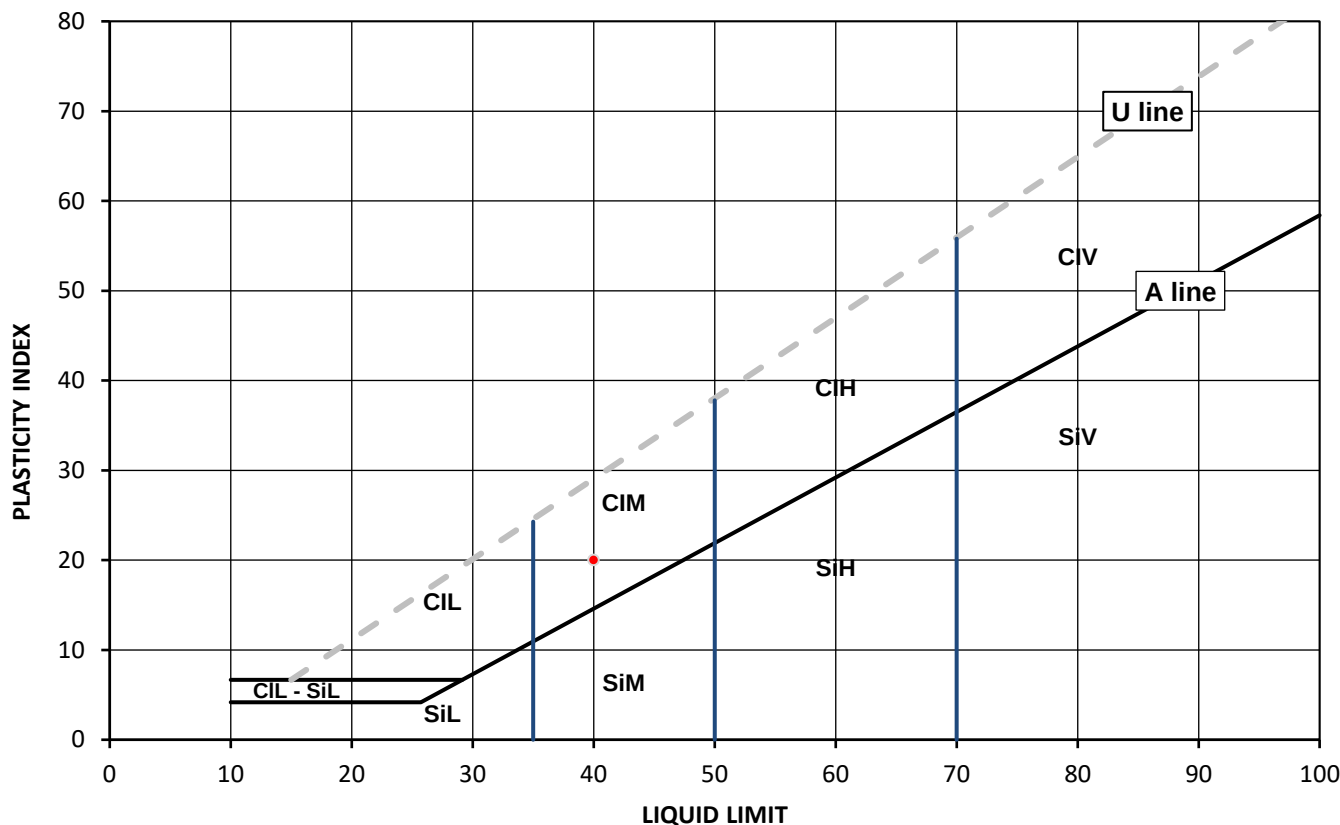
Test Results:

Laboratory Reference: 2784012
Hole No.: TP108
Sample Reference: Not Given
Sample Description: Yellowish brown slightly gravelly sandy CLAY

Depth Top [m]: 1.10
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
21	40	20	20	97



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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.

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

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 29/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

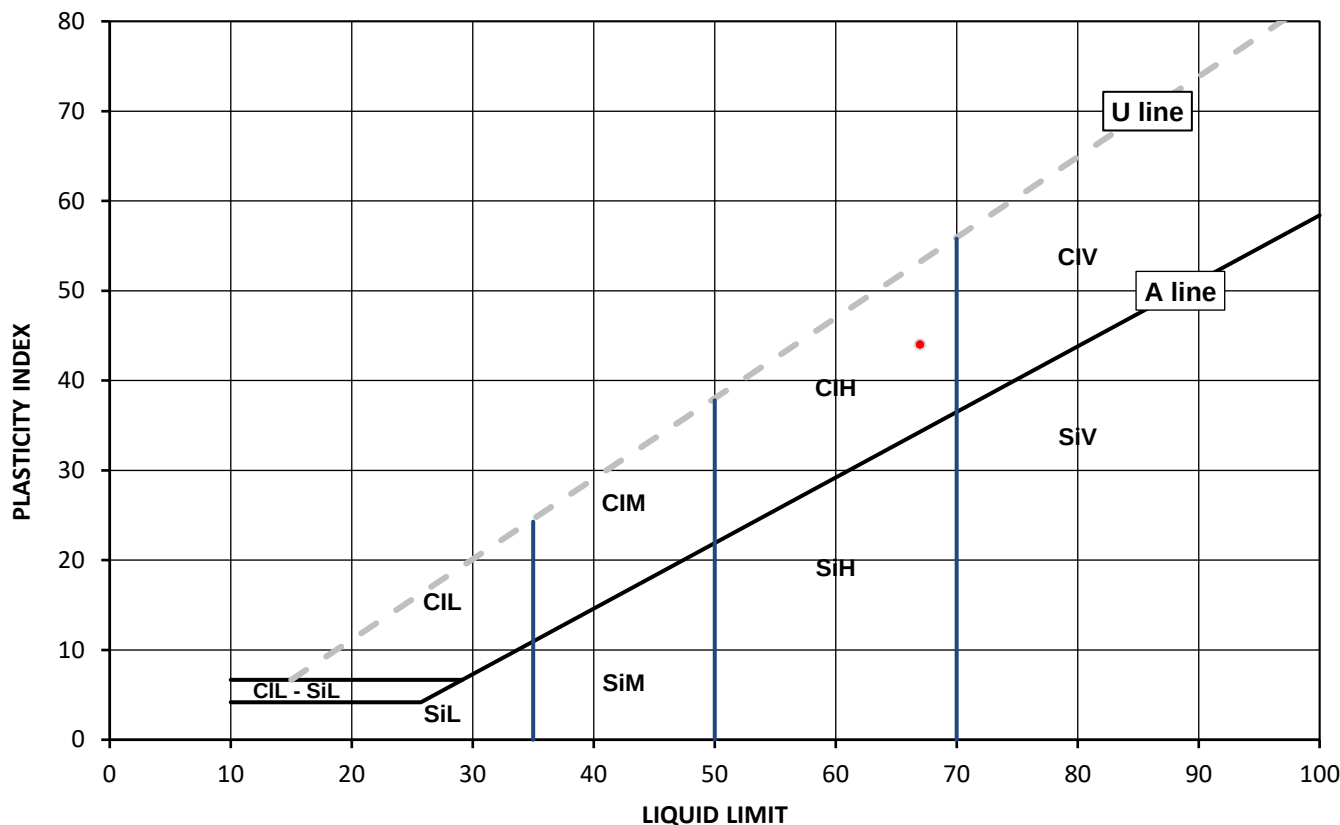
Test Results:

Laboratory Reference: 2784016
Hole No.: TP110
Sample Reference: Not Given
Sample Description: Brown CLAY

Depth Top [m]: 1.10
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
27	67	23	44	100



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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.

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

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06/2023
Date Received: 15/08/2023
Date Tested: 23/08/2023
Sampled By: Client- MR

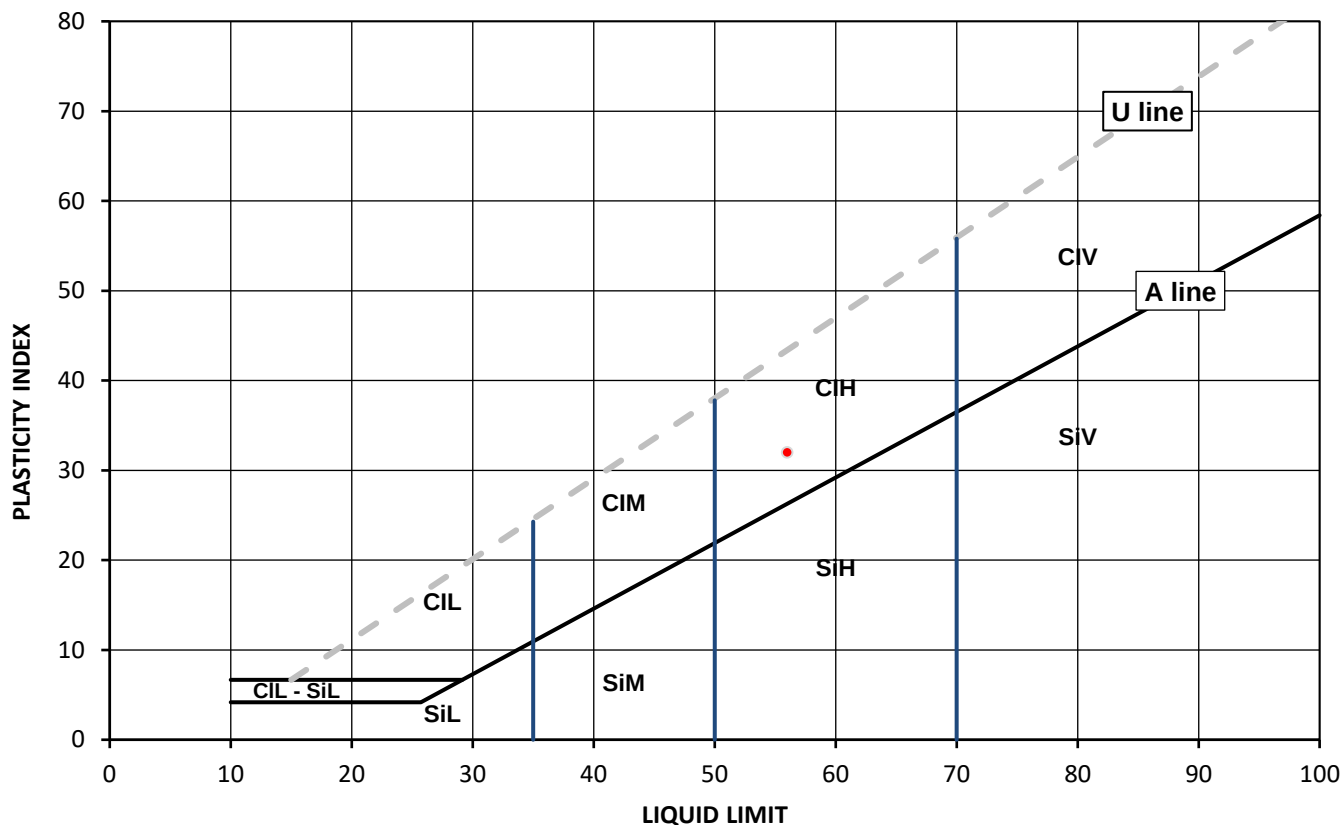
Test Results:

Laboratory Reference: 2784020
Hole No.: TP112
Sample Reference: Not Given
Sample Description: Yellowish brown gravelly slightly sandy CLAY

Depth Top [m]: 2.00
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
12	56	24	32	40



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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06/2023
Date Received: 15/08/2023
Date Tested: 23/08/2023
Sampled By: Client- MR

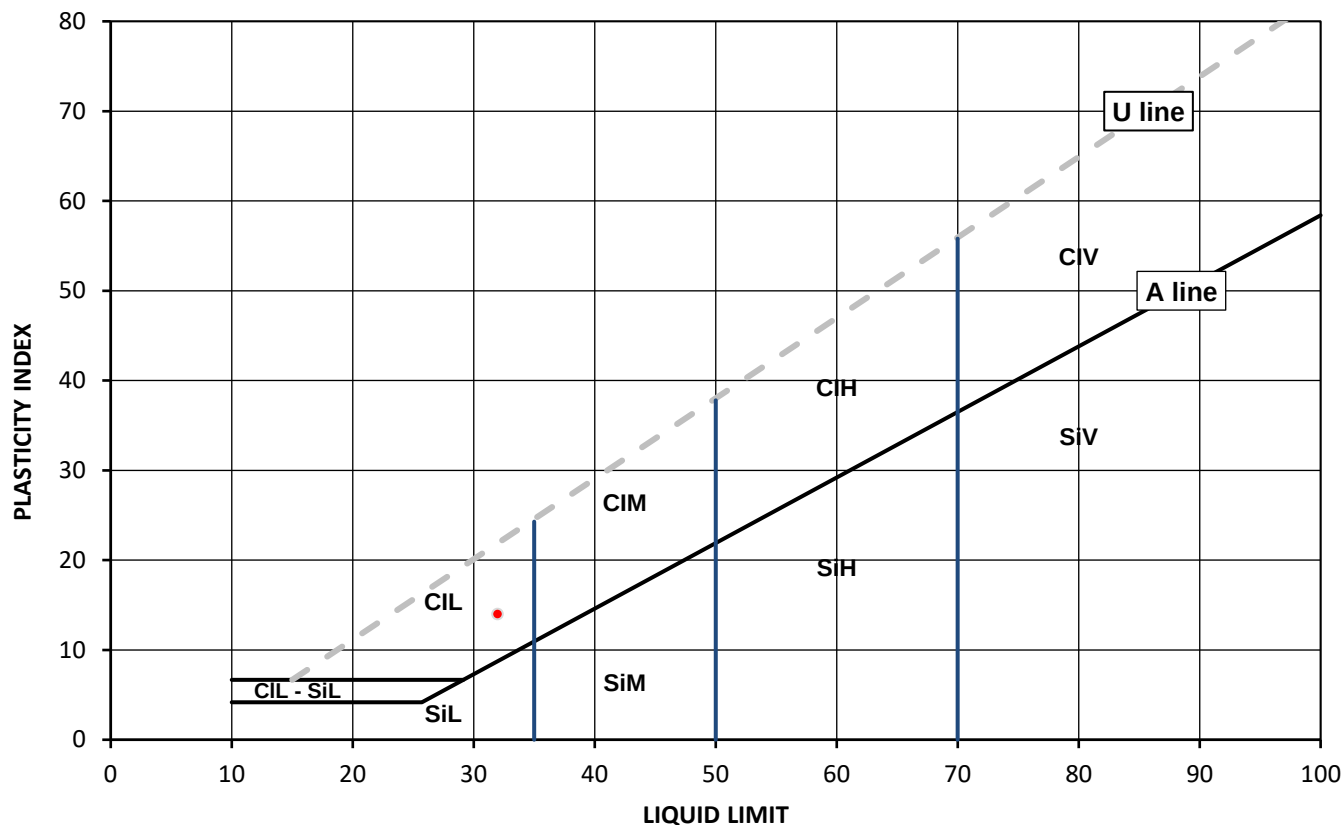
Test Results:

Laboratory Reference: 2784023
Hole No.: TP113
Sample Reference: Not Given
Sample Description: Brownish grey very sandy CLAY

Depth Top [m]: 2.80
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
24	32	18	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	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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 28/06/2023
Date Received: 15/08/2023
Date Tested: 23/08/2023
Sampled By: Client- MR

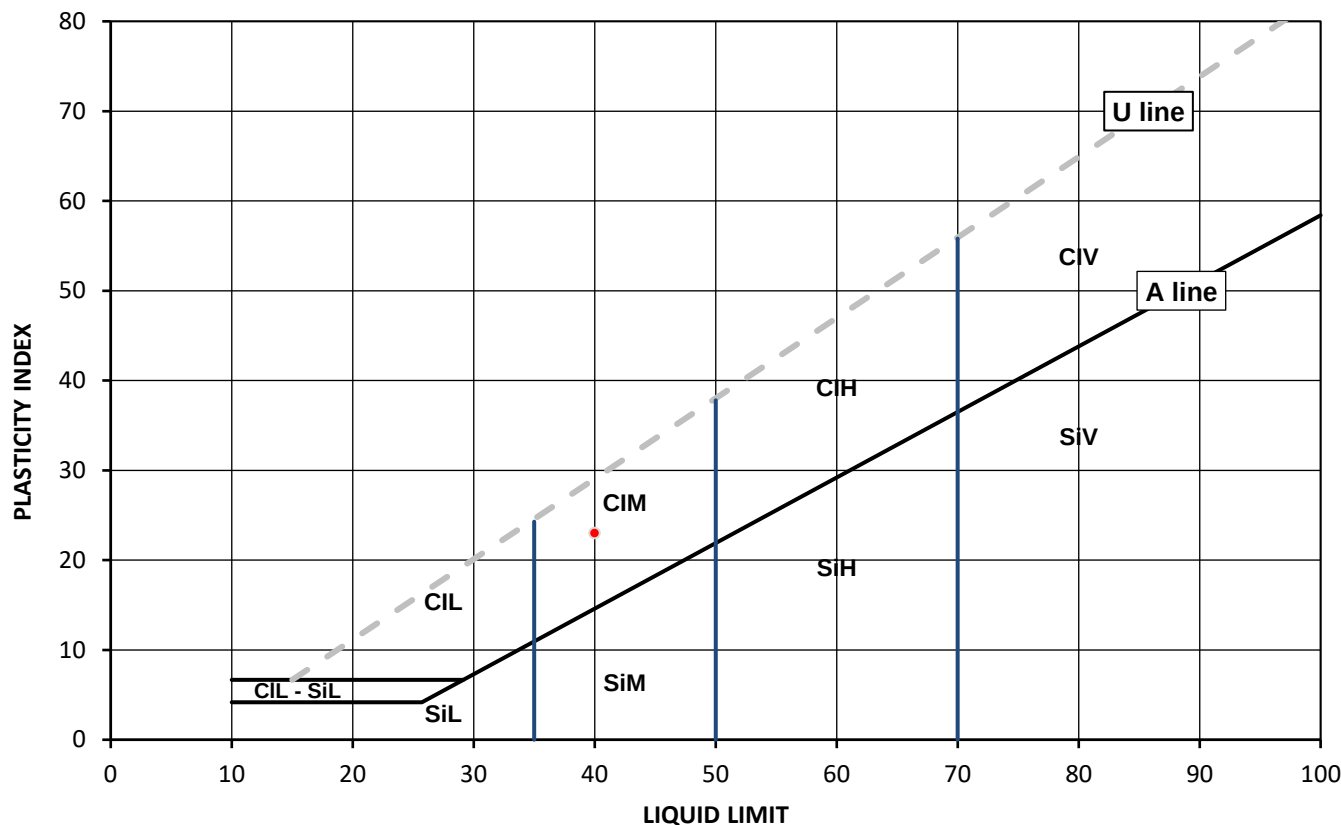
Test Results:

Laboratory Reference: 2784025
Hole No.: TP114
Sample Reference: Not Given
Sample Description: Yellowish brown sandy CLAY

Depth Top [m]: 1.90
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
27	40	17	23	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
	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:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.

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

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 31/07/2023
Date Received: 15/08/2023
Date Tested: 23/08/2023
Sampled By: Client- MR

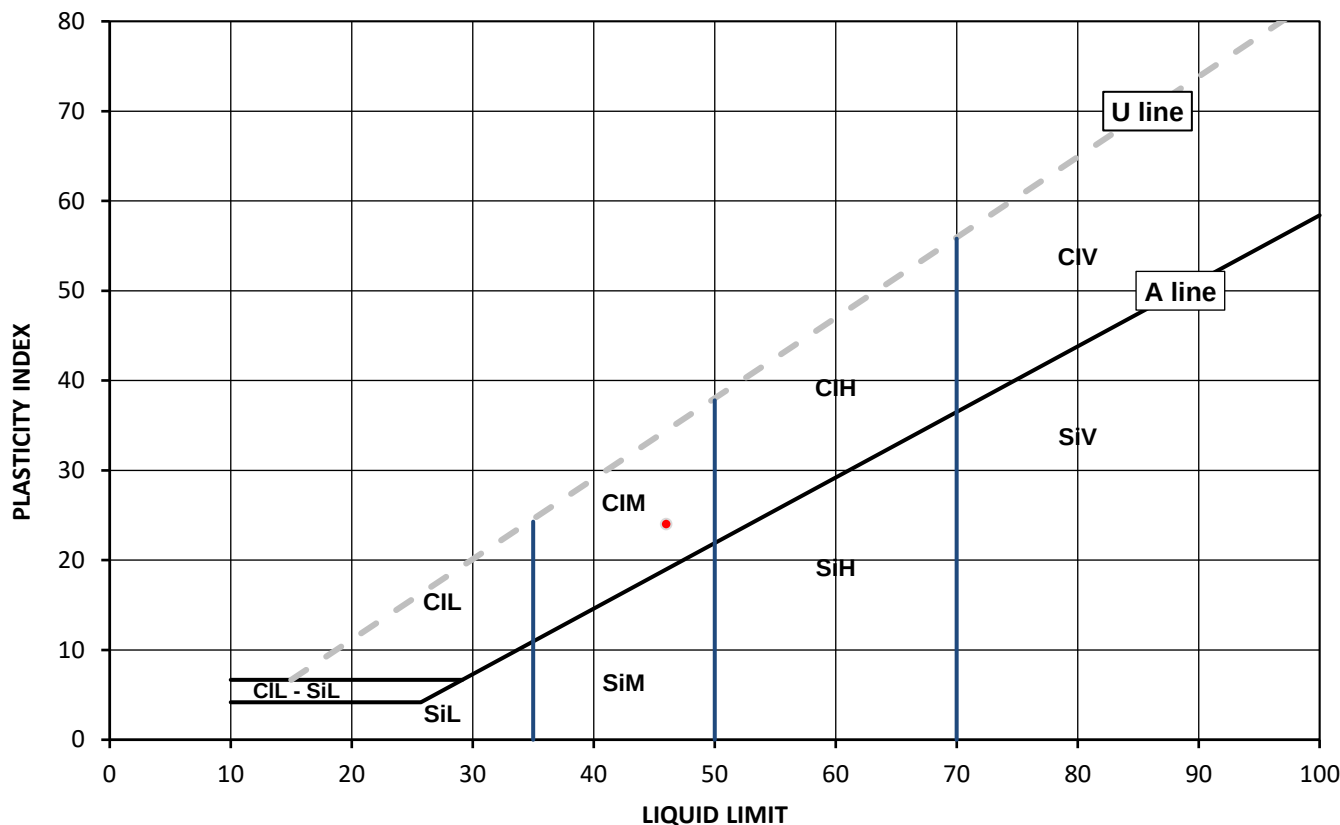
Test Results:

Laboratory Reference: 2784026
Hole No.: TP115
Sample Reference: Not Given
Sample Description: Yellowish brown slightly sandy CLAY

Depth Top [m]: 1.10
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
25	46	22	24	100



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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 31/07/2023
Date Received: 15/08/2023
Date Tested: 28/08/2023
Sampled By: Client- MR

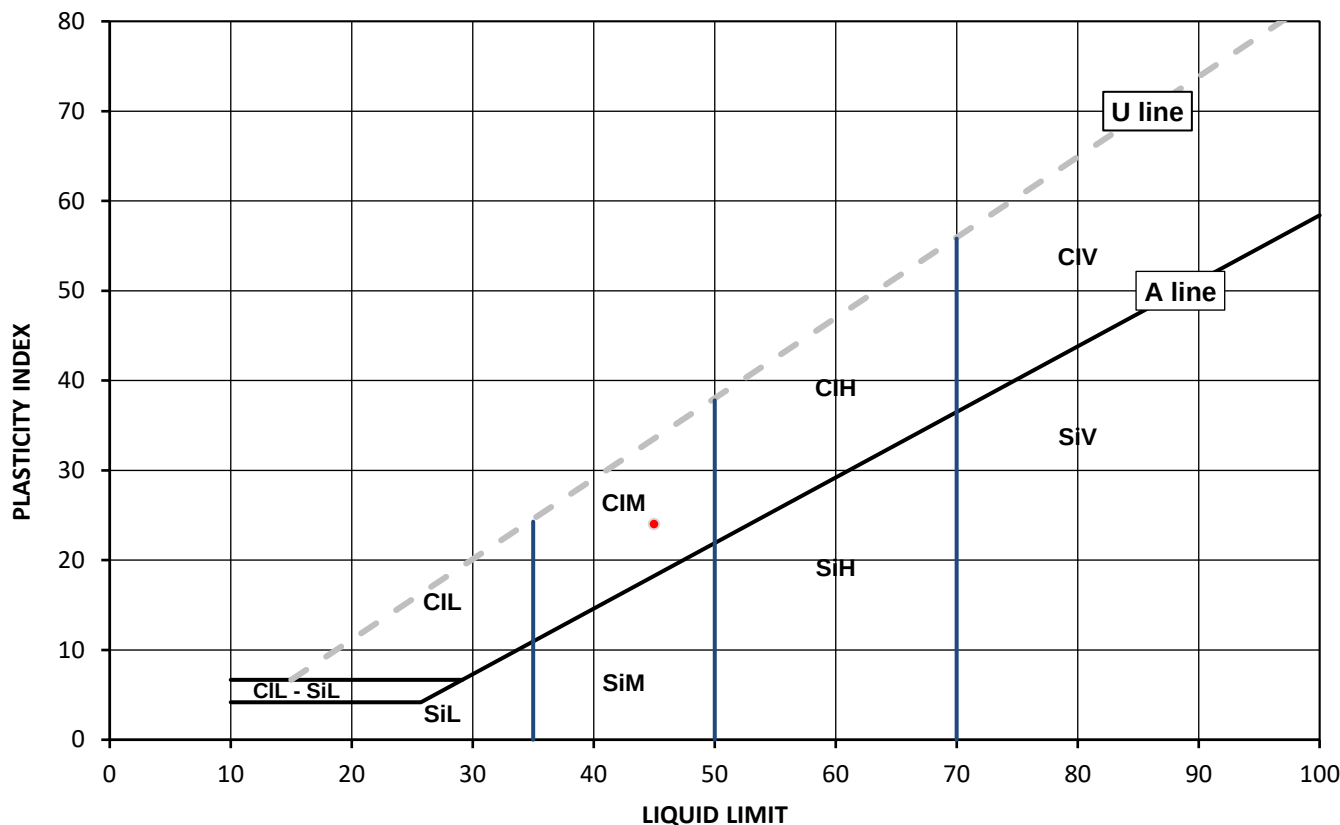
Test Results:

Laboratory Reference: 2784029
Hole No.: TP117
Sample Reference: Not Given
Sample Description: Brown slightly gravelly slightly sandy CLAY

Depth Top [m]: 1.20
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
16	45	21	24	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:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.

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

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 28/06/2023
Date Received: 15/08/2023
Date Tested: 23/08/2023
Sampled By: Client- MR

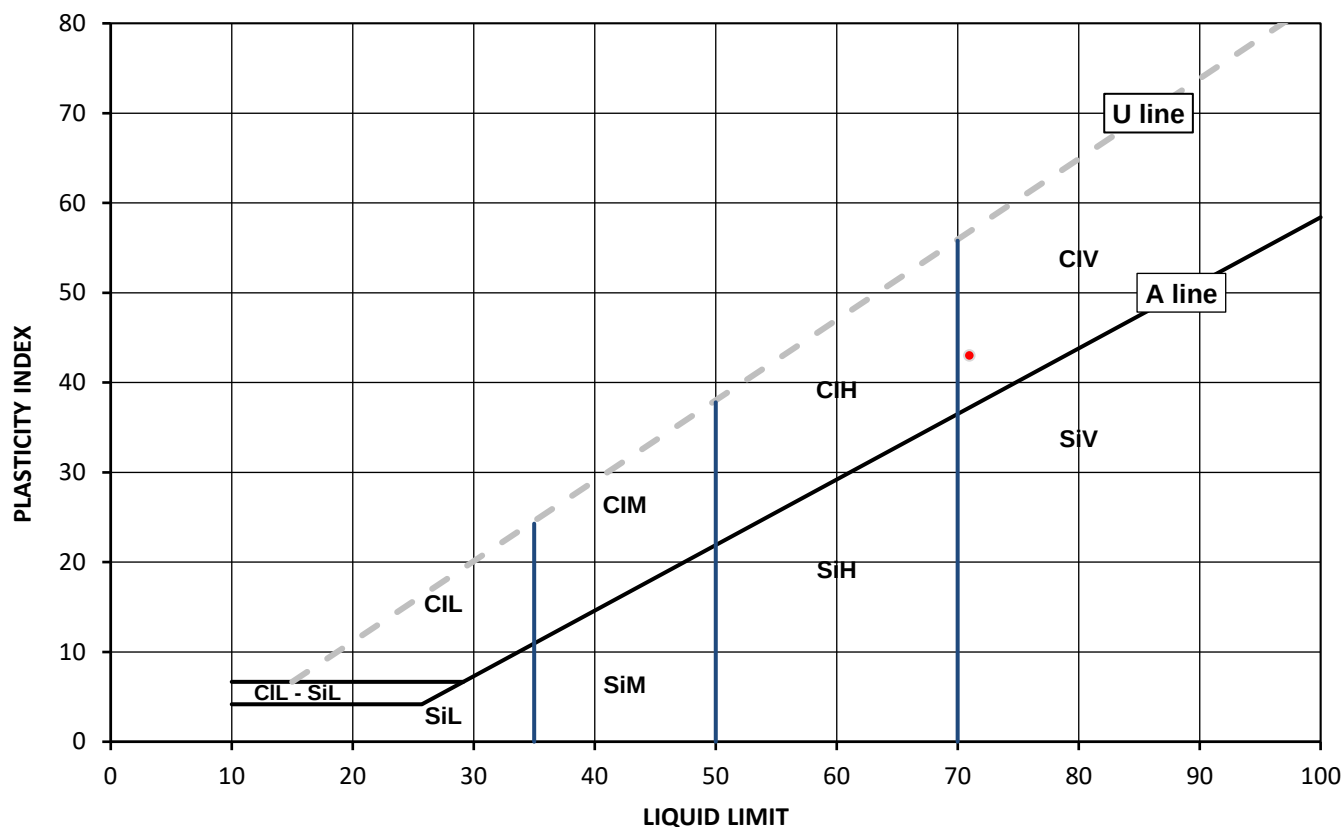
Test Results:

Laboratory Reference: 2784032
Hole No.: TP118
Sample Reference: Not Given
Sample Description: Yellowish brown clayey GRAVEL

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
13	71	28	43	19



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:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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: Endeavour Drilling
Client Address: Unit 7 Mapledean Industrial Estate, Maldon
Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road

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

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06 - 31/07/2023
Date Received: 15/08/2023
Date Tested: 22/08 - 23/08/2023
Sampled By: Client- MR

Testing carried out at i2 Analytical Limited, ul. Pionierow, 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			
2784000	TP101	Not Given	2.00	Not Given	D	Brownish grey CLAY	Atterberg 4 Point	30		100	64	27	37						
2784002	TP103	Not Given	0.60	Not Given	D	Yellowish brown slightly gravelly sandy CLAY	Atterberg 4 Point	15		97	38	19	19						
2784005	TP104	Not Given	1.50	Not Given	D	Yellowish brown gravelly CLAY	Atterberg 4 Point	18		54	65	27	38						
2784008	TP105	Not Given	1.90	Not Given	D	Yellowish brown slightly gravelly slightly sandy CLAY	Atterberg 4 Point	21		83	46	19	27						
2784009	TP106	Not Given	0.80	Not Given	D	Light brown slightly sandy CLAY	Atterberg 4 Point	26		100	47	21	26						
2784011	TP107	Not Given	2.80	Not Given	D	Yellowish brown sandy CLAY	Atterberg 4 Point	32		100	37	17	20						
2784012	TP108	Not Given	1.10	Not Given	D	Yellowish brown slightly gravelly sandy CLAY	Atterberg 4 Point	21		97	40	20	20						
2784016	TP110	Not Given	1.10	Not Given	D	Brown CLAY	Atterberg 4 Point	27		100	67	23	44						
2784020	TP112	Not Given	2.00	Not Given	D	Yellowish brown gravelly slightly sandy CLAY	Atterberg 4 Point	12		40	56	24	32						
2784023	TP113	Not Given	2.80	Not Given	D	Brownish grey very sandy CLAY	Atterberg 4 Point	24		100	32	18	14						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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: Endeavour Drilling
Client Address: Unit 7 Mapledean Industrial Estate, Maldon
Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road

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

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 28/06 - 31/07/2023
Date Received: 15/08/2023
Date Tested: 23/08 - 28/08/2023
Sampled By: Client- MR

Testing carried out at i2 Analytical Limited, ul. Pionierow, 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	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m															
2784025	TP114	Not Given	1.90	Not Given	D	Yellowish brown sandy CLAY	Atterberg 4 Point	27		100	40	17	23						
2784026	TP115	Not Given	1.10	Not Given	D	Yellowish brown slightly sandy CLAY	Atterberg 4 Point	25		100	46	22	24						
2784029	TP117	Not Given	1.20	Not Given	D	Brown slightly gravelly slightly sandy CLAY	Atterberg 4 Point	16		98	45	21	24						
2784032	TP118	Not Given	1.50	Not Given	D	Yellowish brown clayey GRAVEL	Atterberg 4 Point	13		19	71	28	43						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledean Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD

Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road

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

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06 - 31/07/2023
Date Received: 15/08/2023
Date Tested: 22/08 - 23/08/2023
Sampled By: Client- MR

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							
2784000	TP101	Not Given	2.00	Not Given	D	Brownish grey CLAY		30	Sample was quartered, oven dried at 108.1 °C			
2784002	TP103	Not Given	0.60	Not Given	D	Yellowish brown slightly gravelly sandy CLAY		15	Sample was quartered, oven dried at 106.2 °C			
2784005	TP104	Not Given	1.50	Not Given	D	Yellowish brown gravelly CLAY		18	Sample was quartered, oven dried at 108.1 °C			
2784008	TP105	Not Given	1.90	Not Given	D	Yellowish brown slightly gravelly slightly sandy CLAY		21	Sample was quartered, oven dried at 106.2 °C			
2784009	TP106	Not Given	0.80	Not Given	D	Light brown slightly sandy CLAY		26	Sample was quartered, oven dried at 108.1 °C			
2784011	TP107	Not Given	2.80	Not Given	D	Yellowish brown sandy CLAY		32	Sample was quartered, oven dried at 106.2 °C			
2784012	TP108	Not Given	1.10	Not Given	D	Yellowish brown slightly gravelly sandy CLAY		21	Sample was quartered, oven dried at 108 °C			
2784016	TP110	Not Given	1.10	Not Given	D	Brown CLAY		27	Sample was quartered, oven dried at 108.1 °C			
2784020	TP112	Not Given	2.00	Not Given	D	Yellowish brown gravelly slightly sandy CLAY		12	Sample was quartered, oven dried at 108 °C			
2784023	TP113	Not Given	2.80	Not Given	D	Brownish grey very sandy CLAY		24	Sample was quartered, oven dried at 108 °C			

Comments:

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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd



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

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledean Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD

Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road

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

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 28/06 - 31/07/2023
Date Received: 15/08/2023
Date Tested: 23/08 - 28/08/2023
Sampled By: Client- MR

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							
2784025	TP114	Not Given	1.90	Not Given	D	Yellowish brown sandy CLAY		27	Sample was quartered, oven dried at 108 °C			
2784026	TP115	Not Given	1.10	Not Given	D	Yellowish brown slightly sandy CLAY		25	Sample was quartered, oven dried at 108 °C			
2784029	TP117	Not Given	1.20	Not Given	D	Brown slightly gravelly slightly sandy CLAY		16	Sample was quartered, oven dried at 107.8 °C			
2784032	TP118	Not Given	1.50	Not Given	D	Yellowish brown clayey GRAVEL		13	Sample was quartered, oven dried at 108 °C			

Comments:

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:

Monika Siewior

Monika Siewior
Reporting Specialist
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



Environmental Science

4041

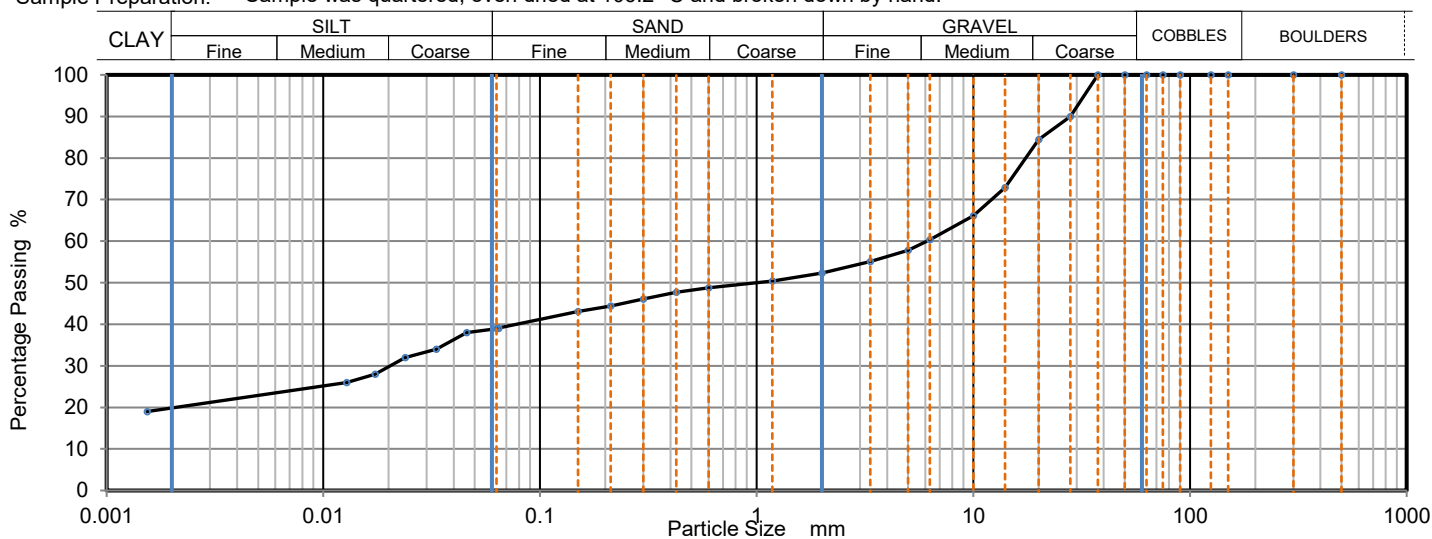
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 29/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2783999
Hole No.: TP101
Sample Reference: Not Given
Sample Description: Brownish grey clayey GRAVEL
Sample Preparation: Sample was quartered, oven dried at 106.2 °C and broken down by hand.

Depth Top [m]: 0.90
Depth Base [m]: Not Given
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0644	39
300	100	0.0459	38
150	100	0.0332	34
125	100	0.0238	32
90	100	0.0173	28
75	100	0.0128	26
63	100	0.0015	19
50	100		
37.5	100		
28	90		
20	84		
14	73		
10	66		
6.3	60		
5	58		
3.35	55	Particle density (assumed) 2.65 Mg/m3	
2	52		
1.18	50		
0.6	49		
0.425	48		
0.3	46		
0.212	44		
0.15	43		
0.063	39		

Sample Proportions	% dry mass
Very coarse	0
Gravel	48
Sand	14
Silt	18
Clay	20

Grading Analysis		
D100	mm	37.5
D60	mm	6.12
D30	mm	0.0202
D10	mm	
Uniformity Coefficient		> 4000
Curvature Coefficient		

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

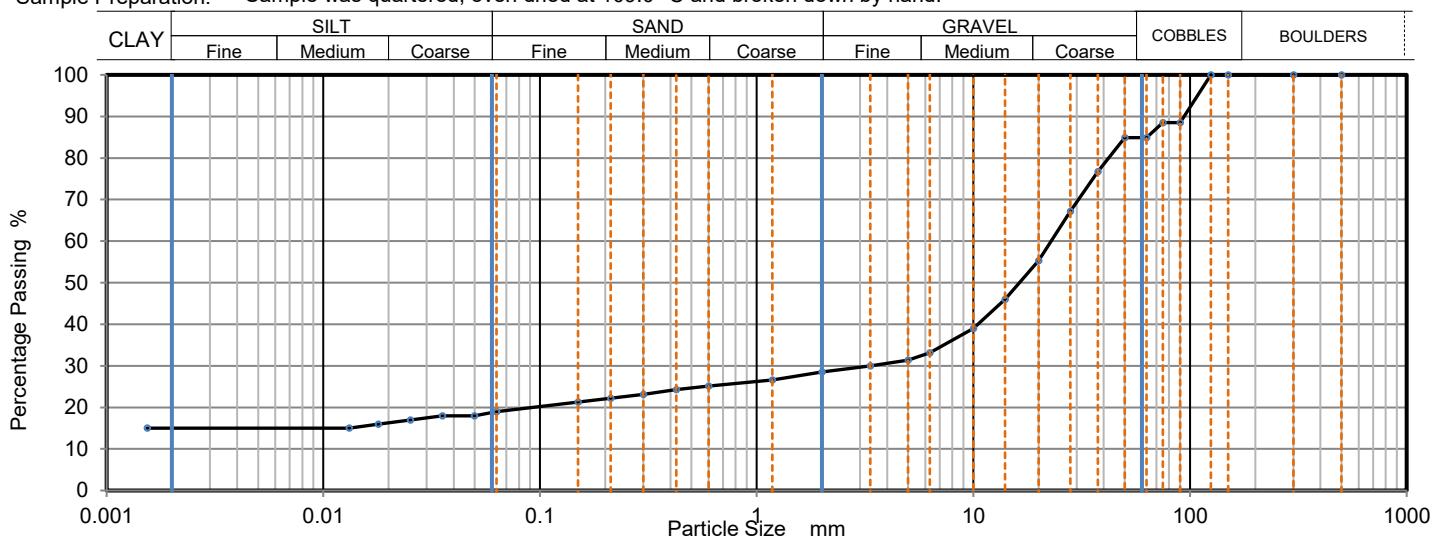
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784001
Hole No.: TP102
Sample Reference: Not Given
Sample Description: Yellowish brown clayey GRAVEL with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 0.70
Depth Base [m]: 1.00
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	19
300	100	0.0497	18
150	100	0.0354	18
125	100	0.0252	17
90	89	0.0179	16
75	89	0.0132	15
63	85	0.0015	15
50	85		
37.5	77		
28	67		
20	55		
14	46		
10	39		
6.3	33		
5	31		
3.35	30	Particle density (assumed) 2.65 Mg/m3	
2	29		
1.18	27		
0.6	25		
0.425	24		
0.3	23		
0.212	22		
0.15	21		
0.063	19		

Sample Proportions	% dry mass
Very coarse	15
Gravel	56
Sand	9
Silt	5
Clay	15

Grading Analysis	
D100	mm 125
D60	mm 22.8
D30	mm 3.37
D10	mm
Uniformity Coefficient	> 15000
Curvature Coefficient	

Uniformity and Curvature 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: The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

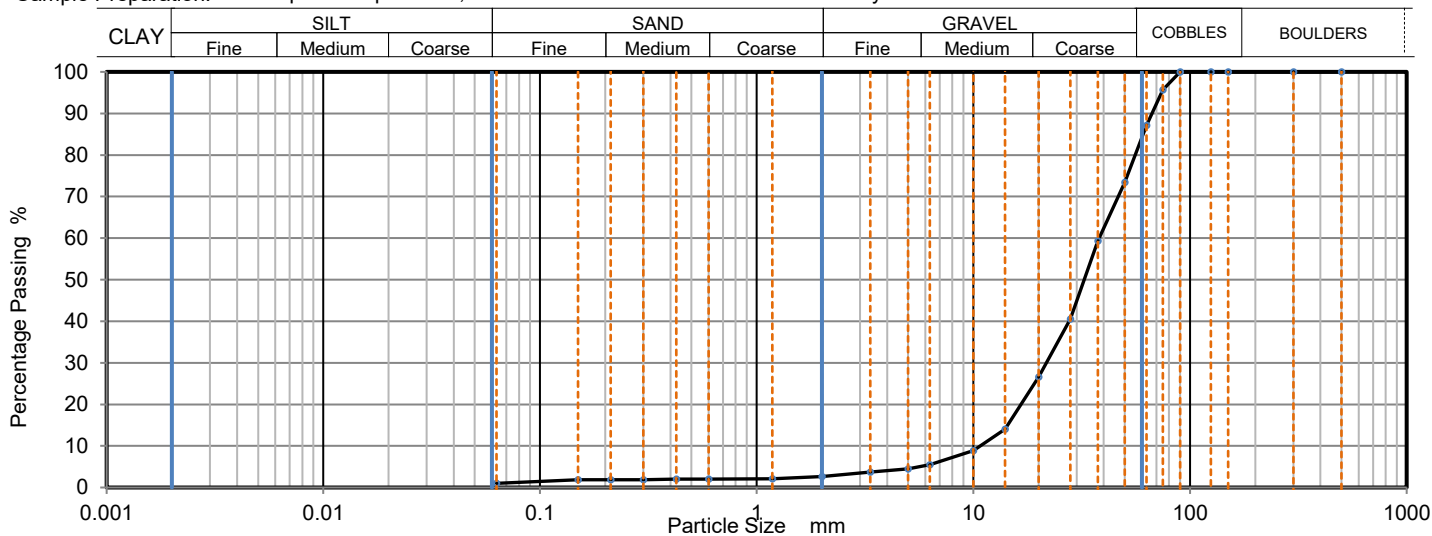
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 29/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784003
Hole No.: TP103
Sample Reference: Not Given
Sample Description: Brown GRAVEL (FLINTSTONE)
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 1.00
Depth Base [m]: 1.40
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	96		
63	87		
50	73		
37.5	59		
28	41		
20	27		
14	14		
10	9		
6.3	6		
5	5		
3.35	4		
2	3		
1.18	2		
0.6	2		
0.425	2		
0.3	2		
0.212	2		
0.15	2		
0.063	2		

Sample Proportions	% dry mass
Very coarse	13
Gravel	85
Sand	1
Fines <0.063mm	2

Grading Analysis	
D100	mm 90
D60	mm 38
D30	mm 21.7
D10	mm 10.8
Uniformity Coefficient	3.5
Curvature Coefficient	1.2

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



4041

**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



Environmental Science

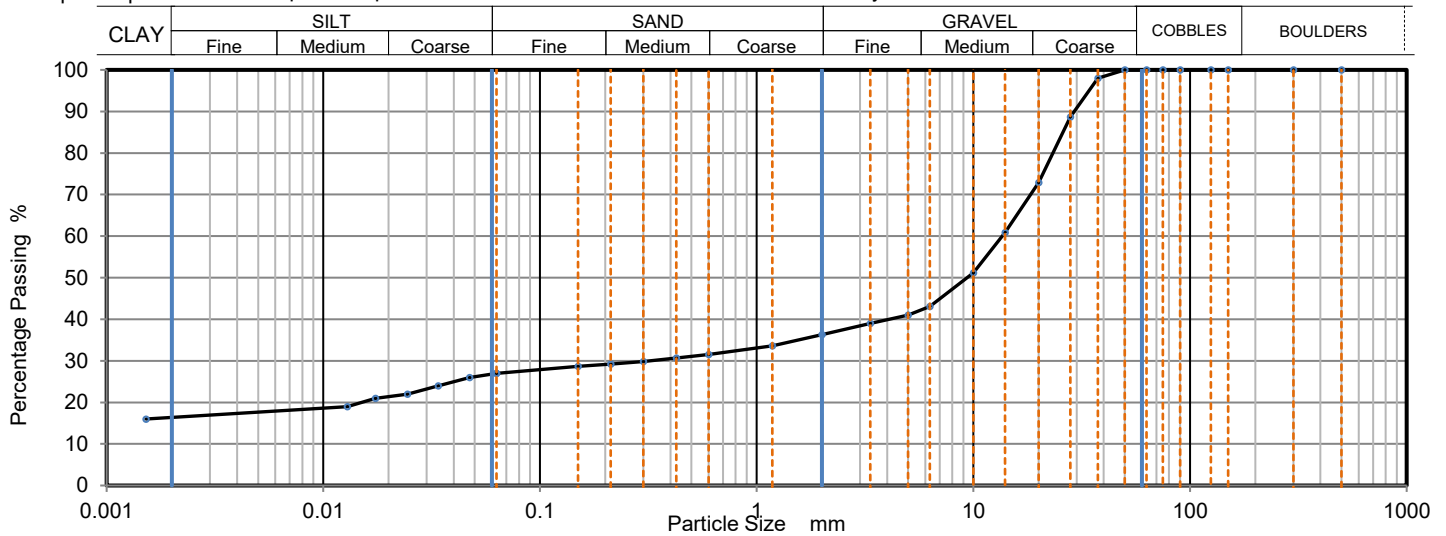
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784004
Hole No.: TP104
Sample Reference: Not Given
Sample Description: Yellowish brown clayey GRAVEL with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 107.0 °C and broken down by hand.

Depth Top [m]: 0.80
Depth Base [m]: 1.10
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	27
300	100	0.0472	26
150	100	0.0339	24
125	100	0.0245	22
90	100	0.0174	21
75	100	0.0129	19
63	100	0.0015	16
50	100		
37.5	98		
28	89		
20	73		
14	61		
10	51		
6.3	43		
5	41		
3.35	39	Particle density (assumed) 2.65 Mg/m ³	
2	36		
1.18	34		
0.6	32		
0.425	31		
0.3	30		
0.212	29		
0.15	29		
0.063	27		

Sample Proportions	% dry mass
Very coarse	0
Gravel	64
Sand	10
Silt	10
Clay	16

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 8900
Curvature Coefficient	

Uniformity and Curvature 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:**

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

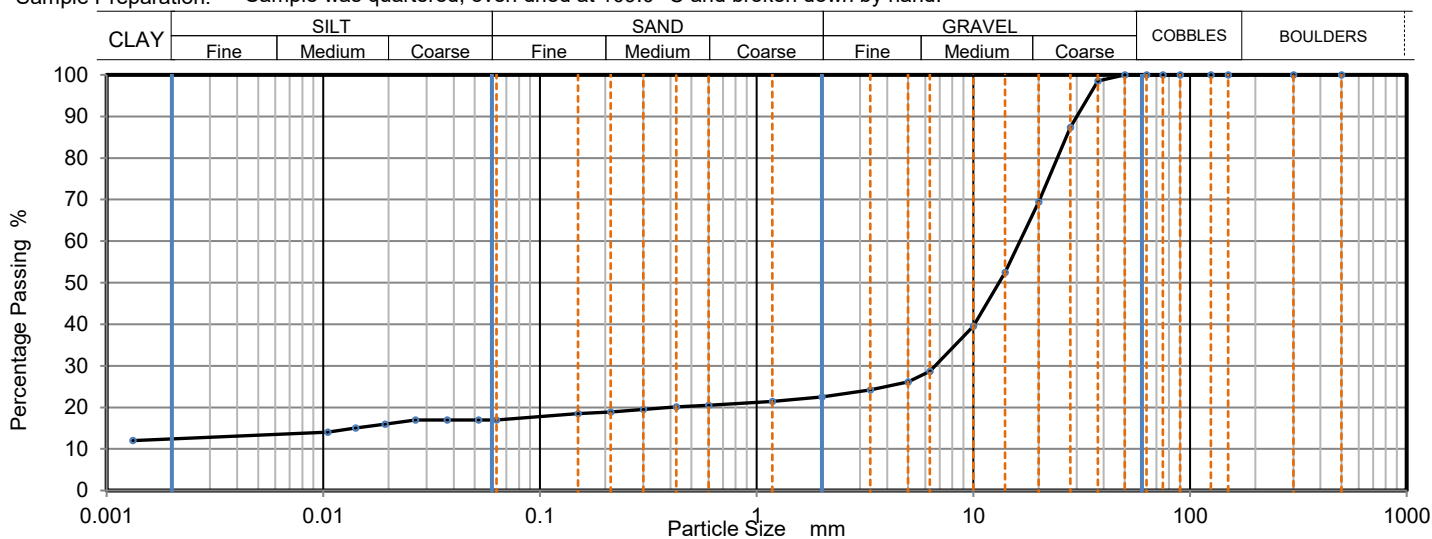
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784006
Hole No.: TP104
Sample Reference: Not Given
Sample Description: Brown clayey GRAVEL with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 2.40
Depth Base [m]: 2.80
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0521	17
300	100	0.0373	17
150	100	0.0266	17
125	100	0.0193	16
90	100	0.0141	15
75	100	0.0105	14
63	100	0.0075	12
50	100		
37.5	99		
28	87		
20	69		
14	53		
10	40		
6.3	29		
5	26		
3.35	24	Particle density (assumed) 2.65 Mg/m ³	
2	23		
1.18	21		
0.6	21		
0.425	20		
0.3	20		
0.212	19		
0.15	19		
0.063	17		

Sample Proportions	% dry mass
Very coarse	0
Gravel	77
Sand	5
Silt	6
Clay	12

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 12000
Curvature Coefficient	

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

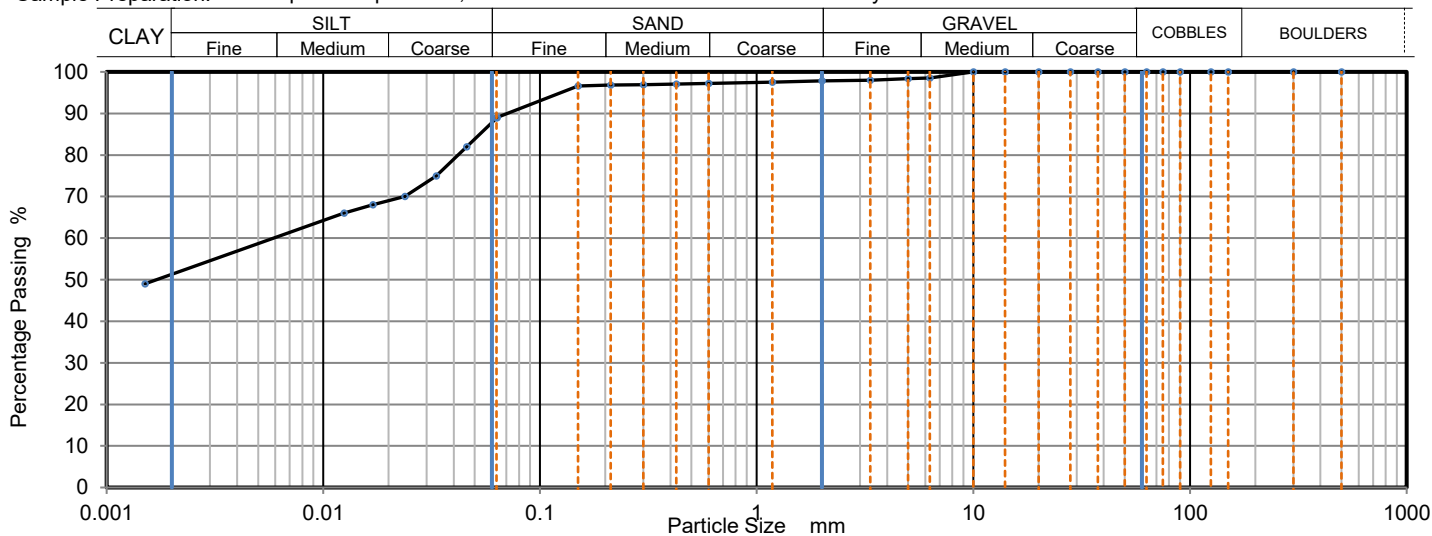
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 27/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784007
Hole No.: TP105
Sample Reference: Not Given
Sample Description: Yellowish brown CLAY
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 1.80
Depth Base [m]: 2.30
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0634	89
300	100	0.0459	82
150	100	0.0332	75
125	100	0.0238	70
90	100	0.0170	68
75	100	0.0125	66
63	100	0.0015	49
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	98		
3.35	98	Particle density (assumed) 2.65 Mg/m ³	
2	98		
1.18	98		
0.6	97		
0.425	97		
0.3	97		
0.212	97		
0.15	97		
0.063	89		

Sample Proportions	% dry mass
Very coarse	0
Gravel	2
Sand	9
Silt	37
Clay	52

Grading Analysis	
D100	mm 10
D60	mm 0.00596
D30	mm
D10	mm
Uniformity Coefficient	> 4
Curvature Coefficient	

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



4041

**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



Environmental Science

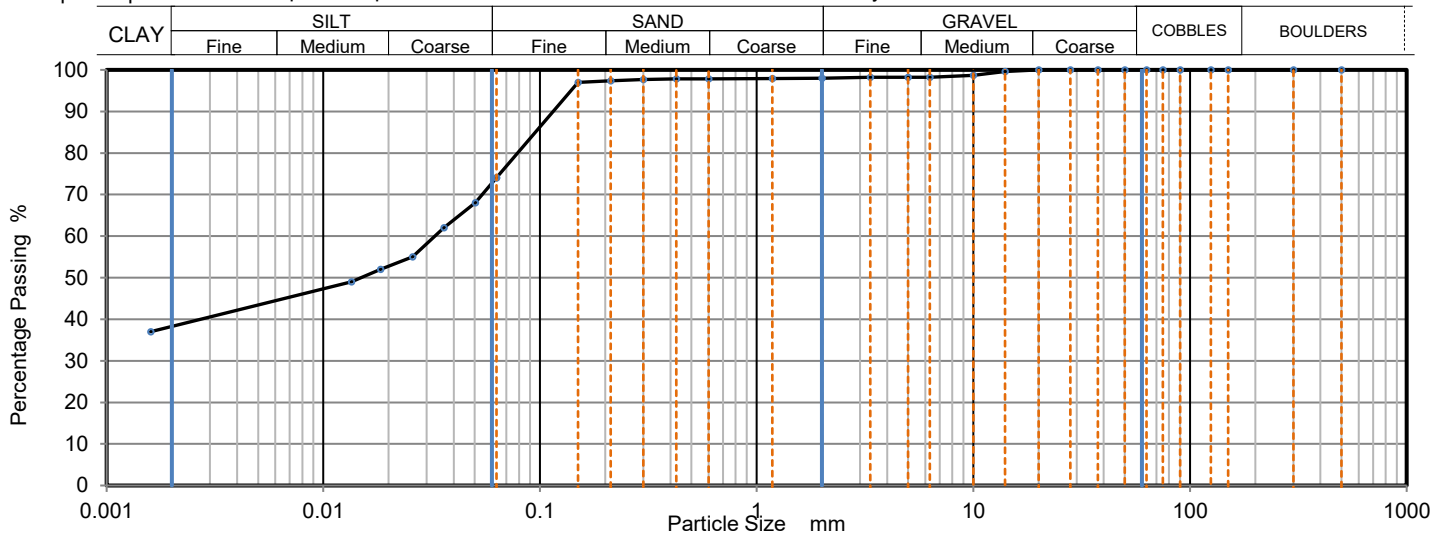
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 31/07/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784010
Hole No.: TP107
Sample Reference: Not Given
Sample Description: Yellowish brown sandy CLAY
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 2.20
Depth Base [m]: 2.50
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	74
300	100	0.0503	68
150	100	0.0360	62
125	100	0.0258	55
90	100	0.0184	52
75	100	0.0135	49
63	100	0.0016	37
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	98		
5	98		
3.35	98	Particle density (assumed) 2.65 Mg/m ³	
2	98		
1.18	98		
0.6	98		
0.425	98		
0.3	98		
0.212	97		
0.15	97		
0.063	74		

Sample Proportions	% dry mass
Very coarse	0
Gravel	2
Sand	24
Silt	36
Clay	38

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 21
Curvature Coefficient	

Uniformity and Curvature 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:**

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

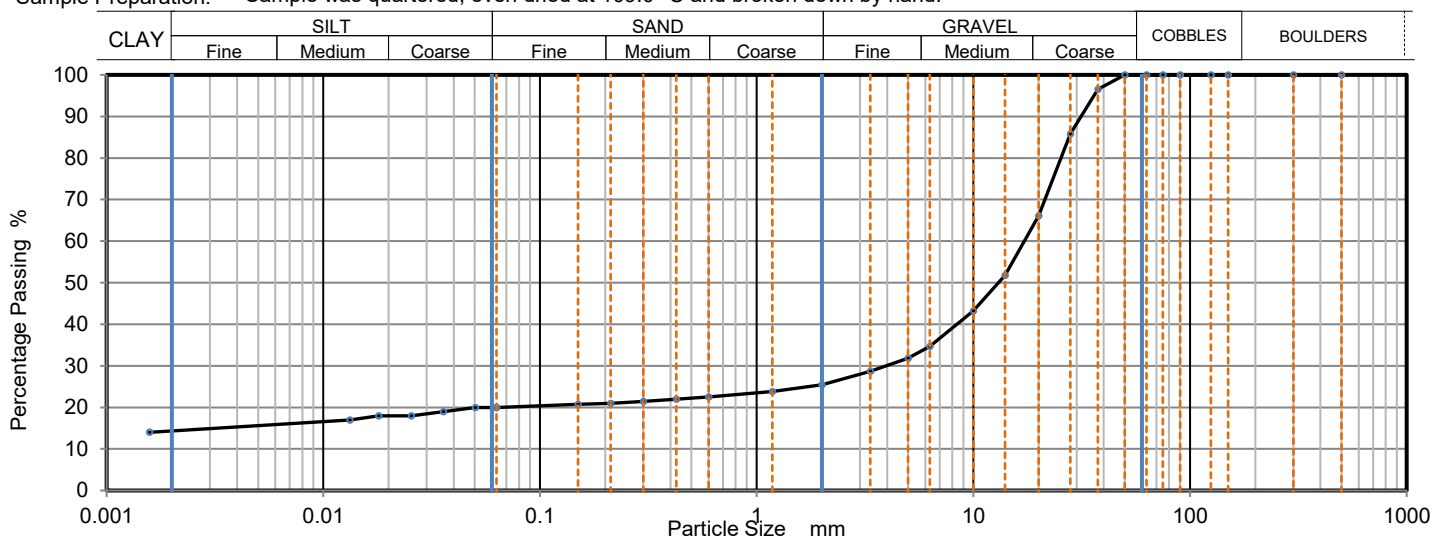
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 31/07/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784013
Hole No.: TP108
Sample Reference: Not Given
Sample Description: Brown clayey GRAVEL with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 2.00
Depth Base [m]: 2.30
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	20
300	100	0.0503	20
150	100	0.0358	19
125	100	0.0255	18
90	100	0.0180	18
75	100	0.0132	17
63	100	0.0016	14
50	100		
37.5	97		
28	86		
20	66		
14	52		
10	43		
6.3	35		
5	32		
3.35	29	Particle density (assumed) 2.65 Mg/m3	
2	25		
1.18	24		
0.6	23		
0.425	22		
0.3	21		
0.212	21		
0.15	21		
0.063	20		

Sample Proportions	% dry mass
Very coarse	0
Gravel	75
Sand	6
Silt	4
Clay	15

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 11000
Curvature Coefficient	

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

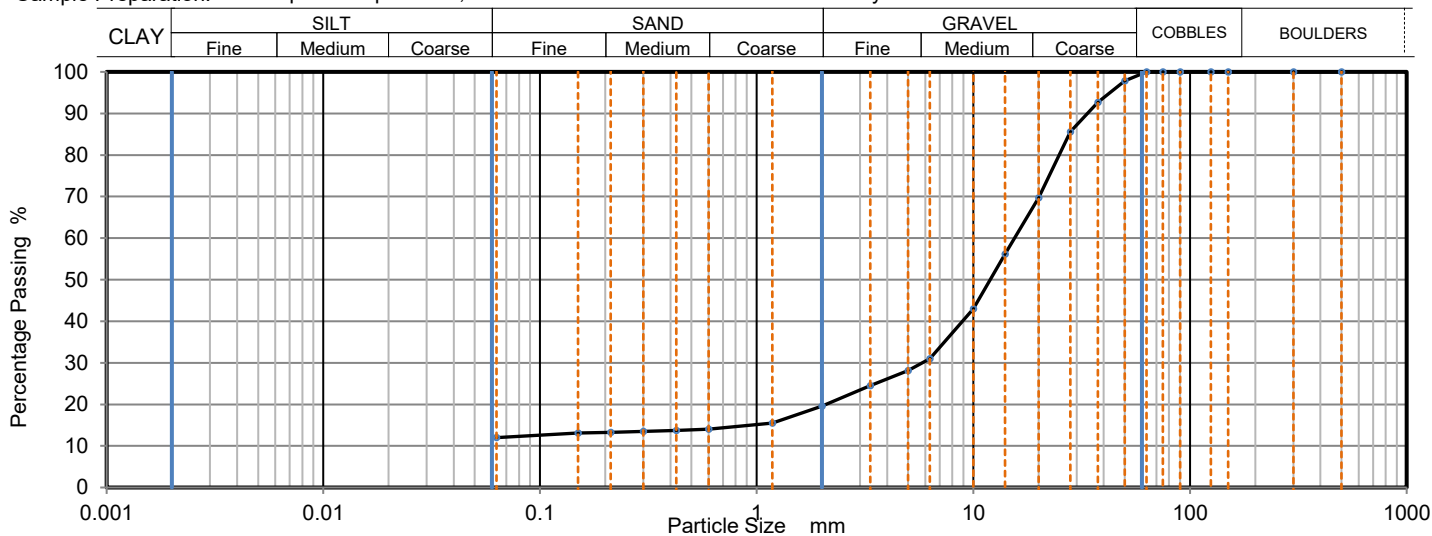
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 20/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784014
Hole No.: TP109
Sample Reference: Not Given
Sample Description: Light brown GRAVEL with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 0.90
Depth Base [m]: 1.40
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	98		
37.5	93		
28	86		
20	70		
14	56		
10	43		
6.3	31		
5	28		
3.35	25		
2	20		
1.18	16		
0.6	14		
0.425	14		
0.3	14		
0.212	13		
0.15	13		
0.063	12		

Sample Proportions	% dry mass
Very coarse	0
Gravel	80
Sand	7
Fines <0.063mm	12

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 250
Curvature Coefficient	

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

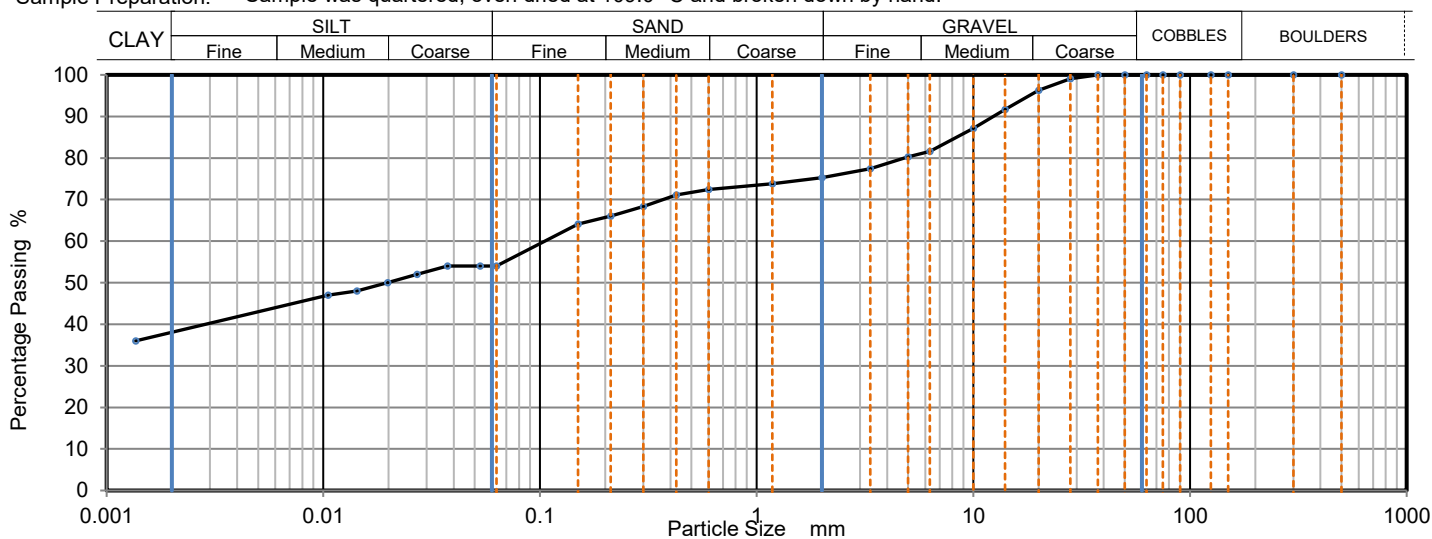
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 20/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784015
Hole No.: TP109
Sample Reference: Not Given
Sample Description: Yellowish brown gravelly sandy CLAY with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 2.40
Depth Base [m]: 2.60
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0529	54
300	100	0.0374	54
150	100	0.0270	52
125	100	0.0198	50
90	100	0.0143	48
75	100	0.0105	47
63	100	0.0074	36
50	100		
37.5	100		
28	99		
20	96		
14	92		
10	87		
6.3	82		
5	80		
3.35	77	Particle density (assumed) 2.65 Mg/m ³	
2	75		
1.18	74		
0.6	72		
0.425	71		
0.3	68		
0.212	66		
0.15	64		
0.063	54		

Sample Proportions	% dry mass
Very coarse	0
Gravel	25
Sand	21
Silt	16
Clay	38

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 77
Curvature Coefficient	

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

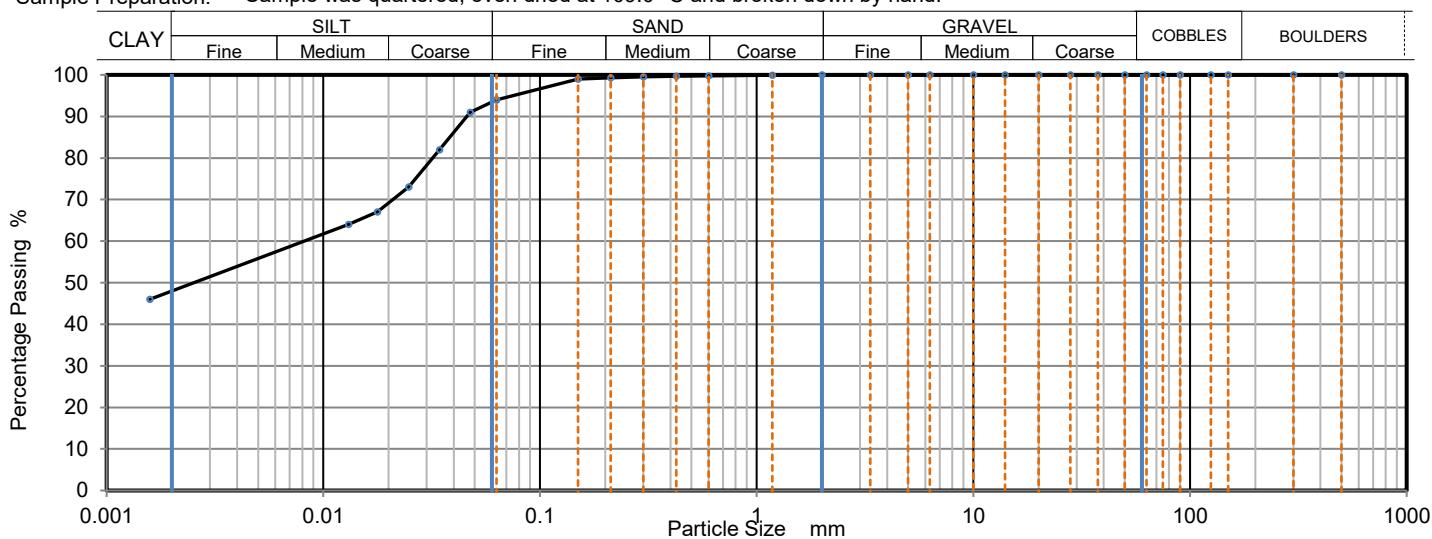
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 29/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784017
Hole No.: TP110
Sample Reference: Not Given
Sample Description: Brown CLAY
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 1.40
Depth Base [m]: 2.00
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	94
300	100	0.0476	91
150	100	0.0344	82
125	100	0.0248	73
90	100	0.0178	67
75	100	0.0131	64
63	100	0.0106	60
50	100	0.0075	46
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100	Particle density (assumed) 2.65 Mg/m3	
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	99		
0.15	99		
0.063	94		

Sample Proportions	% dry mass
Very coarse	0
Gravel	0
Sand	6
Silt	46
Clay	48

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 5.3
Curvature Coefficient	

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



4041

**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



Environmental Science

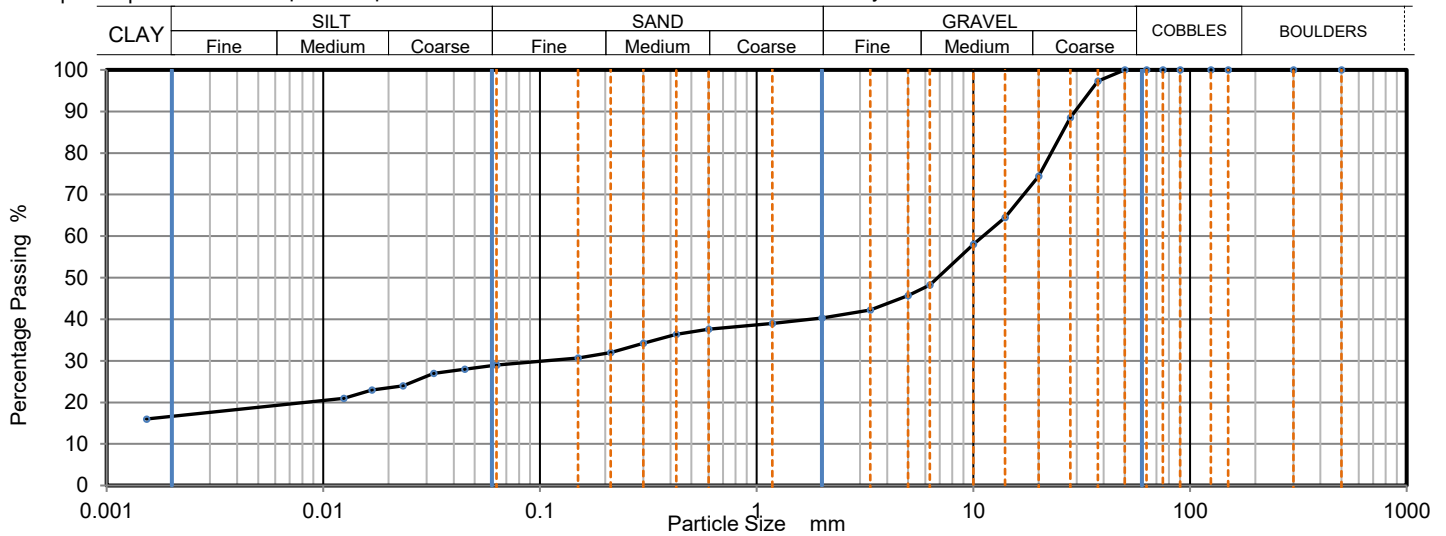
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 29/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784018
Hole No.: TP111
Sample Reference: Not Given
Sample Description: Yellowish brown clayey GRAVEL
Sample Preparation: Sample was quartered, oven dried at 107.0 °C and broken down by hand.

Depth Top [m]: 1.30
Depth Base [m]: 1.60
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	29
300	100	0.0449	28
150	100	0.0323	27
125	100	0.0233	24
90	100	0.0168	23
75	100	0.0124	21
63	100	0.0015	16
50	100		
37.5	97		
28	89		
20	74		
14	65		
10	58		
6.3	48		
5	46		
3.35	42	Particle density (assumed) 2.65 Mg/m3	
2	40		
1.18	39		
0.6	38		
0.425	36		
0.3	34		
0.212	32		
0.15	31		
0.063	29		

Sample Proportions	% dry mass
Very coarse	0
Gravel	60
Sand	11
Silt	12
Clay	17

Grading Analysis	
D100	mm 50
D60	mm 11.1
D30	mm 0.107
D10	mm
Uniformity Coefficient	> 7300
Curvature Coefficient	

Uniformity and Curvature 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:**

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

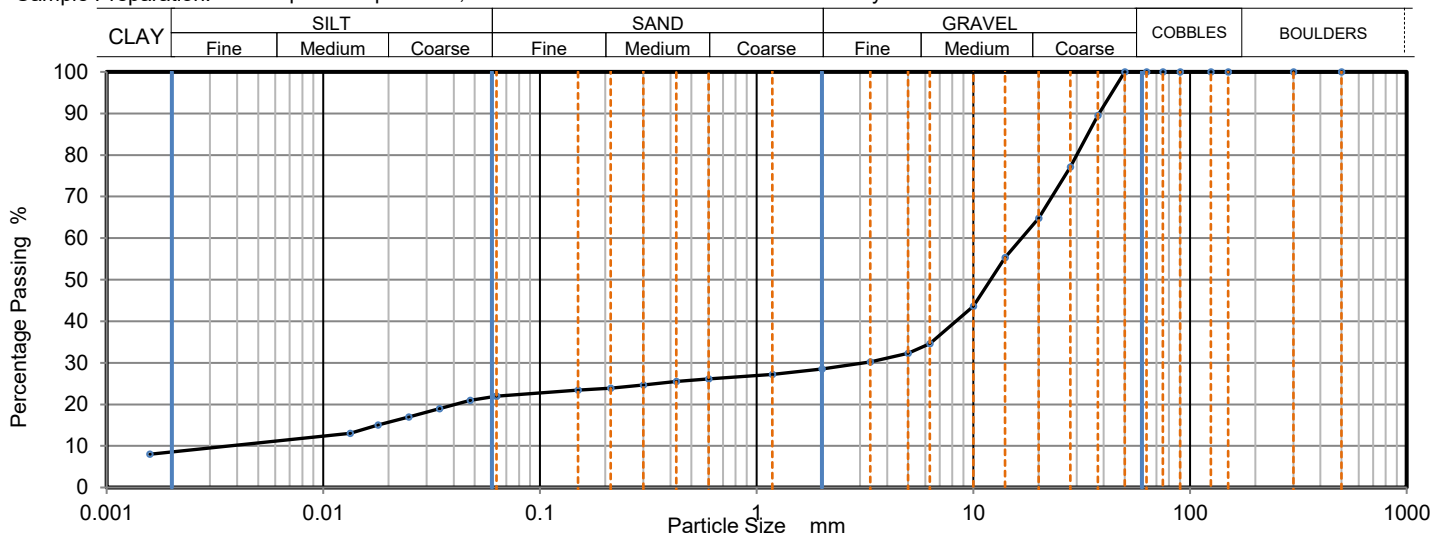
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784019
Hole No.: TP112
Sample Reference: Not Given
Sample Description: Brown clayey GRAVEL with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 1.00
Depth Base [m]: 1.40
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	22
300	100	0.0476	21
150	100	0.0344	19
125	100	0.0248	17
90	100	0.0179	15
75	100	0.0133	13
63	100	0.0016	8
50	100		
37.5	90		
28	77		
20	65		
14	55		
10	44		
6.3	35		
5	32		
3.35	30	Particle density (assumed) 2.65 Mg/m3	
2	29		
1.18	27		
0.6	26		
0.425	26		
0.3	25		
0.212	24		
0.15	23		
0.063	22		

Sample Proportions	% dry mass
Very coarse	0
Gravel	72
Sand	7
Silt	13
Clay	8

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

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

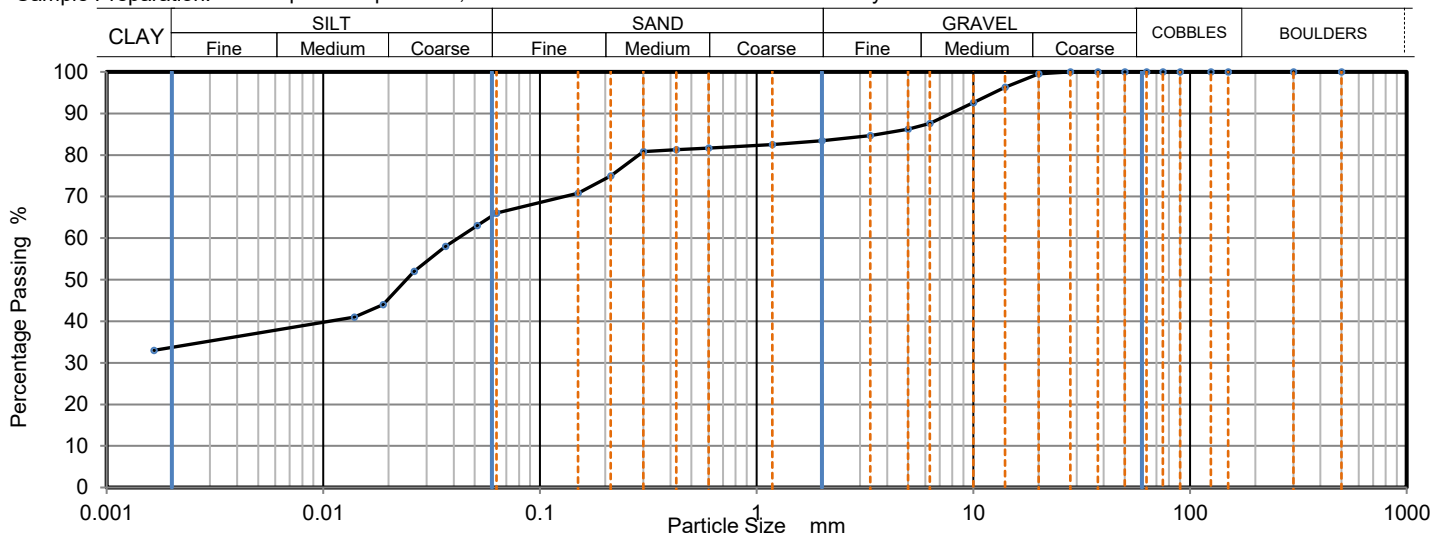
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784021
Hole No.: TP112
Sample Reference: Not Given
Sample Description: Yellowish brown CLAY
Sample Preparation: Sample was quartered, oven dried at 108.2 °C and broken down by hand.

Depth Top [m]: 2.70
Depth Base [m]: 3.00
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	66
300	100	0.0512	63
150	100	0.0367	58
125	100	0.0263	52
90	100	0.0189	44
75	100	0.0139	41
63	100	0.0017	33
50	100		
37.5	100		
28	100		
20	100		
14	96		
10	93		
6.3	88		
5	86		
3.35	85	Particle density (assumed) 2.65 Mg/m ³	
2	83		
1.18	83		
0.6	82		
0.425	81		
0.3	81		
0.212	75		
0.15	71		
0.063	66		

Sample Proportions	% dry mass
Very coarse	0
Gravel	17
Sand	17
Silt	32
Clay	34

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

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



4041

**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



Environmental Science

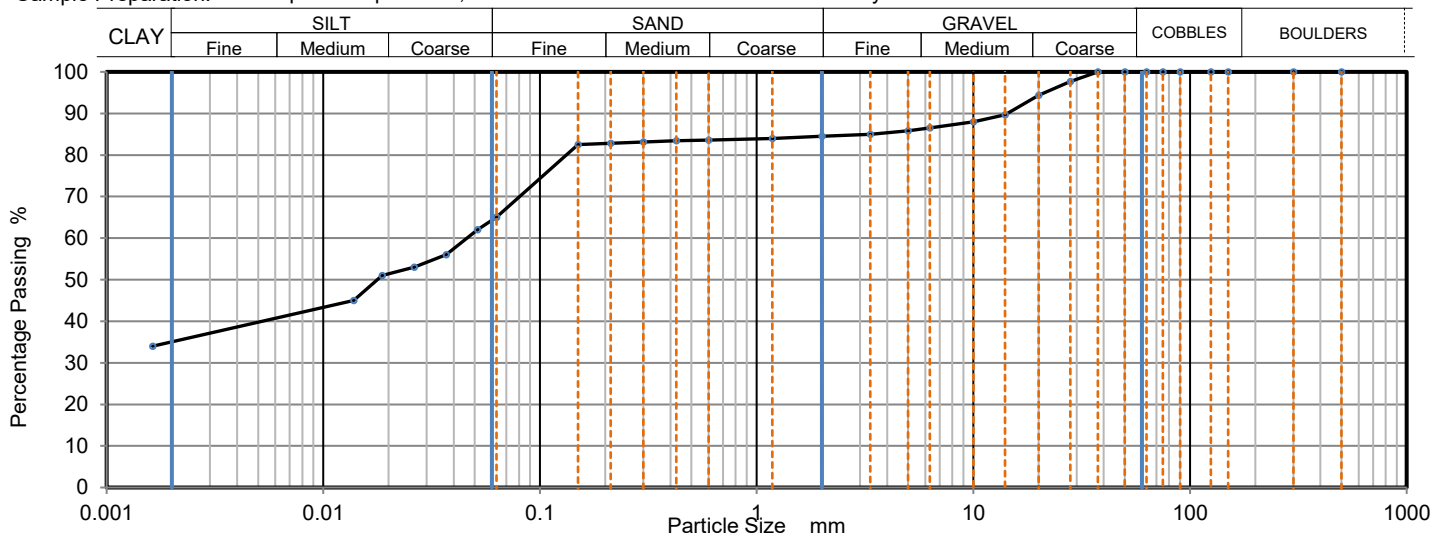
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784022
Hole No.: TP113
Sample Reference: Not Given
Sample Description: Brown sandy CLAY with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 0.50
Depth Base [m]: 0.90
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	65
300	100	0.0515	62
150	100	0.0369	56
125	100	0.0263	53
90	100	0.0187	51
75	100	0.0138	45
63	100	0.0016	34
50	100		
37.5	100		
28	98		
20	94		
14	90		
10	88		
6.3	87		
5	86		
3.35	85	Particle density (assumed) 2.65 Mg/m3	
2	85		
1.18	84		
0.6	84		
0.425	83		
0.3	83		
0.212	83		
0.15	83		
0.063	65		

Sample Proportions	% dry mass
Very coarse	0
Gravel	16
Sand	20
Silt	29
Clay	35

Grading Analysis	
D100	mm 37.5
D60	mm 0.0461
D30	mm
D10	mm
Uniformity Coefficient	> 28
Curvature Coefficient	

Uniformity and Curvature 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:**

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

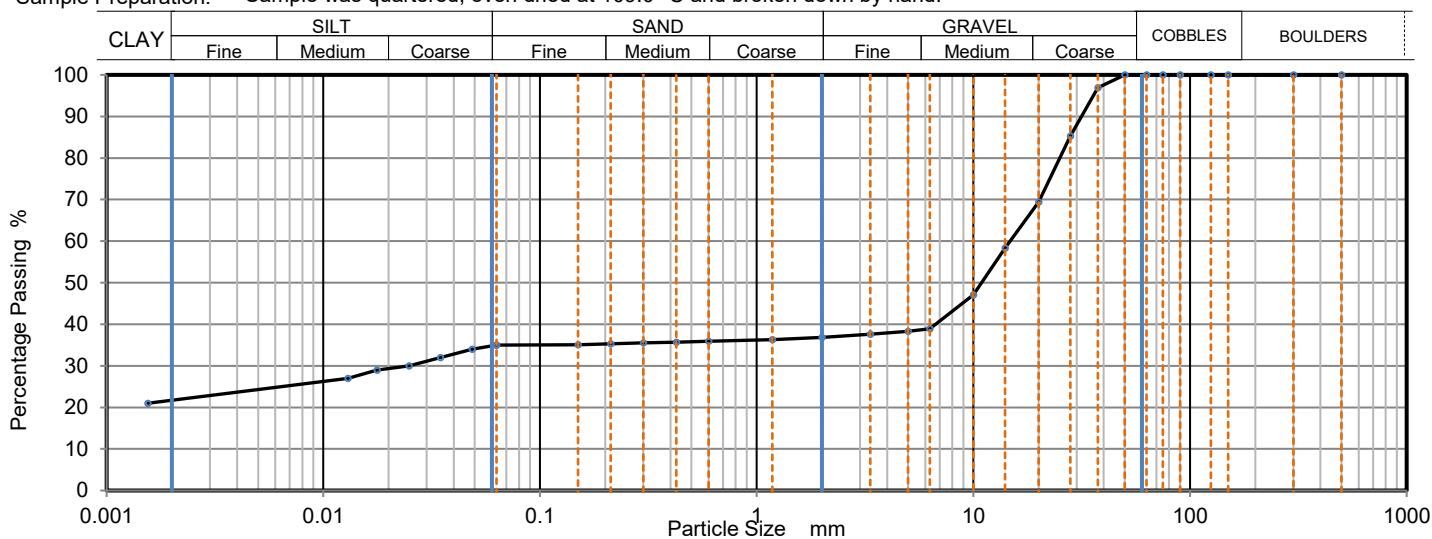
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 28/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784024
Hole No.: TP114
Sample Reference: Not Given
Sample Description: Grey clayey GRAVEL with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 1.00
Depth Base [m]: 1.50
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	35
300	100	0.0487	34
150	100	0.0346	32
125	100	0.0248	30
90	100	0.0177	29
75	100	0.0130	27
63	100	0.0016	21
50	100		
37.5	97		
28	85		
20	69		
14	58		
10	47		
6.3	39		
5	38		
3.35	38	Particle density (assumed) 2.65 Mg/m3	
2	37		
1.18	36		
0.6	36		
0.425	36		
0.3	36		
0.212	35		
0.15	35		
0.063	35		

Sample Proportions	% dry mass
Very coarse	0
Gravel	63
Sand	2
Silt	13
Clay	22

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 9500
Curvature Coefficient	

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

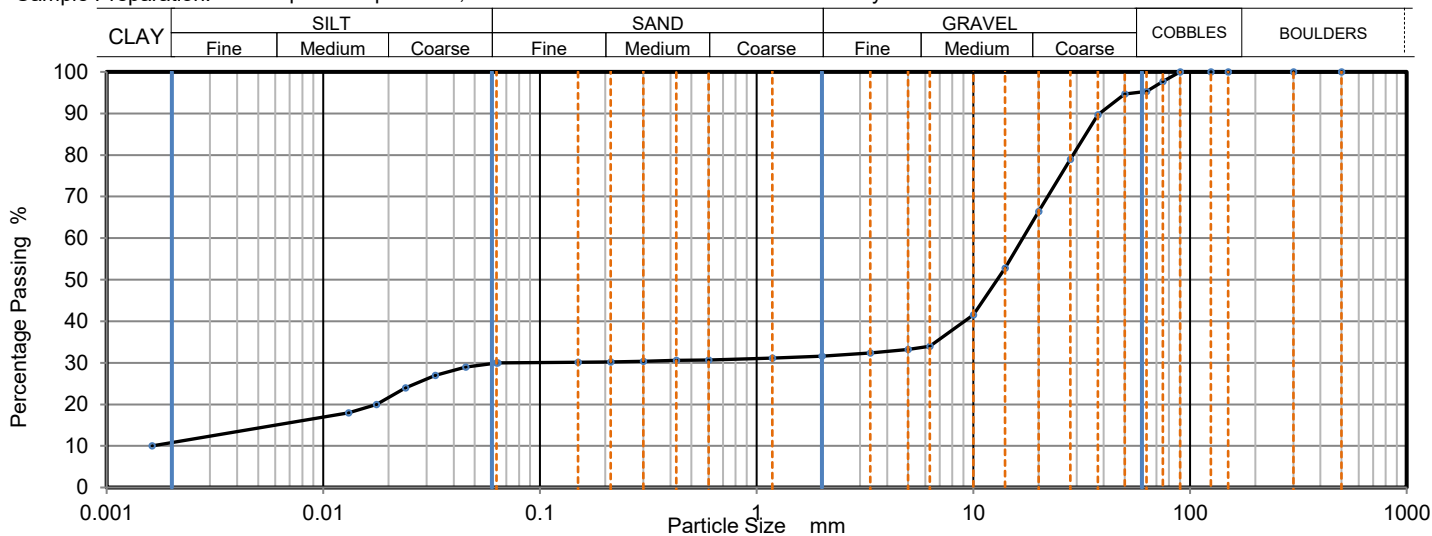
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 31/07/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784027
Hole No.: TP115
Sample Reference: Not Given
Sample Description: Brown clayey GRAVEL with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 106.1 °C and broken down by hand.

Depth Top [m]: 1.70
Depth Base [m]: 2.00
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0637	30
300	100	0.0454	29
150	100	0.0329	27
125	100	0.0240	24
90	100	0.0175	20
75	98	0.0131	18
63	95	0.0016	10
50	95		
37.5	90		
28	79		
20	66		
14	53		
10	42		
6.3	34		
5	33		
3.35	32	Particle density (assumed) 2.65 Mg/m3	
2	32		
1.18	31		
0.6	31		
0.425	31		
0.3	30		
0.212	30		
0.15	30		
0.063	30		

Sample Proportions	% dry mass
Very coarse	5
Gravel	64
Sand	2
Silt	18
Clay	11

Grading Analysis	
D100	mm 90
D60	mm 16.9
D30	mm 0.103
D10	mm
Uniformity Coefficient	> 10000
Curvature Coefficient	

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



4041

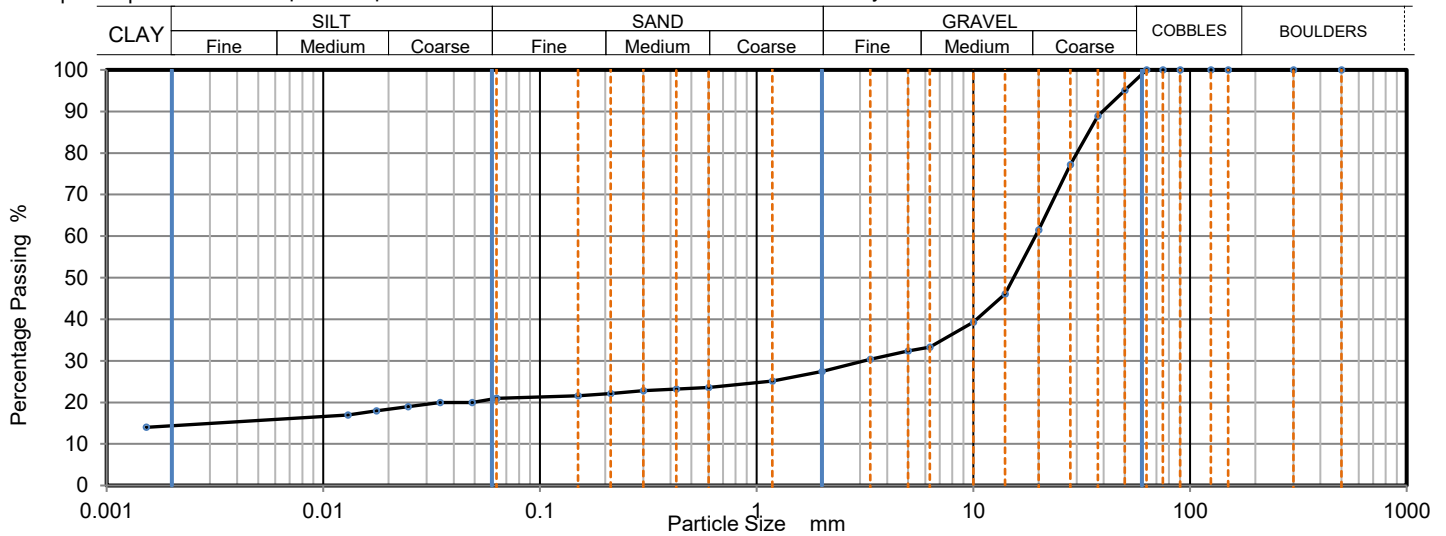
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 28/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784028
Hole No.: TP116
Sample Reference: Not Given
Sample Description: Brown clayey GRAVEL with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 0.90
Depth Base [m]: 1.20
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	21
300	100	0.0486	20
150	100	0.0346	20
125	100	0.0246	19
90	100	0.0175	18
75	100	0.0130	17
63	100	0.0015	14
50	95		
37.5	89		
28	77		
20	62		
14	46		
10	39		
6.3	33		
5	32		
3.35	30	Particle density (assumed) 2.65 Mg/m ³	
2	27		
1.18	25		
0.6	24		
0.425	23		
0.3	23		
0.212	22		
0.15	22		
0.063	21		

Sample Proportions	% dry mass
Very coarse	0
Gravel	73
Sand	7
Silt	5
Clay	15

Grading Analysis	
D100	63
D60	19.3
D30	3.13
D10	
Uniformity Coefficient	> 13000
Curvature Coefficient	

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



4041

**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



Environmental Science

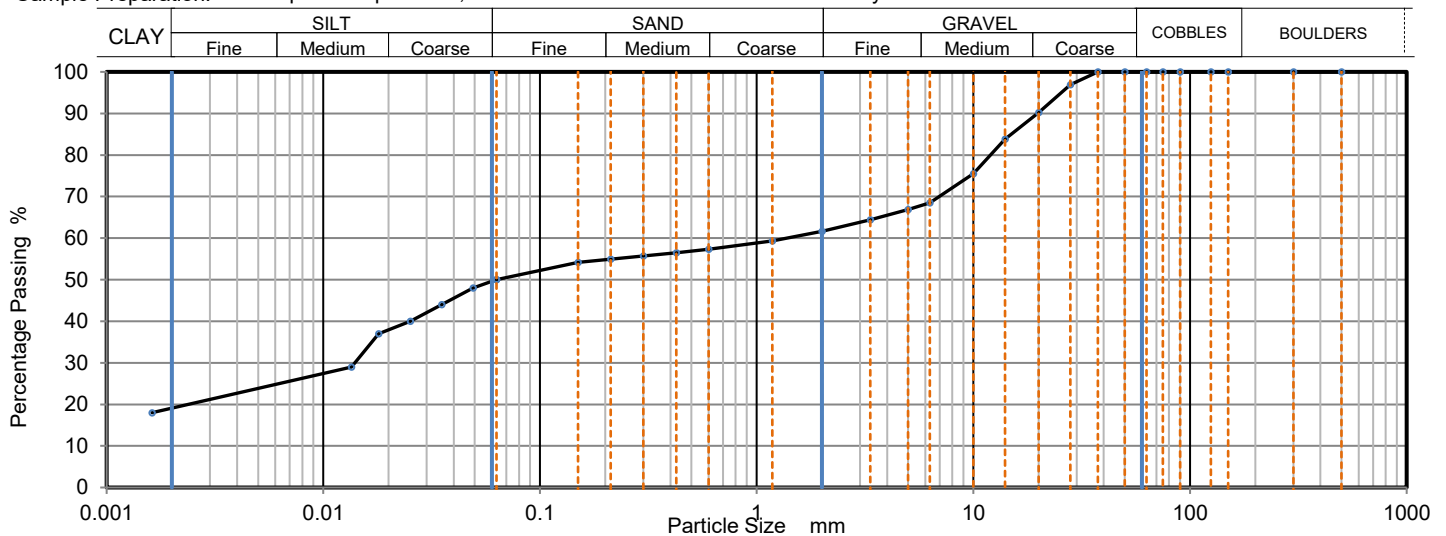
Client: Endeavour Drilling
Client Address: Unit 7 Mapledean Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 31/07/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784030
Hole No.: TP117
Sample Reference: Not Given
Sample Description: Yellowish brown gravelly CLAY with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 1.70
Depth Base [m]: 2.00
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	50
300	100	0.0490	48
150	100	0.0351	44
125	100	0.0252	40
90	100	0.0180	37
75	100	0.0135	29
63	100	0.0016	18
50	100		
37.5	100		
28	97		
20	90		
14	84		
10	76		
6.3	69		
5	67		
3.35	64	Particle density (assumed) 2.65 Mg/m3	
2	62		
1.18	59		
0.6	57		
0.425	57		
0.3	56		
0.212	55		
0.15	54		
0.063	50		

Sample Proportions	% dry mass
Very coarse	0
Gravel	38
Sand	12
Silt	31
Clay	19

Grading Analysis	
D100	mm 37.5
D60	mm 1.39
D30	mm 0.0138
D10	mm
Uniformity Coefficient	> 860
Curvature Coefficient	

Uniformity and Curvature 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:**

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

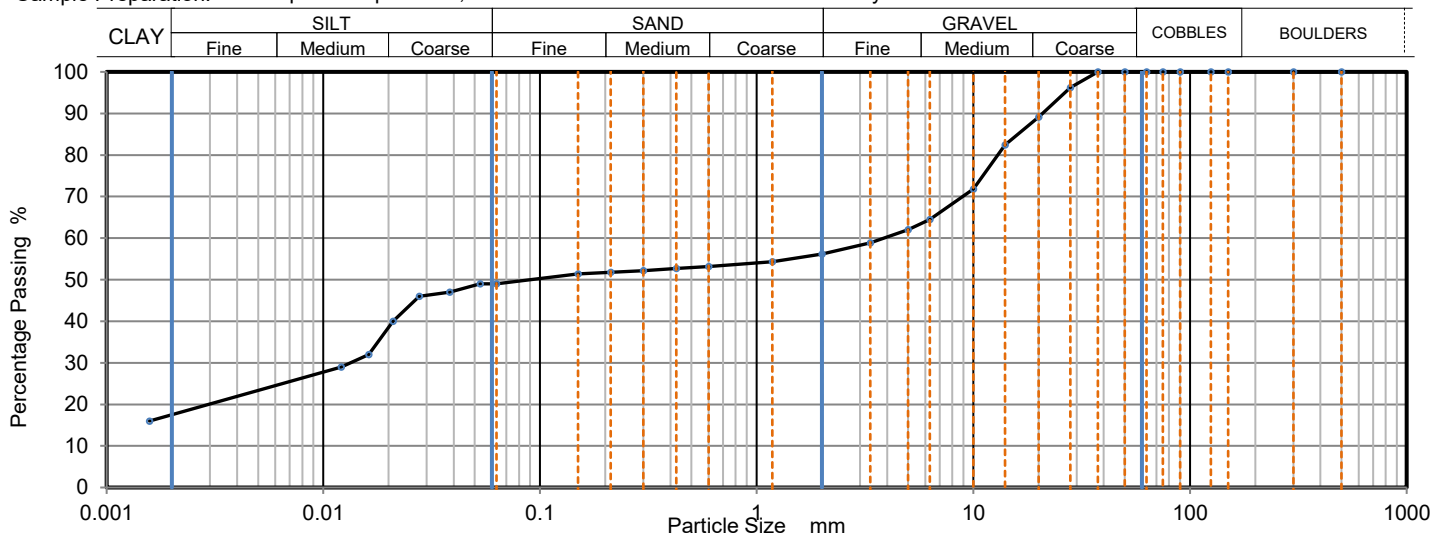
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 28/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784031
Hole No.: TP118
Sample Reference: Not Given
Sample Description: Yellowish brown gravelly CLAY with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 0.90
Depth Base [m]: 1.20
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0529	49
300	100	0.0383	47
150	100	0.0277	46
125	100	0.0210	40
90	100	0.0162	32
75	100	0.0121	29
63	100	0.0016	16
50	100		
37.5	100		
28	96		
20	89		
14	82		
10	72		
6.3	65		
5	62		
3.35	59	Particle density (assumed) 2.65 Mg/m ³	
2	56		
1.18	54		
0.6	53		
0.425	53		
0.3	52		
0.212	52		
0.15	51		
0.063	49		

Sample Proportions	% dry mass
Very coarse	0
Gravel	44
Sand	7
Silt	31
Clay	18

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 2500
Curvature Coefficient	

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



Matthew Rust
Endeavour Drilling
Unit 7 Mapledean Industrial Estate
Maldon Road
Chelmsford
CM3 6LD

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

t: 01621741300

e: Matthew@endeavourdrilling.co.uk

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

Analytical Report Number : 23-51008

Project / Site name:	Stantec Southleigh Road	Samples received on:	15/08/2023
Your job number:	J5443	Samples instructed on / Analysis started on:	15/08/2023
Your order number:		Analysis completed by:	22/08/2023
Report Issue Number:	1	Report issued on:	22/08/2023
Samples Analysed:	7 soil samples		

Signed: _____

Dominika Liana
Junior Reporting Specialist
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: 23-51008
Project / Site name: Stantec Southleigh Road

Lab Sample Number				2781426	2781427	2781428	2781429	2781430
Sample Reference				WS101	WS102	WS104	WS105	WS106
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.70	2.00	1.90	2.40	1.40
Date Sampled				21/07/2023	28/06/2023	21/07/2023	20/08/2023	27/08/2023
Time Taken				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
Moisture Content	%	0.01	NONE	7.3	6.1	12	15	9
Total mass of sample received	kg	0.001	NONE	0.6	0.7	0.4	0.8	0.9

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	5.6	7.7	7.9	8.2	8
Total Sulphate as SO ₄	mg/kg	50	MCERTS	190	170	180	160	160
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.06	0.0157	0.0645	0.011	0.0329
Total Sulphur	mg/kg	50	MCERTS	98	66	54	59	77

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

Analytical Report Number: 23-51008
Project / Site name: Stantec Southleigh Road

Lab Sample Number				2781431	2781432
Sample Reference				WS108	WS109
Sample Number				None Supplied	None Supplied
Depth (m)				1.30	1.20-1.65
Date Sampled				27/08/2023	28/06/2023
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	9.8	7.3
Total mass of sample received	kg	0.001	NONE	1	0.4

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8	8
Total Sulphate as SO ₄	mg/kg	50	MCERTS	240	150
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0126	0.0399
Total Sulphur	mg/kg	50	MCERTS	97	99

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

Analytical Report Number : 23-51008

Project / Site name: Stantec Southleigh Road

* 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 *
2781426	WS101	None Supplied	1.7	Brown sand with gravel.
2781427	WS102	None Supplied	2	Brown clay with gravel.
2781428	WS104	None Supplied	1.9	Brown clay and sand with gravel.
2781429	WS105	None Supplied	2.4	Brown clay and sand with gravel.
2781430	WS106	None Supplied	1.4	Brown clay with gravel.
2781431	WS108	None Supplied	1.3	Brown clay with gravel.
2781432	WS109	None Supplied	1.20-1.65	Brown clay with gravel.

Analytical Report Number : 23-51008
Project / Site name: Stantec Southleigh Road

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
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-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 Sulphur in soil	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

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.



Matthew Rust
Endeavour Drilling
Unit 7 Mapledean Industrial Estate
Maldon Road
Chelmsford
CM3 6LD

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

t: 01621741300

e: Matthew@endeavourdrilling.co.uk

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

Analytical Report Number : 23-51020

Project / Site name:	STANTEC Southleigh Road	Samples received on:	15/08/2023
Your job number:	J5443	Samples instructed on / Analysis started on:	15/08/2023
Your order number:		Analysis completed by:	22/08/2023
Report Issue Number:	1	Report issued on:	22/08/2023
Samples Analysed:	5 soil samples		

Signed: _____

Dominika Liana
Junior Reporting Specialist
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: 23-51020
Project / Site name: STANTEC Southleigh Road

Lab Sample Number				2781471	2781472	2781473	2781474	2781475
Sample Reference				TP101	TP109	TP111	TP116	TP117
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.40	2.00	1.50	1.50	0.60
Date Sampled				29/06/2023	20/06/2023	29/06/2023	28/06/2023	30/06/2023
Time Taken				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
Moisture Content	%	0.01	NONE	8.4	12	5	8.6	8.8
Total mass of sample received	kg	0.001	NONE	0.6	0.8	1	1.1	1

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.1	7.2	7.7	7.4	7.6
Total Sulphate as SO ₄	mg/kg	50	MCERTS	170	180	85	110	99
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0699	0.0343	0.0187	0.0194	0.0236
Total Sulphur	mg/kg	50	MCERTS	76	74	50	55	80

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

Analytical Report Number : 23-51020

Project / Site name: STANTEC Southleigh Road

* 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 *
2781471	TP101	None Supplied	1.4	Brown clay and sand with gravel.
2781472	TP109	None Supplied	2	Brown clay with gravel.
2781473	TP111	None Supplied	1.5	Brown clay and sand with gravel.
2781474	TP116	None Supplied	1.5	Brown clay and sand with gravel.
2781475	TP117	None Supplied	0.6	Brown clay and loam with gravel and vegetation.

Analytical Report Number : 23-51020
Project / Site name: STANTEC Southleigh Road

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
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-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 Sulphur in soil	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

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.

APPENDIX H

Chemical Analysis Results



Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Endeavour Drilling
Aldgate Tower
2 Leman Street
London
E1 8FA

Attention: Oliver Wendland

CERTIFICATE OF ANALYSIS

Date of report Generation:	30 June 2023
Customer:	Endeavour Drilling
Sample Delivery Group (SDG):	230622-44
Your Reference:	J5443
Location:	Southleigh Road, Havant
Report No:	694519
Order Number:	15538OW

We received 10 samples on Thursday June 22, 2023 and 3 of these samples were scheduled for analysis which was completed on Friday June 30, 2023. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 230622-44
Client Ref.: J5443

Report Number: 694519
Location: Southleigh Road, Havant

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28195079	TP 102	ES1	0.20	19/06/2023
28195071	TP 102	ES2	0.60	19/06/2023
28195069	TP 104	ES1	0.30	19/06/2023
28195070	TP 104	ES2	0.50	19/06/2023
28195072	TP 104	ES3	0.80	19/06/2023
28195075	TP 112	ES1	0.20	19/06/2023
28195076	TP 112	ES2	0.40	19/06/2023
28195078	TP 112	ES3	0.90	19/06/2023
28195073	TP 113	ES1	0.20	19/06/2023
28195074	TP 113	ES2	0.60	19/06/2023

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230622-44
Client Ref.: J5443

Report Number: 694519
Location: Southleigh Road, Havant

Superseded Report:

Results Legend

- X** Test
- N** No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Results Legend	Lab Sample No(s)		28195079	28195070	28195076
	Customer Sample Reference		TP 102	TP 104	TP 112
Sample Types -	AGS Reference		ES1	ES2	ES2
	Depth (m)		0.20	0.50	0.40
Sample Types -	Container		1 kg TUB with Handle (ALE260)	250g Amber jar (ALE210)	60g VOC (ALE215)
	Sample Type		S	S	S
Anions by Kone (soil)	All	NDPs: 0 Tests: 3	X	X	X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 3	X	X	X
EPH CWG GC (S)	All	NDPs: 0 Tests: 3	X	X	X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3	X	X	X
Metals in solid samples by OES	All	NDPs: 0 Tests: 3	X	X	X
PAH by GCMS	All	NDPs: 0 Tests: 3	X	X	X
pH	All	NDPs: 0 Tests: 3	X	X	X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3	X	X	X
Sample description	All	NDPs: 0 Tests: 2	X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 3	X	X	X
TPH CWG GC (S)	All	NDPs: 0 Tests: 3	X	X	X
VOC MS (S)	All	NDPs: 0 Tests: 3	X	X	X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230622-44
Client Ref.: J5443

Report Number: 694519
Location: Southleigh Road, Havant

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
28195079	TP 102	0.20	Light Brown	Sandy Clay Loam	Stones	Vegetation
28195070	TP 104	0.50	Light Brown	Silt Loam	Brick	Vegetation
28195076	TP 112	0.40	Cream	N/A	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

SDG: 230622-44

Report Number: 694519

Superseded Report:

Client Ref.: J5443

Location: Southleigh Road, Havant

PAH by GCMS

[illegible]

SDG: 230622-44

Report Number: 694519

Superseded Report:

Client Ref.: J5443

Location: Southleigh Road, Havant

VOC MS (S)

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 230622-44
Client Ref.: J5443

Report Number: 694519

Superseded Report:

Location: Southleigh Road, Havant

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5$ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP 102ES1 0.20 SOLID 19/06/2023 00:00:00 22/06/2023 05:00:00 230622-44 28195079 TM048	29/06/2023	Odhran McLernon	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP 104ES2 0.50 SOLID 19/06/2023 00:00:00 22/06/2023 05:00:00 230622-44 28195070 TM048	29/06/2023	Odhran McLernon	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP 112ES2 0.40 SOLID 19/06/2023 00:00:00 22/06/2023 05:00:00 230622-44 28195076 TM048	29/06/2023	Odhran McLernon	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 230622-44
Client Ref.: J5443

Report Number: 694519
Location: Southleigh Road, Havant

Superseded Report:

Table of Results - Appendix

Method No	Description
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM048	Identification of Asbestos in Bulk Material
TM062 (S)	Determination of Phenols in Soils by HPLC
TM218	The determination of PAH in soil samples by GC-MS
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM243	Mixed Anions In Soils By Kone

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230622-44
Client Ref.: J5443

Report Number: 694519
Location: Southleigh Road, Havant

Superseded Report:

Test Completion Dates

Lab Sample No(s)	28195079	28195070	28195076
Customer Sample Ref.	TP 102	TP 104	TP 112
AGS Ref.	ES1	ES2	ES2
Depth	0.20	0.50	0.40
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Anions by Kone (soil)	28-Jun-2023	28-Jun-2023	28-Jun-2023
Asbestos ID in Solid Samples	29-Jun-2023	29-Jun-2023	29-Jun-2023
EPH CWG GC (S)	28-Jun-2023	29-Jun-2023	28-Jun-2023
GRO by GC-FID (S)	28-Jun-2023	28-Jun-2023	28-Jun-2023
Metals in solid samples by OES	28-Jun-2023	28-Jun-2023	29-Jun-2023
PAH by GCMS	30-Jun-2023	30-Jun-2023	29-Jun-2023
pH	27-Jun-2023	27-Jun-2023	27-Jun-2023
Phenols by HPLC (S)	29-Jun-2023	29-Jun-2023	29-Jun-2023
Sample description	24-Jun-2023	26-Jun-2023	26-Jun-2023
Total Organic Carbon	30-Jun-2023	30-Jun-2023	30-Jun-2023
TPH CWG GC (S)	28-Jun-2023	29-Jun-2023	28-Jun-2023
VOC MS (S)	29-Jun-2023	29-Jun-2023	29-Jun-2023



CERTIFICATE OF ANALYSIS

SDG: 230622-44
Client Ref: J5443

Report Number: 694519
Location: Southleigh Road, Havant

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Endeavour Drilling
Aldgate Tower
2 Leman Street
London
E1 8FA

Attention: Oliver Wendland

CERTIFICATE OF ANALYSIS

Date of report Generation: 18 July 2023
Customer: Endeavour Drilling
Sample Delivery Group (SDG): 230624-60
Your Reference: J5443
Location: Southleigh Road, Havant
Report No: 696711
Order Number: 15538OW

This report has been revised and directly supersedes 696234 in its entirety.

We received 4 samples on Saturday June 24, 2023 and 1 of these samples were scheduled for analysis which was completed on Tuesday July 18, 2023. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 230624-60
Client Ref.: J5443

Report Number: 696711
Location: Southleigh Road, Havant

Superseded Report: 696234

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28212359	WS101 ES1	ES	0.10	21/06/2023
28212360	WS101 ES2	ES	0.60	21/06/2023
28212356	WS104 ES1	ES	0.20	21/06/2023
28212358	WS104 ES2	ES	0.60	21/06/2023

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230624-60
Client Ref.: J5443

Report Number: 696711
Location: Southleigh Road, Havant

Superseded Report: 696234

Results Legend



Test



No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)

28212358

Customer Sample Reference

WS104 ES2

AGS Reference

ES

Depth (m)

0.60

Container

60g VOC (ALE215)
250g Amber Jar (ALE210)
1kg TUB with Handle (ALE260)

Sample Type

S S S

Anions by Kone (soil)

All

NDPs: 0
Tests: 1

X

Asbestos ID in Solid Samples

All

NDPs: 0
Tests: 1

X

EPH CWG GC (S)

All

NDPs: 0
Tests: 1

X

GRO by GC-FID (S)

All

NDPs: 0
Tests: 1

X

Hexavalent Chromium (s)

All

NDPs: 0
Tests: 1

X

Metals in solid samples by OES

All

NDPs: 0
Tests: 1

X

PAH by GCMS

All

NDPs: 0
Tests: 1

X

pH

All

NDPs: 0
Tests: 1

X

Phenols by HPLC (S)

All

NDPs: 0
Tests: 1

X

Sample description

All

NDPs: 0
Tests: 1

X

Total Organic Carbon

All

NDPs: 0
Tests: 1

X

TPH CWG GC (S)

All

NDPs: 0
Tests: 1

X

VOC MS (S)

All

NDPs: 0
Tests: 1

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230624-60
Client Ref.: J5443

Report Number: 696711
Location: Southleigh Road, Havant

Superseded Report: 696234

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
28212358	WS104 ES2	0.60	Light Brown	Sandy Clay Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230624-60
Client Ref.: J5443

Report Number: 696711
Location: Southleigh Road, Havant

Superseded Report: 696234

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5&+@@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref.	WS104 ES2ES	13/07/2023	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Depth (m)	0.60										
Sample Type	SOLID										
Date Sampled	21/06/2023 00:00:00										
Date Received	24/06/2023 05:00:00										
SDG	230624-60										
Original Sample	28212358										
Method Number	TM048										



CERTIFICATE OF ANALYSIS

Validated

SDG: 230624-60
Client Ref.: J5443

Report Number: 696711
Location: Southleigh Road, Havant

Superseded Report: 696234

Table of Results - Appendix

Method No	Description
TM048	Identification of Asbestos in Bulk Material
TM062 (S)	Determination of Phenols in Soils by HPLC
TM218	The determination of PAH in soil samples by GC-MS
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM243	Mixed Anions In Soils By Kone
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM151	Determination of Hexavalent Chromium using Kone analyser
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230624-60
Client Ref.: J5443

Report Number: 696711
Location: Southleigh Road, Havant

Superseded Report: 696234

Test Completion Dates

Lab Sample No(s)	28212358
Customer Sample Ref.	WS104 ES2
AGS Ref.	ES
Depth	0.60
Type	Soil/Solid (S)

Anions by Kone (soil)	10-Jul-2023
Asbestos ID in Solid Samples	13-Jul-2023
EPH CWG GC (S)	18-Jul-2023
GRO by GC-FID (S)	07-Jul-2023
Hexavalent Chromium (s)	08-Jul-2023
Metals in solid samples by OES	07-Jul-2023
PAH by GCMS	14-Jul-2023
pH	06-Jul-2023
Phenols by HPLC (S)	07-Jul-2023
Sample description	05-Jul-2023
Total Organic Carbon	10-Jul-2023
TPH CWG GC (S)	18-Jul-2023
VOC MS (S)	06-Jul-2023



CERTIFICATE OF ANALYSIS

SDG: 230624-60
Client Ref: J5443

Report Number: 696711
Location: Southleigh Road, Havant

Superseded Report: 696234

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Endeavour Drilling
Aldgate Tower
2 Leman Street
London
E1 8FA

Attention: Oliver Wendland

CERTIFICATE OF ANALYSIS

Date of report Generation: 14 July 2023
Customer: Endeavour Drilling
Sample Delivery Group (SDG): 230629-53
Your Reference: J5443
Location: Southleigh Road, Havant
Report No: 696362
Order Number: 15538OW

This report has been revised and directly supersedes 696235 in its entirety.

We received 6 samples on Thursday June 29, 2023 and 2 of these samples were scheduled for analysis which was completed on Friday July 14, 2023. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-53
Client Ref.: J5443

Report Number: 696362
Location: Southleigh Road, Havant

Superseded Report: 696235

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28240616	TP105	ESES1	0.20	27/06/2023
28240617	TP105	ESES2	0.70	27/06/2023
28240618	TP105	ESES3	1.50	27/06/2023
28240620	TP106	ESES1	0.20	27/06/2023
28240621	TP106	ESES2	0.50	27/06/2023
28240622	TP106	ESES3	0.90	27/06/2023

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-53
Client Ref.: J5443

Report Number: 696362
Location: Southleigh Road, Havant

Superseded Report: 696235

Results Legend



Test



No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)

28240617

28240621

Customer Sample Reference

TP105

TP106

AGS Reference

ESES2

ESES2

Depth (m)

0.70

0.50

Container

60g VOC (ALE215)
250g Amber jar (ALE210)
1kg TUB with Handle (ALE260)
60g VOC (ALE215)
250g Amber jar (ALE210)
1kg TUB with Handle (ALE260)

Sample Type

S

S

S

S

S

S

Anions by Kone (soil)

All

NDPs: 0
Tests: 2

X

X

Asbestos ID in Solid Samples

All

NDPs: 0
Tests: 2

X

X

EPH CWG GC (S)

All

NDPs: 0
Tests: 2

X

X

GRO by GC-FID (S)

All

NDPs: 0
Tests: 2

X

X

Hexavalent Chromium (s)

All

NDPs: 0
Tests: 2

X

X

Metals in solid samples by OES

All

NDPs: 0
Tests: 2

X

X

PAH by GCMS

All

NDPs: 0
Tests: 2

X

X

pH

All

NDPs: 0
Tests: 2

X

X

Phenols by HPLC (S)

All

NDPs: 0
Tests: 2

X

X

Sample description

All

NDPs: 0
Tests: 2

X

X

Total Organic Carbon

All

NDPs: 0
Tests: 2

X

X

TPH CWG GC (S)

All

NDPs: 0
Tests: 2

X

X

VOC MS (S)

All

NDPs: 0
Tests: 2

X

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-53
Client Ref.: J5443

Report Number: 696362
Location: Southleigh Road, Havant

Superseded Report: 696235

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
28240617	TP105	0.70	Dark Brown	Silty Clay Loam	Stones	None
28240621	TP106	0.50	Light Brown	Silty Clay Loam	Stones	Brick

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-53
Client Ref.: J5443

Report Number: 696362
Location: Southleigh Road, Havant

Superseded Report: 696235

Results Legend			Customer Sample Ref.		TP105		TP106						
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.70 Soil/Solid (S) 27/06/2023		0.50 Soil/Solid (S) 27/06/2023						
M	mCERTS accredited.												
aq	Aqueous / settled sample.												
diss.filt	Dissolved / filtered sample.												
tot.unfilt	Total / unfiltered sample.												
*	Subcontracted - refer to subcontractor report for accreditation status.												
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery												
(F)	Trigger breach confirmed												
1-4**	@ Sample deviation (see appendix)												
Component	LOD/Units	Method											
Moisture Content Ratio (% of as received sample)	%	PM024	15		11								
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M		<0.01 M								
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M		<0.01 M								
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M		<0.015 M								
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M		<0.035 M								
Soil Organic Matter (SOM)	<0.35 %	TM132	0.733 #		0.36 #								
pH	1 pH Units	TM133	8.3 M		7.57 M								
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 M		<0.6 M								
Arsenic	<0.6 mg/kg	TM181	10.2 M		6.83 M								
Cadmium	<0.02 mg/kg	TM181	0.409 M		0.112 M								
Chromium	<0.9 mg/kg	TM181	17.2 M		21.7 M								
Copper	<1.4 mg/kg	TM181	10 M		9.51 M								
Lead	<0.7 mg/kg	TM181	18.7 M		14 M								
Mercury	<0.1 mg/kg	TM181	<0.1 M		<0.1 M								
Nickel	<0.2 mg/kg	TM181	24.7 M		20.4 M								
Selenium	<1 mg/kg	TM181	1.16 #		<1 #								
Vanadium	<0.2 mg/kg	TM181	39.4 #		37.5 #								
Zinc	<1.9 mg/kg	TM181	44 M		36.5 M								
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0955 M		0.0137 M								



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-53
Client Ref.: J5443

Report Number: 696362
Location: Southleigh Road, Havant

Superseded Report: 696235

PAH by GCMS

Results Legend			Customer Sample Ref.		TP105		TP106							
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.70		0.50							
M	mCERTS accredited.				Soil/Solid (S)		Soil/Solid (S)							
aq	Aqueous / settled sample.				27/06/2023		27/06/2023							
diss.filt	Dissolved / filtered sample.				29/06/2023		29/06/2023							
tot.unfilt	Total / unfiltered sample.				230629-53		230629-53							
* Subcontracted - refer to subcontractor report for accreditation status.							28240617		28240621					
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							ESES2		ESES2					
(F) Trigger breach confirmed														
1-4*§@ Sample deviation (see appendix)														
Component	LOD/Units	Method												
Naphthalene-d8 % recovery**	%	TM218	94.9		96.2									
Acenaphthene-d10 % recovery**	%	TM218	92.9		92.5									
Phenanthrene-d10 % recovery**	%	TM218	90.9		88.8									
Chrysene-d12 % recovery**	%	TM218	94.1		94.1									
Perylene-d12 % recovery**	%	TM218	89.6		95.3									
Naphthalene	<9 µg/kg	TM218	<9		<9									
			M		M									
Acenaphthylene	<12 µg/kg	TM218	<12		<12									
			M		M									
Acenaphthene	<8 µg/kg	TM218	<8		<8									
			M		M									
Fluorene	<10 µg/kg	TM218	<10		<10									
			M		M									
Phenanthrene	<15 µg/kg	TM218	<15		<15									
			M		M									
Anthracene	<16 µg/kg	TM218	<16		<16									
			M		M									
Fluoranthene	<17 µg/kg	TM218	<17		<17									
			M		M									
Pyrene	<15 µg/kg	TM218	<15		<15									
			M		M									
Benz(a)anthracene	<14 µg/kg	TM218	<14		<14									
			M		M									
Chrysene	<10 µg/kg	TM218	<10		<10									
			M		M									
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15		<15									
			M		M									
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14		<14									
			M		M									
Benzo(a)pyrene	<15 µg/kg	TM218	<15		<15									
			M		M									
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18		<18									
			M		M									
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23		<23									
			M		M									
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24		<24									
			M		M									
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118		<118									



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-53
Client Ref.: J5443

Report Number: 696362
Location: Southleigh Road, Havant

Superseded Report: 696235

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5$ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP105ESES2 0.70 SOLID 27/06/2023 00:00:00 29/06/2023 05:00:00 230629-53 28240617 TM048	12/07/2023	Alex Horner	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP106ESES2 0.50 SOLID 27/06/2023 00:00:00 29/06/2023 05:00:00 230629-53 28240621 TM048	13/07/2023	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-53
Client Ref.: J5443

Report Number: 696362
Location: Southleigh Road, Havant

Superseded Report: 696235

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM151	Determination of Hexavalent Chromium using Kone analyser
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM243	Mixed Anions In Soils By Kone
TM048	Identification of Asbestos in Bulk Material
TM062 (S)	Determination of Phenols in Soils by HPLC
TM218	The determination of PAH in soil samples by GC-MS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-53
Client Ref.: J5443

Report Number: 696362
Location: Southleigh Road, Havant

Superseded Report: 696235

Test Completion Dates

Lab Sample No(s)	28240617	28240621
Customer Sample Ref.	TP105	TP106
AGS Ref.	ESES2	ESES2
Depth	0.70	0.50
Type	Soil/Solid (S)	Soil/Solid (S)

Anions by Kone (soil)	11-Jul-2023	11-Jul-2023
Asbestos ID in Solid Samples	12-Jul-2023	13-Jul-2023
EPH CWG GC (S)	14-Jul-2023	14-Jul-2023
Hexavalent Chromium (s)	08-Jul-2023	08-Jul-2023
Metals in solid samples by OES	10-Jul-2023	10-Jul-2023
PAH by GCMS	14-Jul-2023	13-Jul-2023
pH	07-Jul-2023	06-Jul-2023
Phenols by HPLC (S)	07-Jul-2023	07-Jul-2023
Sample description	05-Jul-2023	05-Jul-2023
Total Organic Carbon	12-Jul-2023	12-Jul-2023
TPH CWG GC (S)	14-Jul-2023	14-Jul-2023
VOC MS (S)	10-Jul-2023	10-Jul-2023



CERTIFICATE OF ANALYSIS

SDG: 230629-53
Client Ref: J5443

Report Number: 696362
Location: Southleigh Road, Havant

Superseded Report: 696235

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Endeavour Drilling
Aldgate Tower
2 Leman Street
London
E1 8FA

Attention: Oliver Wendland

CERTIFICATE OF ANALYSIS

Date of report Generation: 18 July 2023
Customer: Endeavour Drilling
Sample Delivery Group (SDG): 230629-55
Your Reference: J5443
Location: Southleigh Road, Havant
Report No: 696712
Order Number: 15538OW

This report has been revised and directly supersedes 696230 in its entirety.

We received 8 samples on Thursday June 29, 2023 and 2 of these samples were scheduled for analysis which was completed on Tuesday July 18, 2023. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-55
Client Ref.: J5443

Report Number: 696712
Location: Southleigh Road, Havant

Superseded Report: 696230

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28240957	WS103		0.10 - 0.30	26/06/2023
28240958	WS103		0.50 - 0.60	26/06/2023
28240959	WS103		1.10 - 1.20	26/06/2023
28240960	WS106		0.10 - 0.30	27/06/2023
28240961	WS106		0.40 - 0.50	27/06/2023
28240962	WS106		0.90 - 1.00	27/06/2023
28240964	WS108		0.10 - 0.20	27/06/2023
28240965	WS108		0.40 - 0.50	27/06/2023

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-55
Client Ref.: J5443

Report Number: 696712
Location: Southleigh Road, Havant

Superseded Report: 696230

Results Legend

- X** Test
- N** No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)

Customer Sample Reference

AGS Reference

Depth (m)

Container

Sample Type

28240958

28240965

WS103

WS108

0.50 - 0.60

0.40 - 0.50

1kg Cardboard Container
250g Amber Jar (ALE210)
60g VOC (ALE215)
1kg TUB with Handle (ALE260)
250g Amber Jar (ALE210)
60g VOC (ALE215)

S S S S S S

Anions by Kone (soil)

All

NDPs: 0
Tests: 2

X

X

Asbestos ID in Solid Samples

All

NDPs: 0
Tests: 2

X

X

EPH CWG GC (S)

All

NDPs: 0
Tests: 2

X

X

GRO by GC-FID (S)

All

NDPs: 0
Tests: 2

X

X

Hexavalent Chromium (s)

All

NDPs: 0
Tests: 2

X

X

Metals in solid samples by OES

All

NDPs: 0
Tests: 2

X

X

PAH by GCMS

All

NDPs: 0
Tests: 2

X

X

pH

All

NDPs: 0
Tests: 2

X

X

Phenols by HPLC (S)

All

NDPs: 0
Tests: 2

X

X

Sample description

All

NDPs: 0
Tests: 2

X

X

Total Organic Carbon

All

NDPs: 0
Tests: 2

X

X

TPH CWG GC (S)

All

NDPs: 0
Tests: 2

X

X

VOC MS (S)

All

NDPs: 0
Tests: 2

X

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-55
Client Ref.: J5443

Report Number: 696712
Location: Southleigh Road, Havant

Superseded Report: 696230

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
28240958	WS103	0.50 - 0.60	Light Brown	Silty Sand	Stones	Vegetation
28240965	WS108	0.40 - 0.50	Light Brown	Clay Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-55
Client Ref.: J5443

Report Number: 696712
Location: Southleigh Road, Havant

Superseded Report: 696230

Results Legend			Customer Sample Ref.		WS103		WS108					
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.50 - 0.60 Soil/Solid (S) 26/06/2023 29/06/2023 230629-55 28240958	0.40 - 0.50 Soil/Solid (S) 27/06/2023 29/06/2023 230629-55 28240965							
M	mCERTS accredited.											
aq	Aqueous / settled sample.											
diss.filt	Dissolved / filtered sample.											
tot.unfilt	Total / unfiltered sample.											
*	Subcontracted - refer to subcontractor report for accreditation status.											
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery											
(F)	Trigger breach confirmed											
1-4**@	Sample deviation (see appendix)											
Component	LOD/Units	Method										
Moisture Content Ratio (% of as received sample)	%	PM024	5	11								
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M								
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M								
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M	<0.015 M								
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M	<0.035 M								
Soil Organic Matter (SOM)	<0.35 %	TM132	0.595 #	0.681 #								
pH	1 pH Units	TM133	6.48 M	8.08 M								
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 M	<0.6 M								
Arsenic	<0.6 mg/kg	TM181	12.1 M	11.6 M								
Cadmium	<0.02 mg/kg	TM181	<0.02 M	0.261 M								
Chromium	<0.9 mg/kg	TM181	10.7 M	25.5 M								
Copper	<1.4 mg/kg	TM181	2.68 M	10.4 M								
Lead	<0.7 mg/kg	TM181	11.1 M	12.6 M								
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M								
Nickel	<0.2 mg/kg	TM181	6.92 M	29.4 M								
Selenium	<1 mg/kg	TM181	<1 #	<1 #								
Vanadium	<0.2 mg/kg	TM181	35.1 #	46.1 #								
Zinc	<1.9 mg/kg	TM181	15.9 M	36.1 M								
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.257 M	0.0104 M								
								</				



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-55
Client Ref.: J5443

Report Number: 696712
Location: Southleigh Road, Havant

Superseded Report: 696230

PAH by GCMS

Results Legend			Customer Sample Ref.		WS103		WS108						
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.50 - 0.60 Soil/Solid (S) 26/06/2023		0.40 - 0.50 Soil/Solid (S) 27/06/2023						
M	mCERTS accredited.												
aq	Aqueous / settled sample.												
diss.filt	Dissolved / filtered sample.												
tot.unfilt	Total / unfiltered sample.												
* Subcontracted - refer to subcontractor report for accreditation status.													
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery													
(F) Trigger breach confirmed													
1-4*§@ Sample deviation (see appendix)													
Component	LOD/Units	Method											
Naphthalene-d8 % recovery**	%	TM218	97.7		97.1								
Acenaphthene-d10 % recovery**	%	TM218	95.9		92.5								
Phenanthrene-d10 % recovery**	%	TM218	94.5		88.6								
Chrysene-d12 % recovery**	%	TM218	98.8		93								
Perylene-d12 % recovery**	%	TM218	96.1		92.5								
Naphthalene	<9 µg/kg	TM218	<9 M		<9 M								
Acenaphthylene	<12 µg/kg	TM218	<12 M		<12 M								
Acenaphthene	<8 µg/kg	TM218	<8 M		<8 M								
Fluorene	<10 µg/kg	TM218	<10 M		<10 M								
Phenanthrene	<15 µg/kg	TM218	<15 M		<15 M								
Anthracene	<16 µg/kg	TM218	<16 M		<16 M								
Fluoranthene	<17 µg/kg	TM218	<17 M		<17 M								
Pyrene	<15 µg/kg	TM218	<15 M		<15 M								
Benz(a)anthracene	<14 µg/kg	TM218	<14 M		<14 M								
Chrysene	<10 µg/kg	TM218	<10 M		<10 M								
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15 M		<15 M								
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14 M		<14 M								
Benzo(a)pyrene	<15 µg/kg	TM218	<15 M		<15 M								
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18 M		<18 M								
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23 M		<23 M								
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24 M		<24 M								
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118		<118								
		</											



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-55
Client Ref.: J5443

Report Number: 696712
Location: Southleigh Road, Havant

Superseded Report: 696230

VOC MS (S)

Results Legend			Customer Sample Ref.		WS103		WS108															
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.50 - 0.60 Soil/Solid (S) 26/06/2023	0.40 - 0.50 Soil/Solid (S) 27/06/2023																	
M	mCERTS accredited.																					
aq	Aqueous / settled sample.																					
diss.filt	Dissolved / filtered sample.																					
tot.unfilt	Total / unfiltered sample.																					
* Subcontracted - refer to subcontractor report for accreditation status.																						
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery																						
(F) Trigger breach confirmed																						
1-4* Sample deviation (see appendix)																						
Component	LOD/Units	Method																				
Dibromofluoromethane**	%	TM116	98.3		97.4																	
Toluene-d8**	%	TM116	98.1		97.9																	
4-Bromofluorobenzene**	%	TM116	98.1		100																	
Methyl Tertiary Butyl Ether	<0.5 µg/kg	TM116	<0.5		<0.5																	
			M		M																	
Benzene	<1 µg/kg	TM116	<1		<1																	
			M		M																	
Toluene	<1 µg/kg	TM116	<1		<1																	
			M		M																	
Ethylbenzene	<1 µg/kg	TM116	<1		<1																	
			M		M																	
p/m-Xylene	<2 µg/kg	TM116	<2		<2																	
			#		#																	
o-Xylene	<2 µg/kg	TM116	<2		<2																	
			M		M																	
Sum of Detected Xylenes	<0.02 mg/kg	TM116	<0.02		<0.02																	
Sum of BTEX	<7 µg/kg	TM116	<7		<7																	



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-55
Client Ref.: J5443

Report Number: 696712
Location: Southleigh Road, Havant

Superseded Report: 696230

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5$ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS103 0.50 - 0.60 SOLID 26/06/2023 00:00:00 29/06/2023 05:00:00 230629-55 28240958 TM048	13/07/2023	Odhran McLernon	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS108 0.40 - 0.50 SOLID 27/06/2023 00:00:00 29/06/2023 05:00:00 230629-55 28240965 TM048	13/07/2023	Odhran McLernon	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-55
Client Ref.: J5443

Report Number: 696712
Location: Southleigh Road, Havant

Superseded Report: 696230

Table of Results - Appendix

Method No	Description
TM048	Identification of Asbestos in Bulk Material
TM062 (S)	Determination of Phenols in Soils by HPLC
TM218	The determination of PAH in soil samples by GC-MS
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM151	Determination of Hexavalent Chromium using Kone analyser
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM243	Mixed Anions In Soils By Kone

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-55
Client Ref.: J5443

Report Number: 696712
Location: Southleigh Road, Havant

Superseded Report: 696230

Test Completion Dates

Lab Sample No(s)	28240958	28240965
Customer Sample Ref.	WS103	WS108
AGS Ref.		
Depth	0.50 - 0.60	0.40 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)

Anions by Kone (soil)	11-Jul-2023	11-Jul-2023
Asbestos ID in Solid Samples	13-Jul-2023	13-Jul-2023
EPH CWG GC (S)	18-Jul-2023	13-Jul-2023
Hexavalent Chromium (s)	08-Jul-2023	08-Jul-2023
Metals in solid samples by OES	10-Jul-2023	10-Jul-2023
PAH by GCMS	14-Jul-2023	13-Jul-2023
pH	06-Jul-2023	06-Jul-2023
Phenols by HPLC (S)	07-Jul-2023	07-Jul-2023
Sample description	05-Jul-2023	05-Jul-2023
Total Organic Carbon	10-Jul-2023	11-Jul-2023
TPH CWG GC (S)	18-Jul-2023	13-Jul-2023
VOC MS (S)	10-Jul-2023	10-Jul-2023



CERTIFICATE OF ANALYSIS

SDG: 230629-55
Client Ref: J5443

Report Number: 696712
Location: Southleigh Road, Havant

Superseded Report: 696230

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Endeavour Drilling
Aldgate Tower
2 Leman Street
London
E1 8FA

Attention: Oliver Wendland

CERTIFICATE OF ANALYSIS

Date of report Generation: 18 July 2023
Customer: Endeavour Drilling
Sample Delivery Group (SDG): 230701-49
Your Reference: J5443
Location: Southleigh Road, Havant
Report No: 696714
Order Number: 15538OW

This report has been revised and directly supersedes 696231 in its entirety.

We received 20 samples on Saturday July 01, 2023 and 4 of these samples were scheduled for analysis which was completed on Tuesday July 18, 2023. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 230701-49
Client Ref.: J5443

Report Number: 696714
Location: Southleigh Road, Havant

Superseded Report: 696231

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28255715	TP101 ES1	ES	0.10	29/06/2023
28255717	TP101 ES2	ES	0.50	29/06/2023
28255705	TP103 ES1	ES	0.20	29/06/2023
28255707	TP103 ES2	ES	0.80	29/06/2023
28255711	TP110 ES1	ES	0.10	29/06/2023
28255713	TP110 ES2	ES	0.60	29/06/2023
28255718	TP111 ES1	ES	0.20	29/06/2023
28255720	TP111 ES2	ES	1.00	29/06/2023
28255449	TP114 ES1	ES	0.20	28/06/2023
28255450	TP114 ES2	ES	0.80	28/06/2023
28255451	TP116 ES1	ES	0.10	28/06/2023
28255452	TP116 ES2	ES	0.70	28/06/2023
28255453	TP118 ES1	ES	0.10	28/06/2023
28255454	TP118 ES2	ES	0.60	28/06/2023
28255442	WS102 ES1	ES	0.10 - 0.20	28/06/2023
28255444	WS102 ES2	ES	0.30 - 0.40	28/06/2023
28255445	WS107 ES1	ES	0.10 - 0.20	28/06/2023
28255446	WS107 ES2	ES	0.30 - 0.40	28/06/2023
28255447	WS109 ES1	ES	0.10 - 0.20	28/06/2023
28255448	WS109 ES2	ES	0.40 - 0.50	28/06/2023

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230701-49
Client Ref.: J5443

Report Number: 696714
Location: Southleigh Road, Havant

Superseded Report: 696231

Results Legend

- X** Test
- N** No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Results Legend	Lab Sample No(s)		28255717	28255713	28255444	28255447
	Customer Sample Reference		TP101 ES2	TP110 ES2	WS102 ES2	WS109 ES1
Sample Types -	AGS Reference		ES	ES	ES	ES
	Depth (m)		0.50	0.60	0.30 - 0.40	0.10 - 0.20
Sample Types -	Container		250g Amber jar (ALE210) 1kg TUB with Handle (ALE260)	250g Amber jar (ALE210) 1kg TUB with Handle (ALE260)	250g Amber jar (ALE210) 1kg TUB with Handle (ALE260)	250g Amber jar (ALE210) 1kg TUB with Handle (ALE260)
	Sample Type		S	S	S	S
Anions by Kone (soil)	All	NDPs: 0 Tests: 4	X	X	X	X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 4	X	X	X	X
EPH CWG GC (S)	All	NDPs: 0 Tests: 4	X	X	X	X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 4	X	X	X	X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 4	X	X	X	X
Metals in solid samples by OES	All	NDPs: 0 Tests: 4	X	X	X	X
PAH by GCMS	All	NDPs: 0 Tests: 4	X	X	X	X
pH	All	NDPs: 0 Tests: 4	X	X	X	X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 4	X	X	X	X
Sample description	All	NDPs: 0 Tests: 4	X	X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 4	X	X	X	X
TPH CWG GC (S)	All	NDPs: 0 Tests: 4	X	X	X	X
VOC MS (S)	All	NDPs: 0 Tests: 4	X	X	X	X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230701-49
Client Ref.: J5443

Report Number: 696714
Location: Southleigh Road, Havant

Superseded Report: 696231

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
28255717	TP101 ES2	0.50	Light Brown	Clay	Stones	Vegetation
28255713	TP110 ES2	0.60	Light Brown	Clay	Stones	None
28255444	WS102 ES2	0.30 - 0.40	Light Brown	Silty Clay Loam	Stones	None
28255447	WS109 ES1	0.10 - 0.20	Light Brown	Clay Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

SDG: 230701-49

Report Number: 696714

Superseded Report: 696231

Client Ref.: J5443

Location: Southleigh Road, Havant

VOC MS (S)

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 230701-49
Client Ref.: J5443

Report Number: 696714
Location: Southleigh Road, Havant

Superseded Report: 696231

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5$ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP101 ES2ES 0.50 SOLID 29/06/2023 00:00:00 01/07/2023 05:00:00 230701-49 28255717 TM048	13/07/2023	Odhran McLernon	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP110 ES2ES 0.60 SOLID 29/06/2023 00:00:00 01/07/2023 05:00:00 230701-49 28255713 TM048	12/07/2023	Odhran McLernon	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS102 ES2ES 0.30 - 0.40 SOLID 28/06/2023 00:00:00 01/07/2023 05:00:00 230701-49 28255444 TM048	12/07/2023	Alex Horner	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS109 ES1ES 0.10 - 0.20 SOLID 28/06/2023 00:00:00 01/07/2023 05:00:00 230701-49 28255447 TM048	13/07/2023	Odhran McLernon	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 230701-49
Client Ref.: J5443

Report Number: 696714
Location: Southleigh Road, Havant

Superseded Report: 696231

Table of Results - Appendix

Method No	Description
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM151	Determination of Hexavalent Chromium using Kone analyser
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM048	Identification of Asbestos in Bulk Material
TM062 (S)	Determination of Phenols in Soils by HPLC
TM218	The determination of PAH in soil samples by GC-MS
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM243	Mixed Anions In Soils By Kone

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230701-49
Client Ref.: J5443

Report Number: 696714
Location: Southleigh Road, Havant

Superseded Report: 696231

Test Completion Dates

Lab Sample No(s)	28255717	28255713	28255444	28255447
Customer Sample Ref.	TP101 ES2	TP110 ES2	WS102 ES2	WS109 ES1
AGS Ref.	ES	ES	ES	ES
Depth	0.50	0.60	0.30 - 0.40	0.10 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Anions by Kone (soil)	10-Jul-2023	11-Jul-2023	11-Jul-2023	11-Jul-2023
Asbestos ID in Solid Samples	13-Jul-2023	12-Jul-2023	12-Jul-2023	13-Jul-2023
EPH CWG GC (S)	18-Jul-2023	13-Jul-2023	14-Jul-2023	18-Jul-2023
GRO by GC-FID (S)	07-Jul-2023		07-Jul-2023	07-Jul-2023
Hexavalent Chromium (s)	08-Jul-2023	08-Jul-2023	08-Jul-2023	08-Jul-2023
Metals in solid samples by OES	10-Jul-2023	10-Jul-2023	10-Jul-2023	10-Jul-2023
PAH by GCMS	14-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023
pH	06-Jul-2023	06-Jul-2023	06-Jul-2023	06-Jul-2023
Phenols by HPLC (S)	07-Jul-2023	07-Jul-2023	12-Jul-2023	12-Jul-2023
Sample description	05-Jul-2023	05-Jul-2023	05-Jul-2023	05-Jul-2023
Total Organic Carbon	11-Jul-2023	11-Jul-2023	12-Jul-2023	10-Jul-2023
TPH CWG GC (S)	18-Jul-2023	13-Jul-2023	14-Jul-2023	18-Jul-2023
VOC MS (S)	10-Jul-2023	07-Jul-2023	07-Jul-2023	07-Jul-2023



CERTIFICATE OF ANALYSIS

SDG: 230701-49
Client Ref: J5443

Report Number: 696714
Location: Southleigh Road, Havant

Superseded Report: 696231

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Endeavour Drilling
Aldgate Tower
2 Leman Street
London
E1 8FA

Attention: Oliver Wendland

CERTIFICATE OF ANALYSIS

Date of report Generation:	15 August 2023
Customer:	Endeavour Drilling
Sample Delivery Group (SDG):	230803-84
Your Reference:	J5443
Location:	Southleigh Road, Havant
Report No:	700189
Order Number:	15538OW

We received 10 samples on Thursday August 03, 2023 and 2 of these samples were scheduled for analysis which was completed on Tuesday August 15, 2023. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 230803-84
Client Ref.: J5443

Report Number: 700189
Location: Southleigh Road, Havant

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28428476	TP107	ESES1	0.10 - 0.30	31/07/2023
28428477	TP107	ESES2	0.40 - 0.60	31/07/2023
28428478	TP107	ESES3	0.70 - 1.00	31/07/2023
28428479	TP108	ESES1	0.10 - 2.00	31/07/2023
28428480	TP108	ESES2	0.20 - 0.40	31/07/2023
28428484	TP115	ESES1	0.10 - 0.20	31/07/2023
28428485	TP115	ESES2	0.30 - 0.50	31/07/2023
28428481	TP117	ESES1	0.10 - 0.20	31/07/2023
28428482	TP117	ESES2	0.20 - 0.40	31/07/2023
28428483	TP117	ESES3	0.50 - 0.70	31/07/2023

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230803-84
Client Ref.: J5443

Report Number: 700189
Location: Southleigh Road, Havant

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
28428476	TP107	0.10 - 0.30	Dark Brown	Sandy Loam	Stones	Vegetation
28428482	TP117	0.20 - 0.40	Light Brown	Silt Loam	Vegetation	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230803-84
Client Ref.: J5443

Report Number: 700189

Superseded Report:

Location: Southleigh Road, Havant

Results Legend			Customer Sample Ref.		TP107		TP117							
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.10 - 0.30 Soil/Solid (S) 31/07/2023		0.20 - 0.40 Soil/Solid (S) 31/07/2023							
M	mCERTS accredited.													
aq	Aqueous / settled sample.													
diss.filt	Dissolved / filtered sample.													
tot.unfilt	Total / unfiltered sample.													
* Subcontracted - refer to subcontractor report for accreditation status.														
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery														
(F) Trigger breach confirmed														
1-4*§@ Sample deviation (see appendix)														
Component		LOD/Units	Method											
Moisture Content Ratio (% of as received sample)		%	PM024		10		13							
Phenol		<0.01 mg/kg	TM062 (S)		<0.01		<0.01							
					M		M							
Cresols		<0.01 mg/kg	TM062 (S)		<0.01		<0.01							
					M		M							
Xylenols		<0.015 mg/kg	TM062 (S)		<0.015		<0.015							
					M		M							
Phenols, Total Detected monohydric		<0.035 mg/kg	TM062 (S)		<0.035		<0.035							
					M		M							
Soil Organic Matter (SOM)		<0.35 %	TM132		3.47		2.1							
					#		#							
pH		1 pH Units	TM133		7.96		7.77							
					M		M							
Arsenic		<0.6 mg/kg	TM181		9.54		8.81							
					M		M							
Cadmium		<0.02 mg/kg	TM181		0.0409		0.0275							
					M		M							
Chromium		<0.9 mg/kg	TM181		11.8		15.4							
					M		M							
Copper		<1.4 mg/kg	TM181		11.1		24.7							
					M		M							
Lead		<0.7 mg/kg	TM181		23.2		27.1							
					M		M							
Mercury		<0.1 mg/kg	TM181		<0.1		<0.1							
					M		M							
Nickel		<0.2 mg/kg	TM181		10.4		11.5							
					M		M							
Selenium		<1 mg/kg	TM181		<1		<1							
					#		#							
Vanadium		<0.2 mg/kg	TM181		21.6		30.3							
					#		#							
Zinc		<1.9 mg/kg	TM181		47.6		51.8							
					M		M							
Water Soluble Sulphate as SO4 2:1 Extract		<0.004 g/l	TM243		<0.004		0.0218							
					M		M							



CERTIFICATE OF ANALYSIS

Validated

SDG: 230803-84
Client Ref.: J5443

Report Number: 700189
Location: Southleigh Road, Havant

Superseded Report:

PAH by GCMS

Results Legend			Customer Sample Ref.		TP107		TP117						
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.10 - 0.30 Soil/Solid (S) 31/07/2023		0.20 - 0.40 Soil/Solid (S) 31/07/2023						
M	mCERTS accredited.												
aq	Aqueous / settled sample.												
diss.filt	Dissolved / filtered sample.												
tot.unfilt	Total / unfiltered sample.												
* Subcontracted - refer to subcontractor report for accreditation status.													
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery													
(F) Trigger breach confirmed													
1-4*§@Sample deviation (see appendix)													
Component	LOD/Units	Method											
Naphthalene-d8 % recovery**	%	TM218	91.9		97.6								
Acenaphthene-d10 % recovery**	%	TM218	97.4		97.2								
Phenanthrene-d10 % recovery**	%	TM218	108		102								
Chrysene-d12 % recovery**	%	TM218	109		105								
Perylene-d12 % recovery**	%	TM218	109		104								
Naphthalene	<9 µg/kg	TM218	527		<9								
			M		M								
Acenaphthylene	<12 µg/kg	TM218	938		<12								
			M		M								
Acenaphthene	<8 µg/kg	TM218	95.5		<8								
			M		M								
Fluorene	<10 µg/kg	TM218	613		<10								
			M		M								
Phenanthrene	<15 µg/kg	TM218	6900		24.4								
			M		M								
Anthracene	<16 µg/kg	TM218	2830		<16								
			M		M								
Fluoranthene	<17 µg/kg	TM218	9700		71.3								
			M		M								
Pyrene	<15 µg/kg	TM218	7550		60.6								
			M		M								
Benz(a)anthracene	<14 µg/kg	TM218	4290		36.3								
			M		M								
Chrysene	<10 µg/kg	TM218	3890		43.7								
			M		M								
Benzo(b)fluoranthene	<15 µg/kg	TM218	4390		52.8								
			M		M								
Benzo(k)fluoranthene	<14 µg/kg	TM218	1680		24.1								
			M		M								
Benzo(a)pyrene	<15 µg/kg	TM218	3780		40.9								
			M		M								
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	1800		29.8								
			M		M								
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	419		<23								
			M		M								
Benzo(g,h,i)perylene	<24 µg/kg	TM218	2030		28.6								
			M		M								
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	51400		412								
			</										



CERTIFICATE OF ANALYSIS

Validated

SDG: 230803-84
Client Ref.: J5443

Report Number: 700189
Location: Southleigh Road, Havant

Superseded Report:

VOC MS (S)

Results Legend			Customer Sample Ref.		TP107		TP117															
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.10 - 0.30 Soil/Solid (S) 31/07/2023	0.20 - 0.40 Soil/Solid (S) 31/07/2023																	
M	mCERTS accredited.																					
aq	Aqueous / settled sample.																					
diss.filt	Dissolved / filtered sample.																					
tot.unfilt	Total / unfiltered sample.																					
* Subcontracted - refer to subcontractor report for accreditation status.				03/08/2023 230803-84 28428476 ESES1	03/08/2023 230803-84 28428482 ESES2																	
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery																						
(F) Trigger breach confirmed																						
1-4*§@ Sample deviation (see appendix)																						
Component	LOD/Units	Method																				
Dibromofluoromethane**	%	TM116	110		111																	
Toluene-d8**	%	TM116	98.4		98.9																	
4-Bromofluorobenzene**	%	TM116	87.6		91.3																	
Methyl Tertiary Butyl Ether	<0.5 µg/kg	TM116	<5		<5																	
			M		M																	
Benzene	<1 µg/kg	TM116	<10		<10																	
			M		M																	
Toluene	<1 µg/kg	TM116	<10		<10																	
			M		M																	
Ethylbenzene	<1 µg/kg	TM116	<10		<10																	
			M		M																	
p/m-Xylene	<2 µg/kg	TM116	<20		<20																	
			#		#																	
o-Xylene	<2 µg/kg	TM116	<20		<20																	
			M		M																	
Sum of Detected Xylenes	<0.02 mg/kg	TM116	<0.2		<0.2																	
Sum of BTEX	<7 µg/kg	TM116	<70		<70																	



CERTIFICATE OF ANALYSIS

Validated

SDG: 230803-84
Client Ref.: J5443

Report Number: 700189
Location: Southleigh Road, Havant

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5$ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP107ESES1 0.10 - 0.30 SOLID 31/07/2023 00:00:00 03/08/2023 05:00:00 230803-84 28428476 TM048	14/08/2023	Alex Horner	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP117ESES2 0.20 - 0.40 SOLID 31/07/2023 00:00:00 03/08/2023 05:00:00 230803-84 28428482 TM048	15/08/2023	Alex Horner	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 230803-84
Client Ref.: J5443

Report Number: 700189
Location: Southleigh Road, Havant

Superseded Report:

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM243	Mixed Anions In Soils By Kone
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM048	Identification of Asbestos in Bulk Material
TM062 (S)	Determination of Phenols in Soils by HPLC
TM218	The determination of PAH in soil samples by GC-MS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230803-84
Client Ref.: J5443

Report Number: 700189
Location: Southleigh Road, Havant

Superseded Report:

Test Completion Dates

Lab Sample No(s)	28428476	28428482
Customer Sample Ref.	TP107	TP117
AGS Ref.	ESES1	ESES2
Depth	0.10 - 0.30	0.20 - 0.40
Type	Soil/Solid (S)	Soil/Solid (S)

Anions by Kone (soil)	10-Aug-2023	10-Aug-2023
Asbestos ID in Solid Samples	14-Aug-2023	15-Aug-2023
EPH CWG GC (S)	08-Aug-2023	08-Aug-2023
GRO by GC-FID (S)	09-Aug-2023	09-Aug-2023
Metals in solid samples by OES	10-Aug-2023	10-Aug-2023
PAH by GCMS	08-Aug-2023	09-Aug-2023
pH	08-Aug-2023	08-Aug-2023
Phenols by HPLC (S)	08-Aug-2023	08-Aug-2023
Sample description	04-Aug-2023	04-Aug-2023
Total Organic Carbon	10-Aug-2023	10-Aug-2023
TPH CWG GC (S)	09-Aug-2023	09-Aug-2023
VOC MS (S)	07-Aug-2023	07-Aug-2023



CERTIFICATE OF ANALYSIS

SDG: 230803-84
Client Ref: J5443

Report Number: 700189
Location: Southleigh Road, Havant

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



GROUND INVESTIGATION REPORT (FACTUAL)

Southleigh Road,
Havant,
Portsmouth,
Hampshire,
PO9 2NX

Client: Stantec (UK) Ltd

September 2023

Report No: END23-058
332310755-SP-3501-V02

Endeavour Drilling Ltd
Unit 7,
Mapledean Industrial Estate
Maldon Road
Latchingdon
Essex
CM3 6LG

GROUND INVESTIGATION REPORT (FACTUAL)

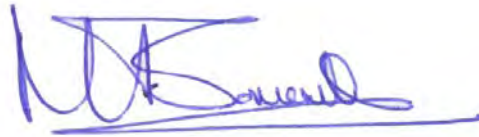
Southleigh Road, Havant, Portsmouth

Author: Jay Spires BSc (Hons), FGS



Signed:

Checked By: Matthew Somerville BSc (Hons), FGS, CGeol



Signed:

Revision	Date	Description	Prepared	Checked
Final	26.09.23	Factual Report	JS	MJS

CONTENTS:-

1. INTRODUCTION.....	4
2. LIMITATIONS	5
3. FIELDWORK.....	6
4. LABORATORY TESTING	9

APPENDIX: -

APPENDIX A:	SITE LOCATION PLAN
APPENDIX B:	WINDOWLESS SAMPLE LOGS
APPENDIX C:	MACHINE DUG TRIAL PIT LOGS
APPENDIX D:	INFILTRATION TEST DATA
APPENDIX E:	SPT HAMMER CALIBRATION
APPENDIX F:	GROUNDWATER MONITORING RESULTS
APPENDIX G:	GEOTECHNICAL ANALYSIS RESULTS
APPENDIX H:	CHEMICAL ANALYSIS RESULTS

1. INTRODUCTION

Endeavour Drilling Ltd received instruction to carry out a ground investigation to inform the design of the proposed Southleigh Road residential development. The area currently comprises of agricultural fields, accessed from multiple points across Southleigh Road, Havant, Portsmouth. The nearest postcode for the site is PO9 2NX.

The ground investigation was instructed by the client, Stantec (UK) Ltd. The technical objectives of this ground investigation as outlined by the client were to determine the geotechnical characteristics of the ground for the design of foundations, infrastructure, and other geotechnical elements of the proposed redevelopment.

In summary the ground investigation comprises nine (9) windowless sampler boreholes with associated sampling and in-situ testing, eighteen (18) machine dug trial pits, with three (3) infiltration tests within selected trial pit locations. Semi-permanent groundwater standpipes were installed within all boreholes with the exception of WS102.

Laboratory testing, comprising of geotechnical and chemical analysis, was also undertaken. This report presents the factual findings from the intrusive investigation and results of the laboratory testing carried out.

The work was carried out in general accordance with BS EN 1997-2, BS EN ISO 22475-1, BS EN ISO 22475-2, BS EN ISO 22475-3, BS 1377:1990, BS 5930:2015+A1:2020, BS10175, BS EN ISO 2282-2:2012 and other relevant standards that are referenced within the text.

2. LIMITATIONS

This report is based on the results of the windowless sampler boreholes, machine dug trial pits, associated in-situ testing and the laboratory testing carried out on samples recovered from the exploratory holes and on details of the scheme provided by the client.

This report has been prepared for the benefit of Stantec (UK) Ltd and its contents should not be relied upon by others without the written authority of Endeavour Drilling Ltd. (ED). If any unauthorised third party makes use of this report, they do so at their own risk and ED owes them no duty of care or skill.

All information provided by others is taken as being in good faith accurate, but ED cannot, and does not accept any liability for the detailed accuracy, errors or omissions in such information.

Subsoils are by their nature hidden from view and no investigation can be exhaustive to the extent that all soil conditions are revealed. Conditions may well be present beneath the site which was not evident from the investigations carried out.

Groundwater levels can be subject to considerable seasonal variations, and the conditions encountered in the exploratory borehole may not reflect long-term conditions.

3. FIELDWORK

The fieldwork was undertaken between the 19th June and the 31st July 2023 and comprised of the following:

- Nine (9) windowless sample boreholes (WS101 – WS109)
- Eighteen (18) Machine dug trial pits (TP101-TP118)
- Three (3) Infiltration Tests (TP103, TP104, TP106a)

The exploratory positions were predetermined by the client prior to undertaking the fieldwork and the coordinates were provided and subsequently surveyed into position by Endeavour Drilling Ltd using a Topcon DGPS. An exploratory hole location plan is included as Figure 1 in Appendix A.

In addition to the utility service trace, each exploratory borehole was CAT scanned for the presence of underground buried services and an inspection pit excavated to a depth of 1.20mbgl to identify the presence of any buried services prior to commencing drilling. Whilst drilling the exploratory holes were also scanned for unexploded ordnance (UXO) by a trained operative.

3.1. Windowless Sampling

Nine windowless sample boreholes (WS101 – WS109) were drilled to depths ranging from 2.45mbgl to 6.45mbgl.

The window sampling utilised a two-man crew, operating a track mounted hydraulic power pack and percussive hammer to drive a series of small diameter tubes into the ground. Liner samples were then recovered from within the small diameter tubes for subsequent logging and sub sampling.

Disturbed samples were recovered throughout the window samples for possible future geotechnical testing and chemical analysis. The chemical samples were recovered in air-tight plastic containers and then stored in refrigerated cool boxes for transport to the analytical laboratory.

Within all soils, standard penetration tests (SPT's) were carried out at 1m centres to the base of the window sample, using an automatic trip hammer. The number of blows required to advance the cone over the final 300mm of a 450mm total drive was recorded and is shown as the penetration resistance ("N" value).

Groundwater was encountered whilst drilling and to allow for a longer-term assessment, a 50mm diameter HDPE groundwater standpipes were installed and finished at surface with a flush cover. Table 1, overleaf summarises the design details:

Table 1: Standpipe Design (Windowless Sampler Boreholes)

BH No.	Piezometer Section (mbgl)	Plain Section (mbgl)	Gravel Surround (mbgl)	Bentonite Seal (mbgl)
WS101	5.00m to 6.00m	GL to 5.00m	5.00m to 6.45m	0.30m to 5.00m
WS103	1.00m to 4.00m	GL to 1.00m	1.00m to 4.00m	0.30m to 1.00m & 4.00m to 4.20m
WS104	1.00m to 3.00m	GL to 1.00m	1.00m to 3.00m	0.30m to 1.00m & 3.00m to 3.20m
WS105	0.80m to 1.80m	GL to 0.80m	0.30m to 1.00m & 4.00m to 4.20m	0.30m to 0.80m
WS106	1.00m to 4.00m	GL to 1.00m	1.00m to 4.00m	0.30m to 1.00m & 4.00m to 4.45m
WS107	1.00m to 3.50m	GL to 1.00m	1.00m to 3.50m	0.30m to 1.00m & 3.50m to 3.60m
WS108	1.00m to 3.30m	GL to 1.00m	1.00m to 3.30m	0.30m to 1.00m & 3.30m to 3.50m
WS109	1.50m to 2.50m	GL to 1.50m	1.50m to 2.50m	0.30m to 1.50m & 2.50m to 2.80m

The borehole records and groundwater monitoring are presented in Appendix B and E respectively and give both descriptions and depths of strata encountered, together with details of samples taken, in-situ tests and any other relevant information.

3.2. Machine Dug Trial Pits

In total, eighteen (TP101 – TP118) trial pits were mechanically excavated utilising a JCB 3CX/ 8T tracked excavator. The trial pits were formed to depths ranging from 1.9mbgl to 3.80mbgl.

Small disturbed and larger bulk samples were recovered from throughout the trial pits for chemical and geotechnical testing. Samples required for chemical analysis were recovered in plastic containers and then stored in refrigerated cool boxes for transport to the analytical laboratory.

A note was made of any groundwater encountered, and of the stability of the trial pit sides during excavation.

Upon completion the trial pits were backfilled with arisings and reinstated at surface with Type 1 and compacted using the excavator.

The trial pit logs are presented in Appendix C and give both descriptions and depths of the strata encountered, together with details of samples taken, insitu tests, and any other relevant information.

3.3. Soakaway Testing in Trial Pits

Soakaway testing was undertaken in general accordance with BRE Digest 365 “Soakaway Design” 2016 within trial pit TP103, 104, and 106a. The dimensions of the pit were measured and then filled with water, the fall in water level was measured at regular intervals in order that infiltration rates may be calculated.

Results of the soakaway testing are presented in Appendix D.

3.4. Groundwater Post Fieldwork Monitoring

Post fieldwork monitoring does forms part of the brief for this investigation and is currently ongoing at the time of this report.

The readings taken to date are presented in Appendix F respectively.

4. LABORATORY TESTING

The laboratory testing programme comprised of both geotechnical testing and chemical analysis for use in assessing the soil conditions encountered.

All laboratory testing was undertaken by UKAS / MCERTS accredited laboratories; the geotechnical testing I2 Analytical Ltd and chemical analysis by ALS and I2 Analytical Ltd. The results are included in Appendices G and H, respectively.

4.1. Geotechnical Testing

A total of twenty-one samples were tested for moisture content to enable the materials to be classified and their engineering behaviour assessed in accordance with BS1377, Part 2:1990; clause 3.2, 4.4, 5.3 and 5.4.

Atterberg limits were determined for twenty-one samples of cohesive material to enable the materials to be classified and their engineering behaviour assessed in accordance with BS1377, Part 2:1990; clause 3.2, 4.4, 5.3 and 5.4.

Twenty particle size distribution tests were carried out using both the wet and dry sieve methods and in accordance with BS1377, Part 2:1990; clause 9.

The quantitative determination of the particle size distribution for fine soils, from coarse silt to clay was undertaken on eighteen samples, assessed in accordance with BS1377, Part 2: 1990, clause 9.5, using the sedimentation by hydrometer method. It should be noted to increase sampling volumes in accordance with BS1377 guidelines, disturbed samples of the same material have been combined.

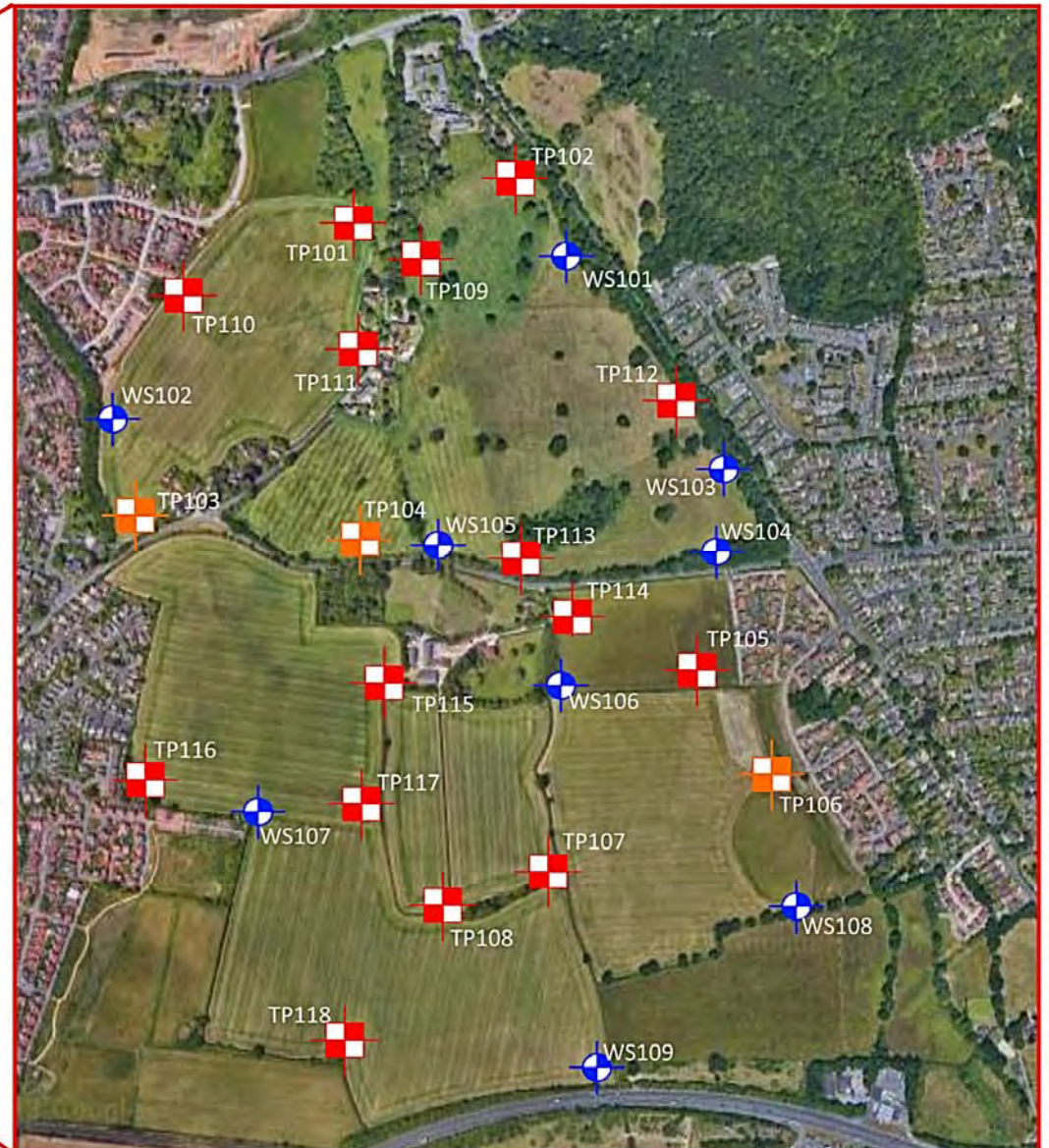
4.2. Chemical Analysis

A total of twelve samples of soil were analysed for Basic Soil Suite, comprising of the following determinants on selected samples:

<i>Arsenic</i>	<i>Zinc</i>
<i>Cadmium</i>	<i>pH</i>
<i>Chromium III</i>	<i>Asbestos</i>
<i>Chromium VI</i>	<i>Soil Organic matter</i>
<i>Copper</i>	<i>Phenols</i>
<i>Lead</i>	<i>BTEX/MTBE</i>
<i>Mercury</i>	<i>Total Petroleum Hydrocarbons (TPH-CWG)</i>
<i>Nickel</i>	<i>Speciated Polyaromatic Hydrocarbons (PAH)</i>
<i>Selenium</i>	<i>Water Soluble Sulphate</i>
<i>Vanadium</i>	

APPENDIX A

Site Location Plan



PROJECT:
SOUTHLEIGH ROAD, HAVANT

CLIENT:
STANTEC UK LTD

SCALE:
NTS

JOB NO:
J5443

DRAWN: MG
CHECKED: OW

DATE:
20/09/23

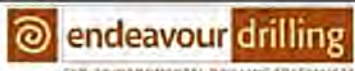
TITLE:
EXPLORATORY WINDOW SAMPLE AND TRIAL PIT LOCATION PLAN

DWG NO:

KEY:
[Red and white checkered square symbol] TRIAL PIT LOCATION

[Blue circle symbol] WINDOW SAMPLE LOCATION

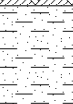
[Orange square with cross symbol] TRIAL PIT WITH SOAKAWAY



APPENDIX B

Windowless Sampler Logs

		Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Borehole ID: WS101						
		Contract Number: J5443	Date Started: 21/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1							
Window Sample Log		Easting:		Northing:		Ground Level:		Plant Used: Dando Terrier		Print Date: 26/09/2023		Scale: 1:40		
Weather: Sunny				Termination: Reached Target Depth				SPT Hammer: DT0769 Energy Ratio: 66%						
Samples & In Situ Testing				Strata Details						Groundwater				
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description				Water Strike	Backfill/ Installation			
0.10	ES1	SPT(S) 1.20m, N=16 (1,3/3,4,4,5)		0.20		TOPSOIL - Greyish brown slightly gravelly sandy clay. Gravel is fine to coarse sub-angular to sub-rounded of flint.								
0.20	D1			(0.50)		Soft brown slightly sandy gravelly CLAY, with occasional rootlets (<2mm, dead) and medium cobble content. Gravel is fine to coarse sub-angular to sub-rounded of flint.								
0.50	D2			(0.70)		Firm orangish brown mottled grey slightly gravelly sandy CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.								
0.60	ES2					...stiff below 1.20mbgl								
0.90	D3			(1.70)		...locally gravelly clayey sand between 1.70m and 1.80mbgl								
1.70	D4	SPT(S) 2.00m, N=27 (1,4/5,8,7,7)		2.40		Stiff dark brown mottled orangish brown slightly sandy silty CLAY, with occasional pockets of fine to medium orange sand.				1				
1.90	D5			(1.60)		Stiff dark grey silty CLAY.				2				
2.50	D6	SPT(S) 3.00m, N=25 (1,3/5,6,6,8)		4.00						3				
3.90	D7	SPT(S) 4.00m, N=22 (3,3/4,5,6,7)		4.00						4				
4.10	D8					(2.45)						5		
4.90	D9	SPT(S) 5.00m, N=21 (2,3/4,5,6,6)		6.45		End of Borehole at 6.45m				6				
5.90	D10	SPT(S) 6.00m, N=25 (3,4/5,5,7,8)								7				
										8				
Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1. Position Hand excavated to 1.20mbgl prior to drilling. 2. No groundwater encountered. 3. Water monitoring well installed to 2.50mbgl 4. Borehole reinstated with bentonite and cement upon					
21-06-2023	16:00	6.45			1.20	300								
					2.00	101								
					3.00	87								
					4.00	77								
					6.00	67								
Chiselling					Installation				Water Strikes					
From (m)	To (m)	Duration	Remarks		Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
					0.00	5.00	PLAIN	50						
					5.00	6.00	SLOTTED	50						
HBSI CP Template Issue Number: 2 Issue Date: 09/06/2015														

		Contract Name: Southleigh Road, Havant				Client: Stantec (UK) Ltd				Borehole ID: WS102			
		Contract Number: J5443		Date Started: 28/06/2023		Logged By: JS		Checked By: MJS		Status: FINAL			
Window Sample Log		Easting: 473200.2		Northing: 107488.9		Ground Level: 16.91mOD		Plant Used: Archway Dart		Print Date: 26/09/2023		Sheet 1 of 1 Scale: 1:40	
Weather: Dry and Sunny				Termination: SPT Refusal				SPT Hammer: 488 Energy Ratio: 61%					
Samples & In Situ Testing				Strata Details						Groundwater			
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description				Water Strike	Backfill/Installation		
0.10 - 0.20	B1	SPT(S) 1.20m, N=3 (1,0/0,1,1,1)	16.71	0.20		TOPSOIL - Firm to stiff brown silty sandy clay.				1			
0.10 - 0.20	ES1				Soft to firm brown slightly sandy CLAY, with rare rootlets (<2mm diameter, live).								
0.30 - 0.40	B2												
0.30 - 0.70	ES2												
1.30	D1	SPT(S) 2.00m, N=50 (9,11/10,12,13,15)	15.51	1.40		Loose brown slightly sandy fine to coarse sub-rounded flint GRAVEL ... Borehole collapse from 2.0mbgl to 1.6mbgl				2			
1.40 - 2.00	B3			15.11	1.80		Very stiff gravelly CLAY, locally very dense very clayey gravel. Gravel is fine to coarse sub-angular to sub-rounded flint.						
2.00	D2	14.46	2.45		End of Borehole at 2.45m								
										3			
										4			
										5			
										6			
										7			
										8			
Start & End of Shift Observations			Borehole Diameter		Casing Diameter		Remarks:						
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1. Position Hand excavated to 1.2mbgl prior to drilling. 2. No ground water encountered during drilling. 3. Borehole collapse from 2.0m up to 1.60mbgl. Re-drill resulting in further collapse back up to 1.5mbgl. 4. No water monitoring well installed 5. Borehole reinstated with bentonite and cement upon completion.				
28-06-2023	17:30	2.45			1.20	300							
					2.00	101							
					2.45	49							
Chiselling			Installation		Water Strikes								
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
HBSI CP Template Issue Number: 2 Issue Date: 09/06/2015													

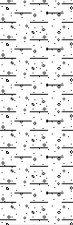
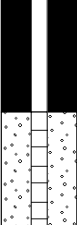
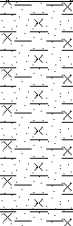
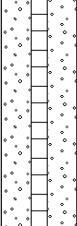
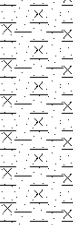
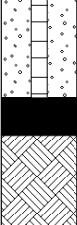
		Contract Name: Southleigh Road, Havant				Client: Stantec (UK) Ltd				Borehole ID: WS103				
		Contract Number: J5443		Date Started: 26/06/2023		Logged By: JS		Checked By: MJS				Status: FINAL		
Window Sample Log		Easting:		Northing:		Ground Level:		Plant Used: Archway Dart		Print Date: 26/09/2023		Sheet 1 of 1 Scale: 1:40		
Weather: Dry and sunny				Termination: Hole Collapse.				SPT Hammer: 488 Energy Ratio: 61%						
Samples & In Situ Testing				Strata Details								Groundwater		
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description						Water Strike	Backfill/ Installation	
0.10	B1	SPT(S) 1.20m, N=40 (1,2/8,12,11,9)		(0.30)		TOPSOIL - Stiff light grey gravelly silty fine to coarse sand. Gravel is fine to coarse sub-angular to sub-rounded flint.						1		
0.10 - 0.30	D1			(0.75)		MADE GROUND - Firm to stiff light grey gravelly silty fine to coarse sand, with rare rootlets (<2mm diameter, live) and cobbles. Gravel is fine to coarse sub-angular to sub-rounded flint.								
0.10 - 0.30	ES1													
0.40	B2													
0.40 - 0.80	D2													
0.50 - 0.60	ES2	SPT(S) 2.00m, N=19 (2,4/5,4,5,5)		(1.05)		Stiff to very stiff brown slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded flint. <i>... Very gravelly sandy clay between 1.3-1.7mbgl</i>						2		
1.10	B3													
1.10 - 1.20	D3													
1.10 - 1.30	ES3													
1.30 - 1.70	B4													
2.00	D4	HV 2.80m, 86kPa SPT(S) 3.00m, N=14 (3,4/3,3,4,4) HV 3.30m, 70kPa		(1.65)								3		
2.50	D5													
2.75	D6													
3.00	D7													
3.55	D8													
3.90	D9	HV 3.70m, 22kPa SPT(S) 4.00m, N=13 (0,1/2,3,4,4)		(3.50)		Soft to firm brown sandy CLAY						4		
4.10	D10													
4.60	D11													
4.50														
5.00	D12													
		SPT(S) 5.00m, N=18 (11,5/4,4,5,5)		(1.50)		Medium dense brown gravelly slightly silty fine to coarse SAND.						5		
		... No recovery below 5.00m		(4.50)		Stiff brown slightly sandy silty CLAY.						6		
		... Borehole unstable/ collapsing below 4.00mbgl End of Borehole at 6.00m		(6.00)								7		
												8		
Start & End of Shift Observations				Borehole Diameter		Casing Diameter		Remarks:						
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1. Position Hand excavated to 1.2mbgl prior to drilling. 2. Ground water encountered at 4.0mbgl, rising to 2.37mbgl after 20 minutes of monitoring. 3. Borehole collapse from 6.00m up to 4.00mbgl. 4. Water monitoring well installed to 4.00mbgl 5. Borehole reinstated with bentonite and cement upon completion.					
26-06-2023	13:15	6.00			1.20	300								
					2.00	117								
					3.00	107								
					4.00	87								
					5.00	77								
Chiselling				Installation		Water Strikes								
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks	
				0.00	1.00	PLAIN	50	4.00			20	2.37	Fast inflow	
				1.00	4.00	SLOTTED	50							
HBSI CP Template Issue Number: 2 Issue Date: 09/06/2015														

		Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Borehole ID: WS104					
		Contract Number: J5443	Date Started: 21/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1						
Window Sample Log		Easting:		Northing:		Ground Level:		Plant Used: Dando Terrier		Print Date: 26/09/2023		Scale: 1:40	
Weather: Sunny				Termination: Hole Collapse.				SPT Hammer: DT0769 Energy Ratio: 66%					
Samples & In Situ Testing				Strata Details						Groundwater			
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description				Water Strike	Backfill/ Installation		
0.10	D1	HV 0.50m, 70kPa		(0.30)		TOPSOIL - Greyish brown slightly gravelly sandy clay, with rare rootlets (4mm, dead). Gravel is fine to coarse sub-angular to sub-round of flint.							
0.20	ES1			0.30		Firm orangish brown and grey slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.							
0.60	ES2			(1.30)		...very stiff below 1.20mbgl							
0.70	D2												
1.70	D3	SPT(S) 1.20m, N=30 (3,4/5,8,8,9)		1.60		Firm orangish brown mottled grey sandy silty CLAY, with rare fine to coarse black sand pockets.				1			
1.90	D4			1.60		...becoming soft at 2.00mbgl				2			
2.90	D5	SPT(S) 2.00m, N=6 (1,1/1,1,2,2)		(2.40)		...locally clayey fine to coarse sand between 3.00 and 3.50mbgl				3			
3.40	D6									3			
3.90	D7	SPT(S) 3.00m, N=8 (2,1/1,2,2,3)		4.00		End of Borehole at 4.00m				4			
						4						5	
						5						6	
						6						7	
		7					8						
		8											
Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1. Position Hand excavated to 1.20mbgl prior to drilling. 2. Ground water encountered at 3.00mbgl, rising to 2.48mbgl after 20 minutes of monitoring. 3. Borehole collapse from 4.m to 3.00mbgl. 4. Water monitoring well installed to 3.00mbgl 5. Borehole reinstated with bentonite and cement upon				
21-06-2023	12:00	4.00			1.20	300							
					2.00	101							
					3.00	87							
					4.00	77							
Chiselling					Installation				Water Strikes				
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
				0.00	1.00	PLAIN	50	3.00			0		
				1.00	3.00	SLOTTED	50						
HBSI CP Template Issue Number: 2 Issue Date: 09/06/2015													

		Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Borehole ID: WS105						
		Contract Number: J5443	Date Started: 20/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1							
Window Sample Log		Easting:		Northing:		Ground Level:		Plant Used: Dando Terrier		Print Date: 26/09/2023		Scale: 1:40		
Weather: Cloudy				Termination: Hole Collapse.				SPT Hammer: DT0769 Energy Ratio: 66%						
Samples & In Situ Testing				Strata Details								Groundwater		
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description						Water Strike	Backfill/ Installation	
0.10	B1	HV 0.70m, 60kPa		0.15		TOPSOIL - Greyish brown sandy clay, with occasional rootlets (>2mm, living)								
0.10	D1			0.15		MADE GROUND - Firm brown slightly gravelly sandy clay. Gravel is fine to coarse sub-angular to sub-rounded of brick, pottery and flint.								
0.10 - 0.40	ES1			0.35										
0.40	D2			0.50										
0.40	ES2			0.50										
0.60 - 0.90	B2	HV 1.30m, 70kPa		0.90		Firm brown and grey slightly gravelly sandy CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.								
0.70	ES3			0.90										
0.80	D3			0.90										
1.30	D4	SPT(S) 1.20m, N=29 (0,2/5,7,7,10)		1.40		...becoming stiff below 1.20mbgl								
				1.40		Stiff light grey mottled brown slightly sandy very gravelly CLAY, with occasional pockets of fine to coarse silty clay. Gravel is fine to coarse sub-angular of flint.								
				1.40										
2.00	D5	SPT(S) 2.00m, N=5 (2,4/3,1,0,1)		2.00		Soft brown mottled grey slightly sandy gravelly CLAY, with pockets of fine to coarse sand. Gravel is fine to coarse sub-angular of flint.								
2.40	D6			2.00		...poor recovery between 2.00m and 3.00mbgl								
2.60	D7			2.00										
3.20	D8	SPT(S) 3.00m, N=6 (1,1/1,1,2,2)		3.00		Soft brown mottled grey slightly sandy silty CLAY.								
				3.00		...poor recovery between 3.00m and 4.00mbgl								
				3.00										
3.70	D9	SPT(S) 4.00m, N=20 (2,2/5,4,5,6)		3.60		Stiff grey slightly sandy silty CLAY.								
				3.60		...becoming grey below 3.60mbgl								
				3.60										
				4.45		End of Borehole at 4.45m								
				4.45										
				4.45										
Start & End of Shift Observations				Borehole Diameter		Casing Diameter		Remarks:						
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1. Position Hand excavated to 1.20mbgl prior to drilling. 2. Ground water encountered at 2.20mbgl, rising to 1.00mbgl after 20 minutes of monitoring. 3. Borehole collapse from 4.m to 1.80mbgl. 4. Water monitoring well installed to 1.80mbgl 5. Borehole reinstated with bentonite and cement upon completion.					
20-06-2023	16:00	4.45			1.20	300								
					2.00	101								
					3.00	87								
					4.00	77								
					4.45	49								
Chiselling				Installation				Water Strikes						
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks	
				0.00	0.80	PLAIN	50	2.20			0		Moderate Inflow	
				0.80	1.80	SLOTTED	50							
HBSI CP Template Issue Number: 2 Issue Date: 09/06/2015														

		Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Borehole ID: WS106	
		Contract Number: J5443	Date Started: 27/06/2023	Logged By: JS	Checked By: MJS	Status: FINAL	Sheet 1 of 1		
Window Sample Log		Easting: 473894.6	Northing: 107131.1	Ground Level: 12.28mOD	Plant Used: Archway Dart	Print Date: 26/09/2023	Scale: 1:40		
Weather: Dry and sunny			Termination: Hole Collapse.			SPT Hammer: 488 Energy Ratio: 61%			
Samples & In Situ Testing			Strata Details				Groundwater		
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation	
0.10 - 0.30	B1	SPT(S) 1.20m, N=17 (2,3/3,5,5,4) HV 1.50m, 50kPa	11.98	(0.30)		TOPSOIL - Firm greyish brown gravelly sandy CLAY, with rootlets (<2mm diameter, live). Gravel is fine to coarse sub-angular to sub-rounded flint.	1		
0.10 - 0.30	ES1			(0.30)		Firm to stiff greyish brown gravelly sandy CLAY, with rare rootlets (<2mm diameter, live). Gravel is fine to coarse sub-angular to sub-rounded flint.			
0.20	D1			(0.40)		Firm brown slightly gravelly slightly sandy CLAY. Gravel is fine to coarse sub-angular to sub-rounded flint.			
0.40 - 0.50	B2			(0.70)		Firm brown slightly gravelly slightly sandy CLAY. Gravel is fine to coarse sub-angular to sub-rounded flint.			
0.40 - 0.60	ES2			(0.90)		... Becoming stiff below 1.20mbgl.			
0.50	D2			(1.60)		Firm greyish brown gravelly CLAY, locally very clayey GRAVEL. Gravel is fine to coarse sub-angular to sub-rounded flint.			
0.80 - 1.20	B3			(2.40)		Structureless CHALK composed of slightly gravelly sandy SILT. Gravel is weak, low density, white (Grade Dm).			
0.90	D3			(2.60)		Firm brown mottled orange sandy CLAY.			
0.90 - 1.00	ES3			(3.00)		Soft brown sandy slightly silty CLAY.			
				(3.50)		... Borehole unstable/ collapsing below 3.00mbgl.			
1.40	D4	HV 2.70m, 30kPa	10.68	(0.80)		Soft to firm brown sandy silty CLAY.	2		
1.60 - 2.00	B4			(0.95)		... Becoming dark grey below 3.7m			
2.00	D5			(4.45)		... Becoming stiff at 4.00mbgl.			
2.10	D6			(4.45)		End of Borehole at 4.45m			
2.50	D7			(4.45)					
3.00	D8			(4.45)					
3.50	D9			(4.45)					
3.80	D10			(4.45)					
4.00	D11			(4.45)					
				(4.45)					
Start & End of Shift Observations			Borehole Diameter		Casing Diameter		Remarks:		
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	
27-06-2023	11:00	4.45			1.20	300			
					2.00	101			
					3.00	87			
					4.00	77			
					4.45	49			
Chiselling			Installation		Water Strikes				
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	
				0.00	1.00	PLAIN	50	3.00	
				1.00	4.00	SLOTTED	50		
HBSI CP Template Issue Number: 2 Issue Date: 09/06/2015									

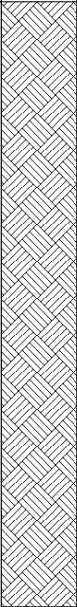
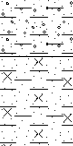
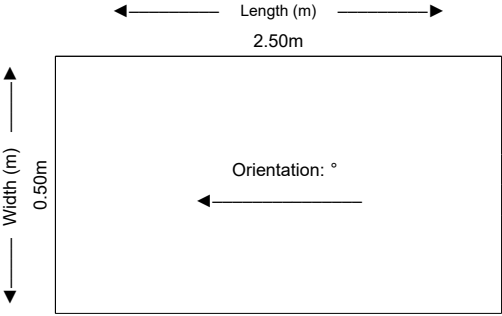
		Contract Name: Southleigh Road, Havant				Client: Stantec (UK) Ltd			Borehole ID: WS107																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		Contract Number: J5443		Date Started: 28/06/2023		Logged By: JS		Checked By: MJS		Status: FINAL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Window Sample Log		Easting: 473437.7		Northing: 106932.8		Ground Level: 13.36mOD		Plant Used: Archway Dart		Print Date: 26/09/2023		Sheet 1 of 1 Scale: 1:40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Weather: Dry and Sunny				Termination: Hole Collapse				SPT Hammer: 488 Energy Ratio: 61%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Samples & In Situ Testing				Strata Details							Groundwater																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description					Water Strike	Backfill/ Installation																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
0.00 - 0.20 0.10	B1 D1	SPT(S) 1.20m, N=12 (2,3/2,3,3,4)	13.06	(0.30)		TOPSOIL - Firm to stiff brown slightly gravelly slightly sandy clay. Gravel is fine to coarse sub-angular to sub-rounded flint.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
0.10 - 0.20 0.30 - 0.40	ES1 B2			0.30		Firm locally stiff brown mottled orange sandy CLAY, with rare rootlets (<2mm diameter, live) and rare black mottling.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
0.30 - 0.90 0.40	ES2 D2			(1.50)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
1.40	D3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
1.70 - 2.00	B3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
2.00	D4	SPT(S) 2.00m, N=10 (2,2/1,4,3,2)	11.56	1.80		Firm slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded flint.					2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
2.40 - 3.00	B4			2.30		Loose brown clayey fine to coarse sub-angular to sub-rounded flint GRAVEL.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		SPT(S) 3.00m, N=7 (1,2/3,2,1,1)	11.06	(1.10)		... Borehole unstable/ collapsing below 3.00mbgl.					3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
3.50	D5			3.40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
3.70	D6	HV 3.70m, 70kPa	9.76	3.60		Loose light brown clayey gravelly fine to coarse SAND. Gravel is sub-angular to sub-rounded flint.					4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
4.00	D7			(0.85)		Stiff red mottled light brown slightly gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded flint.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		SPT(S) 4.00m, N=43 (7,12/10,12,11,10)	8.91			4.45		... Becoming very stiff below 4.00mbgl.					4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
				End of Borehole at 4.45m																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

	Contract Name: Southleigh Road, Havant				Client: Stantec (UK) Ltd			Borehole ID: WS108					
	Contract Number: J5443		Date Started: 27/06/2023		Logged By: JS	Checked By: MJS	Status: FINAL	Sheet 1 of 1					
	Easting: 474248.2		Northing: 106807.7		Ground Level: 10.16mOD	Plant Used: Archway Dart	Print Date: 26/09/2023	Scale: 1:40					
Window Sample Log				Weather: Dry and Sunny		Termination: Hole Collapse.		SPT Hammer: 488 Energy Ratio: 61%					
Samples & In Situ Testing				Strata Details				Groundwater					
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation					
0.10	B1	SPT(S) 1.20m, N=12 (5,5/4,3,3,2)	9.76	(0.40)		TOPSOIL - Stiff brown slightly gravelly sandy clay. Gravel fine to coarse sub-angular to sub-rounded flint.	1						
0.10 - 0.20	D1												
0.10 - 0.30	ES1												
0.40 - 0.50	B2												
0.40 - 0.80	ES2												
0.50	D2	SPT() 2.00m, N=10 (1,2/2,3,3,3)	8.56	(1.20)		Firm brown mottled orange slightly gravelly sandy CLAY, with rare rootlets (<2mm diameter, live). Gravel fine to coarse sub-angular to sub-rounded flint.	2						
1.00	D9												
1.30	D3												
1.70	D4												
2.00	D5												
2.60	D6	HV 2.60m, 45kPa	7.46	(1.10)		Firm brown slightly sandy silty CLAY.	3						
2.80	D7												
3.00	D8												
		HV 3.60m, 95kPa		(1.75)		Firm dark grey slightly sandy silty CLAY.	4						
		SPT(S) 3.00m, N=12 (2,1/2,3,3,4)	5.71	(4.45)		End of Borehole at 4.45m	5						
		SPT(S) 4.00m, N=13 (2,1/3,2,4,4)					6						
							7						
							8						
Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1. Position Hand excavated to 1.2mbgl prior to drilling. 2. Ground water encountered at 4.45mbgl, rising to 2.30mbgl after 20 minutes of monitoring. 3. Borehole collapse from 4.45m up to 3.40mbgl. Re-drill resulting in further collapse back up to 3.3mbgl. 4. Water monitoring well installed to 3.30mbgl 5. Borehole reinstated with bentonite and cement upon completion.				
27-06-2023	12:45	4.45			1.20	300							
					2.00	101							
					3.00	87							
					4.00	77							
					4.45	49							
Chiselling					Installation				Water Strikes				
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
				0.00	1.00	PLAIN	50	4.45			20	2.30	Fast inflow.
				1.00	3.30	SLOTTED	50						
HBSI CP Template Issue Number: 2 Issue Date: 09/06/2015													

		Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Borehole ID: WS109					
		Contract Number: J5443	Date Started: 28/06/2023	Logged By: JS	Checked By: MJS	Status: FINAL	Sheet 1 of 1						
Window Sample Log		Easting: 473989.0	Northing: 106555.0	Ground Level: 10.82mOD	Plant Used: Archway Dart	Print Date: 26/09/2023	Scale: 1:40						
Weather: Dry and Sunny			Termination: Hole Collapse			SPT Hammer: 488 Energy Ratio: 61%							
Samples & In Situ Testing			Strata Details				Groundwater						
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation					
0.00 - 0.20 0.10	B1 D1	SPT(S) 1.20m, N=39 (10,11/10,9,10,10)	10.62	0.20		TOPSOIL - Light brown slightly gravelly sandy clay. Gravel is fine to coarse sub-angular to sub-rounded flint and rare brick.	1						
0.10 - 0.20 0.30 - 0.60	ES1 B2			(0.50)		Firm locally stiff brown mottled orange slightly gravelly slightly sandy CLAY, with rare rootlets (<2mm diameter, live). Gravel is fine to coarse sub-angular to sub-rounded flint.							
0.40 - 0.50	D2 ES2			0.70		Very stiff brown slightly sandy gravelly CLAY, locally clayey gravel. Gravel is fine to coarse sub-angular to sub-rounded flint.							
0.80 - 1.20 0.90	B3 D3			10.12					(1.20)				
1.30 - 1.90	B4				1.90	8.93				Soft brown slightly sandy silty CLAY. ... Borehole unstable/ collapsing from 2.0mbgl.	2		
2.00	D1	SPT() 2.00m, N=5 (1,1/1,1,2,1)	8.93	(1.00)		Stiff dark grey silty CLAY.	3						
2.70	D2			2.90									
3.00	D3			7.92					(0.55)	7.38	3.45	End of Borehole at 3.45m	4
							5						
							6						
							7						
							8						
Start & End of Shift Observations			Borehole Diameter		Casing Diameter		Remarks:						
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1. Position Hand excavated to 1.2mbgl prior to drilling. 2. Ground water encountered at 4.45mbgl, rising to 2.30mbgl after 20 minutes of monitoring. 3. Borehole collapse from 3.45m up to 2.30mbgl. 4. Water monitoring well installed to 2.50mbgl 5. Borehole reinstated with bentonite and cement upon completion.				
28-06-2023	11:30	3.45			1.20	300							
					2.00	101							
					3.00	87							
					3.45	49							
Chiselling			Installation		Water Strikes								
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
				0.00	1.50	PLAIN	50	3.45			20	2.30	Moderate inflow.
				1.50	2.50	SLOTTED	50						
HBSI CP Template Issue Number: 2 Issue Date: 09/06/2015													

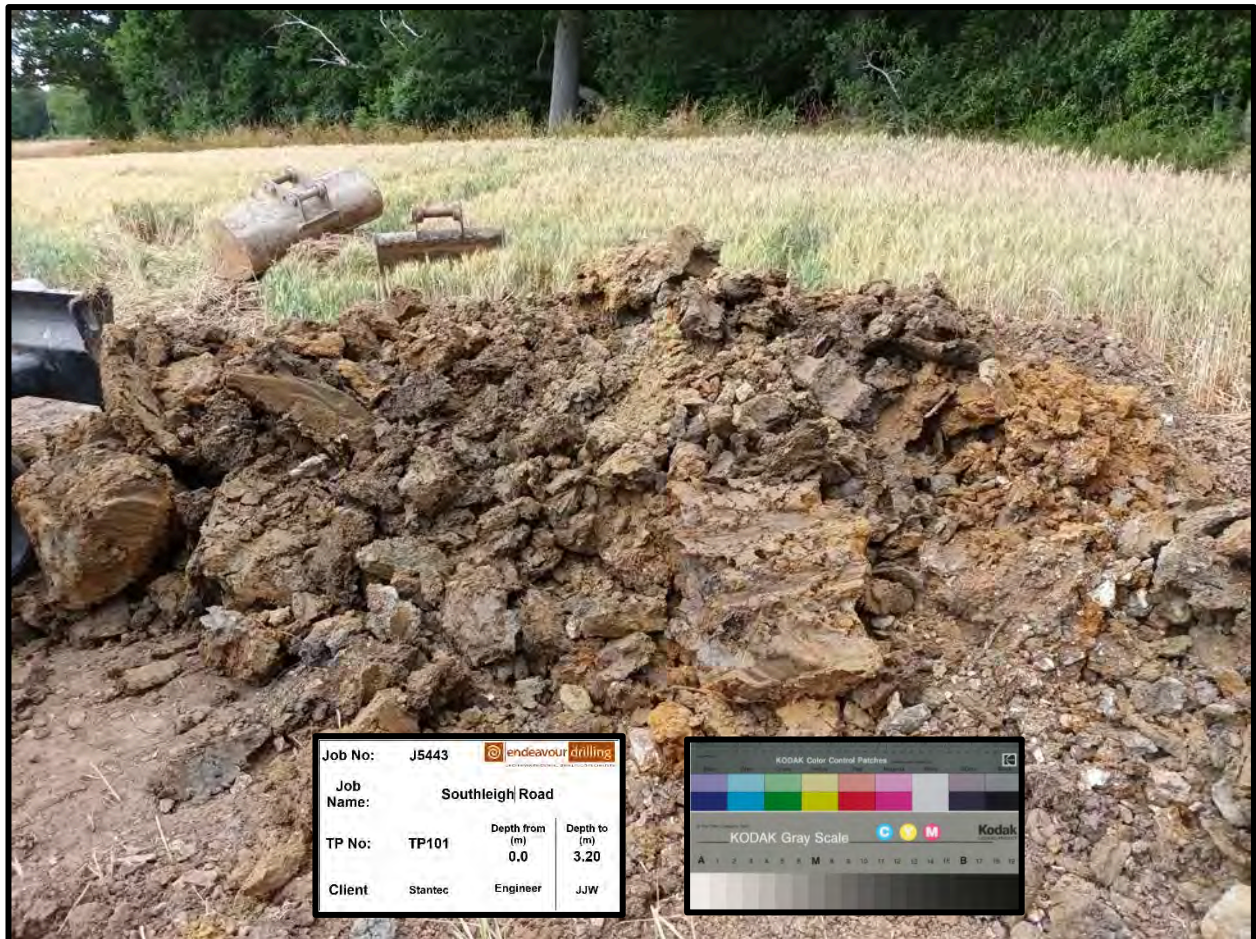
APPENDIX C

Machine Dug Trial Pit Logs

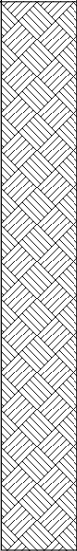
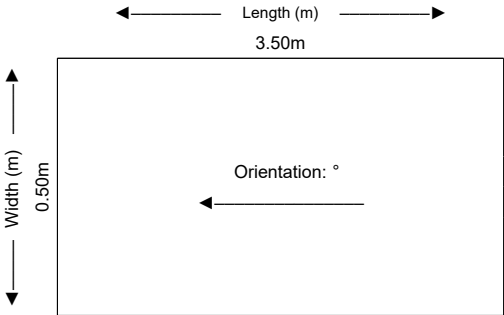
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP101			
	Contract Number: J5443	Date Started: 29/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1				
Trial Pit Log	Easting: 473587.4	Northing: 107814.7	Ground Level: 28.78mOD	Plant Used: 8T Excavtor	Date Printed: 26/09/2023	Scale: 1:40				
Weather: Sunny		Termination: Refusal due to excavator at limit of capability within ground conditions.			Stability: Stable					
Samples & In Situ Testing			Strata Details					Water	Backfill	
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description				
0.10	ES1		28.58	0.20		TOPSOIL - Greyish brown sandy clay, with occasional rootlets (<2mm, living).		1		
0.20	D1			28.18	(0.40)		Soft to firm brown slightly gravelly sandy CLAY, with rare rootlets (6mm, dead). Gravel is fine to coarse sub-angular to sub-rounded of flint.			
0.30 - 0.60	B1									
0.40	D2									
0.50	ES2			27.48	1.30		Firm light grey slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.			
0.80 - 1.10	B2									
0.90	D3									
1.20	D4									
1.40	D5									
1.60 - 1.80	B3	HV125(125)kPa	25.58	3.20		Stiff dark brown mottled grey slightly sandy silty CLAY, with frequent gleying. ...layer of fine to coarse orange sand between 1.40m and 1.50mbgl		2		
2.00	D6	HV150(150)kPa				...becoming very stiff below 2.00mbgl				
2.50	D7	HV150(150)kPa								
3.00	D8	HV150(150)kPa								
						End of Trial Pit at 3.20m			3	
								4		
								5		
								6		
Dimensions:						General Remarks:				
Final Depth: 3.20m						1. Position machine excavated to 3.20mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.				
										
Inclination: °										
						Water Strikes				
						Strike (m)	Time (mins)	Rose to (m)	Remarks	
						HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015				



TP101 – 0.0mbgl to 3.20mbgl

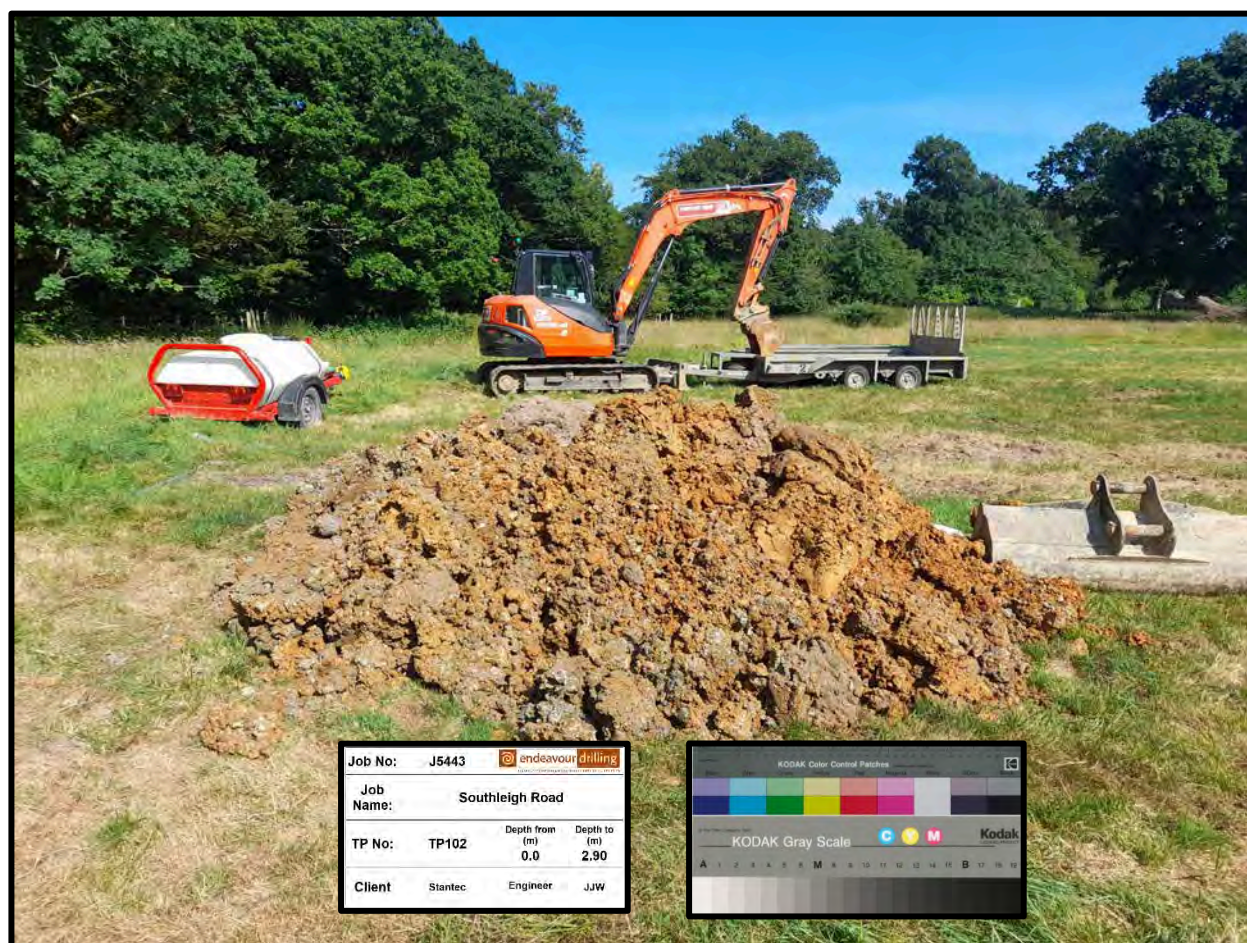


TP101 – 0.0mbgl to 3.20mbgl

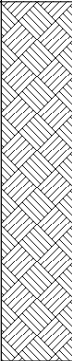
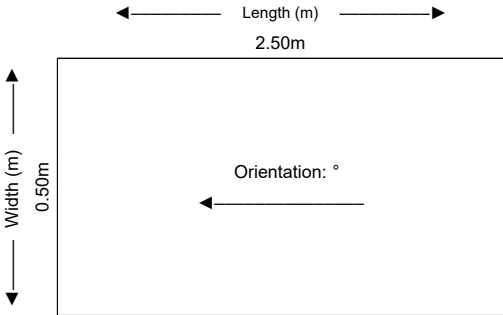
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP102		
	Contract Number: J5443	Date Started: 19/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1			
Trial Pit Log		Easting: 473226.1	Northing: 107871.7	Ground Level: 30.93mOD	Plant Used: 8T Excavator	Date Printed: 26/09/2023	Scale: 1:40		
Weather: Sunny			Termination: Refusal due to excavator at limit of capability within ground conditions.			Stability: Stable			
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.30 0.30	D1 ES1	HV68(68)kPa	30.53	(0.40)		TOPSOIL - Greyish brown slightly gravelly sandy clay, with occasional rootlets (<2mm, living). Gravel is fine to coarse sub-angular to sub-rounded of flint.		1	
0.60 0.70 0.70 - 1.00	ES2 B1 D2			(0.60)		Brown mottled grey slightly silty clayey sandy fine to coarse subangular GRAVEL of flint, with medium cobble content.			
1.50	D3		29.93	1.00		Firm brown mottled grey slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.			
2.00	D4			(1.50)					
2.50	D5		28.23	2.70		Firm brown and grey slightly sandy silty CLAY, with occasional laminations of sandy clay.			
2.80	D6		28.03	2.90		End of Trial Pit at 2.90m			
								3	
								4	
								5	
								6	
Dimensions:					General Remarks:				
Final Depth: 2.90m					1. Position machine excavated to 2.90mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.				
									
Inclination: °									
					Water Strikes				
					Strike (m)		Time (mins)	Rose to (m)	Remarks
					HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015				



TP102 – 0.0mbgl to 2.90mbgl



TP102 – 0.0mbgl to 2.90mbgl

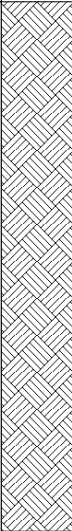
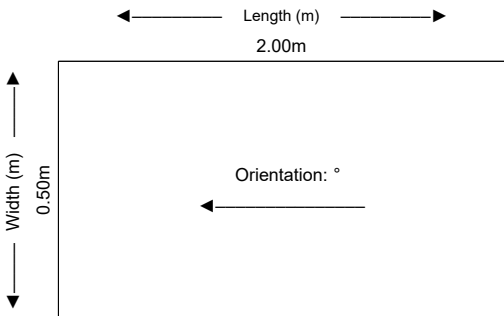
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd		Trial Pit ID: TP103			
	Contract Number: J5443	Date Started: 29/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1			
Trial Pit Log		Easting: 473226.1	Northing: 107336.7	Ground Level: 14.98mOD	Plant Used: 8T Excavator	Date Printed: 26/09/2023	Scale: 1:40		
Weather: Sunny			Termination: Refusal due to excavator at limit of capability within ground conditions.			Stability: Unstable			
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.10	D1	HV32(32)kPa	14.68	(0.30)		TOPSOIL - Greyish brown sandy clay, with occasional rootlets (<2mm, living).		1	
0.20	ES1			0.30		Soft orangish brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.			
0.40 - 0.80	B1		(0.60)		Grey and brown slightly clayey slightly sandy GRAVEL, with medium cobble content. Gravel is fine to coarse sub-angular to sub-rounded of flint.				
0.60	D2								
0.80	ES2		14.08	0.90					
1.00	B2								
1.00 - 1.40	D3	(1.00)							
1.50	D4								
			13.08	1.90	End of Trial Pit at 1.90m		2		
							3		
							4		
							5		
							6		
Dimensions:					General Remarks:				
Final Depth: 1.90m					1. Position machine excavated to 1.90mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.				
									
Inclination: °									
					Water Strikes				
					Strike (m)		Time (mins)	Rose to (m)	Remarks
					HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015				

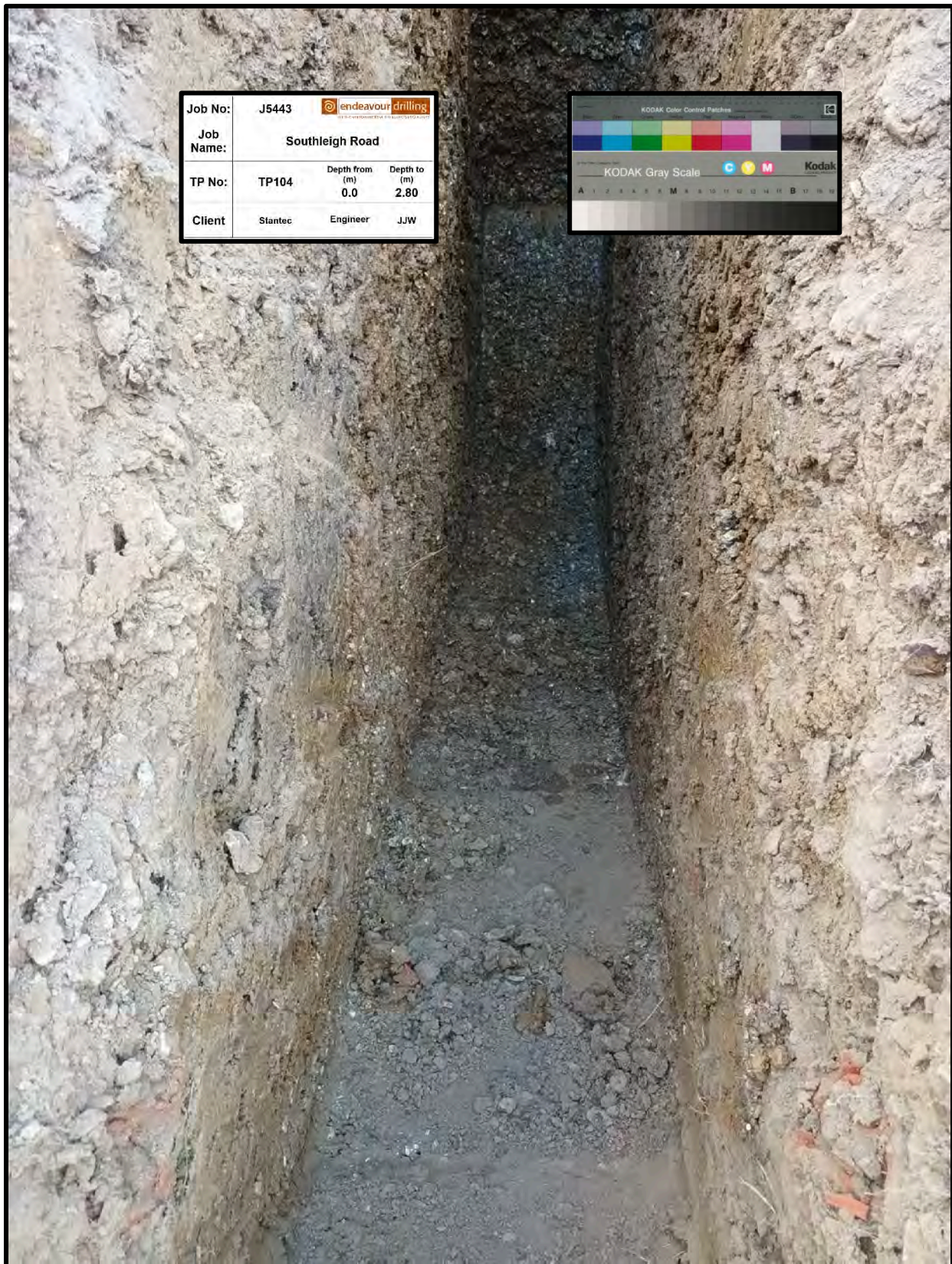


TP103 – 0.0mbgl to 1.90mbgl



TP103 – 0.0mbgl to 1.90mbgl

	Contract Name: Southleigh Road, Havant		Client: Stantec (UK) Ltd			Trial Pit ID: TP104										
	Contract Number: J5443	Date Started: 19/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1										
Trial Pit Log		Easting: 473588.7	Northing: 107314.7	Ground Level: 13.30mOD	Plant Used: 8T Excavator	Date Printed: 26/09/2023	Scale: 1:40									
Weather: Sunny			Termination: Refusal due to excavator at limit of capability within ground conditions.			Stability: Stable										
Samples & In Situ Testing				Strata Details												
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description	Water	Backfill								
0.10 - 0.40	B1	HV68(68)kPa	12.90	(0.40)		TOPSOIL - Soft greyish brown fine to coarse sandy clay, with occasional rootlets (<2mm, living).	1									
0.20	D1															
0.30	ES1															
0.50	D2															
0.50	ES2															
0.80	B2															
0.80 - 1.10	ES3															
1.00	D3															
1.50	D4															
2.00	D5															
2.40 - 2.80	B3	10.90	2.40	(0.40)		Light grey clayey silty sandy fine to coarse sub-angular GRAVEL of flint.	3									
2.50	D6															
			10.50	2.80		End of Trial Pit at 2.80m										
							4									
							5									
							6									
Dimensions:					General Remarks:											
Final Depth: 2.80m					1. Position machine excavated to 2.80mbgl. 2. Groundwater encountered at 2.80mbgl (slow infill, no rise). 3. Position backfilled with arisings and compacted upon completion.											
																
Inclination: °																
					Water Strikes											
					<table><tr><td>Strike (m)</td><td>Time (mins)</td><td>Rose to (m)</td><td>Remarks</td></tr><tr><td>2.80</td><td>20</td><td>2.80</td><td></td></tr></table>				Strike (m)	Time (mins)	Rose to (m)	Remarks	2.80	20	2.80	
Strike (m)	Time (mins)	Rose to (m)	Remarks													
2.80	20	2.80														
					HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015											

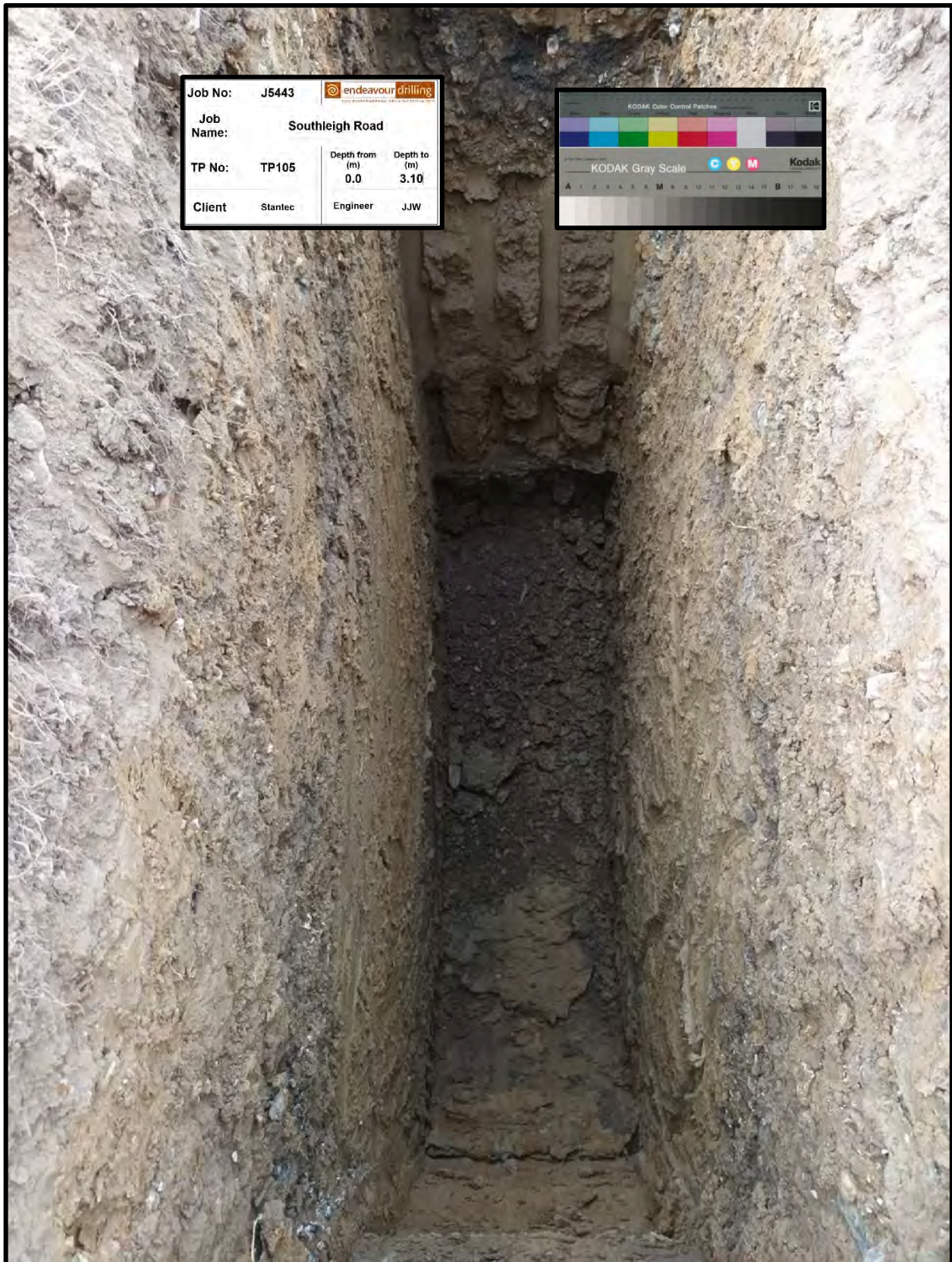


TP104 – 0.0mbgl to 2.80mbgl

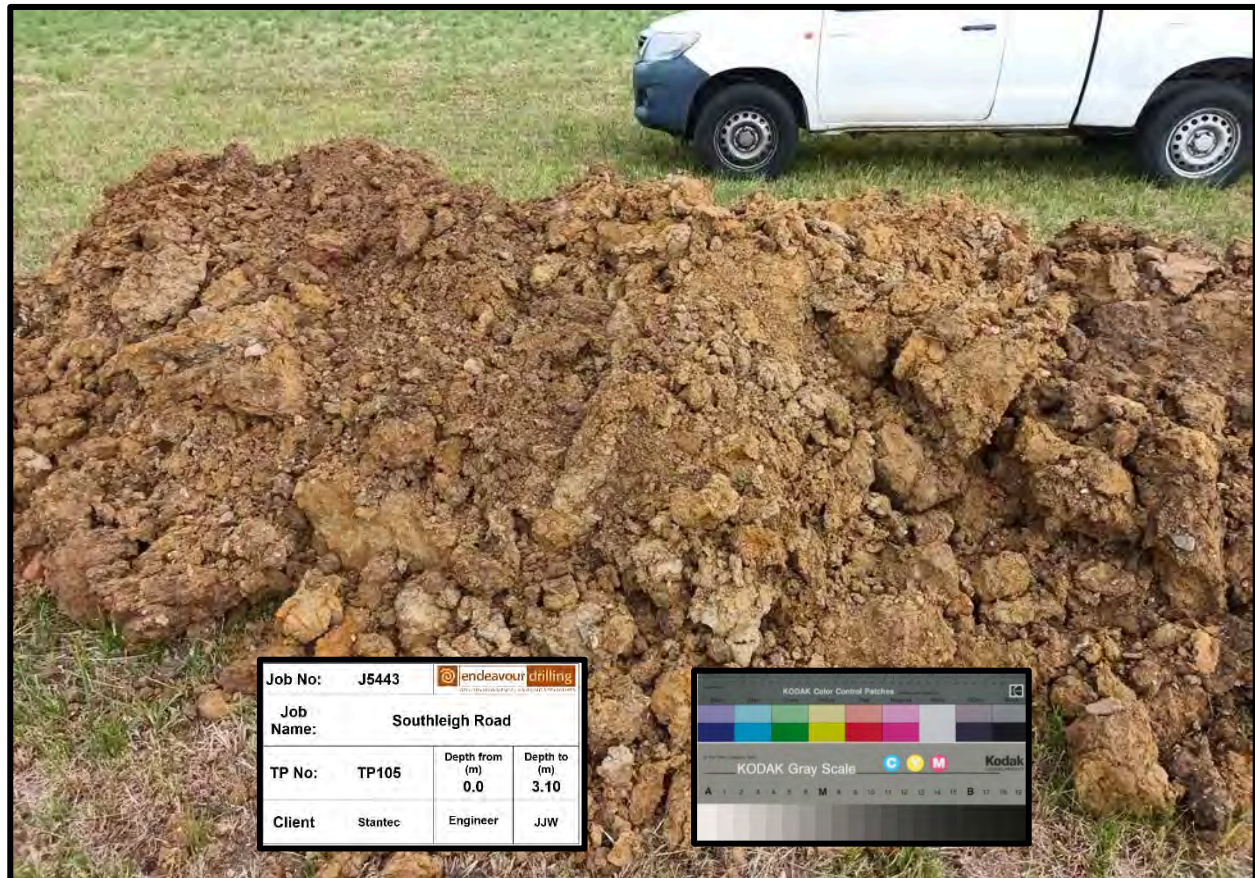


TP104 – 0.0mbgl to 2.80mbgl

	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd		Trial Pit ID: TP105										
	Contract Number: J5443	Date Started: 27/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1										
Trial Pit Log		Easting: 474129.6	Northing: 107137.7	Ground Level: 11.17mOD	Plant Used: 8T Excavator	Date Printed: 26/09/2023	Scale: 1:40									
Weather: Sunny			Termination: Refusal due to excavator at limit of capability within ground conditions.			Stability: Stable										
Samples & In Situ Testing				Strata Details			Water	Backfill								
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description										
0.20 0.20 0.40 - 0.80	D1 ES1 B1	HV60(60)kPa HV55(55)kPa	10.87	(0.30) 0.30		TOPSOIL - Greyish brown slightly gravelly sandy clay, with occasional rootlets (<2mm, living). Gravel is fine to coarse sub-angular of flint.	1									
0.70 0.80	ES2 D2			(0.90)		MADE GROUND - Soft to firm orangish brown sandy gravelly clay. Gravel is fine to coarse sub-angular to sub-rounded of flint, brick and plastic.										
1.20 - 1.50 1.30	B2 D3			9.97		1.20			Firm orangish brown mottled grey slightly sandy silty CLAY, with occasional pockets of fine to coarse black sand.							
1.50 1.50	D4 ES3					(1.60)			...becoming silty below 1.80mbgl							
1.80 - 2.30 1.90	B3 D5															
2.40	D6	8.37 8.07	2.80 (0.30) 3.10	Stiff dark brown mottled orange slightly sandy silty CLAY.	3											
2.90	D7		End of Trial Pit at 3.10m		4											
							5									
							6									
Dimensions:					General Remarks:											
Final Depth: 3.10m					1. Position machine excavated to 3.10mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.											
<div><div>← Length (m) →</div><div>2.50m</div><div>↑ Width (m) ↓</div><div>0.50m</div><div>Orientation: °</div><div>←</div></div>																
Inclination: °					Water Strikes											
					<table><tr><th>Strike (m)</th><th>Time (mins)</th><th>Rose to (m)</th><th>Remarks</th></tr><tr><td></td><td></td><td></td><td></td></tr></table>				Strike (m)	Time (mins)	Rose to (m)	Remarks				
Strike (m)	Time (mins)	Rose to (m)	Remarks													
HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015																



TP105 – 0.0mbgl to 3.10mbgl

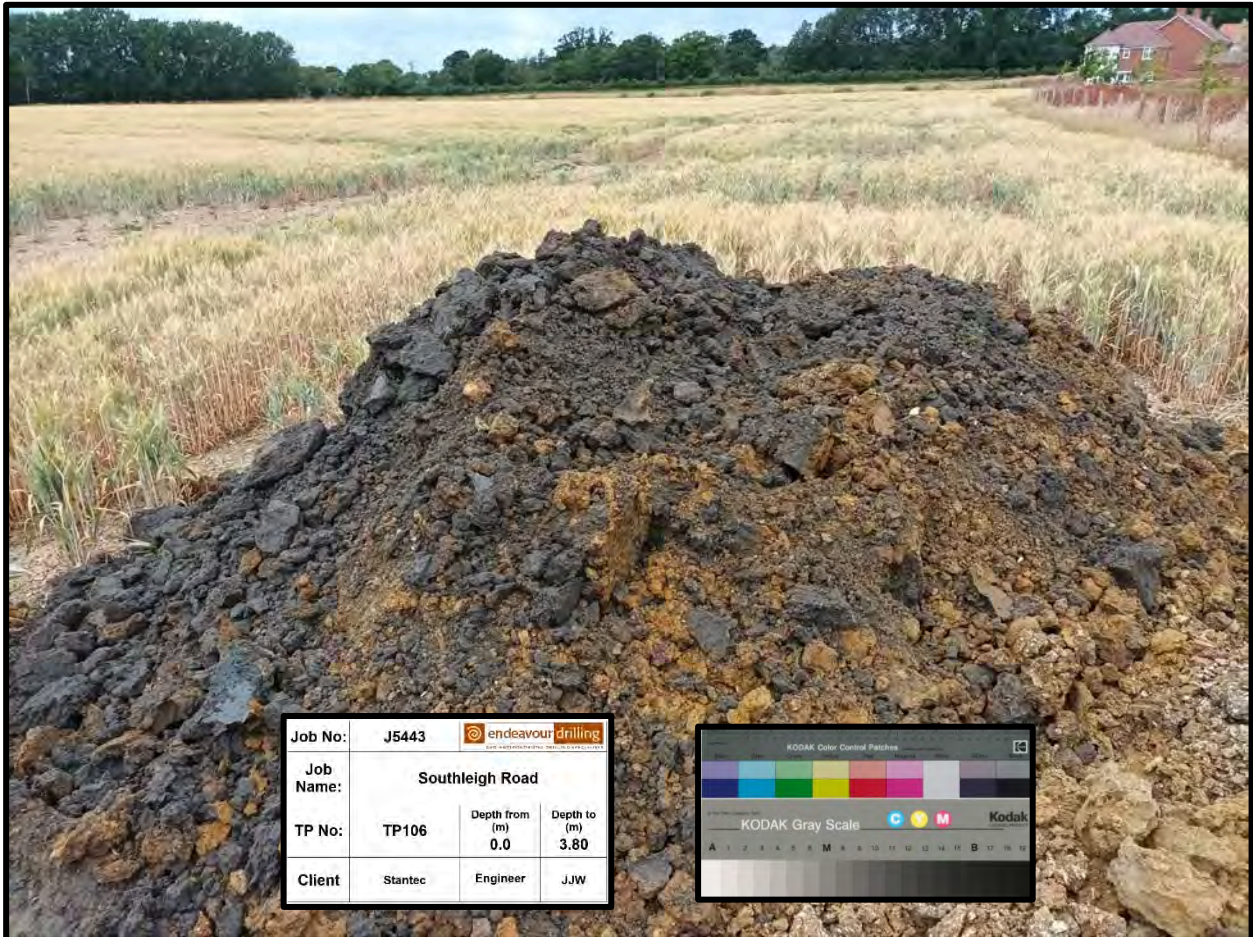


TP105 – 0.0mbgl to 3.10mbgl

	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP106			
	Contract Number: J5443	Date Started: 27/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1				
Trial Pit Log	Easting: 474218.8	Northing: 107004.5	Ground Level: 9.85mOD	Plant Used: 8T Excavator	Date Printed: 26/09/2023	Scale: 1:40				
Weather: Sunny		Termination: Refusal due to excavator at limit of capability within ground conditions			Stability: Stable					
Samples & In Situ Testing			Strata Details					Water	Backfill	
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description				
0.10 0.20 0.30 - 0.60 0.50 0.50 0.70 - 1.00 0.80 0.90 1.20 1.70 2.30 - 2.60 2.40 2.80 - 3.10 2.90 3.40	D1 ES1 B1 D2 ES2 B2 D3 ES3 D4 D5 B3 D6 B4 D7 D8	HV30(30)kPa HV83(83)kPa HV125(125)kPa	9.60 9.25 8.75 7.55 7.15 6.05	0.25 (0.35) 0.60 (0.50) 1.10 (1.20) 2.30 (0.40) 2.70 (1.10) 3.80	                              	1 2 3 4 5 6				
Dimensions:						General Remarks:				
Final Depth: 3.80m						1. Position machine excavated to 3.80mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.				
<div><div>← Length (m) →</div><div>2.30m</div><div>↑ Width (m) ↓</div><div>0.50m</div><div>Orientation: °</div><div>←</div></div>										
Inclination: °										
						Water Strikes				
						Strike (m)		Time (mins)	Rose to (m)	Remarks
HBSI TP Template						Issue Number: 1		Issue Date: 09/06/2015		



TP106 – 0.0mbgl to 3.80mbgl

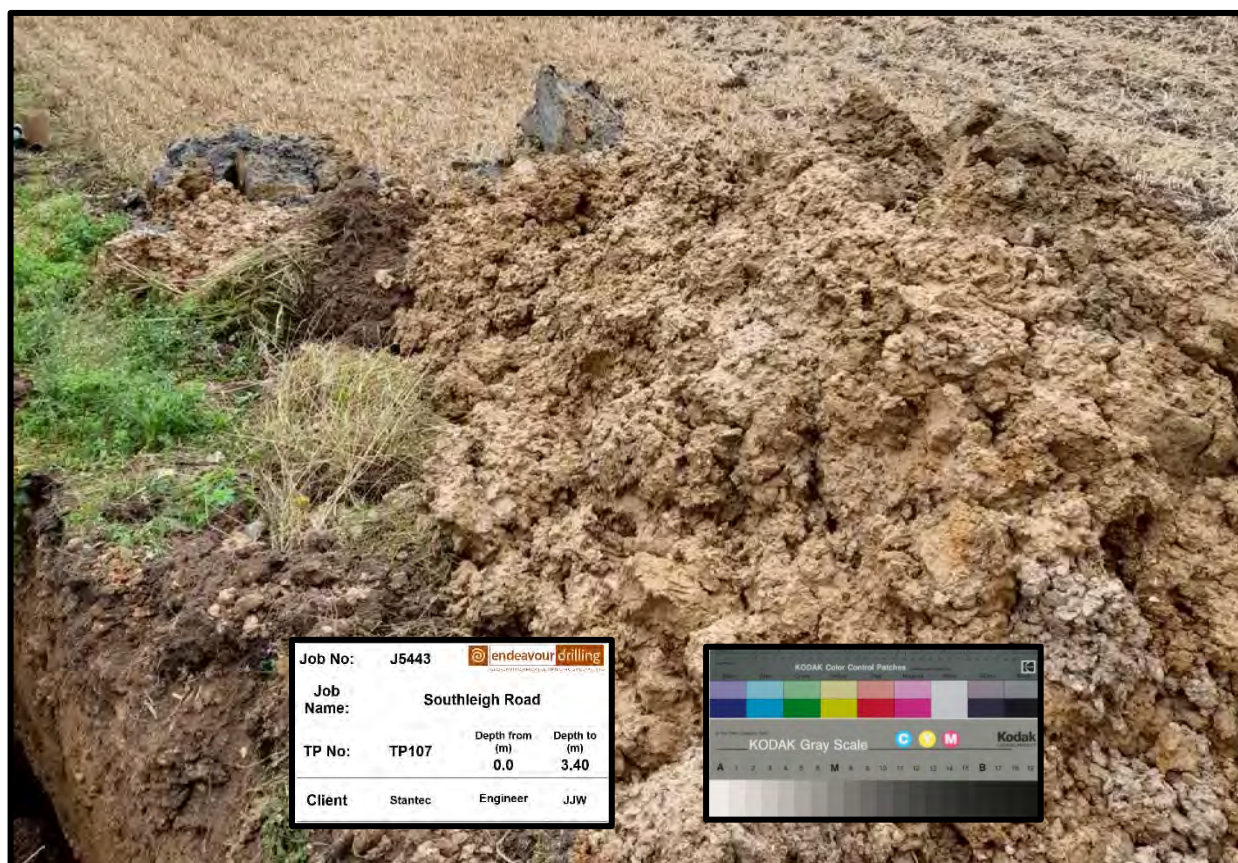


TP106 – 0.0mbgl to 3.80mbgl

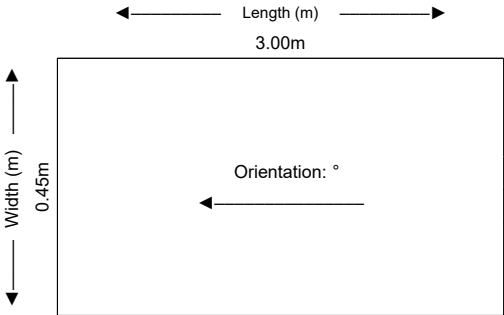
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP107		
	Contract Number: J5443	Date Started: 31/07/2023	Logged By: JS	Checked By: MJS	Status: FINAL	Sheet 1 of 1			
	Easting: 473908.6	Northing: 106857.4	Ground Level: 11.55mOD	Plant Used: JCB 3CX	Date Printed: 26/09/2023	Scale: 1:40			
Trial Pit Log									
Weather: Wet and overcast		Termination: Hole collapse			Stability: Stable from 0.0-1.5mbgl, unstable below 1.5mbgl				
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.10	B1	HV15(15)kPa	11.25	(0.30)		TOPSOIL - Soft to firm brown slightly slightly sandy slightly gravelly silty clay, with rootlets (<2mm diameter, live). Gravel is fine to coarse, sub-angular to sub-rounded flint and brick	1		
0.10 - 0.30	D1								
0.10 - 0.30	ES1								
0.40	B2								
0.40 - 0.60	D2								
0.40 - 0.60	ES2								
0.70	D3								
0.70 - 1.00	ES3								
1.20	D4								
1.70	D5								
2.20 - 2.50	B3	HV20(20)kPa	9.35	2.20		Soft brown mottled orange slightly sandy silty CLAY, with rare pockets of slightly gravelly clay.	2		
2.30	D6								
2.80	D7	HV20(20)kPa	8.35	(1.00)		... Collapse from 3.4 to 2.5mbgl	3		
3.20 - 3.40	B4								
3.30	D8	8.15	3.40		Soft dark grey slightly sandy CLAY, with rare fossil fragments.	4			
					End of Trial Pit at 3.40m		5		
								6	
Dimensions:						General Remarks:			
Final Depth: 3.40m						1. Position machine excavated to 3.40mbgl. 2. Groundwater encountered at 2.0mbgl, no rise after 20 minutes monitoring. 3. Position backfilled with arisings and compacted upon completion.			
<div><div>← Length (m) →</div><div>3.00m</div><div>↑ Width (m) ↓</div><div>0.45m</div><div>Orientation: °</div><div>←</div></div>									
Inclination: °									
						Water Strikes			
						Strike (m)	Time (mins)	Rose to (m)	Remarks
						2.00	20	2.00	No Rise
						HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015			



TP107 – 0.0mbgl to 3.40mbgl



TP107 – 0.0mbgl to 3.40mbgl

	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP108		
	Contract Number: J5443	Date Started: 31/07/2023	Logged By: JS	Checked By: MJS	Status: FINAL	Sheet 1 of 1			
	Easting: 473738.8	Northing: 106792.2	Ground Level: 12.71mOD	Plant Used: JCB 3CX	Date Printed: 26/09/2023	Scale: 1:40			
Trial Pit Log									
Weather: Wet and overcast		Termination: Hole collapse			Stability: Stable between 0.0-2.0, unstable below 2.0mbgl				
Samples & In Situ Testing				Strata Details				Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.10	B1	HV5(5)kPa	12.51	0.20		TOPSOIL - Soft brown slightly gravelly slightly sandy slightly silty clay, with rootlets (<2mm diameter, live).	1		
0.10 - 0.20	D1	HV10(10)kPa		(0.30)		Very soft light brown slightly gravelly sandy CLAY. Gravel is fine to coarse flint.			
0.10 - 0.20	ES1								
0.20 - 0.40	B2	HV15(15)kPa	12.21	0.50		Soft brown mottled orange slightly sandy silty CLAY.	2		
0.20 - 0.40	ES2								
0.20 - 0.50	D2								
0.30	D3	HV18(18)kPa	(1.50)		... Rare flint gravels present below 1.5mbgl	3			
0.50 - 0.70	B3								
0.60	D3								
1.10	D4	HV17(17)kPa	10.71	2.00		Brown slightly silty clayey sandy fine to coarse sub-angular to sub-rounded GRAVEL of flint.	4		
1.60	D5								
2.00 - 2.30	B4								
2.10	D6	HV12(12)kPa	9.61	3.10		Soft light brown slightly sandy silty CLAY, with rare partings of grey clay.	5		
2.60	D7								
3.10 - 3.40	B5								
3.20	D8	End of Trial Pit at 3.50m	9.21	3.50		6			
Dimensions:						General Remarks:			
Final Depth: 3.50m						1. Position machine excavated to 3.50mbgl. 2. Groundwater encountered at 2.5mbgl, no rise after 20 minutes monitoring. 3. Position backfilled with arisings and compacted upon completion.			
									
Inclination: °									
						Water Strikes			
						Strike (m)	Time (mins)	Rose to (m)	Remarks
						2.50	20	2.50	No rise
						HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015			



TP108 – 0.0mbgl to 3.50mbgl



TP108 – 0.0mbgl to 3.50mbgl

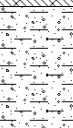
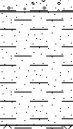
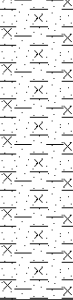
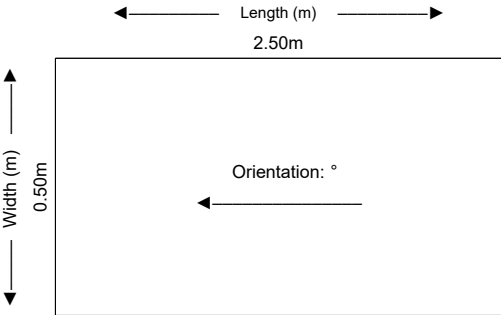
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd		Trial Pit ID: TP109									
	Contract Number: J5443	Date Started: 20/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1									
Trial Pit Log		Easting: 473683.8	Northing: 107757.6	Ground Level: 26.84mOD	Plant Used: 8T Excavator	Date Printed: 26/09/2023	Scale: 1:40								
Weather: Overcast			Termination: Refusal due to excavator at limit of capability within ground conditions.			Stability: Stable									
Samples & In Situ Testing				Strata Details			Water	Backfill							
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description									
0.20 0.20	D1 ES1	HV35(35)kPa HV90(90)kPa	26.44	(0.40)		TOPSOIL - Greyish brown sandy clay, with occasional rootlets (<2mm, living).	1								
0.50 0.50	B1 D2			0.40		MADE GROUND - Soft dark greyish brown sandy gravelly clay. Gravel is fine to coarse sub-angular of concrete and flint.									
0.50 - 0.80	ES2			0.80		Orangish brown clayey silty sandy fine to coarse angular GRAVEL of flint.									
0.90 0.90	B2 D3			(0.60)											
0.90 - 1.40	ES3		1.40												
1.50	D4		25.44	(1.00)		Firm orangish brown mottled grey slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.			2						
2.00	D5		24.44	2.40		Soft light brown mottled grey slightly silty slightly sandy slightly gravelly CLAY. Gravel is fine to medium sub-angular to sub-rounded of flint.			3						
2.40 - 2.60	B3			(0.30)		Stiff dark brown slightly sandy silty CLAY, with frequent gleying and occasional rootlets (2mm, dead).									
2.50	D6			2.70		End of Trial Pit at 2.80m									
2.70 - 2.80	B4 D7			24.14 24.04		2.80									
										4					
										5					
										6					
Dimensions:				General Remarks:											
Final Depth: 2.80m				1. Position machine excavated to 2.80mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.											
<div><div>← Length (m) →</div><div>4.00m</div><div>↑ Width (m) ↓</div><div>0.50m</div><div>Orientation: °</div><div>←</div></div>															
Inclination: °															
				Water Strikes											
				<table><tr><th>Strike (m)</th><th>Time (mins)</th><th>Rose to (m)</th><th>Remarks</th></tr><tr><td></td><td></td><td></td><td></td></tr></table>				Strike (m)	Time (mins)	Rose to (m)	Remarks				
Strike (m)	Time (mins)	Rose to (m)	Remarks												
				HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015											

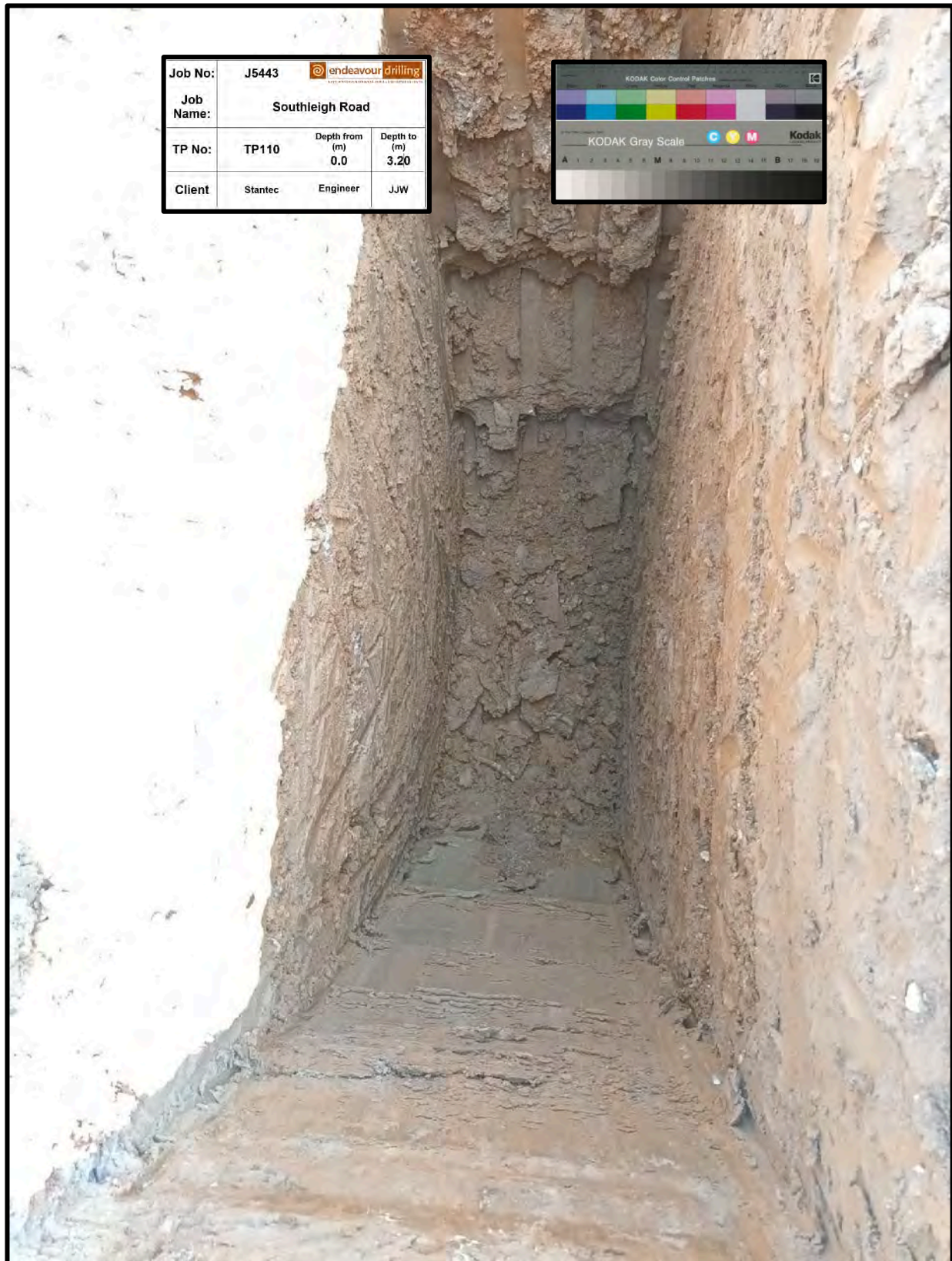


TP109 – 0.0mbgl to 2.80mbgl



TP109 – 0.0mbgl to 2.80mbgl

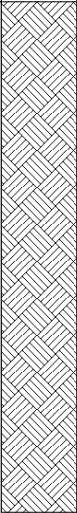
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd		Trial Pit ID: TP110				
	Contract Number: J5443	Date Started: 29/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1				
Trial Pit Log		Easting: 473304.2	Northing: 107683.8	Ground Level: 19.42mOD	Plant Used: 8T Excavtor	Date Printed: 26/09/2023	Scale: 1:40			
Weather: Sunny			Termination: Refusal due to excavator at limit of capability within ground conditions.			Stability: Stable				
Samples & In Situ Testing			Strata Details					Water	Backfill	
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description				
0.10 0.20 0.30 - 0.80	ES1 D1 B1	HV60(60)kPa	19.12	(0.30)		TOPSOIL - Greyish brown sandy clay, with occasional rootlets (<2mm, living).		1		
0.50 0.60	D2 ES2			(0.70)		Firm brown slightly gravelly sandy CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.				
1.00 - 1.30 1.10	B2 D3			18.42	1.00		Firm brown mottled grey slightly sandy silty CLAY.			
1.70 1.70 - 2.00	B3 D4			17.82	1.60		Stiff orangish brown mottled brown slightly sandy silty CLAY, with rare fine to medium sand laminations.			2
2.20	D5	HV100(100)kPa	16.22	(1.60)		End of Trial Pit at 3.20m		3		
2.70	D6								4	
3.20	D7	HV95(95)kPa						5		
								6		
Dimensions:					General Remarks:					
Final Depth: 3.20m					1. Position machine excavated to 3.20mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.					
										
Inclination: °										
					Water Strikes					
					Strike (m)		Time (mins)	Rose to (m)	Remarks	
					HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015					

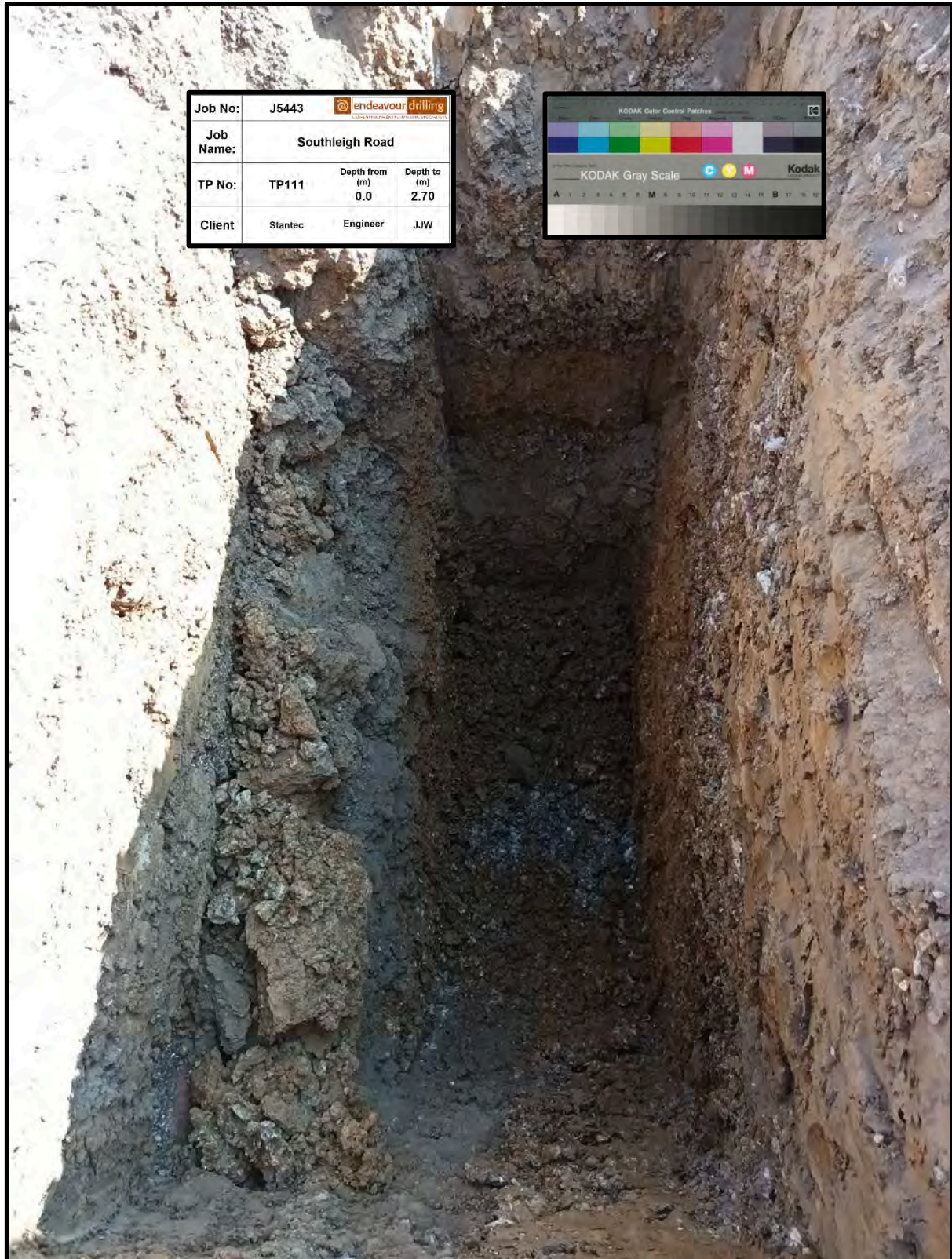


TP110 – 0.0mbgl to 3.20mbgl



TP110 – 0.0mbgl to 3.20mbgl

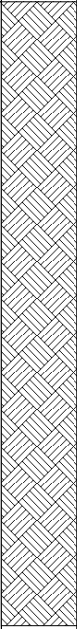
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd		Trial Pit ID: TP111			
	Contract Number: J5443	Date Started: 29/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1			
Trial Pit Log		Easting: 473597.7	Northing: 107613.6	Ground Level: 20.30mOD	Plant Used: 8T Excavtor	Date Printed: 26/09/2023	Scale: 1:40		
Weather: Sunny			Termination: Refusal due to excavator at limit of capability within ground conditions.			Stability: Stable			
Samples & In Situ Testing			Strata Details				Water	Backfill	
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.10 0.20 0.40 - 0.70 0.60	D1 ES1 B1 D2	HV55(55)kPa	20.00	(0.30) 0.30		TOPSOIL - Greyish brown slightly gravelly sandy clay, with occasional rootlets (<2mm, living). Gravel is fine to coarse sub-angular to sub-rounded of flint. Firm orangish brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.	1		
1.00 1.00 1.30 - 1.60 1.50	D3 ES2 B2 D4			19.10					(0.90) 1.20
2.00 2.50	D5 D6	17.60	(1.50) 2.70			End of Trial Pit at 2.70m	3		
							5		
							6		
Dimensions:						General Remarks:			
Final Depth: 2.70m						1. Position machine excavated to 2.70mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.			
<div><div>← Length (m) →</div><div>2.50m</div><div><div>↑ Width (m) ↓</div><div>0.90m</div></div><div>Orientation: °</div><div>←</div></div>									
Inclination: °						Water Strikes			
						Strike (m)	Time (mins)	Rose to (m)	Remarks
HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015									

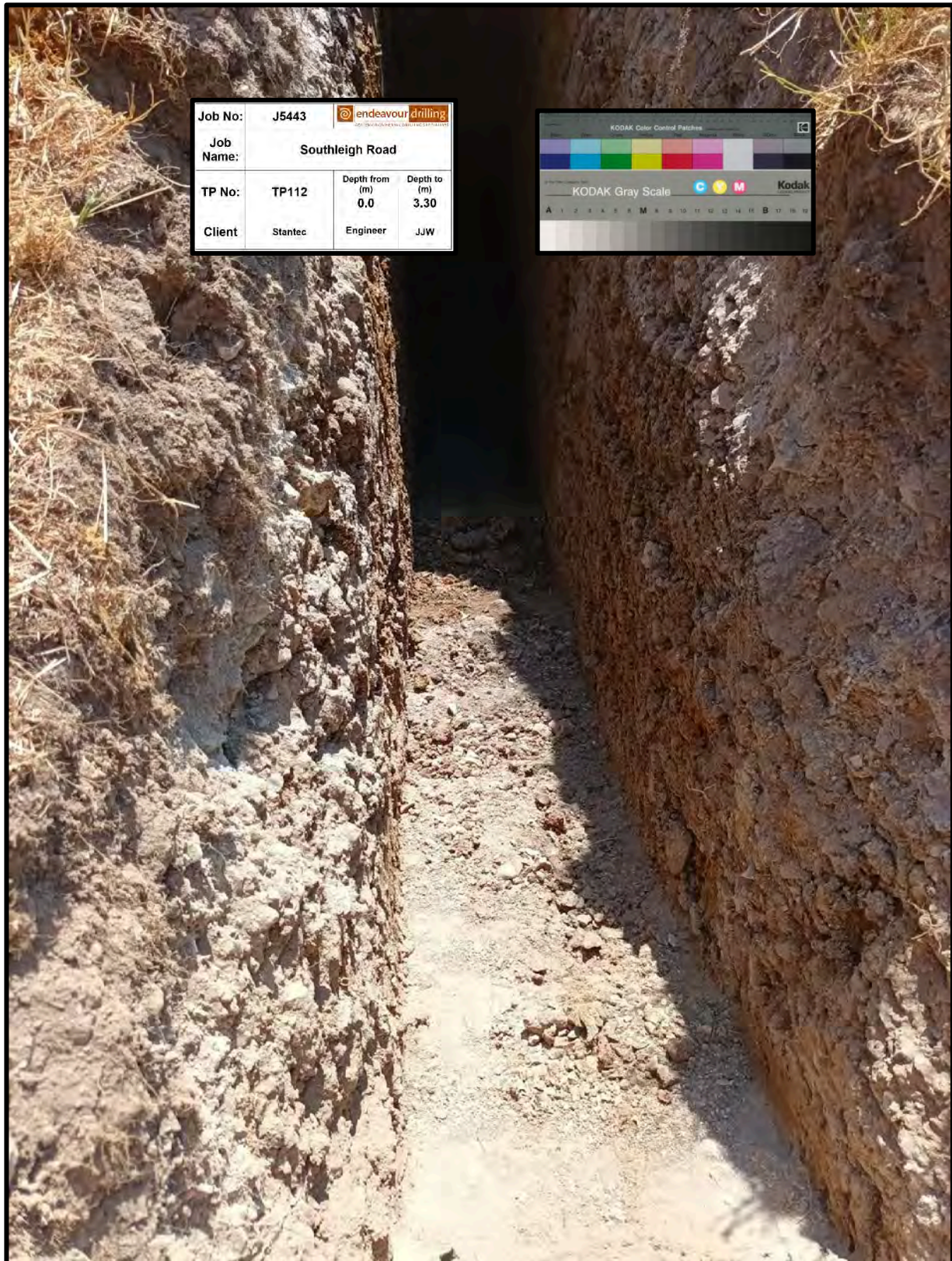


TP111 – 0.0mbgl to 2.70mbgl



TP111 – 0.0mbgl to 2.70mbgl

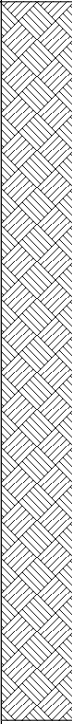
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP112		
	Contract Number: J5443	Date Started: 19/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1			
Trial Pit Log	Easting: 474088.5	Northing: 107524.5	Ground Level: 16.61mOD	Plant Used: 8T Excavtor	Date Printed: 26/09/2023	Scale: 1:40			
Weather: Sunny		Termination: Refusal due to excavator at limit of capability within ground conditions.			Stability: Stable				
Samples & In Situ Testing			Strata Details				Water	Backfill	
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.20 0.20 0.30 - 0.70 0.40 0.50	D1 ES1 B1 ES2 D2	HV38(38)kPa	16.41	0.20 (0.60)	 	TOPSOIL - Dark greyish brown sandy clay, with occasional rootlets (<2mm, living). MADE GROUND - Light grey sandy fine to coarse sub-angular gravel of concrete.	<div>1</div> <div>2</div> <div>3</div> <div>4</div> <div>5</div> <div>6</div>		
0.90 1.00 1.00 - 1.40	ES3 B2 D3		15.81	0.80 (0.60)		Brown mottled grey clayey silty sandy fine to coarse angular to subrounded GRAVEL of flint.			
1.50	D4		15.21	1.40		Soft to firm brown mottled grey slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular of flint.			
2.00	D5		14.01	(1.20)		Soft light brown slightly silty slightly sandy slightly gravelly CLAY, with occasional pockets of clayey fine to coarse sand. Gravel is fine to medium sub-angular to sub-rounded of flint.			
2.50	D6			2.60					
2.70 2.70 - 3.00	B3 D7			(0.70)					
3.20	D8		13.31	3.30	End of Trial Pit at 3.30m				
Dimensions:					General Remarks:				
Final Depth: 3.30m					1. Position machine excavated to 3.30mbgl. 2. Damp below 2.90mbgl. 3. Position backfilled with arisings and compacted upon completion.				
<div><div>← Length (m) →</div><div>3.50m</div><div>↑ Width (m) ↓</div><div>0.50m</div><div>Orientation: °</div><div>←</div></div>									
Inclination: °									
					Water Strikes				
					Strike (m)		Time (mins)	Rose to (m)	Remarks
					2.90		20	2.90	
					HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015				



TP112 – 0.0mbgl to 3.30mbgl

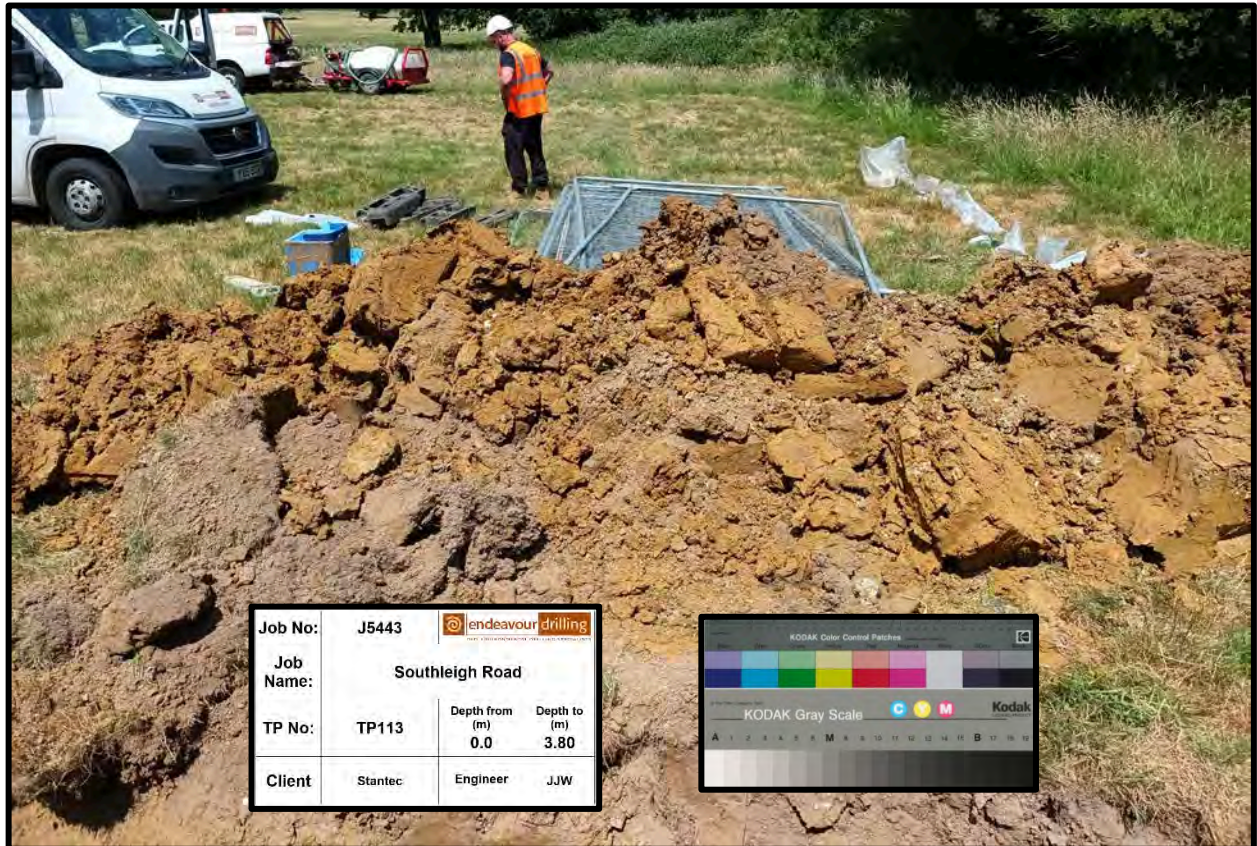


TP112 – 0.0mbgl to 3.30mbgl

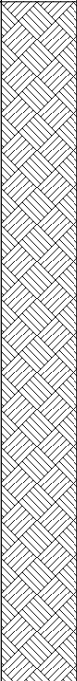
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP113		
	Contract Number: J5443	Date Started: 19/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1			
Trial Pit Log	Easting: 473840.8	Northing: 107298.8	Ground Level: 12.77mOD	Plant Used: 8T Excavtor	Date Printed: 26/09/2023	Scale: 1:40			
Weather: Sunny		Termination: Refusal due to excavator at limit of capability within ground conditions			Stability: Stable				
Samples & In Situ Testing			Strata Details				Water	Backfill	
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.10 - 0.40 0.20 0.30	B1 ES1 D1		12.27	(0.50)		TOPSOIL - Greyish brown fine to coarse sandy clay, with occasional rootlets (<2mm, living).	1		
0.50 - 0.90 0.60 0.60	B2 D2 ES2			0.50		Soft brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint. ...very gravelly between 0.7m and 1.50mbgl			
1.00	D3								
1.50	D4				(2.20)				
2.00	D5								
2.50	D6	HV35(35)kPa	10.07	2.70		Soft brown mottled grey slightly sandy silty CLAY.	2		
2.80 - 3.20	D7			(0.90)			3		
3.30	D8	HV38(38)kPa	9.17	3.60		Firm grey and brown slightly sandy silty CLAY, with occasional thin laminations of clay.	4		
3.60 - 3.80 3.70	B4 D9	HV57(57)kPa		3.80	End of Trial Pit at 3.80m	5			
								6	
Dimensions:						General Remarks:			
Final Depth: 3.80m						1. Position machine excavated to 3.80mbgl. 2. Groundwater encountered at 3.80mbgl (slow infill, rising to 3.70mbgl). 3. Position backfilled with arisings and compacted upon completion.			
<div><div>← Length (m) →</div><div>3.00m</div><div>↑ Width (m) ↓</div><div>0.50m</div><div>Orientation: °</div><div>←</div></div>									
Inclination: °						Water Strikes			
						Strike (m)	Time (mins)	Rose to (m)	Remarks
						3.80	20	3.70	
HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015									

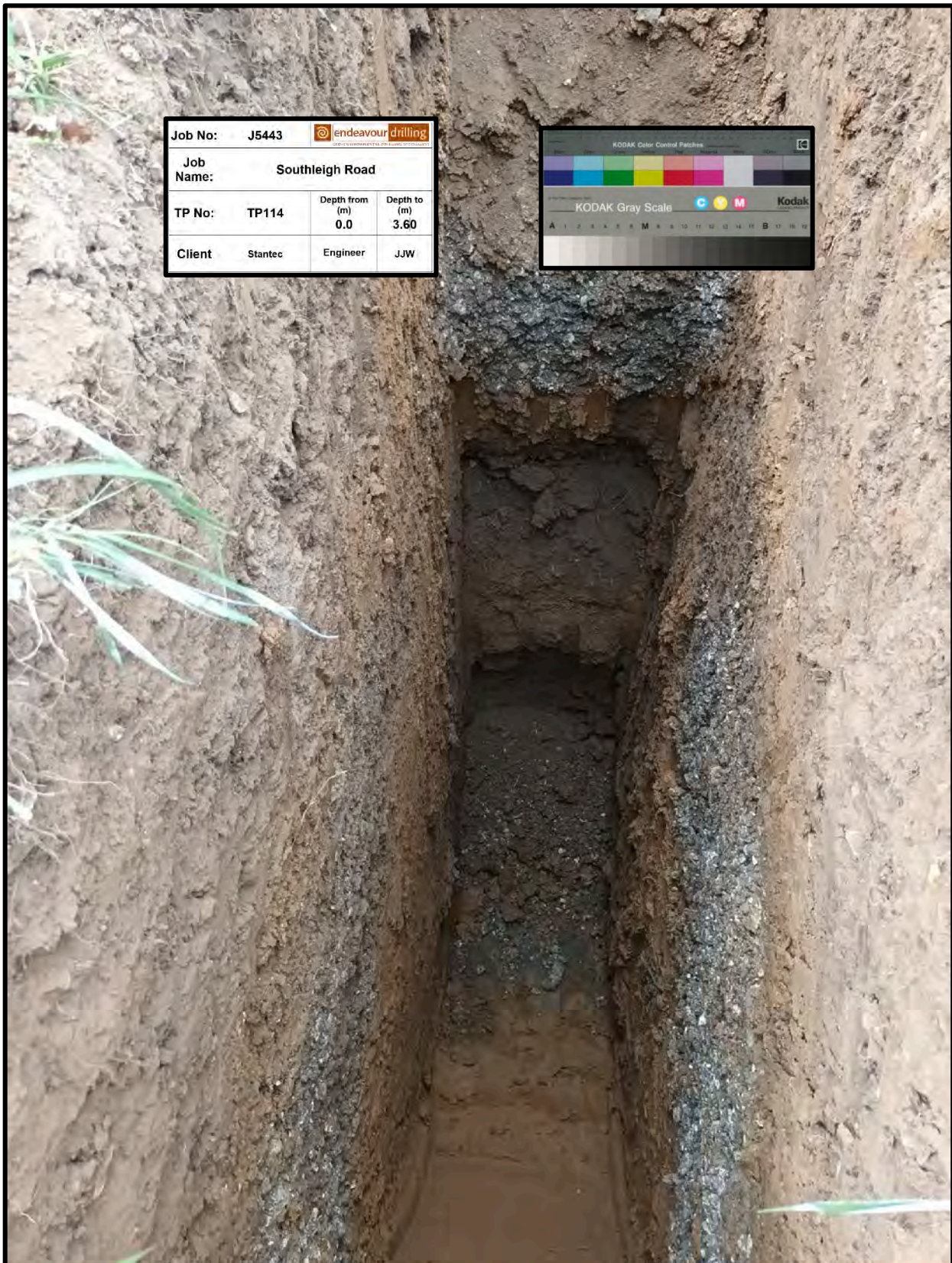


TP113 – 0.0mbgl to 3.80mbgl

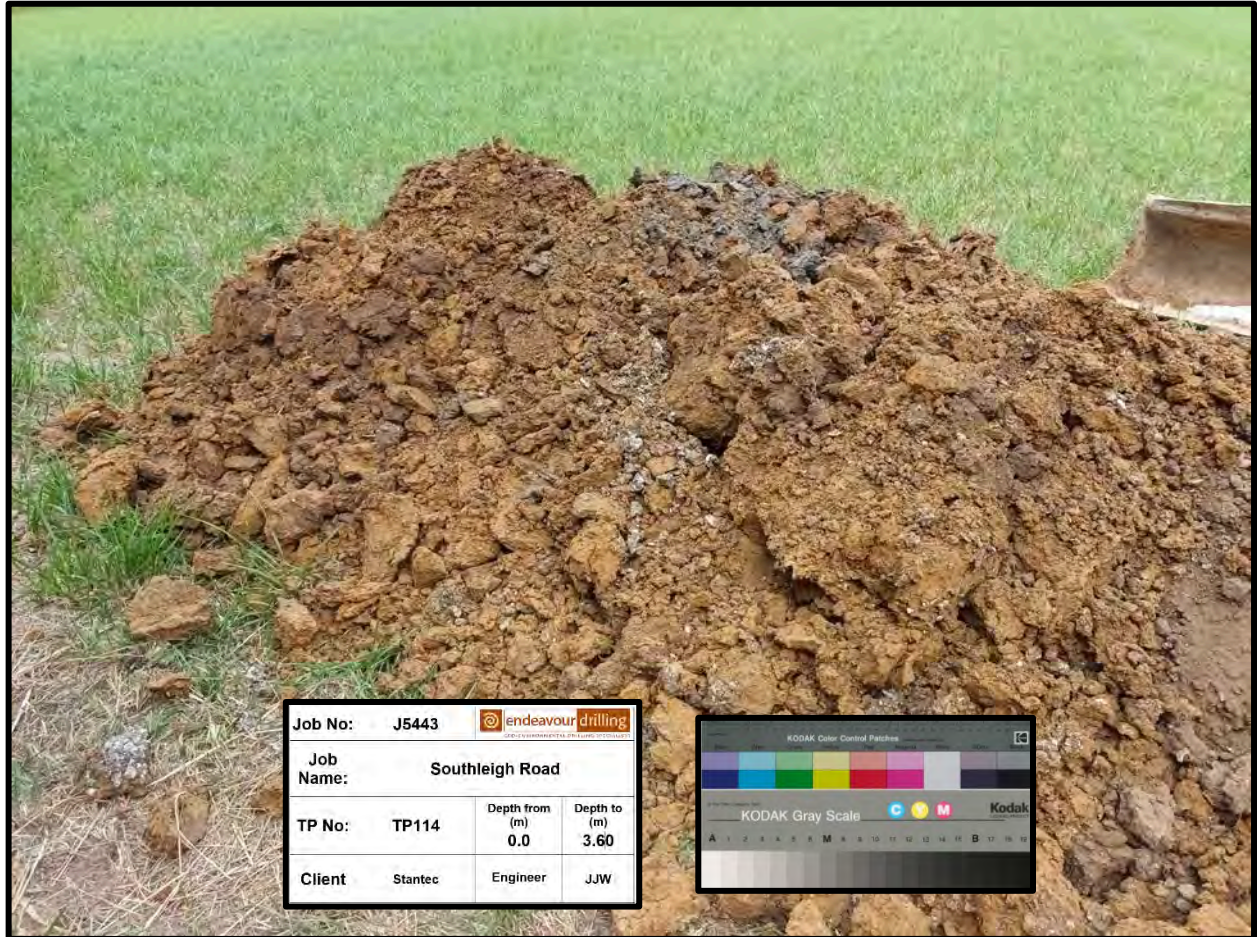


TP113 – 0.0mbgl to 3.80mbgl

	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP114		
	Contract Number: J5443	Date Started: 28/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1			
Trial Pit Log	Easting: 473894.6	Northing: 107229.2	Ground Level: 12.40mOD	Plant Used: 8T Excavator	Date Printed: 26/09/2023	Scale: 1:40			
Weather: Sunny		Termination: Refusal due to excavator at limit of capability within ground conditions			Stability: Stable				
Samples & In Situ Testing			Strata Details				Water	Backfill	
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.20 0.30	ES1 D1		12.00	(0.40)		TOPSOIL - Greyish brown slightly gravelly sandy clay, with occasional rootlets (<2mm, living). Gravel is fine to medium sub-angular of flint.	1		
0.50 - 0.90	B1			0.40		Soft to firm brown slightly gravelly sandy CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.			
0.70 0.80	D2 ES2			(0.60)		Firm grey and brown slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded of flint.			
1.00 - 1.50	B2 D3			1.00					
1.10				(0.80)					
1.60	D4	HV30(30)kPa	10.60	1.80		Soft orangish brown mottled grey slightly sandy silty CLAY, with occasional pockets of silty fine to coarse sand.	2		
1.90 1.90 - 2.30	B3 D5								
2.40	D6			(1.60)					
2.90	D7								
3.40 3.50 - 3.60 3.60	D8 B4 D9			9.00 8.80	3.40 3.60			Firm dark grey slightly sandy silty CLAY.	3
End of Trial Pit at 3.60m						4			
							5		
								6	
Dimensions:						General Remarks:			
Final Depth: 3.60m						1. Position machine excavated to 3.60mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.			
<div><div>← Length (m) →</div><div>2.50m</div><div><div>↑ Width (m) ↓</div><div>0.50m</div></div><div>Orientation: °</div><div>←</div></div>									
Inclination: °						Water Strikes			
						Strike (m)	Time (mins)	Rose to (m)	Remarks
						HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015			

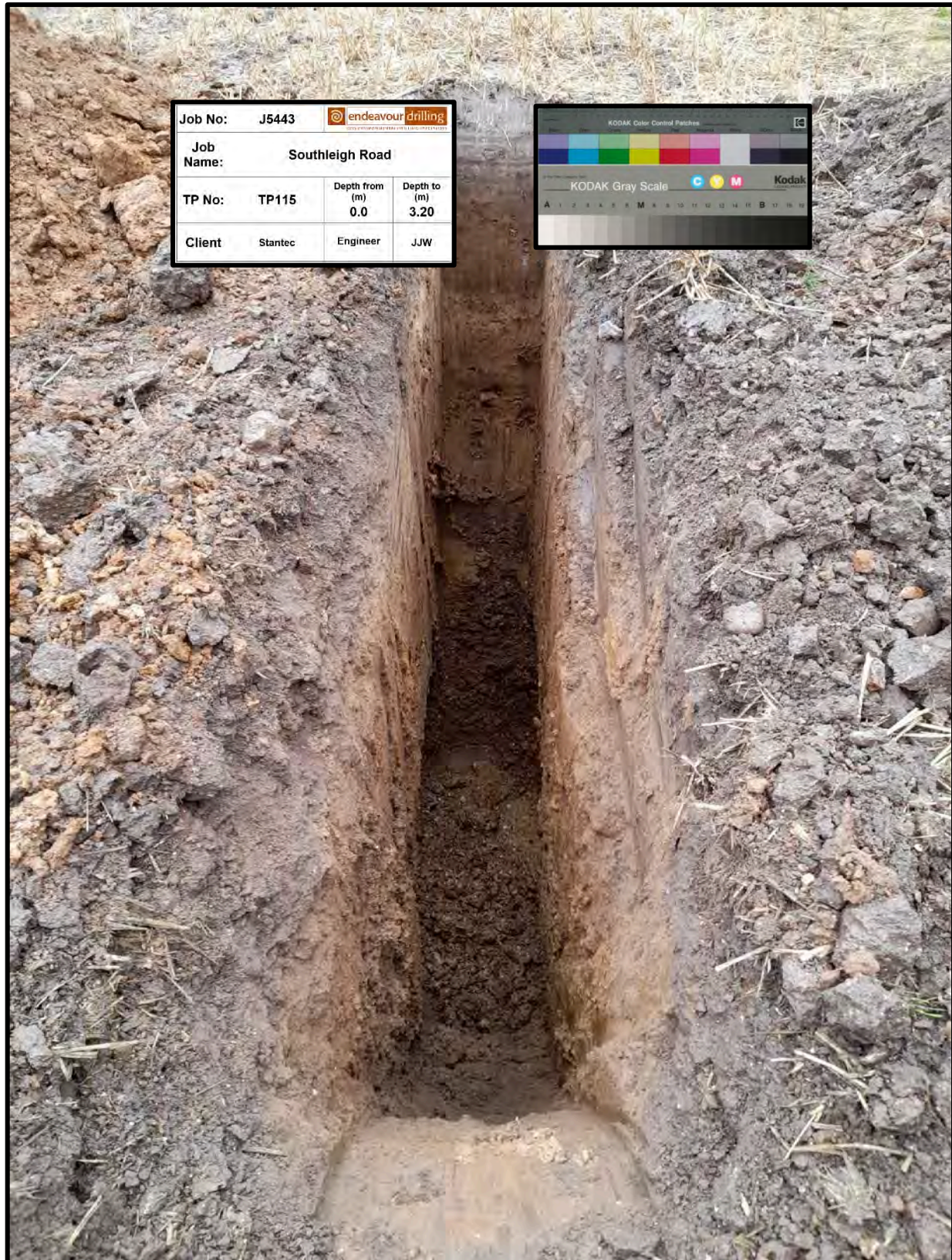


TP114 – 0.0mbgl to 3.60mbgl



TP114 – 0.0mbgl to 3.60mbgl

	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP115		
	Contract Number: J5443	Date Started: 31/07/2023	Logged By: JS	Checked By: MJS	Status: FINAL	Sheet 1 of 1			
	Easting: 473659.5	Northing: 107141.0	Ground Level: 13.03mOD	Plant Used: JCB 3CX	Date Printed: 26/09/2023	Scale: 1:40			
Trial Pit Log									
Weather: Wet and overcast		Termination: Hole collapse			Stability: Stable between 0.0 and 2.0mbgl, unstable below 2.0mbgl				
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.10	B1	HV12(12)kPa	12.83	0.20 (0.30)		TOPSOIL - Soft dark brown slightly gravelly slightly sandy slightly silty clay, with rootlets (<2mm diameter, live). Gravel is fine to coarse sub-angular to sub-rounded flint and brick. Very soft brown slightly sandy silty CLAY.	1		
0.10 - 0.20	D1								
0.10 - 0.20	ES1								
0.20 - 0.50	B2								
0.30	D2								
0.30 - 0.50	ES2	HV18(18)kPa	12.53	0.50		Soft orange brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular to sub-rounded.	2		
0.50 - 0.80	B3								
0.60	D3								
1.10	D4								
1.60	D5								
1.70 - 2.00	B4	HV16(16)kPa	11.33	1.70		Firm slightly silty gravelly CLAY, locally clayey gravel. Gravel is fine to coarse sub-angular to sub-rounded flint.	3		
1.80	D6								
2.30	D7								
2.80	D8								
			9.83	3.20		End of Trial Pit at 3.20m	4		
							5		
							6		
Dimensions:						General Remarks:			
Final Depth: 3.20m						1. Position machine excavated to 3.40mbgl. 2. No groundwater encountered. 3. Position backfilled with arisings and compacted upon completion.			
<div><div>← Length (m) →</div><div>3.00m</div><div>↑ Width (m) ↓</div><div>0.45m</div><div>Orientation: °</div><div>←</div></div>									
Inclination: °									
						Water Strikes			
						Strike (m)	Time (mins)	Rose to (m)	Remarks
						HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015			

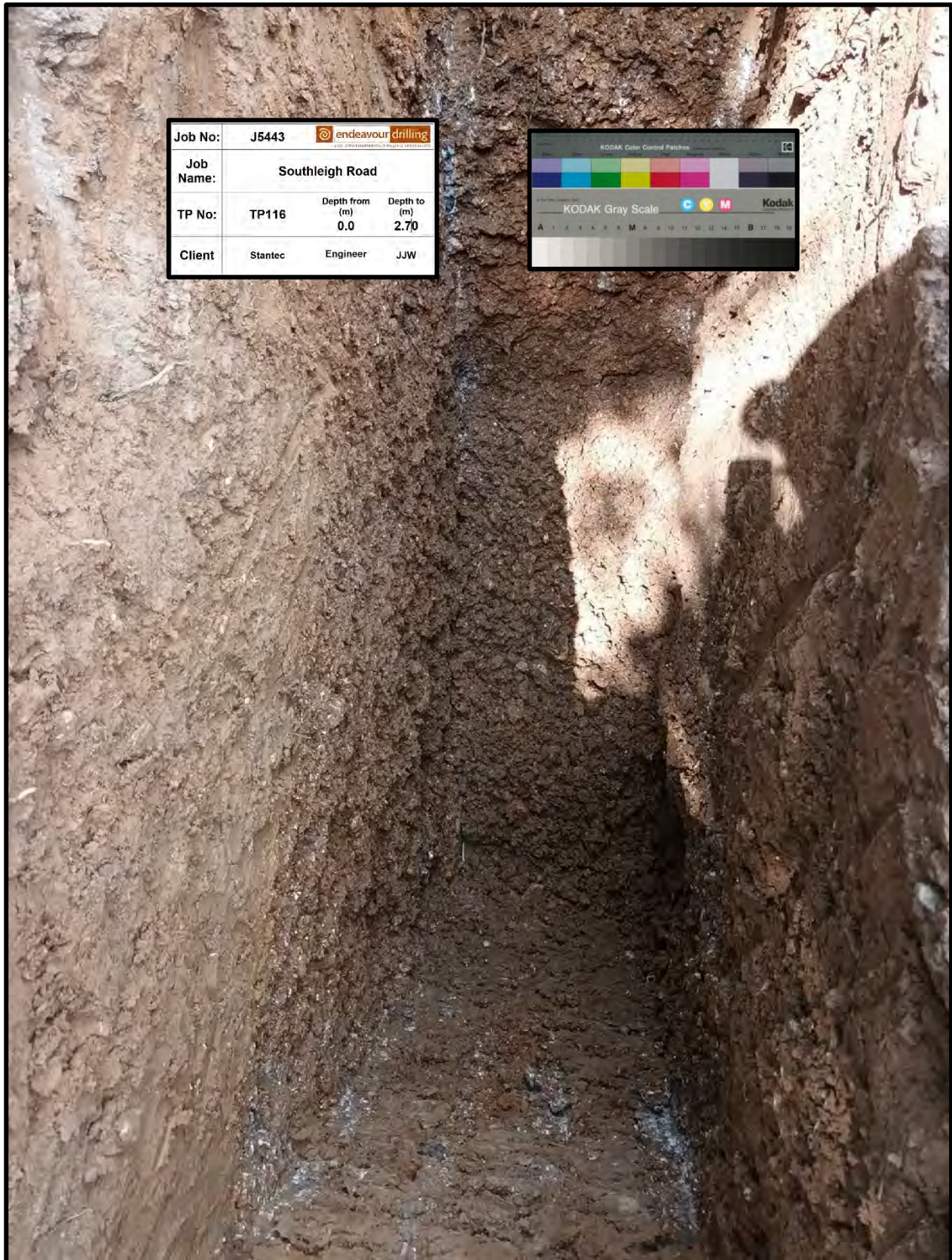


TP115 – 0.0mbgl to 3.20mbgl

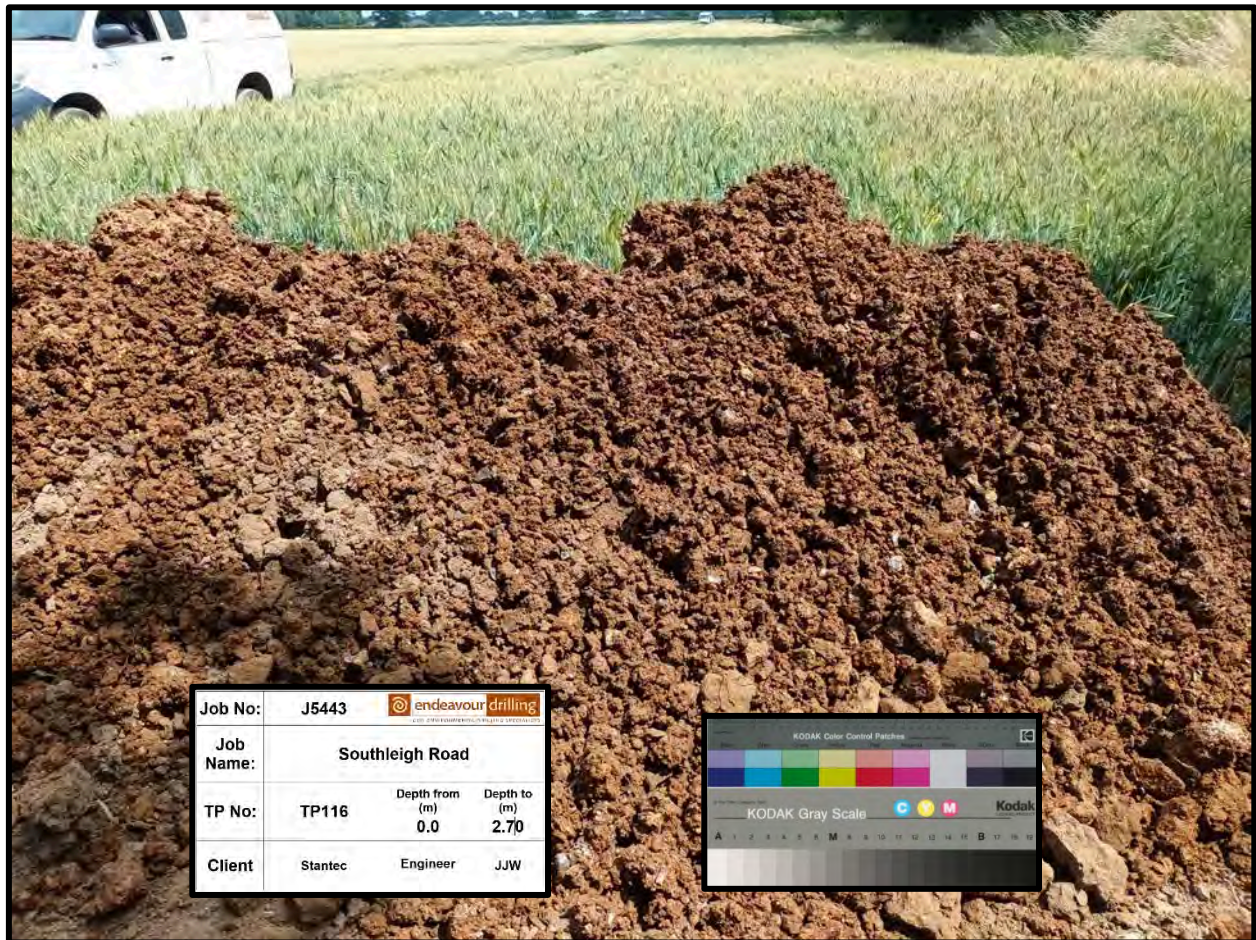


TP115 – 0.0mbgl to 3.20mbgl

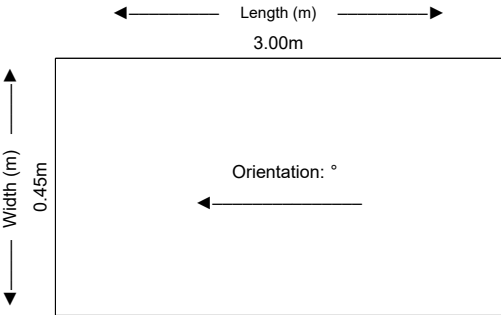
[illegible]

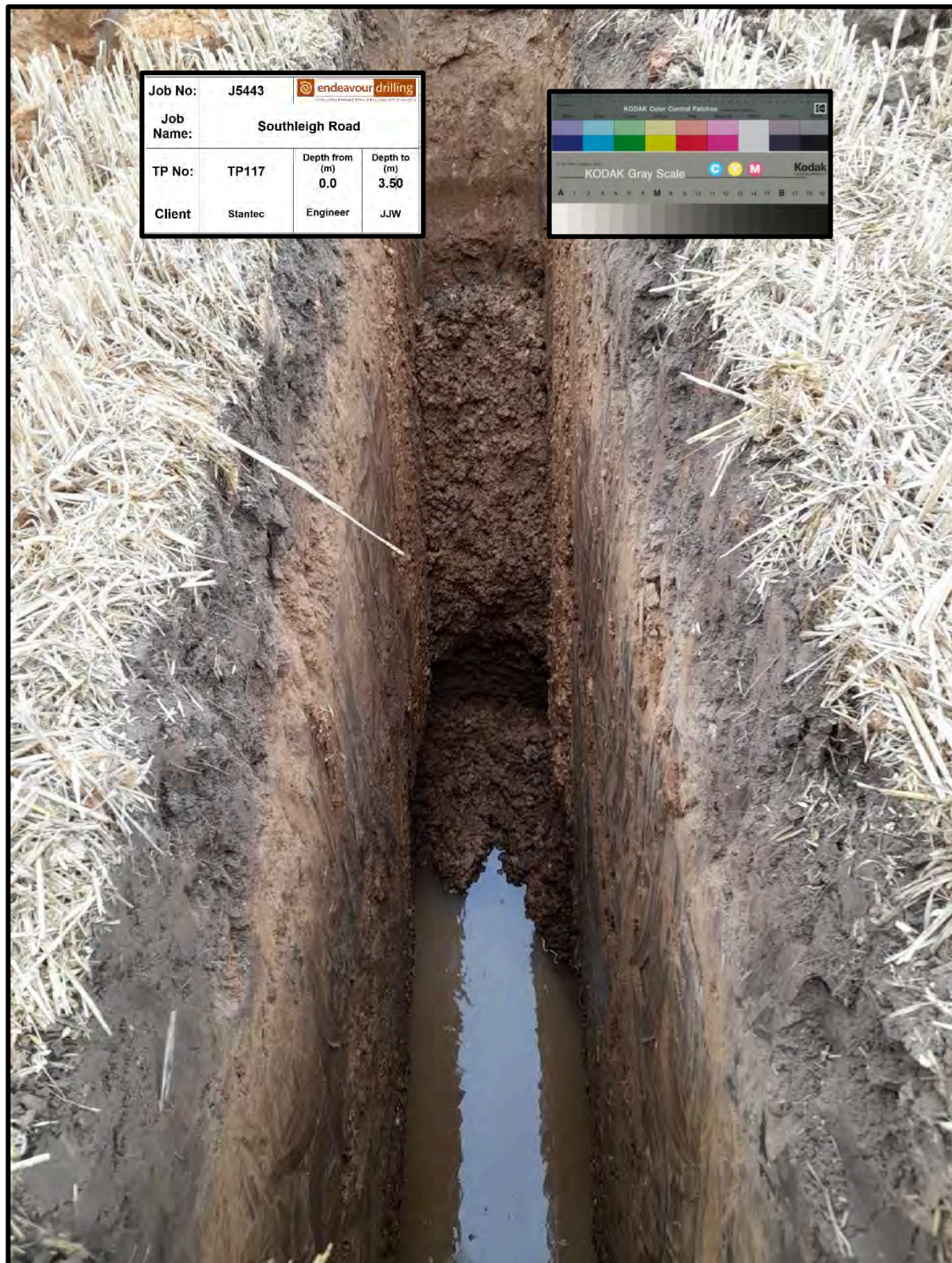


TP116 – 0.0mbgl to 2.70mbgl



TP116 – 0.0mbgl to 2.70mbgl

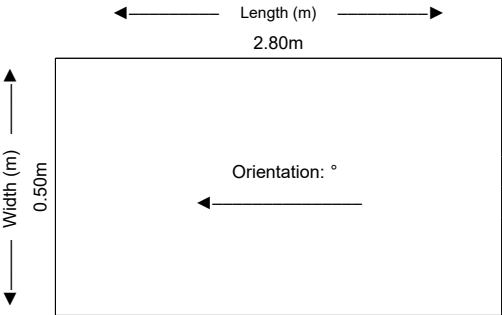
	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd			Trial Pit ID: TP117				
	Contract Number: J5443	Date Started: 31/07/2023	Logged By: JS	Checked By: MJS	Status: FINAL	Sheet 1 of 1					
	Easting: 473629.5	Northing: 106871.0	Ground Level: 12.86mOD	Plant Used: JCB 3CX	Date Printed: 26/09/2023	Scale: 1:40					
Trial Pit Log											
Weather: Wet and overcast		Termination: Hole collapse			Stability: Stable from 0.0 to 1.9mbgl, unstable below 1.9mbgl						
Samples & In Situ Testing				Strata Details				Water	Backfill		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description					
0.10	B1	HV9(9)kPa	12.66	0.20		TOPSOIL - Soft brown slightly gravelly slightly sandy slightly silty clay, with rootlets (<2mm diameter, live). Gravel is fine to coarse sub-angular to sub-rounded flint and rare brick.	1				
0.10 - 0.20	D1			(0.30)		Soft brown slightly sandy silty CLAY, with rare rootlets (<2mm diameter, live).					
0.10 - 0.20	ES1			12.36	0.50					Very soft to soft brown slightly sandy silty CLAY.	
0.20 - 0.40	B2										
0.20 - 0.40	B2										
0.20 - 0.50	ES2	11.16	(1.20)		... Rare gravels of flint present below 1.5mbgl						
0.30	D2					HV10(10)kPa					
0.50 - 0.70	B3										
0.50 - 0.80	ES3										
0.60	D3										
1.20	D4	11.16	1.70		Firm light brown slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded flint.		2				
1.70 - 2.00	B4										
1.80	D5										
2.30	D6										
2.80	D7										
3.30	D8	9.36	3.50		... Locally off-white structureless chalk recovered as gravelly sandy SILT below 3.00mbgl. Gravel is fine to coarse sub-angular to sub-rounded flint	3					
							End of Trial Pit at 3.50m	4			
									5		
										6	
Dimensions:		General Remarks:									
Final Depth: 3.50m		1. Position machine excavated to 3.40mbgl. 2. Groundwater encountered at 2.6mbgl, rising to 2.5mbgl after 20 minutes monitoring. 3. Position backfilled with arisings and compacted upon completion.									
											
Inclination: °											
		Water Strikes									
		Strike (m)		Time (mins)		Rose to (m)		Remarks			
		2.60		20		2.50		Slow inflow.			
		HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015									



TP117 – 0.0mbgl to 3.50mbgl

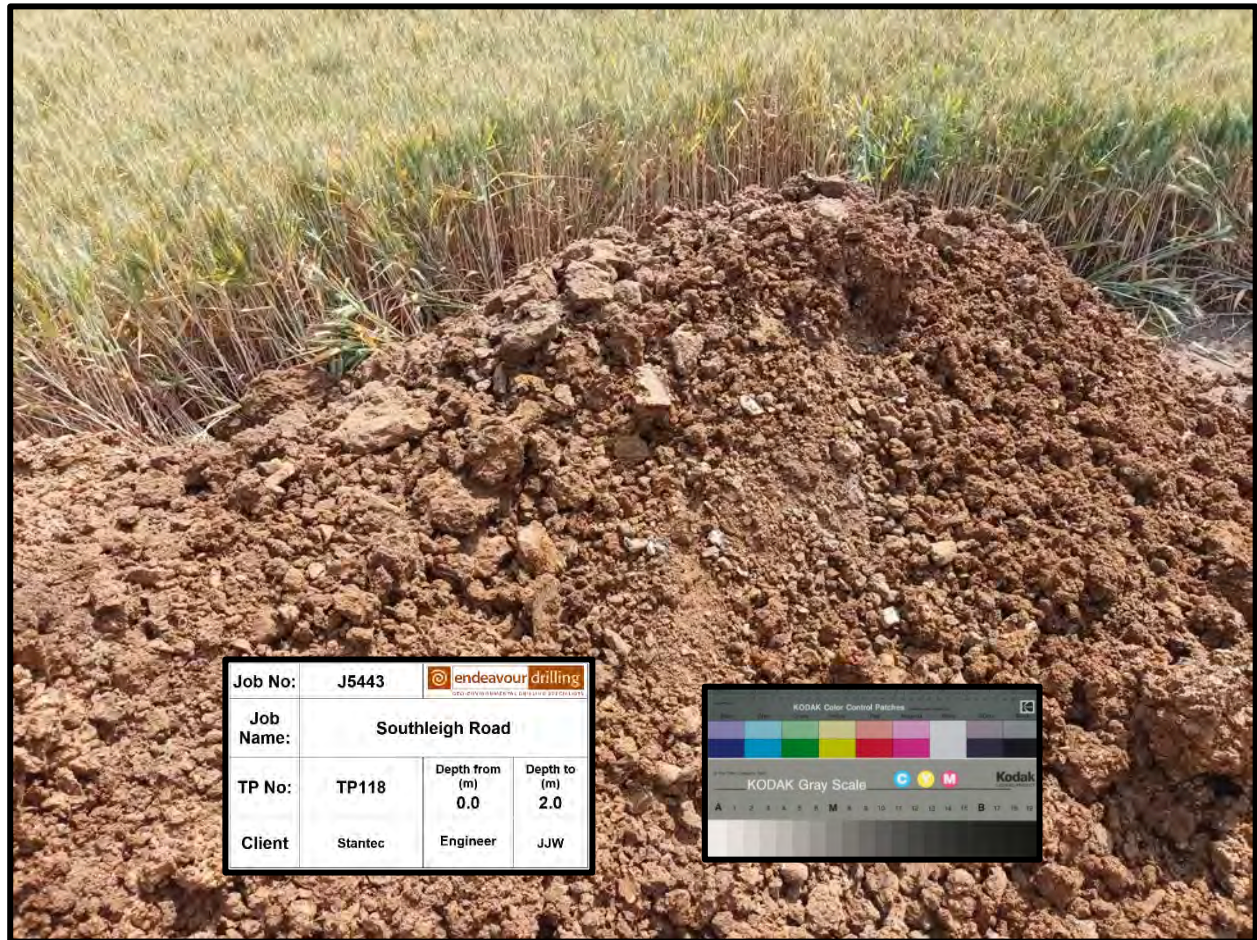


TP117 – 0.0mbgl to 3.50mbgl

	Contract Name: Southleigh Road, Havant			Client: Stantec (UK) Ltd		Trial Pit ID: TP118			
	Contract Number: J5443	Date Started: 28/06/2023	Logged By: MG	Checked By: MJS	Status: FINAL	Sheet 1 of 1			
Trial Pit Log		Easting: 473583.2	Northing: 106589.1	Ground Level: 11.62mOD	Plant Used: 8T Excavator	Date Printed: 26/09/2023	Scale: 1:40		
Weather: Sunny			Termination: Groundwater strike at 2.00mbgl		Stability: Stable				
Samples & In Situ Testing			Strata Details				Water	Backfill	
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.10	ES1		11.32	(0.30)		TOPSOIL - Greyish brown sandy clay, with frequent rootlets (<2mm, living).	1		
0.20	D1			0.30		Soft to firm light brown slightly gravelly sandy CLAY, with occasional rootlets (2mm, living). Gravel is fine to medium sub-angular of flint			
0.40 - 0.70	B1			(0.50)					
0.60	D2			10.82	0.80				
0.60	ES2				(1.20)				
0.90	B2		9.62	2.00		...pockets of fine to coarse brown sand below 1.70mbgl	2		
0.90 - 1.20	D3					End of Trial Pit at 2.00m			
1.50	D4								
1.80 - 2.00	B3						3		
1.90	D5								
							4		
							5		
							6		
Dimensions:						General Remarks:			
Final Depth: 2.00m						1. Position machine excavated to 2.00mbgl. 2. Groundwater encountered at 2.00mbgl (slow infill, rising to 1.90mbgl). 3. Position backfilled with arisings and compacted upon completion.			
									
Inclination: °									
						Water Strikes			
						Strike (m)	Time (mins)	Rose to (m)	Remarks
						2.00	20	1.90	
						HBSI TP Template Issue Number: 1 Issue Date: 09/06/2015			



TP118 – 0.0mbgl to 2.0mbgl



TP118 – 0.0mbgl to 2.0mbgl

APPENDIX D

Infiltration Test Data

Project No.: J5443
 Site: Southleigh Rd
 Test Location: TP103 Test 1
 Date 29/06/23

Endeavour Drilling Ltd
Infiltration Test

Analysis using method as described in
 BRE Digest 365 and
 CIRIA Report C697-The SUDS Manual

test pit top dimensions width (m) length (m)
 0.5 2.2

test pit base dimensions 0.5 2.2
 test pit depth 1.9 m

Infiltration rate (q) is very fast - unable to maintain head of water to complete test

depth to groundwater before adding water (m) = DRY

time (mins)	depth to water surface (m)	depth of water in pit (m)
0	1.8	0.1
0.5	1.9	0
1		1.9
1.5		1.9
2		1.9
2.5		1.9
3		1.9
3.5		1.9
4		1.9
5		1.9
6		1.9
8		1.9
10		1.9
15		1.9
20		1.9
25		1.9
30		1.9
40		1.9
50		1.9
60		1.9

From graph below:

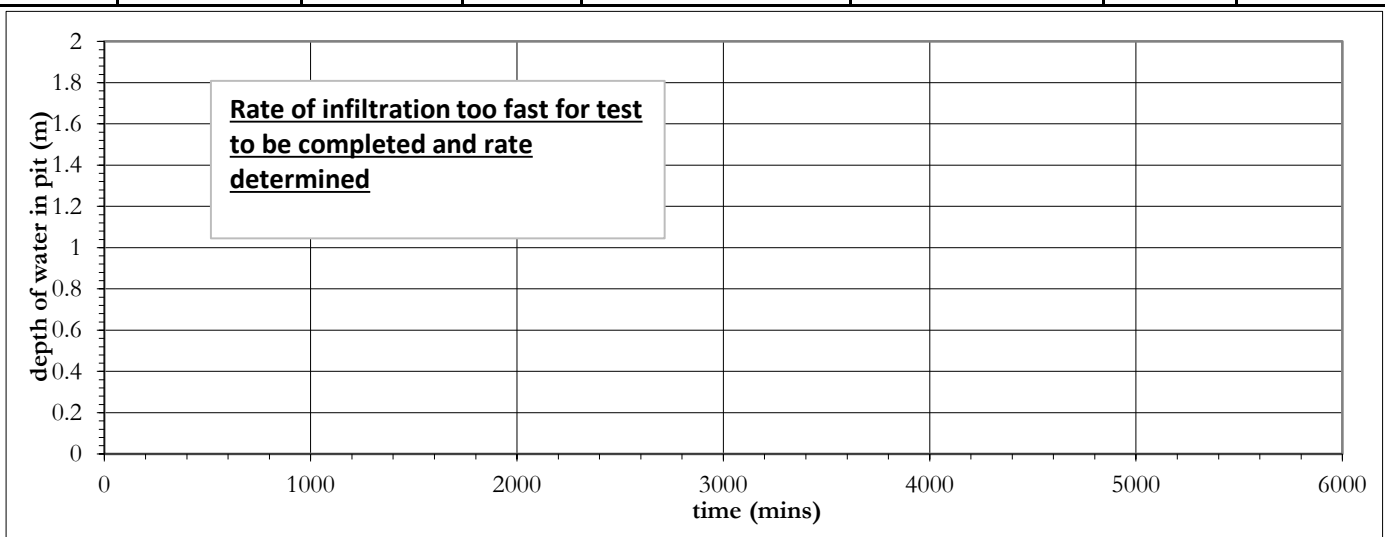
test start - 75% depth at

Unable to determine m water depth
 time is not determined

test end - 25% depth at

Unable to determine m water depth
 time is not determined

time (mins)	depth to water surface (m)	depth of water in pit (m)	time elapsed (mins)	volume of water lost (m3)	Area of walls and base at 50% drop (m2)	q (m/min)	q (m/h)



Project No.: J5443

Site: Southleigh Rd

Test Location: TP104 Test 1

Date 19/06/23

Endeavour Drilling Ltd

Infiltration Test

Analysis using method as described in
BRE Digest 365 and
CIRIA Report C697-The SUDS Manual

	width (m)	length (m)
test pit top dimensions	0.5	2
test pit base dimensions	0.5	2
test pit depth	2.8	m

Infiltration rate (q) is very low
depth to groundwater before adding water (m) = DRY

time (mins)	depth to water surface (m)	depth of water in pit (m)
0	1.74	1.06
0.5	1.75	1.05
1	1.75	1.05
1.5	1.75	1.05
2	1.74	1.06
2.5	1.74	1.06
3	1.74	1.06
3.5	1.74	1.06
4	1.74	1.06
5	1.74	1.06
6	1.74	1.06
8	1.74	1.06
10	1.74	1.06
15	1.74	1.06
20	1.74	1.06
25	1.74	1.06
30	1.74	1.06
40	1.74	1.06
50	1.74	1.06
60	1.73	1.07
90	1.73	1.07
120	1.73	1.07
150	1.73	1.07
180	1.73	1.07
210	1.73	1.07
240	1.73	1.07

From graph below:

test start - 75% depth at

Unable to determine m water depth

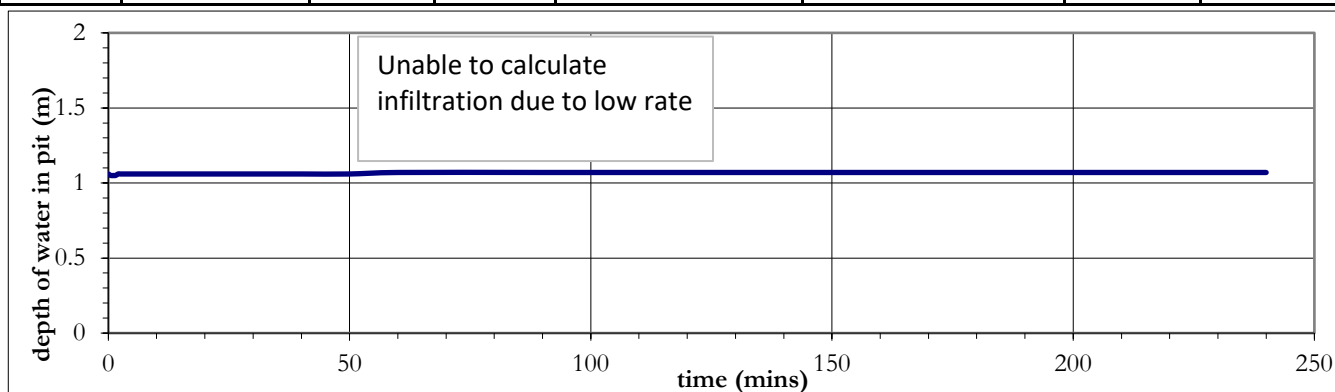
time is not determined

test end - 25% depth at

Unable to determine m water depth

time is not determined

time (mins)	depth to water surface (m)	depth of water in pit (m)	time elapsed (mins)	volume of water lost (m3)	Area of walls and base at 50% drop (m2)	q (m/min)	q (m/h)



Project No.: J5443

Site: Southleigh Rd

Test Location: TP106a Test 1

Date 27/06/23

Endeavour Drilling Ltd

infiltration Test

Analysis using method as described in

BRE Digest 365 and

CIRIA Report C697-The SUDS

Manual

	width (m)	length (m)
test pit top dimensions	0.5	2
test pit base dimensions	0.5	2
test pit depth	2.3	m

infiltration rate (q) is very low

depth to groundwater before adding water (m) = DRY

time (mins)	depth to water surface (m)	depth of water in pit (m)
0	1.15	1.15
0.5	1.15	1.15
1	1.15	1.15
1.5	1.16	1.14
2	1.16	1.14
2.5	1.16	1.14
3	1.16	1.14
3.5	1.17	1.13
4	1.17	1.13
5	1.17	1.13
6	1.17	1.13
8	1.18	1.12
10	1.19	1.11
15	1.19	1.11
20	1.19	1.11
25	1.19	1.11
30	1.19	1.11
40	1.19	1.11
50	1.19	1.11
60	1.19	1.11
90	1.19	1.11

From graph below:

test start - 75% depth at

Unable to determine m water depth

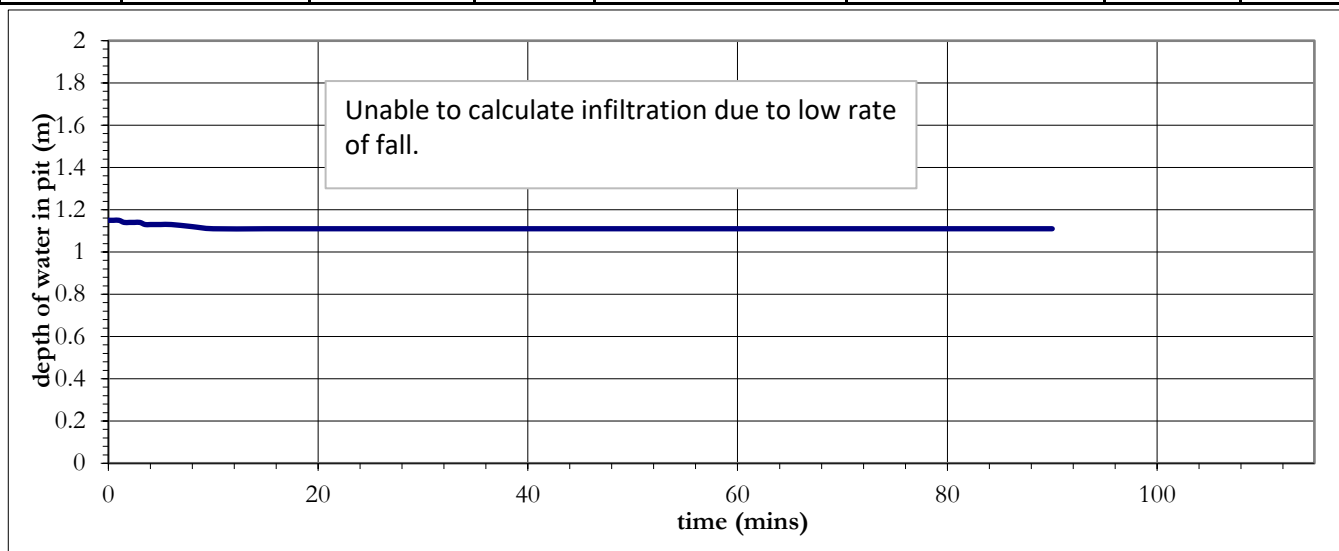
time is not determined

test end - 25% depth at

Unable to determine m water depth

time is not determined

time (mins)	depth to water surface (m)	depth of water in pit (m)	time elapsed (mins)	volume of water lost (m3)	Area of walls and base at 50% drop (m2)	q (m/min)	q (m/h)



APPENDIX E

SPT Hammer Calibration Certificates

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

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

SPT Hammer Ref: DT/0769
Test Date: 28/03/2023
Report Date: 28/03/2023
File Name: 0769.spt
Test Operator: BOB

Instrumented Rod Data

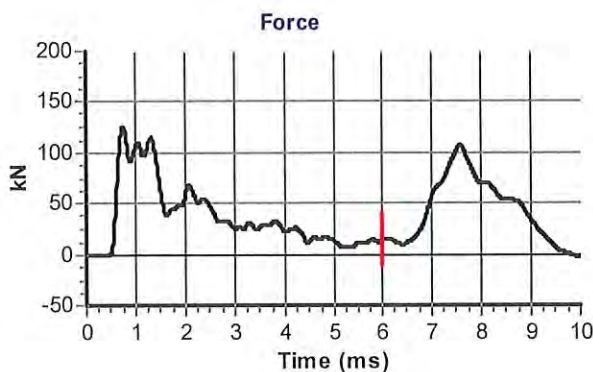
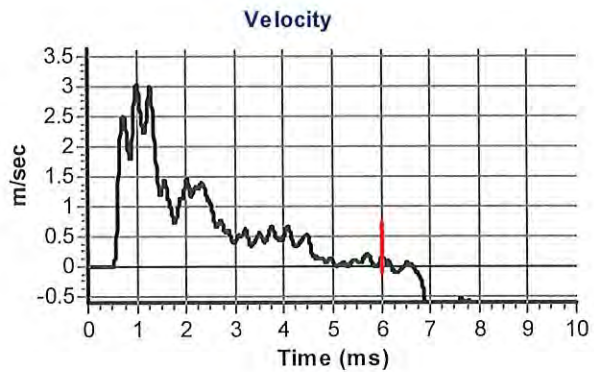
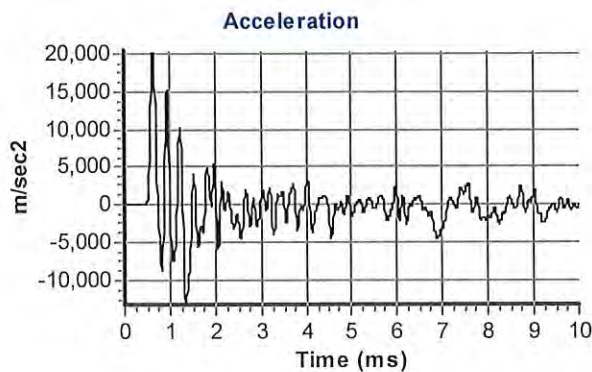
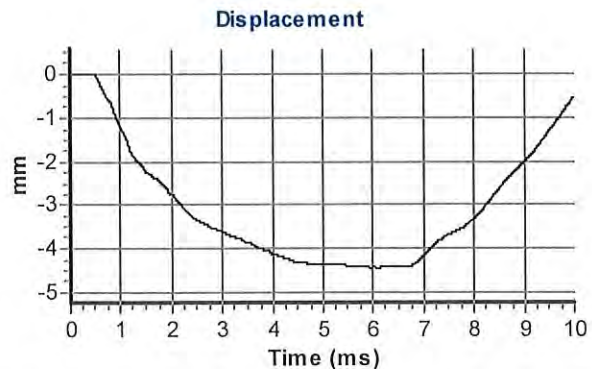
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.7
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 64786
Accelerometer No.2: 64789

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 14.7

Comments / Location

CHARLSWOOD



Calculations

Area of Rod A (mm^2): 996
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 310

Energy Ratio E_r (%): **66**

Signed: Bob

Title: Technician

The recommended calibration interval is 12 months

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

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

SPT Hammer Ref: DART488.
Test Date: 03/03/2023
Report Date: 03/03/2023
File Name: DART488..spt
Test Operator: RWS

Instrumented Rod Data

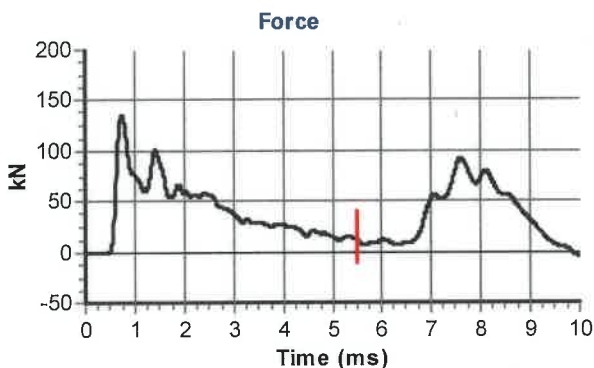
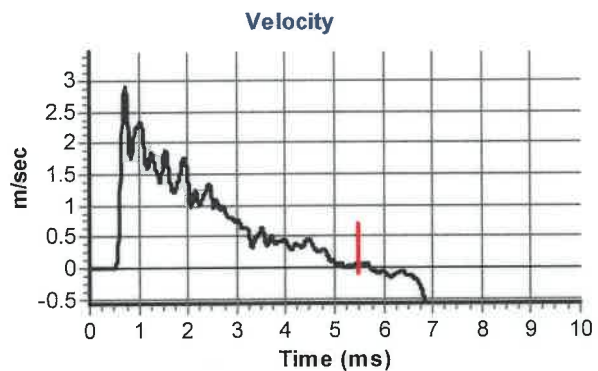
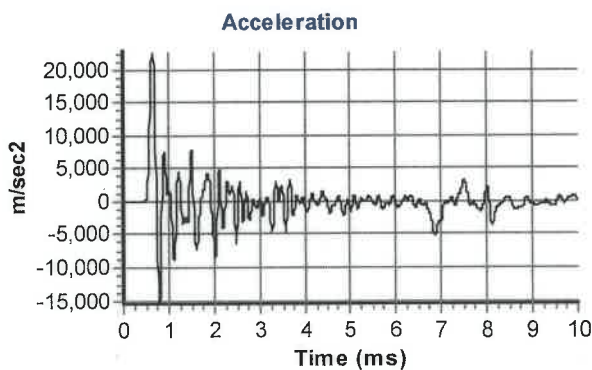
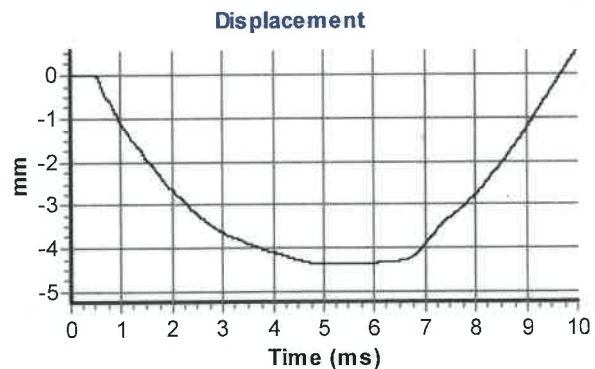
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.7
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 64786
Accelerometer No.2: 64789

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 14.7

Comments / Location

Southern Testing



Calculations

Area of Rod A (mm^2): 996
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 289

Energy Ratio E_r (%):

61

Signed: Bob Stewart

Title: Technician

The recommended calibration interval is 12 months

APPENDIX F

Groundwater Monitoring Results

Water Level Readings

Client: Stantec (UK) Ltd

Site: J5443 Southleigh Road, Havant

Date: 11th August 2023

Borehole No.	Install Depth (mbgl)	Dipped Depth (mbgl)	DATE	Water Level (mbgl)	Water Level (mAOD)
WS101	6.00	5.95	11.08.23	4.00	
WS103	4.00	4.00	11.08.23	2.30	
WS104	3.00	2.91	11.08.23	2.91	
WS105	1.80	1.80	11.08.23	1.05	
WS106	4.00	3.36	11.08.23	2.50	
WS107	3.50	3.23	11.08.23	1.97	

APPENDIX G

Geotechnical Laboratory Results

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51464-1
Date Sampled: 21/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client - MR

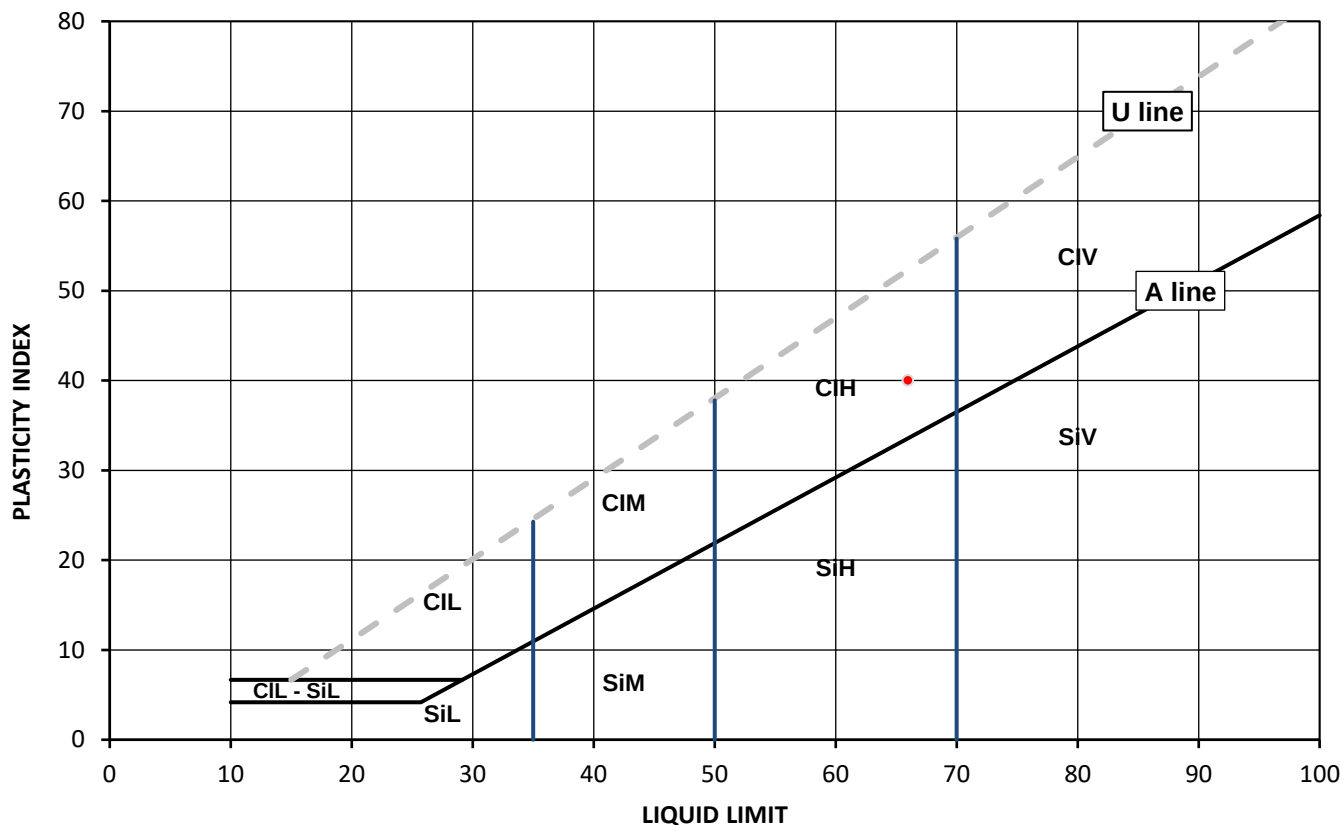
Test Results:

Laboratory Reference: 2783673
Hole No.: WS101
Sample Reference: Not Given
Sample Description: Yellowish brown slightly gravelly CLAY

Depth Top [m]: 2.50
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
24	66	26	40	99



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

Remarks:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51464-1
Date Sampled: 28/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client - MR

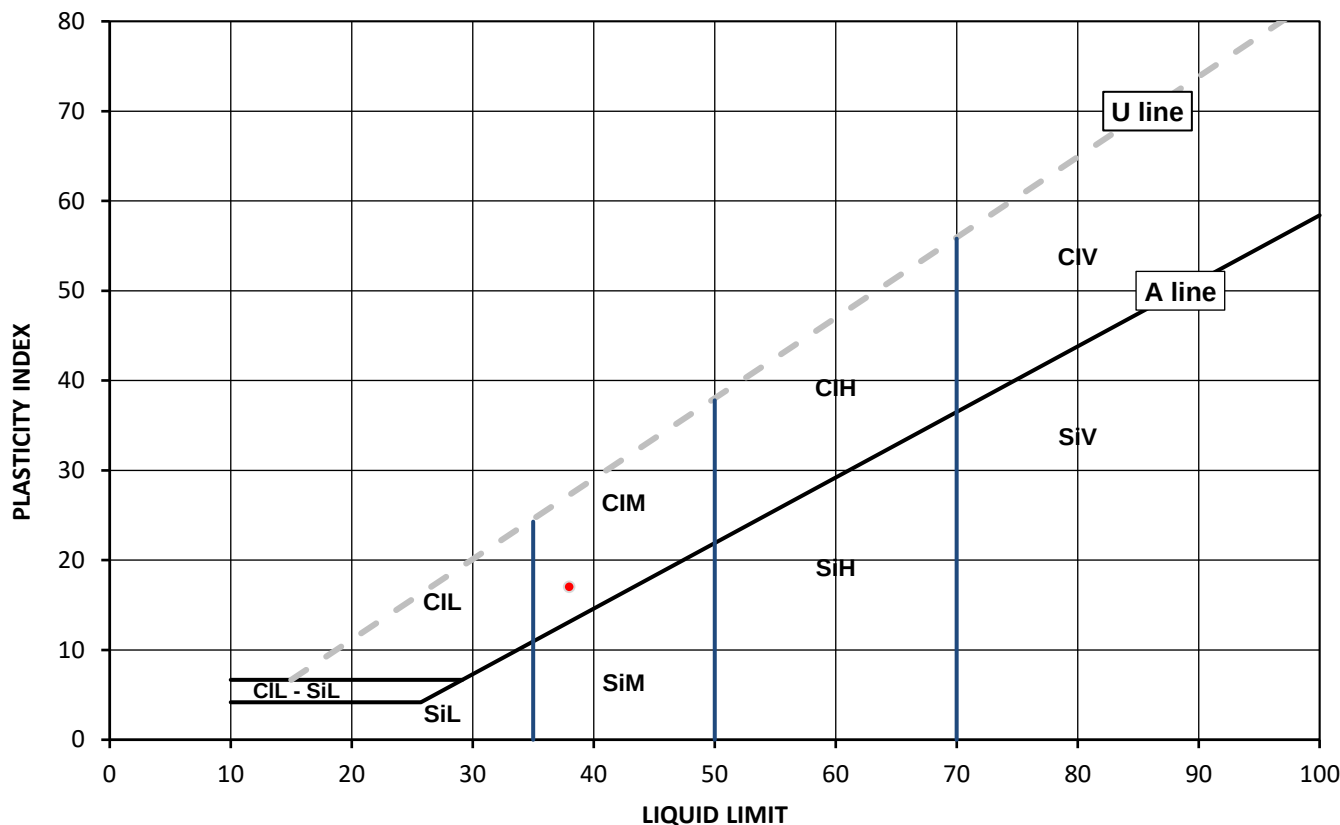
Test Results:

Laboratory Reference: 2783674
Hole No.: WS102
Sample Reference: Not Given
Sample Description: Brown slightly gravelly sandy CLAY

Depth Top [m]: 1.30
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
17	38	21	17	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	O append to classification for organic material (eg CIHO)

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

Remarks:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51464-1
Date Sampled: 26/06/2023
Date Received: 15/08/2023
Date Tested: 23/08/2023
Sampled By: Client - MR

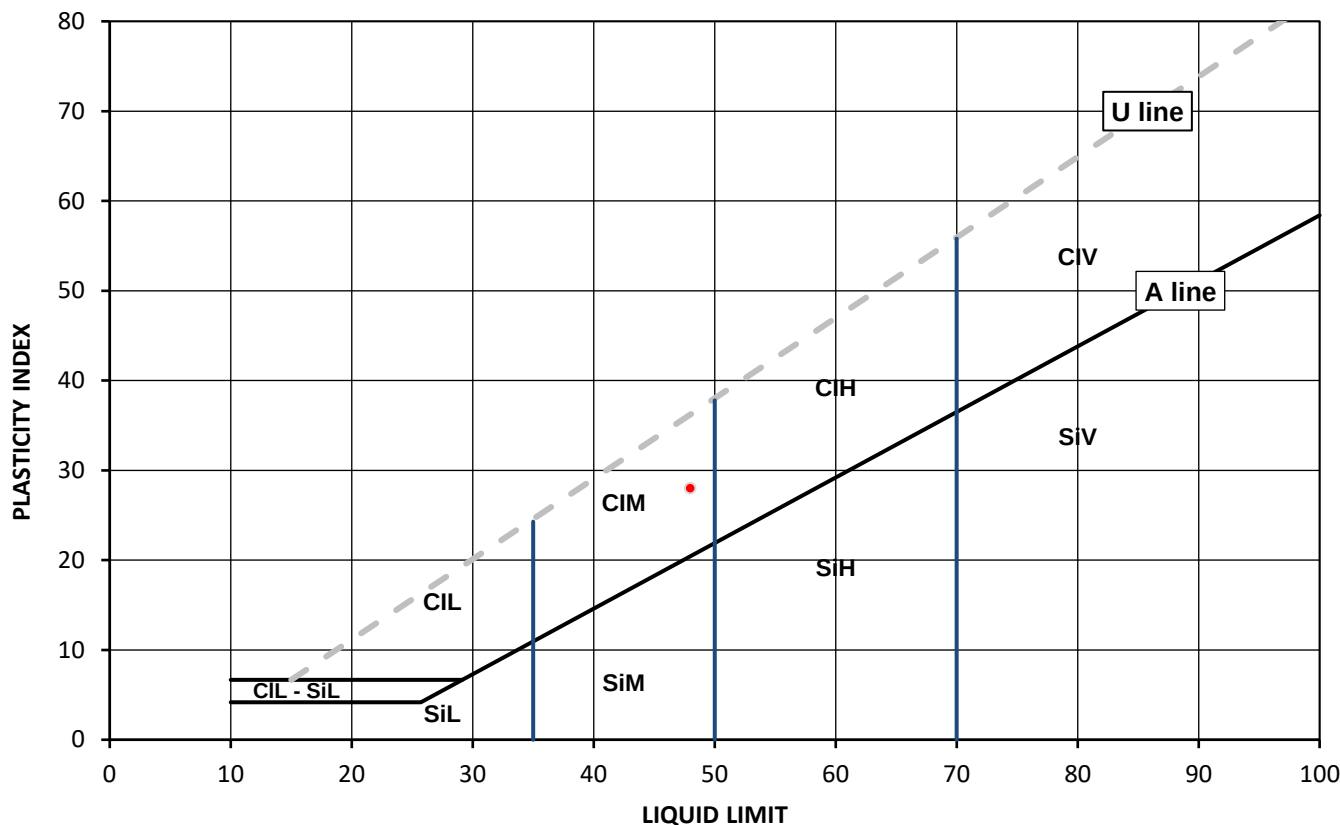
Test Results:

Laboratory Reference: 2783675
Hole No.: WS103
Sample Reference: Not Given
Sample Description: Orangish brown gravelly slightly sandy CLAY

Depth Top [m]: 1.30
Depth Base [m]: 1.70
Sample Type: B

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
12	48	20	28	49



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:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51464-1
Date Sampled: 21/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client - MR

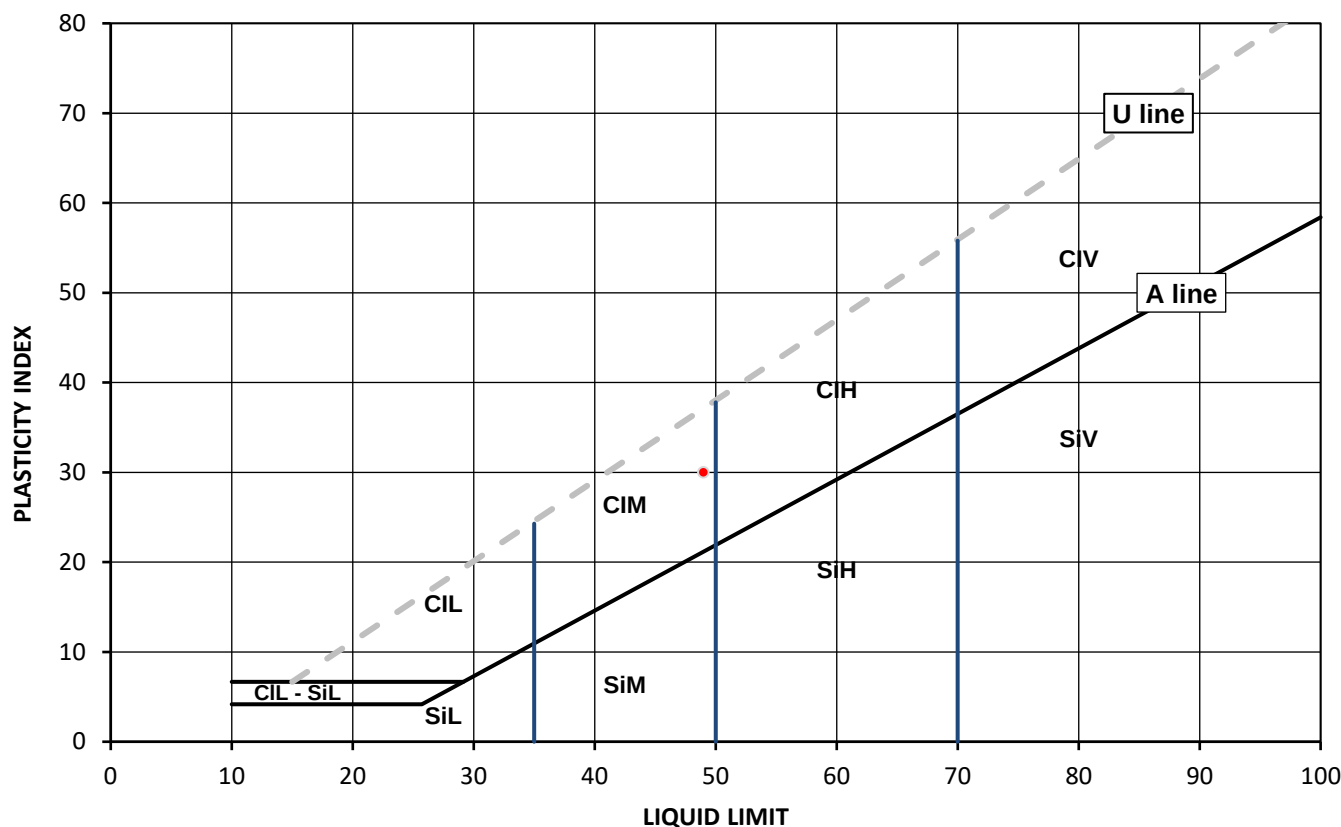
Test Results:

Laboratory Reference: 2783676
Hole No.: WS104
Sample Reference: Not Given
Sample Description: Yellowish brown slightly sandy CLAY

Depth Top [m]: 1.70
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
22	49	19	30	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
	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:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51464-1
Date Sampled: 28/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client - MR

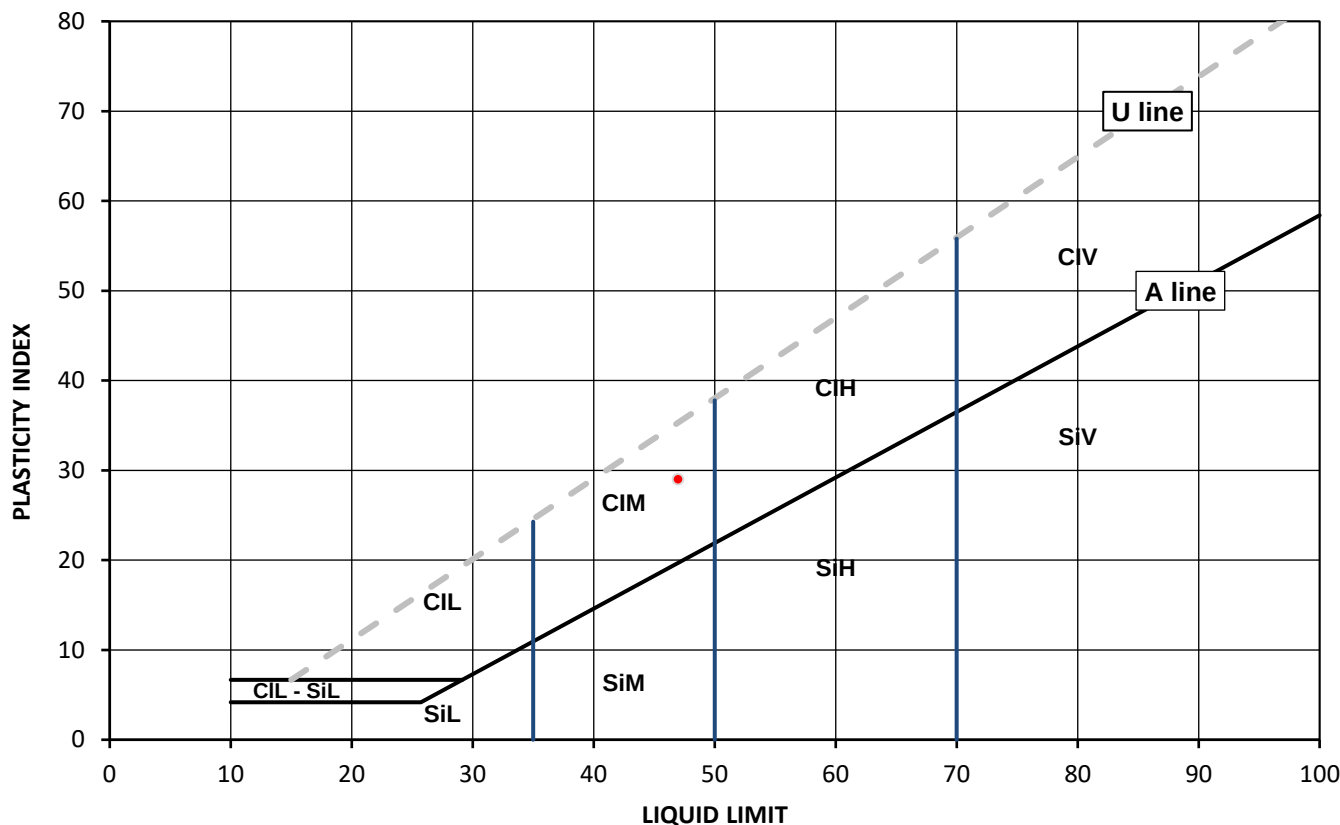
Test Results:

Laboratory Reference: 2783677
Hole No.: WS107
Sample Reference: Not Given
Sample Description: Yellowish brown slightly gravelly slightly sandy CLAY

Depth Top [m]: 1.40
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	47	18	29	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
	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:

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51464-1
Date Sampled: 27/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client - MR

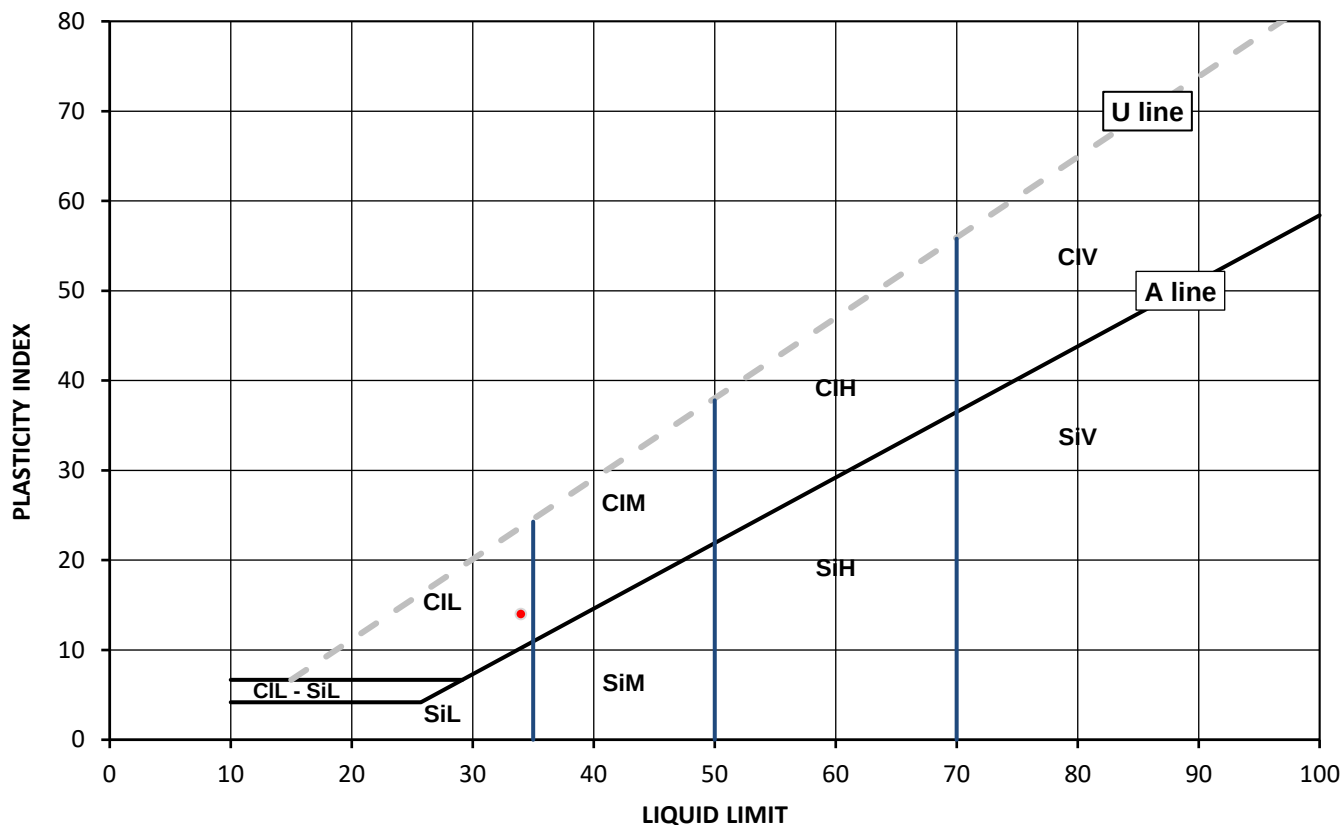
Test Results:

Laboratory Reference: 2783678
Hole No.: WS108
Sample Reference: Not Given
Sample Description: Yellowish brown slightly gravelly very sandy CLAY

Depth Top [m]: 1.70
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
26	34	20	14	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

Remarks:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51464-1
Date Sampled: 28/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client - MR

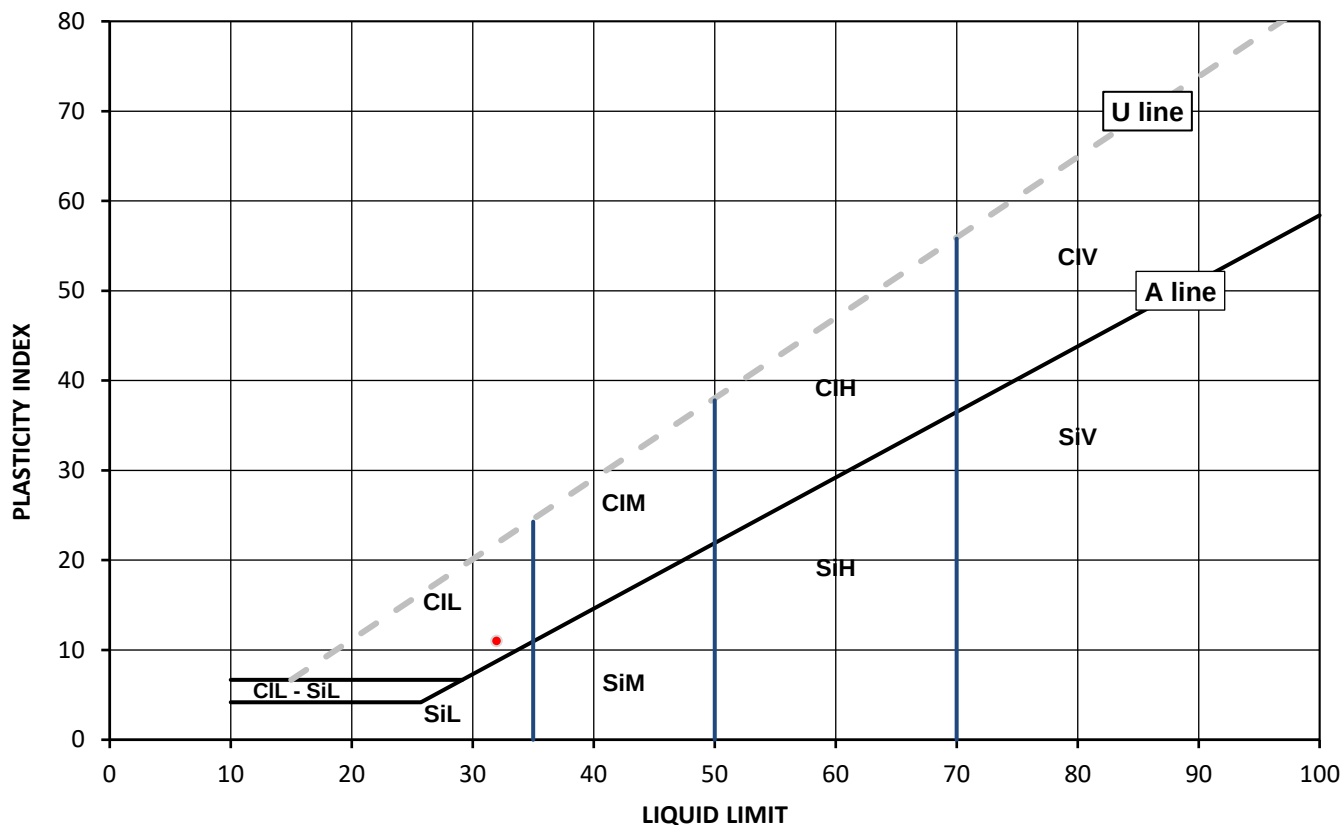
Test Results:

Laboratory Reference: 2783679
Hole No.: WS109
Sample Reference: Not Given
Sample Description: Yellowish brown slightly gravelly very sandy CLAY

Depth Top [m]: 2.00
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
24	32	21	11	99



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

Remarks:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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: Endeavour Drilling
Client Address: Unit 7 Mapledean Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC Southleigh Road

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

Client Reference: J5443
Job Number: 23-51464-1
Date Sampled: 21/06 - 28/06/2023
Date Received: 15/08/2023
Date Tested: 22/08 - 23/08/2023
Sampled By: Client - MR

Testing carried out at i2 Analytical Limited, ul. Pionierow, 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 17892-1 [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			
2783673	WS101	Not Given	2.50	Not Given	D	Yellowish brown slightly gravelly CLAY	Atterberg 4 Point	24		99	66	26	40						
2783674	WS102	Not Given	1.30	Not Given	D	Brown slightly gravelly sandy CLAY	Atterberg 4 Point	17		80	38	21	17						
2783675	WS103	Not Given	1.30	1.70	B	Orangish brown gravelly slightly sandy CLAY	Atterberg 4 Point	12		49	48	20	28						
2783676	WS104	Not Given	1.70	Not Given	D	Yellowish brown slightly sandy CLAY	Atterberg 4 Point	22		100	49	19	30						
2783677	WS107	Not Given	1.40	Not Given	D	Yellowish brown slightly gravelly slightly sandy CLAY	Atterberg 4 Point	16		97	47	18	29						
2783678	WS108	Not Given	1.70	Not Given	D	Yellowish brown slightly gravelly very sandy CLAY	Atterberg 4 Point	26		97	34	20	14						
2783679	WS109	Not Given	2.00	Not Given	D	Yellowish brown slightly gravelly very sandy CLAY	Atterberg 4 Point	24		99	32	21	11						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledean Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD

Contact: Matthew Rust
Site Address: STANTEC Southleigh Road

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

Client Reference: J5443
Job Number: 23-51464-1
Date Sampled: 21/06 - 28/06/2023
Date Received: 15/08/2023
Date Tested: 22/08 - 23/08/2023
Sampled By: Client - MR

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							
2783673	WS101	Not Given	2.50	Not Given	D	Yellowish brown slightly gravelly CLAY		24	Sample was quartered, oven dried at 106.2 °C			
2783674	WS102	Not Given	1.30	Not Given	D	Brown slightly gravelly sandy CLAY		17	Sample was quartered, oven dried at 108.1 °C			
2783675	WS103	Not Given	1.30	1.70	B	Orangish brown gravelly slightly sandy CLAY		12	Sample was quartered, oven dried at 108.1 °C			
2783676	WS104	Not Given	1.70	Not Given	D	Yellowish brown slightly sandy CLAY		22	Sample was quartered, oven dried at 108.1 °C			
2783677	WS107	Not Given	1.40	Not Given	D	Yellowish brown slightly gravelly slightly sandy CLAY		16	Sample was quartered, oven dried at 106.2 °C			
2783678	WS108	Not Given	1.70	Not Given	D	Yellowish brown slightly gravelly very sandy CLAY		26	Sample was quartered, oven dried at 108.1 °C			
2783679	WS109	Not Given	2.00	Not Given	D	Yellowish brown slightly gravelly very sandy CLAY		24	Sample was quartered, oven dried at 108.1 °C			

Comments:

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:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 29/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

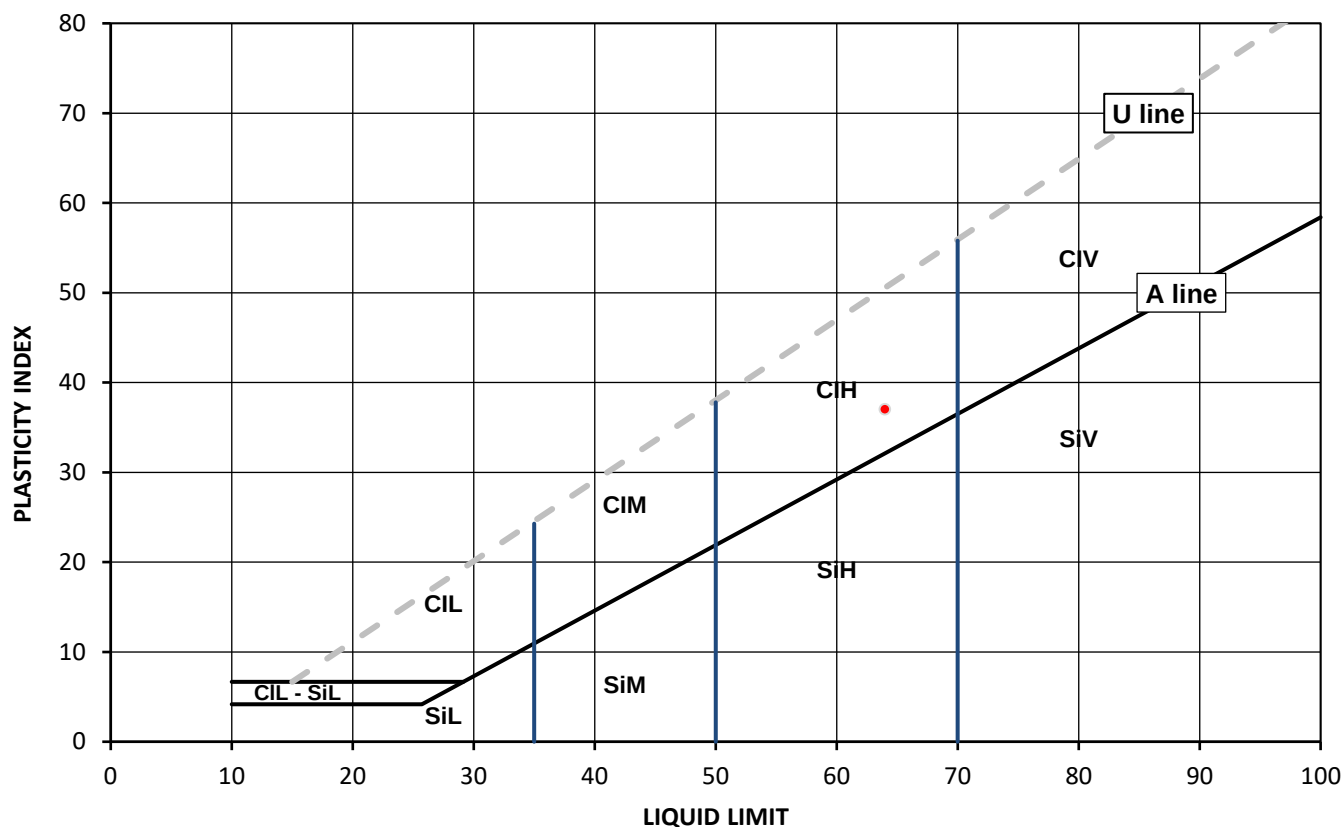
Test Results:

Laboratory Reference: 2784000
Hole No.: TP101
Sample Reference: Not Given
Sample Description: Brownish grey CLAY

Depth Top [m]: 2.00
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
30	64	27	37	100



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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.

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

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 29/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

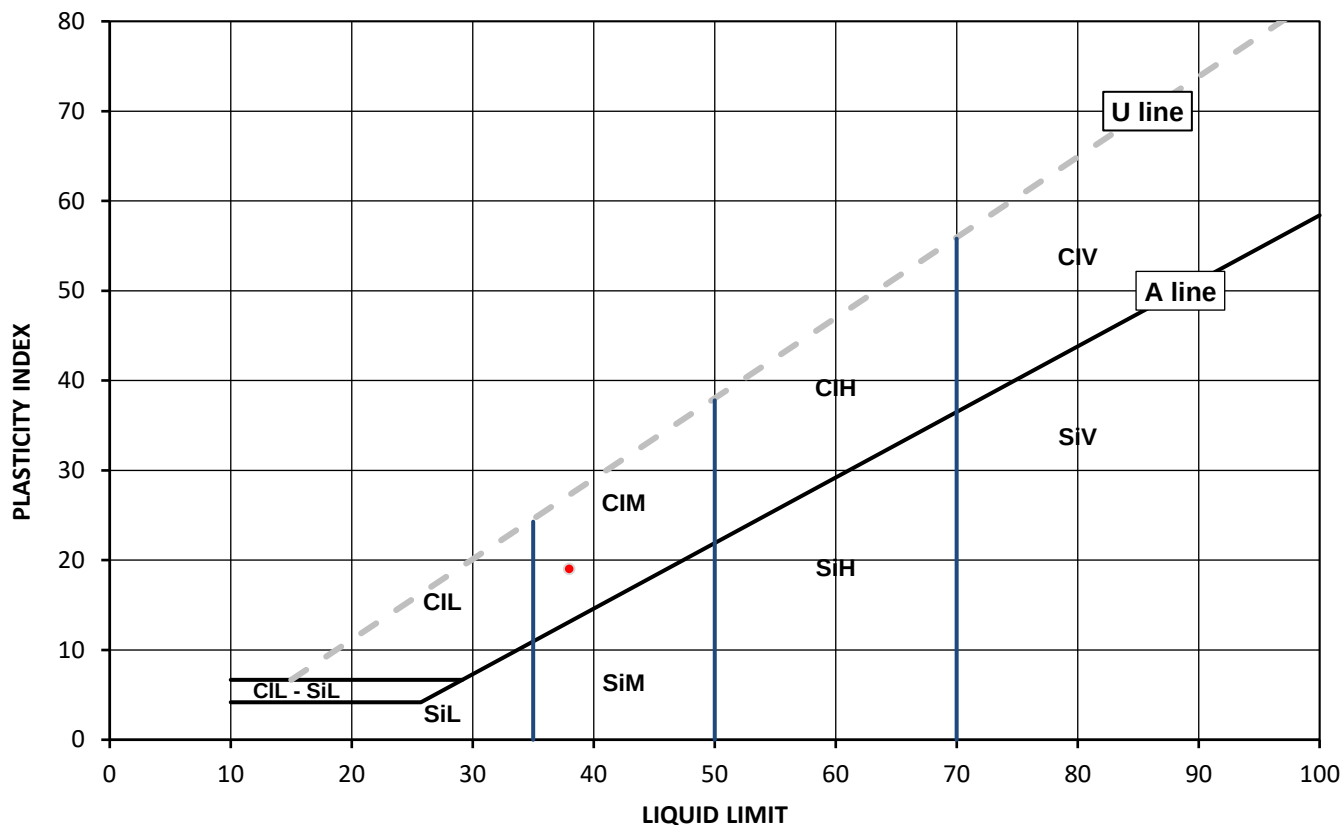
Test Results:

Laboratory Reference: 2784002
Hole No.: TP103
Sample Reference: Not Given
Sample Description: Yellowish brown slightly gravelly sandy CLAY

Depth Top [m]: 0.60
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
15	38	19	19	97



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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.

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

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

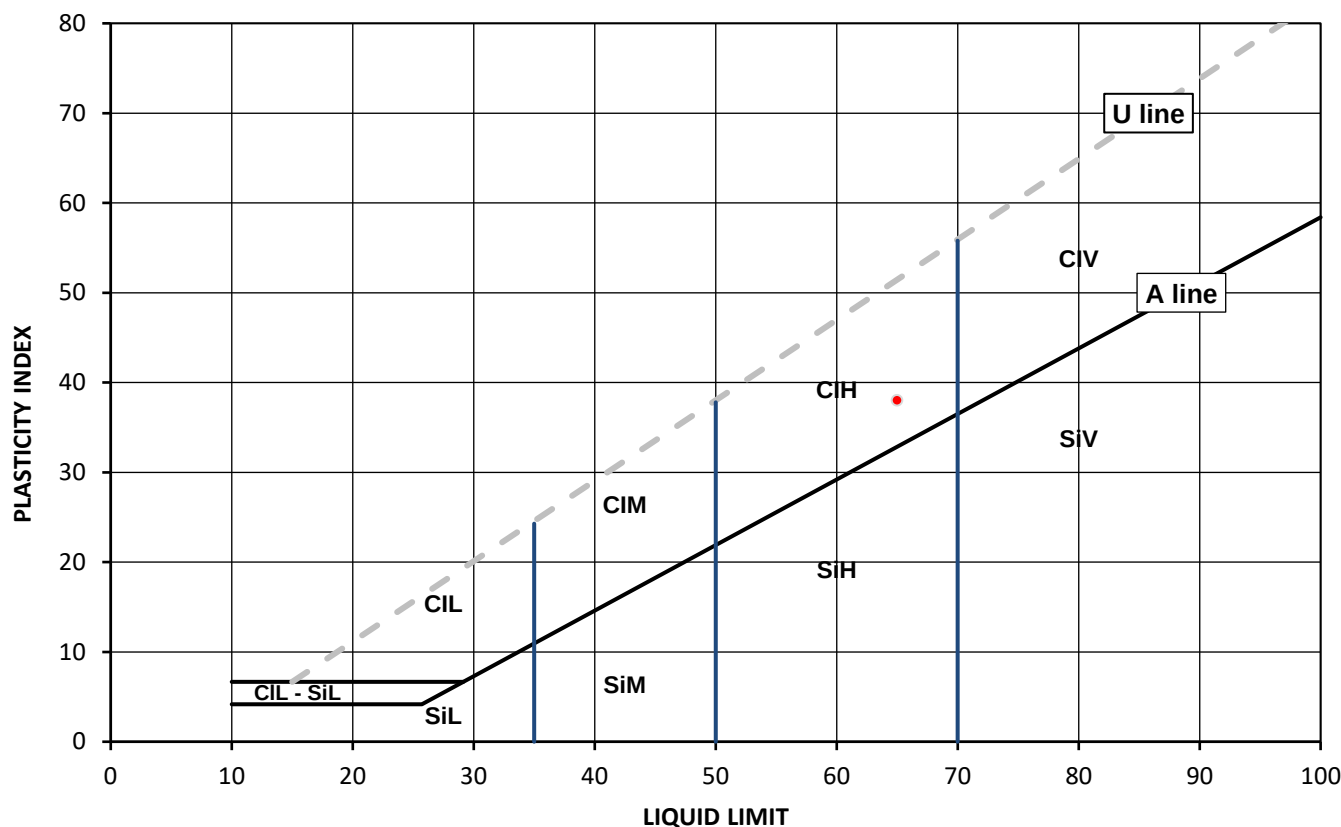
Test Results:

Laboratory Reference: 2784005
Hole No.: TP104
Sample Reference: Not Given
Sample Description: Yellowish brown gravelly 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
18	65	27	38	54



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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 27/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

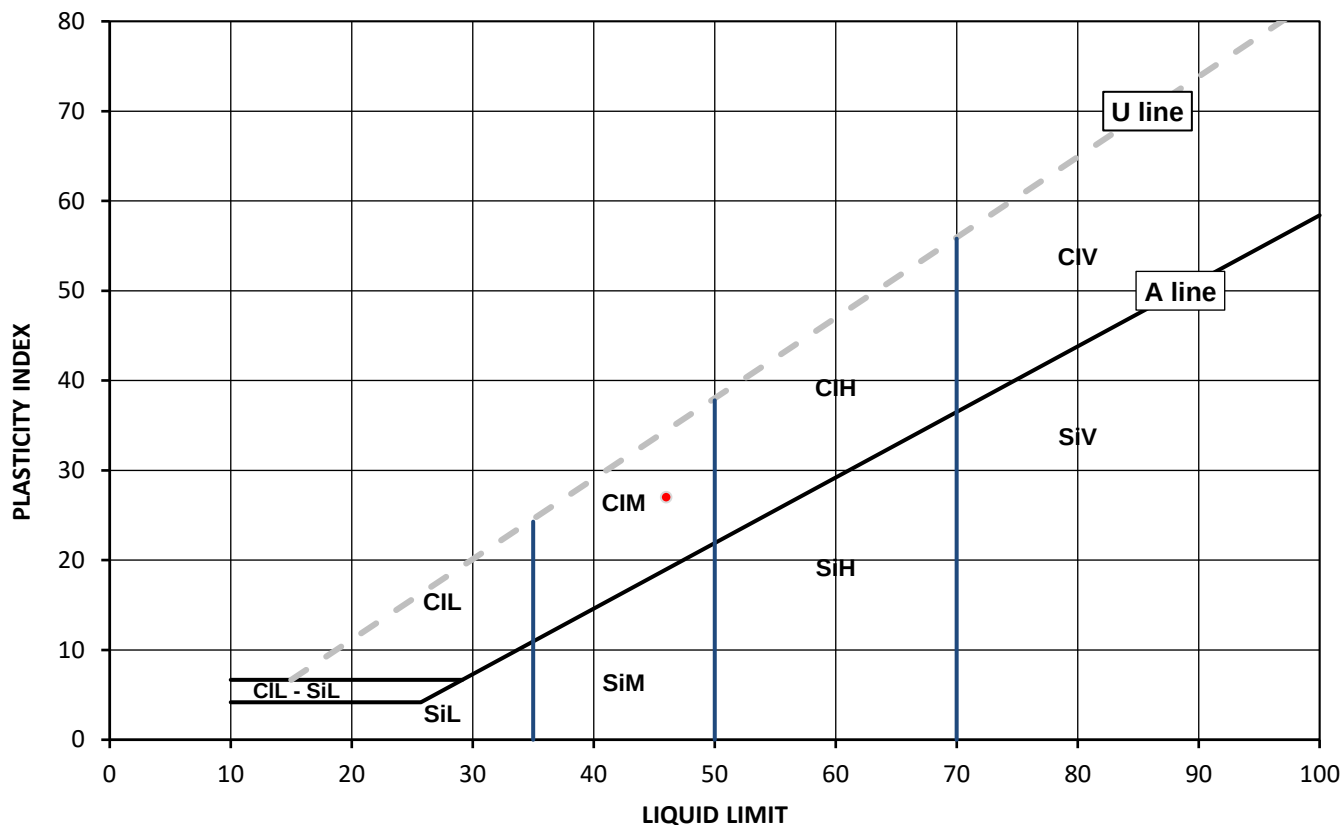
Test Results:

Laboratory Reference: 2784008
Hole No.: TP105
Sample Reference: Not Given
Sample Description: Yellowish brown slightly gravelly slightly sandy CLAY

Depth Top [m]: 1.90
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
21	46	19	27	83



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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 27/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

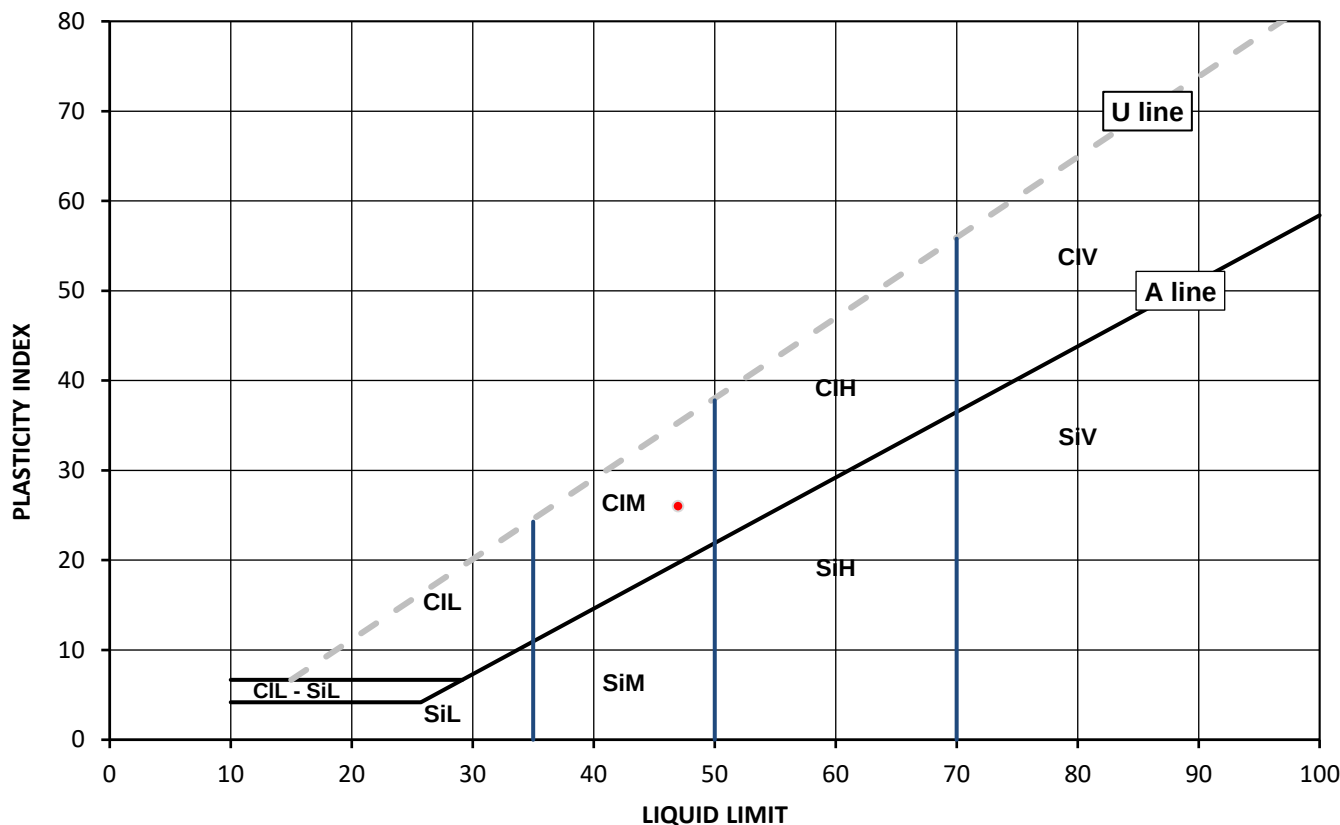
Test Results:

Laboratory Reference: 2784009
Hole No.: TP106
Sample Reference: Not Given
Sample Description: Light brown slightly sandy CLAY

Depth Top [m]: 0.80
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
26	47	21	26	100



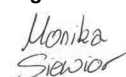
Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	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

Remarks:

Signed:



Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 31/07/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

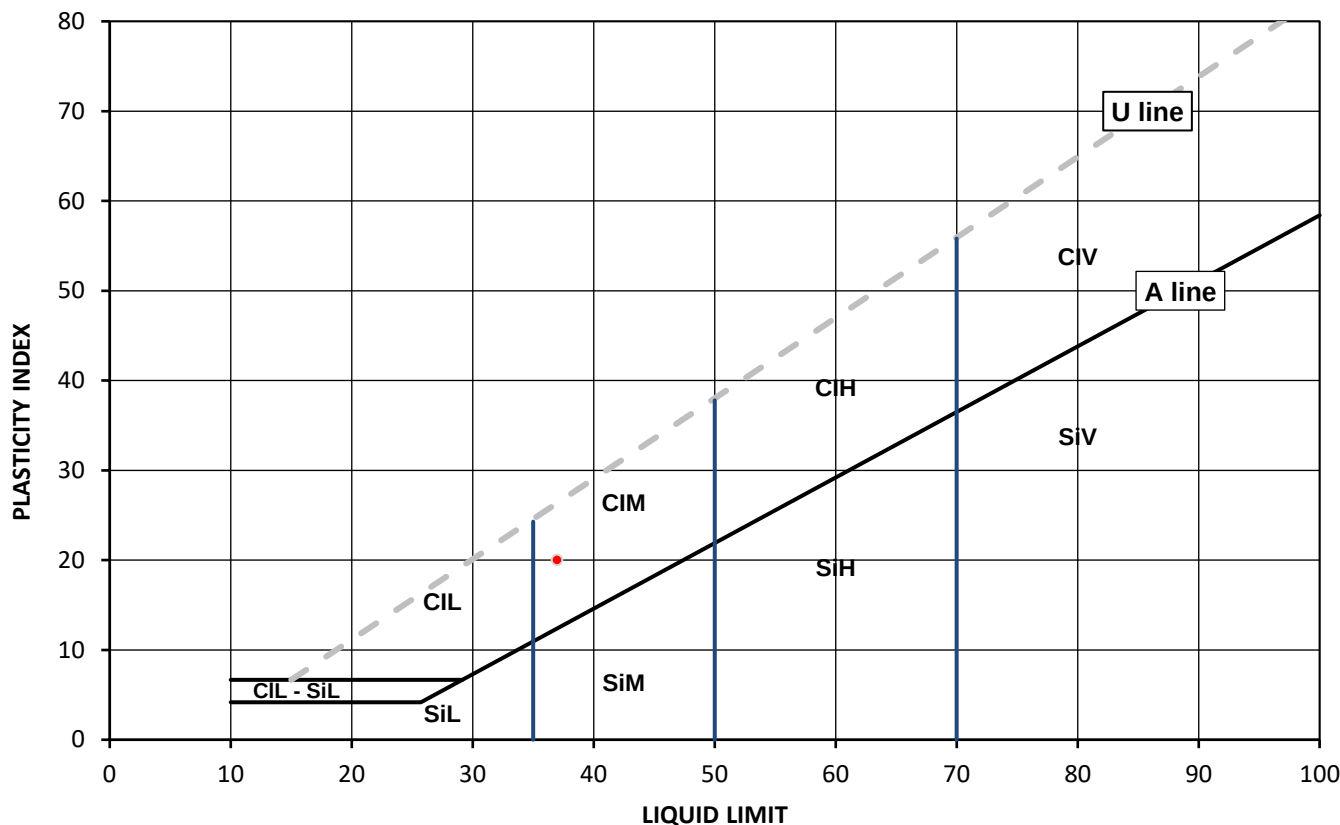
Test Results:

Laboratory Reference: 2784011
Hole No.: TP107
Sample Reference: Not Given
Sample Description: Yellowish brown sandy CLAY

Depth Top [m]: 2.80
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
32	37	17	20	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
	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:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 31/07/2023
Date Received: 15/08/2023
Date Tested: 23/08/2023
Sampled By: Client- MR

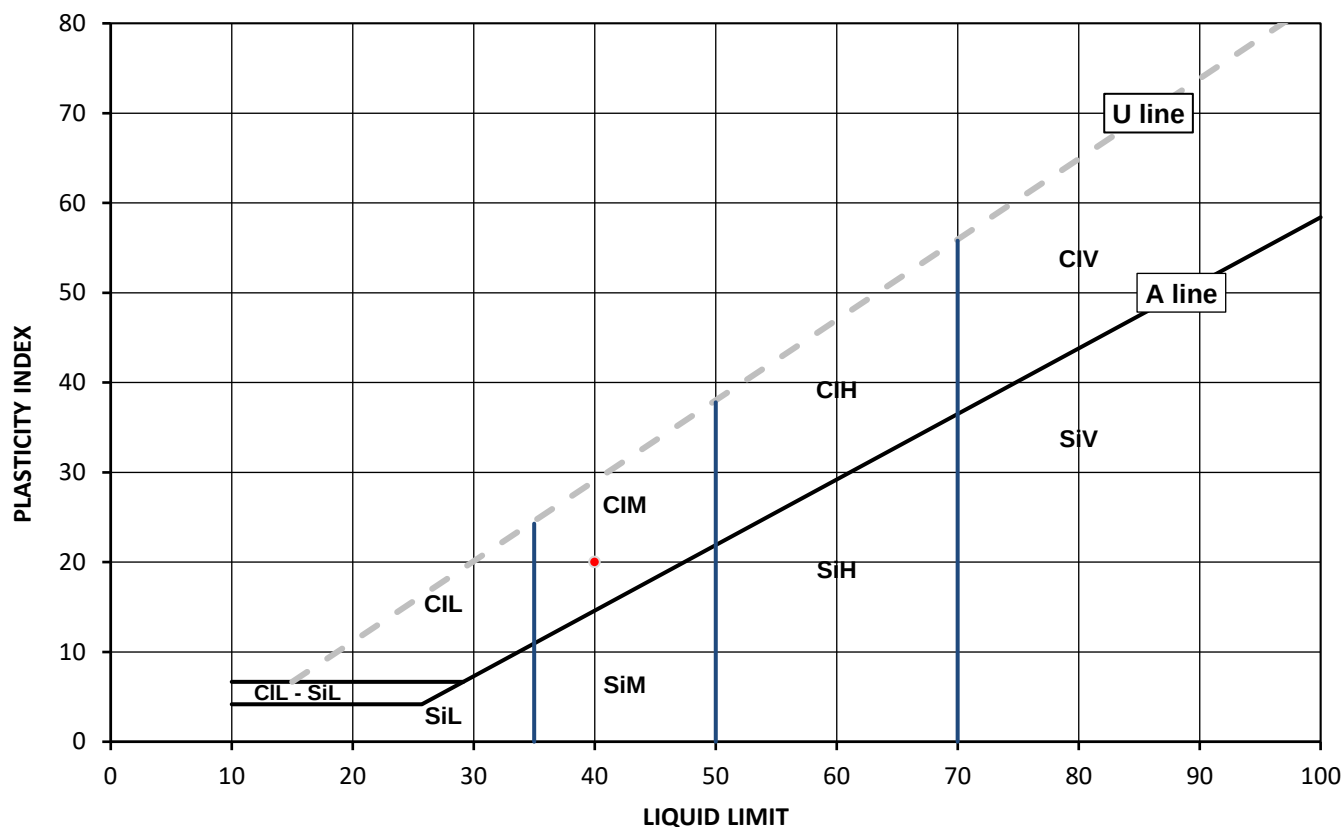
Test Results:

Laboratory Reference: 2784012
Hole No.: TP108
Sample Reference: Not Given
Sample Description: Yellowish brown slightly gravelly sandy CLAY

Depth Top [m]: 1.10
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
21	40	20	20	97



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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 29/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

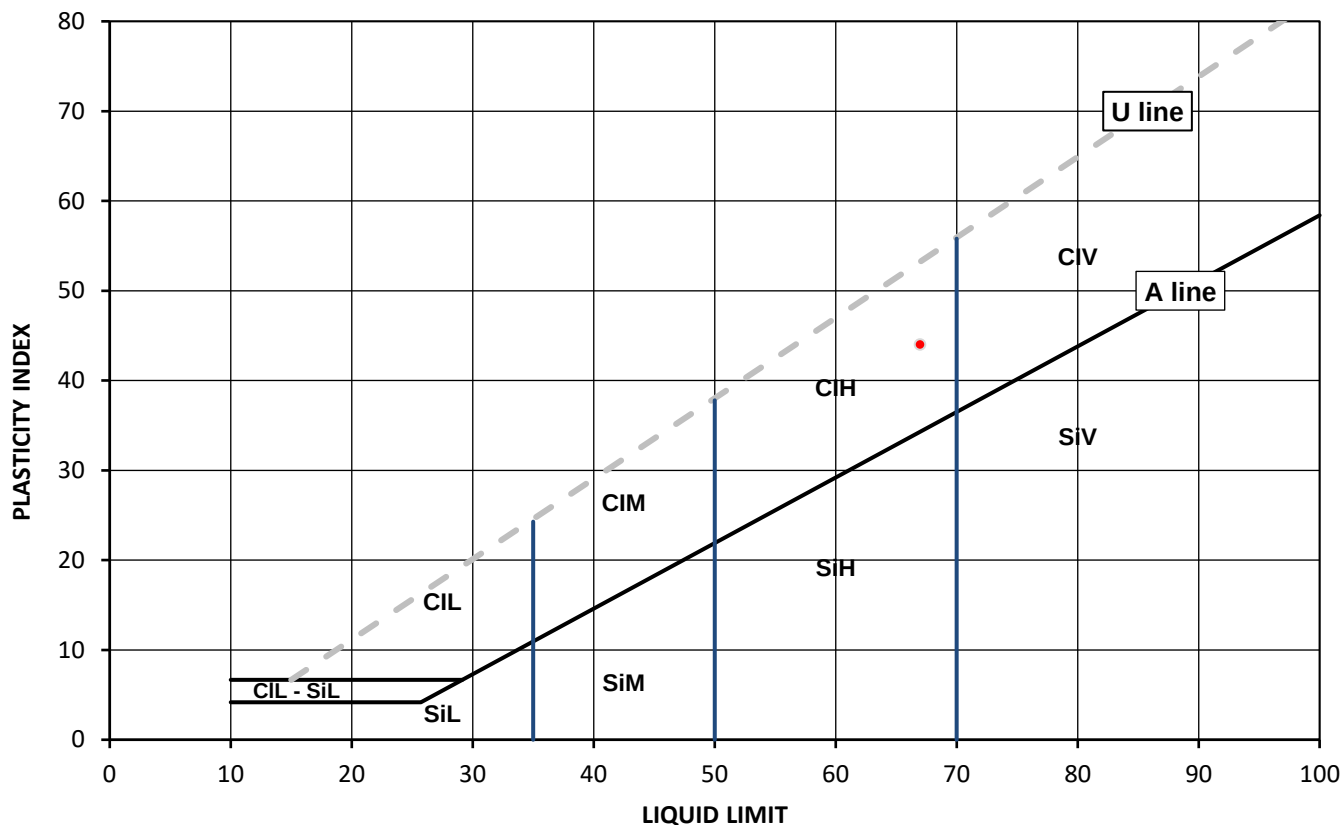
Test Results:

Laboratory Reference: 2784016
Hole No.: TP110
Sample Reference: Not Given
Sample Description: Brown CLAY

Depth Top [m]: 1.10
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
27	67	23	44	100



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	O Organic append to classification for organic material (eg CIHO)

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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06/2023
Date Received: 15/08/2023
Date Tested: 23/08/2023
Sampled By: Client- MR

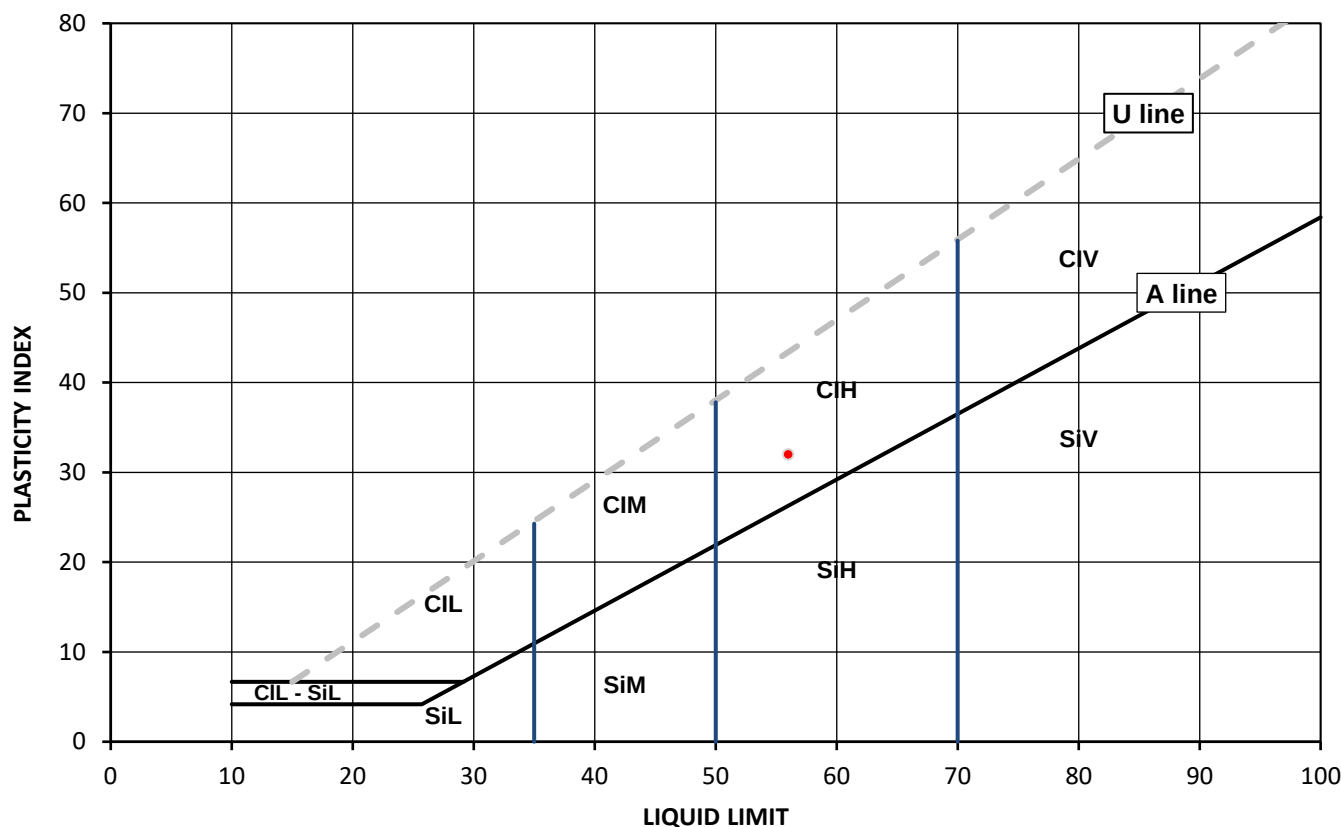
Test Results:

Laboratory Reference: 2784020
Hole No.: TP112
Sample Reference: Not Given
Sample Description: Yellowish brown gravelly slightly sandy CLAY

Depth Top [m]: 2.00
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
12	56	24	32	40



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
		50 to 70
		exceeding 70
		append to classification for organic material (eg CIHO)

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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06/2023
Date Received: 15/08/2023
Date Tested: 23/08/2023
Sampled By: Client- MR

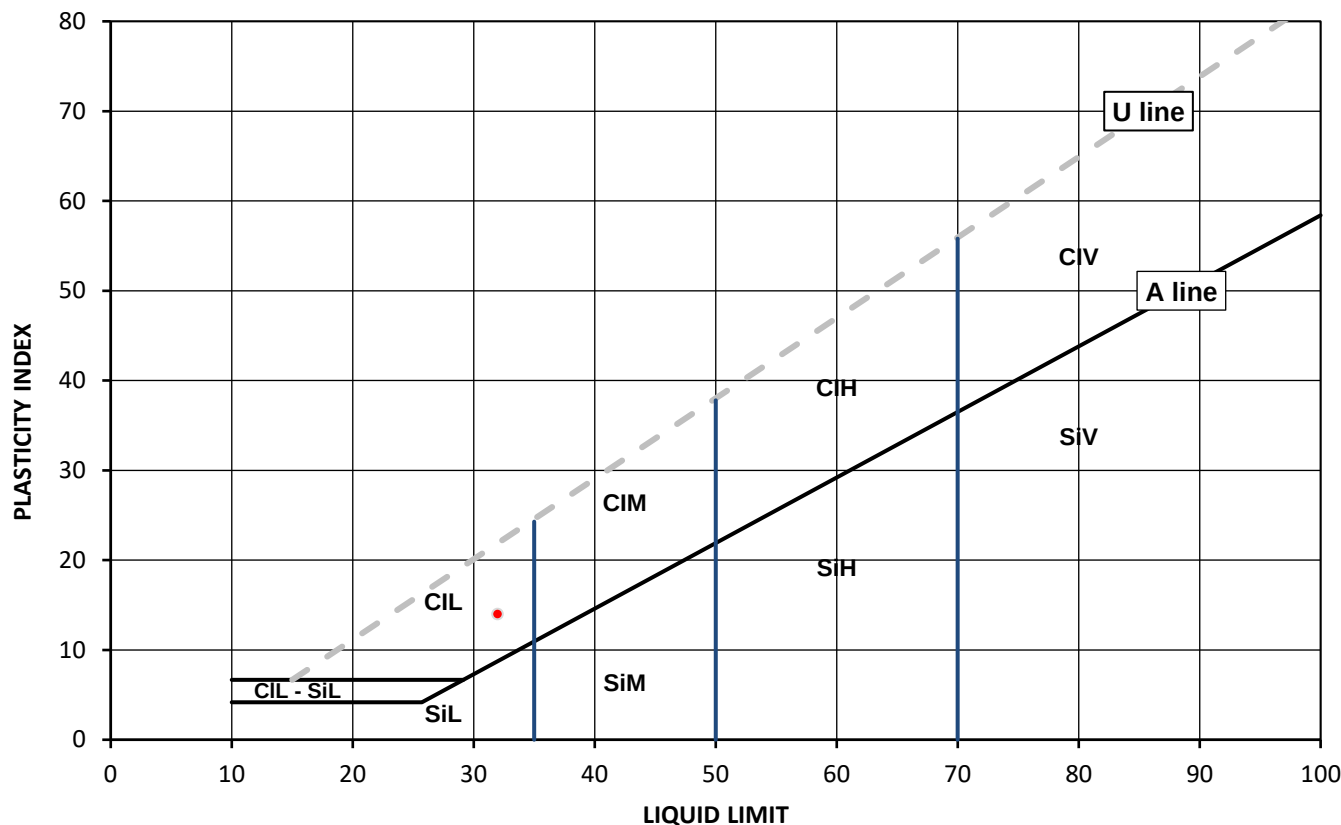
Test Results:

Laboratory Reference: 2784023
Hole No.: TP113
Sample Reference: Not Given
Sample Description: Brownish grey very sandy CLAY

Depth Top [m]: 2.80
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
24	32	18	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	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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 28/06/2023
Date Received: 15/08/2023
Date Tested: 23/08/2023
Sampled By: Client- MR

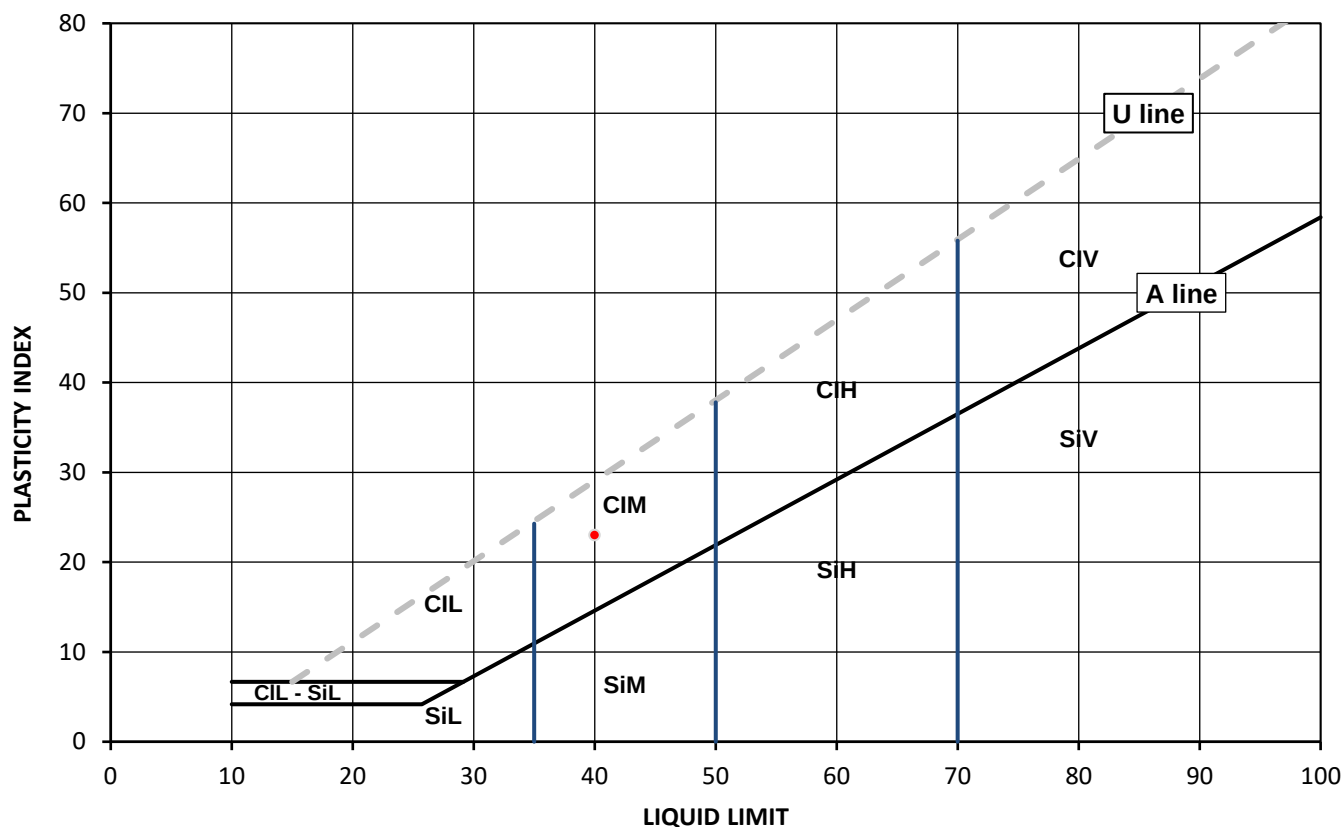
Test Results:

Laboratory Reference: 2784025
Hole No.: TP114
Sample Reference: Not Given
Sample Description: Yellowish brown sandy CLAY

Depth Top [m]: 1.90
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
27	40	17	23	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
	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:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 31/07/2023
Date Received: 15/08/2023
Date Tested: 23/08/2023
Sampled By: Client- MR

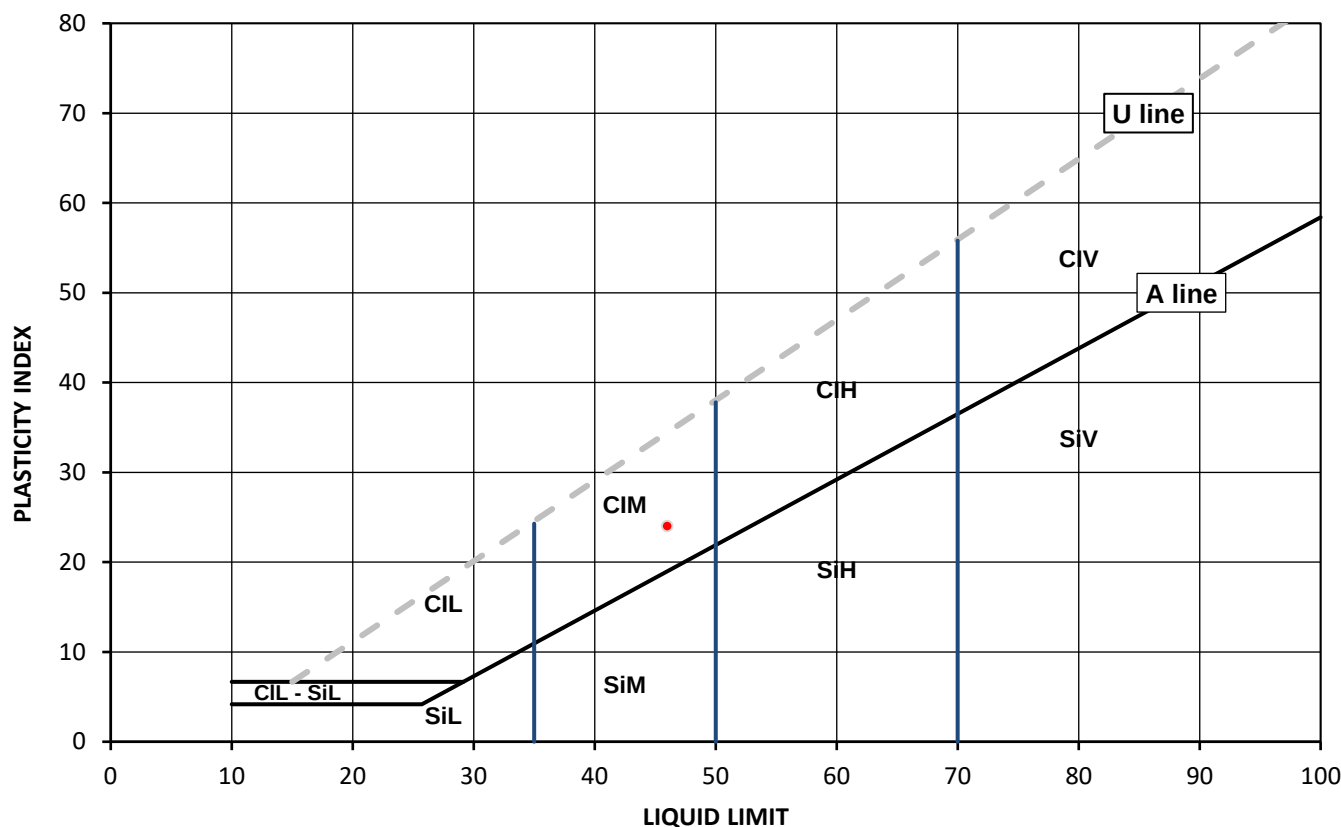
Test Results:

Laboratory Reference: 2784026
Hole No.: TP115
Sample Reference: Not Given
Sample Description: Yellowish brown slightly sandy CLAY

Depth Top [m]: 1.10
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
25	46	22	24	100



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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 31/07/2023
Date Received: 15/08/2023
Date Tested: 28/08/2023
Sampled By: Client- MR

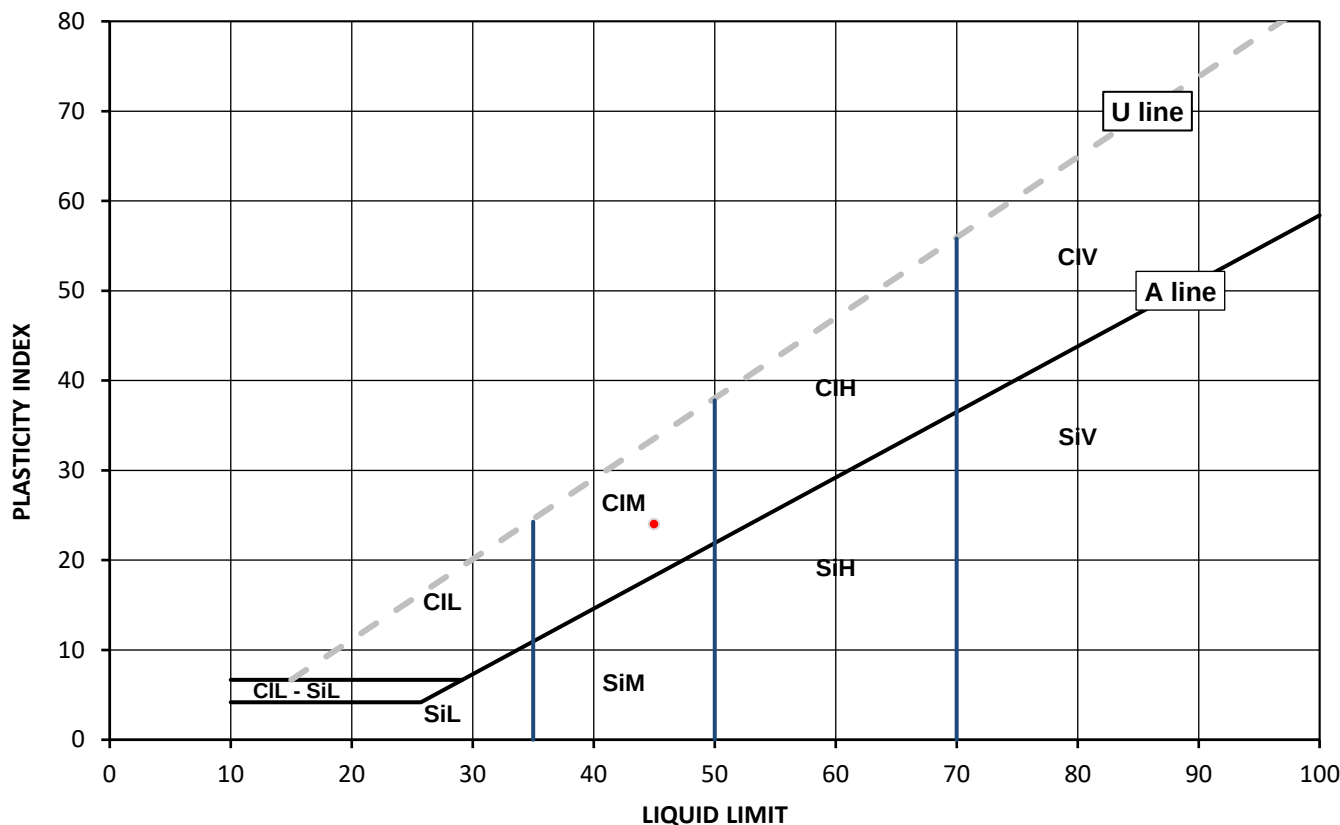
Test Results:

Laboratory Reference: 2784029
Hole No.: TP117
Sample Reference: Not Given
Sample Description: Brown slightly gravelly slightly sandy CLAY

Depth Top [m]: 1.20
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
16	45	21	24	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:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.

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

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 28/06/2023
Date Received: 15/08/2023
Date Tested: 23/08/2023
Sampled By: Client- MR

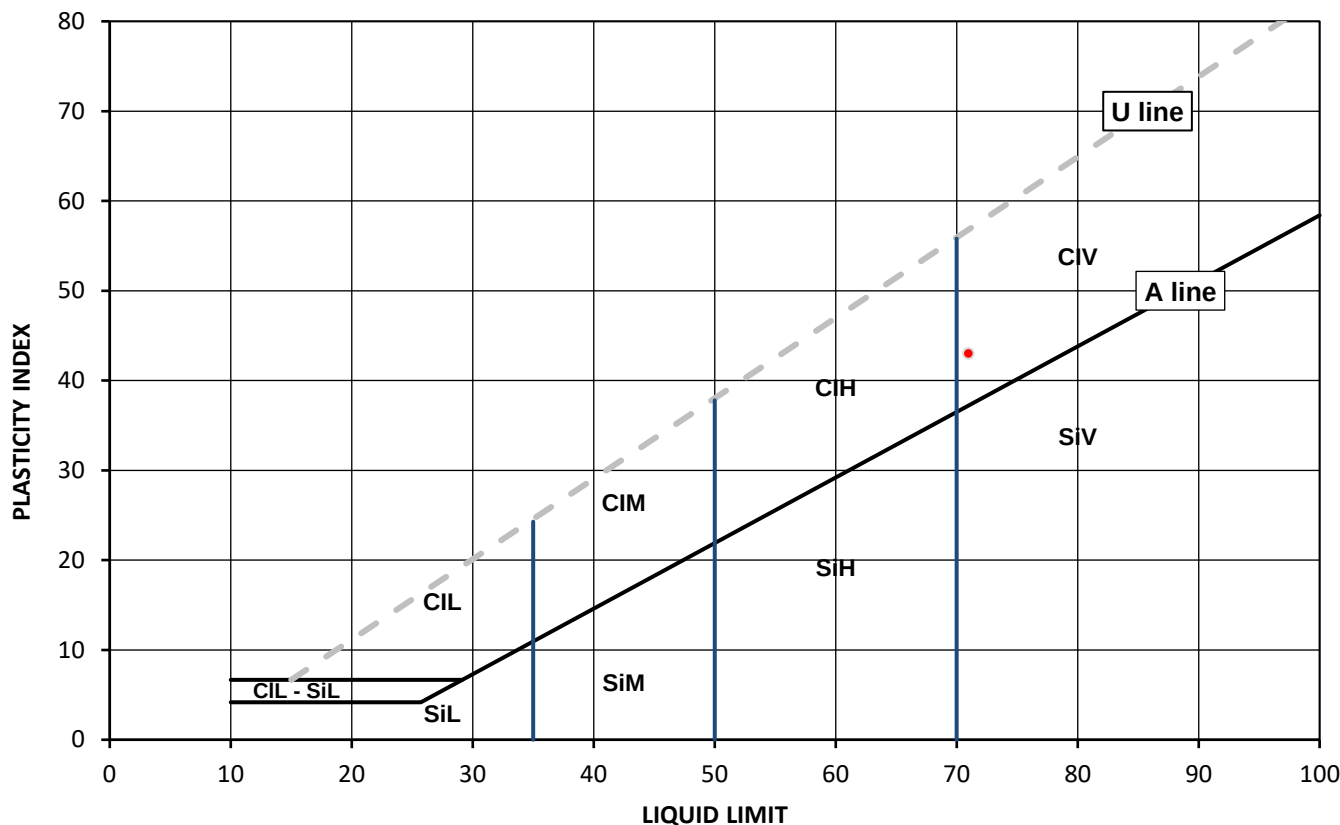
Test Results:

Laboratory Reference: 2784032
Hole No.: TP118
Sample Reference: Not Given
Sample Description: Yellowish brown clayey GRAVEL

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
13	71	28	43	19



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
		50 to 70
		exceeding 70
		append to classification for organic material (eg CIHO)

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

Remarks:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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: Endeavour Drilling
Client Address: Unit 7 Mapledean Industrial Estate, Maldon
Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road

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

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06 - 31/07/2023
Date Received: 15/08/2023
Date Tested: 22/08 - 23/08/2023
Sampled By: Client- MR

Testing carried out at i2 Analytical Limited, ul. Pionierow, 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			
2784000	TP101	Not Given	2.00	Not Given	D	Brownish grey CLAY	Atterberg 4 Point	30		100	64	27	37						
2784002	TP103	Not Given	0.60	Not Given	D	Yellowish brown slightly gravelly sandy CLAY	Atterberg 4 Point	15		97	38	19	19						
2784005	TP104	Not Given	1.50	Not Given	D	Yellowish brown gravelly CLAY	Atterberg 4 Point	18		54	65	27	38						
2784008	TP105	Not Given	1.90	Not Given	D	Yellowish brown slightly gravelly slightly sandy CLAY	Atterberg 4 Point	21		83	46	19	27						
2784009	TP106	Not Given	0.80	Not Given	D	Light brown slightly sandy CLAY	Atterberg 4 Point	26		100	47	21	26						
2784011	TP107	Not Given	2.80	Not Given	D	Yellowish brown sandy CLAY	Atterberg 4 Point	32		100	37	17	20						
2784012	TP108	Not Given	1.10	Not Given	D	Yellowish brown slightly gravelly sandy CLAY	Atterberg 4 Point	21		97	40	20	20						
2784016	TP110	Not Given	1.10	Not Given	D	Brown CLAY	Atterberg 4 Point	27		100	67	23	44						
2784020	TP112	Not Given	2.00	Not Given	D	Yellowish brown gravelly slightly sandy CLAY	Atterberg 4 Point	12		40	56	24	32						
2784023	TP113	Not Given	2.80	Not Given	D	Brownish grey very sandy CLAY	Atterberg 4 Point	24		100	32	18	14						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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: Endeavour Drilling
Client Address: Unit 7 Mapledean Industrial Estate, Maldon
Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road

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

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 28/06 - 31/07/2023
Date Received: 15/08/2023
Date Tested: 23/08 - 28/08/2023
Sampled By: Client- MR

Testing carried out at i2 Analytical Limited, ul. Pionierow, 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	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m															
2784025	TP114	Not Given	1.90	Not Given	D	Yellowish brown sandy CLAY	Atterberg 4 Point	27		100	40	17	23						
2784026	TP115	Not Given	1.10	Not Given	D	Yellowish brown slightly sandy CLAY	Atterberg 4 Point	25		100	46	22	24						
2784029	TP117	Not Given	1.20	Not Given	D	Brown slightly gravelly slightly sandy CLAY	Atterberg 4 Point	16		98	45	21	24						
2784032	TP118	Not Given	1.50	Not Given	D	Yellowish brown clayey GRAVEL	Atterberg 4 Point	13		19	71	28	43						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledean Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD

Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road

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

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06 - 31/07/2023
Date Received: 15/08/2023
Date Tested: 22/08 - 23/08/2023
Sampled By: Client- MR

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							
2784000	TP101	Not Given	2.00	Not Given	D	Brownish grey CLAY		30	Sample was quartered, oven dried at 108.1 °C			
2784002	TP103	Not Given	0.60	Not Given	D	Yellowish brown slightly gravelly sandy CLAY		15	Sample was quartered, oven dried at 106.2 °C			
2784005	TP104	Not Given	1.50	Not Given	D	Yellowish brown gravelly CLAY		18	Sample was quartered, oven dried at 108.1 °C			
2784008	TP105	Not Given	1.90	Not Given	D	Yellowish brown slightly gravelly slightly sandy CLAY		21	Sample was quartered, oven dried at 106.2 °C			
2784009	TP106	Not Given	0.80	Not Given	D	Light brown slightly sandy CLAY		26	Sample was quartered, oven dried at 108.1 °C			
2784011	TP107	Not Given	2.80	Not Given	D	Yellowish brown sandy CLAY		32	Sample was quartered, oven dried at 106.2 °C			
2784012	TP108	Not Given	1.10	Not Given	D	Yellowish brown slightly gravelly sandy CLAY		21	Sample was quartered, oven dried at 108 °C			
2784016	TP110	Not Given	1.10	Not Given	D	Brown CLAY		27	Sample was quartered, oven dried at 108.1 °C			
2784020	TP112	Not Given	2.00	Not Given	D	Yellowish brown gravelly slightly sandy CLAY		12	Sample was quartered, oven dried at 108 °C			
2784023	TP113	Not Given	2.80	Not Given	D	Brownish grey very sandy CLAY		24	Sample was quartered, oven dried at 108 °C			

Comments:

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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd



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

4041

Client: Endeavour Drilling
Client Address: Unit 7 Mapledean Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD

Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road

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

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 28/06 - 31/07/2023
Date Received: 15/08/2023
Date Tested: 23/08 - 28/08/2023
Sampled By: Client- MR

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							
2784025	TP114	Not Given	1.90	Not Given	D	Yellowish brown sandy CLAY		27	Sample was quartered, oven dried at 108 °C			
2784026	TP115	Not Given	1.10	Not Given	D	Yellowish brown slightly sandy CLAY		25	Sample was quartered, oven dried at 108 °C			
2784029	TP117	Not Given	1.20	Not Given	D	Brown slightly gravelly slightly sandy CLAY		16	Sample was quartered, oven dried at 107.8 °C			
2784032	TP118	Not Given	1.50	Not Given	D	Yellowish brown clayey GRAVEL		13	Sample was quartered, oven dried at 108 °C			

Comments:

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:

Monika Siewior

Monika Siewior
Reporting Specialist
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



Environmental Science

4041

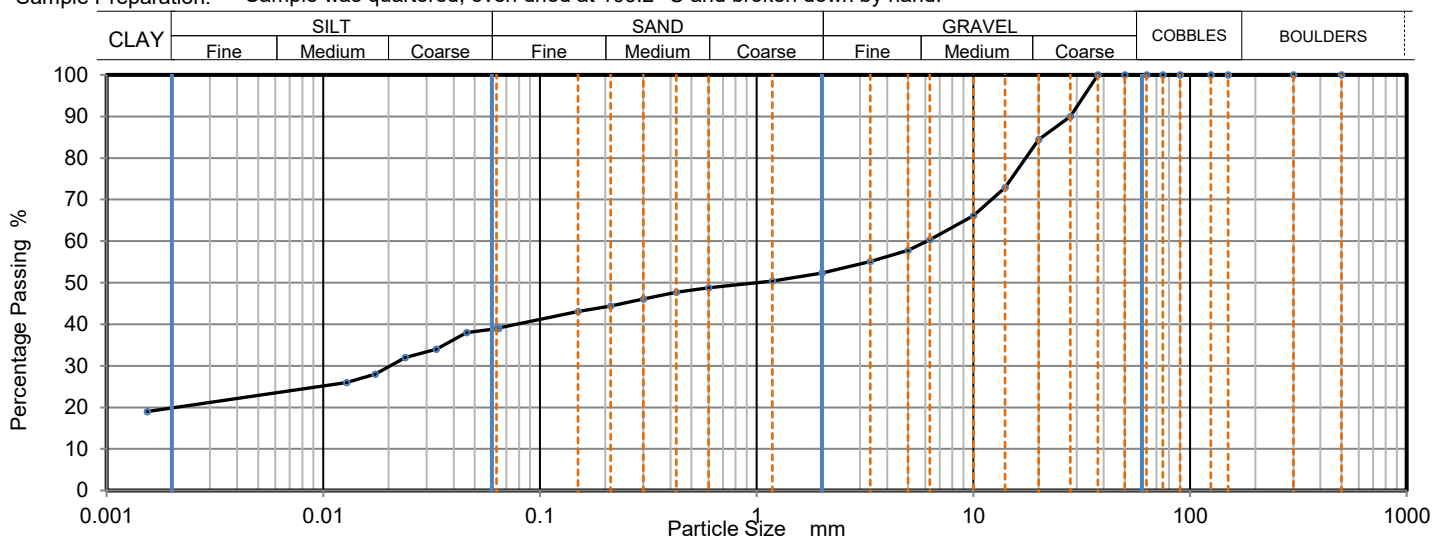
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 29/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2783999
Hole No.: TP101
Sample Reference: Not Given
Sample Description: Brownish grey clayey GRAVEL
Sample Preparation: Sample was quartered, oven dried at 106.2 °C and broken down by hand.

Depth Top [m]: 0.90
Depth Base [m]: Not Given
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0644	39
300	100	0.0459	38
150	100	0.0332	34
125	100	0.0238	32
90	100	0.0173	28
75	100	0.0128	26
63	100	0.0015	19
50	100		
37.5	100		
28	90		
20	84		
14	73		
10	66		
6.3	60		
5	58		
3.35	55	Particle density (assumed) 2.65 Mg/m3	
2	52		
1.18	50		
0.6	49		
0.425	48		
0.3	46		
0.212	44		
0.15	43		
0.063	39		

Sample Proportions	% dry mass
Very coarse	0
Gravel	48
Sand	14
Silt	18
Clay	20

Grading Analysis	
D100	mm 37.5
D60	mm 6.12
D30	mm 0.0202
D10	mm
Uniformity Coefficient	> 4000
Curvature Coefficient	

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

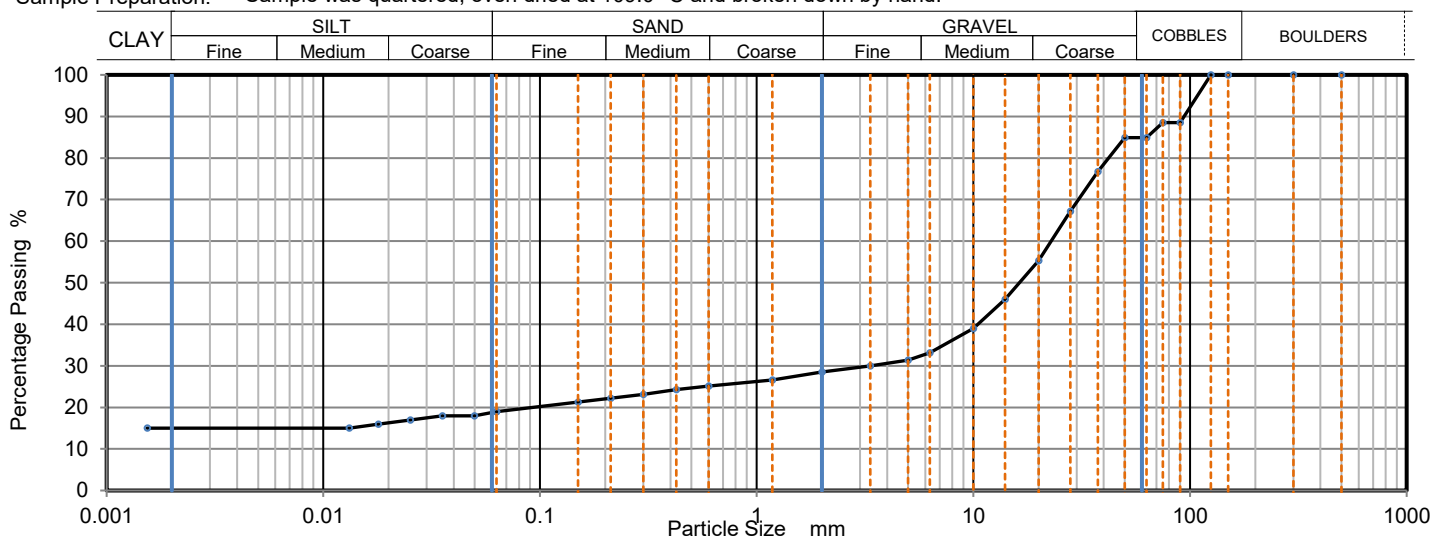
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784001
Hole No.: TP102
Sample Reference: Not Given
Sample Description: Yellowish brown clayey GRAVEL with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 0.70
Depth Base [m]: 1.00
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	19
300	100	0.0497	18
150	100	0.0354	18
125	100	0.0252	17
90	89	0.0179	16
75	89	0.0132	15
63	85	0.0015	15
50	85		
37.5	77		
28	67		
20	55		
14	46		
10	39		
6.3	33		
5	31		
3.35	30	Particle density (assumed) 2.65 Mg/m ³	
2	29		
1.18	27		
0.6	25		
0.425	24		
0.3	23		
0.212	22		
0.15	21		
0.063	19		

Sample Proportions	% dry mass
Very coarse	15
Gravel	56
Sand	9
Silt	5
Clay	15

Grading Analysis	
D100	mm 125
D60	mm 22.8
D30	mm 3.37
D10	mm
Uniformity Coefficient	> 15000
Curvature Coefficient	

Uniformity and Curvature 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: The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

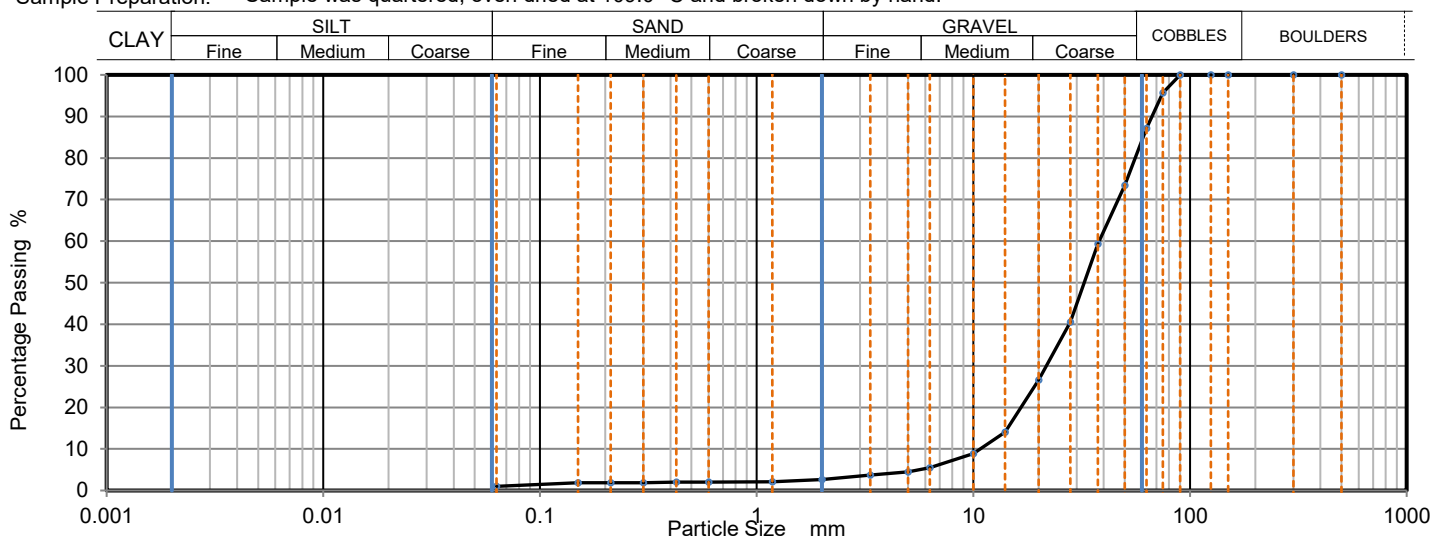
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 29/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784003
Hole No.: TP103
Sample Reference: Not Given
Sample Description: Brown GRAVEL (FLINTSTONE)
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 1.00
Depth Base [m]: 1.40
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	96		
63	87		
50	73		
37.5	59		
28	41		
20	27		
14	14		
10	9		
6.3	6		
5	5		
3.35	4		
2	3		
1.18	2		
0.6	2		
0.425	2		
0.3	2		
0.212	2		
0.15	2		
0.063	2		

Sample Proportions	% dry mass
Very coarse	13
Gravel	85
Sand	1
Fines <0.063mm	2

Grading Analysis	
D100	mm 90
D60	mm 38
D30	mm 21.7
D10	mm 10.8
Uniformity Coefficient	3.5
Curvature Coefficient	1.2

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



4041

**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



Environmental Science

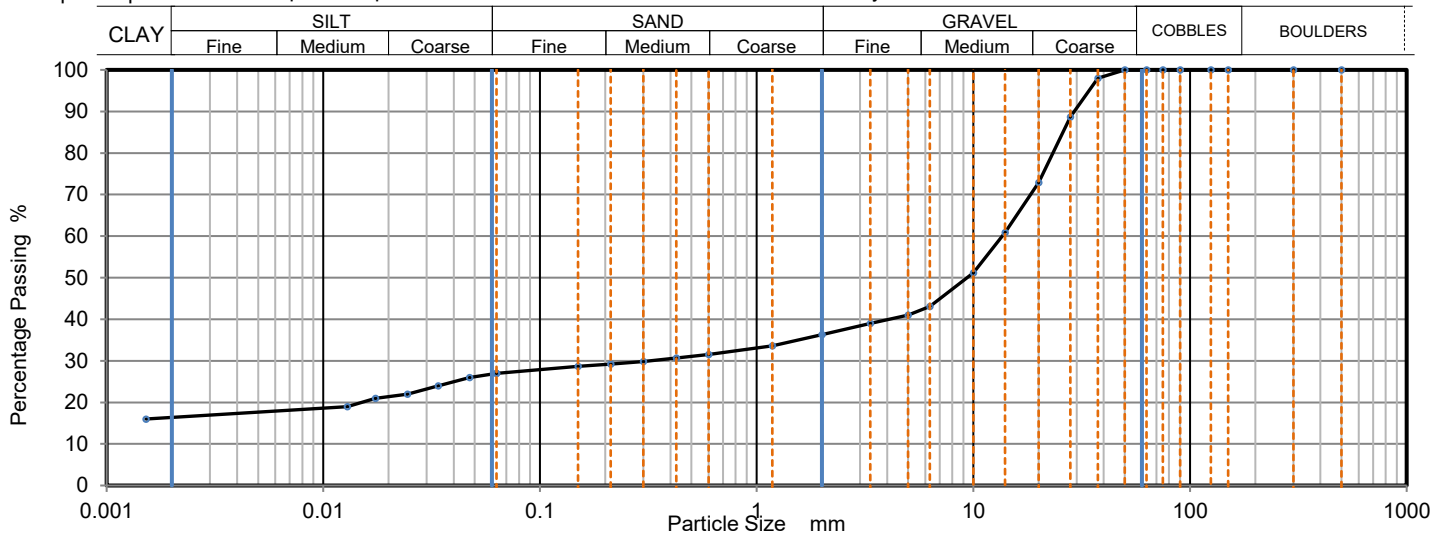
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784004
Hole No.: TP104
Sample Reference: Not Given
Sample Description: Yellowish brown clayey GRAVEL with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 107.0 °C and broken down by hand.

Depth Top [m]: 0.80
Depth Base [m]: 1.10
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	27
300	100	0.0472	26
150	100	0.0339	24
125	100	0.0245	22
90	100	0.0174	21
75	100	0.0129	19
63	100	0.0015	16
50	100		
37.5	98		
28	89		
20	73		
14	61		
10	51		
6.3	43		
5	41		
3.35	39	Particle density (assumed) 2.65 Mg/m ³	
2	36		
1.18	34		
0.6	32		
0.425	31		
0.3	30		
0.212	29		
0.15	29		
0.063	27		

Sample Proportions	% dry mass
Very coarse	0
Gravel	64
Sand	10
Silt	10
Clay	16

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 8900
Curvature Coefficient	

Uniformity and Curvature 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:**

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

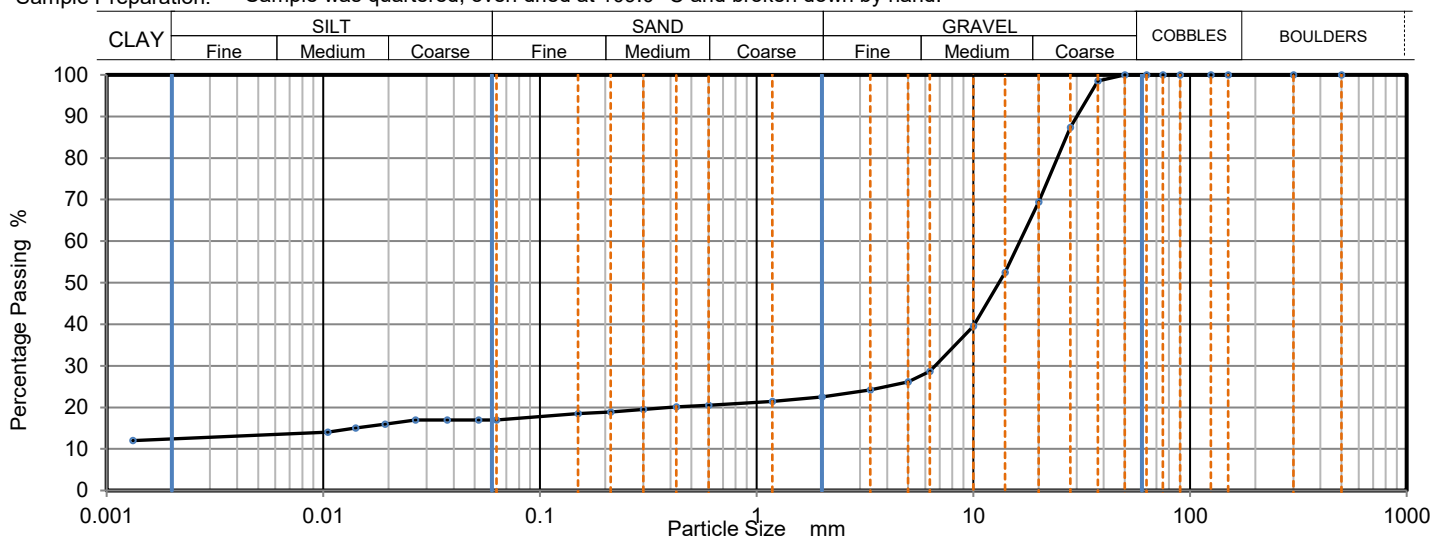
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784006
Hole No.: TP104
Sample Reference: Not Given
Sample Description: Brown clayey GRAVEL with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 2.40
Depth Base [m]: 2.80
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0521	17
300	100	0.0373	17
150	100	0.0266	17
125	100	0.0193	16
90	100	0.0141	15
75	100	0.0105	14
63	100	0.0075	12
50	100		
37.5	99		
28	87		
20	69		
14	53		
10	40		
6.3	29		
5	26		
3.35	24		
2	23		
1.18	21		
0.6	21		
0.425	20		
0.3	20		
0.212	19		
0.15	19		
0.063	17		

Sample Proportions	% dry mass
Very coarse	0
Gravel	77
Sand	5
Silt	6
Clay	12

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 12000
Curvature Coefficient	

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

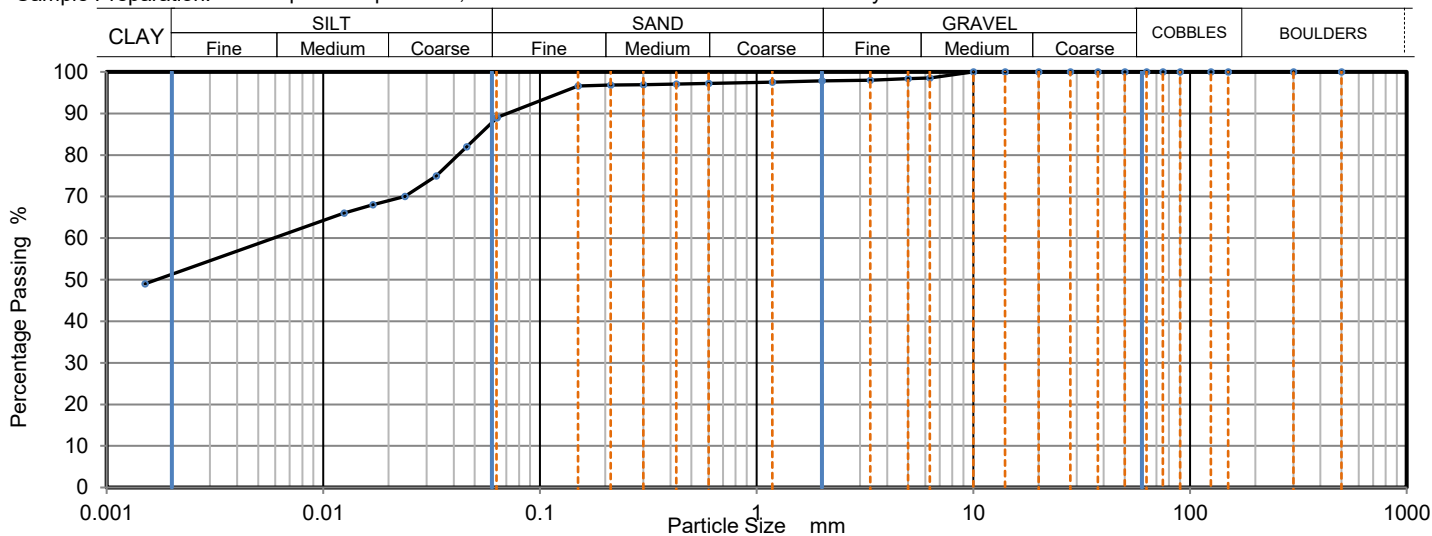
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 27/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784007
Hole No.: TP105
Sample Reference: Not Given
Sample Description: Yellowish brown CLAY
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 1.80
Depth Base [m]: 2.30
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0634	89
300	100	0.0459	82
150	100	0.0332	75
125	100	0.0238	70
90	100	0.0170	68
75	100	0.0125	66
63	100	0.0015	49
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	98		
3.35	98	Particle density (assumed) 2.65 Mg/m ³	
2	98		
1.18	98		
0.6	97		
0.425	97		
0.3	97		
0.212	97		
0.15	97		
0.063	89		

Sample Proportions	% dry mass
Very coarse	0
Gravel	2
Sand	9
Silt	37
Clay	52

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 4
Curvature Coefficient	

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



4041

**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



Environmental Science

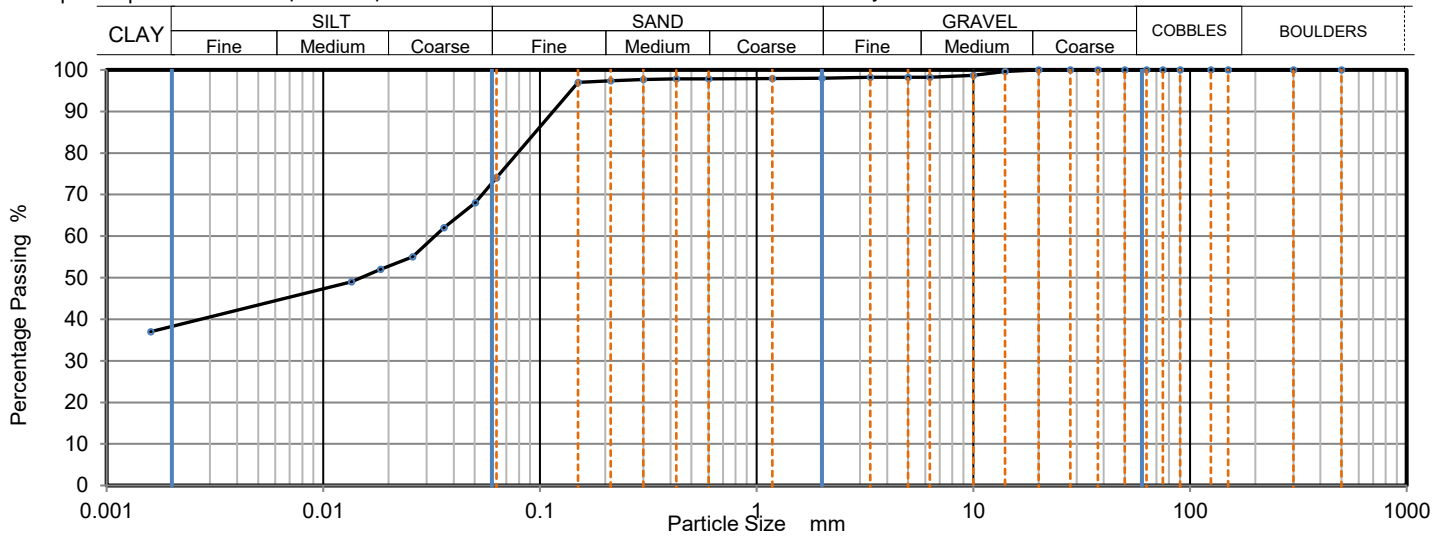
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 31/07/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784010
Hole No.: TP107
Sample Reference: Not Given
Sample Description: Yellowish brown sandy CLAY
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 2.20
Depth Base [m]: 2.50
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	74
300	100	0.0503	68
150	100	0.0360	62
125	100	0.0258	55
90	100	0.0184	52
75	100	0.0135	49
63	100	0.0016	37
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	98		
5	98		
3.35	98	Particle density (assumed) 2.65 Mg/m ³	
2	98		
1.18	98		
0.6	98		
0.425	98		
0.3	98		
0.212	97		
0.15	97		
0.063	74		

Sample Proportions	% dry mass
Very coarse	0
Gravel	2
Sand	24
Silt	36
Clay	38

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 21
Curvature Coefficient	

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

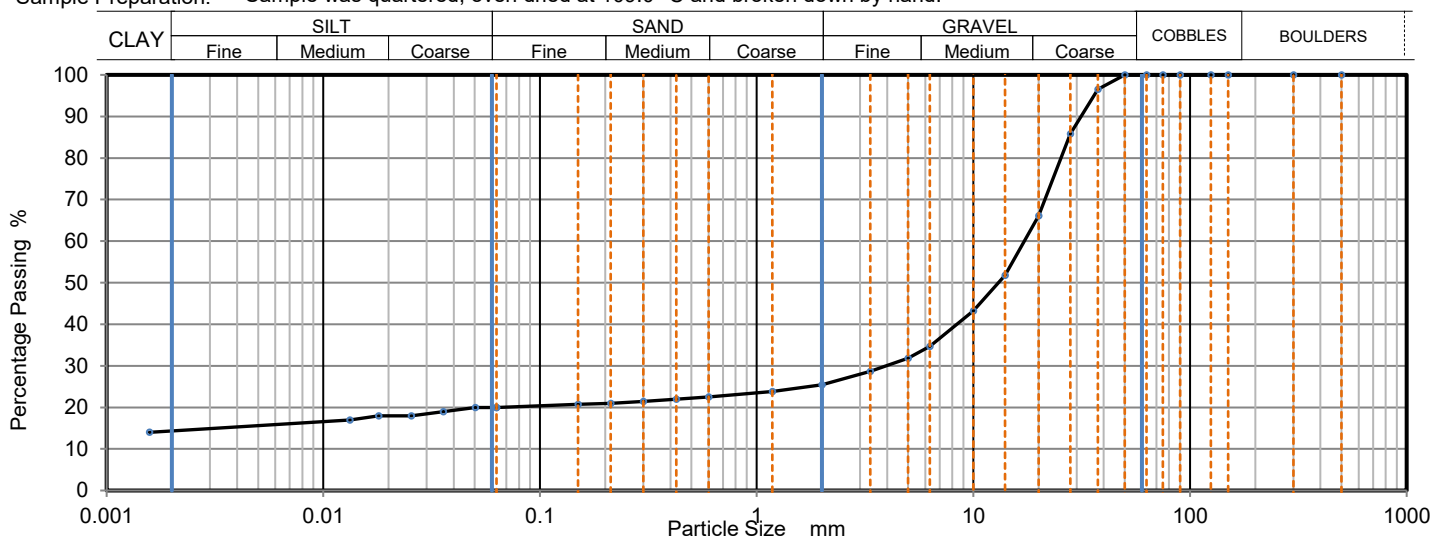
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 31/07/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784013
Hole No.: TP108
Sample Reference: Not Given
Sample Description: Brown clayey GRAVEL with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 2.00
Depth Base [m]: 2.30
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	20
300	100	0.0503	20
150	100	0.0358	19
125	100	0.0255	18
90	100	0.0180	18
75	100	0.0132	17
63	100	0.0016	14
50	100		
37.5	97		
28	86		
20	66		
14	52		
10	43		
6.3	35		
5	32		
3.35	29	Particle density (assumed) 2.65 Mg/m3	
2	25		
1.18	24		
0.6	23		
0.425	22		
0.3	21		
0.212	21		
0.15	21		
0.063	20		

Sample Proportions	% dry mass
Very coarse	0
Gravel	75
Sand	6
Silt	4
Clay	15

Grading Analysis	
D100	mm 50
D60	mm 17.2
D30	mm 3.96
D10	mm
Uniformity Coefficient	> 11000
Curvature Coefficient	

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

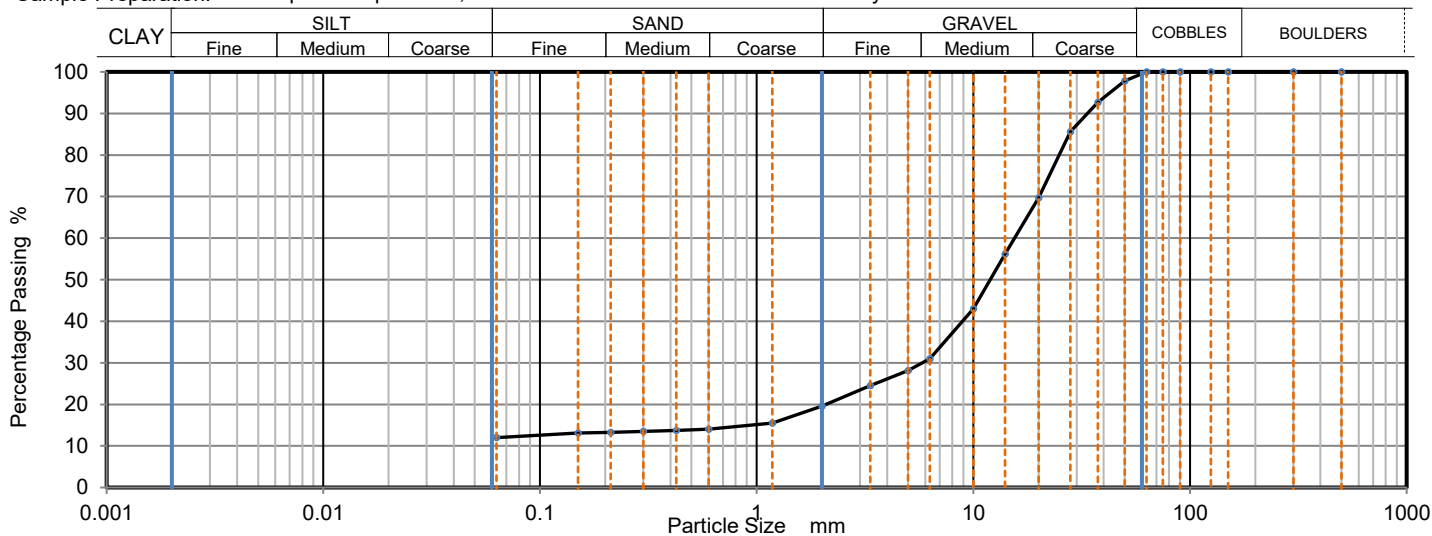
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 20/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784014
Hole No.: TP109
Sample Reference: Not Given
Sample Description: Light brown GRAVEL with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 0.90
Depth Base [m]: 1.40
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	98		
37.5	93		
28	86		
20	70		
14	56		
10	43		
6.3	31		
5	28		
3.35	25		
2	20		
1.18	16		
0.6	14		
0.425	14		
0.3	14		
0.212	13		
0.15	13		
0.063	12		

Sample Proportions	% dry mass
Very coarse	0
Gravel	80
Sand	7
Fines <0.063mm	12

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 250
Curvature Coefficient	

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

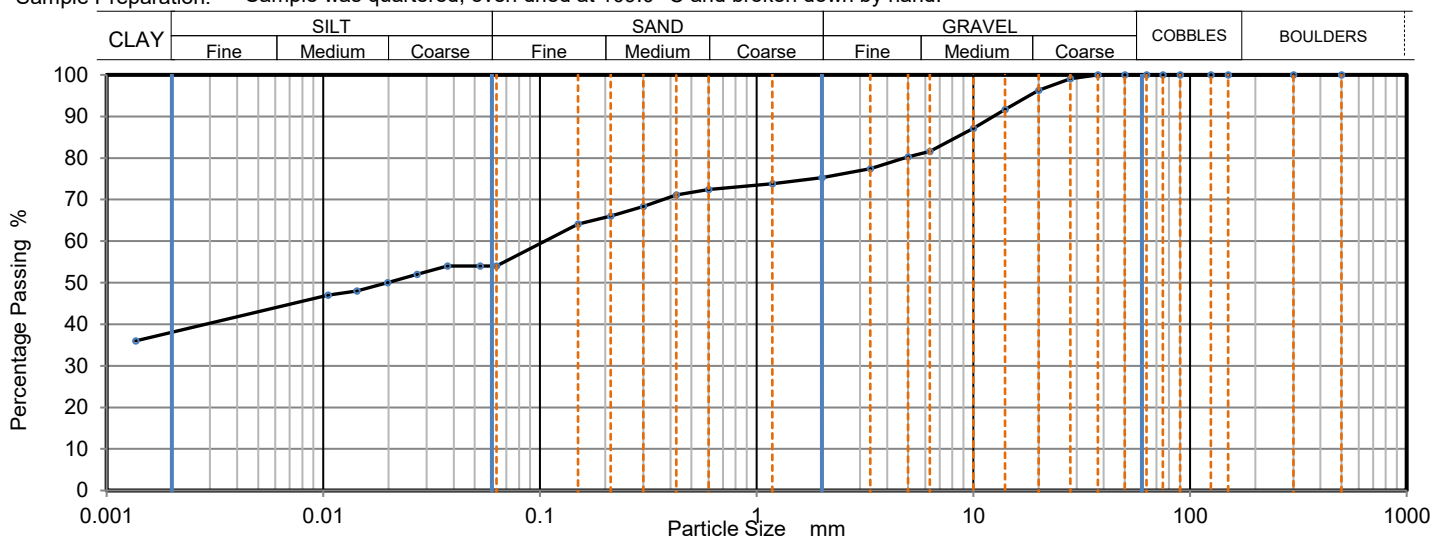
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 20/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784015
Hole No.: TP109
Sample Reference: Not Given
Sample Description: Yellowish brown gravelly sandy CLAY with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 2.40
Depth Base [m]: 2.60
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0529	54
300	100	0.0374	54
150	100	0.0270	52
125	100	0.0198	50
90	100	0.0143	48
75	100	0.0105	47
63	100	0.0074	36
50	100		
37.5	100		
28	99		
20	96		
14	92		
10	87		
6.3	82		
5	80		
3.35	77	Particle density (assumed) 2.65 Mg/m ³	
2	75		
1.18	74		
0.6	72		
0.425	71		
0.3	68		
0.212	66		
0.15	64		
0.063	54		

Sample Proportions	% dry mass
Very coarse	0
Gravel	25
Sand	21
Silt	16
Clay	38

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 77
Curvature Coefficient	

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

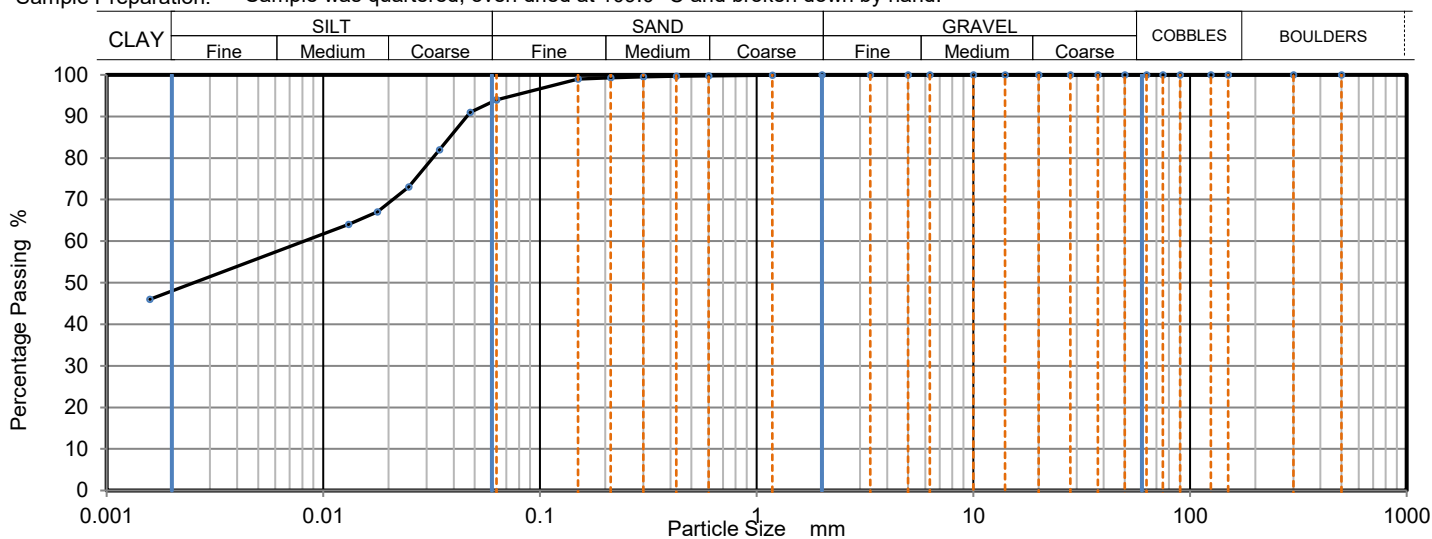
Client: Endeavour Drilling
Client Address: Unit 7 Mapledean Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 29/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784017
Hole No.: TP110
Sample Reference: Not Given
Sample Description: Brown CLAY
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 1.40
Depth Base [m]: 2.00
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	94
300	100	0.0476	91
150	100	0.0344	82
125	100	0.0248	73
90	100	0.0178	67
75	100	0.0131	64
63	100	0.0106	60
50	100	0.0075	46
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100	Particle density (assumed) 2.65 Mg/m3	
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	99		
0.15	99		
0.063	94		

Sample Proportions	% dry mass
Very coarse	0
Gravel	0
Sand	6
Silt	46
Clay	48

Grading Analysis		
D100	mm	3.35
D60	mm	0.00834
D30	mm	
D10	mm	
Uniformity Coefficient		> 5.3
Curvature Coefficient		

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

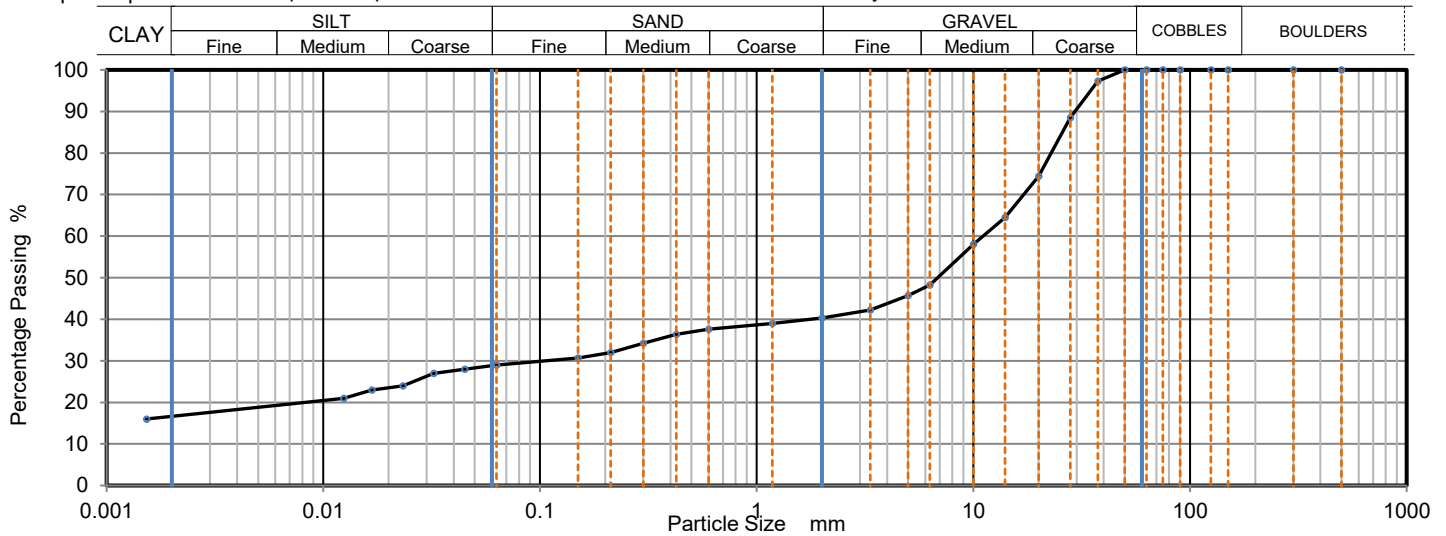
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 29/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784018
Hole No.: TP111
Sample Reference: Not Given
Sample Description: Yellowish brown clayey GRAVEL
Sample Preparation: Sample was quartered, oven dried at 107.0 °C and broken down by hand.

Depth Top [m]: 1.30
Depth Base [m]: 1.60
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	29
300	100	0.0449	28
150	100	0.0323	27
125	100	0.0233	24
90	100	0.0168	23
75	100	0.0124	21
63	100	0.0015	16
50	100		
37.5	97		
28	89		
20	74		
14	65		
10	58		
6.3	48		
5	46		
3.35	42	Particle density (assumed) 2.65 Mg/m ³	
2	40		
1.18	39		
0.6	38		
0.425	36		
0.3	34		
0.212	32		
0.15	31		
0.063	29		

Sample Proportions	% dry mass
Very coarse	0
Gravel	60
Sand	11
Silt	12
Clay	17

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 7300
Curvature Coefficient	

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

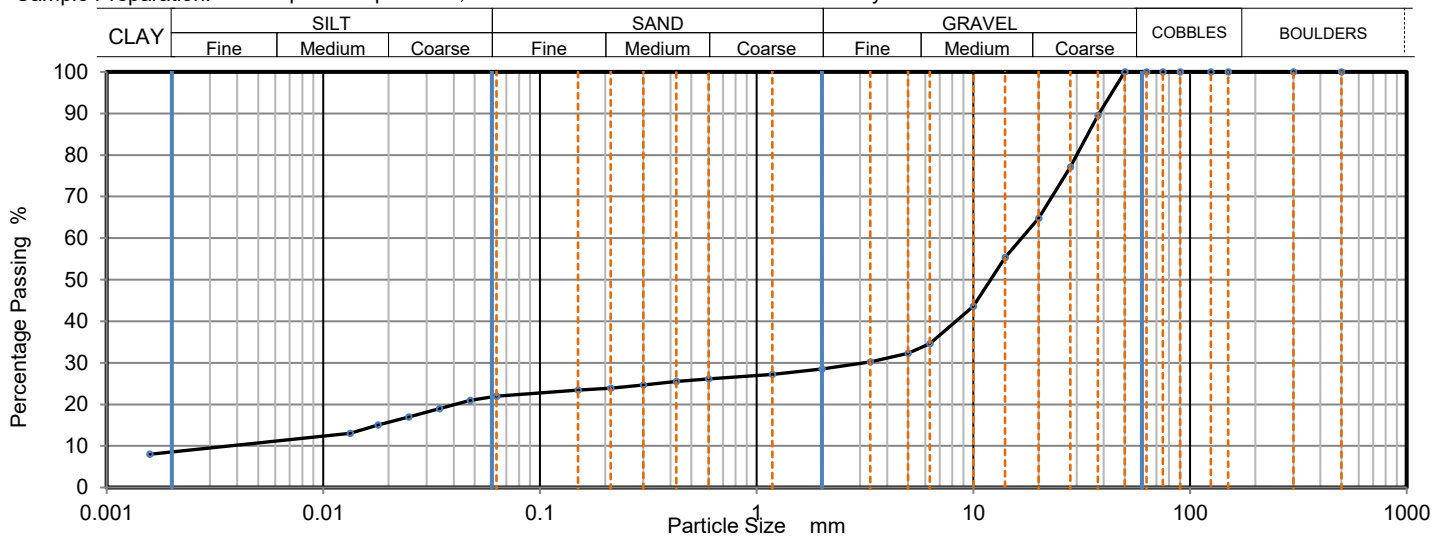
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784019
Hole No.: TP112
Sample Reference: Not Given
Sample Description: Brown clayey GRAVEL with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 1.00
Depth Base [m]: 1.40
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	22
300	100	0.0476	21
150	100	0.0344	19
125	100	0.0248	17
90	100	0.0179	15
75	100	0.0133	13
63	100	0.0106	11
50	100	0.0075	8
37.5	90		
28	77		
20	65		
14	55		
10	44		
6.3	35		
5	32		
3.35	30		
2	29		
1.18	27		
0.6	26		
0.425	26		
0.3	25		
0.212	24		
0.15	23		
0.063	22		

Sample Proportions	% dry mass
Very coarse	0
Gravel	72
Sand	7
Silt	13
Clay	8

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

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



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



Environmental Science

4041

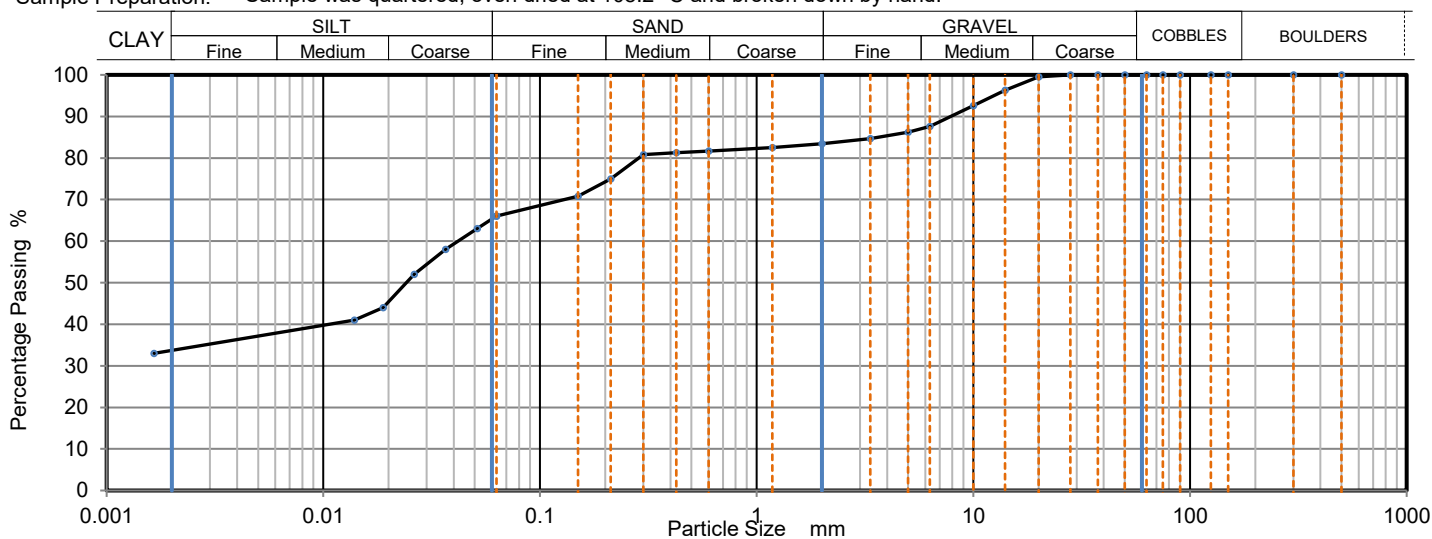
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784021
Hole No.: TP112
Sample Reference: Not Given
Sample Description: Yellowish brown CLAY
Sample Preparation: Sample was quartered, oven dried at 108.2 °C and broken down by hand.

Depth Top [m]: 2.70
Depth Base [m]: 3.00
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	66
300	100	0.0512	63
150	100	0.0367	58
125	100	0.0263	52
90	100	0.0189	44
75	100	0.0139	41
63	100	0.0017	33
50	100		
37.5	100		
28	100		
20	100		
14	96		
10	93		
6.3	88		
5	86		
3.35	85	Particle density (assumed) 2.65 Mg/m ³	
2	83		
1.18	83		
0.6	82		
0.425	81		
0.3	81		
0.212	75		
0.15	71		
0.063	66		

Sample Proportions	% dry mass
Very coarse	0
Gravel	17
Sand	17
Silt	32
Clay	34

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

Uniformity and Curvature 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:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



4041

**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



Environmental Science

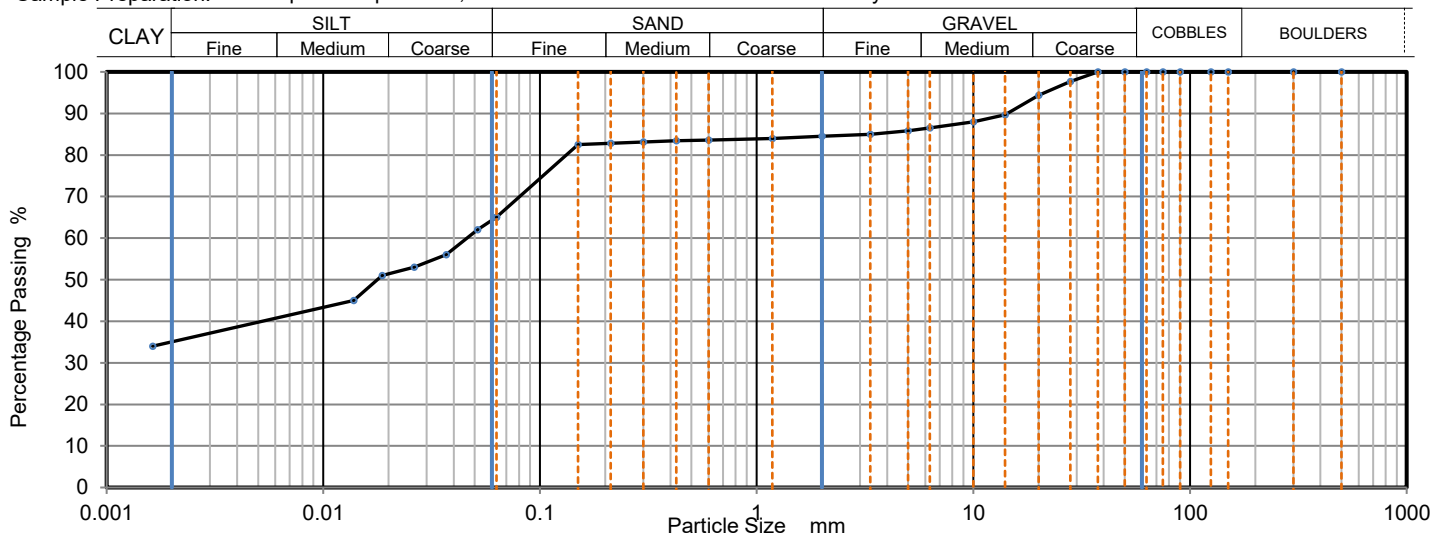
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 19/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784022
Hole No.: TP113
Sample Reference: Not Given
Sample Description: Brown sandy CLAY with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 0.50
Depth Base [m]: 0.90
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	65
300	100	0.0515	62
150	100	0.0369	56
125	100	0.0263	53
90	100	0.0187	51
75	100	0.0138	45
63	100	0.0016	34
50	100		
37.5	100		
28	98		
20	94		
14	90		
10	88		
6.3	87		
5	86		
3.35	85	Particle density (assumed) 2.65 Mg/m3	
2	85		
1.18	84		
0.6	84		
0.425	83		
0.3	83		
0.212	83		
0.15	83		
0.063	65		

Sample Proportions	% dry mass
Very coarse	0
Gravel	16
Sand	20
Silt	29
Clay	35

Grading Analysis	
D100	mm 37.5
D60	mm 0.0461
D30	mm
D10	mm
Uniformity Coefficient	> 28
Curvature Coefficient	

Uniformity and Curvature 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:**

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.



4041

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



Environmental Science

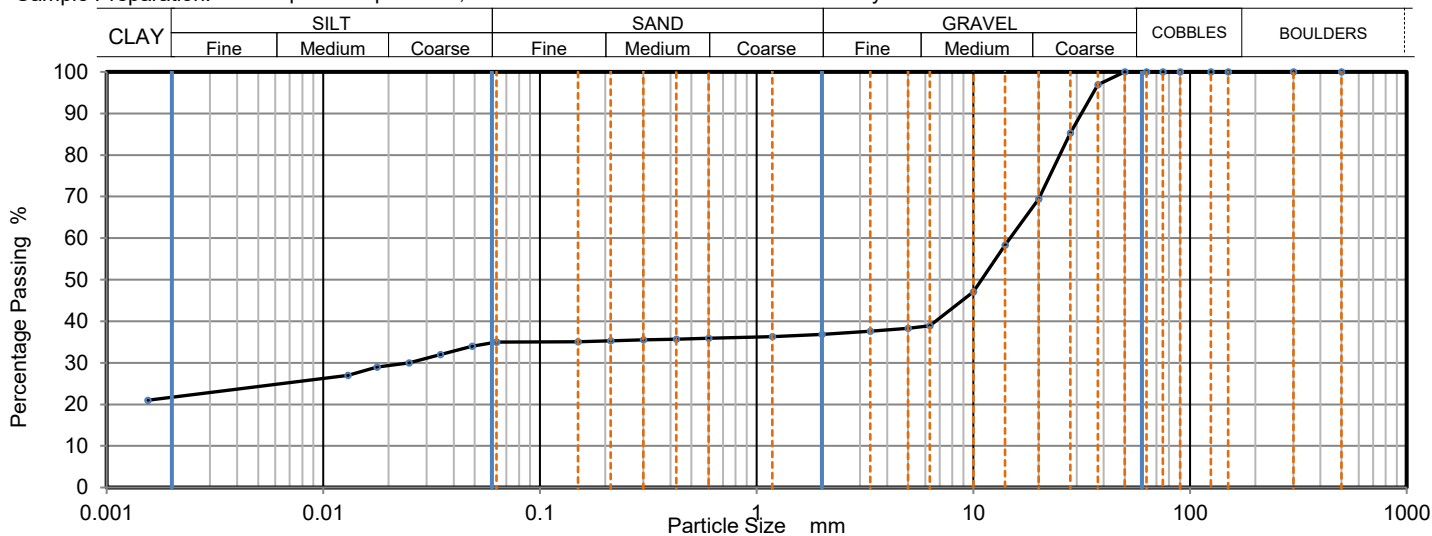
Client: Endeavour Drilling
Client Address: Unit 7 Mapledene Industrial Estate, Maldon Road,
Chelmsford, CM3 6LD
Contact: Matthew Rust
Site Address: STANTEC, Southleigh Road
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: J5443
Job Number: 23-51526-1
Date Sampled: 28/06/2023
Date Received: 15/08/2023
Date Tested: 22/08/2023
Sampled By: Client- MR

Test Results:

Laboratory Reference: 2784024
Hole No.: TP114
Sample Reference: Not Given
Sample Description: Grey clayey GRAVEL with fragments of flintstone
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 1.00
Depth Base [m]: 1.50
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	35
300	100	0.0487	34
150	100	0.0346	32
125	100	0.0248	30
90	100	0.0177	29
75	100	0.0130	27
63	100	0.0016	21
50	100		
37.5	97		
28	85		
20	69		
14	58		
10	47		
6.3	39		
5	38		
3.35	38	Particle density (assumed) 2.65 Mg/m3	
2	37		
1.18	36		
0.6	36		
0.425	36		
0.3	36		
0.212	35		
0.15	35		
0.063	35		

Sample Proportions	% dry mass
Very coarse	0
Gravel	63
Sand	2
Silt	13
Clay	22

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 9500
Curvature Coefficient	

Uniformity and Curvature 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:**

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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.