

PointID

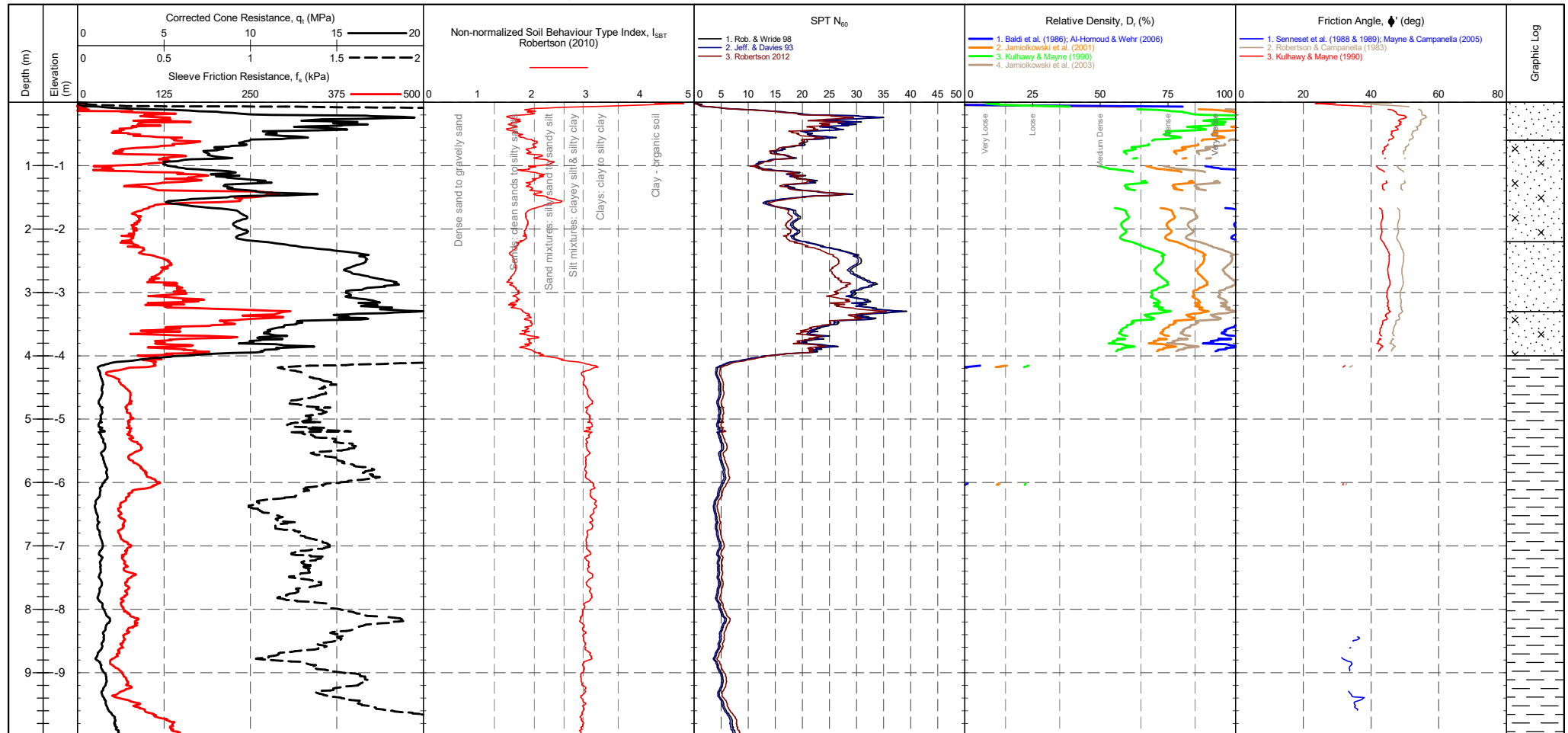
CPT103

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Target depth

Remark:
Test completed at target depth.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold

Transducer
Tip
Sleeve
Pore Pressure 2
X-Y Inclinator

CPTU ZERO VALUES

Pre	Post	Difference
264 mV	267 mV	0.035 MPa
338 mV	340 mV	0.001 kPa
287 mV	261 mV	-0.007 kPa
2246 mV	2257 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12					
Description	SBT Index, I_c	Description	SPT N value, NSPT	Description	Relative Density D_r (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level

Dissipation Test

PointID

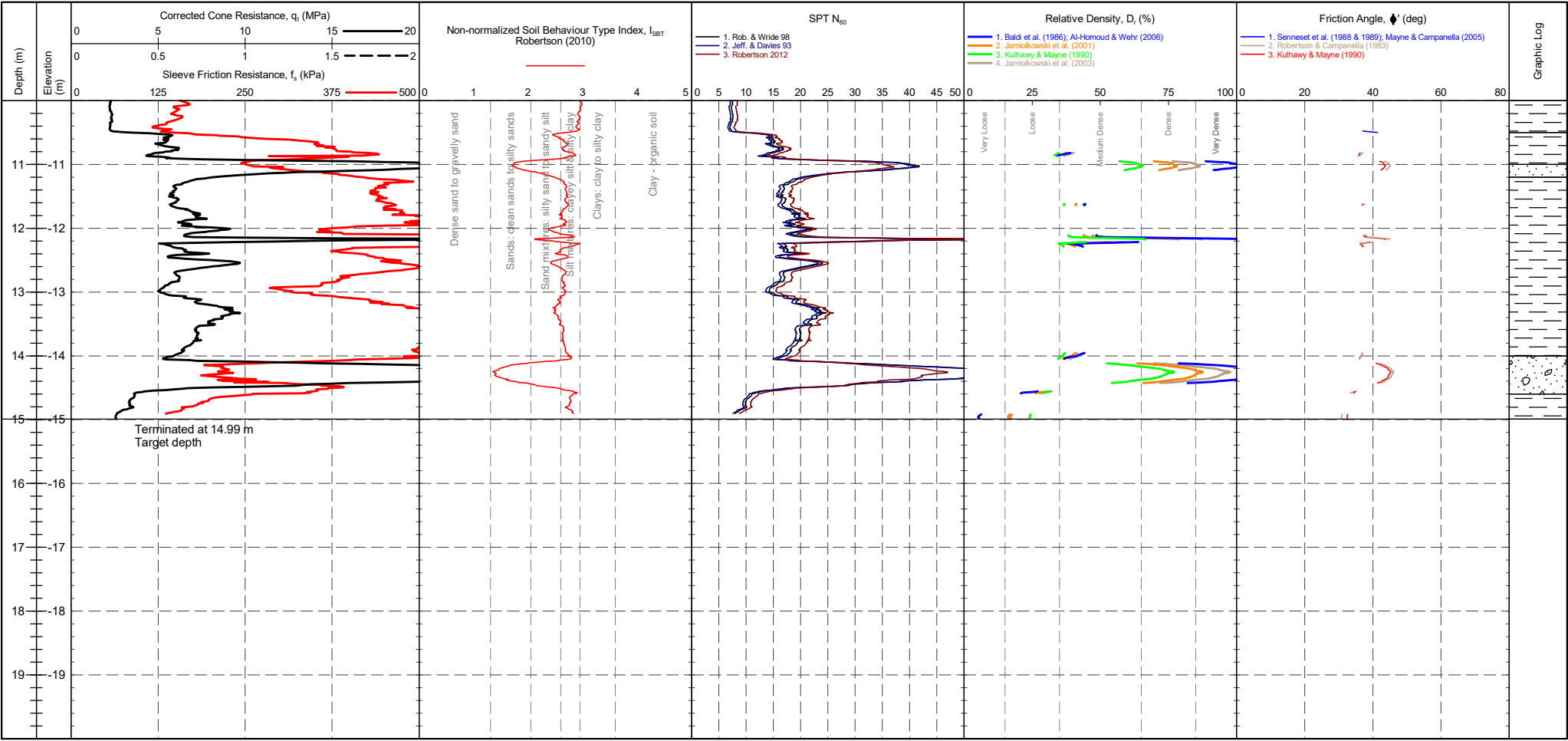
CPT103

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Target depth

Remark:
Test completed at target depth.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	264 mV	267 mV	0.035 MPa
Sleeve	338 mV	340 mV	0.001 kPa
Pore Pressure 2	287 mV	261 mV	-0.007 kPa
X-Y Inclinator	2246 mV	2257 mV	

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Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level
Dissipation Test

PointID

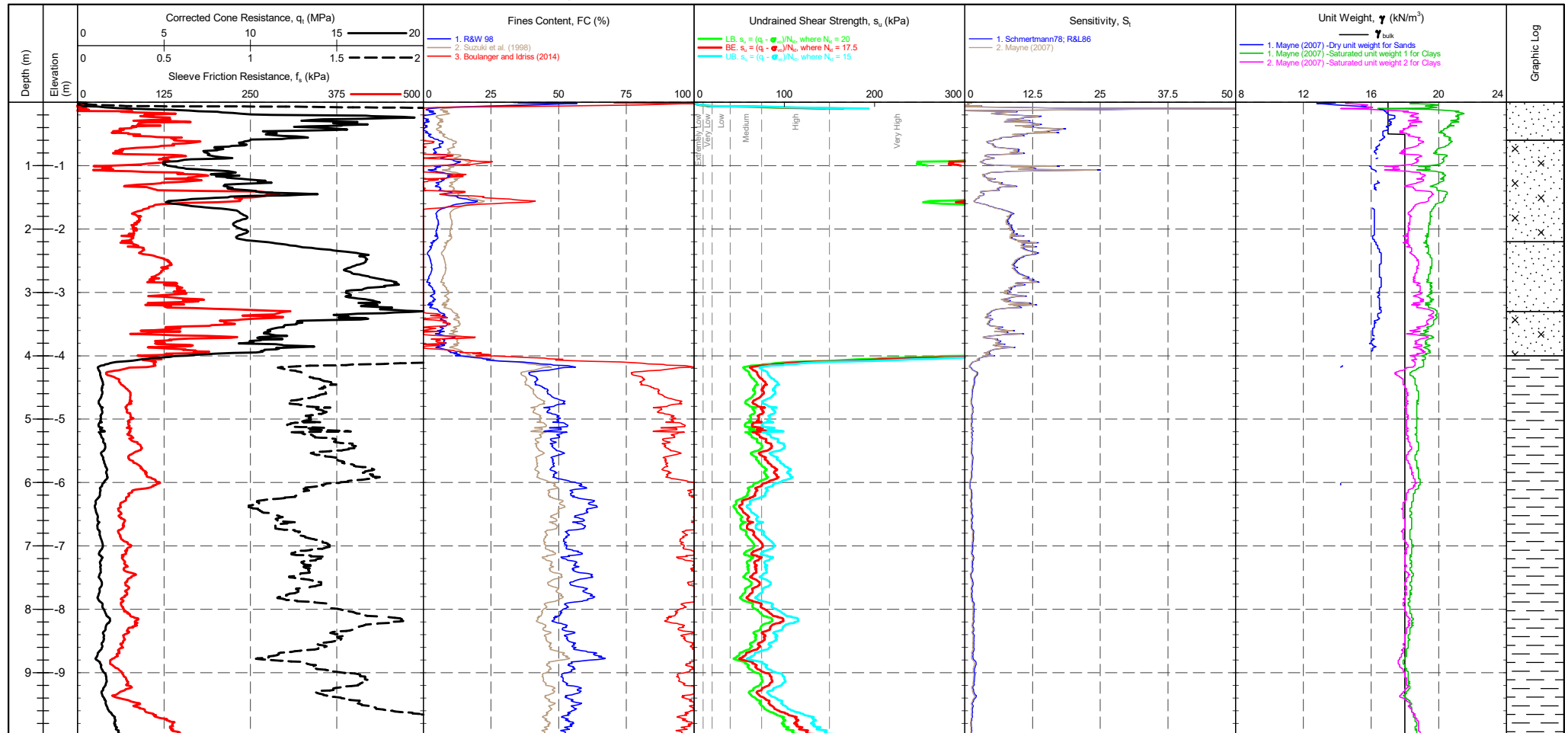
CPT103

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

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NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Target depth

Remark:
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SHEET : 1 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	264 mV	267 mV	0.035 MPa
Sleeve	338 mV	340 mV	0.001 kPa
Pore Pressure 2	287 mV	261 mV	-0.007 kPa
X-Y Inclinator	2246 mV	2257 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)	Term based on measurement	su (kPa)
Extremely low strength	<10	Medium strength	40-75
Very low strength	10-20	High strength	75-150
Low strength	20-40	Very high strength	150-300
		Extremely high strength	>300

Groundwater Level

Dissipation Test

PointID

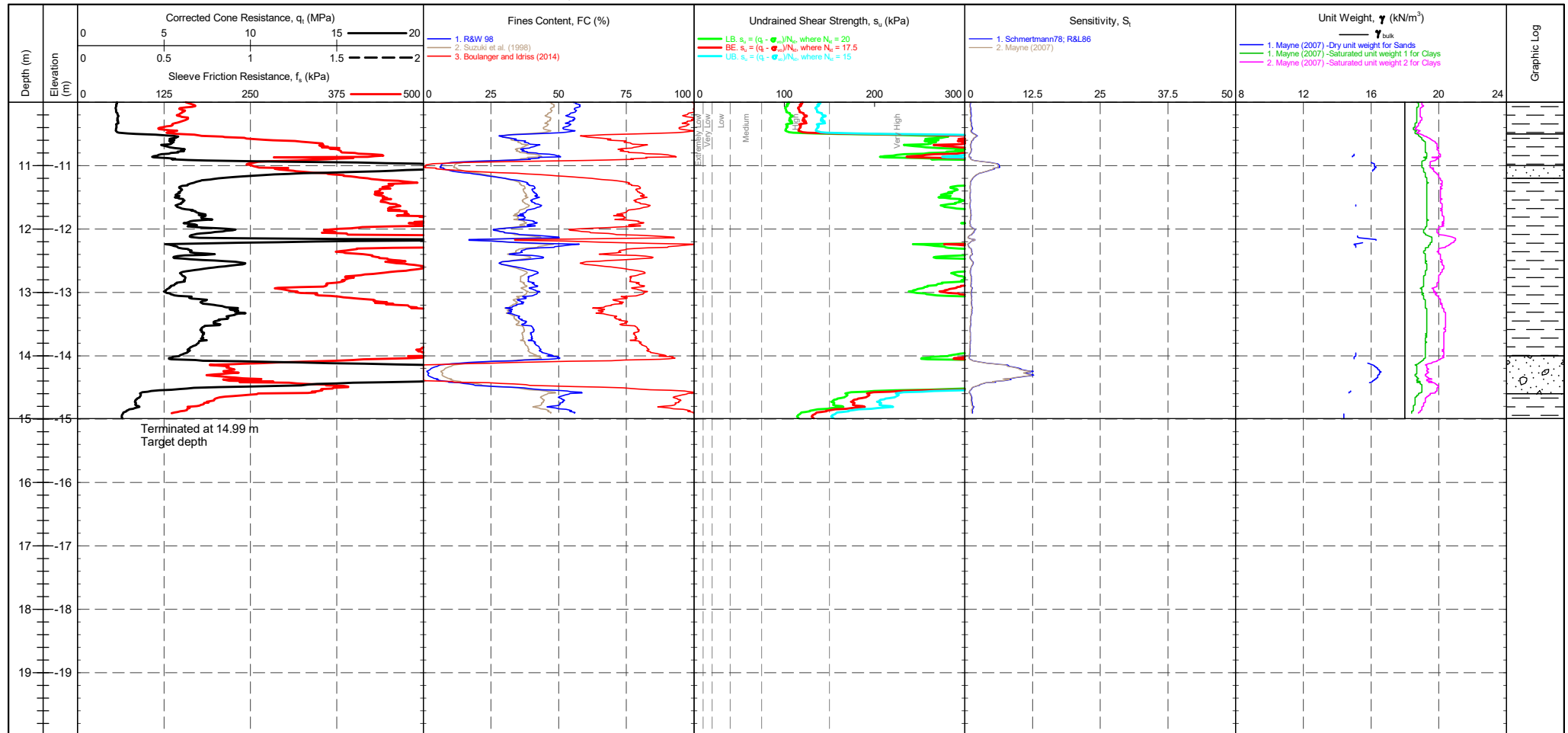
CPT103

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Target depth

Remark:
Test completed at target depth.

SHEET : 2 OF 2
STATUS : Final
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PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CONE MODEL : Subtraction
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CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold

Transducer
Tip
Sleeve
Pore Pressure 2
X-Y Inclinator

Pre	Post	Difference
264 mV	267 mV	0.035 MPa
338 mV	340 mV	0.001 kPa
287 mV	261 mV	-0.007 kPa
2246 mV	2257 mV	

CPTU ZERO VALUES

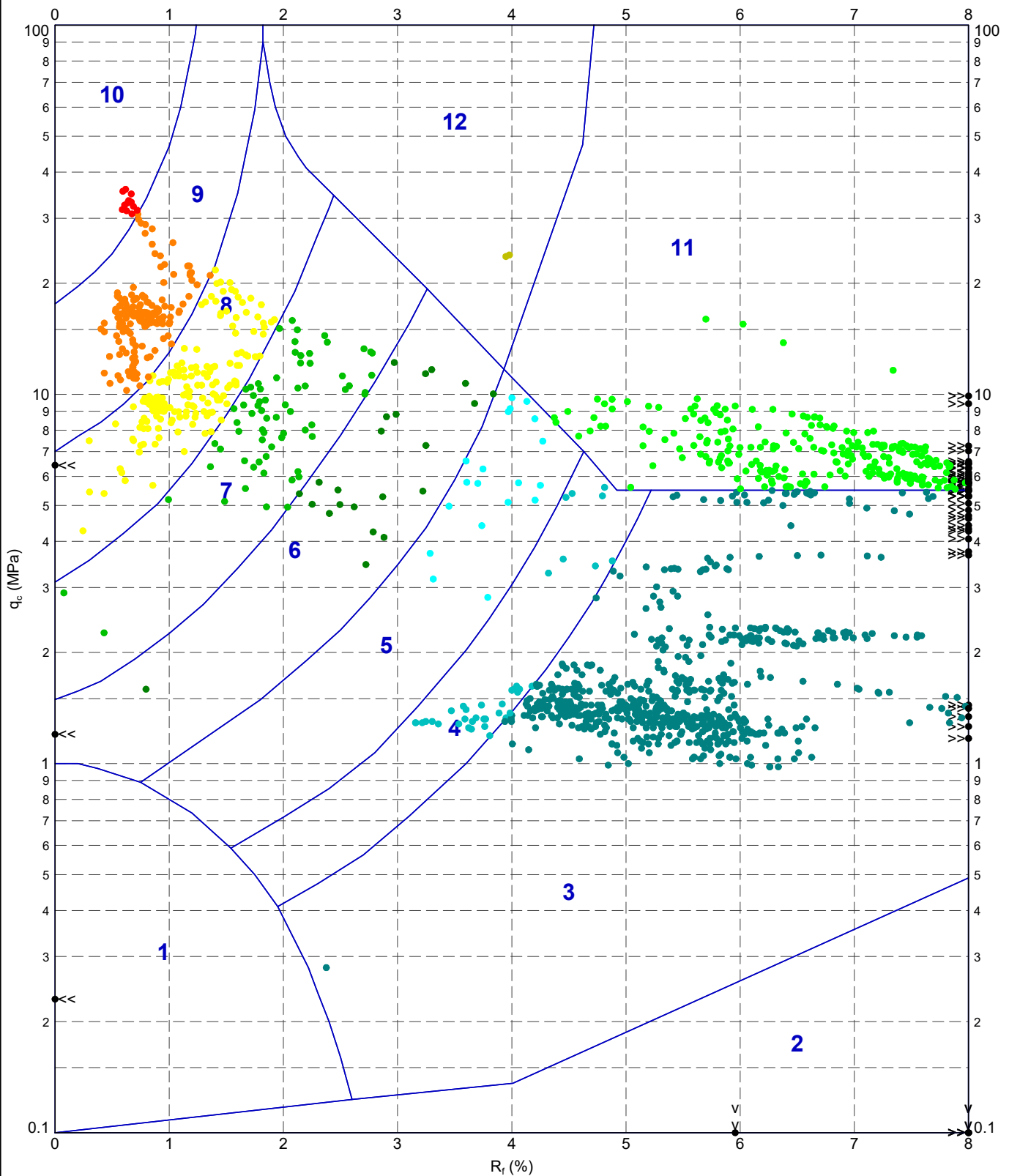
COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	s_u (kPa)	Term based on measurement	s_u (kPa)
Extremely low strength	<10	Medium strength	40-75
Very low strength	10-20	High strength	75-150
Low strength	20-40	Very high strength	150-300
		Extremely high strength	>300

Groundwater Level

Dissipation Test

22069-ADVANCED REPORT INSTITUSI 202.1 LUB - CHLOE GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF MAP 1240458 CHORLTON BATHS LK GROUP GPJ <<DrawingFile>> 25/10/2024 16:32 10.03.00.09 Dargel Lab and in Situ Tool - DGD | Lib in Situ SI 2.02.0 2017-07-10 Pjt in Situ SI 2.02.0 2017-07-10



METHOD: Robertson et al. 1986 q_c vs. R_f

- | | | | |
|-------------------------------------|-------------------------------|------------------------------|------------------------------|
| 1 - Sensitive fine grained material | 4 - Silty CLAY to CLAY | 7 - Silty SAND to sandy SILT | 10 - Gravelly SAND to SAND |
| 2 - Organic material | 5 - Clayey SILT to silty CLAY | 8 - SAND to silty SAND | 11 - Very stiff fine grained |
| 3 - CLAY | 6 - Sandy SILT to clayey SILT | 9 - SAND | 12 - SAND to clayey SAND |

IN SITU
SITE INVESTIGATION

TITLE

LK Group
Manchester
Chorlton Baths
Robertson et al. 1986 q_c vs. R_f - CPT103

DRAWN

DATE

25/10/2024

CHECKED

DATE

25/10/2024

SCALE

Not To Scale

A4

PROJECT No

1240458

FIGURE No

PointID

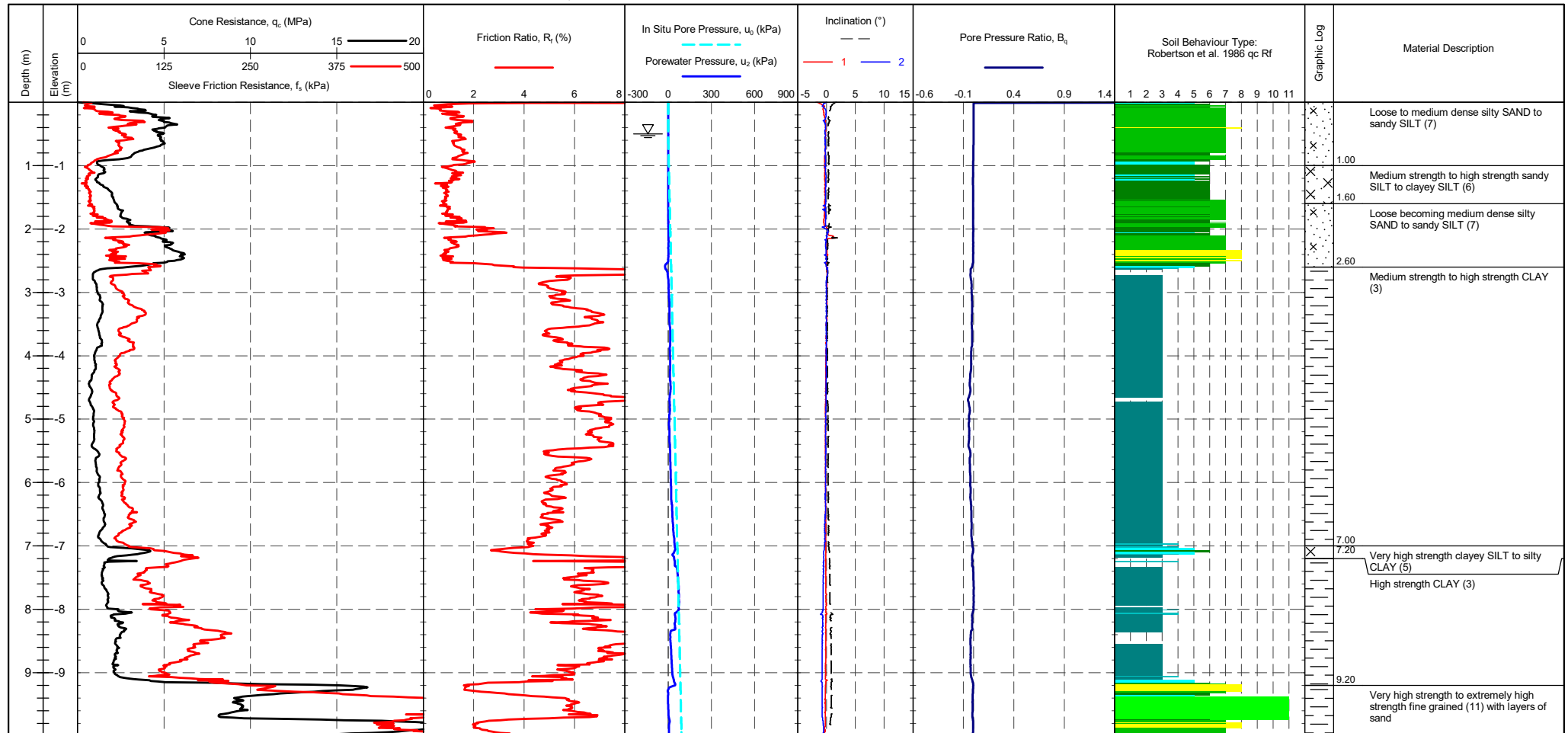
CPT104

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Target depth

Remark:
Test completed at target depth.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CALIBRATION DATE : 20/06/2023
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE
TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold
GROUNDWATER DEPTH : Assumed for calculation purposes

CPTU ZERO VALUES
Transducer : Pre : Post : Difference
Tip : 264 mV : 264 mV : 0 MPa
Sleeve : 338 mV : 339 mV : 0.001 kPa
Pore Pressure 2 : 253 mV : 271 mV : 0.005 kPa
X-Y Inclinator : 2385 mV : 2383 mV

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravely SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater
Level

Dissipation Test

PointID

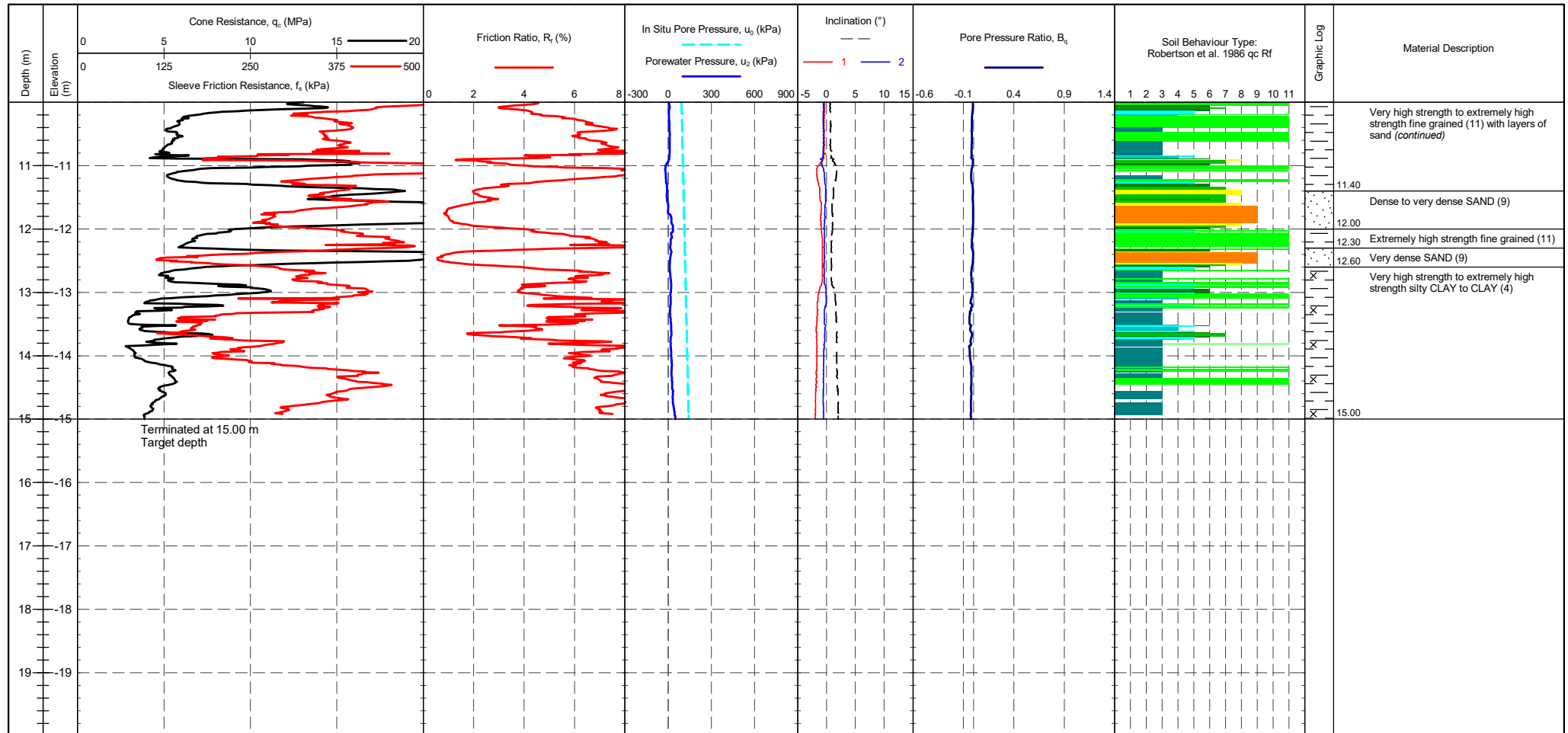
CPT104

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Target depth

Remark:
Test completed at target depth.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CALIBRATION DATE : 20/06/2023
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold
GROUNDWATER DEPTH : Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	264 mV	264 mV	0 MPa
Sleeve	338 mV	339 mV	0.001 kPa
Pore Pressure 2	253 mV	271 mV	0.005 kPa
X-Y Inclinator	2385 mV	2383 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material	5 - Clayey SILT to silty CLAY	9 - SAND
2 - Organic material	6 - Sandy SILT to clayey SILT	10 - Gravely SAND to SAND
3 - CLAY	7 - Silty SAND to sandy SILT	11 - Very stiff fine grained
4 - Silty CLAY to CLAY	8 - SAND to silty SAND	12 - SAND to clayey SAND

Groundwater
Level

Dissipation Test

PointID

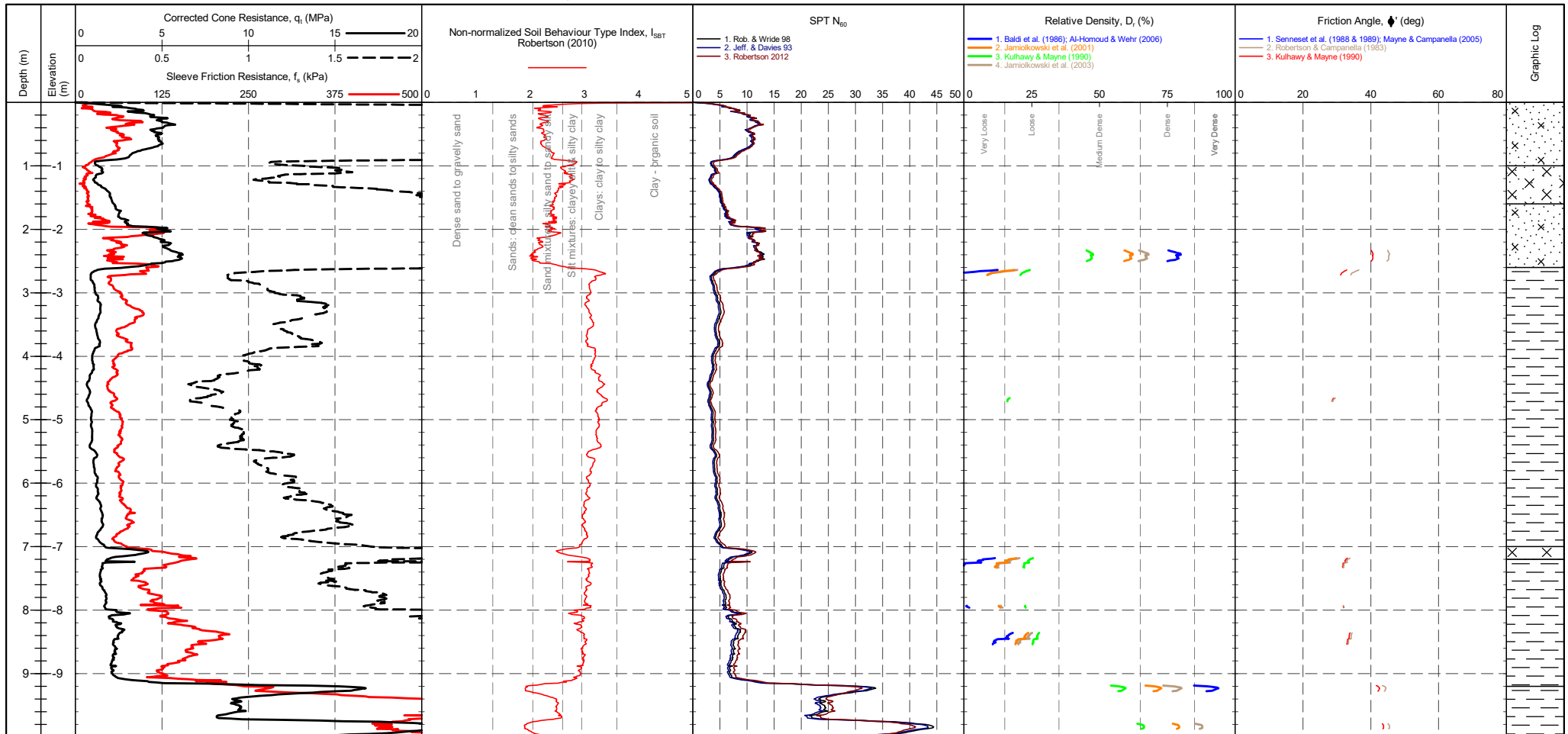
CPT104

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
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Test completed at target depth.

SHEET : 1 OF 2
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CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	264 mV	264 mV	0 MPa
Sleeve	338 mV	339 mV	0.001 kPa
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Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level

Dissipation Test

PointID

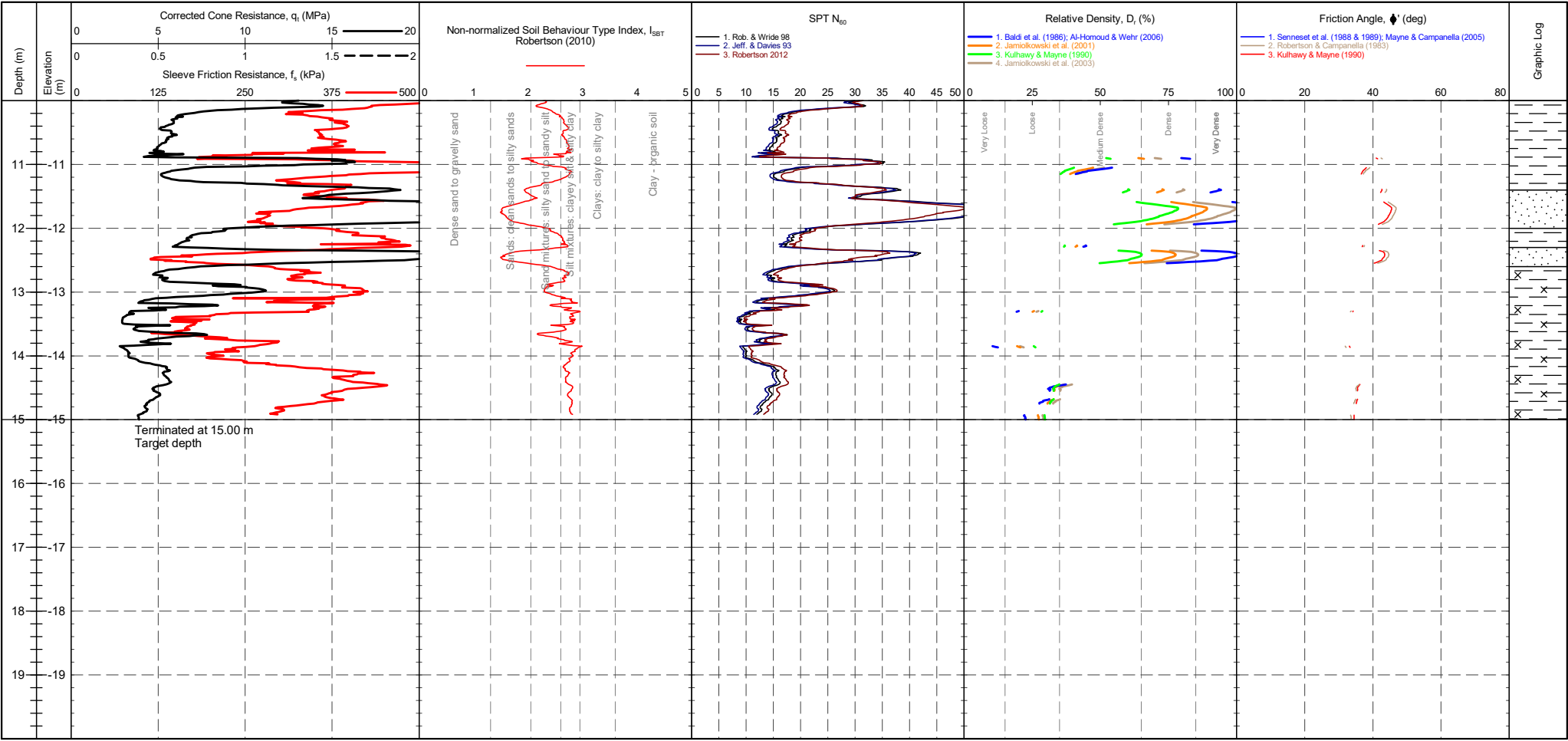
CPT104

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
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Test completed at target depth.

SHEET : 2 OF 2
STATUS : Final
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METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	264 mV	264 mV	0 MPa
Sleeve	338 mV	339 mV	0.001 kPa
Pore Pressure 2	253 mV	271 mV	0.005 kPa
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GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12				
Description	SBT Index, I _c	Description	SPT N value, NSPT	Description
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense
Sands	1.31-2.05	Dense	30 - 50	Dense
Gravelly sand	<1.31	Very Dense	>50	Very Dense

Groundwater Level
Dissipation Test

PointID

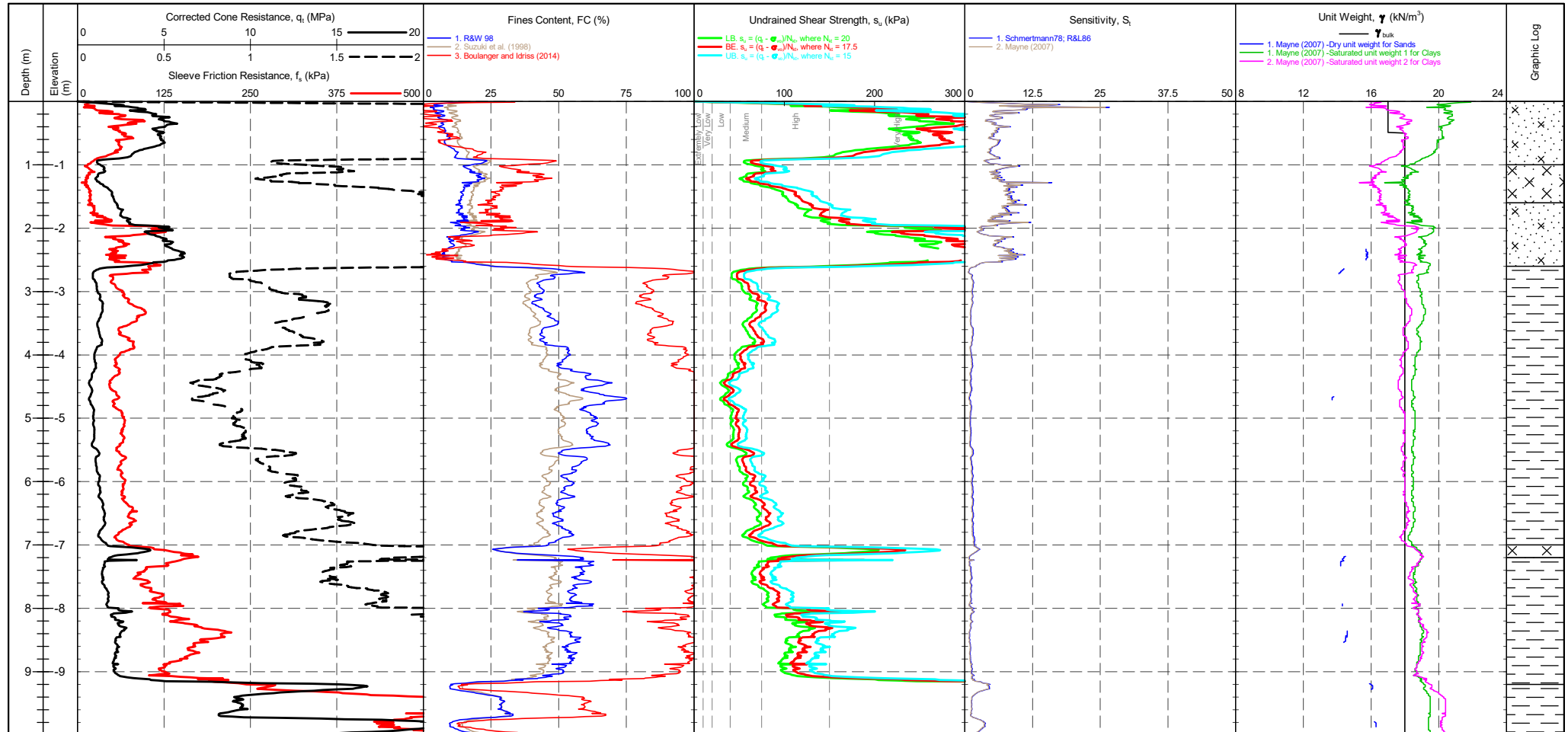
CPT104

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

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SHEET : 1 OF 2
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FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold

Transducer Pre Post Difference
Tip 264 mV 264 mV 0 MPa
Sleeve 338 mV 339 mV 0.001 kPa
Pore Pressure 2 253 mV 271 mV 0.005 kPa
X-Y Inclinator 2385 mV 2383 mV

CPTU ZERO VALUES

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	s_u (kPa)	Term based on measurement	s_u (kPa)
Extremely low strength	<10	Medium strength	40-75
Very low strength	10-20	High strength	75-150
Low strength	20-40	Very high strength	150-300
		Extremely high strength	>300

Groundwater Level

Dissipation Test

PointID

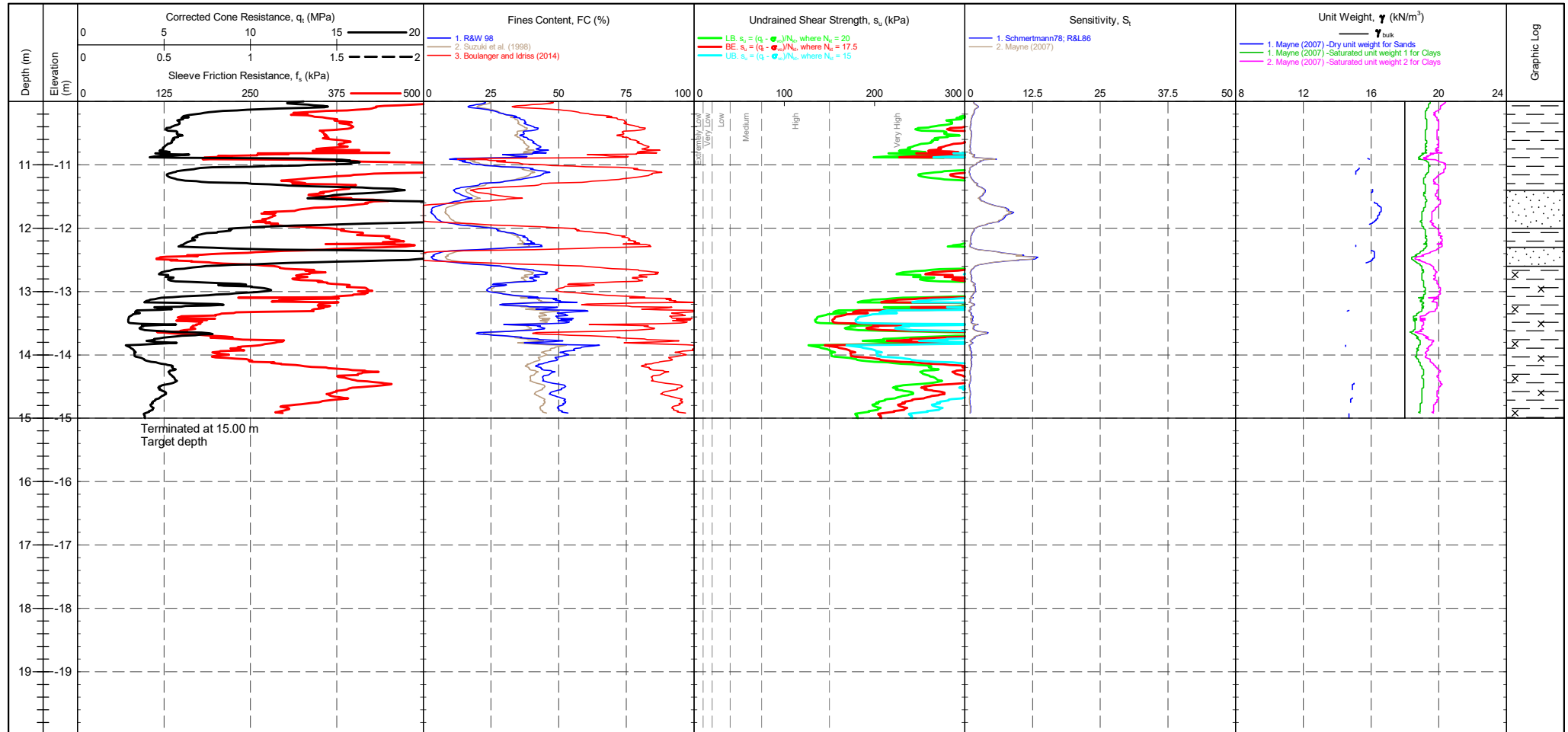
CPT104

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
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Test completed at target depth.

SHEET : 2 OF 2
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CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold

Transducer
Tip
Sleeve
Pore Pressure 2
X-Y Inclinator

CPTU ZERO VALUES

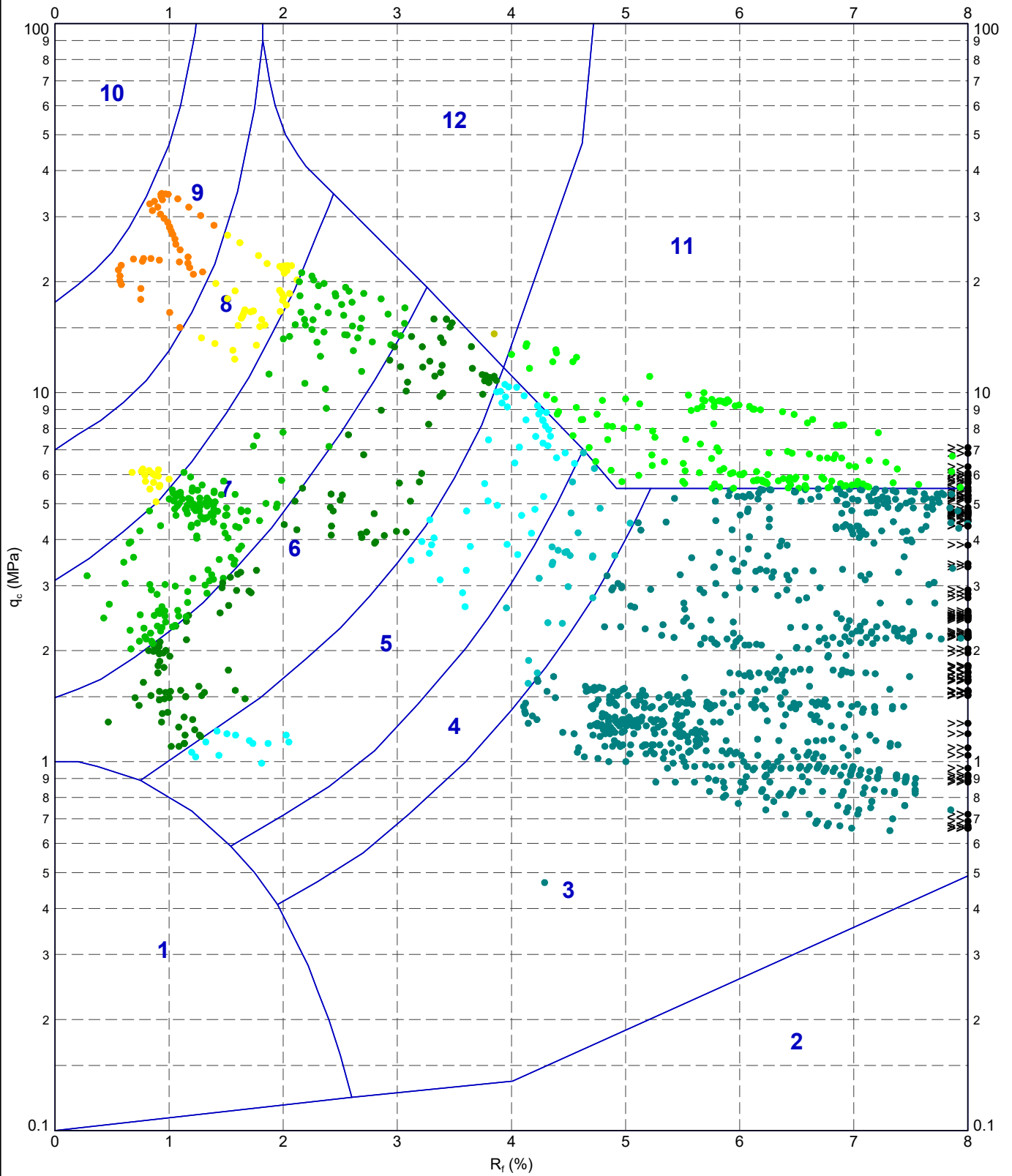
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Groundwater Level
Dissipation Test

22069-ADVANCED REPORT INSTITUSI 202.1 UB - CHLOE GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF MAP 1240458 CHORLTON BATHS LK GROUP GPJ <<DrawingFile>> 25/10/2024 16:33 10.03.00.09 Dargel Lab and in Situ Tool - DGD | Lib in Situ SI 2.02.0 2017-07-10 Pjt in Situ SI 2.02.0 2017-07-10



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material

2 - Organic material

3 - CLAY
- 4 - Silty CLAY to CLAY

5 - Clayey SILT to silty CLAY

6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT

8 - SAND to silty SAND

9 - SAND
- 10 - Gravelly SAND to SAND

11 - Very stiff fine grained

12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION	TITLE LK Group Manchester Chorlton Baths Robertson et al. 1986 qc vs. Rf - CPT104	DRAWN	DATE	25/10/2024
		CHECKED	DATE	25/10/2024
		SCALE	Not To Scale	A4
		PROJECT No 1240458	FIGURE No	

PointID

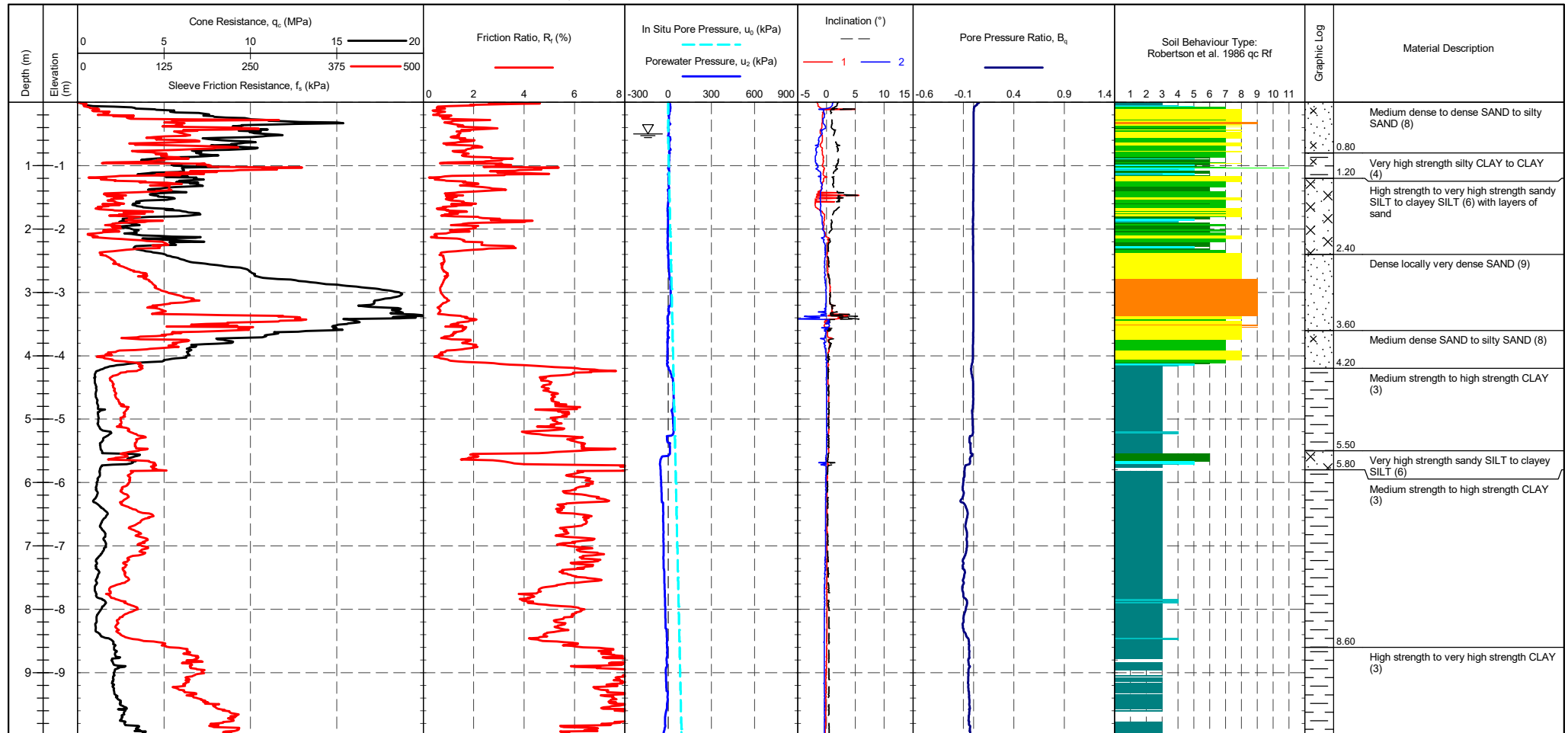
CPT105

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CALIBRATION DATE : 20/06/2023
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE
TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold
GROUNDWATER DEPTH : Assumed for calculation purposes

CPTU ZERO VALUES
Transducer Pre Post Difference
Tip 265 mV 267 mV 0.023 MPa
Sleeve 339 mV 341 mV 0.001 kPa
Pore Pressure 2 261 mV 265 mV 0.001 kPa
X-Y Inclinator 2381 mV 2345 mV

METHOD: Robertson et al. 1986 $q_c R_f$
1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravely SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level
Dissipation Test

PointID

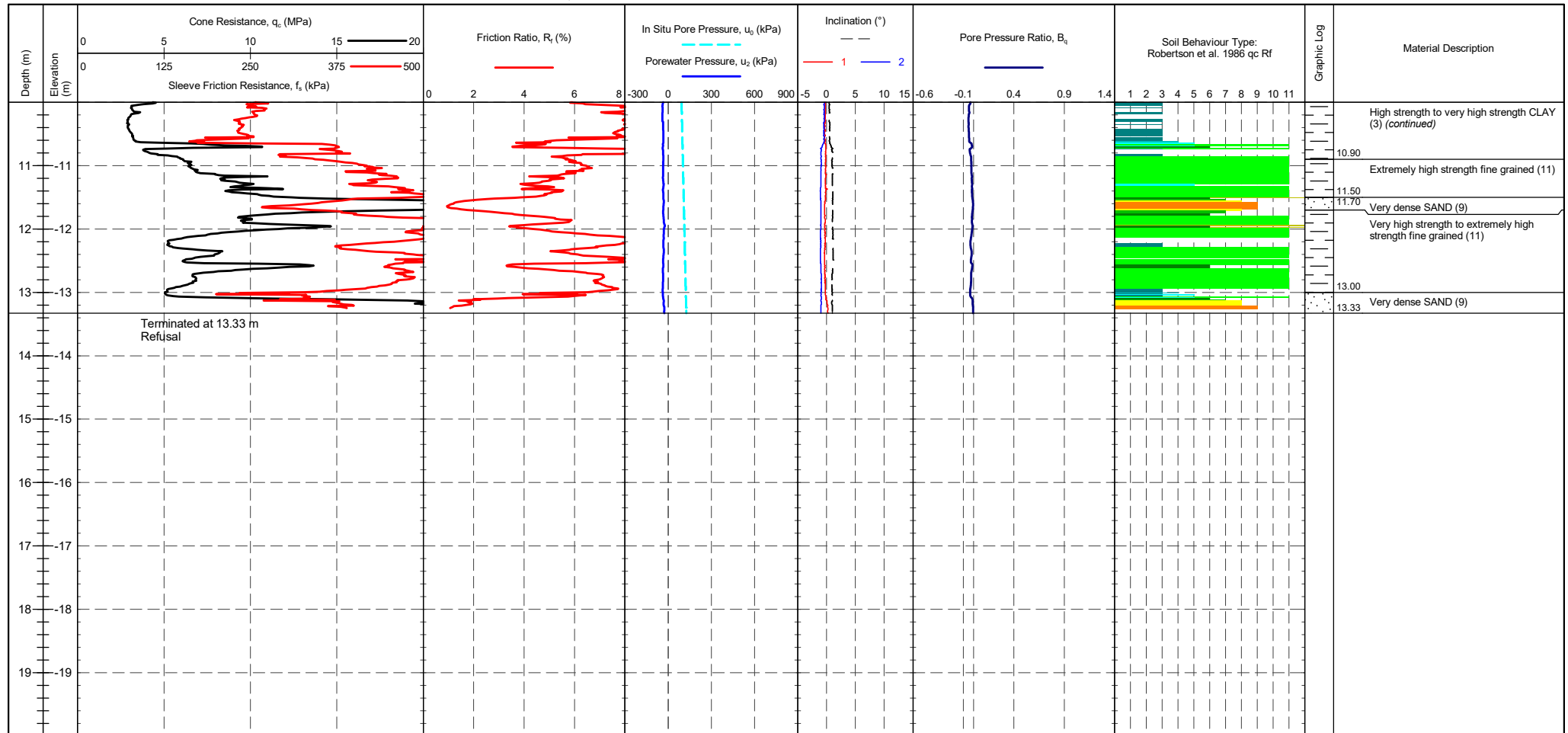
CPT105

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CALIBRATION DATE : 20/06/2023
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE
TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold
GROUNDWATER DEPTH : Assumed for calculation purposes

CPTU ZERO VALUES
Transducer Pre Post Difference
Tip 265 mV 267 mV 0.023 MPa
Sleeve 339 mV 341 mV 0.001 kPa
Pore Pressure 2 261 mV 265 mV 0.001 kPa
X-Y Inclinator 2381 mV 2345 mV

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater
Level

Dissipation Test

PointID

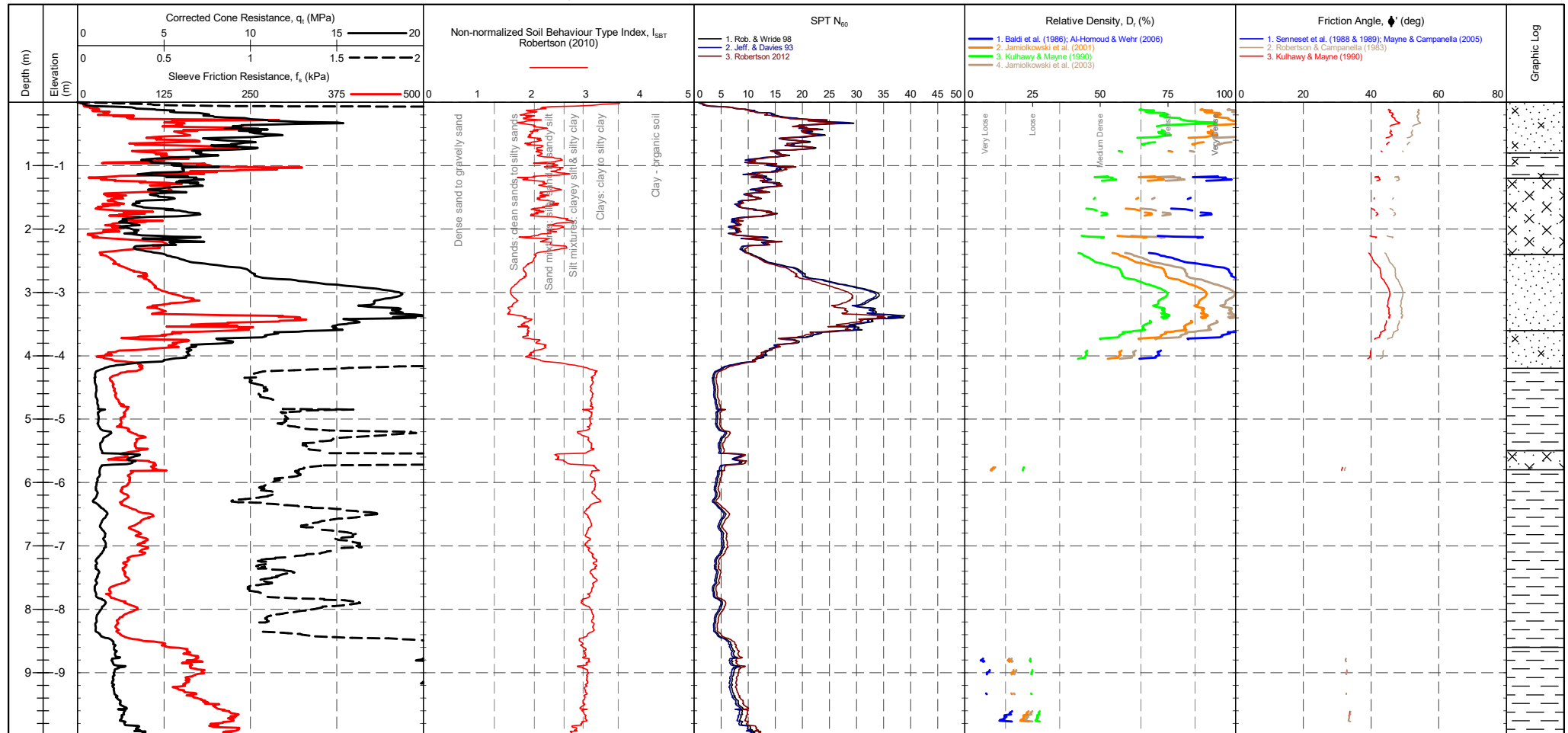
CPT105

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	265 mV	267 mV	0.023 MPa
Sleeve	339 mV	341 mV	0.001 kPa
Pore Pressure 2	261 mV	265 mV	0.001 kPa
X-Y Inclinator	2381 mV	2345 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12					
Description	SBT Index, I_c	Description	SPT N value, NSPT	Description	Relative Density D_r (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level

Dissipation Test

PointID

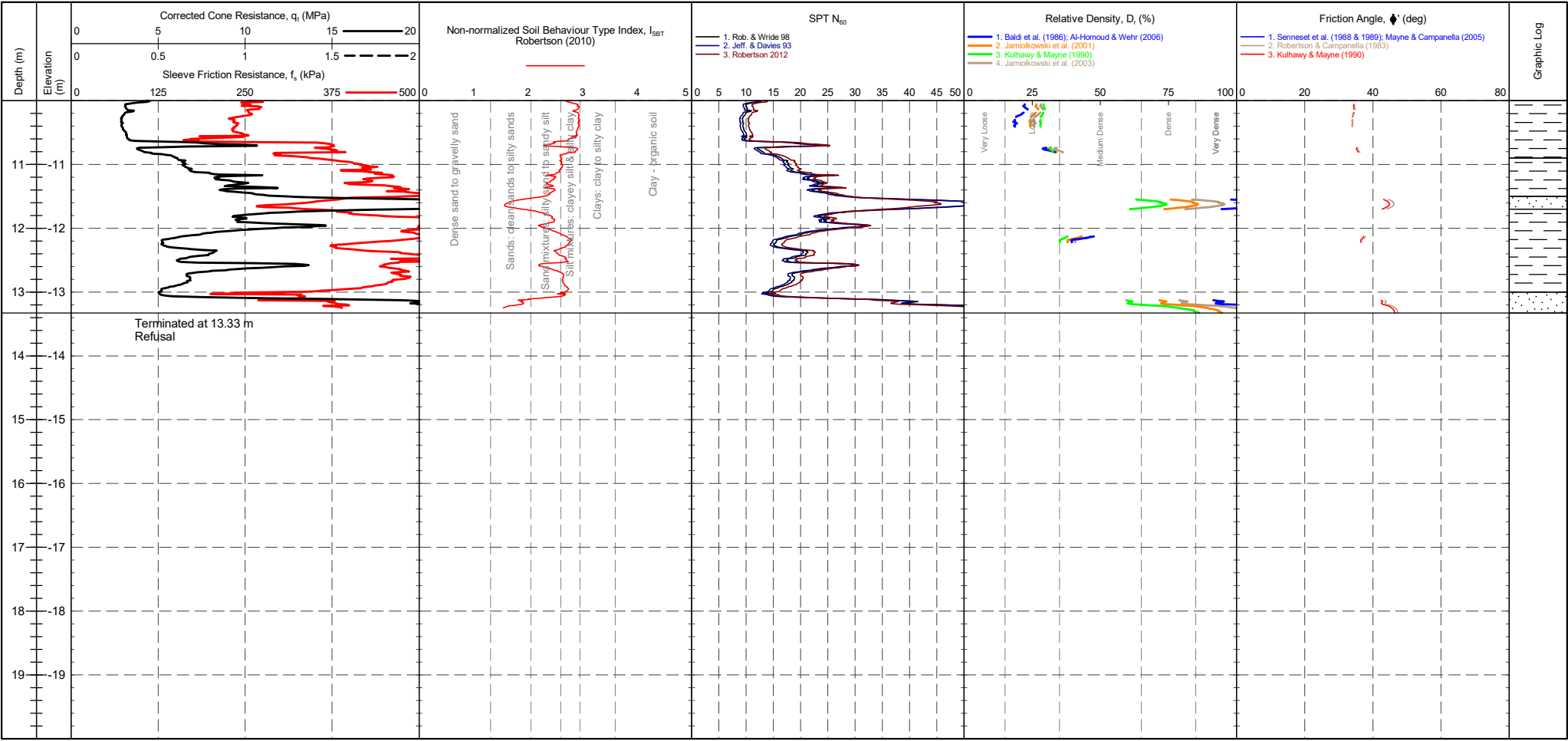
CPT105

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	265 mV	267 mV	0.023 MPa
Sleeve	339 mV	341 mV	0.001 kPa
Pore Pressure 2	261 mV	265 mV	0.001 kPa
X-Y Inclinator	2381 mV	2345 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, I_c	Description	SPT N value, NSPT	Description	Relative Density D_r (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level
Dissipation Test

PointID

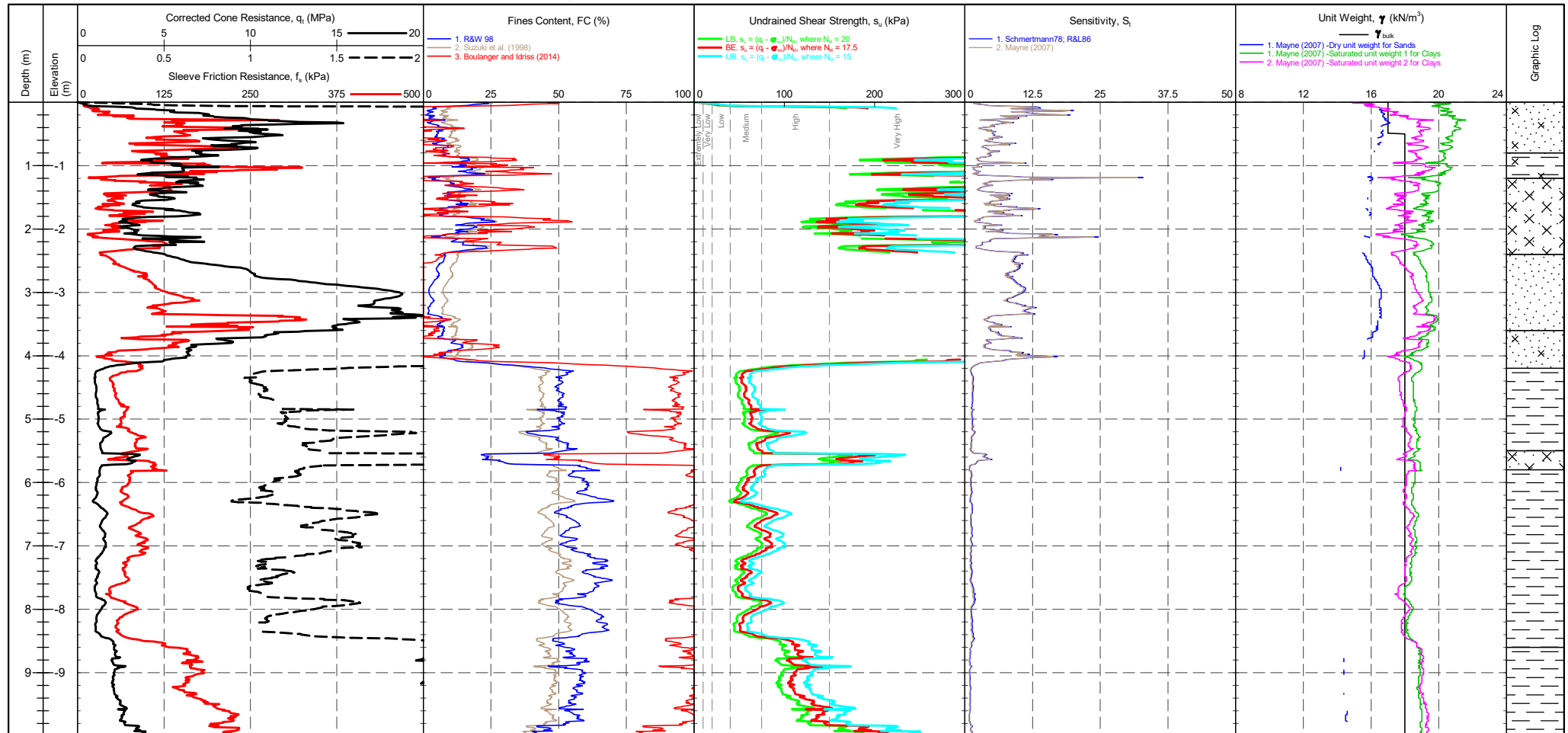
CPT105

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold

Transducer
Tip
Sleeve
Pore Pressure 2
X-Y Inclinator

Pre	Post	Difference
265 mV	267 mV	0.023 MPa
339 mV	341 mV	0.001 kPa
261 mV	265 mV	0.001 kPa
2381 mV	2345 mV	

CPTU ZERO VALUES

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)	Term based on measurement	su (kPa)
Extremely low strength	<10	Medium strength	40-75
Very low strength	10-20	High strength	75-150
Low strength	20-40	Very high strength	150-300
		Extremely high strength	>300

Groundwater Level

Dissipation Test

PointID

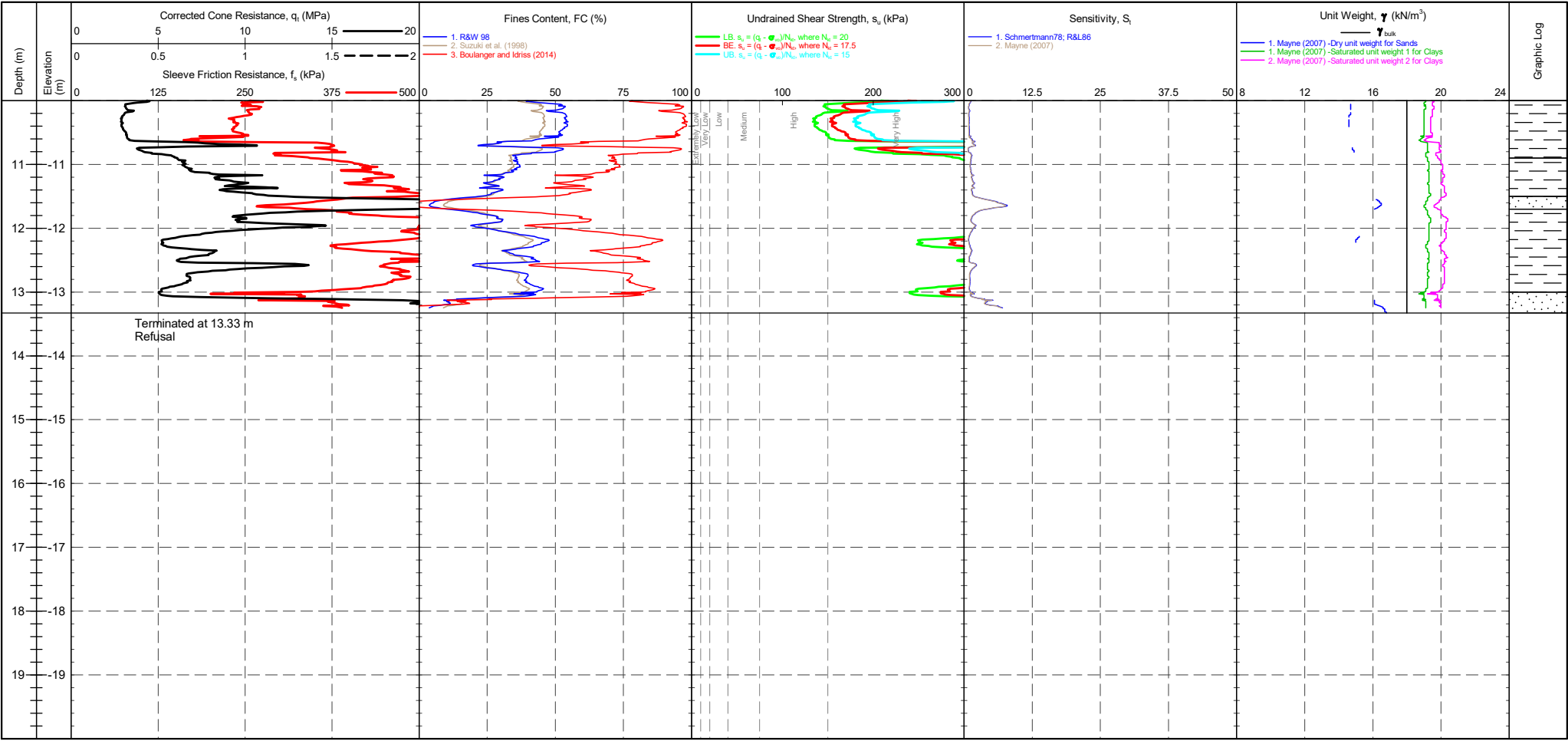
CPT105

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

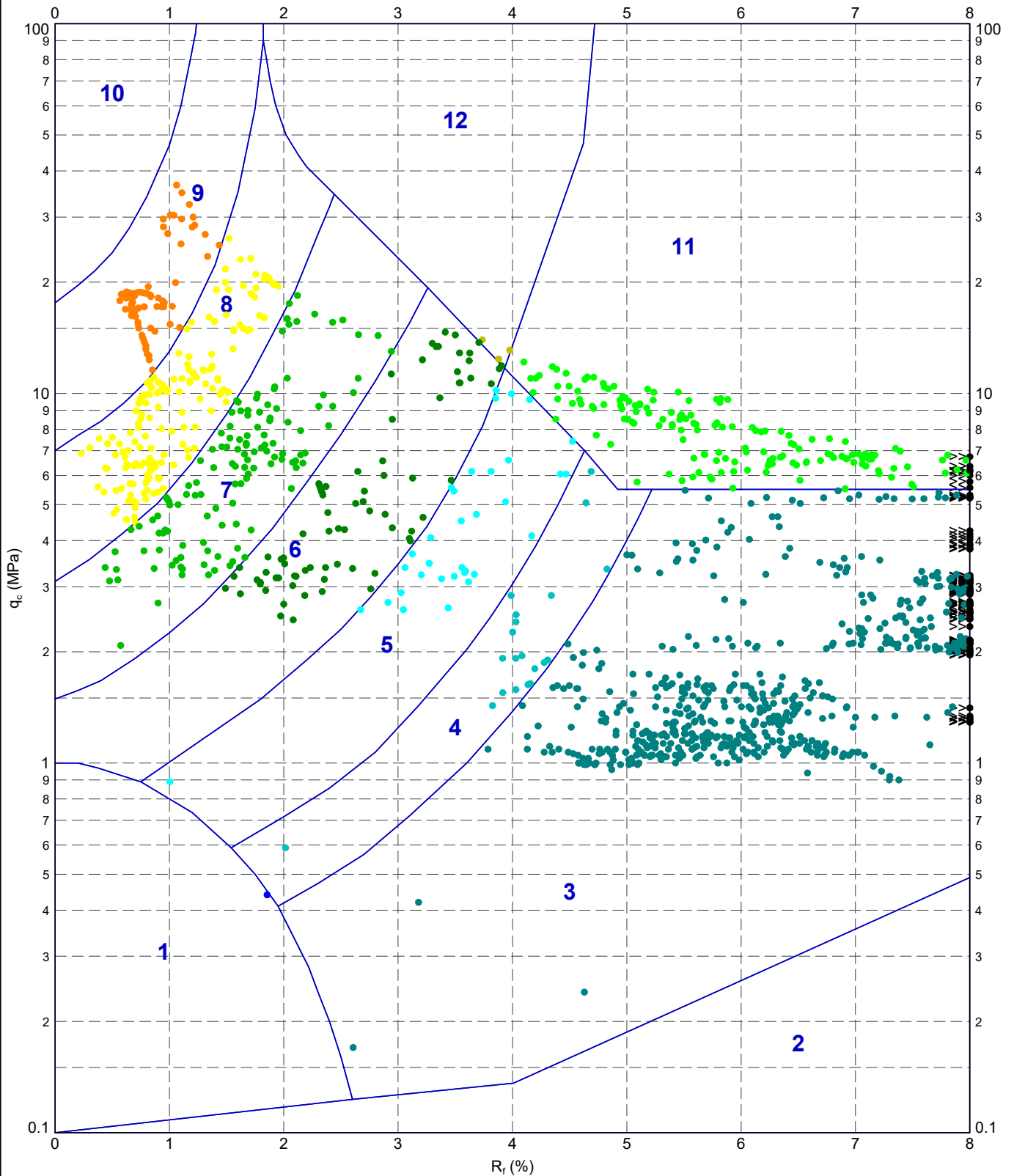
Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136		TEST TYPE : TE2		CPTU ZERO VALUES			COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11				Groundwater Level Dissipation Test
CONE MODEL : Subtraction		APPLICATION CLASS : 2		Transducer	Pre	Post	Difference	Term based on measurement	su (kPa)	Term based on measurement	su (kPa)
CONE AREA : 15cm ²		RIG : CPT 017 - Griffen		Tip	265 mV	267 mV	0.023 MPa	Extremely low strength	<10	Medium strength	40-75
CONE AREA RATIO : 0.79		OPERATOR : DR		Sleeve	339 mV	341 mV	0.001 kPa	Very low strength	10-20	High strength	75-150
FILTER POSITION : u2		FRICTION REDUCER : None		Pore Pressure 2	261 mV	265 mV	0.001 kPa	Low strength	20-40	Very high strength	150-300
FILTER TYPE : HDPE		WEATHER : Sunny & Cold		X-Y Inclinator	2381 mV	2345 mV				Extremely high strength	>300

22069-ADVANCED REPORT INSTITUSI 2.02.1 LUB - CHLOE GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF MAP 1240458 CHORLTON BATHS LK GROUP GPJ <<DrawingFile>> 25/10/2024 16:35 10.03.00.09 Dargel Lab and in Situ Tool - DGD | Lib in Situ SI 2.02.0 2017-07-10 Pjt in Situ SI 2.02.0 2017-07-10



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material

2 - Organic material

3 - CLAY
- 4 - Silty CLAY to CLAY

5 - Clayey SILT to silty CLAY

6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT

8 - SAND to silty SAND

9 - SAND
- 10 - Gravelly SAND to SAND

11 - Very stiff fine grained

12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION	TITLE LK Group Manchester Chorlton Baths Robertson et al. 1986 q _c vs. R _f - CPT105	DRAWN	DATE	25/10/2024	
		CHECKED	DATE	25/10/2024	
		SCALE			A4
		Not To Scale			
		PROJECT No		FIGURE No	
1240458					

PointID

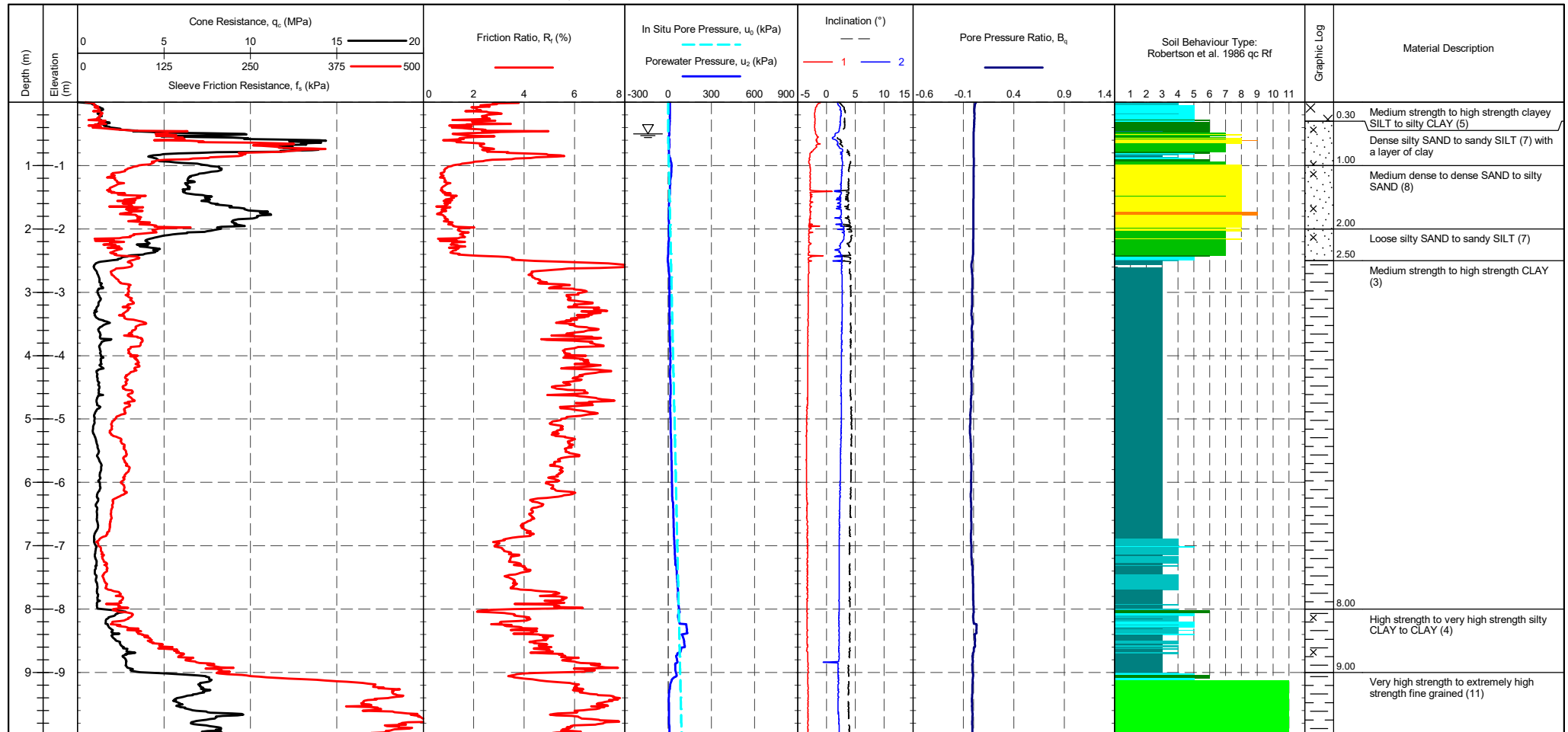
CPT106

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CALIBRATION DATE : 20/06/2023
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE
TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold
GROUNDWATER DEPTH : Assumed for calculation purposes

CPTU ZERO VALUES
Transducer Pre Post Difference
Tip 263 mV 263 mV 0 MPa
Sleeve 338 mV 337 mV -0.001 kPa
Pore Pressure 2 268 mV 118 mV -0.039 kPa
X-Y Inclinator 2449 mV 2468 mV

METHOD: Robertson et al. 1986 $q_c R_f$

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravely SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

Dissipation Test

PointID

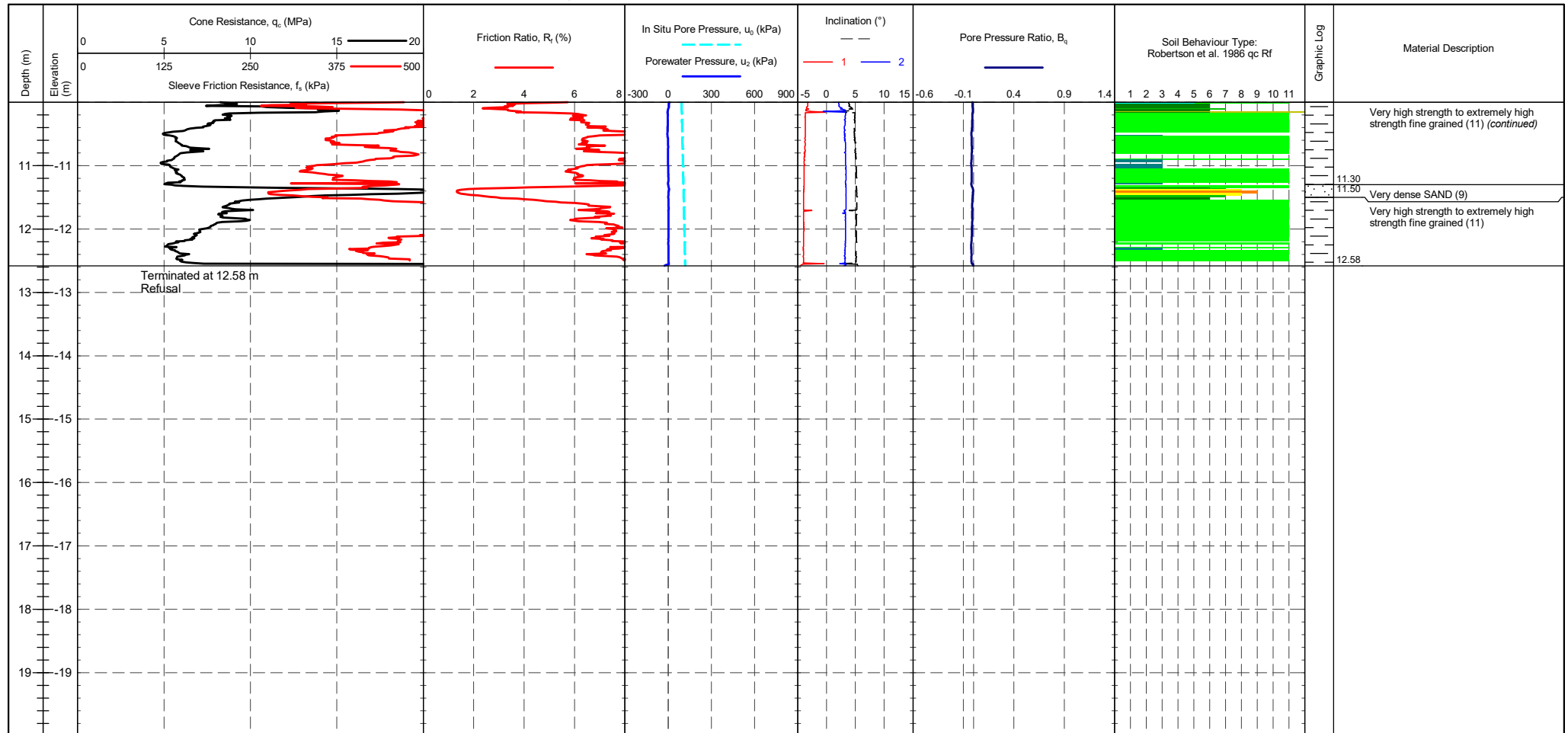
CPT106

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CALIBRATION DATE : 20/06/2023
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE
TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold
GROUNDWATER DEPTH : Assumed for calculation purposes

CPTU ZERO VALUES
Transducer Pre Post Difference
Tip 263 mV 263 mV 0 MPa
Sleeve 338 mV 337 mV -0.001 kPa
Pore Pressure 2 268 mV 118 mV -0.039 kPa
X-Y Inclinator 2449 mV 2468 mV

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater
Level

Dissipation Test

PointID

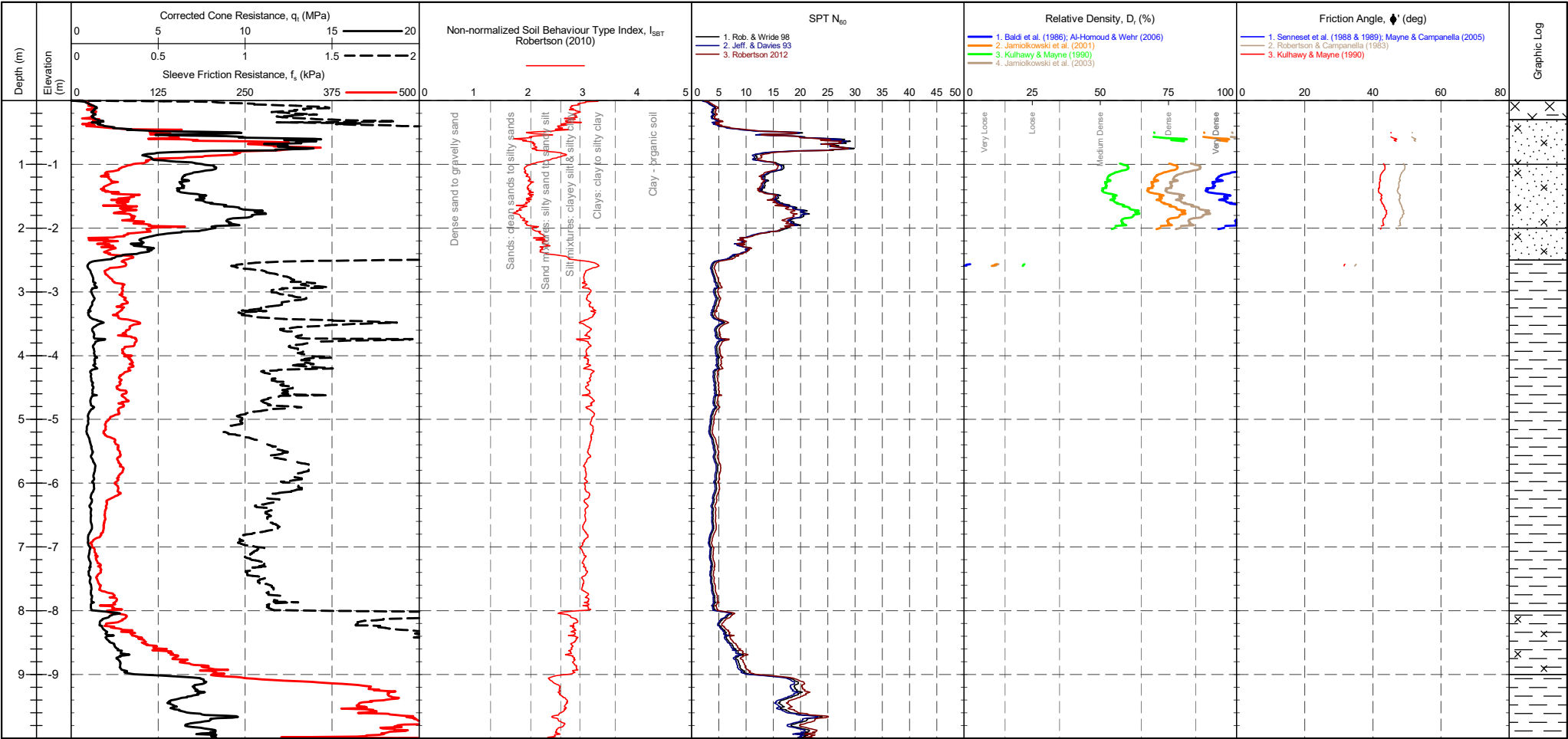
CPT106

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	263 mV	263 mV	0 MPa
Sleeve	338 mV	337 mV	-0.001 kPa
Pore Pressure 2	268 mV	118 mV	-0.039 kPa
X-Y Inclinator	2449 mV	2468 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12					
Description	SBT Index, I _c	Description	SPT N value, NSPT	Description	Relative Density D _r (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level

Dissipation Test

PointID

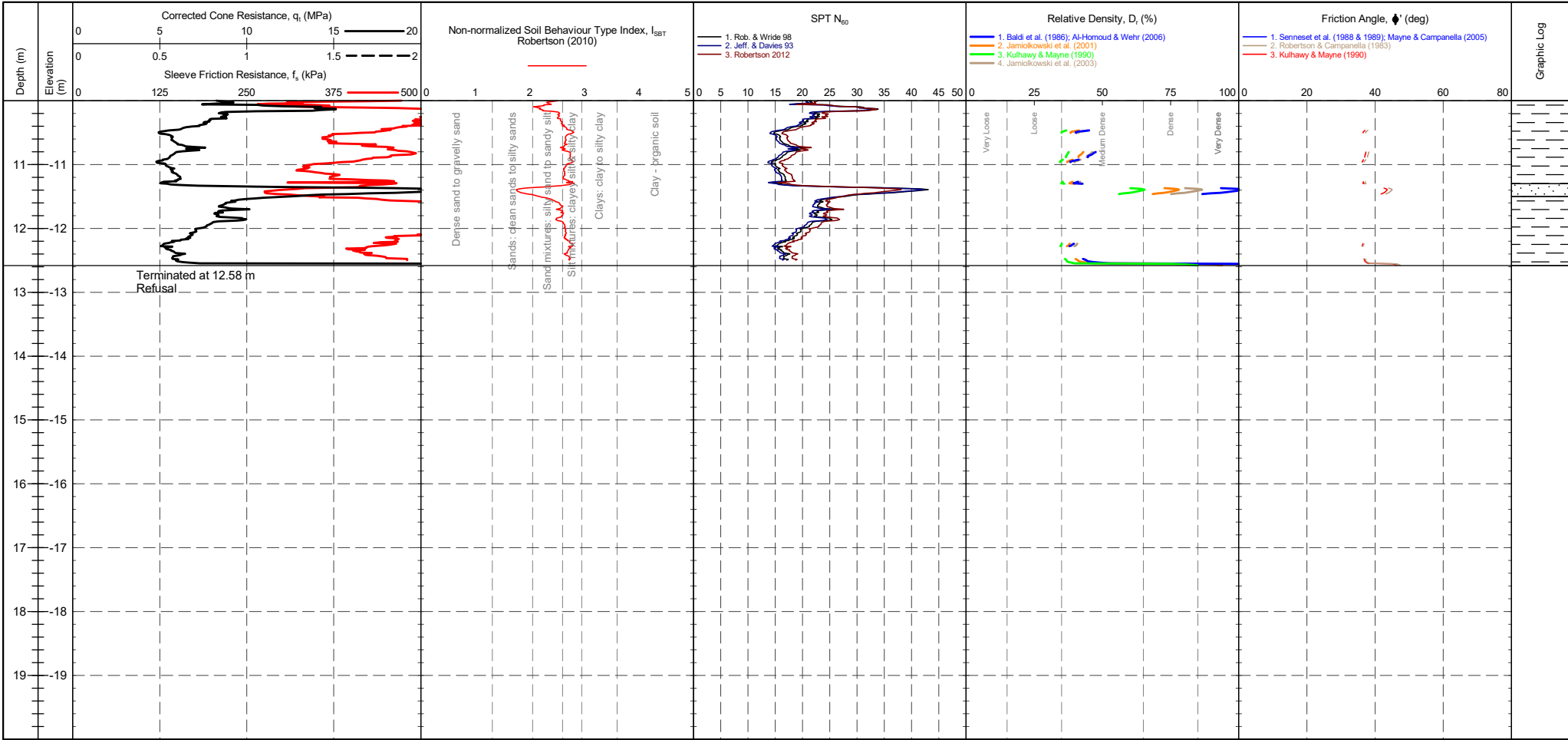
CPT106

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	263 mV	263 mV	0 MPa
Sleeve	338 mV	337 mV	-0.001 kPa
Pore Pressure 2	268 mV	118 mV	-0.039 kPa
X-Y Inclinator	2449 mV	2468 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, I_c	Description	SPT N value, NSPT	Description	Relative Density D_r (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level
Dissipation Test

PointID

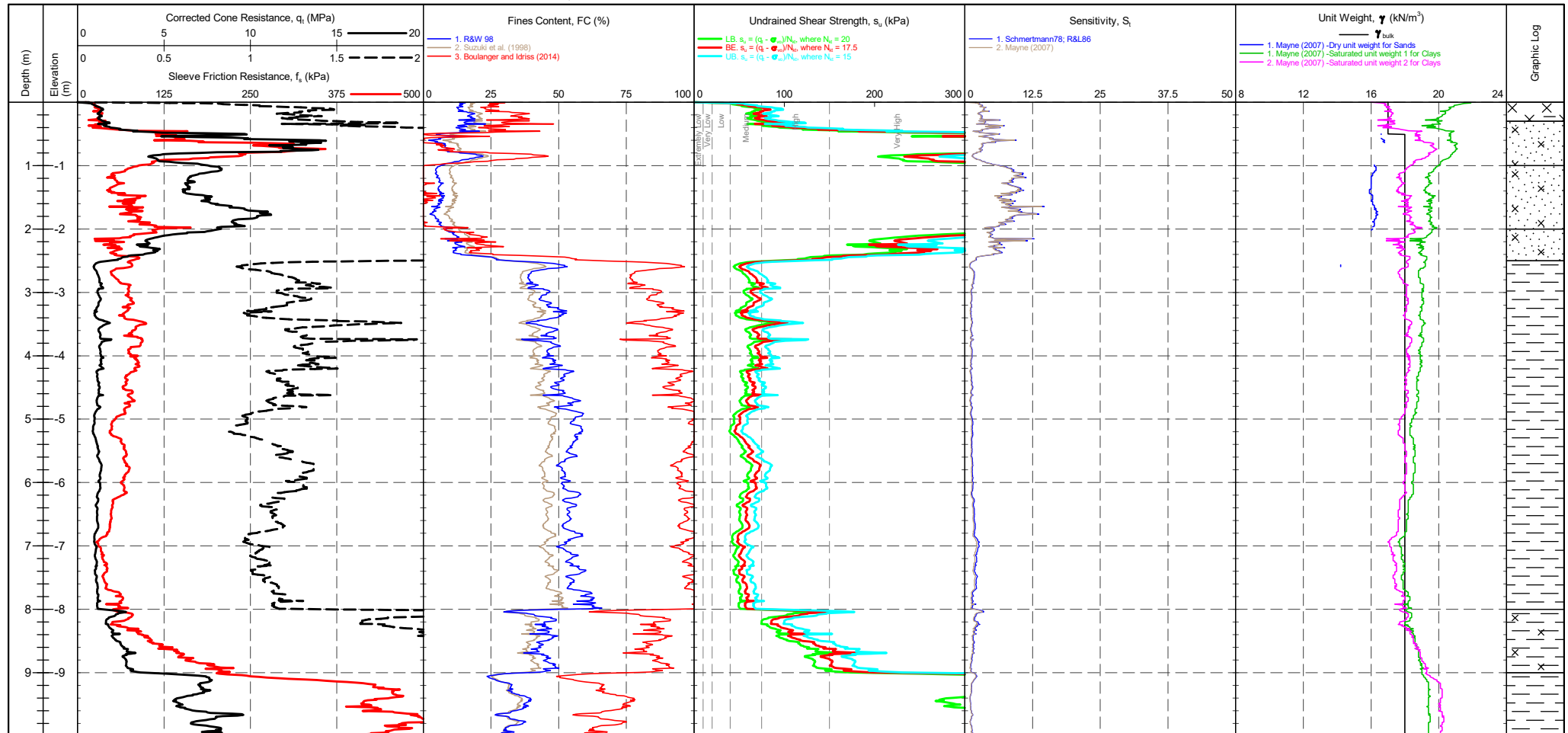
CPT106

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold

Transducer : Pre Post Difference
Tip : 263 mV 263 mV 0 MPa
Sleeve : 338 mV 337 mV -0.001 kPa
Pore Pressure 2 : 268 mV 118 mV -0.039 kPa
X-Y Inclinator : 2449 mV 2468 mV

CPTU ZERO VALUES

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)	Term based on measurement	su (kPa)
Extremely low strength	<10	Medium strength	40-75
Very low strength	10-20	High strength	75-150
Low strength	20-40	Very high strength	150-300
		Extremely high strength	>300

Groundwater Level

Dissipation Test

PointID

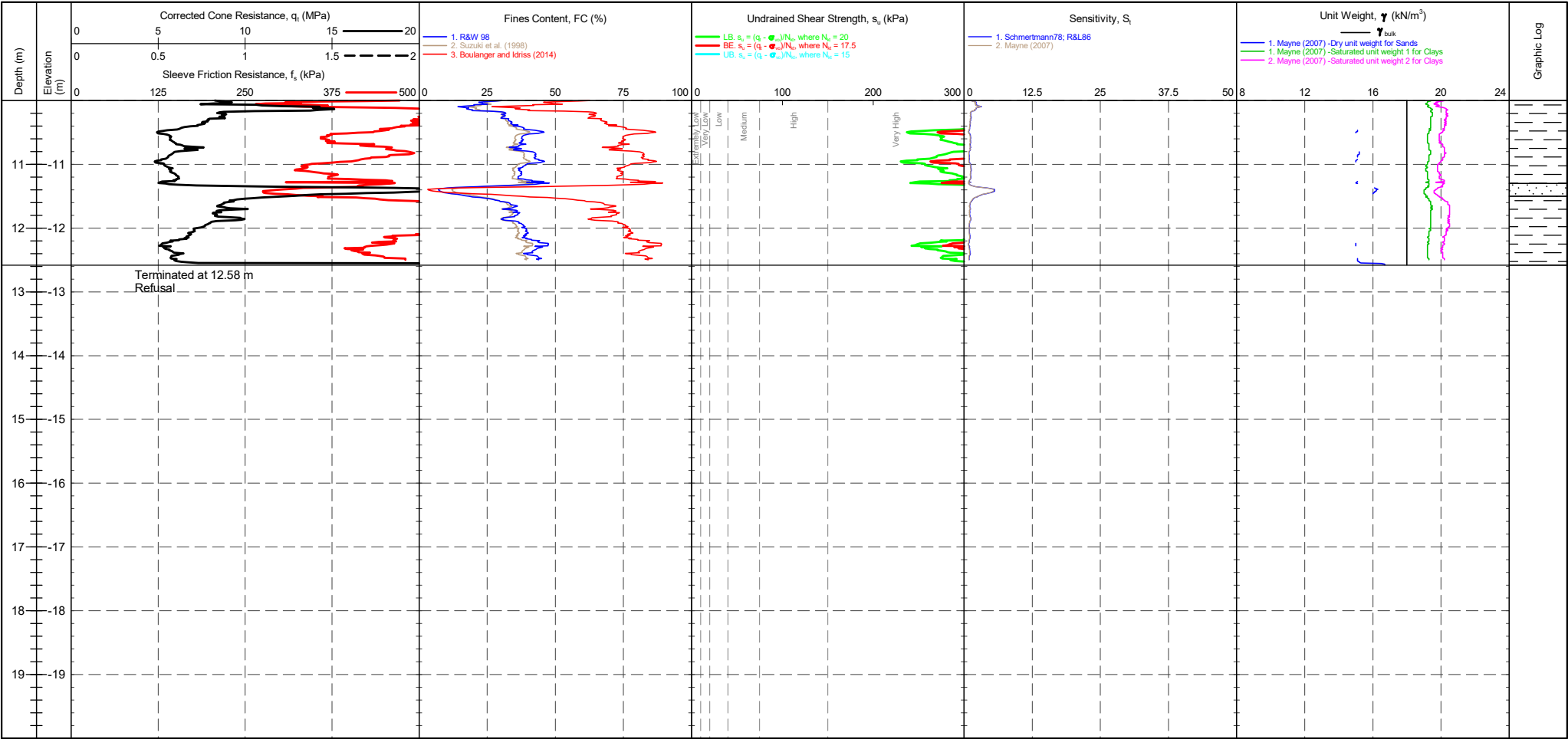
CPT106

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

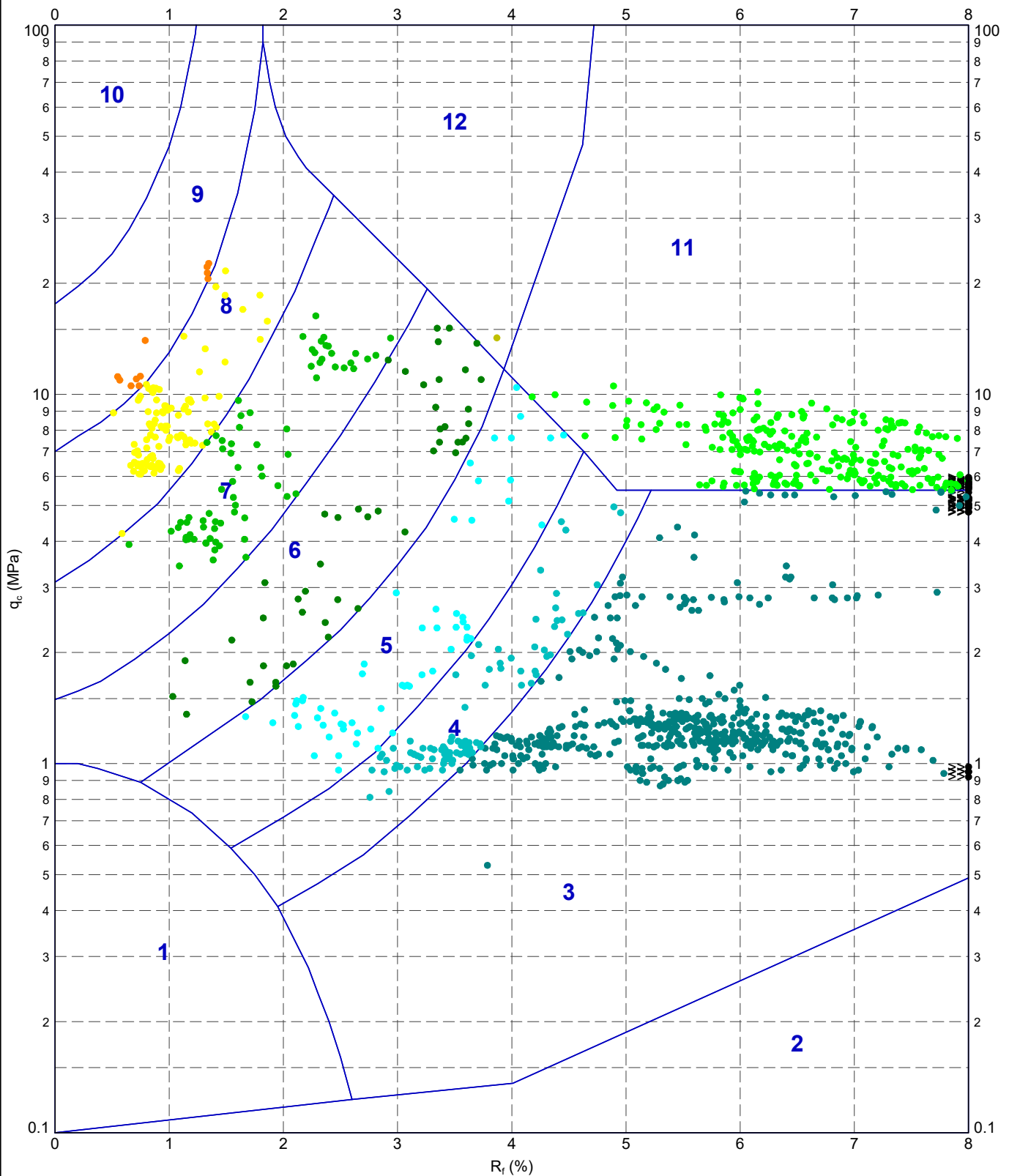
Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136		TEST TYPE : TE2		CPTU ZERO VALUES			COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11				Groundwater Level Dissipation Test
CONE MODEL : Subtraction		APPLICATION CLASS : 2		Transducer	Pre	Post	Difference	Term based on measurement	su (kPa)	Term based on measurement	su (kPa)
CONE AREA : 15cm ²		RIG : CPT 017 - Griffen		Tip	263 mV	263 mV	0 MPa	Extremely low strength	<10	Medium strength	40-75
CONE AREA RATIO : 0.79		OPERATOR : DR		Sleeve	338 mV	337 mV	-0.001 kPa	Very low strength	10-20	High strength	75-150
FILTER POSITION : u2		FRICTION REDUCER : None		Pore Pressure 2	268 mV	118 mV	-0.039 kPa	Low strength	20-40	Very high strength	150-300
FILTER TYPE : HDPE		WEATHER : Sunny & Cold		X-Y Inclinator	2449 mV	2468 mV				Extremely high strength	>300

22069-ADVANCED REPORT INSTITUSI 202.1 LUB - CHLOE GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF AP 1240458 CHORLTON BATHS LK GROUP GPJ <<DrawingFile>> 25/10/2024 16:36 10.03.00.09 Dargel Lab and in Situ Tool - DGD | Lib in Situ SI 2.02.0 2017-07-10 Pjt in Situ SI 2.02.0 2017-07-10



METHOD: Robertson et al. 1986 qc Rf

- | | | | |
|-------------------------------------|-------------------------------|------------------------------|------------------------------|
| 1 - Sensitive fine grained material | 4 - Silty CLAY to CLAY | 7 - Silty SAND to sandy SILT | 10 - Gravelly SAND to SAND |
| 2 - Organic material | 5 - Clayey SILT to silty CLAY | 8 - SAND to silty SAND | 11 - Very stiff fine grained |
| 3 - CLAY | 6 - Sandy SILT to clayey SILT | 9 - SAND | 12 - SAND to clayey SAND |

	TITLE LK Group Manchester Chorlton Baths Robertson et al. 1986 qc vs. Rf - CPT106	DRAWN	DATE 25/10/2024
		CHECKED	DATE 25/10/2024
		SCALE Not To Scale	A4
		PROJECT No 1240458	FIGURE No

PointID

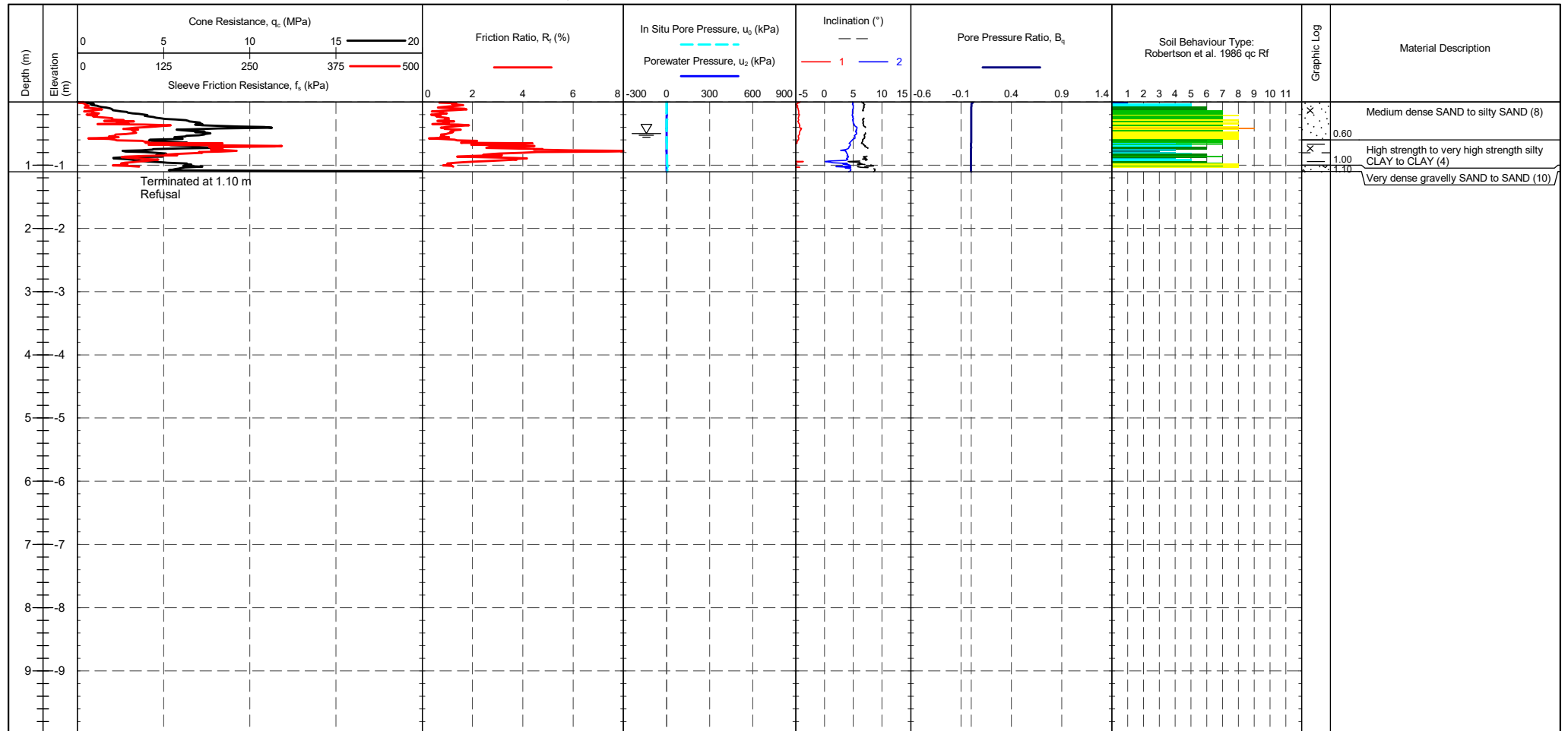
CPT107

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CALIBRATION DATE : 20/06/2023
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold
GROUNDWATER DEPTH : Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	264 mV	267 mV	0.035 MPa
Sleeve	339 mV	340 mV	0.001 kPa
Pore Pressure 2	265 mV	259 mV	-0.002 kPa
X-Y Inclinator	2146 mV	2160 mV	

METHOD: Robertson et al. 1986 $q_c R_f$

1 - Sensitive fine grained material	5 - Clayey SILT to silty CLAY	9 - SAND
2 - Organic material	6 - Sandy SILT to clayey SILT	10 - Gravelly SAND to SAND
3 - CLAY	7 - Silty SAND to sandy SILT	11 - Very stiff fine grained
4 - Silty CLAY to CLAY	8 - SAND to silty SAND	12 - SAND to clayey SAND

Groundwater
Level

Dissipation Test

PointID

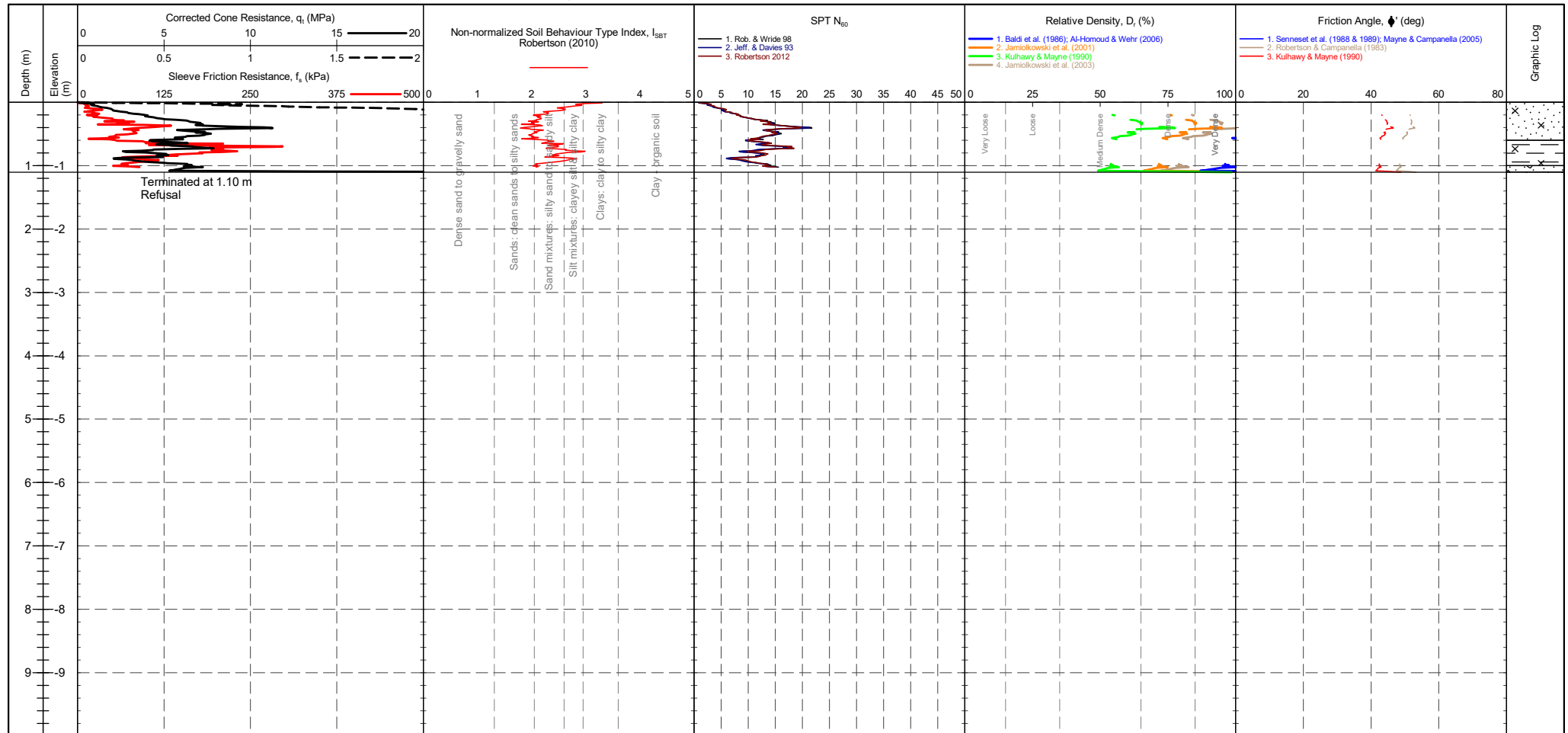
CPT107

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	264 mV	267 mV	0.035 MPa
Sleeve	339 mV	340 mV	0.001 kPa
Pore Pressure 2	265 mV	259 mV	-0.002 kPa
X-Y Inclinator	2146 mV	2160 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12			
Description	SBT Index, I_c	Description	SPT N value, NSPT
Clays	2.95-3.60	Very Loose	0 - 4
Silt mixtures	2.60-2.95	Loose	4 - 10
Sand mixtures	2.05-2.60	Medium Dense	10 - 30
Sands	1.31-2.05	Dense	30 - 50
Gravelly sand	<1.31	Very Dense	>50

Groundwater Level

Dissipation Test

PointID

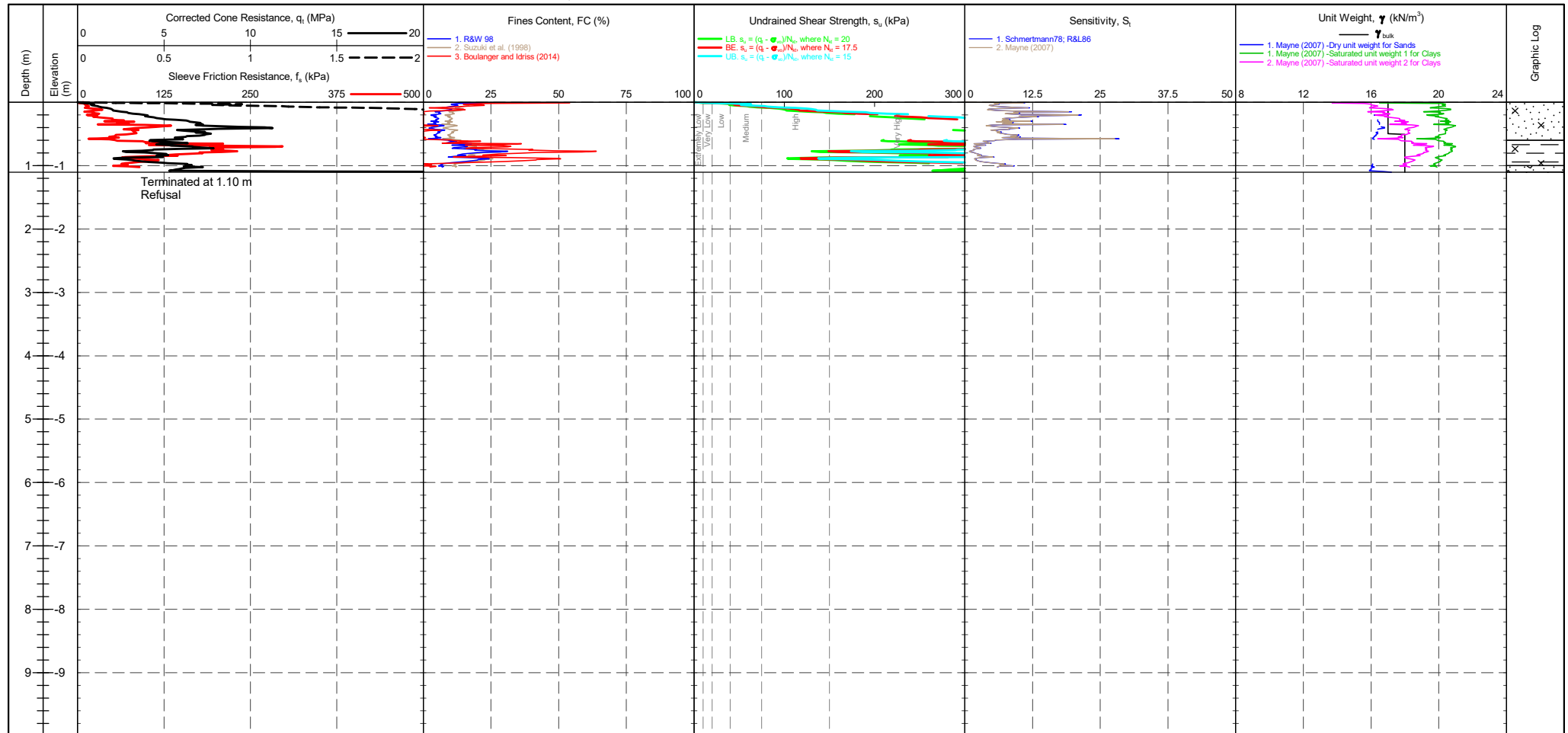
CPT107

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	264 mV	267 mV	0.035 MPa
Sleeve	339 mV	340 mV	0.001 kPa
Pore Pressure 2	265 mV	259 mV	-0.002 kPa
X-Y Inclinator	2146 mV	2160 mV	

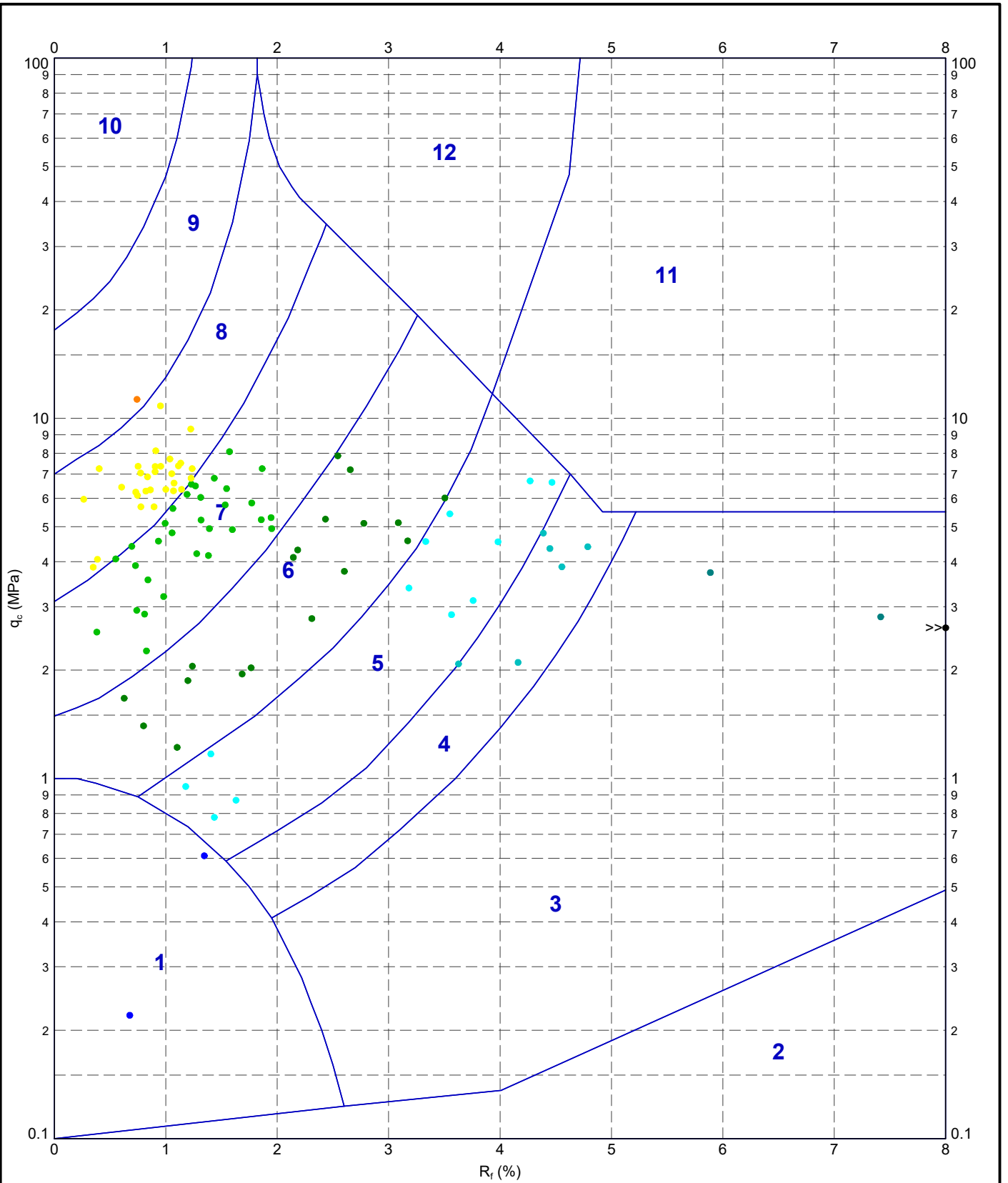
COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	s_u (kPa)	Term based on measurement	s_u (kPa)
Extremely low strength	<10	Medium strength	40-75
Very low strength	10-20	High strength	75-150
Low strength	20-40	Very high strength	150-300
		Extremely high strength	>300

Groundwater Level

Dissipation Test

22069-ADVANCED REPORT INSTITUSI 202.1 LUB - CHLOE GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF AP 1240458 CHORLTON BATHS LK GROUP GPJ <<DrawingFile>> 25/10/2024 16:37 10.03.00.09 Dargel Lab and in Situ Tool - DGD | Lib in Situ SI 2.02.0 2017-07-10 PJT in Situ SI 2.02.0 2017-07-10



METHOD: Robertson et al. 1986 q_c vs. R_f

- | | | | |
|-------------------------------------|-------------------------------|------------------------------|------------------------------|
| 1 - Sensitive fine grained material | 4 - Silty CLAY to CLAY | 7 - Silty SAND to sandy SILT | 10 - Gravelly SAND to SAND |
| 2 - Organic material | 5 - Clayey SILT to silty CLAY | 8 - SAND to silty SAND | 11 - Very stiff fine grained |
| 3 - CLAY | 6 - Sandy SILT to clayey SILT | 9 - SAND | 12 - SAND to clayey SAND |

	TITLE LK Group Manchester Chorlton Baths Robertson et al. 1986 q_c vs. R_f - CPT107	DRAWN	DATE 25/10/2024
		CHECKED	DATE 25/10/2024
		SCALE Not To Scale	A4
		PROJECT No 1240458	FIGURE No

PointID

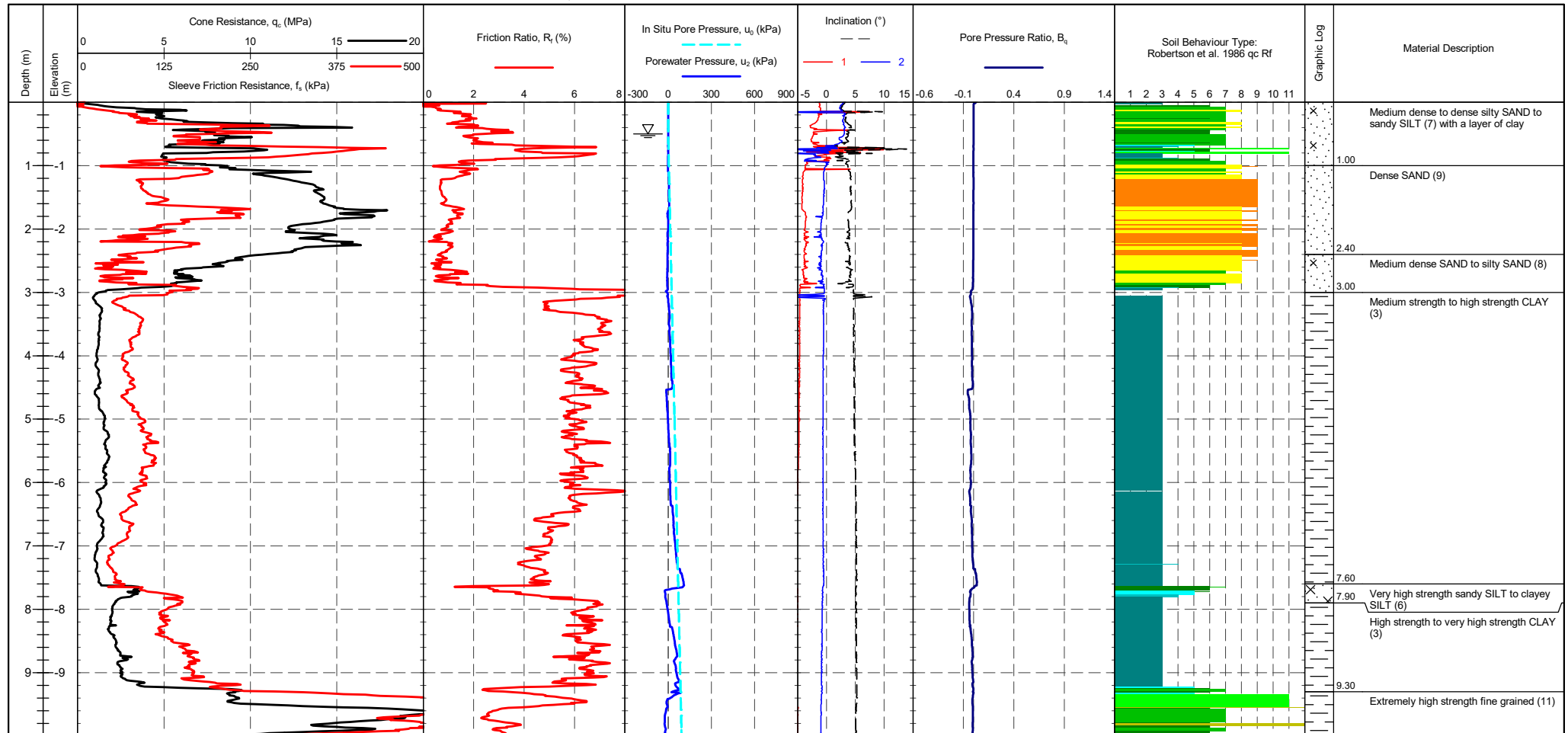
CPT107A

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CALIBRATION DATE : 20/06/2023
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold
GROUNDWATER DEPTH : Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	266 mV	266 mV	0 MPa
Sleeve	339 mV	339 mV	0 kPa
Pore Pressure 2	257 mV	255 mV	-0.001 kPa
X-Y Inclinator	2435 mV	2483 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material	5 - Clayey SILT to silty CLAY	9 - SAND
2 - Organic material	6 - Sandy SILT to clayey SILT	10 - Gravelly SAND to SAND
3 - CLAY	7 - Silty SAND to sandy SILT	11 - Very stiff fine grained
4 - Silty CLAY to CLAY	8 - SAND to silty SAND	12 - SAND to clayey SAND

Groundwater Level
Dissipation Test

PointID

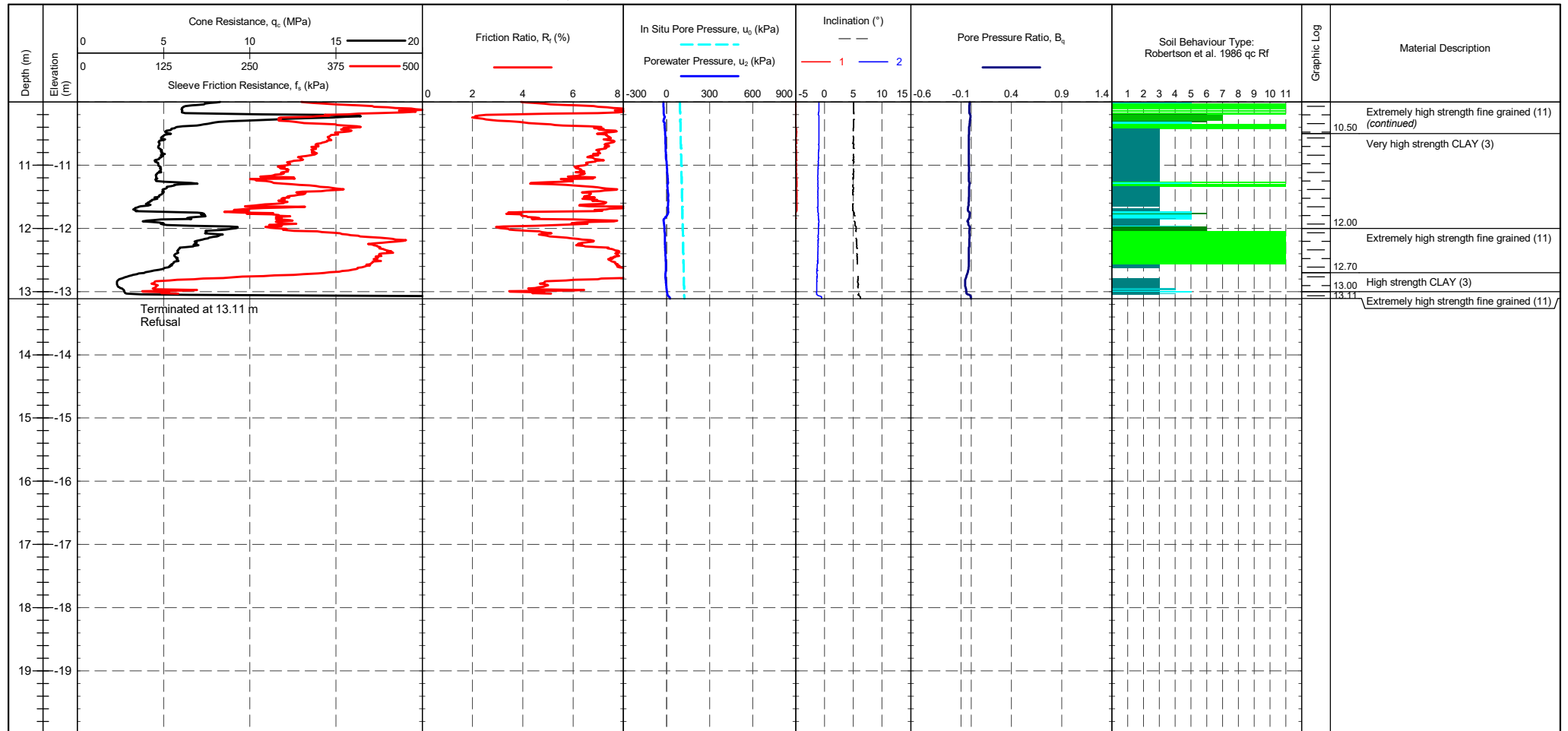
CPT107A

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CALIBRATION DATE : 20/06/2023
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold
GROUNDWATER DEPTH : Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	266 mV	266 mV	0 MPa
Sleeve	339 mV	339 mV	0 kPa
Pore Pressure 2	257 mV	255 mV	-0.001 kPa
X-Y Inclinator	2435 mV	2483 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material	5 - Clayey SILT to silty CLAY	9 - SAND
2 - Organic material	6 - Sandy SILT to clayey SILT	10 - Gravelly SAND to SAND
3 - CLAY	7 - Silty SAND to sandy SILT	11 - Very stiff fine grained
4 - Silty CLAY to CLAY	8 - SAND to silty SAND	12 - SAND to clayey SAND

Groundwater
Level

Dissipation Test

PointID

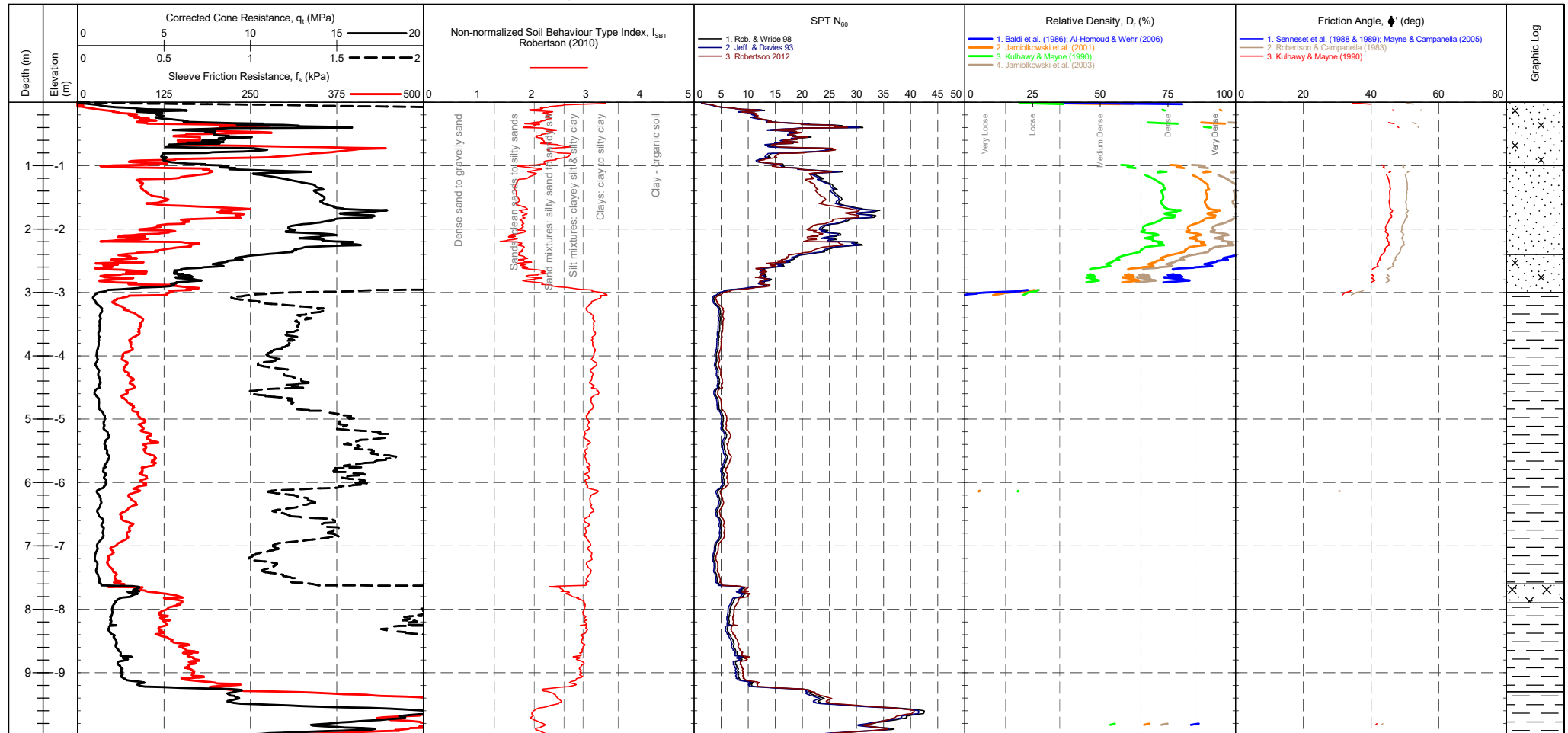
CPT107A

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold

Transducer
Tip
Sleeve
Pore Pressure 2
X-Y Inclinator

CPTU ZERO VALUES

Pre	Post	Difference
266 mV	266 mV	0 MPa
339 mV	339 mV	0 kPa
257 mV	255 mV	-0.001 kPa
2435 mV	2483 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12					
Description	SBT Index, I_c	Description	SPT N value, NSPT	Description	Relative Density D_r (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level

Dissipation Test

PointID

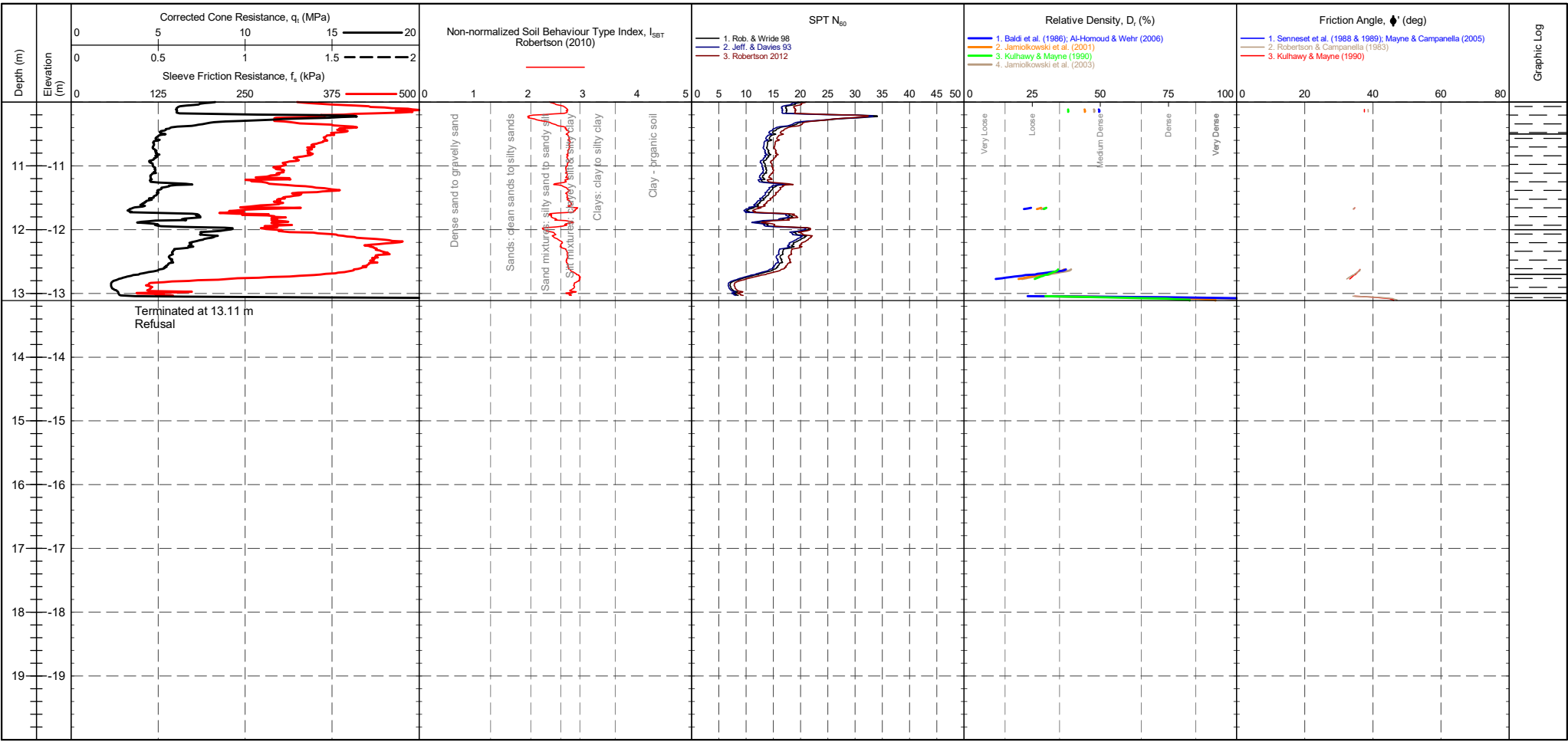
CPT107A

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136		TEST TYPE : TE2		CPTU ZERO VALUES				GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12						 Groundwater Level
CONE MODEL : Subtraction		APPLICATION CLASS : 2		Transducer	Pre	Post	Difference	Description	SBT Index, I_c	Description	SPT N value, NSPT	Description	Relative Density D_r (%)	
CONE AREA : 15cm ²		RIG : CPT 017 - Griffen		Tip	266 mV	266 mV	0 MPa	Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15	 Dissipation Test
CONE AREA RATIO : 0.79		OPERATOR : DR		Sleeve	339 mV	339 mV	0 kPa	Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35	
FILTER POSITION : u2		FRICTION REDUCER : None		Pore Pressure 2	257 mV	255 mV	-0.001 kPa	Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65	
FILTER TYPE : HDPE		WEATHER : Sunny & Cold		X-Y Inclinator	2435 mV	2483 mV		Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85	
								Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85	

PointID

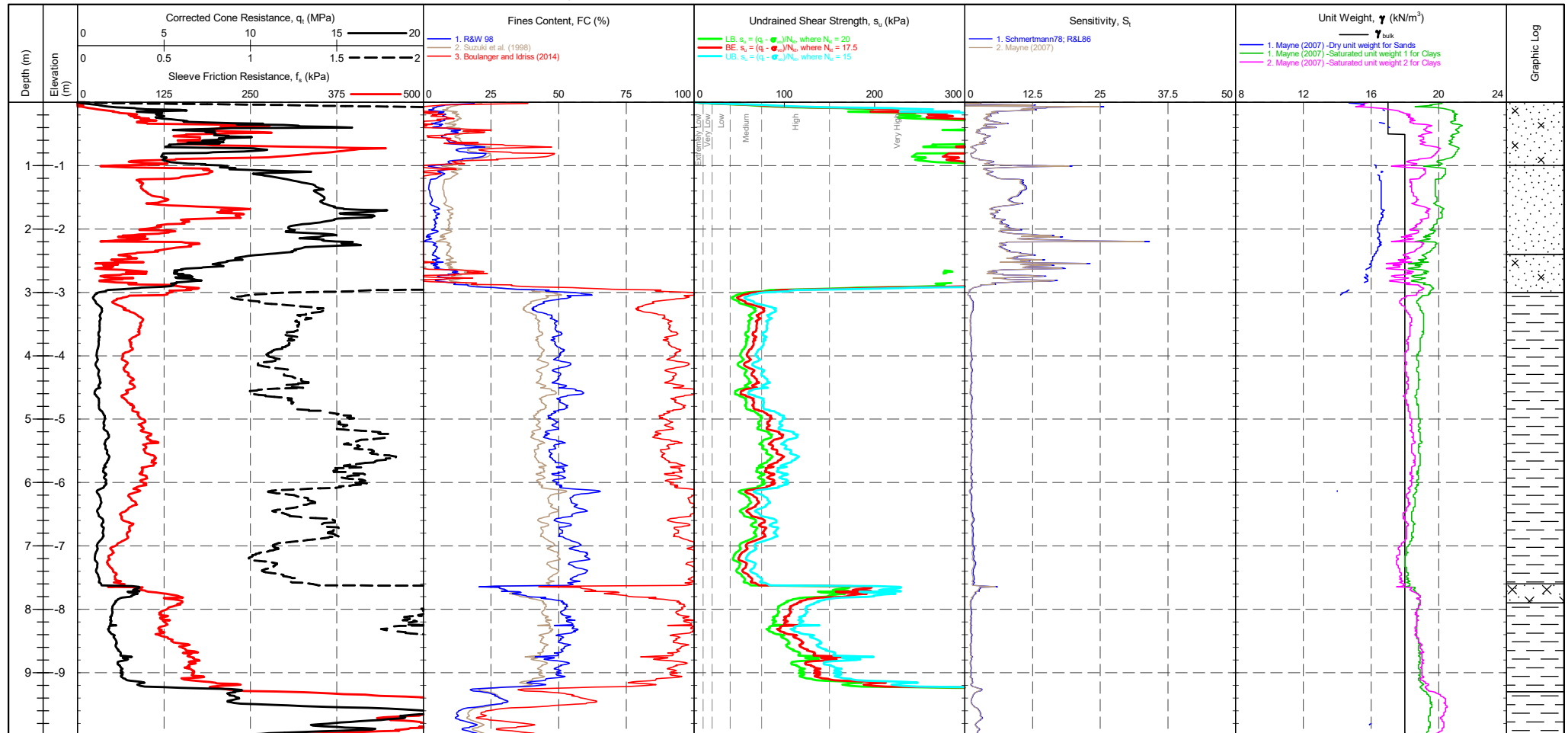
CPT107A

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136
CONE MODEL : Subtraction
CONE AREA : 15cm²
CONE AREA RATIO : 0.79
FILTER POSITION : u2
FILTER TYPE : HDPE

TEST TYPE : TE2
APPLICATION CLASS : 2
RIG : CPT 017 - Griffen
OPERATOR : DR
FRICTION REDUCER : None
WEATHER : Sunny & Cold

Transducer
Tip
Sleeve
Pore Pressure 2
X-Y Inclinator

Pre	Post	Difference
266 mV	266 mV	0 MPa
339 mV	339 mV	0 kPa
257 mV	255 mV	-0.001 kPa
2435 mV	2483 mV	

CPTU ZERO VALUES

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)	Term based on measurement	su (kPa)
Extremely low strength	<10	Medium strength	40-75
Very low strength	10-20	High strength	75-150
Low strength	20-40	Very high strength	150-300
		Extremely high strength	>300

Groundwater Level

Dissipation Test

PointID

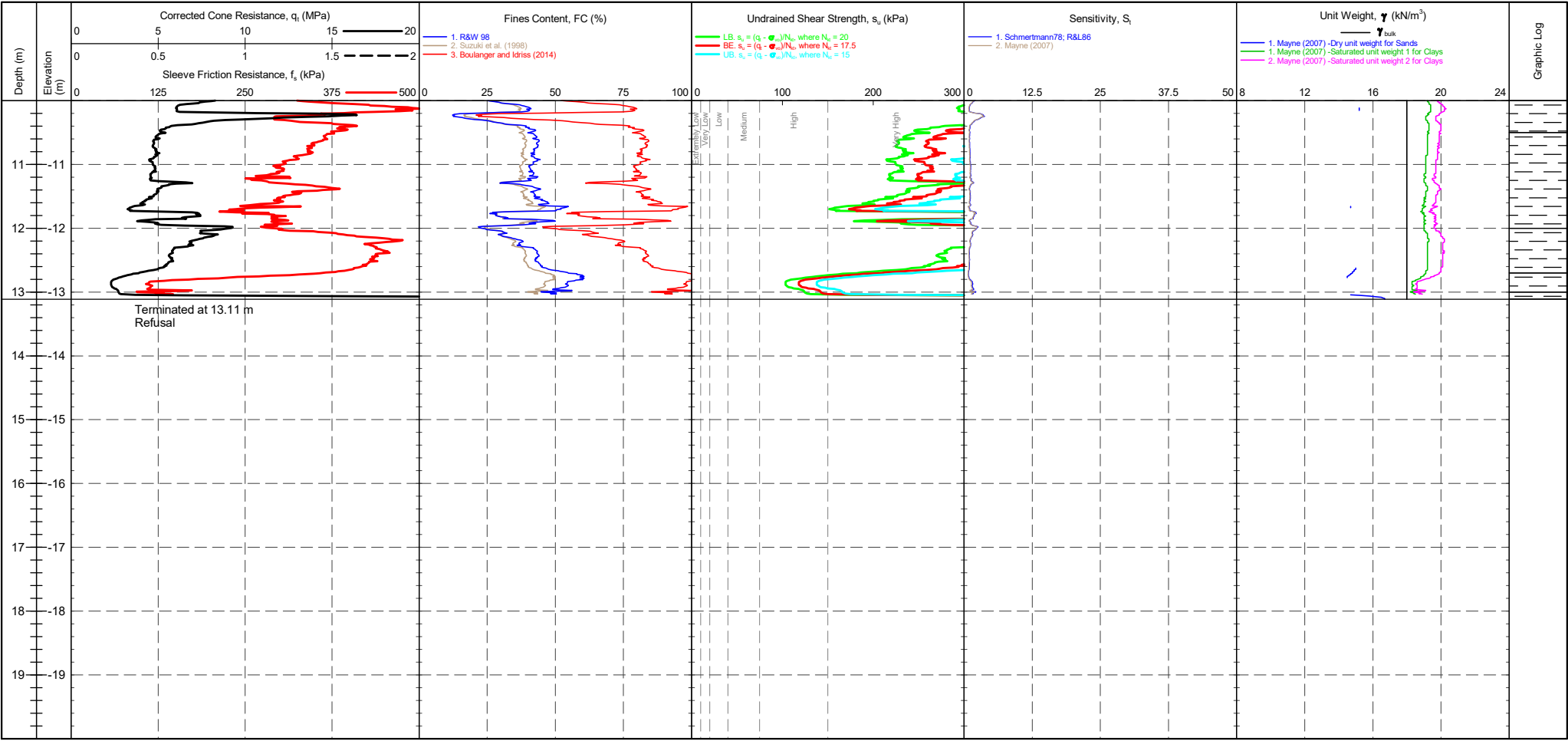
CPT107A

CLIENT : LK Group
PROJECT: Chorlton Baths
LOCATION : Manchester
PROJECT No. : 1240458

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

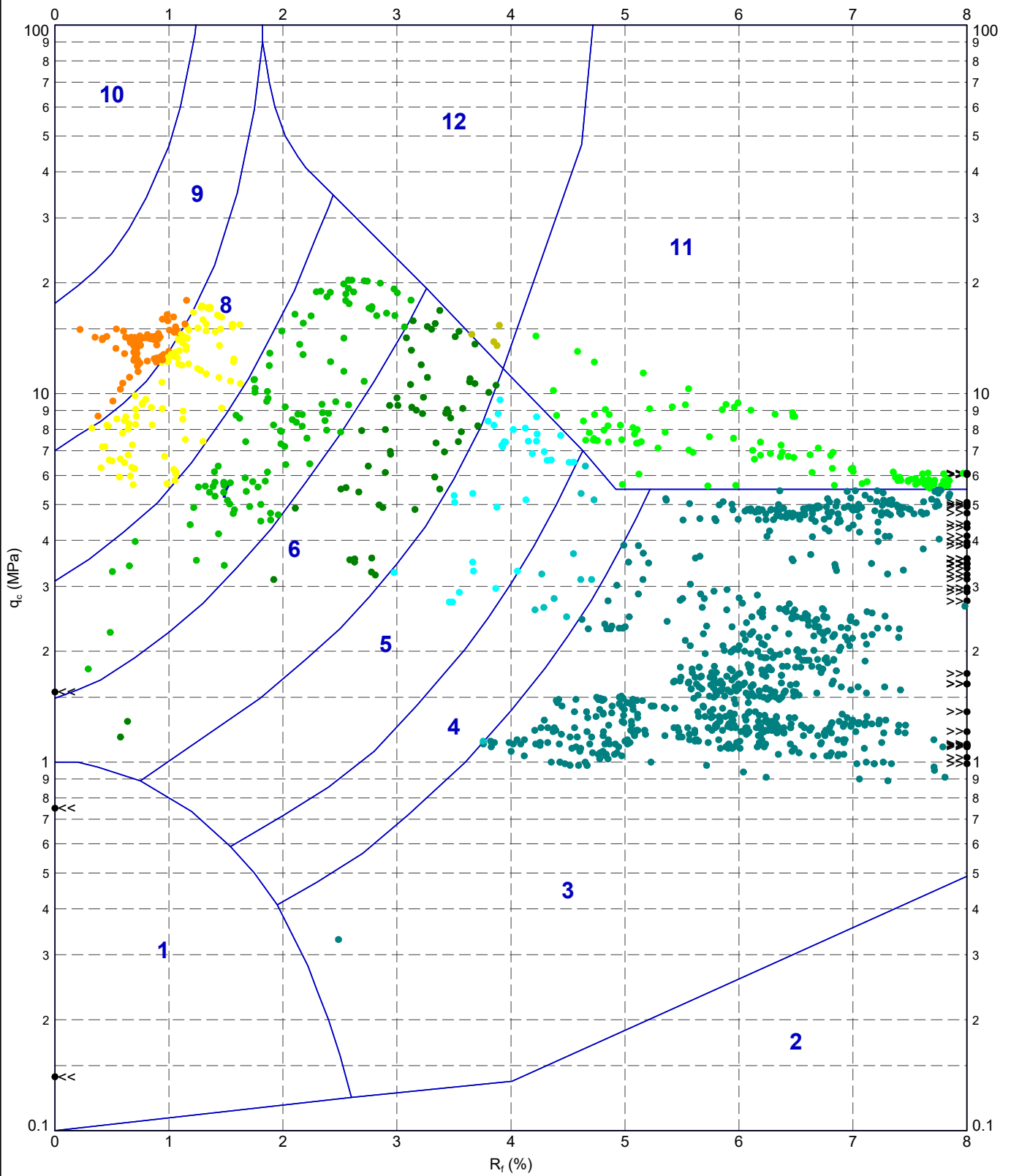
Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 24/10/2024
PLOT DATE : 25/10/2024
METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2136		TEST TYPE : TE2		CPTU ZERO VALUES			COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11				Groundwater Level Dissipation Test
CONE MODEL : Subtraction		APPLICATION CLASS : 2		Transducer	Pre	Post	Difference	Term based on measurement	s_u (kPa)	Term based on measurement	s_u (kPa)
CONE AREA : 15cm ²		RIG : CPT 017 - Griffen		Tip	266 mV	266 mV	0 MPa	Extremely low strength	<10	Medium strength	40-75
CONE AREA RATIO : 0.79		OPERATOR : DR		Sleeve	339 mV	339 mV	0 kPa	Very low strength	10-20	High strength	75-150
FILTER POSITION : u2		FRICTION REDUCER : None		Pore Pressure 2	257 mV	255 mV	-0.001 kPa	Low strength	20-40	Very high strength	150-300
FILTER TYPE : HDPE		WEATHER : Sunny & Cold		X-Y Inclinator	2435 mV	2483 mV				Extremely high strength	>300

22069-ADVANCED REPORT INSTITUSI 202.1 LUB - CHLOE GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF AP 1240458 CHORLTON BATHS LK GROUP GPJ <<DrawingFile>> 25/10/2024 16:39 10.03.00.09 Dargel Lab and in Situ Tool - DGD | LUB in Situ SI 2.02.0 2017-07-10 PJH in Situ SI 2.02.0 2017-07-10



METHOD: Robertson et al. 1986 qc Rf

- | | | | |
|-------------------------------------|-------------------------------|------------------------------|------------------------------|
| 1 - Sensitive fine grained material | 4 - Silty CLAY to CLAY | 7 - Silty SAND to sandy SILT | 10 - Gravelly SAND to SAND |
| 2 - Organic material | 5 - Clayey SILT to silty CLAY | 8 - SAND to silty SAND | 11 - Very stiff fine grained |
| 3 - CLAY | 6 - Sandy SILT to clayey SILT | 9 - SAND | 12 - SAND to clayey SAND |

	TITLE LK Group Manchester Chorlton Baths Robertson et al. 1986 qc vs. Rf - CPT107A	DRAWN	DATE 25/10/2024
		CHECKED	DATE 25/10/2024
		SCALE Not To Scale	A4
		PROJECT No 1240458	FIGURE No



IN SITU SITE INVESTIGATION

Unit 23 Hastings Innovation
Centre,
Highfield Drive
St. Leonards on Sea, East Sussex,
TN38 9UH, U.K.

Company No.: 6339469
VAT No.: 922 3561 41

Appendix C – Certificates of Analysis (Soil)



Peter Dunn
LK Consult Limited
Unit 29 Eton Business Park
Eton Hill Road
Manchester
M26 2ZS

Normec DETS Limited
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 24-13235

Site Reference: Chorlton Baths

Project / Job Ref: LKC241317

Order No: PO-C000521

Sample Receipt Date: 31/10/2024

Sample Scheduled Date: 05/11/2024

Report Issue Number: 1

Reporting Date: 11/11/2024

Authorised by:

Kevin Old
Operations Director

Dates of laboratory activities for each tested analyte are available upon request.

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



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate						
DETS Report No: 24-13235	~Date Sampled	29/10/24	29/10/24			
LK Consult Limited	~Time Sampled	None Supplied	None Supplied			
~Site Reference: Chorlton Baths	~TP / BH No	CP104	CP104			
~Project / Job Ref: LKC241317	~Additional Refs	ES	ES			
~Order No: PO-C000521	~Depth (m)	1.00 - 1.20	1.20 - 1.50			
Reporting Date: 11/11/2024	DETS Sample No	748253	748254			

Determinand	Unit	RL	Accreditation				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected			
pH	pH Units	N/a	MCERTS	9.5	8.9		
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	1650	190		
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	1.65	0.19		
Organic Matter (SOM)	%	< 0.1	MCERTS	2.5			
W/S Chloride (2:1)	mg/kg	< 1	MCERTS		19		
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS		9.6		
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	< 3	MCERTS		< 3		
Water Soluble Nitrate (2:1) as NO ₃	mg/l	< 1.5	MCERTS		< 1.5		
Arsenic (As)	mg/kg	< 2	MCERTS	8			
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2			
Chromium (Cr)	mg/kg	< 2	MCERTS	11			
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2			
Copper (Cu)	mg/kg	< 4	MCERTS	23			
Lead (Pb)	mg/kg	< 3	MCERTS	94			
W/S Magnesium	mg/l	< 0.1	NONE		1.4		
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1			
Nickel (Ni)	mg/kg	< 3	MCERTS	9			
Selenium (Se)	mg/kg	< 2	MCERTS	< 2			
Vanadium (V)	mg/kg	< 1	MCERTS	18			
Zinc (Zn)	mg/kg	< 3	MCERTS	106			

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)

~Sample details provided by customer and can affect the validity of results



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-13235	~Date Sampled	29/10/24				
LK Consult Limited	~Time Sampled	None Supplied				
~Site Reference: Chorlton Baths	~TP / BH No	CP104				
~Project / Job Ref: LKC241317	~Additional Refs	ES				
~Order No: PO-C000521	~Depth (m)	1.00 - 1.20				
Reporting Date: 11/11/2024	DETS Sample No	748253				

Determinand	Unit	RL	Accreditation				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1			
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1			
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1			
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1			
Phenanthrene	mg/kg	< 0.1	MCERTS	0.48			
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1			
Fluoranthene	mg/kg	< 0.1	MCERTS	0.46			
Pyrene	mg/kg	< 0.1	MCERTS	0.42			
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.15			
Chrysene	mg/kg	< 0.1	MCERTS	0.21			
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.14			
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1			
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.15			
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1			
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1			
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1			
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	2			

~Sample details provided by customer and can affect the validity of results



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Sample Descriptions

DETS Report No: 24-13235	
LK Consult Limited	
~Site Reference: Chorlton Baths	
~Project / Job Ref: LKC241317	
~Order No: PO-C000521	
Reporting Date: 11/11/2024	

DETS Sample No	~TP / BH No	~Additional Refs	~Depth (m)	Moisture Content (%)	Sample Matrix Description
748253	CP104	ES	1.00 - 1.20	11.2	Brown clayey sand with stones and brick
748254	CP104	ES	1.20 - 1.50	17	Brown clayey sand with stones

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{I/S}

Unsuitable Sample ^{U/S}

~Sample details provided by customer and can affect the validity of results



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 24-13235

LK Consult Limited

~Site Reference: Chorlton Baths

~Project / Job Ref: LKC241317

~Order No: PO-C000521

Reporting Date: 11/11/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphénylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried

AR As Received

~Sample details provided by customer and can affect the validity of results



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Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



List of HWOL Acronyms and Operators	
DETS Report No:	24-13235
LK Consult Limited	
~Site Reference:	Chorlton Baths
~Project / Job Ref:	LKC241317
~Order No:	PO-C000521
Reporting Date:	11/11/2024

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total
~	Sample details provided by customer and can affect the validity of results

Det - Acronym



Peter Dunn
LK Consult Limited
Unit 29 Eton Business Park
Eton Hill Road
Manchester
M26 2ZS

Normec DETS Limited
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 24-13219

Site Reference: Chorlton Baths

Project / Job Ref: LKC241317

Order No: PO-C000521

Sample Receipt Date: 05/11/2024

Sample Scheduled Date: 05/11/2024

Report Issue Number: 1

Reporting Date: 11/11/2024

Authorised by:

Kevin Old
Operations Director

Dates of laboratory activities for each tested analyte are available upon request.

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

For Topsoil and WAC analysis the expanded uncertainty measurement should be considered while evaluating results against compliance values.



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Rose Lane
Lenham Heath
Maidstone
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Soil Analysis Certificate						
DETS Report No: 24-13219	~Date Sampled	01/11/24	01/11/24	01/11/24	01/11/24	01/11/24
LK Consult Limited	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Chorlton Baths	~TP / BH No	WS101	WS101	WS102	WS103	WS104
~Project / Job Ref: LKC241317	~Additional Refs	ES	ES	ES	ES	ES
~Order No: PO-C000521	~Depth (m)	0.40 - 1.40	1.40 - 1.80	0.50 - 1.20	2.00 - 3.00	0.00 - 0.50
Reporting Date: 11/11/2024	DETS Sample No	748153	748154	748155	748156	748157

Determinand	Unit	RL	Accreditation	(n)				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
pH	pH Units	N/a	MCERTS	10.1	9.1	8.3	8.9	9.5
Total Cyanide	mg/kg	< 1	NONE		< 1			
Free Cyanide	mg/kg	< 1	NONE		< 1			
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	554	60	41	210	1650
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.55	0.06	0.04	0.21	1.65
Organic Matter (SOM)	%	< 0.1	MCERTS	3.2	0.7	1.3	2.2	4.8
W/S Chloride (2:1)	mg/kg	< 1	MCERTS					
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS					
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	< 3	MCERTS					
Water Soluble Nitrate (2:1) as NO ₃	mg/l	< 1.5	MCERTS					
Arsenic (As)	mg/kg	< 2	MCERTS	6	< 2	5	5	10
W/S Boron	mg/kg	< 1	NONE		< 1			
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	9	4	6	6	11
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	24	9	13	19	35
Lead (Pb)	mg/kg	< 3	MCERTS	59	56	42	51	197
W/S Magnesium	mg/l	< 0.1	NONE					
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	9	6	5	7	11
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	18	4	13	12	22
Zinc (Zn)	mg/kg	< 3	MCERTS	68	31	23	34	119
Total Phenols (monohydric)	mg/kg	< 2	NONE		< 2			

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)

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Maidstone
Kent ME17 2JN
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Soil Analysis Certificate						
DETS Report No: 24-13219	~Date Sampled	01/11/24	01/11/24	01/11/24	01/11/24	01/11/24
LK Consult Limited	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Chorlton Baths	~TP / BH No	WS104	WS105	WS105	WS102	WS104
~Project / Job Ref: LKC241317	~Additional Refs	ES	ES	ES	ES	ES
~Order No: PO-C000521	~Depth (m)	0.50 - 0.60	0.00 - 0.80	0.80 - 1.20	2.70 - 3.30	4.50 - 5.00
Reporting Date: 11/11/2024	DETS Sample No	748158	748159	748160	748161	748162

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025		Not Detected	Not Detected		
pH	pH Units	N/a	MCERTS	7.6	10.5	8.4	7.8	7.9
Total Cyanide	mg/kg	< 1	NONE		< 1			
Free Cyanide	mg/kg	< 1	NONE		< 1			
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	121	1760	860	55	17
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.12	1.76	0.86	0.05	0.02
Organic Matter (SOM)	%	< 0.1	MCERTS		5	1.2		
W/S Chloride (2:1)	mg/kg	< 1	MCERTS	11			7	5
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS	5.7			3.4	2.7
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	< 3	MCERTS	24			6	< 3
Water Soluble Nitrate (2:1) as NO ₃	mg/l	< 1.5	MCERTS	12			2.8	< 1.5
Arsenic (As)	mg/kg	< 2	MCERTS		9	3		
W/S Boron	mg/kg	< 1	NONE		< 1			
Cadmium (Cd)	mg/kg	< 0.2	MCERTS		0.2	< 0.2		
Chromium (Cr)	mg/kg	< 2	MCERTS		11	7		
Chromium (hexavalent)	mg/kg	< 2	NONE		< 2	< 2		
Copper (Cu)	mg/kg	< 4	MCERTS		31	6		
Lead (Pb)	mg/kg	< 3	MCERTS		96	37		
W/S Magnesium	mg/l	< 0.1	NONE	1.1			0.9	0.8
Mercury (Hg)	mg/kg	< 1	MCERTS		< 1	< 1		
Nickel (Ni)	mg/kg	< 3	MCERTS		10	7		
Selenium (Se)	mg/kg	< 2	MCERTS		< 2	< 2		
Vanadium (V)	mg/kg	< 1	MCERTS		24	11		
Zinc (Zn)	mg/kg	< 3	MCERTS		116	31		
Total Phenols (monohydric)	mg/kg	< 2	NONE		< 2			

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)

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Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
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Soil Analysis Certificate						
DETS Report No: 24-13219	~Date Sampled	01/11/24	01/11/24			
LK Consult Limited	~Time Sampled	None Supplied	None Supplied			
~Site Reference: Chorlton Baths	~TP / BH No	WS105	CP104			
~Project / Job Ref: LKC241317	~Additional Refs	ES	ES			
~Order No: PO-C000521	~Depth (m)	3.50 - 4.00	8.50 - 8.95			
Reporting Date: 11/11/2024	DETS Sample No	748163	748164			

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025					
pH	pH Units	N/a	MCERTS	8.2	8.3			
Total Cyanide	mg/kg	< 1	NONE					
Free Cyanide	mg/kg	< 1	NONE					
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	38	24			
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.04	0.02			
Organic Matter (SOM)	%	< 0.1	MCERTS					
W/S Chloride (2:1)	mg/kg	< 1	MCERTS	19	6			
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS	9.5	3.2			
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	< 3	MCERTS	4	< 3			
Water Soluble Nitrate (2:1) as NO ₃	mg/l	< 1.5	MCERTS	1.9	< 1.5			
Arsenic (As)	mg/kg	< 2	MCERTS					
W/S Boron	mg/kg	< 1	NONE					
Cadmium (Cd)	mg/kg	< 0.2	MCERTS					
Chromium (Cr)	mg/kg	< 2	MCERTS					
Chromium (hexavalent)	mg/kg	< 2	NONE					
Copper (Cu)	mg/kg	< 4	MCERTS					
Lead (Pb)	mg/kg	< 3	MCERTS					
W/S Magnesium	mg/l	< 0.1	NONE	1.6	1.8			
Mercury (Hg)	mg/kg	< 1	MCERTS					
Nickel (Ni)	mg/kg	< 3	MCERTS					
Selenium (Se)	mg/kg	< 2	MCERTS					
Vanadium (V)	mg/kg	< 1	MCERTS					
Zinc (Zn)	mg/kg	< 3	MCERTS					
Total Phenols (monohydric)	mg/kg	< 2	NONE					

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)

~Sample details provided by customer and can affect the validity of results



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Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-13219	~Date Sampled	01/11/24	01/11/24	01/11/24	01/11/24	01/11/24
LK Consult Limited	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Chorlton Baths	~TP / BH No	WS101	WS101	WS102	WS103	WS104
~Project / Job Ref: LKC241317	~Additional Refs	ES	ES	ES	ES	ES
~Order No: PO-C000521	~Depth (m)	0.40 - 1.40	1.40 - 1.80	0.50 - 1.20	2.00 - 3.00	0.00 - 0.50
Reporting Date: 11/11/2024	DETS Sample No	748153	748154	748155	748156	748157

Determinand	Unit	RL	Accreditation	(n)				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.48	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	0.22	< 0.1	0.36	0.32	0.14
Fluorene	mg/kg	< 0.1	MCERTS	0.12	< 0.1	0.29	0.17	0.13
Phenanthrene	mg/kg	< 0.1	MCERTS	1.92	0.10	3.91	2.65	1.11
Anthracene	mg/kg	< 0.1	MCERTS	0.37	< 0.1	0.82	0.47	0.25
Fluoranthene	mg/kg	< 0.1	MCERTS	2.43	< 0.1	6	4.41	1.30
Pyrene	mg/kg	< 0.1	MCERTS	2.31	< 0.1	6.16	5.92	1.20
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	1.19	< 0.1	2.93	3.15	0.61
Chrysene	mg/kg	< 0.1	MCERTS	1.29	< 0.1	2.88	3.51	0.69
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	1.36	< 0.1	3.22	3.17	0.64
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.52	< 0.1	0.88	0.73	0.26
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	1.09	< 0.1	2.58	2.98	0.55
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.63	< 0.1	1.43	1.22	0.30
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.12	< 0.1	0.35	0.33	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.59	< 0.1	1.46	1.32	0.32
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	14.1	< 1.6	33.8	30.4	7.5

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Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-13219	~Date Sampled	01/11/24	01/11/24			
LK Consult Limited	~Time Sampled	None Supplied	None Supplied			
~Site Reference: Chorlton Baths	~TP / BH No	WS105	WS105			
~Project / Job Ref: LKC241317	~Additional Refs	ES	ES			
~Order No: PO-C000521	~Depth (m)	0.00 - 0.80	0.80 - 1.20			
Reporting Date: 11/11/2024	DETS Sample No	748159	748160			

Determinand	Unit	RL	Accreditation				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Acenaphthene	mg/kg	< 0.1	MCERTS	0.13	< 0.1		
Fluorene	mg/kg	< 0.1	MCERTS	0.15	< 0.1		
Phenanthrene	mg/kg	< 0.1	MCERTS	4.64	0.12		
Anthracene	mg/kg	< 0.1	MCERTS	0.45	< 0.1		
Fluoranthene	mg/kg	< 0.1	MCERTS	1.23	0.13		
Pyrene	mg/kg	< 0.1	MCERTS	1.04	0.13		
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.45	< 0.1		
Chrysene	mg/kg	< 0.1	MCERTS	0.55	< 0.1		
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.57	< 0.1		
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.21	< 0.1		
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.43	< 0.1		
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.29	< 0.1		
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.25	< 0.1		
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	10.4	< 1.6		

~Sample details provided by customer and can affect the validity of results



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Maidstone
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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 24-13219	~Date Sampled	01/11/24	01/11/24			
LK Consult Limited	~Time Sampled	None Supplied	None Supplied			
~Site Reference: Chorlton Baths	~TP / BH No	WS101	WS105			
~Project / Job Ref: LKC241317	~Additional Refs	ES	ES			
~Order No: PO-C000521	~Depth (m)	1.40 - 1.80	0.00 - 0.80			
Reporting Date: 11/11/2024	DETS Sample No	748154	748159			

Determinand	Unit	RL	Accreditation	(n)				
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01			
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05			
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2			
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2			
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3			
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3			
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	19			
Aliphatic >C34 - C44 : EH_CU_1D_AL	mg/kg	< 10	NONE	< 10	< 10			
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21			
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01			
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05			
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2			
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2			
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	2			
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	< 3	14			
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10	< 10			
Aromatic >C35 - C44 : EH_CU_1D_AR	mg/kg	< 10	NONE	< 10	< 10			
Aromatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	< 21	< 21			
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 42	NONE	< 42	< 42			

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Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - BTEX / MTBE					
DETS Report No: 24-13219	~Date Sampled	01/11/24	01/11/24		
LK Consult Limited	~Time Sampled	None Supplied	None Supplied		
~Site Reference: Chorlton Baths	~TP / BH No	WS101	WS105		
~Project / Job Ref: LKC241317	~Additional Refs	ES	ES		
~Order No: PO-C000521	~Depth (m)	1.40 - 1.80	0.00 - 0.80		
Reporting Date: 11/11/2024	DETS Sample No	748154	748159		

Determinand	Unit	RL	Accreditation	(n)	
Benzene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2
Toluene : HS 1D MS	ug/kg	< 5	MCERTS	< 5	< 5
Ethylbenzene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2
p & m-xylene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2
o-xylene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2
MTBE : HS 1D MS	ug/kg	< 5	MCERTS	< 5	< 5

~Sample details provided by customer and can affect the validity of results

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

Waste Acceptance Criteria Analytical Certificate									
DETS Report No: 24-13219		~Date Sampled	01/11/24		Landfill Waste Acceptance Criteria Limits				
LK Consult Limited		~Time Sampled	None Supplied						
~Site Reference: Chorlton Baths		~TP / BH No	WS101						
~Project / Job Ref: LKC241317		~Additional Refs	ES						
~Order No: PO-C000521		~Depth (m)	1.40 - 1.80						
Reporting Date: 11/11/2024		DETS Sample No	748154						
Determinand	Unit	MDL							
TOC ^{MU}	%	< 0.1	0.4						
Loss on Ignition ^{MU}	%	< 0.01	1.40						
BTEX ^{MU}	mg/kg	< 0.05	< 0.05						
Sum of PCBs	mg/kg	< 0.1	< 0.1						
Mineral Oil ^{MU}	mg/kg	< 10	< 10						
Total PAH ^{MU}	mg/kg	< 1.7	< 1.7						
pH ^{MU}	pH Units	N/a	9.1						
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	< 1						
Eluate Analysis			2:1 mg/l	8:1 mg/l		Cumulative 10:1 * mg/kg	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic ^U		0.0068	0.0042		0.082	0.5	2	25	
Barium ^U		0.0140	0.0094		0.178	20	100	300	
Cadmium ^U		< 0.0002	< 0.0002		< 0.002	0.04	1	5	
Chromium ^U		0.0045	0.0017		0.036	0.5	10	70	
Copper ^U		0.0104	0.0112		0.201	2	50	100	
Mercury ^U		< 0.00004	< 0.00004		< 0.0004	0.01	0.2	2	
Molybdenum ^U		0.0041	0.0009		0.022	0.5	10	30	
Nickel ^U		0.0006	0.0005		0.0089	0.4	10	40	
Lead ^U		0.0129	0.0346		0.585	0.5	10	50	
Antimony ^U		< 0.0002	< 0.0002		< 0.002	0.06	0.7	5	
Selenium ^U		0.0029	0.0011		0.0226	0.1	0.5	7	
Zinc ^U		0.007	0.010		0.18	4	50	200	
Chloride ^U		11	2		48	800	15000	25000	
Fluoride ^U		< 0.5	< 0.5		< 1	10	150	500	
Sulphate ^U		57	7		227	1000	20000	50000	
TDS		159	57		1223	4000	60000	100000	
Phenol Index ^U		< 0.01	< 0.01		< 0.5	1	-	-	
DOC ^U		11.5	9.5		175	500	800	1000	
Leach Test Information									
Sample Mass (kg)		0.09							
Dry Matter (%)		95.6							
Moisture (%)		4.6							
Stage 1									
Volume Eluate L2 (litres)		0.17							
Filtered Eluate VE1 (litres)		0.16							
Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Samples Descriptions page describes if the test is performed on the dried or as-received portion									
Stated limits are for guidance only and Normec DETS Limited cannot be held responsible for any discrepancies with current legislation									
M Denotes MCERTS accredited test									
U Denotes ISO17025 accredited test									
~Sample details provided by customer and can affect the validity of results									
* DETS are accredited for the testing of leachate and not the leachate preparation stage which is unaccredited									



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Sample Descriptions

DETS Report No: 24-13219	
LK Consult Limited	
~Site Reference: Chorlton Baths	
~Project / Job Ref: LKC241317	
~Order No: PO-C000521	
Reporting Date: 11/11/2024	

DETS Sample No	~TP / BH No	~Additional Refs	~Depth (m)	Moisture Content (%)	Sample Matrix Description
748153	WS101	ES	0.40 - 1.40	9.8	Brown sandy clay with stones and brick
748154	WS101	ES	1.40 - 1.80	3.9	Brown sand with stones
748155	WS102	ES	0.50 - 1.20	11.2	Brown sandy clay with stones
748156	WS103	ES	2.00 - 3.00	9.8	Brown sandy clay with stones and brick
748157	WS104	ES	0.00 - 0.50	14.3	Brown sandy clay with stones and vegetation
748158	WS104	ES	0.50 - 0.60	16.5	Brown sandy clay
748159	WS105	ES	0.00 - 0.80	9.5	Brown clayey sand with stones and brick
748160	WS105	ES	0.80 - 1.20	9.6	Brown sandy clay with stones
748161	WS102	ES	2.70 - 3.30	6.9	Brown clayey sand with stones
748162	WS104	ES	4.50 - 5.00	11.4	Brown clayey sand with stones
748163	WS105	ES	3.50 - 4.00	16.3	Brown clay
748164	CP104	ES	8.50 - 8.95	9.7	Brown clay

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{1/5}

Unsuitable Sample ^{U/S}

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Rose Lane
Lenham Heath
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Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 24-13219

LK Consult Limited

~Site Reference: Chorlton Baths

~Project / Job Ref: LKC241317

~Order No: PO-C000521

Reporting Date: 11/11/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphénylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried

AR As Received

~Sample details provided by customer and can affect the validity of results



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Water Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 24-13219

LK Consult Limited

~Site Reference: Chorlton Baths

~Project / Job Ref: LKC241317

~Order No: PO-C000521

Reporting Date: 11/11/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	F	Ammoniacal Nitrogen	Determination of ammoniacal nitrogen by discrete analyser.	E126
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	F	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	UF	Biological Oxygen Demand (BOD)	Determination using BOD sensors measuring the change of pressure	E133
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR dete	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	TPH CWG (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCS	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

Key

F Filtered
UF Unfiltered

~Sample details provided by customer and can affect the validity of results



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



List of HWOL Acronyms and Operators

DETS Report No: 24-13219

LK Consult Limited

~Site Reference: Chorlton Baths

~Project / Job Ref: LKC241317

~Order No: PO-C000521

Reporting Date: 11/11/2024

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total
~	Sample details provided by customer and can affect the validity of results

Benzene - HS_1D_MS
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
Mineral Oil (C10 - C40) (BS EN 12457-3) - EH_CU_1D_AL
TPH - Aliphatic >C34 - C44 - raw data - EH_CU_1D_AL
TPH CWG - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH CWG - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH CWG - Aliphatic >C16 - C21 - EH_CU_1D_AL
TPH CWG - Aliphatic >C21 - C34 - EH_CU_1D_AL
TPH CWG - Aliphatic >C34 - C44 - EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH CWG - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH CWG - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH CWG - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH CWG - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH CWG - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH CWG - Aromatic >C35 - C44 - EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH CWG - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH CWG - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH CWG - Total >C5 - C44 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
Total BTEX (BS EN 12457-3) - HS_1D_MS_Total
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

Parameter	Matrix Type	Expanded Uncertainty Measurement	Unit
TOC	Soil	12.2	%
Loss on Ignition	Soil	22.9	%
BTEX	Soil	11.2	%
Sum of PCBs	Soil	43.4	%
Mineral Oil	Soil	9.0	%
Total PAH	Soil	18.5	%
pH	Soil	0.335	Units
Acid Neutralisation Capacity	Soil	18.0	%
Clay Content	Soil	15.0	%
Silt Content	Soil	14.0	%
Sand Content	Soil	13.0	%
Loss on Ignition	Soil	22.9	%
pH	Soil	0.335	Units
Carbonate	Soil	12.0	%
Total Nitrogen	Soil	12.0	%
Phosphorus (Extractable)	Soil	24.0	%
Potassium (Extractable)	Soil	20.0	%
Magnesium (Extractable)	Soil	26.0	%
Zinc	Soil	21.6	%
Copper	Soil	18.2	%
Nickel	Soil	24.3	%
Available Sodium	Soil	23.0	%
Available Calcium	Soil	23.0	%
Electrical Conductivity	Soil	10.0	%



Michael Berry
LK Consult Limited
Unit 29 Eton Business Park
Eton Hill Road
Manchester
M26 2ZS

Normec DETS Limited
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 24-10916

Site Reference: Chorlton Baths

Project / Job Ref: LKC241317

Order No: PO000360

Sample Receipt Date: 17/09/2024

Sample Scheduled Date: 17/09/2024

Report Issue Number: 1

Reporting Date: 24/09/2024

Authorised by:

Steve Knight
Customer Support Manager

Dates of laboratory activities for each tested analyte are available upon request.

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

For Topsoil and WAC analysis the expanded uncertainty measurement should be considered while evaluating results against compliance values.



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate						
DETS Report No: 24-10916	~Date Sampled	12/09/24	12/09/24	12/09/24	12/09/24	12/09/24
LK Consult Limited	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Chorlton Baths	~TP / BH No	TP101	TP101	TP102	TP102	TP103
~Project / Job Ref: LKC241317	~Additional Refs	ES	ES	ES	ES	ES
~Order No: PO000360	~Depth (m)	0.05 - 1.00	1.00 - 2.00	0.00 - 0.60	0.60 - 1.50	0.30 - 1.00
Reporting Date: 24/09/2024	DETS Sample No	738523	738524	738525	738526	738527

Determinand	Unit	RL	Accreditation	(n)			
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected
pH	pH Units	N/a	MCERTS	7.8	8.4	7.8	8.1
Total Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	169	< 10	61	< 10
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.17	< 0.01	0.06	< 0.01
Organic Matter (SOM)	%	< 0.1	MCERTS	7.3	5.6		0.6
W/S Chloride (2:1)	mg/kg	< 1	MCERTS	11		4	6
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS	5.7		2.1	2.8
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	< 3	MCERTS	< 3		< 3	< 3
Water Soluble Nitrate (2:1) as NO ₃	mg/l	< 1.5	MCERTS	< 1.5		< 1.5	< 1.5
Arsenic (As)	mg/kg	< 2	MCERTS	23		20	3
W/S Boron	mg/kg	< 1	NONE	1.1	< 1		< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.5	< 0.2		< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	14		12	7
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2		< 2
Copper (Cu)	mg/kg	< 4	MCERTS	105		59	7
Lead (Pb)	mg/kg	< 3	MCERTS	212		141	6
W/S Magnesium	mg/l	< 0.1	NONE	0.3		0.6	0.8
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1		< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	30		14	9
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2		< 2
Vanadium (V)	mg/kg	< 1	MCERTS	44		23	8
Zinc (Zn)	mg/kg	< 3	MCERTS	148		78	27
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2		< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
 Subcontracted analysis (S)

~Sample details provided by customer and can affect the validity of results

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Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate						
DETS Report No: 24-10916	~Date Sampled	12/09/24	12/09/24			
LK Consult Limited	~Time Sampled	None Supplied	None Supplied			
~Site Reference: Chorlton Baths	~TP / BH No	TP104	TP104			
~Project / Job Ref: LKC241317	~Additional Refs	ES	ES			
~Order No: PO000360	~Depth (m)	0.20 - 1.00	2.50 - 3.00			
Reporting Date: 24/09/2024	DETS Sample No	738528	738529			

Determinand	Unit	RL	Accreditation	(n)				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected				
pH	pH Units	N/a	MCERTS	9.8	5.3			
Total Cyanide	mg/kg	< 1	NONE	< 1				
Free Cyanide	mg/kg	< 1	NONE	< 1				
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	487	835			
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.49	0.84			
Organic Matter (SOM)	%	< 0.1	MCERTS	5				
W/S Chloride (2:1)	mg/kg	< 1	MCERTS		53			
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS		26.4			
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	< 3	MCERTS		1330			
Water Soluble Nitrate (2:1) as NO ₃	mg/l	< 1.5	MCERTS		666			
Arsenic (As)	mg/kg	< 2	MCERTS	5				
W/S Boron	mg/kg	< 1	NONE	< 1				
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.3				
Chromium (Cr)	mg/kg	< 2	MCERTS	9				
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2				
Copper (Cu)	mg/kg	< 4	MCERTS	9				
Lead (Pb)	mg/kg	< 3	MCERTS	26				
W/S Magnesium	mg/l	< 0.1	NONE		28			
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1				
Nickel (Ni)	mg/kg	< 3	MCERTS	8				
Selenium (Se)	mg/kg	< 2	MCERTS	< 2				
Vanadium (V)	mg/kg	< 1	MCERTS	14				
Zinc (Zn)	mg/kg	< 3	MCERTS	36				
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2				

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)

~Sample details provided by customer and can affect the validity of results



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Soil Analysis Certificate - Speciated PAHs

DETS Report No: 24-10916	~Date Sampled	12/09/24	12/09/24	12/09/24	12/09/24
LK Consult Limited	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Chorlton Baths	~TP / BH No	TP101	TP102	TP103	TP104
~Project / Job Ref: LKC241317	~Additional Refs	ES	ES	ES	ES
~Order No: PO000360	~Depth (m)	0.05 - 1.00	0.00 - 0.60	0.30 - 1.00	0.20 - 1.00
Reporting Date: 24/09/2024	DETS Sample No	738523	738525	738527	738528

Determinand	Unit	RL	Accreditation	(n)	(n)
Naphthalene	mg/kg	< 0.1	MCERTS	0.83	0.28
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	0.12
Acenaphthene	mg/kg	< 0.1	MCERTS	6.68	0.58
Fluorene	mg/kg	< 0.1	MCERTS	4.19	0.54
Phenanthrene	mg/kg	< 0.1	MCERTS	37.30	4.91
Anthracene	mg/kg	< 0.1	MCERTS	7.65	0.91
Fluoranthene	mg/kg	< 0.1	MCERTS	46.30	7.73
Pyrene	mg/kg	< 0.1	MCERTS	42.40	9.32
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	19.30	4.15
Chrysene	mg/kg	< 0.1	MCERTS	19.70	5.32
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	16.10	3.61
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	5.75	1.36
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	17.50	4.66
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	8.42	2.40
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	1.99	0.58
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	6.83	2.14
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	241	48.6

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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 24-10916	~Date Sampled	12/09/24	12/09/24	12/09/24	12/09/24
LK Consult Limited	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Chorlton Baths	~TP / BH No	TP101	TP102	TP103	TP104
~Project / Job Ref: LKC241317	~Additional Refs	ES	ES	ES	ES
~Order No: PO000360	~Depth (m)	0.05 - 1.00	0.00 - 0.60	0.30 - 1.00	0.20 - 1.00
Reporting Date: 24/09/2024	DETS Sample No	738523	738525	738527	738528

Determinand	Unit	RL	Accreditation	(n)		(n)	
Aliphatic >C5 - C6 : HS 1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8 : HS 1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	4	< 3	< 3	5
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	4	8	< 3	60
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	12	73	< 10	647
Aliphatic >C34 - C44 : EH_CU_1D_AL	mg/kg	< 10	NONE	< 10	< 10	< 10	177
Aliphatic (C5 - C44) : HS 1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	81	< 21	888
Aromatic >C5 - C7 : HS 1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8 : HS 1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	41	6	< 2	2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	254	58	< 3	61
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	276	200	< 10	639
Aromatic >C35 - C44 : EH_CU_1D_AR	mg/kg	< 10	NONE	13	34	< 10	168
Aromatic (C5 - C44) : HS 1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	584	299	< 21	870
Total >C5 - C44 : HS 1D_MS+EH_CU_1D_Tot	mg/kg	< 42	NONE	604	380	< 42	1759

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Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
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Soil Analysis Certificate - BTEX / MTBE

DETS Report No: 24-10916	~Date Sampled	12/09/24	12/09/24	12/09/24	12/09/24
LK Consult Limited	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Chorlton Baths	~TP / BH No	TP101	TP102	TP103	TP104
~Project / Job Ref: LKC241317	~Additional Refs	ES	ES	ES	ES
~Order No: PO000360	~Depth (m)	0.05 - 1.00	0.00 - 0.60	0.30 - 1.00	0.20 - 1.00
Reporting Date: 24/09/2024	DETS Sample No	738523	738525	738527	738528

Determinand	Unit	RL	Accreditation	(n)	
Benzene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2
Toluene : HS 1D MS	ug/kg	< 5	MCERTS	< 5	< 5
Ethylbenzene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2
p & m-xylene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2
o-xylene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2
MTBE : HS 1D MS	ug/kg	< 5	MCERTS	< 5	< 5

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 Rose Lane
 Lenham Heath
 Maidstone
 Kent ME17 2JN
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Waste Acceptance Criteria Analytical Certificate																																							
DETS Report No: 24-10916		~Date Sampled	12/09/24		<table border="1"> <thead> <tr> <th colspan="3">Landfill Waste Acceptance Criteria Limits</th> </tr> <tr> <th>Inert Waste Landfill</th> <th>Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill</th> <th>Hazardous Waste Landfill</th> </tr> </thead> <tbody> <tr> <td>3%</td> <td>5%</td> <td>6%</td> </tr> <tr> <td>--</td> <td>--</td> <td>10%</td> </tr> <tr> <td>6</td> <td>--</td> <td>--</td> </tr> <tr> <td>1</td> <td>--</td> <td>--</td> </tr> <tr> <td>500</td> <td>--</td> <td>--</td> </tr> <tr> <td>100</td> <td>--</td> <td>--</td> </tr> <tr> <td>--</td> <td>>6</td> <td>--</td> </tr> <tr> <td>--</td> <td>To be evaluated</td> <td>To be evaluated</td> </tr> </tbody> </table>					Landfill Waste Acceptance Criteria Limits			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	3%	5%	6%	--	--	10%	6	--	--	1	--	--	500	--	--	100	--	--	--	>6	--	--	To be evaluated	To be evaluated
Landfill Waste Acceptance Criteria Limits																																							
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500	--	--																																					
100	--	--																																					
--	>6	--																																					
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LK Consult Limited		~Time Sampled	None Supplied																																				
~Site Reference: Chorlton Baths		~TP / BH No	TP101																																				
~Project / Job Ref: LKC241317		~Additional Refs	ES																																				
~Order No: PO000360		~Depth (m)	0.05 - 1.00																																				
Reporting Date: 24/09/2024		DETS Sample No	738523																																				
Determinand	Unit	MDL																																					
TOC ^{MU}	%	< 0.1	4.3																																				
Loss on Ignition ^{MU}	%	< 0.01	6.60																																				
BTEX ^{MU}	mg/kg	< 0.05	< 0.05																																				
Sum of PCBs	mg/kg	< 0.1	< 0.1																																				
Mineral Oil ^{MU}	mg/kg	< 10	21																																				
Total PAH ^{MU}	mg/kg	< 1.7	242																																				
pH ^{MU}	pH Units	N/a	7.8																																				
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	< 1																																				
Eluate Analysis			2:1	8:1		Cumulative	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)																																
			mg/l	mg/l		10:1 * mg/kg																																	
Arsenic ^U		0.0046	0.0039		0.071	0.5	2	25																															
Barium ^U		0.0456	0.0310		0.573	20	100	300																															
Cadmium ^U		< 0.0002	< 0.0002		< 0.002	0.04	1	5																															
Chromium ^U		0.0004	0.0005		0.009	0.5	10	70																															
Copper ^U		0.0139	0.0056		0.107	2	50	100																															
Mercury ^U		< 0.00004	< 0.00004		< 0.0004	0.01	0.2	2																															
Molybdenum ^U		0.0428	0.0152		0.298	0.5	10	30																															
Nickel ^U		0.0013	0.0008		0.0153	0.4	10	40																															
Lead ^U		0.0011	0.0031		0.054	0.5	10	50																															
Antimony ^U		0.0147	0.0084		0.157	0.06	0.7	5																															
Selenium ^U		0.0006	0.0004		0.0076	0.1	0.5	7																															
Zinc ^U		0.020	0.006		0.12	4	50	200																															
Chloride ^U		3	< 1		16	800	15000	25000																															
Fluoride ^U		1	0.9		15.6	10	150	500																															
Sulphate ^U		75	20		405	1000	20000	50000																															
TDS		212	99		1881	4000	60000	100000																															
Phenol Index ^U		< 0.01	< 0.01		< 0.5	1	-	-																															
DOC ^U		21.7	11.5		217	500	800	1000																															
Leach Test Information																																							
Sample Mass (kg)			0.10																																				
Dry Matter (%)			88.4																																				
Moisture (%)			13.2																																				
Stage 1																																							
Volume Eluate L2 (litres)			0.16																																				
Filtered Eluate VE1 (litres)			0.07																																				

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Samples Descriptions page describes if the test is performed on the dried or as-received portion

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U Denotes ISO17025 accredited test

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Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
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Waste Acceptance Criteria Analytical Certificate																																							
DETS Report No: 24-10916		~Date Sampled	12/09/24		<table border="1"> <thead> <tr> <th colspan="3">Landfill Waste Acceptance Criteria Limits</th> </tr> <tr> <th>Inert Waste Landfill</th> <th>Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill</th> <th>Hazardous Waste Landfill</th> </tr> </thead> <tbody> <tr> <td>3%</td> <td>5%</td> <td>6%</td> </tr> <tr> <td>--</td> <td>--</td> <td>10%</td> </tr> <tr> <td>6</td> <td>--</td> <td>--</td> </tr> <tr> <td>1</td> <td>--</td> <td>--</td> </tr> <tr> <td>500</td> <td>--</td> <td>--</td> </tr> <tr> <td>100</td> <td>--</td> <td>--</td> </tr> <tr> <td>--</td> <td>>6</td> <td>--</td> </tr> <tr> <td>--</td> <td>To be evaluated</td> <td>To be evaluated</td> </tr> </tbody> </table>					Landfill Waste Acceptance Criteria Limits			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	3%	5%	6%	--	--	10%	6	--	--	1	--	--	500	--	--	100	--	--	--	>6	--	--	To be evaluated	To be evaluated
Landfill Waste Acceptance Criteria Limits																																							
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100	--	--																																					
--	>6	--																																					
--	To be evaluated	To be evaluated																																					
LK Consult Limited		~Time Sampled	None Supplied																																				
~Site Reference: Chorlton Baths		~TP / BH No	TP104																																				
~Project / Job Ref: LKC241317		~Additional Refs	ES																																				
~Order No: PO000360		~Depth (m)	0.20 - 1.00																																				
Reporting Date: 24/09/2024		DETS Sample No	738528																																				
Determinand	Unit	MDL																																					
TOC ^{MU}	%	< 0.1	2.9																																				
Loss on Ignition ^{MU}	%	< 0.01	3.60																																				
BTEX ^{MU}	mg/kg	< 0.05	< 0.05																																				
Sum of PCBs	mg/kg	< 0.1	< 0.1																																				
Mineral Oil ^{MU}	mg/kg	< 10	866																																				
Total PAH ^{MU}	mg/kg	< 1.7	30.3																																				
pH ^{MU}	pH Units	N/a	9.8																																				
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	1.4																																				
Eluate Analysis			2:1 mg/l	8:1 mg/l		Cumulative 10:1 * mg/kg	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)																																
Arsenic ^U		0.0028	0.0038		0.068	0.5	2	25																															
Barium ^U		0.0388	0.0149		0.289	20	100	300																															
Cadmium ^U		< 0.0002	< 0.0002		< 0.002	0.04	1	5																															
Chromium ^U		0.0166	0.0027		0.060	0.5	10	70																															
Copper ^U		0.0171	0.0043		0.089	2	50	100																															
Mercury ^U		< 0.00004	< 0.00004		< 0.0004	0.01	0.2	2																															
Molybdenum ^U		0.0117	0.0012		0.030	0.5	10	30																															
Nickel ^U		0.0020	0.0005		0.0108	0.4	10	40																															
Lead ^U		< 0.0002	0.0005		0.008	0.5	10	50																															
Antimony ^U		< 0.0002	< 0.0002		< 0.002	0.06	0.7	5																															
Selenium ^U		0.0015	0.0003		0.0058	0.1	0.5	7																															
Zinc ^U		0.018	0.003		0.06	4	50	200																															
Chloride ^U		33	2		65	800	15000	25000																															
Fluoride ^U		< 0.5	< 0.5		< 1	10	150	500																															
Sulphate ^U		155	27		599	1000	20000	50000																															
TDS		296	48		1072	4000	60000	100000																															
Phenol Index ^U		< 0.01	< 0.01		< 0.5	1	-	-																															
DOC ^U		35	12		237	500	800	1000																															
Leach Test Information																																							
Sample Mass (kg)			0.09																																				
Dry Matter (%)			92.9																																				
Moisture (%)			7.6																																				
Stage 1																																							
Volume Eluate L2 (litres)			0.17																																				
Filtered Eluate VE1 (litres)			0.07																																				

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Unit 1, Rose Lane Industrial Estate
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Lenham Heath
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Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Sample Descriptions

DETS Report No: 24-10916	
LK Consult Limited	
~Site Reference: Chorlton Baths	
~Project / Job Ref: LKC241317	
~Order No: PO000360	
Reporting Date: 24/09/2024	

DETS Sample No	~TP / BH No	~Additional Refs	~Depth (m)	Moisture Content (%)	Sample Matrix Description
738523	TP101	ES	0.05 - 1.00	11.1	Black loamy sand with stones and concrete
738524	TP101	ES	1.00 - 2.00	8.8	Brown sandy clay with stones
738525	TP102	ES	0.00 - 0.60	11	Black loamy sand with stones
738526	TP102	ES	0.60 - 1.50	5.7	Light brown sandy clay with stones
738527	TP103	ES	0.30 - 1.00	5.4	Light brown sand with stones
738528	TP104	ES	0.20 - 1.00	6.5	Brown sandy gravel with stones and concrete
738529	TP104	ES	2.50 - 3.00	31.8	Light brown clay

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{1/s}

Unsuitable Sample ^{u/s}

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Maidstone
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Soil Analysis Certificate - Methodology & Miscellaneous Information	
DETS Report No: 24-10916	
LK Consult Limited	
~Site Reference: Chorlton Baths	
~Project / Job Ref: LKC241317	
~Order No: PO000360	
Reporting Date: 24/09/2024	

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenv/carbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried

AR As Received

~Sample details provided by customer and can affect the validity of results



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Water Analysis Certificate - Methodology & Miscellaneous Information	
DETS Report No: 24-10916	
LK Consult Limited	
~Site Reference: Chorlton Baths	
~Project / Job Ref: LKC241317	
~Order No: PO000360	
Reporting Date: 24/09/2024	

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	F	Ammoniacal Nitrogen	Determination of ammoniacal nitrogen by discrete analyser.	E126
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	F	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	UF	Biological Oxygen Demand (BOD)	Determination using BOD sensors measuring the change of pressure	E133
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR detection	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichloromethane	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	TPH CWG (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCS	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

Key

F Filtered
UF Unfiltered

~Sample details provided by customer and can affect the validity of results



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



List of HWOL Acronyms and Operators

DETS Report No: 24-10916

LK Consult Limited

~Site Reference: Chorlton Baths

~Project / Job Ref: LKC241317

~Order No: PO000360

Reporting Date: 24/09/2024

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH 2D Total but with humics mathematically subtracted
#2	EH 2D Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS Total or EH CU+HS Total
~	Sample details provided by customer and can affect the validity of results

Benzene - HS 1D_MS
Ethylbenzene - HS 1D_MS
MTBE - HS 1D_MS
Mineral Oil (C10 - C40) (BS EN 12457-3) - EH_CU_1D_AL
TPH - Aliphatic >C34 - C44 - raw data - EH_CU_1D_AL
TPH CWG - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH CWG - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH CWG - Aliphatic >C16 - C21 - EH_CU_1D_AL
TPH CWG - Aliphatic >C21 - C34 - EH_CU_1D_AL
TPH CWG - Aliphatic >C34 - C44 - EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH CWG - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH CWG - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH CWG - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH CWG - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH CWG - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH CWG - Aromatic >C35 - C44 - EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH CWG - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH CWG - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH CWG - Total >C5 - C44 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
Total BTEX (BS EN 12457-3) - HS_1D_MS_Total
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

Parameter	Matrix Type	Expanded Uncertainty Measurement	Unit
TOC	Soil	12.2	%
Loss on Ignition	Soil	22.9	%
BTEX	Soil	11.2	%
Sum of PCBs	Soil	43.4	%
Mineral Oil	Soil	9.0	%
Total PAH	Soil	18.5	%
pH	Soil	0.335	Units
Acid Neutralisation Capacity	Soil	18.0	%
Clay Content	Soil	15.0	%
Silt Content	Soil	14.0	%
Sand Content	Soil	13.0	%
Loss on Ignition	Soil	22.9	%
pH	Soil	0.335	Units
Carbonate	Soil	12.0	%
Total Nitrogen	Soil	12.0	%
Phosphorus (Extractable)	Soil	24.0	%
Potassium (Extractable)	Soil	20.0	%
Magnesium (Extractable)	Soil	26.0	%
Zinc	Soil	21.6	%
Copper	Soil	18.2	%
Nickel	Soil	24.3	%
Available Sodium	Soil	23.0	%
Available Calcium	Soil	23.0	%
Electrical Conductivity	Soil	10.0	%

Appendix D – Certificates of Analysis (Geotechnical)

TEST REPORT

Client LK Consult Ltd

Address Unit 29 Eton Business Park
Eton Hill Road
Radcliffe
Greater Manchester
M26 2ZS

Contract LKC 24 1317 -
Chorlton Baths

Job Number MRN 24076/117
Date of Issue 20 December 2024
Page 1 of 24

Approved Signatories

S J Hutchings, O P Davies

Notes

- 1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.
- 2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.
- 3 Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation.
- 4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.
- 5 The results included within the report are representative of the samples submitted for analysis.
- 6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.



Andrew House, Hadfield Street, Dukinfield, Cheshire SK16 4QX Tel: 0161 475 0870
Email: enquiries@murrayrix.com Website: www.murrayrix.com

Also at: London: 020 8523 1999

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MURRAY RIX
ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

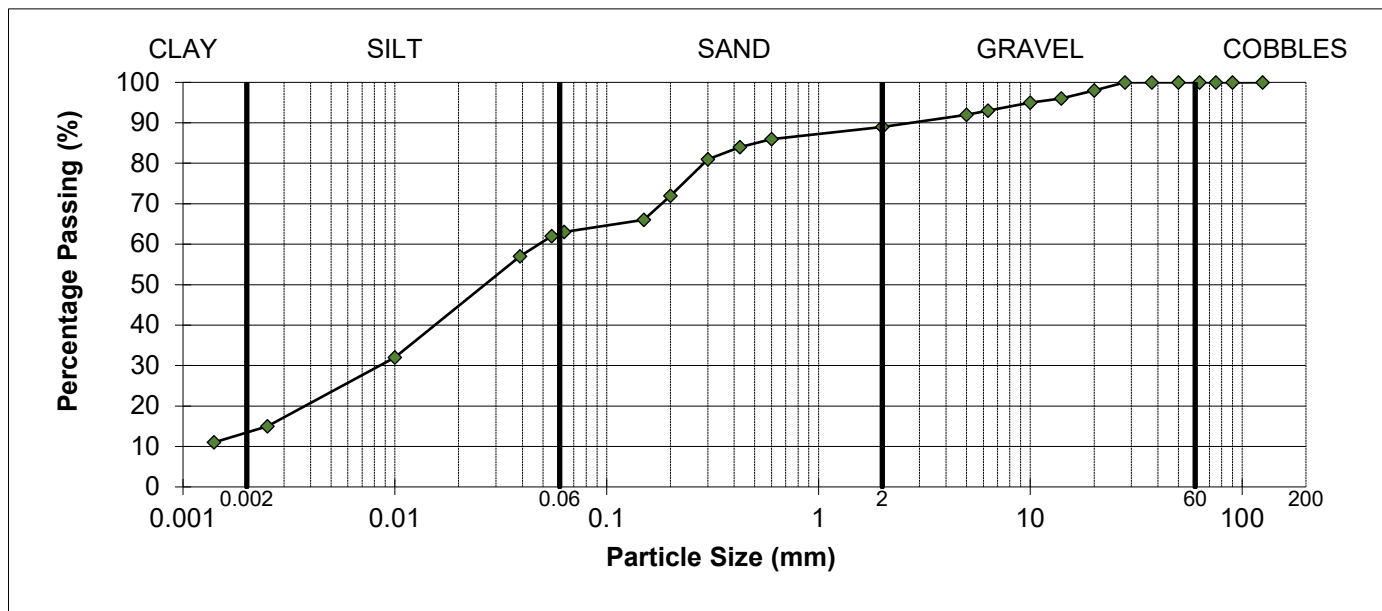
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd		
SITE	LKC 24 1317 - Chorlton Baths		
JOB NUMBER	MRN 24076/117		

SAMPLE LABEL	CP101 3.4-3.7 B	DATE SAMPLED	19-Nov-24
LAB SAMPLE No	610701	DATE RECEIVED	05-Dec-24
DATE TESTED	09-Dec-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	89	
90	100		0.6	86	
75	100		0.425	84	
63	100		0.3	81	
50	100		0.2	72	
37.5	100		0.15	66	
28	100		0.063	63	
20	98		0.055	62	
14	96		0.039	57	
10	95		0.01	32	
6.3	93		0.0025	15	
5	92		0.0014	11	



REMARKS

As received water content = 18.8%

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

20-Dec-24

MURRAY RIX
ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

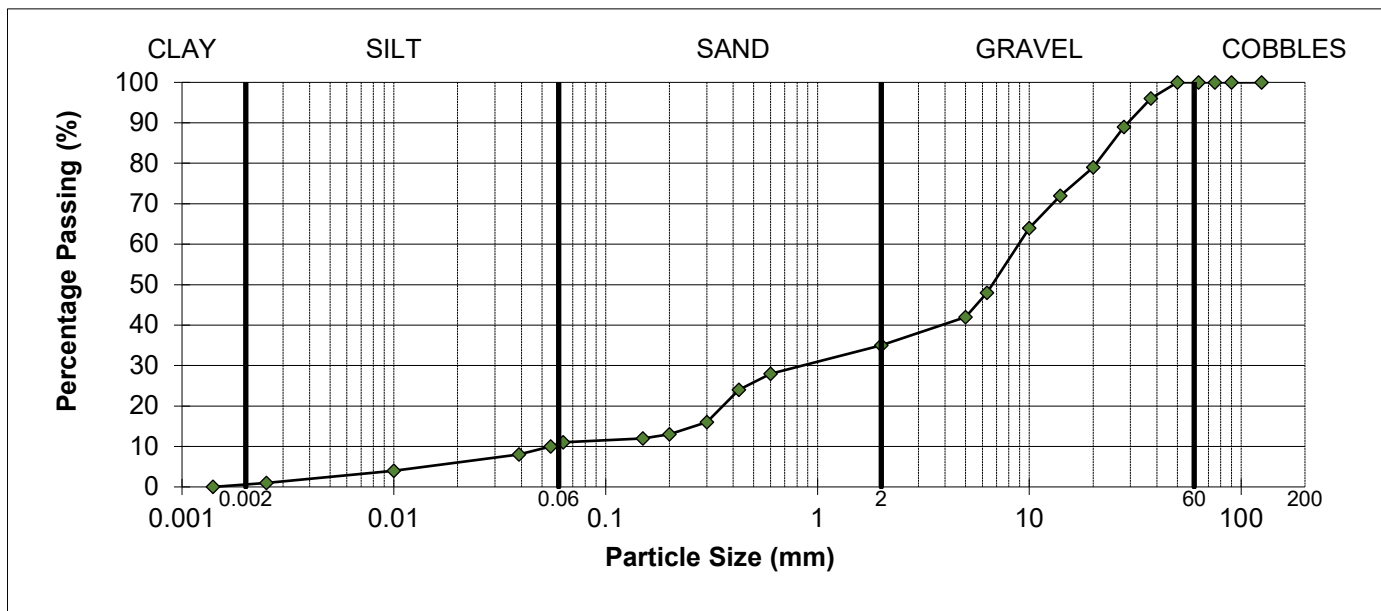
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd		
SITE	LKC 24 1317 - Chorlton Baths		
JOB NUMBER	MRN 24076/117		

SAMPLE LABEL	CP101 17.5-17.8 B	DATE SAMPLED	19-Nov-24
LAB SAMPLE No	610703	DATE RECEIVED	05-Dec-24
DATE TESTED	09-Dec-24	SAMPLED BY	Client

MATERIAL	Grey brown silty very sandy GRAVEL
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	35	
90	100		0.6	28	
75	100		0.425	24	
63	100		0.3	16	
50	100		0.2	13	
37.5	96		0.15	12	
28	89		0.063	11	
20	79		0.055	10	
14	72		0.039	8	
10	64		0.01	4	
6.3	48		0.0025	1	
5	42		0.0014	0	



REMARKS

As received water content = 8.3%

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

20-Dec-24

MURRAY RIX
ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

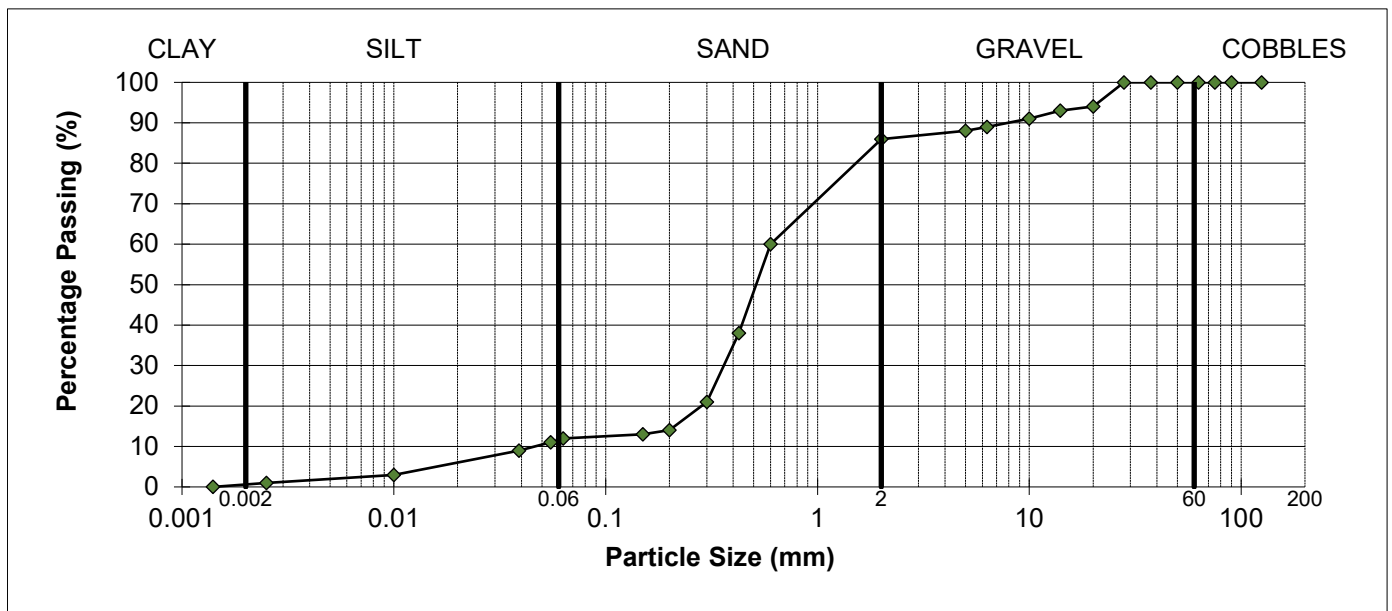
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd		
SITE	LKC 24 1317 - Chorlton Baths		
JOB NUMBER	MRN 24076/117		

SAMPLE LABEL	CP102 1.7-2 B	DATE SAMPLED	18-Nov-24
LAB SAMPLE No	610704	DATE RECEIVED	05-Dec-24
DATE TESTED	09-Dec-24	SAMPLED BY	Client

MATERIAL	Grey brown silty gravelly SAND
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	86	
90	100		0.6	60	
75	100		0.425	38	
63	100		0.3	21	
50	100		0.2	14	
37.5	100		0.15	13	
28	100		0.063	12	
20	94		0.055	11	
14	93		0.039	9	
10	91		0.01	3	
6.3	89		0.0025	1	
5	88		0.0014	0	



REMARKS

As received water content = 15.8%

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

20-Dec-24

MURRAY RIX
ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

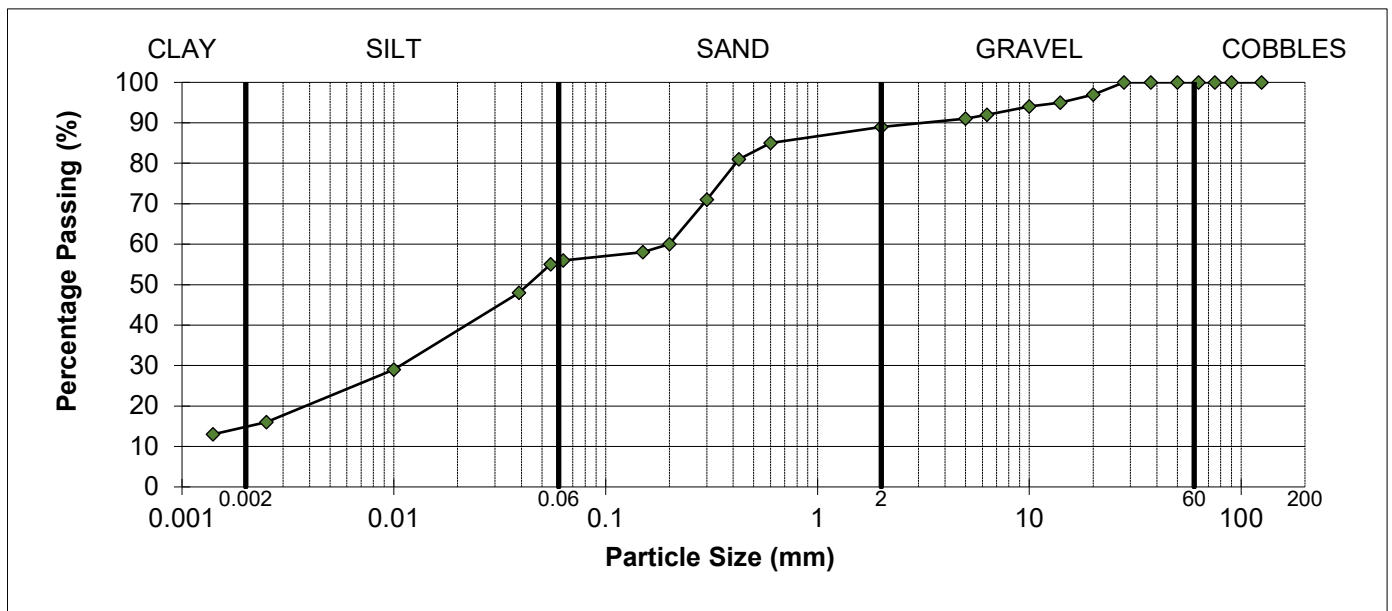
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/117

SAMPLE LABEL	CP102 9-9.3 B	DATE SAMPLED	18-Nov-24
LAB SAMPLE No	610706	DATE RECEIVED	05-Dec-24
DATE TESTED	09-Dec-24	SAMPLED BY	Client

MATERIAL	Brown silty very sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	89	
90	100		0.6	85	
75	100		0.425	81	
63	100		0.3	71	
50	100		0.2	60	
37.5	100		0.15	58	
28	100		0.063	56	
20	97		0.055	55	
14	95		0.039	48	
10	94		0.01	29	
6.3	92		0.0025	16	
5	91		0.0014	13	



REMARKS

As received water content = 11.3%

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

20-Dec-24

MURRAY RIX
ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

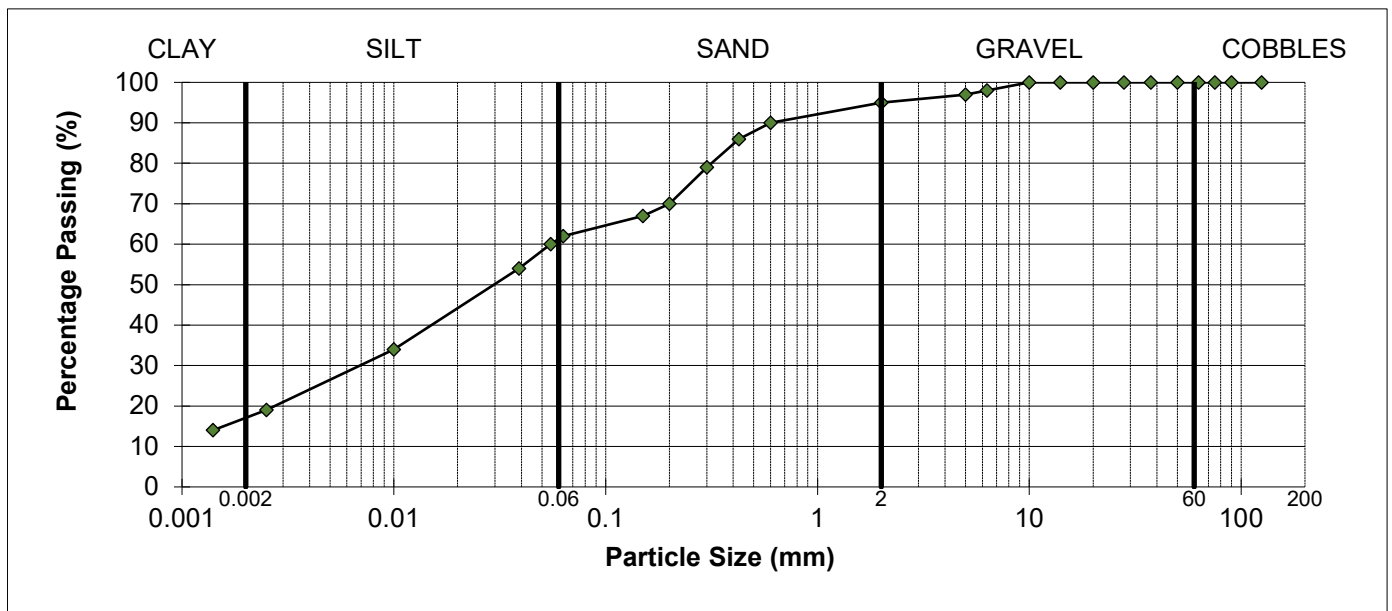
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/117

SAMPLE LABEL	CP105 1.7-2 B	DATE SAMPLED	21-Nov-24
LAB SAMPLE No	616015	DATE RECEIVED	13-Dec-24
DATE TESTED	16-Dec-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	95	
90	100		0.6	90	
75	100		0.425	86	
63	100		0.3	79	
50	100		0.2	70	
37.5	100		0.15	67	
28	100		0.063	62	
20	100		0.055	60	
14	100		0.039	54	
10	100		0.01	34	
6.3	98		0.0025	19	
5	97		0.0014	14	



REMARKS

As received water content = 14.1%

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

20-Dec-24

MURRAY RIX
ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

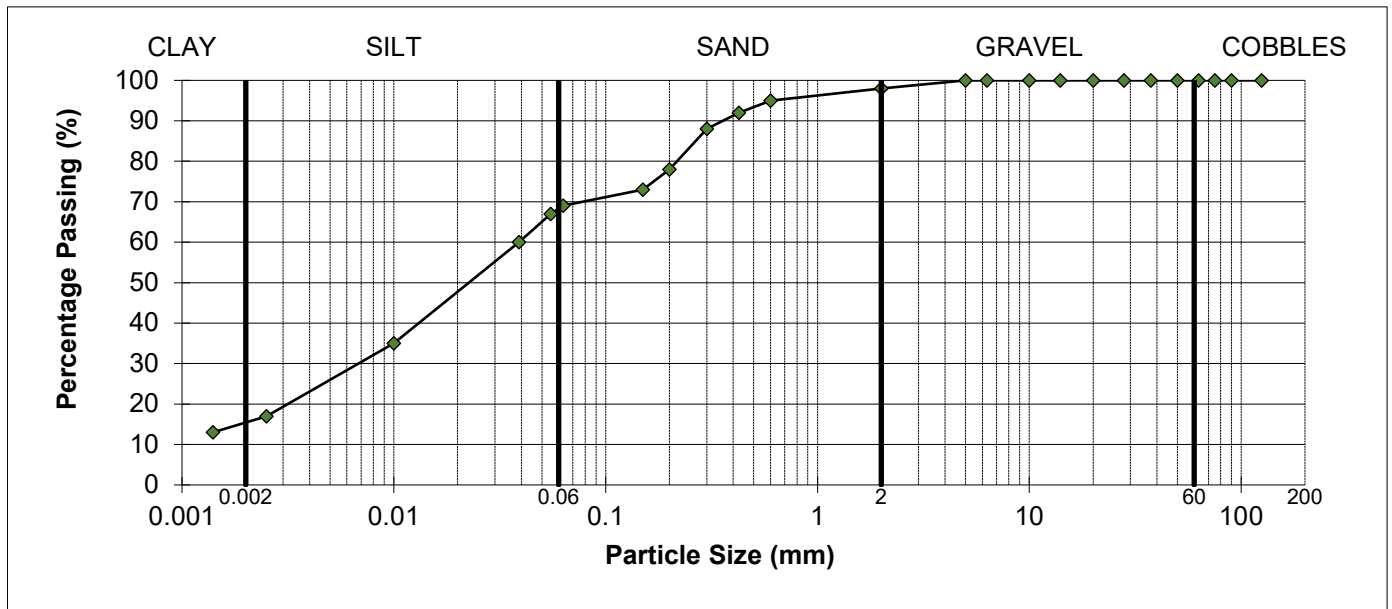
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd		
SITE	LKC 24 1317 - Chorlton Baths		
JOB NUMBER	MRN 24076/117		

SAMPLE LABEL	CP105 9-9.3 B	DATE SAMPLED	21-Nov-24
LAB SAMPLE No	616017	DATE RECEIVED	13-Dec-24
DATE TESTED	16-Dec-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	98	
90	100		0.6	95	
75	100		0.425	92	
63	100		0.3	88	
50	100		0.2	78	
37.5	100		0.15	73	
28	100		0.063	69	
20	100		0.055	67	
14	100		0.039	60	
10	100		0.01	35	
6.3	100		0.0025	17	
5	100		0.0014	13	



REMARKS

As received water content = 17.6%

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

20-Dec-24

MURRAY RIX
ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

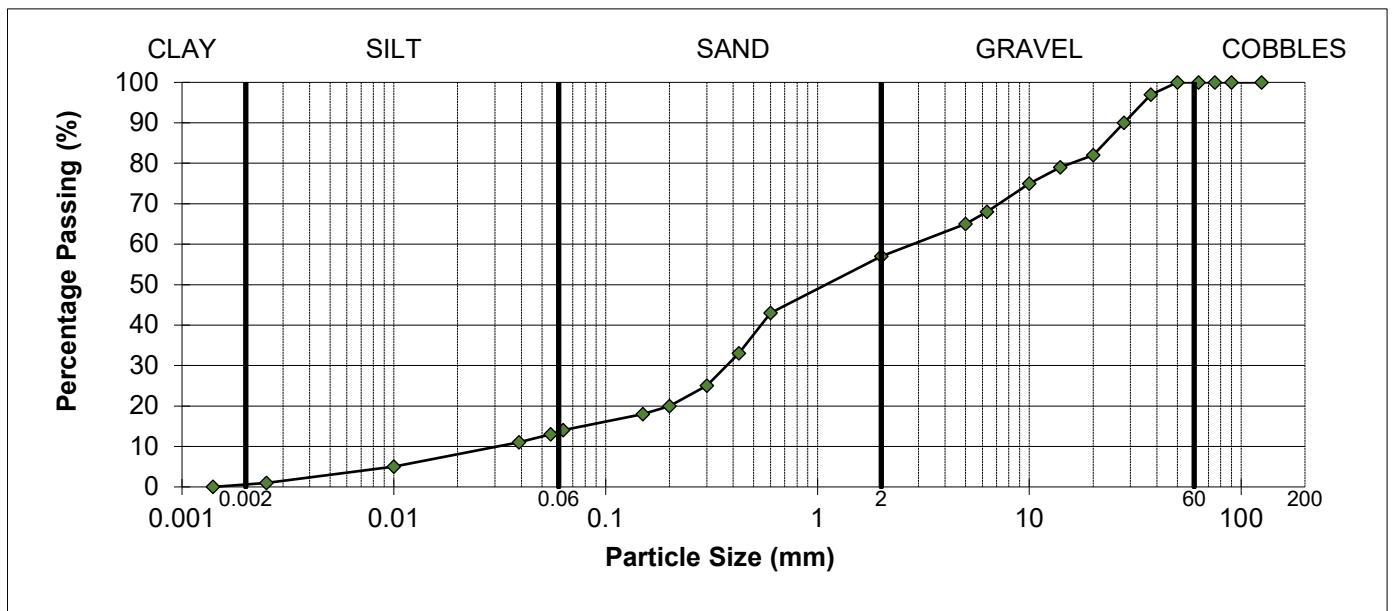
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd		
SITE	LKC 24 1317 - Chorlton Baths		
JOB NUMBER	MRN 24076/117		

SAMPLE LABEL	CP106 2.7-3 B	DATE SAMPLED	02-Dec-24
LAB SAMPLE No	610710	DATE RECEIVED	05-Dec-24
DATE TESTED	09-Dec-24	SAMPLED BY	Client

MATERIAL	Brown silty SAND & GRAVEL		
ADVISED SOURCE	Site Investigation Sample		

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	57	
90	100		0.6	43	
75	100		0.425	33	
63	100		0.3	25	
50	100		0.2	20	
37.5	97		0.15	18	
28	90		0.063	14	
20	82		0.055	13	
14	79		0.039	11	
10	75		0.01	5	
6.3	68		0.0025	1	
5	65		0.0014	0	



REMARKS

As received water content = 7.1%

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

20-Dec-24

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ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

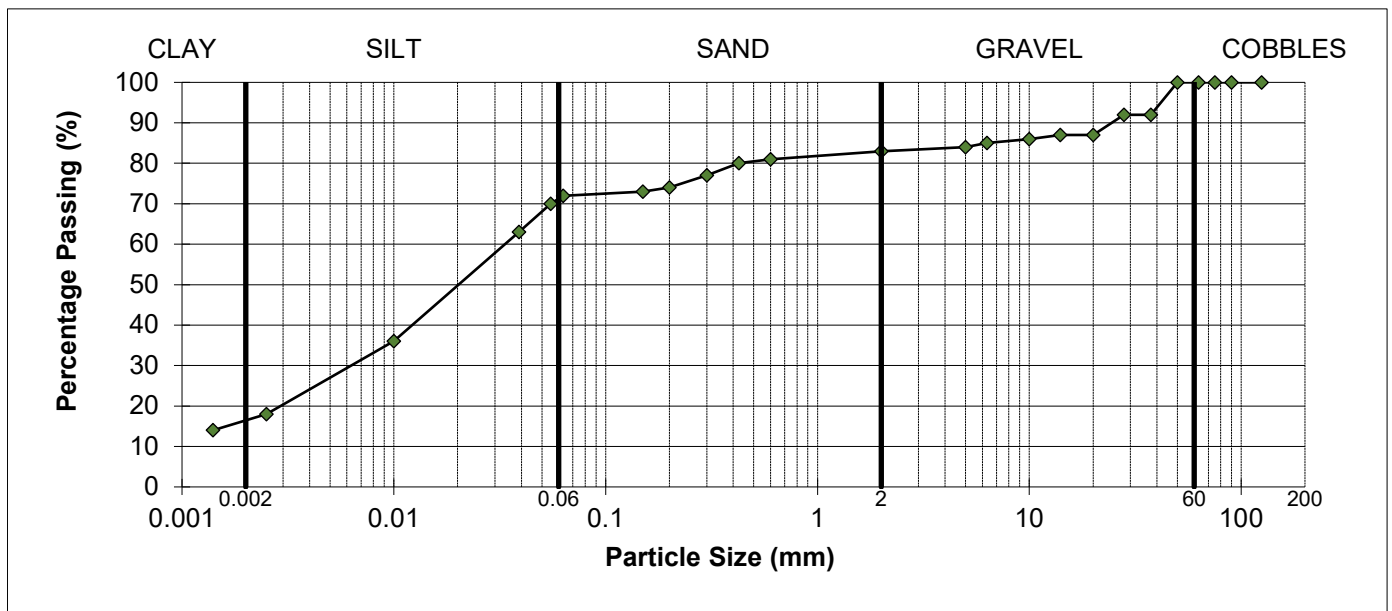
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd		
SITE	LKC 24 1317 - Chorlton Baths		
JOB NUMBER	MRN 24076/117		

SAMPLE LABEL	CP106 4.7-5 B	DATE SAMPLED	02-Dec-24
LAB SAMPLE No	610711	DATE RECEIVED	05-Dec-24
DATE TESTED	09-Dec-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	83	
90	100		0.6	81	
75	100		0.425	80	
63	100		0.3	77	
50	100		0.2	74	
37.5	92		0.15	73	
28	92		0.063	72	
20	87		0.055	70	
14	87		0.039	63	
10	86		0.01	36	
6.3	85		0.0025	18	
5	84		0.0014	14	



REMARKS

As received water content = 19.2%

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

20-Dec-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

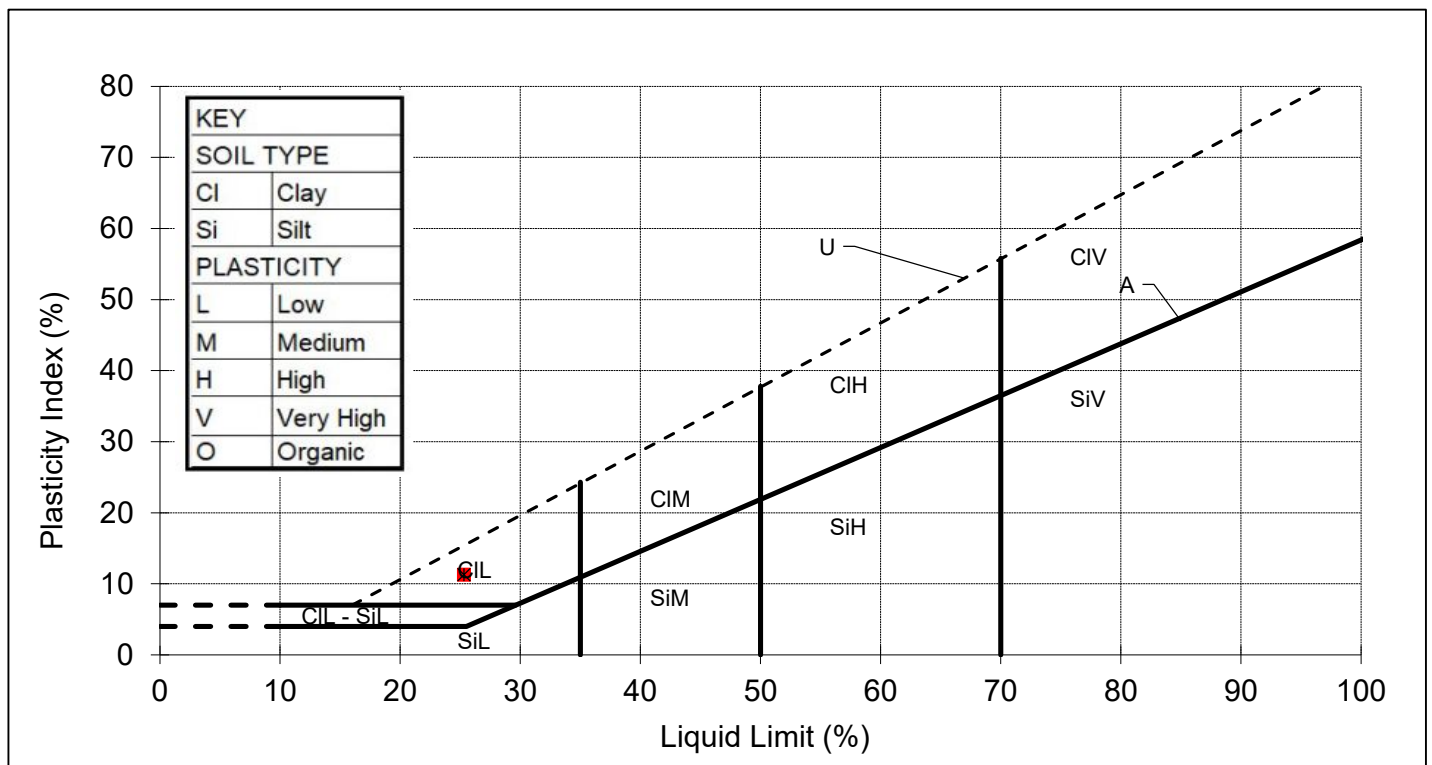
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/117

SAMPLE LABEL	CP101 3.4-3.7 B	DATE SAMPLED	19-Nov-24
SAMPLE No.	610701	DATE RECEIVED	05-Dec-24
DATE TESTED	09-Dec-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Water Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	19.7	25.2	1.006	
Determination 2 (avg)	19.5	25.1		

Natural Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
18.8	25	14	11	84



REMARKS

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

20-Dec-24

MURRAY RIX

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DUKINFIELD, CHESHIRE SK16 4QX
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TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

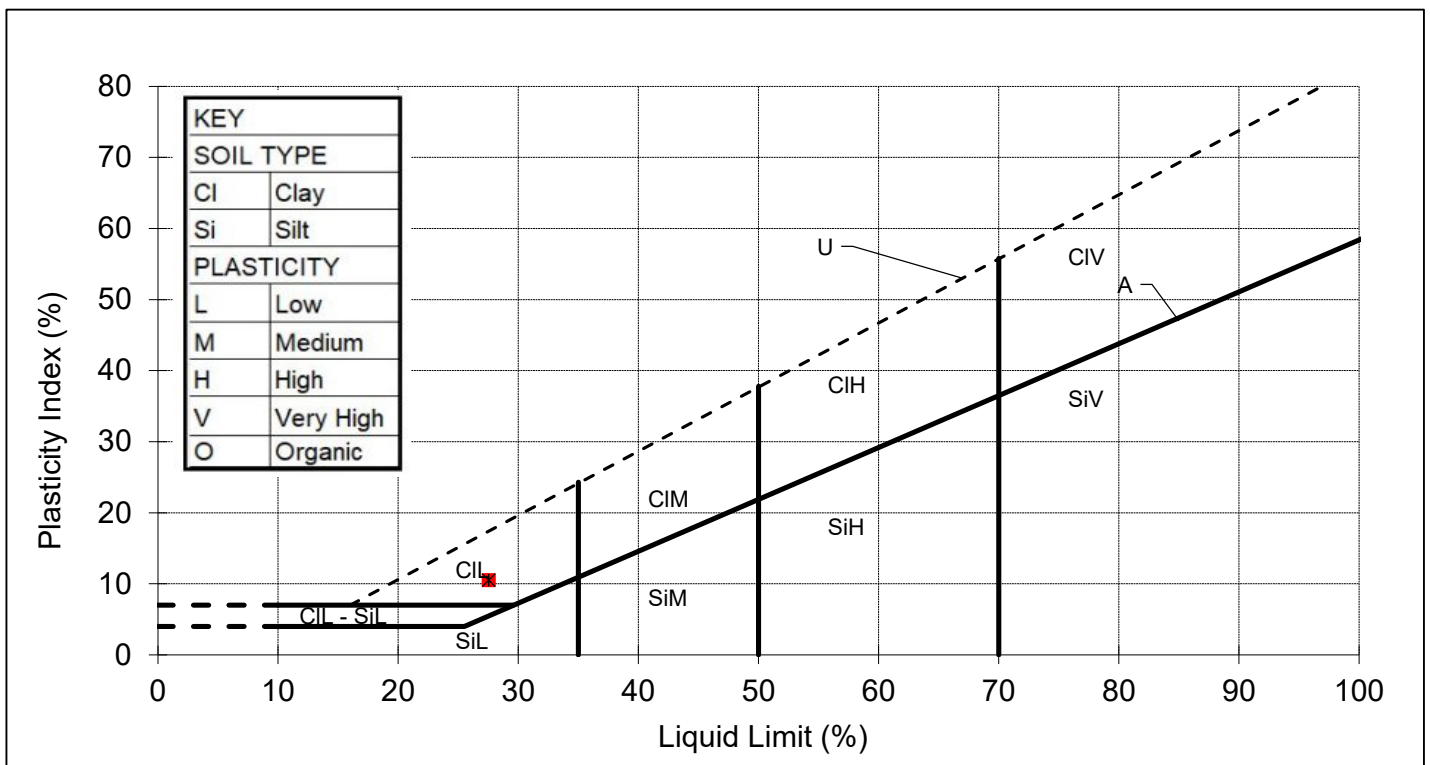
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/117

SAMPLE LABEL	CP101 9.7-10 B	DATE SAMPLED	19-Nov-24
SAMPLE No.	610702	DATE RECEIVED	05-Dec-24
DATE TESTED	09-Dec-24	SAMPLED BY	Client

MATERIAL	Grey brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Water Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	24.8	28.9	0.954	
Determination 2 (avg)	24.4	28.8		

Natural Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
20.7	28	17	11	72



REMARKS

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

20-Dec-24

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

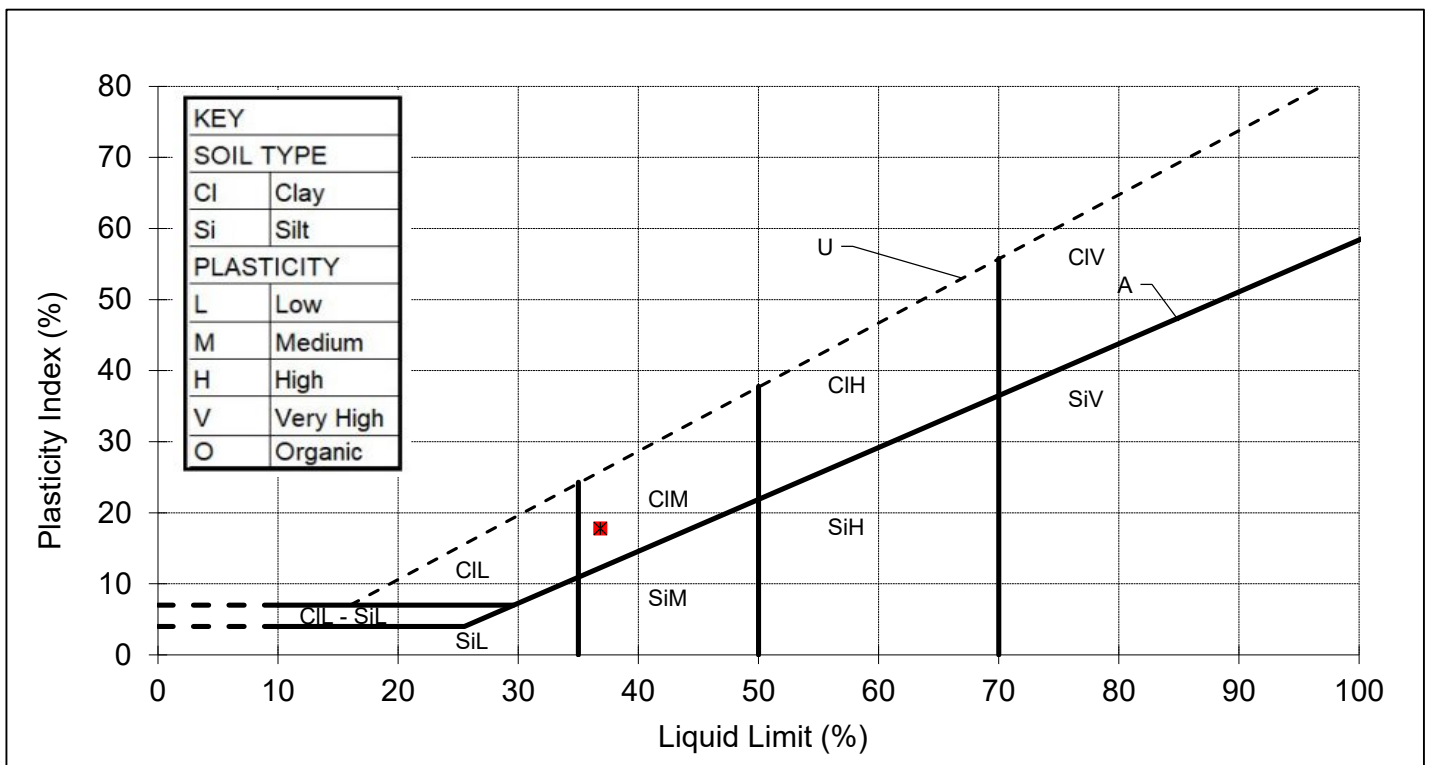
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/117

SAMPLE LABEL	CP102 4-4.3 B	DATE SAMPLED	18-Nov-24
SAMPLE No.	610705	DATE RECEIVED	05-Dec-24
DATE TESTED	09-Dec-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Water Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	18.1	35.9	1.031	
Determination 2 (avg)	17.8	35.5		

Natural Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
21.7	37	19	18	98



REMARKS

SIGNED

NAME

O.P. Davies BA (Hons)
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DATE

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TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

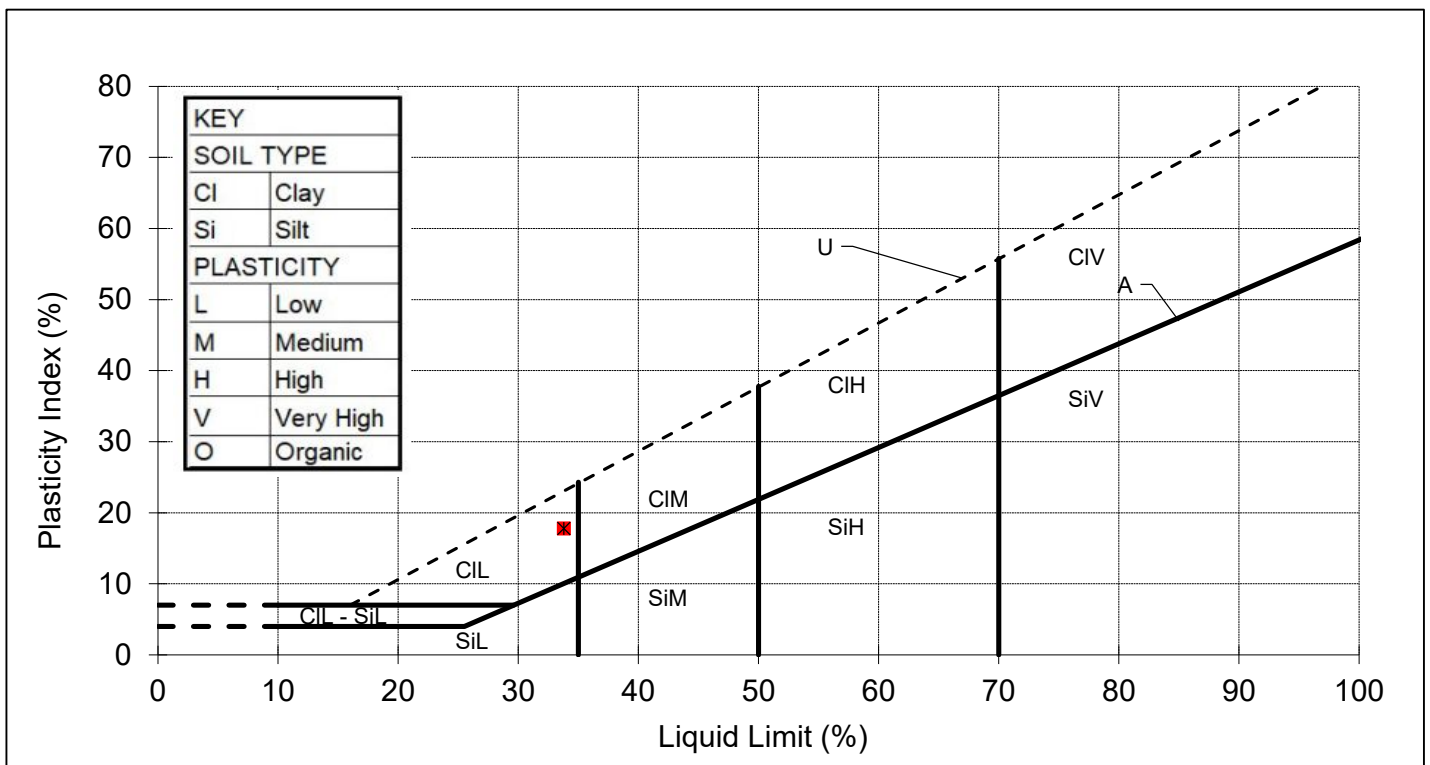
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/117

SAMPLE LABEL	CP105 3.7-4 B	DATE SAMPLED	21-Nov-24
SAMPLE No.	616016	DATE RECEIVED	13-Dec-24
DATE TESTED	13-Dec-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Water Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	19.4	33.5	1.011	
Determination 2 (avg)	19.2	33.4		

Natural Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
18.9	34	16	18	92



REMARKS

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

20-Dec-24

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TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

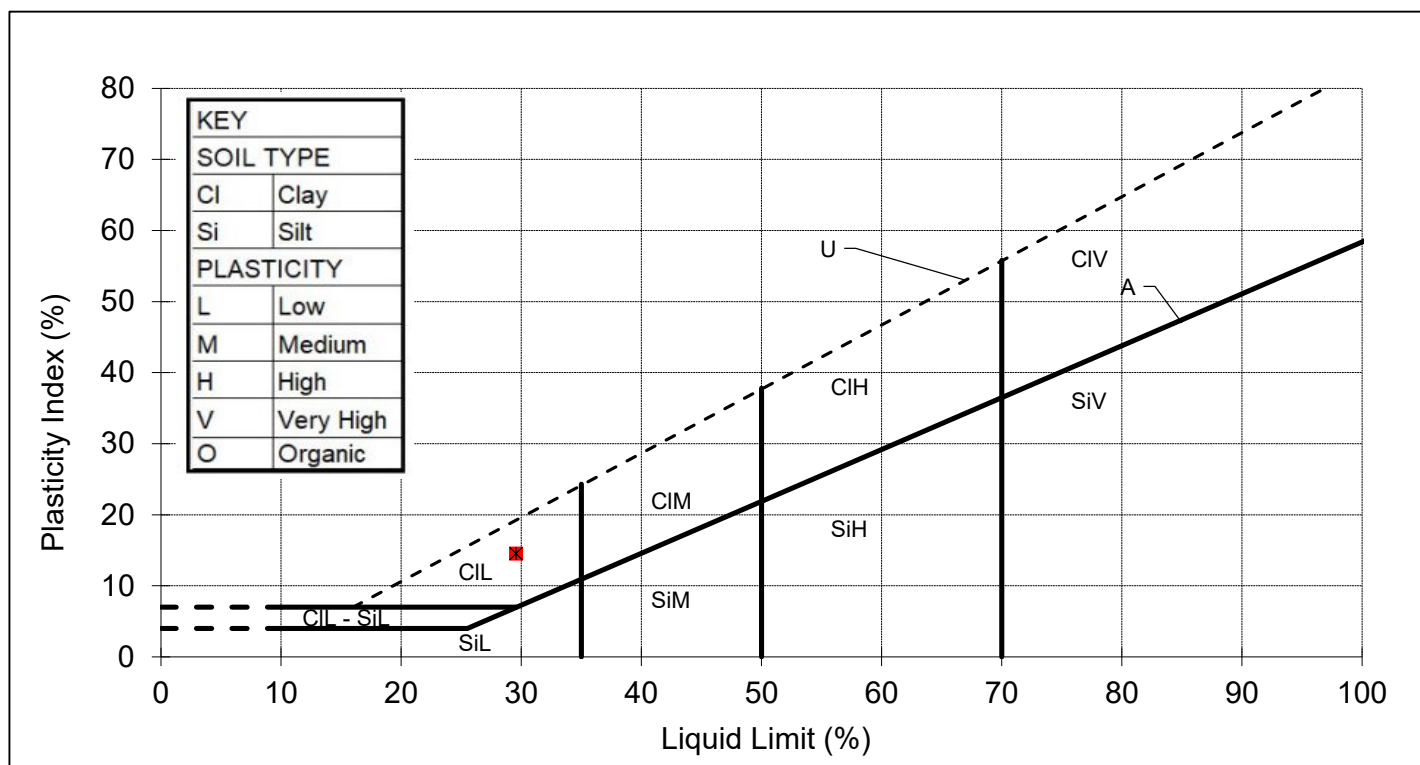
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/117

SAMPLE LABEL	CP105 9-9.3 B	DATE SAMPLED	21-Nov-24
SAMPLE No.	616017	DATE RECEIVED	13-Dec-24
DATE TESTED	16-Dec-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Water Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	20.0	29.6	1.000	
Determination 2 (avg)	20.0	29.5		

Natural Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
17.6	30	15	15	92



REMARKS

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

20-Dec-24

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

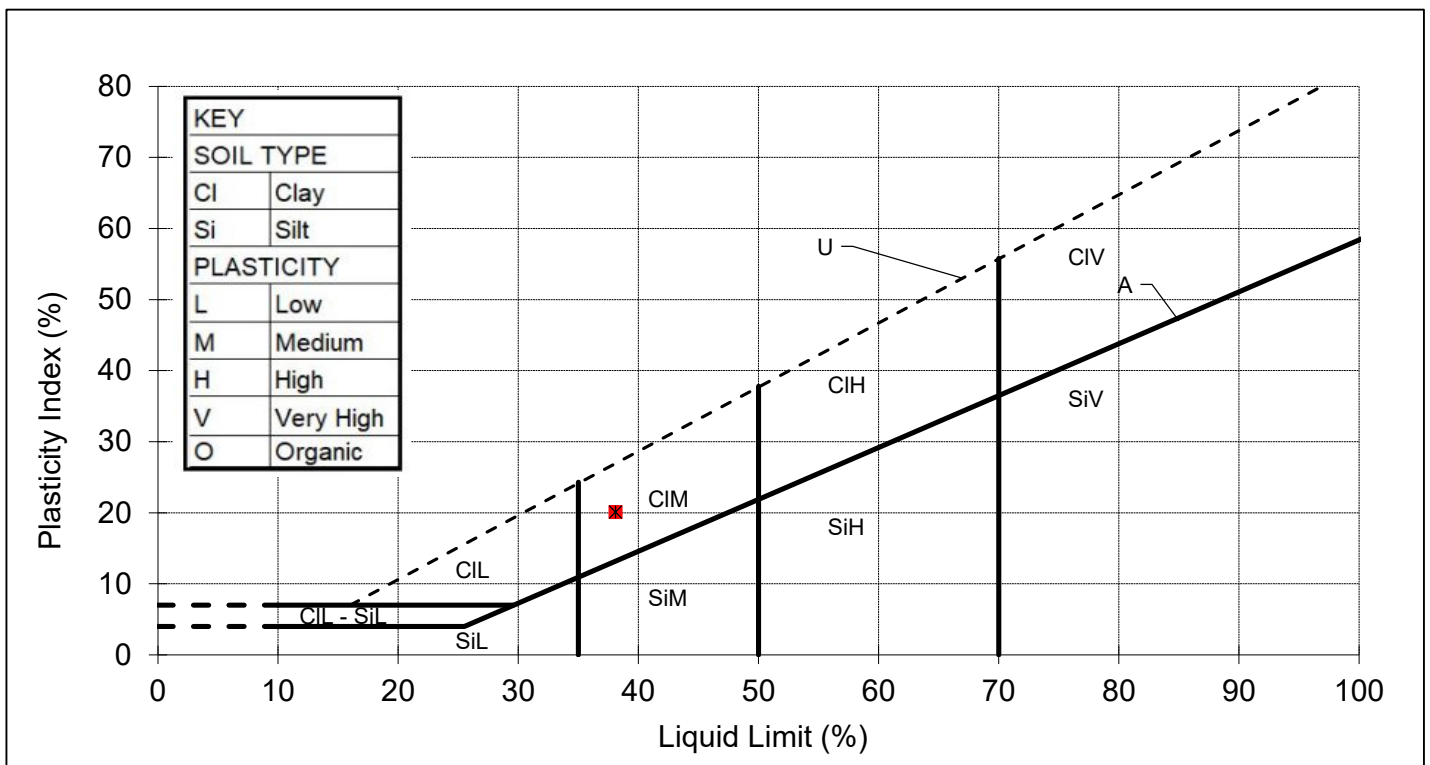
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/117

SAMPLE LABEL	CP106 4.7-5 B	DATE SAMPLED	02-Dec-24
SAMPLE No.	610711	DATE RECEIVED	05-Dec-24
DATE TESTED	09-Dec-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Water Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	18.9	37.5	1.019	
Determination 2 (avg)	18.8	37.3		

Natural Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
19.2	38	18	20	80



REMARKS

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

20-Dec-24

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TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

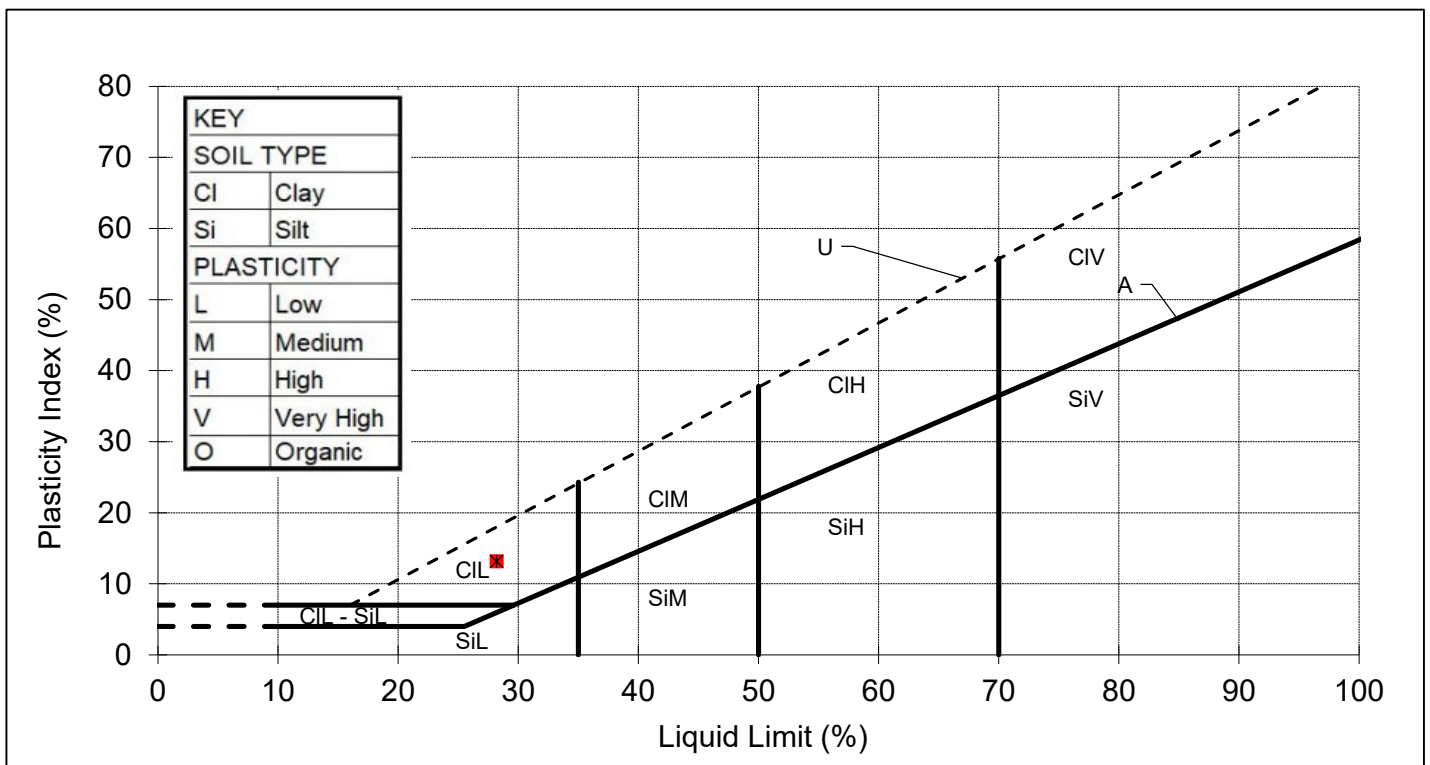
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/117

SAMPLE LABEL	CP106 9-9.3 B	DATE SAMPLED	02-Dec-24
SAMPLE No.	610712	DATE RECEIVED	05-Dec-24
DATE TESTED	09-Dec-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Water Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	23.2	29.5	0.960	
Determination 2 (avg)	23.0	29.2		

Natural Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
12.7	28	15	13	67



REMARKS

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

20-Dec-24

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TEL 0161 475 0870



TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

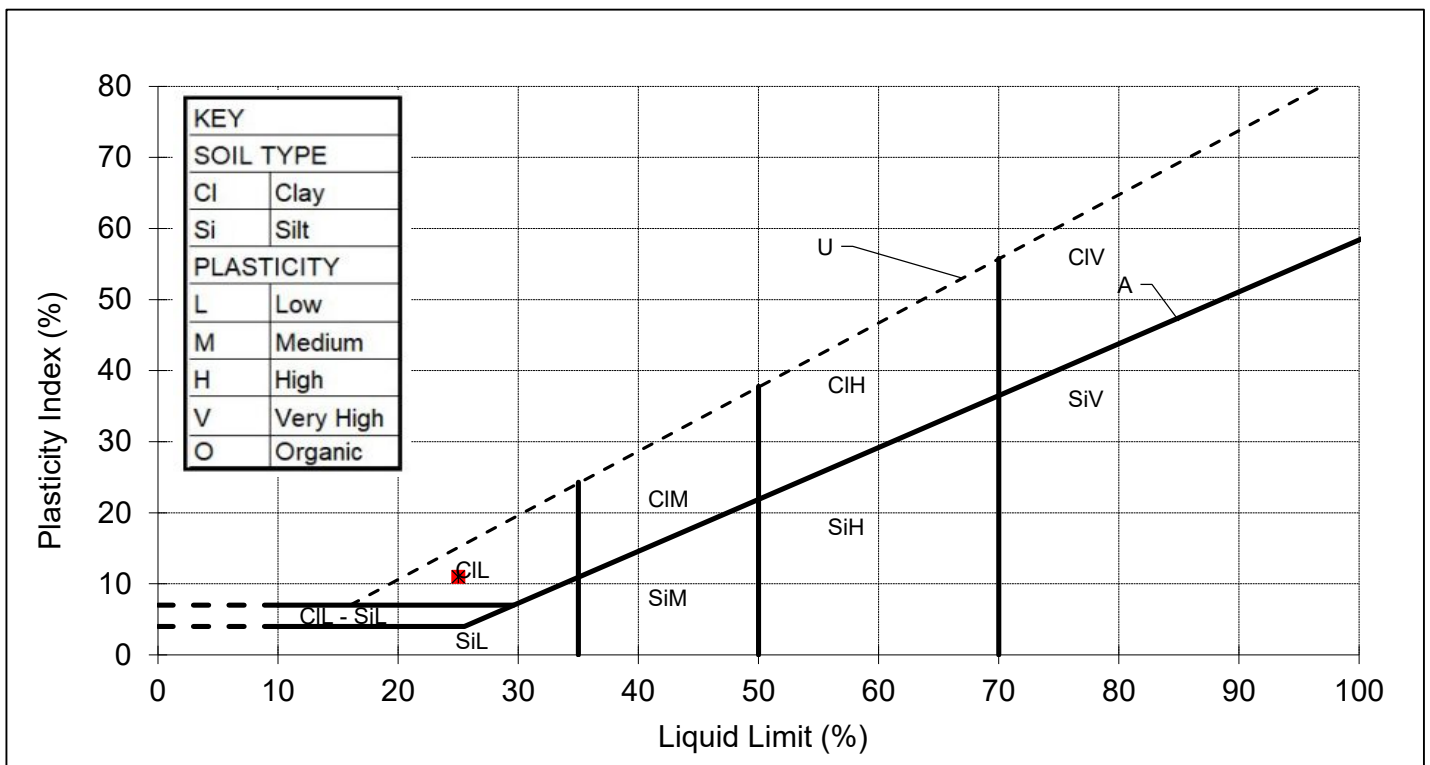
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/117

SAMPLE LABEL	CP102 16.50-16.9 D	DATE SAMPLED	18-Nov-24
SAMPLE No.	610720	DATE RECEIVED	05-Dec-24
DATE TESTED	09-Dec-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Water Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	16.5	23.9	1.048	
Determination 2 (avg)	16.3	23.8		

Natural Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
11.2	25	14	11	78



REMARKS

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

20-Dec-24

MURRAY RIX

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

BS EN ISO 17892-8:2018

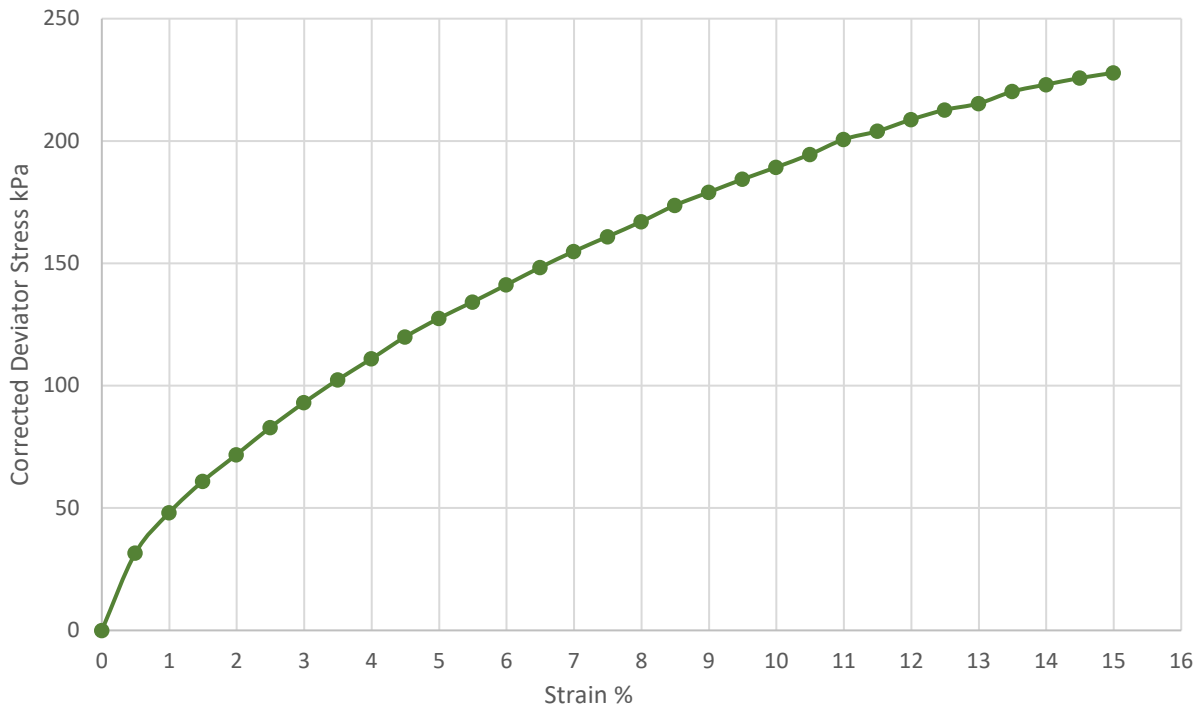
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/117

SAMPLE LABEL	CP101 10.6-11.05 U	DATE SAMPLED	19-Nov-24
LAB SAMPLE No.	610713	DATE RECEIVED	05-Dec-24
DATE TESTED	12-Dec-24	SAMPLED BY	Client
MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

INITIAL CONDITIONS

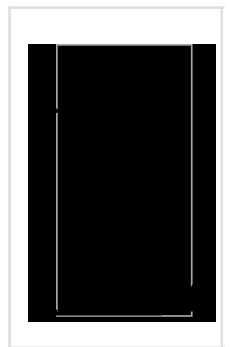
Specimen Location	Sample Length (mm)	280	Specimen depth from top of Sample (mm)	10
	Sample Orientation	Vertical	Specimen Condition	Undisturbed
	Specimen Length (mm)	201	Specimen Water Content (%)	10.7
	Specimen Diameter (mm)	101	Specimen Bulk Density (Mg/m3)	2.16
	Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.95
	Membrane Correction	3.39		

CORRECTED DEVIATOR STRESS vs AXIAL STRAIN



TEST TYPE
SINGLE STAGE

SKETCH OF
SPECIMEN AT
FAILURE



PLASTIC

(kPa)	(%)	(%/min)	Stress (kPa)	Shear Strength Cu (kPa)
220	15.0	2.0	228	114

Remarks/Abnormalities

Name O.P. Davies BA (Hons)
(Director / Head of Laboratory)

Signed

Date 20 December 2024

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

BS EN ISO 17892-8:2018

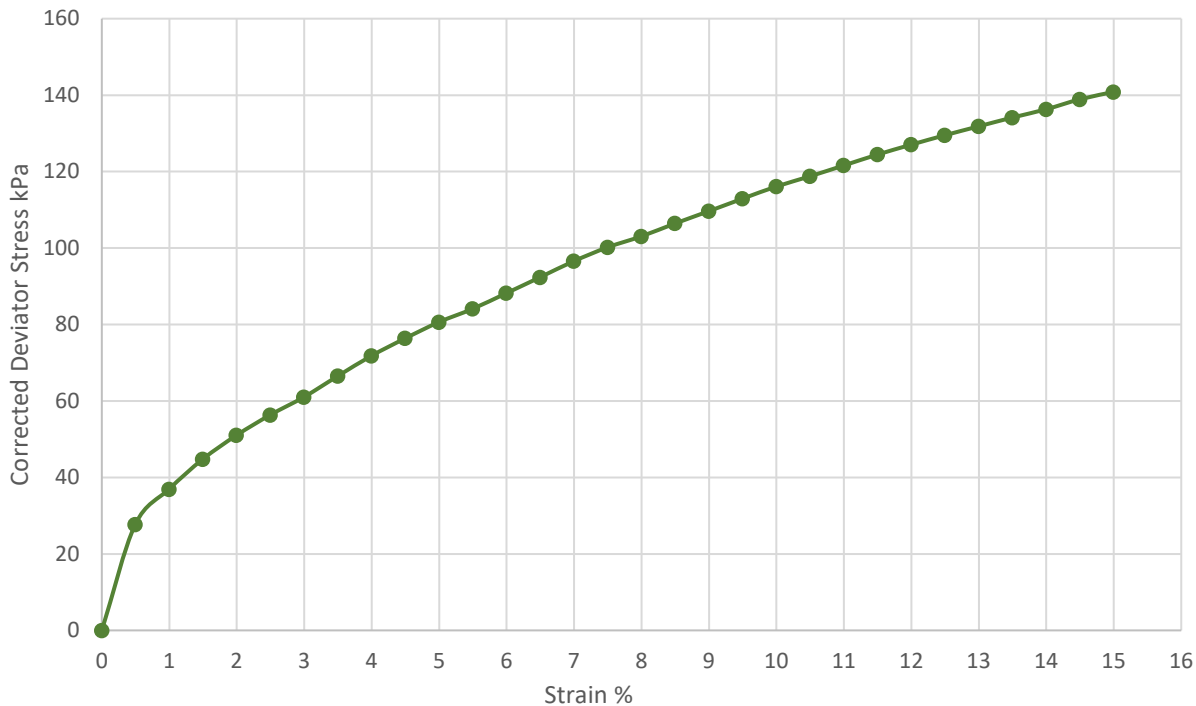
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/117

SAMPLE LABEL	CP102 4.5-4.95 U	DATE SAMPLED	18-Nov-24
LAB SAMPLE No.	610714	DATE RECEIVED	05-Dec-24
DATE TESTED	12-Dec-24	SAMPLED BY	Client
MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

INITIAL CONDITIONS

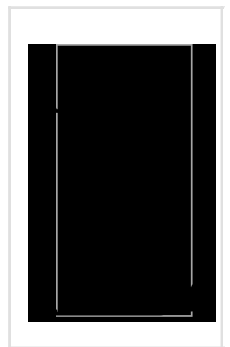
Specimen	Sample Length (mm)	445	Specimen depth from top of Sample (mm)	50
Location	Sample Orientation	Vertical	Specimen Condition	Undisturbed
	Specimen Length (mm)	200	Specimen Water Content (%)	13.5
	Specimen Diameter (mm)	101	Specimen Bulk Density (Mg/m3)	2.23
	Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.96
	Membrane Correction	3.39		

CORRECTED DEVIATOR STRESS vs AXIAL STRAIN



TEST TYPE
SINGLE STAGE

SKETCH OF
SPECIMEN AT
FAILURE



PLASTIC

(kPa)	(%)	(%/min)	Stress (kPa)	Shear Strength Cu (kPa)
90	15.0	2.0	141	70

Remarks/Abnormalities

Name O.P. Davies BA (Hons)
(Director / Head of Laboratory)

Signed

Date 20 December 2024

MURRAY RIX

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DUKINFIELD, CHESHIRE SK16 4QX
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TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

BS EN ISO 17892-8:2018

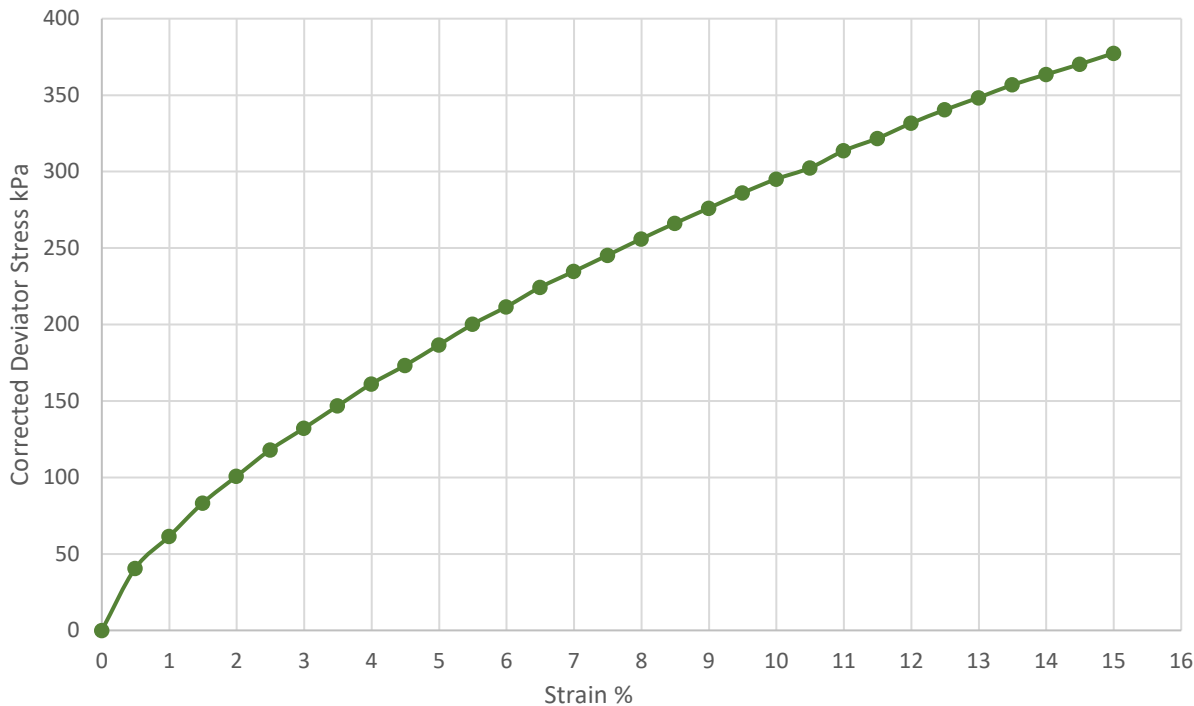
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/117

SAMPLE LABEL	CP102 10.1-10.55 U	DATE SAMPLED	18-Nov-24
LAB SAMPLE No.	610715	DATE RECEIVED	05-Dec-24
DATE TESTED	12-Dec-24	SAMPLED BY	Client
MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

INITIAL CONDITIONS

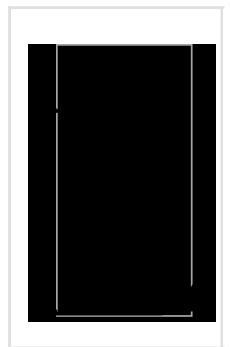
Specimen Location	Sample Length (mm)	235	Specimen depth from top of Sample (mm)	15
	Sample Orientation	Vertical	Specimen Condition	Undisturbed
	Specimen Length (mm)	200	Specimen Water Content (%)	9.9
	Specimen Diameter (mm)	100	Specimen Bulk Density (Mg/m3)	2.12
	Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.93
	Membrane Correction	3.39		

CORRECTED DEVIATOR STRESS vs AXIAL STRAIN



TEST TYPE
SINGLE STAGE

SKETCH OF
SPECIMEN AT
FAILURE



PLASTIC

(kPa)	(%)	(%/mm)	Stress (kPa)	Shear Strength Cu (kPa)
200	15.0	2.0	377	189

Remarks/Abnormalities

Name O.P. Davies BA (Hons)
(Director / Head of Laboratory)

Signed

Date 20 December 2024

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

BS EN ISO 17892-8:2018

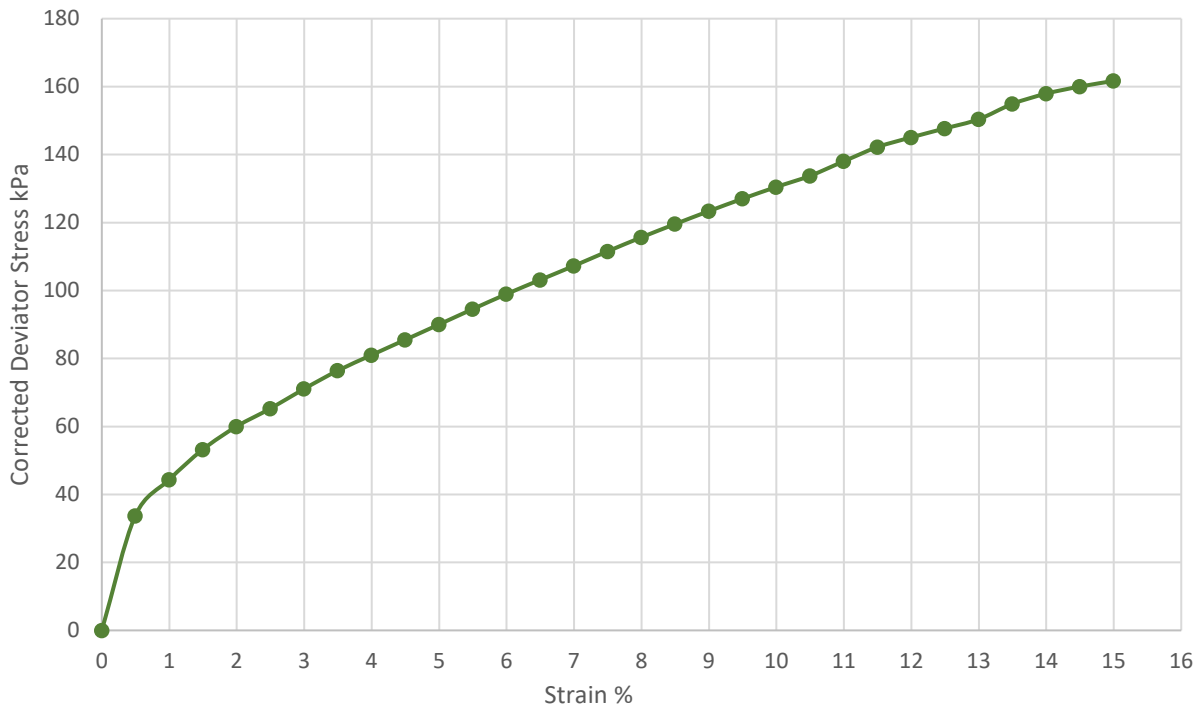
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/117

SAMPLE LABEL	CP105 5.5-5.95 U	DATE SAMPLED	21-Nov-24
LAB SAMPLE No.	616007	DATE RECEIVED	13-Dec-24
DATE TESTED	16-Dec-24	SAMPLED BY	Client
MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

INITIAL CONDITIONS

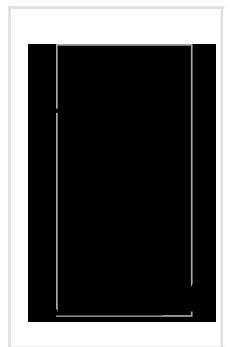
Specimen Location	Sample Length (mm)	400	Specimen depth from top of Sample (mm)	50
	Sample Orientation	Vertical	Specimen Condition	Undisturbed
	Specimen Length (mm)	200	Specimen Water Content (%)	14.6
	Specimen Diameter (mm)	101	Specimen Bulk Density (Mg/m3)	2.13
	Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.86
	Membrane Correction	3.39		

CORRECTED DEVIATOR STRESS vs AXIAL STRAIN



TEST TYPE
SINGLE STAGE

SKETCH OF
SPECIMEN AT
FAILURE



PLASTIC

(kPa)	(%)	(%/mm)	Stress (kPa)	Shear Strength Cu (kPa)
110	15.0	2.0	162	81

Remarks/Abnormalities

Name O.P. Davies BA (Hons)
(Director / Head of Laboratory)

Signed

Date 20 December 2024

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

BS EN ISO 17892-8:2018

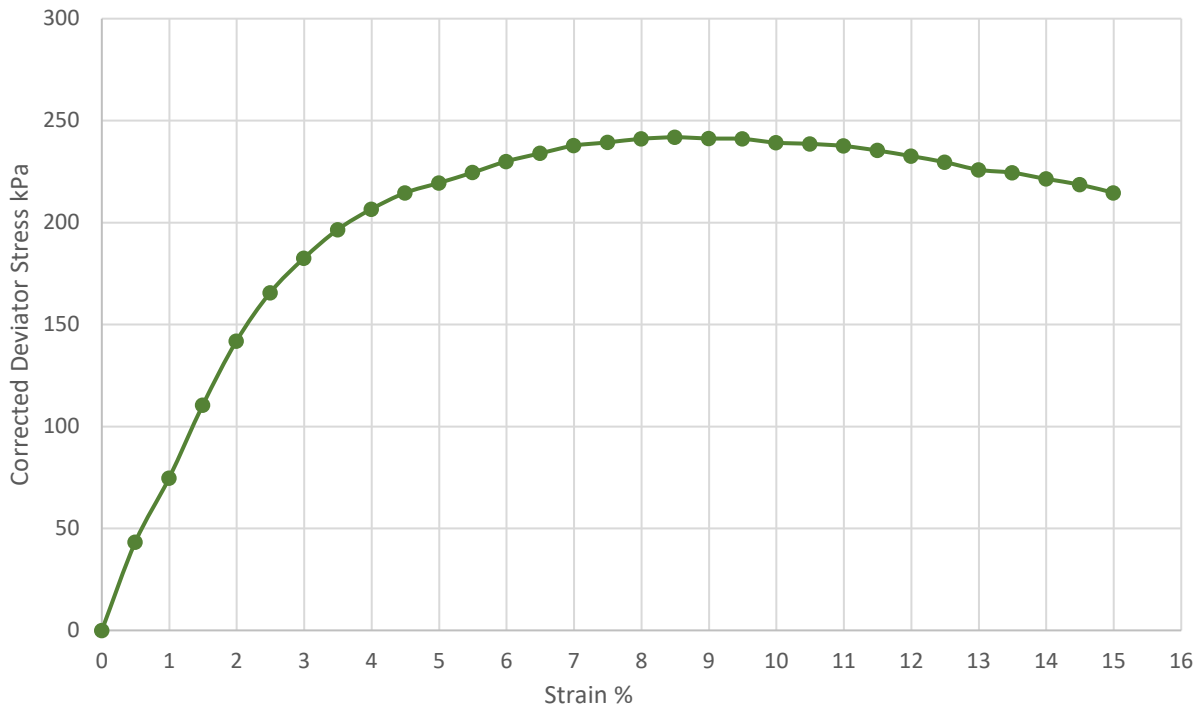
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/117

SAMPLE LABEL	CP105 10.5-10.95 U	DATE SAMPLED	21-Nov-24
LAB SAMPLE No.	616019	DATE RECEIVED	13-Dec-24
DATE TESTED	16-Dec-24	SAMPLED BY	Client
MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

INITIAL CONDITIONS

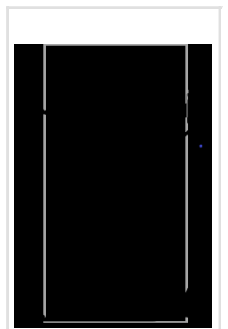
Specimen Location	Sample Length (mm)	300	Specimen depth from top of Sample (mm)	50
	Sample Orientation	Vertical	Specimen Condition	Undisturbed
	Specimen Length (mm)	200	Specimen Water Content (%)	10.7
	Specimen Diameter (mm)	101	Specimen Bulk Density (Mg/m3)	2.18
	Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.97
	Membrane Correction	3.39		

CORRECTED DEVIATOR STRESS vs AXIAL STRAIN



TEST TYPE
SINGLE STAGE

SKETCH OF
SPECIMEN AT
FAILURE



COMBINED

(kPa)	(%)	(%/mm)	Stress (kPa)	Shear Strength Cu (kPa)
220	8.5	2.0	242	121

Remarks/Abnormalities

Name O.P. Davies BA (Hons)
(Director / Head of Laboratory)

Signed

Date 20 December 2024

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

BS EN ISO 17892-8:2018

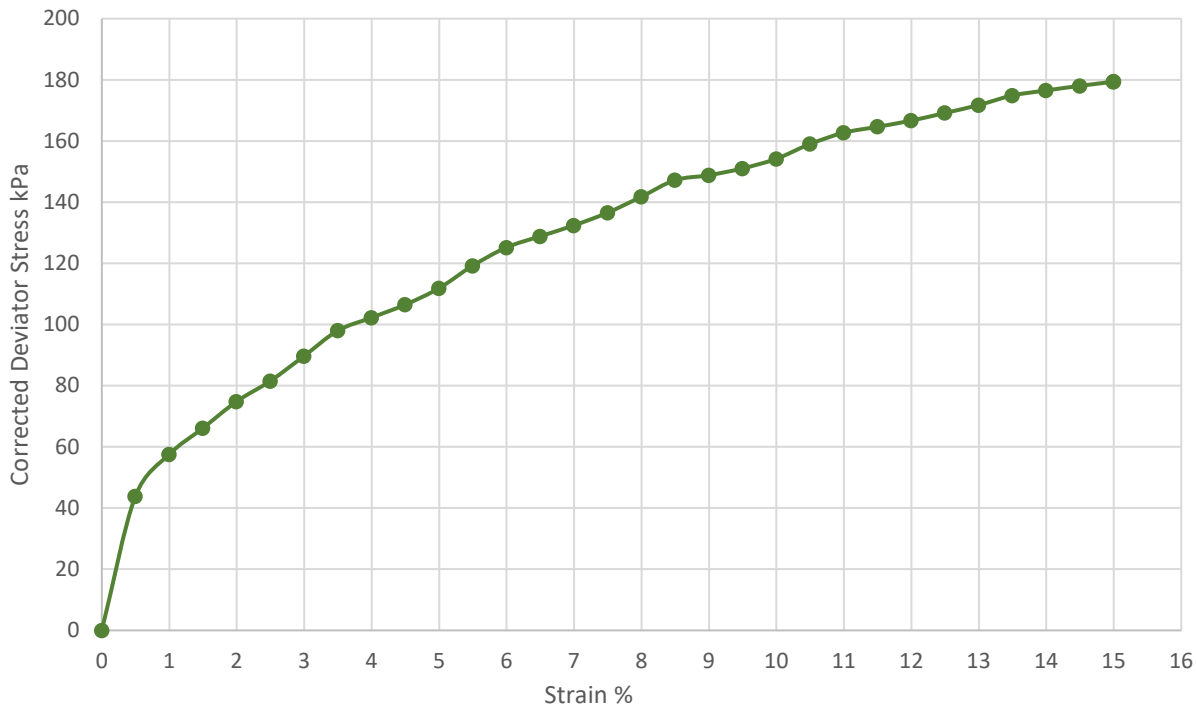
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/117

SAMPLE LABEL	CP106 7-7.45 U	DATE SAMPLED	02-Dec-24
LAB SAMPLE No.	610718	DATE RECEIVED	05-Dec-24
DATE TESTED	12-Dec-24	SAMPLED BY	Client
MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

INITIAL CONDITIONS

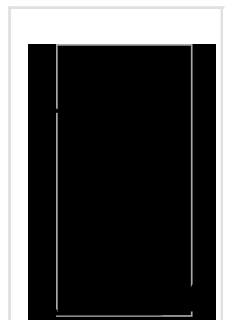
Specimen Location	Sample Length (mm)	400	Specimen depth from top of Sample (mm)	40
	Sample Orientation	Vertical	Specimen Condition	Undisturbed
	Specimen Length (mm)	200	Specimen Water Content (%)	19.0
	Specimen Diameter (mm)	100	Specimen Bulk Density (Mg/m3)	2.16
	Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.82
	Membrane Correction	3.39		

CORRECTED DEVIATOR STRESS vs AXIAL STRAIN



TEST TYPE
SINGLE STAGE

SKETCH OF
SPECIMEN AT
FAILURE



PLASTIC

(kPa)	(%)	(%/mm)	Stress (kPa)	Shear Strength Cu (kPa)
140	15.0	2.0	179	90

Remarks/Abnormalities

Name O.P. Davies BA (Hons)
(Director / Head of Laboratory)

Signed

Date 20 December 2024

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

BS EN ISO 17892-8:2018

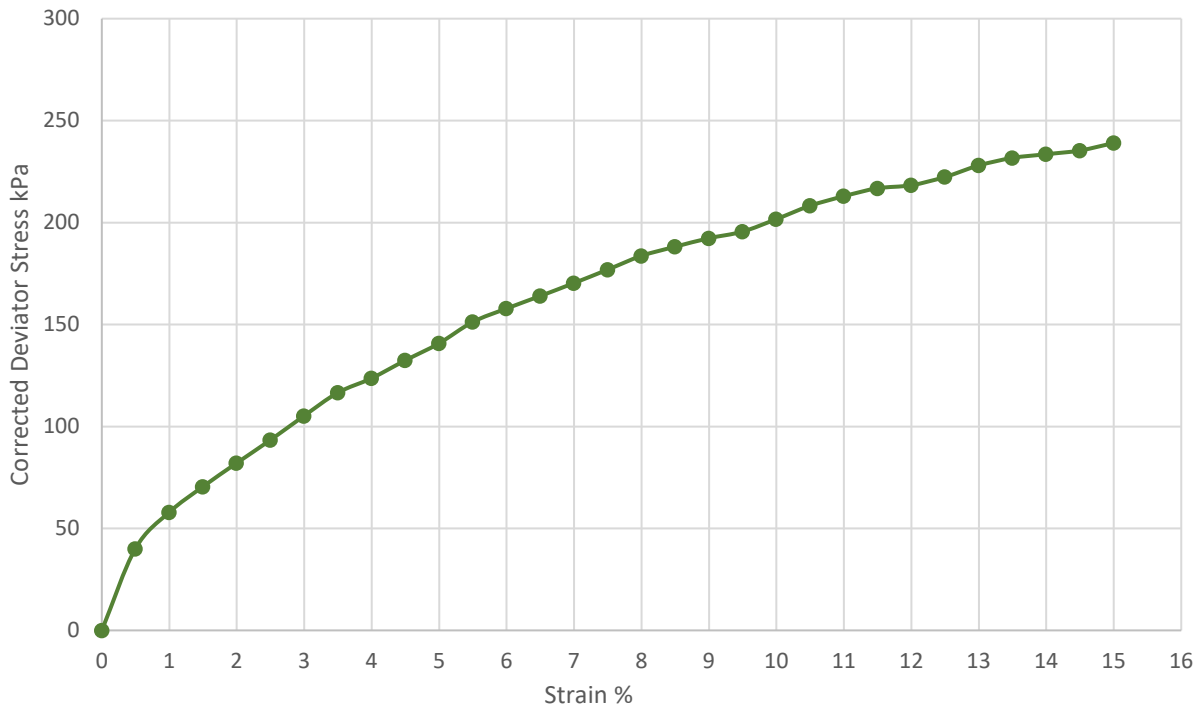
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/117

SAMPLE LABEL	CP106 10-10.55 U	DATE SAMPLED	02-Dec-24
LAB SAMPLE No.	610719	DATE RECEIVED	05-Dec-24
DATE TESTED	12-Dec-24	SAMPLED BY	Client
MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

INITIAL CONDITIONS

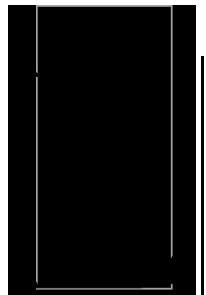
Specimen Location	Sample Length (mm)	400	Specimen depth from top of Sample (mm)	40
	Sample Orientation	Vertical	Specimen Condition	Undisturbed
	Specimen Length (mm)	200	Specimen Water Content (%)	10.4
	Specimen Diameter (mm)	101	Specimen Bulk Density (Mg/m3)	2.15
	Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.95
	Membrane Correction	3.39		

CORRECTED DEVIATOR STRESS vs AXIAL STRAIN



TEST TYPE
SINGLE STAGE

SKETCH OF
SPECIMEN AT
FAILURE



PLASTIC

(kPa)	(%)	(%/mm)	Stress (kPa)	Shear Strength Cu (kPa)
200	15.0	2.0	239	120

Remarks/Abnormalities

Name O.P. Davies BA (Hons)
(Director / Head of Laboratory)

Signed

Date 20 December 2024

TEST REPORT

Client LK Consult Ltd

Address Unit 29 Eton Business Park
Eton Hill Road
Radcliffe
Greater Manchester
M26 2ZS

Contract LKC 24 1317 -
Chorlton Baths

Job Number MRN 24076/96
Date of Issue 01 October 2024
Page 1 of 18

Approved Signatories

S J Hutchings, O P Davies

Notes

- 1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.
- 2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.
- 3 Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation.
- 4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.
- 5 The results included within the report are representative of the samples submitted for analysis.
- 6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.



Andrew House, Hadfield Street, Dukinfield, Cheshire SK16 4QX Tel: 0161 475 0870
Email: enquiries@murrayrix.com Website: www.murrayrix.com

Also at: London: 020 8523 1999

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TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

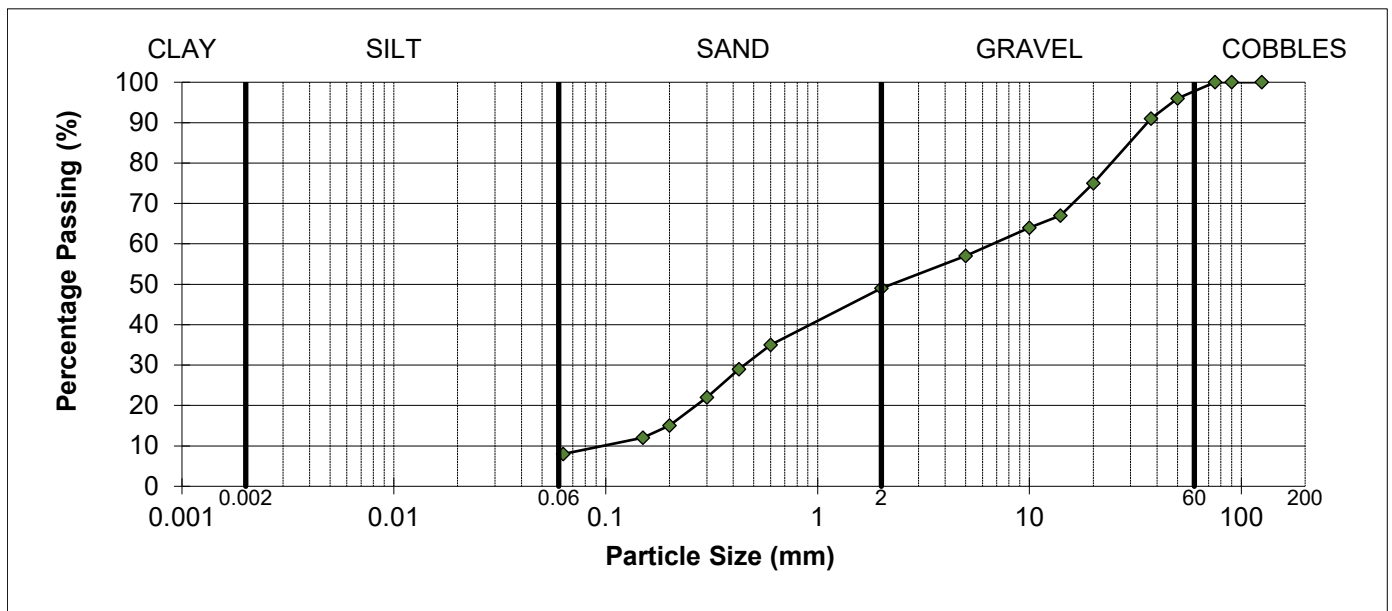
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/96

SAMPLE LABEL	TP101 0.1-1 B	DATE SAMPLED	12-Sep-24
LAB SAMPLE No	554901	DATE RECEIVED	12-Sep-24
DATE TESTED	19-Sep-24	SAMPLED BY	Client

MATERIAL	Black silty SAND & GRAVEL
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		5	57	
90	100		2	49	
75	100		0.6	35	
50	96		0.425	29	
37.5	91		0.3	22	
20	75		0.2	15	
14	67		0.15	12	
10	64		0.063	8	



REMARKS

As received water content = 11.1%

SIGNED



NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

01-Oct-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

MOISTURE CONDITION VALUE

BS 1377-2:2022 Cl. 13

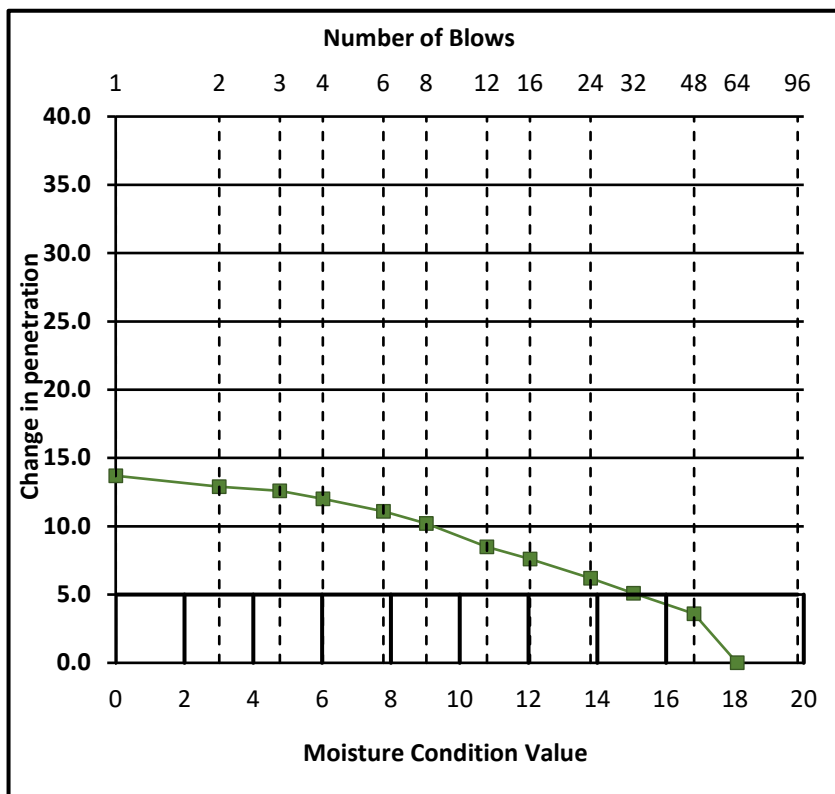
DETERMINATION OF WATER CONTENT - BS EN ISO 17892-1:2014+A1:2022

CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/96

SAMPLE LABEL	TP101 0.1-1 B	DATE SAMPLED	12-Sep-24
LAB SAMPLE No	554901	DATE RECEIVED	12-Sep-24
DATE TESTED	19-Sep-24	SAMPLED BY	Client

MATERIAL	Black silty SAND & GRAVEL
ADVISED SOURCE	Site Investigation Sample
INTERPRETATION OF TEST CURVE	Straight line through 5mm change in penetration
PROPORTION LARGER THAN 20mm	25%

Total number of blows (n)	Penetration (mm)	Change in penetration n to 4 n (mm)
1	99.2	13.7
2	92.2	12.9
3	88.3	12.6
4	85.5	12.0
6	81.8	11.1
8	79.3	10.2
12	75.7	8.5
16	73.5	7.6
24	70.7	6.2
32	69.1	5.1
48	67.2	3.6
64	65.9	
96	64.5	
128	64.0	
192	63.6	
256		



MOISTURE CONDITION VALUE	15.0
WATER CONTENT	14.2 %

REMARKS

NAME O.P. Davies BA (Hons) SIGNED
(Director / Head of Laboratory)

DATE 01-Oct-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP VIBRATING HAMMER

BS 1377-2:2022 Cl.11

PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

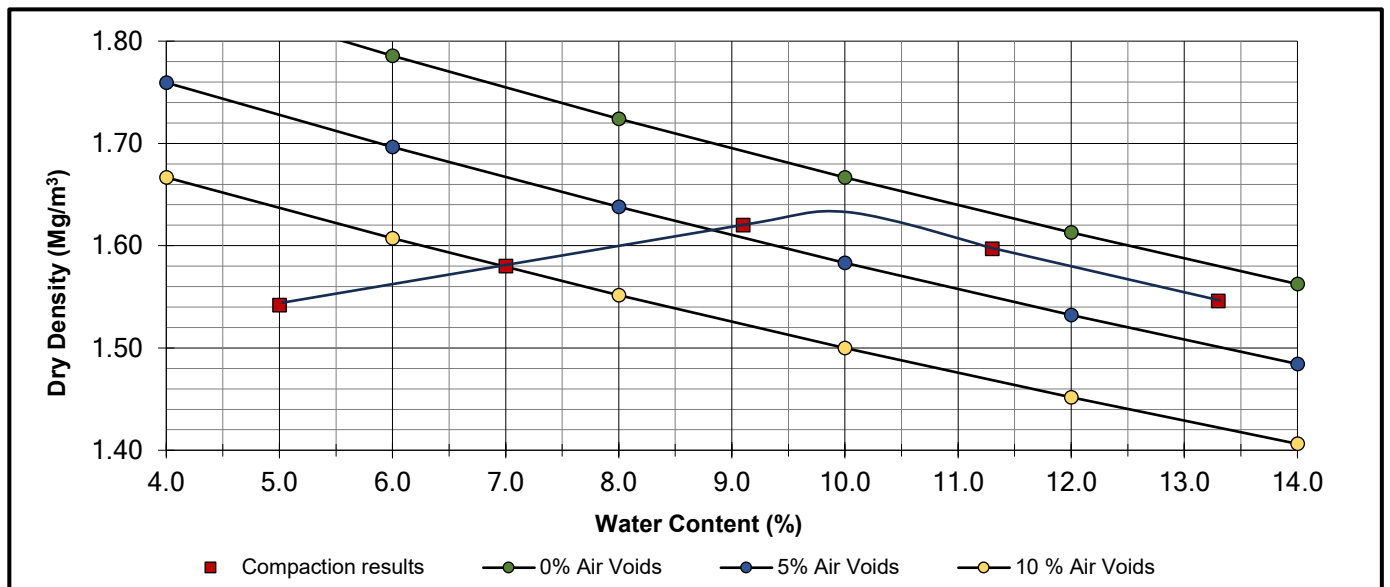
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/96

SAMPLE LABEL	TP101 0.1-1 B	DATE SAMPLED	12-Sep-24
SAMPLE NUMBER	554901	DATE RECEIVED	12-Sep-24
DATE TESTED	19-Sep-24	SAMPLED BY	Client

MATERIAL	Black silty SAND & GRAVEL
ADVISED SOURCE	Site Investigation Sample
PRE TREATMENT	Air Dried / Separate Batches

RETAINED 37.5mm	9 %	GRADING ZONE	Zone 5
RETAINED 20mm	25 %	PARTICLE DENSITY	2.00 Mg/m ³ (Assumed)

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m ³)
1	5.0	1.542
2	7.0	1.580
3	9.1	1.620
4	11.3	1.597
5	13.3	1.546



OPTIMUM WATER CONTENT	9.9	(%)
MAXIMUM DRY DENSITY	1.63	(Mg/m ³)

REMARKS

NAME O.P. Davies BA (Hons)
(Director / Head of Laboratory)

SIGNED

DATE 01-Oct-24

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

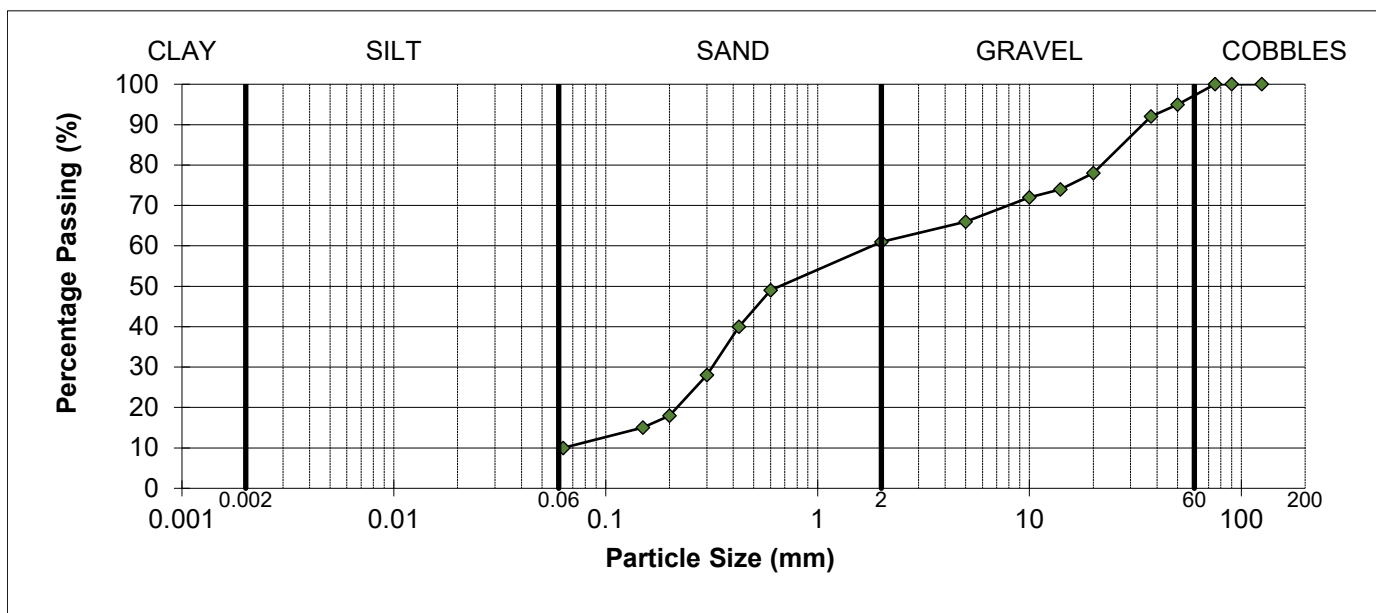
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/96

SAMPLE LABEL	TP102 0-0.6 B	DATE SAMPLED	12-Sep-24
LAB SAMPLE No	554903	DATE RECEIVED	12-Sep-24
DATE TESTED	19-Sep-24	SAMPLED BY	Client

MATERIAL	Black silty SAND & GRAVEL
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		5	66	
90	100		2	61	
75	100		0.6	49	
50	95		0.425	40	
37.5	92		0.3	28	
20	78		0.2	18	
14	74		0.15	15	
10	72		0.063	10	



REMARKS

As received water content = 12.1%

SIGNED



NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

01-Oct-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

MOISTURE CONDITION VALUE

BS 1377-2:2022 Cl. 13

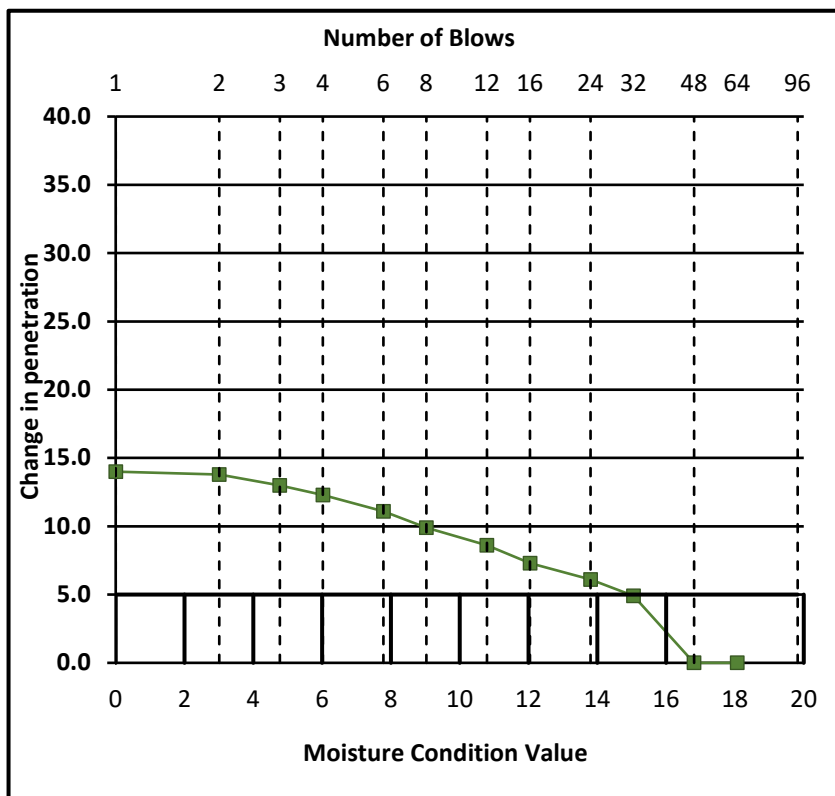
DETERMINATION OF WATER CONTENT - BS EN ISO 17892-1:2014+A1:2022

CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/96

SAMPLE LABEL	TP102 0-0.6 B	DATE SAMPLED	12-Sep-24
LAB SAMPLE No	554903	DATE RECEIVED	12-Sep-24
DATE TESTED	19-Sep-24	SAMPLED BY	Client

MATERIAL	Black silty SAND & GRAVEL
ADVISED SOURCE	Site Investigation Sample
INTERPRETATION OF TEST CURVE	Straight line through 5mm change in penetration
PROPORTION LARGER THAN 20mm	22%

Total number of blows (n)	Penetration (mm)	Change in penetration n to 4 n (mm)
1	98.9	14.0
2	92.0	13.8
3	87.9	13.0
4	84.9	12.3
6	81.1	11.1
8	78.2	9.9
12	74.9	8.6
16	72.6	7.3
24	70.0	6.1
32	68.3	4.9
48	66.3	
64	65.3	
96	63.9	
128	63.4	
192		
256		



MOISTURE CONDITION VALUE	15.0
WATER CONTENT	12.7 %

REMARKS

NAME O.P. Davies BA (Hons) SIGNED
(Director / Head of Laboratory)

DATE 01-Oct-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP VIBRATING HAMMER

BS 1377-2:2022 Cl.11

PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

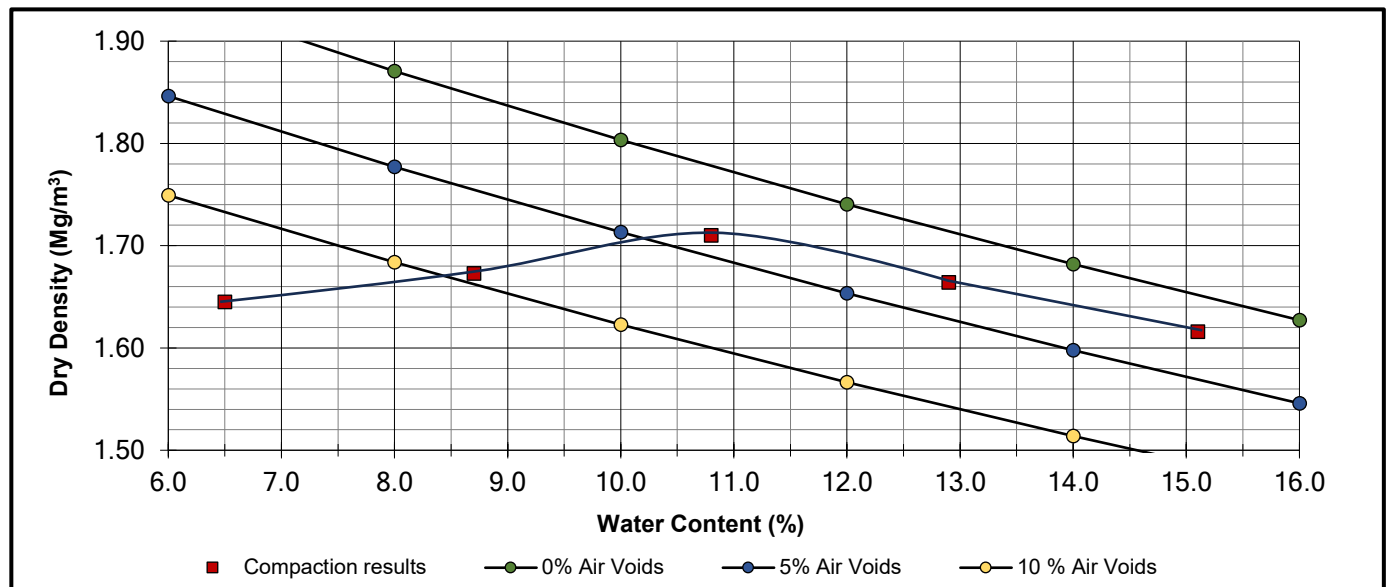
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/96

SAMPLE LABEL	TP102 0-0.6 B	DATE SAMPLED	12-Sep-24
SAMPLE NUMBER	554903	DATE RECEIVED	12-Sep-24
DATE TESTED	19-Sep-24	SAMPLED BY	Client

MATERIAL	Black silty SAND & GRAVEL
ADVISED SOURCE	Site Investigation Sample
PRE TREATMENT	Air Dried / Separate Batches

RETAINED 37.5mm	8 %	GRADING ZONE	Zone 5
RETAINED 20mm	22 %	PARTICLE DENSITY	2.20 Mg/m ³ (Assumed)

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m ³)
1	6.5	1.645
2	8.7	1.673
3	10.8	1.710
4	12.9	1.664
5	15.1	1.616



OPTIMUM WATER CONTENT	11 (%)
MAXIMUM DRY DENSITY	1.71 (Mg/m ³)

REMARKS

NAME O.P. Davies BA (Hons)
(Director / Head of Laboratory)

SIGNED

DATE 01-Oct-24

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

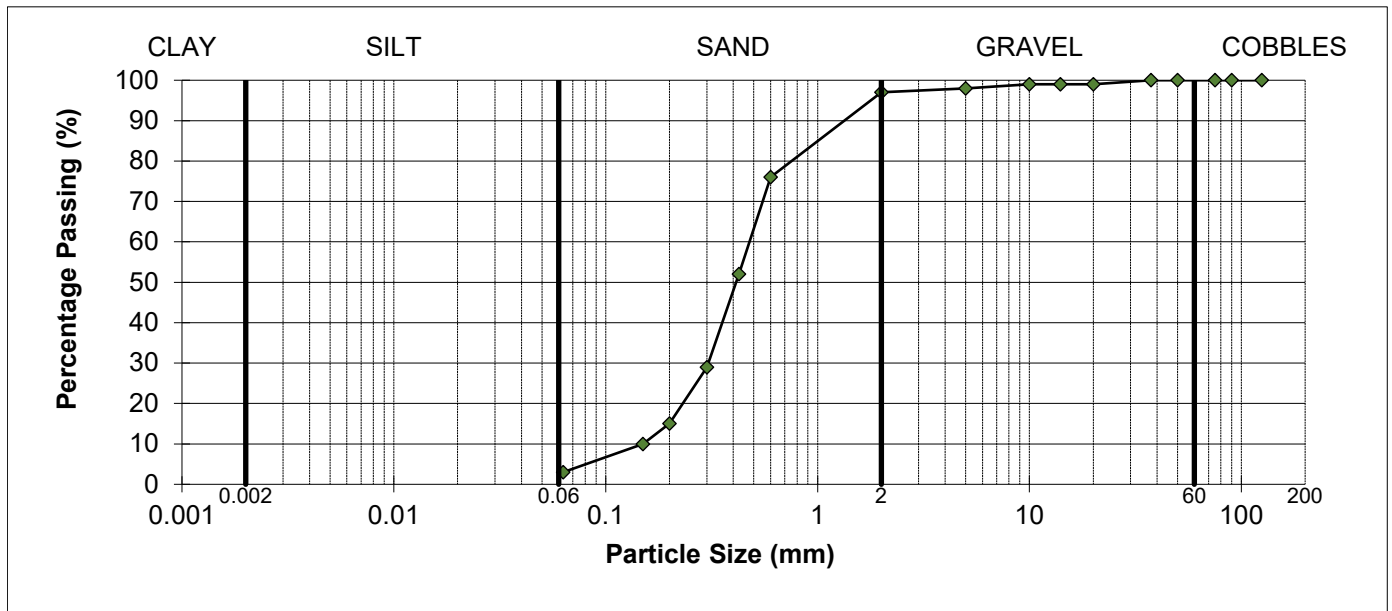
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/96

SAMPLE LABEL	TP103 1-2 B	DATE SAMPLED	12-Sep-24
LAB SAMPLE No	554907	DATE RECEIVED	12-Sep-24
DATE TESTED	19-Sep-24	SAMPLED BY	Client

MATERIAL	Brown slightly gravelly SAND
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		5	98	
90	100		2	97	
75	100		0.6	76	
50	100		0.425	52	
37.5	100		0.3	29	
20	99		0.2	15	
14	99		0.15	10	
10	99		0.063	3	



REMARKS

As received water content = 4.0%

SIGNED



NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

01-Oct-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

MOISTURE CONDITION VALUE

BS 1377-2:2022 Cl. 13

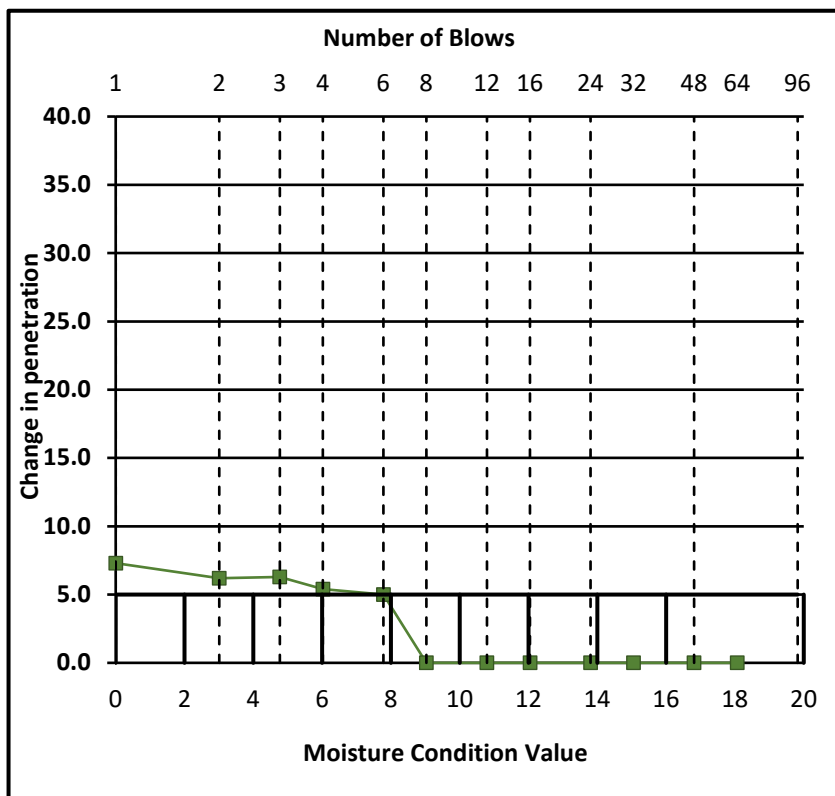
DETERMINATION OF WATER CONTENT - BS EN ISO 17892-1:2014+A1:2022

CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/96

SAMPLE LABEL	TP103 1-2 B	DATE SAMPLED	12-Sep-24
LAB SAMPLE No	554907	DATE RECEIVED	12-Sep-24
DATE TESTED	19-Sep-24	SAMPLED BY	Client

MATERIAL	Brown slightly gravelly SAND
ADVISED SOURCE	Site Investigation Sample
INTERPRETATION OF TEST CURVE	Straight line through 5mm change in penetration
PROPORTION LARGER THAN 20mm	1%

Total number of blows (n)	Penetration (mm)	Change in penetration n to 4 n (mm)
1	93.9	7.3
2	90.6	6.2
3	88.9	6.3
4	86.6	5.4
6	85.7	5.0
8	84.4	
12	82.6	
16	81.2	
24	80.7	
32		
48		
64		
96		
128		
192		
256		



MOISTURE CONDITION VALUE	7.8
WATER CONTENT	4.2 %

REMARKS

NAME O.P. Davies BA (Hons) SIGNED
(Director / Head of Laboratory)

DATE 01-Oct-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP VIBRATING HAMMER

BS 1377-2:2022 Cl.11

PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

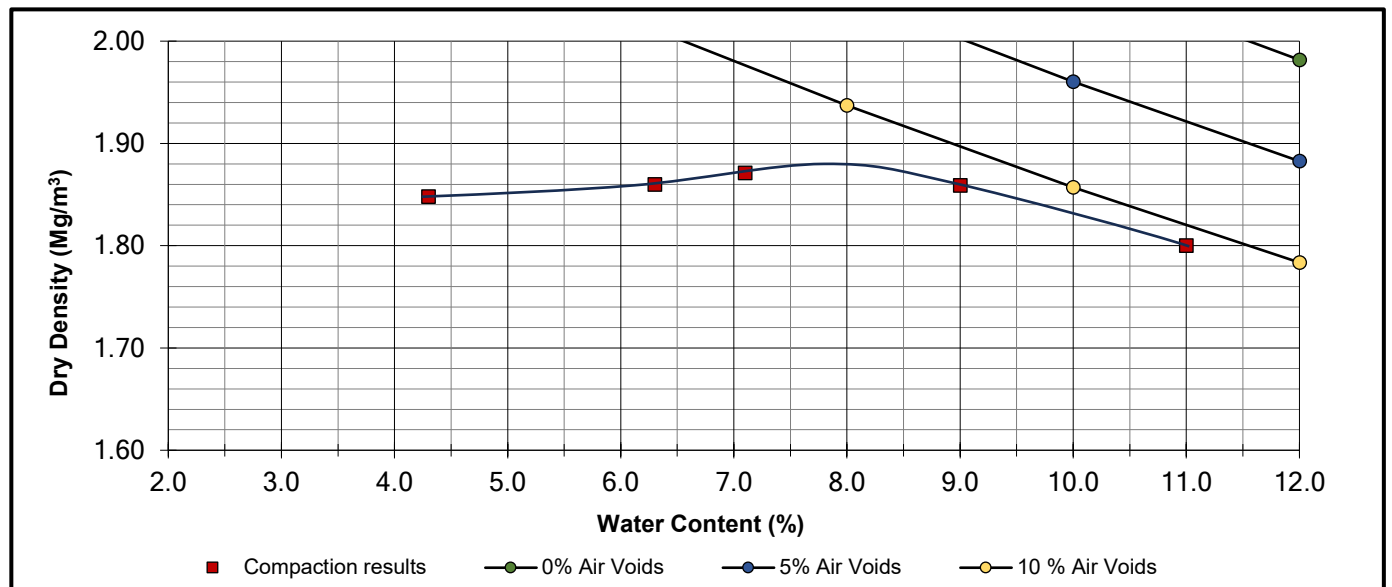
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/96

SAMPLE LABEL	TP103 1-2 B	DATE SAMPLED	12-Sep-24
SAMPLE NUMBER	554907	DATE RECEIVED	12-Sep-24
DATE TESTED	19-Sep-24	SAMPLED BY	Client

MATERIAL	Brown slightly gravelly SAND
ADVISED SOURCE	Site Investigation Sample
PRE TREATMENT	Air Dried / Separate Batches

RETAINED 37.5mm	0 %	GRADING ZONE	Zone 2
RETAINED 20mm	1 %	PARTICLE DENSITY	2.60 Mg/m ³ (Assumed)

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m ³)
1	4.3	1.848
2	6.3	1.860
3	7.1	1.871
4	9.0	1.859
5	11.0	1.800



OPTIMUM WATER CONTENT	7.9	(%)
MAXIMUM DRY DENSITY	1.88	(Mg/m ³)

REMARKS

NAME O.P. Davies BA (Hons)
(Director / Head of Laboratory)

SIGNED

DATE 01-Oct-24

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

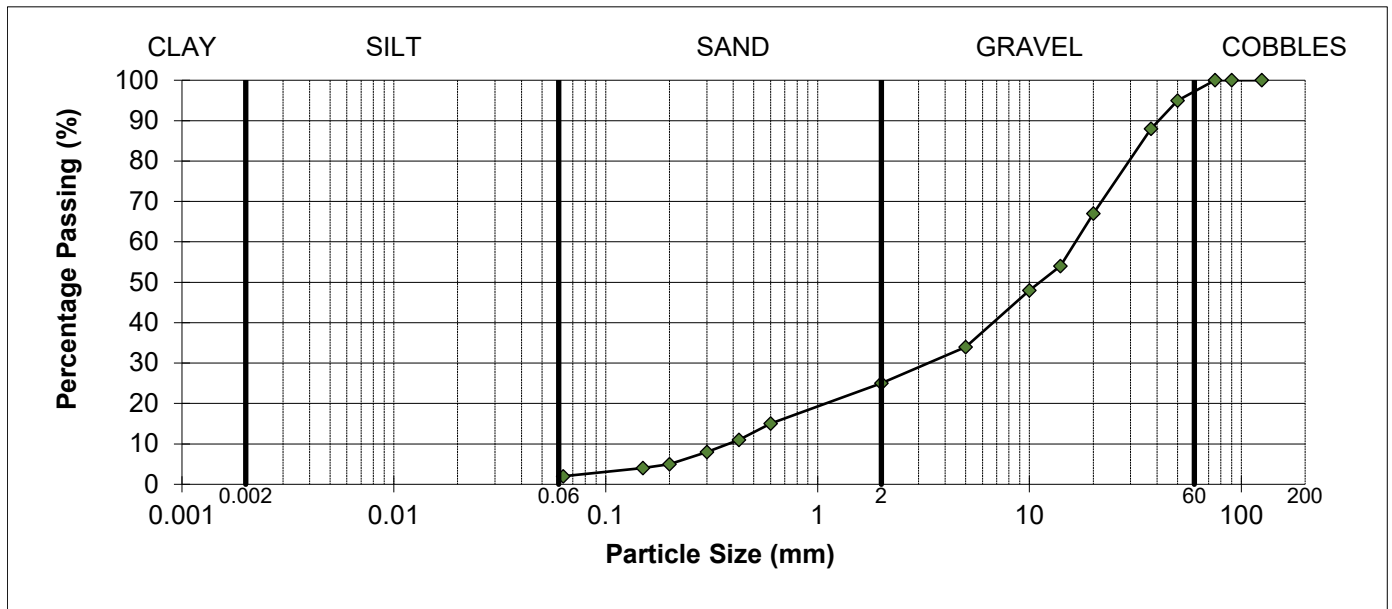
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/96

SAMPLE LABEL	TP104 B 0.2-1 B	DATE SAMPLED	12-Sep-24
LAB SAMPLE No	554908	DATE RECEIVED	12-Sep-24
DATE TESTED	19-Sep-24	SAMPLED BY	Client

MATERIAL	Black slightly silty sandy GRAVEL
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		5	34	
90	100		2	25	
75	100		0.6	15	
50	95		0.425	11	
37.5	88		0.3	8	
20	67		0.2	5	
14	54		0.15	4	
10	48		0.063	2	



REMARKS

As received water content = 5.3%

SIGNED



NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

01-Oct-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

**TEST CERTIFICATE**

MOISTURE CONDITION VALUE

BS 1377-2:2022 Cl. 13

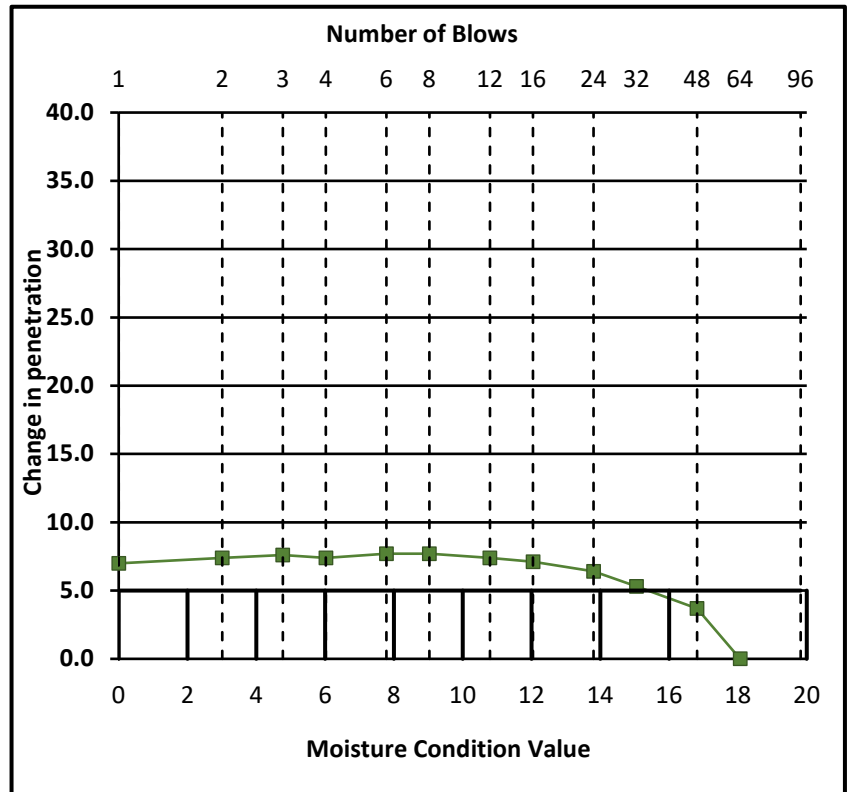
DETERMINATION OF WATER CONTENT - BS EN ISO 17892-1:2014+A1:2022

CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/96

SAMPLE LABEL	TP104 B 0.2-1 B	DATE SAMPLED	12-Sep-24
LAB SAMPLE No	554908	DATE RECEIVED	12-Sep-24
DATE TESTED	19-Sep-24	SAMPLED BY	Client

MATERIAL	Black slightly silty sandy GRAVEL
ADVISED SOURCE	Site Investigation Sample
INTERPRETATION OF TEST CURVE	Straight line through 5mm change in penetration
PROPORTION LARGER THAN 20mm	33%

Total number of blows (n)	Penetration (mm)	Change in penetration n to 4 n (mm)
1	81.9	7.0
2	78.7	7.4
3	76.6	7.6
4	74.9	7.4
6	72.8	7.7
8	71.3	7.7
12	69.0	7.4
16	67.5	7.1
24	65.1	6.4
32	63.6	5.3
48	61.6	3.7
64	60.4	
96	58.7	
128	58.3	
192	57.9	
256		



MOISTURE CONDITION VALUE	7.8
WATER CONTENT	8.9 %

REMARKS

NAME O.P. Davies BA (Hons) SIGNED
(Director / Head of Laboratory)

DATE 01-Oct-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP VIBRATING HAMMER

BS 1377-2:2022 Cl.11

PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

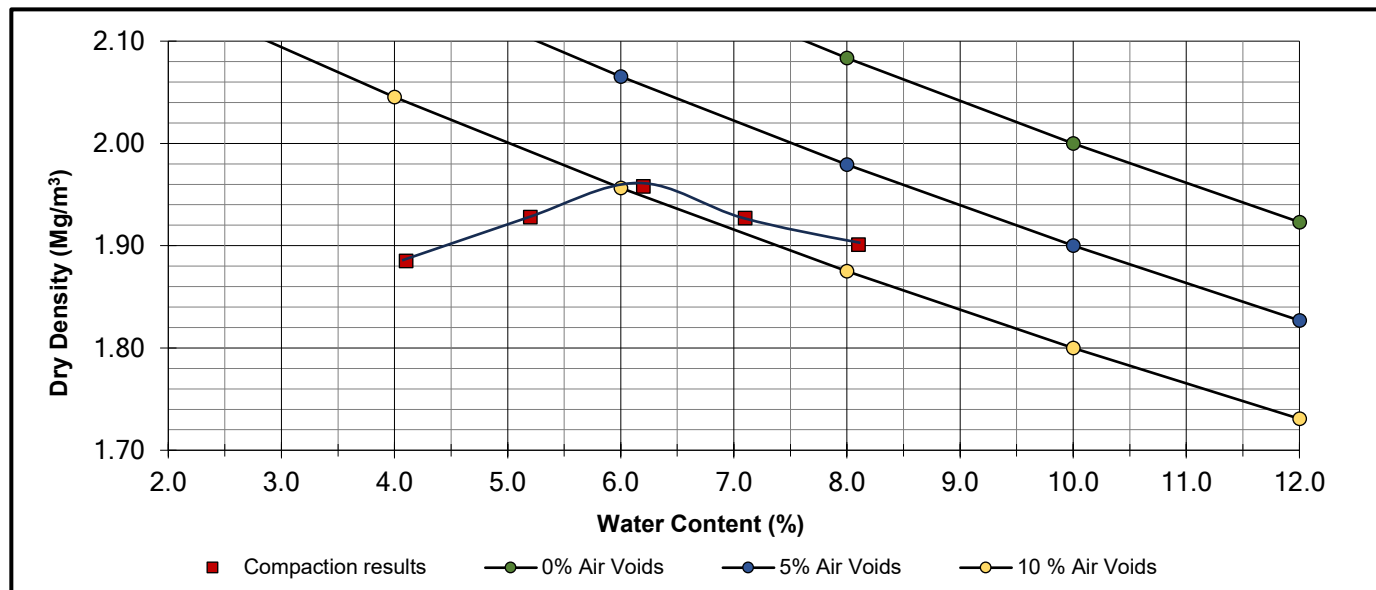
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/96

SAMPLE LABEL	TP104 B 0.2-1 B	DATE SAMPLED	12-Sep-24
SAMPLE NUMBER	554908	DATE RECEIVED	12-Sep-24
DATE TESTED	19-Sep-24	SAMPLED BY	Client

MATERIAL	Black slightly silty sandy GRAVEL
ADVISED SOURCE	Site Investigation Sample
PRE TREATMENT	Air Dried / Separate Batches

RETAINED 37.5mm	12 %	GRADING ZONE	Zone X
RETAINED 20mm	33 %	PARTICLE DENSITY	2.50 Mg/m ³ (Assumed)

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m ³)
1	4.1	1.885
2	5.2	1.928
3	6.2	1.958
4	7.1	1.927
5	8.1	1.901



OPTIMUM WATER CONTENT	6.1	(%)
MAXIMUM DRY DENSITY	1.94	(Mg/m ³)

REMARKS

NAME O.P. Davies BA (Hons)
(Director / Head of Laboratory)

SIGNED

DATE 01-Oct-24

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

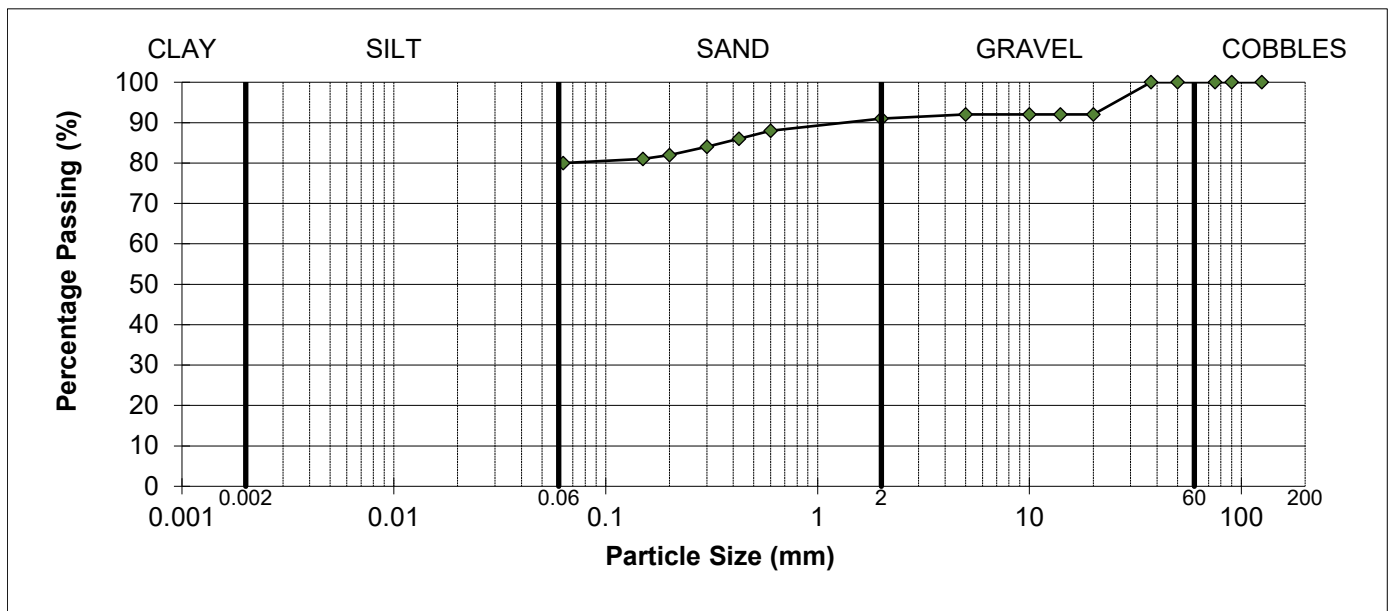
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/96

SAMPLE LABEL	TP104 2.5-3 B	DATE SAMPLED	29-Aug-24
LAB SAMPLE No	554909	DATE RECEIVED	04-Sep-24
DATE TESTED	05-Sep-24	SAMPLED BY	Client

MATERIAL	Light grey brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		5	92	
90	100		2	91	
75	100		0.6	88	
50	100		0.425	86	
37.5	100		0.3	84	
20	92		0.2	82	
14	92		0.15	81	
10	92		0.063	80	



REMARKS

As received water content = 41.3%

SIGNED



NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

01-Oct-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

MOISTURE CONDITION VALUE

BS 1377-2:2022 Cl. 13

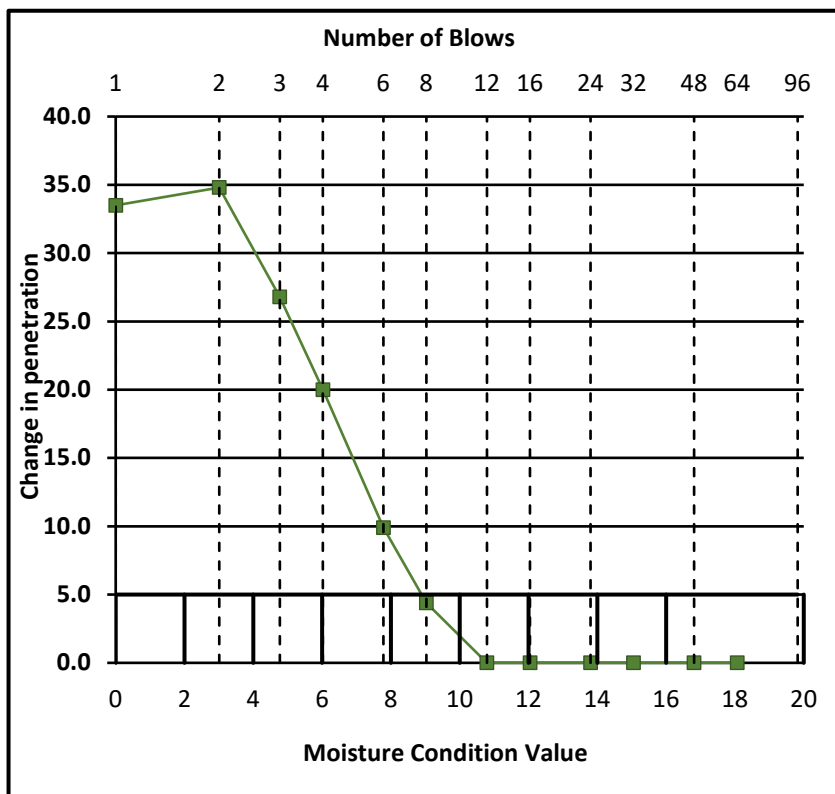
DETERMINATION OF WATER CONTENT - BS EN ISO 17892-1:2014+A1:2022

CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/96

SAMPLE LABEL	TP104 2.5-3 B	DATE SAMPLED	29-Aug-24
LAB SAMPLE No	554909	DATE RECEIVED	04-Sep-24
DATE TESTED	05-Sep-24	SAMPLED BY	Client

MATERIAL	Light grey brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample
INTERPRETATION OF TEST CURVE	Straight line through 5mm change in penetration
PROPORTION LARGER THAN 20mm	8%

Total number of blows (n)	Penetration (mm)	Change in penetration n to 4 n (mm)
1	133.3	33.5
2	117.4	34.8
3	106.9	26.8
4	99.8	20.0
6	88.9	9.9
8	82.6	4.4
12	80.1	
16	79.8	
24	79.0	
32	78.2	
48		
64		
96		
128		
192		
256		



MOISTURE CONDITION VALUE	8.8
WATER CONTENT	41.3 %

REMARKS

NAME O.P. Davies BA (Hons) SIGNED
(Director / Head of Laboratory)

DATE 01-Oct-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

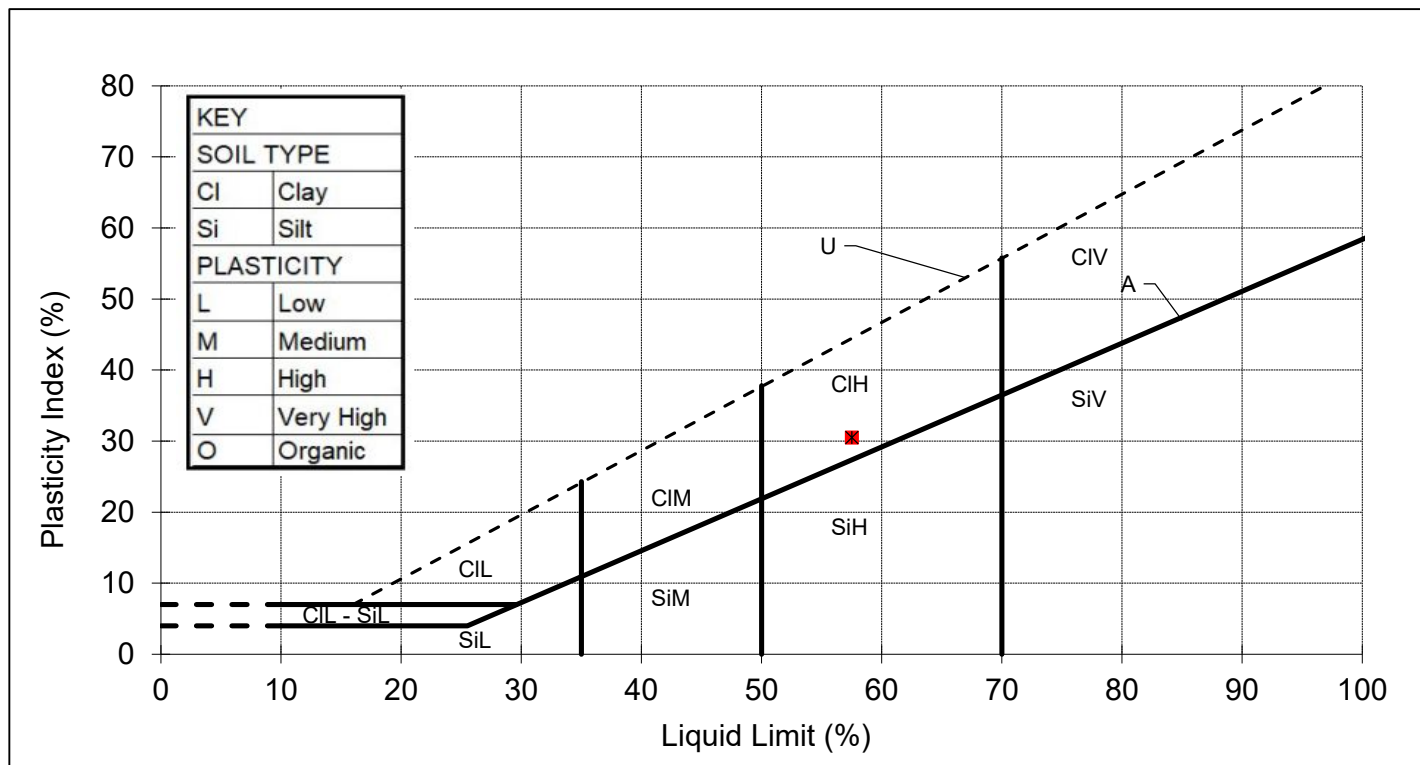
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/96

SAMPLE LABEL	TP104 2.5-3 B	DATE SAMPLED	29-Aug-24
SAMPLE No.	554909	DATE RECEIVED	04-Sep-24
DATE TESTED	05-Sep-24	SAMPLED BY	Client

MATERIAL	Light grey brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Water Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	20.0	57.5	1.003	
Determination 2 (avg)	19.7	57.2		

Natural Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
41.3	58	27	31	86



REMARKS

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

01-Oct-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP 2.5kg RAMMER

BS 1377-2:2022 Cl.11

PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

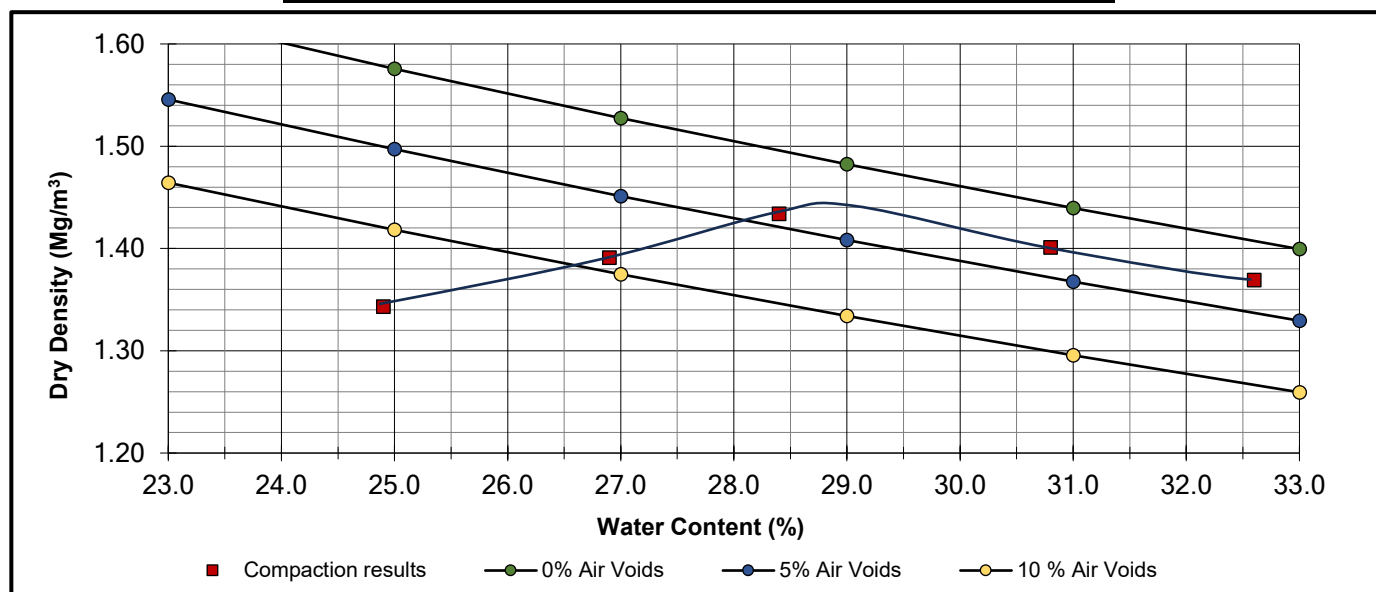
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/96

SAMPLE LABEL	TP104 2.5-3 B	DATE SAMPLED	29-Aug-24
SAMPLE NUMBER	554909	DATE RECEIVED	04-Sep-24
DATE TESTED	05-Sep-24	SAMPLED BY	Client

MATERIAL	Light grey brown silty slightly sandy slightly gravelly CLAY
ADVISED SOURCE	Site Investigation Sample
PRE TREATMENT	Air Dried / Separate Batches

RETAINED 37.5mm	0 %	GRADING ZONE	Zone 3
RETAINED 20mm	8 %	PARTICLE DENSITY	2.60 Mg/m ³ (Assumed)

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m ³)
1	24.9	1.343
2	26.9	1.391
3	28.4	1.434
4	30.8	1.401
5	32.6	1.369



OPTIMUM WATER CONTENT	29 (%)
MAXIMUM DRY DENSITY	1.44 (Mg/m ³)

REMARKS

NAME O.P. Davies BA (Hons)
(Director / Head of Laboratory)

SIGNED

DATE 01-Oct-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

**TEST CERTIFICATE**

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION
BS 1377-7:1990 & Specification For Highway Works Clause 633

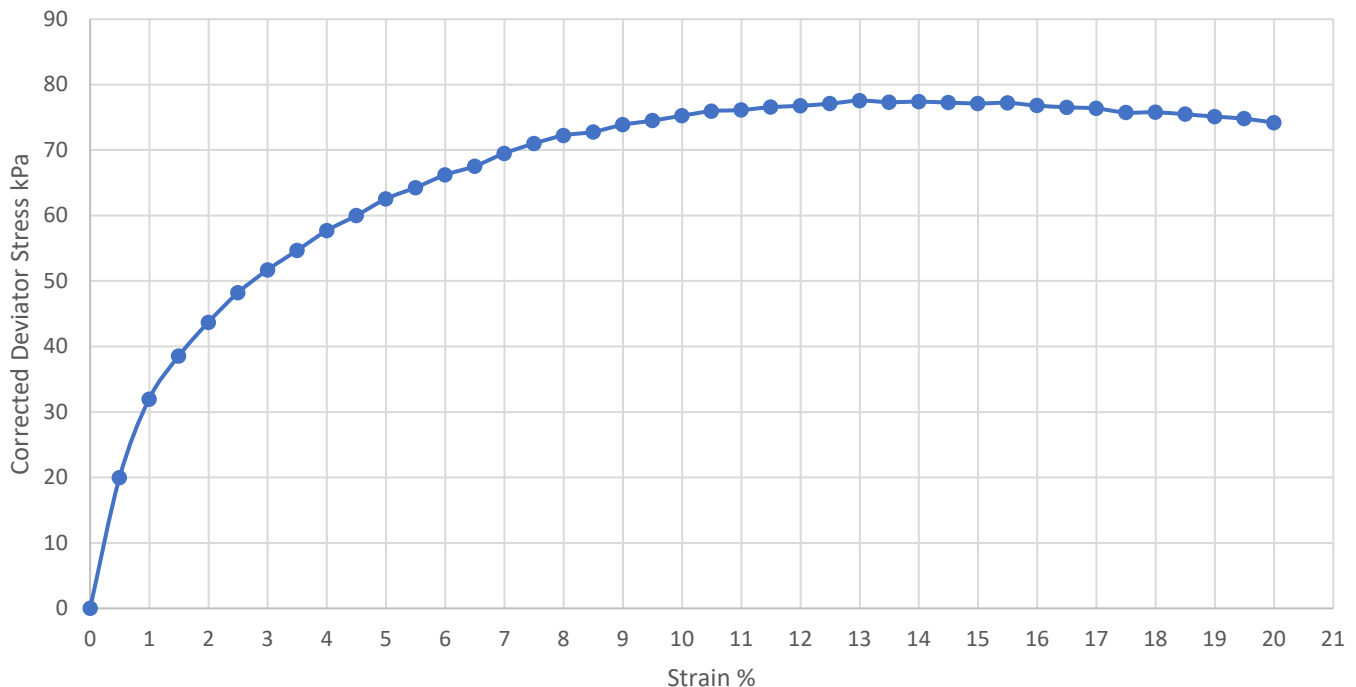
CLIENT	LK Consult Ltd
SITE	LKC 24 1317 - Chorlton Baths
JOB NUMBER	MRN 24076/96

SAMPLE LABEL	TP104 2.5-3 B	DATE SAMPLED	29-Aug-24
LAB SAMPLE No.	554909	DATE RECEIVED	04-Sep-24
DATE TESTED	05-Sep-24	SAMPLED BY	Client
MATERIAL	Light grey brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	As client & site above		

INITIAL CONDITIONS

Specimen Location	Sample Preparation	2.5kg Rammer	Sample Moisture Content at Preparation	As received
	Retained 20mm (%)	8	Specimen Condition	Recompacted
	Specimen Length (mm)	200	Specimen Moisture Content (%)	22.4
	Specimen Diameter (mm)	100	Specimen Bulk Density (Mg/m3)	1.62
	Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.32
	Membrane Correction	4.53		

CORRECTED DEVIATOR STRESS vs AXIAL STRAIN



Cell Pressure (kPa)	Failure Strain (%)	Rate of Strain (%/min)	Corrected Deviator Stress (kPa)	Shear Strength Cu (kPa)
200	13.0	1.0	78	39

Remarks/Abnormalities

Name O.P. Davies BA (Hons)
(Director / Head of Laboratory)

Signed

Date 01 October 2024

Appendix E – Generic Assessment Criteria Values

Generic Assessment Criteria Values

Contaminant		SOM	Res +	Res -	Allot.	Comm.	POS ^{resi}	POS ^{park}	Source
Metals	Inorganic Arsenic	N/A	37	40	49	640	79	168	DEFRA C4SL
	Beryllium	N/A	1.7	1.7	35	12	2.2	63	LQM S4UL
	Boron	N/A	290	11,000	45	240,000	21,000	46,000	LQM S4UL
	Cadmium	N/A	26	149	4.9	410	220	880	DEFRA C4SL
	Chromium (III)	N/A	910	910	18,000	8,600	1,500	33,000	LQM S4UL
	Chromium (VI)	N/A	21.0	21.0	170.0	49	23.0	250	DEFRA C4SL
	Copper	N/A	2,400	7,100	520	68,000	12,000	44,000	LQM S4UL
	Lead	N/A	200	310	80	2,330	630	1,300	DEFRA C4SL
	Elemental Mercury	N/A	1.2	1.2	21	58 (25.8) ^{vap}	16	30 (25.8) ^{vap}	LQM S4UL
	Inorganic Mercury	N/A	40	56	19	1,100	120	240	LQM S4UL
	Methylmercury	N/A	11	15	6.0	320	40	68	LQM S4UL
	Nickel (2015 update)	N/A	130	180	53	980	230	800	LQM S4UL
	Selenium	N/A	250	430	88	12,000	1,100	1,800	LQM S4UL
	Vanadium	N/A	410	1,200	91	9,000	2,000	5,000	LQM S4UL
Zinc	N/A	3,700	40,000	620	730,000	81,000	170,000	LQM S4UL	
Polycyclic Aromatic Hydrocarbons (PAHs)	Acenaphthene	1%	210	3,000 (57.1) ^{sol}	34	84,000 (57.0) ^{sol}	15,000	29,000	LQM S4UL
		2.5%	510	4,700 (141) ^{sol}	85	97,000 (141) ^{sol}	15,000	30,000	LQM S4UL
		6%	1,100	6,000 (336) ^{sol}	200	100,000	15,000	30,000	LQM S4UL
	Acenaphthylene	1%	170	2,900 (86.1) ^{sol}	28	83,000 (86.1) ^{sol}	15,000	29,000	LQM S4UL
		2.5%	420	4,600 (212) ^{sol}	69	97,000 (212) ^{sol}	15,000	30,000	LQM S4UL
		6%	920	6,000 (506) ^{sol}	160	100,000	15,000	30,000	LQM S4UL
	Anthracene	1%	2,400	31,000 (1.17) ^{vap}	380	520,000	74,000	150,000	LQM S4UL
		2.5%	5,400	35,000	950	540,000	74,000	150,000	LQM S4UL
		6%	11,000	37,000	2,200	540,000	74,000	150,000	LQM S4UL
	Benz(a)anthracene	1%	7.2	11	2.9	170	29	49	LQM S4UL
		2.5%	11	14	6.5	170	29	56	LQM S4UL
		6%	13	15	13	180	29	62	LQM S4UL
	Benzo(a)pyrene (only)	1%	5.0	5.3	5.70	77	10.0	21	DEFRA C4SL
		2.5%	5.0	5.3	5.70	77	10.0	21	DEFRA C4SL
		6%	5.0	5.3	5.70	77	10.0	21	DEFRA C4SL
	Benzo(a)pyrene (surrogate marker Coal Tar)	1%	0.8	1.2	0.32	15	2.2	4	LQM S4UL
		2.5%	1.0	1.2	0.67	15	2.2	5	LQM S4UL
		6%	1.1	1.2	1.20	15	2.2	5	LQM S4UL
	Benzo(b)fluoranthene	1%	2.6	3.9	0.99	44	7.1	13	LQM S4UL
		2.5%	3.3	4.0	2.1	44	7.2	15	LQM S4UL
		6%	3.7	4.0	3.9	45	7.2	16	LQM S4UL
	Benzo(ghi)perylene	1%	320	360	290	3,900	640	1,400	LQM S4UL
		2.5%	340	360	470	4,000	640	1,500	LQM S4UL
		6%	350	360	640	4,000	640	1,600	LQM S4UL
	Benzo(k)fluoranthene	1%	77	110	37	1,200	190	370	LQM S4UL
		2.5%	93	110	75	1,200	190	410	LQM S4UL
		6%	100	110	130	1,200	190	440	LQM S4UL
	Chrysene	1%	15	30	4.1	350	57	93	LQM S4UL
		2.5%	22	31	9.4	350	57	110	LQM S4UL
		6%	27	32	19	350	57	120	LQM S4UL
	Dibenzo(ah)anthracene	1%	0.24	0.31	0.14	3.5	0.57	1.1	LQM S4UL
		2.5%	0.28	0.32	0.27	3.6	0.58	1.3	LQM S4UL
		6%	0.3	0.32	0.43	3.6	0.58	1.4	LQM S4UL
	Fluoranthene	1%	280	1,500	52	23,000	3,100	6,300	LQM S4UL
		2.5%	560	1,600	130	23,000	3,100	6,300	LQM S4UL
		6%	890	1,600	290	23,000	3,100	6,400	LQM S4UL
	Fluorene	1%	170	2,800 (36.0) ^{sol}	27	63,000 (30.9) ^{sol}	9,900	20,000	LQM S4UL
		2.5%	400	3,800 (76.5) ^{sol}	67	68,000	9,900	20,000	LQM S4UL
		6%	860	4,500 (183) ^{sol}	160	71,000	9,900	20,000	LQM S4UL
	Indeno(123-cd)pyrene	1%	27	45	9.5	500	82	150	LQM S4UL
		2.5%	36	46	21	510	82	170	LQM S4UL
		6%	41	46	39	510	82	180	LQM S4UL
	Naphthalene	1%	15	15	65	1,600*	11,000*	8,400*	DEFRA C4SL
		2.5%	36	36	130	3,700*	15,000*	17,000*	DEFRA C4SL
		6%	85	85	200	8,400*	1,200*	1,900*	DEFRA C4SL
	Phenanthrene	1%	95	1,300 (36.0) ^{sol}	15	22,000	3,100	6,200	LQM S4UL
		2.5%	220	1,500	38	22,000	3,100	6,200	LQM S4UL
		6%	440	1,500	90	22,000	3,100	6,300	LQM S4UL
	Pyrene	1%	620	3,700	110	54,000	7,400	15,000	LQM S4UL
		2.5%	1,200	3,800	270	54,000	7,400	15,000	LQM S4UL
		6%	2,000	3,800	620	54,000	7,400	15,000	LQM S4UL
	Coal Tar (B(a)P as surrogate marker)	1%	0.79	1.2	0.32	15	2.2	4.4	LQM S4UL
		2.5%	0.98	1.2	0.67	15	2.2	4.7	LQM S4UL
		6%	1.1	1.2	1.2	15	2.2	4.8	LQM S4UL

Generic Assessment Criteria Values

Contaminant		SOM	Res +	Res -	Allot.	Comm.	POS ^{res} i	POS ^{park}	Source
BTEX Compounds	Benzene	1%	0.87	0.38	0.017	27	72	90	LQM S4UL
		2.5%	0.17	0.70	0.034	47	72	100	LQM S4UL
		6%	0.37	1.4	0.075	90	73	110	LQM S4UL
	Toluene	1%	130	880 (869) ^{vap}	22	56,000 (869) ^{vap}	56,000	87,000 (869) ^{vap}	LQM S4UL
		2.5%	290	1,900	51	110,000 (1,920) ^{vap}	56,000	95,000 (1,920) ^{vap}	LQM S4UL
		6%	660	3,900	120	180,000 (4,360) ^{vap}	56,000	100,000 (4,360) ^{vap}	LQM S4UL
	Ethylbenzene	1%	47	83	16	5,700 (518) ^{vap}	24,000	17,000 (518) ^{vap}	LQM S4UL
		2.5%	110	190	39	13,000 (1,220) ^{vap}	24,000	22,000 (1,220) ^{vap}	LQM S4UL
		6%	260	440	91	27,000 (2,840) ^{vap}	25,000	27,000 (2,840) ^{vap}	LQM S4UL
	o-xylene	1%	60	88	28	6,600 (478) ^{sol}	41,000	17,000 (478) ^{sol}	LQM S4UL
		2.5%	140	210	67	15,000 (1,120) ^{sol}	42,000	24,000 (1,120) ^{sol}	LQM S4UL
		6%	330	480	160	33,000 (2,620) ^{sol}	43,000	33,000 (2,620) ^{sol}	LQM S4UL
	m-xylene	1%	59	82	31	6,200 (625) ^{vap}	41,000	17,000 (625) ^{vap}	LQM S4UL
		2.5%	140	190	74	14,000 (1,470) ^{vap}	42,000	24,000 (1,470) ^{vap}	LQM S4UL
		6%	320	450	170	31,000 (3,460) ^{vap}	43,000	32,000 (3,460) ^{vap}	LQM S4UL
	p-xylene	1%	56	79	29	5,900 (576) ^{sol}	41,000	17,000 (576) ^{sol}	LQM S4UL
		2.5%	130	180	69	14,000 (1,350) ^{sol}	42,000	23,000 (1,350) ^{sol}	LQM S4UL
		6%	310	430	160	30,000 (3,170) ^{sol}	43,000	31,000 (3,170) ^{sol}	LQM S4UL
Petroleum Hydroc	Aliphatic								
	EC 5-6	1%	42	42	730	3,200 (304) ^{sol}	570,000(304) ^{sol}	95,000 (304) ^{sol}	LQM S4UL
	EC>6-8	1%	100	100	2,300	7,800 (144) ^{sol}	600,000	150,000 (144) ^{sol}	LQM S4UL
	EC>8-10	1%	27	27	320	2,000 (78) ^{sol}	13,000	14,000 (78) ^{vap}	LQM S4UL
	EC>10-12	1%	130 (48) ^{vap}	130 (48) ^{vap}	2,200	9,700 (48) ^{sol}	13,000	21,000 (48) ^{vap}	LQM S4UL
	EC>12-16	1%	1,100 (24) ^{sol}	1,100 (24) ^{sol}	11,000	59,000 (24) ^{sol}	13,000	25,000 (24) ^{sol}	LQM S4UL
	EC>16-35	1%	65,000 (8.48)	65,000 (8.48) ^{f, sol}	260,000 ^f	160,000 ^f	250,000 ^f	450,000 ^f	LQM S4UL
	EC>35-44	1%	65,000 (8.48)	65,000 (8.48) ^{f, sol}	260,000 ^f	160,000 ^f	250,000 ^f	450,000 ^f	LQM S4UL
	Aliphatic								
	EC 5-6	2.5%	78	78	1,700	5,900 (558) ^{sol}	590,000	130,000 (558) ^{sol}	LQM S4UL
	EC>6-8	2.5%	230	230	5,600	17,000 (322) ^{sol}	610,000	220,000 (322) ^{sol}	LQM S4UL
	EC>8-10	2.5%	65	65	770	4,800 (190) ^{vap}	13,000	18,000 (190) ^{vap}	LQM S4UL
	EC>10-12	2.5%	330 (118) ^{vap}	330 (118) ^{vap}	4,400	23,000 (118) ^{vap}	13,000	23,000 (118) ^{vap}	LQM S4UL
	EC>12-16	2.5%	2,400 (59) ^{sol}	2,400 (59) ^{sol}	13,000	82,000 (59) ^{sol}	13,000	25,000 (59) ^{sol}	LQM S4UL
	EC>16-35	2.5%	92,000 (21)	92,000 (21) ^{f, sol}	270,000 ^f	1,700,000 ^f	250,000 ^f	480,000 ^f	LQM S4UL
	EC>35-44	2.5%	92,000 (21)	92,000 (21) ^{f, sol}	270,000 ^f	1,700,000 ^f	250,000 ^f	480,000 ^f	LQM S4UL
	Aliphatic								
	EC 5-6	6%	160	160	3,900	12,000 (1,150) ^{sol}	600,000	180,000 (1,150)	LQM S4UL
	EC>6-8	6%	530	530	13,000	40,000 (736) ^{sol}	620,000	320,000 (736) ^{sol}	LQM S4UL
	EC>8-10	6%	150	150	1,700	11,000 (451) ^{vap}	13,000	21,000 (451) ^{vap}	LQM S4UL
	EC>10-12	6%	760 (283) ^{vap}	760 (283) ^{vap}	7,300	47,000 (283) ^{vap}	13,000	24,000 (283) ^{vap}	LQM S4UL
	EC>12-16	6%	4,300 (142) ^{sol}	4,400 (142) ^{sol}	13,000	90,000 (142) ^{sol}	13,000	26,000 (142) ^{sol}	LQM S4UL
	EC>16-35	6%	110,000 ^f	110,000 ^f	270,000 ^f	1,800,000 ^f	250,000 ^f	490,000 ^f	LQM S4UL
	EC>35-44	6%	110,000 ^f	110,000 ^f	270,000 ^f	1,800,000 ^f	250,000 ^f	490,000 ^f	LQM S4UL
	Aromatic								
	EC5-7(benzene as non-	1%	70	370	13	26,000 (1,220) ^{sol}	56,000	76,000 (1,220) ^{sol}	LQM S4UL
	EC>7-8(toluene)	1%	130	860	22	56,000 (869) ^{vap}	56,000	87,000 (869) ^{vap}	LQM S4UL
	EC>8-10	1%	34	47	8.6	3,500 (613) ^{vap}	5,000	7,200 (613) ^{vap}	LQM S4UL
	EC>10-12	1%	74	250	13	16,000 (364) ^{sol}	5,000	9,200 (364) ^{sol}	LQM S4UL
	EC>12-16	1%	140	1,800	23	36,000 (169) ^{sol}	5,100	10,000	LQM S4UL
	EC>16-21	1%	260 ^f	1,900 ^f	46 ^f	28,000 ^f	3,800 ^f	7,600 ^f	LQM S4UL
	EC>21-35	1%	1,100 ^f	1,900 ^f	370 ^f	28,000 ^f	3,800 ^f	7,800 ^f	LQM S4UL
	EC>35-44	1%	1,100 ^f	1,900 ^f	370 ^f	28,000 ^f	3,800 ^f	7,800 ^f	LQM S4UL
	Aromatic								
	EC5-7(benzene as non-	2.5%	140	690	27	46,000 (2,260) ^{sol}	56,000	84,000 (2,260) ^{sol}	LQM S4UL
	EC>7-8(toluene)	2.5%	290	1,800	51	110,000 (1,920) ^{sol}	56,000	95,000 (1,920) ^{sol}	LQM S4UL
	EC>8-10	2.5%	83	110	21	8,100 (1,500) ^{vap}	5,000	8,500 (1,500) ^{vap}	LQM S4UL
	EC>10-12	2.5%	180	590	31	28,000 (899) ^{sol}	5,000	9,700 (899) ^{sol}	LQM S4UL
	EC>12-16	2.5%	330	2,300 (419) ^{sol}	57	37,000	5,100	10,000	LQM S4UL
	EC>16-21	2.5%	540 ^f	1,900 ^f	110 ^f	28,000 ^f	3,800 ^f	7,700 ^f	LQM S4UL
	EC>21-35	2.5%	1,500 ^f	1,900 ^f	820 ^f	28,000 ^f	3,800 ^f	7,800 ^f	LQM S4UL
	EC>35-44	2.5%	1,500 ^f	1,900 ^f	820 ^f	28,000 ^f	3,800 ^f	7,800 ^f	LQM S4UL
	Aromatic								
	EC5-7(benzene as non-	6%	300	1,400	57	86,000 (4,710) ^{sol}	56,000	92,000 (4,710) ^{sol}	LQM S4UL
	EC>7-8(toluene)	6%	660	3,900	120	180,000 (4,360) ^{vap}	56,000	100,000 (4,360)	LQM S4UL
	EC>8-10	6%	190	270	51	17,000 (3,580) ^{vap}	5,000	9,300 (3,580) ^{vap}	LQM S4UL
	EC>10-12	6%	380	1,200	4	34,000 (2,150) ^{sol}	5,000	10,000	LQM S4UL
	EC>12-16	6%	660	2,500	130	38,000	5,100	10,000	LQM S4UL
	EC>16-21	6%	930 ^f	1,900 ^f	260 ^f	28,000 ^f	3,800 ^f	7,800 ^f	LQM S4UL
	EC>21-35	6%	1,700 ^f	1,900 ^f	1,600 ^f	28,000 ^f	3,800 ^f	7,900 ^f	LQM S4UL
	EC>35-44	6%	1,700 ^f	1,900 ^f	1,600 ^f	28,000 ^f	3,800 ^f	7,900 ^f	LQM S4UL
	Aliphatic +Aromatic >EC44	1%	1,600 ^f	1,900 ^f	1,200 ^f	28,000 ^f	3,800 ^f	7,800 ^f	LQM S4UL
		2.5%	1,800 ^f	1,900 ^f	2,100 ^f	28,000 ^f	3,800 ^f	7,800 ^f	LQM S4UL
		6%	1,900 ^f	1,900 ^f	3,000 ^f	28,000 ^f	3,800 ^f	7,900 ^f	LQM S4UL

Generic Assessment Criteria Values

Contaminant		SOM	Res +	Res -	Allot.	Comm.	POS ^{res} i	POS ^{park}	Source
Chloroalkanes and Alkenes & Explosives	1,2 Dichloroethane (DCA)	1%	0.0071	0.0092	0.0046	0.67	29	21	LQM S4UL
		2.5%	0.0110	0.0130	0.0083	0.97	29	24	LQM S4UL
		6%	0.0190	0.0230	0.0160	1.7	29	28	LQM S4UL
	1,1,1 Trichloroethane (TCA)	1%	8.8	9.0	48	660	140,000	57,000 (1,425) ^{vap}	LQM S4UL
		2.5%	18	18	110	1,300	140,000	76,000 (2,915) ^{vap}	LQM S4UL
		6%	39	40	240	3,000	140,000	100,000 (6,392)	LQM S4UL
	1,1,2,2-Tetrachloroethanes (PCA)	1%	1.6	3.9	0.41	270	1,400	1,800	LQM S4UL
		2.5%	3.4	8.0	0.89	550	1,400	2,100	LQM S4UL
		6%	7.5	17	2.0	1,100	1,400	2,300	LQM S4UL
	1,1,1,2-Tetrachloroethanes (PCA)	1%	1.2	1.5	0.79	110	1,400	1,500	LQM S4UL
		2.5%	2.8	3.5	1.9	250	1,400	1,800	LQM S4UL
		6%	6.4	8.2	4.4	560	1,400	2,100	LQM S4UL
	Tetrachloroethene (PCE)	1%	0.31	0.32	2.00	24	3,200	1400	DEFRA C4SL
		2.5%	0.70	0.71	4.8	55	3,300	1900	DEFRA C4SL
		6%	1.60	1.60	11.0	130	3,400	2,500	DEFRA C4SL
	Tetrachloromethane (carbon tetrachloride)	1%	0.03	0.03	0.45	2.9	890	190	LQM S4UL
		2.5%	0.06	0.06	1.0	6.3	920	270	LQM S4UL
		6%	0.13	0.13	2.4	14	950	400	LQM S4UL
	Trichloroethene (TCE)	1%	0.009	0.010	0.032	0.7	76.0	41.0	DEFRA C4SL
		2.5%	0.020	0.020	0.072	1.5	78.0	51.0	DEFRA C4SL
		6%	0.043	0.045	0.160	3.4	79.0	69.0	DEFRA C4SL
	cis 1,2-dichloroethene	1%	0.46	0.50	0.890	38	3,800	2,000	DEFRA C4SL
		2.5%	0.78	0.84	1.70	64	3,800	2,400	DEFRA C4SL
		6%	1.50	1.60	3.60	120	3,900	3,100	DEFRA C4SL
	Trichloromethane (chloroform)	1%	0.91	1.2	0.42	99	2,500	2,600	LQM S4UL
		2.5%	1.7	2.1	0.83	170	2,500	2,800	LQM S4UL
		6%	3.4	4.2	1.7	350	2,500	3,100	LQM S4UL
	Trans-1,2 Dichloroethene	1%	0.9	0.9	3.7	69	13,000	5,600	DEFRA C4SL
		2.5%	1.6	1.7	7.5	120	13,000	7,000	DEFRA C4SL
		6%	3.3	3.4	16.0	260	13,000	9,100	DEFRA C4SL
	Chloroethene (vinyl chloride)	1%	0.006	0.015	0.0017	1.1E+00	7.8	18.0	DEFRA C4SL
		2.5%	0.010	0.019	0.0031	1.4E+00	7.8	19.0	DEFRA C4SL
		6%	0.017	0.029	0.0058	2.20	7.8	19.0	DEFRA C4SL
	2,4,6-Trinitrotoluene (TNT)	1%	1.6	65	0.24	1,000	130	260	LQM S4UL
		2.5%	3.7	66	0.58	1,000	130	270	LQM S4UL
		6%	8.1	66	1.4	1,000	130	270	LQM S4UL
	RDX	1%	120	13,000	17	210,000	26,000	49,000 (18.7) ^{sol}	LQM S4UL
		2.5%	250	13,000	38	210,000	26,000	51,000	LQM S4UL
		6%	540	13,000	85	210,000	27,000	53,000	LQM S4UL
	HMX	1%	5.7	6,700	0.86	110,000	13,000	23,000 (0.35) ^{vap}	LQM S4UL
		2.5%	13	6,700	1.9	110,000	13,000	23,000 (0.39) ^{vap}	LQM S4UL
		6%	26	6,700	3.9	110,000	13,000	24,000 (0.48) ^{vap}	LQM S4UL
Pesticides	Aldrin	1%	5.7	7.3	3.2	170	18	30	LQM S4UL
		2.5%	6.6	7.4	6.1	170	18	31	LQM S4UL
		6%	7.1	7.5	9.8	170	18	31	LQM S4UL
	Dieldrin	1%	0.97	7.0	0.17	170	18	30	LQM S4UL
		2.5%	2.0	7.3	0.41	170	18	30	LQM S4UL
		6%	3.5	7.4	0.96	170	18	31	LQM S4UL
	Atrazine	1%	3.3	610	0.5	9,300	1,200	2,300	LQM S4UL
		2.5%	7.8	620	1.2	9,400	1,200	2,400	LQM S4UL
		6%	17.4	620	2.7	9,400	1,200	2,400	LQM S4UL
	Dichlorvos	1%	3.2E-02	6.4	4.9E-03	140	16	26	LQM S4UL
		2.5%	6.6E-02	6.5	1.0E-02	140	16	26	LQM S4UL
		6%	0.14	6.6	2.2E-02	140	16	27	LQM S4UL
	Endosulfans (2 isomers)	1%	7.4	160 (3.0E-03) ^{vap}	1.2	5,600 (3.0E-03) ^{vap}	1,200	2,300	LQM S4UL
		2.5%	18	280 (7.0E-03) ^{vap}	2.9	7,400 (7.0E-03) ^{vap}	1,200	2,400	LQM S4UL
		6%	41	410 (1.6E-02) ^{vap}	6.8	8,400 (1.6E-02) ^{vap}	1,200	2,500	LQM S4UL
	Hexachlorocyclohexane (3 isomers), inc Lindane	1%	8.5E-02	3.7	1.3E-02	65	8.1	15	LQM S4UL
		2.5%	0.2	3.8	3.2E-02	65	8.1	15	LQM S4UL
		6%	0.46	3.8	7.7E-02	65	8.1	16	LQM S4UL
Chlorobenzenes	Chlorobenzene	1%	0.46	0.46	5.9	56	11,000	1,300 (675) ^{sol}	LQM S4UL
		2.5%	1.0	1.0	14	130	13,000	2,000 (1,520) ^{sol}	LQM S4UL
		6%	2.4	2.4	32	290	14,000	2,900	LQM S4UL
	Dichlorobenzenes (3 isomers)	1%	23	24	94	2,000 (571) ^{sol}	90,000	24,000 (571) ^{sol}	LQM S4UL
		2.5%	55	57	230	4,800 (1,370) ^{sol}	95,000	36,000 (1,370) ^{sol}	LQM S4UL
		6%	130	130	540	11,000 (3,240) ^{sol}	98,000	51,000 (3,270) ^{sol}	LQM S4UL
	Trichlorobenzenes (3 isomers)	1%	2.6	2.6	55	220	15,000	1,700 (318) ^{vap}	LQM S4UL
		2.5%	6.4	6.4	140	530	17,000	2,600 (786) ^{vap}	LQM S4UL
		6%	15	15	320	1,300	19,000	4,000 (1,880) ^{vap}	LQM S4UL
	Tetrachlorobenzenes (3 isomers)	1%	0.66	0.75	0.38	49 (39.4) ^{vap}	78	110 (39) ^{vap}	LQM S4UL
		2.5%	1.6	1.9	0.90	120 (98.1) ^{vap}	79	120	LQM S4UL
		6%	3.7	4.3	2.2	240 (235) ^{vap}	79	130	LQM S4UL
	Pentachlorobenzene	1%	5.8	19	1.2	640 (43.0) ^{sol}	100	190	LQM S4UL
		2.5%	12	30	3.1	770 (107) ^{sol}	100	190	LQM S4UL
		6%	22	38	7.0	830	100	190	LQM S4UL
	Hexachlorobenzene	1%	1.8 (0.20) ^{vap}	4.1 (0.20) ^{vap}	0.47	110 (0.20) ^{vap}	16	30	LQM S4UL
		2.5%	3.3 (0.50) ^{vap}	5.7 (0.50) ^{vap}	1.1	120	16	30	LQM S4UL
		6%	4.9	6.7 (1.2) ^{vap}	2.5	120	16	30	LQM S4UL

Generic Assessment Criteria Values

Contaminant		SOM	Res +	Res -	Allot.	Comm.	^{POS} resi	^{POS} park	Source
Chlorophenol	Chlorophenols (4 congeners)	1%	0.87 ^B	94	0.13 ^B	3,500	620	1,100	LQM S4UL
		2.5%	2.0	150	0.30	4,000	620	1,100	LQM S4UL
		6%	4.5	210	0.70	4,300	620	1,100	LQM S4UL
	Pentachlorophenol	1%	0.22	27 (16.4) ^{vap}	3.0E-02	400	60	110	LQM S4UL
		2.5%	0.52	29	8.0E-02	400	60	120	LQM S4UL
		6%	1.2	31	0.19	400	60	120	LQM S4UL
Others	Carbon Disulphide	1%	0.14	0.14	4.8	11	11,000	1,300	LQM S4UL
		2.5%	0.29	0.29	10	22	11,000	1,900	LQM S4UL
		6%	0.62	0.62	23	47	11,000	2,700	LQM S4UL
	Hexachlorobutadiene	1%	0.29	0.32	0.25	31	25	48	LQM S4UL
		2.5%	0.7	0.78	0.61	66	25	50	LQM S4UL
		6%	1.6	1.8	1.4	120	25	51	LQM S4UL
	Phenol	1%	120	440 (460)	23	440 ^{dir} (26,000)	440 ^{dir} (10,000)	440 ^{dir} (7,600)	LQM S4UL
		2.5%	200	690	42	690 ^{dir} (30,000)	690 ^{dir} (10,000)	690 ^{dir} (8,300)	LQM S4UL
		6%	380	1,200	83	1,300 ^{dir} (34,000)	1,300 ^{dir} (10,000)	1,300 ^{dir} (9,300)	LQM S4UL

sol/vap = solubility/vapour limit (potentially use if free product identified, although highly conservative)

*=naphthalene C4SL exceeds the CLEA calculated soil saturation concentration (76 mg kg⁻¹ for 1% SOM, 183 mg kg⁻¹ for 2.5% SOM and 432 mg kg⁻¹ for 6% SOM)

f = oral, dermal and inhalation exposures compared to oral HCV

dir = S4ULs based on threshold protective of direct skin contact with phenol)brackets long term exposure for illustration purposes)

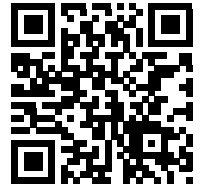
g = derived based on 2,3,4-tetrachlorophenol

Appendix F – Hazwaste Online Certificates

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

- understand the origin of the waste
- select the correct List of Waste code(s)
- confirm that the list of determinands, results and sampling plan are fit for purpose
- select and justify the chosen metal species (Appendix B)
- correctly apply moisture correction and other available corrections
- add the meta data for their user-defined substances (Appendix A)
- check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)



RWAPQ-QWGVMS-S13LD

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in **pale yellow**.

Job name

LKC241317

Description/Comments

Project

LKC241317

Site

Chorlton Baths

Classified by

Name: **Peter Dunn**
Date: **03 Oct 2024 14:58 GMT**
Telephone: **0161 763 7200**
Company: **LK Group**

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification:

CERTIFIED

Course

Hazardous Waste Classification
Most recent 3 year Refresher

Date

26 Mar 2015 *
02 Aug 2022

Next 3 year Refresher due by Aug 2025
* training course booked

Purpose of classification

2 - Material Characterisation

Address of the waste

3 Cavendish Terrace, Chorlton-cum-Hardy, Manchester

Post Code **M21 0UA**

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Development of brownfield land

Description of the specific process, sub-process and/or activity that created the waste

Construction

Description of the waste

Soil

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	TP101-0.05 - 1.00-12/09/2024	0.05 - 1.00	Non Hazardous		3
2	TP102-0.00 - 0.60-12/09/2024	0.00 - 0.60	Non Hazardous		6
3	TP103-0.30 - 1.00-12/09/2024	0.30 - 1.00	Non Hazardous		9
4	TP104-0.20 - 1.00-12/09/2024	0.20 - 1.00	Hazardous	HP 3(i), HP 7, HP 11	12

Related documents

#	Name	Description
1	24-10916.1.hwol	DETS South .hwol file used to populate the Job
2	LK SUITE 1 - 5	waste stream template used to create this Job

Report

Created by: Peter Dunn

Created date: 03 Oct 2024 14:58 GMT

Appendices

	Page
Appendix A: Classifier defined and non GB MCL determinands	15
Appendix B: Rationale for selection of metal species	16
Appendix C: Version	17

Classification of sample: TP101-0.05 - 1.00-12/09/2024

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP101-0.05 - 1.00-12/09/2024	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.05 - 1.00 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
11.1%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 11.1% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				23 mg/kg	1.32	26.997 mg/kg	0.0027 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				0.5 mg/kg	1.142	0.508 mg/kg	0.0000508 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				14 mg/kg	1.462	18.191 mg/kg	0.00182 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				105 mg/kg	1.126	105.096 mg/kg	0.0105 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
5	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
6	nickel { nickel(II) oxide (nickel monoxide) }				30 mg/kg	1.273	33.94 mg/kg	0.00339 %	✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	212 mg/kg		188.468 mg/kg	0.0188 %	✓	
	082-001-00-6									
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<2 mg/kg	1.405	<2.81 mg/kg	<0.000281 %		<LOD
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				44 mg/kg	1.785	69.829 mg/kg	0.00698 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				148 mg/kg	1.245	163.77 mg/kg	0.0164 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	boron { diboron trioxide }				1.1 mg/kg	3.22	3.149 mg/kg	0.000315 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
13	TPH (C6 to C40) petroleum group				604 mg/kg		536.956 mg/kg	0.0537 %	✓	
			TPH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
15	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
16	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
17	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
18	xylene				<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
20	pH				7.8 pH		7.8 pH	7.8 pH			
			PH								
21	naphthalene				0.83 mg/kg		0.738 mg/kg	0.0000738 %		✓	
	601-052-00-2	202-049-5	91-20-3								
22	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
23	acenaphthene				6.68 mg/kg		5.939 mg/kg	0.000594 %		✓	
		201-469-6	83-32-9								
24	fluorene				4.19 mg/kg		3.725 mg/kg	0.000372 %		✓	
		201-695-5	86-73-7								
25	phenanthrene				37.3 mg/kg		33.16 mg/kg	0.00332 %		✓	
		201-581-5	85-01-8								
26	anthracene				7.65 mg/kg		6.801 mg/kg	0.00068 %		✓	
		204-371-1	120-12-7								
27	fluoranthene				46.3 mg/kg		41.161 mg/kg	0.00412 %		✓	
		205-912-4	206-44-0								
28	pyrene				42.4 mg/kg		37.694 mg/kg	0.00377 %		✓	
		204-927-3	129-00-0								
29	benzo[a]anthracene				19.3 mg/kg		17.158 mg/kg	0.00172 %		✓	
	601-033-00-9	200-280-6	56-55-3								
30	chrysene				19.7 mg/kg		17.513 mg/kg	0.00175 %		✓	
	601-048-00-0	205-923-4	218-01-9								
31	benzo[b]fluoranthene				16.1 mg/kg		14.313 mg/kg	0.00143 %		✓	
	601-034-00-4	205-911-9	205-99-2								
32	benzo[k]fluoranthene				5.75 mg/kg		5.112 mg/kg	0.000511 %		✓	
	601-036-00-5	205-916-6	207-08-9								
33	benzo[a]pyrene; benzo[def]chrysene				17.5 mg/kg		15.558 mg/kg	0.00156 %		✓	
	601-032-00-3	200-028-5	50-32-8								
34	indeno[123-cd]pyrene				8.42 mg/kg		7.485 mg/kg	0.000749 %		✓	
		205-893-2	193-39-5								
35	dibenz[a,h]anthracene				1.99 mg/kg		1.769 mg/kg	0.000177 %		✓	
	601-041-00-2	200-181-8	53-70-3								
36	benzo[ghi]perylene				6.83 mg/kg		6.072 mg/kg	0.000607 %		✓	
		205-883-8	191-24-2								
37	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
38	monohydric phenols				<2 mg/kg		<2 mg/kg	<0.0002 %			<LOD
			P1186								
Total:									0.137 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 1000 mg/kg (0.1%) because: Concentrations at less than 1.0% are "unlikely to be flammable". Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0537%)

Classification of sample: TP102-0.00 - 0.60-12/09/2024

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP102-0.00 - 0.60-12/09/2024	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.00 - 0.60 m	
Moisture content:	
11%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 11% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number								
1		arsenic { arsenic trioxide }				20 mg/kg	1.32	23.502 mg/kg	0.00235 %	✓		
		033-003-00-0	215-481-4	1327-53-3								
2		cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD	
		048-002-00-0	215-146-2	1306-19-0								
3		chromium in chromium(III) compounds {  chromium(III) oxide (worst case) }				12 mg/kg	1.462	15.609 mg/kg	0.00156 %	✓		
			215-160-9	1308-38-9								
4		copper { dicopper oxide; copper (I) oxide }				59 mg/kg	1.126	59.12 mg/kg	0.00591 %	✓		
		029-002-00-X	215-270-7	1317-39-1								
5		mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD	
		080-010-00-X	231-299-8	7487-94-7								
6		nickel { nickel(II) oxide (nickel monoxide) }				14 mg/kg	1.273	15.857 mg/kg	0.00159 %	✓		
		028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]								
7		lead {  lead compounds with the exception of those specified elsewhere in this Annex }			1	141 mg/kg		125.49 mg/kg	0.0125 %	✓		
		082-001-00-6										
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<2 mg/kg	1.405	<2.81 mg/kg	<0.000281 %		<LOD	
		034-002-00-8										
9		vanadium { divanadium pentaoxide; vanadium pentoxide }				23 mg/kg	1.785	36.543 mg/kg	0.00365 %	✓		
		023-001-00-8	215-239-8	1314-62-1								
10		zinc { zinc oxide }				78 mg/kg	1.245	86.408 mg/kg	0.00864 %	✓		
		030-013-00-7	215-222-5	1314-13-2								
11		chromium in chromium(VI) compounds { chromium(VI) oxide }				<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD	
		024-001-00-0	215-607-8	1333-82-0								
12		boron { diboron trioxide }				<1 mg/kg	3.22	<3.22 mg/kg	<0.000322 %		<LOD	
		005-008-00-8	215-125-8	1303-86-2								
13		TPH (C6 to C40) petroleum group				380 mg/kg		338.2 mg/kg	0.0338 %	✓		
				TPH								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
15	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
16	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
17	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
18	xylene				<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
20	pH				7.8 pH		7.8 pH	7.8 pH			
			PH								
21	naphthalene				0.28 mg/kg		0.249 mg/kg	0.0000249 %		✓	
	601-052-00-2	202-049-5	91-20-3								
22	acenaphthylene				0.12 mg/kg		0.107 mg/kg	0.0000107 %		✓	
		205-917-1	208-96-8								
23	acenaphthene				0.58 mg/kg		0.516 mg/kg	0.0000516 %		✓	
		201-469-6	83-32-9								
24	fluorene				0.54 mg/kg		0.481 mg/kg	0.0000481 %		✓	
		201-695-5	86-73-7								
25	phenanthrene				4.91 mg/kg		4.37 mg/kg	0.000437 %		✓	
		201-581-5	85-01-8								
26	anthracene				0.91 mg/kg		0.81 mg/kg	0.000081 %		✓	
		204-371-1	120-12-7								
27	fluoranthene				7.73 mg/kg		6.88 mg/kg	0.000688 %		✓	
		205-912-4	206-44-0								
28	pyrene				9.32 mg/kg		8.295 mg/kg	0.000829 %		✓	
		204-927-3	129-00-0								
29	benzo[a]anthracene				4.15 mg/kg		3.694 mg/kg	0.000369 %		✓	
	601-033-00-9	200-280-6	56-55-3								
30	chrysene				5.32 mg/kg		4.735 mg/kg	0.000473 %		✓	
	601-048-00-0	205-923-4	218-01-9								
31	benzo[b]fluoranthene				3.61 mg/kg		3.213 mg/kg	0.000321 %		✓	
	601-034-00-4	205-911-9	205-99-2								
32	benzo[k]fluoranthene				1.36 mg/kg		1.21 mg/kg	0.000121 %		✓	
	601-036-00-5	205-916-6	207-08-9								
33	benzo[a]pyrene; benzo[def]chrysene				4.66 mg/kg		4.147 mg/kg	0.000415 %		✓	
	601-032-00-3	200-028-5	50-32-8								
34	indeno[123-cd]pyrene				2.4 mg/kg		2.136 mg/kg	0.000214 %		✓	
		205-893-2	193-39-5								
35	dibenz[a,h]anthracene				0.58 mg/kg		0.516 mg/kg	0.0000516 %		✓	
	601-041-00-2	200-181-8	53-70-3								
36	benzo[ghi]perylene				2.14 mg/kg		1.905 mg/kg	0.00019 %		✓	
		205-883-8	191-24-2								
37	monohydric phenols				<2 mg/kg		<2 mg/kg	<0.0002 %			<LOD
			P1186								
Total:									0.0759 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 1000 mg/kg (0.1%) because: Concentrations at less than 1.0% are "unlikely to be flammable". Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0338%)

Classification of sample: TP103-0.30 - 1.00-12/09/2024

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP103-0.30 - 1.00-12/09/2024	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.30 - 1.00 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
5.4%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 5.4% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1		arsenic { arsenic trioxide }				3 mg/kg	1.32	3.747 mg/kg	0.000375 %	✓	
		033-003-00-0	215-481-4	1327-53-3							
2		cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
		048-002-00-0	215-146-2	1306-19-0							
3		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				7 mg/kg	1.462	9.678 mg/kg	0.000968 %	✓	
			215-160-9	1308-38-9							
4		copper { dicopper oxide; copper (I) oxide }				7 mg/kg	1.126	7.456 mg/kg	0.000746 %	✓	
		029-002-00-X	215-270-7	1317-39-1							
5		mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
		080-010-00-X	231-299-8	7487-94-7							
6		nickel { nickel(II) oxide (nickel monoxide) }				9 mg/kg	1.273	10.835 mg/kg	0.00108 %	✓	
		028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	6 mg/kg		5.676 mg/kg	0.000568 %	✓	
		082-001-00-6									
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<2 mg/kg	1.405	<2.81 mg/kg	<0.000281 %		<LOD
		034-002-00-8									
9		vanadium { divanadium pentaoxide; vanadium pentoxide }				8 mg/kg	1.785	13.51 mg/kg	0.00135 %	✓	
		023-001-00-8	215-239-8	1314-62-1							
10		zinc { zinc oxide }				27 mg/kg	1.245	31.792 mg/kg	0.00318 %	✓	
		030-013-00-7	215-222-5	1314-13-2							
11		chromium in chromium(VI) compounds { chromium(VI) oxide }				<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
		024-001-00-0	215-607-8	1333-82-0							
12		boron { diboron trioxide }				<1 mg/kg	3.22	<3.22 mg/kg	<0.000322 %		<LOD
		005-008-00-8	215-125-8	1303-86-2							
13		TPH (C6 to C40) petroleum group				<42 mg/kg		<42 mg/kg	<0.0042 %		<LOD
				TPH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X	216-653-1	1634-04-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
15	benzene 601-020-00-8	200-753-7	71-43-2		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
16	toluene 601-021-00-3	203-625-9	108-88-3		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
17	ethylbenzene 601-023-00-4	202-849-4	100-41-4		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
18	xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<LOD
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
20	pH PH				7.7 pH		7.7 pH	7.7 pH		
21	naphthalene 601-052-00-2	202-049-5	91-20-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	acenaphthylene 205-917-1	208-96-8			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	acenaphthene 201-469-6	83-32-9			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	fluorene 201-695-5	86-73-7			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	phenanthrene 201-581-5	85-01-8			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	anthracene 204-371-1	120-12-7			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	fluoranthene 205-912-4	206-44-0			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	pyrene 204-927-3	129-00-0			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	chrysene 601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	indeno[123-cd]pyrene 205-893-2	193-39-5			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	benzo[ghi]perylene 205-883-8	191-24-2			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	monohydric phenols P1186				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
Total:								0.0142 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP104-0.20 - 1.00-12/09/2024

 **Hazardous Waste**
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:
TP104-0.20 - 1.00-12/09/2024	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.20 - 1.00 m	Entry:
Moisture content:	17 05 03 * (Soil and stones containing hazardous substances)
6.5%	
(wet weight correction)	

Hazard properties

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.164%)

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.164%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.164%)

Determinands

Moisture content: 6.5% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	 arsenic { arsenic trioxide }				5 mg/kg	1.32	6.173 mg/kg	0.000617 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	 cadmium { cadmium oxide }				0.3 mg/kg	1.142	0.32 mg/kg	0.000032 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
3	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				9 mg/kg	1.462	12.299 mg/kg	0.00123 %	✓	
		215-160-9	1308-38-9							
4	 copper { dicopper oxide; copper (I) oxide }				9 mg/kg	1.126	9.474 mg/kg	0.000947 %	✓	
	029-002-00-X	215-270-7	1317-39-1							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
5	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
6	nickel { nickel(II) oxide (nickel monoxide) }				8 mg/kg	1.273	9.519 mg/kg	0.000952 %	✓		
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]								
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	26 mg/kg		24.31 mg/kg	0.00243 %	✓		
	082-001-00-6										
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<2 mg/kg	1.405	<2.81 mg/kg	<0.000281 %			<LOD
	034-002-00-8										
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				14 mg/kg	1.785	23.368 mg/kg	0.00234 %	✓		
	023-001-00-8	215-239-8	1314-62-1								
10	zinc { zinc oxide }				36 mg/kg	1.245	41.897 mg/kg	0.00419 %	✓		
	030-013-00-7	215-222-5	1314-13-2								
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
12	boron { diboron trioxide }				<1 mg/kg	3.22	<3.22 mg/kg	<0.000322 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
13	TPH (C6 to C40) petroleum group				1759 mg/kg		1644.665 mg/kg	0.164 %	✓		
			TPH								
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
15	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
16	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
17	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
18	xylene				<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
20	pH				9.8 pH		9.8 pH	9.8 pH			
			PH								
21	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
22	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
23	acenaphthene				0.16 mg/kg		0.15 mg/kg	0.000015 %	✓		
		201-469-6	83-32-9								
24	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
25	phenanthrene				3.79 mg/kg		3.544 mg/kg	0.000354 %	✓		
		201-581-5	85-01-8								
26	anthracene				0.57 mg/kg		0.533 mg/kg	0.0000533 %	✓		
		204-371-1	120-12-7								
27	fluoranthene				5.21 mg/kg		4.871 mg/kg	0.000487 %	✓		
		205-912-4	206-44-0								
28	pyrene				4.5 mg/kg		4.208 mg/kg	0.000421 %	✓		
		204-927-3	129-00-0								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
29	benzo[a]anthracene				3.36 mg/kg		3.142 mg/kg	0.000314 %	✓	
	601-033-00-9	200-280-6	56-55-3							
30	chrysene				2.74 mg/kg		2.562 mg/kg	0.000256 %	✓	
	601-048-00-0	205-923-4	218-01-9							
31	benzo[b]fluoranthene				2.56 mg/kg		2.394 mg/kg	0.000239 %	✓	
	601-034-00-4	205-911-9	205-99-2							
32	benzo[k]fluoranthene				1.08 mg/kg		1.01 mg/kg	0.000101 %	✓	
	601-036-00-5	205-916-6	207-08-9							
33	benzo[a]pyrene; benzo[def]chrysene				2.97 mg/kg		2.777 mg/kg	0.000278 %	✓	
	601-032-00-3	200-028-5	50-32-8							
34	indeno[123-cd]pyrene				1.42 mg/kg		1.328 mg/kg	0.000133 %	✓	
		205-893-2	193-39-5							
35	dibenz[a,h]anthracene				0.43 mg/kg		0.402 mg/kg	0.0000402 %	✓	
	601-041-00-2	200-181-8	53-70-3							
36	benzo[ghi]perylene				1.55 mg/kg		1.449 mg/kg	0.000145 %	✓	
		205-883-8	191-24-2							
37	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
38	monohydric phenols				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
			P1186							
Total:								0.182 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 1000 mg/kg (0.1%) because: Concentrations at less than 1.0% are "unlikely to be flammable". Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.164%)

Appendix A: Classifier defined and non GB MCL determinands

• chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• lead compounds with the exception of those specified elsewhere in this Annex

GB MCL index number: 082-001-00-6

Description/Comments: Least-worst case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers many simple lead compounds to be Carcinogenic category 2

Additional Hazard Statement(s): Carc. 2; H351

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html. Review date 29/09/2015

• TPH (C6 to C40) petroleum group (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

• ethylbenzene (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4

Description/Comments:

Additional Hazard Statement(s): Carc. 2; H351

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

• salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex

GB MCL index number: 006-007-00-5

Description/Comments: Conversion factor based on a worst case compound: sodium cyanide

Additional Hazard Statement(s): EUH032 >= 0.2 %

Reason for additional Hazards Statement(s):

20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

• pH (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

• acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

• acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

• fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

■ **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

■ **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **polychlorobiphenyls; PCB** (EC Number: 215-648-1, CAS Number: 1336-36-3)

GB MCL index number: 602-039-00-4
Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans;

POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.

Additional Hazard Statement(s): Carc. 1A; H350

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

■ **monohydric phenols** (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
Data source: CLP combined data
Data source date: 26 Mar 2019
Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 <= conc. < 3 % , Eye Irrit. 2; H319 1 <= conc. < 3 % , Aquatic Chronic 2; H411

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides.

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel(II) oxide (nickel monoxide)}

Worst case compound based on absence of CrVI and assumed metal oxides from a combustion, ash based source.

lead {lead compounds with the exception of those specified elsewhere in this Annex}

Worst case compound based on absence of CrVI and assumed metal oxides from a combustion, ash based source.

selenium {selenium compounds with the exception of cadmium sulposelenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulposelenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil.

vanadium {divanadium pentaoxide; vanadium pentoxide}

Most conservative species.

zinc {zinc oxide}

Worst case compound based on absence of CrVI and assumed metal oxides from a combustion, ash based source.

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments

boron {diboron trioxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass.

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide]

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021

HazWasteOnline Classification Engine Version: 2024.271.6257.11459 (29 Sep 2024)

HazWasteOnline Database: 2024.271.6257.11459 (29 Sep 2024)

This classification utilises the following guidance and legislation:

WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

14th ATP - Regulation (EU) 2020/217 of 4 October 2019

15th ATP - Regulation (EU) 2020/1182 of 19 May 2020

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK:

2020 No. 1540 of 16th December 2020

GB MCL List - version 1.1 of 09 June 2021

GB MCL List v2.0 - version 2.0 of 20th October 2023

GB MCL List v3.0 - version 3.0 of 11th January 2024

GB MCL List v4.0 - version 4.0 of 2nd March 2024

GB MCL List v5.0 - version 5.0 of 26th June 2024

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Based across the UK with offices in
Manchester, Liverpool, Swindon and Glasgow.

Manchester (Head Office)

Unit 29
Eton Business Park
Eton Hill Rd, Radcliffe
M26 2ZS

t: 0161 763 7200
e: info@thelkgroup.com

Swindon

39 Bowman House Business Centre
Bowman Court
Whitehill Lane
Royal Wootton Bassett
Swindon
SN4 7DB

t: 01793 987 390
e: info@thelkgroup.com

Glasgow

Wright Business Centre
1 Lonmay Road
Glasgow
G33 4EL

t: 0141 773 6269
e: info@thelkgroup.com

Liverpool

Unit 10
12 Jordan Street
Baltic Triangle
Liverpool
L1 0BP

t: 0161 763 7200
e: info@thelkgroup.com



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Chorlton Baths, Manchester

Final Phase 2 Geo-Environmental Investigation Risk Assessment & Remediation Strategy

Job Number: LKC241317

Date: December 2024

Client: Caddick Construction (NW) Ltd



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