

Endeavour Drilling LTD
Mapledean Industrial Estate
Maldon Road
Latchingdon
CM3 6LG

SPT Hammer Ref: 386
Test Date: 17/03/2025
Report Date: 17/03/2025
File Name: 386.spt
Test Operator: BR

Instrumented Rod Data

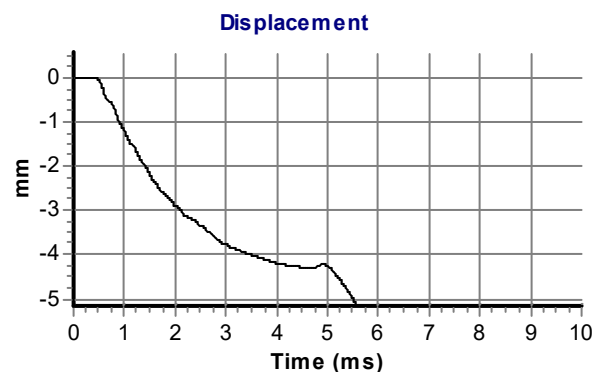
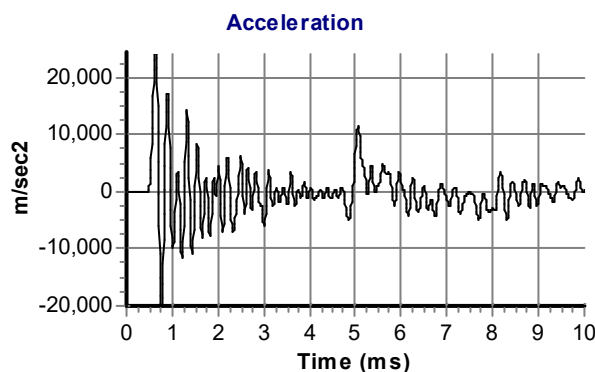
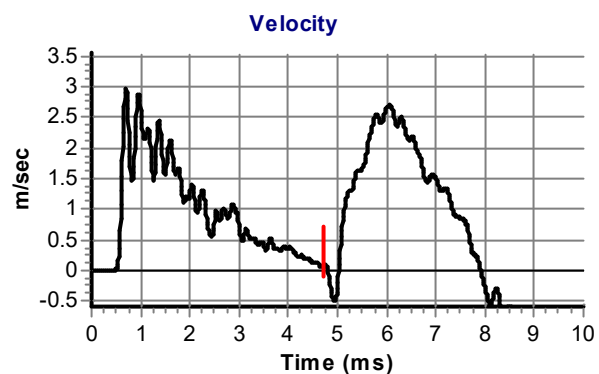
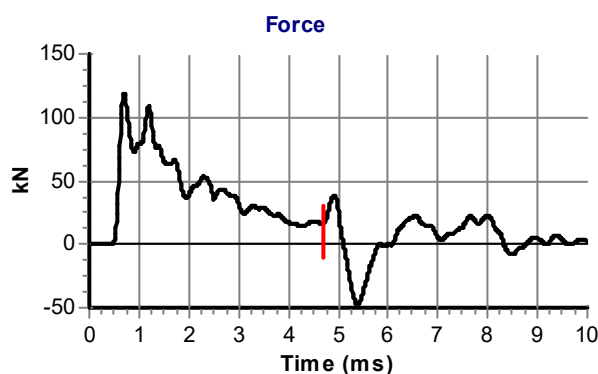
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 7.0
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 76175
Accelerometer No.2: 76176

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 11.5

Comments / Location

Latchingdon



Calculations

Area of Rod A (mm²): 1034
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 278

Energy Ratio E_r (%): **59**



Signed: Clint Rose
Title: Managing Director

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

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

SPT Hammer Ref: SPT6
Test Date: 06/12/2024
Report Date: 06/12/2024
File Name: SPT6.spt
Test Operator: BOB

Instrumented Rod Data

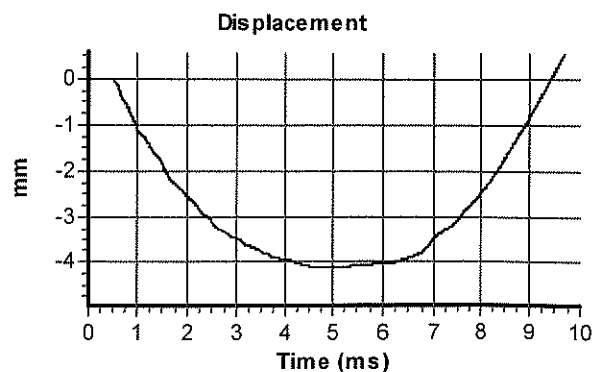
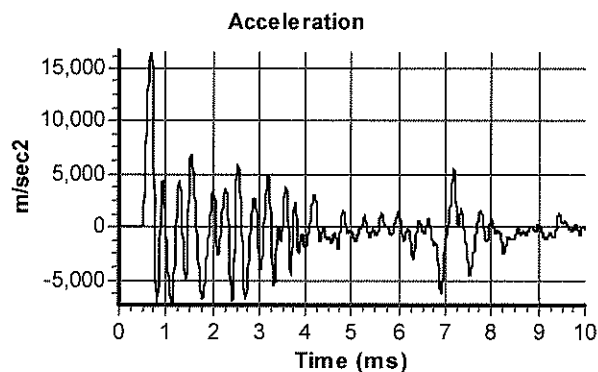
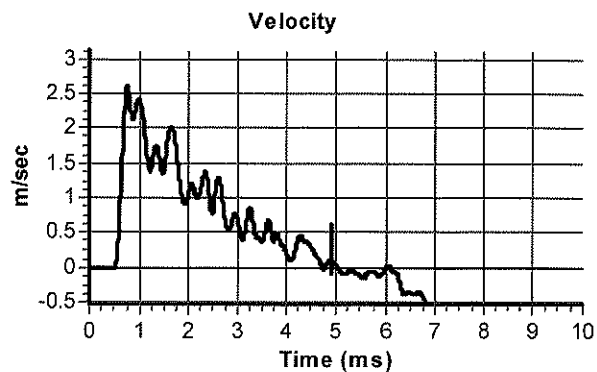
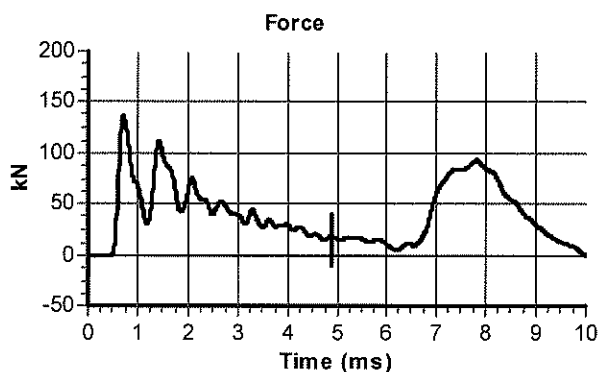
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.7
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 73547
Accelerometer No.2: 64789

SPT Hammer Information

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

Comments / Location

CHARLWOODS



Calculations

Area of Rod A (mm²): 996
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 273

Energy Ratio E_r (%): **58**

Signed: Bob Stewart
Title: Technician

The recommended calibration interval is 12 months

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

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

SPT Hammer Ref: SPT7
Test Date: 10/06/2024
Report Date: 10/06/2024
File Name: SPT7.spt
Test Operator: BOB

Instrumented Rod Data

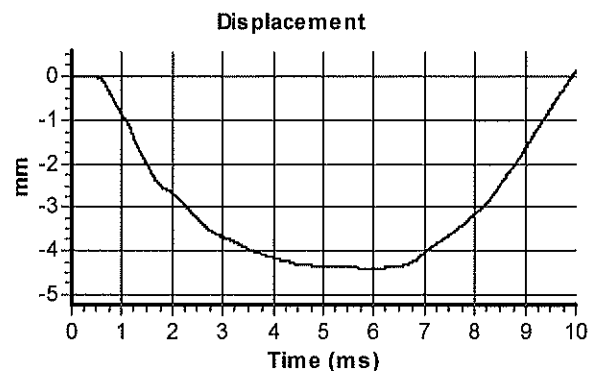
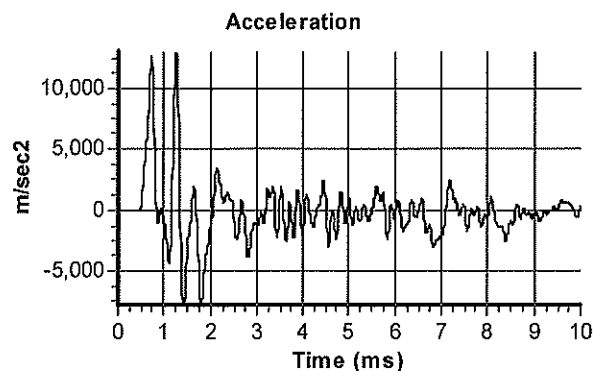
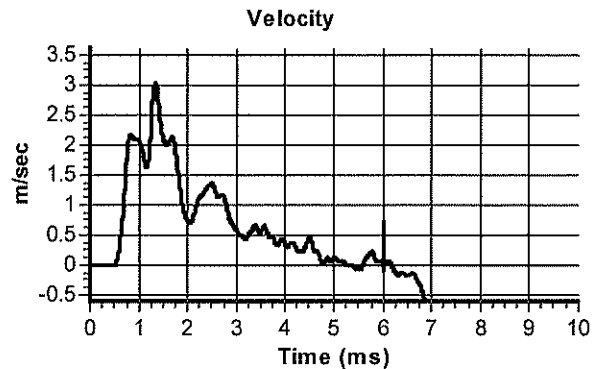
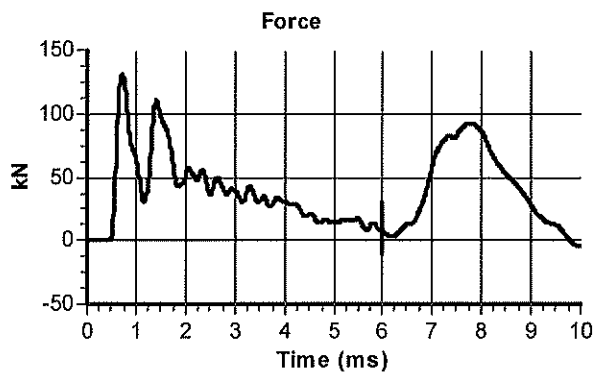
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.4
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 73547
Accelerometer No.2: 64789

SPT Hammer Information

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

Comments / Location

CHARLSWOOD



Calculations

Area of Rod A (mm^2): 957
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 276

Energy Ratio E_r (%): **58**

Signed: Bob Stewart

Title: Technician

The recommended calibration interval is 12 months

Annex D: Field Data

VISIT NUMBER: 1 OF 4

DATE: 2025-03-25

OPERATOR: WILL MILBURN

	GAS CONCENTRATIONS												VOLATILES		FLOW DATA				WELL AND WATER DATA		COMMENTS
Monitoring Point	Methane (% v/v)		%LEL		Carbon dioxide (% v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (% v/v)		PID Peak (ppm)	Product Thickness (mm)	Flow rate (l/hr)		Differential Borehole Pressure (Pa)	Time for flow to equalise (secs)	Water Level (mbgl)	Depth of well (m)	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min.	Steady			Peak	Steady					
CP101	<0.1	<0.1	<0.1	<0.1	1.0	1.0	5.0	5.0	1.0	1.0	17.6	17.6	<0.1	ND	<0.1	<0.1	-1.16	60	Dry	16.22	
CP102	<0.1	<0.1	<0.1	<0.1	0.4	0.4	9.0	9.0	<1	<1	19.5	19.6	<0.1	ND	<0.1	<0.1	-0.30	60	Dry	16.39	
CP104	<0.1	<0.1	<0.1	<0.1	0.2	0.2	4.0	4.0	<1	<1	19.8	19.8	<0.1	ND	<0.1	<0.1	-0.32	60	Dry	16.35	
WS102	<0.1	<0.1	<0.1	<0.1	0.4	0.4	3.0	3.0	<1	<1	19.9	19.9	<0.1	ND	<0.1	<0.1	-0.18	60	Dry	5.05	
WS103	<0.1	<0.1	<0.1	<0.1	0.1	0.1	3.0	3.0	<1	<1	19.5	19.5	<0.1	ND	<0.1	<0.1	-0.21	60	Dry	2.09	
WS104	<0.1	<0.1	<0.1	<0.1	0.7	0.7	6.0	6.0	1.0	1.0	19.2	19.2	<0.1	ND	<0.1	<0.1	-0.28	60	Dry	5.10	

ND - Not detected

NR - Not recorded

NA - Not applicable

METEOROLOGICAL AND SITE INFORMATION:

(Select correct box with X or enter data, as applicable)

State of ground:

X

Dry

Moist

Wet

Snow

Frozen

Wind:

X

Calm

Light

Moderate

Strong

Cloud cover:

None

Slight

X

Cloudy

Overcast

Precipitation:

X

None

Slight

Moderate

Heavy

Time monitoring performed:

10:00

Start

10:14

End

Barometric pressure (mbar):

1014

Start

End

Pressure trend (daily):

Falling

Steady

X

Rising

Air Temperature (Deg C):

8

Before

11

After

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter:

G507923

Gas Range:

CH₄

0 to 100%

CO₄

0 to 100%

O₂

0 to 25%

Gas Flow Range:

+100 / -50 l/hour

Differential Presure:

(+/-) 1000 Pa

Ambient Air Check:

CH₄

0

CO₂

0.1

O₂

20.9

VISIT NUMBER: 4 OF 4

DATE: 2025-04-16

OPERATOR: WILL MILBURN

	GAS CONCENTRATIONS												VOLATILES		FLOW DATA				WELL AND WATER DATA		COMMENTS
Monitoring Point	Methane (% v/v)		%LEL		Carbon dioxide (% v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (% v/v)		PID Peak (ppm)	Product Thickness (mm)	Flow rate (l/hr)		Differential Borehole Pressure (Pa)	Time for flow to equalise (secs)	Water Level (mbgl)	Depth of well (m)	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min.	Steady			Peak	Steady					
CP101	<0.1	<0.1	<0.1	<0.1	0.2	0.2	<1	<1	<1	<1	20.3	20.3	<0.1	ND	<0.1	<0.1	-0.14	60	Dry	16.22	
CP102	<0.1	<0.1	<0.1	<0.1	0.9	0.9	2.0	2.0	<1	<1	19.7	19.7	<0.1	ND	<0.1	<0.1	0.70	60	Dry	16.39	
CP104	<0.1	<0.1	<0.1	<0.1	0.2	0.2	<1	<1	<1	<1	20.4	20.4	<0.1	ND	<0.1	<0.1	-0.05	60	Dry	16.35	
WS102	<0.1	<0.1	<0.1	<0.1	0.4	0.4	<1	<1	<1	<1	20.4	20.4	<0.1	ND	<0.1	<0.1	-0.21	60	Dry	5.05	
WS103	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<1	<1	<1	<1	20.5	20.5	<0.1	ND	<0.1	<0.1	-0.11	60	Dry	2.09	
WS104	<0.1	<0.1	<0.1	<0.1	1.1	1.1	2.0	2.0	<1	<1	18.3	18.3	<0.1	ND	<0.1	<0.1	-0.11	60	Dry	5.10	

ND - Not detected

NR - Not recorded

NA - Not applicable

METEOROLOGICAL AND SITE INFORMATION:

(Select correct box with X or enter data, as applicable)

State of ground:

DryMoist

X

WetSnowFrozen

Wind:

CalmLight

X

ModerateStrong

Cloud cover:

None

X

SlightCloudyOvercast

Precipitation:

X

NoneSlightModerateHeavy

Time monitoring performed:

09:20

StartEnd

10:30

Barometric pressure (mbar):

993

StartEnd

993

Pressure trend (daily):

FallingSteady

X

Rising

Air Temperature (Deg C):

10

BeforeAfter

12

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter:

Gas Range:

CH₄

0 to 100%

CO₄

0 to 100%

O₂

0 to 25%

Gas Flow Range:

+100 / -50 l/hour

Differential Presure:

(+/-) 1000 Pa

Ambient Air Check:

CH₄

0.0

CO₂

0.1

O₂

20.9



Page 4 of 4

5/6/2025, 8:57:15 AM UTC

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VISIT NUMBER: 2 OF 4

DATE: 2025-04-02

OPERATOR: WILL MILBURN

	GAS CONCENTRATIONS												VOLATILES		FLOW DATA				WELL AND WATER DATA		COMMENTS
Monitoring Point	Methane (% v/v)		%LEL		Carbon dioxide (% v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (% v/v)		PID Peak (ppm)	Product Thickness (mm)	Flow rate (l/hr)		Differential Borehole Pressure (Pa)	Time for flow to equalise (secs)	Water Level (mbgl)	Depth of well (m)	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min.	Steady			Peak	Steady					
CP101	0.1	0.1	2.0	2.0	1.0	1.0	<1	<1	<1	<1	18.7	18.7	<0.1	ND	<0.1	<0.1	-0.12	60	Dry	16.22	
CP102	0.1	0.1	2.0	2.0	0.7	0.7	<1	<1	<1	<1	19.8	19.8	<0.1	ND	<0.1	<0.1	-0.19	60	Dry	16.39	
CP104	0.1	0.1	2.0	2.0	0.2	0.2	<1	<1	<1	<1	20.8	20.8	<0.1	ND	<0.1	<0.1	-0.33	60	Dry	16.35	
WS102	0.1	0.1	2.0	2.0	0.2	0.1	<1	<1	<1	<1	20.7	20.8	<0.1	ND	<0.1	<0.1	-0.25	60	Dry	5.05	
WS103	0.1	0.1	2.0	2.0	0.1	0.1	<1	<1	<1	<1	20.9	20.9	<0.1	ND	<0.1	<0.1	-0.23	60	Dry	2.09	
WS104	0.1	0.1	2.0	2.0	1.1	1.1	<1	<1	<1	<1	19.2	19.2	<0.1	ND	<0.1	<0.1	-0.21	60	Dry	5.10	

ND - Not detected

NR - Not recorded

NA - Not applicable

METEOROLOGICAL AND SITE INFORMATION:

(Select correct box with X or enter data, as applicable)

State of ground:

X

Dry

Moist

Wet

Snow

Frozen

Wind:

Calm

Light

X

Moderate

Strong

Cloud cover:

None

X

Slight

Cloudy

Overcast

Precipitation:

X

None

Slight

Moderate

Heavy

Time monitoring performed:

08:20

Start

09:00

End

Barometric pressure (mbar):

1017

Start

1017

End

Pressure trend (daily):

X

Falling

Steady

Rising

Air Temperature (Deg C):

10

Before

12

After

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter:

Gas Range:

CH₄

0 to 100%

CO₄

0 to 100%

O₂

0 to 25%

Gas Flow Range:

+100 / -50 l/hour

Differential Presure:

(+/-) 1000 Pa

Ambient Air Check:

CH₄

0.0

CO₂

0.1

O₂

20.9



Page 2 of 4

5/6/2025, 8:57:15 AM UTC

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VISIT NUMBER: 3 OF 4

DATE: 2025-04-11

OPERATOR: WILL MILBURN

	GAS CONCENTRATIONS												VOLATILES		FLOW DATA				WELL AND WATER DATA		COMMENTS
Monitoring Point	Methane (% v/v)		%LEL		Carbon dioxide (% v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (% v/v)		PID Peak (ppm)	Product Thickness (mm)	Flow rate (l/hr)		Differential Borehole Pressure (Pa)	Time for flow to equalise (secs)	Water Level (mbgl)	Depth of well (m)	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min.	Steady			Peak	Steady					
CP101	<0.1	<0.1	<0.1	<0.1	1.4	1.4	<1	<1	<1	<1	18.8	18.8	<0.1	ND	<0.1	<0.1	-0.11	60	Dry	16.22	
CP102	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	Demolition works covering area
CP104	<0.1	<0.1	<0.1	<0.1	0.2	0.2	<1	<1	<1	<1	20.6	20.6	<0.1	ND	<0.1	<0.1	-0.39	60	Dry	16.35	
WS102	<0.1	<0.1	<0.1	<0.1	0.2	0.1	<1	<1	<1	<1	20.8	20.8	<0.1	ND	<0.1	<0.1	-0.23	60	Dry	5.05	
WS103	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<1	<1	<1	<1	20.6	20.6	<0.1	ND	<0.1	<0.1	-0.39	60	Dry	2.09	
WS104	<0.1	<0.1	<0.1	<0.1	0.8	0.8	<1	<1	<1	<1	19.5	19.5	<0.1	ND	<0.1	<0.1	-0.23	60	Dry	5.10	

ND - Not detected

NR - Not recorded

NA - Not applicable

METEOROLOGICAL AND SITE INFORMATION:

(Select correct box with X or enter data, as applicable)

State of ground:

X

Dry

Moist

Wet

Snow

Frozen

Wind:

Calm

X

Light

Moderate

Strong

Cloud cover:

None

X

Slight

Cloudy

Overcast

Precipitation:

X

None

Slight

Moderate

Heavy

Time monitoring performed:

08:00

Start

09:00

End

Barometric pressure (mbar):

1017

Start

1017

End

Pressure trend (daily):

X

Falling

Steady

Rising

Air Temperature (Deg C):

8

Before

10

After

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter:

Gas Range:

CH₄

0 to 100%

CO₄

0 to 100%

O₂

0 to 25%

Gas Flow Range:

+100 / -50 l/hour

Differential Presure:

(+/-) 1000 Pa

Ambient Air Check:

CH₄

0.0

CO₂

0.1

O₂

20.9



Page 3 of 4

5/6/2025, 8:57:15 AM UTC

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Annex E: Laboratory Geotechnical Data

GEOLABS Limited
 Bucknalls Lane
 Garston
 Watford
 Hertfordshire
 WD25 9XX
 Tel: +44(0) 1923 892 190

email: admin@geolabs.co.uk
 web: www.geolabs.co.uk

TRC Companies Limited

WorkLife
 20 Red Lion Street
 London
 WC1R 4PS

14 April 2025

Report No : GEO/42260/01

Page 1 of 1

For the attention of Mr J Entwistle

Our ref **GEO / 42260**
 Your ref **631621**
 Order ref **631621**

Date samples received 27/03/2025
 Date written instructions received 27/03/2025
 Date testing commenced 28/03/2025
Date of sample disposal 12/05/2025

Project **STARWOOD HOUSE, LETCHWORTH**

Further to your instructions we have pleasure in enclosing the results of the tests you requested in the attached figures.

LABORATORY TEST REPORT

Item No	Test Quantity	Description
1	~	Liquid & Plastic Limits Summary
~	5	Water Content
~	5	Liquid & Plastic Limits
2	~	Geochemical Test Summary
~	5	BRE SD1 Suite A - Natural ground
~	4	BRE SD1 Suite C - Brownfield
~	5	BRE SD1 Suite D - Brownfield + pyrite
3	6	Particle Size Distribution
4	2	Split and describe with Photographs

Any opinions or interpretations expressed herein are outside the scope of UKAS accreditation. All results contained in this report are provisional and may be subject to change unless signed by an approved signatory. The results contained in this report relate only to samples received in the laboratory and are tested 'as received' unless otherwise stated. This report should not be reproduced, except in full, without the written approval of the laboratory. The results reported are applicable only to the test items received by the laboratory.

All the necessary data required by the documented test procedures has been recorded and will be stored for a period of not less than 6 years. This data will be issued to yourselves at your request. All samples will be disposed of after the date shown above. Written confirmation will be required to retain the samples beyond this period and a storage charge may be applied.

We trust that the above meets your requirements and should you require any further information or assistance, please do not hesitate to contact us.

Yours faithfully
 on behalf of **GEOLABS Limited**

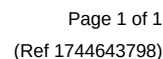


S Burke
 Senior Technician

Test Type:	2 - 4 point 80g / 30° fall cone method.	Sample condition:	1 - As Received 2 - Air Dried 3 - Washed & Air Dried
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S Burke - Senior Technician
14/04/2025

**STARWOOD HOUSE, LETCHWORTH
631621**



GL Version 22.220908-1125

Tested by SB Checked and Approved by  S Burke - Senior Technician 14/04/2025	Project Number: GEO / 42260 Project Name: STARWOOD HOUSE, LETCHWORTH 631621	
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SUMMARY OF CHEMICAL TESTS ON SOIL

Location	Depth m	Sample Ref	Sample Type	pH Value	Total Acid Soluble Sulphate as SO ₄ %	Water Soluble Sulphate as SO ₄ 2:1 Water:Soil Extract mg/l	Total Sulphur %	Water Soluble Chloride mg/l	Water Soluble Nitrate mg/l	Magnesium mg/l	Water Soluble Nitrate (2:1) as NO ₃ mg/kg	Mass Loss on Ignition %	Carbonate Content %
CP101	0.30-0.50		B	10.5	0.41	630	0.15	23	<5.0	<2.5	-	-	-
CP101	4.80		D	9.1	-	34	-	-	-	-	-	-	-
CP101	11.00-11.40		B	8.4	-	16	-	-	-	-	-	-	-
CP102	1.50-1.80		B	10.3	0.13	240	-	65	-	<2.5	6.3	-	-
CP102	14.50		D	9.5	-	29	-	-	-	-	-	-	-
CP104	0.20		D	12.2	0.57	34	0.21	31	<5.0	<2.5	-	-	-
CP104	0.40		D	12.0	0.36	33	-	52	-	<2.5	4.2	-	-
CP104	3.70		D	9.0	-	66	-	-	-	-	-	-	-
WS103	0.50		B	10.5	0.15	100	0.050	85	<5.0	<2.5	-	-	-
WS103	1.00		B	8.8	0.065	54	-	59	-	<2.5	6.0	-	-
WS104	0.60		B	9.3	0.20	180	0.079	6.9	<5.0	<2.5	-	-	-
WS104	3.70		D	8.1	0.14	490	-	570	-	15	23	-	-
WS109	0.10		B	8.8	0.041	19	0.025	1.8	<5.0	<2.5	-	-	-
WS109	4.00		B	8.2	-	25	-	-	-	-	-	-	-

Tested by i2 Analytical : MCERTS / UKAS No 4041

Checked and Approved by:



J Sturges - Operations Manager
23/04/2025

Project Number:

GEO / 42260

Project Name:

**STARWOOD HOUSE, LETCHWORTH
631621**

GEOLABS®

Tested by i2 Analytical : MCERTS / UKAS No 4041

GEOLABS

PARTICLE SIZE DISTRIBUTION

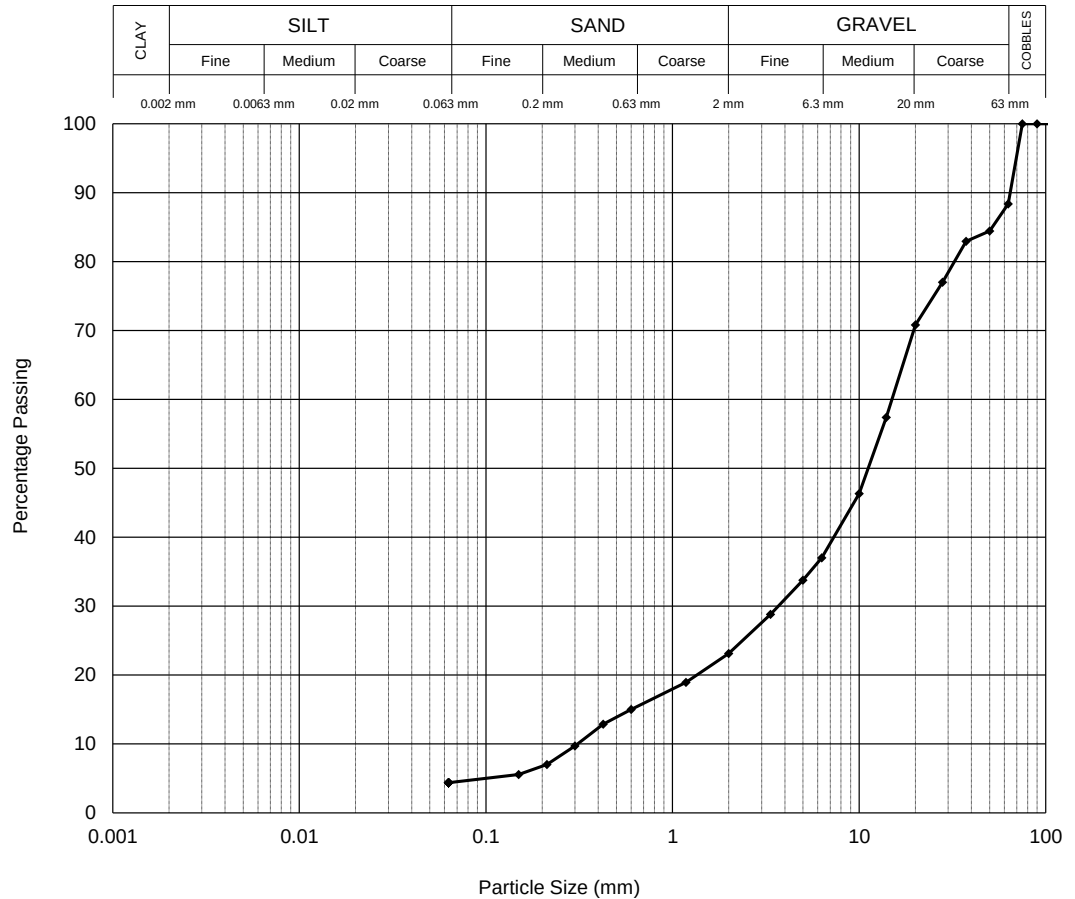
Location CP101
 Sample Depth 0.30-0.50 m
 Sample Type B

Description

Brown sandy GRAVEL with occasional cobbles.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	88
50.0 mm	84
37.5 mm	83
28.0 mm	77
20.0 mm	71
14.0 mm	57
10.0 mm	46
6.30 mm	37
5.00 mm	34
3.35 mm	29
2.00 mm	23
1.18 mm	19
600 µm	15
425 µm	13
300 µm	10
212 µm	7
150 µm	6
63 µm	4



Particle Proportions	
Cobbles	11.6
Gravel	65.2
Sand	18.8
Silt & Clay	4.4

Tested by TH
 Checked and Approved by

S Burke

S Burke - Senior Technician
 14/04/2025

Project Number:

GEO / 42260

Project Name:

STARWOOD HOUSE, LETCHWORTH
 631621



PARTICLE SIZE DISTRIBUTION

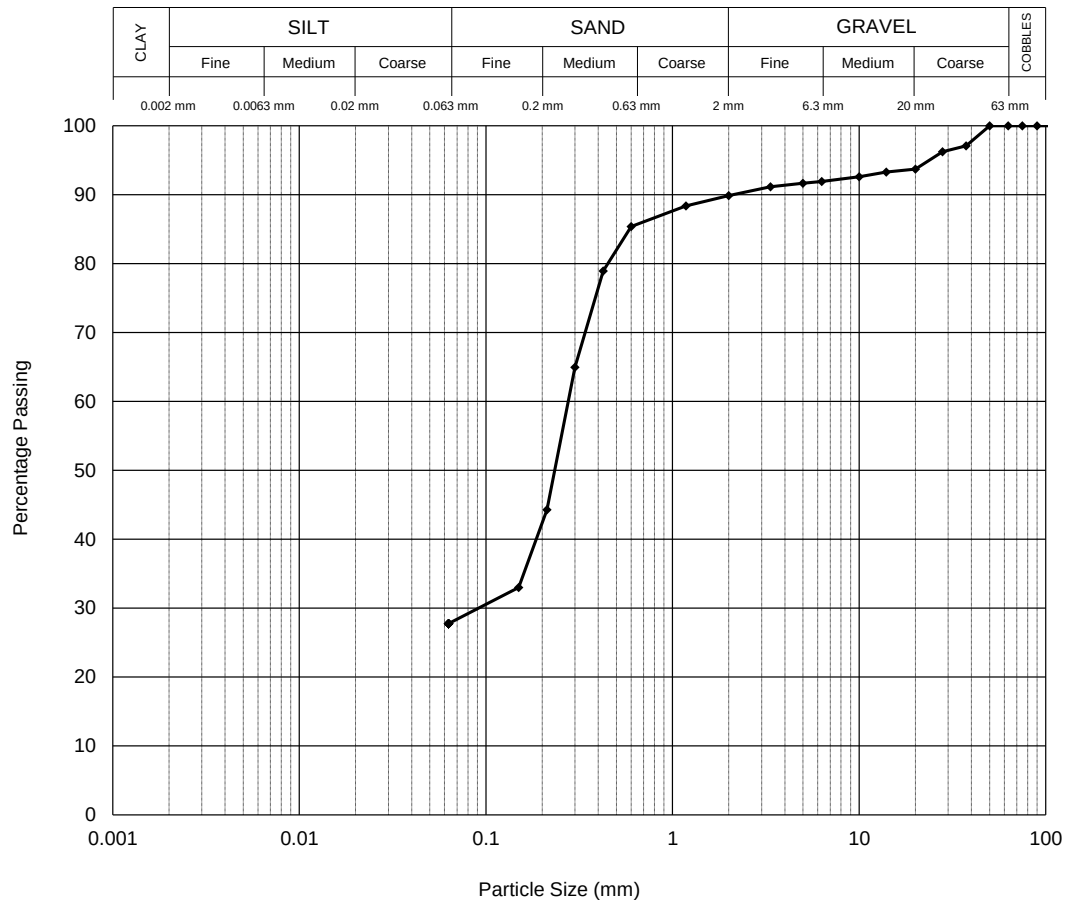
Location CP101
Sample Depth 1.00-1.20 m
Sample Type B

Description

Orange brown slightly gravelly clayey silty SAND.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	97
28.0 mm	96
20.0 mm	94
14.0 mm	93
10.0 mm	93
6.30 mm	92
5.00 mm	92
3.35 mm	91
2.00 mm	90
1.18 mm	88
600 µm	85
425 µm	79
300 µm	65
212 µm	44
150 µm	33
63 µm	28



Particle Proportions	
Cobbles	0.0
Gravel	10.1
Sand	62.1
Silt & Clay	27.8

Tested by TH
Checked and Approved by

S Burke

S Burke - Senior Technician
14/04/2025

Project Number:

GEO / 42260

Project Name:

STARWOOD HOUSE, LETCHWORTH
631621



PARTICLE SIZE DISTRIBUTION

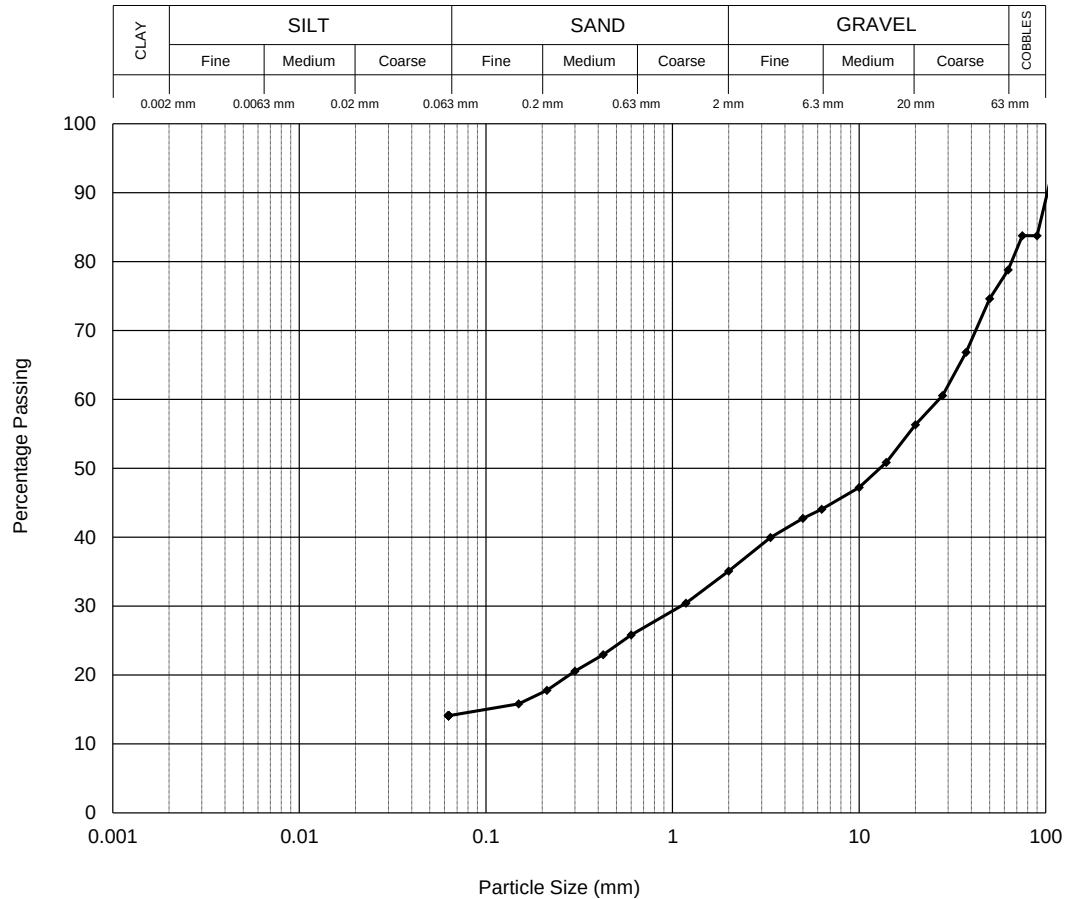
Location CP102
Sample Depth 1.00-1.40 m
Sample Type B

Description

Brown clayey silty very sandy GRAVEL with occasional cobbles.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	84
75.0 mm	84
63.0 mm	79
50.0 mm	75
37.5 mm	67
28.0 mm	61
20.0 mm	56
14.0 mm	51
10.0 mm	47
6.30 mm	44
5.00 mm	43
3.35 mm	40
2.00 mm	35
1.18 mm	30
600 µm	26
425 µm	23
300 µm	21
212 µm	18
150 µm	16
63 µm	14



Particle Proportions	
Cobbles	21.2
Gravel	43.7
Sand	21.0
Silt & Clay	14.1

Tested by TH
Checked and Approved by

S Burke

S Burke - Senior Technician
14/04/2025

Project Number:

GEO / 42260

Project Name:

STARWOOD HOUSE, LETCHWORTH
631621



PARTICLE SIZE DISTRIBUTION

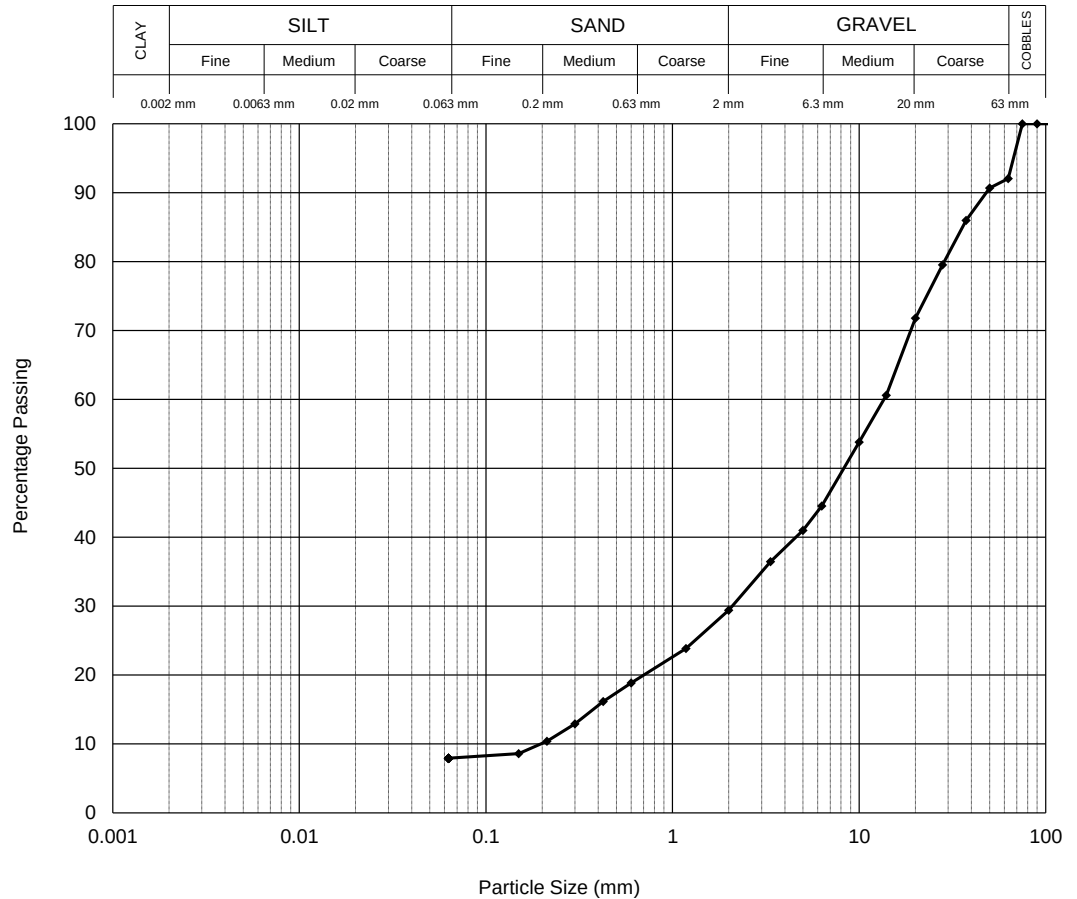
Location WS103
 Sample Depth 0.50 m
 Sample Type B

Description

Brown clayey very sandy GRAVEL with rare cobbles.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	92
50.0 mm	91
37.5 mm	86
28.0 mm	80
20.0 mm	72
14.0 mm	61
10.0 mm	54
6.30 mm	45
5.00 mm	41
3.35 mm	36
2.00 mm	29
1.18 mm	24
600 µm	19
425 µm	16
300 µm	13
212 µm	10
150 µm	9
63 µm	8



Particle Proportions	
Cobbles	8.0
Gravel	62.6
Sand	21.5
Silt & Clay	7.9

Tested by MJ
 Checked and Approved by

S Burke

S Burke - Senior Technician
 14/04/2025

Project Number:

GEO / 42260

Project Name:

STARWOOD HOUSE, LETCHWORTH
 631621



PARTICLE SIZE DISTRIBUTION

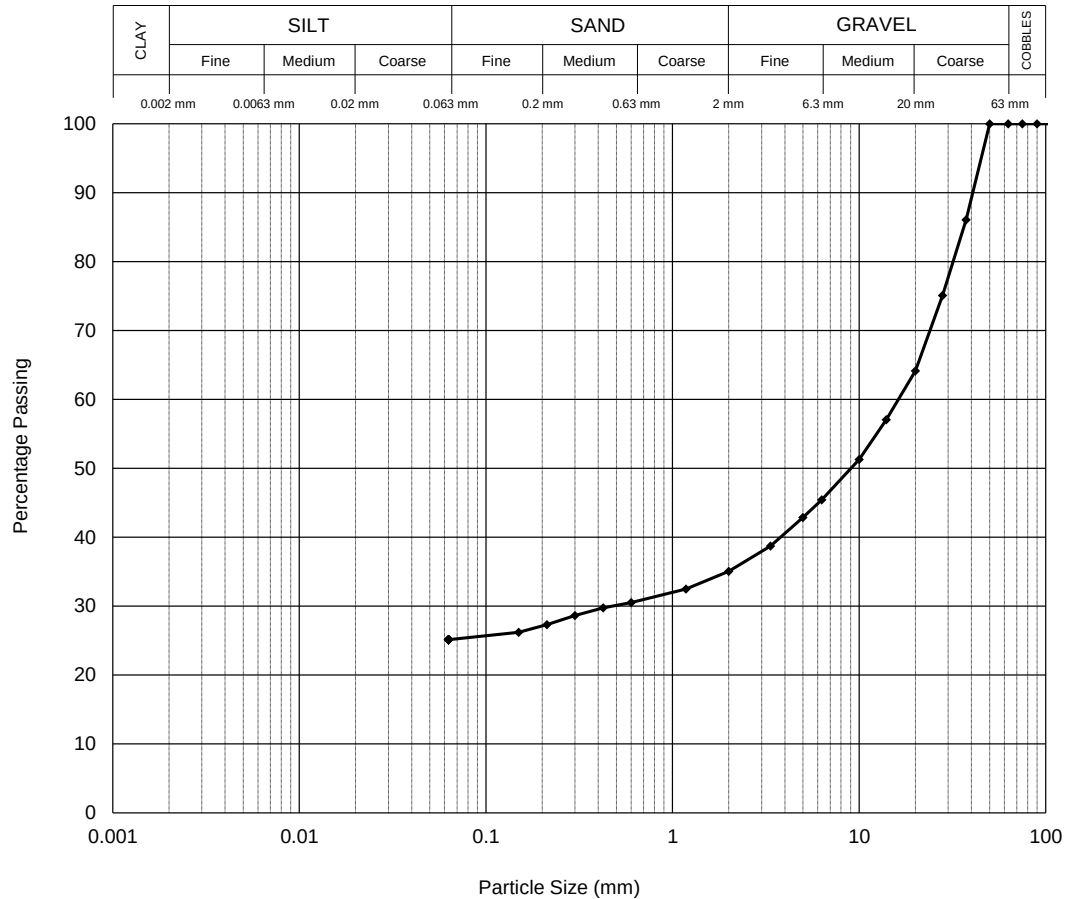
Location WS103
Sample Depth 1.00 m
Sample Type B

Description

White gravel sized CHALK in a structureless chalk matrix.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	86
28.0 mm	75
20.0 mm	64
14.0 mm	57
10.0 mm	51
6.30 mm	45
5.00 mm	43
3.35 mm	39
2.00 mm	35
1.18 mm	32
600 µm	31
425 µm	30
300 µm	29
212 µm	27
150 µm	26
63 µm	25



Particle Proportions	
Cobbles	0.0
Gravel	65.0
Sand	9.9
Silt & Clay	25.1

Tested by MJ
Checked and Approved by

S Burke

S Burke - Senior Technician
14/04/2025

Project Number:

GEO / 42260

Project Name:

**STARWOOD HOUSE, LETCHWORTH
631621**



PARTICLE SIZE DISTRIBUTION

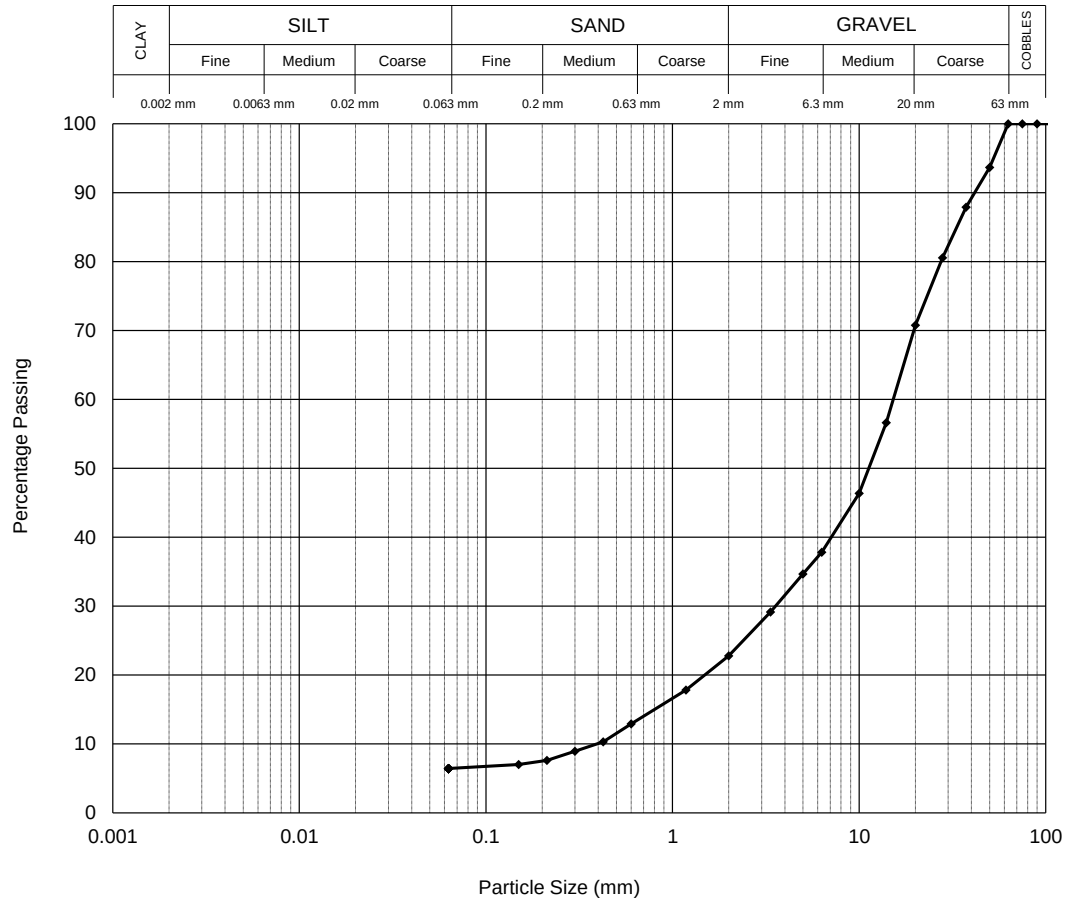
Location WS104
Sample Depth 0.60 m
Sample Type B

Description

Brown clayey silty sandy GRAVEL.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	94
37.5 mm	88
28.0 mm	81
20.0 mm	71
14.0 mm	57
10.0 mm	46
6.30 mm	38
5.00 mm	35
3.35 mm	29
2.00 mm	23
1.18 mm	18
600 µm	13
425 µm	10
300 µm	9
212 µm	8
150 µm	7
63 µm	6



Particle Proportions	
Cobbles	0.0
Gravel	77.2
Sand	16.4
Silt & Clay	6.4

Tested by MJ
Checked and Approved by

S Burke

S Burke - Senior Technician
14/04/2025

Project Number:

GEO / 42260

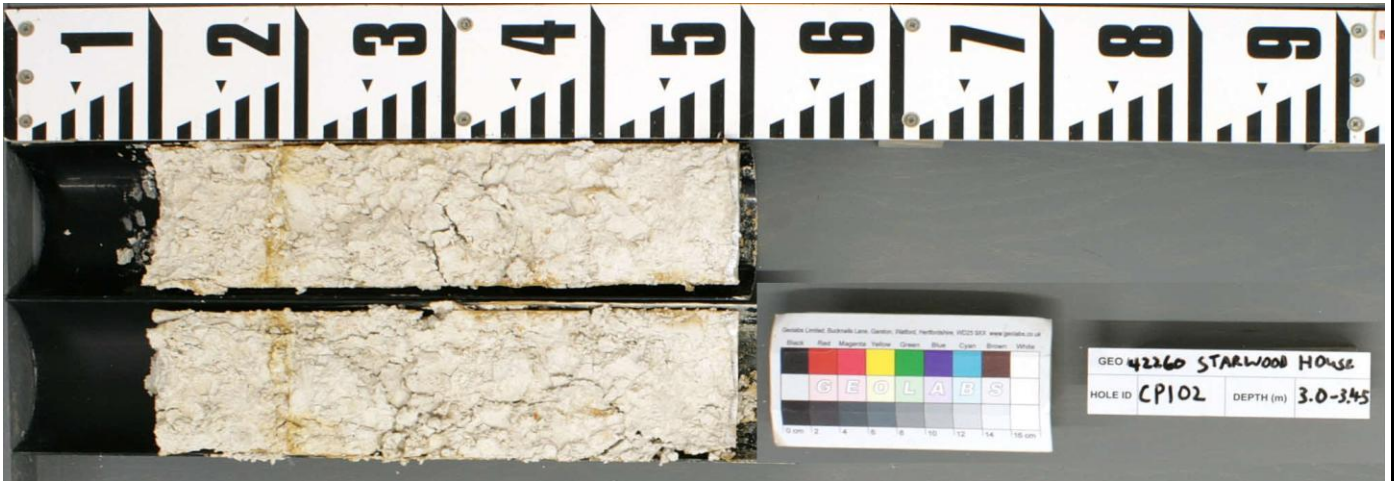
Project Name:

STARWOOD HOUSE, LETCHWORTH
631621



SAMPLE DESCRIPTION

BH / TP No	CP102	Sample ref.		Sample depth (m)	3.00 - 3.45	Sample type	U
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Depth (m)	Visual description	Depth (m)	Lab Test
3.00	3.00-3.45m: Structureless CHALK composed of cream with rare orange staining, slightly gravelly sandy clayey SILT. Gravel is very weak to weak, low density, white and subangular to subrounded with occasional black speckling (Grade Dm).		
3.05			
3.10			
3.15			
3.20			
3.25			
3.30			
3.35			
3.40			
3.45			
	END OF SAMPLE (3.45m)		

Comments No suitable chalk lump to test for Saturation Moisture Content (SMC) - Test Restricted.

Key

Processed by CV/HB

Checked and Approved by

John
John - Laboratory Manager
10/04/2025

Project Number:

GEO / 42260

Project Name:

STARWOOD HOUSE, LETCHWORTH

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SAMPLE DESCRIPTION

BH / TP No	CP104	Sample ref.	Sample depth (m)	5.00 - 5.45	Sample type	U
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Depth (m)	Visual description	Depth (m)	Lab Test
5.00	5.00-5.45m: Structureless CHALK composed of slightly sandy silty, subangular to subrounded GRAVEL. Clasts are very weak and weak, low density, white with occasional black speckling. Matrix is cream with occasional orange staining (Grade Dc).	5.00-5.18	SMC
5.05			
5.10			
5.15			
5.20			
5.25			
5.30			
5.35			
5.40			
5.45			
	END OF SAMPLE (5.45m)		

Comments

Key SMC: Saturation Moisture Content

Processed by CV/HB

Checked and Approved by

Jabuz
Tablos - Laboratory Manager
10/04/2025

Project Number:

GEO / 42260

Project Name:

STARWOOD HOUSE, LETCHWORTH

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Annex F: Laboratory Chemical Data

TRC Companies Ltd
20 Red Lion Street, London
WC1R 4PQ

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

e: lsadowski@trccompanies.com

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

Analytical Report Number : 25-014623

Project / Site name:	Starwood House, Letchworth	Samples received on:	24/03/2025
Your job number:	631621	Samples instructed on/ Analysis started on:	24/03/2025
Your order number:	631621	Analysis completed by:	03/04/2025
Report Issue Number:	1	Report issued on:	03/04/2025
Samples Analysed:	17 soil samples		



Signed: _____

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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

Analytical Report Number: 25-014623
Project / Site name: Starwood House, Letchworth
Your Order No: 631621

Lab Sample Number	491130	491131	491132	491133	491134
Sample Reference	CP101	CP101	CP102	CP102	CP102
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.40	0.70	0.40	0.80	1.90
Date Sampled	17/03/2025	17/03/2025	17/03/2025	17/03/2025	20/03/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	50.6	15.6	50.4	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	6.3	6.3	5.7	18	22
Total mass of sample received	kg	0.1	NONE	0.7	0.7	0.7	0.7	0.7

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	-	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	WEM	-	WEM	WEM	-
Analysis completed	N/A	N/A	N/A	31/03/2025	-	31/03/2025	31/03/2025	-
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-	-	-	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	10.9	8.8	10.9	10	10.1
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.12	< 0.05	0.06	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.11	< 0.05	0.16	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.68	< 0.05	0.4	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.69	< 0.05	0.44	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	4.1	< 0.05	3.1	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	1.3	< 0.05	1.2	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	7.5	0.14	8	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	6.3	0.13	8	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.7	< 0.05	3.7	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	2.7	< 0.05	4	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	3.1	0.06	5	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	1.4	< 0.05	2.5	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.8	< 0.05	4.9	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.4	< 0.05	2.3	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.29	< 0.05	0.51	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.5	< 0.05	2.4	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	36.5	< 0.80	46.6	< 0.80	< 0.80
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Analytical Report Number: 25-014623
Project / Site name: Starwood House, Letchworth
Your Order No: 631621

Lab Sample Number	491130				491131	491132	491133	491134
Sample Reference	CP101				CP101	CP102	CP102	CP102
Sample Number	None Supplied				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A				N/A	N/A	N/A	N/A
Depth (m)	0.40				0.70	0.40	0.80	1.90
Date Sampled	17/03/2025				17/03/2025	17/03/2025	17/03/2025	20/03/2025
Time Taken	None Supplied				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	16	9.8	2.4	1.2
Boron (water soluble)	mg/kg	0.2	MCERTS	2.6	0.7	1.9	0.7	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	< 0.2	0.4	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	21	25	52	3.2	1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	25	52	3.3	1.3
Copper (aqua regia extractable)	mg/kg	1	MCERTS	18	21	16	4.8	13
Lead (aqua regia extractable)	mg/kg	1	MCERTS	25	9.3	21	3.1	1.3
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	16	21	14	3.4	2
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	110	45	68	15	12

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	7.1	< 2.0	17	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	12	< 8.0	33	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	76	< 8.0	130	< 8.0	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	95	< 10	180	< 10	< 10

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	3.3	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	18	< 2.0	8.8	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	44	< 10	58	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	200	< 10	350	< 10	< 10
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	270	< 10	420	< 10	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

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

Analytical Report Number: 25-014623
Project / Site name: Starwood House, Letchworth
Your Order No: 631621

Lab Sample Number	491135	491136	491137	491138	491139
Sample Reference	CP103	CP104	CP104	WS102	WS102
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.40	0.20	1.80	0.10	1.60
Date Sampled	17/03/2025	19/03/2025	19/03/2025	19/03/2025	19/03/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	20.8	< 0.1	27	< 0.1
Moisture Content	%	0.01	NONE	13	3.3	21	14	23
Total mass of sample received	kg	0.1	NONE	0.7	0.7	0.7	0.7	0.7

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	-	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	WEM	WEM	-	WEM	-
Analysis completed	N/A	N/A	N/A	31/03/2025	31/03/2025	-	31/03/2025	-
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-	-	-	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	10.4	12.5	9.3	8.6	9.3
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.11	0.07	< 0.05	0.6	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.14	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.54	0.47	< 0.05	1.4	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.53	0.4	< 0.05	1.2	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.24	0.25	< 0.05	0.56	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.26	0.26	< 0.05	0.57	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.36	0.23	< 0.05	0.74	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.15	0.11	< 0.05	0.29	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.31	0.19	< 0.05	0.58	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.16	0.08	< 0.05	0.25	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.06	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.17	0.07	< 0.05	0.25	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	2.83	2.12	< 0.80	6.63	< 0.80
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Analytical Report Number: 25-014623
Project / Site name: Starwood House, Letchworth
Your Order No: 631621

Lab Sample Number	491135	491136	491137	491138	491139
Sample Reference	CP103	CP104	CP104	WS102	WS102
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.40	0.20	1.80	0.10	1.60
Date Sampled	17/03/2025	19/03/2025	19/03/2025	19/03/2025	19/03/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.3	13	1.9	10	< 1.0
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	1.1	0.6	1.3	0.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	< 0.2	< 0.2	0.5	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	11	18	2.7	16	< 1.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	11	18	2.8	16	< 1.0
Copper (aqua regia extractable)	mg/kg	1	MCERTS	7.5	9.2	4.1	20	4.1
Lead (aqua regia extractable)	mg/kg	1	MCERTS	12	7.7	3.9	40	1.5
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	9.3	13	2.9	13	1.7
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	35	42	17	79	13

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

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

Analytical Report Number: 25-014623
Project / Site name: Starwood House, Letchworth
Your Order No: 631621

Lab Sample Number	491140	491141	491142	491143	491144
Sample Reference	WS104	WS104	WS108	WS109	WS109
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.50	2.80	0.50	0.30	3.50
Date Sampled	17/03/2025	19/03/2025	17/03/2025	18/03/2025	18/03/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	62.2	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	9.4	22	14	13	21
Total mass of sample received	kg	0.1	NONE	0.7	0.7	0.7	0.7	0.7

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Detected	-	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	WEM	-	WEM	WEM	-
Analysis completed	N/A	N/A	N/A	31/03/2025	-	31/03/2025	31/03/2025	-
Actinolite detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	Detected	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	Detected	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	0.002	-	-	-	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	Loose Fibres	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	9.1	8.6	9	8.2	9.1
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.12	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.27	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.23	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	2	< 0.05	0.2	0.1	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.7	< 0.05	0.08	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	5.9	< 0.05	0.67	0.33	< 0.05
Pyrene	mg/kg	0.05	MCERTS	6	< 0.05	0.6	0.31	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.7	< 0.05	0.27	0.16	< 0.05
Chrysene	mg/kg	0.05	MCERTS	2.9	< 0.05	0.29	0.18	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	4.3	< 0.05	0.31	0.25	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	1.8	< 0.05	0.19	0.08	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	3.8	< 0.05	0.32	0.21	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.8	< 0.05	0.16	0.11	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.39	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2	< 0.05	0.19	0.13	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	34.8	< 0.80	3.27	1.86	< 0.80
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Analytical Report Number: 25-014623

Project / Site name: Starwood House, Letchworth

Your Order No: 631621

Lab Sample Number	491140	491141	491142	491143	491144
Sample Reference	WS104	WS104	WS108	WS109	WS109
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.50	2.80	0.50	0.30	3.50
Date Sampled	17/03/2025	19/03/2025	17/03/2025	18/03/2025	18/03/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	< 1.0	5.2	14	< 1.0
Boron (water soluble)	mg/kg	0.2	MCERTS	1.4	0.7	0.8	0.8	0.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.8	< 0.2	0.3	0.7	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	52	< 1.0	9.7	30	< 1.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	52	1	9.7	30	< 1.0
Copper (aqua regia extractable)	mg/kg	1	MCERTS	40	3.4	7.5	25	3.5
Lead (aqua regia extractable)	mg/kg	1	MCERTS	130	1.2	13	51	1.3
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	3.6	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	32	1.8	7.7	20	1.2
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	260	11	38	110	11

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	9.3	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	22	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	100	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	130	< 10	< 10	< 10	< 10

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	6.1	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	40	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	230	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	280	< 10	< 10	< 10	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

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

Analytical Report Number: 25-014623

Project / Site name: Starwood House, Letchworth

Your Order No: 631621

Lab Sample Number				491145	491146
Sample Reference				WS103	WS103
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				0.40	3.80
Date Sampled				19/03/2025	19/03/2025
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	37.6	< 0.1
Moisture Content	%	0.01	NONE	7.2	21
Total mass of sample received	kg	0.1	NONE	0.7	0.7

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Detected	-
Asbestos Analyst ID	N/A	N/A	N/A	WEM	-
Analysis completed	N/A	N/A	N/A	31/03/2025	-
Actinolite detected	Type	N/A	ISO 17025	Not-detected	-
Amosite detected	Type	N/A	ISO 17025	Not-detected	-
Anthophyllite detected	Type	N/A	ISO 17025	Not-detected	-
Chrysotile detected	Type	N/A	ISO 17025	Detected	-
Crocidolite detected	Type	N/A	ISO 17025	Not-detected	-
Tremolite detected	Type	N/A	ISO 17025	Not-detected	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	0.003	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	Loose Fibres	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	10.9	9.1
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.1	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.06	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.08	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	1.1	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.2	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	2.1	0.15
Pyrene	mg/kg	0.05	MCERTS	2	0.16
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.97	0.06
Chrysene	mg/kg	0.05	MCERTS	1.3	0.08
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	1.4	0.17
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.66	0.07
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.3	0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.61	0.12
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.14	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.73	0.13

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	12.7	1.04
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Analytical Report Number: 25-014623
Project / Site name: Starwood House, Letchworth
Your Order No: 631621

Lab Sample Number	491145	491146
Sample Reference	WS103	WS103
Sample Number	None Supplied	None Supplied
Water Matrix	N/A	N/A
Depth (m)	0.40	3.80
Date Sampled	19/03/2025	19/03/2025
Time Taken	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection
		Test Accreditation Status

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	1.5
Boron (water soluble)	mg/kg	0.2	MCERTS	1.8	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	0.4
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	31	4.1
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	32	4.2
Copper (aqua regia extractable)	mg/kg	1	MCERTS	31	21
Lead (aqua regia extractable)	mg/kg	1	MCERTS	72	36
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25	3.2
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	140	82

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	4.5	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	19	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	140	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	160	< 10

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	12	< 10
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	120	< 10
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	130	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0

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



4041



Analytical Report Number: 25-014623
Project / Site name: Starwood House, Letchworth
Your Order No: 631621

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample	Analysis completed	Analyst ID
491140	WS104	0.50	170	Loose Fibres	Amosite & Chrysotile	0.002	0.002	31/03/2025	WEM
491145	WS103	0.40	169	Loose Fibres	Chrysotile	0.003	0.003	31/03/2025	WEM

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

Analytical Report Number : 25-014623
Project / Site name: Starwood House, Letchworth

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
491130	CP101	None Supplied	0.4	Brown sand with gravel and stones
491131	CP101	None Supplied	0.7	Brown sand with gravel and stones
491132	CP102	None Supplied	0.4	Brown sand with gravel and stones
491133	CP102	None Supplied	0.8	Beige clay and sand with gravel and chalk
491134	CP102	None Supplied	1.9	Beige clay and sand with gravel and chalk
491135	CP103	None Supplied	0.4	Light brown clay and sand with gravel and chalk
491136	CP104	None Supplied	0.2	Light brown sand with gravel and stones
491137	CP104	None Supplied	1.8	Beige clay and sand with gravel and chalk
491138	WS102	None Supplied	0.1	Brown sand with vegetation and stones
491139	WS102	None Supplied	1.6	Beige clay and sand with gravel and chalk
491140	WS104	None Supplied	0.5	Brown sand with glass and gravel
491141	WS104	None Supplied	2.8	Beige clay and sand with gravel and chalk
491142	WS108	None Supplied	0.5	Light brown clay and sand with gravel and chalk
491143	WS109	None Supplied	0.3	Brown loam and clay with gravel and vegetation
491144	WS109	None Supplied	3.5	Beige chalk ¹⁹
491145	WS103	None Supplied	0.4	Brown loam and sand with rubble and brick
491146	WS103	None Supplied	3.8	Beige chalk with gravel ¹⁹

Analytical Report Number : 25-014623

Project / Site name: Starwood House, Letchworth

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references	HSE Report No: 83/1996, HSG 248 (2021), HSG 264 (2012) & SCA Blue Book (draft)	A006B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088-PL	D/W	MCERTS
Chromium III in soil	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080-PL/L130B	W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS

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

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

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

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

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

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

*g - Unaccredited sample matrix.

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Analytical Report Number : 25-014623

Replaces Analytical Report Number: 25-014623, issue no. 1
Additional analysis undertaken.

TRC Leachate Suite added to samples 491130/132 & 136 as per client's request.

Project / Site name:	Starwood House, Letchworth	Samples received on:	24/03/2025
Your job number:	631621	Samples instructed on/ Analysis started on:	24/03/2025
Your order number:	631621	Analysis completed by:	24/04/2025
Report Issue Number:	2	Report issued on:	24/04/2025
Samples Analysed:	17 soil samples - 3 leachate samples		

Signed: 

Rachel Chappell
Key Account Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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

Analytical Report Number: 25-014623
Project / Site name: Starwood House, Letchworth
Your Order No: 631621

Lab Sample Number	491130	491131	491132	491133	491134
Sample Reference	CP101	CP101	CP102	CP102	CP102
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.40	0.70	0.40	0.80	1.90
Date Sampled	17/03/2025	17/03/2025	17/03/2025	17/03/2025	20/03/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	50.6	15.6	50.4	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	6.3	6.3	5.7	18	22
Total mass of sample received	kg	0.1	NONE	0.7	0.7	0.7	0.7	0.7

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	-	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	WEM	-	WEM	WEM	-
Analysis completed	N/A	N/A	N/A	31/03/2025	-	31/03/2025	31/03/2025	-
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-	-	-	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	10.9	8.8	10.9	10	10.1
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.12	< 0.05	0.06	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.11	< 0.05	0.16	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.68	< 0.05	0.4	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.69	< 0.05	0.44	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	4.1	< 0.05	3.1	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	1.3	< 0.05	1.2	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	7.5	0.14	8	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	6.3	0.13	8	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.7	< 0.05	3.7	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	2.7	< 0.05	4	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	3.1	0.06	5	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	1.4	< 0.05	2.5	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.8	< 0.05	4.9	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.4	< 0.05	2.3	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.29	< 0.05	0.51	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.5	< 0.05	2.4	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	36.5	< 0.80	46.6	< 0.80	< 0.80
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Analytical Report Number: 25-014623
 Project / Site name: Starwood House, Letchworth
 Your Order No: 631621

Lab Sample Number	491130	491131	491132	491133	491134
Sample Reference	CP101	CP101	CP102	CP102	CP102
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.40	0.70	0.40	0.80	1.90
Date Sampled	17/03/2025	17/03/2025	17/03/2025	17/03/2025	20/03/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	16	9.8	2.4	1.2
Boron (water soluble)	mg/kg	0.2	MCERTS	2.6	0.7	1.9	0.7	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	< 0.2	0.4	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	21	25	52	3.2	1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	25	52	3.3	1.3
Copper (aqua regia extractable)	mg/kg	1	MCERTS	18	21	16	4.8	13
Lead (aqua regia extractable)	mg/kg	1	MCERTS	25	9.3	21	3.1	1.3
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	16	21	14	3.4	2
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	110	45	68	15	12

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	7.1	< 2.0	17	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	12	< 8.0	33	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	76	< 8.0	130	< 8.0	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	95	< 10	180	< 10	< 10

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	3.3	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	18	< 2.0	8.8	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	44	< 10	58	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	200	< 10	350	< 10	< 10
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	270	< 10	420	< 10	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

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

Analytical Report Number: 25-014623
Project / Site name: Starwood House, Letchworth
Your Order No: 631621

Lab Sample Number	491135	491136	491137	491138	491139
Sample Reference	CP103	CP104	CP104	WS102	WS102
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.40	0.20	1.80	0.10	1.60
Date Sampled	17/03/2025	19/03/2025	19/03/2025	19/03/2025	19/03/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	20.8	< 0.1	27	< 0.1
Moisture Content	%	0.01	NONE	13	3.3	21	14	23
Total mass of sample received	kg	0.1	NONE	0.7	0.7	0.7	0.7	0.7

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	-	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	WEM	WEM	-	WEM	-
Analysis completed	N/A	N/A	N/A	31/03/2025	31/03/2025	-	31/03/2025	-
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-	-	-	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	10.4	12.5	9.3	8.6	9.3
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.11	0.07	< 0.05	0.6	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.14	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.54	0.47	< 0.05	1.4	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.53	0.4	< 0.05	1.2	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.24	0.25	< 0.05	0.56	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.26	0.26	< 0.05	0.57	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.36	0.23	< 0.05	0.74	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.15	0.11	< 0.05	0.29	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.31	0.19	< 0.05	0.58	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.16	0.08	< 0.05	0.25	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.06	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.17	0.07	< 0.05	0.25	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	2.83	2.12	< 0.80	6.63	< 0.80
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Analytical Report Number: 25-014623
 Project / Site name: Starwood House, Letchworth
 Your Order No: 631621

Lab Sample Number	491135	491136	491137	491138	491139
Sample Reference	CP103	CP104	CP104	WS102	WS102
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.40	0.20	1.80	0.10	1.60
Date Sampled	17/03/2025	19/03/2025	19/03/2025	19/03/2025	19/03/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.3	13	1.9	10	< 1.0
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	1.1	0.6	1.3	0.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	< 0.2	< 0.2	0.5	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	11	18	2.7	16	< 1.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	11	18	2.8	16	< 1.0
Copper (aqua regia extractable)	mg/kg	1	MCERTS	7.5	9.2	4.1	20	4.1
Lead (aqua regia extractable)	mg/kg	1	MCERTS	12	7.7	3.9	40	1.5
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	9.3	13	2.9	13	1.7
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	35	42	17	79	13

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

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

Analytical Report Number: 25-014623
Project / Site name: Starwood House, Letchworth
Your Order No: 631621

Lab Sample Number	491140	491141	491142	491143	491144
Sample Reference	WS104	WS104	WS108	WS109	WS109
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.50	2.80	0.50	0.30	3.50
Date Sampled	17/03/2025	19/03/2025	17/03/2025	18/03/2025	18/03/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	62.2	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	9.4	22	14	13	21
Total mass of sample received	kg	0.1	NONE	0.7	0.7	0.7	0.7	0.7

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Detected	-	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	WEM	-	WEM	WEM	-
Analysis completed	N/A	N/A	N/A	31/03/2025	-	31/03/2025	31/03/2025	-
Actinolite detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	Detected	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	Detected	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	0.002	-	-	-	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	Loose Fibres	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	9.1	8.6	9	8.2	9.1
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.12	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.27	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.23	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	2	< 0.05	0.2	0.1	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.7	< 0.05	0.08	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	5.9	< 0.05	0.67	0.33	< 0.05
Pyrene	mg/kg	0.05	MCERTS	6	< 0.05	0.6	0.31	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.7	< 0.05	0.27	0.16	< 0.05
Chrysene	mg/kg	0.05	MCERTS	2.9	< 0.05	0.29	0.18	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	4.3	< 0.05	0.31	0.25	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	1.8	< 0.05	0.19	0.08	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	3.8	< 0.05	0.32	0.21	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.8	< 0.05	0.16	0.11	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.39	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2	< 0.05	0.19	0.13	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	34.8	< 0.80	3.27	1.86	< 0.80
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Analytical Report Number: 25-014623
 Project / Site name: Starwood House, Letchworth
 Your Order No: 631621

Lab Sample Number	491140	491141	491142	491143	491144
Sample Reference	WS104	WS104	WS108	WS109	WS109
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.50	2.80	0.50	0.30	3.50
Date Sampled	17/03/2025	19/03/2025	17/03/2025	18/03/2025	18/03/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	< 1.0	5.2	14	< 1.0
Boron (water soluble)	mg/kg	0.2	MCERTS	1.4	0.7	0.8	0.8	0.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.8	< 0.2	0.3	0.7	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	52	< 1.0	9.7	30	< 1.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	52	1	9.7	30	< 1.0
Copper (aqua regia extractable)	mg/kg	1	MCERTS	40	3.4	7.5	25	3.5
Lead (aqua regia extractable)	mg/kg	1	MCERTS	130	1.2	13	51	1.3
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	3.6	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	32	1.8	7.7	20	1.2
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	260	11	38	110	11

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	9.3	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	22	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	100	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	130	< 10	< 10	< 10	< 10

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	6.1	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	40	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	230	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	280	< 10	< 10	< 10	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

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

Analytical Report Number: 25-014623
Project / Site name: Starwood House, Letchworth
Your Order No: 631621

Lab Sample Number	491145	491146
Sample Reference	WS103	WS103
Sample Number	None Supplied	None Supplied
Water Matrix	N/A	N/A
Depth (m)	0.40	3.80
Date Sampled	19/03/2025	19/03/2025
Time Taken	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection
		Test Accreditation Status

Stone Content	%	0.1	NONE	37.6	< 0.1
Moisture Content	%	0.01	NONE	7.2	21
Total mass of sample received	kg	0.1	NONE	0.7	0.7

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Detected	-
Asbestos Analyst ID	N/A	N/A	N/A	WEM	-
Analysis completed	N/A	N/A	N/A	31/03/2025	-
Actinolite detected	Type	N/A	ISO 17025	Not-detected	-
Amosite detected	Type	N/A	ISO 17025	Not-detected	-
Anthophyllite detected	Type	N/A	ISO 17025	Not-detected	-
Chrysotile detected	Type	N/A	ISO 17025	Detected	-
Crocidolite detected	Type	N/A	ISO 17025	Not-detected	-
Tremolite detected	Type	N/A	ISO 17025	Not-detected	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	0.003	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	Loose Fibres	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	10.9	9.1
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.1	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.06	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.08	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	1.1	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.2	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	2.1	0.15
Pyrene	mg/kg	0.05	MCERTS	2	0.16
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.97	0.06
Chrysene	mg/kg	0.05	MCERTS	1.3	0.08
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	1.4	0.17
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.66	0.07
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.3	0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.61	0.12
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.14	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.73	0.13

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	12.7	1.04
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Analytical Report Number: 25-014623
 Project / Site name: Starwood House, Letchworth
 Your Order No: 631621

Lab Sample Number				491145	491146
Sample Reference				WS103	WS103
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				0.40	3.80
Date Sampled				19/03/2025	19/03/2025
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	1.5
Boron (water soluble)	mg/kg	0.2	MCERTS	1.8	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	0.4
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	31	4.1
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	32	4.2
Copper (aqua regia extractable)	mg/kg	1	MCERTS	31	21
Lead (aqua regia extractable)	mg/kg	1	MCERTS	72	36
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25	3.2
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	140	82

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	4.5	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	19	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	140	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	160	< 10

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	12	< 10
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	120	< 10
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	130	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0

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



4041



Analytical Report Number: 25-014623
Project / Site name: Starwood House, Letchworth
Your Order No: 631621

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample	Analysis completed	Analyst ID
491140	WS104	0.50	170	Loose Fibres	Amosite & Chrysotile	0.002	0.002	31/03/2025	WEM
491145	WS103	0.40	169	Loose Fibres	Chrysotile	0.003	0.003	31/03/2025	WEM

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

Analytical Report Number: 25-014623
Project / Site name: Starwood House, Letchworth

Your Order No: 631621

Lab Sample Number	491130	491132	491136
Sample Reference	CP101	CP102	CP104
Sample Number	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A
Depth (m)	0.40	0.40	0.20
Date Sampled	17/03/2025	17/03/2025	19/03/2025
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Test Limit of detection	Test Accreditation Status

General Inorganics

pH (automated)	pH Units	N/A	ISO 17025	9.8	9.5	12.4
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Speciated PAHs

Naphthalene	µg/l	0.01	NONE	< 0.01	< 0.01	0.75
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01	0.05
Acenaphthene	µg/l	0.01	NONE	< 0.01	< 0.01	0.07
Fluorene	µg/l	0.01	NONE	< 0.01	< 0.01	0.07
Phenanthrene	µg/l	0.01	NONE	< 0.01	< 0.01	0.12
Anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	NONE	< 0.16	< 0.16	1.06
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1	ISO 17025	3.1	3.1	< 1.0
Boron (dissolved)	µg/l	10	ISO 17025	42	59	< 10
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	5	NONE	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.4	ISO 17025	2.2	2.7	2.7
Copper (dissolved)	µg/l	0.7	ISO 17025	8.9	12	2.4
Lead (dissolved)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Mercury (dissolved)	µg/l	0.5	ISO 17025	0.6	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	< 0.3	0.8	< 0.3
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	< 0.4	2.9	< 0.4

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Your Order No: 631621

Lab Sample Number	491130	491132	491136
Sample Reference	CP101	CP102	CP104
Sample Number	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A
Depth (m)	0.40	0.40	0.20
Date Sampled	17/03/2025	17/03/2025	19/03/2025
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Test Limit of detection	Test Accreditation Status

Petroleum Hydrocarbons

TPH - Aliphatic >EC5 - EC6 _{HS_1D_AL}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC6 - EC8 _{HS_1D_AL}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC8 - EC10 _{HS_1D_AL}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC10 - EC12 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC12 - EC16 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC16 - EC21 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC21 - EC35 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC5 - EC35 _{HS+EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10

TPH - Aromatic >EC5 - EC7 _{HS_1D_AR}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC7 - EC8 _{HS_1D_AR}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC8 - EC10 _{EH_1D_AR_MS}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC10 - EC12 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC12 - EC16 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC16 - EC21 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC21 - EC35 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC6 - EC35 _{HS+EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	NONE	< 3.0	< 3.0	< 3.0
Benzene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0

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

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
491130	CP101	None Supplied	0.4	Brown sand with gravel and stones
491131	CP101	None Supplied	0.7	Brown sand with gravel and stones
491132	CP102	None Supplied	0.4	Brown sand with gravel and stones
491133	CP102	None Supplied	0.8	Beige clay and sand with gravel and chalk
491134	CP102	None Supplied	1.9	Beige clay and sand with gravel and chalk
491135	CP103	None Supplied	0.4	Light brown clay and sand with gravel and chalk
491136	CP104	None Supplied	0.2	Light brown sand with gravel and stones
491137	CP104	None Supplied	1.8	Beige clay and sand with gravel and chalk
491138	WS102	None Supplied	0.1	Brown sand with vegetation and stones
491139	WS102	None Supplied	1.6	Beige clay and sand with gravel and chalk
491140	WS104	None Supplied	0.5	Brown sand with glass and gravel
491141	WS104	None Supplied	2.8	Beige clay and sand with gravel and chalk
491142	WS108	None Supplied	0.5	Light brown clay and sand with gravel and chalk
491143	WS109	None Supplied	0.3	Brown loam and clay with gravel and vegetation
491144	WS109	None Supplied	3.5	Beige chalk ⁹
491145	WS103	None Supplied	0.4	Brown loam and sand with rubble and brick
491146	WS103	None Supplied	3.8	Beige chalk with gravel ⁹

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Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos Identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references	HSE Report No: 83/1996, HSG 248 (2021), HSG 264 (2012) & SCA Blue Book (draft)	A006B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-MS/GC-MS HS in leachate	Determination of total petroleum hydrocarbons in leachate by GC-MS/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L070B/L088-PL	W	NONE
BTEX and/or Volatile organic compounds in leachate	Determination of volatile organic compounds in leachate by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	NONE
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088-PL	D/W	MCERTS
Chromium III in leachate	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080-PL	W	NONE
Chromium III in soil	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080-PL/L130B	W	NONE
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	ISO 17025

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Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphénylcarbazine followed by colorimetry	In-house method	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS
pH at 20°C in leachate (automated)	Determination of pH in leachate by electrometric measurement	In-house method	L099-PL	W	ISO 17025
Speciated PAHs and/or Semi-volatile organic compounds in leachate	SVOCs and PAHs in leachate	In-house method	L102B		NONE
NRA Leachate 10:1		In-house method based on interim NRA guidance (1994)	L020B	W	NONE

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

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

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

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

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

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

*g - Unaccredited sample matrix.

Annex G: Screening Criteria

Human Health Generic Assessment Criteria

Contaminant of Concern	Units	Generic Assessment Criteria (mg/kg)				Source
		Residential (wHP)	Residential (woHP)	POS (Residential)	Commercial	
Heavy Metals						
Arsenic	mg/kg	37	40	79	640	S4UL
Boron	mg/kg	290	11000	21000	240000	S4UL
Cadmium	mg/kg	11	85	120	190	S4UL
Chromium (hexavalent)	mg/kg	6	6	7.7	33	S4UL
Chromium (III)	mg/kg	910	910	1500	8600	S4UL
Chromium	mg/kg	910	910	1500	8600	S4UL
Copper	mg/kg	2400	7100	12000	68000	S4UL
Lead	mg/kg	200	310	630	2330	C4SL
Mercury	mg/kg	40	56	120	1100	S4UL
Nickel	mg/kg	180	180	230	980	S4UL
Selenium	mg/kg	250	430	1100	12000	S4UL
Zinc	mg/kg	3700	40000	81000	730000	S4UL
Polycyclic Aromatic Hydrocarbons						
Naphthalene	mg/kg	2.3	2.3	4900	190	S4UL
Acenaphthylene	mg/kg	170	2900	15000	83000	S4UL
Acenaphthene	mg/kg	210	3000	15000	84000	S4UL
Fluorene	mg/kg	170	2800	9900	63000	S4UL
Phenanthrene	mg/kg	95	1300	3100	22000	S4UL
Anthracene	mg/kg	2400	31000	74000	520000	S4UL
Fluoranthene	mg/kg	280	1500	3100	23000	S4UL
Pyrene	mg/kg	620	3700	7400	54000	S4UL
Benzo(a)anthracene	mg/kg	7.2	11	29	170	S4UL
Chrysene	mg/kg	15	30	57	350	S4UL
Benzo(b)fluoranthene	mg/kg	2.6	3.9	7.1	44	S4UL
Benzo(k)fluoranthene	mg/kg	77	110	190	1200	S4UL
Benzo(a)pyrene	mg/kg	2.2	3.2	5.7	35	S4UL
Indeno(1,2,3-cd) pyrene	mg/kg	27	45	82	500	S4UL
Dibenz(a,h)anthracene	mg/kg	0.24	0.31	0.57	3.5	S4UL
Benzo(ghi)perylene	mg/kg	320	360	640	3900	S4UL
Monoaromatics						
Benzene	µg/kg	87	380	72000	27000	S4UL
Toluene	µg/kg	130000	880000	56000000	56000000	S4UL
Ethylbenzene	µg/kg	47000	83000	24000000	5700000	S4UL
p & m-xylene	µg/kg	56000	79000	41000000	5900000	S4UL
o-xylene	µg/kg	60000	88000	41000000	6600000	S4UL
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	49000	73000	-	7900000	EIC/AGS/CL:AIRE
Petroleum Hydrocarbons (Aliphatic)						
TPH-CWG – Aliphatic >EC5 – EC6	mg/kg	42	42	570000	3200	S4UL
TPH-CWG – Aliphatic >EC6 – EC 8	mg/kg	100	100	600000	7800	S4UL
TPH-CWG – Aliphatic >EC8 – EC10	mg/kg	27	27	13000	2000	S4UL
TPH-CWG – Aliphatic >EC10 – EC12	mg/kg	130	130	13000	9700	S4UL
TPH-CWG – Aliphatic >EC12 – EC16	mg/kg	1100	1100	13000	59000	S4UL
TPH-CWG – Aliphatic >EC16 – EC21	mg/kg	65000	65000	250000	1600000	S4UL

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TPH-CWG – Aliphatic >EC21 – EC35	mg/kg	65000	65000	250000	1600000	S4UL
Petroleum Hydrocarbons (Aromatic)						
TPH-CWG – Aromatic >EC5 – EC7	mg/kg	70	370	56000	26000	S4UL
TPH-CWG – Aromatic >EC7 – EC8	mg/kg	130	860	56000	56000	S4UL
TPH-CWG – Aromatic >EC8 – EC10	mg/kg	34	47	5000	3500	S4UL
TPH-CWG – Aromatic >EC10 – EC12	mg/kg	74	250	5000	16000	S4UL
TPH-CWG – Aromatic >EC12 – EC16	mg/kg	140	1800	5100	36000	S4UL
TPH-CWG – Aromatic >EC16 – EC21	mg/kg	260	1900	3800	28000	S4UL
TPH-CWG – Aromatic >EC21 – EC35	mg/kg	1100	1900	3800	28000	S4UL
Volatile Organic Compounds						
Chloromethane	µg/kg	8.3	8.5	-	1000	EIC/AGS/CL:AIRE
Chloroethane	µg/kg	8300	8400	-	960000	EIC/AGS/CL:AIRE
Bromomethane	µg/kg	-	-	-	-	-
Vinyl Chloride	µg/kg	0.64	0.77	3500	59	S4UL
Trichlorofluoromethane	µg/kg	-	-	-	-	-
1,1-Dichloroethene	µg/kg	230	230	-	26000	EIC/AGS/CL:AIRE
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	110	120	-	14000	EIC/AGS/CL:AIRE
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	49000	73000	-	7900000	EIC/AGS/CL:AIRE
1,1-Dichloroethane	µg/kg	2400	2500	-	280000	EIC/AGS/CL:AIRE
2,2-Dichloropropane	µg/kg	-	-	-	-	-
Trichloromethane	µg/kg	910	1200	2500000	99000	S4UL
1,1,1-Trichloroethane	µg/kg	8800	9000	140000000	660000	S4UL
1,2-Dichloroethane	µg/kg	7.1	9.2	29000	670	S4UL
1,1-Dichloropropene	µg/kg	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	190	190	-	22000	EIC/AGS/CL:AIRE
Benzene	µg/kg	87	380	72000	27000	S4UL
Tetrachloromethane	µg/kg	26	26	890000	2900	S4UL
1,2-Dichloropropane	µg/kg	24	24	-	3300	EIC/AGS/CL:AIRE
Trichloroethene	µg/kg	16	17	120000	1200	S4UL
Dibromomethane	µg/kg	-	-	-	-	-
Bromodichloromethane	µg/kg	16	19	-	2100	EIC/AGS/CL:AIRE
Cis-1,3-dichloropropene	µg/kg	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	-	-	-	-	-
Toluene	µg/kg	130000	880000	56000000	56000000	S4UL
1,1,2-Trichloroethane	µg/kg	600	880	-	94000	EIC/AGS/CL:AIRE
1,3-Dichloropropane	µg/kg	-	-	-	-	-
Dibromochloromethane	µg/kg	-	-	-	-	-
Tetrachloroethene	µg/kg	180	180	1400000	19000	S4UL
1,2-Dibromoethane	µg/kg	-	-	-	-	-
Chlorobenzene	µg/kg	460	460	11000000	56000	S4UL
1,1,1,2-Tetrachloroethane	µg/kg	1200	1500	1400000	110000	S4UL
Ethylbenzene	µg/kg	47000	83000	24000000	5700000	S4UL
p & m-Xylene	µg/kg	56000	79000	41000000	5900000	S4UL
Styrene	µg/kg	8100	35000	-	3300000	EIC/AGS/CL:AIRE
Tribromomethane	µg/kg	-	-	-	-	-
o-Xylene	µg/kg	60000	88000	41000000	6600000	S4UL

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1,1,2,2-Tetrachloroethane	µg/kg	1600	3900	1400000	270000	S4UL
Isopropylbenzene	µg/kg	11000	12000	-	1400000	EIC/AGS/CL:AIRE
Bromobenzene	µg/kg	870	910	-	97000	EIC/AGS/CL:AIRE
n-Propylbenzene	µg/kg	34000	40000	-	4100000	EIC/AGS/CL:AIRE
2-Chlorotoluene	µg/kg	-	-	-	-	-
4-Chlorotoluene	µg/kg	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	-	-	-	-	-
tert-Butylbenzene	µg/kg	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	350	410	-	42000	EIC/AGS/CL:AIRE
sec-Butylbenzene	µg/kg	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	400	440	300000	30000	S4UL
p-Isopropyltoluene	µg/kg	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	23000	24000	90000000	2000000	S4UL
1,4-Dichlorobenzene	µg/kg	61000	61000	17000000	4400000	S4UL
Butylbenzene	µg/kg	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	2600	2600	15000000	220000	S4UL
Hexachlorobutadiene	µg/kg	290	320	25000	31000	S4UL
1,2,3-Trichlorobenzene	µg/kg	1500	1500	1800000	102000	S4UL

Key	
Source Reference	Document
S4UL	Nathanail, CP et al (2015) The LQM/CIEH S4ULs for human health risk assessment.
C4SL	Department for Environment, Food and Rural Affairs (2014) SP1010: Development of category 4 screening levels for assessment of land affected by contamination – policy companion document.
EIC/AGS/CL:AIRE	Environmental Industries Commission, The Association of Geotechnical and Geoenvironmental Specialists and Contaminated Land: Applications in Real Environments (2009) The EIC/AGS/CL:AIRE soil generic assessment criteria for human health risk assessment.

Notes:

The above GAC are for guidance only when assessing risk to human health receptors for specific development scenarios.

The absence of GAC for a substance does not necessarily imply there is no risk.

Some substances may be known by alternative names.

GAC given for organic compounds are based on the assumption of 1% soil organic matter.

Abbreviations:

GAC	Generic Assessment Criteria
wHP	With homegrown produce
woHP	Without homegrown produce
POS	Public open space

Generic Assessment Criteria for Assessing Vapour Risk to Human Health from Volatile Contaminants in Groundwater

Contaminant of Concern	Units	SoBRA Generic Assessment Criteria (µg/l)	
		Residential	Commercial
Polycyclic Aromatic Hydrocarbons			
Naphthalene	µg/l	220	23000
Acenaphthylene	µg/l	170000	15000000
Acenaphthene	µg/l	220000	20000000
Fluorene	µg/l	-	-
Phenanthrene	µg/l	-	-
Anthracene	µg/l	-	-
Fluoranthene	µg/l	210000	18000000
Pyrene	µg/l	-	-
Benzo(a)anthracene	µg/l	-	-
Chrysene	µg/l	-	-
Benzo(b)fluoranthene	µg/l	0.00017	-
Benzo(k)fluoranthene	µg/l	0.00017	-
Benzo(a)pyrene	µg/l	0.00017	-
Indeno(1,2,3-cd) pyrene	µg/l	-	-
Dibenz(a,h)anthracene	µg/l	0.00017	-
Benzo(ghi)perylene	µg/l	0.00017	-
Monoaromatics			
Benzene	µg/l	210	20000
Toluene	µg/l	230000	230000
Ethylbenzene	µg/l	10000	960000
p & m-xylene	µg/l	9500	94000
o-xylene	µg/l	12000	1100000
MTBE (Methyl Tertiary Butyl Ether)	µg/l	83000	7800000
Petroleum Hydrocarbons (Aliphatic)			
TPH-CWG – Aliphatic >EC5 – EC6	µg/l	1900	190000
TPH-CWG – Aliphatic >EC6 – EC 8	µg/l	1500	150000
TPH-CWG – Aliphatic >EC8 – EC10	µg/l	57	5700
TPH-CWG – Aliphatic >EC10 – EC12	µg/l	37	3600
TPH-CWG – Aliphatic >EC12 – EC16	µg/l	-	-
TPH-CWG – Aliphatic >EC16 – EC21	µg/l	-	-
TPH-CWG – Aliphatic >EC21 – EC35	µg/l	-	-
Petroleum Hydrocarbons (Aromatic)			
TPH-CWG – Aromatic >EC5 – EC7	µg/l	210000	20000000
TPH-CWG – Aromatic >EC7 – EC8	µg/l	220000	21000000
TPH-CWG – Aromatic >EC8 – EC10	µg/l	1900	190000
TPH-CWG – Aromatic >EC10 – EC12	µg/l	6800	660000
TPH-CWG – Aromatic >EC12 – EC16	µg/l	39000	3700000
TPH-CWG – Aromatic >EC16 – EC21	µg/l	-	-
TPH-CWG – Aromatic >EC21 – EC35	µg/l	-	-
Volatile Organic Compounds			
1,1-Dichloroethene	µg/l	160	16000
MTBE (Methyl Tertiary Butyl Ether)	µg/l	83000	7800000
1,1-Dichloroethane	µg/l	2700	260000

Generic Assessment Criteria for Assessing Vapour Risk to Human Health from Volatile Contaminants in Groundwater

1,1,1-Trichloroethane	µg/l	3000	290000
1,2-Dichloroethane	µg/l	8.9	850
Benzene	µg/l	210	20000
1,2-Dichloropropane	µg/l	22	2600
Toluene	µg/l	230000	21000000
1,1,2-Trichloroethane	µg/l	520	49000
1,1,1,2-Tetrachloroethane	µg/l	240	22000
Ethylbenzene	µg/l	10000	960000
p & m-Xylene	µg/l	9500	94000
Styrene	µg/l	8800	810000
o-Xylene	µg/l	12000	1100000
1,1,2,2-Tetrachloroethane	µg/l	1600	150000
Isopropylbenzene	µg/l	850	86000
n-Propylbenzene	µg/l	2700	240000
1,2,4-Trimethylbenzene	µg/l	24	2200
1,2-Dichlorobenzene	µg/l	2000	220000
1,2,4-Trichlorobenzene	µg/l	68	7200
1,2,3-Trichlorobenzene	µg/l	35	3100

Key	
Source Reference	Document
SoBRA	Society of Brownfield Risk Assessment, Development of Generic Assessment Criteria for Assessing Vapour Risk to Human Health from Volatile Contaminants in Groundwater, 2017

Notes:

The above GAC are for guidance only when assessing risk to human health from volatile contaminants in groundwater.

The absence of GAC for a substance does not necessarily imply there is no risk.

Some substances may be known by alternative names.

Abbreviations:

GAC	Generic Assessment Criteria
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Water Quality Standards

Contaminant of Concern	Units	EQS	Source	DWS	Source
General Inorganics					
Total Cyanide	µg/l	1	GUK 22	50	WSR 18
Sulphate	mg/l	400	GUK 22	250	WSR 18
Chloride	mg/l	250	GUK 22	250	WSR 18
Ammonium as NH4	µg/l	-	-	500	WSR 18
Heavy Metals					
Arsenic	µg/l	50	GUK 22	10	WSR 18
Boron	µg/l	2,000	GUK 22	1,000	WSR 18
Cadmium	µg/l	0.08	GUK 22	5	WSR 18
Chromium (hexavalent)	µg/l	3.4	GUK 22	5.4	US EPA RfD
Chromium	µg/l	4.7	GUK 22	50	WSR 18
Copper	µg/l	1	GUK 22	2,000	WSR 18
Lead	µg/l	1.2	GUK 22	10	WSR 18
Mercury	µg/l	0.07	GUK 22	1	WSR 18
Nickel	µg/l	4	GUK 22	20	WSR 18
Selenium	µg/l	-	-	10	WSR 18
Zinc	µg/l	10.9	GUK 22	5000	US EPA
Polycyclic Aromatic Hydrocarbons					
Naphthalene	µg/l	2	GUK 22	0.1	DWI 17
Acenaphthylene	µg/l	-	-	0.1	DWI 17
Acenaphthene	µg/l	-	-	0.1	DWI 17
Fluorene	µg/l	-	-	0.1	DWI 17
Phenanthrene	µg/l	-	-	0.1	DWI 17
Anthracene	µg/l	0.1	GUK 22	0.1	DWI 17
Fluoranthene	µg/l	0.0063	GUK 22	0.1	DWI 17
Pyrene	µg/l	-	-	0.01	DWI 17
Benzo(a)anthracene	µg/l	-	-	0.1	DWI 17
Chrysene	µg/l	-	-	0.1	DWI 17
Benzo(b)fluoranthene	µg/l	0.00017	GUK 22	0.1	DWI 17
Benzo(k)fluoranthene	µg/l	0.00017	GUK 22	0.1	DWI 17
Benzo(a)pyrene	µg/l	0.00017	GUK 22	0.1	DWI 17
Indeno(1,2,3-cd) pyrene	µg/l	0.00017	GUK 22	0.1	DWI 17
Dibenz(a,h)anthracene	µg/l			0.1	DWI 17
Benzo(ghi)perylene	µg/l	0.00017	GUK 22	0.1	DWI 17
Total EPA-16 PAHs	µg/l	-	-	0.1	DWI 17
Monoaromatics					
Benzene	µg/l	10	GUK 22	10	PHG 17
Toluene	µg/l	74	GUK 22	700	PHG 17
Ethylbenzene	µg/l	20	EQS R&D	300	PHG 17
p & m-xylene	µg/l	30	GUK 22	500	PHG 17
o-xylene	µg/l	30	GUK 22	500	PHG 17
MTBE (Methyl Tertiary Butyl Ether)	µg/l	-	-	-	-
Petroleum Hydrocarbons (Aliphatic)					
TPH-CWG – Aliphatic >EC5 – EC6	µg/l	-	-	15000	PHG 17
TPH-CWG – Aliphatic >EC6 – EC 8	µg/l	-	-	15000	PHG 17

Water Quality Standards

TPH-CWG – Aliphatic >EC8 – EC10	µg/l	-	-	300	PHG 17
TPH-CWG – Aliphatic >EC10 – EC12	µg/l	-	-	300	PHG 17
TPH-CWG – Aliphatic >EC12 – EC16	µg/l	-	-	300	PHG 17
TPH-CWG – Aliphatic >EC16 – EC21	µg/l	-	-	300	PHG 17
TPH-CWG – Aliphatic >EC21 – EC35	µg/l	-	-	300	PHG 17
Petroleum Hydrocarbons (Aromatic)					
TPH-CWG – Aromatic >EC5 – EC7	µg/l	-	-	10	PHG 17
TPH-CWG – Aromatic >EC7 – EC8	µg/l	-	-	700	PHG 17
TPH-CWG – Aromatic >EC8 – EC10	µg/l	-	-	300	PHG 17
TPH-CWG – Aromatic >EC10 – EC12	µg/l	-	-	90	PHG 17
TPH-CWG – Aromatic >EC12 – EC16	µg/l	-	-	90	PHG 17
TPH-CWG – Aromatic >EC16 – EC21	µg/l	-	-	90	PHG 17
TPH-CWG – Aromatic >EC21 – EC35	µg/l	-	-	90	PHG 17
Volatile Organic Compounds					
Chloromethane	µg/l	-	-	-	-
Chloroethane	µg/l	-	-	-	-
Bromomethane	µg/l	-	-	-	-
Vinyl Chloride	µg/l	0.375	WFD 15	0.5 (0.3)	WSR 18 (WHO 22)
Trichlorofluoromethane	µg/l	-	-	-	-
1,1-Dichloroethene	µg/l	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/l	-	-	-	-
Cis-1,2-dichloroethene	µg/l	-	-	50	WHO 22
MTBE (Methyl Tertiary Butyl Ether)	µg/l	-	-	-	-
1,1-Dichloroethane	µg/l	-	-	-	-
2,2-Dichloropropane	µg/l	-	-	-	-
Trichloromethane	µg/l	2.5	GUK 22	100 (300)	WSR 18 (WHO 22)
1,1,1-Trichloroethane	µg/l	100	GUK 22	-	-
1,2-Dichloroethane	µg/l	10	GUK 22	3 (30)	WSR 18 (WHO 22)
1,1-Dichloropropene	µg/l	-	-	-	-
Trans-1,2-dichloroethene	µg/l	-	-	50	WHO 22
Tetrachloromethane	µg/l	12	GUK 22	-	-
1,2-Dichloropropane	µg/l	-	-	-	-
Trichloroethene	µg/l	10	GUK 22	10 (8)	WSR 18 (WHO 22)
Dibromomethane	µg/l	-	-	-	-
Bromodichloromethane	µg/l	-	-	100	WSR 18
Cis-1,3-dichloropropene	µg/l	-	-	-	-
Trans-1,3-dichloropropene	µg/l	-	-	-	-
1,1,2-Trichloroethane	µg/l	400	GUK 22	-	-
1,3-Dichloropropane	µg/l	-	-	-	-
Dibromochloromethane	µg/l	-	-	100	WSR 18
Tetrachloroethene	µg/l	10	GUK 22	100	WHO 22
1,2-Dibromoethane	µg/l	-	-	0.4	WHO 22
Chlorobenzene	µg/l	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/l	-	-	-	-
Styrene	µg/l	50	GUK 22	20	WHO 22
Tribromomethane	µg/l	-	-	100	WSR 18
1,1,2,2-Tetrachloroethane	µg/l	-	-	-	-

Water Quality Standards

Isopropylbenzene	µg/l	-	-	-	-
Bromobenzene	µg/l	-	-	-	-
n-Propylbenzene	µg/l	-	-	-	-
2-Chlorotoluene	µg/l	-	-	-	-
4-Chlorotoluene	µg/l	-	-	-	-
1,3,5-Trimethylbenzene	µg/l	-	-	-	-
tert-Butylbenzene	µg/l	-	-	-	-
1,2,4-Trimethylbenzene	µg/l	-	-	-	-
sec-Butylbenzene	µg/l	-	-	-	-
1,3-Dichlorobenzene	µg/l	-	-	-	-
p-Isopropyltoluene	µg/l	-	-	-	-
1,2-Dichlorobenzene	µg/l	20	GUK 22	1000	WHO 22
1,4-Dichlorobenzene	µg/l	20	GUK 22	300	WHO 22
Butylbenzene	µg/l	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/l	-	-	1	WHO 22
1,2,4-Trichlorobenzene	µg/l	0.4	GUK 22	-	-
Hexachlorobutadiene	µg/l	-	-	0.6	WHO 22
1,2,3-Trichlorobenzene	µg/l	0.4	GUK 22	-	-
Semi-volatile Organic Compounds					
Aniline	µg/l	-	-	-	-
Phenol	µg/l	7.7	GUK 22	-	-
2-Chlorophenol	µg/l	50	GUK 22	-	-
Bis(2-chloroethyl)ether	µg/l	-	-	-	-
1,3-Dichlorobenzene	µg/l	-	-	-	-
Bis(2-chloroisopropyl)ether	µg/l	-	-	-	-
2-Methylphenol	µg/l	-	-	-	-
Hexachloroethane	µg/l	-	-	-	-
Nitrobenzene	µg/l	-	-	-	-
4-Methylphenol	µg/l	-	-	-	-
Isophorone	µg/l	-	-	-	-
2-Nitrophenol	µg/l	-	-	-	-
2,4-Dimethylphenol	µg/l	-	-	-	-
Bis(2-chloroethoxy)methane	µg/l	-	-	-	-
2,4-Dichlorophenol	µg/l	4.2	GUK 22	-	-
4-Chloroaniline	µg/l	-	-	-	-
Hexachlorobutadiene	µg/l	-	-	0.6	WHO 22
4-Chloro-3-methylphenol	µg/l	-	-	-	-
2,4,6-Trichlorophenol	µg/l	-	-	200	WHO 22
2,4,5-Trichlorophenol	µg/l	-	-	-	-
2-Methylnaphthalene	µg/l	-	-	-	-
2-Chloronaphthalene	µg/l	-	-	-	-
Dimethylphthalate	µg/l	800	GUK 22	-	-
2,6-Dinitrotoluene	µg/l	-	-	-	-
2,4-Dinitrotoluene	µg/l	-	-	-	-
Dibenzofuran	µg/l	-	-	-	-
4-Chlorophenyl phenyl ether	µg/l	-	-	-	-
Diethyl phthalate	µg/l	200	GUK 22	-	-

Water Quality Standards

4-Nitroaniline	µg/l	-	-	-	-
Azobenzene	µg/l	-	-	-	-
Bromophenyl phenyl ether	µg/l	-	-	-	-
Hexachlorobenzene	µg/l	-	-	-	-
Carbazole	µg/l	-	-	-	-
Dibutyl phthalate	µg/l	8	GUK 22	-	-
Anthraquinone	µg/l	-	-	-	-
Butyl benzyl phthalate	µg/l	-	-	-	-

Key	
Source Reference	Document
PHG 17	Petroleum Hydrocarbons in Groundwater (CL:AIRE, 2017, ISBN 978-1-905046-31-7).
DWI 17	DEFRA, Drinking Water Inspectorate, 2017.
WFD 15	The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015.
WSR 18	The Water Supply (Water Quality) Regulations 2018 (Statutory Instrument 2018 No. 647).
EQS R&D	Proposed Environmental Quality Standards for Ethylbenzene in Water R&D Technical Report P2-115/TR4 (Annual Average) 2002.
GUK 22	Gov.UK February 2022. Surface water pollution risk assessment for your environmental permit. (www.gov.uk/guidance/surface-water-pollution-risk-assessment-for-your-environmental-permit).
WHO 22	World Health Organisation Guidelines for drinking water quality: fourth edition incorporating the first and second addenda 2022.
US EPA RfD	US EPA Reference Dose, presented in the Drinking Water Inspectorate 2015.
US EPA	US EPA Secondary Drinking Water Standards.

Notes:

The above GAC are for guidance only when assessing risk to groundwater and surface water receptors.

The absence of GAC for a substance does not necessarily imply there is no risk.

Some substances may be known by alternative names.

EQS referenced are annual average concentrations for inland (freshwater) surface waters.

Alternative EQS are available for assessing risk to estuarine or marine water environments.

The EQS for cadmium is based on hardness band 40mg to less than 50mg CaCO₃/l.

Abbreviations:

EQS	Environmental Quality Standards
DWS	UK Drinking Water Standards
GAC	Generic Assessment Criteria