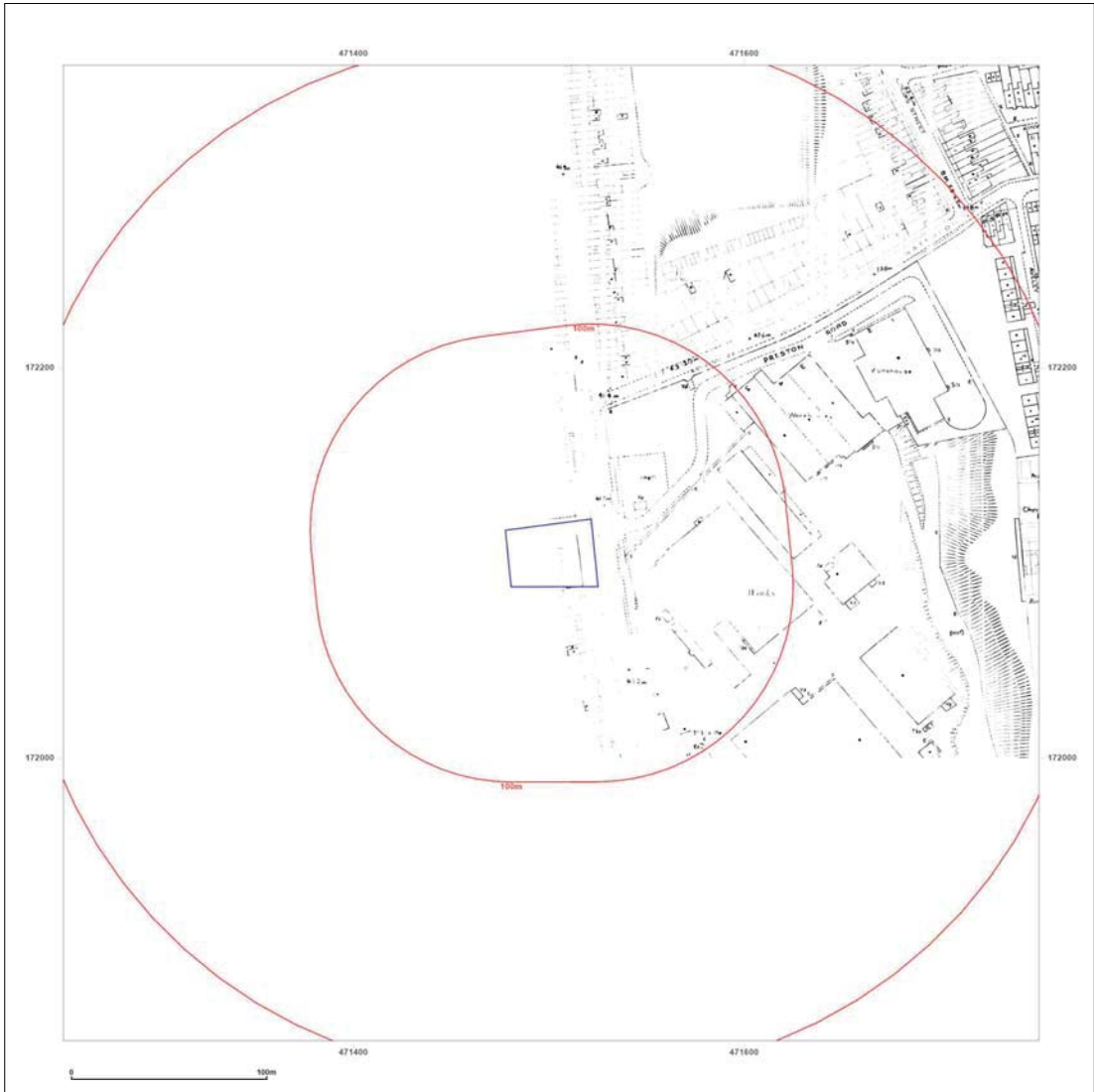
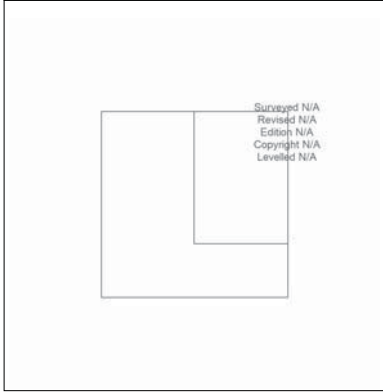




Site Details: 220, ELGAR ROAD SOUTH, READING, RG2 0BW	
Client Ref:	GWPR6540
Report Ref:	GS-OQA-S8W-8F8-FEK
Grid Ref:	471501, 172105
Map Name:	National Grid
Map date:	1978
Scale:	1:1,250
Printed at:	1:2,000



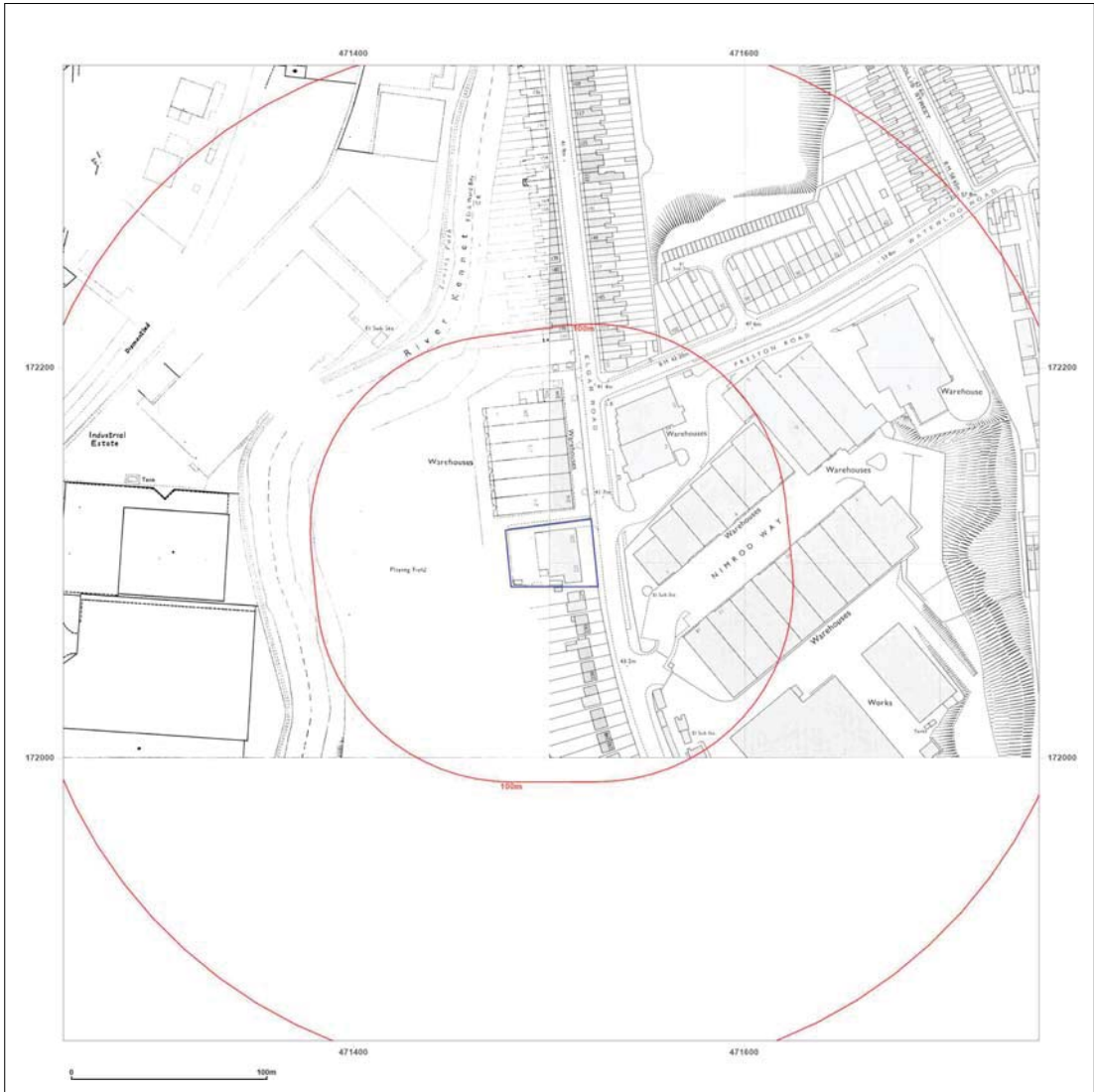


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Production date: 14 May 2025

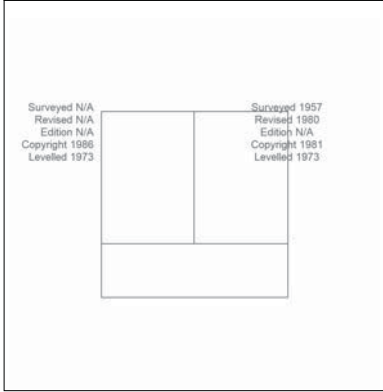
Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Site Details:
220, ELGAR ROAD SOUTH,
READING, RG2 0BW

Client Ref: GWPR6540
Report Ref: GS-OQA-S8W-8F8-FEK
Grid Ref: 471501, 172105

Map Name: National Grid
Map date: 1981-1986
Scale: 1:1,250
Printed at: 1:2,000

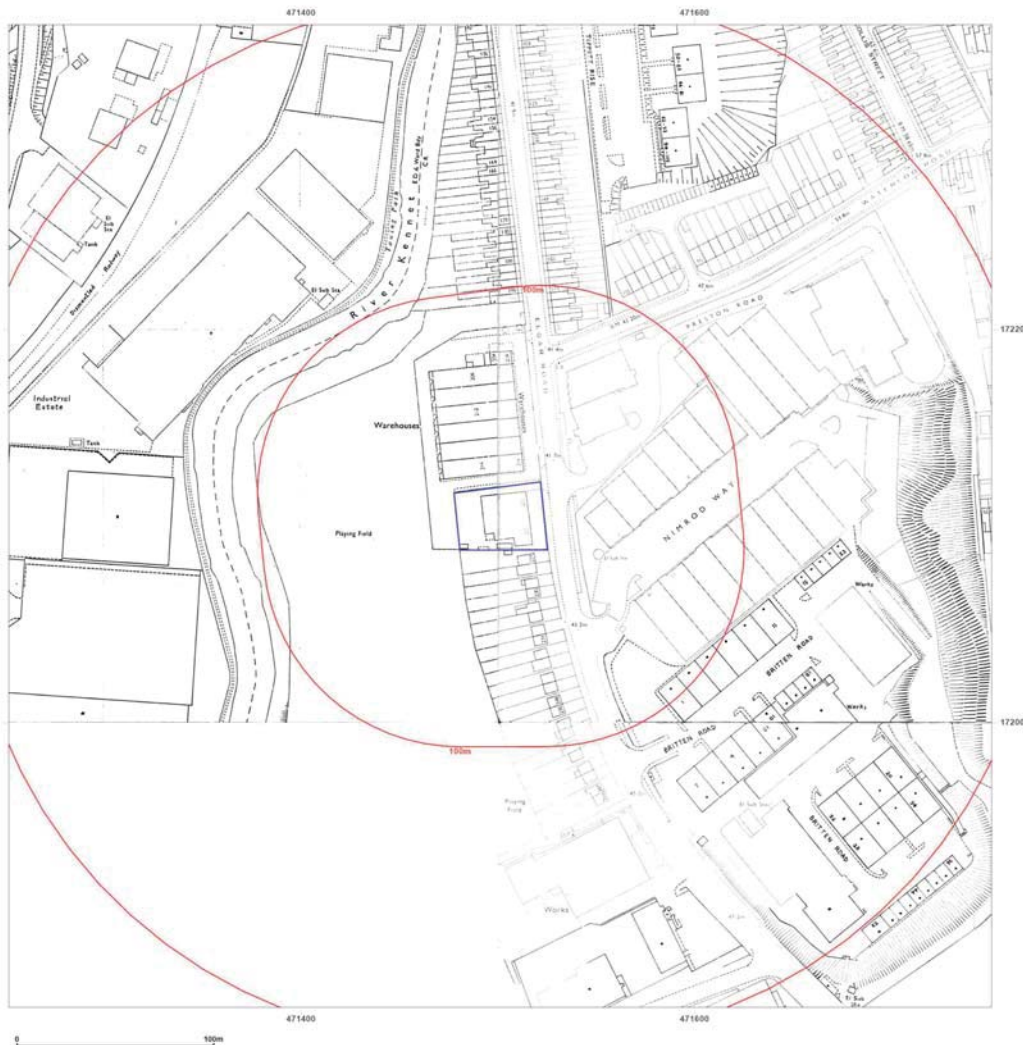


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Site Details:

220, ELGAR ROAD SOUTH,
READING, RG2 0BW

Client Ref: GWPR6540

Report Ref: GS-OQA-S8W-8F8-FEK

Grid Ref: 471501, 172105

Map Name: National Grid

Map date: 1987-1990

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1973
Revised 1987
Edition N/A
Copyright 1987
Levelled 1973

Surveyed 1973
Revised 1987
Edition N/A
Copyright 1987
Levelled 1973

Surveyed 1972
Revised 1990
Edition N/A
Copyright 1990
Levelled 1972

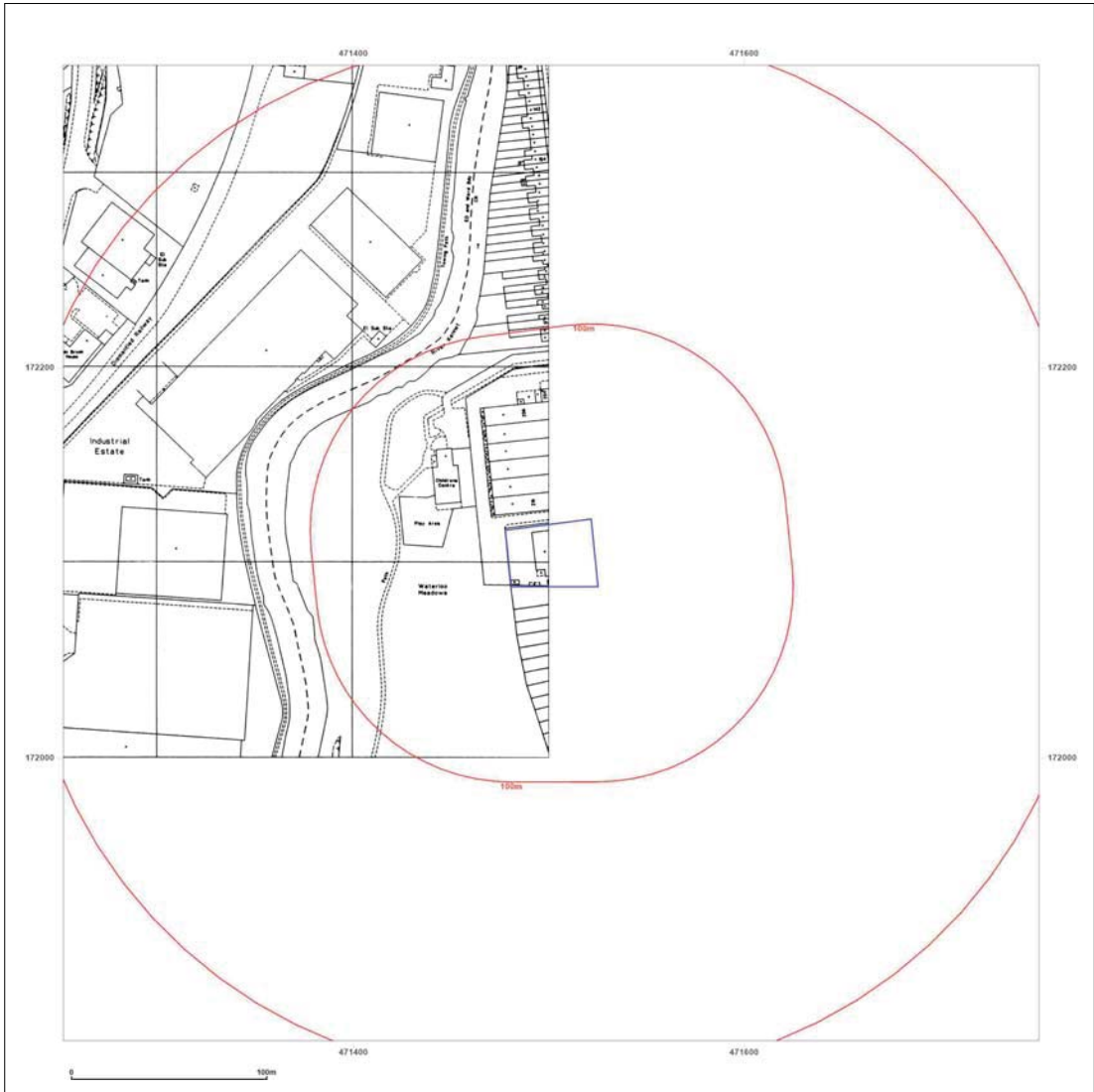


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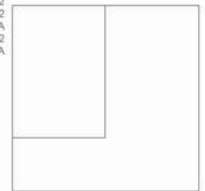
Site Details:
220, ELGAR ROAD SOUTH,
READING, RG2 0BW

Client Ref: GWPR6540
Report Ref: GS-OQA-S8W-8F8-FEK
Grid Ref: 471501, 172105

Map Name: National Grid
Map date: 1992
Scale: 1:1,250
Printed at: 1:2,000



Surveyed 1992
Revised 1992
Edition N/A
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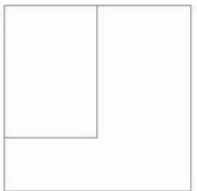
Site Details:
220, ELGAR ROAD SOUTH,
READING, RG2 0BW

Client Ref: GWPR6540
Report Ref: GS-OQA-S8W-8F8-FEK
Grid Ref: 471501, 172105

Map Name: National Grid
Map date: 1993
Scale: 1:1,250
Printed at: 1:2,000



Surveyed 1993
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

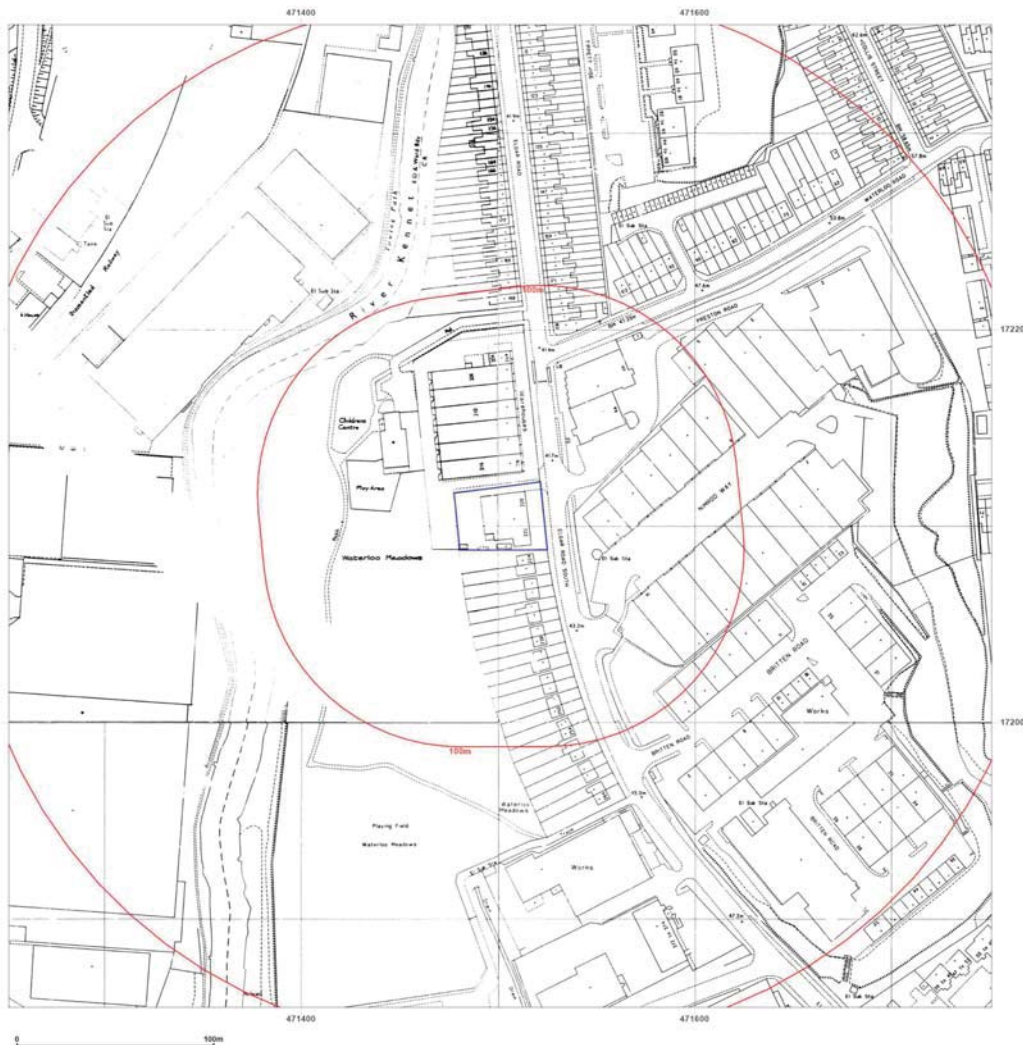


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Site Details:

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READING, RG2 0BW

Client Ref: GWPR6540

Report Ref: GS-OQA-S8W-8F8-FEK

Grid Ref: 471501, 172105

Map Name: National Grid

Map date: 1991-1993

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1973 Revised 1991 Edition N/A Copyright 1991 Levelled 1973	Surveyed 1993 Revised N/A Edition N/A Copyright 1993 Levelled N/A
Surveyed 1993 Revised N/A Edition N/A Copyright 1993 Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A



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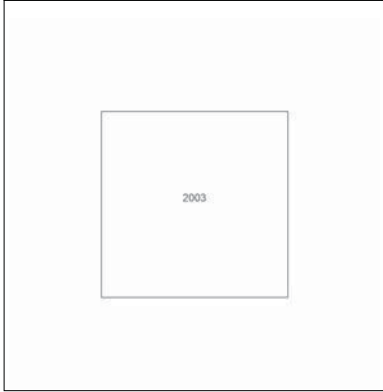
Map legend available at:
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Site Details:
220, ELGAR ROAD SOUTH,
READING, RG2 0BW

Client Ref: GWPR6540
Report Ref: GS-OQA-S8W-8F8-FEK
Grid Ref: 471501, 172105

Map Name: LandLine
Map date: 2003
Scale: 1:1,250
Printed at: 1:1,250



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Site Details:
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READING, RG2 0BW

Client Ref: GWPR6540
Report Ref: GS-OQA-S8W-8F8-FEK
Grid Ref: 471501, 172105

Map Name: County Series
Map date: 1898
Scale: 1:10,560
Printed at: 1:10,560



Surveyed 1876
Revised 1898
Edition N/A
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Surveyed N/A
Revised N/A
Edition N/A
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Levelled N/A



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Site Details:
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READING, RG2 0BW

Client Ref: GWPR6540
Report Ref: GS-OQA-S8W-8F8-FEK
Grid Ref: 471501, 172105

Map Name: County Series
Map date: 1898-1900
Scale: 1:10,560
Printed at: 1:10,560



Surveyed 1877 Revised 1898 Edition 1900 Copyright N/A Levelled N/A	Surveyed 1877 Revised 1898 Edition N/A Copyright N/A Levelled N/A
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Site Details:
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READING, RG2 0BW

Client Ref: GWPR6540
Report Ref: GS-OQA-S8W-8F8-FEK
Grid Ref: 471501, 172105

Map Name: County Series

Map date: 1910-1913

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1877 Revised 1910 Edition N/A Copyright N/A Levelled N/A	Surveyed 1877 Revised 1910 Edition 1913 Copyright N/A Levelled N/A
Surveyed 1876 Revised 1913 Edition 1913 Copyright N/A Levelled N/A	Surveyed 1876 Revised 1913 Edition 1913 Copyright N/A Levelled N/A



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READING, RG2 0BW

Client Ref: GWPR6540
Report Ref: GS-OQA-S8W-8F8-FEK
Grid Ref: 471501, 172105

Map Name: County Series

Map date: 1914

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1914
Edition 1913
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Site Details:
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READING, RG2 0BW

Client Ref: GWPR6540
Report Ref: GS-OQA-S8W-8F8-FEK
Grid Ref: 471501, 172105

Map Name: County Series

Map date: 1932-1933

Scale: 1:10,560

Printed at: 1:10,560



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READING, RG2 0BW

Client Ref: GWPR6540
Report Ref: GS-OQA-S8W-8F8-FEK
Grid Ref: 471501, 172105

Map Name: County Series
Map date: 1938
Scale: 1:10,560
Printed at: 1:10,560



Surveyed 1877
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1877
Revised 1938
Edition N/A
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Surveyed 1876
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Site Details: 220, ELGAR ROAD SOUTH, READING, RG2 0BW	
Client Ref:	GWPR6540
Report Ref:	GS-OQA-S8W-8F8-FEK
Grid Ref:	471501, 172105
Map Name:	Provisional
Map date:	1962
Scale:	1:10,560
Printed at:	1:10,560



Surveyed 1959
Revised 1961
Edition N/A
Copyright 1962
Levelled N/A

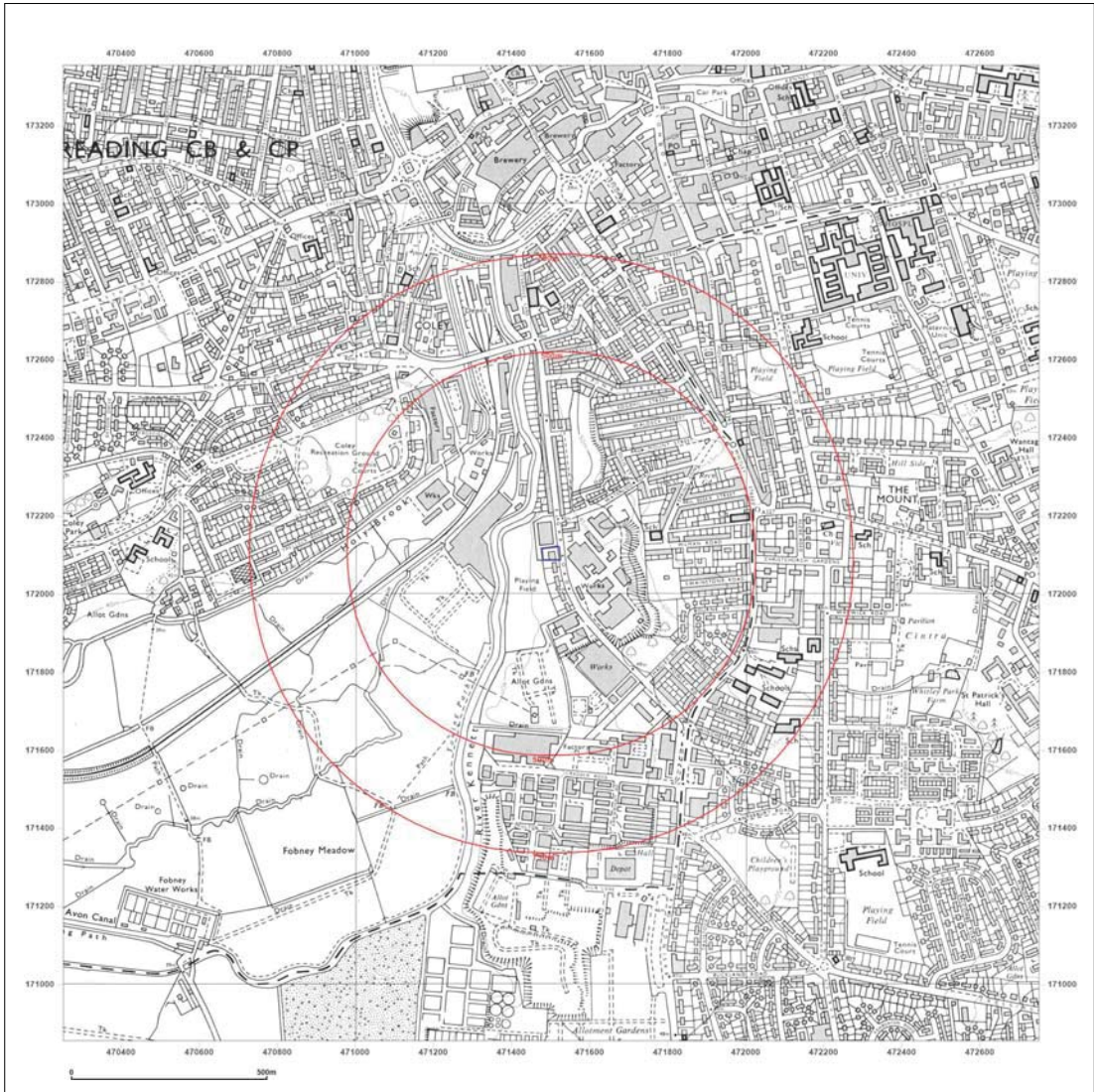


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Site Details:
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READING, RG2 0BW

Client Ref: GWPR6540
Report Ref: GS-OQA-S8W-8F8-FEK
Grid Ref: 471501, 172105

Map Name: National Grid
Map date: 1973
Scale: 1:10,000
Printed at: 1:10,000



Surveyed 1970
Revised 1973
Edition N/A
Copyright 1973
Levelled N/A

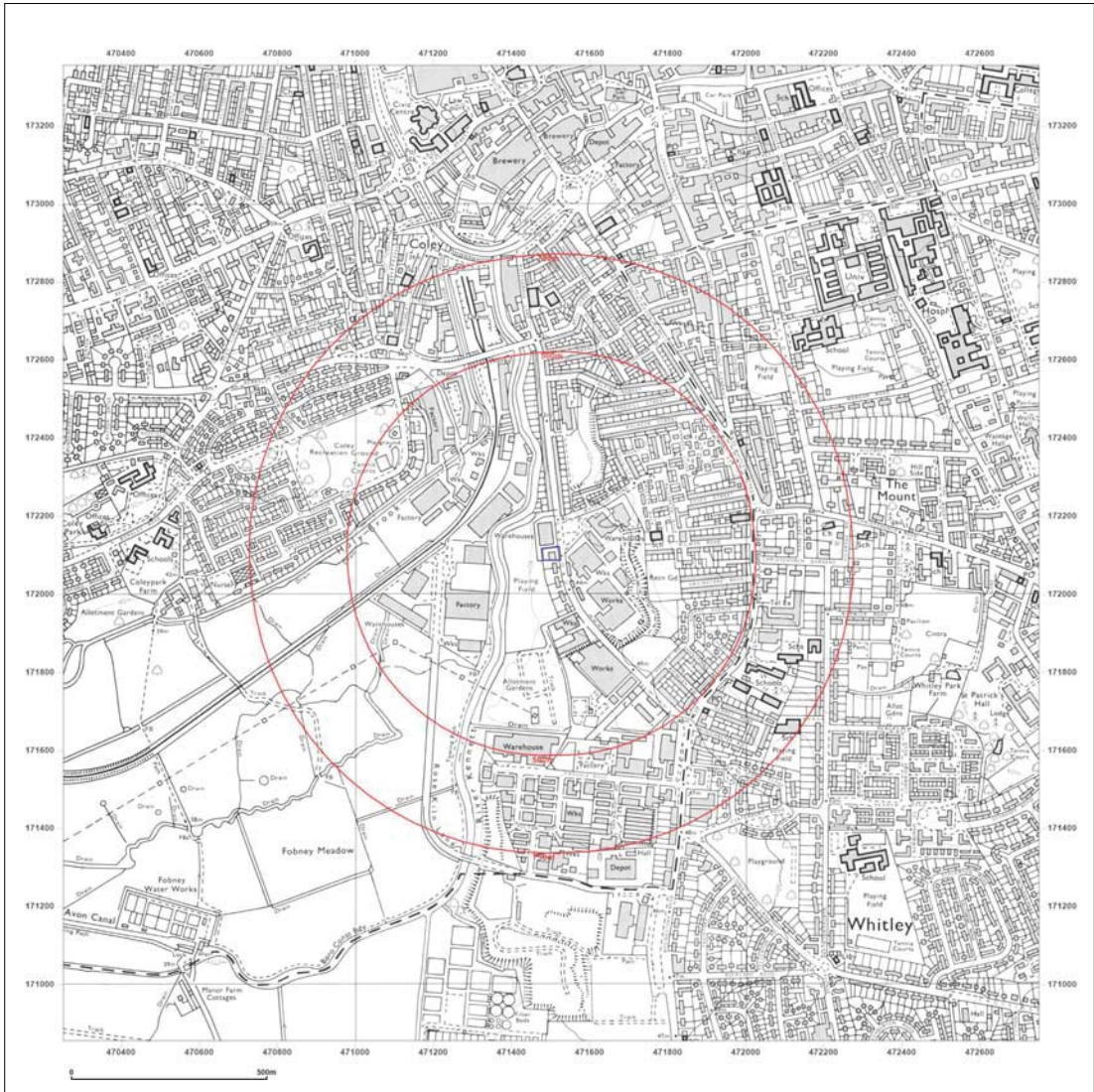


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READING, RG2 0BW

Client Ref: GWPR6540
Report Ref: GS-OQA-S8W-8F8-FEK
Grid Ref: 471501, 172105

Map Name: National Grid
Map date: 1979
Scale: 1:10,000
Printed at: 1:10,000



Surveyed 1977
Revised 1979
Edition N/A
Copyright 1979
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Site Details:

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READING, RG2 0BW

Client Ref: GWPR6540
Report Ref: GS-OQA-S8W-8F8-FEK
Grid Ref: 471501, 172105

Map Name:	National Grid
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Map date: 1989

Scale: 1:10,000



Surveyed 1987
Revised 1989
Edition N/A
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Site Details:

220, ELGAR ROAD SOUTH,
READING. RG2 0BW

Client Ref: GWPR6540

Client Ref: GWPR6340
Report Ref: GS-OQA-S8W-8F8-FEK

Report Ref: G3-UQA-38W-81
Grid Ref: 471501, 172105

Map Name:	National Grid
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Map date: 1994

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1987
Revised 1994
Edition N/A
Copyright N/A
Levelled N/A

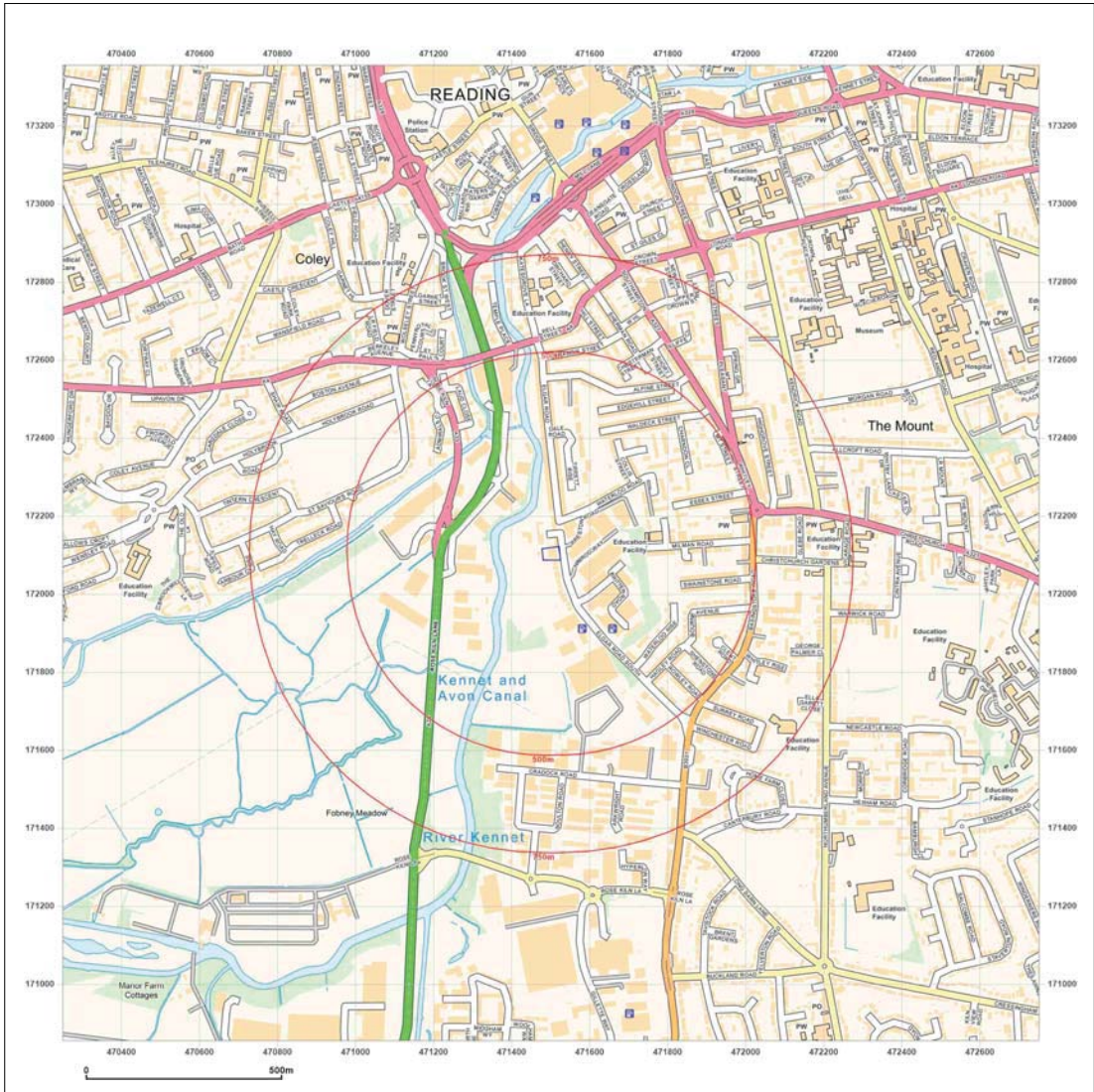


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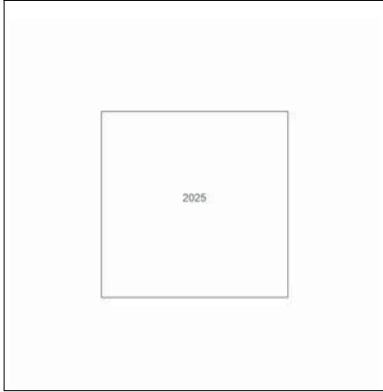
Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Site Details:
220, ELGAR ROAD SOUTH,
READING, RG2 0BW

Client Ref: GWPR6540
Report Ref: GS-OQA-S8W-8F8-FEK
Grid Ref: 471501, 172105

Map Name: National Grid
Map date: 2025
Scale: 1:10,000
Printed at: 1:10,000



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APPENDIX F:

Chemical Laboratory Testing

Ground and Water Ltd
2 The Long Barn
Norton Farm
Selbourne Road
Alton
Hampshire
GU34 3NB

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

e: natasha.kearl@groundandwater.co.uk

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

Analytical Report Number : 25-018315

Replaces Analytical Report Number: 25-018315, issue no. 1
Additional analysis undertaken.
Asbestos quantification added to sample 509792 at clients request

Project / Site name:	220 Elgar Road South Reading RG2 0BW	Samples received on:	10/04/2025
Your job number:	GWPR6540	Samples instructed on/ Analysis started on:	10/04/2025
Your order number:	GWPR6540	Analysis completed by:	23/04/2025
Report Issue Number:	2	Report issued on:	25/04/2025
Samples Analysed:	11 soil samples - 1 leachate sample		



Signed:

Adam Fenwick
Key Account Executive
For & on behalf of i2 Analytical Ltd.

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

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

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting
Excel copies of reports are only valid when accompanied by this PDF certificate.	air	- once the analysis is complete

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: 25-018315
 Project / Site name: 220 Elgar Road South Reading RG2 0BW
 Your Order No: GWPR6540

Lab Sample Number	509792	509793	509794	509795	509796
Sample Reference	BH1	BH1	BH2	WS3	WS1
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)	0.20	0.80	0.50	0.20	0.20
Date Sampled	03/04/2025	03/04/2025	04/04/2025	07/04/2025	07/04/2025
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	44.4	< 0.1	53.8	< 0.1	8.9
Moisture Content	%	0.01	NONE	1.1	12	13	6.8	5.9
Total mass of sample received	kg	0.1	NONE	1.1	1.2	1.2	1.1	1.2

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	KJK	KJK	KJK	KJK	KJK
Analysis completed	N/A	N/A	N/A	15/04/2025	15/04/2025	15/04/2025	15/04/2025	15/04/2025
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	Not-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	< 0.001	-	-	-	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	Loose Fibres	-	-	-	-
---	------	-----	-----------	--------------	---	---	---	---

General Inorganics

pH (L005B)	pH Units	N/A	MCERTS	8.5	-	-	-	-
pH (L099)	pH Units	N/A	MCERTS	9.1	8.6	8.4	8.7	10.1
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	280	57	150	13	170
Water Soluble SO ₄ 16hr extraction (2:1) Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	141	28.3	73.3	6.58	85.2
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	-	-	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphur	%	0.005	MCERTS	-	-	-	-	-
Ammoniacal Nitrogen as NH ₄ ⁺	mg/kg	0.5	MCERTS	-	-	-	-	-
Ammonium as NH ₄ ⁺ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	3.8	1.2	5.2	1.5	1
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.2	0.7	3	0.9	0.6
Loss on Ignition @ 450°C	%	0.2	MCERTS	3.9	-	-	-	-
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	-	-	-	-	-
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	-	-	-	-	-
Acid Neutralisation Capacity	mmol/kg	-9999	NONE	14	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.05	< 0.05	0.33	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.15	< 0.05	2.1	0.06	0.09
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.19	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.31	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.22	0.15	4.5	0.35	0.83
Anthracene	mg/kg	0.05	MCERTS	0.36	< 0.05	1.7	0.06	0.16

Analytical Report Number: 25-018315
 Project / Site name: 220 Elgar Road South Reading RG2 0BW
 Your Order No: GWPR6540

Lab Sample Number				509792	509793	509794	509795	509796
Sample Reference				BH1	BH1	BH2	WS3	WS1
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)				0.20	0.80	0.50	0.20	0.20
Date Sampled				03/04/2025	03/04/2025	04/04/2025	07/04/2025	07/04/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Fluoranthene	mg/kg	0.05	MCERTS	0.73	0.22	16	0.76	1.6
Pyrene	mg/kg	0.05	MCERTS	0.74	0.19	14	0.67	1.4
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.42	0.1	9.4	0.4	0.71
Chrysene	mg/kg	0.05	MCERTS	0.44	0.12	11	0.49	0.82
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.93	0.13	14	0.58	1
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.16	0.07	6.8	0.31	0.32
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.9	0.11	12	0.48	0.78
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	11	0.07	6.1	0.32	0.45
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	2.6	< 0.05	1.6	0.06	0.09
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	14	0.09	6.9	0.4	0.57
Coronene	mg/kg	0.05	NONE	8.8	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	33.8	1.25	107	4.96	8.76
Total WAC-17 PAHs	mg/kg	0.85	NONE	42.7	-	-	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	7.7	11	4.5	6.1
Boron (water soluble)	mg/kg	0.2	MCERTS	1.7	2.7	3.2	0.8	0.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3	< 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 (aqua regia extractable)	mg/kg	1	MCERTS	27	18	20	8	11
Copper (aqua regia extractable)	mg/kg	1	MCERTS	20	13	61	12	12
Lead (aqua regia extractable)	mg/kg	1	MCERTS	27	20	82	21	24
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.7	< 0.3	0.6	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	15	15	25	9.3	9.2
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	1.3	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	38	28	41	14	20
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	57	39	200	48	38

Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	-	-
Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	-	-

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	29	-	-	< 2.0	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	51	-	-	< 8.0	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	130	-	-	< 8.0	-
TPHCWG - Aliphatic >EC35 - EC40 _{EH_CU_1D_AL}	mg/kg	10	NONE	70	-	-	< 10	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	210	-	-	< 10	-
TPHCWG - Aliphatic >EC5 - EC40 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	280	-	-	< 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	7.4	-	-	< 2.0	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	29	-	-	< 10	-

Analytical Report Number: 25-018315
 Project / Site name: 220 Elgar Road South Reading RG2 0BW
 Your Order No: GWPR6540

Lab Sample Number				509792	509793	509794	509795	509796
Sample Reference				BH1	BH1	BH2	WS3	WS1
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)				0.20	0.80	0.50	0.20	0.20
Date Sampled				03/04/2025	03/04/2025	04/04/2025	07/04/2025	07/04/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	290	-	-	15	-
TPHCWG - Aromatic >EC35 - EC40 EH_CU_1D_AR	mg/kg	10	NONE	230	-	-	< 10	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	330	-	-	15	-
TPHCWG - Aromatic >EC5 - EC40 EH_CU+HS_1D_AR	mg/kg	10	NONE	550	-	-	15	-
TPH Total >EC5 - EC40 EH_CU+HS_1D_TOTAL				mg/kg	10	NONE	840	-
Mineral Oil (EC10 - EC40) EH_CU_1D_AL				mg/kg	10	NONE	280	-
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	-
Total BTEX				µg/kg	10	MCERTS	< 10	-
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	0.011	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	0.003	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	0.007	-	-	-	-
Total PCBs				mg/kg	0.007	MCERTS	0.021	-

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

Analytical Report Number: 25-018315
Project / Site name: 220 Elgar Road South Reading RG2 0BW
Your Order No: GWPR6540

Lab Sample Number	509797	509798	509799	509800	509801
Sample Reference	WS4A	WS4A	BH2	WS2	WS3
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)	0.20	0.50	0.80	1.00	3.00
Date Sampled	07/04/2025	07/04/2025	04/04/2025	07/04/2025	07/04/2025
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	< 0.1	28.5	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	12	13	12	3.5	15
Total mass of sample received	kg	0.1	NONE	1.1	1.1	1.1	1.8	1.6

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	KJK	-	-	-	-
Analysis completed	N/A	N/A	N/A	15/04/2025	-	-	-	-
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 (L005B)	pH Units	N/A	MCERTS	-	-	-	-	-
pH (L099)	pH Units	N/A	MCERTS	8.1	-	-	8.7	8.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0	-	-	-	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	< 0.005	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	22	-	-	3.7	27
Water Soluble SO ₄ 16hr extraction (2:1) Leachate Equivalent	mg/l	1.25	MCERTS	-	-	-	1.86	13.7
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	11.2	-	-	-	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	-	< 0.5	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	< 50	-
Total Sulphur	%	0.005	MCERTS	-	-	-	< 0.005	-
Ammoniacal Nitrogen as NH ₄ ⁺	mg/kg	0.5	MCERTS	-	-	-	< 0.5	-
Ammonium as NH ₄ ⁺ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	-	-	-	< 0.05	-
Organic Matter (automated)	%	0.1	MCERTS	1.3	-	-	-	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.8	0.5	2.2	-	-
Loss on Ignition @ 450°C	%	0.2	MCERTS	-	-	-	-	-
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	-	-	-	< 2.0	-
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	-	-	-	< 5.0	-
Acid Neutralisation Capacity	mmol/kg	-9999	NONE	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	-	-	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	0.24	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-

Analytical Report Number: 25-018315
Project / Site name: 220 Elgar Road South Reading RG2 0BW
Your Order No: GWPR6540

Lab Sample Number				509797	509798	509799	509800	509801
Sample Reference				WS4A	WS4A	BH2	WS2	WS3
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)				0.20	0.50	0.80	1.00	3.00
Date Sampled				07/04/2025	07/04/2025	04/04/2025	07/04/2025	07/04/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Fluoranthene	mg/kg	0.05	MCERTS	0.48	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	0.45	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.27	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	0.37	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.57	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.14	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.38	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.19	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.08	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.28	-	-	-	-
Coronene	mg/kg	0.05	NONE	-	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	3.47	-	-	-	-
Total WAC-17 PAHs	mg/kg	0.85	NONE	-	-	-	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	-	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	1.3	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	36	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	21	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	35	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	29	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	-	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	41	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	94	-	-	-	-

Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	< 2.5	-
Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	< 5.0	-

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_ID_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-	-	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_ID_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-	-	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_ID_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-	-	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_ID_AL}	mg/kg	1	MCERTS	< 1.0	-	-	-	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_ID_AL}	mg/kg	2	MCERTS	< 2.0	-	-	-	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	< 8.0	-	-	-	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	< 8.0	-	-	-	-
TPHCWG - Aliphatic >EC35 - EC40 _{EH_CU_ID_AL}	mg/kg	10	NONE	< 10	-	-	-	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	< 10	-	-	-	-
TPHCWG - Aliphatic >EC5 - EC40 _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	< 10	-	-	-	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_ID_AR}	mg/kg	0.01	MCERTS	< 0.010	-	-	-	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_ID_AR}	mg/kg	0.01	MCERTS	< 0.010	-	-	-	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_ID_AR}	mg/kg	0.02	MCERTS	< 0.020	-	-	-	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_ID_AR}	mg/kg	1	MCERTS	< 1.0	-	-	-	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_ID_AR}	mg/kg	2	MCERTS	2.6	-	-	-	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	< 10	-	-	-	-

Analytical Report Number: 25-018315
 Project / Site name: 220 Elgar Road South Reading RG2 0BW
 Your Order No: GWPR6540

Lab Sample Number				509797	509798	509799	509800	509801
Sample Reference				WS4A	WS4A	BH2	WS2	WS3
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)				0.20	0.50	0.80	1.00	3.00
Date Sampled				07/04/2025	07/04/2025	04/04/2025	07/04/2025	07/04/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	47	-	-	-	-
TPHCWG - Aromatic >EC35 - EC40 EH_CU_1D_AR	mg/kg	10	NONE	17	-	-	-	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	49	-	-	-	-
TPHCWG - Aromatic >EC5 - EC40 EH_CU+HS_1D_AR	mg/kg	10	NONE	66	-	-	-	-

TPH Total >EC5 - EC40 EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	66	-	-	-	-
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Mineral Oil (EC10 - EC40) EH_CU_1D_AL	mg/kg	10	NONE	-	-	-	-	-
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VOCs

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

Total BTEX	µg/kg	10	MCERTS	-	-	-	-	-
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PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-

Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-
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U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 25-018315
Project / Site name: 220 Elgar Road South Reading RG2 0BW
Your Order No: GWPR6540

Lab Sample Number				509802
Sample Reference				BH2
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				9.00
Date Sampled				04/04/2025
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	22
Total mass of sample received	kg	0.1	NONE	1

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-
Asbestos Analyst ID	N/A	N/A	N/A	-
Analysis completed	N/A	N/A	N/A	-
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 (L005B)	pH Units	N/A	MCERTS	-
pH (L099)	pH Units	N/A	MCERTS	7.5
Total Cyanide	mg/kg	1	MCERTS	-
Total Sulphate as SO ₄	%	0.005	MCERTS	0.04
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	96
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	47.7
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	10
Total Sulphur	mg/kg	50	MCERTS	260
Total Sulphur	%	0.005	MCERTS	0.026
Ammoniacal Nitrogen as NH ₄ ⁺	mg/kg	0.5	MCERTS	1.6
Ammonium as NH ₄ ⁺ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	0.1
Organic Matter (automated)	%	0.1	MCERTS	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	-
Loss on Ignition @ 450°C	%	0.2	MCERTS	-
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	< 2.0
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	< 5.0
Acid Neutralisation Capacity	mmol/kg	-9999	NONE	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-
Acenaphthylene	mg/kg	0.05	MCERTS	-
Acenaphthene	mg/kg	0.05	MCERTS	-
Fluorene	mg/kg	0.05	MCERTS	-
Phenanthrene	mg/kg	0.05	MCERTS	-
Anthracene	mg/kg	0.05	MCERTS	-

Analytical Report Number: 25-018315
 Project / Site name: 220 Elgar Road South Reading RG2 0BW
 Your Order No: GWPR6540

Lab Sample Number				509802
Sample Reference				BH2
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				9.00
Date Sampled				04/04/2025
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	
Fluoranthene	mg/kg	0.05	MCERTS	-
Pyrene	mg/kg	0.05	MCERTS	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-
Chrysene	mg/kg	0.05	MCERTS	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-
Coronene	mg/kg	0.05	NONE	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-
Total WAC-17 PAHs	mg/kg	0.85	NONE	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-

Magnesium (leachate equivalent)	mg/l	2.5	NONE	2.6
Magnesium (water soluble)	mg/kg	5	NONE	5.2

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-
TPHCWG - Aliphatic >EC35 - EC40 _{EH_CU_1D_AL}	mg/kg	10	NONE	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-
TPHCWG - Aliphatic >EC5 - EC40 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-

Analytical Report Number: 25-018315
 Project / Site name: 220 Elgar Road South Reading RG2 0BW
 Your Order No: GWPR6540

Lab Sample Number				509802
Sample Reference				BH2
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				9.00
Date Sampled				04/04/2025
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	-
TPHCWG - Aromatic >EC35 - EC40 EH_CU_1D_AR	mg/kg	10	NONE	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	-
TPHCWG - Aromatic >EC5 - EC40 EH_CU+HS_1D_AR	mg/kg	10	NONE	-

TPH Total >EC5 - EC40 EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	-
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Mineral Oil (EC10 - EC40) EH_CU_1D_AL	mg/kg	10	NONE	-
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VOCs

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

Total BTEX	µg/kg	10	MCERTS	-
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PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-
PCB Congener 52	mg/kg	0.001	MCERTS	-
PCB Congener 101	mg/kg	0.001	MCERTS	-
PCB Congener 118	mg/kg	0.001	MCERTS	-
PCB Congener 138	mg/kg	0.001	MCERTS	-
PCB Congener 153	mg/kg	0.001	MCERTS	-
PCB Congener 180	mg/kg	0.001	MCERTS	-

Total PCBs	mg/kg	0.007	MCERTS	-
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U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



4041



Environmental Science

Analytical Report Number: 25-018315
Project / Site name: 220 Elgar Road South Reading RG
Your Order No: GWPR6540

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
509792	BH1	0.20	150	Loose Fibres	Amosite	< 0.001	< 0.001	23/04/2025	KJK

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



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Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3. This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Where colour coding is used on this report, this is for guidance purposes only. This does not constitute a statement of conformity of pass or fail.

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 : 25-018315

Project / Site name: 220 Elgar Road South Reading RG2 0BW

* 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 *
509792	BH1	None Supplied	0.2	Brown loam and clay with gravel
509793	BH1	None Supplied	0.8	Brown clay and loam with gravel and chalk
509794	BH2	None Supplied	0.5	Brown loam and sand with gravel
509795	WS3	None Supplied	0.2	Brown loam and sand with gravel and vegetation
509796	WS1	None Supplied	0.2	Brown loam and sand with gravel and vegetation
509797	WS4A	None Supplied	0.2	Brown clay and sand with gravel
509798	WS4A	None Supplied	0.5	Brown clay and sand with chalk
509799	BH2	None Supplied	0.8	Brown loam and sand with gravel and vegetation
509800	WS2	None Supplied	1	Brown sand
509801	WS3	None Supplied	3	Brown clay and sand
509802	BH2	None Supplied	9	White clay and sand with chalk

Analytical Report Number : 25-018315

Project / Site name: 220 Elgar Road South Reading RG2 0BW

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
pH at 20°C in soil	Determination of pH in soil by addition of water followed by electrometric measurement	In-house method	L005B	W	MCERTS
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
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
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
PCB's By GC-MS in soil	Determination of PCB by extraction with hexane followed by GC-MS	In-house method based on USEPA 8082	L027B	D	MCERTS
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by electrometric measurement	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031B	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1 ratio with a buffer solution followed by Ion Selective Electrode	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination	L033B	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR Analyser	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037B	W	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
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES	In-house method based on TRL 447	L038B	D	NONE
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS

Analytical Report Number : 25-018315

Project / Site name: 220 Elgar Road South Reading RG2 0BW

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
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
Metals in leachate by ICP-OES	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
Sample Preparation		In-house method	L043B	W	NONE
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe	In-house method based on Guidance on Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046B	W	NONE
Loss on ignition of soil @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	In-house method	L047-PL	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
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088-PL	D/W	NONE
Water Soluble Nitrate (leachate equivalent)	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L078-PL	W	NONE
Nitrate, water soluble, in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L078-PL	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
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS

Analytical Report Number : 25-018315

Project / Site name: 220 Elgar Road South Reading RG2 0BW

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
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser	In-house based on MEWAM Method ISBN 0117516260	L082B	W	ISO 17025
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser	In-house method	L082B	D	MCERTS
Ammonium as NH ₄ in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	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
Soil Descriptions	Textural classification	In-house method	L019B	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.

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

The result for sum should be interpreted with caution



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Website: www.alsenvironmental.co.uk

Ground and Water Ltd
Head Office
2 The Long Barn
Norton Farm, Selborne Road
Alton
Hampshire
GU34 3NB

Attention: Natasha Kearn

CERTIFICATE OF ANALYSIS

Date of report Generation:	29 May 2025
Customer:	Ground and Water Ltd
Sample Delivery Group (SDG):	250517-53
Your Reference:	GWPR6540
Location:	220 Elgar Road South, Reading RG2 0BW
Report No:	766145
Order Number:	GWPR6540

We received 2 samples on Saturday May 17, 2025 and 2 of these samples were scheduled for analysis which was completed on Thursday May 29, 2025. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

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

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

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

Approved By:

Justin Keeton

Business Unit Leader - Land



1291



CERTIFICATE OF ANALYSIS

Validated

SDG: 250517-53
Client Ref.: GWPR6540

Report Number: 766145
Location: 220 Elgar Road South, Reading RG2 0BW

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
31527954	BH1		0.00 - 0.00	16/05/2025
31527971	BH2		0.00 - 0.00	16/05/2025

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 250517-53
Client Ref.: GWPR6540

Report Number: 766145

Superseded Report:
Location: 220 Elgar Road South, Reading RG2 0BW

Results Legend X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)		31 527954										31 527971																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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SDG: 250517-53
Client Ref.: GWPR6540

Report Number: 766145

Superseded Report:

Location: 220 Elgar Road South, Reading RG2 0BW

[illegible]

SDG: 250517-53
Client Ref.: GWPR6540

Report Number: 766145

Superseded Report:

Location: 220 Elgar Road South, Reading RG2 0BW

PAH Spec MS - Aqueous (W)

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 250517-53
Client Ref.: GWPR6540

Report Number: 766145

Superseded Report:
Location: 220 Elgar Road South, Reading RG2 0BW

SVOC MS (W) - Aqueous

Results Legend			Customer Sample Ref.		BH1	BH2			
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00			
M	mCERTS accredited.				Ground Water (GW)	Ground Water (GW)			
aq	Aqueous / settled sample.				16/05/2025	16/05/2025			
diss.filt	Dissolved / filtered sample.				00:00	00:00			
tot.unfilt	Total / unfiltered sample.				17/05/2025	17/05/2025			
*	Subcontracted - refer to subcontractor report for accreditation status.				250517-53	250517-53			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				31527954	31527971			
***	6:2 FTAB (see appendix)								
1.4.5.6	Sample deviation (see appendix)								
Component	LOD/Units	Method							
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176			<10	<100			
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176			<10	<100			
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176			<10	<100			
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176			<10	<100			
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176			<10	<100			
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176			<10	<100			
2,4-Dichlorophenol (aq)	<1 µg/l	TM176			<10	<100			
2,4-Dimethylphenol (aq)	<1 µg/l	TM176			<10	<100			
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176			<10	<100			
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176			<10	<100			
2-Chloronaphthalene (aq)	<1 µg/l	TM176			<10	<100			
2-Chlorophenol (aq)	<1 µg/l	TM176			<10	<100			
2-Methylnaphthalene (aq)	<1 µg/l	TM176			<10	<100			
2-Methylphenol (aq)	<1 µg/l	TM176			<10	<100			
2-Nitroaniline (aq)	<1 µg/l	TM176			<10	<100			
2-Nitrophenol (aq)	<1 µg/l	TM176			<10	<100			
3-Nitroaniline (aq)	<1 µg/l	TM176			<10	<100			
4-Bromophenylphenylether (aq)	<1 µg/l	TM176			<10	<100			
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176			<10	<100			
4-Chloroaniline (aq)	<1 µg/l	TM176			<10	<100			
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176			<10	<100			
4-Methylphenol (aq)	<1 µg/l	TM176			<10	<100			
4-Nitroaniline (aq)	<1 µg/l	TM176			<10	<100			
4-Nitrophenol (aq)	<1 µg/l	TM176			<10	<100			
Azobenzene (aq)	<1 µg/l	TM176			<10	<100			
Acenaphthylene (aq)	<1 µg/l	TM176			<10	<100			
Acenaphthene (aq)	<1 µg/l	TM176			<10	<100			
Anthracene (aq)	<1 µg/l	TM176			<10	<100			
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176			<10	<100			
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176			<10	<100			
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176			<20	<200			
Butylbenzyl phthalate (aq)	<1 µg/l	TM176			<10	<100			



CERTIFICATE OF ANALYSIS

Validated

SDG: 250517-53
Client Ref.: GWPR6540

Report Number: 766145

Superseded Report:
Location: 220 Elgar Road South, Reading RG2 0BW

SVOC MS (W) - Aqueous

Results Legend			Customer Sample Ref.		BH1	BH2				
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00				
M	mCERTS accredited.				Ground Water (GW)	Ground Water (GW)				
aq	Aqueous / settled sample.				16/05/2025	16/05/2025				
dis.filt	Dissolved / filtered sample.				00:00	00:00				
tot.unfilt	Total / unfiltered sample.				17/05/2025	17/05/2025				
*	Subcontracted - refer to subcontractor report for accreditation status.				250517-53	250517-53				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				31527954	31527971				
***	6:2 FTAB (see appendix)									
1-4+5-6	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Benzo(a)anthracene (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Benzo(a)pyrene (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Carbazole (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Chrysene (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Dibenzofuran (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
n-Dibutyl phthalate (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Diethyl phthalate (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Dimethyl phthalate (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
n-Dioctyl phthalate (aq)	<5 µg/l	TM176			<50	<500				
					◆ #	#				
Fluoranthene (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Fluorene (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Hexachlorobenzene (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Hexachlorobutadiene (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Pentachlorophenol (aq)	<1 µg/l	TM176			<10	<100				
Phenol (aq)	<1 µg/l	TM176			<10	<100				
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Hexachloroethane (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Nitrobenzene (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Naphthalene (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Isophorone (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176			<10	<100				
Phenanthrene (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				
Pyrene (aq)	<1 µg/l	TM176			<10	<100				
					◆ #	#				



CERTIFICATE OF ANALYSIS

Validated

SDG: 250517-53
Client Ref.: GWPR6540

Report Number: 766145

Superseded Report:
Location: 220 Elgar Road South, Reading RG2 0BW

VOC MS (W)

Results Legend			Customer Sample Ref.		BH1	BH2			
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00			
M	mCERTS accredited.				Ground Water (GW)	Ground Water (GW)			
aq	Aqueous / settled sample.				16/05/2025	16/05/2025			
diss.filt	Dissolved / filtered sample.				00:00	00:00			
tot.unfilt	Total / unfiltered sample.				17/05/2025	17/05/2025			
*	Subcontracted - refer to subcontractor report for accreditation status.				250517-53	250517-53			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				31527954	31527971			
***	6:2 FTAB (see appendix)								
1.4.5.2	Sample deviation (see appendix)								
Component	LOD/Units	Method							
Dibromofluoromethane**	%	TM208			106	103			
Toluene-d8**	%	TM208			98.9	95.8			
4-Bromofluorobenzene**	%	TM208			98.9	84.5			
Dichlorodifluoromethane	<1 µg/l	TM208			<1	<1			
Chloromethane	<1 µg/l	TM208			<1	<1	#	#	
Vinyl chloride	<1 µg/l	TM208			<1	<1	#	#	
Bromomethane	<1 µg/l	TM208			<1	<1	#	#	
Chloroethane	<1 µg/l	TM208			<1	<1	#	#	
Trichlorofluoromethane	<1 µg/l	TM208			<1	<1	#	#	
1,1-Dichloroethene	<1 µg/l	TM208			<1	<1	#	#	
Carbon disulphide	<1 µg/l	TM208			<1	<1	#	#	
Dichloromethane	<3 µg/l	TM208			<3	<3	#	#	
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208			<1	<1	#	#	
trans-1,2-Dichloroethene	<1 µg/l	TM208			<1	<1	#	#	
1,1-Dichloroethane	<1 µg/l	TM208			<1	<1	#	#	
cis-1,2-Dichloroethene	<1 µg/l	TM208			<1	<1	#	#	
2,2-Dichloropropane	<1 µg/l	TM208			<1	<1			
Bromochloromethane	<1 µg/l	TM208			<1	<1	#	#	
Chloroform	<1 µg/l	TM208			<1	9.67	#	#	
1,1,1-Trichloroethane	<1 µg/l	TM208			<1	<1	#	#	
1,1-Dichloropropene	<1 µg/l	TM208			<1	<1	#	#	
Carbontetrachloride	<1 µg/l	TM208			<1	<1	#	#	
1,2-Dichloroethane	<1 µg/l	TM208			<1	<1	#	#	
Benzene	<1 µg/l	TM208			<1	<1	#	#	
Trichloroethene	<1 µg/l	TM208			2.38	2.01	#	#	
1,2-Dichloropropane	<1 µg/l	TM208			<1	<1	#	#	
Dibromomethane	<1 µg/l	TM208			<1	<1	#	#	
Bromodichloromethane	<1 µg/l	TM208			<1	<1	#	#	
cis-1,3-Dichloropropene	<1 µg/l	TM208			<1	<1	#	#	
Toluene	<1 µg/l	TM208			<1	<1	#	#	
trans-1,3-Dichloropropene	<1 µg/l	TM208			<1	<1	#	#	
1,1,2-Trichloroethane	<1 µg/l	TM208			<1	<1	#	#	



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SDG: 250517-53
Client Ref.: GWPR6540

Report Number: 766145

Superseded Report:
Location: 220 Elgar Road South, Reading RG2 0BW

VOC MS (W)

Results Legend		Customer Sample Ref.	BH1	BH2				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00 Ground Water (GW) 16/05/2025 00:00 17/05/2025 250517-53 31527954	0.00 - 0.00 Ground Water (GW) 16/05/2025 00:00 17/05/2025 250517-53 31527971				
M	mCERIS accredited.							
aq.	Aqueous / settled sample.							
dis.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
***	6.2 FTAB (see appendix)							
1-4	Sample deviation (see appendix)							
Component	LOD/Units	Method						
1,3-Dichloropropane	<1 µg/l	TM208	<1 #	<1 #				
Tetrachloroethene	<1 µg/l	TM208	15.3 #	61.8 #				
Dibromochloromethane	<1 µg/l	TM208	<1 #	<1 #				
1,2-Dibromoethane	<1 µg/l	TM208	<1 #	<1 #				
Chlorobenzene	<1 µg/l	TM208	<1 #	<1 #				
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #				
Ethylbenzene	<1 µg/l	TM208	<1 #	<1 #				
m,p-Xylene	<1 µg/l	TM208	<1 #	<1 #				
o-Xylene	<1 µg/l	TM208	<1 #	<1 #				
Styrene	<1 µg/l	TM208	<1 #	<1 #				
Bromoform	<1 µg/l	TM208	<2 #	<1 #				
Isopropylbenzene	<1 µg/l	TM208	<1 #	<1 #				
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #				
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 #	<1 #				
Bromobenzene	<1 µg/l	TM208	<1 #	<1 #				
Propylbenzene	<1 µg/l	TM208	<1 #	<1 #				
2-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #				
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #				
4-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #				
tert-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #				
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #				
sec-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #				
4-iso-Propyltoluene	<1 µg/l	TM208	<1 #	<1 #				
1,3-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #				
1,4-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #				
n-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #				
1,2-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #				
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1 #	<1 #				
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #				
Hexachlorobutadiene	<1 µg/l	TM208	<1 #	<1 #				
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1 #	<1 #				
Naphthalene	<1 µg/l	TM208	<1 #	<1 #				



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SDG: 250517-53
Client Ref.: GWPR6540

Report Number: 766145
Location: 220 Elgar Road South, Reading RG2 0BW

Superseded Report:

Notification of NDPs (No determination possible)

Date Received : 17/05/2025 08:13:22

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
31527954	BH1	0.00 - 0.00	Mercury Dissolved	nple contains sediment-unsuitable for filtered anal
31527954	BH1	0.00 - 0.00	Dissolved Metals by ICP-MS	nple contains sediment-unsuitable for filtered anal
31527971	BH2	0.00 - 0.00	Mercury Dissolved	nple contains sediment-unsuitable for filtered anal
31527971	BH2	0.00 - 0.00	Dissolved Metals by ICP-MS	nple contains sediment-unsuitable for filtered anal



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SDG: 250517-53
Client Ref.: GWPR6540

Report Number: 766145
Location: 220 Elgar Road South, Reading RG2 0BW

Superseded Report:

Table of Results - Appendix

Method No	Description
TM176	Determination of SVOCs in Water by GCMS
TM178	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM227	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM241	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser
TM245	Determination of GRO by Headspace in waters
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM259	Determination of Phenols in Waters and Leachates by HPLC
TM439	Determination of Extractable Petroleum Hydrocarbons (EPH) CWG banding by GC-FID on liquids

NA = not applicable.

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



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Validated

SDG: 250517-53
Client Ref.: GWPR6540

Report Number: 766145
Superseded Report:
Location: 220 Elgar Road South, Reading RG2 0BW

Test Completion Dates

Lab Sample No(s)	31527954	31527971
Customer Sample Ref.	BH1	BH2
AGS Ref.		
Depth	0.00 - 0.00	0.00 - 0.00
Type	Ground Water	Ground Water

Anions by Kone (w)	21-May-2025	21-May-2025
Cyanide Comp/Free/Total/Thiocyanate	27-May-2025	27-May-2025
EPH and CWG by FID	23-May-2025	29-May-2025
GRO by GC-FID (W)	27-May-2025	27-May-2025
Hexavalent Chromium (w)	20-May-2025	20-May-2025
PAH Spec MS - Aqueous (W)	22-May-2025	22-May-2025
pH Value	23-May-2025	23-May-2025
Phenols by HPLC (W)	22-May-2025	22-May-2025
SVOC MS (W) - Aqueous	28-May-2025	22-May-2025
TPH CWG (W)	27-May-2025	29-May-2025
VOC MS (W)	27-May-2025	27-May-2025



CERTIFICATE OF ANALYSIS

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SDG: 250517-53
Client Ref.: GWPR6540

Report Number: 766145
Location: 220 Elgar Road South, Reading RG2 0BW

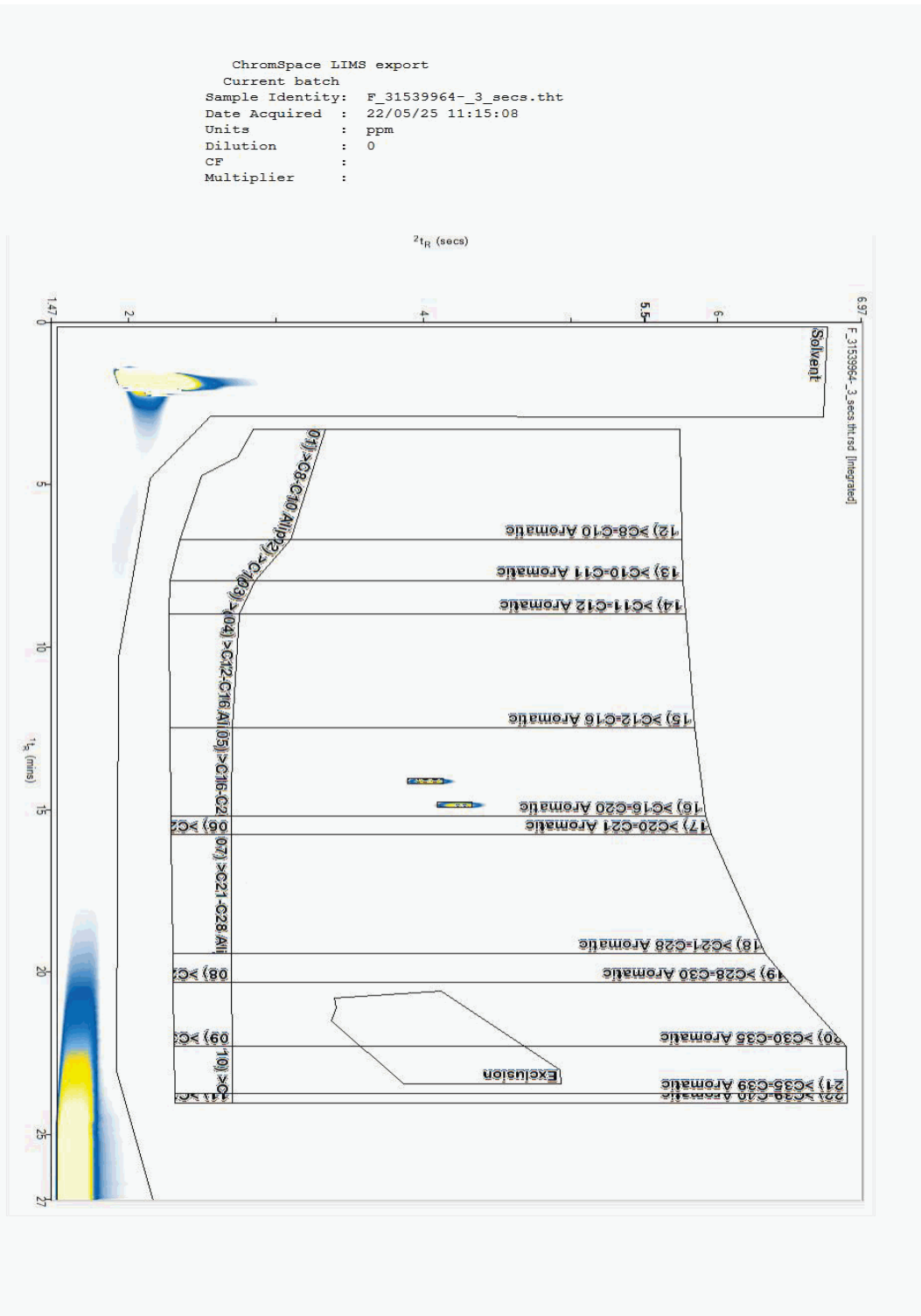
Superseded Report:

Chromatogram

Analysis: EPH and CWG by FID

Sample No : 31539964
Sample ID : BH1

Depth : 0.00 - 0.00





CERTIFICATE OF ANALYSIS

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SDG: 250517-53
Client Ref.: GWPR6540

Report Number: 766145
Location: 220 Elgar Road South, Reading RG2 0BW

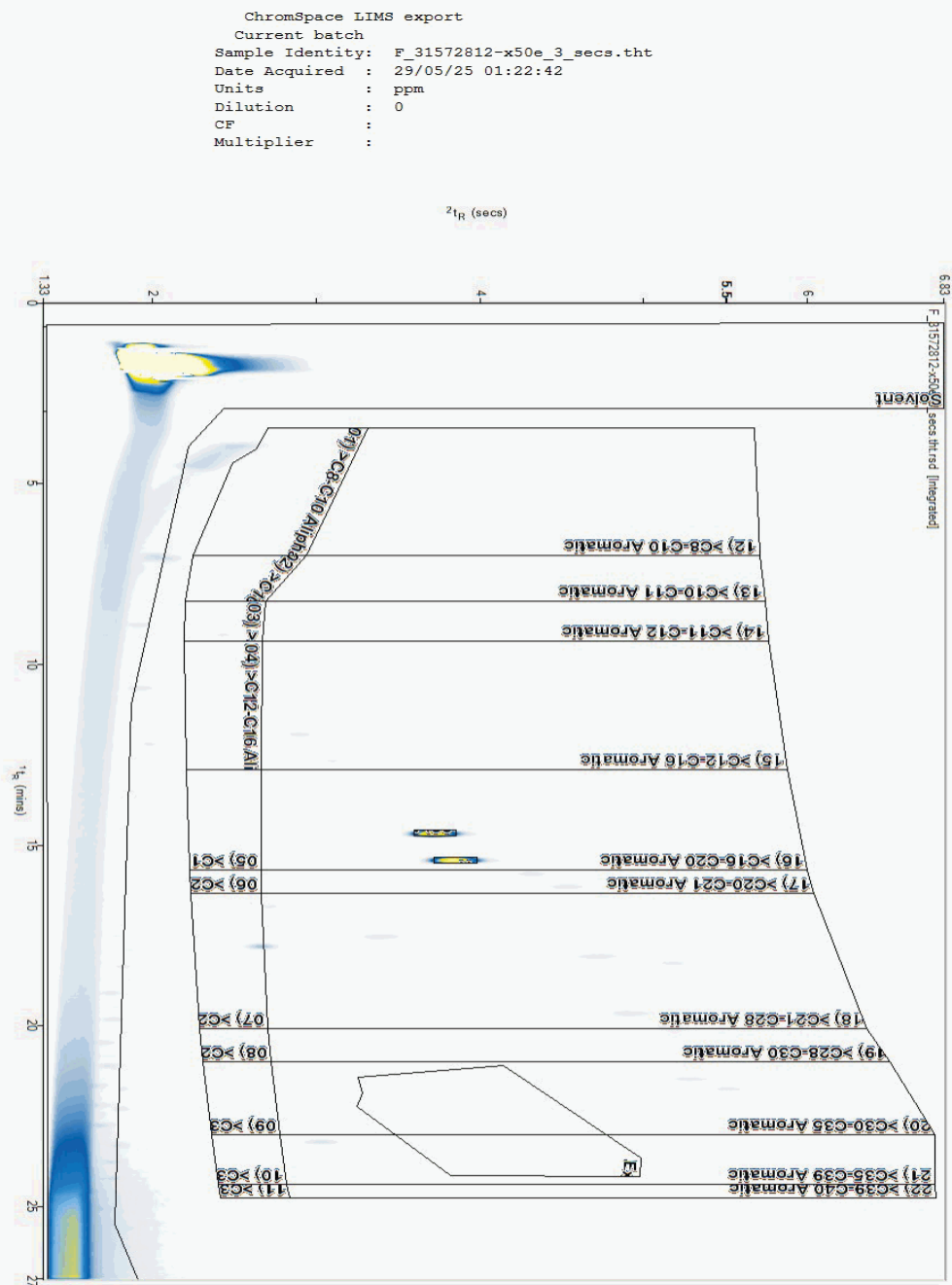
Superseded Report:

Chromatogram

Analysis: EPH and CWG by FID

Sample No : 31572812
Sample ID : BH2

Depth : 0.00 - 0.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250517-53
Client Ref.: GWPR6540

Report Number: 766145
Location: 220 Elgar Road South, Reading RG2 0BW

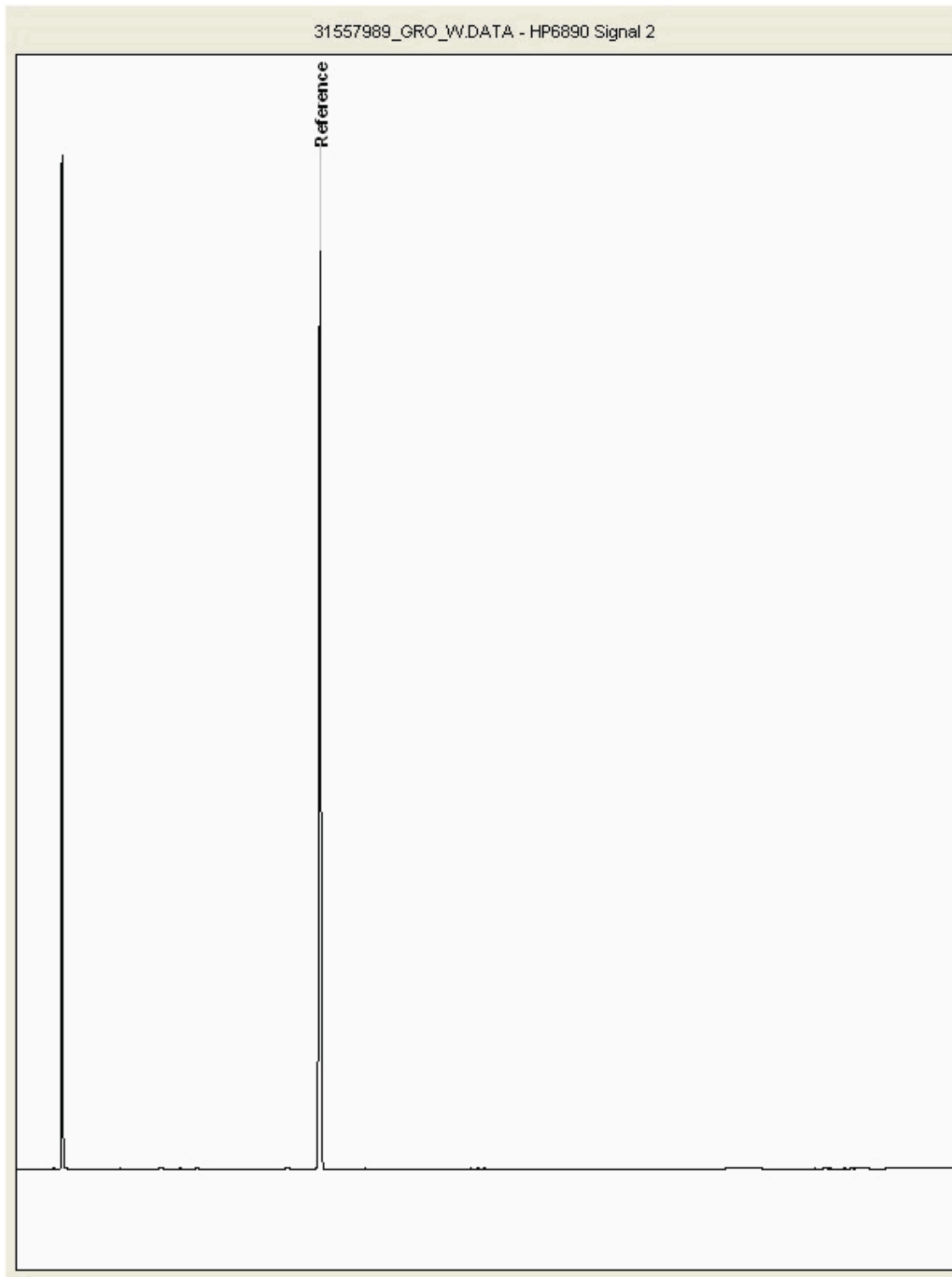
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 31557989
Sample ID : BH1

Depth : 0.00 - 0.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250517-53
Client Ref.: GWPR6540

Report Number: 766145
Location: 220 Elgar Road South, Reading RG2 0BW

Superseded Report:

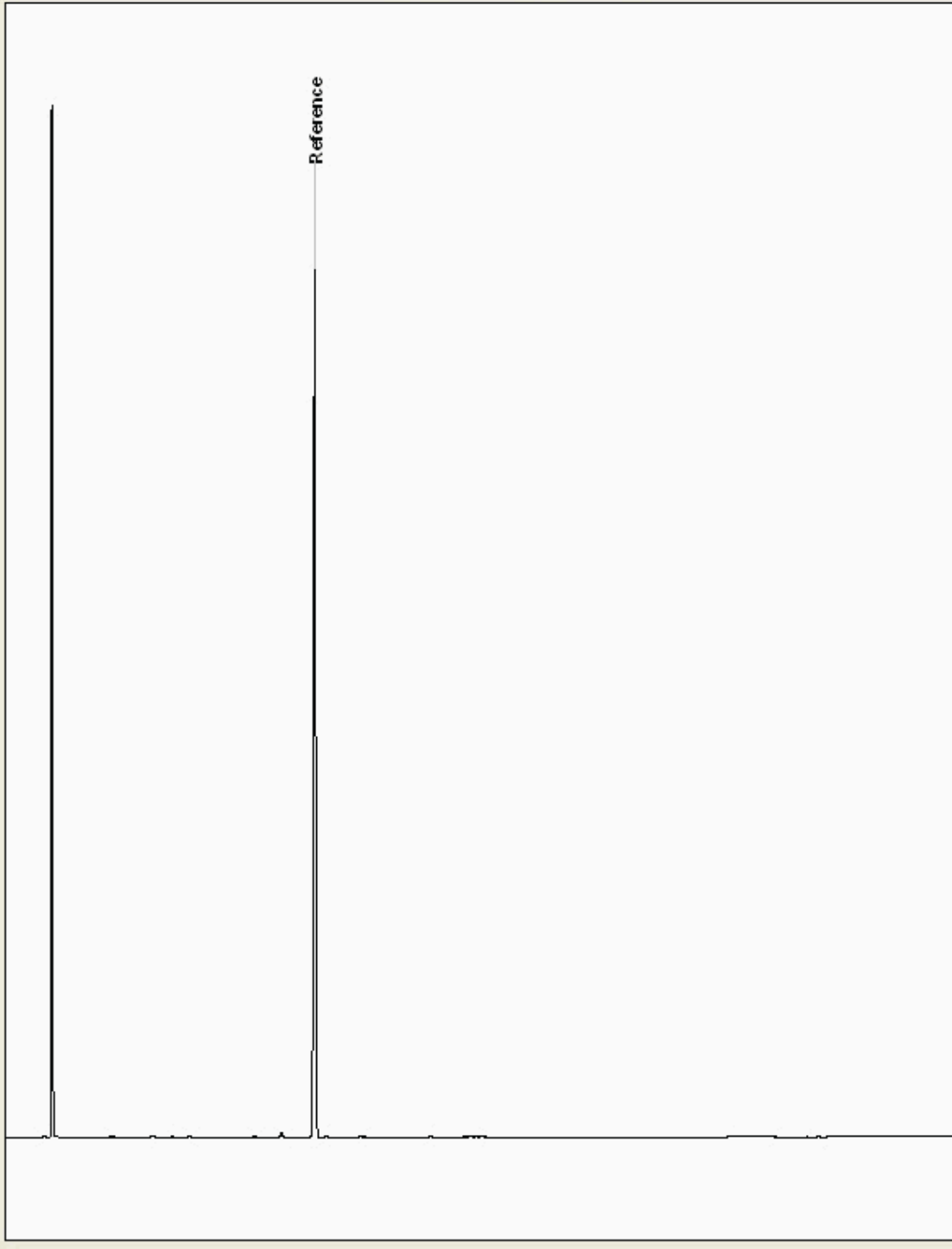
Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 31557993
Sample ID : BH2

Depth : 0.00 - 0.00

31557993_GRO_W.DAT - HP6890 Signal 2





CERTIFICATE OF ANALYSIS

SDG: 250517-53
Client Ref: GWPR6540

Report Number: 766145
Location: 220 Elgar Road South, Reading RG2 0BW

Superseded Report:

Appendix

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

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

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

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

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

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

7. Results relate only to the items tested.

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

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

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

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

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

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

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

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

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

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

General

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

19. Sample Deviations

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

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

20. Asbestos

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

If during the search of the two 'pinch' samples by PLM only 1 or 2 fibres or fibre bundles are seen and identified as asbestos, the term 'trace asbestos identified' is reported.

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

Respirable Fibres

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

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

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

21. 6:2 FTAB

Recovery of 6:2 FTAB in the quality control samples has been observed to be <50% of the target value. Please note the 6:2 FTAB result is supplied as indicative only.



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

Tel: (01244) 528777

email: hawardencustomerservices@alsglobal.com

Website: www.alsenvironmental.co.uk

Ground and Water Ltd
Head Office
2 The Long Barn
Norton Farm, Selborne Road
Alton
Hampshire
GU34 3NB

Attention: Natasha Kearn

CERTIFICATE OF ANALYSIS

Date of report Generation:	03 June 2025
Customer:	Ground and Water Ltd
Sample Delivery Group (SDG):	250523-66
Your Reference:	GWPR6540
Location:	220 Elgar Road South, Reading RG2 0BW
Report No:	766678
Order Number:	GWPR6540

This report has been revised and directly supersedes 766474 in its entirety.

We received 2 samples on Friday May 23, 2025 and 2 of these samples were scheduled for analysis which was completed on Tuesday June 03, 2025. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

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

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

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

Approved By:

Justin Keeton

Business Unit Leader - Land



1291



CERTIFICATE OF ANALYSIS

Validated

SDG: 250523-66
Client Ref.: GWPR6540

Report Number: 766678
Location: 220 Elgar Road South, Reading RG2 0BW

Superseded Report: 766474

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
31560773	BH1		0.00 - 0.00	22/05/2025
31560786	BH2		0.00 - 0.00	22/05/2025

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 250523-66
Client Ref.: GWPR6540

Report Number: 766678

Superseded Report: 766474
Location: 220 Elgar Road South, Reading RG2 0BW

Results Legend	Lab Sample No(s)		31560773		31560786	
	Customer Sample Reference		BH1		BH2	
	AGS Reference					
	Depth (m)		0.00 - 0.00		0.00 - 0.00	
	Container		Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	500ml Plastic (ALE244)
	Sample Type		NaOH (ALE245)	H2SO4 (ALE244)	NaOH (ALE245)	NaOH (ALE245)
Anions by Kone (w)	All	NDPs: 0 Tests: 2				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2				
EPH and CWG by FID	All	NDPs: 0 Tests: 2				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 2				
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 2				
Mercury Dissolved	All	NDPs: 0 Tests: 2				
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 2				
pH Value	All	NDPs: 0 Tests: 2				
Phenols by HPLC (W)	All	NDPs: 0 Tests: 2				
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 2				
TPH CWG (W)	All	NDPs: 0 Tests: 2				
VOC MS (W)	All	NDPs: 0 Tests: 2				

SDG: 250523-66
Client Ref.: GWPR6540

Report Number: 766678

Superseded Report: 766474

Location: 220 Elgar Road South, Reading RG2 0BW

[illegible]

SDG: 250523-66
Client Ref.: GWPR6540

Report Number: 766678

Superseded Report: 766474

Location: 220 Elgar Road South, Reading RG2 0BW

PAH Spec MS - Aqueous (W)

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 250523-66
Client Ref.: GWPR6540

Report Number: 766678

Superseded Report: 766474
Location: 220 Elgar Road South, Reading RG2 0BW

SVOC MS (W) - Aqueous

Results Legend			Customer Sample Ref.		BH1	BH2			
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00			
M	mCERTS accredited.				Ground Water (GW)	Ground Water (GW)			
aq	Aqueous / settled sample.				22/05/2025	22/05/2025			
diss.filt	Dissolved / filtered sample.				00:00	00:00			
tot.unfilt	Total / unfiltered sample.				23/05/2025	23/05/2025			
*	Subcontracted - refer to subcontractor report for accreditation status.				250523-66	250523-66			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				31560773	31560786			
***	6:2 FTAB (see appendix)								
1.4.5.2	Sample deviation (see appendix)								
Component	LOD/Units	Method							
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176			<100 #	<40 #			
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176			<100 #	<40 #			
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176			<100 #	<40 #			
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176			<100 #	<40 #			
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176			<100 #	<40 #			
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176			<100 #	<40 #			
2,4-Dichlorophenol (aq)	<1 µg/l	TM176			<100 #	<40 #			
2,4-Dimethylphenol (aq)	<1 µg/l	TM176			<100 #	<40 #			
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176			<100 #	<40 #			
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176			<100 #	<40 #			
2-Chloronaphthalene (aq)	<1 µg/l	TM176			<100 #	<40 #			
2-Chlorophenol (aq)	<1 µg/l	TM176			<100 #	<40 #			
2-Methylnaphthalene (aq)	<1 µg/l	TM176			<100 #	<40 #			
2-Methylphenol (aq)	<1 µg/l	TM176			<100 #	<40 #			
2-Nitroaniline (aq)	<1 µg/l	TM176			<100 #	<40 #			
2-Nitrophenol (aq)	<1 µg/l	TM176			<100 #	<40 #			
3-Nitroaniline (aq)	<1 µg/l	TM176			<100 #	<40 #			
4-Bromophenylphenylether (aq)	<1 µg/l	TM176			<100 #	<40 #			
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176			<100 #	<40 #			
4-Chloroaniline (aq)	<1 µg/l	TM176			<100 #	<40 #			
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176			<100 #	<40 #			
4-Methylphenol (aq)	<1 µg/l	TM176			<100 #	<40 #			
4-Nitroaniline (aq)	<1 µg/l	TM176			<100 #	<40 #			
4-Nitrophenol (aq)	<1 µg/l	TM176			<100 #	<40 #			
Azobenzene (aq)	<1 µg/l	TM176			<100 #	<40 #			
Acenaphthylene (aq)	<1 µg/l	TM176			<100 #	<40 #			
Acenaphthene (aq)	<1 µg/l	TM176			<100 #	<40 #			
Anthracene (aq)	<1 µg/l	TM176			<100 #	<40 #			
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176			<100 #	<40 #			
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176			<100 #	<40 #			
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176			<200 #	<80 #			
Butylbenzyl phthalate (aq)	<1 µg/l	TM176			<100 #	<40 #			



CERTIFICATE OF ANALYSIS

Validated

SDG: 250523-66
Client Ref.: GWPR6540

Report Number: 766678

Superseded Report: 766474
Location: 220 Elgar Road South, Reading RG2 0BW

SVOC MS (W) - Aqueous

Results Legend			Customer Sample Ref.		BH1	BH2				
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00				
M	mCERTS accredited.				Ground Water (GW)	Ground Water (GW)				
aq	Aqueous / settled sample.				22/05/2025	22/05/2025				
dis.filt	Dissolved / filtered sample.				00:00	00:00				
tot.unfilt	Total / unfiltered sample.				23/05/2025	23/05/2025				
*	Subcontracted - refer to subcontractor report for accreditation status.				250523-66	250523-66				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				31560773	31560786				
***	6:2 FTAB (see appendix)									
1-4+5-6	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Benzo(a)anthracene (aq)	<1 µg/l	TM176			<100 #	<40 #				
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176			<100 #	<40 #				
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176			<100 #	<40 #				
Benzo(a)pyrene (aq)	<1 µg/l	TM176			<100 #	<40 #				
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176			<100 #	<40 #				
Carbazole (aq)	<1 µg/l	TM176			<100 #	<40 #				
Chrysene (aq)	<1 µg/l	TM176			<100 #	<40 #				
Dibenzofuran (aq)	<1 µg/l	TM176			<100 #	<40 #				
n-Dibutyl phthalate (aq)	<1 µg/l	TM176			<100 #	<40 #				
Diethyl phthalate (aq)	<1 µg/l	TM176			<100 #	<40 #				
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176			<100 #	<40 #				
Dimethyl phthalate (aq)	<1 µg/l	TM176			<100 #	<40 #				
n-Dioctyl phthalate (aq)	<5 µg/l	TM176			<500 #	<200 #				
Fluoranthene (aq)	<1 µg/l	TM176			<100 #	<40 #				
Fluorene (aq)	<1 µg/l	TM176			<100 #	<40 #				
Hexachlorobenzene (aq)	<1 µg/l	TM176			<100 #	<40 #				
Hexachlorobutadiene (aq)	<1 µg/l	TM176			<100 #	<40 #				
Pentachlorophenol (aq)	<1 µg/l	TM176			<100	<40				
Phenol (aq)	<1 µg/l	TM176			<100	<40				
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176			<100 #	<40 #				
Hexachloroethane (aq)	<1 µg/l	TM176			<100 #	<40 #				
Nitrobenzene (aq)	<1 µg/l	TM176			<100 #	<40 #				
Naphthalene (aq)	<1 µg/l	TM176			<100 #	<40 #				
Isophorone (aq)	<1 µg/l	TM176			<100 #	<40 #				
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176			<100	<40				
Phenanthrene (aq)	<1 µg/l	TM176			<100 #	<40 #				
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176			<100 #	<40 #				
Pyrene (aq)	<1 µg/l	TM176			<100 #	<40 #				

SDG: 250523-66
Client Ref.: GWPR6540

Report Number: 766678

Superseded Report: 766474

Location: 220 Elgar Road South, Reading RG2 0BW

TPH CWG (W)

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 250523-66
Client Ref.: GWPR6540

Report Number: 766678

Superseded Report: 766474
Location: 220 Elgar Road South, Reading RG2 0BW

VOC MS (W)

Results Legend			Customer Sample Ref.		BH1	BH2			
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00			
M	mCERTS accredited.				Ground Water (GW)	Ground Water (GW)			
aq	Aqueous / settled sample.				22/05/2025	22/05/2025			
diss.filt	Dissolved / filtered sample.				00:00	00:00			
tot.unfilt	Total / unfiltered sample.				23/05/2025	23/05/2025			
*	Subcontracted - refer to subcontractor report for accreditation status.				250523-66	250523-66			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				31560773	31560786			
***	6:2 FTAB (see appendix)								
1.4.5@	Sample deviation (see appendix)								
Component	LOD/Units	Method							
Dibromofluoromethane**	%	TM208			114	112			
Toluene-d8**	%	TM208			99.6	101			
4-Bromofluorobenzene**	%	TM208			96.8	99.8			
Dichlorodifluoromethane	<1 µg/l	TM208			<1	<1			
Chloromethane	<1 µg/l	TM208			<1	<1	#	#	
Vinyl chloride	<1 µg/l	TM208			<1	<1	#	#	
Bromomethane	<1 µg/l	TM208			<1	<1	#	#	
Chloroethane	<1 µg/l	TM208			<1	<1	#	#	
Trichlorofluoromethane	<1 µg/l	TM208			<1	<1	#	#	
1,1-Dichloroethene	<1 µg/l	TM208			<1	<1	#	#	
Carbon disulphide	<1 µg/l	TM208			<1	<1	#	#	
Dichloromethane	<3 µg/l	TM208			<3	<3	#	#	
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208			<1	<1	#	#	
trans-1,2-Dichloroethene	<1 µg/l	TM208			<1	<1	#	#	
1,1-Dichloroethane	<1 µg/l	TM208			<1	<1	#	#	
cis-1,2-Dichloroethene	<1 µg/l	TM208			<1	<1	#	#	
2,2-Dichloropropane	<1 µg/l	TM208			<1	<1			
Bromochloromethane	<1 µg/l	TM208			<1	<1	#	#	
Chloroform	<1 µg/l	TM208			5.64	4.95	#	#	
1,1,1-Trichloroethane	<1 µg/l	TM208			<1	<1	#	#	
1,1-Dichloropropene	<1 µg/l	TM208			<1	<1	#	#	
Carbontetrachloride	<1 µg/l	TM208			<1	<1	#	#	
1,2-Dichloroethane	<1 µg/l	TM208			<1	<1	#	#	
Benzene	<1 µg/l	TM208			<1	<1	#	#	
Trichloroethene	<1 µg/l	TM208			1.6	1.57	#	#	
1,2-Dichloropropane	<1 µg/l	TM208			<1	<1	#	#	
Dibromomethane	<1 µg/l	TM208			<1	<1	#	#	
Bromodichloromethane	<1 µg/l	TM208			<1	<1	#	#	
cis-1,3-Dichloropropene	<1 µg/l	TM208			<1	<1	#	#	
Toluene	<1 µg/l	TM208			<1	<1	#	#	
trans-1,3-Dichloropropene	<1 µg/l	TM208			<1	<1	#	#	
1,1,2-Trichloroethane	<1 µg/l	TM208			<1	<1	#	#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 250523-66
Client Ref.: GWPR6540

Report Number: 766678

Superseded Report: 766474
Location: 220 Elgar Road South, Reading RG2 0BW

VOC MS (W)

Results Legend			Customer Sample Ref.		BH1	BH2				
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00				
M	mCERTS accredited.				Ground Water (GW)	Ground Water (GW)				
aq.	Aqueous / settled sample.				22/05/2025	22/05/2025				
dis.filt	Dissolved / filtered sample.				00:00	00:00				
tot.unfilt	Total / unfiltered sample.				23/05/2025	23/05/2025				
*	Subcontracted - refer to subcontractor report for accreditation status.				250523-66	250523-66				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				31560773	31560786				
***	6.2 FTAB (see appendix)									
1-4	Sample deviation (see appendix)									
Component	LOD/Units	Method								
1,3-Dichloropropane	<1 µg/l	TM208			<1 #	<1 #				
Tetrachloroethene	<1 µg/l	TM208			21.6 #	19.4 #				
Dibromochloromethane	<1 µg/l	TM208			<1 #	<1 #				
1,2-Dibromoethane	<1 µg/l	TM208			<1 #	<1 #				
Chlorobenzene	<1 µg/l	TM208			<1 #	<1 #				
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208			<1 #	<1 #				
Ethylbenzene	<1 µg/l	TM208			<1 #	<1 #				
m,p-Xylene	<1 µg/l	TM208			<1 #	<1 #				
o-Xylene	<1 µg/l	TM208			<1 #	<1 #				
Styrene	<1 µg/l	TM208			<1 #	<1 #				
Bromoform	<1 µg/l	TM208			<1 #	<1 #				
Isopropylbenzene	<1 µg/l	TM208			<1 #	<1 #				
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208			<1 #	<1 #				
1,2,3-Trichloropropane	<1 µg/l	TM208			<1 #	<1 #				
Bromobenzene	<1 µg/l	TM208			<1 #	<1 #				
Propylbenzene	<1 µg/l	TM208			<1 #	<1 #				
2-Chlorotoluene	<1 µg/l	TM208			<1 #	<1 #				
1,3,5-Trimethylbenzene	<1 µg/l	TM208			<1 #	<1 #				
4-Chlorotoluene	<1 µg/l	TM208			<1 #	<1 #				
tert-Butylbenzene	<1 µg/l	TM208			<1 #	<1 #				
1,2,4-Trimethylbenzene	<1 µg/l	TM208			<1 #	<1 #				
sec-Butylbenzene	<1 µg/l	TM208			<1 #	<1 #				
4-iso-Propyltoluene	<1 µg/l	TM208			<1 #	<1 #				
1,3-Dichlorobenzene	<1 µg/l	TM208			<1 #	<1 #				
1,4-Dichlorobenzene	<1 µg/l	TM208			<1 #	<1 #				
n-Butylbenzene	<1 µg/l	TM208			<1 #	<1 #				
1,2-Dichlorobenzene	<1 µg/l	TM208			<1 #	<1 #				
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208			<1 #	<1 #				
1,2,4-Trichlorobenzene	<1 µg/l	TM208			<1 #	<1 #				
Hexachlorobutadiene	<1 µg/l	TM208			<1 #	<1 #				
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208			<1 #	<1 #				
Naphthalene	<1 µg/l	TM208			<1 #	<1 #				

SDG: 250523-66
Client Ref.: GWPR6540

Report Number: 766678

Superseded Report: 766474

Location: 220 Elgar Road South, Reading RG2 0BW

VOC MS (W)

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 250523-66
Client Ref.: GWPR6540

Report Number: 766678
Location: 220 Elgar Road South, Reading RG2 0BW

Superseded Report: 766474

Table of Results - Appendi:

Method No	Description
TM176	Determination of SVOCs in Water by GCMS
TM259	Determination of Phenols in Waters and Leachates by HPLC
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM241	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser
TM245	Determination of GRO by Headspace in waters
TM178	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM439	Determination of Extractable Petroleum Hydrocarbons (EPH) CWG banding by GC-FID on liquids
TM152	Analysis of Aqueous Samples by ICP-MS
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM227	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples

NA = not applicable.

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 250523-66
Client Ref.: GWPR6540

Report Number: 766678
Location: 220 Elgar Road South, Reading RG2 0BW

Superseded Report: 766474

Test Completion Dates

Lab Sample No(s)	31560773	31560786
Customer Sample Ref.	BH1	BH2
AGS Ref.		
Depth	0.00 - 0.00	0.00 - 0.00
Type	Ground Water	Ground Water
Anions by Kone (w)	28-May-2025	28-May-2025
Cyanide Comp/Free/Total/Thiocyanate	30-May-2025	30-May-2025
Dissolved Metals by ICP-MS	03-Jun-2025	03-Jun-2025
EPH and CWG by FID	30-May-2025	30-May-2025
GRO by GC-FID (W)	02-Jun-2025	02-Jun-2025
Hexavalent Chromium (w)	30-May-2025	30-May-2025
Mercury Dissolved	02-Jun-2025	02-Jun-2025
PAH Spec MS - Aqueous (W)	02-Jun-2025	02-Jun-2025
pH Value	30-May-2025	30-May-2025
Phenols by HPLC (W)	29-May-2025	29-May-2025
SVOC MS (W) - Aqueous	30-May-2025	30-May-2025
TPH CWG (W)	02-Jun-2025	02-Jun-2025
VOC MS (W)	30-May-2025	30-May-2025



CERTIFICATE OF ANALYSIS

Validated

SDG: 250523-66
Client Ref.: GWPR6540

Report Number: 766678
Location: 220 Elgar Road South, Reading RG2 0BW

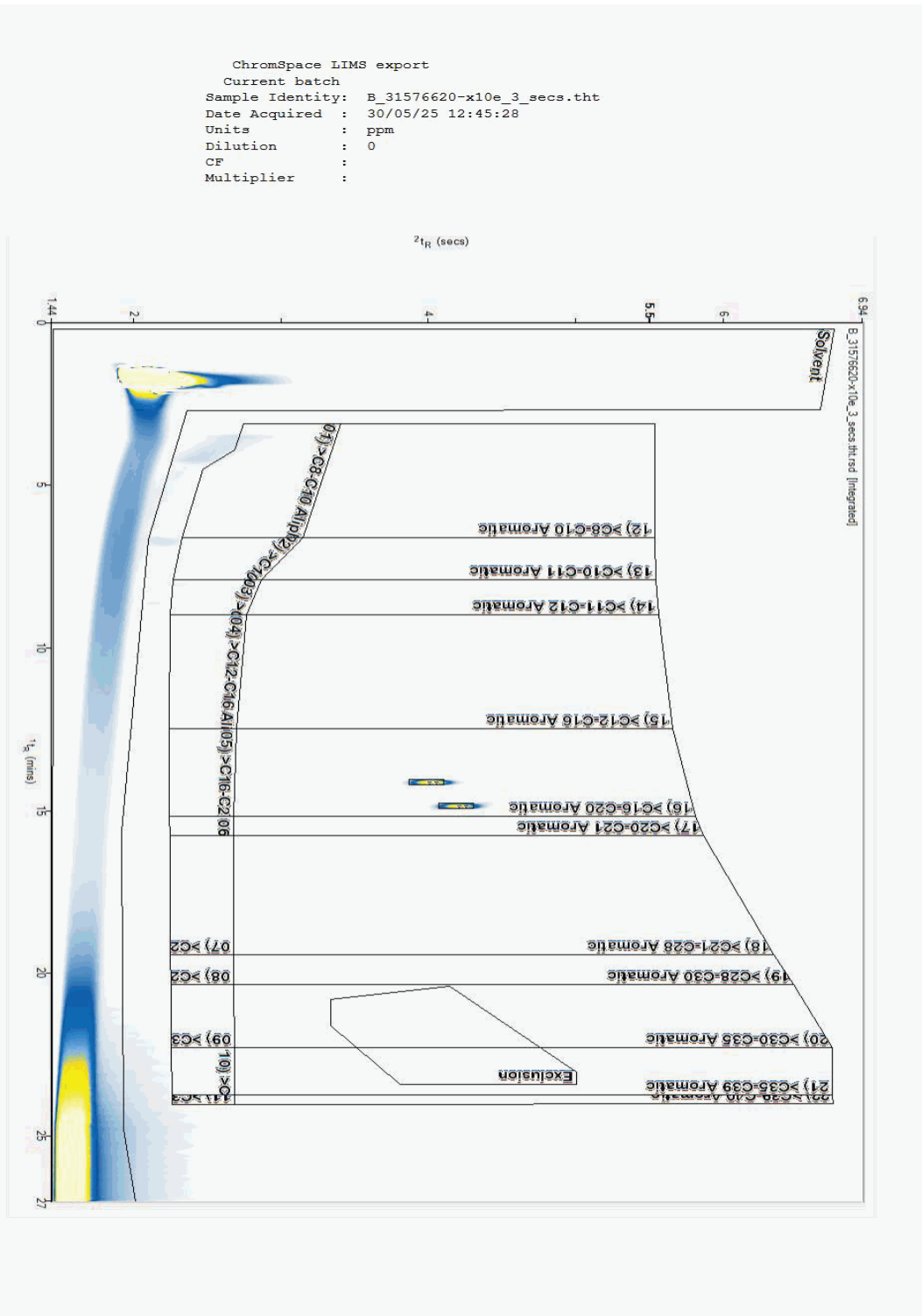
Superseded Report: 766474

Chromatogram

AnalysisxEPH and CWG by FID

Sample No x 31576620
Sample ID x BH2

Depth x 0.00 - 0.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250523-66
Client Ref.: GWPR6540

Report Number: 766678
Location: 220 Elgar Road South, Reading RG2 0BW

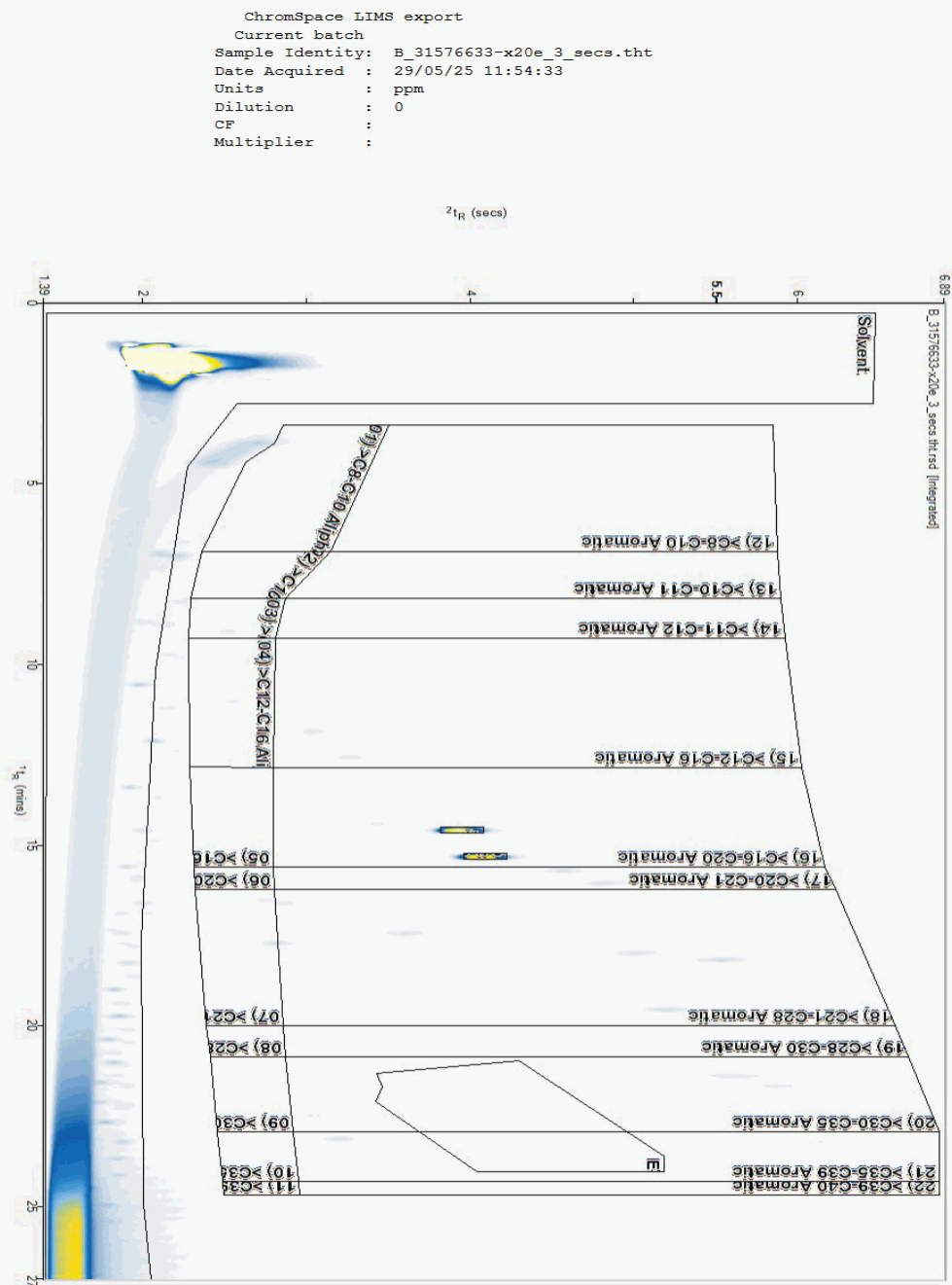
Superseded Report: 766474

Chromatogram

AnalysisxEPH and CWG by FID

Sample No x 31576633
Sample ID x BH1

Depth x 0.00 - 0.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250523-66
Client Ref.: GWPR6540

Report Number: 766678
Location: 220 Elgar Road South, Reading RG2 0BW

Superseded Report: 766474

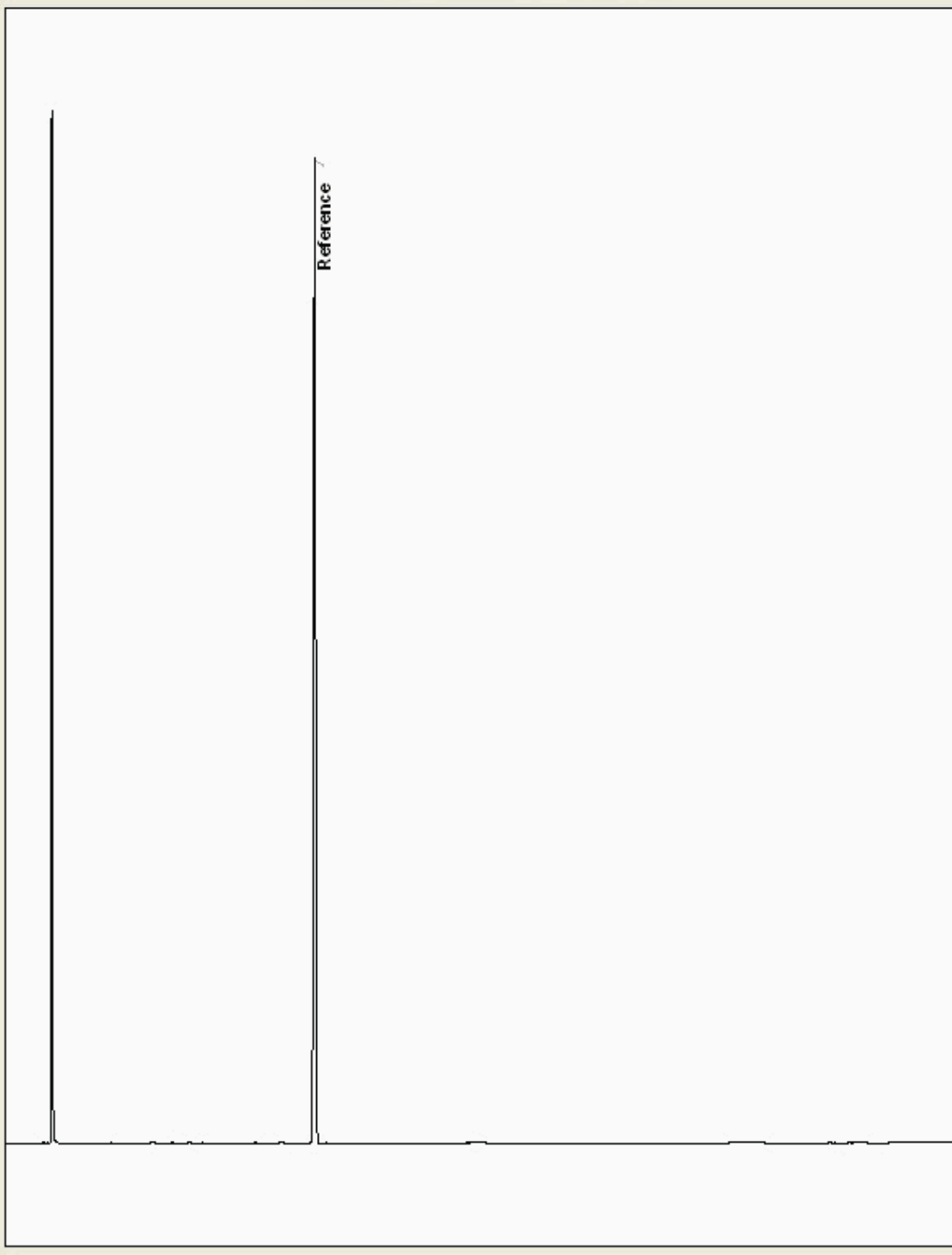
Chromatogram

AnalysisxGRO by GC-FID (W)

Sample No x 31588912
Sample ID x BH1

Depth x 0.00 - 0.00

31588912_GRO_W.DATA - HP6890 Signal 2





CERTIFICATE OF ANALYSIS

Validated

SDG: 250523-66
Client Ref.: GWPR6540

Report Number: 766678
Location: 220 Elgar Road South, Reading RG2 0BW

Superseded Report: 766474

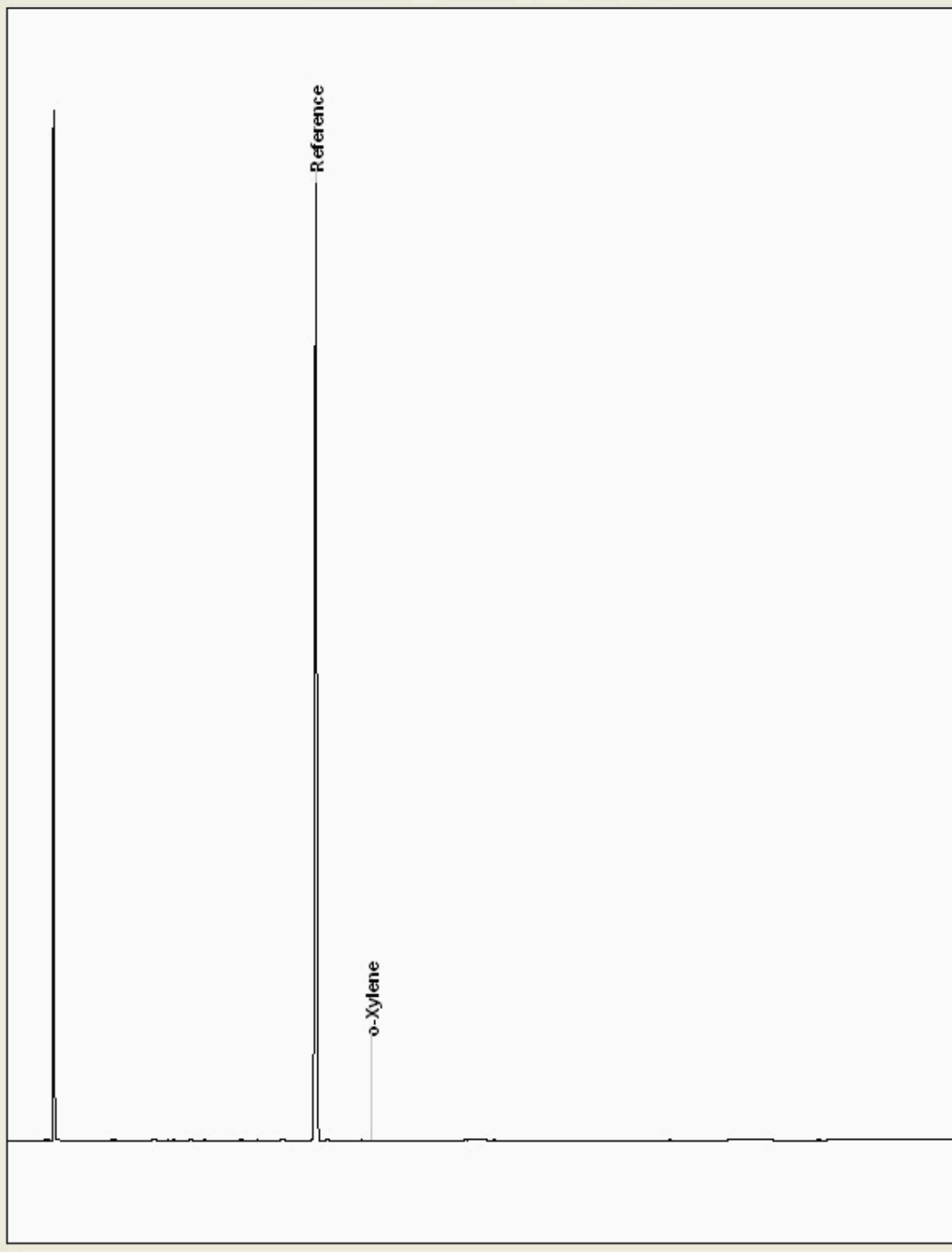
Chromatogram

AnalysisxGRO by GC-FID (W)

Sample No x 31588943
Sample ID x BH2

Depth x 0.00 - 0.00

31588943_GRO_W.DATA - HP6890 Signal 2





CERTIFICATE OF ANALYSIS

SDG: 250523-66
Client Ref: GWPR6540

Report Number: 766678
Location: 220 Elgar Road South, Reading RG2 0BW

Superseded Report: 766474

Appendix

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

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

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

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

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

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

7. Results relate only to the items tested.

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

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

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

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

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

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

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

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

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

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

General

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

19. Sample Deviations

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

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

20. Asbestos

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

If during the search of the two 'pinch' samples by PLM only 1 or 2 fibres or fibre bundles are seen and identified as asbestos, the term 'trace asbestos identified' is reported.

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

Respirable Fibres

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

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

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

21. 6:2 FTAB

Recovery of 6:2 FTAB in the quality control samples has been observed to be <50% of the target value. Please note the 6:2 FTAB result is supplied as indicative only.

APPENDIX G: Soil Assessment Criteria

Ground and Water Limited

Soil Guideline Values and Generic Assessment Criteria

The Contaminated Land Regime reflects the UK Government's stated objectives of achieving sustainable development through the 'suitable for use approach'. At preliminary risk assessment stage, risks are evaluated qualitatively. As the site investigation progresses to a generic or detailed quantitative risk assessment, data is collected and assessment criteria are utilised to evaluate whether the contaminants represent an unacceptable risk to the identified receptors.

1. Contaminated Land Exposure Assessment Model (CLEA)

Current United Kingdom risk assessment practice is based on the Contaminated Land Exposure Assessment Model (CLEA).

The CLEA Guidance comprises the following documents:

- 1) EA Science Report SC050021/SR2: Human health toxicological assessment of contaminants in soil.
- 2) EA Science Report SC050021/SR3: Updated technical background to the CLEA model.
- 3) EA CLEA Bulletin (2009).
- 4) CLEA software version 1.07 (2015)
- 5) Toxicological reports and SGV technical notes.

The CLEA guidance and tools:

- Do not cover other types of risk to humans, such as fire, suffocation or explosion, or short-term and acute exposures;
- Do not cover risks to the environment, such as groundwater, ecosystems or buildings;
- Do not provide a definitive test for telling when human health risks are significant; and
- Are not a legal requirement in assessing land contamination risks. They are not part of the legal regime for Part 2A of the Environmental Protection Act 1990.

The CLEA guidance derives soil concentrations of contaminants above which (in the opinion of the EA) there may be a concern that warrants further investigation. It does not provide a definitive test for establishing that the risk is significant.

1.1. Land-use Scenarios

The CLEA model uses a range of standard land-use scenarios to develop conceptual exposure models outlined in the following sections.

1.1.1. Residential (with home grown produce) (RwHP)

Generic scenario assumes a typical two-storey house built on a ground bearing slab with a private garden having a lawn, flowerbeds and a small fruit and vegetable patch.

- Critical receptor is a young female child (zero to six years old)
- Exposure duration is six years.
- Exposure pathways include direct soil and indoor dust ingestion, consumption of homegrown produce and any adhering soil, skin contact with soils and indoor dust and inhalation of indoor and outdoor dust and vapours.
- Building type is a two-storey small-terraced house.

A sub-set of this land-use is residential apartments with communal landscaped gardens where the consumption of home grown vegetables will not occur. (Residential without homegrown produce (RwoHP)).

1.1.2. Allotments

Provision of open space (about 250sq.m) commonly made available to tenants by the local authority to grow fruit and vegetable for their own consumption. Typically, there are a number of plots to a site which may have a total area of up to 1 hectare. The tenants are assumed to be adults and that young children make occasional accompanied visits.

Although some allotment holders may choose to keep animals including rabbits, hens, and ducks, potential exposure to contaminated meat and eggs is not considered.

- Critical receptor is a young female child (zero to six years old)
- Exposure duration is six years.
- Exposure pathways include direct soil ingestion, consumption of homegrown produce and any adhering soil, skin contact with soils and inhalation of outdoor dust and vapours.
- There is no building.

1.1.3. Commercial/Industrial

The generic scenario assumes a typical commercial or light industrial property comprising a three-storey building at which employees spend most time indoors and are involved in office-based or relatively light physical work.

- Critical receptor is a working female adult (aged 16 to 65 years old).
- Exposure duration is a working lifetime of 49 years.
- Exposure pathways include direct soil and indoor dust ingestion, skin contact with soils and dusts and inhalation of dust and vapours.
- Building type is a three-storey office (pre 1970).

2. LQM/CIEH Suitable 4 Use Levels (S4UL)

For derivation of these S4UL reference must be made to:

Nathanial, P., McCaffrey, C., Gillet, A., Ogden, R., Nathanial, J., *The LQM/CIEH S4UL's for Human Health Risk Assessment*. Land Quality Press. 2015

2.1. S4UL Background

The Land Quality Management/Chartered Institute of Environmental Health (LQM/CIEH) S4UL for a given land use is the concentration of the contaminant in soil at which the predicted daily exposure,

as calculated by the CLEA software, equals the Health Criteria Value. The S4ULs have been derived for substances based on various generic land use and soil organic matter contents.

The final output for each contaminant represents a synthesis of new toxicological (and fate and transport) reviews published since the preparation of the 2nd edition LQM/CIEH GAC's (Nathanial et al., 2009).

In the derivation of LQM/CIEH S4UL's the principles of 'minimal' or 'tolerable' risk enshrined in SR2, which has not been withdrawn, has been maintained.

2.2. S4UL Land-use

S4UL's have been derived for the basic CLEA land-uses, as described in section 1.2, and for two new land uses:

- Public Open Spaces near Residential Housing (POSresi).
- Public Park (POSpark).

2.2.1. Public Open Spaces near Residential Housing (POSresi)

Includes the predominantly grassed areas adjacent to high density housing, the central green area on many 1930's – 1970's housing estates, and smaller areas commonly incorporated in newer developments as informal grassed areas or more formal landscaped areas with a mixture of open space and covered soils with planting. It is assumed that the close proximity to the place of residence will allow tracking back of soil to occur.

2.2.2. Public Park (POSpark)

An area of open space, usually owned and maintained by the local authority, provided for recreational uses including family visits and picnics, children's play area, informal sporting activities (not a dedicated sports pitch), and dog walking. It is assumed that tracking back of soils into places of residence will be negligible.

The following LQM/CIEH S4ULs (Copyright Land Quality Management Limited) have been reproduced with permission, to the publication number S4UL3072.

3. Category 4 Screening Levels (C4SLs)

In the case of Lead, no SGV or GAC has been published to date. This is likely to be due to the toxicity review that is currently being undertaken by the Environment Agency. In the absence of updated toxicity information the SGV derived using CLEA 1.07 methodology and related toxicity will be used.

The overall objective of the C4SLs research project was to assist the provision of technical guidance in support of Defra's revised Statutory Guidance (SG) for Part 2A of the Environmental Protection Act 1990 (Part 2A) (Defra, 2012a). Specifically, the project aimed to deliver:

- A methodology for deriving C4SLs for four generic land-uses comprising residential, commercial, allotments and public open space; and
- A demonstration of the methodology, via the derivation of C4SLs for six substances – arsenic, benzene, benzo(a)pyrene, cadmium, chromium (VI) and lead.

To help achieve a more targeted approach to identifying and managing contaminated land in relation to the risk (or possibility) of harm to human health, the revised SG presented a new four category

system for considering land under Part 2A, ranging from Category 4, where there is no risk that land poses a significant possibility of significant harm (SPOSH), or the level of risk is low, to Category 1, where the risk that land poses a significant possibility of significant harm (SPOSH) is unacceptably high. More specific guidance on what type of land should be considered as Category 4 (Human Health) is provided in Paragraphs 4.21 and 4.22 of the revised SG, as follows:

“4.21 The local authority should consider that the following types of land should be placed into Category 4: Human Health:

(a) Land where no relevant contaminant linkage has been established.

(b) Land where there are only normal levels of contaminants in soil, as explained in Section 3 of this Guidance.

(c) Land that has been excluded from the need for further inspection and assessment because contaminant levels do not exceed relevant generic assessment criteria in accordance with Section 3 of this Guidance, or relevant technical tools or advice that may be developed in accordance with paragraph 3.30 of this Guidance.

(d) Land where estimated levels of exposure to contaminants in soil are likely to form only a small proportion of what a receptor might be exposed to anyway through other sources of environmental exposure (e.g. in relation to average estimated national levels of exposure to substances commonly found in the environment, to which receptors are likely to be exposed in the normal course of their lives).

4.22 The local authority may consider that land other than the types described in paragraph 4.21 should be placed into Category 4: Human Health if following a detailed quantitative risk assessment it is satisfied that the level of risk posed is sufficiently low.”

The C4SLs are intended as “relevant technical tools” (in relation to Paragraph 4.21(c)) to help local authorities and others when deciding to stop further assessment of a site, on the grounds that it falls within Category 4 (Human Health).

The Impact Assessment (IA), which accompanied the revised SG (Defra, 2012b) provides further information on the nature and potential role of the C4SLs. Paragraph 47(h) of the IA states that:

“The new statutory guidance will bring about a situation where the current SGVs/GACs are replaced with more pragmatic (but still strongly precautionary) Category 4 screening levels (C4SLs) which will provide a higher simple test for deciding that land is suitable for use and definitely not contaminated land.”

A key distinction between the Soil Guideline Values (SGVs) and the C4SLs is the level of risk that they describe. As described by the Environment Agency (2009a):

“SGVs are guidelines on the level of long-term human exposure to individual chemicals in soil that, unless stated otherwise, are tolerable or pose a minimal risk to human health.”

The implication of Paragraph 47(h) of the IA is that minimal risk is well within Category 4 and that the C4SLs should describe a higher level of risk which, whilst not minimal, can still be considered low enough to allow a judgement to be made that land containing substances at, or below, the C4SLs would typically fall within Category 4. This reflects Paragraph 4.20 of the revised SG, which states:

“4.20 The local authority should not assume that land poses a significant possibility of significant harm if it considers that there is no risk or that the level of risk posed is low. For the purposes of this Guidance, such land is referred to as a “Category 4: Human Health” case. The authority may decide that the land is a Category 4: Human Health case as soon as it considers it has evidence to this effect, and this may happen at any stage during risk assessment including the early stages.”

C4SLs, therefore, should not be viewed as “SPOSH levels” and they should not be used as a legal trigger for the determination of land under Part 2A.

The generic screening values referred to before usually take the form of risk-based Soil Guideline Values (SGVs) or other Generic Assessment Criteria (GACs) that are most typically derived using the Environment Agency's Contaminated Land Exposure Assessment (CLEA) model, as described in the Environment Agency's SR2, SR3 and SR7 reports (EA, 2009b & c; EA, 2008). It is anticipated that C4SLs will be used in a similar manner; as generic screening criteria that can be used within a GQRA, albeit describing a higher level of risk than the SGVs.

The suggested approach to the development of C4SLs consists of the retention and use of the CLEA framework, modified according to considerations of the underlying science within the context of Defra's policy objectives relating to the revised SG. Within this context, it is suggested that the development of C4SLs may be achieved in one of three ways, namely:

- By modifying the toxicological parameters used within CLEA (while maintaining current exposure parameters);
- By modifying the exposure parameters embedded within CLEA (while maintaining current toxicological “minimal risk” interpretations); and
- By modifying both toxicological and exposure parameters.

There is also a suggested check on “other considerations” (e.g., background levels, epidemiological data, sources of uncertainty) within the approach, applicable to all three options.

It is suggested that a new term is defined for the toxicological guidance values associated with the derivation of C4SLs – a Low Level of Toxicological Concern (LLTC). A LLTC should represent an intake of low concern that remains suitably protective of health, and definitely does not approach an intake level that could be defined as SPOSH.

4. CL:AIRE Generic Assessment Criteria (GAC)

For derivation of the CL:AIRE Generic Assessment Criteria (GAC) reference should be made to the following report:

CL:AIRE, *The Soil Generic Assessment Criteria for Human Health Risk Assessment. Contaminated Land: Applications in the Real Environment*. 2009.

Within this report, Contaminated Land: Applications in Real Environments (CL:AIRE) provided Generic Assessment Criteria (GAC) in accordance with the CLEA software and the principles outlined previously for a further 35 contaminants sometimes encountered on land affected by contamination.

5. SoBRA Acute GAC

The Society of Brownfield Risk Assessment (SoBRA) identified that most human health risk assessments focus on the chronic risks arising from long-term exposure to specific substances. As chronic risks often occur at lower doses than acute risks, they are often the key drivers, however, in some instances the acute dose may also be an important consideration within risk assessments.

The methodology for deriving the acute GAC were related to two distinct receptor groups:

- Members of the public, where the 'critical' receptor for this group will typically be a female child, which is consistent with CLEA residential and Public Open Space/allotments land-uses;
- Workers involved with excavations. The critical receptor for this group is assumed to be a female working adult, without the use of PPE.

The acute GACs relate to short term exposure of high concentrations of a substance that lead to acute effects. They are not considered to be average exposures across a specific / defined area. As a result, the GACs should be normally be compared with the maximum likely concentration that the individual may be exposed to, and not the average concentration within a specific area.

The SoBRA acute GAC will primarily be used for contaminants that do not currently have any GAC, most notably Cyanide.

6. Detailed Quantitative Risk Assessments (DQRA)

Where the adoption of a GAC is not appropriate, for instance when the intended land-use is at variance the CLEA standard land-uses, then a DQRA may be undertaken to develop site specific values for relevant soil contaminants.

- | |
|---|
| <ul style="list-style-type: none">▪ Establishing the plausibility that generic exposure pathways exist in practice by measurement and observation.▪ Developing more accurate parameters using site data. |
|---|

7. Phytotoxicity

CLEA guidance only addresses human health toxicity; assessment of plant toxicity (phytotoxicity) is based on threshold trigger values obtained from the following source:

- BS3882:2015 – *Specification for Topsoil*

The trigger values are relevant only to those contaminants, where present in excess, have the potential to inhibit plant growth, or kill plants (Cu, Ni and Zn). The criteria have been based on a wide range of planting that are common within a multi-purpose topsoil.

8. Statistical Tests

DEFRA R&D Publication CLR 7 (DOE 1994) addressed the statistical treatment of test results and their comparison to Soil Guideline Values.

Consideration must be given to the appropriate area of land to be considered termed the critical averaging area.

For a communal open space or commercial land-use, the critical averaging area will depend on the proposed layout. For a residential use with private gardens the averaging area is the individual plot.

It may be appropriate to compare the upper 95th percentile concentration with the Soil Guideline Value, subject to applying a statistical test to establish that the range of concentrations are reasonably consistent and belonging to the same underlying distribution of data.

CL:AIRE published guidance in 2020, *Guidance in comparing soil contamination data with a critical concentration*, superseding the CL:AIRE/CIEH 2008 report of the same name. The guidance provides ways to assist land contamination stakeholders to apply statistical methods to their data to enable decisions under the legislative framework; either planning system or Part 2A of the Environmental Protection Act 1990.

The use of the statistical tests should only be applied if the following statements are valid for the datasets:

- Averaging areas, as well as the smallest area of concern have been identified on the basis of the CSM, including the desk study and/or the site walkover;
- The sample locations were chosen using a simple random, stratified random or stratified systematic (square, herringbone or triangular grid) sampling pattern, rather than being targeted to locations suspected of being contaminated;
- The sample locations are relatively evenly spread across the area and are not clustered, to avoid giving undue weight to some parts of the site over others in the calculated statistics;
- The analyses do not suggest a hotspot or outlier of contamination that should be treated as a separate zone. This has been established by a histogram and/or a names statistical test;
- The sample locations are all taken from one population (i.e. the same material);
- Where an averaging zone encompasses several averaging areas, analyses do not show a spatial trend or other spatial pattern across that zone; and
- The number of samples has been shown to be sufficient for a statistical analysis.

Any included statistical spreadsheet is based on an in-house method of statistical analysis, in line with those outlined within the CL:AIRE guidance (2020).

Treatment of Hot-Spots

- A statistical test is applied to establish whether the data is a part of a single set, or whether data outliers are present.
- Provided that the data is based on random sampling and no distinct contamination source was present at the sampling location, the hot-spot(s) may be excluded and the mean of the remaining data assessed.

9. Ground and Water Limited Soil Assessment Criteria

The Soil Assessment Criteria used in the preparation of the Generic Quantitative Risk Assessment are tabulated in the following pages, where the source of each has been outlined in the previous sections.

9.1. Inorganics

SoBRA – Acute Generic Assessment Criteria						
Determinand	RwHP (mg/kg)	RwoHP (mg/kg)	Allotment (mg/kg)	Commercial (mg/kg)	POSresi (mg/kg)	POSpark (mg/kg)
Cyanide	24	24	24	1400	24	24

9.2. Metals

C4SL Low Level of Toxicological Concern						
Determinand	RwHP (mg/kg)	RwoHP (mg/kg)	Allotment (mg/kg)	Commercial (mg/kg)	POSresi (mg/kg)	POSpark (mg/kg)
Lead	< 200	< 310	< 80	< 2300	< 630	< 1300

LQM/CIEH Suitable 4 Use Levels – Metals and Semi-metals						
Determinand	RwHP (mg/kg)	RwoHP (mg/kg)	Allotment (mg/kg)	Commercial (mg/kg)	POSresi (mg/kg)	POSpark (mg/kg)
Arsenic	37	40	43	640	79	170
Beryllium	1.7	1.7	35	12	2.2	63
Boron	290	11000	45	240000	21000	46000
Cadmium	11	85	1.9	190	120	532
Chromium (III)	910	910	18000	8600	1500	33000
Chromium (VI)	6	6	1.8	33	7.7	220
Copper	2400	7100	520	68000	12000	44000
Elemental Mercury	1.2	1.2	21	58	16	30
Inorganic Mercury	40	56	19	1100	120	240
Methylmercury	11	15	6	320	40	68
Nickel	130	180	53	980	230	800
Selenium	250	430	88	12000	1100	1800
Vanadium	410	1200	91	9000	2000	5000
Zinc	3700	40000	620	730000	81000	170000

Phytotoxicity (Harmful to Plants) Threshold Trigger Values			
Determinand	Soil pH < 6.0 (mg/kg)	Soil pH 6.0 – 7.0 (mg/kg)	Soil pH > 7.0 (mg/kg)
Copper	100	135	200
Nickel	60	75	110
Zinc	200	200	300
Notes: BS3882:2015 – <i>Specification for Topsoil</i> . Based on a wide range of common plants that will be exposed to multi-purpose topsoil. Toxicity of contaminant may also be impacted by pH of soils. Site observation of plant vitality may give additional guidance.			

CL:AIRE Soil Generic Assessment Criteria				
Determinand	Residential (mg/kg)	Residential without plant uptake (mg/kg)	Allotment (mg/kg)	Commercial (mg/kg)
Antimony	ND	550	ND	7500
Barium	ND	1300	ND	22000
Molybdenum	ND	670	ND	17000
ND – Not derived				

9.3. Total Petroleum Hydrocarbons (TPHs)

9.3.1. BTEX Compounds

LQM/CIEH Sutable 4 Use Levels – BTEX Compounds							
Determinand	Soil Organic Matter	RwHP (mg/kg)	RwoHP (mg/kg)	Allotment (mg/kg)	Commercial (mg/kg)	POSresi (mg/kg)	POSpark (mg/kg)
Benzene	1.0% SOM	0.087	0.38	0.017	27	72	90
	2.5% SOM	0.170	0.70	0.034	47	72	100
	6.0% SOM	0.370	1.40	0.075	90	73	110
Toluene	1.0% SOM	130	880	22	56000	56000	87000
	2.5% SOM	290	1900	51	110000	56000	95000
	6.0% SOM	660	3900	120	180000	56000	100000
Ethylbenzene	1.0% SOM	47	83	16	5700	24000	17000
	2.5% SOM	110	190	39	13000	24000	22000
	6.0% SOM	260	440	91	27000	25000	27000
o-Xylene	1.0% SOM	60	88	28	6600	41000	17000
	2.5% SOM	140	210	67	15000	42000	24000
	6.0% SOM	330	480	160	33000	43000	33000
m-Xylene	1.0% SOM	59	82	31	6200	41000	17000
	2.5% SOM	140	190	74	14000	42000	24000
	6.0% SOM	320	450	170	31000	43000	33000
p-Xylene	1.0% SOM	56	79	29	5900	41000	17000
	2.5% SOM	130	180	69	14000	42000	23000
	6.0% SOM	310	430	160	30000	43000	31000

SOM = Soil Organic Matter Content (%)

9.3.2. Total Petroleum Hydrocarbons – Aliphatic

LQM/CIEH Sutable 4 Use Levels For TPH							
Aliphatic		RwHP (mg/kg)	RwoHP (mg/kg)	Allotment (mg/kg)	Commercial (mg/kg)	POSresi (mg/kg)	POSpark (mg/kg)
EC 5-6	1.0% SOM	42	42	730	3,200 (304) ^{sol}	570,000 (304) ^{sol}	95,000 (304) ^{sol}
	2.5% SOM	78	78	1,700	5,900 (558) ^{sol}	590,000	130,000 (558) ^{sol}
	6.0% SOM	160	160	3,900	12,000 (1150) ^{sol}	600,000 (1150) ^{sol}	180,000 (1150) ^{sol}
EC >6-8	1.0% SOM	100	100	2,300	7,800 (144) ^{sol}	600,000	150,000 (144) ^{sol}
	2.5% SOM	230	230	5,600	17,000 (322) ^{sol}	610,000	220,000 (322) ^{sol}
	6.0% SOM	530	530	13,000	40,000 (736) ^{sol}	620,000	320,000 (736) ^{sol}
EC >8-10	1.0% SOM	27	27	320	2,000 (78) ^{sol}	13,000	14,000 (78) ^{sol}
	2.5% SOM	65	65	770	4,800 (118) ^{vap}	13,000	18,000 (118) ^{vap}
	6.0% SOM	150	150	1,700	11,000 (451) ^{vap}	13,000	21,000 (451) ^{vap}
EC >10-12	1.0% SOM	130 (48) ^{vap}	130 (48) ^{vap}	2,200	9,700 (48) ^{sol}	13,000	21,000 (48) ^{sol}
	2.5% SOM	330 (118) ^{vap}	330 (118) ^{vap}	4,400	23,000 (118) ^{vap}	13,000	23,000 (118) ^{vap}
	6.0% SOM	760 (283) ^{vap}	760 (283) ^{vap}	7,300	47,000 (283) ^{vap}	13,000	24,000 (283) ^{vap}
EC >12-16	1.0% SOM	1,100 (24) ^{sol}	1,100 (24) ^{sol}	11,000	59,000 (24) ^{sol}	13,000	25,000 (24) ^{sol}
	2.5% SOM	2,400 (59) ^{sol}	2,400 (59) ^{sol}	13,000	82,000 (59) ^{sol}	13,000	25,000 (59) ^{sol}
	6.0% SOM	4,300 (142) ^{sol}	4,400 (142) ^{sol}	13,000	90,000 (142) ^{sol}	13,000	26,000 (142) ^{sol}
EC >16-35	1.0% SOM	65,000 (8.48) ^{sol}	65,000 (8.48) ^{sol}	260,000	1,600,000	250,000	450,000
	2.5% SOM	92,000 (21) ^{sol}	92,000 (21) ^{sol}	270,000	1,700,000	250,000	480,000
	6.0% SOM	110,000	110,000	270,000	1,800,000	250,000	490,000
EC >35-44	1.0% SOM	65,000 (8.48) ^{sol}	65,000 (8.48) ^{sol}	260,000	1,600,000	250,000	450,000
	2.5% SOM	92,000 (21) ^{sol}	92,000 (21) ^{sol}	270,000	1,700,000	250,000	480,000
	6.0% SOM	110,000	110,000	270,000	1,800,000	250,000	490,000

SOM = Soil Organic Matter Content (%)

^{vap} – GAC presented exceeds the vapour saturation limit, which is presented in brackets.

^{sol} – GAC presented exceeds the soil saturation limit, which is presented in brackets.

9.3.3. Total Petroleum Hydrocarbons – Aromatic

LQM/CIEH Sutable 4 Use Levels For TPH							
Aromatic		RwHP (mg/kg)	RwoHP (mg/kg)	Allotment (mg/kg)	Commercial (mg/kg)	POSresi (mg/kg)	POSpark (mg/kg)
EC 5-7 (Benzene)	1.0% SOM	70	370	13	26,000 (1220) ^{sol}	56,000	76,000 (1220) ^{sol}
	2.5% SOM	140	690	27	46,000 (2260) ^{sol}	56,000	84,000 (2260) ^{sol}
	6.0% SOM	300	1,400	57	86,000 (4710) ^{sol}	56,000	92,000 (4710) ^{sol}
EC >7-8 (Toluene)	1.0% SOM	130	860	22	56,000 (869) ^{vap}	56,000	87,000 (869) ^{sol}
	2.5% SOM	290	1,800	51	110,000 (1920) ^{sol}	56,000	95,000 (1920) ^{sol}
	6.0% SOM	660	3,900	120	180,000 (4360) ^{vap}	56,000	100,000 (4360) ^{vap}
EC >8-10	1.0% SOM	34	47	8.6	3,500 (613) ^{vap}	5,000	7,200 (613) ^{vap}
	2.5% SOM	83	110	21	8,100 (1500) ^{vap}	5,000	8,500 (1500) ^{vap}
	6.0% SOM	190	270	51	17,000 (3850) ^{vap}	5,000	9,300 (3580) ^{vap}
EC >10-12	1.0% SOM	74	250	13	16,000 (364) ^{sol}	5,000	9,200 (364) ^{sol}
	2.5% SOM	180	590	31	28,000 (899) ^{sol}	5,000	9,700 (889) ^{sol}
	6.0% SOM	380	1,200	74	34,000 (2150) ^{sol}	5,000	10,000
EC >12-16	1.0% SOM	140	1,800	23	36,000 (169) ^{sol}	5,100	10,000
	2.5% SOM	330	2,300 (419) ^{sol}	57	37,000	5,100	10,000
	6.0% SOM	660	2,500	130	38,000	5,000	10,000
EC >16-21	1.0% SOM	260	1,900	46	28,000	3,800	7,600
	2.5% SOM	540	1,900	110	28,000	3,800	7,700
	6.0% SOM	930	1,900	260	28,000	3,800	7,800
EC >21-35	1.0% SOM	1,100	1,900	370	28,000	3,800	7,800
	2.5% SOM	1,500	1,900	820	28,000	3,800	7,800
	6.0% SOM	1,700	1,900	1,600	28,000	3,800	7,900
EC >35-44	1.0% SOM	1,100	1,900	370	28,000	3,800	7,800
	2.5% SOM	1,500	1,900	820	28,000	3,800	7,800
	6.0% SOM	1,700	1,900	1,600	28,000	3,800	7,900
EC >44-70	1.0% SOM	1,600	1,900	1,200	28,000	3,800	7,800
	2.5% SOM	1,800	1,900	2,100	28,000	3,800	7,800
	6.0% SOM	1,900	1,900	3,000	28,000	3,800	7,900
SOM = Soil Organic Matter Content (%)							
^{vap} – GAC presented exceeds the vapour saturation limit, which is presented in brackets.							
^{sol} – GAC presented exceeds the soil saturation limit, which is presented in brackets.							

9.4. Polycyclic Aromatic Hydrocarbons (PAHs)

LQM/CIEH Suitable 4 Use Levels For Polycyclic Aromatic Hydrocarbons (PAHs)							
Determinands		RwHP (mg/kg)	RwoHP (mg/kg)	Allotment (mg/kg)	Commercial (mg/kg)	POSresi (mg/kg)	POSpark (mg/kg)
Acenaphthene	1.0% SOM	210	3,000 (57.0) ^{sol}	34	84,000(57.0) ^{sol}	15,000	29,000
	2.5% SOM	510	4,700(141) ^{sol}	85	97,000(141) ^{sol}	15,000	30,000
	6.0% SOM	1100	6,000(336) ^{sol}	200	100,000	15,000	30,000
Acenaphthylene	1.0% SOM	170	2,900(86.1) ^{sol}	28	83,000(86.1) ^{sol}	15,000	29,000
	2.5% SOM	420	4,600(212) ^{sol}	69	97,000(212) ^{sol}	15,000	30,000
	6.0% SOM	920	6,000(506) ^{sol}	160	100,000	15,000	30,000
Anthracene	1.0% SOM	2,400	31,000(1.17) ^{vap}	380	520,000	74,000	150,000
	2.5% SOM	5,400	35,000	950	540,000	74,000	150,000
	6.0% SOM	11,000	37,000	2,200	540,000	74,000	150,000
Benzo(a)anthracene	1.0% SOM	7.20	11	2.90	170	29	49
	2.5% SOM	11	14	6.50	170	29	56
	6.0% SOM	13	15	13	180	29	62
Benzo(a)pyrene	1.0% SOM	2.20	3.20	0.97	35	5.70	11
	2.5% SOM	2.70	3.20	2.00	35	5.70	12
	6.0% SOM	3.00	3.20	3.50	36	5.70	13
Benzo(b)flouranthene	1.0% SOM	2.60	3.90	0.99	44	7.10	13
	2.5% SOM	3.30	4.00	2.10	44	7.20	15
	6.0% SOM	3.70	4.00	3.90	45	7.20	16
Benzo(ghi)perylene	1.0% SOM	320	360	290	3,900	640	1,400
	2.5% SOM	340	360	470	4,000	640	1,500
	6.0% SOM	350	360	640	4,000	640	1,600
Benzo(k)flouranthene	1.0% SOM	77	110	37	1,200	190	370
	2.5% SOM	93	110	75	1,200	190	410
	6.0% SOM	100	110	130	1,200	190	440
Chrysene	1.0% SOM	15	30	4.10	350	57	93
	2.5% SOM	22	31	9.40	350	57	110
	6.0% SOM	27	32	19	350	57	120
Dibenzo(ah)anthracene	1.0% SOM	0.24	0.31	0.14	3.50	0.57	1.10
	2.5% SOM	0.28	0.32	0.27	3.50	0.57	1.30
	6.0% SOM	0.30	0.32	0.43	3.60	0.58	1.40
Flouranthene	1.0% SOM	280	1,500	52	23,000	3,100	6,300
	2.5% SOM	560	1,600	130	23,000	3,100	6,300
	6.0% SOM	890	1,600	290	23,000	3,100	6,300
Flourene	1.0% SOM	170	2,800 (30.9) ^{sol}	27	63,000(30.9) ^{sol}	9,900	20,000
	2.5% SOM	400	3,800(76.5) ^{sol}	67	68,000	9,900	20,000
	6.0% SOM	860	4,500(183) ^{sol}	160	71,000	9,900	20,000
Indeno(123-cd)pyrene	1.0% SOM	27	45	9.50	500	82	150
	2.5% SOM	36	46	21	510	82	170
	6.0% SOM	41	46	39	510	82	180
Napthalene	1.0% SOM	15	36	65	1,600	11,000	800
	2.5% SOM	36	36	130	3,700	15,000	1,200
	6.0% SOM	85	85	200	8,400	17,000	1,900
Phenanthrene	1.0% SOM	95	1,300(183) ^{sol}	15	22,000	3,100	6,200
	2.5% SOM	220	1,500	38	22,000	3,100	6,200
	6.0% SOM	440	1,500	90	23,000	3,100	6,300
Pyrene	1.0% SOM	620	3,700	110	54,000	7,400	15,000
	2.5% SOM	1200	3,800	270	54,000	7,400	15,000
	6.0% SOM	2000	3,800	620	54,000	7,400	15,000
Coal Tar (Benzo(a)pyrene used as marker compound)	1.0% SOM	0.79	1.2	0.32	15	2.20	4.40
	2.5% SOM	0.98	1.2	0.67	15	2.20	4.70
	6.0% SOM	1.10	1.2	1.20	15	2.20	4.80
SOM = Soil Organic Matter Content (%)							
^{vap} – GAC presented exceeds the vapour saturation limit, which is presented in brackets.							
^{sol} – GAC presented exceeds the soil saturation limit, which is presented in brackets.							

9.5. Volatile and Semi-volatile Organic Compounds

LQM CIEH General Assessment Criteria: Volatile and Semi-Volatile Organic Compounds							
Determinands		RwHP (mg/kg)	RwoHP (mg/kg)	Allotment (mg/kg)	Commercial (mg/kg)	POSresi (mg/kg)	POSpark (mg/kg)
<i>Chloroalkanes & alkenes</i>							
1,2 Dichloroethane	1.0% SOM	0.0071	0.0092	0.0046	0.67	29	21
	2.5% SOM	0.011	0.013	0.0083	0.97	29	24
	6.0% SOM	0.019	0.023	0.016	1.70	29	28
1,1,2,2 Tetrachloroethane	1.0% SOM	1.60	3.90	0.41	270	1,400	1,800
	2.5% SOM	3.40	8.00	0.89	550	1,400	2,100
	6.0% SOM	7.50	17	2.00	1,100	1,400	2,300
1,1,1,2 Tetrachloroethane	1.0% SOM	1.20	1.50	0.79	110	1,400	1,500
	2.5% SOM	2.80	3.50	1.90	250	1,400	1,800
	6.0% SOM	6.40	8.20	4.40	560	1,400	2,100
Tetrachloroethene	1.0% SOM	0.18	0.18	0.65	19	1,400	810 ^{sol} (424)
	2.5% SOM	0.39	0.40	1.50	42	1,400	1,100 ^{sol} (951)
	6.0% SOM	0.90	0.92	3.60	95	1,400	1,500
1,1,1 Trichloroethane	1.0% SOM	8.80	9.00	48	660	140,000	57,000 ^{vap} (1425)
	2.5% SOM	18	18	110	1,300	140,000	76,000 ^{vap} (2915)
	6.0% SOM	39	40	240	3,000	140,000	100,000 ^{vap} (6392)
Tetrachloromethene	1.0% SOM	0.026	0.026	0.45	2.90	890	190
	2.5% SOM	0.056	0.056	1.00	6.30	920	270
	6.0% SOM	0.130	0.130	2.40	14	950	400
Trichloroethene	1.0% SOM	0.016	0.017	0.041	1.20	120	70
	2.5% SOM	0.034	0.036	0.091	2.60	120	91
	6.0% SOM	0.075	0.080	0.210	5.70	120	120
Trichloromethane	1.0% SOM	0.91	1.20	0.42	99	2,500	2,600
	2.5% SOM	1.70	2.10	0.83	170	2,500	2,800
	6.0% SOM	3.40	4.20	1.70	350	2,500	3,100
Vinyl Chloride	1.0% SOM	0.00064	0.00077	0.00055	0.059	3.50	4.80
	2.5% SOM	0.00087	0.00100	0.00100	0.077	3.50	5.00
	6.0% SOM	0.00014	0.00150	0.00180	0.120	3.50	5.40
<i>Explosives</i>							
2,4,6 Trinitrotoluene	1.0% SOM	1.60	65	0.24	1,000	130	260
	2.5% SOM	3.70	66	0.58	1,000	130	270
	6.0% SOM	8.10	66	1.40	1,000	130	270
RDX (Hexogen/Cyclonite/1,3,5-trinitro-1,3,5-triazacyclohexane)	1.0% SOM	120	13,000	17	210,000	26,000	49,000(18.7) ^{sol}
	2.5% SOM	250	13,000	38	210,000	26,000	51,000
	6.0% SOM	540	13,000	85	210,000	27,000	53,000
HMX (Octogen/1,3,5,7-tetrenitro-1,3,5,7-tetrazacyclo-octane)	1.0% SOM	5.70	67,00	0.86	110,000	13,000	23,000(0.35) ^{vap}
	2.5% SOM	13	67,00	1.90	110,000	13,000	23,000(0.39) ^{vap}
	6.0% SOM	26	67,00	3.90	110,000	13,000	24,000(0.48) ^{vap}
Atrazine	1.0% SOM	3.30	610	0.50	9,300	1,200	2,300
	2.5% SOM	7.60	620	1.20	9,400	1,200	2,400
	6.0% SOM	17.40	620	2.70	9,400	1,200	2,400
^{vap} – GAC presented exceeds the vapour saturation limit, which is presented in brackets. ^{sol} – GAC presented exceeds the soil saturation limit, which is presented in brackets.							

VOC and SVOC table continued overleaf

VOC and SVOC table continued from previous page

LQM CIEH General Assessment Criteria: Volatile and Semi-Volatile Organic Compounds							
Determinands		RwHP (mg/kg)	RwoHP (mg/kg)	Allotment (mg/kg)	Commercial (mg/kg)	POSresi (mg/kg)	POSpark (mg/kg)
Pesticides							
Aldrin	1.0% SOM	5.70	7.30	3.20	170	18	30
	2.5% SOM	6.60	7.40	6.10	170	18	31
	6.0% SOM	7.10	7.50	9.60	170	18	31
Dieldrin	1.0% SOM	0.97	7.00	0.17	170	18	30
	2.5% SOM	2.00	7.30	0.41	170	18	30
	6.0% SOM	3.50	7.40	0.96	170	18	31
Dichlorvos	1.0% SOM	0.032	6.40	0.0049	140	16	26
	2.5% SOM	0.066	6.50	0.0100	140	16	26
	6.0% SOM	0.140	6.60	0.0220	140	16	27
Alpha - Endosulfan	1.0% SOM	7.40	160(0.003) ^{vap}	1.20	5,600(0.003) ^{vap}	1,200	2,400
	2.5% SOM	18	280(0.007) ^{vap}	2.90	7,400(0.007) ^{vap}	1,200	2,400
	6.0% SOM	41	410(0.016) ^{vap}	6.80	8,400(0.016) ^{vap}	1,200	2,400
Beta - Endosulfan	1.0% SOM	7.00	190(0.00007) ^{vap}	1.10	6,300(0.00007) ^{vap}	1,200	2,400
	2.5% SOM	17	320(0.0002) ^{vap}	2.70	7,800(0.0002) ^{vap}	1,200	2,400
	6.0% SOM	39	440(0.0004) ^{vap}	6.40	8700	1,200	2,500
Alpha - Hexachlorocyclohexanes	1.0% SOM	0.23	6.90	0.035	170	24	47
	2.5% SOM	0.55	9.20	0.087	180	24	48
	6.0% SOM	1.20	11	0.210	180	24	48
Beta - Hexachlorocyclohexanes	1.0% SOM	0.085	3.70	0.013	65	8.10	15
	2.5% SOM	0.200	3.80	0.032	65	8.10	15
	6.0% SOM	0.460	3.80	0.077	65	8.10	16
Gamma - Hexachlorocyclohexanes	1.0% SOM	0.06	2.90	0.0092	67	8.2	14
	2.5% SOM	0.14	3.30	0.0230	69	8.2	15
	6.0% SOM	0.33	3.50	0.0540	70	8.2	15
Chlorobenzenes							
Chlorobenzene	1.0% SOM	0.46	0.46	5.90	56	11,000	1,300(675) ^{sol}
	2.5% SOM	1.00	1.00	14	130	13,000	2,000(1520) ^{sol}
	6.0% SOM	2.40	2.40	32	290	14,000	2,900
1,2-Dichlorobenzene	1.0% SOM	23	24	94	2,000 (571) ^{sol}	90,000	24,000(571) ^{sol}
	2.5% SOM	55	57	230	4,800 (1370) ^{sol}	95,000	36,000(1370) ^{sol}
	6.0% SOM	130	130	540	11,000 (3240) ^{sol}	98,000	51,000(3240) ^{sol}
1,3-Dichlorobenzene	1.0% SOM	0.40	0.44	0.25	30	300	390
	2.5% SOM	1.00	1.10	0.60	73	300	440
	6.0% SOM	2.30	2.50	1.50	170	300	470
1,4-Dichlorobenzene	1.0% SOM	61	61	15	4,400 (224) ^{vap}	17,000 ^g	36,000 (224) ^{vap}
	2.5% SOM	150	150	37	10,000 (540) ^{vap}	17,000 ^g	36,000 (540) ^{vap}
	6.0% SOM	350	350	88 ^g	25,000 (1280) ^{vap}	17,000 ^g	36,000 (1280) ^{vap}
1,2,3,-Trichlorobenzene	1.0% SOM	1.50	1.50	4.70	102	1,800	770(134) ^{vap}
	2.5% SOM	3.60	3.70	12	250	1,800	1,100(330) ^{vap}
	6.0% SOM	8.60	8.80	28	590	1,800	1,600(789) ^{vap}
1,2,4,-Trichlorobenzene	1.0% SOM	2.60	2.60	55	220	15,000	1,700(318) ^{vap}
	2.5% SOM	6.40	6.40	140	530	17,000	2,600(786) ^{vap}
	6.0% SOM	15	15	320	1,300	19,000	4,000(1880) ^{vap}
1,3,5,-Trichlorobenzene	1.0% SOM	0.33	0.33	4.70	23	1,700	380(36.7) ^{vap}
	2.5% SOM	0.81	0.81	12	55	1,700	590(90.8) ^{vap}
	6.0% SOM	1.90	1.90	140	130	1,800	860(217) ^{vap}
^{vap} – GAC presented exceeds the vapour saturation limit, which is presented in brackets. ^{sol} – GAC presented exceeds the soil saturation limit, which is presented in brackets.							

VOC and SVOC table continued overleaf

VOC and SVOC table continued from previous page

LQM CIEH General Assessment Criteria: Volatile and Semi-Volatile Organic Compounds							
Determinands		RwHP (mg/kg)	RwoHP (mg/kg)	Allotment (mg/kg)	Commercial (mg/kg)	POSresi (mg/kg)	POSpark (mg/kg)
Chlorobenzenes (cont.)							
1,2,3,4,- Tetrachlorobenzene	1.0% SOM	15	24	4.40	1,700(122) ^{vap}	830	1,500(122) ^{vap}
	2.5% SOM	36	56	11	3,080(304) ^{vap}	830	1,600
	6.0% SOM	78	120	26	4,400(728) ^{vap}	830	1,600
1,2,3,5,- Tetrachlorobenzene	1.0% SOM	0.66	0.75	0.38	49(39.4) ^{vap}	78	110(39) ^{vap}
	2.5% SOM	1.60	1.90	0.90	120(98.1) ^{vap}	79	120
	6.0% SOM	3.70	4.30	2.20	240(235) ^{vap}	79	130
1,2,4, 5,- Tetrachlorobenzene	1.0% SOM	0.33	0.73	0.06	42(19.7) ^{sol}	13	25
	2.5% SOM	0.77	1.70	0.16	72(49.1) ^{sol}	13	26
	6.0% SOM	1.60	3.50	0.37	96	13	26
Pentachlorobenzene	1.0% SOM	5.80	19	1.20	640(43.0) ^{sol}	100	190
	2.5% SOM	12	30	3.10	770(107) ^{sol}	100	190
	6.0% SOM	22	38	7.00	830	100	190
Hexachlorobenzene	1.0% SOM	1.80(0.20) ^{vap}	4.10 (0.20) ^{vap}	0.47	110(0.20) ^{vap}	16	30
	2.5% SOM	3.30(0.50) ^{vap}	5.70 (0.50) ^{vap}	1.10	120	16	30
	6.0% SOM	4.90	6.70 (1.2) ^{vap}	2.50	120	16	30
Phenols & Chlorophenols							
BTEX	1.0% SOM	280	750	66	760 ^{dir} (31,000)	760 ^{dir} (11,000)	760 ^{dir} (8,600)
	2.5% SOM	550	1,300	140	1,500 ^{dir} (35,000)	1,500 ^{dir} (11,000)	1,500 ^{dir} (9,700)
	6.0% SOM	1100	2,300	280	3,200 ^{dir} (37,000)	3,200 ^{dir} (11,000)	3,200 ^{dir} (11,000)
Chlorophenols (4 Congeners)	1.0% SOM	0.87	94	0.13	3,500	620	1,100
	2.5% SOM	2.00	150	0.30	4,000	620	1,100
	6.0% SOM	4.50	210	0.70	4,300	620	1,100
Pentachlorophenols	1.0% SOM	0.22	27(16.4) ^{vap}	0.03	400	60	110
	2.5% SOM	0.52	29	0.08	400	60	120
	6.0% SOM	1.20	31	0.19	400	60	120
Others							
Carbon Disulphide	1.0% SOM	0.14	0.14	4.80	11	11,000	1,300
	2.5% SOM	0.29	0.29	10	22	11,000	1,900
	6.0% SOM	0.62	0.62	23	47	12,000	2,700
Hexachloro-1,3- Butadiene	1.0% SOM	0.29	0.32	0.25	31	25	48
	2.5% SOM	0.70	0.78	0.61	68	25	50
	6.0% SOM	1.60	1.80	1.40	120	25	51
^{vap} – GAC presented exceeds the vapour saturation limit, which is presented in brackets.							
^{sol} – GAC presented exceeds the soil saturation limit, which is presented in brackets.							

VOC and SVOC table continued overleaf

VOC and SVOC table continued from previous page

CL:AIRE General Assessment Criteria: Volatile and Semi-Volatile Organic Compounds					
Determinands		RwHP (mg/kg)	RwoHP (mg/kg)	Allotment (mg/kg)	Commercial (mg/kg)
1,1,2 Trichloroethane	1.0% SOM	0.60	0.88	0.28	94
	2.5% SOM	1.20	1.8	0.61	190
	6.0% SOM	2.70	3.9	1.40	400
1,1-Dichloroethane	1.0% SOM	2.40	2.50	9.20	280
	2.5% SOM	3.90	4.10	17	450
	6.0% SOM	7.40	7.70	35	850
1,1-Dichloroethene	1.0% SOM	0.23	0.23	2.80	26
	2.5% SOM	0.40	0.41	5.60	46
	6.0% SOM	0.82	0.82	12	92
1,2,4-Trimethylbenzene	1.0% SOM	0.35	0.41	0.38	42
	2.5% SOM	0.85	0.99	0.93	99
	6.0% SOM	2.00	2.30	2.20	220
1,2-Dichloropropane	1.0% SOM	0.024	0.024	0.62	3.3
	2.5% SOM	0.042	0.042	1.20	5.9
	6.0% SOM	0.084	0.085	2.60	12
2,4-Dimethylphenol	1.0% SOM	19	210	3.10	16000*
	2.5% SOM	43	410	7.20	24000*
	6.0% SOM	97	730	17	30000*
2,4-Dinitrotoluene	1.0% SOM	1.50	170*	0.22	3700*
	2.5% SOM	3.20	170	0.49	3700*
	6.0% SOM	7.20	170	1.10	3800*
2,6-Dinitrotoluene	1.0% SOM	0.78	78	0.12	1900*
	2.5% SOM	1.70	84	0.27	1900*
	6.0% SOM	3.90	87	0.61	1900*
2-Chloronaphthalene	1.0% SOM	3.70	3.80	40	390*
	2.5% SOM	9.20	9.30	98	960*
	6.0% SOM	22	22	230	2200*
Biphenyl	1.0% SOM	66*	220*	14	18000*
	2.5% SOM	160	500*	35	33000*
	6.0% SOM	360	980*	83	48000*
Bis (2-ethylhexyl) phthalate	1.0% SOM	280*	2700*	47*	85000*
	2.5% SOM	610*	2800*	120*	86000*
	6.0% SOM	1100*	2800*	280*	86000*
Bromobenzene	1.0% SOM	0.87	0.91	3.2	97
	2.5% SOM	2.0	2.1	7.6	220
	6.0% SOM	4.7	4.9	18	520
Bromodichloromethane	1.0% SOM	0.016	0.019	0.016	2.1
	2.5% SOM	0.030	0.034	0.032	3.7
	6.0% SOM	0.061	0.070	0.068	7.6
Bromoform	1.0% SOM	2.8	5.2	0.95	760
	2.5% SOM	5.9	11	2.1	1500
	6.0% SOM	13	23	4.6	3100
Butyl benzyl phthalate	1.0% SOM	1400*	42000*	220*	940000*
	2.5% SOM	3300*	44000*	550*	940000*
	6.0% SOM	7200*	44000*	1300*	950000*

*soil concentration above saturation limit

VOC and SVOC table continued from previous page

CL:AIRE General Assessment Criteria: Volatile and Semi-Volatile Organic Compounds					
Determinands		RwHP (mg/kg)	RwoHP (mg/kg)	Allotment (mg/kg)	Commercial (mg/kg)
Chloroethane	1.0% SOM	8.3	8.4	110	960
	2.5% SOM	11	11	200	1300
	6.0% SOM	18	18	380	2100
Chloromethane	1.0% SOM	0.0083	0.0085	0.066	1.0
	2.5% SOM	0.0098	0.0099	0.13	1.2
	6.0% SOM	0.013	0.013	0.23	1.6
<i>Cis</i> 1,2 Dichloroethene	1.0% SOM	0.11	0.12	0.26	14
	2.5% SOM	0.19	0.20	0.50	24
	6.0% SOM	0.37	0.39	1.0	47
Dichloromethane	1.0% SOM	0.58	2.10	0.10	270
	2.5% SOM	0.98	2.80	0.19	360
	6.0% SOM	1.70	4.50	0.34	560
Diethyl Phthalate	1.0% SOM	120*	1800*	19*	150000*
	2.5% SOM	260*	3500*	41*	220000*
	6.0% SOM	570*	6300*	94*	290000*
Di- <i>n</i> -butyl phthalate	1.0% SOM	13*	450*	2.00	15000*
	2.5% SOM	31*	450*	5.00	15000*
	6.0% SOM	67*	450*	12	15000*
Di- <i>n</i> -octyl phthalate	1.0% SOM	2300*	3400*	940*	89000*
	2.5% SOM	2800*	3400*	2100*	89000*
	6.0% SOM	3100*	3400*	3900*	89000*
Hexachloroethane	1.0% SOM	0.20	0.22	0.27	22*
	2.5% SOM	0.48	0.54	0.67	53*
	6.0% SOM	1.10	1.30	1.60	120*
Isopropylbenzene	1.0% SOM	11	12	32	1400*
	2.5% SOM	27	28	79	3300*
	6.0% SOM	64	67	190	7700*
Methyl <i>tert</i> -butyl ether (MTBE)	1.0% SOM	49	73	23	7900
	2.5% SOM	84	120	44	13000
	6.0% SOM	160	220	90	24000
Propylbenzene	1.0% SOM	34	40	34	4100*
	2.5% SOM	82	97	83	9700*
	6.0% SOM	190	230	200	21000*
Styrene	1.0% SOM	8.10	35	1.60	3300*
	2.5% SOM	19	78	3.70	6500*
	6.0% SOM	43	170	8.70	11000*
Total Cresols (2-, 3-, and 4-methylphenol)	1.0% SOM	80	3700	12	160000
	2.5% SOM	180	5400	27	180000*
	6.0% SOM	400	6900	63	180000*
<i>Trans</i> 1,2 Dichloroethene	1.0% SOM	0.19	0.19	0.93	22
	2.5% SOM	0.34	0.35	1.90	40
	6.0% SOM	0.70	0.71	0.24	81
Tributyl tin oxide	1.0% SOM	0.25	1.40	0.042	130*
	2.5% SOM	0.59	3.10	0.100	180*
	6.0% SOM	1.30	5.70	0.240	200*

*soil concentration above saturation limit

C4SL Low Level of Toxicological Concern							
Determinands		RwHP (mg/kg)	RwoHP (mg/kg)	Allotment (mg/kg)	Commercial (mg/kg)	POSresi (mg/kg)	POSpark (mg/kg)
1,2-Dichloroethane (Ethylene Dichloride)	1.0% SOM	0.11	0.16	0.054	12	300	300
	2.5% SOM	0.18	0.24	0.10	17	310	330
	6.0% SOM	0.31	0.41	0.19	29	310	380
Cis-1,2-Dichloroethene	1.0% SOM	0.46	0.50	0.89	38	3,800	2,000
	2.5% SOM	0.78	0.84	1.7	64	3,800	2,400
	6.0% SOM	1.5	1.6	3.6	120	3,900	3,100
Tetrachloroethene (PCE)	1.0% SOM	0.31	0.32	2	24	3,200	1,400
	2.5% SOM	0.70	0.71	4.8	55	3,300	1,900
	6.0% SOM	1.60	1.60	11	130	3,400	2,500
Trans-1,2-Dichloroethene	1.0% SOM	0.90	0.93	3.70	69	13,000	5,600
	2.5% SOM	1.60	1.70	7.50	120	13,000	7,000
	6.0% SOM	3.30	3.40	16	260	13,000	9,100
Trichloroethene (TCE)	1.0% SOM	0.0093	0.0097	0.032	0.73	76	41
	2.5% SOM	0.020	0.020	0.072	1.5	78	54
	6.0% SOM	0.043	0.045	0.16	3.4	79	69
Vinyl Chloride (Chloroethene)	1.0% SOM	0.0064	0.015	0.0017	1.1	7.8	18
	2.5% SOM	0.010	0.019	0.0031	1.4	7.8	19
	6.0% SOM	0.017	0.029	0.0058	2.2	7.8	19

9.6. Per- and Polyfluoroalkyl Substances (PFAS)

Interim C4SLs for PFOA, PFNA, PFHxS and PFOS						
Determinand	RwHP (mg/kg)	RwoHP (mg/kg)	Allotment (mg/kg)	Commercial (mg/kg)	POSresi (mg/kg)	POSpark (mg/kg)
PFOA	0.076	0.041	0.0014	0.60	0.079	0.17
PFOS	0.013	0.041	0.0027	0.60	0.079	0.17
PFHxS	0.0081	0.041	0.0015	0.60	0.079	0.17
PFNA	0.0073	0.041	0.0013	0.60	0.079	0.17

9.7. Asbestos

No asbestos or asbestos containing materials (ACM's) are considered acceptable on-site from a human health perspective. Therefore the GAC for asbestos & ACM's within any imported material should be none detected (ND).

Ground and Water Limited

Waters Guideline Values and Generic Assessment Criteria

Land contamination can harm a number of receptors, most notably: human health; drinking water; groundwater; surface water; soils; ecosystems; and buildings/structures. The UK Government's stated objectives of LCRM are to enhance the health and wellbeing of all, whilst adding the economic, ecological and amenity value of the area through dealing with land contamination.

The risk assessment is an iterative process. At preliminary risk assessment stage, risks are evaluated qualitatively. As the site investigation progresses to a generic or detailed quantitative risk assessment, data is collected and assessment criteria are utilised to evaluate whether the contaminants represent an unacceptable risk to the identified receptors.

Based on the identified receptor, there are numerous assessment criteria that can be used, which have been outlined in the subsequent sections.

1. Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015

1.1. Background

Within England and Wales, an appropriate agency must classify the ecological and chemical status of a body of surface water. The agency must also classify the chemical and quantitative status of a body of groundwater. The appropriate agency must review and update the classifications at least every 6 years as and when new data is collected through monitoring programmes. In addition to the classification and as part of the WFD, pollution of surface waters must be controlled by limiting the discharge of priority substances and other substances into surface water.

1.2. Surface Water

In order to aid with the classification, a series of environmental quality standards (EQS) for specific pollutants have been generated. The EQS refer to the dissolved fraction of metals within a water sample, therefore the sample collected must pass through a 0.45µm filter at the time of sampling. A number of metals have a bioavailable threshold and therefore a site specific meta bioavailability assessment should be undertaken.

Where the calculated mean value of a measurement is less than the limit of quantification and the limit of quantification is above the EQS, the result must not be used for determining a failed classification.

For the majority of substances, two values will be included for review; AA and MAC. The Annual Average (AA) is the arithmetic mean of the concentrations measured at different times during the year for each representative point within the water body. When using the Max Allowable Concentration (MAC) values, a statistical analysis may be undertaken to ensure an acceptable level of confidence for determining compliance with the MAC.

1.3. Groundwater

The appropriate agency must apply the threshold values for groundwater (in Table 1, Schedule 5) and, if any value is exceeded, undertake an appropriate investigation to determine whether or not the

applicable conditions for good groundwater chemical status are met. The criteria outlined are designed to be averaged across an aquifer rather than a site specific investigations.

2. The Water Supply (Water Quality) Regulations 2016

The water supply regulations apply in relation to the supply of water to premises for domestic purposes (including for cooking, drinking, food preparation and washing) or for food production purposes, both of which include the intended use for human consumption.

The point of compliance for the water supply is principally the consumers' taps, however, where stated the compliance point is the reservoir or treatment works.

3. World Health Organisation, Petroleum Products in Drinking Water, 2008

The World Health Organisation produced a background document for the development of WHO Guidelines for Drinking-water Quality, specifically relating to petroleum products (WHO/SDE/WSH/05.08/123). Petroleum products are used widely in a range of industrial applications, with the largest quantities used for gasoline, diesel and heating oil.

The difference in chemical and physical properties of each hydrocarbon means that they will behave differently within the environment, where their persistence is dictated by their volatilisation, biodegradation and dissolution within water. As a result of these, the heavier hydrocarbons typically have more persistence. Exposure to human health from petroleum hydrocarbons within drinking water can occur from a short to long-term, however the incident that leads to high concentrations within the drinking water will typically occur in the short term.

Petroleum products are a complicated mix of hundreds of compounds and therefore assessment can be difficult. The TPH-CWG method, developed in the USA, groups the TPH into a series of fractions based on the number of carbon atoms, coupled with the overall structure of the compound. This process enables the TPHs to be split into two distinct groups, aliphatics and aromatics.

4. SoBRA GAC_{gw vap}

Prior to the development of the SoBRA GAC_{gw vap}, there were no formally published UK GAC for the assessment of vapour risk arising from volatile contaminants in groundwater in the UK. The SoBRA groundwater vapour GAC (GAC_{gw vap}) is intended as a conservative screening tool that assessors may choose to use to help assess the long-term (chronic) risks to human health from inhalation of vapours arising from groundwater. They are intended for comparison with measured groundwater concentrations and represent the estimated concentration in groundwater below which the long-term risks to human health from vapour migration and inhalation can be considered low/tolerable, i.e. unlikely to be of concern (for the land use scenarios considered). When used as part of a Generic Quantitative Risk Assessment (GQRA) (which includes consideration of uncertainties) comparison of the GAC_{gw vap} with measured concentrations in groundwater can be used to screen out contaminants as being unlikely to represent an unacceptable risk to humans living or working above the groundwater plume.

The GAC have been derived for two land use scenarios for which the vapour intrusion pathway is likely to require assessment: residential and commercial. Generic assumptions have been made for each land use. These include assumptions about the depth to groundwater, soil type in the unsaturated zone, building dimension and foundation type, and receptor behaviour. The parameter values have been chosen to ensure that the GAC are precautionary for the vast majority of commercial and

residential properties in the UK. However, there may be particular situations where the GAC are not protective, for example where non aqueous phase liquid (NAPL) is present or preferential pathways exist.

5. Detailed Quantitative Risk Assessments (DQRA)

Where the adoption of a GAC is not appropriate, for instance when the intended land-use is at variance the CLEA standard land-uses, then a DQRA may be undertaken to develop site specific values for relevant groundwater contaminants. As part of the EA Remedial Targets Methodology (RTM), a level 3 risk assessment will consider the effect of attenuation between the site and a downgradient receptor or compliance point. For a level 4 risk assessment the appropriateness of assessing dilution in a receiving watercourse or a pumping abstraction borehole will need to be considered.

The RTM also recommends that sensitivity/uncertainty analysis is incorporated into each stage of the assessment.

6. Ground and Water Limited Waters Assessment Criteria

The Waters Assessment Criteria used in the preparation of the Generic Quantitative Risk Assessment are tabulated in the following pages, where the source of each has been outlined in the previous sections.

6.1. Inorganics

Specific Pollutants				
Determinand	Long Term Fresh water (µg/l)	Short Term Fresh water (µg/l)	Long Term Salt water (µg/l)	Short Term Salt water (µg/l)
Cyanide	1	5	1	5
Phenol	7.7	46	7.7	46

Drinking Water Standards	
Determinand	Maximum allowable Concentration at compliance point (µg/l)
Cyanide	50
pH	6.5 – 9.5

6.2. Metals

Specific Pollutants				
Determinand	Long Term Fresh water (µg/l)	Short Term Fresh water (µg/l)	Long Term Salt water (µg/l)	Short Term Salt water (µg/l)
Arsenic	50	-	25	-
Chromium (III)	4.7	32	-	-
Chromium (VI)	3.4	-	0.6	32
Copper	1*	-	3.76	34
Iron	1000	-	1000	-
Manganese	123*	-	-	-
Zinc	10.9*	-	6.8	-

*Site specific bioavailability calculation should be undertaken.

EQS for Priority Substances and other substances

Determinand		AA-EQS Inland surface water (µg/l)	MAC-EQS Inland surface water (µg/l)	AA-EQS Other Surface waters (µg/l)	MAC-EQS Other Surface waters (µg/l)
Cadmium	<40mg/l CaCO ₃	<0.08	<0.45	0.2	-
	40 – <50mg/l	0.08	0.45		
	50 – <100mg/l	0.09	0.6		
	100 – <200mg/l	0.15	0.9		
	>200mg/l	0.25	1.5		
Lead		1.2	14	1.3	14
Mercury		-	0.07	-	0.07
Nickel		4	34	8.6	34

Threshold Values for Groundwater			
Determinand	Groundwater Impact on Surface Water (µg/l)	Drinking water Protected Area (µg/l)	General Quality of Groundwater Body (µg/l)
Aluminum	-	150	150
Arsenic	25.8 – 106	7.5	7.5
Boron	-	750	-
Cadmium	0.054 – 0.53	3.75	-
Copper	0.516 – 2.12	1500	1500
Lead	0.619 – 2.54	7.5	7.5
Mercury	0.026 – 0.106	0.75	-
Nickel	2.06 – 8.48	15	15
Selenium	-	7.5	-
Zinc	5.62 – 23.1	-	-

Drinking Water Standards	
Determinand	Maximum allowable Concentration at compliance point (µg/l)
Arsenic	10
Cadmium	5
Chromium	50
Copper	2
Lead	10
Mercury	1
Nickel	20

6.3. Total Petroleum Hydrocarbons (TPHs)

6.3.1. BTEX Compounds

Specific Pollutants				
Determinand	Long Term Fresh water (µg/l)	Short Term Fresh water (µg/l)	Long Term Salt water (µg/l)	Short Term Salt water (µg/l)
Toluene	74	380	74	370

EQS for Priority Substances and other substances				
Determinand	AA-EQS Inland surface water (µg/l)	MAC-EQS Inland surface water (µg/l)	AA-EQS Other Surface waters (µg/l)	MAC-EQS Other Surface waters (µg/l)
Benzene	10	50	8	50

Threshold Values for Groundwater			
Determinand	Groundwater Impact on Surface Water (µg/l)	Drinking water Protected Area (µg/l)	General Quality of Groundwater Body (µg/l)
Benzene	5.16 – 21.2	0.75	0.75
Toluene	38.2 – 157	-	-
Xylene (o+p+m)	15.5 – 63.6	-	-

6.3.2. Total Petroleum Hydrocarbons – Aliphatic

World Health Organisation	
Determinand	Drinking Water Standard (µg/l)
>C5 – C6	15,000
>C6 – C8	
>C8 – C10	
>C10 – C12	300
>C12 – C16	
>C16 – C21	
>C21 – C35	Not Derived

6.3.3. Total Petroleum Hydrocarbons – Aromatic

World Health Organisation	
Determinand	Drinking Water Standard (µg/l)
>EC5 – EC7	10
>EC7 – EC8	700
>EC8 – EC10	300
>EC10 – EC12	90
>EC12 – EC16	
>EC16 – EC21	
>EC21 – EC35	90

6.4. Polycyclic Aromatic Hydrocarbons (PAHs)

EQS for Priority Substances and other substances				
Determinand	AA-EQS Inland surface water (µg/l)	MAC-EQS Inland surface water (µg/l)	AA-EQS Other Surface waters (µg/l)	MAC-EQS Other Surface waters (µg/l)
Anthracene	0.1	0.1	0.1	0.1
Fluoranthene	0.0063	0.12	0.0063	0.12
Naphthalene	2	130	2	130
Benzo(a)pyrene	0.00017	0.27	0.00017	0.027
Benzo(b)fluoranthene	*	0.017	*	0.017
Benzo(k)fluoranthene	*	0.017	*	0.017
Benzo(ghi)perylene	*	0.0082	*	0.00082
Indeno(123-cd)pyrene	*	-	*	-

*For the group of priority substances of polyaromatic hydrocarbons, the AA-EQS in water refer to the concentration of benzo(a)pyrene. Benzo(a)pyrene can be considered as a marker for the other PAHs, hence only benzo(a)pyrene must be monitored for comparison with the corresponding AA-EQS.

Threshold Values for Groundwater			
Determinand	Groundwater Impact on Surface Water (µg/l)	Drinking water Protected Area (µg/l)	General Quality of Groundwater Body (µg/l)
Anthracene	0.052 – 0.193	-	-
Benzo(a)pyrene	0.000089 – 0.000328	0.0075	-
Benzo(b)fluoranthene	0.016 – 0.058	0.075	-
Fluoranthene	0.0033 – 0.0122	-	0.075
Naphthalene	1.03 – 4.24	-	0.075

Drinking Water Standards	
Determinand	Maximum allowable Concentration at compliance point (µg/l)
Benzo(a)pyrene	0.010
Benzo(b) fluoranthene	0.10
Benzo(k)fluoranthene	
Benzo(ghi)perylene	
Indeno(1,2,3-cd)pyrene	

6.5. Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)

EQS for Priority Substances and other substances				
Determinand	AA-EQS Inland surface water (µg/l)	MAC-EQS Inland surface water (µg/l)	AA-EQS Other Surface waters (µg/l)	MAC-EQS Other Surface waters (µg/l)
Perfluorooctane sulfonic acid (PFOS)	0.00065	36	0.00013	7.2

6.6. Volatile and Semi-volatile Organic Compounds

SoBRA GAC _{gwvap} for Petroleum Hydrocarbons			
Determinand	GAC _{gwvap} (µg/l) ^{1,2}		Aqueous Solubility (µg/l)
	Residential	Commercial	
1,2,4-Trimethylbenzene	24	2,200	559,000
Benzene ³	210	20,000	1,780,000
Ethylbenzene ³	10,000	960,000 (sol)	180,000
Isopropylbenzene	850	86,000 (sol)	56,000
Propylbenzene	2,700	240,000 (sol)	54,100
Styrene	8,800	810,000 (sol)	290,000
Toluene ³	230,000	21,000,000 (sol)	590,000
TPH Aliphatic EC5-EC6 ³	1,900	190,000 (sol)	35,900
TPH Aliphatic >EC6-EC8 ³	1,500	150,000 (sol)	5,370
TPH Aliphatic >EC8-EC10 ³	57	5,700 (sol)	427
TPH Aliphatic >EC10-EC12 ³	37	3,600 (sol)	34
TPH Aromatic >EC5-EC7 ³	210,000	20,000,000 (sol)	1,780,000
TPH Aromatic >EC7-EC8 ³	220,000	21,000,000 (sol)	590,000
TPH Aromatic >EC8-EC10 ³	1,900	190,000 (sol)	64,600
TPH Aromatic >EC10-EC12 ³	6,800	660,000 (sol)	24,500
TPH Aromatic >EC12-EC16 ³	39,000	3,700,000 (sol)	5,750
m-Xylene ^{3,5}	9,500	940,000 (sol)	200,000
o-Xylene ^{3,5}	12,000	1,100,000 (sol)	173,000
p-Xylene ²	9,900	980,000 (sol)	200,000
Notes			

1. GAC in *italics* with (sol) exceed aqueous solubility.
2. GAC rounded to two significant figures.
3. The GAC for these petroleum hydrocarbon contaminants have been calculated using a sub-surface soil to indoor air correction factor of 10 in line with the physical-chemical data sources.
4. The GAC for TPH fractions do not account for genotoxic mutagenic effects. Concentrations of TPH Aromatic >EC5-EC7 should therefore also be compared with the GAC for benzene to ensure that such effects are also assessed.
5. The Health Criteria Value used for each xylene isomer was for total xylene. If site specific additivity assessments are not completed, as a conservative measure the sum of isomer concentrations should be compared to the lowest xylene GAC (as is the case for soil GAC).

SoBRA GAC _{gwvap} for Polycyclic Aromatic Hydrocarbons			
Determinand	GAC _{gwvap} (µg/l) ^{1,2}		Aqueous Solubility (µg/l)
	Residential	Commercial	
Acenaphthene	170,000 (sol)	15,000,000 (sol)	4,110
Acenaphthylene	220,000 (sol)	20,000,000 (sol)	7,950
Fluorene	210,000 (sol)	18,000,000 (sol)	1,860
Naphthalene	220	23,000 (sol)	19,000
Notes 1. GAC in <i>italics</i> with (sol) exceed aqueous solubility. 2. GAC rounded to two significant figures.			

SoBRA GAC _{gwvap} for Pesticides			
Determinand	GAC _{gwvap} (µg/l) ^{1,2}		Aqueous Solubility (µg/l)
	Residential	Commercial	
Aldrin	47 (sol)	3,700 (sol)	20
alpha-Endosulfan	7,400 (sol)	590,000 (sol)	530
beta-Endosulfan	7,500 (sol)	600,000 (sol)	280
Notes 1. GAC in <i>italics</i> with (sol) exceed aqueous solubility. 2. GAC rounded to two significant figures.			

SoBRA GAC _{gwvap} for Halogenated Organics			
Determinand	GAC _{gwvap} (µg/l) ^{1,2}		Aqueous Solubility (µg/l)
	Residential	Commercial	
1,1,1,2-Tetrachloroethane	240	22,000	1,110,000
1,1,1-Trichloroethane	3,000	290,000	1,300,000
1,1,2,2-Tetrachloroethane	1,600	150,000	2,930,000
1,1,2-Trichloroethane	520	49,000	4,491,000
1,1-Dichloroethane	2,700	260,000	3,666,000
1,1-Dichloroethene	160	16,000	3,100,000
1,2,3,4-Tetrachlorobenzene	240	31,000 (sol)	7,800
1,2,3,5-Tetrachlorobenzene	7.0	600	3,500
1,2,3-Trichlorobenzene	35	3,100	21,000
1,2,4,5-Tetrachlorobenzene	8.1	700 (sol)	600
1,2,4-Trichlorobenzene	68	7,200	41,400
1,2-Dichlorobenzene	2,000	220,000 (sol)	133,000
1,2-Dichloroethane	8.9	850	8,680,000
1,2-Dichloropropane	22	2,600	2,050,000

1,3,5-Trichlorobenzene	7.4	660	6,000
1,3-Dichlorobenzene	31	2,800	103,000
1,4-Dichlorobenzene	5,000	<i>460,000 (sol)</i>	51,200
Bromobenzene	220	20,000	388,040
Bromodichloromethane	17	1,600	3,000,000
Bromoform (Tribromomethane)	3,100	400,000	3,000,000
Chlorobenzene	98	15,000	387,000
Chloroethane	10,000	1,000,000	5,742,000
Chloroethene (Vinyl Chloride)	0.62	63	2,760,000
Chloromethane	14	1,400	5,350,000
cis-1,2-Dichloroethene	130	13,000	7,550,000
Dichloromethane	3,300	370,000	20,080,000
Hexachlorobenzene	<i>16 (sol)</i>	<i>1,400 (sol)</i>	10
Hexachlorobutadiene	1.7	230	4,800
Hexachloroethane	8.5	740	49,900
Pentachlorobenzene	140	<i>12,000 (sol)</i>	500
Tetrachloroethene	34	4,600	225,000
Tetrachloromethane (Carbon Tetrachloride)	5.3	770	846,000
trans-1,2-Dichloroethene	160	16,000	5,250,000
Trichloroethene	5.7	530	1,370,000
Trichloromethane (Chloroform)	790	85,000	8,950,000
Notes 1. GAC in <i>italics</i> with (sol) exceed aqueous solubility. 2. GAC rounded to two significant figures.			

SoBRA GAC_{gwvap} for Others (organic and inorganic)			
Determinand	GAC_{gwvap} (µg/l) ^{1,2}		Aqueous Solubility (µg/l)
	Residential	Commercial	
2-Chloronaphthalene	160	<i>14,000 (sol)</i>	11,700
Biphenyl (Limonene)	<i>15,000 (sol)</i>	<i>1,300,000 (sol)</i>	4,060
Carbon disulphide	56	5,600	2,100,000
Mercury, elemental	1.1	<i>95 (sol)</i>	56
Methyl tertiary butyl ether (MTBE)	83,000	7,800,000	48,000,000
Notes 1. GAC in <i>italics</i> with (sol) exceed aqueous solubility. 2. GAC rounded to two significant figures.			

7. Climate Change

Review of the publication by SoBRA referenced: Guidance on Assessing Risk to Controlled Waters from UK Land Contamination Under Conditions of Future Climate Change, August 2022, addresses the consideration of climate change as part of groundwater risk assessments. Following the development of a preliminary Conceptual Site Model (CSM), climate change should be included by re-evaluating the potential Source-Pathway-Receptor (SPR) linkage assessment to account for the potential effects of climate change based on projections for the region of the site. It is recommended where practicable to use at least two contrasting future climate change scenarios, incorporating information for the periods of 2020s, 2050s and 2080s dependent on the relevant timeframe to the specific assessment. A qualitative assessment of the impact of climate change on the SPRs and resultant impacts on the contaminants linkages within the CSM. Quantitative data can be used to re-address the generic quantitative risk assessment for medium to long term climate change effects. For short-term extreme weather events the of “what if” scenarios should be considered. Consideration also needs to be given to the shortcomings of available simulation models in the UK where they are not equipped to model

temporal changes to parameter values and where mitigation measures may be appropriate to address this.

APPENDIX H:

Asbestos Risk Assessment

Asbestos Risk Assessment (CIRIA733)



Site information	Trial Hole Depth (m bgl)		BH1 0.2	
Asbestos Type	Abestos type	Chrysotile	Amosite	Crocidolite
Considerations	Kasbestos	1.3	1.7	2.0
	Soil Concentration (Quantification Result in %)		0.001	
Soil Type	Soil Type	Sand Sandy Clay Clay	Sand Sandy Clay Clay	Sand Sandy Clay Clay
Considerations	Ksoil	2.9 1.7 0.93	2.9 1.7 0.93	2.9 1.7 0.93
	Enter the relevant from the above	1.7	2.9	
Constants	Koverall	1.6	1.6	1.6
	Dust Concentration (mg/m3)	0.1	0.1	0.1
	Dry Conditions Exposure (hrs)	750	750	750
	Occupation hours in a year	1920	1920	1920
Calculation Results	fibre/ml per mg/m3		0.0031	
	fibre/ml		0.00031	
	fibre/ml.hr		0.231	
	fibre/ml.year		0.000120	
Mesothelioma	Age (exposure commences)	0	0	0
Accumulated Risk	Risk persists for (Years)	60	60	60
	Cummulative Age Adjustment Factor	16.8	16.8	16.8
	fibre/ml.year (cumulative)		0.00202	
Lung Cancer	Risk persists for (Years)	60	60	60
Accumulated Risk	fibre/ml.year (cumulative)		0.00144	

BACKGROUND

This asbestos risk assessment has been undertaken in accordance with the guidance within CIRIA733.

The fibre concentration within the airborne soil dust (in fibres/ml per mg/m3) was calculated based on the results of Addison et al 1988.

The airborne concentration of soil dust (0.1mg/m3) was based on ambient urban dust levels and ART modelling.

The dry conditions exposure (750hrs) was based upon regional meteorological data suggesting 150hrs of dry conditions per year, when applied over a 5-year segment this equates to 750hours.

The occupational hours per year (1920hrs) is based on a 40-hour working week and 48 working weeks in a year.

A worst-case exposure scenario has been considered for residents, groundworkers or generally end-users. This was based on the risk persisting for a period of 60 years, accumulated in 5-year increments. As the risk of mesothelioma is age dependent, this considered the exposure commencing at age 0 with the relevant age adjustment factor applied for each 5-year increment.

Based on the above considerations, the following equations have been used:

$$((\text{Kasbestostype} \times \text{Ksoil}) \div \text{Koverall}) \times \text{Soil Concentration} = \text{fibre/ml per mg/m3}$$

$$\text{Fibre/ml per mg/m3} \times \text{Dust Concentration} = \text{fibre/ml}$$

$$(\text{f/ml} \times \text{Dry Conditions Exposure (hrs)}) = \text{fibre/ml.hr}$$

$$\text{Fibre/ml.hr} \div \text{occupational hours per year} = \text{fibre/ml.year}$$

$$\text{Mesothelioma: fibre/ml.year} \times 16.8 \text{ (cumulative age adjustment factor for 60 years)}$$

$$\text{Lung Cancer: fibre/ml.year} \times 12 \text{ (60 years in 5-year increments)}$$

APPENDIX I: Ground-Gas Monitoring Results



DataPack[®]

Understanding the hazards and risks at your site

GG3988 Elgar Road South, Reading

Ref: GGS3988DP01

Issue: Final

Date: May 2025

Document Control Page

Client	Ground & Water Ltd Norton Farm Cottage, Unit 2, The Long Barn, Selborne Road, Alton, GU34 3NB.
Project Title	GGG DataPack® GGG3988 Elgar Road South, Reading
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FOREWORD

This report has been prepared based on information made available to Ground-Gas Solutions, trading as GGS, at the time of the reporting using all reasonable skill, care and diligence and within the limitations of the scope of works agreed with, and resources provided by, the client.

GGG has relied on information provided by others and has prepared this report on the basis of this information being accurate.

The report and recommendations therein are provided based on information available to GGS at the time of preparing the report and completed to recognised UK guidance and legislation. GGS will not accept any liability for inaccurate or incomplete information provided to GGS or any liability arising from the future change of any such guidance or legislation.

GGG is not obliged and disclaims any obligation to carry out further works or update the report for events occurring after such works have been carried out, and / or report issued in final form. This also applies to transfer of the report to other parties.

This report must be issued as final and be signed by the author and approved by a company director or senior management before the report may be relied upon by the client and subject to full payment for our services being made.

Any third parties using or relying on the information, comments, conclusions and recommendations do so at their own risk. Should any third party wish to use or rely upon the content of the report, written approval must be sought from a GGS Director; a charge may be levied against such approval.

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Appendices

Appendix A

Site Location & Monitoring Location Plan

Appendix B

Site Photographs

Appendix C

Periodic Monitoring Data

Appendix D

Time Series Data

Appendix E

Calibration Certificates

Appendix F

Gas Sentinel® Overview & Deployment information

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1 Introduction

GGG Limited has been commissioned by Ground & Water Ltd to undertake continuous ground gas monitoring at Elgar Road South, Reading (subsequently referred to as 'the site' throughout this report), and provide a GGG DataPack® report containing the following information:

- Periodic monitoring records.
- Continuous monitoring data and graphs.
- Atmospheric pressure trend analysis.
- Instrument calibration certificates.

1.1 Scope of works

The scope of works is set out below:

- A site visit by a GGG specialist on the 9th April 2025 to; periodically monitor 2 No. monitoring well locations and deploy continuous ground gas monitoring instruments at 2 No. monitoring well locations.
- A site visit by GGG specialists on 7th May 2025 to collect continuous ground gas monitoring instruments from 2 No. monitoring well locations.
- Provision of a GGG DataPack® report.

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2 Site Characteristics

2.1 Site Description

Table 2.1 below details the site description. A site and monitoring location plan is presented in Appendix A, whilst selected site photographs are presented in Appendix B.

Table 2.1 Site description

Description	Details
Address	220 Elgar Road South, Reading, RG2 0BW.
National grid Reference (approximate centre of site)	SU 71530 72132
Overview	The site comprises a car park to the rear of former DVSA Reading Driving Test Centre. GGG understands the site requires continuous ground gas monitoring to update and revise the gas conceptual site model.
North of the site	The site is bound to the north by Park View and residential housing.
South of the site	The site is bound to the south by residential housing.
East of the site	The site is bound to the east by Elgar Road South and some industrial units.
West of the site	A portion of greenspace lies to the West along with Waterloo Meadows Basketball Court and the River Kennet.

Figure 1 below presents selected GGS site photographs. Additional site photographs are presented in Appendix B.

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Figure 1 Selected GGS site photographs (April 2025). Image top left: View of car park area of site. Image top right: Rear of building on site. Image bottom left: Entrance lane to site. Image bottom right: GGS headworks and instrumentation secured in situ.

3 Methodology

3.1 Periodic monitoring of well locations

GGGS undertook periodic ground gas monitoring of 2 No. monitoring well locations, prior to the deployment of the continuous monitoring instrument. Concentrations of standard ground gases (methane, carbon dioxide, oxygen, carbon monoxide, and hydrogen sulphide), and flow rates, were recorded until steady state conditions were observed, or up to a maximum of 10 minutes.

GGGS also recorded depth to groundwater and depth to base of the monitoring well using a geotechnical dip meter. Monitoring data was recorded on individual proforma records, along with all pertinent observations.

A summary of the periodic monitoring records is presented in Section 4.1, whilst the full periodic monitoring records are presented in Appendix C.

3.2 Continuous ground gas monitoring

3.2.1 Definition

When the frequency of sampling matches, or is greater than, the frequency of a parameter change, the data collected can be termed 'continuous'. A continuous data set will therefore capture the full range of variation in the parameter being recorded.

3.2.2 Benefits of continuous data

The collection of time series data of permanent gases and other environmental parameters provides a wealth of information significantly assisting the assessor to identify the dominant processes of gas generation and migration. This leads to a more detailed understanding of the ground-gas regime and allows for an accurate and truly site-specific risk assessment to be completed.

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3.2.3 Methodology

GGG deployed continuous ground gas monitoring instruments within 2 No. monitoring well locations for a 4-week period during April and May 2025. The instruments were configured to record standard ground gases (methane, carbon dioxide, oxygen, carbon monoxide and hydrogen sulphide), along with atmospheric pressure, atmospheric temperature, and borehole flow, at a 60-minute monitoring frequency.

Figure 2 below presents selected site photographs of the continuous monitoring instruments deployed and secured on site, whilst Table 3.1 details the continuous monitoring schedule.



Figure 2 Selected GGS site photograph of a Gas Sentinel® continuous ground gas monitoring instrument deployed and secured on site.

Table 3.1 Continuous monitoring schedule

Location ID	Instrument Serial No.	Dates monitored
BH1	Gas Sentinel® 03000067	09/04/2025 – 07/05/2025
BH2	Gas Sentinel® 03000060	09/04/2025 – 07/05/2025

Continuous monitoring graphs are presented in Section 4.2 and the raw data is presented in Appendix D. Calibration certificates for the instruments used are presented in Appendix E, whilst Gas Sentinel® overview & deployment information is presented in Appendix F.

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4 Results

4.1 Summary of periodic monitoring of well locations

Table 4.1 below presents a summary of the periodic monitoring completed by GGS. The full periodic monitoring records are presented in Appendix C.

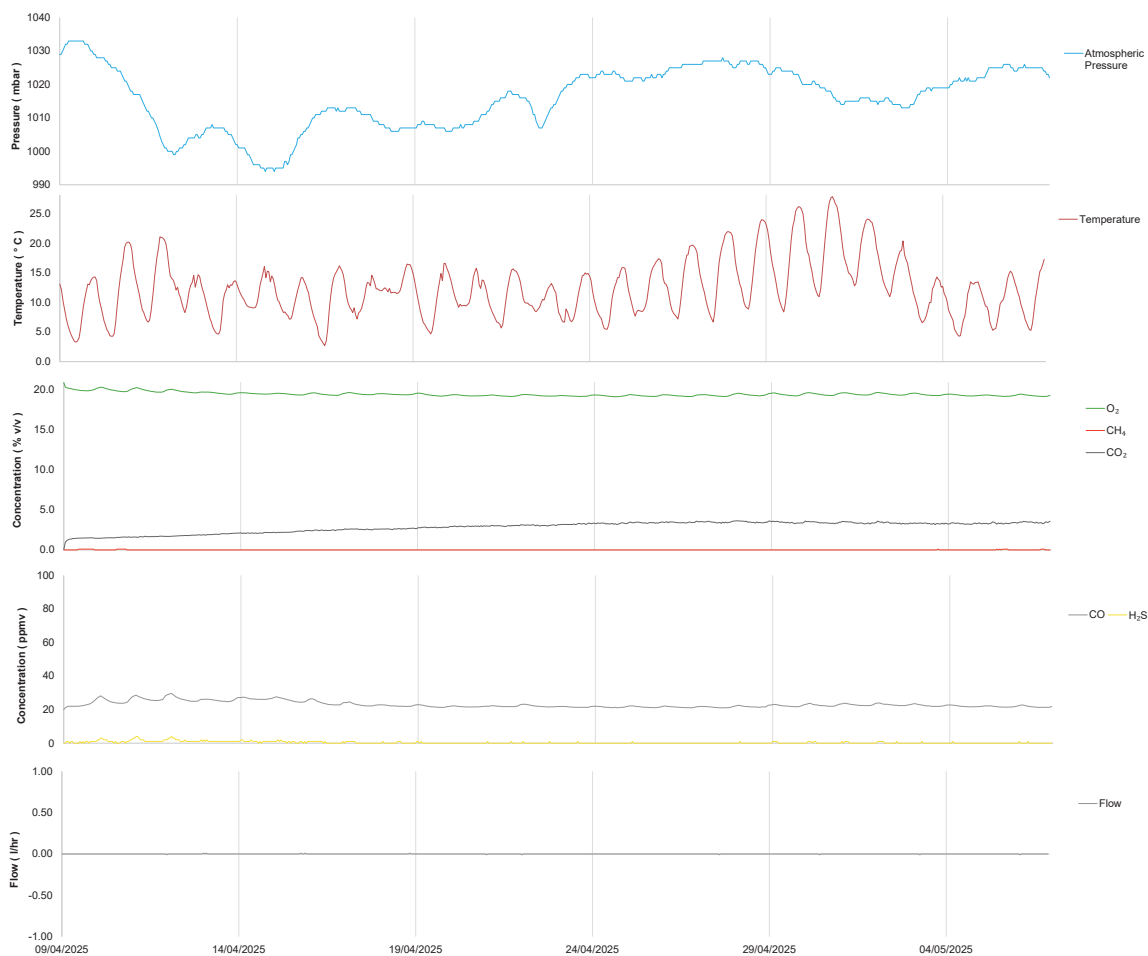
Table 4.1 Periodic gas monitoring results

Monitoring Location	Date	Max. Steady Positive Flow Rate (l/hr)	Max. CH ₄ (% v/v)	Max. CO ₂ (% v/v)	Min O ₂ (% v/v)	Max. CO (ppmv)	Max. H ₂ S (ppmv)	Standing water level (m bgl)
BH1	09/04/2025	<0.1	0.1	4.3	10.3	3	<1	3.49
BH2	09/04/2025	<0.1	0.2	0.4	20.1	4	<1	1.74

4.2 Continuous monitoring results

GGs DataPack® analysis involves converting raw data files from instruments into spread sheets. The data is then plotted as time series data graphs, showing ground-gas concentrations, gas flow, atmospheric pressure and atmospheric temperature against time. The graphs also contain a minimum and maximum values table.

The time series graphs are presented on the following pages, whilst the raw time series data is presented in Appendix D.



Title:
BH1 Time Series Graphs

Project Reference:
GGS3988

Project Name:
Elgar Road South, Reading

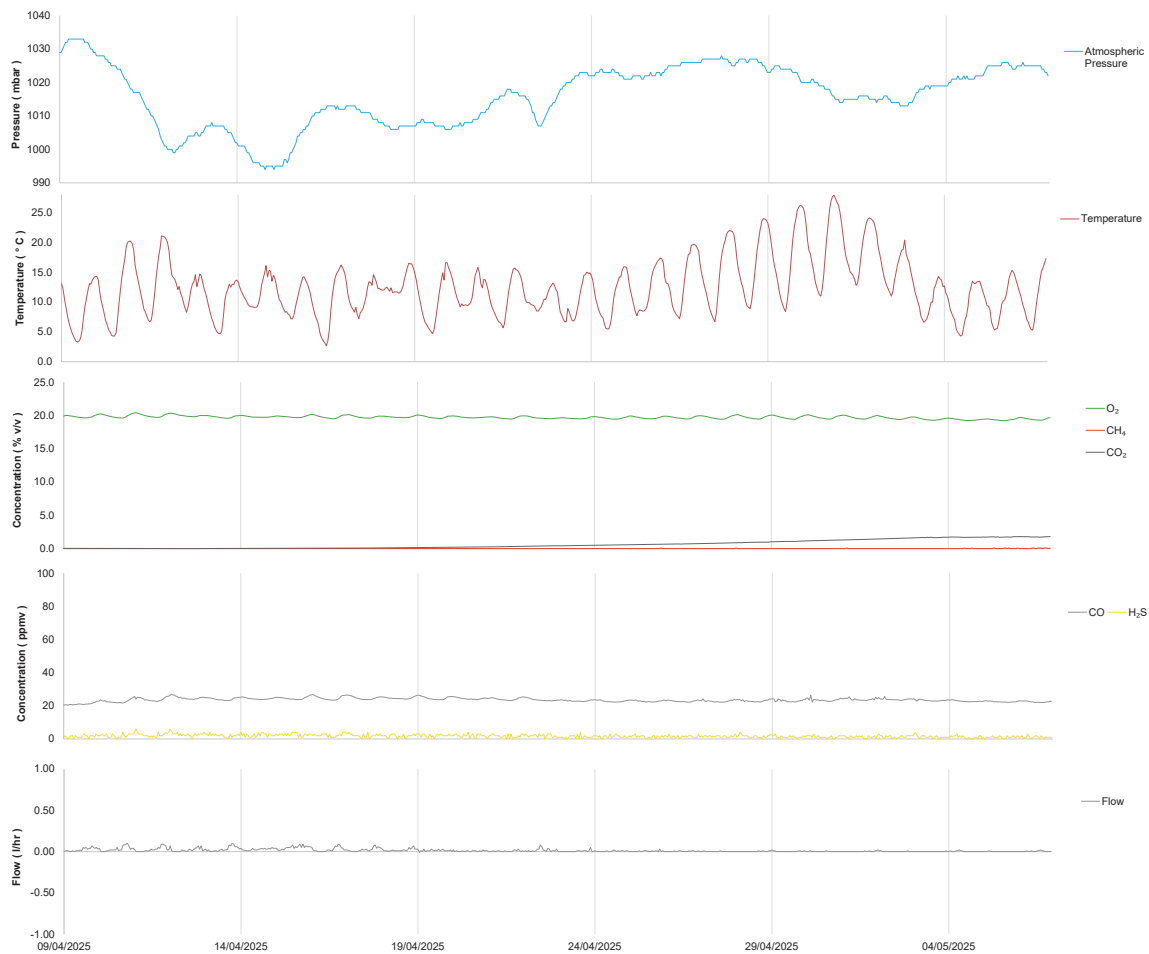
Client:
Ground & Water Ltd

Minimum / Maximum Table		
Parameter	Minimum	Maximum
CH ₄ (% v/v)	0.0	0.1
CO ₂ (% v/v)	0.1	3.7
O ₂ (% v/v)	19.2	20.9
Carbon Monoxide (ppmv)	20	30
Hydrogen Sulphide (ppmv)	0	4
Temperature (° C)	2.7	27.9
Atmospheric Pressure (mbar)	994	1033
Flow (l/hr)	-0.01	0.01

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Title:
BH2 Time Series Graphs

Project Reference:
GGS3988

Project Name:
Elgar Road South, Reading

Client:
Ground & Water Ltd

Minimum / Maximum Table		
Parameter	Minimum	Maximum
CH ₄ (% v/v)	0.0	0.1
CO ₂ (% v/v)	0.0	1.8
O ₂ (% v/v)	19.2	20.4
Carbon Monoxide (ppmv)	20	27
Hydrogen Sulphide (ppmv)	0	6
Temperature (° C)	2.7	27.9
Atmospheric Pressure (mbar)	994	1033
Flow (l/hr)	-0.01	0.10

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4.3 Atmospheric Pressure Analysis

Atmospheric pressure is often a dominant ground-gas driver and as such, monitoring should include measurements during falling and rising pressure events. Specifically, it is the rate of a pressure fall and the duration of the fall that are the two factors considered most important.

To capture potential 'worst case' conditions with respect to falling atmospheric pressure, monitoring should include both short and longer duration falling pressure events at a rate of 1.15 millibars per hour and above¹. This is calculated as an average fall over an 8-hour reference period. The rate of change in atmospheric pressure over an 8-hour reference period is presented in Figure 4 on the following pages.

For weather forecasting in the UK, The Meteorological Office² records falling pressure tendency over a 3-hour period, whereby every hour the change in atmospheric pressure over the proceeding 3 hours is noted as being:

- Stable <0.1 millibars
- Falling (or rising) slowly >0.1 millibars
- Falling (or rising) >1.6 millibars
- Falling (or rising) rapidly >3.6 millibars
- Falling (or rising) very rapidly >6 millibars

Similarly, The British Coal Technical Department³ considered a sharp fall in pressure to be between 4 and 8 millibars over a 3-hour period. GGS has used the time series data to reference a 3-hour tendency throughout the continuous monitoring period using the Met Office criteria listed above. A time series graph of the 3-hour pressure tendency is also presented in Figure 4 on the following pages, which provides time reference/occurrences to atmospheric pressure falling, falling rapidly and/or falling very rapidly.

¹ CL:AIRE Technical Bulletin 17, August 2018. Ground Gas Monitoring and 'Worst-Case' Conditions

² https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/library-and-archive/library/publications/factsheets/factsheet_8-shipping-forecast.pdf

³ British Coal Technical Department. 1990. Hazardous Gases Underground: Notes for Guidance NG/9. British Coal Technical Department.

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The standard mean sea level pressure (MSLP) in the UK is defined as 1013.25 millibars⁴, which provides a common value to compare atmospheric pressure across different locations and elevations. Atmospheric pressure above or below MSLP can therefore be considered either higher or lower than the average pressure for that geographical location. Typical meteorological convention is to segment atmospheric pressure into five distinct categories as follows:

- Very high >1035 millibars
- High >1020 <1035 millibars
- Normal >1005 <1020 millibars
- Low >990 <1005 millibars
- Very low <990 millibars

Table 4.2 on the following page provides a summary of the atmospheric pressure regime, including the percentage time in which pressure was below average and below average and falling.

With consideration to The Met Office pressure change criteria, the percentage distribution of the 3-hour atmospheric pressure tendency during the continuous monitoring period is presented in Figure 3 below. Although rising pressure will have a similar distribution to falling pressure, this is listed together. The percentage distribution of atmospheric pressure in terms of very low to very high pressure, is also included in Figure 3 below.

For the purpose of atmospheric pressure analysis, GGS has obtained historical weather data which is based on reanalysis datasets. A combination of weather station, aircraft, buoy, radar and satellite observations are used to create a comprehensive record of past weather conditions. These datasets are able to provide detailed historical weather data for locations which may not have a local weather station and for locations that may have gaps in observational weather data. All the assessed atmospheric pressure data is relative to sea level pressure.

⁴ <https://www.metoffice.gov.uk/weather/learn-about/weather/how-weather-works/high-and-low-pressure>

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Table 4.2 Atmospheric pressure regime

Atmospheric Pressure Analysis 09/04/2025 – 07/05/2025	
Range in atmospheric pressure (mbar)	994.2 – 1032.9 (38.7 millibars)
Maximum average rate of fall over an 8-hour reference period	1.075 mbar/hour (12/04/2025 08:00 1009.8 mb to 12/04/2025 16:00 1001.2mb)
Maximum change in pressure over a 3-hour period (pressure tendency)	3.8 millibars (23/04/2025 01:00 1011.4mb to 23/04/2025 04:00 1007.6mb)
Most significant atmospheric pressure fall greater than 8 hours	33 millibars over 64 hours (0.52 mbar/hour) (1032.6 mb 10/04/2025 09:00 – 999.6 mb 13/04/2025 00:00).
% time low or very low pressure and falling	12.2%
Average pressure during the monitoring period (millibars)	1015.98

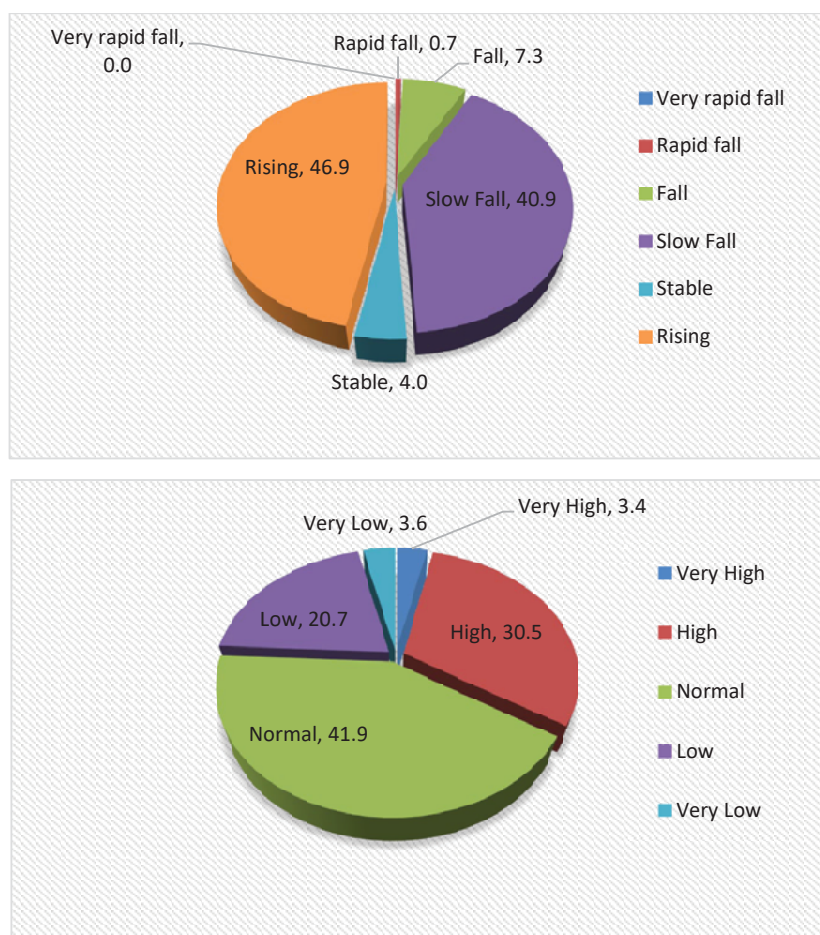


Figure 3 % distribution of 3-hour pressure tendency (top) and low, normal and high pressure (bottom)

GGs DataPack®
GGs3988 Elgar Road South, Reading

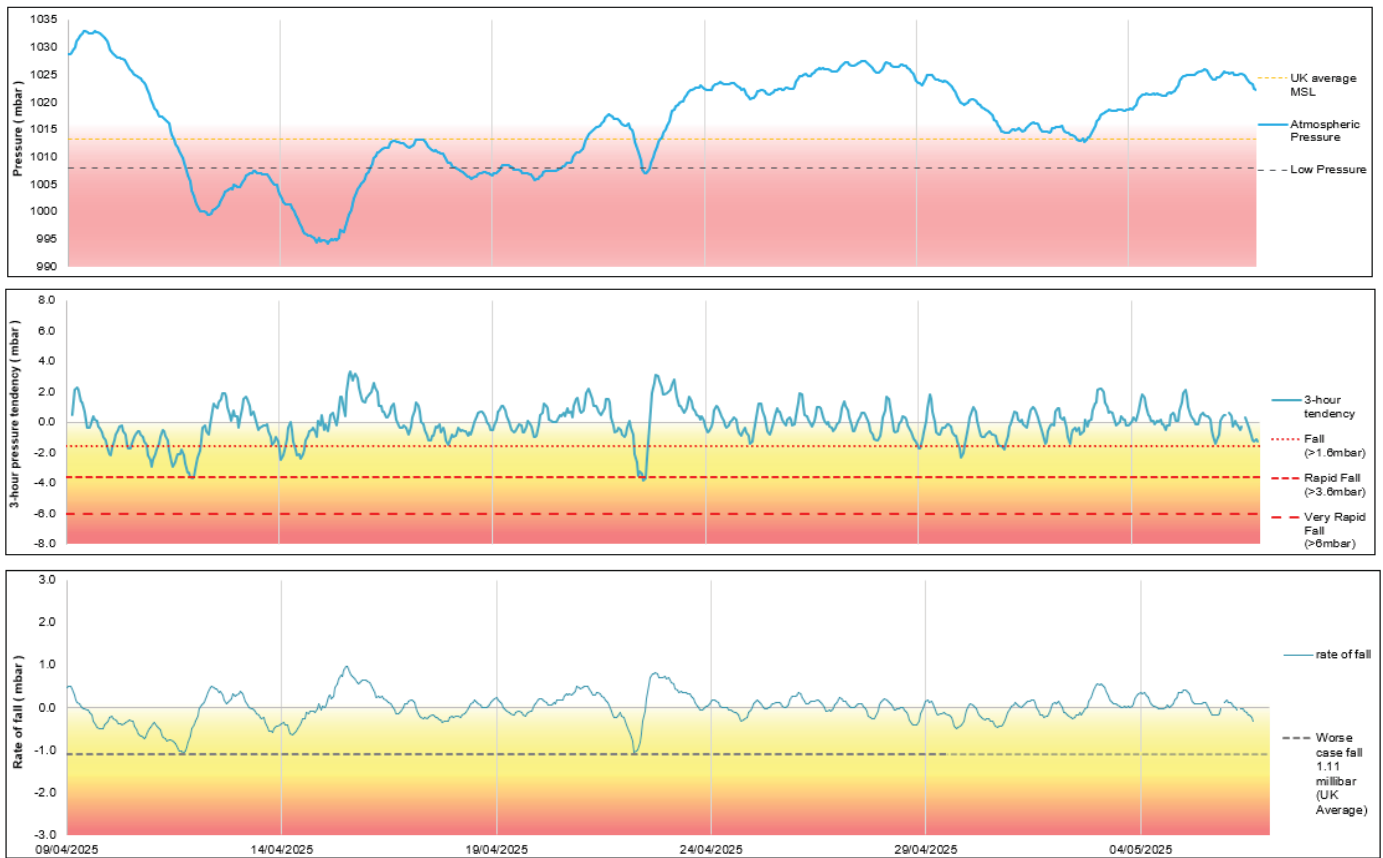


Figure 4 Time series atmospheric pressure presented with reference to standard UK mean sea level pressure (top), 3-hour pressure tendency (middle) and a maximum rate of fall averaged over an 8-hour reference period (bottom)

5 Instrumentation specifications

GGG instrumentation is maintained in accordance with the manufacturer recommendations and is serviced and calibrated annually. Note that for some instrumentation, cross sensitivity to other gases and significant environmental changes, such as temperature, pressure and humidity, should be taken into consideration when considering all site monitoring data.

The current calibration certificates for all equipment used on site are included in Appendix E.

5.1 GasData GFM400 series

The GasData GFM 400 series gas analyser with flow meter measures borehole flow rates, bulk gas concentrations (methane, carbon dioxide and oxygen), trace gas concentrations (carbon monoxide and hydrogen sulphide) barometric and differential pressure.

The specification range of the GFM 400 series is as follows:

Table 5.1 GFM 400 series specification

Feature	Method / Type	Range	Resolution
Methane	Infrared	0 - 100%v/v	0.1%
Lower Detection Limit (LEL)	Infrared	0 - 100%v/v	0.1%
Carbon Dioxide	Infrared	0 - 100%v/v	0.1%
Oxygen	Electrochemical	0 - 25%v/v	0.1%
Hydrogen Sulphide	Electrochemical	0 - 5000ppm	1ppm
Carbon Monoxide	Electrochemical	0 - 2000ppm	1ppm
Atmospheric Pressure	Absolute Pressure Sensor	800 - 1200mb	1mb
Differential Pressure	Thermal Dissipation	±1250Pa	0.1Pa
Temperature	Bi-metal	-10°C to +100°C	1°C
Flow	Thermal Dissipation	-60 – 100 l/hr	0.1l/hr

5.2 Gas Sentinel® instrumentation

Instrument specification and overview information sheets are presented in Appendix F.

6 ISO Accreditation and Professional Insurances

GGG are accredited to the following international standards:

- ISO 9001:2015 (Quality Management System);
- ISO 14001:2015 (Environmental Management System), and;
- ISO 45001: 2018 (Occupational Health and Safety Management System).

7 Limitations

GGG has prepared this factual report for the use of the Client and those parties whom a warranty agreement has been executed, or with whom an assignment has been agreed.

GGG accepts no responsibility for the consequences of this document being used for any purpose or project other than for which it was commissioned or for the consequences arising from this document's use by any third party with whom an agreement has not been executed.

GGG accept no responsibility for the interpretation of this factual data. A reviewer of the data provided must take into account other available information and the context in which this data was collected. For example, site setting, conceptual site model, environmental conditions, gases present (that are not monitored as part of this contract, but may interfere with the sensors used), building design and construction practices during the monitoring period.

GGG accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Appendix A

Site Location & Monitoring Location Plan



1:100,000



1:10,000

TITLE: Site Location Plan	Rev.	Date	Dwn	Description	App'd
	0	21/05/25	EC	FINAL	HH
PROJECT: GGS3988 Elgar Road South, Reading					
DRAWING REF: GGS3988_SLP_01					
This Document should only be relied upon and used in circumstances it was originally prepared by GGS for the Client. Any Other use or modification is not the responsibility of GGS. © Copyright Ground-Gas Solutions 2025.					
Note: - All locations are approximate. - Map & satellite imagery ©OpenStreetMap					





Experts in Continuous Monitoring

Ground gas solutions Ltd.
 Pythia House (Unit 10),
 Bamford Business Park,
 Hibbert Street, Stockport
 SK4 1PL



Title:
Monitoring Location Plan

Project:
GGS3988 Elgar Road South, Reading

Drawing No:
GGS3988_12.05.25

Key:

 Continuous monitoring location

Note:

- All locations are approximate.
- Imagery Google© 2025.

Rev.	Date	Dwn.	Description	App'd
0	12/05/25	MT	FINAL	HH

This document should only be relied upon and used in the circumstances it was originally prepared by GGS for the client. Any other use or modification is not the responsibility of GGS.

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**Experts in
Continuous Monitoring**

Ground Gas Solutions (GGS) Ltd.
Pythia House (Unit 10), Bamford Business Park
Hibbert Street, Stockport, SK4 1PL

Appendix B

Site Photographs

GGs DataPack®
GGs3988 Elgar Road South, Reading



GGs DataPack® Plus
GGs3988 Elgar Road South, Reading

Appendix C

Periodic Monitoring Data



PROJECT DETAILS		
Project ID	GGS3988	
Site	Elgar Road South, Reading	
Date	09/04/2025	
Weather Conditions (from Met office app)	Temperature (°C)	16
	Wind (km/h)	11.0
	Precipitation	None
	Cloud cover	None
	Atmospheric Pressure trend	Rising
Overall Site Ground Conditions	Flat asphalt car park of former driving test centre. Easy access to monitoring well locations.	
Site Notes/H&S Notes	N/A	

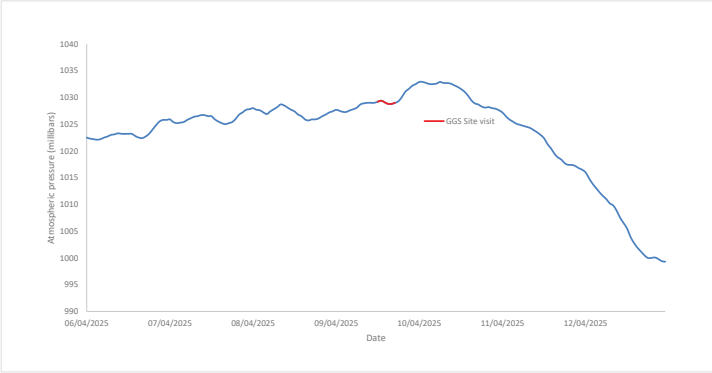


Figure 1. GGS site visit in relation to atmospheric pressure regime



Experts in Continuous Monitoring

Site Name	Elgar Road South, Reading
Project ID	GG53988
GG5 Staff	PG
Monitoring Date	09/04/2025
Monitoring Start Time	13:46

Borehole Details	
Borehole ID	BH1
W3W	friday.crops.juices
Area surrounding borehole	Dry
Headworks Type	Ground Level
Rubber bung and valve in place?	Yes
Valve is clear and clean?	Yes
Standpipe Condition	Correct

BS8576 Visual Checks	
Concrete Cover	Present
Bentonite Seal	Pellet Form
Gravel Fill	Not Visible

Borehole Measurements	
Groundwater Level (mbgl)	3.49
Depth to base (mbgl)	5.4

Pressure Readings	Start	End
Atmospheric Pressure (mb)	1029	1029

EQUIPMENT	
Model	Serial Number
GA 5000	G50M460
Dip Tape	N/A

Notes	

Time (seconds)	Gas Flow Litres/hour	Gas Readings					
		CH ₄ (% v/v)	CO ₂ (% v/v)	O ₂ (% v/v)	BAL	CO (ppmv)	H ₂ S (ppmv)
Fresh Air	<0.1	0.1	0.1	20.2	79.6	<1	<1
Initial	<0.1	0.1	2.7	16.7	80.5	1	<1
30	<0.1	0.1	2.7	13.8	83.4	1	<1
60	<0.1	0.1	2.8	13.6	83.5	3	<1
120	<0.1	0.1	2.9	13.2	83.8	3	<1
180		0.1	3.1	12.8	84.0	3	<1
240		0.1	3.4	12.2	84.3	2	<1
300		0.1	3.6	11.7	84.6	2	<1
360		0.1	3.8	11.3	84.8	1	<1
420		0.1	4.0	10.9	85.0	1	<1
480		0.1	4.1	10.6	85.2	1	<1
540		0.1	4.2	10.4	85.3	1	<1
600		0.1	4.3	10.3	85.3	<1	<1
Fresh Air	<0.1	0.1	0.1	20.2	79.7	<1	<1

STEADY STATE FINAL RESULTS							
Reult	Flow (l/hr)	CH ₄ (% v/v)	CO ₂ (% v/v)	O ₂ (% v/v)	BAL	CO (ppmv)	H ₂ S (ppmv)
Steady state time (s)	30	30	N/A	N/A	N/A	60	30
Steady state value	<0.1	0.1	N/A	N/A	N/A	3	<1
Peak Value (O ₂ Low)	<0.1	0.1	4.3	10.3	85.3	3	<1

KEY: <0.1= Below instrument limit of detection, NM = Not Measured, N/A = Not Applicable, %v/v = Percentage volume by volume, ppmv = parts per million by volume, mb = milibar, ltr/hr = litres per hour, mbgl = metres below ground level, OS = off scale of instrument
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Experts in Continuous Monitoring

Site Name	Elgar Road South, Reading
Project ID	GG53988
GGS Staff	PG
Monitoring Date	09/04/2025
Monitoring Start Time	13:28

Borehole Details	
Borehole ID	BH2
W3W	tides.margin.walks
Area surrounding borehole	Dry
Headworks Type	Ground Level
Rubber bung and valve in place?	Yes
Valve is clear and clean?	Yes
Standpipe Condition	Correct

BS8576 Visual Checks	
Concrete Cover	Present
Bentonite Seal	Pellet Form
Gravel Fill	Not Visible

Borehole Measurements	
Groundwater Level (mbgl)	1.74
Depth to base (mbgl)	3.64

Pressure Readings	Start	End
Atmospheric Pressure (mb)	1029	1029

EQUIPMENT	
Model	Serial Number
GA 5000	G504460
Dip Tape	N/A

Notes	
Brown silt at base.	

Time (seconds)	Gas Flow Litres/hour	Gas Readings					
		CH ₄ (% v/v)	CO ₂ (% v/v)	O ₂ (% v/v)	BAL	CO (ppmv)	H ₂ S (ppmv)
Fresh Air	<0.1	0.2	0.1	20.6	79.1	<1	<1
Initial	<0.1	0.2	0.4	20.4	79.0	4	<1
30	<0.1	0.2	0.2	20.2	79.4	2	<1
60	<0.1	0.2	0.3	20.2	79.3	2	<1
120	<0.1	0.2	0.2	20.2	79.4	2	<1
180		0.2	0.2	20.2	79.4	1	<1
240		0.2	0.2	20.2	79.4	1	<1
300		0.1	0.2	20.2	79.5	<1	<1
360		0.1	0.1	20.1	79.7	<1	<1
420		0.1	0.1	20.1	79.7	<1	<1
480		0.1	0.1	20.1	79.7	<1	<1
540							
600							
Fresh Air	<0.1	0.1	0.1	20.2	79.7	<1	<1

STEADY STATE FINAL RESULTS							
Reult	Flow (l/hr)	CH ₄ (% v/v)	CO ₂ (% v/v)	O ₂ (% v/v)	BAL	CO (ppmv)	H ₂ S (ppmv)
Steady state time (s)	30	30	120	30	120	60	30
Steady state value	<0.1	0.2	0.2	20.2	79.4	30	<1
Peak Value (O ₂ Low)	<0.1	0.2	0.4	20.1	79.7	2	<1

Appendix D

Time Series Data

Time Series Data

Project Ref:	GG3988
Project Name:	Elgar Road South, Reading
Borehole ref:	BH1
Instrument Name and ID:	03000067
Start Date:	09/04/2025 17:00
End Date:	07/05/2025 14:00
Days of monitoring:	28
Monitoring Frequency (hh:mm:ss):	01:00:00
Total samples taken:	670



Summary Table

	CH ₄	CO ₂	O ₂	CO	H ₂ S	Flow		Atmospheric Pressure	Average 8-hour atmospheric pressure change	Temperature
Minimum	0.0	0.1	19.2	20	0	-0.01	Minimum	994	-1.1	2.7
Maximum	0.1	3.7	20.9	30	4	0.01	Maximum	1033	1.0	27.9
Range	0.1	3.6	1.7	10	4	0.02	Range	39	2.1	25.2

Date and Time	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	CO ppm/v	H ₂ S ppm/v	Flow Ltr/hr		Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Temperature °C
09/04/2025 17:00	0.0	0.1	20.9	20	0	0.00		1029	NM	13.1
09/04/2025 18:00	0.0	1.0	20.4	21	0	0.00		1029	NM	12.2
09/04/2025 19:00	0.0	1.2	20.3	22	1	0.00		1030	NM	10.5
09/04/2025 20:00	0.0	1.3	20.2	22	1	0.00		1031	NM	9.1
09/04/2025 21:00	0.0	1.4	20.2	22	0	0.00		1032	NM	7.7
09/04/2025 22:00	0.0	1.4	20.2	22	1	0.00		1032	NM	6.6
09/04/2025 23:00	0.0	1.4	20.1	22	1	0.00		1033	NM	5.7
10/04/2025 00:00	0.0	1.5	20.1	22	0	0.00		1033	NM	5.0
10/04/2025 01:00	0.0	1.5	20.0	22	0	0.00		1033	-1.1	4.3
10/04/2025 02:00	0.0	1.4	20.0	22	0	0.00		1033	0.5	3.8
10/04/2025 03:00	0.1	1.5	20.0	22	0	0.00		1033	0.4	3.4
10/04/2025 04:00	0.1	1.5	20.0	22	1	0.00		1033	0.3	3.3
10/04/2025 05:00	0.1	1.5	19.9	22	0	0.00		1033	0.1	3.5
10/04/2025 06:00	0.1	1.5	19.9	22	1	0.00		1033	0.1	4.0
10/04/2025 07:00	0.1	1.5	19.9	23	0	0.00		1033	0.0	5.4
10/04/2025 08:00	0.1	1.5	19.9	23	1	0.00		1033	0.0	7.5
10/04/2025 09:00	0.1	1.5	19.9	23	1	0.00		1033	0.0	9.4
10/04/2025 10:00	0.1	1.5	19.9	23	0	0.00		1032	-0.1	10.7
10/04/2025 11:00	0.1	1.5	19.9	24	1	0.00		1032	-0.1	12.0
10/04/2025 12:00	0.1	1.5	20.0	24	1	0.00		1032	-0.1	13.1
10/04/2025 13:00	0.1	1.5	20.0	25	1	0.00		1031	-0.3	13.0
10/04/2025 14:00	0.0	1.5	20.1	26	1	0.00		1030	-0.4	13.7
10/04/2025 15:00	0.0	1.5	20.2	26	1	0.00		1030	-0.4	14.1
10/04/2025 16:00	0.0	1.5	20.3	27	2	0.00		1029	-0.5	14.3
10/04/2025 17:00	0.0	1.5	20.3	28	2	0.00		1029	-0.5	14.3
10/04/2025 18:00	0.0	1.5	20.4	28	3	0.00		1028	-0.5	13.7
10/04/2025 19:00	0.0	1.5	20.3	28	3	0.00		1028	-0.5	11.7
10/04/2025 20:00	0.0	1.5	20.3	27	2	0.00		1028	-0.5	10.2
10/04/2025 21:00	0.0	1.5	20.2	26	2	0.00		1028	-0.4	9.2
10/04/2025 22:00	0.0	1.5	20.2	26	2	0.00		1028	-0.3	8.1
10/04/2025 23:00	0.0	1.5	20.1	25	1	0.00		1028	-0.3	6.9
11/04/2025 00:00	0.0	1.5	20.1	25	1	0.00		1027	-0.3	6.2
11/04/2025 01:00	0.0	1.5	20.0	25	1	0.00		1027	-0.3	5.4
11/04/2025 02:00	0.0	1.5	20.0	24	1	0.00		1026	-0.3	5.0
11/04/2025 03:00	0.0	1.5	20.0	24	0	0.00		1026	-0.3	4.4
11/04/2025 04:00	0.0	1.5	19.9	24	1	0.00		1025	-0.4	4.3
11/04/2025 05:00	0.1	1.6	19.9	24	0	0.00		1025	-0.4	4.3
11/04/2025 06:00	0.1	1.6	19.9	24	0	0.00		1025	-0.4	4.8
11/04/2025 07:00	0.1	1.6	19.8	24	0	0.00		1025	-0.4	6.8
11/04/2025 08:00	0.1	1.6	19.8	24	1	0.00		1024	-0.4	9.6
11/04/2025 09:00	0.1	1.6	19.8	24	1	0.00		1024	-0.4	12.0
11/04/2025 10:00	0.1	1.6	19.8	24	1	0.00		1024	-0.3	14.1
11/04/2025 11:00	0.1	1.6	19.8	24	0	0.00		1023	-0.4	15.8
11/04/2025 12:00	0.0	1.6	19.8	24	1	0.00		1022	-0.4	17.2
11/04/2025 13:00	0.0	1.6	19.9	25	1	0.00		1021	-0.5	19.3
11/04/2025 14:00	0.0	1.6	20.0	26	2	0.00		1021	-0.5	20.0
11/04/2025 15:00	0.0	1.6	20.1	27	2	0.00		1020	-0.6	20.2
11/04/2025 16:00	0.0	1.6	20.2	28	3	0.00		1019	-0.6	20.2
11/04/2025 17:00	0.0	1.6	20.2	28	3	0.00		1018	-0.8	19.8
11/04/2025 18:00	0.0	1.6	20.3	29	4	0.00		1018	-0.8	18.8
11/04/2025 19:00	0.0	1.6	20.3	28	4	0.00		1017	-0.8	16.3
11/04/2025 20:00	0.0	1.6	20.2	28	3	0.00		1017	-0.6	14.8
11/04/2025 21:00	0.0	1.7	20.2	27	2	0.00		1017	-0.5	13.6
11/04/2025 22:00	0.0	1.7	20.1	27	2	0.00		1017	-0.5	12.5
11/04/2025 23:00	0.0	1.6	20.0	27	2	0.00		1017	-0.4	11.3
12/04/2025 00:00	0.0	1.7	20.0	26	1	0.00		1016	-0.4	10.0

Date and Time	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	CO ppm/v	H ₂ S ppm/v	Flow Ltr/hr		Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Temperature °C
12/04/2025 01:00	0.0	1.7	20.0	26	1	0.00		1015	-0.4	8.8
12/04/2025 02:00	0.0	1.7	19.9	26	1	0.00		1014	-0.5	8.3
12/04/2025 03:00	0.0	1.6	19.9	26	1	0.00		1013	-0.5	7.6
12/04/2025 04:00	0.0	1.7	19.8	26	1	0.00		1012	-0.6	7.0
12/04/2025 05:00	0.0	1.7	19.8	26	1	0.00		1012	-0.6	6.7
12/04/2025 06:00	0.0	1.7	19.8	25	1	0.00		1011	-0.8	7.0
12/04/2025 07:00	0.0	1.7	19.8	25	1	0.00		1010	-0.9	8.6
12/04/2025 08:00	0.0	1.7	19.7	25	1	0.00		1010	-0.8	10.8
12/04/2025 09:00	0.0	1.7	19.7	25	1	0.00		1009	-0.8	13.2
12/04/2025 10:00	0.0	1.7	19.7	26	1	0.00		1008	-0.8	15.6
12/04/2025 11:00	0.0	1.7	19.7	26	1	0.00		1007	-0.8	17.8
12/04/2025 12:00	0.0	1.7	19.8	26	1	0.00		1006	-0.8	19.1
12/04/2025 13:00	0.0	1.7	19.8	27	2	0.00		1004	-1.0	21.1
12/04/2025 14:00	0.0	1.7	19.9	28	2	0.00		1003	-1.0	21.0
12/04/2025 15:00	0.0	1.7	20.0	29	2	0.00		1002	-1.0	20.9
12/04/2025 16:00	0.0	1.7	20.0	29	3	-0.01		1001	-1.1	20.6
12/04/2025 17:00	0.0	1.7	20.1	29	3	0.00		1001	-1.0	20.0
12/04/2025 18:00	0.0	1.7	20.1	30	4	0.00		1000	-1.0	18.6
12/04/2025 19:00	0.0	1.7	20.1	29	3	0.00		1000	-0.9	16.3
12/04/2025 20:00	0.0	1.7	20.0	28	3	0.00		1000	-0.8	14.5
12/04/2025 21:00	0.0	1.8	20.0	28	2	0.00		1000	-0.5	14.1
12/04/2025 22:00	0.0	1.7	19.9	27	2	0.00		999	-0.5	13.8
12/04/2025 23:00	0.0	1.8	19.9	27	2	0.00		999	-0.4	13.1
13/04/2025 00:00	0.0	1.8	19.9	26	1	0.00		1000	-0.1	12.1
13/04/2025 01:00	0.0	1.8	19.8	26	1	0.00		1000	-0.1	12.6
13/04/2025 02:00	0.0	1.8	19.8	26	1	0.00		1001	0.1	11.4
13/04/2025 03:00	0.0	1.8	19.8	26	2	0.00		1001	0.1	10.8
13/04/2025 04:00	0.0	1.8	19.8	26	1	0.00		1001	0.1	9.8
13/04/2025 05:00	0.0	1.8	19.7	25	1	0.00		1002	0.3	8.9
13/04/2025 06:00	0.0	1.8	19.7	25	1	0.00		1002	0.4	8.3
13/04/2025 07:00	0.0	1.8	19.7	25	1	0.00		1003	0.5	9.2
13/04/2025 08:00	0.0	1.9	19.7	25	1	0.00		1004	0.5	10.6
13/04/2025 09:00	0.0	1.9	19.7	25	1	0.00		1004	0.5	12.1
13/04/2025 10:00	0.0	1.9	19.7	25	1	0.00		1004	0.4	13.0
13/04/2025 11:00	0.0	1.9	19.7	25	1	0.00		1004	0.4	13.4
13/04/2025 12:00	0.0	1.9	19.7	25	1	0.00		1004	0.4	14.6
13/04/2025 13:00	0.0	1.9	19.7	26	1	0.00		1005	0.4	12.6
13/04/2025 14:00	0.0	1.9	19.7	26	2	0.00		1005	0.4	13.6
13/04/2025 15:00	0.0	1.9	19.8	26	1	0.00		1004	0.1	14.7
13/04/2025 16:00	0.0	1.9	19.7	26	2	0.00		1004	0.0	14.4
13/04/2025 17:00	0.0	1.9	19.7	26	1	0.01		1005	0.1	13.2
13/04/2025 18:00	0.0	1.9	19.8	26	2	0.00		1005	0.1	12.2
13/04/2025 19:00	0.0	1.9	19.7	26	1	0.01		1006	0.3	11.4
13/04/2025 20:00	0.0	1.9	19.7	26	1	0.00		1007	0.4	10.4
13/04/2025 21:00	0.0	1.9	19.7	26	1	0.00		1007	0.3	9.3
13/04/2025 22:00	0.0	1.9	19.7	26	1	0.00		1007	0.3	8.3
13/04/2025 23:00	0.0	2.0	19.7	26	1	0.00		1007	0.4	7.3
14/04/2025 00:00	0.0	2.0	19.6	26	1	0.00		1008	0.5	6.7
14/04/2025 01:00	0.0	2.0	19.6	25	1	0.00		1007	0.3	5.8
14/04/2025 02:00	0.0	2.0	19.6	25	1	0.00		1007	0.3	5.3
14/04/2025 03:00	0.0	2.0	19.6	25	1	0.00		1007	0.1	4.9
14/04/2025 04:00	0.0	2.0	19.6	25	1	0.00		1007	0.0	4.7
14/04/2025 05:00	0.0	2.0	19.5	25	1	0.00		1007	0.0	4.7
14/04/2025 06:00	0.0	2.0	19.5	25	1	0.00		1007	0.0	5.3
14/04/2025 07:00	0.0	2.0	19.5	25	1	0.00		1007	0.0	7.6
14/04/2025 08:00	0.0	2.0	19.5	25	1	0.00		1007	-0.1	10.3
14/04/2025 09:00	0.0	2.0	19.5	25	1	0.00		1006	-0.1	11.5
14/04/2025 10:00	0.0	2.1	19.5	25	1	0.00		1006	-0.1	12.1
14/04/2025 11:00	0.0	2.1	19.5	25	1	0.00		1005	-0.3	13.0
14/04/2025 12:00	0.0	2.1	19.5	26	1	0.00		1005	-0.3	12.5
14/04/2025 13:00	0.0	2.1	19.6	26	1	0.00		1005	-0.3	13.0
14/04/2025 14:00	0.0	2.1	19.6	27	1	0.00		1004	-0.4	12.9
14/04/2025 15:00	0.0	2.1	19.6	27	1	0.00		1003	-0.5	13.5
14/04/2025 16:00	0.0	2.1	19.7	27	1	0.00		1002	-0.6	13.7
14/04/2025 17:00	0.0	2.2	19.7	27	2	0.00		1002	-0.5	13.4
14/04/2025 18:00	0.0	2.1	19.7	27	2	0.00		1001	-0.6	12.6
14/04/2025 19:00	0.0	2.1	19.7	27	1	0.00		1001	-0.5	11.9
14/04/2025 20:00	0.0	2.1	19.7	27	1	0.00		1001	-0.5	11.4
14/04/2025 21:00	0.0	2.1	19.6	27	1	0.00		1001	-0.5	10.9
14/04/2025 22:00	0.0	2.1	19.6	27	1	0.00		1001	-0.4	10.5
14/04/2025 23:00	0.0	2.1	19.6	26	1	0.00		1000	-0.4	10.0
15/04/2025 00:00	0.0	2.1	19.6	26	2	0.00		999	-0.4	9.5
15/04/2025 01:00	0.0	2.1	19.6	26	1	0.00		999	-0.4	9.3
15/04/2025 02:00	0.0	2.1	19.6	26	1	0.00		998	-0.4	9.2
15/04/2025 03:00	0.0	2.1	19.5	26	1	0.00		997	-0.5	9.2
15/04/2025 04:00	0.0	2.1	19.5	26	1	0.00		996	-0.6	9.1
15/04/2025 05:00	0.0	2.1	19.5	26	0	0.00		996	-0.6	9.1
15/04/2025 06:00	0.0	2.1	19.5	26	1	0.00		996	-0.6	9.2
15/04/2025 07:00	0.0	2.1	19.5	26	0	0.00		996	-0.5	9.9
15/04/2025 08:00	0.0	2.1	19.5	26	1	0.00		996	-0.4	11.1
15/04/2025 09:00	0.0	2.2	19.5	26	1	0.00		995	-0.5	12.9

Date and Time	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	CO ppm/v	H ₂ S ppm/v	Flow Ltr/hr		Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Temperature °C
15/04/2025 10:00	0.0	2.2	19.5	26	1	0.00		995	-0.4	13.9
15/04/2025 11:00	0.0	2.2	19.5	26	1	0.00		995	-0.3	14.9
15/04/2025 12:00	0.0	2.2	19.5	26	1	0.00		994	-0.3	16.1
15/04/2025 13:00	0.0	2.2	19.5	27	1	0.00		995	-0.1	14.2
15/04/2025 14:00	0.0	2.2	19.5	27	1	0.00		995	-0.1	15.3
15/04/2025 15:00	0.0	2.2	19.6	27	1	0.00		995	-0.1	15.2
15/04/2025 16:00	0.0	2.2	19.6	27	1	0.00		995	-0.1	13.5
15/04/2025 17:00	0.0	2.2	19.6	28	1	0.00		995	0.0	14.5
15/04/2025 18:00	0.0	2.2	19.6	27	2	0.00		994	-0.1	14.0
15/04/2025 19:00	0.0	2.2	19.6	27	1	0.00		995	0.0	12.8
15/04/2025 20:00	0.0	2.2	19.6	27	2	0.00		995	0.1	11.5
15/04/2025 21:00	0.0	2.2	19.6	27	1	0.00		995	0.0	10.4
15/04/2025 22:00	0.0	2.2	19.6	27	1	0.00		995	0.0	10.1
15/04/2025 23:00	0.0	2.2	19.5	26	1	0.00		995	0.0	9.4
16/04/2025 00:00	0.0	2.2	19.5	26	0	0.00		995	0.0	8.8
16/04/2025 01:00	0.0	2.2	19.5	26	1	0.00		997	0.3	8.3
16/04/2025 02:00	0.0	2.2	19.5	26	1	0.00		997	0.4	8.4
16/04/2025 03:00	0.0	2.2	19.5	25	0	0.00		996	0.1	8.0
16/04/2025 04:00	0.0	2.2	19.4	25	1	0.00		997	0.3	7.8
16/04/2025 05:00	0.0	2.3	19.4	25	1	0.00		999	0.5	7.2
16/04/2025 06:00	0.0	2.3	19.4	25	0	0.00		999	0.5	7.2
16/04/2025 07:00	0.0	2.3	19.4	25	0	0.00		1000	0.6	7.9
16/04/2025 08:00	0.0	2.3	19.4	25	0	0.00		1001	0.8	9.1
16/04/2025 09:00	0.0	2.4	19.4	24	1	0.00		1002	0.6	10.4
16/04/2025 10:00	0.0	2.4	19.4	24	1	0.00		1004	0.9	11.3
16/04/2025 11:00	0.0	2.3	19.4	24	0	0.01		1004	1.0	12.4
16/04/2025 12:00	0.0	2.4	19.4	25	1	0.00		1005	1.0	13.3
16/04/2025 13:00	0.0	2.4	19.5	25	0	0.00		1005	0.8	14.2
16/04/2025 14:00	0.0	2.4	19.5	26	1	0.01		1006	0.9	14.2
16/04/2025 15:00	0.0	2.4	19.6	26	1	0.00		1006	0.8	13.6
16/04/2025 16:00	0.0	2.4	19.6	26	1	0.00		1007	0.8	13.1
16/04/2025 17:00	0.0	2.4	19.6	26	1	0.00		1007	0.6	12.3
16/04/2025 18:00	0.0	2.4	19.7	26	1	0.00		1008	0.5	11.6
16/04/2025 19:00	0.0	2.5	19.6	26	1	0.00		1009	0.6	10.3
16/04/2025 20:00	0.0	2.5	19.6	25	1	0.00		1010	0.6	9.1
16/04/2025 21:00	0.0	2.5	19.6	25	1	0.00		1010	0.6	8.1
16/04/2025 22:00	0.0	2.4	19.5	25	1	0.00		1011	0.6	7.3
16/04/2025 23:00	0.0	2.5	19.5	24	1	0.00		1011	0.6	6.6
17/04/2025 00:00	0.0	2.5	19.5	24	1	0.00		1011	0.5	5.9
17/04/2025 01:00	0.0	2.5	19.5	24	0	0.00		1011	0.5	4.4
17/04/2025 02:00	0.0	2.4	19.4	23	1	0.00		1012	0.5	3.9
17/04/2025 03:00	0.0	2.5	19.4	23	0	0.00		1012	0.4	3.5
17/04/2025 04:00	0.0	2.4	19.4	23	0	0.00		1012	0.3	3.1
17/04/2025 05:00	0.0	2.5	19.4	23	0	0.00		1012	0.3	2.7
17/04/2025 06:00	0.0	2.5	19.4	23	0	0.00		1013	0.3	3.5
17/04/2025 07:00	0.0	2.5	19.4	23	0	0.00		1013	0.3	5.4
17/04/2025 08:00	0.0	2.5	19.3	23	0	0.00		1013	0.3	8.5
17/04/2025 09:00	0.0	2.4	19.3	23	0	0.00		1013	0.3	11.0
17/04/2025 10:00	0.0	2.5	19.3	23	0	0.00		1013	0.1	12.8
17/04/2025 11:00	0.0	2.5	19.4	23	0	0.00		1013	0.1	14.1
17/04/2025 12:00	0.0	2.5	19.4	23	0	0.00		1012	0.0	14.8
17/04/2025 13:00	0.0	2.5	19.5	23	0	0.00		1013	0.1	15.2
17/04/2025 14:00	0.0	2.5	19.5	24	1	0.00		1012	-0.1	15.7
17/04/2025 15:00	0.0	2.6	19.6	24	0	0.00		1012	-0.1	16.2
17/04/2025 16:00	0.0	2.7	19.6	24	1	0.00		1012	-0.1	15.7
17/04/2025 17:00	0.0	2.6	19.6	24	1	0.00		1012	-0.1	15.2
17/04/2025 18:00	0.0	2.6	19.7	25	1	0.00		1012	-0.1	14.2
17/04/2025 19:00	0.0	2.6	19.7	24	1	0.00		1013	0.0	12.3
17/04/2025 20:00	0.0	2.6	19.7	24	1	0.00		1013	0.1	11.0
17/04/2025 21:00	0.0	2.6	19.6	24	1	0.00		1013	0.0	9.8
17/04/2025 22:00	0.0	2.6	19.6	23	1	0.00		1013	0.1	9.2
17/04/2025 23:00	0.0	2.6	19.6	23	0	0.00		1013	0.1	8.8
18/04/2025 00:00	0.0	2.7	19.5	23	0	0.00		1013	0.1	8.3
18/04/2025 01:00	0.0	2.6	19.5	23	0	0.00		1013	0.1	9.1
18/04/2025 02:00	0.0	2.6	19.5	23	0	0.00		1012	0.0	7.9
18/04/2025 03:00	0.0	2.6	19.5	23	0	0.00		1012	-0.1	7.2
18/04/2025 04:00	0.0	2.6	19.5	22	0	0.00		1012	-0.1	8.2
18/04/2025 05:00	0.0	2.5	19.4	22	0	0.00		1011	-0.3	8.5
18/04/2025 06:00	0.0	2.6	19.4	22	0	0.00		1011	-0.3	9.0
18/04/2025 07:00	0.0	2.6	19.4	22	0	0.00		1011	-0.3	9.9
18/04/2025 08:00	0.0	2.5	19.4	22	0	0.00		1011	-0.3	10.9
18/04/2025 09:00	0.0	2.6	19.4	22	0	0.00		1011	-0.3	12.5
18/04/2025 10:00	0.0	2.5	19.4	22	0	0.00		1011	-0.1	13.4
18/04/2025 11:00	0.0	2.6	19.4	22	0	0.00		1011	-0.1	13.3
18/04/2025 12:00	0.0	2.6	19.5	23	0	0.00		1010	-0.3	12.8
18/04/2025 13:00	0.0	2.6	19.5	23	0	0.00		1009	-0.3	14.6
18/04/2025 14:00	0.0	2.6	19.5	23	0	0.00		1009	-0.3	14.0
18/04/2025 15:00	0.0	2.6	19.6	23	0	0.00		1009	-0.3	13.3
18/04/2025 16:00	0.0	2.6	19.6	23	0	0.00		1009	-0.3	12.3
18/04/2025 17:00	0.0	2.6	19.6	23	1	0.00		1008	-0.4	12.3
18/04/2025 18:00	0.0	2.6	19.5	23	0	0.00		1008	-0.4	12.1

Date and Time	CH ₄	CO ₂	O ₂	CO	H ₂ S	Flow		Atmospheric Pressure	Average 8-hour atmospheric pressure change	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	Ltr/hr		mbar	mbar	°C
18/04/2025 19:00	0.0	2.6	19.5	23	0	0.00		1008	-0.4	12.0
18/04/2025 20:00	0.0	2.7	19.5	23	0	0.00		1008	-0.3	12.0
18/04/2025 21:00	0.0	2.6	19.5	22	0	0.00		1007	-0.3	12.3
18/04/2025 22:00	0.0	2.6	19.5	22	0	0.00		1007	-0.3	12.5
18/04/2025 23:00	0.0	2.6	19.5	22	0	0.00		1007	-0.3	12.2
19/04/2025 00:00	0.0	2.6	19.5	22	0	0.00		1007	-0.3	11.8
19/04/2025 01:00	0.0	2.7	19.5	22	0	0.00		1006	-0.3	12.4
19/04/2025 02:00	0.0	2.6	19.5	22	0	0.00		1006	-0.3	11.6
19/04/2025 03:00	0.0	2.6	19.4	22	1	0.00		1006	-0.3	11.7
19/04/2025 04:00	0.0	2.7	19.4	22	1	0.00		1006	-0.3	11.7
19/04/2025 05:00	0.0	2.7	19.4	22	1	0.00		1006	-0.1	11.7
19/04/2025 06:00	0.0	2.6	19.4	22	0	0.00		1006	-0.1	11.5
19/04/2025 07:00	0.0	2.7	19.4	22	0	0.00		1007	0.0	11.6
19/04/2025 08:00	0.0	2.6	19.4	22	0	0.00		1007	0.0	11.9
19/04/2025 09:00	0.0	2.6	19.4	22	0	0.00		1007	0.1	12.6
19/04/2025 10:00	0.0	2.7	19.4	22	0	0.00		1007	0.1	13.8
19/04/2025 11:00	0.0	2.7	19.4	22	0	0.00		1007	0.1	14.8
19/04/2025 12:00	0.0	2.7	19.4	22	0	0.00		1007	0.1	15.8
19/04/2025 13:00	0.0	2.7	19.5	22	0	0.01		1007	0.1	16.5
19/04/2025 14:00	0.0	2.7	19.5	22	0	0.00		1007	0.1	16.4
19/04/2025 15:00	0.0	2.7	19.5	23	0	0.00		1007	0.0	16.4
19/04/2025 16:00	0.0	2.7	19.6	23	1	0.00		1007	0.0	15.8
19/04/2025 17:00	0.0	2.7	19.6	23	1	0.00		1007	0.0	14.9
19/04/2025 18:00	0.0	2.8	19.6	23	0	0.00		1007	0.0	13.8
19/04/2025 19:00	0.0	2.8	19.6	23	1	0.00		1008	0.1	12.4
19/04/2025 20:00	0.0	2.8	19.6	23	0	0.00		1008	0.1	11.0
19/04/2025 21:00	0.0	2.8	19.5	22	0	0.00		1008	0.1	9.8
19/04/2025 22:00	0.0	2.9	19.5	22	0	0.00		1009	0.3	8.5
19/04/2025 23:00	0.0	2.8	19.4	22	0	0.00		1009	0.3	7.5
20/04/2025 00:00	0.0	2.8	19.4	22	0	0.00		1008	0.1	6.6
20/04/2025 01:00	0.0	2.8	19.4	22	0	0.00		1008	0.1	6.3
20/04/2025 02:00	0.0	2.8	19.4	22	0	0.00		1008	0.1	5.8
20/04/2025 03:00	0.0	2.8	19.3	22	0	0.00		1008	0.0	5.4
20/04/2025 04:00	0.0	2.8	19.3	22	0	0.00		1008	0.0	5.1
20/04/2025 05:00	0.0	2.9	19.3	22	0	0.00		1008	0.0	4.7
20/04/2025 06:00	0.0	2.8	19.3	21	0	0.00		1008	-0.1	5.2
20/04/2025 07:00	0.0	2.8	19.3	21	0	0.00		1007	-0.3	6.7
20/04/2025 08:00	0.0	2.8	19.3	21	0	0.00		1007	-0.1	8.4
20/04/2025 09:00	0.0	2.8	19.2	21	0	0.00		1007	-0.1	10.3
20/04/2025 10:00	0.0	2.9	19.2	21	0	0.00		1007	-0.1	12.0
20/04/2025 11:00	0.0	2.8	19.2	21	0	0.00		1007	-0.1	13.5
20/04/2025 12:00	0.0	2.9	19.3	22	0	0.00		1007	-0.1	14.9
20/04/2025 13:00	0.0	2.8	19.3	22	0	0.00		1007	-0.1	13.7
20/04/2025 14:00	0.0	2.8	19.4	22	0	0.00		1006	-0.3	16.6
20/04/2025 15:00	0.0	2.9	19.4	22	0	0.00		1006	-0.1	16.6
20/04/2025 16:00	0.0	2.9	19.4	22	0	0.00		1006	-0.1	15.8
20/04/2025 17:00	0.0	2.9	19.4	22	0	0.00		1006	-0.1	15.1
20/04/2025 18:00	0.0	3.0	19.4	22	0	0.00		1006	-0.1	14.4
20/04/2025 19:00	0.0	2.9	19.4	22	0	0.00		1007	0.0	13.6
20/04/2025 20:00	0.0	2.9	19.4	22	0	0.00		1007	0.0	12.4
20/04/2025 21:00	0.0	3.0	19.4	22	0	0.00		1007	0.0	11.3
20/04/2025 22:00	0.0	3.0	19.4	22	0	0.00		1007	0.1	10.6
20/04/2025 23:00	0.0	3.0	19.3	22	0	0.00		1007	0.1	9.9
21/04/2025 00:00	0.0	2.9	19.3	22	0	0.00		1008	0.3	9.2
21/04/2025 01:00	0.0	2.9	19.3	22	0	0.00		1007	0.1	9.7
21/04/2025 02:00	0.0	2.9	19.3	22	0	0.00		1007	0.1	9.4
21/04/2025 03:00	0.0	3.0	19.3	22	0	0.00		1008	0.1	9.5
21/04/2025 04:00	0.0	3.0	19.3	22	0	0.00		1008	0.1	9.5
21/04/2025 05:00	0.0	2.9	19.3	22	0	0.00		1008	0.1	9.4
21/04/2025 06:00	0.0	3.0	19.3	22	0	0.00		1008	0.1	9.6
21/04/2025 07:00	0.0	2.9	19.3	22	0	0.00		1008	0.1	9.9
21/04/2025 08:00	0.0	3.0	19.3	22	0	0.00		1008	0.0	10.7
21/04/2025 09:00	0.0	3.0	19.3	22	0	0.00		1009	0.3	12.4
21/04/2025 10:00	0.0	3.0	19.3	22	0	0.00		1009	0.3	14.3
21/04/2025 11:00	0.0	2.9	19.3	22	0	0.00		1009	0.1	15.1
21/04/2025 12:00	0.0	3.0	19.3	22	0	0.00		1009	0.1	15.8
21/04/2025 13:00	0.0	2.9	19.3	22	0	0.00		1010	0.3	14.9
21/04/2025 14:00	0.0	3.0	19.3	22	0	0.00		1011	0.4	13.0
21/04/2025 15:00	0.0	3.0	19.3	22	0	0.00		1011	0.4	12.4
21/04/2025 16:00	0.0	3.0	19.3	22	1	0.00		1011	0.4	13.8
21/04/2025 17:00	0.0	3.0	19.3	22	0	-0.01		1011	0.3	13.7
21/04/2025 18:00	0.0	3.0	19.4	22	0	0.00		1012	0.4	12.9
21/04/2025 19:00	0.0	3.1	19.4	22	0	0.00		1012	0.4	11.9
21/04/2025 20:00	0.0	3.0	19.4	22	0	0.00		1013	0.5	10.6
21/04/2025 21:00	0.0	3.0	19.4	22	0	0.00		1014	0.5	9.6
21/04/2025 22:00	0.0	3.0	19.3	22	0	0.00		1014	0.4	8.9
21/04/2025 23:00	0.0	3.0	19.3	22	0	0.00		1015	0.5	8.3
22/04/2025 00:00	0.0	3.1	19.3	22	0	0.00		1015	0.5	7.8
22/04/2025 01:00	0.0	3.0	19.3	22	0	0.00		1015	0.5	7.2
22/04/2025 02:00	0.0	3.0	19.3	22	0	0.00		1015	0.4	6.7
22/04/2025 03:00	0.0	3.0	19.2	22	0	0.00		1016	0.5	6.6

Date and Time	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	CO ppm/v	H ₂ S ppm/v	Flow Ltr/hr		Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Temperature °C
22/04/2025 04:00	0.0	2.9	19.2	22	0	0.00		1016	0.4	6.3
22/04/2025 05:00	0.0	3.0	19.2	22	0	0.00		1016	0.3	5.7
22/04/2025 06:00	0.0	3.0	19.2	22	0	0.00		1016	0.3	6.3
22/04/2025 07:00	0.0	3.1	19.2	22	0	0.00		1017	0.3	8.2
22/04/2025 08:00	0.0	3.0	19.2	22	1	0.00		1018	0.4	10.2
22/04/2025 09:00	0.0	3.1	19.2	22	0	0.00		1018	0.4	12.0
22/04/2025 10:00	0.0	3.0	19.2	22	0	0.00		1018	0.4	13.3
22/04/2025 11:00	0.0	3.1	19.2	22	0	0.00		1017	0.1	14.6
22/04/2025 12:00	0.0	3.1	19.2	22	0	0.00		1017	0.1	15.5
22/04/2025 13:00	0.0	3.1	19.3	22	0	0.00		1017	0.1	15.7
22/04/2025 14:00	0.0	3.0	19.4	23	0	0.00		1017	0.1	15.4
22/04/2025 15:00	0.0	3.2	19.4	23	0	0.00		1017	0.0	15.3
22/04/2025 16:00	0.0	3.1	19.4	23	1	0.00		1016	-0.3	14.9
22/04/2025 17:00	0.0	3.1	19.4	23	0	-0.01		1016	-0.3	14.3
22/04/2025 18:00	0.0	3.1	19.5	23	0	0.00		1016	-0.3	13.4
22/04/2025 19:00	0.0	3.1	19.5	23	0	0.00		1016	-0.1	11.9
22/04/2025 20:00	0.0	3.1	19.4	23	0	0.00		1016	-0.1	10.6
22/04/2025 21:00	0.0	3.1	19.4	23	0	0.00		1015	-0.3	10.0
22/04/2025 22:00	0.0	3.1	19.4	22	0	0.00		1015	-0.3	9.9
22/04/2025 23:00	0.0	3.2	19.4	22	0	0.00		1014	-0.4	9.9
23/04/2025 00:00	0.0	3.1	19.4	22	0	0.00		1013	-0.4	9.6
23/04/2025 01:00	0.0	3.0	19.3	22	0	0.00		1011	-0.6	9.5
23/04/2025 02:00	0.0	3.1	19.3	22	0	0.00		1011	-0.6	9.4
23/04/2025 03:00	0.0	3.1	19.3	22	0	0.00		1009	-0.9	9.0
23/04/2025 04:00	0.0	3.0	19.3	22	0	0.00		1008	-1.0	8.5
23/04/2025 05:00	0.0	3.1	19.3	22	0	0.00		1007	-1.0	8.5
23/04/2025 06:00	0.0	3.1	19.3	22	0	0.00		1007	-1.0	8.9
23/04/2025 07:00	0.0	3.1	19.3	22	0	0.00		1007	-0.9	9.2
23/04/2025 08:00	0.0	3.1	19.3	22	0	0.00		1008	-0.6	9.9
23/04/2025 09:00	0.0	3.0	19.2	22	0	0.00		1009	-0.3	10.5
23/04/2025 10:00	0.0	3.0	19.2	22	1	0.00		1010	-0.1	10.4
23/04/2025 11:00	0.0	3.1	19.2	22	0	0.00		1011	0.3	11.1
23/04/2025 12:00	0.0	3.1	19.2	22	0	0.00		1012	0.5	11.9
23/04/2025 13:00	0.0	3.1	19.2	22	0	0.00		1013	0.8	12.5
23/04/2025 14:00	0.0	3.1	19.3	22	0	0.00		1013	0.8	12.8
23/04/2025 15:00	0.0	3.1	19.3	22	0	0.00		1014	0.9	13.2
23/04/2025 16:00	0.0	3.2	19.3	22	0	0.00		1014	0.8	12.8
23/04/2025 17:00	0.0	3.2	19.3	22	0	0.00		1015	0.8	12.1
23/04/2025 18:00	0.0	3.2	19.3	22	0	0.00		1016	0.8	11.7
23/04/2025 19:00	0.0	3.2	19.3	22	0	0.00		1017	0.8	9.9
23/04/2025 20:00	0.0	3.2	19.3	22	0	0.00		1018	0.8	8.3
23/04/2025 21:00	0.0	3.2	19.3	22	0	0.00		1018	0.6	7.8
23/04/2025 22:00	0.0	3.2	19.3	22	0	0.00		1019	0.8	7.1
23/04/2025 23:00	0.0	3.2	19.3	22	0	0.00		1019	0.6	6.7
24/04/2025 00:00	0.0	3.2	19.3	22	0	0.00		1020	0.8	6.7
24/04/2025 01:00	0.0	3.2	19.2	22	0	0.00		1020	0.6	8.9
24/04/2025 02:00	0.0	3.2	19.2	21	0	0.00		1020	0.5	8.4
24/04/2025 03:00	0.0	3.2	19.2	21	0	0.00		1020	0.4	7.6
24/04/2025 04:00	0.0	3.2	19.2	21	0	0.00		1021	0.4	6.9
24/04/2025 05:00	0.0	3.2	19.2	21	1	0.00		1021	0.4	6.8
24/04/2025 06:00	0.0	3.3	19.2	21	0	0.00		1022	0.4	7.2
24/04/2025 07:00	0.0	3.3	19.2	21	0	0.00		1022	0.4	8.1
24/04/2025 08:00	0.0	3.2	19.2	21	0	0.00		1022	0.3	9.4
24/04/2025 09:00	0.0	3.3	19.2	21	0	0.00		1023	0.4	10.8
24/04/2025 10:00	0.0	3.3	19.2	21	0	0.00		1023	0.4	12.2
24/04/2025 11:00	0.0	3.2	19.2	21	0	0.00		1023	0.4	13.2
24/04/2025 12:00	0.0	3.3	19.2	21	0	0.00		1023	0.3	14.5
24/04/2025 13:00	0.0	3.4	19.3	22	0	0.00		1023	0.3	14.6
24/04/2025 14:00	0.0	3.3	19.3	22	0	0.00		1023	0.1	15.0
24/04/2025 15:00	0.0	3.3	19.4	22	0	0.00		1022	0.0	14.8
24/04/2025 16:00	0.0	3.4	19.4	22	0	0.00		1022	0.0	14.9
24/04/2025 17:00	0.0	3.3	19.4	22	0	0.00		1022	-0.1	14.5
24/04/2025 18:00	0.0	3.3	19.4	22	0	0.00		1022	-0.1	13.7
24/04/2025 19:00	0.0	3.4	19.4	22	0	0.00		1022	-0.1	12.0
24/04/2025 20:00	0.0	3.4	19.4	22	0	0.00		1023	0.0	10.6
24/04/2025 21:00	0.0	3.3	19.4	22	0	0.00		1023	0.0	9.6
24/04/2025 22:00	0.0	3.4	19.3	22	0	0.00		1023	0.0	8.7
24/04/2025 23:00	0.0	3.4	19.3	22	0	0.00		1024	0.3	8.1
25/04/2025 00:00	0.0	3.4	19.3	21	0	0.00		1024	0.3	7.6
25/04/2025 01:00	0.0	3.2	19.3	21	0	0.00		1023	0.1	7.3
25/04/2025 02:00	0.0	3.3	19.2	21	0	0.00		1023	0.1	6.3
25/04/2025 03:00	0.0	3.3	19.2	21	0	0.00		1023	0.1	5.6
25/04/2025 04:00	0.0	3.3	19.2	21	0	0.00		1023	0.0	5.5
25/04/2025 05:00	0.0	3.3	19.2	21	0	0.00		1023	0.0	5.5
25/04/2025 06:00	0.0	3.2	19.2	21	0	0.00		1023	0.0	6.3
25/04/2025 07:00	0.0	3.3	19.2	21	0	0.00		1024	0.0	7.9
25/04/2025 08:00	0.0	3.2	19.2	21	0	0.00		1024	0.0	10.0
25/04/2025 09:00	0.0	3.2	19.2	21	0	0.00		1023	0.0	11.8
25/04/2025 10:00	0.0	3.3	19.2	21	0	0.00		1023	0.0	12.5
25/04/2025 11:00	0.0	3.4	19.2	21	0	0.00		1023	0.0	13.3
25/04/2025 12:00	0.0	3.4	19.2	21	0	0.00		1022	-0.1	14.2

Date and Time	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	CO ppm/v	H ₂ S ppm/v	Flow Ltr/hr		Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Temperature °C
25/04/2025 13:00	0.0	3.3	19.3	22	0	0.00		1022	-0.1	14.2
25/04/2025 14:00	0.0	3.3	19.3	22	0	0.00		1022	-0.1	15.3
25/04/2025 15:00	0.0	3.3	19.3	22	0	0.00		1021	-0.4	15.9
25/04/2025 16:00	0.0	3.4	19.4	22	0	0.00		1021	-0.4	15.9
25/04/2025 17:00	0.0	3.5	19.4	22	0	0.00		1021	-0.3	15.8
25/04/2025 18:00	0.0	3.5	19.4	22	1	0.00		1021	-0.3	14.6
25/04/2025 19:00	0.0	3.4	19.4	22	0	0.00		1021	-0.3	12.9
25/04/2025 20:00	0.0	3.4	19.4	22	0	0.00		1021	-0.1	11.3
25/04/2025 21:00	0.0	3.5	19.4	22	0	0.00		1022	0.0	10.4
25/04/2025 22:00	0.0	3.5	19.3	22	0	0.00		1022	0.0	9.6
25/04/2025 23:00	0.0	3.5	19.3	22	0	0.00		1022	0.1	8.4
26/04/2025 00:00	0.0	3.4	19.3	22	0	0.00		1022	0.1	7.7
26/04/2025 01:00	0.0	3.4	19.3	22	0	0.00		1022	0.1	8.4
26/04/2025 02:00	0.0	3.4	19.3	21	0	0.00		1022	0.1	8.7
26/04/2025 03:00	0.0	3.4	19.2	21	0	0.00		1021	0.0	8.6
26/04/2025 04:00	0.0	3.3	19.2	21	0	0.00		1021	0.0	8.5
26/04/2025 05:00	0.0	3.3	19.2	21	0	0.00		1022	0.0	8.5
26/04/2025 06:00	0.0	3.4	19.2	21	0	0.00		1022	0.0	8.8
26/04/2025 07:00	0.0	3.4	19.2	21	0	0.00		1022	0.0	9.4
26/04/2025 08:00	0.0	3.4	19.2	21	0	0.00		1022	0.0	10.5
26/04/2025 09:00	0.0	3.4	19.2	21	0	0.00		1023	0.1	12.2
26/04/2025 10:00	0.0	3.3	19.2	21	0	0.00		1022	0.0	14.1
26/04/2025 11:00	0.0	3.4	19.2	21	0	0.00		1022	0.1	15.2
26/04/2025 12:00	0.0	3.4	19.3	21	0	0.00		1022	0.1	15.9
26/04/2025 13:00	0.0	3.4	19.3	22	0	0.00		1023	0.1	16.3
26/04/2025 14:00	0.0	3.5	19.4	22	0	0.00		1023	0.1	16.8
26/04/2025 15:00	0.0	3.5	19.4	22	0	0.00		1023	0.1	17.1
26/04/2025 16:00	0.0	3.4	19.4	22	0	0.00		1022	0.0	17.4
26/04/2025 17:00	0.0	3.5	19.4	22	0	0.00		1023	0.0	17.2
26/04/2025 18:00	0.0	3.5	19.4	22	0	0.00		1023	0.1	16.6
26/04/2025 19:00	0.0	3.4	19.4	22	0	0.00		1024	0.3	14.1
26/04/2025 20:00	0.0	3.5	19.4	22	0	0.00		1024	0.3	13.2
26/04/2025 21:00	0.0	3.5	19.4	22	0	0.00		1025	0.3	13.1
26/04/2025 22:00	0.0	3.5	19.3	22	0	0.00		1025	0.3	12.5
26/04/2025 23:00	0.0	3.4	19.3	22	0	0.00		1025	0.3	11.1
27/04/2025 00:00	0.0	3.4	19.3	22	0	0.00		1025	0.4	9.7
27/04/2025 01:00	0.0	3.4	19.3	21	0	0.00		1025	0.3	8.7
27/04/2025 02:00	0.0	3.4	19.3	21	0	0.00		1025	0.3	8.2
27/04/2025 03:00	0.0	3.4	19.3	21	0	0.00		1025	0.1	7.9
27/04/2025 04:00	0.0	3.4	19.2	21	0	0.00		1025	0.1	7.6
27/04/2025 05:00	0.0	3.4	19.2	21	0	0.00		1025	0.0	7.2
27/04/2025 06:00	0.0	3.4	19.2	21	0	0.00		1026	0.1	8.4
27/04/2025 07:00	0.0	3.4	19.2	21	0	0.00		1026	0.1	10.4
27/04/2025 08:00	0.0	3.4	19.2	21	0	0.00		1026	0.1	12.8
27/04/2025 09:00	0.0	3.5	19.2	21	0	0.00		1026	0.1	15.0
27/04/2025 10:00	0.0	3.5	19.2	21	0	0.00		1026	0.1	16.7
27/04/2025 11:00	0.0	3.4	19.2	21	0	0.00		1026	0.1	18.0
27/04/2025 12:00	0.0	3.4	19.2	21	0	0.00		1026	0.1	18.1
27/04/2025 13:00	0.0	3.5	19.3	22	0	0.00		1026	0.1	19.5
27/04/2025 14:00	0.0	3.6	19.4	22	0	0.00		1026	0.0	19.6
27/04/2025 15:00	0.0	3.5	19.4	22	0	0.00		1026	0.0	19.7
27/04/2025 16:00	0.0	3.5	19.4	22	0	0.00		1026	0.0	19.5
27/04/2025 17:00	0.0	3.6	19.4	22	0	0.00		1026	0.0	19.1
27/04/2025 18:00	0.0	3.5	19.4	22	0	0.00		1026	0.0	18.5
27/04/2025 19:00	0.0	3.5	19.4	22	0	0.00		1026	0.0	16.4
27/04/2025 20:00	0.0	3.5	19.4	22	0	0.00		1027	0.1	14.8
27/04/2025 21:00	0.0	3.5	19.4	22	0	0.00		1027	0.1	13.7
27/04/2025 22:00	0.0	3.6	19.4	22	0	0.00		1027	0.1	12.6
27/04/2025 23:00	0.0	3.6	19.4	22	0	0.00		1027	0.1	11.7
28/04/2025 00:00	0.0	3.5	19.3	21	0	0.00		1027	0.1	10.5
28/04/2025 01:00	0.0	3.5	19.3	21	0	0.00		1027	0.1	9.4
28/04/2025 02:00	0.0	3.5	19.3	21	0	0.00		1027	0.1	8.5
28/04/2025 03:00	0.0	3.4	19.3	21	0	0.00		1027	0.1	7.8
28/04/2025 04:00	0.0	3.4	19.3	21	0	0.00		1027	0.0	7.2
28/04/2025 05:00	0.0	3.4	19.2	21	0	0.00		1027	0.0	6.7
28/04/2025 06:00	0.0	3.5	19.2	21	0	0.00		1027	0.0	8.2
28/04/2025 07:00	0.0	3.3	19.2	21	0	-0.01		1027	0.0	10.9
28/04/2025 08:00	0.0	3.5	19.2	21	0	0.00		1027	0.0	14.0
28/04/2025 09:00	0.0	3.4	19.2	21	0	0.00		1028	0.1	16.7
28/04/2025 10:00	0.0	3.5	19.2	21	0	0.00		1027	0.0	18.3
28/04/2025 11:00	0.0	3.4	19.2	21	0	0.00		1027	0.0	19.5
28/04/2025 12:00	0.0	3.5	19.3	21	0	0.00		1027	0.0	20.3
28/04/2025 13:00	0.0	3.5	19.3	22	0	0.00		1027	0.0	21.4
28/04/2025 14:00	0.0	3.6	19.4	22	0	0.00		1026	-0.1	21.8
28/04/2025 15:00	0.0	3.6	19.5	22	0	0.00		1026	-0.1	22.0
28/04/2025 16:00	0.0	3.6	19.5	22	0	0.00		1025	-0.3	21.9
28/04/2025 17:00	0.0	3.6	19.5	22	0	0.00		1025	-0.4	21.8
28/04/2025 18:00	0.0	3.7	19.6	23	0	0.00		1025	-0.3	21.3
28/04/2025 19:00	0.0	3.6	19.6	22	1	0.00		1026	-0.1	19.6
28/04/2025 20:00	0.0	3.6	19.6	22	0	0.00		1026	-0.1	17.2
28/04/2025 21:00	0.0	3.6	19.5	22	0	0.00		1027	0.0	15.5

Date and Time	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	CO ppm/v	H ₂ S ppm/v	Flow Ltr/hr		Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Temperature °C
28/04/2025 22:00	0.0	3.6	19.5	22	0	0.00		1027	0.1	14.4
28/04/2025 23:00	0.0	3.6	19.5	22	0	0.00		1027	0.1	13.2
29/04/2025 00:00	0.0	3.6	19.4	22	0	0.00		1027	0.3	12.5
29/04/2025 01:00	0.0	3.5	19.4	22	0	0.00		1027	0.3	11.2
29/04/2025 02:00	0.0	3.5	19.4	22	0	0.00		1026	0.1	10.0
29/04/2025 03:00	0.0	3.5	19.4	22	0	0.00		1026	0.0	9.3
29/04/2025 04:00	0.0	3.4	19.3	22	0	0.00		1027	0.1	9.1
29/04/2025 05:00	0.0	3.4	19.3	22	0	0.00		1027	0.0	8.9
29/04/2025 06:00	0.0	3.4	19.3	22	0	0.00		1027	0.0	10.1
29/04/2025 07:00	0.0	3.5	19.3	21	0	0.00		1027	0.0	12.2
29/04/2025 08:00	0.0	3.4	19.3	21	0	0.00		1027	0.0	14.5
29/04/2025 09:00	0.0	3.5	19.3	22	0	0.00		1027	0.0	17.1
29/04/2025 10:00	0.0	3.4	19.3	22	0	0.00		1026	0.0	19.4
29/04/2025 11:00	0.0	3.4	19.3	22	0	0.00		1026	0.0	21.0
29/04/2025 12:00	0.0	3.4	19.3	22	0	0.00		1026	-0.1	22.1
29/04/2025 13:00	0.0	3.5	19.4	22	0	0.00		1025	-0.3	23.6
29/04/2025 14:00	0.0	3.4	19.5	23	0	0.00		1025	-0.3	24.0
29/04/2025 15:00	0.0	3.6	19.5	23	0	0.00		1024	-0.4	23.9
29/04/2025 16:00	0.0	3.6	19.6	23	0	0.00		1023	-0.5	23.7
29/04/2025 17:00	0.0	3.5	19.6	23	1	0.00		1023	-0.5	23.2
29/04/2025 18:00	0.0	3.6	19.6	23	1	0.00		1023	-0.4	22.2
29/04/2025 19:00	0.0	3.6	19.6	23	1	0.00		1024	-0.3	20.5
29/04/2025 20:00	0.0	3.6	19.6	23	1	0.00		1024	-0.3	18.5
29/04/2025 21:00	0.0	3.6	19.6	23	0	0.00		1025	0.0	16.8
29/04/2025 22:00	0.0	3.5	19.5	22	0	0.00		1025	0.0	15.5
29/04/2025 23:00	0.0	3.4	19.5	22	0	0.00		1025	0.1	14.3
30/04/2025 00:00	0.0	3.5	19.5	22	0	0.00		1025	0.3	13.1
30/04/2025 01:00	0.0	3.4	19.4	22	0	0.00		1024	0.1	11.4
30/04/2025 02:00	0.0	3.5	19.4	22	0	0.00		1024	0.1	10.4
30/04/2025 03:00	0.0	3.4	19.4	22	0	0.00		1024	0.0	9.6
30/04/2025 04:00	0.0	3.5	19.4	22	0	0.00		1024	0.0	8.9
30/04/2025 05:00	0.0	3.4	19.3	22	0	0.00		1024	-0.1	8.4
30/04/2025 06:00	0.0	3.4	19.3	22	0	0.00		1024	-0.1	9.8
30/04/2025 07:00	0.0	3.4	19.3	22	0	0.00		1024	-0.1	11.9
30/04/2025 08:00	0.0	3.3	19.3	22	0	0.00		1024	-0.1	14.6
30/04/2025 09:00	0.0	3.3	19.3	22	0	0.00		1023	-0.1	17.6
30/04/2025 10:00	0.0	3.4	19.3	22	0	0.00		1023	-0.1	20.6
30/04/2025 11:00	0.0	3.4	19.3	22	0	0.00		1023	-0.1	22.7
30/04/2025 12:00	0.0	3.4	19.3	22	0	NM		1023	-0.1	23.8
30/04/2025 13:00	0.0	3.4	19.4	22	0	NM		1022	-0.3	25.4
30/04/2025 14:00	0.0	3.4	19.5	23	0	NM		1021	-0.4	25.9
30/04/2025 15:00	0.0	3.4	19.6	23	0	NM		1020	-0.5	26.2
30/04/2025 16:00	0.0	3.6	19.6	23	0	NM		1020	-0.5	26.1
30/04/2025 17:00	0.0	3.5	19.6	24	1	NM		1020	-0.4	25.8
30/04/2025 18:00	0.0	3.6	19.7	24	1	NM		1020	-0.4	25.0
30/04/2025 19:00	0.0	3.5	19.7	24	1	NM		1020	-0.4	23.0
30/04/2025 20:00	0.0	3.5	19.6	23	0	NM		1020	-0.4	20.2
30/04/2025 21:00	0.0	3.6	19.6	23	1	NM		1020	-0.3	18.6
30/04/2025 22:00	0.0	3.5	19.6	23	1	NM		1021	0.0	18.0
30/04/2025 23:00	0.0	3.5	19.5	23	0	NM		1021	0.1	16.5
01/05/2025 00:00	0.0	3.5	19.5	23	0	NM		1020	0.0	15.4
01/05/2025 01:00	0.0	3.5	19.5	22	0	NM		1020	0.0	13.8
01/05/2025 02:00	0.0	3.4	19.4	22	0	NM		1020	0.0	12.7
01/05/2025 03:00	0.0	3.4	19.4	22	0	NM		1019	-0.1	11.9
01/05/2025 04:00	0.0	3.4	19.4	22	0	NM		1019	-0.1	11.2
01/05/2025 05:00	0.0	3.4	19.4	22	0	NM		1019	-0.1	11.0
01/05/2025 06:00	0.0	3.4	19.4	22	0	NM		1019	-0.3	12.2
01/05/2025 07:00	0.0	3.4	19.3	22	0	NM		1018	-0.4	14.6
01/05/2025 08:00	0.0	3.4	19.3	22	0	NM		1018	-0.3	17.6
01/05/2025 09:00	0.0	3.3	19.3	22	0	NM		1018	-0.3	20.6
01/05/2025 10:00	0.0	3.3	19.3	22	0	NM		1018	-0.3	23.1
01/05/2025 11:00	0.0	3.3	19.3	22	0	NM		1017	-0.3	25.5
01/05/2025 12:00	0.0	3.3	19.4	22	0	NM		1016	-0.4	27.0
01/05/2025 13:00	0.0	3.4	19.5	23	0	NM		1016	-0.4	27.7
01/05/2025 14:00	0.0	3.4	19.5	23	0	NM		1015	-0.5	27.9
01/05/2025 15:00	0.0	3.5	19.6	23	0	NM		1015	-0.4	27.4
01/05/2025 16:00	0.0	3.5	19.6	23	1	NM		1015	-0.4	26.7
01/05/2025 17:00	0.0	3.6	19.6	24	0	NM		1014	-0.5	26.3
01/05/2025 18:00	0.0	3.6	19.7	24	1	NM		1014	-0.5	25.1
01/05/2025 19:00	0.0	3.5	19.7	24	1	NM		1014	-0.4	23.4
01/05/2025 20:00	0.0	3.5	19.6	24	1	NM		1015	-0.1	21.5
01/05/2025 21:00	0.0	3.5	19.6	23	0	NM		1015	-0.1	19.3
01/05/2025 22:00	0.0	3.5	19.6	23	0	NM		1015	0.0	17.7
01/05/2025 23:00	0.0	3.5	19.6	23	0	NM		1015	0.0	16.8
02/05/2025 00:00	0.0	3.5	19.5	23	0	NM		1015	0.0	16.0
02/05/2025 01:00	0.0	3.4	19.5	23	0	NM		1015	0.1	15.0
02/05/2025 02:00	0.0	3.4	19.5	23	0	NM		1015	0.1	14.8
02/05/2025 03:00	0.0	3.3	19.4	23	0	NM		1015	0.1	14.4
02/05/2025 04:00	0.0	3.3	19.4	23	0	NM		1015	0.0	13.8
02/05/2025 05:00	0.0	3.4	19.4	22	0	NM		1015	0.0	12.8
02/05/2025 06:00	0.0	3.4	19.4	22	0	NM		1016	0.1	13.2

Date and Time	CH ₄	CO ₂	O ₂	CO	H ₂ S	Flow		Atmospheric Pressure	Average 8-hour atmospheric pressure change	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	Ltr/hr		mbar	mbar	°C
02/05/2025 07:00	0.0	3.3	19.4	22	0	NM		1016	0.1	14.7
02/05/2025 08:00	0.0	3.3	19.4	22	0	NM		1016	0.1	16.9
02/05/2025 09:00	0.0	3.3	19.4	22	0	NM		1016	0.1	19.1
02/05/2025 10:00	0.0	3.3	19.4	22	0	NM		1016	0.1	20.9
02/05/2025 11:00	0.0	3.4	19.4	22	0	NM		1016	0.1	22.1
02/05/2025 12:00	0.0	3.2	19.4	23	0	NM		1016	0.1	23.3
02/05/2025 13:00	0.0	3.4	19.5	23	0	NM		1015	0.0	23.9
02/05/2025 14:00	0.0	3.4	19.6	23	0	NM		1015	-0.1	24.1
02/05/2025 15:00	0.0	3.4	19.6	24	0	NM		1015	-0.1	24.0
02/05/2025 16:00	0.0	3.4	19.7	24	1	NM		1015	-0.1	23.7
02/05/2025 17:00	0.0	3.6	19.7	24	1	NM		1015	-0.1	23.5
02/05/2025 18:00	0.0	3.5	19.7	24	1	NM		1014	-0.3	22.5
02/05/2025 19:00	0.0	3.5	19.7	23	1	NM		1015	-0.1	21.3
02/05/2025 20:00	0.0	3.5	19.6	23	1	NM		1015	-0.1	19.2
02/05/2025 21:00	0.0	3.4	19.6	23	0	NM		1015	0.0	18.1
02/05/2025 22:00	0.0	3.5	19.6	23	0	NM		1015	0.0	16.8
02/05/2025 23:00	0.0	3.5	19.6	23	0	NM		1016	0.1	15.4
03/05/2025 00:00	0.0	3.5	19.5	23	0	NM		1016	0.1	14.3
03/05/2025 01:00	0.0	3.4	19.5	23	0	NM		1016	0.1	13.2
03/05/2025 02:00	0.0	3.3	19.5	23	0	NM		1015	0.1	12.7
03/05/2025 03:00	0.0	3.4	19.4	23	0	NM		1015	0.0	12.1
03/05/2025 04:00	0.0	3.3	19.4	23	0	NM		1014	-0.1	11.5
03/05/2025 05:00	0.0	3.4	19.4	23	1	NM		1014	-0.1	11.0
03/05/2025 06:00	0.0	3.4	19.4	22	0	NM		1014	-0.1	11.8
03/05/2025 07:00	0.0	3.3	19.4	22	0	NM		1014	-0.3	13.4
03/05/2025 08:00	0.0	3.4	19.4	22	0	NM		1014	-0.3	15.1
03/05/2025 09:00	0.0	3.2	19.4	22	0	NM		1014	-0.3	15.9
03/05/2025 10:00	0.0	3.3	19.4	22	0	NM		1013	-0.3	17.1
03/05/2025 11:00	0.0	3.3	19.4	22	0	NM		1013	-0.3	17.9
03/05/2025 12:00	0.0	3.3	19.4	23	0	NM		1013	-0.1	18.7
03/05/2025 13:00	0.0	3.3	19.5	23	0	NM		1013	-0.1	18.8
03/05/2025 14:00	0.0	3.3	19.5	23	0	NM		1013	-0.1	20.4
03/05/2025 15:00	0.0	3.4	19.6	23	0	NM		1013	-0.1	18.1
03/05/2025 16:00	0.0	3.3	19.6	23	0	NM		1014	0.0	17.3
03/05/2025 17:00	0.0	3.3	19.6	24	0	NM		1014	0.0	16.7
03/05/2025 18:00	0.0	3.4	19.6	23	0	NM		1014	0.1	15.3
03/05/2025 19:00	0.0	3.3	19.6	23	0	NM		1015	0.3	14.2
03/05/2025 20:00	0.0	3.3	19.6	23	0	NM		1016	0.4	13.0
03/05/2025 21:00	0.0	3.3	19.5	23	0	NM		1017	0.5	11.7
03/05/2025 22:00	0.0	3.4	19.5	23	1	NM		1017	0.5	10.9
03/05/2025 23:00	0.0	3.3	19.5	23	0	NM		1018	0.6	10.0
04/05/2025 00:00	0.0	3.3	19.4	22	0	NM		1018	0.5	9.2
04/05/2025 01:00	0.0	3.4	19.4	22	0	NM		1018	0.5	7.7
04/05/2025 02:00	0.0	3.4	19.4	22	0	NM		1018	0.5	7.1
04/05/2025 03:00	0.0	3.3	19.4	22	0	NM		1019	0.5	6.6
04/05/2025 04:00	0.0	3.3	19.4	22	0	NM		1019	0.4	6.8
04/05/2025 05:00	0.0	3.3	19.3	22	0	NM		1019	0.3	7.2
04/05/2025 06:00	0.0	3.2	19.3	22	0	NM		1018	0.1	7.9
04/05/2025 07:00	0.0	3.3	19.3	22	0	NM		1019	0.1	8.9
04/05/2025 08:00	0.0	3.2	19.3	22	0	NM		1019	0.1	10.0
04/05/2025 09:00	0.0	3.3	19.3	22	0	NM		1019	0.1	10.0
04/05/2025 10:00	0.1	3.3	19.3	22	0	NM		1019	0.1	12.3
04/05/2025 11:00	0.0	3.3	19.3	22	0	NM		1019	0.0	12.8
04/05/2025 12:00	0.0	3.3	19.3	22	0	NM		1019	0.0	13.7
04/05/2025 13:00	0.0	3.4	19.4	22	0	NM		1019	0.0	14.3
04/05/2025 14:00	0.0	3.2	19.4	23	0	NM		1019	0.1	13.9
04/05/2025 15:00	0.0	3.4	19.5	23	0	NM		1019	0.0	13.7
04/05/2025 16:00	0.0	3.3	19.5	23	0	NM		1019	0.0	12.6
04/05/2025 17:00	0.0	3.3	19.5	23	0	NM		1019	0.0	12.7
04/05/2025 18:00	0.0	3.3	19.5	23	0	NM		1019	0.0	11.5
04/05/2025 19:00	0.0	3.4	19.5	23	1	NM		1020	0.1	11.0
04/05/2025 20:00	0.0	3.4	19.5	23	0	NM		1020	0.1	10.1
04/05/2025 21:00	0.0	3.4	19.4	22	0	NM		1021	0.3	8.7
04/05/2025 22:00	0.0	3.3	19.4	22	0	NM		1021	0.3	8.1
04/05/2025 23:00	0.0	3.4	19.4	22	0	NM		1021	0.3	7.5
05/05/2025 00:00	0.0	3.4	19.4	22	0	NM		1021	0.3	7.0
05/05/2025 01:00	0.0	3.3	19.4	22	0	NM		1022	0.4	5.5
05/05/2025 02:00	0.0	3.3	19.3	22	0	NM		1021	0.3	5.0
05/05/2025 03:00	0.0	3.3	19.3	22	0	NM		1021	0.1	4.6
05/05/2025 04:00	0.0	3.2	19.3	22	0	NM		1021	0.1	4.3
05/05/2025 05:00	0.0	3.2	19.3	22	0	NM		1022	0.1	4.4
05/05/2025 06:00	0.0	3.3	19.3	22	0	NM		1021	0.0	5.7
05/05/2025 07:00	0.0	3.2	19.3	22	0	NM		1022	0.1	7.0
05/05/2025 08:00	0.0	3.2	19.2	22	0	NM		1021	0.0	7.7
05/05/2025 09:00	0.0	3.2	19.2	22	0	NM		1021	-0.1	9.2
05/05/2025 10:00	0.0	3.3	19.3	22	0	NM		1021	0.0	11.5
05/05/2025 11:00	0.0	3.4	19.3	22	0	NM		1021	0.0	12.4
05/05/2025 12:00	0.0	3.3	19.3	22	0	NM		1021	0.0	13.5
05/05/2025 13:00	0.0	3.3	19.3	22	0	NM		1022	0.0	13.2
05/05/2025 14:00	0.0	3.4	19.3	22	0	NM		1022	0.1	13.1
05/05/2025 15:00	0.0	3.3	19.3	22	0	NM		1022	0.0	13.4

Date and Time	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	CO ppm/v	H ₂ S ppm/v	Flow Ltr/hr		Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Temperature °C
05/05/2025 16:00	0.0	3.3	19.4	22	0	NM		1022	0.1	13.4
05/05/2025 17:00	0.0	3.3	19.4	22	0	NM		1022	0.1	13.5
05/05/2025 18:00	0.0	3.3	19.4	22	0	NM		1022	0.1	12.7
05/05/2025 19:00	0.0	3.3	19.4	22	0	NM		1023	0.3	11.9
05/05/2025 20:00	0.0	3.3	19.4	22	0	NM		1024	0.4	11.1
05/05/2025 21:00	0.0	3.3	19.4	22	0	NM		1025	0.4	10.3
05/05/2025 22:00	0.0	3.4	19.3	22	0	NM		1025	0.4	9.4
05/05/2025 23:00	0.0	3.5	19.3	22	0	NM		1025	0.4	9.3
06/05/2025 00:00	0.0	3.5	19.3	22	0	NM		1025	0.4	8.6
06/05/2025 01:00	0.0	3.4	19.3	22	0	NM		1025	0.4	6.7
06/05/2025 02:00	0.1	3.3	19.3	22	0	NM		1025	0.4	5.9
06/05/2025 03:00	0.0	3.4	19.3	22	0	NM		1025	0.3	5.3
06/05/2025 04:00	0.1	3.3	19.2	22	0	NM		1025	0.1	5.5
06/05/2025 05:00	0.0	3.4	19.2	22	0	NM		1025	0.0	5.6
06/05/2025 06:00	0.1	3.2	19.2	22	0	NM		1025	0.0	6.7
06/05/2025 07:00	0.1	3.3	19.2	21	0	NM		1026	0.1	8.1
06/05/2025 08:00	0.1	3.3	19.2	21	0	NM		1026	0.1	9.7
06/05/2025 09:00	0.1	3.3	19.2	21	0	NM		1026	0.1	10.2
06/05/2025 10:00	0.0	3.3	19.2	22	0	NM		1026	0.1	10.4
06/05/2025 11:00	0.0	3.3	19.3	22	0	NM		1026	0.1	11.2
06/05/2025 12:00	0.0	3.4	19.3	22	0	NM		1025	0.0	12.5
06/05/2025 13:00	0.0	3.4	19.3	22	0	NM		1025	0.0	14.0
06/05/2025 14:00	0.0	3.4	19.3	22	0	NM		1024	-0.1	14.8
06/05/2025 15:00	0.0	3.4	19.4	22	0	NM		1024	-0.3	15.3
06/05/2025 16:00	0.0	3.4	19.4	22	1	NM		1024	-0.3	15.0
06/05/2025 17:00	0.0	3.5	19.5	23	0	NM		1025	-0.1	14.3
06/05/2025 18:00	0.0	3.5	19.5	23	0	NM		1025	-0.1	13.4
06/05/2025 19:00	0.0	3.5	19.5	23	0	NM		1025	-0.1	12.6
06/05/2025 20:00	0.0	3.6	19.4	22	0	NM		1025	0.0	11.7
06/05/2025 21:00	0.0	3.5	19.4	22	0	NM		1026	0.1	11.0
06/05/2025 22:00	0.0	3.5	19.4	22	1	NM		1025	0.1	9.8
06/05/2025 23:00	0.0	3.5	19.4	22	0	NM		1025	0.1	9.0
07/05/2025 00:00	0.0	3.5	19.3	22	0	NM		1025	0.1	8.2
07/05/2025 01:00	0.0	3.5	19.3	22	0	NM		1025	0.0	7.1
07/05/2025 02:00	0.0	3.5	19.3	22	0	NM		1025	0.0	6.6
07/05/2025 03:00	0.0	3.4	19.3	21	0	NM		1025	0.0	5.9
07/05/2025 04:00	0.0	3.4	19.3	21	0	NM		1025	0.0	5.4
07/05/2025 05:00	0.0	3.5	19.2	21	0	NM		1025	-0.1	5.3
07/05/2025 06:00	0.0	3.4	19.2	21	0	NM		1025	0.0	6.5
07/05/2025 07:00	0.0	3.4	19.2	21	0	NM		1025	0.0	8.6
07/05/2025 08:00	0.1	3.4	19.2	21	0	NM		1025	0.0	10.6
07/05/2025 09:00	0.1	3.3	19.2	21	0	NM		1025	0.0	12.1
07/05/2025 10:00	0.1	3.3	19.2	21	0	NM		1024	-0.1	13.8
07/05/2025 11:00	0.0	3.5	19.2	21	0	NM		1024	-0.1	15.2
07/05/2025 12:00	0.0	3.4	19.2	21	0	NM		1023	-0.3	15.7
07/05/2025 13:00	0.0	3.5	19.3	22	0	NM		1023	-0.3	16.5
07/05/2025 14:00	0.0	3.6	19.3	22	0	NM		1022	-0.4	17.3

Time Series Data

Project Ref:	GG33988
Project Name:	Elgar Road South, Reading
Borehole ref:	BH2
Instrument Name and ID:	03000060
Start Date:	09/04/2025 17:00
End Date:	07/05/2025 14:00
Days of monitoring:	28
Monitoring Frequency (hh:mm:ss):	01:00:00
Total samples taken:	670



Summary Table

	CH ₄	CO ₂	O ₂	CO	H ₂ S	Flow		Atmospheric Pressure	Average 8-hour atmospheric pressure change	Temperature
Minimum	0.0	0.0	19.2	20	0	-0.01	Minimum	994	-1.1	2.7
Maximum	0.1	1.8	20.4	27	6	0.10	Maximum	1033	1.0	27.9
Range	0.1	1.8	1.2	7	6	0.11	Range	39	2.1	25.2

Date and Time	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	CO ppm/v	H ₂ S ppm/v	Flow Ltr/hr		Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Temperature °C
09/04/2025 17:00	0.00	0.04	19.9	20	1	0.00		1029	NM	13.1
09/04/2025 18:00	0.00	0.03	20.0	21	2	0.01		1029	NM	12.2
09/04/2025 19:00	0.00	0.03	20.0	21	1	0.01		1030	NM	10.5
09/04/2025 20:00	0.00	0.03	20.0	20	0	0.01		1031	NM	9.1
09/04/2025 21:00	0.00	0.02	20.0	21	1	0.00		1032	NM	7.7
09/04/2025 22:00	0.00	0.03	19.9	21	2	0.00		1032	NM	6.6
09/04/2025 23:00	0.00	0.02	19.9	21	2	0.01		1033	NM	5.7
10/04/2025 00:00	0.00	0.02	19.9	21	0	0.00		1033	NM	5.0
10/04/2025 01:00	0.00	0.02	19.8	21	2	0.01		1033	0.5	4.3
10/04/2025 02:00	0.00	0.02	19.8	21	1	0.01		1033	0.5	3.8
10/04/2025 03:00	0.00	0.02	19.7	21	1	0.01		1033	0.4	3.4
10/04/2025 04:00	0.00	0.02	19.7	21	1	0.02		1033	0.3	3.3
10/04/2025 05:00	0.00	0.02	19.7	21	1	0.01		1033	0.1	3.5
10/04/2025 06:00	0.00	0.02	19.7	21	2	0.05		1033	0.1	4.0
10/04/2025 07:00	0.00	0.02	19.7	21	3	0.04		1033	0.0	5.4
10/04/2025 08:00	0.00	0.01	19.7	21	2	0.05		1033	0.0	7.5
10/04/2025 09:00	0.00	0.01	19.7	21	2	0.03		1033	0.0	9.4
10/04/2025 10:00	0.00	0.02	19.7	21	0	0.04		1032	-0.1	10.7
10/04/2025 11:00	0.00	0.01	19.7	21	2	0.04		1032	-0.1	12.0
10/04/2025 12:00	0.00	0.01	19.8	21	2	0.07		1032	-0.1	13.1
10/04/2025 13:00	0.00	0.02	19.9	22	2	0.05		1031	-0.3	13.0
10/04/2025 14:00	0.00	0.02	20.0	22	1	0.04		1030	-0.4	13.7
10/04/2025 15:00	0.00	0.02	20.1	23	3	0.05		1030	-0.4	14.1
10/04/2025 16:00	0.00	0.02	20.2	23	2	0.03		1029	-0.5	14.3
10/04/2025 17:00	0.00	0.02	20.2	23	2	0.04		1029	-0.5	14.3
10/04/2025 18:00	0.00	0.02	20.3	24	2	0.00		1028	-0.5	13.7
10/04/2025 19:00	0.00	0.02	20.2	23	3	0.00		1028	-0.5	11.7
10/04/2025 20:00	0.00	0.02	20.1	23	2	0.00		1028	-0.5	10.2
10/04/2025 21:00	0.00	0.02	20.1	23	2	0.00		1028	-0.4	9.2
10/04/2025 22:00	0.00	0.02	20.0	22	3	0.01		1028	-0.3	8.1
10/04/2025 23:00	0.00	0.02	20.0	22	1	0.01		1028	-0.3	6.9
11/04/2025 00:00	0.00	0.02	19.9	22	1	0.02		1027	-0.3	6.2
11/04/2025 01:00	0.00	0.02	19.8	22	1	0.02		1027	-0.3	5.4
11/04/2025 02:00	0.00	0.02	19.8	22	3	0.02		1026	-0.3	5.0
11/04/2025 03:00	0.00	0.02	19.8	22	2	0.02		1026	-0.3	4.4
11/04/2025 04:00	0.00	0.02	19.7	22	1	0.02		1025	-0.4	4.3
11/04/2025 05:00	0.00	0.01	19.7	22	0	0.05		1025	-0.4	4.3
11/04/2025 06:00	0.00	0.01	19.7	22	1	0.01		1025	-0.4	4.8
11/04/2025 07:00	0.00	0.01	19.7	22	1	0.02		1025	-0.4	6.8
11/04/2025 08:00	0.00	0.01	19.6	22	1	0.02		1024	-0.4	9.6
11/04/2025 09:00	0.00	0.01	19.6	22	4	0.08		1024	-0.4	12.0
11/04/2025 10:00	0.00	0.01	19.7	22	2	0.08		1024	-0.3	14.1
11/04/2025 11:00	0.00	0.01	19.8	22	1	0.09		1023	-0.4	15.8
11/04/2025 12:00	0.00	0.01	19.9	23	2	0.10		1022	-0.4	17.2
11/04/2025 13:00	0.00	0.02	20.1	23	3	0.07		1021	-0.5	19.3
11/04/2025 14:00	0.00	0.02	20.2	24	3	0.03		1021	-0.5	20.0
11/04/2025 15:00	0.00	0.02	20.3	24	3	0.04		1020	-0.6	20.2
11/04/2025 16:00	0.00	0.03	20.3	25	3	0.04		1019	-0.6	20.2
11/04/2025 17:00	0.00	0.03	20.4	26	4	0.02		1018	-0.8	19.8
11/04/2025 18:00	0.00	0.03	20.4	24	6	0.00		1018	-0.8	18.8
11/04/2025 19:00	0.00	0.02	20.4	25	4	0.00		1017	-0.8	16.3
11/04/2025 20:00	0.00	0.03	20.3	25	3	0.00		1017	-0.6	14.8
11/04/2025 21:00	0.00	0.03	20.2	25	3	0.00		1017	-0.5	13.6
11/04/2025 22:00	0.00	0.03	20.1	24	3	0.00		1017	-0.5	12.5
11/04/2025 23:00	0.00	0.03	20.1	24	2	0.00		1017	-0.4	11.3
12/04/2025 00:00	0.00	0.02	20.0	23	2	0.01		1016	-0.4	10.0

Date and Time	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	CO ppm/v	H ₂ S ppm/v	Flow Ltr/hr		Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Temperature °C
12/04/2025 01:00	0.00	0.02	20.0	24	2	0.01		1015	-0.4	8.8
12/04/2025 02:00	0.00	0.02	19.9	23	2	0.01		1014	-0.5	8.3
12/04/2025 03:00	0.00	0.02	19.9	23	1	0.01		1013	-0.5	7.6
12/04/2025 04:00	0.00	0.02	19.8	23	2	0.03		1012	-0.6	7.0
12/04/2025 05:00	0.00	0.02	19.8	23	1	0.02		1012	-0.6	6.7
12/04/2025 06:00	0.00	0.02	19.8	23	2	0.02		1011	-0.8	7.0
12/04/2025 07:00	0.00	0.02	19.7	23	1	0.03		1010	-0.9	8.6
12/04/2025 08:00	0.00	0.02	19.7	23	1	0.03		1010	-0.8	10.8
12/04/2025 09:00	0.00	0.02	19.7	23	4	0.05		1009	-0.8	13.2
12/04/2025 10:00	0.00	0.02	19.8	23	2	0.04		1008	-0.8	15.6
12/04/2025 11:00	0.00	0.02	19.8	23	2	0.09		1007	-0.8	17.8
12/04/2025 12:00	0.00	0.02	20.0	24	2	0.09		1006	-0.8	19.1
12/04/2025 13:00	0.00	0.02	20.1	25	3	0.08		1004	-1.0	21.1
12/04/2025 14:00	0.00	0.03	20.2	25	4	0.07		1003	-1.0	21.0
12/04/2025 15:00	0.00	0.02	20.2	26	3	0.02		1002	-1.0	20.9
12/04/2025 16:00	0.00	0.03	20.3	26	4	0.02		1001	-1.1	20.6
12/04/2025 17:00	0.00	0.03	20.3	26	6	0.07		1001	-1.0	20.0
12/04/2025 18:00	0.00	0.03	20.4	27	5	0.01		1000	-1.0	18.6
12/04/2025 19:00	0.00	0.04	20.3	27	3	0.00		1000	-0.9	16.3
12/04/2025 20:00	0.00	0.03	20.3	26	3	0.00		1000	-0.8	14.5
12/04/2025 21:00	0.00	0.03	20.2	26	3	0.00		1000	-0.5	14.1
12/04/2025 22:00	0.00	0.03	20.1	26	4	0.00		999	-0.5	13.8
12/04/2025 23:00	0.00	0.03	20.1	25	2	0.00		999	-0.4	13.1
13/04/2025 00:00	0.00	0.03	20.0	25	3	0.00		1000	-0.1	12.1
13/04/2025 01:00	0.00	0.03	20.0	25	2	0.02		1000	-0.1	12.6
13/04/2025 02:00	0.00	0.03	20.0	25	3	0.01		1001	0.1	11.4
13/04/2025 03:00	0.00	0.03	20.0	25	2	0.01		1001	0.1	10.8
13/04/2025 04:00	0.00	0.03	19.9	24	2	0.00		1001	0.1	9.8
13/04/2025 05:00	0.00	0.03	19.9	24	3	0.01		1002	0.3	8.9
13/04/2025 06:00	0.00	0.03	19.9	24	2	0.03		1002	0.4	8.3
13/04/2025 07:00	0.00	0.02	19.9	24	2	0.02		1003	0.5	9.2
13/04/2025 08:00	0.00	0.02	19.8	24	0	0.01		1004	0.5	10.6
13/04/2025 09:00	0.00	0.03	19.8	24	2	0.03		1004	0.5	12.1
13/04/2025 10:00	0.00	0.03	19.8	24	3	0.04		1004	0.4	13.0
13/04/2025 11:00	0.00	0.02	19.9	24	2	0.05		1004	0.4	13.4
13/04/2025 12:00	0.00	0.03	19.9	24	3	0.07		1004	0.4	14.6
13/04/2025 13:00	0.00	0.03	20.0	25	3	0.03		1005	0.4	12.6
13/04/2025 14:00	0.00	0.03	20.0	25	3	0.07		1005	0.4	13.6
13/04/2025 15:00	0.00	0.03	20.0	25	3	0.01		1004	0.1	14.7
13/04/2025 16:00	0.00	0.03	20.0	25	4	0.02		1004	0.0	14.4
13/04/2025 17:00	0.00	0.03	20.0	25	3	0.03		1005	0.1	13.2
13/04/2025 18:00	0.00	0.03	20.0	25	3	0.01		1005	0.1	12.2
13/04/2025 19:00	0.00	0.03	20.0	25	2	0.02		1006	0.3	11.4
13/04/2025 20:00	0.00	0.03	20.0	25	4	0.00		1007	0.4	10.4
13/04/2025 21:00	0.00	0.03	19.9	25	2	0.00		1007	0.3	9.3
13/04/2025 22:00	0.00	0.03	19.9	24	3	0.00		1007	0.3	8.3
13/04/2025 23:00	0.00	0.03	19.8	24	2	0.01		1007	0.4	7.3
14/04/2025 00:00	0.00	0.02	19.8	24	3	0.01		1008	0.5	6.7
14/04/2025 01:00	0.00	0.02	19.8	24	2	0.00		1007	0.3	5.8
14/04/2025 02:00	0.00	0.02	19.7	24	2	0.01		1007	0.3	5.3
14/04/2025 03:00	0.00	0.02	19.7	24	2	0.02		1007	0.1	4.9
14/04/2025 04:00	0.00	0.02	19.7	24	3	0.03		1007	0.0	4.7
14/04/2025 05:00	0.00	0.02	19.7	23	2	0.01		1007	0.0	4.7
14/04/2025 06:00	0.00	0.02	19.6	23	1	0.02		1007	0.0	5.3
14/04/2025 07:00	0.00	0.01	19.6	23	1	0.02		1007	0.0	7.6
14/04/2025 08:00	0.00	0.02	19.6	23	0	0.03		1007	-0.1	10.3
14/04/2025 09:00	0.00	0.02	19.6	23	1	0.08		1006	-0.1	11.5
14/04/2025 10:00	0.00	0.02	19.7	23	3	0.07		1006	-0.1	12.1
14/04/2025 11:00	0.00	0.02	19.7	24	1	0.10		1005	-0.3	13.0
14/04/2025 12:00	0.00	0.02	19.8	25	2	0.09		1005	-0.3	12.5
14/04/2025 13:00	0.00	0.02	19.9	25	2	0.06		1005	-0.3	13.0
14/04/2025 14:00	0.00	0.02	20.0	25	2	0.06		1004	-0.4	12.9
14/04/2025 15:00	0.00	0.02	20.0	25	3	0.05		1003	-0.5	13.5
14/04/2025 16:00	0.00	0.02	20.0	25	2	0.03		1002	-0.6	13.7
14/04/2025 17:00	0.00	0.02	20.0	25	4	0.04		1002	-0.5	13.4
14/04/2025 18:00	0.00	0.02	20.0	25	2	0.02		1001	-0.6	12.6
14/04/2025 19:00	0.00	0.02	20.0	25	3	0.02		1001	-0.5	11.9
14/04/2025 20:00	0.00	0.02	20.0	25	1	0.01		1001	-0.5	11.4
14/04/2025 21:00	0.00	0.02	19.9	25	3	0.01		1001	-0.5	10.9
14/04/2025 22:00	0.00	0.02	19.9	24	2	0.01		1001	-0.4	10.5
14/04/2025 23:00	0.00	0.02	19.8	24	1	0.01		1000	-0.4	10.0
15/04/2025 00:00	0.00	0.02	19.8	24	1	0.02		999	-0.4	9.5
15/04/2025 01:00	0.00	0.02	19.8	24	2	0.04		999	-0.4	9.3
15/04/2025 02:00	0.00	0.02	19.8	24	3	0.02		998	-0.4	9.2
15/04/2025 03:00	0.00	0.02	19.8	24	1	0.02		997	-0.5	9.2
15/04/2025 04:00	0.00	0.02	19.8	24	2	0.02		996	-0.6	9.1
15/04/2025 05:00	0.00	0.02	19.7	24	4	0.03		996	-0.6	9.1
15/04/2025 06:00	0.00	0.02	19.7	24	2	0.03		996	-0.6	9.2
15/04/2025 07:00	0.00	0.02	19.7	24	4	0.04		996	-0.5	9.9
15/04/2025 08:00	0.00	0.02	19.7	24	4	0.03		996	-0.4	11.1
15/04/2025 09:00	0.00	0.02	19.7	24	3	0.04		995	-0.5	12.9

Date and Time	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	CO ppm/v	H ₂ S ppm/v	Flow Ltr/hr		Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Temperature °C
15/04/2025 10:00	0.00	0.02	19.7	24	3	0.03		995	-0.4	13.9
15/04/2025 11:00	0.00	0.02	19.8	24	1	0.03		995	-0.3	14.9
15/04/2025 12:00	0.00	0.02	19.8	24	3	0.04		994	-0.3	16.1
15/04/2025 13:00	0.00	0.02	19.8	24	3	0.03		995	-0.1	14.2
15/04/2025 14:00	0.00	0.02	19.8	25	2	0.05		995	-0.1	15.3
15/04/2025 15:00	0.00	0.02	19.9	25	2	0.04		995	-0.1	15.2
15/04/2025 16:00	0.00	0.03	19.9	25	2	0.04		995	-0.1	13.5
15/04/2025 17:00	0.00	0.02	19.9	25	3	0.04		995	0.0	14.5
15/04/2025 18:00	0.00	0.03	19.9	25	2	0.02		994	-0.1	14.0
15/04/2025 19:00	0.00	0.03	19.9	25	3	0.01		995	0.0	12.8
15/04/2025 20:00	0.00	0.03	19.9	25	3	0.02		995	0.1	11.5
15/04/2025 21:00	0.00	0.03	19.9	25	3	0.03		995	0.0	10.4
15/04/2025 22:00	0.00	0.03	19.9	25	2	0.02		995	0.0	10.1
15/04/2025 23:00	0.00	0.03	19.8	25	3	0.04		995	0.0	9.4
16/04/2025 00:00	0.00	0.03	19.8	24	2	0.05		995	0.0	8.8
16/04/2025 01:00	0.00	0.03	19.8	24	3	0.05		997	0.3	8.3
16/04/2025 02:00	0.00	0.03	19.8	24	2	0.05		997	0.4	8.4
16/04/2025 03:00	0.00	0.03	19.7	24	3	0.06		996	0.1	8.0
16/04/2025 04:00	0.00	0.03	19.7	24	4	0.08		997	0.3	7.8
16/04/2025 05:00	0.00	0.03	19.7	24	4	0.04		999	0.5	7.2
16/04/2025 06:00	0.00	0.03	19.7	24	4	0.06		999	0.5	7.2
16/04/2025 07:00	0.00	0.03	19.7	24	4	0.05		1000	0.6	7.9
16/04/2025 08:00	0.00	0.03	19.7	24	1	0.07		1001	0.8	9.1
16/04/2025 09:00	0.00	0.03	19.7	24	3	0.09		1002	0.6	10.4
16/04/2025 10:00	0.00	0.03	19.7	24	1	0.05		1004	0.9	11.3
16/04/2025 11:00	0.00	0.03	19.8	24	1	0.09		1004	1.0	12.4
16/04/2025 12:00	0.00	0.04	19.8	25	3	0.05		1005	1.0	13.3
16/04/2025 13:00	0.00	0.04	19.9	25	3	0.07		1005	0.8	14.2
16/04/2025 14:00	0.00	0.04	20.0	26	2	0.06		1006	0.9	14.2
16/04/2025 15:00	0.00	0.04	20.1	26	3	0.06		1006	0.8	13.6
16/04/2025 16:00	0.00	0.04	20.1	27	3	0.06		1007	0.8	13.1
16/04/2025 17:00	0.00	0.05	20.2	27	3	0.05		1007	0.6	12.3
16/04/2025 18:00	0.00	0.05	20.2	27	2	0.02		1008	0.5	11.6
16/04/2025 19:00	0.00	0.05	20.1	26	3	0.01		1009	0.6	10.3
16/04/2025 20:00	0.00	0.05	20.0	26	2	0.01		1010	0.6	9.1
16/04/2025 21:00	0.00	0.05	20.0	25	2	0.00		1010	0.6	8.1
16/04/2025 22:00	0.00	0.05	19.9	25	2	0.00		1011	0.6	7.3
16/04/2025 23:00	0.00	0.05	19.8	25	2	0.00		1011	0.6	6.6
17/04/2025 00:00	0.00	0.05	19.8	24	3	0.00		1011	0.5	5.9
17/04/2025 01:00	0.00	0.06	19.7	24	3	0.00		1011	0.5	4.4
17/04/2025 02:00	0.00	0.06	19.7	24	3	0.00		1012	0.5	3.9
17/04/2025 03:00	0.00	0.06	19.7	24	3	0.01		1012	0.4	3.5
17/04/2025 04:00	0.00	0.06	19.6	24	1	0.02		1012	0.3	3.1
17/04/2025 05:00	0.00	0.06	19.6	24	3	0.02		1012	0.3	2.7
17/04/2025 06:00	0.00	0.07	19.6	23	1	0.01		1013	0.3	3.5
17/04/2025 07:00	0.00	0.07	19.5	23	1	0.01		1013	0.3	5.4
17/04/2025 08:00	0.00	0.07	19.5	23	1	0.04		1013	0.3	8.5
17/04/2025 09:00	0.00	0.08	19.5	23	1	0.07		1013	0.3	11.0
17/04/2025 10:00	0.00	0.08	19.6	24	2	0.06		1013	0.1	12.8
17/04/2025 11:00	0.00	0.07	19.7	24	2	0.09		1013	0.1	14.1
17/04/2025 12:00	0.00	0.08	19.8	25	3	0.08		1012	0.0	14.8
17/04/2025 13:00	0.00	0.08	20.0	26	2	0.05		1013	0.1	15.2
17/04/2025 14:00	0.00	0.08	20.0	26	4	0.04		1012	-0.1	15.7
17/04/2025 15:00	0.00	0.09	20.1	26	4	0.02		1012	-0.1	16.2
17/04/2025 16:00	0.00	0.09	20.1	26	4	0.02		1012	-0.1	15.7
17/04/2025 17:00	0.00	0.09	20.1	26	3	0.02		1012	-0.1	15.2
17/04/2025 18:00	0.00	0.09	20.2	26	4	0.01		1012	-0.1	14.2
17/04/2025 19:00	0.00	0.09	20.1	26	3	0.01		1013	0.0	12.3
17/04/2025 20:00	0.00	0.09	20.1	26	3	0.00		1013	0.1	11.0
17/04/2025 21:00	0.00	0.09	20.0	26	2	0.00		1013	0.0	9.8
17/04/2025 22:00	0.00	0.09	19.9	25	2	0.00		1013	0.1	9.2
17/04/2025 23:00	0.00	0.09	19.9	25	2	0.00		1013	0.1	8.8
18/04/2025 00:00	0.00	0.09	19.8	25	2	0.00		1013	0.1	8.3
18/04/2025 01:00	0.00	0.09	19.8	24	2	0.01		1013	0.1	9.1
18/04/2025 02:00	0.00	0.10	19.7	24	1	0.01		1012	0.0	7.9
18/04/2025 03:00	0.00	0.11	19.7	24	0	0.03		1012	-0.1	7.2
18/04/2025 04:00	0.00	0.10	19.7	24	3	0.02		1012	-0.1	8.2
18/04/2025 05:00	0.00	0.10	19.6	24	1	0.02		1011	-0.3	8.5
18/04/2025 06:00	0.00	0.11	19.6	24	1	0.03		1011	-0.3	9.0
18/04/2025 07:00	0.00	0.11	19.6	24	4	0.01		1011	-0.3	9.9
18/04/2025 08:00	0.00	0.11	19.6	24	0	0.01		1011	-0.3	10.9
18/04/2025 09:00	0.00	0.12	19.6	24	1	0.02		1011	-0.3	12.5
18/04/2025 10:00	0.00	0.12	19.7	24	2	0.03		1011	-0.1	13.4
18/04/2025 11:00	0.00	0.12	19.7	24	2	0.07		1011	-0.1	13.3
18/04/2025 12:00	0.00	0.11	19.8	25	2	0.08		1010	-0.3	12.8
18/04/2025 13:00	0.00	0.12	19.9	25	3	0.04		1009	-0.3	14.6
18/04/2025 14:00	0.00	0.12	19.9	25	2	0.06		1009	-0.3	14.0
18/04/2025 15:00	0.00	0.12	19.9	25	3	0.05		1009	-0.3	13.3
18/04/2025 16:00	0.00	0.12	19.9	25	2	0.04		1009	-0.3	12.3
18/04/2025 17:00	0.00	0.12	19.9	25	2	0.03		1008	-0.4	12.3
18/04/2025 18:00	0.00	0.12	19.9	25	2	0.01		1008	-0.4	12.1

Date and Time	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	CO ppm/v	H ₂ S ppm/v	Flow Ltr/hr		Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Temperature °C
18/04/2025 19:00	0.00	0.12	19.9	25	2	0.01		1008	-0.4	12.0
18/04/2025 20:00	0.00	0.12	19.9	25	1	0.01		1008	-0.3	12.0
18/04/2025 21:00	0.00	0.12	19.8	25	0	0.00		1007	-0.3	12.3
18/04/2025 22:00	0.00	0.13	19.8	25	2	0.01		1007	-0.3	12.5
18/04/2025 23:00	0.00	0.12	19.8	24	3	0.01		1007	-0.3	12.2
19/04/2025 00:00	0.00	0.13	19.8	25	3	0.02		1007	-0.3	11.8
19/04/2025 01:00	0.00	0.12	19.8	24	3	0.01		1006	-0.3	12.4
19/04/2025 02:00	0.00	0.13	19.7	24	2	0.01		1006	-0.3	11.6
19/04/2025 03:00	0.00	0.13	19.7	24	0	0.01		1006	-0.3	11.7
19/04/2025 04:00	0.00	0.13	19.7	24	2	0.01		1006	-0.3	11.7
19/04/2025 05:00	0.00	0.13	19.7	24	1	0.01		1006	-0.1	11.7
19/04/2025 06:00	0.00	0.13	19.7	24	1	0.01		1006	-0.1	11.5
19/04/2025 07:00	0.00	0.13	19.7	24	3	0.02		1007	0.0	11.6
19/04/2025 08:00	0.00	0.13	19.7	24	1	0.02		1007	0.0	11.9
19/04/2025 09:00	0.00	0.13	19.7	24	0	0.01		1007	0.1	12.6
19/04/2025 10:00	0.00	0.13	19.7	24	2	0.02		1007	0.1	13.8
19/04/2025 11:00	0.00	0.14	19.7	24	2	0.05		1007	0.1	14.8
19/04/2025 12:00	0.00	0.13	19.8	25	2	0.03		1007	0.1	15.8
19/04/2025 13:00	0.00	0.13	19.8	25	2	0.05		1007	0.1	16.5
19/04/2025 14:00	0.00	0.14	19.9	25	3	0.07		1007	0.1	16.4
19/04/2025 15:00	0.00	0.15	20.0	26	2	0.03		1007	0.0	16.4
19/04/2025 16:00	0.00	0.15	20.0	26	3	0.03		1007	0.0	15.8
19/04/2025 17:00	0.00	0.15	20.1	26	3	0.03		1007	0.0	14.9
19/04/2025 18:00	0.00	0.15	20.1	26	3	-0.01		1007	0.0	13.8
19/04/2025 19:00	0.00	0.15	20.0	26	1	0.01		1008	0.1	12.4
19/04/2025 20:00	0.00	0.15	20.0	26	3	0.00		1008	0.1	11.0
19/04/2025 21:00	0.00	0.16	19.9	25	3	0.03		1008	0.1	9.8
19/04/2025 22:00	0.00	0.16	19.9	25	2	0.00		1009	0.3	8.5
19/04/2025 23:00	0.00	0.17	19.8	25	1	0.01		1009	0.3	7.5
20/04/2025 00:00	0.00	0.16	19.8	24	1	0.01		1008	0.1	6.6
20/04/2025 01:00	0.00	0.17	19.7	24	3	0.01		1008	0.1	6.3
20/04/2025 02:00	0.00	0.17	19.7	24	1	0.03		1008	0.1	5.8
20/04/2025 03:00	0.00	0.17	19.7	24	2	0.02		1008	0.0	5.4
20/04/2025 04:00	0.00	0.17	19.6	24	0	0.01		1008	0.0	5.1
20/04/2025 05:00	0.00	0.18	19.6	24	2	0.02		1008	0.0	4.7
20/04/2025 06:00	0.00	0.17	19.6	24	3	0.01		1008	-0.1	5.2
20/04/2025 07:00	0.00	0.18	19.6	24	2	0.03		1007	-0.3	6.7
20/04/2025 08:00	0.00	0.17	19.6	24	3	0.01		1007	-0.1	8.4
20/04/2025 09:00	0.00	0.18	19.6	24	3	0.02		1007	-0.1	10.3
20/04/2025 10:00	0.00	0.17	19.6	24	2	0.03		1007	-0.1	12.0
20/04/2025 11:00	0.00	0.18	19.7	24	2	0.01		1007	-0.1	13.5
20/04/2025 12:00	0.00	0.21	19.8	25	2	0.01		1007	-0.1	14.9
20/04/2025 13:00	0.00	0.21	19.9	25	2	0.01		1007	-0.1	13.7
20/04/2025 14:00	0.00	0.21	19.9	25	3	0.01		1006	-0.3	16.6
20/04/2025 15:00	0.00	0.18	19.9	26	2	0.02		1006	-0.1	16.6
20/04/2025 16:00	0.00	0.21	19.9	26	2	0.00		1006	-0.1	15.8
20/04/2025 17:00	0.00	0.21	20.0	26	2	0.02		1006	-0.1	15.1
20/04/2025 18:00	0.00	0.22	19.9	25	3	0.00		1006	-0.1	14.4
20/04/2025 19:00	0.00	0.21	19.9	25	3	0.01		1007	0.0	13.6
20/04/2025 20:00	0.00	0.21	19.9	25	2	0.00		1007	0.0	12.4
20/04/2025 21:00	0.00	0.22	19.8	25	2	0.00		1007	0.0	11.3
20/04/2025 22:00	0.00	0.23	19.8	25	1	0.00		1007	0.1	10.6
20/04/2025 23:00	0.00	0.23	19.8	25	1	0.01		1007	0.1	9.9
21/04/2025 00:00	0.00	0.22	19.7	24	3	0.00		1008	0.3	9.2
21/04/2025 01:00	0.00	0.22	19.7	24	2	0.00		1007	0.1	9.7
21/04/2025 02:00	0.00	0.22	19.7	24	2	0.01		1007	0.1	9.4
21/04/2025 03:00	0.00	0.23	19.7	24	4	0.01		1008	0.1	9.5
21/04/2025 04:00	0.00	0.23	19.7	24	0	0.00		1008	0.1	9.5
21/04/2025 05:00	0.00	0.23	19.7	24	2	0.00		1008	0.1	9.4
21/04/2025 06:00	0.00	0.23	19.7	24	3	0.01		1008	0.1	9.6
21/04/2025 07:00	0.00	0.23	19.6	24	1	0.01		1008	0.1	9.9
21/04/2025 08:00	0.00	0.24	19.6	24	0	0.01		1008	0.0	10.7
21/04/2025 09:00	0.00	0.23	19.6	24	3	0.00		1009	0.3	12.4
21/04/2025 10:00	0.00	0.23	19.7	24	3	0.00		1009	0.3	14.3
21/04/2025 11:00	0.00	0.23	19.7	24	3	0.01		1009	0.1	15.1
21/04/2025 12:00	0.00	0.23	19.7	24	2	0.00		1009	0.1	15.8
21/04/2025 13:00	0.00	0.26	19.8	25	2	0.02		1010	0.3	14.9
21/04/2025 14:00	0.00	0.25	19.8	25	2	0.01		1011	0.4	13.0
21/04/2025 15:00	0.00	0.25	19.8	25	1	0.01		1011	0.4	12.4
21/04/2025 16:00	0.00	0.26	19.8	24	0	0.01		1011	0.4	13.8
21/04/2025 17:00	0.00	0.26	19.8	24	2	0.00		1011	0.3	13.7
21/04/2025 18:00	0.00	0.26	19.8	25	2	0.00		1012	0.4	12.9
21/04/2025 19:00	0.00	0.25	19.8	25	3	0.00		1012	0.4	11.9
21/04/2025 20:00	0.00	0.27	19.8	25	3	0.01		1013	0.5	10.6
21/04/2025 21:00	0.00	0.27	19.8	25	2	0.00		1014	0.5	9.6
21/04/2025 22:00	0.00	0.27	19.7	24	2	0.00		1014	0.4	8.9
21/04/2025 23:00	0.00	0.27	19.7	24	2	0.01		1015	0.5	8.3
22/04/2025 00:00	0.00	0.27	19.7	24	2	0.01		1015	0.5	7.8
22/04/2025 01:00	0.00	0.28	19.6	24	1	0.00		1015	0.5	7.2
22/04/2025 02:00	0.00	0.28	19.6	24	1	0.00		1015	0.4	6.7
22/04/2025 03:00	0.00	0.29	19.6	24	2	0.00		1016	0.5	6.6

Date and Time	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	CO ppm/v	H ₂ S ppm/v	Flow Ltr/hr		Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Temperature °C
22/04/2025 04:00	0.00	0.29	19.5	23	2	0.01		1016	0.4	6.3
22/04/2025 05:00	0.00	0.30	19.5	23	0	0.00		1016	0.3	5.7
22/04/2025 06:00	0.00	0.29	19.5	23	3	0.00		1016	0.3	6.3
22/04/2025 07:00	0.00	0.29	19.5	23	0	0.00		1017	0.3	8.2
22/04/2025 08:00	0.00	0.30	19.5	23	3	0.00		1018	0.4	10.2
22/04/2025 09:00	0.00	0.30	19.5	23	0	0.00		1018	0.4	12.0
22/04/2025 10:00	0.00	0.30	19.5	24	1	0.02		1018	0.4	13.3
22/04/2025 11:00	0.00	0.30	19.6	24	1	0.02		1017	0.1	14.6
22/04/2025 12:00	0.00	0.30	19.7	24	1	0.01		1017	0.1	15.5
22/04/2025 13:00	0.00	0.31	19.8	25	2	0.03		1017	0.1	15.7
22/04/2025 14:00	0.00	0.33	19.9	25	1	0.01		1017	0.1	15.4
22/04/2025 15:00	0.00	0.31	19.9	25	3	0.00		1017	0.0	15.3
22/04/2025 16:00	0.00	0.34	20.0	25	3	0.01		1016	-0.3	14.9
22/04/2025 17:00	0.00	0.33	20.0	25	2	0.00		1016	-0.3	14.3
22/04/2025 18:00	0.00	0.33	20.0	25	3	0.01		1016	-0.3	13.4
22/04/2025 19:00	0.00	0.33	19.9	25	2	0.00		1016	-0.1	11.9
22/04/2025 20:00	0.00	0.34	19.9	25	1	0.01		1016	-0.1	10.6
22/04/2025 21:00	0.00	0.35	19.8	24	2	0.00		1015	-0.3	10.0
22/04/2025 22:00	0.00	0.36	19.8	24	2	0.00		1015	-0.3	9.9
22/04/2025 23:00	0.00	0.36	19.7	24	2	0.01		1014	-0.4	9.9
23/04/2025 00:00	0.00	0.35	19.7	24	3	0.00		1013	-0.4	9.6
23/04/2025 01:00	0.00	0.36	19.7	24	2	0.01		1011	-0.6	9.5
23/04/2025 02:00	0.00	0.36	19.6	23	1	0.03		1011	-0.6	9.4
23/04/2025 03:00	0.00	0.36	19.6	23	3	0.03		1009	-0.9	9.0
23/04/2025 04:00	0.00	0.37	19.6	23	2	0.08		1008	-1.0	8.5
23/04/2025 05:00	0.00	0.37	19.6	23	2	0.06		1007	-1.0	8.5
23/04/2025 06:00	0.00	0.37	19.6	23	3	0.02		1007	-1.0	8.9
23/04/2025 07:00	0.00	0.39	19.6	23	0	0.01		1007	-0.9	9.2
23/04/2025 08:00	0.00	0.39	19.5	23	2	0.00		1008	-0.6	9.9
23/04/2025 09:00	0.00	0.39	19.5	23	3	0.04		1009	-0.3	10.5
23/04/2025 10:00	0.00	0.40	19.5	23	3	0.03		1010	-0.1	10.4
23/04/2025 11:00	0.00	0.42	19.5	23	3	0.00		1011	0.3	11.1
23/04/2025 12:00	0.00	0.42	19.5	23	1	0.01		1012	0.5	11.9
23/04/2025 13:00	0.00	0.40	19.6	23	1	0.01		1013	0.8	12.5
23/04/2025 14:00	0.00	0.42	19.6	23	2	0.01		1013	0.8	12.8
23/04/2025 15:00	0.00	0.42	19.6	23	1	0.03		1014	0.9	13.2
23/04/2025 16:00	0.00	0.42	19.6	23	1	0.00		1014	0.8	12.8
23/04/2025 17:00	0.00	0.43	19.7	23	1	0.00		1015	0.8	12.1
23/04/2025 18:00	0.00	0.42	19.7	24	1	0.00		1016	0.8	11.7
23/04/2025 19:00	0.00	0.43	19.7	23	1	0.00		1017	0.8	9.9
23/04/2025 20:00	0.00	0.43	19.7	23	0	0.00		1018	0.8	8.3
23/04/2025 21:00	0.00	0.44	19.6	23	1	0.00		1018	0.6	7.8
23/04/2025 22:00	0.00	0.44	19.6	23	0	0.00		1019	0.8	7.1
23/04/2025 23:00	0.00	0.45	19.6	23	1	0.00		1019	0.6	6.7
24/04/2025 00:00	0.00	0.45	19.6	23	2	0.00		1020	0.8	6.7
24/04/2025 01:00	0.00	0.45	19.6	23	2	0.00		1020	0.6	8.9
24/04/2025 02:00	0.00	0.47	19.5	23	2	0.00		1020	0.5	8.4
24/04/2025 03:00	0.00	0.45	19.5	23	2	0.00		1020	0.4	7.6
24/04/2025 04:00	0.00	0.47	19.5	23	0	0.00		1021	0.4	6.9
24/04/2025 05:00	0.00	0.45	19.5	23	3	0.01		1021	0.4	6.8
24/04/2025 06:00	0.00	0.47	19.5	23	0	0.01		1022	0.4	7.2
24/04/2025 07:00	0.00	0.48	19.5	23	4	0.01		1022	0.4	8.1
24/04/2025 08:00	0.00	0.49	19.5	23	0	0.00		1022	0.3	9.4
24/04/2025 09:00	0.00	0.48	19.5	23	1	0.01		1023	0.4	10.8
24/04/2025 10:00	0.00	0.51	19.5	23	2	0.01		1023	0.4	12.2
24/04/2025 11:00	0.00	0.48	19.6	23	1	0.01		1023	0.4	13.2
24/04/2025 12:00	0.00	0.47	19.6	23	1	0.00		1023	0.3	14.5
24/04/2025 13:00	0.00	0.48	19.7	23	1	0.01		1023	0.3	14.6
24/04/2025 14:00	0.00	0.50	19.8	24	1	0.05		1023	0.1	15.0
24/04/2025 15:00	0.00	0.50	19.8	23	1	0.00		1022	0.0	14.8
24/04/2025 16:00	0.00	0.51	19.8	24	2	0.00		1022	0.0	14.9
24/04/2025 17:00	0.00	0.51	19.8	24	2	0.01		1022	-0.1	14.5
24/04/2025 18:00	0.00	0.50	19.8	23	2	0.00		1022	-0.1	13.7
24/04/2025 19:00	0.00	0.51	19.8	23	1	0.00		1022	-0.1	12.0
24/04/2025 20:00	0.00	0.51	19.8	24	2	0.00		1023	0.0	10.6
24/04/2025 21:00	0.00	0.52	19.7	23	0	0.00		1023	0.0	9.6
24/04/2025 22:00	0.00	0.54	19.7	23	0	0.00		1023	0.0	8.7
24/04/2025 23:00	0.00	0.53	19.7	23	2	0.00		1024	0.3	8.1
25/04/2025 00:00	0.00	0.55	19.6	23	2	0.00		1024	0.3	7.6
25/04/2025 01:00	0.00	0.53	19.6	23	1	0.01		1023	0.1	7.3
25/04/2025 02:00	0.00	0.53	19.5	23	1	0.00		1023	0.1	6.3
25/04/2025 03:00	0.00	0.54	19.5	22	3	0.00		1023	0.1	5.6
25/04/2025 04:00	0.00	0.54	19.5	22	1	0.00		1023	0.0	5.5
25/04/2025 05:00	0.00	0.54	19.5	22	1	0.01		1023	0.0	5.5
25/04/2025 06:00	0.00	0.55	19.5	22	2	0.02		1023	0.0	6.3
25/04/2025 07:00	0.00	0.57	19.5	22	3	0.01		1024	0.0	7.9
25/04/2025 08:00	0.00	0.56	19.5	22	2	0.00		1024	0.0	10.0
25/04/2025 09:00	0.00	0.58	19.5	22	2	0.01		1023	0.0	11.8
25/04/2025 10:00	0.00	0.55	19.5	22	1	0.00		1023	0.0	12.5
25/04/2025 11:00	0.00	0.55	19.6	23	1	0.01		1023	0.0	13.3
25/04/2025 12:00	0.00	0.56	19.6	23	1	0.01		1022	-0.1	14.2

Date and Time	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	CO ppm/v	H ₂ S ppm/v	Flow Ltr/hr		Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Temperature °C
25/04/2025 13:00	0.00	0.56	19.7	23	2	0.00		1022	-0.1	14.2
25/04/2025 14:00	0.00	0.57	19.7	23	1	0.01		1022	-0.1	15.3
25/04/2025 15:00	0.00	0.59	19.8	23	1	0.01		1021	-0.4	15.9
25/04/2025 16:00	0.00	0.59	19.9	23	2	0.00		1021	-0.4	15.9
25/04/2025 17:00	0.00	0.59	19.9	23	1	0.00		1021	-0.3	15.8
25/04/2025 18:00	0.00	0.58	19.9	23	2	0.00		1021	-0.3	14.6
25/04/2025 19:00	0.00	0.58	19.9	23	2	0.00		1021	-0.3	12.9
25/04/2025 20:00	0.00	0.58	19.8	23	3	0.00		1021	-0.1	11.3
25/04/2025 21:00	0.00	0.60	19.8	23	1	0.00		1022	0.0	10.4
25/04/2025 22:00	0.00	0.62	19.8	23	2	0.00		1022	0.0	9.6
25/04/2025 23:00	0.00	0.59	19.7	23	1	0.01		1022	0.1	8.4
26/04/2025 00:00	0.00	0.61	19.7	23	2	0.00		1022	0.1	7.7
26/04/2025 01:00	0.00	0.61	19.6	23	2	0.00		1022	0.1	8.4
26/04/2025 02:00	0.00	0.62	19.6	23	2	0.01		1022	0.1	8.7
26/04/2025 03:00	0.00	0.62	19.6	22	0	0.01		1021	0.0	8.6
26/04/2025 04:00	0.00	0.62	19.6	22	0	0.01		1021	0.0	8.5
26/04/2025 05:00	0.00	0.61	19.5	23	1	0.00		1022	0.0	8.5
26/04/2025 06:00	0.00	0.61	19.5	22	1	0.00		1022	0.0	8.8
26/04/2025 07:00	0.00	0.61	19.5	22	0	0.00		1022	0.0	9.4
26/04/2025 08:00	0.00	0.62	19.5	22	2	0.01		1022	0.0	10.5
26/04/2025 09:00	0.00	0.62	19.5	22	2	0.00		1023	0.1	12.2
26/04/2025 10:00	0.00	0.63	19.5	22	0	0.01		1022	0.0	14.1
26/04/2025 11:00	0.00	0.63	19.6	23	2	0.01		1022	0.1	15.2
26/04/2025 12:00	0.00	0.63	19.6	23	1	0.00		1022	0.1	15.9
26/04/2025 13:00	0.00	0.64	19.7	23	1	0.03		1023	0.1	16.3
26/04/2025 14:00	0.10	0.66	19.8	23	2	0.00		1023	0.1	16.8
26/04/2025 15:00	0.00	0.68	19.9	23	1	0.01		1023	0.1	17.1
26/04/2025 16:00	0.00	0.66	19.9	23	2	0.00		1022	0.0	17.4
26/04/2025 17:00	0.00	0.66	19.9	23	2	0.00		1023	0.0	17.2
26/04/2025 18:00	0.00	0.67	19.9	23	1	0.00		1023	0.1	16.6
26/04/2025 19:00	0.00	0.67	19.9	23	3	0.00		1024	0.3	14.1
26/04/2025 20:00	0.00	0.66	19.8	23	1	0.00		1024	0.3	13.2
26/04/2025 21:00	0.00	0.68	19.8	23	1	0.00		1025	0.3	13.1
26/04/2025 22:00	0.00	0.69	19.8	23	2	0.00		1025	0.3	12.5
26/04/2025 23:00	0.00	0.70	19.7	23	1	0.01		1025	0.3	11.1
27/04/2025 00:00	0.00	0.69	19.7	23	1	0.00		1025	0.4	9.7
27/04/2025 01:00	0.00	0.69	19.6	23	2	0.00		1025	0.3	8.7
27/04/2025 02:00	0.00	0.70	19.6	23	0	0.01		1025	0.3	8.2
27/04/2025 03:00	0.00	0.69	19.6	22	1	0.01		1025	0.1	7.9
27/04/2025 04:00	0.00	0.68	19.6	23	2	0.00		1025	0.1	7.6
27/04/2025 05:00	0.00	0.71	19.5	23	1	0.00		1025	0.0	7.2
27/04/2025 06:00	0.00	0.68	19.5	22	2	0.00		1026	0.1	8.4
27/04/2025 07:00	0.00	0.70	19.5	22	1	0.00		1026	0.1	10.4
27/04/2025 08:00	0.00	0.72	19.5	22	2	0.00		1026	0.1	12.8
27/04/2025 09:00	0.00	0.70	19.5	22	2	0.01		1026	0.1	15.0
27/04/2025 10:00	0.00	0.72	19.5	22	2	0.00		1026	0.1	16.7
27/04/2025 11:00	0.00	0.72	19.6	23	1	0.01		1026	0.1	18.0
27/04/2025 12:00	0.00	0.72	19.8	23	1	0.01		1026	0.1	18.1
27/04/2025 13:00	0.00	0.73	19.9	23	1	0.00		1026	0.1	19.5
27/04/2025 14:00	0.00	0.77	19.9	23	1	0.00		1026	0.0	19.6
27/04/2025 15:00	0.00	0.76	20.0	23	3	0.01		1026	0.0	19.7
27/04/2025 16:00	0.00	0.76	20.0	23	1	0.00		1026	0.0	19.5
27/04/2025 17:00	0.00	0.75	20.0	23	2	0.00		1026	0.0	19.1
27/04/2025 18:00	0.00	0.77	19.9	24	1	0.00		1026	0.0	18.5
27/04/2025 19:00	0.00	0.77	19.9	23	2	0.01		1026	0.0	16.4
27/04/2025 20:00	0.00	0.77	19.9	23	2	0.00		1027	0.1	14.8
27/04/2025 21:00	0.00	0.80	19.9	23	1	0.00		1027	0.1	13.7
27/04/2025 22:00	0.00	0.79	19.8	23	2	0.00		1027	0.1	12.6
27/04/2025 23:00	0.00	0.80	19.7	23	2	0.00		1027	0.1	11.7
28/04/2025 00:00	0.00	0.79	19.7	23	1	0.00		1027	0.1	10.5
28/04/2025 01:00	0.00	0.81	19.6	22	2	0.00		1027	0.1	9.4
28/04/2025 02:00	0.00	0.80	19.6	22	1	0.00		1027	0.1	8.5
28/04/2025 03:00	0.00	0.79	19.6	22	2	0.00		1027	0.1	7.8
28/04/2025 04:00	0.00	0.83	19.5	23	2	0.00		1027	0.0	7.2
28/04/2025 05:00	0.00	0.81	19.5	22	2	0.00		1027	0.0	6.7
28/04/2025 06:00	0.00	0.83	19.5	22	1	0.01		1027	0.0	8.2
28/04/2025 07:00	0.00	0.84	19.4	22	1	0.00		1027	0.0	10.9
28/04/2025 08:00	0.00	0.81	19.4	22	2	0.00		1027	0.0	14.0
28/04/2025 09:00	0.00	0.81	19.4	22	2	0.00		1028	0.1	16.7
28/04/2025 10:00	0.00	0.83	19.5	23	1	0.00		1027	0.0	18.3
28/04/2025 11:00	0.00	0.83	19.6	23	1	0.00		1027	0.0	19.5
28/04/2025 12:00	0.00	0.85	19.8	23	1	0.00		1027	0.0	20.3
28/04/2025 13:00	0.00	0.85	19.8	23	2	0.00		1027	0.0	21.4
28/04/2025 14:00	0.00	0.86	19.9	23	1	0.00		1026	-0.1	21.8
28/04/2025 15:00	0.00	0.87	20.0	24	2	0.00		1026	-0.1	22.0
28/04/2025 16:00	0.00	0.88	20.1	24	3	0.00		1025	-0.3	21.9
28/04/2025 17:00	0.10	0.87	20.1	24	1	0.00		1025	-0.4	21.8
28/04/2025 18:00	0.00	0.88	20.1	24	2	0.00		1025	-0.3	21.3
28/04/2025 19:00	0.00	0.89	20.1	24	4	0.00		1026	-0.1	19.6
28/04/2025 20:00	0.00	0.89	20.0	23	3	0.00		1026	-0.1	17.2
28/04/2025 21:00	0.00	0.88	19.9	24	2	0.00		1027	0.0	15.5

Date and Time	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	CO ppm/v	H ₂ S ppm/v	Flow Ltr/hr		Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Temperature °C
28/04/2025 22:00	0.00	0.92	19.9	23	2	0.00		1027	0.1	14.4
28/04/2025 23:00	0.00	0.92	19.8	23	2	0.00		1027	0.1	13.2
29/04/2025 00:00	0.00	0.95	19.7	23	2	0.00		1027	0.3	12.5
29/04/2025 01:00	0.00	0.95	19.7	23	1	0.00		1027	0.3	11.2
29/04/2025 02:00	0.00	0.94	19.7	23	1	0.00		1026	0.1	10.0
29/04/2025 03:00	0.00	0.93	19.6	23	1	0.00		1026	0.0	9.3
29/04/2025 04:00	0.00	0.93	19.6	23	1	0.00		1027	0.1	9.1
29/04/2025 05:00	0.00	0.95	19.5	22	2	0.00		1027	0.0	8.9
29/04/2025 06:00	0.00	0.97	19.5	22	2	0.00		1027	0.0	10.1
29/04/2025 07:00	0.00	0.95	19.5	23	1	0.00		1027	0.0	12.2
29/04/2025 08:00	0.00	0.95	19.5	22	1	0.01		1027	0.0	14.5
29/04/2025 09:00	0.00	0.96	19.5	22	1	0.00		1027	0.0	17.1
29/04/2025 10:00	0.00	0.96	19.5	23	0	0.00		1026	0.0	19.4
29/04/2025 11:00	0.00	0.97	19.6	23	2	0.01		1026	0.0	21.0
29/04/2025 12:00	0.00	0.96	19.7	23	1	0.00		1026	-0.1	22.1
29/04/2025 13:00	0.00	0.97	19.8	23	1	0.00		1025	-0.3	23.6
29/04/2025 14:00	0.00	1.00	19.9	23	2	0.00		1025	-0.3	24.0
29/04/2025 15:00	0.00	0.97	20.0	24	2	0.01		1024	-0.4	23.9
29/04/2025 16:00	0.00	1.02	20.0	24	3	0.01		1023	-0.5	23.7
29/04/2025 17:00	0.00	1.01	20.1	24	2	0.02		1023	-0.5	23.2
29/04/2025 18:00	0.00	1.03	20.1	24	2	0.01		1023	-0.4	22.2
29/04/2025 19:00	0.00	1.03	20.0	22	3	0.01		1024	-0.3	20.5
29/04/2025 20:00	0.00	1.04	20.0	23	1	0.00		1024	-0.3	18.5
29/04/2025 21:00	0.00	1.04	19.9	24	1	0.00		1025	0.0	16.8
29/04/2025 22:00	0.00	1.05	19.8	24	0	0.00		1025	0.0	15.5
29/04/2025 23:00	0.00	1.06	19.8	23	2	0.00		1025	0.1	14.3
30/04/2025 00:00	0.00	1.06	19.7	24	1	0.00		1025	0.3	13.1
30/04/2025 01:00	0.00	1.11	19.7	23	1	0.00		1024	0.1	11.4
30/04/2025 02:00	0.00	1.08	19.6	23	1	0.00		1024	0.1	10.4
30/04/2025 03:00	0.00	1.09	19.6	22	1	0.00		1024	0.0	9.6
30/04/2025 04:00	0.00	1.06	19.5	23	1	0.00		1024	0.0	8.9
30/04/2025 05:00	0.00	1.06	19.5	22	2	0.00		1024	-0.1	8.4
30/04/2025 06:00	0.00	1.10	19.5	22	1	0.00		1024	-0.1	9.8
30/04/2025 07:00	0.00	1.10	19.5	23	2	0.00		1024	-0.1	11.9
30/04/2025 08:00	0.00	1.07	19.4	22	1	0.00		1024	-0.1	14.6
30/04/2025 09:00	0.00	1.10	19.4	22	1	0.00		1023	-0.1	17.6
30/04/2025 10:00	0.00	1.09	19.5	23	0	0.00		1023	-0.1	20.6
30/04/2025 11:00	0.00	1.11	19.6	23	1	0.01		1023	-0.1	22.7
30/04/2025 12:00	0.00	1.12	19.7	23	1	0.01		1023	-0.1	23.8
30/04/2025 13:00	0.00	1.12	19.8	23	1	0.00		1022	-0.3	25.4
30/04/2025 14:00	0.00	1.16	19.9	24	2	0.00		1021	-0.4	25.9
30/04/2025 15:00	0.00	1.13	20.0	24	1	0.01		1020	-0.5	26.2
30/04/2025 16:00	0.00	1.16	20.0	25	2	0.00		1020	-0.5	26.1
30/04/2025 17:00	0.00	1.18	20.1	25	2	0.00		1020	-0.4	25.8
30/04/2025 18:00	0.00	1.17	20.1	23	2	0.00		1020	-0.4	25.0
30/04/2025 19:00	0.00	1.14	20.1	26	2	0.01		1020	-0.4	23.0
30/04/2025 20:00	0.00	1.20	20.0	22	1	0.00		1020	-0.4	20.2
30/04/2025 21:00	0.00	1.19	19.9	24	3	0.00		1020	-0.3	18.6
30/04/2025 22:00	0.00	1.19	19.9	24	1	0.00		1021	0.0	18.0
30/04/2025 23:00	0.00	1.20	19.8	23	1	0.00		1021	0.1	16.5
01/05/2025 00:00	0.00	1.22	19.8	24	2	0.00		1020	0.0	15.4
01/05/2025 01:00	0.00	1.24	19.7	23	1	0.00		1020	0.0	13.8
01/05/2025 02:00	0.00	1.24	19.7	23	1	0.00		1020	0.0	12.7
01/05/2025 03:00	0.00	1.22	19.6	23	1	0.00		1019	-0.1	11.9
01/05/2025 04:00	0.00	1.25	19.6	23	1	0.00		1019	-0.1	11.2
01/05/2025 05:00	0.00	1.22	19.5	23	1	0.00		1019	-0.1	11.0
01/05/2025 06:00	0.00	1.21	19.5	23	0	0.01		1019	-0.3	12.2
01/05/2025 07:00	0.00	1.26	19.5	23	1	0.00		1018	-0.4	14.6
01/05/2025 08:00	0.00	1.22	19.5	23	1	0.00		1018	-0.3	17.6
01/05/2025 09:00	0.00	1.21	19.5	23	2	0.00		1018	-0.3	20.6
01/05/2025 10:00	0.00	1.25	19.5	23	0	0.00		1018	-0.3	23.1
01/05/2025 11:00	0.00	1.25	19.6	23	0	0.00		1017	-0.3	25.5
01/05/2025 12:00	0.00	1.26	19.7	24	1	0.00		1016	-0.4	27.0
01/05/2025 13:00	0.00	1.26	19.9	24	1	0.00		1016	-0.4	27.7
01/05/2025 14:00	0.00	1.25	19.9	24	2	0.00		1015	-0.5	27.9
01/05/2025 15:00	0.00	1.26	20.0	25	2	0.00		1015	-0.4	27.4
01/05/2025 16:00	0.00	1.29	20.0	24	2	0.00		1015	-0.4	26.7
01/05/2025 17:00	0.00	1.29	20.0	24	2	0.00		1014	-0.5	26.3
01/05/2025 18:00	0.00	1.28	20.1	25	2	0.00		1014	-0.5	25.1
01/05/2025 19:00	0.00	1.30	20.0	24	1	0.00		1014	-0.4	23.4
01/05/2025 20:00	0.10	1.33	20.0	25	1	0.00		1015	-0.1	21.5
01/05/2025 21:00	0.00	1.33	19.9	25	0	0.00		1015	-0.1	19.3
01/05/2025 22:00	0.00	1.33	19.8	24	2	0.00		1015	0.0	17.7
01/05/2025 23:00	0.00	1.36	19.8	23	1	0.00		1015	0.0	16.8
02/05/2025 00:00	0.00	1.37	19.7	24	1	0.00		1015	0.0	16.0
02/05/2025 01:00	0.00	1.38	19.7	24	1	0.00		1015	0.1	15.0
02/05/2025 02:00	0.00	1.38	19.6	24	2	0.00		1015	0.1	14.8
02/05/2025 03:00	0.00	1.36	19.6	24	1	0.00		1015	0.1	14.4
02/05/2025 04:00	0.00	1.37	19.5	23	2	0.00		1015	0.0	13.8
02/05/2025 05:00	0.00	1.39	19.5	23	1	0.00		1015	0.0	12.8
02/05/2025 06:00	0.00	1.37	19.5	23	2	0.00		1016	0.1	13.2

Date and Time	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	CO ppm/v	H ₂ S ppm/v	Flow Ltr/hr		Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Temperature °C
02/05/2025 07:00	0.00	1.37	19.5	23	0	0.00		1016	0.1	14.7
02/05/2025 08:00	0.00	1.39	19.5	23	0	0.01		1016	0.1	16.9
02/05/2025 09:00	0.00	1.42	19.5	23	0	0.00		1016	0.1	19.1
02/05/2025 10:00	0.00	1.38	19.6	24	2	0.00		1016	0.1	20.9
02/05/2025 11:00	0.00	1.37	19.6	24	1	0.01		1016	0.1	22.1
02/05/2025 12:00	0.00	1.38	19.7	24	1	0.00		1016	0.1	23.3
02/05/2025 13:00	0.00	1.42	19.8	24	1	0.00		1015	0.0	23.9
02/05/2025 14:00	0.00	1.43	19.9	24	2	0.00		1015	-0.1	24.1
02/05/2025 15:00	0.00	1.43	19.9	25	0	0.01		1015	-0.1	24.0
02/05/2025 16:00	0.00	1.45	20.0	24	2	0.01		1015	-0.1	23.7
02/05/2025 17:00	0.00	1.47	20.0	25	3	0.02		1015	-0.1	23.5
02/05/2025 18:00	0.00	1.44	19.9	24	2	0.01		1014	-0.3	22.5
02/05/2025 19:00	0.00	1.49	19.9	24	2	0.01		1015	-0.1	21.3
02/05/2025 20:00	0.00	1.49	19.8	24	1	0.00		1015	-0.1	19.2
02/05/2025 21:00	0.00	1.50	19.8	26	0	0.00		1015	0.0	18.1
02/05/2025 22:00	0.00	1.50	19.7	24	2	0.00		1015	0.0	16.8
02/05/2025 23:00	0.00	1.51	19.7	24	1	0.00		1016	0.1	15.4
03/05/2025 00:00	0.00	1.53	19.7	24	2	0.00		1016	0.1	14.3
03/05/2025 01:00	0.00	1.53	19.6	24	2	0.00		1016	0.1	13.2
03/05/2025 02:00	0.00	1.52	19.6	24	0	0.00		1015	0.1	12.7
03/05/2025 03:00	0.00	1.52	19.5	24	1	0.00		1015	0.0	12.1
03/05/2025 04:00	0.00	1.54	19.5	24	1	0.00		1014	-0.1	11.5
03/05/2025 05:00	0.00	1.51	19.5	24	0	0.00		1014	-0.1	11.0
03/05/2025 06:00	0.00	1.55	19.5	24	1	0.00		1014	-0.1	11.8
03/05/2025 07:00	0.00	1.54	19.4	23	1	0.00		1014	-0.3	13.4
03/05/2025 08:00	0.00	1.53	19.4	23	2	0.00		1014	-0.3	15.1
03/05/2025 09:00	0.00	1.55	19.4	23	2	0.00		1014	-0.3	15.9
03/05/2025 10:00	0.00	1.54	19.5	24	1	0.00		1013	-0.3	17.1
03/05/2025 11:00	0.00	1.54	19.5	24	1	0.00		1013	-0.3	17.9
03/05/2025 12:00	0.00	1.55	19.6	24	2	0.00		1013	-0.1	18.7
03/05/2025 13:00	0.00	1.55	19.6	24	2	0.01		1013	-0.1	18.8
03/05/2025 14:00	0.00	1.58	19.7	24	2	0.00		1013	-0.1	20.4
03/05/2025 15:00	0.00	1.59	19.7	24	2	0.00		1013	-0.1	18.1
03/05/2025 16:00	0.00	1.59	19.8	24	2	0.00		1014	0.0	17.3
03/05/2025 17:00	0.00	1.62	19.8	24	3	0.00		1014	0.0	16.7
03/05/2025 18:00	0.00	1.57	19.8	23	4	0.00		1014	0.1	15.3
03/05/2025 19:00	0.00	1.59	19.7	23	2	0.00		1015	0.3	14.2
03/05/2025 20:00	0.00	1.61	19.7	24	1	0.00		1016	0.4	13.0
03/05/2025 21:00	0.00	1.68	19.6	24	0	0.00		1017	0.5	11.7
03/05/2025 22:00	0.00	1.69	19.6	24	2	0.00		1017	0.5	10.9
03/05/2025 23:00	0.00	1.67	19.5	24	2	0.00		1018	0.6	10.0
04/05/2025 00:00	0.00	1.67	19.5	23	2	0.00		1018	0.5	9.2
04/05/2025 01:00	0.00	1.65	19.4	23	1	0.00		1018	0.5	7.7
04/05/2025 02:00	0.00	1.66	19.4	23	1	0.00		1018	0.5	7.1
04/05/2025 03:00	0.00	1.71	19.4	23	1	0.00		1019	0.5	6.6
04/05/2025 04:00	0.00	1.65	19.3	23	2	0.00		1019	0.4	6.8
04/05/2025 05:00	0.00	1.72	19.3	23	1	0.00		1019	0.3	7.2
04/05/2025 06:00	0.00	1.68	19.3	23	0	0.00		1018	0.1	7.9
04/05/2025 07:00	0.00	1.65	19.3	23	1	0.00		1019	0.1	8.9
04/05/2025 08:00	0.00	1.63	19.3	23	2	0.00		1019	0.1	10.0
04/05/2025 09:00	0.00	1.67	19.3	23	1	0.00		1019	0.1	10.0
04/05/2025 10:00	0.00	1.65	19.3	23	0	0.00		1019	0.1	12.3
04/05/2025 11:00	0.00	1.66	19.4	23	1	0.00		1019	0.0	12.8
04/05/2025 12:00	0.00	1.67	19.4	23	1	0.00		1019	0.0	13.7
04/05/2025 13:00	0.00	1.71	19.5	23	1	0.00		1019	0.0	14.3
04/05/2025 14:00	0.00	1.70	19.6	23	1	0.00		1019	0.1	13.9
04/05/2025 15:00	0.00	1.72	19.6	23	1	0.01		1019	0.0	13.7
04/05/2025 16:00	0.00	1.74	19.6	24	1	0.00		1019	0.0	12.6
04/05/2025 17:00	0.00	1.72	19.6	23	1	0.00		1019	0.0	12.7
04/05/2025 18:00	0.00	1.72	19.6	24	2	0.01		1019	0.0	11.5
04/05/2025 19:00	0.00	1.72	19.6	24	1	0.00		1020	0.1	11.0
04/05/2025 20:00	0.00	1.75	19.5	23	2	0.00		1020	0.1	10.1
04/05/2025 21:00	0.00	1.74	19.5	23	2	0.00		1021	0.3	8.7
04/05/2025 22:00	0.00	1.74	19.5	23	3	0.01		1021	0.3	8.1
04/05/2025 23:00	0.00	1.73	19.4	23	1	0.01		1021	0.3	7.5
05/05/2025 00:00	0.00	1.71	19.4	23	2	0.02		1021	0.3	7.0
05/05/2025 01:00	0.00	1.74	19.4	23	1	0.01		1022	0.4	5.5
05/05/2025 02:00	0.00	1.71	19.3	23	2	0.01		1021	0.3	5.0
05/05/2025 03:00	0.00	1.70	19.3	23	1	0.00		1021	0.1	4.6
05/05/2025 04:00	0.10	1.68	19.3	22	0	0.00		1021	0.1	4.3
05/05/2025 05:00	0.00	1.70	19.3	23	0	0.00		1022	0.1	4.4
05/05/2025 06:00	0.00	1.67	19.3	23	1	0.00		1021	0.0	5.7
05/05/2025 07:00	0.00	1.71	19.2	22	0	0.00		1022	0.1	7.0
05/05/2025 08:00	0.00	1.71	19.2	22	0	0.00		1021	0.0	7.7
05/05/2025 09:00	0.10	1.68	19.3	22	0	0.00		1021	-0.1	9.2
05/05/2025 10:00	0.00	1.71	19.3	23	1	0.00		1021	0.0	11.5
05/05/2025 11:00	0.00	1.70	19.3	23	1	0.00		1021	0.0	12.4
05/05/2025 12:00	0.00	1.72	19.4	23	0	0.00		1021	0.0	13.5
05/05/2025 13:00	0.00	1.71	19.4	23	2	0.00		1022	0.0	13.2
05/05/2025 14:00	0.00	1.72	19.4	23	2	0.00		1022	0.1	13.1
05/05/2025 15:00	0.00	1.75	19.4	23	0	0.00		1022	0.0	13.4

Date and Time	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	CO ppm/v	H ₂ S ppm/v	Flow Ltr/hr		Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Temperature °C
05/05/2025 16:00	0.00	1.71	19.4	23	1	0.00		1022	0.1	13.4
05/05/2025 17:00	0.00	1.75	19.4	23	0	0.00		1022	0.1	13.5
05/05/2025 18:00	0.00	1.71	19.5	23	1	0.00		1022	0.1	12.7
05/05/2025 19:00	0.00	1.74	19.5	23	1	0.00		1023	0.3	11.9
05/05/2025 20:00	0.00	1.74	19.5	23	1	0.01		1024	0.4	11.1
05/05/2025 21:00	0.00	1.76	19.5	23	1	0.00		1025	0.4	10.3
05/05/2025 22:00	0.00	1.77	19.4	23	2	0.00		1025	0.4	9.4
05/05/2025 23:00	0.00	1.77	19.4	22	1	0.00		1025	0.4	9.3
06/05/2025 00:00	0.10	1.78	19.4	23	1	0.00		1025	0.4	8.6
06/05/2025 01:00	0.00	1.70	19.3	22	1	0.00		1025	0.4	6.7
06/05/2025 02:00	0.00	1.77	19.3	22	1	0.00		1025	0.4	5.9
06/05/2025 03:00	0.00	1.74	19.3	22	2	0.00		1025	0.3	5.3
06/05/2025 04:00	0.00	1.70	19.3	22	1	0.00		1025	0.1	5.5
06/05/2025 05:00	0.00	1.72	19.3	22	0	0.00		1025	0.0	5.6
06/05/2025 06:00	0.00	1.71	19.3	22	0	0.00		1025	0.0	6.7
06/05/2025 07:00	0.10	1.72	19.2	22	0	0.00		1026	0.1	8.1
06/05/2025 08:00	0.10	1.75	19.2	22	2	0.00		1026	0.1	9.7
06/05/2025 09:00	0.00	1.75	19.3	22	1	0.00		1026	0.1	10.2
06/05/2025 10:00	0.10	1.75	19.3	22	1	0.00		1026	0.1	10.4
06/05/2025 11:00	0.00	1.71	19.4	22	1	0.00		1026	0.1	11.2
06/05/2025 12:00	0.00	1.74	19.4	22	2	0.00		1025	0.0	12.5
06/05/2025 13:00	0.00	1.78	19.4	22	1	0.00		1025	0.0	14.0
06/05/2025 14:00	0.00	1.78	19.5	22	1	0.00		1024	-0.1	14.8
06/05/2025 15:00	0.00	1.79	19.5	23	2	0.00		1024	-0.3	15.3
06/05/2025 16:00	0.10	1.77	19.6	23	1	0.00		1024	-0.3	15.0
06/05/2025 17:00	0.00	1.83	19.7	23	1	0.00		1025	-0.1	14.3
06/05/2025 18:00	0.00	1.81	19.7	23	2	0.00		1025	-0.1	13.4
06/05/2025 19:00	0.00	1.82	19.7	23	0	0.00		1025	-0.1	12.6
06/05/2025 20:00	0.00	1.78	19.7	23	1	0.00		1025	0.0	11.7
06/05/2025 21:00	0.00	1.77	19.6	23	1	0.00		1026	0.1	11.0
06/05/2025 22:00	0.00	1.82	19.6	23	3	0.01		1025	0.1	9.8
06/05/2025 23:00	0.00	1.78	19.5	23	1	0.00		1025	0.1	9.0
07/05/2025 00:00	0.00	1.78	19.5	22	0	0.00		1025	0.1	8.2
07/05/2025 01:00	0.00	1.75	19.4	22	1	0.01		1025	0.0	7.1
07/05/2025 02:00	0.10	1.75	19.4	22	1	0.00		1025	0.0	6.6
07/05/2025 03:00	0.10	1.74	19.4	22	2	0.00		1025	0.0	5.9
07/05/2025 04:00	0.00	1.75	19.4	22	2	0.00		1025	0.0	5.4
07/05/2025 05:00	0.00	1.77	19.3	22	1	0.01		1025	-0.1	5.3
07/05/2025 06:00	0.10	1.75	19.3	22	0	0.01		1025	0.0	6.5
07/05/2025 07:00	0.10	1.70	19.3	22	2	0.02		1025	0.0	8.6
07/05/2025 08:00	0.10	1.75	19.3	22	1	0.01		1025	0.0	10.6
07/05/2025 09:00	0.00	1.72	19.3	22	0	0.01		1025	0.0	12.1
07/05/2025 10:00	0.10	1.79	19.4	22	1	0.00		1024	-0.1	13.8
07/05/2025 11:00	0.10	1.77	19.5	22	1	0.00		1024	-0.1	15.2
07/05/2025 12:00	0.10	1.79	19.6	22	1	0.00		1023	-0.3	15.7
07/05/2025 13:00	0.00	1.79	19.6	23	1	0.00		1023	-0.3	16.5
07/05/2025 14:00	0.10	1.83	19.7	23	1	0.00		1022	-0.4	17.3

GGs DataPack® Plus
GGs3988 Elgar Road South, Reading

Appendix E

Calibration Certificates

For: Ground & Water Ltd
Ref No.: GGS3988DP01
Date: 21/05/2025

CALIBRATION CERTIFICATE:



Certificate ref.	GSCAL00421
Issued By:	VA
Date:	09/07/2024
Staff No.	-
Instrument:	03000067

Calibration Results			
Sensor	Lot No.	Ref. value	Indicated value
Carbon monoxide	C24438	42	44.31
Hydrogen sulphide	C22238	124	124.40
Methane	C322626	59.04	60.09
Carbon dioxide High	C322626	40.96	38.47
Carbon dioxide Low	C322726	1.98	1.89
Carbon dioxide Low ppm	C24338	503	488.83
Isobutylene ppb	C322826	-	-
Oxygen	C24438	0	0

Comments:

Prior to calibration the sensors were allowed to stabilise in ambient air for 1 hour.

The Instrument was calibrated by exposing the sensors to known values of gas concentrations.

The reference values are those generated by the certified source and indicated values are those measured by the Gas Sentinel.

Uncertainty is based on a standard uncertainty multiplied by a coverage factor of $k=2$

This provides a level of confidence of uncertainty of approximately 95%

Ambient conditions	
Temperature	21.45
Relative Humidity	64.2

CALIBRATION CERTIFICATE:



Certificate ref.	GSC6020250402
Issued By:	Thomas Fairey
Date:	02/04/2025
Staff No.	-
Instrument:	03000060

Calibration Results			
Sensor	Lot No.	Ref. value	Indicated value
Carbon monoxide	C24438	42	40.18
Hydrogen sulphide	C22238	124	115.52
Methane	C322626	59.33	59.96
Carbon dioxide High	C322626	40.67	41.44
Carbon dioxide Low	C322726	1.98	1.99
Carbon dioxide Low ppm	C24338	511	473.21
Isobutylene ppb	C322826	-	-
Oxygen	C24438	0	-0.06

Comments:

Prior to calibration the sensors were allowed to stabilise in ambient air for 1 hour.

The Instrument was calibrated by exposing the sensors to known values of gas concentrations.

The reference values are those generated by the certified source and indicated values are those measured by the Gas Sentinel.

Uncertainty is based on a standard uncertainty multiplied by a coverage factor of $k=2$

This provides a level of confidence of uncertainty of approximately 95%

Ambient conditions	
Temperature	19.6
Relative Humidity	37.0

TEST DATE AND CONDITIONS			
Date		12/11/2024	
Atmospheric Pressure		1020	mB
Ambient Temperature		21.5	°C
EnviroNics Serial No.		5089	

**GFM430 Final Inspection & Calibration
Check Certificate**

GAS DATA LTD

Unit D

Earlplace Business Park

Fletchamstead Highway

Coventry

CV4 9XL

Tel 02476303311

Fax 02476307711



GAS DATA
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Customer	Ground Gas Solutions Ltd
Certificate Number	125679
Order Number	340216

Serial Number	10356
Software Version	G430-00.0024/0013

Recalibration DUE Date
12/11/25

Instrument Checks					
Keyboard	✓		Display Contrast	✓	
Pump Flow In	450	Accept > 200 cc/min	Pump Flow @ -200mB	250	Accept > 200 cc/min
Clock Set / Running	✓		Labels Fitted	✓	

Gas Checks						
Sensor	CH ₄		CO ₂		O ₂	
	Instrument Gas	True Gas Value %	Instrument Gas	True Gas Value %	Instrument Gas	True Gas Value %
	Readings %		Readings %		Readings %	
	60.7	60	39.9	40	20.9	20.9
	Accept ±3.0		Accept ±3.0		Accept ±0.5	
	5.0	5	5.0	5	6.0	6
	Accept ±0.3		Accept ±0.3		Accept ±0.3	
Zero Reading 100% N2	0.0	0	0.0	0	0.0	0
	Accept ±0.0		Accept ±0.0		Accept ±0.1	

Optional Gas Checks						
Applied Gas & Range		Concentration Tested @ (ppm)	Instrument Readings (ppm)			
Toxic Gas	Range (ppm)		Zero Reading		Instrument Gas Reading	
H2S	2000	1500	0	Accept ±0.0	1502	Accept ±5.0%
CO	2000	1000	0	Accept ±0.0	1001	Accept ±5.0%

Cross Gas Effects									
Applied Gas (ppm)		Instrument Readings (ppm)							
Toxic Gas	Concentration	Toxic 1:	H2S	Toxic 2:	CO	Toxic 3:			
H2S	1500	1500		0					
CO	1000	61		1001					
Pressure Checks									
Atmospheric Pressure [AP] (mB)					Static Pressure [SP] (mB)				
Current Atmospheric		Instrument Atmospheric			Applied Pressure (mB)		Instrument Pressure (mB)		
Pressure (mB)		Pressure Reading (mB)							
All Ports		Open Ports		1020	Accept ±2.0	0.0mB		N/A	Accept ±0.0
AP Port (Internal)		+800 mB		800	Accept ±5.0	+50mB		N/A	Accept ±2.0
AP Port (Internal)		+1200mb		1200	Accept ±5.0	-100mB		N/A	Accept ±2.0
Flow Checks									
Borehole Flow				Differential Pressure					
Applied Reading (l/h)		Instrument Reading (l/h)		Applied Pressure (Pa)		Instrument Reading (Pa)			
-30	-30.4	Accept ±3.0		-278	-285	Accept ±50			
-3	-3.0	Accept ±1.0		-13	-13	Accept ±6.0			
0	0.0	Accept ±0.0		0	0	Accept ±0.5			
3	3.0	Accept ±0.5		14	13	Accept ±3.0			
30	30.4	Accept ±3.0		301	305	Accept ±50			
60	60.6	Accept ±6.0		915	921	Accept ±130			
90	91.3	Accept ±9.0		1809	1870	Accept ±250			
	Temperature Checks								
	Calibration Temperature			Instrument Temperature Reading °C					
	Applied Temperature °C								
	-10			-10.0	Accept ±2.0				
	0			0.0	Accept ±1.0				
	30			30.0	Accept ±1.0				
	60			60.0	Accept ±1.0				
	100			100.0	Accept ±1.0				

Technician:
Jack Rutland

Date Tested:
12/11/2024

The instrument identified by the serial number stated above has been tested by Gas Data personnel for calibration accuracy on the date and under the ambient conditions stated. Gas Data Ltd internal BS EN ISO9001:2015, BS EN ISO14001:2015, BS EN ISO45001:2018 compliant workshop procedures were followed to apply known calibration test gases, gas flow rates, pressures and temperatures of the values stated. The results displayed on the instrument at each stage are recorded above.

Gas Data Ltd is certified to BS EN ISO9001:2015, BS EN ISO14001:2015, BS EN ISO45001:2018.

TEST DATE AND CONDITIONS			
Date	12.11.24		
Atmospheric Pressure	1020	mB	
Ambient Temperature	21.5	°C	
EnviroNics Serial No.	5089		

GAS DATA LTD Unit D Earlplace Business Park Fletchamstead Highway Coventry CV4 9XL UK +44 (0) 24 7630 3311	 GAS DATA LISTEN · ANALYSE · INFORM
---	--

GFM430 -1 OUTWARD INSPECTION & QUALITY CHECK SHEET

INSTRUMENT DETAILS			
SO Number	Instrument Type	Instrument Serial Number + SW Version	Job Number(s)
340216	GFM430	10356 G430-24/13	125679

Calibration Technician *[Signature]*

Date 12.11.24

Inspection Technician *[Signature]*

Date 13.11.24

INSTRUMENT CHECKS		Pass (P), Fail (F) or not applicable (NA)	INSTRUMENT PACKING LIST		Tick if included	
Function Tests	Dust Caps Fitted	P	Instrument		✓	
	Keyboard Test (All Keys)	P	Leather Case		✓	
	Backlight	P	Instrument Strap		✓	
	Clock Set / Running	P	AC Battery Charger (UK)		✓	
	Comms Test	P	AC Battery Charger (EURO)		X	
	Pump Flow Test (In & Out)	P	AC Battery Charger (US)		X	
	Overall Leak Test (30mB)	n/a	AC Battery Charger (AUS)		X	
	Battery Charge Test	P	Hard Carry Case		✓	
Channel Test	Service Date set to?	12.11.25	Gas Sample Tube – (new issue)		✓	
	Data Logging Enabled?	P	Flow Sample Tube – (new issue)		✓	
	Verify CH4/LEL	P	Spares Pot		✓	
	Verify CO2	P	Allen Key		X	
	Verify O2	P	Temperature Probe		X	
	Verify LEL	P	Vane Anemometer		X	
	Verify 1 st Option Gas	H2S	USB Cable		X	
	Verify 2 nd Option Gas	CO	USB Memory stick		X	
	Verify 3 rd Option Gas	N/A	SiteMan Software	Ver 4.15	X	
	Verify 4 th Option Gas	N/A	Internal Filter Pack	Qty	X	
	Verify Atmospheric pressure	P	External Filter Pack	Qty	X	
	Verify static pressure	N/A	Field Guide		X	
	Verify differential pressure	P	Operation Manual (hard copy)		X	
	Verify flow	P	Extra Items: <i>Sample Tube</i>			
	Verify temperature probe input	P				
	Verify vane anemometer input	P				
	DataBase Checks	Jobcard(s) completed and signed	P	Comments:		
		Jobcard(s) booked off database	P			
Calibration certificate completed		P				
Complete & print QI record		n/a				
Label Checks	No. of Calibration label fitted	GDC 13607				
	Warranty label fitted	P				
H2S Range	H2S Range from Sales Order	2000 ppm				
	H2S Range from Cal Cert	2000 ppm				
	Over-range value correct?	P				
QA Cylinders Used	No. of High Range CH4/CO2	57487				
	No. of Low Range CH4/CO2/O2	56840				
	No. of H2S	6037292				
	No. of CO	56836				
	No. of Optional Cylinder	N/A				
	No. of Optional Cylinder	N/A				

Appendix F

Gas Sentinel® Instrumentation Overview & Deployment Information

GGG Gas Sentinel® Instrumentation Overview & Deployment Information



Introduction

GGG Gas Sentinel® is a transportable, continuous, multi-gas analyser; with 2-way telemetry capability. It is easy to use for both short term and long term monitoring of landfill, contaminated land and existing buildings. Versatile remote data acquisition through an intuitive dashboard provides cost effective regulatory compliance. The equipment is designed to be ATEX* and IP68* rated and can operate safely in explosive atmospheres and survive flooding environments (*awaiting certification).

GGG Gas Sentinel® devices can be configured to carry an extended range of gas sensors but is normally available to monitor methane, carbon dioxide, oxygen, TVOC, hydrogen sulphide and carbon monoxide. Sensors for both full range and high resolution 0-5% methane and 0-2,000ppm carbon dioxide are available. The device also records atmospheric pressure, borehole pressure and temperature and borehole gas flow as standard.

GGG can also provide high frequency water level logging in conjunction with Gas Sentinel deployments

Gas Sentinel® Sensor Specifications, Service and Maintenance

The GGS instruments are serviced and calibrated annually. Routine maintenance including the replacement of filters and operational checks are carried out at regular intervals and prior to deployment at a site. Copies of the calibration certificates for the instruments used on site are included as standard within reporting. Details of the sensor specification are provided below:

Sensor	Method / Type	Range	Resolution & Tolerance
Methane (0-100%)	Infrared	0 - 100%v/v	0.1% v/v 2%FSD or $\pm 10\%$ of reading whichever is the greatest
Methane (0-5%) High Resolution	Infrared	0-5%v/v	0.01% v/v or 2%FSD or $\pm 10\%$ of reading whichever is the greatest
Carbon Dioxide (0-100%)	Infrared	0 - 100%v/v	0.1% v/v or 2%FSD or $\pm 10\%$ of reading whichever is the greatest
Carbon Dioxide (0-2,000ppm) High Resolution	Infrared	0-2,000ppmv	10ppm or 2%FSD or $\pm 10\%$ of reading whichever is the greatest
Oxygen	Electrochemical	0 - 25%v/v	0.1% v/v or $\pm 10\%$ of reading whichever is the greatest
Hydrogen Sulphide	Electrochemical	0 - 100ppmv	1ppm ± 4 ppm or $\pm 10\%$ of reading whichever is the greatest
Carbon Monoxide	Electrochemical	0 – 1,000ppmv	1ppm ± 6 ppm or $\pm 10\%$ of reading whichever is the greatest
Total Volatile Organic Compounds	PID	0 – 4,000ppmv	1ppm ± 10 ppm or $\pm 10\%$ of reading whichever is the greatest
Atmospheric Pressure	Piezoelectric	800 – 1,200mb	± 1 mbar
Borehole Pressure	Piezoelectric	800 – 1,200mb	± 1 mbar
Temperature	Internal chip	-5°C to +50°C	0.1°C ± 0.5 °C of reading
Humidity	Capacitive Internal chip	0-100%RH	1%RH ± 1.8 %RH
Gas Flow	Thermal sensor	0–60 Ltr/hr	0.1ltr/hr ± 0.1 ltr/hr or 10% of reading whichever is the greatest

The GGS Gas Sentinel® is powered by re-chargeable batteries that can provide 4 weeks to several months depending on how many sensors are switched on and the frequency of monitoring. Please discuss your requirements with GGS for the optimum configuration for your site.

Deployment Requirements (IMPORTANT)

The GGS Gas Sentinel® is designed for deployment with standard 50mm installation standpipes but can be used with both larger and smaller diameter standpipes. Secure headworks with sufficient clearance are required for the Gas Sentinel®. GGS recommends a 10 inch diameter flush fit. A minimum 250 mm clearance is required from the top of the 50mm standpipe to the underside of the cover. GGS recommends a minimum distance of 0.25m between the top of the standpipe and standing water level to allow gas sampling. The device is also easily fitted to either inside or to the outside of buildings. Other bespoke deployment options are available. Please contact GGS to discuss options.

Gas Sentinel® Insurance

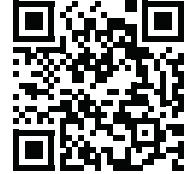
GGG can provide insurance to cover instruments against theft from site or acts of vandalism.

APPENDIX J: Waste Hazard Assessment

Waste Classification Report

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

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



LID1M-3KHLY-M6RQW

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

Report is invalid if pages are removed.

Job name

GWPR6540

Description/Comments

Project

GWPR6540

Site

220 Elgar Road South, Reading, RG2 0BW

Classified by

Name: **Natasha Kearl**
Date: **14 May 2025 10:41 GMT**
Telephone: **01420 463047**
Company: **Ground and Water**
2 The Long Barn, Norton Farm, Selborne
Road
Alton
GU34 3NB

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

HazWasteOnline™ Certification:

Course
Hazardous Waste Classification

Date

Purpose of classification

2 - Material Characterisation

Address of the waste

220 Elgar Road South, Reading, RG2 0BW

Post Code RG2 0BW

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Redevelopment of disused building to residential

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

Waste created during foundation excavations and remediation

Description of the waste

MADE GROUND: Dark brown and black gravelly fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse, brick, ash, chalk and concrete.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	BH1--03042025-0.20		Non Hazardous		3
2	BH1--03042025-0.80		Non Hazardous		6
3	BH2--04042025-0.50		Non Hazardous		8
4	WS3--07042025-0.20		Non Hazardous		10
5	WS1--07042025-0.20		Non Hazardous		13
6	WS4A--07042025-0.20		Non Hazardous		15

Related documents

#	Name	Description
1	25-018315_HWOL.hwol	i2 Analytical .hwol file used to populate the Job

Report

Created by: Natasha Kearl

Created date: 14 May 2025 10:41 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	18
Appendix B: Rationale for selection of metal species	19
Appendix C: Version	20

Classification of sample: BH1--03042025-0.20

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

Sample details

Sample name:	LoW Code:
BH1--03042025-0.20	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
11%	Entry:
(wet weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	benzene				<5 µg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
2	ethylbenzene				<5 µg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
3	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 µg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
4	xylene				<5 µg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
5	toluene				<5 µg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
6	monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
			P1186								
7	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
8	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
9	boron { boron tribromide }				1.7 mg/kg	23.173	35.061 mg/kg	0.00351 %		✓	
	005-003-00-0	233-657-9	10294-33-4								
10	arsenic { arsenic }				11 mg/kg		9.79 mg/kg	0.000979 %		✓	
	033-001-00-X	231-148-6	7440-38-2								
11	cadmium { cadmium sulfide }			1	0.3 mg/kg	1.285	0.343 mg/kg	0.0000267 %		✓	
	048-010-00-4	215-147-8	1306-23-6								
12	copper { dicopper oxide; copper (I) oxide }				20 mg/kg	1.126	20.041 mg/kg	0.002 %		✓	
	029-002-00-X	215-270-7	1317-39-1								
13	mercury { mercury }				0.7 mg/kg		0.623 mg/kg	0.0000623 %		✓	
	080-001-00-0	231-106-7	7439-97-6								
14	nickel { nickel dihydroxide }				15 mg/kg	1.579	21.086 mg/kg	0.00211 %		✓	
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
15	lead { lead chromate }			1	27	mg/kg	1.56	37.482	mg/kg	0.0024 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
16	selenium { selenium }				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	034-001-00-2	231-957-4	7782-49-2									
17	vanadium { divanadium pentaoxide; vanadium pentoxide }				38	mg/kg	1.785	60.375	mg/kg	0.00604 %	✓	
	023-001-00-8	215-239-8	1314-62-1									
18	zinc { zinc sulphate }				57	mg/kg	2.469	125.267	mg/kg	0.0125 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
19	polychlorobiphenyls; PCB				0.021	mg/kg		0.0187	mg/kg	0.00000187 %	✓	
	602-039-00-4	215-648-1	1336-36-3									
20	pH				9.1	pH		9.1	pH	9.1 pH		
			PH									
21	acenaphthylene				0.15	mg/kg		0.134	mg/kg	0.0000134 %	✓	
		205-917-1	208-96-8									
22	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9									
23	anthracene				0.36	mg/kg		0.32	mg/kg	0.000032 %	✓	
		204-371-1	120-12-7									
24	benzo[a]anthracene				0.42	mg/kg		0.374	mg/kg	0.0000374 %	✓	
	601-033-00-9	200-280-6	56-55-3									
25	benzo[a]pyrene; benzo[def]chrysene				1.9	mg/kg		1.691	mg/kg	0.000169 %	✓	
	601-032-00-3	200-028-5	50-32-8									
26	benzo[k]fluoranthene				0.16	mg/kg		0.142	mg/kg	0.0000142 %	✓	
	601-036-00-5	205-916-6	207-08-9									
27	benzo[ghi]perylene				14	mg/kg		12.46	mg/kg	0.00125 %	✓	
		205-883-8	191-24-2									
28	chrysene				0.44	mg/kg		0.392	mg/kg	0.0000392 %	✓	
	601-048-00-0	205-923-4	218-01-9									
29	coronene				8.8	mg/kg		7.832	mg/kg	0.000783 %	✓	
		205-881-7	191-07-1									
30	dibenz[a,h]anthracene				2.6	mg/kg		2.314	mg/kg	0.000231 %	✓	
	601-041-00-2	200-181-8	53-70-3									
31	fluoranthene				0.73	mg/kg		0.65	mg/kg	0.000065 %	✓	
		205-912-4	206-44-0									
32	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7									
33	indeno[123-cd]pyrene				11	mg/kg		9.79	mg/kg	0.000979 %	✓	
		205-893-2	193-39-5									
34	naphthalene				0.05	mg/kg		0.0445	mg/kg	0.00000445 %	✓	
	601-052-00-2	202-049-5	91-20-3									
35	phenanthrene				0.22	mg/kg		0.196	mg/kg	0.0000196 %	✓	
		201-581-5	85-01-8									
36	pyrene				0.74	mg/kg		0.659	mg/kg	0.0000659 %	✓	
		204-927-3	129-00-0									
37	benzo[b]fluoranthene				0.93	mg/kg		0.828	mg/kg	0.0000828 %	✓	
	601-034-00-4	205-911-9	205-99-2									
38	TPH (C6 to C40) petroleum group				840	mg/kg		747.6	mg/kg	0.0748 %	✓	
			TPH									
39	chromium in chromium(III) compounds { chromium(III) oxide }				27	mg/kg	1.462	39.462	mg/kg	0.00395 %		
		215-160-9	1308-38-9									
Total:										0.112 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 1000 mg/kg (0.1%) because: Most likely worst case.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0748%)

Classification of sample: BH1--03042025-0.80

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

Sample details

Sample name:	LoW Code:	
BH1--03042025-0.80	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
12% (wet weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 12% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	monohydric phenols		P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
3	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
4	boron { boron tribromide }				2.7 mg/kg	23.173	55.059 mg/kg	0.00551 %	✓	
	005-003-00-0	233-657-9	10294-33-4							
5	arsenic { arsenic }				7.7 mg/kg		6.776 mg/kg	0.000678 %	✓	
	033-001-00-X	231-148-6	7440-38-2							
6	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6							
7	copper { dicopper oxide; copper (I) oxide }				13 mg/kg	1.126	12.88 mg/kg	0.00129 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	mercury { mercury }				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	080-001-00-0	231-106-7	7439-97-6							
9	nickel { nickel dihydroxide }				15 mg/kg	1.579	20.849 mg/kg	0.00208 %	✓	
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
10	lead { lead chromate }			1	20 mg/kg	1.56	27.453 mg/kg	0.00176 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
11	selenium { selenium }				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	034-001-00-2	231-957-4	7782-49-2							
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				28 mg/kg	1.785	43.987 mg/kg	0.0044 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
13	zinc { zinc sulphate }				39 mg/kg	2.469	84.746 mg/kg	0.00847 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							
14	pH		PH		8.6 pH		8.6 pH	8.6 pH		

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
15	acenaphthylene	205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
16	acenaphthene	201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
17	anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
18	benzo[a]anthracene	200-033-00-9	200-280-6		0.1 mg/kg		0.088 mg/kg	0.0000088 %		✓	
19	benzo[a]pyrene; benzo[def]chrysene	200-032-00-3	200-028-5		0.11 mg/kg		0.0968 mg/kg	0.00000968 %		✓	
20	benzo[k]fluoranthene	205-036-00-5	205-916-6		0.07 mg/kg		0.0616 mg/kg	0.00000616 %		✓	
21	benzo[ghi]perylene	205-883-8	191-24-2		0.09 mg/kg		0.0792 mg/kg	0.00000792 %		✓	
22	chrysene	205-048-00-0	205-923-4		0.12 mg/kg		0.106 mg/kg	0.0000106 %		✓	
23	dibenz[a,h]anthracene	200-041-00-2	200-181-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
24	fluoranthene	205-912-4	206-44-0		0.22 mg/kg		0.194 mg/kg	0.0000194 %		✓	
25	fluorene	201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		0.07 mg/kg		0.0616 mg/kg	0.00000616 %		✓	
27	naphthalene	202-052-00-2	202-049-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
28	phenanthrene	201-581-5	85-01-8		0.15 mg/kg		0.132 mg/kg	0.0000132 %		✓	
29	pyrene	204-927-3	129-00-0		0.19 mg/kg		0.167 mg/kg	0.0000167 %		✓	
30	benzo[b]fluoranthene	205-034-00-4	205-911-9		0.13 mg/kg		0.114 mg/kg	0.0000114 %		✓	
31	chromium in chromium(III) compounds { chromium(III) oxide }	215-160-9	1308-38-9		18 mg/kg	1.462	26.308 mg/kg	0.00263 %			
Total:									0.0269 %		

Key

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

Classification of sample: BH2--04042025-0.50

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

Sample details

Sample name:	LoW Code:
BH2--04042025-0.50	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
13%	Entry:
(wet weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 13% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	monohydric phenols		P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
3	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
4	boron { boron tribromide }				3.2 mg/kg	23.173	64.514 mg/kg	0.00645 %	✓	
	005-003-00-0	233-657-9	10294-33-4							
5	arsenic { arsenic }				11 mg/kg		9.57 mg/kg	0.000957 %	✓	
	033-001-00-X	231-148-6	7440-38-2							
6	cadmium { cadmium sulfide }			1	0.4 mg/kg	1.285	0.447 mg/kg	0.0000348 %	✓	
	048-010-00-4	215-147-8	1306-23-6							
7	copper { dicopper oxide; copper (I) oxide }				61 mg/kg	1.126	59.751 mg/kg	0.00598 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	mercury { mercury }				0.6 mg/kg		0.522 mg/kg	0.0000522 %	✓	
	080-001-00-0	231-106-7	7439-97-6							
9	nickel { nickel dihydroxide }				25 mg/kg	1.579	34.354 mg/kg	0.00344 %	✓	
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
10	lead { lead chromate }			1	82 mg/kg	1.56	111.277 mg/kg	0.00713 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
11	selenium { selenium }				1.3 mg/kg		1.131 mg/kg	0.000113 %	✓	
	034-001-00-2	231-957-4	7782-49-2							
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				41 mg/kg	1.785	63.678 mg/kg	0.00637 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
13	zinc { zinc sulphate }				200 mg/kg	2.469	429.658 mg/kg	0.043 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							
14	pH		PH		8.4 pH		8.4 pH	8.4 pH		

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	acenaphthylene	205-917-1	208-96-8		2.1 mg/kg		1.827 mg/kg	0.000183 %	✓	
16	acenaphthene	201-469-6	83-32-9		0.19 mg/kg		0.165 mg/kg	0.0000165 %	✓	
17	anthracene	204-371-1	120-12-7		1.7 mg/kg		1.479 mg/kg	0.000148 %	✓	
18	benzo[a]anthracene	200-033-00-9	200-280-6		9.4 mg/kg		8.178 mg/kg	0.000818 %	✓	
19	benzo[a]pyrene; benzo[def]chrysene	200-032-00-3	200-028-5		12 mg/kg		10.44 mg/kg	0.00104 %	✓	
20	benzo[k]fluoranthene	205-036-00-5	205-916-6		6.8 mg/kg		5.916 mg/kg	0.000592 %	✓	
21	benzo[ghi]perylene	205-883-8	191-24-2		6.9 mg/kg		6.003 mg/kg	0.0006 %	✓	
22	chrysene	205-048-00-0	205-923-4		11 mg/kg		9.57 mg/kg	0.000957 %	✓	
23	dibenz[a,h]anthracene	200-041-00-2	200-181-8		1.6 mg/kg		1.392 mg/kg	0.000139 %	✓	
24	fluoranthene	205-912-4	206-44-0		16 mg/kg		13.92 mg/kg	0.00139 %	✓	
25	fluorene	201-695-5	86-73-7		0.31 mg/kg		0.27 mg/kg	0.000027 %	✓	
26	indeno[123-cd]pyrene	205-893-2	193-39-5		6.1 mg/kg		5.307 mg/kg	0.000531 %	✓	
27	naphthalene	202-052-00-2	202-049-5		0.33 mg/kg		0.287 mg/kg	0.0000287 %	✓	
28	phenanthrene	201-581-5	85-01-8		4.5 mg/kg		3.915 mg/kg	0.000392 %	✓	
29	pyrene	204-927-3	129-00-0		14 mg/kg		12.18 mg/kg	0.00122 %	✓	
30	benzo[b]fluoranthene	205-034-00-4	205-911-9		14 mg/kg		12.18 mg/kg	0.00122 %	✓	
31	chromium in chromium(III) compounds { chromium(III) oxide }	215-160-9	1308-38-9		20 mg/kg	1.462	29.231 mg/kg	0.00292 %		
Total:								0.0857 %		

Key

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

Classification of sample: **WS3--07042025-0.20**

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

Sample details

Sample name:	LoW Code:	
WS3--07042025-0.20	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
6.8% (wet weight correction)		

Hazard properties

None identified

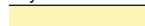
Determinands

Moisture content: 6.8% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	benzene				<5 µg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
2	ethylbenzene				<5 µg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
3	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 µg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
4	xylene				<5 µg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
5	toluene				<5 µg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
6	monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
			P1186							
7	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
8	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
9	boron { boron tribromide }				0.8 mg/kg	23.173	17.278 mg/kg	0.00173 %	✓	
	005-003-00-0	233-657-9	10294-33-4							
10	arsenic { arsenic }				4.5 mg/kg		4.194 mg/kg	0.000419 %	✓	
	033-001-00-X	231-148-6	7440-38-2							
11	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6							
12	copper { dicopper oxide; copper (I) oxide }				12 mg/kg	1.126	12.592 mg/kg	0.00126 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
13	mercury { mercury }				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	080-001-00-0	231-106-7	7439-97-6							
14	nickel { nickel dihydroxide }				9.3 mg/kg	1.579	13.69 mg/kg	0.00137 %	✓	
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
15	 lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	21	mg/kg	1.56	30.529	mg/kg	0.00196 %	✓
16	 selenium { selenium }	034-001-00-2	231-957-4	7782-49-2		<1	mg/kg		<1	mg/kg	<0.0001 %	<LOD
17	 vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		14	mg/kg	1.785	23.293	mg/kg	0.00233 %	✓
18	 zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		48	mg/kg	2.469	110.466	mg/kg	0.011 %	✓
19	pH		PH			8.7	pH		8.7	pH	8.7 pH	
20	 acenaphthylene		205-917-1	208-96-8		0.06	mg/kg		0.0559	mg/kg	0.00000559 %	✓
21	 acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %	<LOD
22	 anthracene		204-371-1	120-12-7		0.06	mg/kg		0.0559	mg/kg	0.00000559 %	✓
23	 benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.4	mg/kg		0.373	mg/kg	0.0000373 %	✓
24	 benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.48	mg/kg		0.447	mg/kg	0.0000447 %	✓
25	 benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.31	mg/kg		0.289	mg/kg	0.0000289 %	✓
26	 benzo[ghi]perylene		205-883-8	191-24-2		0.4	mg/kg		0.373	mg/kg	0.0000373 %	✓
27	 chrysene	601-048-00-0	205-923-4	218-01-9		0.49	mg/kg		0.457	mg/kg	0.0000457 %	✓
28	 dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.06	mg/kg		0.0559	mg/kg	0.00000559 %	✓
29	 fluoranthene		205-912-4	206-44-0		0.76	mg/kg		0.708	mg/kg	0.0000708 %	✓
30	 fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %	<LOD
31	 indeno[123-cd]pyrene		205-893-2	193-39-5		0.32	mg/kg		0.298	mg/kg	0.0000298 %	✓
32	 naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %	<LOD
33	 phenanthrene		201-581-5	85-01-8		0.35	mg/kg		0.326	mg/kg	0.0000326 %	✓
34	 pyrene		204-927-3	129-00-0		0.67	mg/kg		0.624	mg/kg	0.0000624 %	✓
35	 benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.58	mg/kg		0.541	mg/kg	0.0000541 %	✓
36	 TPH (C6 to C40) petroleum group			TPH		15	mg/kg		13.98	mg/kg	0.0014 %	✓
37	 chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		8	mg/kg	1.462	11.692	mg/kg	0.00117 %	
Total:										0.0231 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 1000 mg/kg (0.1%)
because: Most likely worst case.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0014%)

Classification of sample: WS1--07042025-0.20

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

Sample details

Sample name:	LoW Code:
WS1--07042025-0.20	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
5.9%	Entry:
(wet weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 5.9% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	monohydric phenols		P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
3	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
	024-001-00-0	0215-607-8	1333-82-0							
4	boron { boron tribromide }				0.9 mg/kg	23.173	19.625 mg/kg	0.00196 %	✓	
	005-003-00-0	0233-657-9	10294-33-4							
5	arsenic { arsenic }				6.1 mg/kg		5.74 mg/kg	0.000574 %	✓	
	033-001-00-X	0231-148-6	7440-38-2							
6	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
	048-010-00-4	0215-147-8	1306-23-6							
7	copper { dicopper oxide; copper (I) oxide }				12 mg/kg	1.126	12.714 mg/kg	0.00127 %	✓	
	029-002-00-X	0215-270-7	1317-39-1							
8	mercury { mercury }				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	080-001-00-0	0231-106-7	7439-97-6							
9	nickel { nickel dihydroxide }				9.2 mg/kg	1.579	13.674 mg/kg	0.00137 %	✓	
	028-008-00-X	0235-008-5 [1] 0234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
10	lead { lead chromate }			1	24 mg/kg	1.56	35.227 mg/kg	0.00226 %	✓	
	082-004-00-2	0231-846-0	7758-97-6							
11	selenium { selenium }				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	034-001-00-2	0231-957-4	7782-49-2							
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				20 mg/kg	1.785	33.597 mg/kg	0.00336 %	✓	
	023-001-00-8	0215-239-8	1314-62-1							
13	zinc { zinc sulphate }				38 mg/kg	2.469	88.297 mg/kg	0.00883 %	✓	
	030-006-00-9	0231-793-3 [1] 0231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							
14	pH		PH		10.1 pH		10.1 pH	10.1 pH		

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	acenaphthylene	205-917-1	208-96-8		0.09 mg/kg		0.0847 mg/kg	0.00000847 %	✓	
16	acenaphthene	201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
17	anthracene	204-371-1	120-12-7		0.16 mg/kg		0.151 mg/kg	0.0000151 %	✓	
18	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.71 mg/kg		0.668 mg/kg	0.0000668 %	✓	
19	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.78 mg/kg		0.734 mg/kg	0.0000734 %	✓	
20	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.32 mg/kg		0.301 mg/kg	0.0000301 %	✓	
21	benzo[ghi]perylene	205-883-8	191-24-2		0.57 mg/kg		0.536 mg/kg	0.0000536 %	✓	
22	chrysene	601-048-00-0	205-923-4	218-01-9	0.82 mg/kg		0.772 mg/kg	0.0000772 %	✓	
23	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.09 mg/kg		0.0847 mg/kg	0.00000847 %	✓	
24	fluoranthene	205-912-4	206-44-0		1.6 mg/kg		1.506 mg/kg	0.000151 %	✓	
25	fluorene	201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		0.45 mg/kg		0.423 mg/kg	0.0000423 %	✓	
27	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
28	phenanthrene	201-581-5	85-01-8		0.83 mg/kg		0.781 mg/kg	0.0000781 %	✓	
29	pyrene	204-927-3	129-00-0		1.4 mg/kg		1.317 mg/kg	0.000132 %	✓	
30	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	1 mg/kg		0.941 mg/kg	0.0000941 %	✓	
31	chromium in chromium(III) compounds { chromium(III) oxide }	215-160-9	1308-38-9		11 mg/kg	1.462	16.077 mg/kg	0.00161 %		
Total:								0.0221 %		

Key

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

Classification of sample: WS4A--07042025-0.20

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

Sample details

Sample name:	LoW Code:
WS4A--07042025-0.20	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
12%	Entry:
(wet weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 12% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	benzene				<5 µg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
2	ethylbenzene				<5 µg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
3	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 µg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
4	xylene				<5 µg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
5	toluene				<5 µg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
6	monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
			P1186								
7	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
8	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
9	boron { boron tribromide }				1.3 mg/kg	23.173	26.51 mg/kg	0.00265 %		✓	
	005-003-00-0	233-657-9	10294-33-4								
10	arsenic { arsenic }				15 mg/kg		13.2 mg/kg	0.00132 %		✓	
	033-001-00-X	231-148-6	7440-38-2								
11	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %			<LOD
	048-010-00-4	215-147-8	1306-23-6								
12	copper { dicopper oxide; copper (I) oxide }				21 mg/kg	1.126	20.806 mg/kg	0.00208 %		✓	
	029-002-00-X	215-270-7	1317-39-1								
13	mercury { mercury }				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %			<LOD
	080-001-00-0	231-106-7	7439-97-6								
14	nickel { nickel dihydroxide }				29 mg/kg	1.579	40.309 mg/kg	0.00403 %		✓	
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
15	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	35 mg/kg	1.56	48.042 mg/kg	0.00308 %	✓		
16	selenium { selenium }	034-001-00-2	231-957-4	7782-49-2		<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
17	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		41 mg/kg	1.785	64.409 mg/kg	0.00644 %	✓		
18	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		94 mg/kg	2.469	204.26 mg/kg	0.0204 %	✓		
19	pH					8.1 pH		8.1 pH	8.1 pH			
20	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
21	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
22	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
23	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.27 mg/kg		0.238 mg/kg	0.0000238 %	✓		
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.38 mg/kg		0.334 mg/kg	0.0000334 %	✓		
25	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.14 mg/kg		0.123 mg/kg	0.0000123 %	✓		
26	benzo[ghi]perylene		205-883-8	191-24-2		0.28 mg/kg		0.246 mg/kg	0.0000246 %	✓		
27	chrysene	601-048-00-0	205-923-4	218-01-9		0.37 mg/kg		0.326 mg/kg	0.0000326 %	✓		
28	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.08 mg/kg		0.0704 mg/kg	0.00000704 %	✓		
29	fluoranthene		205-912-4	206-44-0		0.48 mg/kg		0.422 mg/kg	0.0000422 %	✓		
30	fluorene		201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
31	indeno[123-cd]pyrene		205-893-2	193-39-5		0.19 mg/kg		0.167 mg/kg	0.0000167 %	✓		
32	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
33	phenanthrene		201-581-5	85-01-8		0.24 mg/kg		0.211 mg/kg	0.0000211 %	✓		
34	pyrene		204-927-3	129-00-0		0.45 mg/kg		0.396 mg/kg	0.0000396 %	✓		
35	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.57 mg/kg		0.502 mg/kg	0.0000502 %	✓		
36	TPH (C6 to C40) petroleum group			TPH		66 mg/kg		58.08 mg/kg	0.00581 %	✓		
37	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		36 mg/kg	1.462	52.616 mg/kg	0.00526 %			
Total:										0.0514 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 1000 mg/kg (0.1%)
because: Most likely worst case.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.00581%)

Appendix A: Classifier defined and non GB MCL determinands

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

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)

Data source: CLP combined data

Data source date: 26 Mar 2019

Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 <= conc. < 3 % , Eye Irrit. 2; H319 1 <= conc. < 3 % , Aquatic Chronic 2; H411

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

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

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

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

Reason for additional Hazards Statement(s):

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

• **arsenic** (EC Number: 231-148-6, CAS Number: 7440-38-2)

GB MCL index number: 033-001-00-X

Description/Comments: Worst Case: IARC considers arsenic Group 1; Carcinogenic to humans

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

Reason for additional Hazards Statement(s):

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

• **pH** (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 17 Jul 2015

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

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 17 Jul 2015

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

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015

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

Data source date: 23 Jul 2015

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

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 21 Aug 2015

Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 06 Aug 2015

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

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

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

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

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

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

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

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

Description/Comments: Data from ECHA's C&L inventory database
Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>
Data source date: 30 Apr 2020
Hazard Statements: Acute Tox. 4; H302 , Skin Sens. 1; H317 , Eye Irrit. 2; H319

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

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

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

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

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

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

POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

• **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source: <http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en>
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2; H371

Appendix B: Rationale for selection of metal species

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

Most likely worst case.

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

Most likely worst case.

boron {boron tribromide}

Most likely worst case.

arsenic {arsenic}

Most likely worst case.

cadmium {cadmium sulfide}

Most likely worst case.

copper {dicopper oxide; copper (I) oxide}

Most likely worst case.

mercury {mercury}

Most likely worst case.

nickel {nickel dihydroxide}

Most likely worst case.

lead {lead chromate}

Most likely worst case.

selenium {selenium}

Most likely worst case.

vanadium {divanadium pentaoxide; vanadium pentoxide}

Most likely worst case.

zinc {zinc sulphate}

Most likely worst case.

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

Most likely worst case.

Appendix C: Version

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

HazWasteOnline Classification Engine Version: 2025.127.6614.12023 (07 May 2025)

HazWasteOnline Database: 2025.127.6614.12023 (07 May 2025)

This classification utilises the following guidance and legislation:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

2020 No. 1540 of 16th December 2020

GB MCL List - version 1.1 of 09 June 2021

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

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

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

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

GB MCL List v6.0 - version 6.0 of 15th February 2025