



ANALYTICAL TEST REPORT

Contract no: 118267

Contract name: Kirkby Mallory

Client reference: 3424

Clients name: Castledine Environmental

Clients address: 4 Wymeswold Road
Hoton
Loughborough
LE12 5SN

Samples received: 26 January 2023

Analysis started: 26 January 2023

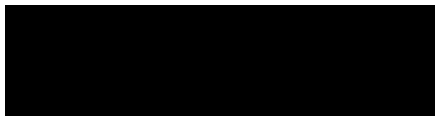
Analysis completed: 08 February 2023

Report issued: 08 February 2023

Key

U	UKAS accredited test
M	MCERTS & UKAS accredited test
\$	Test carried out by an approved subcontractor
I/S	Insufficient sample to carry out test
N/S	Sample not suitable for testing
NAD	No Asbestos Detected

Approved by:



Rachael Burton
Reporting Manager

Chemtech Environmental Limited

SAMPLE INFORMATION

MCERTS (Soils):

Soil descriptions are only intended to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions. MCERTS accreditation applies for sand, clay and loam/topsoil, or combinations of these whether these are derived from naturally occurring soils or from made ground, as long as these materials constitute the major part of the sample. Other materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Lab ref	Sample id	Depth (m)	Sample description	Material removed	% Removed	% Moisture
118267-1	WS01	0.10	Sandy Clay with Gravel	-	-	10.8
118267-2	WS01	0.60	Sandy Clay with Gravel	-	-	8.0
118267-3	WS02	0.20	Loamy Clay with Gravel	-	-	5.6
118267-4	WS02	0.80	Sandy Clay with Gravel	-	-	9.2
118267-5	WS03	0.30	Loamy Clay with Gravel	-	-	13.5
118267-6	WS03	0.60	Sandy Clay with Gravel	-	-	12.7
118267-7	WS04	0.10	Sand with Roots	-	-	12.5
118267-8	WS04	0.25	Sandy Clay with Gravel	-	-	11.1
118267-9	WS05	0.10	Loamy Clay with Gravel	-	-	11.0
118267-10	HP01	0.20	Loamy Clay with Gravel	-	-	13.0

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SOILS

Lab number Sample id Depth (m) Date sampled			118267-1 WS01 0.10 24/01/2023	118267-2 WS01 0.60 24/01/2023	118267-3 WS02 0.20 24/01/2023	118267-4 WS02 0.80 24/01/2023	118267-5 WS03 0.30 24/01/2023	118267-6 WS03 0.60 24/01/2023
Test	Method	Units						
Arsenic (total)	CE127 ^M	mg/kg As	15	18	7.3	3.1	13	14
Cadmium (total)	CE127 ^M	mg/kg Cd	0.2	0.2	<0.2	<0.2	0.3	<0.2
Chromium (total)	CE127 ^M	mg/kg Cr	44	32	26	30	35	37
Chromium (VI)	CE146	mg/kg CrVI	<1	<1	<1	<1	<1	<1
Copper (total)	CE127 ^M	mg/kg Cu	33	23	16	4.4	46	14
Lead (total)	CE127 ^M	mg/kg Pb	55	16	19	10	91	17
Mercury (total)	CE127 ^M	mg/kg Hg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel (total)	CE127 ^M	mg/kg Ni	16	19	6.2	4.2	11	14
Selenium (total)	CE127 ^M	mg/kg Se	0.8	2.8	0.7	0.3	0.7	0.6
Zinc (total)	CE127 ^M	mg/kg Zn	107	66	82	15	124	42
pH	CE004 ^M	un ts	7.3	7.1	7.2	7.2	7.0	6.5
Phenols (total)	CE078	mg/kg PhOH	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Organic Carbon (TOC)	CE197	% w/w C	2.0	0.1	0.8	0.5	2.7	0.4
Estimate of OMC (calculated from TOC)	CE197	% w/w	3.5	0.2	1.3	0.8	4.7	0.8
PAH								
Naphthalene	CE087 ^M	mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Acenaphthylene	CE087 ^M	mg/kg	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
Acenaphthene	CE087 ^M	mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Fluorene	CE087 ^U	mg/kg	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
Phenanthrene	CE087 ^M	mg/kg	0.35	0.06	0.13	<0.02	0.13	<0.02
Anthracene	CE087 ^U	mg/kg	0.06	<0.02	0.06	<0.02	<0.02	<0.02
Fluoranthene	CE087 ^M	mg/kg	0.44	0.07	0.32	<0.02	0.23	<0.02
Pyrene	CE087 ^M	mg/kg	0.35	0.05	0.27	<0.02	0.19	<0.02
Benzo(a)anthracene	CE087 ^U	mg/kg	0.21	0.03	0.17	<0.02	0.11	<0.02
Chrysene	CE087 ^M	mg/kg	0.26	0.03	0.16	<0.03	0.14	<0.03
Benzo(b)fluoranthene	CE087 ^M	mg/kg	0.28	0.04	0.22	<0.02	0.18	<0.02
Benzo(k)fluoranthene	CE087 ^M	mg/kg	0.11	<0.03	0.10	<0.03	0.07	<0.03
Benzo(a)pyrene	CE087 ^U	mg/kg	0.18	0.03	0.19	<0.02	0.13	<0.02
Indeno(123cd)pyrene	CE087 ^M	mg/kg	0.13	<0.02	0.14	<0.02	0.11	<0.02
Dibenz(ah)anthracene	CE087 ^M	mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(ghi)perylene	CE087 ^M	mg/kg	0.12	0.02	0.11	<0.02	0.10	<0.02
PAH (total of USEPA 16)	CE087	mg/kg	2.56	<0.34	1.86	<0.34	1.40	<0.34
TPH								
VPH Aromat c (>EC5-EC7)	CE067	mg/kg	<0.01	-	<0.01	-	-	-
VPH Aromat c (>EC7-EC8)	CE067	mg/kg	<0.01	-	<0.01	-	-	-
VPH Aromat c (>EC8-EC10)	CE067	mg/kg	<0.01	-	<0.01	-	-	-
EPH Aromatic (>EC10-EC12)	CE250	mg/kg	<10	-	<10	-	-	-
EPH Aromatic (>EC12-EC16)	CE250	mg/kg	<10	-	<10	-	-	-
EPH Aromatic (>EC16-EC21)	CE250	mg/kg	<1	-	<1	-	-	-
EPH Aromatic (>EC21-EC35)	CE250	mg/kg	<1	-	<1	-	-	-
EPH Aromatic (>EC35-EC44)	CE250	mg/kg	<1	-	<1	-	-	-

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SOILS

Lab number			118267-1	118267-2	118267-3	118267-4	118267-5	118267-6
Sample id			WS01	WS01	WS02	WS02	WS03	WS03
Depth (m)			0.10	0.60	0.20	0.80	0.30	0.60
Date sampled			24/01/2023	24/01/2023	24/01/2023	24/01/2023	24/01/2023	24/01/2023
Test	Method	Units						
VPH Aliphatic (>C5-C6)	CE067	mg/kg	<0.1	-	<0.1	-	-	-
VPH Aliphatic (>C6-C8)	CE067	mg/kg	<0.1	-	<0.1	-	-	-
VPH Aliphatic (>C8-C10)	CE067	mg/kg	<0.1	-	<0.1	-	-	-
EPH Aliphatic (>C10-C12)	CE250	mg/kg	<6	-	<6	-	-	-
EPH Aliphatic (>C12-C16)	CE250	mg/kg	<6	-	<6	-	-	-
EPH Aliphatic (>C16-C35)	CE250	mg/kg	<15	-	<15	-	-	-
EPH Aliphatic (>C35-C44)	CE250	mg/kg	<10	-	<10	-	-	-
Subcontracted analysis								
Asbestos (qualitative)	\$	-	NAD	-	NAD	-	NAD	-

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SOILS

Lab number Sample id Depth (m) Date sampled			118267-7 WS04 0.10 24/01/2023	118267-8 WS04 0.25 24/01/2023	118267-9 WS05 0.10 24/01/2023	118267-10 HP01 0.20 24/01/2023
Test	Method	Units				
Arsenic (total)	CE127 ^M	mg/kg As	2.1	7.1	7.2	7.2
Cadmium (total)	CE127 ^M	mg/kg Cd	<0.2	<0.2	<0.2	<0.2
Chromium (total)	CE127 ^M	mg/kg Cr	16	32	36	31
Chromium (VI)	CE146	mg/kg CrVI	<1	<1	<1	<1
Copper (total)	CE127 ^M	mg/kg Cu	1226	76	23	19
Lead (total)	CE127 ^M	mg/kg Pb	263	76	47	50
Mercury (total)	CE127 ^M	mg/kg Hg	<0.5	<0.5	<0.5	<0.5
Nickel (total)	CE127 ^M	mg/kg Ni	3.2	13	9.4	10
Selenium (total)	CE127 ^M	mg/kg Se	<0.3	0.6	0.5	0.7
Zinc (total)	CE127 ^M	mg/kg Zn	61	66	51	46
pH	CE004 ^M	un ts	6.5	6.7	6.1	6.2
Phenols (total)	CE078	mg/kg PhOH	<0.5	<0.5	<0.5	<0.5
Total Organic Carbon (TOC)	CE197	% w/w C	0.2	2.1	2.5	2.3
Estimate of OMC (calculated from TOC)	CE197	% w/w	0.4	3.6	4.2	4.0
PAH						
Naphthalene	CE087 ^M	mg/kg	<0.02	<0.02	<0.02	<0.02
Acenaphthylene	CE087 ^M	mg/kg	<0.02	0.03	<0.02	<0.02
Acenaphthene	CE087 ^M	mg/kg	<0.02	<0.02	<0.02	<0.02
Fluorene	CE087 ^U	mg/kg	<0.02	<0.02	<0.02	<0.02
Phenanthrene	CE087 ^M	mg/kg	0.03	0.07	0.05	<0.02
Anthracene	CE087 ^U	mg/kg	<0.02	0.06	<0.02	<0.02
Fluoranthene	CE087 ^M	mg/kg	0.10	0.29	0.13	<0.02
Pyrene	CE087 ^M	mg/kg	0.09	0.33	0.11	0.04
Benzo(a)anthracene	CE087 ^U	mg/kg	0.18	0.21	0.07	0.02
Chrysene	CE087 ^M	mg/kg	0.04	0.10	0.08	<0.03
Benzo(b)fluoranthene	CE087 ^M	mg/kg	0.07	0.64	0.10	<0.02
Benzo(k)fluoranthene	CE087 ^M	mg/kg	0.03	0.17	0.04	<0.03
Benzo(a)pyrene	CE087 ^U	mg/kg	0.08	0.62	0.08	0.03
Indeno(123cd)pyrene	CE087 ^M	mg/kg	0.06	0.43	0.06	<0.02
Dibenz(ah)anthracene	CE087 ^M	mg/kg	<0.02	0.11	<0.02	<0.02
Benzo(ghi)perylene	CE087 ^M	mg/kg	0.05	0.36	0.05	<0.02
PAH (total of USEPA 16)	CE087	mg/kg	0.75	3.41	0.76	<0.34
TPH						
VPH Aromat c (>EC5-EC7)	CE067	mg/kg	-	-	-	<0.01
VPH Aromat c (>EC7-EC8)	CE067	mg/kg	-	-	-	<0.01
VPH Aromat c (>EC8-EC10)	CE067	mg/kg	-	-	-	<0.01
EPH Aromatic (>EC10-EC12)	CE250	mg/kg	-	-	-	<10
EPH Aromatic (>EC12-EC16)	CE250	mg/kg	-	-	-	<10
EPH Aromatic (>EC16-EC21)	CE250	mg/kg	-	-	-	<1
EPH Aromatic (>EC21-EC35)	CE250	mg/kg	-	-	-	<1
EPH Aromatic (>EC35-EC44)	CE250	mg/kg	-	-	-	<1

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SOILS

Lab number			118267-7	118267-8	118267-9	118267-10
Sample id			WS04	WS04	WS05	HP01
Depth (m)			0.10	0.25	0.10	0.20
Date sampled			24/01/2023	24/01/2023	24/01/2023	24/01/2023
Test	Method	Units				
VPH Aliphatic (>C5-C6)	CE067	mg/kg	-	-	-	<0.1
VPH Aliphatic (>C6-C8)	CE067	mg/kg	-	-	-	<0.1
VPH Aliphatic (>C8-C10)	CE067	mg/kg	-	-	-	<0.1
EPH Aliphatic (>C10-C12)	CE250	mg/kg	-	-	-	<6
EPH Aliphatic (>C12-C16)	CE250	mg/kg	-	-	-	<6
EPH Aliphatic (>C16-C35)	CE250	mg/kg	-	-	-	<15
EPH Aliphatic (>C35-C44)	CE250	mg/kg	-	-	-	<10
Subcontracted analysis						
Asbestos (qualitative)	\$	-	NAD	-	NAD	NAD

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METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE127	Arsenic (total)	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg As
CE127	Cadmium (total)	Aqua regia digest, ICP-MS	Dry	M	0.2	mg/kg Cd
CE127	Chromium (total)	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg Cr
CE146	Chromium (VI)	Acid extraction, Colorimetry	Dry		1	mg/kg CrVI
CE127	Copper (total)	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg Cu
CE127	Lead (total)	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg Pb
CE127	Mercury (total)	Aqua regia digest, ICP-MS	Dry	M	0.5	mg/kg Hg
CE127	Nickel (total)	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg Ni
CE127	Selenium (total)	Aqua regia digest, ICP-MS	Dry	M	0.3	mg/kg Se
CE127	Zinc (total)	Aqua regia digest, ICP-MS	Dry	M	5	mg/kg Zn
CE004	pH	Based on BS 1377, pH Meter	As received	M	-	units
CE078	Phenols (total)	Extraction, Continuous Flow Colorimetry	As received		0.5	mg/kg PhOH
CE197	Total Organic Carbon (TOC)	Carbon Analyser	Dry		0.1	% w/w C
CE197	Estimate of OMC (calculated from TOC)	Calculation from Total Organic Carbon	Dry		0.1	% w/w
CE087	Naphthalene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Acenaphthylene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Acenaphthene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Fluorene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Phenanthrene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Anthracene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Fluoranthene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Pyrene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Benzo(a)anthracene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Chrysene	Solvent extraction, GC-MS	As received	M	0.03	mg/kg
CE087	Benzo(b)fluoranthene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Benzo(k)fluoranthene	Solvent extraction, GC-MS	As received	M	0.03	mg/kg
CE087	Benzo(a)pyrene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Indeno(123cd)pyrene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Dibenz(ah)anthracene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Benzo(ghi)perylene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	PAH (total of USEPA 16)	Solvent extraction, GC-MS	As received		0.34	mg/kg
CE067	VPH Aromatic (>EC5-EC7)	Headspace GC-FID	As received		0.01	mg/kg
CE067	VPH Aromatic (>EC7-EC8)	Headspace GC-FID	As received		0.01	mg/kg
CE067	VPH Aromatic (>EC8-EC10)	Headspace GC-FID	As received		0.01	mg/kg
CE250	EPH Aromat c (>EC10-EC12)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE250	EPH Aromat c (>EC12-EC16)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE250	EPH Aromat c (>EC16-EC21)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE250	EPH Aromat c (>EC21-EC35)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE250	EPH Aromat c (>EC35-EC44)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE067	VPH Aliphatic c (>C5-C6)	Headspace GC-FID	As received		0.1	mg/kg
CE067	VPH Aliphatic c (>C6-C8)	Headspace GC-FID	As received		0.1	mg/kg
CE067	VPH Aliphatic c (>C8-C10)	Headspace GC-FID	As received		0.1	mg/kg
CE250	EPH Aliphatic (>C10-C12)	Solvent extraction, GCxGC-FID	As received		6	mg/kg
CE250	EPH Aliphatic (>C12-C16)	Solvent extraction, GCxGC-FID	As received		6	mg/kg

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METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE250	EPH Aliphatic (>C16-C35)	Solvent extraction, GCxGC-FID	As received		15	mg/kg
CE250	EPH Aliphatic (>C35-C44)	Solvent extraction, GCxGC-FID	As received		10	mg/kg
\$	Asbestos (qualitative)	HSG 248, Microscopy	Dry	U	-	-

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DEVIATING SAMPLE INFORMATION

Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.

For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.

Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

N	No (not deviating sample)
Y	Yes (deviating sample)
NSD	Sampling date not provided
NST	Sampling time not provided (waters only)
EHT	Sample exceeded holding time(s)
IC	Sample not received in appropriate containers
HP	Headspace present in sample container
NCF	Sample not chemically fixed (where appropriate)
OR	Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
118267-1	WS01	0.10	N	
118267-2	WS01	0.60	N	
118267-3	WS02	0.20	N	
118267-4	WS02	0.80	N	
118267-5	WS03	0.30	N	
118267-6	WS03	0.60	N	
118267-7	WS04	0.10	N	
118267-8	WS04	0.25	N	
118267-9	WS05	0.10	N	
118267-10	HP01	0.20	N	

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ADDITIONAL INFORMATION

Notes

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

Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.

All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.

Methods, procedures and performance data are available on request.

Results reported herein relate only to the material supplied to the laboratory.

This report shall not be reproduced except in full, without prior written approval.

Samples will be disposed of 4 weeks from initial receipt unless otherwise instructed.

For soils and solids, all results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.

For soils and solids, analytical results are inclusive of stones, where applicable.