



ANALYTICAL TEST REPORT

Contract no: 127046

Contract name: Boston Pad

Client reference: -

Clients name: Total Aggregates

Clients address: Wigwam Lane
Hucknall
Nottingham
NG15 7SZ

Samples received: 28 September 2023

Analysis started: 28 September 2023

Analysis completed: 05 October 2023

Report issued: 05 October 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:

E. McCulloch

Ellis McCulloch
Senior Reporting Administrator

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
127046-1	Boston Pad Topsoil BS3882	-	Loamy Sand with Gravel & Roots	-	-	11.9

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SOILS

Lab number			127046-1
Sample id			Boston Pad
Depth (m)			Topsoil
Date sampled			BS3882
			-
			27/09/2023
Test	Method	Units	
Antimony (total)	CE264	mg/kg Sb	6.2
Arsenic (total)	CE264 ^M	mg/kg As	12.2
Barium (total)	CE264 ^U	mg/kg Ba	60.1
Cadmium (total)	CE264 ^M	mg/kg Cd	<2
Chromium (total)	CE264 ^U	mg/kg Cr	23.7
Copper (total)	CE264 ^M	mg/kg Cu	21.1
Lead (total)	CE264 ^U	mg/kg Pb	32.8
Mercury (total)	CE264 ^U	mg/kg Hg	<2
Molybdenum (total)	CE264	mg/kg Mo	<2
Nickel (total)	CE264 ^M	mg/kg Ni	17.1
Selenium (total)	CE264	mg/kg Se	<3
Zinc (total)	CE264 ^M	mg/kg Zn	62.5
pH	CE004 ^M	units	7.8
Total Organic Carbon (TOC)	CE197	% w/w C	1.7
Loss On Ignition at 440°C	CE006 ^U	% w/w	4.2
PAH			
Naphthalene	CE087 ^M	mg/kg	<0.02
Acenaphthylene	CE087 ^M	mg/kg	<0.02
Acenaphthene	CE087 ^M	mg/kg	<0.02
Fluorene	CE087 ^U	mg/kg	<0.02
Phenanthrene	CE087 ^M	mg/kg	0.05
Anthracene	CE087 ^U	mg/kg	<0.02
Fluoranthene	CE087 ^M	mg/kg	0.16
Pyrene	CE087 ^M	mg/kg	0.15
Benzo(a)anthracene	CE087 ^U	mg/kg	0.08
Chrysene	CE087 ^M	mg/kg	0.08
Benzo(b)fluoranthene	CE087 ^M	mg/kg	0.11
Benzo(k)fluoranthene	CE087 ^M	mg/kg	0.05
Benzo(a)pyrene	CE087 ^U	mg/kg	0.09
Indeno(123cd)pyrene	CE087 ^M	mg/kg	0.07
Dibenz(ah)anthracene	CE087 ^M	mg/kg	<0.02
Benzo(ghi)perylene	CE087 ^M	mg/kg	0.08
Coronene	CE087	mg/kg	<0.02
PAH (total of 17)	CE087	mg/kg	0.92
BTEX & TPH			
Benzene	CE192	mg/kg	<0.01
Toluene	CE192	mg/kg	<0.01
Ethylbenzene	CE192	mg/kg	<0.01
m & p-Xylene	CE192	mg/kg	<0.02
o-Xylene	CE192	mg/kg	<0.01

127046
Boston Pad
-

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SOILS

Lab number			127046-1
Sample id			Boston Pad
Depth (m)			Topsoil
Date sampled			BS3882
			-
			27/09/2023
Test	Method	Units	
EPH (>C10-C40)	CE033 ^M	mg/kg	68

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METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE264	Antimony (total)	Aqua Regia Extraction, ICPOES	Dry		5	mg/kg Sb
CE264	Arsenic (total)	Aqua Regia Extraction, ICPOES	Dry	M	3	mg/kg As
CE264	Barium (total)	Aqua Regia Extraction, ICPOES	Dry	U	4	mg/kg Ba
CE264	Cadmium (total)	Aqua Regia Extraction, ICPOES	Dry	M	2	mg/kg Cd
CE264	Chromium (total)	Aqua Regia Extraction, ICPOES	Dry	U	2	mg/kg Cr
CE264	Copper (total)	Aqua Regia Extraction, ICPOES	Dry	M	2	mg/kg Cu
CE264	Lead (total)	Aqua Regia Extraction, ICPOES	Dry	U	3	mg/kg Pb
CE264	Mercury (total)	Aqua Regia Extraction, ICPOES	Dry	U	2	mg/kg Hg
CE264	Molybdenum (total)	Aqua Regia Extraction, ICPOES	Dry	U	2	mg/kg Mo
CE264	Nickel (total)	Aqua Regia Extraction, ICPOES	Dry	M	3	mg/kg Ni
CE264	Selenium (total)	Aqua Regia Extraction, ICPOES	Dry	U	3	mg/kg Se
CE264	Zinc (total)	Aqua Regia Extraction, ICPOES	Dry	M	4	mg/kg Zn
CE004	pH	Based on BS 1377, pH Meter	As received	M	-	units
CE197	Total Organic Carbon (TOC)	Carbon Analyser	Dry		0.1	% w/w C
CE006	Loss On Ignition at 440°C	Based on BS 1377, Gravimetry	Dry	U	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	Coronene	Solvent extraction, GC-MS	As received		0.02	mg/kg
CE087	PAH (total of 17)	Solvent extraction, GC-MS	As received		0.36	mg/kg
CE192	Benzene	Headspace GC-FID	As received		0.01	mg/kg
CE192	Toluene	Headspace GC-FID	As received		0.01	mg/kg
CE192	Ethylbenzene	Headspace GC-FID	As received		0.01	mg/kg
CE192	m & p-Xylene	Headspace GC-FID	As received		0.02	mg/kg
CE192	o-Xylene	Headspace GC-FID	As received		0.01	mg/kg
CE033	EPH (>C10-C40)	Solvent extraction, GC-FID	As received	M	19	mg/kg

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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)
127046-1	Boston Pad Topsoil BS3882	-	Y	PAH (IC), BTEX (IC), EPH (IC)

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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.

BTEX compounds are identified by retention time only and may include interference from co-eluting compounds.

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.

Moisture Content Calculated on a Wet Weight basis

DECLARATION OF COMPLIANCE (BS3882:2015)

Lab ref	127046-1	Date received	28 September 2023
Contract name	Boston Pad	Analysis started	28 September 2023
Sample ID	Boston Pad Topsoil BS3882	Analysis completed	05 October 2023
OS Grid reference	Not supplied	Report issued	05 October 2023
Date sampled	27 September 2023		

Test	Units	Result	Compliant with Multipurpose? (Y/N)	Compliant with specific purpose? (Y/N)				
				Acidic	Calcareous	Low Fertility	Low F Acidic	Low F Calcareous
Texture								
Clay content	% w/w	15						
Silt content	% w/w	24						
Sand content	% w/w	61						
Soil texture	class	SANDY LOAM	Y	Y	Y	Y	Y	Y

Stone content								
>2mm	% w/w	9	Y	Y	Y	Y	Y	Y
>20mm	% w/w	0	Y	Y	Y	Y	Y	Y
>50mm	% w/w	0	Y	Y	Y	Y	Y	Y

Mass loss on ignition								
Clay 5-20%	% w/w	4.2	Y	Y	Y	Y	Y	Y
Clay 20-35%	% w/w	-	-	-	-	-	-	-
pH ¹	pH units	7.8	Y	N	Y	Y	N	Y
Carbonate (calcareous only)	% w/w CaCO ₃	7.2			Y			Y
Nitrogen (total)	% w/w N	0.21	Y	Y	Y			
Carbon:Nitrogen ratio	-	8.0	Y	Y	Y	Y	Y	Y
Phosphorus (extractable)	mg/l P	50	Y	Y	Y	N	N	N
Potassium (extractable)	mg/l K	256	Y	Y	Y			
Magnesium (extractable)	mg/l Mg	127.81	Y	Y	Y			
Electrical conductivity ²	µS/cm	137	Y					

Phytotoxic contaminants (by soil pH)								
Copper (Nitric acid extract)	mg/kg Cu	19	Y	Y	Y	Y	Y	Y
Nickel (Nitric acid extract)	mg/kg Ni	16	Y	Y	Y	Y	Y	Y
Zinc (Nitric acid extract)	mg/kg Zn	63	Y	Y	Y	Y	Y	Y

VISIBLE CONTAMINANTS								
(air-dried soil)	% w/w	<0.1	Y	Y	Y	Y	Y	Y
...of which plastics	% w/w	<0.1	Y	Y	Y	Y	Y	Y
Sharps	% w/w	None	Y	Y	Y	Y	Y	Y

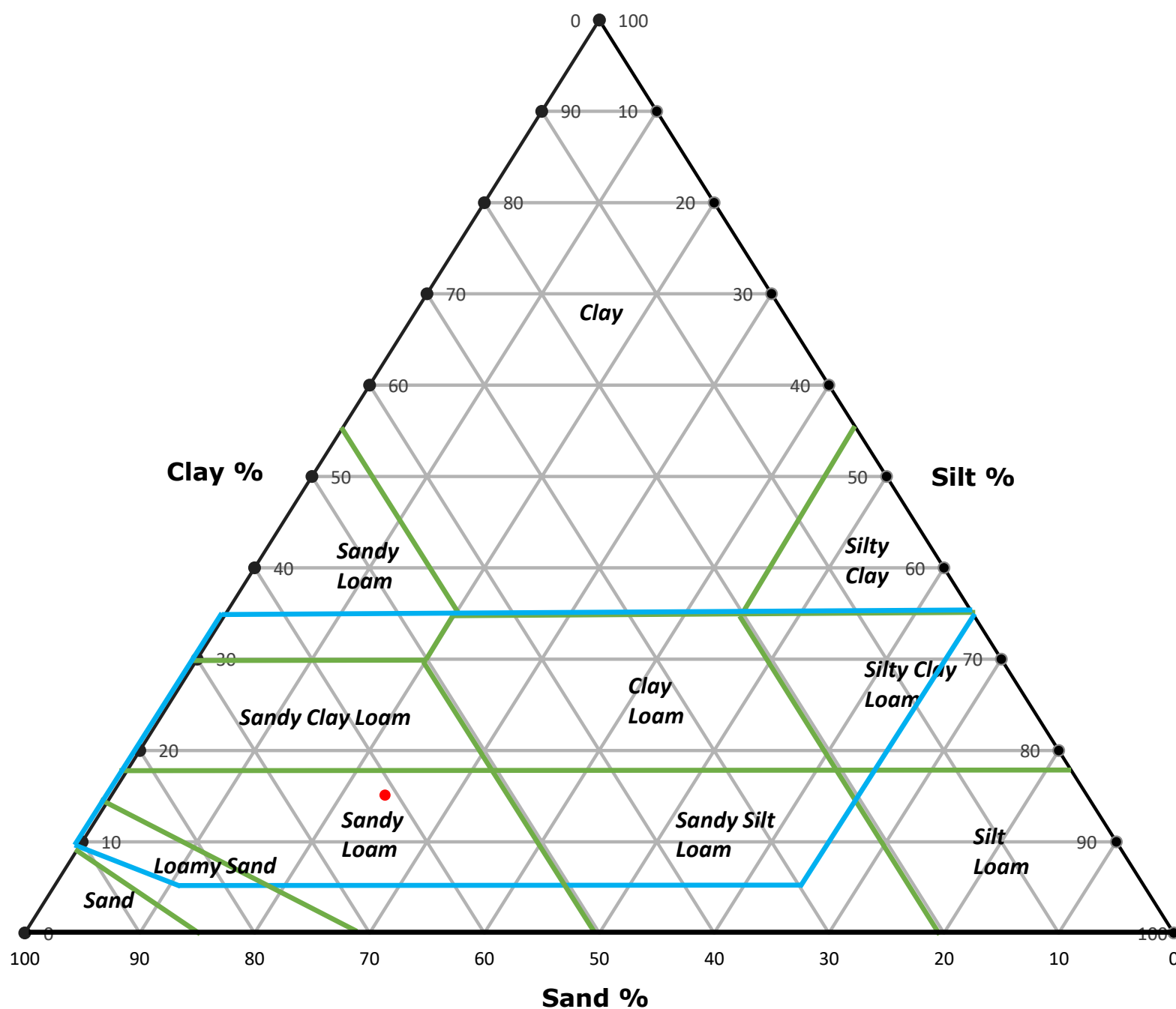
¹ Results are accredited to MCERTS if matrix confirmed as soil
² Results in leachate are accredited to ISO17025

Disclaimer: The limits in this report are provided for guidance only and values are transcribed from BS3882:2015

Chemtech Environmental Ltd does not take responsibility for any errors or omissions in the transcription, and all data should be verified by the end user.

Any assessments made are based on the published results from the Laboratory and make no assessment of uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. Method uncertainty levels can be provided independently upon request.

Assessment is outside the scope of the laboratory's UKAS accreditation.



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METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE001	Moisture Content	Gravimetry, reported on Wet Weight basis	As received		0.1	% w/w
CE004	pH	Based on BS 1377, pH Meter	As received	M	-	units
CE007	Electrical conductivity	Conductivity Meter	As received	U	10	µS/cm
CE197	Total Carbon	Carbon Analyser	Dry		0.1	% w/w C
CE197	Total Organic Carbon (TOC)	Carbon Analyser	Dry		0.1	% w/w C
CE197	Inorganic Carbon (by difference)	Calculation: Total Carbon - Total Organic Carbon	Dry		0.1	% w/w C
CE198	Nitrogen (total)	Combustion, Nitrogen analyser	Dry		0.01	% w/w N
CE222	C:N Ratio	Calculation: TOC/Nitrogen (total)	Dry		-	-
CE118	Soil texture	Sieve & Sedimentation	As received		0.1	% w/w
CE054	Copper (Nitric acid extract)	Nitric Acid Digestm ICPMS	Dry		1	mg/kg Cu
CE054	Nickel (Nitric acid extract)	Nitric Acid Digestm ICPMS	Dry		1	mg/kg Ni
CE054	Zinc (Nitric acid extract)	Nitric Acid Digestm ICPMS	Dry		1	mg/kg Zn
CE088	Magnesium (extractable)	Ammonium Nitrate, ICP-MS	Dry		2	ng/kg
CE088	Potassium (extractable)	Ammonium Nitrate, ICP-MS	Dry		2	ng/kg
CE089	Phosphorus (extractable)	Sodium bicarbonate extraction, ICP-MS	Dry		10	ng/kg

Statement of Conformity

Statement of Conformity

Where Chemtech reports a statement of conformity to a specification, the decision rules applied are derived from the Ilac document ILAC G8:09/2019.

Acceptance limits (AL), applied are derived from the tolerance limits (TL) by you the client or applicable standard (e.g. 2003.33.EC Council Decision, BS3882, BS8601)

Agreed and reported Decision Rule:

"PASS" if the result < TL, and the bias / precision values for the process meet the targets defined within the methodology and/or applied accreditation.

Reported Decisions:

Result < TL for determinands: PASS

Result > TL for determinands: FAIL

Definitions Used:

Acceptance limit (AL) Specified upper or lower bounds of permissible measured quantity values.

Tolerance limit (TL) Specified upper or lower bound of permissible values of a property.

Accreditation of WAC/BS3882/BS8601

Accreditation in Soil to MCERTS is only applicable for specific matrix types identified as soil (Sand/Loam/Clay) during the sample assessment

If the sample is classified as not soil, not accreditation is conveyed