Certificate of Analysis

Certificate Number 17-00397

30-May-17

Client Earth Science Partnership
33 Cardiff Road
Taffs Well
Cardiff
CF15 7RB

Our Reference 17-00397

Client Reference 6503b

Order No 6115

Contract Title 12 Clive road Canton, Cardiff

Description 7 Soil samples.

Date Received Monday, May 22, 2017

Date Started Monday, May 22, 2017

Date Completed Tuesday, May 30, 2017

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 10725 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 17-00397
Client Ref 6503b
Contract Title 12 Clive road Canton, Cardiff

Test	Method	LOD	Units	Lab No	1176894	1176895	1176896	1176897	1176898	1176899	1176900
				Sample ID	TP1	TP1	TP2	TP3	TP1	TP2	TP3
				Depth	0.20	0.50	0.40	0.20	1.10	0.70	0.30
				Other ID							
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date	15-May-17	15-May-17	15-May-17	15-May-17	15-May-17	15-May-17	15-May-17
				Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Metals											
Arsenic	DETSC 2301#	0.2	mg/kg		30	25	28	18			
Barium	DETSC 2301#	1.5	mg/kg		490	160	490	340			
Beryllium	DETSC 2301#	0.2	mg/kg		1.0	0.7	0.8	0.7			
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg		0.4	< 0.2	0.6	0.2			
Cadmium	DETSC 2301#	0.1	mg/kg		0.8	0.3	0.7	0.4			
Chromium	DETSC 2301#	0.15	mg/kg		19	18	24	18			
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0	< 1.0	< 1.0	< 1.0			
Copper	DETSC 2301#	0.2	mg/kg		310	45	78	52			
Lead	DETSC 2301#	0.3	mg/kg		370	120	410	200			
Mercury	DETSC 2325#	0.05	mg/kg		0.43	0.29	0.54	0.24			
Nickel	DETSC 2301#	1	mg/kg		29	20	27	23			
Selenium	DETSC 2301#	0.5	mg/kg		1.0	< 0.5	< 0.5	0.7			
Vanadium	DETSC 2301	0.8	mg/kg		31	30	33	31			
Zinc	DETSC 2301#	1	mg/kg		290	100	310	150			
Inorganics											
pH	DETSC 2008#				7.5	7.8	7.5	7.9	7.7	7.8	7.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg		0.6	0.8	0.6	0.3			
Organic matter	DETSC 2002#	0.1	%		10	5.5	11	6.4			
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l						23	18	16
Sulphur as S, Total	DETSC 2320	0.01	%						0.01	0.02	0.03
Sulphate as SO4, Total	DETSC 2321#	0.01	%						0.03	0.03	0.07
PAHs											
Acenaphthene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03	< 0.03	< 0.03			
Acenaphthylene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03	< 0.03	< 0.03			
Anthracene	DETSC 3303	0.03	mg/kg		< 0.03	< 0.03	< 0.03	< 0.03			
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg		0.17	< 0.03	0.12	0.05			
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg		0.14	< 0.03	0.09	< 0.03			
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg		0.25	< 0.03	0.17	0.05			
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg		0.09	< 0.03	0.07	< 0.03			
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg		0.08	< 0.03	0.07	< 0.03			
Chrysene	DETSC 3303	0.03	mg/kg		0.22	< 0.03	0.16	0.06			
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg		0.04	< 0.03	< 0.03	< 0.03			
Fluoranthene	DETSC 3303#	0.03	mg/kg		0.46	0.05	0.31	0.10			
Fluorene	DETSC 3303	0.03	mg/kg		< 0.03	< 0.03	< 0.03	< 0.03			
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg		0.09	< 0.03	0.07	< 0.03			
Naphthalene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03	< 0.03	< 0.03			
Phenanthrene	DETSC 3303#	0.03	mg/kg		0.20	< 0.03	0.14	0.08			
Pyrene	DETSC 3303#	0.03	mg/kg		0.41	0.04	0.26	0.09			
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg		2.2	< 0.10	1.5	0.43			
Phenols											
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg		< 0.3	< 0.3	< 0.3	< 0.3			

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Asbestos Analysis
Soil Samples

Our Ref 17-00397
Client Ref 6503b
Contract Title 12 Clive road Canton, Cardiff

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1176894	TP1 0.20	SOIL	NAD	none	Michael Kay
1176895	TP1 0.50	SOIL	NAD	none	Michael Kay
1176896	TP2 0.40	SOIL	NAD	none	Michael Kay
1176897	TP3 0.20	SOIL	NAD	none	Michael Kay

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 17-00397
Client Ref 6503b
Contract 12 Clive road Canton, Cardiff

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1176894	TP1 0.20 SOIL	15-05-17	GJ 250ml, PT 1L		
1176895	TP1 0.50 SOIL	15-05-17	GJ 250ml, PT 1L		
1176896	TP2 0.40 SOIL	15-05-17	GJ 250ml, PT 1L		
1176897	TP3 0.20 SOIL	15-05-17	GJ 250ml, PT 1L		
1176898	TP1 1.10 SOIL	15-05-17	PT 1L		
1176899	TP2 0.70 SOIL	15-05-17	PT 1L		
1176900	TP3 0.30 SOIL	15-05-17	PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months