



Certificate of Analysis

Certificate Number 20-09589

11-Jun-20

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

Our Reference 20-09589

Client Reference 7485d

Order No 9070

Contract Title Flying Start Dowlais Primary School

Description 10 Soil samples.

Date Received 01-Jun-20

Date Started 01-Jun-20

Date Completed 11-Jun-20

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

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 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

Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 20-09589

Client Ref 7485d

Contract Title Flying Start Dowlais Primary School

Lab No	1678076	1678077	1678078	1678079	1678080	1678081
Sample ID	SA2	TP3	SA1	SA2	TP3	TP4
Depth	0.30	0.75	0.25	0.60	0.55	0.15
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020	20/05/2020
Sampling Time	1230	0200	1030	1230	0200	0100

Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg			17	5.2	33	13
Barium	DETSC 2301#	1.5	mg/kg			180	370	510	94
Beryllium	DETSC 2301#	0.2	mg/kg			0.9	1.4	1.1	0.6
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg			0.3	0.3	0.6	0.4
Cadmium	DETSC 2301#	0.1	mg/kg			0.2	0.1	0.2	0.3
Chromium	DETSC 2301#	0.15	mg/kg			16	18	14	16
Chromium, Hexavalent	DETSC 2204*	1	mg/kg			< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg			50	17	520	28
Lead	DETSC 2301#	0.3	mg/kg			89	20	210	61
Mercury	DETSC 2325#	0.05	mg/kg			0.20	0.06	0.94	0.09
Nickel	DETSC 2301#	1	mg/kg			22	5.4	31	17
Selenium	DETSC 2301#	0.5	mg/kg			1.1	1.0	< 0.5	0.6
Vanadium	DETSC 2301#	0.8	mg/kg			26	37	34	26
Zinc	DETSC 2301#	1	mg/kg			110	38	220	99
Inorganics									
Loss on Ignition at 440oC	DETSC 2003#	0.01	%	8.8	20				
pH	DETSC 2008#		pH			5.9	8.0	7.3	6.0
Calorific Value	DETSC 5008	1	MJ/kg	3.2	8.9				
Cyanide, Total	DETSC 2130#	0.1	mg/kg			0.5	0.1	< 0.1	0.7
Organic matter	DETSC 2002#	0.1	%			11	5.7	17	9.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l				27	25	
Sulphur as S, Total	DETSC 2320	0.01	%				0.11	0.06	
Sulphate as SO4, Total	DETSC 2321#	0.01	%				0.25	0.10	
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	0.04	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg			0.13	0.22	0.08	0.24
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg			0.14	0.15	0.07	0.23
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg			0.26	0.29	0.27	0.48
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg			0.09	0.13	0.07	0.17
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg			0.07	0.13	0.07	0.15
Chrysene	DETSC 3303	0.03	mg/kg			0.21	0.26	0.15	0.40
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg			< 0.03	0.04	< 0.03	0.05
Fluoranthene	DETSC 3303#	0.03	mg/kg			0.21	0.47	0.14	0.52
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	0.10	0.07	0.16
Naphthalene	DETSC 3303#	0.03	mg/kg			< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg			0.11	0.15	0.07	0.27
Pyrene	DETSC 3303#	0.03	mg/kg			0.15	0.39	0.11	0.38
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg			1.5	2.4	1.1	3.1

Summary of Chemical Analysis

Soil Samples

Our Ref 20-09589

Client Ref 7485d

Contract Title Flying Start Dowlais Primary School

Lab No	1678076	1678077	1678078	1678079	1678080	1678081
Sample ID	SA2	TP3	SA1	SA2	TP3	TP4
Depth	0.30	0.75	0.25	0.60	0.55	0.15
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/05/2020	19/05/2020	19/05/2020	19/05/2020	19/05/2020	20/05/2020
Sampling Time	1230	0200	1030	1230	0200	0100

Test	Method	LOD	Units						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg			0.7	< 0.3	< 0.3	2.2

Summary of Chemical Analysis

Soil Samples

Our Ref 20-09589

Client Ref 7485d

Contract Title Flying Start Dowlais Primary School

Lab No	1678082	1678083	1678084	1678085
Sample ID	BH3	SA1	TP3	BH3
Depth	0.30	1.30	1.00	1.80
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	21/05/2020	19/05/2020	19/05/2020	21/05/2020
Sampling Time	1000	1030	0200	1000

Test	Method	LOD	Units				
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	36			
Barium	DETSC 2301#	1.5	mg/kg	520			
Beryllium	DETSC 2301#	0.2	mg/kg	1.3			
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.7			
Cadmium	DETSC 2301#	0.1	mg/kg	0.2			
Chromium	DETSC 2301#	0.15	mg/kg	15			
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0			
Copper	DETSC 2301#	0.2	mg/kg	170			
Lead	DETSC 2301#	0.3	mg/kg	360			
Mercury	DETSC 2325#	0.05	mg/kg	0.88			
Nickel	DETSC 2301#	1	mg/kg	32			
Selenium	DETSC 2301#	0.5	mg/kg	0.9			
Vanadium	DETSC 2301#	0.8	mg/kg	33			
Zinc	DETSC 2301#	1	mg/kg	180			
Inorganics							
Loss on Ignition at 440oC	DETSC 2003#	0.01	%				
pH	DETSC 2008#		pH	7.3	8.6	8.2	8.6
Calorific Value	DETSC 5008	1	MJ/kg				
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2			
Organic matter	DETSC 2002#	0.1	%	18			
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l		< 10	< 10	< 10
Sulphur as S, Total	DETSC 2320	0.01	%		< 0.01	< 0.01	< 0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.01	0.02	0.02
PAHs							
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03			
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03			
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03			
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.04			
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.03			
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.11			
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.05			
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.03			
Chrysene	DETSC 3303	0.03	mg/kg	0.10			
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03			
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.07			
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03			
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.04			
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03			
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.06			
Pyrene	DETSC 3303#	0.03	mg/kg	0.05			
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.52			

Summary of Chemical Analysis

Soil Samples

Our Ref 20-09589

Client Ref 7485d

Contract Title Flying Start Dowlais Primary School

Lab No	1678082	1678083	1678084	1678085
Sample ID	BH3	SA1	TP3	BH3
Depth	0.30	1.30	1.00	1.80
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	21/05/2020	19/05/2020	19/05/2020	21/05/2020
Sampling Time	1000	1030	0200	1000

Test	Method	LOD	Units				
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.7			

Summary of Asbestos Analysis Soil Samples

Our Ref 20-09589

Client Ref 7485d

Contract Title Flying Start Dowlais Primary School

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1678078	SA1 0.25	SOIL	NAD	none	D Wilkinson
1678079	SA2 0.60	SOIL	NAD	none	D Wilkinson
1678080	TP3 0.55	SOIL	NAD	none	D Wilkinson
1678081	TP4 0.15	SOIL	NAD	none	D Wilkinson
1678082	BH3 0.30	SOIL	NAD	none	D Wilkinson

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 20-09589
 Client Ref 7485d
 Contract Flying Start Dowlais Primary School

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1678076	SA2 0.30 SOIL	19/05/20	GJ 250ml, PT 1L		
1678077	TP3 0.75 SOIL	19/05/20	GJ 250ml, PT 1L		
1678078	SA1 0.25 SOIL	19/05/20	GJ 250ml, PT 1L	pH + Conductivity (7 days)	
1678079	SA2 0.60 SOIL	19/05/20	GJ 250ml, PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
1678080	TP3 0.55 SOIL	19/05/20	GJ 250ml, PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
1678081	TP4 0.15 SOIL	20/05/20	GJ 250ml, PT 1L	pH + Conductivity (7 days)	
1678082	BH3 0.30 SOIL	21/05/20	GJ 250ml, PT 1L	pH + Conductivity (7 days)	
1678083	SA1 1.30 SOIL	19/05/20	GJ 250ml	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
1678084	TP3 1.00 SOIL	19/05/20	GJ 250ml	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
1678085	BH3 1.80 SOIL	21/05/20	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	

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