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Analytical Report Number : 19-31397

Project / Site name: Trowbridge

Samples received on: 04/03/2019

Your job number: LDQ2048

Samples instructed on: 04/03/2019

Your order number: POR024382

Analysis completed by: 11/03/2019

Report Issue Number: 1

Report issued on: 11/03/2019

Samples Analysed: 2 soil samples

Signed:

Rexona Rahman
Head of Customer Services
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

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Analytical Report Number: 19-31397

Project / Site name: Trowbridge

Your Order No: POR024382

Lab Sample Number				1168838	1168839			
Sample Reference				DS07	DS08			
Sample Number				1	1			
Depth (m)				0.30-0.40	0.50-0.60			
Date Sampled				04/03/2019	04/03/2019			
Time Taken				1335	1339			
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Stone Content				%	0.1	NONE	< 0.1	< 0.1
Moisture Content				%	N/A	NONE	21	11
Total mass of sample received				kg	0.001	NONE	1.5	1.7

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.1	8.4			
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1			
Complex Cyanide	mg/kg	1	MCERTS	< 1	< 1			
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1			
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.017	0.026			
Total Sulphur	mg/kg	50	MCERTS	580	430			
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.027	0.0058			

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Phenanthrene	mg/kg	0.05	MCERTS	0.28	< 0.05			
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Fluoranthene	mg/kg	0.05	MCERTS	0.61	< 0.05			
Pyrene	mg/kg	0.05	MCERTS	0.52	< 0.05			
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.39	< 0.05			
Chrysene	mg/kg	0.05	MCERTS	0.43	< 0.05			
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.47	< 0.05			
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.22	< 0.05			
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.42	< 0.05			
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.23	< 0.05			
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.23	< 0.05			

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	3.80	< 0.80			
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Lab Sample Number				1168838	1168839			
Sample Reference				DS07	DS08			
Sample Number				1	1			
Depth (m)				0.30-0.40	0.50-0.60			
Date Sampled				04/03/2019	04/03/2019			
Time Taken				1335	1339			
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	24	9.6			
Barium (aqua regia extractable)	mg/kg	1	MCERTS	98	22			
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.2	0.47			
Boron (water soluble)	mg/kg	0.2	MCERTS	2.9	1.0			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0			
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	33	12			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	22	9.3			
Lead (aqua regia extractable)	mg/kg	1	MCERTS	36	9.7			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3			
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	26	10			
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	2.6			
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	80	34			
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120	34			

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	14	< 10			
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1			



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* 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 *
1168838	DS07	1	0.30-0.40	Light brown clay and loam with vegetation.
1168839	DS08	1	0.50-0.60	Light brown clay and sand with gravel.

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Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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	L038-PL	D	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
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.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
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 (skalar)	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
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.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	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 (Skalar)	L080-PL	W	MCERTS
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 based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil	L038-PL	D	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	W	MCERTS
TPH2 (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' 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 300c.

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The results included within the report are representative of the samples submitted for analysis.

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