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Analytical Report Number : 20-47241

Project / Site name:	Brill Place	Samples received on:	11/12/2020
Your job number:	C1101	Samples instructed on/ Analysis started on:	11/12/2020
Your order number:	C1101-120866	Analysis completed by:	18/12/2020
Report Issue Number:	1	Report issued on:	18/12/2020
Samples Analysed:	2 wac multi samples		

Signed:

Will Fardon
Technical Reviewer (CS Team)
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

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.



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Waste Acceptance Criteria Analytical Results							
Report No:	20-47241						
					Client: OKEEFECONS		
Location	Brill Place						
Lab Reference (Sample Number)	1717067				Landfill Waste Acceptance Criteria		
Sampling Date	09/12/2020				Limits		
Sample ID	C1101/4 Bulk Dig 1				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Depth (m)							
Solid Waste Analysis							
TOC (%)**	0.6				3%	5%	6%
Loss on Ignition (%) **	2.3				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg) #	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	8.0				--	>6	--
Acid Neutralisation Capacity (mol / kg)	1.4				--	To be evaluated	To be evaluated
Eluate Analysis					Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic *	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium *	0.014	0.017		0.17	20	100	300
Cadmium *	< 0.0005	< 0.0005		0.0024	0.04	1	5
Chromium *	< 0.0010	< 0.0010		< 0.0050	0.5	10	70
Copper *	0.0058	0.014		0.13	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.031	0.0047		0.071	0.5	10	30
Nickel *	0.0023	0.0041		0.040	0.4	10	40
Lead *	< 0.0050	< 0.0050		0.025	0.5	10	50
Antimony *	< 0.0050	< 0.0050		0.030	0.06	0.7	5
Selenium *	0.084	0.041		0.45	0.1	0.5	7
Zinc *	0.020	0.0092		0.10	4	50	200
Chloride *	47	29		310	800	15000	25000
Fluoride	1.0	0.49		5.4	10	150	500
Sulphate *	620	180		2200	1000	20000	50000
TDS*	720	210		2500	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	9.5	12		120	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	76						
Moisture (%)	24						
Stage 1							
Volume Eluate L2 (litres)	0.31						
Filtered Eluate VE1 (litres)	0.16						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.					** = UKAS accredited (liquid eluate analysis only)		
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation					** = MCERTS accredited		
Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.							
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.							

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

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Waste Acceptance Criteria Analytical Results											
Report No:			20-47241								
							Client: OKEEFECONS				
Location			Brill Place								
Lab Reference (Sample Number)			1717068				Landfill Waste Acceptance Criteria				
Sampling Date			09/12/2020				Limits				
Sample ID			C1101/5 Bulk Dig 2				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill		
Depth (m)											
Solid Waste Analysis											
TOC (%)**			0.6				3%		5%	6%	
Loss on Ignition (%) **			2.3				--		--	10%	
BTEX (µg/kg) **			< 10				6000		--	--	
Sum of PCBs (mg/kg) **			< 0.30				1		--	--	
Mineral Oil (mg/kg) #			< 10				500		--	--	
Total PAH (WAC-17) (mg/kg)			< 0.85				100		--	--	
pH (units)**			7.9				--		>6	--	
Acid Neutralisation Capacity (mol / kg)			1.8				--		To be evaluated	To be evaluated	
Eluate Analysis			2:1		8:1		Cumulative 10:1		Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)			mg/l		mg/l		mg/kg		using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic *			< 0.010		< 0.010		< 0.050		0.5	2	25
Barium *			0.030		0.034		0.34		20	100	300
Cadmium *			< 0.0005		< 0.0005		0.0027		0.04	1	5
Chromium *			< 0.0010		< 0.0010		< 0.0050		0.5	10	70
Copper *			0.0063		0.0067		0.066		2	50	100
Mercury *			< 0.0015		< 0.0015		< 0.010		0.01	0.2	2
Molybdenum *			0.027		0.0037		0.057		0.5	10	30
Nickel *			0.0041		0.0041		0.041		0.4	10	40
Lead *			< 0.0050		< 0.0050		0.032		0.5	10	50
Antimony *			< 0.0050		< 0.0050		< 0.020		0.06	0.7	5
Selenium *			0.054		0.024		0.27		0.1	0.5	7
Zinc *			0.021		0.0065		0.078		4	50	200
Chloride *			35		5.4		79		800	15000	25000
Fluoride			1.2		0.38		4.5		10	150	500
Sulphate *			600		180		2100		1000	20000	50000
TDS*			720		270		3100		4000	60000	100000
Phenol Index (Monohydric Phenols) *			< 0.13		< 0.13		< 0.50		1	-	-
DOC			7.2		6.7		68		500	800	1000
Leach Test Information											
Stone Content (%)			< 0.1								
Sample Mass (kg)			2.0								
Dry Matter (%)			72								
Moisture (%)			28								
Stage 1											
Volume Eluate L2 (litres)			0.29								
Filtered Eluate VE1 (litres)			0.15								
Results are expressed on a dry weight basis, after correction for moisture content where applicable. * = UKAS accredited (liquid eluate analysis only)											
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation ** = MCERTS accredited											
Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.											
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.											

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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 *
1717067	C1101/4	Bulk Dig 1	None Supplied	Brown clay.
1717068	C1101/5	Bulk Dig 2	None Supplied	Brown clay.



Analytical Report Number : 20-47241
Project / Site name: Brill Place

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
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
Preparation WAC leachate		In-house method	L043-PL	W	NONE
Speciated WAC-17 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. MCERTS accredited except Coronene.	L064-PL	D	MCERTS
Chloride in WAC leachate (BS EN 12457-3 Prep)	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Fluoride in WAC leachate (BS EN 12457-3 Prep)	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L033-PL	W	ISO 17025
Phenol Index in WAC leachate (BS EN 12457-3 Prep)	Determination of monohydric phenols in leachate by continuous flow analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Sulphate in WAC leachate (BS EN 12457-3 Prep)	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
TDS in WAC leachate (BS EN 12457-3 Prep)	Determination of total dissolved solids in leachate by electrometric measurement.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L031-PL	W	NONE
DOC in WAC leachate (BS EN 12457-3 Prep)	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L037-PL	W	NONE
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance on Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Mineral Oil in Soil C10 - C40	Determination of dichloromethane/hexane extractable hydrocarbons in soil by GC-MS.	In-house method based on USEPA 8270	L076-PL	D	NONE
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In house method.	L005-PL	W	MCERTS
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L023-PL	D	MCERTS
Metals in WAC leachate (BS EN 12457-3 Prep)	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
PCB's by GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS



Analytical Report Number : 20-47241
Project / Site name: Brill Place

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BTEX (Sum of BTEX compounds) in soil	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-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 30oC.