

Pat Mcgrath
Cardiff City Council
Waste Management
Lamby Way
Rumney
Cardiff
CF3 2HP

Decus Research Limited
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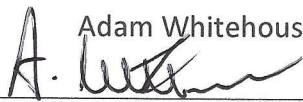
Tel: 01269 844558
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Certificate of Analysis Number: 2895

Project/Site name:	Lamby Way	Samples Taken:	13-02-2019 to 19-02-2019
Job Number:	-	Samples Received:	21-02-2019
Order Number:	-	Date Instructed:	21-02-2019
Quotation Number:	DS 170612	Analysis Complete:	18-03-2019
Sample Matrix:	Groundwater, Surface Water, Leachate Water	Report Issued:	25-03-2019
		Sampled By:	Client

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

Approved by: Adam Whitehouse
Signature: 
Title: Quality Manager



Client: Cardiff City Council
FAO: Pat McGrath

CERTIFICATE OF ANALYSIS 2895
Results of analysis of 27 samples received
on the 21/02/19

Report Date
25th March 2019

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				210219050	210219051	210219052	210219053
Client Sample Reference:				L2	L4	L7	SL4
Sample Date:				19/02/19	19/02/19	19/02/19	19/02/19
Sample Matrix:				Leachate	Leachate	Leachate	Leachate
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	1,482	1,508	273	273
INORG-L13	Chloride	mg.l ⁻¹	A	171	185	286	280
METALS-L	Nickel	µg.l ⁻¹	A	238	162	34.0	6.7
1450	Cadmium	µg.l ⁻¹	S-N	1.5	<0.080	<0.080	<0.080
ORG0L17	Mecoprop	µg.l ⁻¹	A	0.2	0.2	<0.1	0.1
ORG-L05	m&p-Xylene	µg.l ⁻¹	N	6.0	17.5	2.1	<1.0

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				210219054	210219055	210219056	210219057
Client Sample Reference:				SL5	SL6	SL7	SL8
Sample Date:				19/02/19	19/02/19	19/02/19	19/02/19
Sample Matrix:				Leachate	Leachate	Leachate	Leachate
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	65	26	1,092	1,287
INORG-L13	Chloride	mg.l ⁻¹	A	264	55.7	228	227
METALS-L	Nickel	µg.l ⁻¹	A	5.6	4.0	20.3	85.3
1450	Cadmium	µg.l ⁻¹	S-N	<0.080	<0.080	<0.080	<0.080
ORG0L17	Mecoprop	µg.l ⁻¹	A	<0.1	0.1	4.0	0.1
ORG-L05	m&p-Xylene	µg.l ⁻¹	N	<1.0	1.3	5.3	3.3

* Accreditation Status

Tests marked 'A' hold UKAS accreditation

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				210219058	210219059	210219060	210219061
Client Sample Reference:				SW2	SW3	SW4	SW5
Sample Date:				19/02/19	19/02/19	19/02/19	19/02/19
Sample Matrix:				Surface Water	Surface Water	Surface Water	Surface Water
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	<0.01	<0.01	0.12	0.27
INORG-L12	Ammonia as N	mg.l ⁻¹ as N	A	<0.01	<0.01	0.09	0.21
INORG-L13	Chloride	mg.l ⁻¹	A	20.6	26.0	32.5	34.0
INORG-L01	pH	pH units	A	7.3	7.6	7.4	7.5
INORG-L06.1	BOD	mg.l ⁻¹ as O ₂	A	0.7	0.9	0.8	1.4
INORG-L06.1	BOD ATU	mg.l ⁻¹ as O ₂	A	1.5	1.9	1.5	1.4
INORG-L02	Conductivity	μS.cm ⁻¹	A	715	658	1,232	1,384
INORG-L10	Total Suspended Solids	mg.l ⁻¹	A	6.0	102	4.8	4.0
INORG-L05	COD	mg.l ⁻¹ O ₂	A	11	14	16	17
-	TON	mg.l ⁻¹	N	0.8	2.1	1.4	22.0

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				210219062	-	-	-
Client Sample Reference:				SW6	-	-	-
Sample Date:				19/02/19	-	-	-
Sample Matrix:				Surface Water	-	-	-
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	<0.01	-	-	-
INORG-L12	Ammonia as N	mg.l ⁻¹ as N	A	<0.01	-	-	-
INORG-L13	Chloride	mg.l ⁻¹	A	19.8	-	-	-
INORG-L01	pH	pH units	A	7.8	-	-	-
INORG-L06.1	BOD	mg.l ⁻¹ as O ₂	A	1.7	-	-	-
INORG-L06.1	BOD ATU	mg.l ⁻¹ as O ₂	A	2.2	-	-	-
INORG-L02	Conductivity	μS.cm ⁻¹	A	724	-	-	-
INORG-L10	Total Suspended Solids	mg.l ⁻¹	A	10.8	-	-	-
INORG-L05	COD	mg.l ⁻¹ O ₂	A	18	-	-	-
-	TON	mg.l ⁻¹	N	1.4	-	-	-

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				210219063	210219064	210219065	210219066
Client Sample Reference:				C1	C2	C3	C5
Sample Date:				19/02/19	19/02/19	19/02/19	13/02/19
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	0.07	0.73	6.5	0.94
INORG-L13	Chloride	mg.l ⁻¹	A	31.5	31.2	14.0	8.0
INORG-L01	pH	pH units	A	7.4	7.2	7.6	7.2
METALS-L	Nickel	µg.l ⁻¹	A	2.0	1.6	2.9	<1.5
1450	Cadmium	µg.l ⁻¹	S-N	<0.080	<0.080	<0.080	<0.080
ORGOL17	Mecoprop	µg.l ⁻¹	A	<0.1	<0.1	<0.1	<0.1
ORG-L05	m&p-Xylene	µg.l ⁻¹	N	<1.0	<1.0	<1.0	<1.0

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				210219067	210219068	210219069	210219070
Client Sample Reference:				C6	C8	C12	C13
Sample Date:				19/02/19	19/02/19	19/02/19	19/02/19
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	0.55	0.43	11.7	9.1
INORG-L13	Chloride	mg.l ⁻¹	A	3.8	3.6	3.2	6.1
INORG-L01	pH	pH units	A	7.3	7.5	7.1	7.2
METALS-L	Nickel	µg.l ⁻¹	A	<1.5	<1.5	<1.5	<1.5
1450	Cadmium	µg.l ⁻¹	S-N	<0.080	<0.080	<0.080	<0.080
ORGOL17	Mecoprop	µg.l ⁻¹	A	<0.1	<0.1	<0.1	<0.1
ORG-L05	m&p-Xylene	µg.l ⁻¹	N	<1.0	<1.0	<1.0	<1.0

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				210219071	210219072	210219073	210219074
Client Sample Reference:				C16	C18	C19	C20
Sample Date:				19/02/19	19/02/19	19/02/19	13/02/19
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	1.3	0.01	0.04	0.29
INORG-L13	Chloride	mg.l ⁻¹	A	4.1	31.5	28.8	10.1
INORG-L01	pH	pH units	A	6.9	7.7	7.3	7.1
METALS-L	Nickel	µg.l ⁻¹	A	<1.5	<1.5	1.5	<1.5
1450	Cadmium	µg.l ⁻¹	S-N	<0.080	<0.080	<0.080	<0.080
ORG017	Mecoprop	µg.l ⁻¹	A	<0.1	<0.1	<0.1	<0.1
ORG-L05	m&p-Xylene	µg.l ⁻¹	N	<1.0	<1.0	<1.0	<1.0

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				210219075	210219076	-	-
Client Sample Reference:				C21	C22	-	-
Sample Date:				13/02/19	13/02/19	-	-
Sample Matrix:				Groundwater	Groundwater	-	-
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	<0.01	<0.01	-	-
INORG-L13	Chloride	mg.l ⁻¹	A	2.7	32.6	-	-
INORG-L01	pH	pH units	A	7.2	7.0	-	-
METALS-L	Nickel	µg.l ⁻¹	A	<1.5	<1.5	-	-
1450	Cadmium	µg.l ⁻¹	S-N	<0.080	<0.080	-	-
ORG017	Mecoprop	µg.l ⁻¹	A	<0.1	<0.1	-	-
ORG-L05	m&p-Xylene	µg.l ⁻¹	N	<1.0	<1.0	-	-

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Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by electrode probe meter (In-house method)	INORG-L01	ISO 17025
Determination of ammonia in waters by colorimetric photometer (In-house method)	INORG-L12	ISO 17025
Determination of chloride by colorimetric photometer (In-house method)	INORG-L13	ISO 17025
Determination of BOD in waters by titration (In-house method)	INORG-L06.1	ISO 17025
Determination of metals (Cr, Ni, Cu, Zn, S) in waters by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals (Cd) in waters by colorimetric analysis (In-house method)	1450	None
Determination of COD in waters by colorimetric photometer (In-house method)	INORG-L05	ISO 17025
Determination of suspended solids in waters by gravimetric (In-house method)	INORG-L10	ISO 17025
Determination of mecoprop in waters by GC-MS (In-house method)	ORG-L17	ISO 17025
Determination of xylene in waters by GC-MS (In-house method)	ORG-L05	None
Determination of TON by summation of Nitrate and Nitrite (In-house method)	-	None

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All results only relate to the items tested.

This report supersedes any previous versions issued by the laboratory.

A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

Where results have been labelled as deviating for any reason, the data may not be representative of the sample at the point of sampling:

[I/S]: Insufficient Sample

[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

< "Less Than"

> "Greater Than"

Where any sub-contracted results have been noted as deviating by the laboratory in question, their deviations codes will be applied and detailed.

Accreditation statements are correct at the time of issue.

This report shall not be reproduced in part without the approval of Decus Research Ltd, nor used in any way as to lead to misrepresentation of the results or their implications.

*****END OF REPORT*****

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