

Gareth Ffoulkes
Cardiff City Council
Waste Management
Lamby Way
Rumney
Cardiff
CF3 2HP

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Certificate of Analysis Number: 2194

Project/Site name:	Lamby Way	Samples Taken:	19-01-2018
Job Number:	-	Samples Received:	19-01-2018
Order Number:	-	Date Instructed:	19-01-2018
Quotation Number:	DS 170612	Analysis Complete:	08-02-2018
Sample Matrix:	Groundwater, Surface Water, Leachate Water	Report Issued:	15-02-2018
		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: Gareth Ffoulkes

CERTIFICATE OF ANALYSIS 2194
Results of analysis of 30 samples received
on the 19/01/18

Report Date
15th February 2018

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				190118039	190118040	190118041	190118042
Client Sample Reference:				L2	L4	SL4	SL5
Sample Date:				19/01/18	19/01/18	19/01/18	19/01/18
Sample Matrix:				Leachate Water	Leachate Water	Leachate Water	Leachate Water
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	1,790	1,720	468	117
INORG-L13	Chloride	mg.l ⁻¹	A	20.9	18.9	15.3	19.8
METALS-L	Nickel	µg.l ⁻¹	A	124	177	9.9	3.6
1450	Cadmium	µg.l ⁻¹	S-N	<0.080	<0.080	<0.080	<0.080
ORL-L17	Mecoprop	µg.l ⁻¹	A	<1.0	<1.0	<0.1	<0.1
ORG-L05	Xylene	µg.l ⁻¹	N	19.7	12.9	<1.0	<1.0

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				190118043	19018044	190118045	-
Client Sample Reference:				SL6	SL7	SL8	-
Sample Date:				19/01/18	19/01/18	19/01/18	-
Sample Matrix:				Leachate Water	Leachate Water	Leachate Water	-
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	52	1,070	1,290	-
INORG-L13	Chloride	mg.l ⁻¹	A	25.1	7.6	18.3	-
METALS-L	Nickel	µg.l ⁻¹	A	1.5	17.3	71.3	-
1450	Cadmium	µg.l ⁻¹	S-N	<0.080	<0.080	0.18	-
ORL-L17	Mecoprop	µg.l ⁻¹	A	<0.1	<0.1	<0.1	-
ORG-L05	Xylene	µg.l ⁻¹	N	<1.	2.7	1.3	-

* Accreditation Status

Tests marked 'A' hold UKAS accreditation

Tests marked 'N' do not hold UKAS accreditation

Tests marked 'S - A' were sub-contracted to an approved laboratory with accreditation on the specific method

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				190118046	190118047	190118048	190118049
Client Sample Reference:				C18	C19	C20	C21
Sample Date:				19/01/18	19/01/18	19/01/18	19/01/18
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	0.18	0.03	0.52	0.26
INORG-L13	Chloride	mg.l ⁻¹	A	17.3	23.5	5.3	13.1
INORG-L01	pH	pH units	A	7.2	7.2	7.0	7.1

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				190118050	190118051	190118052	190118053
Client Sample Reference:				C22	SW2	SW3	SW4
Sample Date:				19/01/18	19/01/18	19/01/18	19/01/18
Sample Matrix:				Groundwater	Surface Water	Surface Water	Surface Water
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	5.2	0.01	0.01	0.40
INORG-L13	Chloride	mg.l ⁻¹	A	5.1	31.2	20.5	33.1
INORG-L06.1	BOD	mg.l ⁻¹ as O ₂	A	-	1.9	1.0	1.1
INORG-L01	pH	pH units	A	6.9	7.5	7.6	7.3

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				190118054	190118055	-	-
Client Sample Reference:				SW5	SW6	-	-
Sample Date:				19/01/18	19/01/18	-	-
Sample Matrix:				Surface Water	Surface Water	-	-
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	4.0	0.53	-	-
INORG-L13	Chloride	mg.l ⁻¹	A	32.6	24.5	-	-
INORG-L06.1	BOD	mg.l ⁻¹ as O ₂	A	8.3	1.1	-	-
INORG-L01	pH	pH units	A	7.3	7.8	-	-

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				190118056	190118057	190118058	-
Client Sample Reference:				C25	LTP1	LTP Sample	-
Sample Date:				19/01/18	19/01/18	19/01/18	-
Sample Matrix:				Leachate Water	Leachate Water	Leachate Water	-
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	1.0	182	910	-
INORG-L01	pH	pH Units	A	-	-	-	-
INORG-L13	Chloride	mg.l ⁻¹	A	30.2	16.5	22.1	-
INORG-L31	Cyanide	mg.l ⁻¹	N	<0.1	<0.1	<0.1	-
INORG-L20	Mono Phenols	mg.l ⁻¹	A	<0.02	1.1	3.6	-
INORG-L21	Ortho-Phosphate	mg.l ⁻¹ P	A	0.03	1.3	5.4	-
METALS-L	Sulphate	mg.l ⁻¹	A	192	140	70.2	-
INORG-L10	Suspended Solids	mg.l ⁻¹	A	13.2	11.2	30	-
INORG-L05	COD	mg.l ⁻¹ O ₂	A	24	350	1,826	-
1450	Arsenic	µg.l ⁻¹	S-N	3.6	32	30	-
METALS-L	Chromium	µg.l ⁻¹	A	3.5	33.8	123	-
METALS-L	Copper	µg.l ⁻¹	A	20.3	6.5	88.1	-
METALS-L	Nickel	µg.l ⁻¹	A	1.7	40.3	169	-
METALS-L	Zinc	µg.l ⁻¹	A	<1.1	<1.1	46.1	-
METALS-L	Sulphur	mg.l ⁻¹	A	64.2	46.7	23.4	-
1630	Dissolved Methane	mg.l ⁻¹	S-N	<0.050	<0.050	<0.050	-

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				190118059	190118060	190118061	190118062
Client Sample Reference:				C1	C2	C3	C5
Sample Date:				19/01/18	19/01/18	19/01/18	19/01/18
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	0.10	0.10	6.2	8.5
INORG-L13	Chloride	mg.l ⁻¹	A	30.0	27.6	18.1	7.4
INORG-L01	pH	pH units	A	7.6	7.6	7.7	7.4

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				190118063	190118064	190118065	190118066
Client Sample Reference:				C6	C8	C12	C13
Sample Date:				19/01/18	19/01/18	19/01/18	19/01/18
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	0.55	0.60	0.26	0.91
INORG-L13	Chloride	mg.l ⁻¹	A	4.4	23.6	6.0	8.5
INORG-L01	pH	pH units	A	7.3	7.9	7.2	7.4

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				190118067	190118068	-	-
Client Sample Reference:				C14	C16	-	-
Sample Date:				19/01/18	19/01/18	-	-
Sample Matrix:				Groundwater	Groundwater	-	-
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	0.14	3.6	-	-
INORG-L13	Chloride	mg.l ⁻¹	A	4.9	4.6	-	-
INORG-L01	pH	pH units	A	7.3	7.2	-	-

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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 (As, Cd) in waters by colorimetric analysis (In-house method)	1450	None
Determination of Cyanide in water by colorimetric analysis (In-house method)	INORG-L31	None
Determination of COD in waters by colorimetric photometer (In-house method)	INORG-L05	ISO 17025
Determination of Ortho-Phosphates in waters by colorimetric photometer (In-house method)	INORG-L21.1	ISO 17025
Determination of suspended solids in waters by gravimetric (In-house method)	INORG-L10	ISO 17025
Determination of Dissolved Methane in waters by GC-MS (Sub-Contracted method)	1630	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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