

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

Decus Research Limited
ExCAL House
Capel Hendre Industrial Estate
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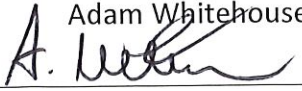
Tel: 01269 844558
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Certificate of Analysis Number: 2797

Project/Site name:	Lamby Way	Samples Taken:	18-12-2018 to 19-12-2018
Job Number:	-	Samples Received:	19-12-2018
Order Number:	-	Date Instructed:	15-01-2019
Quotation Number:	DS 170612	Analysis Complete:	18-01-2019
Sample Matrix:	Groundwater, Surface Water, Leachate Water	Report Issued:	21-01-2019
		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



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FAO: Pat Mcgrath

CERTIFICATE OF ANALYSIS 2797

Results of analysis of 28 samples received
on the 19/12/18

Report Date
21st January 2019

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				150119001	150119002	150119003	150119004
Client Sample Reference:				C1	C2	C3	C5
Sample Date:				18/12/18	18/12/18	18/12/18	18/12/18
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	1.14	0.05	9.23	10.01
INORG-L13	Chloride	mg.l ⁻¹	A	33.5	25.4	11.7	7.2
INORG-L01	pH	pH units	A	6.8	7.1	7.3	7.4

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				150119005	150119006	150119007	150119008
Client Sample Reference:				C6	C8	C12	C13
Sample Date:				18/12/18	18/12/18	18/12/18	18/12/18
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	1.12	4.55	12.74	11.31
INORG-L13	Chloride	mg.l ⁻¹	A	3.1	3.2	3.0	7.8
INORG-L01	pH	pH units	A	7.5	7.1	7.3	7.1

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				150119009	150119010	150119011	150119012
Client Sample Reference:				C16	C18	C19	C20
Sample Date:				18/12/18	18/12/18	18/12/18	18/12/18
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	3.25	0.10	0.36	0.88
INORG-L13	Chloride	mg.l ⁻¹	A	2.0	27.4	21.7	3.5
INORG-L01	pH	pH units	A	7.3	6.9	6.8	7.5

* Accreditation Status

Tests marked 'A' hold UKAS accreditation

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				150119013	150119014	150119015	150119016
Client Sample Reference:				C21	C22	SW2	SW3
Sample Date:				18/12/18	18/12/18	18/12/18	18/12/18
Sample Matrix:				Groundwater	Groundwater	Surface Water	Surface Water
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	0.60	1.69	0.08	<0.01
INORG-L12	Ammonia as N	mg.l ⁻¹ as N	A	0.46	1.3	0.08	<0.01
INORG-L13	Chloride	mg.l ⁻¹	A	4.3	2.9	33.4	17.8
INORG-L01	pH	pH units	A	7.0	6.9	7.1	7.3
INORG-L06.1	BOD	mg.l ⁻¹ as O ₂	A	-	-	2.2	4.0

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				150119017	150119018	150119019	-
Client Sample Reference:				SW4	SW5	SW6	-
Sample Date:				18/12/18	18/12/18	19/12/18	-
Sample Matrix:				Surface Water	Surface Water	Surface Water	-
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	28.5	30.4	22.4	-
INORG-L12	Ammonia as N	mg.l ⁻¹ as N	A	0.04	0.15	0.02	-
INORG-L13	Chloride	mg.l ⁻¹	A	4.3	2.9	33.4	-
INORG-L01	pH	pH units	A	7.4	7.2	7.0	-
INORG-L06.1	BOD	mg.l ⁻¹ as O ₂	A	3.5	5.1	4.5	-

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				150119020	150119021	150119022	150119023
Client Sample Reference:				L2	L4	SL4	SL5
Sample Date:				19/12/18	19/12/18	19/12/18	19/12/18
Sample Matrix:				Leachate	Leachate	Leachate	Leachate
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	1404	1612	442	91
INORG-L13	Chloride	mg.l ⁻¹	A	183	178	16.3	16.5
METALS-L	Nickel	µg.l ⁻¹	A	218	194	13.3	5.1
1450	Cadmium	µg.l ⁻¹	S-N	<0.080	<0.080	<0.080	<0.080
ORG017	Mecoprop	µg.l ⁻¹	A	30.5	3.9	<0.1	14.1
ORG-L05	m&p-Xylene	µg.l ⁻¹	N	2.6	14.6	4.0	<1.0

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				150119024	150119025	150119026	-
Client Sample Reference:				SL6	SL7	SL8	-
Sample Date:				19/12/18	19/12/18	19/12/18	-
Sample Matrix:				Leachate	Leachate	Leachate	-
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	117	1144	1430	-
INORG-L13	Chloride	mg.l ⁻¹	A	18.6	10.9	18.5	-
METALS-L	Nickel	µg.l ⁻¹	A	2.6	23.6	103	-
1450	Cadmium	µg.l ⁻¹	S-N	<0.080	<0.080	<0.080	-
ORG0L17	Mecoprop	µg.l ⁻¹	A	<0.1	57.0	20.4	-
ORG-L05	m&p-Xylene	µg.l ⁻¹	N	<1.0	2.8	<1.0	-

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				150119027		-	-
Client Sample Reference:				L7		-	-
Sample Date:				19/12/18		-	-
Sample Matrix:				Leachate		-	-
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	260		-	-
INORG-L13	Chloride	mg.l ⁻¹	A	17.9		-	-
INORG-L31	Cyanide	mg.l ⁻¹	N	<0.10		-	-
INORG-L20	Mono Phenols	mg.l ⁻¹	A	0.39		-	-
INORG-L21	Ortho-Phosphate	mg.l ⁻¹ P	A	0.08		-	-
METALS-L	Sulphate	mg.l ⁻¹	A	183.3		-	-
INORG-L10	Suspended Solids	mg.l ⁻¹	A	34.4		-	-
INORG-L05	COD	mg.l ⁻¹ O ₂	A	201		-	-
1450	Arsenic	µg.l ⁻¹	S-N	<1.0		-	-
METALS-L	Chromium	µg.l ⁻¹	A	18.4		-	-
METALS-L	Copper	µg.l ⁻¹	A	7.3		-	-
METALS-L	Nickel	µg.l ⁻¹	A	23.1		-	-
METALS-L	Zinc	µg.l ⁻¹	A	9.7		-	-
METALS-L	Lead	µg.l ⁻¹	A	7.0		-	-
METALS-L	Sulphur	mg.l ⁻¹	A	61.2		-	-
1630	Dissolved Methane	mg.l ⁻¹	S-N	<0.050		-	-
INORG-L01	pH	pH units	A	7.6		-	-

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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
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

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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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