Pat Mcgrath
Cardiff City Council
Waste Management
Lamby Way
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Certificate of Analysis Number: 2805

Project/Site name:	Lamby Way		Samples Taken:	09-01-2019 to 16-01-2019
Job Number:	-		Samples Received:	18-01-2019
Order Number:	-		Date Instructed:	18-01-2019
Quotation Number:	DS 170612		Analysis Complete:	20-02-2019
Sample Matrix:	Groundwater, Surface Water, Leachate Water		Report Issued:	20-02-2019
			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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CERTIFICATE OF ANALYSIS 2805

Results of analysis of 28 samples received on the 18/01/19

Report Date
20th February 2019

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**180118005**	**180118006**	**180118007**	**180118008**
Client Sample Reference:				C1	C2	C3	C5
Sample Date:				16/01/19	16/01/19	09/01/19	09/01/19
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	$mg.l^{-1}$ as NH_4	A	1.8	0.05	7.2	4.6
INORG-L13	Chloride	$mg.l^{-1}$	A	58.8	39.3	30.5	17.6
INORG-L01	pH	pH units	A	7.2	8.3	7.6	7.3
1630	Dissolved Methane	$mg.l^{-1}$	S-N	-	<0.050	0.61	-

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**180118009**	**180118010**	**180118011**	**180118012**
Client Sample Reference:				C6	C8	C12	C13
Sample Date:				10/01/19	10/01/19	10/01/19	10/01/19
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	$mg.l^{-1}$ as NH_4	A	0.49	2.6	16.9	8.6
INORG-L13	Chloride	$mg.l^{-1}$	A	11.5	12.2	21.4	11.4
INORG-L01	pH	pH units	A	7.5	7.4	7.4	7.6

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**180118014**	**180118015**	**180118016**	**180118017**
Client Sample Reference:				C16	C18	C19	C20
Sample Date:				09/01/19	09/01/19	09/01/19	09/01/19
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	$mg.l^{-1}$ as NH_4	A	1.7	0.03	0.03	1.9
INORG-L13	Chloride	$mg.l^{-1}$	A	61.7	65.4	12.9	44.7
INORG-L01	pH	pH units	A	6.9	7.7	7.3	7.0

* Accreditation Status
Tests marked 'A' hold UKAS accreditation
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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**180118018**	**180118019**	**180118021**	**180118022**
Client Sample Reference:				C21	C22	SW2	SW3
Sample Date:				09/01/19	09/01/19	10/01/19	10/01/19
Sample Matrix:				Groundwater	Groundwater	Surface Water	Surface Water
INORG-L12	Ammonia	$mg.l^{-1}$ as NH_4	A	0.16	1.2	<0.01	<0.01
INORG-L12	Ammonia as N	$mg.l^{-1}$ as N	A	0.12	0.92	<0.01	<0.01
INORG-L13	Chloride	$mg.l^{-1}$	A	13.4	61.1	32.5	64.3
INORG-L01	pH	pH units	A	7.2	7.0	8.3	8.2
INORG-L06.1	BOD	$mg.l^{-1}$ as O_2	A	-	-	1.6	2.4

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**180118023**	**180118024**	**180118025**	-
Client Sample Reference:				SW4	SW5	SW6	-
Sample Date:				10/01/19	10/01/19	10/01/19	-
Sample Matrix:				Surface Water	Surface Water	Surface Water	-
INORG-L12	Ammonia	$mg.l^{-1}$ as NH_4	A	0.26	0.14	0.56	-
INORG-L12	Ammonia as N	$mg.l^{-1}$ as N	A	0.20	0.11	1.1	
INORG-L13	Chloride	$mg.l^{-1}$	A	28.0	9.6	36.8	-
INORG-L01	pH	pH units	A	8.0	7.9	8.5	-
INORG-L06.1	BOD	$mg.l^{-1}$ as O_2	A	2.3	4.3	3.3	-

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**180118026**	**180118027**	**180118028**	**180118029**
Client Sample Reference:				L2	L4	SL4	SL5
Sample Date:				16/01/19	16/01/19	10/01/19	10/01/19
Sample Matrix:				Leachate	Leachate	Leachate	Leachate
INORG-L12	Ammonia	$mg.l^{-1}$ as NH_4	A	1,378	1,456	351	195
INORG-L13	Chloride	$mg.l^{-1}$	A	201	201	255	265
METALS-L	Nickel	$\mu g.l^{-1}$	A	184	75.1	9.9	4.7
1450	Cadmium	$\mu g.l^{-1}$	S-N	<0.080	<0.080	<0.080	<0.080
ORG0L17	Mecoprop	$\mu g.l^{-1}$	A	15.8	35.1	28.4	11.1
ORG-L05	m&p-Xylene	$\mu g.l^{-1}$	N	5.3	14.2	<1.0	<1.0

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**180118030**	**180118031**	**180118032**	-
Client Sample Reference:				SL6	SL7	SL8	-
Sample Date:				10/01/19	10/01/19	10/01/19	-
Sample Matrix:				Leachate	Leachate	Leachate	-
INORG-L12	Ammonia	$mg.l^{-1}$ as NH_4	A	156	1,196	1,274	-
INORG-L13	Chloride	$mg.l^{-1}$	A	111	238	213	-
METALS-L	Nickel	$\mu g.l^{-1}$	A	5.9	6.0	83.1	-
1450	Cadmium	$\mu g.l^{-1}$	S-N	<0.080	<0.080	<0.080	-
ORG0L17	Mecoprop	$\mu g.l^{-1}$	A	<0.1	22.0	20.0	-
ORG-L05	m&p-Xylene	$\mu g.l^{-1}$	N	1.0	3.3	2.2	-

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**180118034**	**180118035**	-	-
Client Sample Reference:				L7	LTP	-	-
Sample Date:				10/01/19	10/01/19	-	-
Sample Matrix:				Leachate	Leachate	-	-
INORG-L12	Ammonia	$mg.l^{-1}$ as NH_4	A	1,664	1,404	-	-
INORG-L13	Chloride	$mg.l^{-1}$	A	253	196	-	-
INORG-L31	Cyanide	$mg.l^{-1}$	N	<0.1	<0.1	-	-
INORG-L20	Mono Phenols	$mg.l^{-1}$	A	1.0	3.3	-	-
INORG-L21	Ortho-Phosphate	$mg.l^{-1}$ P	A	0.9	6.8	-	-
METALS-L	Sulphate	$mg.l^{-1}$	A	148	86.0	-	-
INORG-L10	Suspended Solids	$mg.l^{-1}$	A	<1.5	35	-	-
INORG-L05	COD	$mg.l^{-1}$ O_2	A	260	1,740	-	-
1450	Arsenic	$\mu g.l^{-1}$	S-N	<1.0	4.1	-	-
METALS-L	Chromium	$\mu g.l^{-1}$	A	19.3	116	-	-
METALS-L	Copper	$\mu g.l^{-1}$	A	45.4	74.4	-	-
METALS-L	Nickel	$\mu g.l^{-1}$	A	34.4	194	-	-
METALS-L	Zinc	$\mu g.l^{-1}$	A	30.5	68.8	-	-
METALS-L	Lead	$\mu g.l^{-1}$	A	7.3	11.5		
METALS-L	Sulphur	$mg.l^{-1}$	A	49.4	28.7	-	-
1630	Dissolved Methane	$mg.l^{-1}$	S-N	<0.050	0.86	-	-
INORG-L01	pH	pH units	A	8.2	8.2	-	-
INORG-L06.1	BOD	$mg.l^{-1}$ as O_2	A	16.7	117	-	-

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

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