

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ



Test Report ID MAR02211

Issue Version: 1

Customer: Bridgend County Borough Council

Customer Reference: Porthcawl Marina - MMO Analysis

Date Sampled: 14-Feb-24

Date Samples Received: 15-Feb-24

Test Report Date: 14-Mar-24

Condition of samples: Cold Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditation

The results reported relate only to the sample tested

The results apply to the sample as received

JM Colbourne

Authorised by: Jane Colbourne

Position: Customer Service Specialist



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MAR02211
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		Units	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)
		Method No	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01
		Accreditation	MMO	MMO	MMO	MMO	MMO	MMO	MMO
			45mm	31.5mm	22.4mm	16mm	11.2mm	8mm	5.6mm
Client Reference:	SOCOTEC Ref:	Matrix	-5.5	-5.0	-4.5	-4.0	-3.5	-3.0	-2.5
A	MAR02211.001	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B	MAR02211.002	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C	MAR02211.003	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00

* See Report Notes

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		Method No	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01
		Accreditation	MMO	MMO	MMO	MMO	MMO	MMO	MMO
			4mm	2.8mm	2mm	1.4mm	1mm	707µm	500µm
Client Reference:	SOCOTEC Ref:	Matrix	-2.0	-1.5	-1.0	-0.5	0.0	0.5	1.0
A	MAR02211.001	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B	MAR02211.002	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C	MAR02211.003	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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		Method No	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01
		Accreditation	MMO	MMO	MMO	MMO	MMO	MMO	MMO
			353.6µm	250µm	176.8µm	125µm	88.39µm	63µm	44.2µm
Client Reference:	SOCOTEC Ref:	Matrix	1.5	2.0	2.5	3.0	3.5	4.0	4.5
A	MAR02211.001	Sediment	0.00	0.16	0.78	3.95	1.50	1.30	4.64
B	MAR02211.002	Sediment	0.00	0.00	0.80	3.37	0.95	2.77	5.59
C	MAR02211.003	Sediment	0.00	0.01	0.27	3.25	3.29	0.83	4.62

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		Method No	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01
		Accreditation	MMO	MMO	MMO	MMO	MMO	MMO	MMO
			31.3µm	22.1µm	15.6µm	11µm	7.8µm	5.5µm	3.9µm
Client Reference:	SOCOTEC Ref:	Matrix	5.0	5.5	6.0	6.5	7.0	7.5	8.0
A	MAR02211.001	Sediment	6.50	7.87	10.73	12.36	12.00	11.07	8.65
B	MAR02211.002	Sediment	6.35	6.59	8.82	10.68	10.87	11.07	9.50
C	MAR02211.003	Sediment	7.40	8.01	9.54	11.61	12.18	11.24	8.61

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		Method No	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01
		Accreditation	MMO	MMO	MMO	MMO	MMO	MMO	MMO
			2.75µm	1.95µm	1.38µm	0.98µm	0.69µm	0.49µm	0.34µm
Client Reference:	SOCOTEC Ref:	Matrix	8.5	9.0	9.5	10.0	10.5	11.0	11.5
A	MAR02211.001	Sediment	5.54	2.97	1.73	1.39	1.37	1.36	1.25
B	MAR02211.002	Sediment	6.44	3.60	2.21	1.80	1.73	1.67	1.54
C	MAR02211.003	Sediment	5.52	3.12	1.98	1.60	1.48	1.38	1.24

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		Method No	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01
		Accreditation	MMO	MMO	MMO	MMO	MMO	MMO	MMO
			0.24µm	0.17µm	0.12µm	0.09µm	0.06µm	0.04µm	<0.04µm
Client Reference:	SOCOTEC Ref:	Matrix	12.0	12.5	13.0	13.5	14.0	14.5	>14.5
A	MAR02211.001	Sediment	1.06	0.79	0.56	0.34	0.13	0.02	0.00
B	MAR02211.002	Sediment	1.32	0.99	0.72	0.44	0.17	0.02	0.00
C	MAR02211.003	Sediment	1.03	0.77	0.55	0.34	0.13	0.02	0.00

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		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Mercury (Hg)	Nickel (Ni)	Lead (Pb)	Zinc (Zn)
A	MAR02211.001	Sediment	13.6	0.17	35.0	27.0	0.15	28.2	53.4	179
B	MAR02211.002	Sediment	13.6	0.16	33.2	30.2	0.16	27.5	48.6	169
C	MAR02211.003	Sediment	14.6	0.14	35.4	28.7	0.17	29.0	50.4	173
Certified Reference Material SETOC 768 (% Recovery)			99	103	114	106	118	110	103	107
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

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Customer Reference Porthcawl Marina - MMO Analysis

		Units	mg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	0.001	0.001
		Accreditation	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	Dibutyltin (DBT)	Tributyltin (TBT)
A	MAR02211.001	Sediment	<0.005	<0.005
B	MAR02211.002	Sediment	<0.005	<0.005
C	MAR02211.003	Sediment	<0.005	<0.005
Certified Reference Material BCR-646 (% Recovery)			67	60
QC Blank			<0.001	<0.001

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		Units	mg/Kg
		Method No	ASC/SOP/305
		Limit of Detection	1
		Accreditation	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	THC
A	MAR02211.001	Sediment	35.2
B	MAR02211.002	Sediment	97.8
C	MAR02211.003	Sediment	81.5
In House Reference Material (% Recovery)			91~
QC Blank			<1

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are available.

For full analyte name see method summaries.

*See report notes

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REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
*SUB_01	MAR02211.001-003	Analysis was conducted by an approved subcontracted laboratory.
ICPMSS*	MAR02211.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
ASC/SOP/301	MAR02211.001-003	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

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Method	Sample and Fraction Size	Method Summary
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Ultra-violet fluorescence spectroscopy

Analyte Definitions					
Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorocyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorocyclohexane
BAA	Benzo[a]anthracene	DBENZA	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorocyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HC	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	PPDDE	p,p'-Dichlorodiphenyldichloroethylene
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	PPDDT	p,p'-Dichlorodiphenyltrichloroethane
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	PPTDE	p,p'-Dichlorodiphenyldichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

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