

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 MAR02997

Issue Version: 1

Customer: Stena Line, Stena House, Holyhead, LL65 1DQ

Customer Reference: DML2278 - MMO Sediment Analysis

Date Sampled: 25-Mar-26

Date Samples Received: 27-Mar-26

Test Report Date: 11-May-26

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

A handwritten signature in grey ink that reads 'K. Smith'.

Authorised by: Katherine Smith

Position: Customer Services Co-ordinator



1252

MAR02997
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Test Report ID MAR02997
Issue Version 1
Customer Reference DML2278 - MMO Sediment Analysis

		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
Table 3 1 Inner Harbour Mid Section	MAR02997.001	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 3 2 Inner Harbour Bend	MAR02997.002	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 3 3 Inner Harbour T2	MAR02997.003	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 4 1 Inner Harbour South Quay	MAR02997.004	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 4 2 Inner Harbour Fish Dock Entrance	MAR02997.005	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 4 3 Inner Harbour Entrance	MAR02997.006	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 5 1 T5/T3 Approach	MAR02997.007	Sediment	0.00	0.00	0.00	0.00	1.78	1.21	1.46
Table 5 2 T3 Berth	MAR02997.008	Sediment	0.00	0.00	0.00	0.00	2.36	0.00	1.69
Table 5 3 T5 Berth	MAR02997.009	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 6 1 DWB Approach	MAR02997.010	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 6 2 DWB Pocket	MAR02997.011	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 6 3 DWB South Pocket	MAR02997.012	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
			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
Table 3 1 Inner Harbour Mid Section	MAR02997.001	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 3 2 Inner Harbour Bend	MAR02997.002	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 3 3 Inner Harbour T2	MAR02997.003	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 4 1 Inner Harbour South Quay	MAR02997.004	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 4 2 Inner Harbour Fish Dock Entrance	MAR02997.005	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 4 3 Inner Harbour Entrance	MAR02997.006	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 5 1 T5/T3 Approach	MAR02997.007	Sediment	1.26	1.60	1.13	0.92	0.93	0.16	2.23
Table 5 2 T3 Berth	MAR02997.008	Sediment	0.77	0.65	0.66	0.52	0.47	0.00	0.00
Table 5 3 T5 Berth	MAR02997.009	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 6 1 DWB Approach	MAR02997.010	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 6 2 DWB Pocket	MAR02997.011	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 6 3 DWB South Pocket	MAR02997.012	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
Table 3 1 Inner Harbour Mid Section	MAR02997.001	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.90
Table 3 2 Inner Harbour Bend	MAR02997.002	Sediment	0.00	0.00	0.00	0.01	0.99	2.59	7.03
Table 3 3 Inner Harbour T2	MAR02997.003	Sediment	0.00	0.00	0.00	0.00	0.00	0.22	5.84
Table 4 1 Inner Harbour South Quay	MAR02997.004	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.15
Table 4 2 Inner Harbour Fish Dock Entrance	MAR02997.005	Sediment	0.00	0.00	0.00	0.00	0.00	0.58	6.94
Table 4 3 Inner Harbour Entrance	MAR02997.006	Sediment	0.00	0.06	1.61	4.93	8.81	10.23	9.69
Table 5 1 T5/T3 Approach	MAR02997.007	Sediment	1.28	0.59	3.87	4.71	5.20	5.25	5.58
Table 5 2 T3 Berth	MAR02997.008	Sediment	0.00	0.02	0.84	1.89	4.27	7.49	6.74
Table 5 3 T5 Berth	MAR02997.009	Sediment	0.00	0.31	2.78	4.54	5.96	6.99	8.05
Table 6 1 DWB Approach	MAR02997.010	Sediment	0.00	0.00	0.03	1.71	3.47	3.04	2.89
Table 6 2 DWB Pocket	MAR02997.011	Sediment	0.00	0.14	3.22	9.03	11.26	9.71	7.15
Table 6 3 DWB South Pocket	MAR02997.012	Sediment	0.00	0.71	4.31	6.88	7.61	7.58	7.42

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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
Table 3 1 Inner Harbour Mid Section	MAR02997.001	Sediment	7.49	6.75	9.89	12.59	12.64	11.87	9.80
Table 3 2 Inner Harbour Bend	MAR02997.002	Sediment	8.70	7.79	9.16	10.19	9.93	9.54	8.20
Table 3 3 Inner Harbour T2	MAR02997.003	Sediment	8.20	7.91	9.58	10.92	11.12	10.73	9.08
Table 4 1 Inner Harbour South Quay	MAR02997.004	Sediment	4.86	7.27	14.94	11.00	8.84	9.25	9.01
Table 4 2 Inner Harbour Fish Dock Entrance	MAR02997.005	Sediment	8.29	7.82	9.27	10.61	10.66	10.32	8.82
Table 4 3 Inner Harbour Entrance	MAR02997.006	Sediment	9.06	6.63	6.70	6.94	6.57	6.24	5.36
Table 5 1 T5/T3 Approach	MAR02997.007	Sediment	6.00	5.14	6.01	6.12	5.55	5.44	4.92
Table 5 2 T3 Berth	MAR02997.008	Sediment	6.10	5.32	6.39	6.91	6.60	6.68	6.18
Table 5 3 T5 Berth	MAR02997.009	Sediment	7.41	5.86	6.81	7.94	8.04	7.72	6.47
Table 6 1 DWB Approach	MAR02997.010	Sediment	5.68	7.76	12.21	10.19	8.96	8.90	7.95
Table 6 2 DWB Pocket	MAR02997.011	Sediment	6.00	4.77	5.64	6.58	6.57	6.39	5.47
Table 6 3 DWB South Pocket	MAR02997.012	Sediment	6.87	5.24	6.25	7.40	7.28	6.93	5.88

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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
Table 3 1 Inner Harbour Mid Section	MAR02997.001	Sediment	7.22	4.84	3.28	2.42	2.07	1.99	1.92
Table 3 2 Inner Harbour Bend	MAR02997.002	Sediment	6.28	4.39	3.08	2.29	1.95	1.88	1.84
Table 3 3 Inner Harbour T2	MAR02997.003	Sediment	6.80	4.60	3.11	2.27	1.93	1.85	1.79
Table 4 1 Inner Harbour South Quay	MAR02997.004	Sediment	7.57	5.66	4.21	3.29	2.86	2.80	2.72
Table 4 2 Inner Harbour Fish Dock Entrance	MAR02997.005	Sediment	6.69	4.58	3.14	2.32	1.97	1.91	1.87
Table 4 3 Inner Harbour Entrance	MAR02997.006	Sediment	4.14	2.93	2.10	1.60	1.34	1.22	1.13
Table 5 1 T5/T3 Approach	MAR02997.007	Sediment	4.06	3.31	2.76	2.18	1.82	1.84	1.92
Table 5 2 T3 Berth	MAR02997.008	Sediment	5.18	4.19	3.42	2.70	2.32	2.37	2.46
Table 5 3 T5 Berth	MAR02997.009	Sediment	4.79	3.30	2.40	1.90	1.66	1.60	1.55
Table 6 1 DWB Approach	MAR02997.010	Sediment	6.20	4.41	3.24	2.57	2.22	2.07	1.93
Table 6 2 DWB Pocket	MAR02997.011	Sediment	4.17	2.96	2.16	1.67	1.42	1.35	1.30
Table 6 3 DWB South Pocket	MAR02997.012	Sediment	4.49	3.18	2.33	1.82	1.57	1.49	1.42

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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
			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
Table 3 1 Inner Harbour Mid Section	MAR02997.001	Sediment	1.66	1.21	0.82	0.46	0.17	0.02	0.00
Table 3 2 Inner Harbour Bend	MAR02997.002	Sediment	1.61	1.17	0.78	0.43	0.16	0.02	0.00
Table 3 3 Inner Harbour T2	MAR02997.003	Sediment	1.55	1.13	0.76	0.43	0.16	0.02	0.00
Table 4 1 Inner Harbour South Quay	MAR02997.004	Sediment	2.32	1.59	0.98	0.50	0.17	0.02	0.00
Table 4 2 Inner Harbour Fish Dock Entrance	MAR02997.005	Sediment	1.63	1.17	0.78	0.43	0.16	0.02	0.00
Table 4 3 Inner Harbour Entrance	MAR02997.006	Sediment	0.98	0.74	0.53	0.32	0.13	0.02	0.00
Table 5 1 T5/T3 Approach	MAR02997.007	Sediment	1.68	1.10	0.61	0.26	0.07	0.01	0.00
Table 5 2 T3 Berth	MAR02997.008	Sediment	2.15	1.41	0.80	0.35	0.10	0.01	0.00
Table 5 3 T5 Berth	MAR02997.009	Sediment	1.39	1.07	0.78	0.47	0.18	0.02	0.00
Table 6 1 DWB Approach	MAR02997.010	Sediment	1.67	1.25	0.89	0.53	0.21	0.02	0.00
Table 6 2 DWB Pocket	MAR02997.011	Sediment	1.14	0.84	0.58	0.33	0.13	0.01	0.00
Table 6 3 DWB South Pocket	MAR02997.012	Sediment	1.24	0.93	0.65	0.38	0.14	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)
Table 3 1 Inner Harbour Mid Section	MAR02997.001	Sediment	11.9	0.15	32.0	28.5	0.10	28.2	39.0	125
Table 3 2 Inner Harbour Bend	MAR02997.002	Sediment	11.6	0.15	31.2	23.3	0.12	28.3	36.9	115
Table 3 3 Inner Harbour T2	MAR02997.003	Sediment	12.0	0.14	32.1	22.3	0.08	28.5	36.5	111
Table 4 1 Inner Harbour South Quay	MAR02997.004	Sediment	10.6	0.14	31.1	22.7	0.10	26.5	35.0	113
Table 4 2 Inner Harbour Fish Dock Entrance	MAR02997.005	Sediment	9.8	0.17	31.4	21.8	0.08	27.7	37.6	116
Table 4 3 Inner Harbour Entrance	MAR02997.006	Sediment	8.7	0.12	22.2	14.1	0.03	19.6	22.6	73.8
Table 5 1 T5/T3 Approach	MAR02997.007	Sediment	27.2	0.14	29.4	17.8	0.07	26.1	36.6	98.2
Table 5 2 T3 Berth	MAR02997.008	Sediment	14.9	0.13	33.8	25.9	0.29	26.6	62.5	131
Table 5 3 T5 Berth	MAR02997.009	Sediment	12.9	0.11	28.8	17.7	0.58	25.4	32.6	96.5
Table 6 1 DWB Approach	MAR02997.010	Sediment	8.5	0.10	25.3	15.0	0.09	22.0	28.0	83.9
Table 6 2 DWB Pocket	MAR02997.011	Sediment	8.5	0.07	26.4	14.1	0.05	22.3	29.4	85.9
Table 6 3 DWB South Pocket	MAR02997.012	Sediment	9.1	0.10	28.8	15.4	0.06	24.0	32.0	92.4
Certified Reference Material SETOC 768 (% Recovery)			103	108	103	113	112	104	112	111
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

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		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)
Table 3 1 Inner Harbour Mid Section	MAR02997.001	Sediment	<0.005	<0.005
Table 3 2 Inner Harbour Bend	MAR02997.002	Sediment	<0.005	<0.005
Certified Reference Material BCR-646 (% Recovery)			60	59
QC Blank			<0.001	<0.001

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		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)
Table 3 3 Inner Harbour T2	MAR02997.003	Sediment	<0.005	<0.005
Table 4 1 Inner Harbour South Quay	MAR02997.004	Sediment	<0.005	<0.005
Table 4 2 Inner Harbour Fish Dock Entrance	MAR02997.005	Sediment	<0.005	<0.005
Table 4 3 Inner Harbour Entrance	MAR02997.006	Sediment	<0.005	<0.005
Table 5 1 T5/T3 Approach	MAR02997.007	Sediment	<0.001	<0.001
Table 5 2 T3 Berth	MAR02997.008	Sediment	<0.001	<0.001
Table 5 3 T5 Berth	MAR02997.009	Sediment	<0.005	<0.005
Table 6 1 DWB Approach	MAR02997.010	Sediment	<0.005	<0.005
Table 6 2 DWB Pocket	MAR02997.011	Sediment	<0.005	<0.005
Table 6 3 DWB South Pocket	MAR02997.012	Sediment	<0.005	<0.005
Certified Reference Material BCR-646 (% Recovery)			79	75
QC Blank			<0.001	<0.001

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		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1	1	1
		Accreditation	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	ACENAPTH	ACENAPHY	ANTHRACN	BAA	BAP	BBF	BENZGHIP	BEP
Table 3 1 Inner Harbour Mid Section	MAR02997.001	Sediment	10.2	5.33	15.7	51.4	69.1	101	75.7	69.0
Table 3 2 Inner Harbour Bend	MAR02997.002	Sediment	8.38	7.11	45.3	94.5	113	139	100	91.7
Certified Reference Material Quasimeme SED42 (% Recovery)			39	128	95	85	89	89	98	91
QC Blank			<1	<1	<1	<1	<1	<1	<1	<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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		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1	1	1
		Accreditation	UKAS/MMO	MMO	MMO	MMO	MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	BKF*	C1N	C1PHEN	C2N	C3N	CHRYSENE*	DBENZAH	FLUORANT
Table 3 1 Inner Harbour Mid Section	MAR02997.001	Sediment	71.1	96.5	133	113	83.4	80.0	17.8	113
Table 3 2 Inner Harbour Bend	MAR02997.002	Sediment	104	95.2	192	113	85.3	121	23.6	224
Certified Reference Material Quasimeme SED42 (% Recovery)			94	98	95	99	55	100	106	96
QC Blank			<1	<1	<1	<1	<1	<1	<1	<1

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For full analyte name see method summaries.

*See report notes

MAR02997

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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 MAR02997
Issue Version 1
Customer Reference DML2278 - MMO Sediment Analysis

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	mg/Kg
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/305
		Limit of Detection	1	1	1	1	1	1	1
		Accreditation	UKAS/MMO	UKAS/MMO	UKAS/MMO	MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	FLUORENE	INDPYR	NAPTH	PERYLENE	PHENANT	PYRENE	THC
Table 3 1 Inner Harbour Mid Section	MAR02997.001	Sediment	23.6	82.9	45.9	36.3	95.9	101	16.6
Table 3 2 Inner Harbour Bend	MAR02997.002	Sediment	24.1	108	41.2	53.4	124	191	38.4
Certified Reference Material Quasimeme SED42 (% Recovery)			69	99	89	108	80	95	97~
QC Blank			<1	<1	<1	<1	<1	<1	<1

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Test Report ID MAR02997
Issue Version 1
Customer Reference DML2278 - MMO Sediment Analysis

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1	1	1
		Accreditation	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	ACENAPTH	ACENAPHY	ANTHRACN	BAA	BAP	BBF	BENZGHIP	BEP
Table 3 3 Inner Harbour T2	MAR02997.003	Sediment	9.26	4.09	17.2	46.3	52.1	70.2	54.6	53.6
Table 4 1 Inner Harbour South Quay	MAR02997.004	Sediment	7.28	3.65	12.3	42.5	53.2	82.6	59.1	55.0
Table 4 2 Inner Harbour Fish Dock Entrance	MAR02997.005	Sediment	4.54	<1	4.99	24.1	29.7	54.7	65.6	42.8
Table 4 3 Inner Harbour Entrance	MAR02997.006	Sediment	5.59	3.39	7.81	27.0	31.4	48.1	34.4	34.7
Table 5 1 T5/T3 Approach	MAR02997.007	Sediment	24.5	7.08	52.6	151	159	170	104	110
Table 5 2 T3 Berth	MAR02997.008	Sediment	25.7	7.47	33.9	104	116	142	120	112
Table 5 3 T5 Berth	MAR02997.009	Sediment	49.2	14.7	88.8	236	250	315	233	220
Table 6 1 DWB Approach	MAR02997.010	Sediment	6.75	2.89	17.9	95.0	232	212	140	173
Table 6 2 DWB Pocket	MAR02997.011	Sediment	7.54	2.28	9.05	36.1	44.5	57.1	46.1	44.6
Table 6 3 DWB South Pocket	MAR02997.012	Sediment	6.71	3.22	10.0	32.5	39.0	64.6	45.7	44.3
Certified Reference Material Quasimeme SED42 (% Recovery)			41	95	71	80	76	77	82	88
QC Blank			<1	<1	<1	<1	<1	<1	<1	<1

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*See report notes

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Test Report ID MAR02997
Issue Version 1
Customer Reference DML2278 - MMO Sediment Analysis

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1	1	1
		Accreditation	UKAS/MMO	MMO	MMO	MMO	MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	BKF*	C1N	C1PHEN	C2N	C3N	CHRYSENE*	DBENZAH	FLUORANT
Table 3 3 Inner Harbour T2	MAR02997.003	Sediment	53.6	97.6	168	103	66.5	75.0	11.9	92.3
Table 4 1 Inner Harbour South Quay	MAR02997.004	Sediment	66.9	81.7	144	96.8	73.0	66.7	9.9	87.1
Table 4 2 Inner Harbour Fish Dock Entrance	MAR02997.005	Sediment	23.6	137	174	132	125	34.0	6.5	31.6
Table 4 3 Inner Harbour Entrance	MAR02997.006	Sediment	40.6	67.3	80.3	93.0	51.3	45.2	7.0	52.8
Table 5 1 T5/T3 Approach	MAR02997.007	Sediment	143	67.9	155	79.5	59.2	178	26.0	285
Table 5 2 T3 Berth	MAR02997.008	Sediment	120	116	175	121	112	137	24.4	248
Table 5 3 T5 Berth	MAR02997.009	Sediment	258	174	499	184	193	286	48.5	516
Table 6 1 DWB Approach	MAR02997.010	Sediment	169	59.2	72.5	52.3	49.8	183	41.8	57.1
Table 6 2 DWB Pocket	MAR02997.011	Sediment	55.6	72.4	69.9	69.1	59.2	55.3	10.9	71.5
Table 6 3 DWB South Pocket	MAR02997.012	Sediment	46.7	82.5	143	81.3	67.9	53.6	10.8	65.4
Certified Reference Material Quasimeme SED42 (% Recovery)			86	81	107	94	55	96	87	92
QC Blank			<1	<1	<1	<1	<1	<1	<1	<1

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*See report notes

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

Test Report ID MAR02997
Issue Version 1
Customer Reference DML2278 - MMO Sediment Analysis

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	mg/Kg
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/305
		Limit of Detection	1	1	1	1	1	1	1
		Accreditation	UKAS/MMO	UKAS/MMO	UKAS/MMO	MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	FLUORENE	INDPYR	NAPTH	PERYLENE	PHENANT	PYRENE	THC
Table 3 3 Inner Harbour T2	MAR02997.003	Sediment	19.9	51.5	36.4	27.0	83.6	77.8	44.8
Table 4 1 Inner Harbour South Quay	MAR02997.004	Sediment	18.5	54.8	31.2	28.4	72.6	75.8	19.1
Table 4 2 Inner Harbour Fish Dock Entrance	MAR02997.005	Sediment	15.8	23.5	30.4	535	77.0	54.6	17.7
Table 4 3 Inner Harbour Entrance	MAR02997.006	Sediment	13.9	35.2	25.5	17.1	51.7	45.2	37.3
Table 5 1 T5/T3 Approach	MAR02997.007	Sediment	25.8	116	35.7	64.6	177	249	14.9
Table 5 2 T3 Berth	MAR02997.008	Sediment	38.9	126	51.4	56.0	166	222	12.5
Table 5 3 T5 Berth	MAR02997.009	Sediment	70.8	230	95.2	116	351	471	7.09
Table 6 1 DWB Approach	MAR02997.010	Sediment	14.2	136	22.7	74.2	57.4	46.3	28.7
Table 6 2 DWB Pocket	MAR02997.011	Sediment	15.0	47.8	28.5	23.4	63.3	60.6	11.1
Table 6 3 DWB South Pocket	MAR02997.012	Sediment	16.9	47.7	30.3	23.0	64.8	55.8	2.70
Certified Reference Material Quasimeme SED42 (% Recovery)			65	75	90	105	76	92	99~
QC Blank			<1	<1	<1	<1	<1	<1	<1

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Test Report ID MAR02997
Issue Version 1
Customer Reference DML2278 - MMO Sediment Analysis

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
*SUB_01	MAR02997.001-012	Analysis was conducted by an approved subcontracted laboratory.
ICPMSS*	MAR02997.001-012	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
ASC/SOP/301	MAR02997.001-006, .009-012	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.
ASC/SOP/303/304	MAR02997.001-012	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR02997.001-012	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. Triphenylene may be present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene). This should be taken into consideration when utilising the data.

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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Test Report ID MAR02997
 Issue Version 1
 Customer Reference DML2278 - MMO Sediment Analysis

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.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up 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	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorocyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCb	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
CTN	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

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