QUASIMEME

Quality assurance of information for marine environmental monitoring

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Certificate of Analysis

Sediment

REFERENCE MATERIAL

Sediment sample 10

WAGENINGEN
UNIVERSITY & RESEARCH

Certificate of Analysis Sediment 10

General Information

In this report an overview is given of analytical data for this sample collected in our proficiency testing program. The consensus values are calculated using a robust statistical model. With this NDA model mean and standard deviation are calculated using all reported data when at least 4 results are left after removal of reported 'lower than' (<) and 0 (= zero) values. No outliers are removed.

This report is divided into two sections: Consensus Values and Indicative Values. The division is made on the reliability of the data. Consensus Values are based on at least 10 results while the relative uncertainty is smaller than 6.25%. Indicative Values are based on a relative uncertainty of maximum 35% with at least 4 and less than 10 results or a relative uncertainty higher than 6.25%.

For each determinand the following parameters are given: mean, standard deviation, coefficient of variation, number of results, median, MAD (Median of Absolute Deviation) and the uncertainty in the assigned value. The confidence limits (at 95 % probabilty) are calculated for these determinands.

The results of each determinand is expressed on dried sediment.

Sample information

QUASIMEME reference materials cover a range of natural Marine sediment species from contaminated waters from the North Sea and/or Mediterranean. There is no spiking, mixing or other alterations of the samples. For sample preparation the sediment samples are dried at 40 oC and milled to pass a 0.5 mm sieve.

This Sediment sample 10 of Harbor sediment from Oostend harbor, Belgium is prepared for the QUASIMEME proficiency programs. The results on which the values in this report are based were taken from the periods given in the following table.

Year.Round	Program	Sample Round Id
2021.2	MS2	QOR148MS
2018.2	MS6	QSP066MS
2016.1	MS7	QBC046MS

Consensus Values MS2

Method: Chlorinated organics - MS2

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
PCB118	µg/kg	0.826	0.1673	20.3	22	0.832	0.1185	0.0446	0.752 - 0.900
PCB153	µg/kg	3.01	0.699	23.2	24	3.01	0.471	0.178	2.72 - 3.31
PCB156	µg/kg	0.284	0.0391	13.8	12	0.290	0.0245	0.0141	0.259 - 0.308

Method: Carbon - MS2

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
TOC	%	1.55	0.128	8.2	12	1.53	0.089	0.046	1.47 - 1.63

Indicative Values MS2

Method: Chlorinated organics - MS2

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
PCB18	µg/kg	0.0870	0.0199	22.9	4	0.0940	0.0150	0.0125	0.0593 - 0.115
PCB28	µg/kg	0.311	0.1066	34.3	18	0.325	0.0740	0.0314	0.259 - 0.364
PCB31	µg/kg	0.210	0.0905	43.1	10	0.233	0.0595	0.0358	0.146 - 0.274
PCB44	µg/kg	0.148	0.0286	19.4	4	0.159	0.0220	0.0179	0.108 - 0.187
PCB47	µg/kg	0.120	0.0130	10.9	4	0.125	0.0100	0.0081	0.101 - 0.138
PCB49	µg/kg	0.359	0.2102	58.5	6	0.360	0.1380	0.1073	0.149 - 0.569
PCB52	µg/kg	0.363	0.1010	27.8	19	0.410	0.0750	0.0290	0.315 - 0.412
PCB66	µg/kg	0.343	0.0805	23.5	5	0.357	0.0570	0.0450	0.250 - 0.435
PCB101	µg/kg	1.24	0.435	35.2	22	1.30	0.291	0.116	1.04 - 1.43
PCB105	µg/kg	0.262	0.1194	45.7	10	0.275	0.0885	0.0472	0.177 - 0.346
PCB110	µg/kg	0.925	0.0969	10.5	5	0.921	0.0650	0.0542	0.814 - 1.04
PCB128	µg/kg	0.419	0.0064	1.5	6	0.420	0.0050	0.0033	0.412 - 0.425
PCB138+PCB163	µg/kg	3.91	0.601	15.4	7	3.89	0.403	0.284	3.38 - 4.45
PCB138	µg/kg	2.98	1.044	35.0	20	2.88	0.705	0.292	2.50 - 3.47
PCB141	µg/kg	0.698	0.0732	10.5	5	0.720	0.0500	0.0409	0.614 - 0.782
PCB149	µg/kg	2.46	0.716	29.1	9	2.35	0.478	0.298	1.92 - 3.00
PCB151	µg/kg	0.730	0.1632	22.4	5	0.700	0.1160	0.0912	0.542 - 0.917
PCB158	µg/kg	0.266	0.0246	9.3	4	0.266	0.0165	0.0154	0.231 - 0.300
PCB170	µg/kg	1.48	0.339	22.9	9	1.48	0.245	0.141	1.22 - 1.73
PCB180	µg/kg	2.60	0.787	30.3	24	2.60	0.540	0.201	2.27 - 2.93
PCB183	µg/kg	0.473	0.0731	15.4	6	0.491	0.0540	0.0373	0.400 - 0.546
PCB187	µg/kg	1.22	0.176	14.5	6	1.29	0.133	0.090	1.04 - 1.39
PCB194	µg/kg	0.463	0.0676	14.6	7	0.474	0.0460	0.0320	0.402 - 0.523
g-HCH	µg/kg	0.0341	0.0182	53.2	7	0.0400	0.0120	0.0086	0.0179 - 0.0503
HCB	µg/kg	0.166	0.0727	43.9	13	0.175	0.0560	0.0252	0.122 - 0.209
Dieldrin	µg/kg	0.0872	0.0017	1.9	5	0.0880	0.0014	0.0009	0.0853 - 0.0891
pp'-DDD	µg/kg	0.156	0.0419	26.9	14	0.161	0.0295	0.0140	0.132 - 0.180
pp'-DDE	µg/kg	0.230	0.0564	24.5	15	0.220	0.0370	0.0182	0.199 - 0.261
pp'-DDT	µg/kg	0.0666	0.0291	43.7	8	0.0731	0.0228	0.0129	0.0429 - 0.0904

Indicative Values MS6

Method: Organometals - MS6

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Tributyltin (TBT)	µg Sn/kg	0.810	0.2583	31.9	13	0.887	0.1668	0.0895	0.656 - 0.965
Dibutyltin (DBT)	µg Sn/kg	0.931	0.5902	63.4	12	1.025	0.4175	0.2130	0.560 - 1.30
Monobutyltin (MBT)	µg Sn/kg	6.94	3.820	55.0	14	7.63	2.595	1.276	4.75 - 9.13

Indicative Values MS7

Method: Brominated Flame Retardants - MS7

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
BDE047	µg/kg	0.0465	0.0195	41.9	10	0.0541	0.0151	0.0077	0.0327 - 0.0602
BDE209	µg/kg	56.4	6.21	11.0	9	56.8	4.38	2.59	51.7 - 61.0