WEPAL-QUASIMEME

Certificate of Analysis

Polycyclic Aromatic Hydrocarbons in seawater

REFERENCE MATERIAL

AQ13 sample 58

2026-Aug-13

WAGENINGEN
UNIVERSITY & RESEARCH

Certificate of Analysis AQ13 58

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, the 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 8 results and a maximum relative uncertainty of 6.25%. Indicative Values are based on a maximum relative uncertainty of 35% and a minimum of 4 and maximum of 7 results, or a relative uncertainty greater than 6.25% when there are at least 8 results.

For each measurand, the following parameters are given: mean, standard deviation, coefficient of variation, number of results, median, MAD (Median of Absolute Deviation), the uncertainty of the mean (consensus or indicative) value and the relative uncertainty.

Please note: Most WEPAL-QUASIMEME reference materials are found to be stable over the long term (>10 years) for most measurand/matrix combinations. There are a few exceptions known to us as being less stable over the long term. These are organotins in sediment (MS6), ASP in shellfish (BT7), some PAHs and PCBs in sediment (SETOC) and N-NH_4 (as N) & N-NO_3 (as N) in clay soils (ISE).

Sample information

QUASIMEME reference materials cover a range of natural SeaWater species from contaminated waters from the North Sea and/or Mediterranean.

This AQ13 sample 58 of Seawater with spike solution from North Sea, the Netherlands is prepared for the QUASIMEME proficiency programs. The results on which the values in this report are based were taken from the rounds given in the following table.

Year.Round	Program	Sample Round Id
2026.1	AQ13	QPH056SW

Consensus Values AQ13

Method: Polycyclic aromatic hydrocarbons - AQ13

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Phenanthrene	µg/L	0.890	0.094	10.6	14	0.884	0.048	0.031	3.53
Fluoranthene	µg/L	2.43	0.202	8.3	15	2.43	0.089	0.065	2.68
Benzo[b]fluoranthene	µg/L	0.118	0.014	11.7	14	0.118	0.007	0.005	3.91
Benzo[a]pyrene	µg/L	0.119	0.017	14.3	15	0.120	0.008	0.005	4.63
Naphthalene	µg/L	4.37	0.687	15.7	16	4.30	0.466	0.215	4.92
Benzo[k]fluoranthene	µg/L	0.051	0.006	11.1	12	0.050	0.003	0.002	4.02
Anthracene	µg/L	2.33	0.302	13.0	15	2.35	0.160	0.098	4.18
Acenaphthene	µg/L	2.03	0.289	14.2	13	2.06	0.185	0.100	4.92
Acenaphthylene	µg/L	2.36	0.290	12.3	14	2.33	0.212	0.097	4.11
Pyrene	µg/L	0.132	0.010	7.5	14	0.132	0.003	0.003	2.50
Benzo[a]anthracene	µg/L	0.229	0.030	13.2	14	0.226	0.022	0.010	4.40
Chrysene	µg/L	0.100	0.008	8.1	15	0.099	0.005	0.003	2.60
Fluorene	µg/L	0.096	0.013	13.1	12	0.095	0.006	0.005	4.73

Indicative Values AQ13

Method: Polycyclic aromatic hydrocarbons - AQ13

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Indeno[1,2,3-cd]pyrene	µg/L	0.477	0.165	34.5	14	0.479	0.112	0.055	11.5
Benzo[g,h,i]perylene	µg/L	0.185	0.045	24.1	16	0.190	0.027	0.014	7.53
Dibenzo[ah]anthracene	µg/L	0.218	0.052	23.8	13	0.222	0.030	0.018	8.26
Benzo[e]pyrene	µg/L	0.249	0.048	19.4	6	0.250	0.030	0.025	9.92