



**University of Stuttgart**  
Germany

**Institute for Sanitary Engineering,  
Water Quality and Solid Waste  
Management**

**AQS Baden-Württemberg**

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AQS Baden-Württemberg

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To the participants of AQS Baden-Württemberg

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**Proficiency test 5/24**  
**TW S11 – Haloacetic acids in drinking water**

2023-03-11

Dear Madam or Sir,

in June 2024 the execution of the above mentioned proficiency test (PT) round TW S11 „haloacetic acids in drinking water“ is planned. The PT is carried out under the umbrella of the NORMAN Network of Reference Laboratories for Monitoring of Emerging Environmental Pollutants (<https://www.norman-network.net>) in cooperation with IWW Water Centre.

If you are interested in participation, please register online via our PT portal. You will reach this portal via our website <https://www.aqsbw.de>. For the first usage of the web portal, you must create a new user. If the e-mail address is not known to the system, this user must be verified. Please plan time for this registration process.

**Application deadline: 05 April 2024**

Please consider our general terms and conditions of business for the execution of the PT, which can be downloaded [here](#).

If you have any questions, please do not hesitate to contact us:  
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**Bank**  
Baden-Württembergische  
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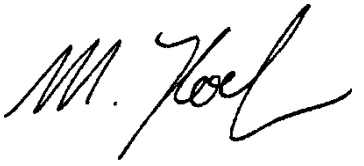
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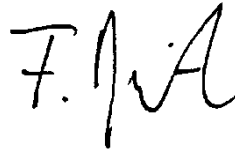
In cooperation with



Best regards

Handwritten signature of Michael Koch in black ink.

Dr.-Ing. Michael Koch  
Scientific director AQS

Handwritten signature of Frank Baumeister in black ink.

Dr.-Ing. Frank Baumeister  
PT coordinator

Annex:  
Details of the proficiency test exercise



**Details of the proficiency test round 5/24**  
**TW S11 – Haloacetic acids in drinking water – June 2024**

**Parameters**

- monochloroacetic acid
- dichloroacetic acid
- trichloroacetic acid
- monobromoacetic acid
- dibromoacetic acid

**Matrix**

Drinking water

**Dates and deadlines:**

Registration deadline: **05 April 2024**

**Please register for this PT only via our PT portal (accessible via our website).**

You will receive a confirmation of receipt by e-mail.

**Dispatch of the samples: 04 June 2024**

Please note the information about the analysis period in chapter “execution of the analysis”.

**Deadline for submission of results: 24 June 2024; 24:00h.**  
**Results submitted after the deadline will not be accepted.**

**Sample dispatch**

Samples will be sent by courier service.

**Sample details**

- 3 samples for the determination of the mentioned parameter in 1000-ml ground glass bottles (brown) with ground glass plug. Preservation by adding sodium thiosulfate.

**Permitted analytical methods**

Participants are free to choose a suitable method.

**Limit of quantification**

The analytical methods must be able to achieve a limit of quantification of 1 µg/l for all parameters.

**Execution of the analysis**

The samples must be analysed in the own laboratory with own personnel and own equipment. Subcontracting of the analysis is not allowed.

**Due to the limited stability of the haloacetic acids, the samples must be analysed or prepared one day after receipt at the latest.**

**Report of the result**

The samples must be analysed in duplicate by the complete method (sample preparation and measurement). Please submit the results as average values in µg/l with three significant digits.

### Evaluation and assessment of the single values

The statistical evaluation will be executed according to DIN 38402 – A45 or ISO/TS 20612 “Interlaboratory comparison for proficiency testing of analytical chemistry laboratories” with the combined estimator Hampel/Q-method, a method of robust statistics. The assigned value  $x_{pt}$  derived from the weighings of the spiked samples and the matrix content<sup>1,2</sup> will be preferably used for the assessment of the single values. Only if this is not possible, the Hampel estimator as robust mean value of the participants’ data will be used.

If possible, the standard deviation for proficiency assessment  $\sigma_{pt}$  will be taken from the variance function for the calculation of the  $z_U$ -scores according to DIN 38402 - A45 (chapter 10.4) or ISO/TS 20612 respectively.  $\sigma_{pt}$  will be limited for both parameters as follows:

- lower limit: 5 %
- upper limit: 25 %

A z-score is calculated for each measurement result derived from the assigned value  $x_{pt}$  and the standard deviation for proficiency assessment:

$$z = \frac{x - x_{pt}}{\sigma_{pt}}$$

The z-score will be modified to a  $z_U$ -score with a correction factor for proficiency assessment (as described in the above mentioned standards).

The tolerance limits are defined as  $|z_U|=2$ .

The single results will be assessed as follows:

$ z_U  \leq 2.0$	satisfactory
$2.0 <  z_U  < 3.0$	questionable
$ z_U  \geq 3.0$	unsatisfactory

### Overall assessment

There is no overall assessment of the proficiency test round, but the single parameters are assessed. A parameter is assessed as successful, if more than half of the values are assessed as “satisfactory”.

In addition those values are assessed as “unsatisfactory”:

- 1) that are not determined (if the other samples of this parameters are analysed),
- 2) that are indicated with “lower than limit of quantification”,
- 3) that have been subcontracted,
- 4) that have been submitted after the deadline of submission of results.

### Participation fee

The participation fee will be 550 € plus transport costs.

The parameter monobromoacetic acid could not be evaluated in the PT TW S11 in 2023. Therefore all laboratories participated in the PT in 2023 will receive a discount of 10 % on the fee.

<sup>1</sup> Rienitz, O., Schiel, D., Güttler, B., Koch, M., Borchers, U.: A convenient and economic approach to achieve SI-traceable reference values to be used in drinking-water interlaboratory comparisons. *Accred Qual Assur* (2007) 12: 615-622.

<sup>2</sup> Koch, M., Baumeister, F.: Traceable reference values for routine drinking water proficiency testing: first experiences. *Accred Qual Assur* (2008) 13: 77-82.