University of Stuttgart
Germany

Institute for Sanitary Engineering, Water Quality and Solid Waste Management

AQS Baden-Württemberg

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To the participants of AQS Baden-Württemberg

2024-04-22

Proficiency test 6/24
TW A4 – General parameters in drinking water

Dear Madam or Sir,

in July 2024 the execution of the above mentioned proficiency test (PT) round "General parameters in drinking water" is planned.

Details about the PT round are enclosed. Please read them with care.

The PT will be executed according to the recommendations of the German Federal Environment Agency from December 2003. These recommendations "for the execution of PTs for the measurement of chemical parameter and indicator parameter for the external quality control of drinking water laboratories" (Bundesgesundheitsblatt 46 (12), 1094-1095) require, that drinking water laboratories must demonstrate their competence for all parameters they are accredited for or they want to be accredited for by a successful participation in a PT round within a cycle of 2-3 years.

If you are interested in participation, please register online via our PT portal. You will reach this portal via our website http://www.aqsbw.de/en. 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: 24 May 2024

If you have any questions, please do not hesitate to contact us:
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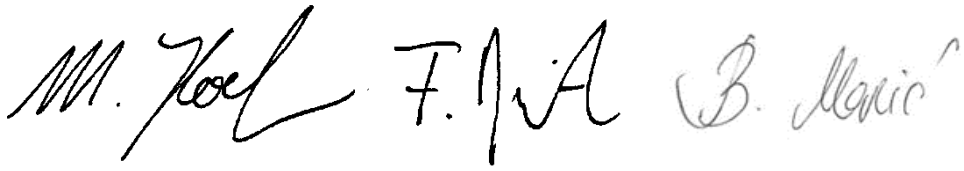
Best regards



Dr.-Ing. Michael Koch	Dr.-Ing. Frank Baumeister	Dipl.-Biol. Biljana Marić
Scientific director AQS	PT coordinator	assist. PT coordinator

Annex:
Details of the proficiency test exercise

Details of the proficiency test round 6/24
TW A4 – General parameters in drinking water – (July 2024)

- colour (SAC_{436})
- conductivity (25°C)
- pH value at 20°C
- turbidity (quantitative)

Matrix
Drinking water

Dates and deadlines
Registration deadline: 24 May 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 and your registration is documented in our PTportal.

Dispatch of the samples: 29 July 2024.

Deadline for submission of results: 19 August 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 colour (SAC_{436}) in 100-ml-glass bottles with screw cap. Stabilisation by autoclaving.
- 3 samples for the determination of conductivity in 100-ml-plastic bottles.
- 3 samples for the determination of the pH value in 100-ml-plastic bottles.
- 3 samples for the determination of turbidity in 250-ml-glass bottles screw capped; preservation by cooling.

Permitted analytical methods
Participants are free to choose a suitable method.

Limit of quantification
The laboratories have to ensure that they us methods with following limits of quantification:

Parameter	limit of quantification
colour (SAC_{436})	0,125 m^{-1}
Conductivity	100 µS/cm
pH value at 20°C	-
turbidity (quantitative)	0,1 NTU

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.

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}, will be derived from the Hampel estimator as robust mean value of the participants' data.

If possible, the standard deviation for proficiency assessment σ_{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. σ_{pt} will be limited as follows:

Parameter	lower limit	upper limit
colour (SAC_{436})	5%	25%
Conductivity	1%	-
pH value at 20°C	-	-
turbidity (quantitative)	5%	25%

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

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

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:

$\lvert z_U \rvert \leq 2.0$	satisfactory
$2.0 < \lvert z_U \rvert < 3.0$	questionable
$\lvert z_U \rvert \geq 3.0$	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 450 € plus transport costs.