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**Proficiency testing provider accredited by NAH under NAH-8-0003/2023.**

# SURFACE WATER TESTING

## Work instructions
## Annual program for 2025

## 1. General instructions

### *1.1. Sample storage:*

Analyses should be performed as soon as possible after arrival of samples and immediately after preparing the prescribed dilutions, if applicable. Samples should be stored unopened at 4 ± 2°C in the dark until analysis. Please follow the safety instructions for laboratory chemicals when handling samples. Samples should be treated as routine samples.

### *1.2. Sample preparation:*

Samples are preserved according to ISO 5667-3:2018 if applicable (see QualcoDuna Proficiency Testing Scheme - Scheme description for further details). Exceptions are **phenol index** samples (**DW/SW-Org-1; DW/SW-Org-2**), that are preserved according to MSZ 1484-1:2009, and **total N, TON** samples (**SW-N-1; SW-N-2**), where hydrochloric acid was used for acidification instead of sulphuric acid. All parameters are present in soluble form, thus samples should not be filtered. Samples should be analysed separately. Samples are either natural surface water of origin, to be analysed directly, or synthetic solutions which should be diluted by the factor prescribed prior to analysis.

Please remember to **check** sample **pH** before analysis.

**Biochemical oxygen demand** samples (**SW-Org-1; SW-Org-2**) are **free from microorganisms**.

***Measurement results should be reported for the diluted samples in case of synthetic solutions, and for the original samples in case of natural surface water (where dilution is not prescribed).***

## 2. Samples:

### 2.1. *General parameters and elements:*

**2.1.1. Sample code: SW/BW-G/M-1, SW/BW-G/M-2 „FSZ/FV-G/M-1, FSZ/FV-G/M-2”** **Dilution not required**

Parameters:

**$Cl^-$, Ca, Mg, total hardess, Ni, Pb, Zn**

**2.1.2. Sample code: SW-M-1, SW-M-2, „FSZ-M-1, FSZ-M-2”** **Dilution not required**

Parameter:

**Hg**

**2.1.3. Sample code: SW/BW-G/M-3, SW/BW-G/M-4 „FSZ/FV-G/M-3, FSZ/FV-G/M-4”** **Dilution not required**

Parameters:

**$SO_4^{2-}$, K, Na, Fe, Mn, Al, As, Cd, Cr, Cu**

**2.1.4. Sample code: DW/SW-M-1, DW/SW-M-2 IV/FSZ-M-1, IV/FSZ-M-2** **Dilution factor: 100**

Parameters and expected concentration ranges:

| | | |
|---|---|---|
| **Sb** | **1,0 – 10** | **µg/dm$^3$** |
| **Se** | **2,0 – 20** | **µg/dm$^3$** |
| **Sn** | **1,0 – 20** | **µg/dm$^3$** |

**2.2.** ***Nutrients:***

**2.2.1. Sample code: SW/BW-N-1, SW/BW-N-2 „FSZ/FV-N-1, FSZ/FV-N-2”** **Dilution not required**

Vizsgálandó komponensek:

**$NH_4^+$-N, $NO_3^-$-N, $PO_4^{3-}$-P**

***Attention! Please provide the test results for nutrients in nitrogen (N) and phosphorus (P)!***

**2.2.2. Sample code: SW-N-1, SW-N-2**
**„FSZ-N-1, FSZ-N-2"** **Dilution not required**

Parameter:

**Total N, TON**

Recommended for elemental analyser instruments.

**2.3.** ***Organic parameters:***

**2.3.1. Sample code: SW-Org-1, SW-Org-2**
**"FSZ-Org-1, FSZ-Org-2"** **Dilution not required**

Parameters:

**$COD_{Cr}$, $cBOD_5$, TOC**

(Expected concentration range for $COD_{Cr}$: 10 – 50 $mg/dm^3$)

***Attention!*** *Analyses should be performed* ***within 2 weeks*** *from the time of arrival of samples to your laboratory.*

**2.3.2. Sample code: SW/BW-Org-3, SW/BW-Org-4**
**FSZ / FV-Org-3, FSZ / FV-Org-4** **Dilution factor: 100**

Parameter amd expected concentration range:

**MBAS** **40 – 200** **$\mu g/dm^3$**

**2.3.3. Sample code: DW/SW-Org-1, DW/SW-Org-2**
**"IV/FSZ-Org-1, IV/FSZ-Org-2"** **Dilution factor: 10 000**

Parameter and expected concentration range:

**Phenol index** **5 – 40** **$\mu g/dm^3$**

***Attention!*** *Analyses should be performed* ***as soon as*** *samples arrive to your laboratory.*

**2.4. *Other parameters:***

**2.4.1. Sample code: DW/SW/BW-NS-1, DW/SW/BW-NS-2**
**"IV/FSZ/FV-NS-1, IV/FSZ/FV-NS-2"** **Dilution factor: 100**

Parameter and expected concentration range:

| | | |
|---|---|---|
| **Turbidity** | **0,3 – 2,8** | **FNU** |

**2.4.2. Sample code: DW/SW-NS-1, DW/SW-NS-2**
**"IV/FSZ-NS-1, IV/FSZ-NS-2"** **Dilution factor: 100**

Parameter and expected concentration range:

| | | |
|---|---|---|
| **$CN^-$(total)** | **20 – 120** | **µg/dm$^3$** |

**3. Reporting of results**:

Participants are asked to report their expanded measurement uncertainty together with the measurement results using a coverage factor of k = 2, so that $E_n$ numbers can be calculated for evaluation. Please make sure that expanded measurement uncertainties are reported in the **same unit of measurement** as the measurement results.

**Results can be reported via our website** (**www.qualcoduna.hu**) using your personal login ID communicated earlier by e-mail. (Choose *Login to online services*, then go to *Reporting of results* to see the online data report forms.) After required fields are filled in and data report form is sent, you will receive a confirmation that your data is received (If you do not receive the confirmation, reporting of results failed.) Please check, save and retain this confirmation for later use.

In case online reporting is not possible, results are accepted by email **(**info@qualcoduna.hu**)** using the data report form available in pdf format on our website (see *Downloads*).

**Reporting deadline: October 21, 2025.; 16:00**

Please make the appropriate rounding and report in the unit of measurement stated on data report forms. Results reported after the above deadline or as „< LOD/LOQ" will be excluded from evaluation, results reported in inappropriate units of measurement will not be converted. (Reference: ISO 13528:2022. Statistical methods for use in proficiency testing by interlaboratory comparisons.)
Please note that **in case zero ("0") is reported** as measurement result, it is regarded as a valid result and is **evaluated accordingly**.

Budapest, September 13, 2025

Dr. Norbert Mátrai (coordinator)