

To: Laboratories participating in Proftest Syke proficiency tests

Proficiency test DW 07/2025 – Drinking water analyses

Proftest Syke will organize a proficiency test (PT) for the analysis of alkalinity, Fe, Mn, chloride, fluoride, sulphate, pH, conductivity, NH₄, NO₂, NO₃, Ca, K, Mg, Na, turbidity, and TOC in drinking water and in raw water.

The purpose of this proficiency test is to ensure the comparability and accuracy of the results of the participants. About 35 laboratories are expected to participate in this proficiency test. The measurands and samples of this proficiency test are included in the Water chemistry scheme of the Proftest Syke accreditation scope (finas.fi/sites/en).

Sample matrices

Synthetic sample, drinking water, and raw water.

Timetable

Registration	13 June – 11 August 2025
Sample dispatch date	9 September 2025 (see Chapter 4 <i>Sample delivery</i>)
Analysis of the samples	Alkalinity, pH, conductivity, turbidity 11 September 2025
	NH ₄ , NO ₂ , NO ₃ at the latest on 12 September 2025
	Ca, K, Mg, Na at the latest on 22 September 2025
	Cl, F, SO ₄ at the latest on 22 September 2025
	Fe, Mn at the latest on 22 September 2025
	TOC at the latest on 22 September 2025
Reporting of the results	9 – 22 September 2025

Participation fee

The participation fee is **1089 €** (+ VAT) including all measurements and samples.

See detailed information in Chapter 9 *Participation fee*.



Päivi Grönroos,
Coordinator



Mirja Leivuori,
Group manager

Proftest Syke is proficiency testing provider PT01
(EN ISO/IEC 17043:2010) accredited by FINAS
(Finnish Accreditation Service, finas.fi/sites/en).



Proftest Syke guide for participants is available on Proftest Syke website (syke.fi/proftest/en).

ProftestWEB is the electronic client interface for Proftest Syke proficiency tests wwwp5.ymparisto.fi/Labtest/en. Within the pages, instructions are available on every page. A short *Getting started* manual is available on ProftestWEB front page.

Organizing the proficiency test

1 Organizer

Proftest Syke, Finnish Environment Institute (Syke)
Address: Mustialankatu 3, FI-00790 Helsinki, Finland
Email: proftest@syke.fi

Contact

Coordinator: Päivi Grönroos, tel. +358 295 252 174
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Analytical experts

Alkalinity, Cl, F, SO₄, pH, conductivity,
N-compounds, turbidity, TOC
Fe, Mn, Ca, K, Mg, Na

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Expert laboratory Finnish Environment Institute, Oulu and Helsinki (T003, finas.fi/sites/en)

2 Sample and measurands

The sample matrices in this proficiency test are: synthetic sample, drinking water and raw water.
Samples, measurands, concentration ranges and sample preservations are presented in Appendix 1.

Note! Check the samples volumes and, in case needed, order additional samples.

Note! The Fe/Mn samples can be ordered as preserved in sulfuric acid or nitric acid. TOC samples can be ordered as preserved in hydrochlorid acid or phosphoric acid. Please choose the right type of preservation when placing your order.

3 Registration

The registration for this proficiency test is open until **11 August 2025**.

Registration is done via the electronic client interface, ProftestWEB: wwwp5.ymparisto.fi/Labtest/en. If there are problems when using ProftestWEB or you need username and password, please contact proftest@syke.fi.

4 Sample delivery

The sample dispatch day for national participants is **9 September 2025**. To ensure timely arrival, the samples are dispatched earlier for participants abroad.

If the sample package does not arrive **at the latest on 10 September 2025**, or there are missing and/or broken sample containers, please contact the provider immediately (proftest@syke.fi). More contact details in Chapter 1 *Organizer*.

5 Sample storage and analysis

The samples are stored at 4 °C. Samples are analysed within the laboratory where they are delivered to, and analyses are conducted according to the participant's normal procedures. For the samples and measurements, replicated analysis are done no more than according to the method of analysis or the instructions within the sample letter.

Timetable for sample analysis is on the first page of this letter.

6 Reporting the results

The participant results are reported to Proftest Syke at the latest on **22 September 2025**.

Note! N compounds are reported as NH₄, NO₂ and NO₃ (not as nitrogen).

Proftest Syke delivers the preliminary results report to the participants latest in the week 40 (29 September – 3 October 2025). The final report will be published at the latest in January 2026 and it is then available on ProftestWEB and on Proftest Syke website (syke.fi/proftest/en). The availability of the report will be informed to the participants.

7 Assigned values and evaluation of the results

Either the calculated concentration (synthetic samples) or the robust mean, the median, or the mean of the results reported by the participants will be used as the assigned value for the measurand. The calculation of the assigned value is based on the results reported according to the given guidelines. Also, when needed, the result of the expert laboratory can be used as the assigned value. The evaluation of the results will be based on z scores. The preliminary standard deviation for proficiency assessment will be given in the cover letter of the sample. In special cases also E_n or D% scores can be used for the performance evaluation.

8 Confidentiality

The results of participants are treated anonymously. The participants' results and the preliminary results report of the round are confidential and should not be shared with third parties during the implementation of the round.

9 Participation fee

The participation fee is **1089 €** (+ VAT) including all measurements and samples. The basic fee is **465 €** (+ VAT) and the fees for each sample and measurand are as follows:

Alkalinity	25 €/ sample	(3 samples)
Ca, K, Mg, Na	20 €/ sample	(3 samples)
Cl, SO ₄	15 €/ sample	(3 samples)
F	18 €/ sample	(3 samples)
Fe, Mn	25 €/ sample	(3 samples)
N-compounds	35 €/sample	(3 samples)
pH, conductivity	15 €/ sample	(4 samples)
Turbidity	25 €/ sample	(3 samples)
TOC	25 €/ sample	(3 samples)

The invoice will be sent after the delivery of the preliminary results report. If the participant orders additional samples, they are charged according to the prices listed above.

Note! In Finland the current VAT is 25,5 %. Further, if the invoicing address or any other additional information has to be corrected after the invoicing, the extra handling cost will be charged. The participant is also responsible for possible custom clearance or customs fee of the sample.

10 Appendices

Appendix 1 Samples, measurands, concentration ranges and preservations.

Appendix 1. Samples, measurands, concentration ranges and preservations.

Measurands	Sample matrix	Sample code	Sample volume ²⁾ and container	Concentration range and <i>preservation</i>
Alkalinity	Synthetic sample	A1A	250 ml, plastic	A1A: 0.02 – 0.5 mmol/l
	Drinking water	D2A		D2A: 0.02 – 3 mmol/l
	Raw water	G3A		G3A: 0.02 – 3 mmol/l
Ca K Mg Na	Synthetic sample	A1K	500 ml, plastic	A1K: Ca, K, Mg, Na > 0.1 mg/l
	Drinking water	D2K		D2K: Ca, K, Mg > 1 mg/l
	Raw water	G3K		Na 1 – 200 mg/l G3K: Ca, K, Mg, Na > 0.1 mg/l
Cl SO₄ – as sulphate ¹⁾	Synthetic sample	A1CS	500 ml, plastic	A1CS: Cl ⁻ > 10 mg/l, SO ₄ > 5 mg/l
	Drinking water	D2CS		D2CS: 3 – 250 mg/l
	Raw water	G3CS		G3CS: > 3 mg/l
F	Synthetic sample	A1F	250 ml, plastic	A1F: > 1 mg/l
	Drinking water	D2F		D2F: 0.2 - 1.5 mg/l
	Raw water	G3F		G3F: > 0.2 mg/l
Fe Mn	Synthetic sample	A1Fe	250 ml, plastic	A1Fe: Fe, Mn > 20 µg/l
	Drinking water	D2Fe		D2Fe: Fe 20 - 200 µg/l Mn 20 - 50 µg/l
	Raw water	G3Fe		G3Fe: Fe > 20 µg/l, Mn > 50 µg/l <i>Samples are preserved: with 2.5 ml 4 mol/l H₂SO₄/250 ml or with 1.25 ml conc. HNO₃/250 ml ³⁾</i>
NH₄ as ammonium ¹⁾ NO₂ as nitrite ¹⁾ NO₃ as nitrate ¹⁾	Synthetic sample	A1N	400 ml, glass	NH₄ A1N: > 0.1 mg/l D2N: 0.05 - 0.50 mg/l G3N: > 0.05 mg/l
	Drinking water	D2N		NO₂ A1N: > 0.05 mg/l D2N: 0.05 - 0.50 mg/l, G3N: > 0.003 mg/l
	Raw water	G3N		NO₃ A1N: > 4 mg/l D2N: 2 - 50 mg/l G3N: > 0.8 mg/l <i>Samples are autoclaved at Syke.</i>
pH	Synthetic sample	A1P	100 ml, glass	A1P: 5 - 9 pH unit
	Drinking water	D2PJ		D2PJ: 6.5 – 9.5 pH unit
	Raw water	G3PJ		G3PJ: 4.5 - 9 pH unit
Turbidity	Synthetic sample	A1S	250 ml, plastic	A1S: < 1 FNU
	Drinking water	D2S		D2S: < 1 FNU
	Raw water	G3S		G3S: < 1 FNU
Conductivity	Synthetic sample	A1J	100 ml, glass	A1J: 200 - 500 µS/cm
	Drinking water	D2PJ		D2PJ: 100 - 2500 µS/cm
	Raw water	G3PJ		G3PJ: > 30 µS/cm

Measurands	Sample matrix	Sample code	Sample volume ²⁾ and container	Concentration range and <i>preservation</i>
TOC	Synthetic sample	A1T	125 ml, plastic	A1T: < 5 mg/l
	Drinking water	D2T		D2T: < 5 mg/l
	Raw water	G3T		G3T: < 5 mg/l
				<i>Samples are preserved: with 1.25 ml 2 mol/l HCl/125 ml or with 1.25 ml 2 mol/ H₃PO₄/125 ml ³⁾</i>

¹⁾ Results are reported as compounds (not as sulphur or nitrogen).

²⁾ Please check the sample volume and, in case needed, order additional samples.

³⁾ Please choose the preservation acid when ordering samples.

Sample codes (first letter showing sample matrix):

A = Synthetic sample

D = Drinking water

G = Raw water (artificial recharge groundwater)