

**The Appendix is an integral part of
Certificate of Accreditation No: 570/2023 of 27/10/2023**

Accredited entity according to ČSN EN ISO/IEC 17025:2018:

AGRO CS a.s.
CAB number 1468, EKOAKVA LABORATORY
č.p. 265, 552 03 Říkov

The laboratory applies a flexible approach to the scope of accreditation.

The current list of activities carried out within the flexible scope is available at the laboratory on the laboratory website <https://www.agrocs.cz/laborator-nase-certifikaty> in the form "List of activities within the flexible scope of accreditation"

Detailed information on the activities within the scope of accreditation (determined analytes / subject of testing) is given in the section "Specification of the scope of accreditation".

Tests:

Ordinal number ¹	Test procedure/method name	Test procedure/method identification ²	Subject of the test	Degrees of freedom ³
1	Determination of conductivity	SOP 1.2.1 (ČSN EN 27888)	Drinking, ground, raw, produced, surface and waste water, aqueous extracts	-
2	Determination of pH by potentiometry	SOP 1.2.2 (ČSN ISO 10523)	Drinking, ground, raw, produced, surface and waste water, aqueous extracts	-
3	Determination of acid neutralizing capacity (ANC-alkalinity) by titrimetric method	SOP 1.2.3 (ČSN EN ISO 9963-1)	Drinking, ground, raw, produced, surface and waste water	-
4	Determination of chemical oxygen demand using permanganate (COD-Mn) by titration	SOP 1.2.4 (ČSN EN ISO 8467)	Drinking, ground, raw, produced and surface water	-
5	Determination of chemical oxygen demand using dichromate (COD-Cr) by test-tube method	SOP 1.2.5 (ČSN ISO 15705)	Ground, raw, surface and waste water	-
6	Determination of suspended solids by gravimetry	SOP 1.2.6 (ČSN EN 872)	Drinking, ground, raw, produced, surface and waste water	-
7	Determination of dissolved solids, dissolved inorganic salts (DIS) by gravimetry	SOP 1.2.7 (ČSN 75 7346; ČSN 75 7347)	Drinking, ground, raw, produced, surface and waste water, aqueous extracts	-
8	Determination of ammonium and ammonia nitrogen by calculation from measured values by spectrophotometry	SOP 1.2.8 (ČSN ISO 7150-1)	Drinking, ground, raw, produced, surface and waste water	-

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Ordinal number ¹	Test procedure/method name	Test procedure/method identification ²	Subject of the test	Degrees of freedom ³
9	Determination of total phosphorus by spectrophotometry using MERCK commercial set	SOP 1.2.9.B (ČSN EN ISO 6878; Merck manual)	Raw, produced, surface and waste water	-
10	Determination of nitrite and nitrite nitrogen by calculation from measured values by spectrophotometry	SOP 1.2.10 (ČSN EN 26 777)	Drinking, ground, raw, produced, surface and waste water	-
11	Determination of nitrate by spectrophotometry in UV range	SOP 1.2.11 (Chemical and Physical Methods for Water Analysis, SNTL 1986)	Drinking, ground, raw and produced water	-
12	Determination of nitrate and nitrate nitrogen by calculation from measured values by spectrophotometry	SOP 1.2.12 (ČSN ISO 7890-3)	Drinking, ground, raw, produced, surface and waste water	-
13	Determination of sulphate by gravimetric method with barium chloride	SOP 1.2.13 (TNV 75 7476)	Drinking, ground, raw, produced, surface and waste water, aqueous extracts	-
14	Determination of chloride by Mohr's titrimetric method	SOP 1.2.14 (ČSN ISO 9297)	Drinking, ground, raw, produced, surface and waste water, aqueous extracts	A
15	Determination of colour by spectrophotometry	SOP 1.2.15 (ČSN EN ISO 7887)	Drinking, ground, raw and produced water	-
16	Determination of turbidity by nephelometry	SOP 1.2.16 (ČSN EN ISO 7027)	Drinking, ground, raw and produced water	-
17	Determination of absorbance by spectrophotometry	SOP 1.2.17 (ČSN 75 7360)	Drinking, ground, raw and produced water	-
18	Determination of fluoride by electrochemical method (ISE)	SOP 1.2.18 (ČSN ISO 10359-1)	Drinking, ground, raw, produced, surface and waste water, aqueous extracts	-
19	Determination of boron by spectrophotometry	SOP 1.2.19 (ČSN ISO 9390)	Drinking, ground, raw, produced, surface and waste water	A
20	Determination of biological oxygen demand (BOD 5) Electrochemical method with a membrane probe	SOP 1.2.20 (ČSN EN ISO 5815-1; ČSN EN 1899-2)	Drinking, ground, raw, produced, surface and waste water	-

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Ordinal number ¹	Test procedure/method name	Test procedure/method identification ²	Subject of the test	Degrees of freedom ³
21	Determination of base neutralizing capacity (BNC-acidity) by titrimetric method	SOP 1.2.21 (ČSN 75 7372)	Drinking, ground, raw, produced, surface and waste water	-
22	Determination of dissolved oxygen by electrochemical probe method	SOP 1.2.22 (ČSN EN ISO 5814)	Drinking, ground, raw, produced, surface and waste water	-
23	Determination of extractives by gravimetry	SOP 1.2.23 (ČSN 75 7508)	Surface and waste water	-
24	Determination of total nitrogen, inorganic and organic nitrogen by calculations from measured values using the Kjeldahl titration method	SOP 1.2.28 (ČSN 83 0540-13:1984)	Ground, raw, surface and waste water	-
25	Determination of total nitrogen and nitrogenous substances by calculation by Kjeldahl method	SOP 1.9.1 (JPP ÚKZÚZ Brno, Analysis of vegetable material, chap. 3.1.1, y. 2005)	Vegetable material, feedstuffs	-
26	Determination of elements by flame AAS method	SOP 1.1.A (ČSN ISO 7980; ČSN ISO 9964-1; ČSN ISO 9964-2; ČSN ISO 8288; ČSN 75 7385)	Drinking, ground, raw and produced water	-
27	Determination of elements by flame AAS method	SOP 1.1.B (ČSN ISO 7980; ČSN ISO 9964-1; ČSN ISO 9964-2; ČSN ISO 8288; ČSN 75 7385; ČSN EN 1233; ČSN EN ISO 12020)	Surface and waste water, aqueous extracts	-
28	Determination of elements by flame AAS method	SOP 1.1.C (JPP ÚKZÚZ Brno, Soil Analysis II, chap. 3.2.1, y. 2011; ČSN ISO 7980; ČSN ISO 9964-1; ČSN ISO 9964-2; ČSN ISO 8288;	Sludge, soil, compost, digestate, sediment, substrate, fertilizers, waste	-

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Ordinal number ¹	Test procedure/method name	Test procedure/method identification ²	Subject of the test	Degrees of freedom ³
		ČSN 75 7385; ČSN EN 1233; ČSN EN ISO 12020)		
29	Determination of elements by flame AAS method	SOP 1.1.D (JPP ÚKZÚZ Brno, Analysis of vegetable material, chap. 2.2.3, y. 2005; ČSN ISO 8288; ČSN 75 7385)	Vegetable material, food, feedstuffs	-
30	Determination of elements by ETA-AAS method	SOP 1.1.E (ČSN EN ISO 5961; ČSN EN 1233; ČSN EN ISO 15586; ČSN EN ISO 12020; ČSN 75 7400)	Drinking, ground, raw and produced water	B
31	Determination of elements by ETA-AAS method	SOP 1.1.F (ČSN EN ISO 5961; ČSN EN 1233; ČSN EN ISO 15586)	Surface and waste water, aqueous extracts	B
32	Determination of elements by ETA-AAS method	SOP 1.1.G (JPP ÚKZÚZ Brno, Soil Analysis II, chap. 3.2.1, y. 2011; ČSN EN ISO 15586)	Sludge, soil, compost, digestate, sediment, substrate, fertilizers, waste	B
33	Determination of elements by ETA-AAS method	SOP 1.1.H (JPP ÚKZÚZ Brno, Analysis of vegetable material, chap. 2.2.2, y. 2005; ČSN EN ISO 5961; ČSN EN 1233; ČSN EN ISO 15586)	Vegetable material, food, feedstuffs	B
34	Determination of Hg by single-purpose atomic absorption spectrophotometer	SOP 1.1.18 (ČSN 75 7440)	Drinking, ground, raw, produced, surface and waste water, aqueous extracts, sludge, soil, compost, digestate, sediment, substrate, plant material, food, feed, fertilizers, waste	-

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Ordinal number ¹	Test procedure/method name	Test procedure/method identification ²	Subject of the test	Degrees of freedom ³
35*	Sensory determination of odour and taste	SOP 1.4 (ČSN EN 1622; ČSN 75 7340)	Drinking and produced water	-
36*	Determination of temperature	SOP 1.5.1 (ČSN 75 7342)	Drinking, ground, raw and produced water, surface and waste water	-
37*	Determination of free chlorine by spectrophotometry by DPD method using HACH set	SOP 1.5.2 (HACH manual)	Drinking and produced water	-
38	Determination of exchangeable pH (CaCl ₂) by potentiometry	SOP 1.7.1.A (JPP ÚKZÚZ Brno, Soil Analysis I, chap. 2.3.1, y. 2010)	Soil	-
39	Determination of phosphorus (Mehlich 3) by spectrophotometry	SOP 1.7.1.B (JPP ÚKZÚZ Brno, Soil Analysis I, chap. 3.1.1 and 3.1.3, y. 2010)	Soil	-
40	Determination of K, Ca and Mg (Mehlich 3) by flame AAS method	SOP 1.7.1.C, D (JPP ÚKZÚZ Brno, Soil Analysis I, chap. 3.1.1, 3.1.2 and 3.1.4, y. 2010)	Soil	-
41	Determination of pH by potentiometry	SOP 1.6.1 (ČSN EN 12176:1999)	Sludge, digestate, sediment	A
42	Determination of phosphorus and its forms by calculation by spectrophotometry	SOP 1.6.2 (JPP ÚKZÚZ Brno, Soil Analysis II, chap. 3.2.1, y. 2011; ČSN EN ISO 6878)	Sludge, soil, compost, digestate, sediment, substrate, fertilizers	-
43	Determination of total nitrogen by the Jodlbauer method	SOP 1.6.3 (JPP ÚKZÚZ Brno, Soil Analysis III, y. 2011/chap. 2.1.3, JPP ÚKZÚZ Brno, Testing of Fertilizers, Part I: Determination of nitrogen, y. 2004/chap. 2.4.2.5)	Sludge, soil, compost, digestate, sediment, substrate, fertilizers	-
44	Determination of dry matter and water content by gravimetry	SOP 1.6.4.A (JPP ÚKZÚZ Brno, Soil Analysis I, chap. 2.1, y. 2010)	Sludge, soil, compost, digestate, sediment, substrate, fertilizers, waste	-

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Ordinal number ¹	Test procedure/method name	Test procedure/method identification ²	Subject of the test	Degrees of freedom ³
45	Determination of dry matter and water content by gravimetry	SOP 1.6.4.B (JPP ÚKZÚZ Brno, Analysis of vegetable material, chap. 1.7, y. 2005)	Vegetable material, feedstuffs	-
46	Determination of combustibles by gravimetry	SOP 1.6.5.A (ČSN EN 12879:2001; ČSN 46 5735)	Sludge, soil, compost, digestate, sediment, substrate	-
47	Determination of combustibles by gravimetry	SOP 1.6.5.B (JPP ÚKZÚZ Brno, Procedures for Laboratory Testing of Feedstuffs, Complements and Premixes I, chap. 6.1, y. 2000)	Vegetable material, feedstuffs	-
48	Enumeration of coliforms by membrane filtration method	SOP 1.3.1 (ČSN 75 7837)	Drinking, raw, produced, ground and surface water	-
49	Detection and enumeration of coliform bacteria and <i>Escherichia coli</i> by membrane filtration method.	SOP 1.3.2 (ČSN EN ISO 9308-1)	Drinking, raw, produced and ground water	-
50	Detection and enumeration of thermotolerant coliform bacteria and <i>Escherichia coli</i> by membrane filtration method	SOP 1.3.3 (ČSN 75 7835)	Drinking, raw, produced, surface and ground water	-
51	Detection and enumeration of intestinal enterococci by membrane filtration method	SOP 1.3.4 (ČSN EN ISO 7899-2)	Drinking, raw, produced, surface and ground water	-
52	Enumeration of colonies by inoculation in a nutrient agar culture (culturable microorganisms): a) at 36 °C b) at 22 °C	SOP 1.3.7 (ČSN EN ISO 6222)	Drinking, raw, produced, surface and ground water	-
53	Enumeration of <i>Clostridium perfringens</i> by membrane filtration method	SOP 1.3.8 (Regulation No. 252/2004 Coll.)	Drinking, raw, produced, surface and ground water	-

¹ asterisk at the ordinal number identifies the tests, which the laboratory is qualified to carry out outside the permanent laboratory premises

² if the document identifying the test procedure is dated, only these specific procedures are used. If the document identifying the test procedure is not dated, the latest valid edition of the specified procedure is used (including any changes)

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³ degrees of freedom: A – Flexibility concerning materials/products (subject of the test), B – Flexibility concerning components/parameters/characteristics, C – Flexibility concerning the performance of the method, D – Flexibility concerning the method

The laboratory can modify the test procedures with the specified degree(s) of freedom in the scope of accreditation while maintaining the principle of measurement. If no degree of freedom is specified, the laboratory cannot apply a flexible approach to the scope of accreditation for the test.

Specification of the scope of accreditation:

Ordinal test number	Detailed information on activities within the scope of accreditation (determined analytes)
26	Ca, Mg, Na, K, Cu, Zn, Mn, Fe and calculation of water hardness (Ca+Mg)
27	Ca, Mg, Na, K, Co, Ni, Pb, Cu, Zn, Mn, Cd, Fe, Cr, Al
28	Ca, Mg, Na, K, Co, Ni, Pb, Cu, Zn, Mn, Cd, Fe, Cr, Al and calculation of CaO, MgO and K ₂ O
29	Cu, Zn, Mn, Fe
30	Cd, Cr, Ni, Pb, Mo, Be, Al, V, Ag, Se, As, Sb
31	Cd, Cr, Ni, Pb, Mo, Be, V, Se, As, Sb
32	Mo, Be, V, As
33	Cd, Cr, Pb, As

Specification of the scope of accreditation:

Ordinal test number	Detailed information on activities within the scope of accreditation (subject of testing)
1, 2, 7, 13, 14, 18, 27, 31, 34	Aqueous extracts – Aqueous extracts according to the Regulation No. 273/2021 Coll.
28, 32, 34, 42-44, 46	Substrate - solid environment, from which land plants gain water and nutrients
28, 32, 34, 41-44, 46	Sediment - bottom deposits of water streams, ponds and other water reservoirs
28, 32, 34, 44	Waste - solid bulk materials (soils, sludges, sediments, excavated soils, construction and demolition debris, construction recyclates, asphalt materials, waste from industrial production), bulky waste

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Sampling:

Ordinal number	Sampling procedure name	Sampling procedure identification ¹	Subject of sampling
1	Sampling of drinking and ground water	SOP 2.3.4 (ČSN EN ISO 5667-1; ČSN EN ISO 5667-3; ČSN EN ISO 5667-16; ČSN ISO 5667-5; ČSN EN ISO 5667-14; ČSN ISO 5667-11, cl. 4.2.1; ČSN EN ISO 19458)	Drinking, raw, produced and ground water
2	Surface water sampling (manual sampling, sampling using a sampling pump)	SOP 2.3.5 (ČSN EN ISO 5667-1; ČSN EN ISO 5667-3; ČSN EN ISO 5667-16; ČSN ISO 5667-4; ČSN ISO 5667-6; ČSN EN ISO 5667-14)	Surface water
3	Waste water sampling (manual sampling and sampling using an automatic sampler)	SOP 2.3.6 (ČSN EN ISO 5667-1, ČSN EN ISO 5667-3; ČSN ISO 5667-10; ČSN EN ISO 5667-14)	Waste water
4	Sampling of sludge	SOP 2.4.1 (ČSN EN ISO 5667-1; ČSN EN ISO 5667-13; ČSN EN ISO 5667-15)	Sludge
5	Sampling of sediments	SOP 2.4.3 (ČSN EN ISO 5667-1; ČSN ISO 5667-12; ČSN EN ISO 5667-15)	Sediment
6	Waste sampling	SOP 2.4.4 (ČSN EN ISO 5667-1; ČSN EN ISO 5667-15; ČSN EN 14899; Ministry of Environment Guideline, 2008)	Waste - solid bulk materials (soils, sludges, sediments, excavated soils, construction and demolition debris, construction recyclates, asphalt materials, waste from industrial production), bulky waste

¹ if the document identifying the sampling procedure is dated, only these specific procedures are used. If the document identifying the sampling procedure is not dated, the latest edition of the specified procedure is used (including any changes)

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Explanatory notes:

SOP	EKOAKVA LABORATORY Standard Operating Procedure
JPP	Uniform Working Procedures
ÚKZÚZ	Central Institute for Supervising and Testing in Agriculture
Flame AAS	Atomic Absorption Spectrometry - flame technique
ETA-AAS	Atomic Absorption Spectrometry - electrothermal atomization technique
ISE	Ion Selective Electrode