



ORDER

№ A 414

Sofia, 05.07.2022

Pursuant to Art. 10, para. 1, item 2a of the Law on National Accreditation of Conformity Assessment Bodies, in connection with item 5.3.1 of the BAS QR 2 Accreditation Procedure, report 2.9.5.5. reg. № 98/75 ЛИ/22/В/21.06.2022, and EA BAS order reg. № A 413 /05.07.2022, I hereby

AMEND

EA BAS order reg. № A 308/12.05.2022

of ECO-CONSULT-ENGINEERING LTD

Laboratory for Environment Component Analysis

Management and laboratory address: 8010 Burgas, Slaveykov Residential complex,
bl. 126, ent. A, floor 3, office 9

To perform testing of:

Type of the scope: flexible for part of the scope			
№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
I.	Waters, waste (1); Waters, running surface (2); Waters, coastal sea (3); Waters, drinking (4) Waters, lake (5) Waters, ground (6)	1. Active reaction/pH	БДС EN ISO 10523 (1, 2, 3, 4, 5, 6) БДС 3424 (4) EPA 150.1 (1, 2, 3, 4, 5, 6)
		2. Temperature	БДС 17.1.4.01 (1) VILM 34:2021 (1, 2, 3, 4, 5, 6)
		3.1 Total dry solids	БДС 17.1.4.04 (1, 2, 4, 5, 6)
		3.2 Dissolved solids.	
		3.3 Suspended solids/ Undissolved solids	БДС 17.1.4.04 (1, 2, 4, 5, 6) БДС EN 872 (1, 2, 4, 5, 6)
		4. Chloride	БДС 17.1.4.24 (1,2,5,6) ISO 9297 (1,2,4,5,6) БДС EN ISO 10304-1 (1,2,4,5,6)
		5.1. Total chlorine	БДС EN ISO 7393-3 (1,2,4,5,6)

Type of the scope: *flexible for part of the scope*

№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
		5.2. Free chlorine 5.3. Residual free chlorine	VILM 21:2007 (1,2,4,5,6)
		6. Bichromatic oxidation	ISO 15705 (1,2,4,5,6) ISO 6060 (1,2,4,5,6)
		7.1 Ammonium	БДС ISO 7150-1 (1, 2, 4, 5, 6)
		7.2 Ammonium ions	БДС ISO 7150-1 (1, 2, 4, 5, 6)
		7.3 Ammoniacal nitrogen	VILM 29:2011 (1, 2, 3, 4, 5, 6)
		8. Nitrites/ Nitrite-nitrogen	БДС EN 26777 (1,2,3,4,5,6) VILM 30:2011 (1,2,3,4,5, 6) БДС EN ISO 10304-1 (1,2,4,5,6)
		9. Nitrates/ Nitrate-nitrogen	БДС ISO 7890-3 (1,2,4,5,6), VILM 11:2006 (1,2,4,5,6) VILM 15:2007 (3) БДС EN ISO 10304-1 (1,2,4,5,6)
		10. Sulphides/ Hydrogen sulfide	БДС 17.1.4.09 (1, 2, 4, 5, 6) VILM 16:2006 (1, 2, 4, 5, 6)
		11.1 Hexavalent chromium	ISO 11083 (1, 2, 4, 5, 6); VILM 03:2005 (1,2,3,4,5,6) БДС 17.1.4.17 (1, 2, 5, 6)
		11.2 Trivalent chromium	VILM 03:2005 (1,2,3,4,5,6) БДС 17.1.4.17 (1, 2, 5, 6)
		11.3 Total chromium	VILM 03:2005 (1,2,3,4,5,6) БДС 17.1.4.17 (1, 2, 5, 6) БДС EN ISO 11885 (1,2,4,5,6)
		12. Iron dissolved/ Iron total	БДС ISO 6332 (1, 2, 3, 4,5,6); БДС EN ISO 11885 (1,2,4,5,6)
		13. Biochemical oxygen demand (BOD) ₅	БДС EN 1899-2 (1,2,3, 4,5,6) БДС EN ISO 5815-1 (1,2,3,4,5,6) ISO 5815-2 (1, 2, 3, 4, 5, 6)
		14. Nitrogen total / Total bound nitrogen	BDS EN ISO 20236 (1, 2, 3, 4, 5, 6)
		14.2 Total Kjeldahl nitrogen	БДС EN 25663 (1, 2, 4, 5, 6) EPA 351.3 (2, 5)
		15. Petroleum products/ Hydrocarbon index (HI)	VILM 01:2003 (1,2,3,4,5,6) EPA 1664B (1, 2, 4, 5, 6) БДС EN ISO 9377-2 (1,2, 5,6)

Type of the scope: *flexible for part of the scope*

№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
		16.1 Phenols	БДС ISO 6439 (1, 2, 4, 5) VILM 20:2007 (1, 2, 5, 6)
		16.2 Phenol index	БДС ISO 6439 (1, 2, 4, 5)
		17.1 Total phosphorus (Pt)/	БДС EN ISO 6878 (1,2,3,4,5,6) VILM 12:2006 (1,2,3,4,5,6)
		17.2 Phosphorus such as phosphates (PO ₄ -P)	
		17.3 Phosphates (PO ₄)	БДС EN ISO 6878 (1,2,3,4,5,6) VILM 12:2006 (1,2,3,4,5,6) БДС EN ISO 10304-1 (1,2,4,5,6)
		17.4 Phosphates (such as P)	
		17.5 Orthophosphate	
		18. Element contents	БДС EN ISO 11885 (1,2,4,5,6)
		18.1. Aluminium/Al	
		18.2. Arsenic/As	
		18.3. Antimony/Sb	
		18.4. Barium/Ba	
		18.5. Boron/B	
		18.6. Selenium/Se	
		18.7. Cadmium/Cd	
		18.8. Potassium/K	
		18.9. Cobalt/Co	
		18.10. Manganese/Mn	
		18.11. Molybdenum /Mo	
		18.12. Sodium/Na	
		18.13. Nickel/Ni	
		18.14. Copper/Cu	
		18.15. Zink/Zn	
		18.16. Lead/Pb	
		18.17. Silver/Ag	
		18.18. Vanadium/V	
		18.19. Tin/Sn	
		18.20. Beryllium/Be	
		18.21. Thallium/Tl	EPA 6010C (1, 2, 4, 5, 6)
		19. Mercury/Hg	VILM 28:2013 (1,2, 4,5,6) EPA 6010C (1,2, 4,5,6)
		20.1. Cyanides free	VILM 17:2006 (1,2,3,4,5,6)
		20.2. Cyanides total	VILM 17:2006 (1,2,3,4,5,6) БДС 17.1.4.14 (1, 2, 5, 6)
		21.1 Colour	БДС EN ISO 7887-Method A (2, 4, 5) БДС 17.1.4.01 (1)

Type of the scope: *flexible for part of the scope*

№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
			БДС 8451 (4)
		21.2 Odour	БДС 17.1.4.01 (1) БДС 8451 (4)
		21.3 Taste	БДС 8451 (4)
		22. Dissolved oxygen oxygen	БДС EN 25813(1, 2, 3, 4, 5, 6) ISO 5813 (1, 2, 3, 4, 5, 6)
		23.1. Sulphates	БДС 17.1.4.03 (1, 2, 5, 6); VILM 31:2016 (1, 2, 3, 4, 5, 6) ISO 15923-1-Method (G) (1, 2, 4, 5, 6) БДС EN ISO 10304-1(1,2,4,5,6)
		23.2. Sulphates such as sulphur	VILM 31:2016 (1, 2, 3, 4, 5, 6)
		24.1 Permanganate oxidation	БДС 17.1.4.16 (1, 2, 5, 6)
		24.2 Permanganate index	БДС EN ISO 8467 (2, 4, 5, 6)
		25.1. Total hardness	БДС ISO 6059 (2,4,5,6) EPA 130.2 (1)
		25.2. Permanent (non-carbonate) hardness	БДС ISO 6059 (2,4,5,6) БДС EN ISO 9963-1 (1,2,4,5,6)
		25.3. Temporary (carbonate) hardness	26.3. Temporary (carbonate)
		26. Extractable substances	VILM 01:2003 (1,2,3,4,5,6) EPA 1664B (1, 2, 4, 5, 6)
		27. Anionic surfactants /a-SPAThe/	БДС 17.1.4.25 (1, 2, 5, 6); БДС EN 903 (1, 2, 4, 5, 6) ISO 7875-1 (1, 2, 4, 5,6)
		28. Total alkalinity/ Composite alkalinity/	БДС EN ISO 9963-1 (1,2,4,5,6)
		29. Carbonates (such as CaCO ₃)	БДС EN ISO 9963-1 (1,2,4,5,6)
		30. Hydrogen carbonates	БДС EN ISO 9963-1 (1,2,4,5,6)
		31. Calcium	БДС ISO 6058 (1, 2, 4, 5, 6) БДС EN ISO 11885 (1,2,4,5,6)
		32. Magnesium	БДС EN ISO 11885 (1,2,4,5,6)

Type of the scope: flexible for part of the scope

№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
		33. Fluorides/ Fluorides (such as fluor)	VILM 12:2006 (1,2,3,4,5,6) БДС 16911 (4) БДС EN ISO 10304-1 (1,2,4,5,6)
		34. Conductivity/ Specific conductivity	БДС EN 27888 (1,2,3,4,5,6)
		35. Total organic carbon /TOC/ Dissolved organic carbon	VILM 22:2007 (1, 2, 4, 5, 6) БДС EN 1484 (1, 2, 3, 4, 5, 6)
		36. Oils and fats	EPA 1664B (1, 2, 3, 4, 5, 6)
		37. Turbidity/ Transparency	БДС EN ISO 7027-1 (1,2,4,5,6)
		38. Bromates	VILM 02:2015 (4, 6)
		39. Adsorbable Organic Halides (AOX)	VILM 04:2016 (1, 2, 4, 5, 6)
		40. Bromides	БДС EN ISO 10304-1 (1,2,4,5,6)
II.	Air, atmospheric – emissions	1. Nitric oxide/NO	VILM 23:2016
		2.1 Nitrogen oxides /NOx (NO, NO ₂)	VILM 23:2016 БДС EN 14792
		2.2 Nitrogen dioxide/ NO ₂	VILM 23:2016
		3. Hydrogen sulfide /H ₂ S	VILM 23:2016
		4. Sulphur dioxide/SO ₂	VILM 23:2016 БДС EN 14791
		5. Carbon oxide/CO	VILM 23:2016 БДС EN 15058
		6. Carbon dioxide/CO ₂	VILM 23:2016
		7. Oxygen/O ₂	VILM 23:2016 БДС EN 14789
		8.1. Hydrocarbons, expressed as total carbon	VILM 23:2016
		8.2. Hydrocarbons, CH ₄	
		8.3 Organic compounds, expressed as total organic carbon/TOC	БДС EN 12619
		9. Parameters of gaseous/air streams:	VILM 23:2016 ISO 10780
		9.1. Velocity	БДС EN ISO 16911-1
		9.2. Flowrate	ISO 10780 VILM 23:2016 БДС EN ISO 16911-1
		9.3. Temperature	БДС EN ISO 16911-1 VILM 23:2016
		9.4.1. Pressure	БДС EN ISO 16911-1
		9.4.2. Barometric pressure	VILM 23:2016

Type of the scope: *flexible for part of the scope*

№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
		9.5. Moisture	БДС EN 14790 VILM 23:2016
		10. Total dust of ducted gaseous/air streams	БДС ISO 9096 БДС EN 13284-1
		11. Hydrogen/H ₂	VILM 23:2016
		12. Formaldehyde	EPA 323
		13. Contents of elements in emissions / inorganic dust substances 13.1. Arsenic/As 13.2. Cadmium/Cd 13.3. Chromium/Cr 13.4. Copper/Cu 13.5. Manganese/Mn 13.6. Nickel/Ni 13.7. Lead/Pb 13.8. Antimony/Sb 13.9. Thallium/Tl 13.10. Vanadium/V 13.11. Cobalt/Co	БДС EN 14385
		13.12. Tin/Sn 13.13. Tellurium/Te 13.14. Zink/Zn 13.15. Selenium/Se	VILM 05:2016
		13.16. Mercury/Hg	БДС EN 13211; VILM 05:2016
		14. Hydrogen fluoride	БДС 17.2.4.12 СД CEN/TS 17340
		15. Ammonium/NH ₃	БДС 17.2.4.05
		16. Phenol	БДС 17.2.4.11
		17. Hydrogen chloride /HCl	БДС EN 1911
		18. Sulphur trioxide/SO ₃	БДС 17.2.4.09
		19. Aerosols of sulfuric acid	EPA 8
		20.1 Quality assurance levels – 2 (QAL2) for automated measuring systems (AMS) 20.2 Annual Surveillance Tests (AST)	БДС EN 14181
III.	Waste	1. Active reaction/ pH/ pH (H ₂ O)/ pH (CaCl ₂)	БДС EN ISO 10523
		2. Conductivity/ Specific conductivity	БДС EN 27888

Type of the scope: flexible for part of the scope

№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
		3. Loss on ignition	БДС EN 15935
		4. Dry solids (dry residue)/ Moisture (moisture contents)	ISO 11465 БДС EN 12880
		5. Elements contents	
		5.1. Arsenic/As	
		5.2 Antimony/Sb	
		5.3 Barium/Ba	
		5.4 Selenium/Se	
		5.5 Cadmium/Cd	
		5.6 Molybdenum/Mo	
		5.7 Nickel/Ni	
		5.8 Copper/Cu	
		5.9 Lead/Pb	БДС EN ISO 11885
		5.10 Zink/Zn	
		5.11 Vanadium/V	
		5.12 Calcium/Ca	
		5.13 Magnesium/Mg	
		5.14 Phosphorus/P	
		5.15 Sulphur(total)/S	
		5.16 Cobalt/Co	
		5.17 Manganese/Mn	
		5.18 Boron/B	
		5.19 Sodium/Na	
		5.20 Potassium/K	
		6. Chromium total	БДС EN ISO 11885
		7. Chromium hexavalent	VILM 03:2005; ISO 11083
		8. Iron	БДС ISO 6332 БДС EN ISO 11885
		9. Chlorides	ISO 9297 БДС 17.1.4.24 БДС EN ISO 10304-1
		10. Sulphates	БДС 17.1.4.03 VILM 31:2016 БДС ISO 11048 БДС EN ISO 10304-1
		11. Fluorides	VILM 13:2006 БДС EN ISO 10304-1
		12. Nitrates	VILM 11:2006 БДС EN ISO 10304-1

Type of the scope: *flexible for part of the scope*

№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
		13. Nitrites	БДС EN 26777 VILM 30:2011 БДС EN ISO 10304-1
		14. Phosphates	БДС EN ISO 6878 VILM 12:2006 БДС EN ISO 10304-1
		15. Kjeldahl nitrogen	БДС EN 16169
		16.1 Cyanides free	VILM 17:2006
		16.2 Cyanides total	БДС 17.1.4.14
		17. Phenols/ Phenol index	БДС ISO 6439 VILM 20:2007
		18.Total carbon (TC)/ Total organic carbon (TOC)	VILM 22:2007 БДС EN 1484 БДС EN 15936
		19. Dissolved organic carbon/DOC	VILM 22:2007 БДС EN 1484
		20. Dissolved solids/ total of dissolved solids	БДС 17.1.4.04 sec.3 БДС EN 15216
		21. Mercury/Hg	VILM 28:2013 EPA 6010C
		22. Ammonium/NH ₄	БДС ISO 7150-1
		23. Petroleum products/ Hydrocarbons (TPH)	БДС EN 14345 БДС EN 14039
		24. Acid neutralization capacity/ ANC	СД CEN/TS 15364
		25.1 Sulphate sulphur 25.2 Sulphide sulphur	VILM 31:2016
		26. Thallium	EPA 6010C
		27. Bromides	БДС EN ISO 10304-1
IV.	Noise	1. Equivalent sound power level	БДС ISO 8297 VILM 33:2011
		2. Level of total sound power	БДС ISO 8297 VILM 33:2011
V.	Soils (1), sediments (2), treated biowaste: - compost; - stabilized organic fraction; - fermentation product; - organic soil improver (3)	1. Petroleum products/ Hydrocarbons (TPH)	БДС EN 14345 (1,2,3) БДС EN ISO 16703 (1,2,3)
		2. Active reaction/ pH/ pH(H ₂ O)/ pH (CaCl ₂)	БДС EN 15933 (1,2,3)
		3. Conductivity/ Specific conductivity	СД CEN/TS 15937 (1,2,3)
		4. Dry solid/ moisture contents	БДС EN 15934 (1,2,3)
		5. Loss of ignition	БДС EN 15935 (1,2,3)

Type of the scope: <i>flexible for part of the scope</i>			
№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
		6.1 Contents of organic substance/ Total organic carbon (TOC) 6.2 Humus 6.3 Total carbon (TC)	БДС EN 15936 (1,2,3) БДС 11302 (1,2,3) ISO 10694 (1,2,3)
		7. Total nitrogen (Kjeldahl)	БДС EN 16169 (1,2,3)
		Extracted forms of 8.1 Ammoniacal nitrogen (NH ₄ -N)	БДС ISO 7150-1 (1, 2, 3)
		8.2 Nitrite-nitrogen (NO ₂ -N)	БДС EN 26777 (1, 2, 3)
		8.3 Nitrate-nitrogen (NO ₃ -N)	БДС ISO 7890-3 (1, 2, 3)
		9. Elements contents 9.1 Arsenic/As 9.2 Antimony/Sb 9.3 Selenium/Se 9.4 Cadmium/Cd 9.5 Nickel/Ni 9.6 Copper/Cu 9.7 Lead/Pb 9.8 Zink/Zn 9.9 Manganese/Mn 9.10 Calcium/Ca 9.11 Calcium oxide/CaO 9.12 Magnesium (total)/Mg 9.13 Phosphorus/P (total) 9.14 Sulphur/S (total) 9.15 Cobalt/Co 9.16 Sodium/Na 9.17 Potassium (total)/K 9.18 Chromium/Cr 9.19 Iron/Fe 9.20 Aluminium/Al 9.21 Boron/B 9.22 Mercury/Hg	БДС EN 16170 (1,2,3)
		10.1. Phosphorous 10.2. Phosphorous – exchangeable forms recalculated as P ₂ O ₅ 10.3. Phosphates	БДС ISO 11263 (1, 2, 3) VILM 35:2021 (1, 2, 3)
		11.1. Water-soluble sulphates, recalculated as sulphur 11.2. Sulphates	VILM 31:2016 (1,2,3) БДС ISO 11048 (1,2,3)

Type of the scope: flexible for part of the scope

№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
		12. Impurities/stones	СД CEN/TS 16202 (1,2,3)
		13.1. Sodium, exchangeable forms	БДС EN ISO 11260 (1,2,3)
		13.2. Potassium, exchangeable forms recalculated as K ₂ O	
		13.3. Calcium, exchangeable forms	
		13.4. Magnesium, exchangeable forms	
		14.1 Density 14.2 Bulk density	БДС EN 12580 (1,2,3)
		15.1 Particle size 15.2 Particle maximum size	БДС EN 15428 (1,2,3)

To perform sampling of:

Type of the scope: flexible for part of the scope

№	Product	Sampling methods (standard/validated method)
1	2	3
1.	Air, atmospheric - emissions	БДС EN 13284-1 БДС ISO 9096 БДС EN 14790 EPA 323- items 6÷6.6, item 7.1 VILM 05:2016-item 8 БДС 17.2.4.12-cl.2 БДС 17.2.4.05 – according to the annex БДС EN 14791-cl. 6, cl. 7 БДС EN 1911- cl. 5 БДС 17.2.4.11 – according to the annex БДС 17.2.4.09 – according to the annex EPA 8-item 8 БДС EN 13211-cl. 5.3÷5.12; cl. 7 СД CEN/TS 17340 - item 6, item 7
2.	Soils	БДС 17.4.5.01, БДС ISO 18400-102
3.	Waste	ASTM D5658 ASTM D5679 СД CEN/TR 15310-2
4.	Waters, lake	БДС ISO 5667-4
5.	Waters, drinking	БДС ISO 5667-5
6.	Waters, running surface	БДС EN ISO 5667-6
7.	Waters, coastal sea	БДС ISO 5667-9
8.	Waters, waste	БДС ISO 5667-10
9.	Waters, ground	БДС ISO 5667-11

Type of the scope: <i>flexible for part of the scope</i>		
№	Product	Sampling methods (standard/validated method)
1	2	3
10.	Sediments and sludge	БДС EN ISO 5667-13
11.	Treated biowaste	БДС EN 12579; БДС EN ISO 5667-13

Flexible scope: *Implementing a new version of standards/documents or standards / documents replacing them is allowed. An updated list of standards/documents and their dated versions is provided by laboratory.*

Fixed scope

References:

1.	VILM 01:2021	Water quality. Determination of the extractable substances and petroleum products in waters
2.	VILM 02:2015	Water quality. Determination of the contents of bromates in drinking waters
3.	VILM 03:2005	Water quality. Determination of the contents of chromium in waters/water extract of waste/eluates
4.	VILM 04:2016	Water quality. Determination of the contents of Adsorbable Organic Halides (AOX) in waters
5.	VILM 05:2016	Stationary emission sources. Determination of elements contents.
6.	VILM 11:2006	Water quality. Determination of the contents of nitrates and nitrate nitrogen in waters/water extract of waste/eluates
7.	VILM 12:2006	Water quality. Determination of the contents of phosphates and total phosphorus in waters/water extract of waste/eluates
8.	VILM 13:2006	Water quality. Determination of the contents of fluorides in waters/water extract of waste/eluates
9.	VILM 15:2007	Water quality. Determination of the contents of nitrate nitrogen and nitrates in sea water
10.	VILM 16:2006	Water quality. Determination of the contents of sulphides and hydrogen sulfide in waters
11.	VILM 17:2006	Water quality. Determination of the contents of cyanides and free cyanides in waters/water extract of waste/eluates
12.	VILM 20:2007	Water quality. Determination of the contents of phenol in waters/water extract of waste/eluates
13.	VILM 21:2007	Water quality. Determination of the contents of free (residual) chlorine in waters/water extract of waste/eluates
14.	VILM 22:2007	Water quality. Determination of the contents of total organic carbon in waters/water extract of waste/eluates
15.	VILM 23:2016	Stationary emission sources. Measurement of harmful substances (pollutants) and parameters of the gaseous streams
16.	VILM 28:2013	Water quality. Mercury determination using ICP - OES in waters/water extract of waste/eluates
17.	VILM 29:2011	Water quality. Determination of ammonium ions and ammoniacal nitrogen in waters/water extract of waste/eluates
18.	VILM 30:2011	Water quality. Determination of nitrites and nitrite nitrogen in waters/water extract of waste/eluates
19.	VILM 31:2016	Water quality. Determination of sulphates and their forms in waters and eluates
20.	VILM 33:2011	Validated intralaboratory methods for determination of total sound power, emitted in the surrounding environment by an industrial enterprise and determination of the sound level on the site of impact
21.	VILM 34:2021	Water quality. Water temperature measurement method
22.	VILM 35:2021	Soils, sediments, treated biowaste. Determination of the bulk forms of phosphorus.

I ORDER

To issue the Certificate of accreditation reg. № 75 ЛИ/05.07.2022, valid until 31.11.2024, and this order as an integral part of it.

The Certificate of accreditation with the enclosure to be received at the office of EA BAS by the Manager / representative of the ECO-CONSULT-ENGINEERING Ltd., the head of Laboratory for Environment Component Analysis, at ECO-CONSULT-ENGINEERING Ltd. or other authorized person in the office of EA BAS.

Upon receipt of the certificate and the enclosure issued, the accredited person is obliged to return to EA BAS the originals of accreditation certificate № 75 ЛИ / 12.05.2022 and its enclosure – EA BAS order reg. № A 308/12.05.2022.

This order shall be notified to the legal entity within 3 (three) days from its issuance.

Eng. Irena Borislavova

Executive Director of EA BAS

