HELLENIC ACCREDITATION SYSTEM

Annex F1/1 to the Certificate No. **1475**

SCOPE of ACCREDITATION
of the
HUMOLABS LABORATORY
of
DEMIRTZOGLOU & SYNERGATES A.B.E.T.E.

Tested materials / products	Types of test / Properties to be measured	Applied standards / Techniques to be used
Chemical Testing		
Drinking, Surface and Groundwater, whether or not intended for human consumption	1. Determination of pH	Internal Method (OM-NE-01) based on ISO 10523:2008
	2. Determination of electrical conductivity	Internal Method (OM-NE-01) based on ISO 7888:1985
	3. Determination of total dissolved solids (TDS)	
	4. Determination of salinity	
	5. Determination of nitrate nitrogen ($N\text{-}NO_3$)	Internal Method (OM-NE-03) based on ISO 15923-1:2013, and ISO 23697-2 and Lovibold Test Kits: Ammonia M65, Nitrate M265, Nitrite M270, Chloride M90, TN M280
	6. Determination of nitrite nitrogen ($N\text{-}NO_2$)	
	7. Determination of ammonia nitrogen ($N\text{-}NH_4$)	
	8. Determination of Total Nitrogen (TN)	
	9. Determination of chlorides (Cl)	
	10. Determination of alkalinity	Internal Method (OM-NE-04) based on ISO 9963-1:1994, APHA 2320 B
	11. Determination of hardness	Internal Method (OM-NE-05) based on ISO 11885:2007 & SW-846, US EPA Method 6010D
	12. Determination of Potassium (K)	
	13. Determination of Iron (Fe)	
	14. Determination of Copper (Cu)	
	15. Determination of Zinc (Zn)	

Tested materials / products	Types of test / Properties to be measured	Applied standards / Techniques to be used
Drinking, Surface and Groundwater, whether or not intended for human consumption (continued)	16. Determination of Manganese (Mn)	
	17. Determination of Boron (B)	
	18. Determination of Calcium (Ca)	
	19. Determination of Magnesium (Mg)	
	20. Determination of sodium (Na)	
	21. Determination of Sulphur (S)	
	22. Determination of Phosphorus (P)	
Soil	1. Mechanical / Granular Composition (Soil texture) Sand %, Silt %, Clay %	Internal Method OM-ΕΔ-02 based on ASTM D422-2007, Soil Texture Protocol, OSU Soil Fertility Lab 07/2020, Method of test for mechanical analysis of soils (State of California – 02/2008)
	2. Determination of electrical conductivity	Internal Method (OM-ΕΔ-03) based on SIST ISO 11265:1996
	3. Determination of pH	Internal Method (OM-ΕΔ-03) based on ISO 10390:2021
	4. Determination of SAR	Internal Method (OM-ΕΔ-03) based on ISO 11885:2007
	5. Determination of nitrate nitrogen (N-NO_3)	Internal Method (OM-ΕΔ-03) based on ISO 11885:2007
	6. Determination of cation exchange capacity (CAC)	Internal Method (OM-ΕΔ-04) based on ISO/TS 22171:2023
	7. Determination of exchangeable sodium (Na)	
	8. Determination of exchangeable calcium (Ca)	
	9. Determination of exchangeable magnesium (Mg)	
	10. Determination of exchangeable potassium (K)	
	11. Determination of total carbonate $CaCO_3$ (%)	Internal Method (OM-ΕΔ-05) based on ISO 10693:1995
	12. Determination of active carbonate $CaCO_3$ (%)	Internal Method (OM-ΕΔ-06) based on Drouineau, G., 1942. Dossage rapide du calcaire actif du sol: nouvelles onnees sur la separetion et la nature des fractions calcaires. Ann. Agron., 12: 441 – 450

Tested materials / products	Types of test / Properties to be measured		Applied standards / Techniques to be used
Soil (continued)	13. Determination of organic matter (%)		Internal Method (ΟΜ-ΕΔ-07) based on FAO (Food and Agriculture Organization): Standard operating procedure for soil organic carbon: 10-2019 (version1)
	14. Determination of total nitrogen (N)		Internal Method (ΟΜ-ΕΔ-08) based on ISO 11261:1995
	15. Determination of C/N		Internal Method ΟΜ-ΕΔ-07 Internal Method ΟΜ-ΕΔ-08
	16. Determination of available phosphorus (P).		Internal Method OLSEN (ΟΜ-ΕΔ-09) based on ISO 11263:1994
	17. Determination of copper (Cu)		Internal Method (ΟΜ-ΕΔ-10) based on ISO 14870:2001
	18. Determination of iron (Fe)		
	19. Determination of manganese (Mn)		
	20. Determination of zinc (Zn)		
	21. Determination of boron (B)		
Fertilizer and nutrient solutions for plants	1. Determination of pH		Internal Method (ΟΜ-ΛΙ-01) based on REGULATION (EC) No 2003/2003 and on EN 12048:1996
	2. Determination of electrical conductivity		
	3. Determination of salinity		
	4. Moisture determination		Internal Method (ΟΜ-ΛΙ-02) based on REGULATION (EC) No 2003/2003
	5. Determination of granulation		
	6. Determination of Nitric Nitrogen (N-NO3)		Internal Method ΟΜ-ΛΙ-03 based on ISO 15923-1:2013, ISO 23697-2, ISO 7150-1 and Lovibold Test Kits: Total Nitrogen M280, Ammonia M65, Nitrate M265
	7. Determination of Ammoniacal Nitrogen (N-NH4)		
	8. Determination of Total Nitrogen (TN)		
	9. Determination of Nitrogen Kjeldahl (TKN)		
	10. Determination of Ammoniacal Nitrogen (N-NH4) in Kjeldhahl		
	11. Determination of Phosphorus (P)	i.Water-Soluble	Internal Method (ΟΜ-ΛΙ-04) based on ISO 11885:2007, ISO 17318:2015, SW-846, US EPA Method 6010D and on REGULATION (EC) No 2003/2003
		ii. soluble in neutral ammonium citrate	
		iii. Total, soluble in mineral acids	

Tested materials / products	Types of test / Properties to be measured		Applied standards / Techniques to be used
Fertilizer and nutrient solutions for plants (continued)	12. Determination of Potassium (K)	i. Water-Soluble	
		ii. Total	
	13. Determination of Calcium (Ca)	i. Water-Soluble	
		ii. Total	
	14. Determination of Magnesium (Mg)	i. Water-Soluble	
		ii. Total	
	15. Determination of Sulfur (S)	i. Water-Soluble	
		ii. Total	
	16. Determination of Sodium (Na)		
	17. Determination of Iron (Fe)	i. Water-Soluble	
		ii. Total	
	18. Determination of Copper (Cu)	i. Water-Soluble	
		ii. Total	
	19. Determination of Manganese (Mn)	i. Water-Soluble	Internal Method (ΟΜ-ΛΙ-04) based on ISO 11885:2007, ISO 17318:2015, SW-846, US EPA Method 6010D and on REGULATION (EC) No 2003/2003
		ii. Total	
	20. Determination of Zinc (Zn)	i. Water-Soluble	
		ii. Total	
	21. Determination of Molybdenum (Mo)		
	22. Determination of Boron (B)	i. Water-Soluble	
		ii. Total	
	23. Determination of Cobalt (Co)	i. Water-Soluble	
		ii. Total	
	24. Determination of Chlorine (Cl)		Internal Method (ΟΜ-ΛΙ-05) based on ISO 15923-1:2013 and ISO 9297:1989
Leaf, Plant tissue	1. Determination of Nitrogen (N)		Internal Method (ΟΜ-ΦΥ-02) based on OAC 978.04-1978 - Title: Nitrogen (Total) (Crude protein) in plants. Kjeldahl methods

Tested materials / products	Types of test / Properties to be measured	Applied standards / Techniques to be used
Leaf, Plant tissue (continued)	2. Determination of Phosphorus (P)	Internal Method (ΟΜ-ΦΥ-03) based on the guidance EPA 3051A. REV.1 2/2007: MICROWAVE ASSISTED ACID DIGESTION OF SEDIMENTS, SLUDGES, SOILS, AND OILS
	3. Determination of Potassium (K)	
	4. Determination of Calcium (Ca)	
	5. Determination of Magnesium (Mg)	
	6. Determination of Sodium (Na)	
	7. Determination of Sulfur (S)	
	8. Determination of Boron (B)	
	9. Determination of Copper (Cu)	
	10. Determination of Iron (Fe)	
	11. Determination of Manganese (Mn)	
	12. Determination of Zinc (Zn)	

Site of assessment: **Laboratory permanent premises Ermou 13 & Theotokopoulou Str., 144 52 Metamorfosi, Greece.**
Approved signatories: **Triantafyllia Demirtzoglou, Vasilis Tritakis.**

The Accreditation Certificate No **1475**, to ELOT EN ISO/IEC 17025:2017, is valid until 23.11.2030.

Athens, 24 November 2025

Konstantinou Evangelos Apostolos
CEO of ESYD