Hellenic Accreditation System

Annex F1B/2 to the Certificate No. **90**-7

SCOPE of ACCREDITATION

of the

Testing Laboratory

of the

Innovation Hub (DKK) of PPC S.A.

Materials/ Products to be tested	Types of test / Properties to be measured	Applied methods / Techniques to be used
Chemical tests		
Petroleum products (liquid fuels and lubricants)	Determination of density, with digital density meter	ASTM D 4052: 2018a ELOT EN ISO 12185: 1996
	Determination of density, with Stabinger viscometer	ASTM D 7042: 2021
	Determination of dynamic and kinematic viscosity, with Stabinger viscometer	ASTM D7042: 2021
	Calculation of viscosity index (VI)	ASTM D2270:2010 (2016)
	Calculation of carbon aromaticity index (CCAI)	ISO 8217: 2017
	Determination of Cleveland open cup flash point and fire point	ASTM D92: 2018 ELOT EN ISO 2592:2017
	Determination of Pensky-Martens closed cup flash point	ASTM D93: 2020 ELOT EN ISO 2719: 2021
	Determination of water, by distillation	ASTM D95: 2013 (2018)
	Determination of carbon, hydrogen and nitrogen	ASTM D5291: 2016
	Determination of heat of combustion (gross and net)	ASTM D 240:19
	Determination of carbon residue (micro method)	ASTM D4530: 2015 (2020)
	Determination of total base number (TBN)	ASTM D2896: 2015

Materials/ Products to be tested	Types of test / Properties to be measured	Applied methods / Techniques to be used
	Determination of water by coulometric Karl Fischer titration	ASTM D 6304: 2020
	Color	ASTM D1500-12 (2017)
	Oxidation stability by rotating pressure vessel	ASTM D 2272:22
	Determination of elements in flexible scope. The elements are specified in detail in the List of Accredited Activities Flexible Field of the Laboratory.	IP 501/2005
	The flexibility that applies covers the following categories. Flexibility in relation to: • Adding new elements to existing matrices • The verification of standard methods and validation of their modifications	
Petroleum products (lubricants)	Determination of elements in flexible scope. The elements are specified in detail in the List of Accredited Activities Flexible Field of the Laboratory.	ASTM D 5185-18:2018
	The flexibility that applies covers the following categories. Flexibility in relation to: • Adding new elements to existing matrices • The verification of standard methods and validation of their modifications	
Transformer oils and insulating oils	Determination of polychlorinated biphenyls (PCBs)	IEC 61619:1997
	Determination of Polychlorinated Triphenyls (PCTs) and Polychlorinated Benzyltoluenes (PCBTs)	ELOT EN 12766.03
	Determination of water by coulometric Karl Fischer titration	ASTM D 6304: 2020
	Determination of density, with Stabinger viscometer	ASTM D 7042: 2021
	Determination of dynamic and kinematic viscosity, with Stabinger viscometer	ASTM D7042: 2021
	Calculation of viscosity index (VI)	ASTM D2270:2010 (2016)

Materials/ Products to be tested	Types of test / Properties to be measured	Applied methods / Techniques to be used
	Determination of density, with digital density meter	ASTM D 4052:2022
	Visual Examination	ASTM D1524-94.R10
	Determination of elements in flexible scope. The elements are specified in detail in the List of Accredited Activities Flexible Field of the Laboratory.	ASTM D 7151-15:2016
	The flexibility that applies covers the following categories. Flexibility in relation to: • Adding new elements to existing matrices • The verification of standard methods and validation of their modifications	
Solid fuels residues and ashes	Determination of Hg concentration	EPA 7473: 2007
	Determination of elements in flexible scope. The elements are specified in detail in the List of Accredited Activities Flexible Field of the Laboratory.	ASTM D 6349-21 ASTM D 6357-21
	The flexibility that applies covers the following categories. Flexibility in relation to: • Adding new elements to existing matrices • The verification of standard methods and validation of their modifications	
Drinking water, surface water, underground water	Determination of pH	ELOT ISO 10523: 2012
	Determination of electrical conductivity	ELOT EN 27888: 1993
	Determination of free (residual) and total chlorine	ISO 7393-2:2018
	Determination of ammonium (NH_4^+)	HACH LCK 304 HACH LCK 305
	Determination of Phenols	HACH LCK 345
	Determination of free CN	HACH LCK 315
	Determination of F^-, Cl^-, NO_2^-, Br^-, NO_3^-, SO_4^{--}, PO_4^{-3}	ELOT EN ISO 10304.01:2010
	Determination of BrO_3^-	ELOT EN ISO 15061:2001
	Determination of ClO_3^- , ClO_2^-	ELOT EN ISO 10304.04:2022

Materials/ Products to be tested	Types of test / Properties to be measured	Applied methods / Techniques to be used
	Determination of hardness (computational)	APHA 2340 B
	Determination of total organic carbon (TOC)	APHA 5310 A, B
	Determination of Total Nitrogen (TN)	EN 12260:2003
	Determination of odor	ELOT EN 1622:2006
	Determination of taste	ELOT EN 1622:2006
	Determination of turbidity	ELOT EN ISO 7027-1:2016
	Determination of oxidability	ISO 8467:1993
	Determination of Color	HACH 8025
	Determination of elements in flexible scope. The elements are specified in detail in the List of Accredited Activities Flexible Field of the Laboratory.	ΕΛΟΤ EN ISO 17294.01:2006 ΕΛΟΤ EN ISO 17294-2:2016 ISO 11885:2009
	The flexibility that applies covers the following categories. Flexibility in relation to: • Adding new elements to existing matrices • The verification of standard methods and validation of their modifications	
Pool water	Determination of pH	ELOT ISO 10523: 2012
	Determination of electrical conductivity	ELOT EN 27888: 1993
	Determination of free (residual) and total chlorine	ISO 7393-2:2018
	Determination of turbidity	ELOT EN ISO 7027-1:2016
Wastewater	Determination of pH	ELOT ISO 10523: 2012
	Determination of electrical conductivity	ELOT EN 27888: 1993
	Determination of ammonium (NH_4^+)	HACH LCK 304 HACH LCK 305
	Determination of Phenols	HACH LCK 345
	Determination of free CN	HACH LCK 315

Materials/ Products to be tested	Types of test / Properties to be measured	Applied methods / Techniques to be used
	Determination of free (residual) and total chlorine	IN HOUSE METHOD BASED ON ISO 7393-2:2018
	Determination of F^-, Cl^-, NO_2^-, Br^-, NO_3^-, SO_4^{--}, PO_4^{-3}	ELOT EN ISO 10304.01:2010
	Determination of total organic carbon (TOC)	APHA 5310 A, B
	Determination of Total Nitrogen (TN)	EN 12260:2003
	Determination of Hg	EPA:7473-2007
	Determination of COD	HACH LCK 314
	Determination of Total Petroleum Hydrocarbons (TPH)	ASTM D7066-04
	Determination of Total Nitrogen (TN)	HACH LCK 138
	Determination of Salinity	APHA 2520 B
	Determination of Hexavalent Chromium (Cr VI)	HACH LCK 313
	Determination of Total Suspended Solids (TSS)	APHA 2540 D
	Determination of Total Dissolved Solids (TDS)	APHA 2540 C
	Determination of Color	HACH 8025
	Determination of Anionic Surfactants	HACH LCK 332
	Determination of Cationic Surfactants	HACH LCK 331
	Determination of Nonionic Surfactants	HACH LCK 333
	Determination of elements in flexible scope. The elements are specified in detail in the List of Accredited Activities Flexible Field of the Laboratory.	EPA 6010D: 2018 ΕΛΟΤ EN ISO 17294.01:2006 ΕΛΟΤ EN ISO 17294-2:2016
	The flexibility that applies covers the following categories. Flexibility in relation to: • Adding new elements to existing matrices • The verification of standard methods and validation of their modifications	
Saline water and sea water	Determination of COD	HACH LCK 1814

Materials/ Products to be tested	Types of test / Properties to be measured	Applied methods / Techniques to be used
Granular waste materials, sludges, soils and soil-like materials	One stage leaching test at a liquid to solid ratio of: L/S=2 l/kg.	ELOT EN 12457-01:2003 and according to Directive 2003/33/EC
	One stage leaching test at a liquid to solid ratio of: L/S=10 l/kg.	ELOT EN 12457-02:2002 and according to Directive 2003/33/EC
Soil	Determination of Hg	EPA 7473:2007
	Determination of elements in flexible scope. The elements are specified in detail in the List of Accredited Activities Flexible Field of the Laboratory.	EPA 3051A EPA 6010D: 2018
	The flexibility that applies covers the following categories. Flexibility in relation to: • Adding new elements to existing matrices • The verification of standard methods and validation of their modifications	
Microbiological tests		
Wastewater, Sea water	Enumeration of total coliforms and *Escherichia coli*	ELOT EN ISO 9308-2:2014
	Detection and enumeration of fecal coliforms	Method IDEXX COLILERT-18
	Detection and enumeration of enterococci	Method 9230 D (APHA, STANDARD METHODS 23rd, 2017)
Water (Potable, groundwater, surfacewater, swimming pool waters	Enumeration of total viable count at 22± 2°C	ELOT EN ISO 6222:1999
	Enumeration of total viable count at 36± 2°C	ELOT EN ISO 6222:1999
	Detection and enumeration of *Clostridium perfringens* (including spores)	ELOT EN ISO 14189: 2013
Water (Potable, groundwater, surface water, swimming pool waters, sea water)	Detection and enumeration of enterococci	ELOT EN ISO 7899-2: 2000
	Detection and enumeration of total coliforms	ELOT EN ISO 9308-1: 2014 /Amd 1:2016
	Detectiona and enumeration of *Escherichia coli*	ELOT EN ISO 9308-1: 2014 /Amd 1:2016

Materials/ Products to be tested	Types of test / Properties to be measured	Applied methods / Techniques to be used
Water with low background (matrix A)	Enumeration of Legionella	ELOT EN ISO 11731:2017
Water with high background (matrix B)	Enumeration of Legionella	ELOT EN ISO 11731:2017
Surface water, ground water and wastewater	Detection and enumeration of enterococci	ELOT EN ISO 7899-2: 2000
	Detection and enumeration of total coliforms	APHA 9222B
	Ανίχνευση και καταμέτρηση Escherichia coli	APHA 9222H
	Detection and enumeration of fecal coliforms	APHA 9222D
	Detection and enumeration of *Clostridium perfringens* (including spores)	ELOT EN ISO 14189: 2013
Final effluent from biological treatment	Detection and enumeration of total coliforms	ELOT EN ISO 9308-1: 2014 /Amd 1:2016
	Detectiona and enumeration of *Escherichia coli*	ELOT EN ISO 9308-1: 2014 /Amd 1:2016
	Detection and enumeration of enterococci	ELOT EN ISO 7899-2: 2000
	Detection and enumeration of *Clostridium perfringens* (including spores)	ELOT EN ISO 14189: 2013
Sampling		
Transformer oils and insulating oils	Sampling of transformer oils and insulating oils	EN IEC 60475:2022 ASTM D 923-15
Water samples	Sampling of physicochemical parameters	ISO 5667

Materials/ Products to be tested	Types of test / Properties to be measured	Applied methods / Techniques to be used
Water samples	Sampling of microbiological parameters	ISO 19458

Site of assessment: **Laboratory permanent premises, 9 Leondariou Str., Kantza, Pallini, Attiki, Greece.**

Approved signatories: **M. Bomboulos, E. Oikonomopoulos, F. Deligianni, E. Sigala, D. Dimitroulis, L. Ntotsika, K. Bourouti, N. Tzimotoudis**.

This Scope of Accreditation replaces the previous one dated 01.07.2024.
The Accreditation Certificate No. **90**-7, to ELOT EN ISO/IEC 17025: 2017, is valid until 02.07.2027.

Athens, 18.07.2024

Christos Nestoras
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