



SCOPE OF ACCREDITATION ISO/IEC 17025:2017

ALS LS PERU SAC  
 Av. República de Argentina 1859 Cercado de Lima  
 Lima, Peru  
 Evelyn Miñan Castillo Phone: +51 932 109 523

BIOLOGICAL

Valid To: July 31, 2023

Certificate Number: 6172.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on the matrices identified:

<u>Test(s)/Technology(ies)</u>	<u>Test Method(s)</u>	<u>Matrix(ces)</u>
Benthic Macroinvertebrates (Quantitative)	SMEWW-APHA-AWWA-WEF Part 10500 C (item 1 and 2), 23rd 2017	Epicontinental Sediments; Estuarine Sediments; Marine Sediments
Eggs and Larvae of Helminths	Manual de Técnicas Parasitológicas y Bacteriológicas de Laboratorio (Bailenger Modificado), OMS 1997 (Modified)	Water for Human Use and Consumption
<i>Escherichia coli</i> (MPN)	SMEWW-APHA-AWWA-WEF Part 9221 G-2, 23rd Ed. 2017	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Fecal Enterococcus or Intestinal Enterococcus (NMP)	SMEWW-APHA-AWWA-WEF Part 9230 B, 23rd Ed. 2017	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Fecal or Thermotolerant Coliforms (NMP)	SMEWW-APHA-AWWA-WEF Part 9221 E.1, 23rd Ed. 2017	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Free Living Organisms – OVL (Phytoplankton and Zooplankton)	SMEWW-APHA-AWWA-WEF Part 10200 C.1, F.2, c.1; SMEWW-APHA-AWWA-WEF Part 10200 C1, G 23rd Ed. 2017	Natural Water; Water for Human Use and Consumption

<b><u>Test(s)/Technology(ies)</u></b>	<b><u>Test Method(s)</u></b>	<b><u>Matrix(ces)</u></b>
Helminth Eggs	Bailenger modified OMS 1997 (modified)	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Heterotrophic Bacteria (UFC/mL)	SMEWW-APHA-AWWA-WEF Part 9215 B, 23rd Ed. 2017	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Parasitic Forms	Referenced in Method Identification and Quantification of Entoparasites in Wastewater, CEPIS 1993 (Modified) – Simplified Methods of Microbiological Analysis of Wastewater (1983)	Natural Water; Water for Human Use and Consumption
Qualitative Phytoplankton (Detection)	EPA-670/4-73 - 001. PLANKTON 3.1.1; 4.1.1, 1973	Natural Water
Qualitative Zooplankton (Detection)	EPA-670/4-73 - 001. PLANKTON 3.2; 4.2.1, 1973	Natural Water
Quantitative Periphyton	SMEWW-APHA-AWWA-WEF Part 10300 C, Items 1 y 2, 23 <sup>rd</sup> Ed. 2017	Natural Water
Quantitative Phytoplankton	SMEWW-APHA-AWWA-WEF Part 10200 C.1 and F.2, c.1, 23rd Ed. 2017	Natural Water; Saline Water; Water for Human Use and Consumption
Quantitative Zooplankton	SMEWW-APHA-AWWA-WEF Part 10200 C.1 and G, 23rd Ed. 2017	Natural Water; Saline Water; Water for Human Use and Consumption
<i>Salmonella</i> spp. (Detection)	ISO 19250, 1st Ed 2010	Domestic and Municipal Wastewater; Natural Water; Water for Human Use and Consumption
Total Coliform (NMP)	SMEWW-APHA-AWWA-WEF Part 9221 B and C, 23rd Ed. 2017	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
<i>Vibrio cholerae</i> (Detection)	SMEWW-APHA-AWWA-WEF Part 9260 H (item 1,2,3d (1a, 1b), 6, 7 (Exception Serogroup O139), 23rd Ed. 2017	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption

<u>Test(s)/Technology(ies)</u>	<u>Test Method(s)</u>	<u>Matrix(ces)</u>
Virus (Somatic Coliphage Assay)	SMEWW-APHA-AWWA-WEF Part 9224 B, 23rd. 2017	Natural Water; Water for Human Use and Consumption



# Accredited Laboratory

A2LA has accredited

**ALS LS PERU SAC**

*Lima, PERU*

for technical competence in and compliance with the

**Biological Testing**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 24<sup>th</sup> day of September 2021.

Mr. Trace McInturff, Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 6172.02  
Valid to July 31, 2023  
Revised June 23, 2023

*For the tests to which this accreditation applies, please refer to the laboratory's Biological Scope of Accreditation.*



SCOPE OF ACCREDITATION ISO/IEC 17025:2017

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Av. República de Argentina 1859 Cercado de Lima  
Lima, Peru  
Evelyn Miñan Castillo Phone: +51 932 109 523

CHEMICAL

Valid To: July 31, 2023

Certificate Number: 6172.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on the matrices identified:

<u>Test(s)/Technology(ies)</u>	<u>Test Method(s)</u>	<u>Matrix(ces)</u>
Aldicarb	EPA Method 8270E Rev. 6, June 2018 (modified)	Saline Water
Alkalinity, Bicarbonate, Carbonate	SMEWW-APHA-AWWA-WEF Part 2320 B, 23rd Ed. 2017	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Ammonia, Ammoniacal Nitrogen	SMEWW-APHA-AWWA-WEF Part 4500-NH3- F, 23rd Ed. 2017	Saline Water
Anionic Detergents by Flow Analysis (FIA and CFA) and Photometric Detection	ISO 16265, 1ra Ed. 2009 (modified)	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Biochemical Oxygen Demand (BOD5)	SMEWW-APHA-AWWA-WEF Part 5210 B, 23rd Ed. 2017	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
BTEX by GC-MS: Benzene Ethylbenzene Toluene Xylenes (o, m, p -Xylene)	EPA Method 8260 D Rev. 4, June, 2018	Saline Water

<u>Test(s)/Technology(ies)</u>	<u>Test Method(s)</u>	<u>Matrix(ces)</u>
Calcium Hardness (Calculated by ICP-MS)	SMEWW-APHA-AWWA-WEF Part. 2340 B, 23rd Ed. 2017 (calculation); EPA Method 6020B, Rev 2, 2014 (modified)	Natural Water; Process Water; Saline Water; Wastewater; Water for Human Use and Consumption
Chemical Oxygen Demand (COD)	SMEWW-APHA-AWWA-WEF Part 5220 D, 23rd Ed. 2017 (modified)	Saline Water
Chlorophyll A	SMEWW APHA-AWWA-WEF Part 10200-H, 23rd Ed. 2017	Natural Water; Saline Water
Chromium VI	SMEWW-APHA-AWWA-WEF Part 3500-Cr B, 23rd Ed. 2017 (modified)	Saline Water
Color	SMEWW-APHA-AWWA-WEF Part 2120 C, 23rd Ed. 2017	Natural Water; Saline Water (modified); Wastewater; Water for Human Use and Consumption
Conductivity	SMEWW-APHA-AWWA-WEF Part 2510 B, 23rd Ed. 2017	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Cyanide Wad	ASTM D6888-16:2016 (modified)	Saline Water
Free Cyanide	EPA Method 9016, Rev. 0, 2010	Saline Water
Inorganic Anions by Ion Chromatography: Bromide Chloride Fluoride Nitrate Nitrite Nitrogen-Nitrate Nitrogen-Nitrite Phosphate Phosphorus-Phosphate Sulfate	EPA Method 300.1 Rev. 1, 1997 (modified)  <i>Reference in ECA Water (DS N° 004-2017-MINAM): Nitrates + Nitrites</i>	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Magnesium Hardness (Calculated by ICP-MS)	SMEWW-APHA-AWWA-WEF Part. 2340 B, 23rd Ed. 2017 (calculation); EPA Method 6020B, Rev 2, 2014 (modified)	Natural Water; Process Water; Saline Water; Wastewater; Water for Human Use and Consumption

<u>Test(s)/Technology(ies)</u>	<u>Test Method(s)</u>	<u>Matrix(ces)</u>
Nitrate	SMEWW-APHA-AWWA-WEF Part 4500-NO3- E, 23rd Ed. 2017	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Nitrite	SMEWW-APHA-AWWA-WEF Part 4500-NO2- B, 23rd Ed. 2017	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Oils and Grease by Infrared	ASTM D7066-04, 2017 (modified)	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Organochlorine Pesticides by Gas Chromatography (GC/ECD): 4,4'-DDD 4,4'-DDE 4,4'-DDT $\alpha$ -BHC (alpha BHC) $\alpha$ -Chlordane Aldrin $\beta$ -BHC (beta BHC) Dieldrin Endosulfan I Endosulfan II Endosulfan Sulfate Endrin Endrin Aldehyde Endrin Ketone $\gamma$ -BHC (Lindane) $\gamma$ -Chlordane Heptachlor Heptachlor Epoxide Methoxychlor $\delta$ -BHC (delta BHC)	EPA Method 8081 B, Rev. 2, 2007 (modified)  <i>Reference in ECA Water (DS N° 004-2017-MINAM):</i> <i>DDT (Sum) = 4,4'-DDD + 4,4'-DDE.</i> <i>Aldrin + Dieldrin.</i> <i>Heptachlor + Heptachlor epoxide.</i> <i>Chlordane (Isomers Totals);</i> <i>Endosulfan (Isomers totals).</i>	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Organophosphate Pesticides by GC-MS: Dimethoate Disulfoton Famfur Malathion Methyl Parathion O, O, O-Triethyl Thiophosphorus Thioate Parathion Phorate Sulfotep Tionazinon	EPA Method 8270E Rev. 6 June, 2018	Saline Water

<u>Test(s)/Technology(ies)</u>	<u>Test Method(s)</u>	<u>Matrix(ces)</u>
Phenols	EPA SW-846 Method 9065, Rev. 0, 1986	Saline Water;
Phosphorus (All Forms): Phosphate Total Phosphate Total Phosphorus	EPA Method 365.3, 1983	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Polychlorinated Biphenyl (PCB) by Gas Chromatography (GC/ECD): Aroclors Total PCB	EPA Method 8082 A, Rev. 1, 2007 (modified)	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Polycyclic Aromatic Hydrocarbons (PAHs) by Gas Chromatography (GC/MS): Acenaphthene Acenaphthylene Anthracene Benzo [a] Anthracene Benzo [a] Pyrene Benzo [b] Fluoranthene Benzo [g, h, i] Perylene Polycyclic Aromatic Benzo [k] Fluoranthene Chrysene Dibenzene [a, h] Anthracene Fluoranthene Fluorene Indeno [1,2,3- cd] Pyrene Naphthalene Phenanthrene Pyrene	EPA Method 8270 E, Rev. 6, 2018 (modified)  <i>Reference in ECA Water (DS N°004-2017-MINAM): Total Oil Hydrocarbons (Fraction Aromatic)</i>	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Salinity	SMEWW-APHA-AWWA-WEF Part 2520 B, 23rd Ed. 2017	Saline Water
Settling Solids	SMEWW-APHA-AWWA-WEF Part 2540-F (item 3.a), 23rd Ed. 2017	Saline Water
Silicates by Flow Analysis (FIA and CFA) and Photometric Detection: SiO <sub>2</sub> -Si SiO <sub>2</sub> -SiO <sub>3</sub> SiO <sub>3</sub> -Si	ISO 16264, 1ra Ed, 2002 (modified)	Natural Water; Saline Water; Water for Human Use and Consumption
Sulfide(s)	SMEWW-APHA-AWWA-WEF Part 4500-S <sub>2</sub> -D, 23rd Ed. 2017	Saline Water
Total and Dissolved Mercury (Hg) by Cold Vapor Atomic	EPA Method 245.7 Rev.2, 2005 (modified)	Saline Water



<b><u>Test(s)/Technology(ies)</u></b>	<b><u>Test Method(s)</u></b>	<b><u>Matrix(ces)</u></b>
Total and Dissolved Metals by Inductively Coupled Plasma (ICP-MS): Ag Al As B Ba Be Bi Ca Cd Co Cr Cu Fe Hg K Li Mg Mn Mo Na Ni P Pb Sb Se Si Sn Sr Ti Tl U V Zn	EPA Method 6020 B, Rev. 2, 2014 (modified)	Natural Water; Process Water; Saline Water; Wastewater; Water for Human Use and Consumption
Total Cyanide	ISO 14403-2: 2012 (modified)	Saline Water
Total Dissolved Solids	SMEWW-APHA-AWWA-WEF Part 2540 C, 23rd Ed. 2017 (modified)	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Total Hardness (Calculated by ICP-MS)	SMEWW-APHA-AWWA-WEF Part. 2340 B, 23rd Ed. 2017 (calculation); EPA Method 6020B, Rev 2, 2014 (modified)	Natural Water; Process Water; Saline Water; Wastewater; Water for Human Use and Consumption

<u>Test(s)/Technology(ies)</u>	<u>Test Method(s)</u>	<u>Matrix(ces)</u>
Total Nitrogen by Flow Analysis (CFA and FIA) and Spectrophotometric Detection	ISO 29441 1 <sup>st</sup> Ed 2010 (modified)	Saline Water
Total Petroleum Hydrocarbon by Gas Chromatography (GC/FID); Including Fractions:  DRO (C8-C40) (C9-C40) (C10-C28) (C10-C40) (C28-C40)	EPA Method 8015 C, Rev. 3, 2007 (modified)  <i>Reference in DS N ° 031-2010-SA: Dissolved or emulsified hydrocarbon; mineral oil.</i>	Process Water
Total Petroleum Hydrocarbon by Gas Chromatography (GC-FID); Including Fractions:  GRO (C5-C10) (C6-C10)	EPA Method 8015 C, Rev. 3, 2007.	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Total Petroleum Hydrocarbon by Gas Chromatography (GC/FID); Including Fractions:  GRO (C5-C10) (C6-C10)  DRO (C8-C40) (C9-C40) (C10-C28) (C10-C40) (C28-C40) Greater than C28 (>C28-C40) (C5-C40) * (C6-C40) *	EPA Method 8015 C, Rev. 3, 2007 (modified)  <i>Reference in DS N ° 031-2010-SA: Dissolved or emulsified hydrocarbon; mineral oil.</i>	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Total Solids	SMEWW-APHA-AWWA-WEF Part 2540B, 23rd Ed. 2017 (modified)	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Total Suspended Solids	SMEWW-APHA-AWWA-WEF Part 2540D, 23rd Ed. 2017 (modified)	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption

<u>Test(s)/Technology(ies)</u>	<u>Test Method(s)</u>	<u>Matrix(ces)</u>
Turbidity	SMEWW-APHA-AWWA-WEF Part 2130 B, 23rd Ed. 2017	Natural Water; Saline Water; Wastewater; Water for Human Use and Consumption
Volatile Organic Compounds (VOCs) by Gas Chromatography (GC-MS):  Halogenated and Non-Halogenated: 1,1,1,2-Tetrachloroethane 1,1,1-Trichloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichlorethylene 1,1-Dichloropropene 1,2,3-Trichlorobenzene 1,2,3-Trichloropropane 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,3-Dichloropropane 1,4-Dichlorobenzene 2,2-Dichloropropane 2-Chlorotoluene 4-Chlorotoluene Bromobenzene Bromochloromethane Carbon Tetrachloride cis-1,2-Dichloroethylene Chloride Chlorobenzene Dibromomethane Hexachlorobutadiene Isopropylbenzene Methylene Naphthalene n-Butylbenzene n-Propylbenzene P-isopropyl Toluene sec-Butylbenzene Styrene tert-Butylbenzene Tetrachlorethylene trans-1,2-Dichloroethylene	EPA Method 8260 D Rev. 4, June, 2018	Saline Water

<u>Test(s)/Technology(ies)</u>	<u>Test Method(s)</u>	<u>Matrix(ces)</u>
Halogenated and Non-Halogenated <i>(cont'd)</i> : Trichlorethylene  Trihalomethanes: Bromodichloromethane Bromoform Chloroform Dibromochloromethane		

\* Fractions C5-C40 and C6-C40 is not included in the Scope of Accreditation; however, this is the result of the sum of the fractions (C5-C10) or (C6-C10) and (C10-C40), which are accredited by A2LA.



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