SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ALGORITMOS Y MEDICIONES AMBIENTALES SPA
Seminario 180
Santiago, CHILE
Viviana Zúñiga Mosqueira Phone: (56 2) 23616618
Email: Viviana.zuniga@ALSGlobal.com

CHEMICAL

Valid To: March 31, 2027 Certificate Number: 4235.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this organization to perform recognized methods using the following testing technologies and, in the analyte, categories identified below:

Waters – Physical-Chemical Tests

Matrix(ces)	Parameter(s)/Analyte(s)	Method(s)
Drinking water Groundwater Superficial water Wastewater	Acidity	SM 2310 B. Ed.24, 2023
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Residual Free Chlorine	SM 4500-Cl G. Ed.24, 2023
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Color	SM 2120 C. Ed.24, 2023
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Conductivity	SM 2510 B. Ed.24, 2023
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Chemical Oxygen Demand (COD)	M-LAB-A38 Ed.00 based on SM 5220 D. Ed.24, 2023
Wastewater	Fixed hydrocarbons Volatile hydrocarbons	NCh 2313/7, 2021

Matrix(ces)	Parameter(s)/Analyte(s)	Method(s)
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Total Hydrocarbons	NCh 2313/7, 2021
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Hydrocarbons (Fixed)	SM 5520 F. Ed.24, 2023 SM 5520 D. Ed.24, 2023 (Gravimetric)
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Langelier Index	The Metro Handbook of Water Treatment for HVAC Systems, Richard Blake, by calculation
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	pH	SM 4500-H+ B. Ed.24, 2023
Drinking water Collection sources	Taste	ME-26-2024
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Fixed and Volatile Solids	SM 2540 E. Ed.24, 2023
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Volatile Suspended Solids	SM 2540 E. Ed.24, 2023
Drinking water Groundwater Superficial water Wastewater	Total Solids	SM 2540 B. Ed.24, 2023
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Sulfide	SM 4500-S2 F. Ed.24, 2023
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Sulfide	SM 4500-S2 G. Ed.24, 2023

Waters, Metals – Physical-Chemical Tests

Matrix(ces)	Parameter(s) / Analyte(s)	Method(s)
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Dissolved and Total Aluminum Dissolved and Total Antimony Dissolved and Total Arsenic Dissolved and Total Barium Dissolved and Total Beryllium Dissolved and Total Bismuth Dissolved and Total Boron Dissolved and Total Cadmium Dissolved and Total Calcium Dissolved and Total Chromium Dissolved and Total Cobalt Dissolved and Total Copper Dissolved and Total Gold Dissolved and Total Iron Dissolved and Total Lead Dissolved and Total Lithium Dissolved and Total Magnesium Dissolved and Total Manganese Dissolved and Total Molybdenum Dissolved and Total Nickel Dissolved and Total Phosphorous Dissolved and Total Potassium Dissolved and Total Rhenium Dissolved and Total Rhodium Dissolved and Total Selenium Dissolved and Total Silicon Dissolved and Total Silver Dissolved and Total Sodium Dissolved and Total Strontium Dissolved and Total Sulfur Dissolved and Total Thallium Dissolved and Total Tin Dissolved and Total Titanium Dissolved and Total Tellurium Dissolved and Total Tungsten Dissolved and Total Uranium Dissolved and Total Vanadium Dissolved and Total Zinc Dissolved and Total Zirconium	M-LAB-A32 Ed.00 based on EPA 200.7, Rev. 4.4, 1994
Drinking water Groundwater Superficial water Wastewater	Dissolved Aluminum Dissolved Antimony Dissolved Arsenic Dissolved Barium Dissolved Beryllium Dissolved Bismuth Dissolved Boron Dissolved Cadmium Dissolved Calcium Dissolved Chromium	SM 3120 B. Ed.24, 2023 / SM 3030 B. Ed.24, 2023

Matrix(ces)	Parameter(s) / Analyte(s)	Method(s)
Drinking water Groundwater Superficial water Wastewater (cont.)	Dissolved Cobalt Dissolved Copper Dissolved Iron Dissolved Lead Dissolved Lithium Dissolved Magnesium Dissolved Manganese Dissolved Molybdenum Dissolved Nickel Dissolved Phosphorous Dissolved Potassium Dissolved Selenium Dissolved Silicon Dissolved Silver Dissolved Sodium Dissolved Strontium Dissolved Sulfur Dissolved Thallium Dissolved Tin Dissolved Titanium Dissolved Tungsten Dissolved Vanadium Dissolved Zinc Dissolved Zirconium	SM 3120 B. Ed.24, 2023 / SM 3030 B. Ed.24, 2023
Drinking water Groundwater Superficial water Wastewater	Total Aluminum Total Antimony Total Arsenic Total Barium Total Beryllium Total Bismuth Total Boron Total Cadmium Total Calcium Total Chromium Total Cobalt Total Copper Total Iron Total Lead Total Lithium Total Magnesium Total Manganese Total Molybdenum Total Nickel Total Phosphorous Total Potassium Total Selenium Total Silicon Total Silver Total Sodium Total Strontium	SM 3120 B. Ed.24, 2023

Matrix(ces)	Parameter(s) / Analyte(s)	Method(s)
Drinking water Groundwater Superficial water Wastewater (cont.)	Total Sulfur Total Thallium Total Tin Total Titanium Total Tungsten Total Vanadium Total Zinc Total Zirconium	SM 3120 B. Ed.24, 2023
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Total Cadmium Total Calcium Total Chromium Total Cobalt Total Copper Total Iron Total Lead Total Lithium Total Magnesium Total Manganese Total Nickel Total Potassium Total Silver Total Sodium Total Tin Total Zinc	SM 3111 B. Ed.24, 2023 / SM 3030 F. Ed.24, 2023
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Total Aluminum Total Barium Total Beryllium Total Molybdenum Total Vanadium	SM 3111 D.Ed.24, 2023 / SM 3030 F. Ed.24, 2023
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Total Mercury	SM 3112 B. Ed.24, 2023
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Total Arsenic Total Selenium	SM 3114 B. Ed.24, 2023
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Cadmium Dissolved Calcium Dissolved Chromium Dissolved Cobalt Dissolved Copper Dissolved Iron Dissolved Lead Dissolved Lithium Dissolved Magnesium Dissolved Manganese Dissolved	SM 3111 B. Ed.24, 2023 / SM 3030 B. Ed.24, 2023

Matrix(ces)	Parameter(s) / Analyte(s)	Method(s)
Drinking water Groundwater Superficial water Water for industrial purposes Wastewate(cont.)	Nickel Dissolved Potassium Dissolved Silver Dissolved Sodium Dissolved Tin Dissolved Zinc Dissolved	SM 3111 B. Ed.24, 2023 / SM 3030 B. Ed.24, 2023
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Aluminum Dissolved Barium Dissolved Beryllium Dissolved Molybdenum Dissolved Vanadium Dissolved	SM 3111 D. Ed.24, 2023 / SM 3030 B. Ed.24, 2023
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Mercury Dissolved	SM 3112 B. Ed.24, 2023 / SM 3030 B. Ed.24, 2023
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Arsenic Dissolved Selenium Dissolved	SM 3114 B. Ed.24, 2023 / SM 3030 B. Ed.24, 2023
Wastewater	Arsenic Total	NCh 2313/9, 1996
Wastewater	Total Cadmium Total Chromium Total Copper Total Iron Total Lead Total Manganese Total Nickel Total Zinc	NCh 2313/10, 2020
Wastewater	Total Mercury	NCh 2313/12, 1996
Wastewater	Total Molybdenum	NCh 2313/13, 1998
Wastewater	Total Selenium	NCh 2313/30, 1999
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Mercury Dissolved	M-LAB-A17 Ed.00 based on SM 3112 B. Ed.24, 2023 / SM 3030 B. Ed.24, 2023
Drinking water Groundwater Superficial water Wastewater	RAS (Sodium Adsorption Ratio) NA % (Sodium Percentage)	NCh 1333.Of78 (modified in 1987). Punto 3.8

Waters, Organic Compounds – Physical-Chemical Tests

Matrix(ces)	Parameter(s)/Analyte(s)	Method(s)
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	2,4 Dichlorophenoxyacetic acid (2,4D) Pentachlorophenol	SM 6640 B. Ed.24, 2023
Drinking water Collection sources	Benzene Toluene Xilenes	ME-19-2024
Drinking water Collection sources	Bromodichloromethane Dibromochloromethane Tetrachloroethene Tribromomethane Trichloromethane	ME-22-2024
Drinking water Groundwater Superficial water Water for industrial purposes Wastewater	Bromodichloromethane Dibromochloromethane Tetrachloroethene Tribromomethane Trichloromethane	SM 6232 B. Ed.24, 2023
Drinking Water Groundwater Superficial water Water for industrial purposes Wastewater	Trihalomethanes (by calculation)	NCh 409/1 Norma de Calidad de Agua Potable Table 5

Water – Microbiological Tests

Matrix(ces)	Parameter(s)/Analyte(s)	Method(s)
Water for industrial purposes	Determination of fecal coliforms	SM 9221 E1. Ed.24, 2023
Water for industrial purposes	Determination of fecal coliforms (MPN)	SM 9221 E2. Ed.24, 2023
Water for industrial purposes	Determination of total coliform bacteria (MPN)	SM 9221 B. Ed.24, 2023
Water for industrial purposes	Escherichia coli detection (MPN)	SM 9221 F. Ed.24, 2023
Drinking water Groundwater Irrigation water Recreational water Superficial water Water for industrial purposes Wastewater	Determination of Heterotrophs	SM 9215 B. Ed.24, 2023

Solids and Sediments – Physical-Chemical Tests

Matrix(ces)	Parameter(s)/Analyte(s)	Method(s)
Aquatic, lake, and marine sediments Sludge Soils	Oils and Fats	M-LAB-S08 Ed.00 based on SM 5520 E. Ed.24, 2023
Aquatic, lake, and marine sediments Sludge Soils	Moisture	M-LAB-S01 Ed.01 based on NCh 1515.Of 79
Aquatic, lake, and marine sediments	Conductivity pH	M-LAB-S04 Ed.00 based on INIA 2005 Serie Acta N°30 5.1 Extracto 1:5
Aquatic, sediments, Lake sediments, and Marine sediments Sludge Soils	Fixed hydrocarbons Total hydrocarbons Volatile hydrocarbons	M-LAB-S07 Ed.00 based on SM 5520 E and F Ed.24, 2023
Aquatic, sediments, Lake sediments, and Marine sediments Sludge Soils	Total Nitrogen Total Kjeldahl Nitrogen	M-LAB-S09 Ed.00 based on INIA 2006 / SM 4500-N B. Ed.24, 2023
Aquatic sediments, Lake sediments, and Marine sediments Sludge Soils	Organic Matter	M-LAB-S11 Ed.00 based on Res. Ex. N°3612/2009 SERNAPESCA. Numeral 27
Aquatic sediments, Lake sediments, and Marine sediments	Total Phosphorous	M-LAB-S12 Ed.00 based on SM 4500-P E. Ed.24, 2023
Aquatic sediments, Lake sediments, and Marine sediments Sludge Soils	Granulometry	M-LAB-S02 Ed.00 based on ASTM C136-06 and NCh3236.Of2010

Solids and Sediments , Metals – Physical-Chemical Tests

Matrix(ces)	Parameter(s)/Analyte(s)	Method(s)
Aquatic, lake, and marine sediments Sludge Soils	Aluminum Antimony Arsenic Barium Beryllium Bismuth Boron Cadmium Calcium Chromium Cobalt Copper Gold Iron Lead Lithium Magnesium Manganese Molybdenum Nickel Phosphorous Potassium Rhenium Rhodium Selenium Silicon Silver Sodium Strontium Sulfur Thallium Tin Tellurium Titanium Tungsten Uranium Vanadium Zinc Zirconium	M-LAB-S10 Ed.00 based on EPA Method 200.7, Rev. 4.4, 1994
Aqueous waste Soils Solid waste	Cadmium Chromium Lead Silver	EPA 1311, 1992 / SM 3111 B. Ed.24, 2023
Aqueous waste Soils Solid waste	Barium	EPA 1311, 1992 / SM 3111 D. Ed.24, 2023

Matrix(ces)	Parameter(s)/Analyte(s)	Method(s)
Aqueous waste Soils Solid waste	Mercury	EPA 1311, 1992 / SM 3112 B. Ed.24, 2023
Aqueous waste Soils Solid waste	Arsenic Selenium	EPA 1311, 1992 / SM 3114 B. Ed.24, 2023
Aqueous waste Soils Solid waste	Cadmium Chromium Lead Silver	EPA 1312, 1994 / SM 3111 B. Ed.24, 2023
Aqueous waste Soils Solid waste	Barium	EPA 1312, 1994 / SM 3111 D. Ed.24, 2023
Aqueous waste Soils Solid waste	Mercury	EPA 1312, 1994 / SM 3112 B. Ed.24, 2023
Aqueous waste Soils Solid waste	Arsenic Selenium	EPA 1312, 1994 / SM 3114 B. Ed.24, 2023
Aquatic sediments, Lake sediments, and Marine sediments Sludge Soils	Arsenic Barium Cadmium Zinc Copper Chromium Iron Magnesium Manganese Mercury Molybdenum Nickel Silver Lead Potassium Selenium Vanadium	I-LAB28 Ed.00 based on SM Part 3000 Ed.24, 2023 / EPA 3050 B 1996

Stationary Sources: Isokinetic Filters and Recovered - Physical-Chemical Tests

Matrix(ces)	Parameter(s)/Analyte(s)	Method(s)
Air – Gases Air – Particulate Matter	Total Reduced Sulfur Emissions (TRS) with Impinger: Sulfur Dioxide, Carbon Disulfide, Methyl Disulfide, Methyl Mercaptan, Carbonyl Sulfide, Dimethyl Sulfide, Hydrogen Sulfide	EPA 16A, 2017
Air – Gases Air – Particulate Matter	Particulate Matter	EPA 17, 2017. CFR 40 – PART 60
Air – Gases Air – Particulate Matter	Particulate Matter	CH-5, 2020 based on EPA 5:2020
Air – Gases Air – Particulate Matter	Particulate Matter	EPA 5, 2020
Air – Gases Air – Particulate Matter	Particulate Matter PM 10 Particulate Matter PM 2,5	EPA 201A - CFR 40 – Part 51. 2020
Air – Gases Air – Particulate Matter	Condensable Particulate Matter	EPA 202 - CFR 40 – Part 51. 2017
Air – Gases Air – Particulate Matter	Sulfuric Acid, Sulfur Dioxide	EPA 8, 2019
Filters	Particulate Matter	I-LAB-F01 Ed.02 based on EPA 40 CFR, Part 50, Appendix J, 2022
Air – Particulate Matter	Settleable particulate matter (MPS)	M-LAB-S03 Ed.00 based on EPA 40 CFR, Part 50 Appendix J, 2022

Stationary Sources: Isokinetic and Recovered Filters. Metals - Physical-Chemical Tests

Matrix(ces)	Parameter(s)/Analyte(s)	Method(s)
Filters Settleable Particulate Material	Aluminum Antimony Arsenic Barium Beryllium Bismuth Boron Cadmium Calcium Chromium Cobalt Copper Gold Iron Lead Lithium Magnesium Manganese Molybdene Nickel Phosphorous Potassium Rhenium Rhodium Selenium Silicon Silver Sodium Strontium Sulfur Thallium Tin Tellurium Titanium Tungsten Uranium Vanadium Zinc Zirconium	M-LAB-F02 Ed.00 based on EPA 200.7, Rev. 4.4, 1994
Filters Settleable Particulate Material	Aluminum Arsenic Beryllium Cadmium Calcium Chromium Cobalt Copper Iron	I-LAB27 Ed.00 based on EPA 3050 B 1996 / SM Part 3000 Ed.24, 2023

Matrix(ces)	Parameter(s)/Analyte(s)	Method(s)
Filters Settleable Particulate Material (cont.)	Lead Manganese Mercury Molybdenum Nickel Selenium Sodium Tin Vanadium Zinc	I-LAB27 Ed.00 based on EPA 3050 B 1996 / SM Part 3000 Ed.24, 2023

Air Analysis (Laboratory facility) – Olfactometry

Matrix(ces)	Parameter	Methods
Air Quality	Air Quality – Odor	NCh 3190:2010 Determination of odor concentration by dynamic olfactometry, based on UNE EN 13725:2004

Accredited Laboratory

A2LA has accredited

ALGORITMOS Y MEDICIONES AMBIENTALES SPA

Santiago, CHILE

for technical competence in the field of

Chemical 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 1st day of September 2025.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 4235.02
Valid to March 31, 2027

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