



CERTIFICATE OF ACCREDITATION

This is to attest that

CERTIMIN S.A.

AVENIDA LAS VEGAS 845, SJM
LIMA 15828, PERÚ

Testing Laboratory TL-1051

has met the requirements of AC89, *IAS Accreditation Criteria for Testing Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories*. This organization is accredited to provide the services specified in the scope of accreditation.

Effective Date August 2, 2024



International Accreditation Service
Issued under the authority of IAS management

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SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

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CERTIMIN S.A.

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Accredited to ISO/IEC 17025:2017

Effective Date August 2, 2024

FIELDS OF TESTING	MATERIAL/ MATRIX	DETERMINANT(S)/ ANALYTE(S)	METHOD REFERENCE
ENVIRONMENTAL- ACUSTIC (Sampling and Field Measurement)	Environmental Noise	Environmental Noise	NTP ISO 1996-1:2020. Acoustics. Description, measurement and assessment of environmental noise. Part 1: Basic quantities and assessment procedures / NTP ISO 1996-2:2023. Acoustics. Description, measurement and assessment of environmental noise. Part 2: Determination of sound pressure levels.
ENVIRONMENTAL - ORGANIC (Sampling and Analysis)	Air	Benzene (C ₆ H ₆)	NTP 712.107:2020. ENVIRONMENTAL QUALITY MONITORING. Method of measuring the environmental concentration of benzene in ambient air. Part 2: Aspiration sampling followed by solvent desorption and gas chromatography
		Total Hydrocarbons Expressed as Hexane	ASTM D3687-19. 2019 Standard Test Method for Analysis of Organic Compound Vapors Collected by the Activated Charcoal Tube Adsorption Method / ASTM D3686-20. 2020. Standard Practice for Sampling Atmospheres to Collect Organic Compound Vapors (Activated Charcoal Tube Adsorption Method)
	Soils and Sediments	Polychlorinated biphenyls (PCBs): (PCB 28, PCB 52, PCB 101, PCB 118, PCB 153, PCB 138, PCB 180, PCB Total)	EPA Method 8270 E Rev. 06. 2018. Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry

TL-1051

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Page 2 of 6

IAS/TL-Food/101-3



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ENVIRONMENTAL - INORGANIC (Sampling and Field Measurement)	Natural water	Floating Material of Anthropogenic origin	IC-MON-087 Rev.03 Qualitative Determination of Floating Material of anthropogenic origin based on the NMX-AA-006-SCFI-2010 standard (Validated, 2022).
	Wastewater, Natural Water, Water for Human use and consumption and Saline Water.	Dissolved Oxygen	NTP 214.046:2013 (Reviewed, 2018) WATER QUALITY. Determination of dissolved oxygen in water. Instrumental probe method. Sensor based on Luminescence 1 ^a Edition
		Oxidation - Reduction Potential (ORP).	SMEWW-APHA-AWWA-WEF Part 2580 B, 24th Ed. 2023. Oxidation - Reduction Potential (ORP). Oxidation - Reduction Potential Measurement in Clean Water.
	Air	Total Gaseous Mercury (Hg)	NTP 900.068: 2016/COR 1: 2017. Environmental Quality Monitoring. Air quality. Standardized method for the determination of total gaseous mercury.
		Meteorological parameters: Environmental Temperature, Relative humidity, Environmental pressure, Precipitation, Wind speed and Wind direction (Wind rose)	EPA-454/B-08-002 March 2008. Quality Assurance Handbook for Air Pollution Measurement Systems. Volumen IV: Meteorological Measurements Version 2.0 (Final) modified according to Protocol of Meteorological Parameters IC-MON-009, rev 07. (Validated, 2022)
	Stationary source emissions	Sulfur Dioxide (SO ₂)	EPA CTM 034. 1999. Test Method - Determination of Oxygen, Carbon Monoxide and Oxides of Nitrogen For Periodic Monitoring (Validated, 2023)
		Nitrogen Oxides (NO _x , NO and NO ₂), Carbon Monoxide (CO) and Oxygen (O ₂)	EPA CTM 034. 1999. Test Method - Determination of Oxygen, Carbon Monoxide and Oxides of Nitrogen For Periodic Monitoring

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ENVIRONMENTAL - INORGANIC (Sampling and Analysis)	Stationary source emissions	Particulate Matter (PM)	EPA 40 CFR, Part 60, Appendix A-3, Method 5. 2023 edition – Determination of particulate matter emissions from stationary sources
	Stationary source emissions (cont'd.)	Metals in emissions: Silver(Ag), Arsenic (As), Barium(Ba), Beryllium (Be), Cadmium (Cd), Chromium(Cr), Cobalt (Co), Copper (Cu), Manganese (Mn), Nickel (Ni), Phosphorus (P), Lead (Pb), Antimony (Sb), Selenium (Se), Thallium (Tl), Zinc (Zn).	EPA 40 CFR, Part 60, Appendix A-8, Method 29. 2023 edition – Determination of metals emissions from stationary sources
	Soils and Sediments	Organic matter	NOM-021-RECNAT-2000-Salinity Specifications and Soil Classification. Studies, Sampling and Analysis. Section 7.1.7 Determination of Soil Organic Matter – Walkley Black Method modified according to Determination of Organic Matter in soils and sediments IC-MA-146, rev 01. (Validated, 2023)
	Vegetable tissue	Total Metals in vegetable tissue: Antimony (Sb), Arsenic (As), Barium (Ba), Calcium (Ca), Cadmium (Cd), Chromium (Cr), Copper (Cu), Iron (Fe), Potassium (K), Magnesium(Mg), Manganese (Mn), Molybdenum (Mo), Sodium(Na), Nickel (Ni), Phosphorus (P), Lead (Pb), Strontium (Sr), Silver (Ag), Vanadium (V), Zinc (Zn).	EPA Method 200.3. Rev. 1. 1991. Sample preparation procedure for spectrochemical. Determination of total recoverable elements in biological Tissues modified according to Determination of Total Metals in plant tissue by ICP-OES IC-MA-147, rev.01 / EPA Method 200.7 Revision 4.4. 1994. Determination of metals and trace elements in water and wastes by inductively coupled plasma-atomic emission spectrometry (Validated, 2024).

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ENVIRONMENTAL - INORGANIC (Sampling and Analysis) (cont'd.)	Wastewater, Natural Water, Water for Human use and consumption, Saline Water and Process Water	Total Oil and Grease (TOG)	ASTM D7066 -04 (Reapproved 2024). Standard Test Method for dimer/trimer of chlorotrifluoroethylene (S-316) Recoverable Oil and Grease and Nonpolar Material by Infrared Determination (Validated, 2024)
CHEMICAL TESTING	Geochemical Exploration	Ag, Cu, Pb, Zn, Mo, As, Li	IC-VH-088 (Validated) Rev.07 Dec.2022 / Geochemical Exploration Samples: Multielemental Determination by ICP-OES/MS - Aqua Regia Digestion (HNO ₃ and HCl)
		Ag, Cu, Pb, Zn, Mo, As, Li	IC-VH-059 (Validated) Rev.11 Dec 2022 / Geochemical Exploration Samples: Multielemental Determination by ICPOES-MS Multiacid Digestion (HF, HClO ₄ , HNO ₃ and HCl).
		Ag, Cu, Pb, Zn, Mo, As	IC-VH-138 (Validated) Rev. 01 Aug. 2023: Geochemical Exploration Samples: Multielement Determination by ICP OES Multi-acid Digestion by Hot Block (HF, HClO ₄ , HNO ₃ and HCl).
		Ag, Cu, Pb, Zn, Mo, As, Li	IC-VH-139 (Validated) Rev. 01 Aug. 2023: Geochemical Exploration Samples: Multielement Determination by ICP OES-MS Multi-acid Digestion by Hot Block (HF, HClO ₄ , HNO ₃ and HCl).
	Copper Concentrate	Determination of Copper	IC-VH-007 (Validated) Rev.10 Jun.2024/Copper Concentrate and Ores: Determination of Copper – Volumetric Method
		Ag, Pb, Zn, As, Sb, Bi	IC-VH-027 (Validated) Rev.09 Feb.2023 / Copper Concentrate: Multielemental Determination by Atomic Absorption Spectrophotometry.

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CHEMICAL TESTING (cont'd.)	Lead Concentrate	Determination of Lead	IC-VH-011 (Validated) Rev.10 Jun.2024/Lead Concentrate and Ores: Determination of Lead – Volumetric Method
		Zn, Cu, As, Sb, Bi	IC-VH-028 (Validated) Rev.10 Feb.2023 / Lead Concentrate: Multi-Elemental Determination By Atomic Absorption Spectrophotometry.
	Zinc Concentrate	Determination of Zinc	IC-VH-008 (Validated) Rev.10 Jun.2024/Zinc Concentrate and Ores: Determination of Zinc – Volumetric Method
		Ag, Pb, Cu, As, Sb, Bi	IC-VH-029 (Validated) Rev.09 Feb.2023 / Zinc Concentrate: Multi-Elemental Determination by Atomic Absorption Spectrophotometry
	Bullion	Determination of Gold in Bullion	ASTM E1335-24 (Validated modified)/IC-EF-014 Rev.12 Aug.2024/ Standard Test Methods for Determination of Gold in Bullion by Fire Assay Cupellation Analysis / Bullion Samples – Determination of Gold and/or Silver by Fire Assay
	Ore	Ag, Cu, Pb, Zn	IC-VH-134 (Validated) Rev.02 Dec. 2023: Ore Samples: Multielement Determination by ICP-OES Multi-acid Digestion (HF, HClO ₄ , HNO ₃ and HCl)