CERTIFICATE OF ACCREDITATION

This is to attest that

ECOGESTION AMBIENTAL LTDA.

PROGRESO PASAJE 1 NO 1560, CHIGUAYANTE
CONCEPCIÓN 4100000, REPUBLIC OF CHILE

Inspection Agency AA-788 (Type A)

has met the requirements of AC98, *IAS Accreditation Criteria for Inspection Agencies*, and has demonstrated compliance with ISO/IEC Standard 17020:2012, *Conformity assessment - Requirements for the operation of various types of bodies performing inspection*. This organization is accredited to provide the services specified in the scope of accreditation.

Expiry Date October 1, 2024
Effective Date October 18, 2021

President

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SCOPE OF ACCREDITATION

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ECOGESTION AMBIENTAL LTDA.

www.ecogestionambiental.cl

Contact Name Alex Aguilera **Contact Phone** +56 41249200

Accredited to ISO/IEC 17020:2012 *Effective Date October 18, 2021*

Field and Range of Inspection	Regulations, Inspection Methods, Standards and/or Specifications
Automatic measurement of wastewater flow -In situ measurements.	NCh 411/10-2005 Water Quality - Sampling - part 10: Sampling of waste water - Collection and handling of samples.
Manual measurement of wastewater flow -In situ measurements.	NCh 411/10-2005 Water Quality - Sampling - part 10: Sampling of waste water - Collection and handling of samples.
Measurement of temperature in line and in situ of wastewater -In situ measurements.	NCh 2313/2, Of 95, Supreme Decree No. 545 of 1995 of the Ministry of Public Works: Wastewater - Methods of analysis Part 2: Temperature Determination.
Measurement of dissolved oxygen in line and in situ of wastewater -In situ measurements.	NCh 411/10-2005 Water Quality - Sampling - part 10: Sampling of waste water - Collection and handling of samples.
Measurement of potential hydrogen pH determination in line and in situ of wastewater -In situ measurements.	NCh 2313/1:2021 Wastewater – Analysis methods – Part 1: Determination of pH Wastewater Test methods – Part 1: Determination of pH.
Manual sampling of spot samples in wastewater -Sampling.	NCh 411/10-2005 Water Quality - Sampling - part 10: Sampling of waste water - Collection and handling of samples.
Automatic collection of point samples of wastewater -Sampling.	NCh 411/ 10-2005 Water quality - Sampling - Part 10: Sampling of wastewater - Collection and handling of samples.
Manual sampling of composite samples in wastewater -Sampling.	NCh 411/ 10-2005 Water quality - Sampling - Part 10: Sampling of wastewater - Collection and handling of samples.
Measurements of free chlorine total in wastewaters -In situ measurements.	NCh 411/ 10-2005 Water quality - Sampling - Part 10: Sampling of wastewater - Collection and handling of samples.
Measurements of free chlorine residual in wastewaters -In situ measurements.	NCh 411/ 10-2005 Water quality - Sampling - Part 10: Sampling of wastewater - Collection and handling of samples.
Sampling of groundwater	NCh 411/ 11-Of 1998 Water quality - Sampling - Part 11: Guide for the sampling of groundwater

Field and Range of Inspection	Regulations, Inspection Methods, Standards and/or Specifications
Sampling of seawater and surface water for bioassays and other physicochemical and biological tests	S-MU-02 (Version 01), based on Standard Methods for the Examination or Water and Wastewater 1060 B y 10200 B, 23rd Edition, 2017
Measurements of conductivity / salinity in seawater and surface water -In situ measurements.	Exempt Resolution No. 3612 SUBPESCA, Numeral 29, modification Exempt Resolution No.905-2020
Measurements of temperature in seawater and surface water -In situ measurements.	Exempt Resolution No. 3612 SUBPESCA, Numeral 29, modification Exempt Resolution No. 905-2020
Measurements of dissolved oxygen in seawater and surface water - In situ measurements.	Exempt Resolution No. 3612 SUBPESCA, Numeral 29, modification Exempt Resolution No. 905-2020
Measurements of hydrogen potential in marine sediments (intertidal and subtidal), aquatic sediments (estuarine and fluvial) and lacustrine sediments -In situ measurements.	S-ME-01 (Version 04), based on Exempt Resolution No. 3612 SUBPESCA
Measurements of reduction oxide potential in marine sediments (intertidal and subtidal), aquatic sediments (estuarine and fluvial), and lacustrine sediments -In situ measurements.	S-ME-01 (Version 04), based on Exempt Resolution No. 3612 SUBPESCA
Measurements of temperature in marine sediments (intertidal and subtidal), aquatic sediments (estuarine and fluvial) and lacustrine sediments -In situ measurements.	S-ME-01 (Version 04), based on Exempt Resolution No. 3612 SUBPESCA
Measurements of hydrogen potential in seawater and surface water - In situ measurements.	Standard Methods for the Examination of Water and Wastewater 4500-H B, 23rd Edition, 2017.
Measurements of temperature in seawater and surface water – In situ measurements	Standard Methods for the Examination of Water and Wastewater 4500-H B, 23rd Edition, 2017
Measurements of free chlorine (total and residual) in drinking waters -In situ measurements.	NCH 409/1 2005 Drinking Water Quality.
Measurements of free chlorine (total and residual) in raw waters (surface water) -In situ measurements.	NCh 411- 10 Water quality - Sampling - Part 10: Sampling of wastewater.
Sediment sampling for bioassays and other physicochemical and biological tests in marine sediments (intertidal and subtidal), aquatic sediments (estuarine and fluvial) and lacustrine sediments -Sampling.	S-MU-01 (Version 04), based on Exempt Resolution No.3612 SUBPESCA and clauses 25, 26 and 27 and Standard Methods for the examination of water and wastewater 1060 B, C 23rd,2017
Sampling of Soil	NCh 3400/2:2016 Soil quality – Sampling - Part 2: Guidelines of sampling techniques. 2016. INN

Field and Range of Inspection	Regulations, Inspection Methods, Standards and/or Specifications
Measurement of Temperature in Seawater and Surface Water.	A-ME-01 (Version 01), based on Seabird 19 plus-v2, SAIV A/S model SD 208, RBR model XR-620 and maestro^3 equipment manuals.
Measurement of Salinity in Seawater and Surface Water.	A-ME-02 (Version 01), based on Seabird 19 plus-v2, SAIV A/S model SD 208, RBR model XR-620 and maestro^3 equipment manuals.
Measurement of Conductivity in Seawater and Surface Water.	A-ME-03 (Version 01), based on Seabird 19 plus-v2, SAIV A/S model SD 208, RBR model XR-620 and maestro^3 equipment manuals.
Measurement of Dissolved oxygen in Seawater and Surface Water.	A-ME-04 (Version 01), based on Seabird 19 plus-v2, SAIV A/S model SD 208, RBR model XR-620 and maestro^3 equipment manuals.
Measurement of Oxygen saturation in Seawater and Surface Water.	A-ME-05 (Version 01), based on Seabird 19 plus-v2, SAIV A/S model SD 208, RBR model XR-620 and maestro^3 equipment manuals.
Measurement of Fluorescence in Seawater and Surface Water.	A-ME-06 (Version 01), based on Seabird 19 plus-v2, SAIV A/S model SD 208, RBR model XR-620 and maestro^3 equipment manuals.
Measurement of Density in Seawater and Surface Water.	A-ME-07 (Version 01), based on Seabird 19 plus-v2, SAIV A/S model SD 208, RBR model XR-620 and maestro^3 equipment manuals.
Measurement of Hydrogen potential (pH) in Seawater and Surface Water.	A-ME-08 (Version 01), based on Seabird 19 plus-v2, SAIV A/S model SD 208, RBR model XR-620 and maestro^3 equipment manuals.
Measurement of Turbidity in Seawater and Surface Water.	A-ME-09 (Version 01), based on Hanna HI 9829, Aquareed model AP-2000 and multiparameter type CTD-O equipment manuals.
Measurement of Temperature in Seawater and Surface Water.	A-ME-10 (Version 01), based on Aquareed model AP-2000, Hach model HQ 40d and Hanna model HI9829, HI98130, HI98190, HI98191 and HI98194 equipment manual.
Measurement of Salinity in Seawater and Surface Water.	A-ME-11 (Version 01), based on Aquareed model AP-2000, Hach model HQ 40d and Hanna model HI9829 and HI98194 equipment manual.
Measurement of Conductivity in Seawater and Surface Water.	A-ME-12 (Version 01), based on Aquareed model AP-2000, Hach model HQ 40d and Hanna model HI9829, HI98130 and HI98194 equipment manual.
Measurement of Dissolved oxygen in Seawater and Surface Water.	A-ME-13 (Version 01), based on Aquareed model AP-2000, Hach model HQ 40d and Hanna model HI9829 and HI98194 equipment manual.

Field and Range of Inspection	Regulations, Inspection Methods, Standards and/or Specifications
Measurement of Oxygen saturation in Seawater and Surface Water.	A-ME-14 (Version 01), based on Aquareed model AP-2000, Hach model HQ 40d, Hanna model HI9829 and HI98194 equipment manual.
Measurement of Oxide Reduction Potential (ORP) in Seawater and Surface Water.	A-ME-15 (Version 01), based on Aquareed model AP-2000, WTW model ph3110 and Hanna model HI9829, HI98190, HI98191 y HI98194 equipment manual.
Measurement of Total dissolved solids in Seawater and Surface Water.	A-ME-16 (Version 01), based on Aquareed model AP-2000, Hach model HQ 40d and Hanna model HI9829, HI98130 and HI98194 equipment manual.
Measurement of Rhodamine in Seawater and Surface Water.	A-ME-17 (Version 01), based on Aquareed model AP-2000 and Turner Designs aquafluor model 8000-010 equipment manual.
Measurement of Transparency in Seawater and Surface Water.	A-ME-18 (Version 01), based on EPA 440/4-91-002 standard.
Measurement of Flow in Surface water.	A-ME-19 (Version 01), based on NCh 3205-2011 standard.
Sampling of Seawater and Surface Water.	A-MU-01 (Version 01), based on Standard Methods for the Examination of Water and Wastewater 1060 B and 10200 B. 23rd Edition, 2017 and NCh 411/3:2014 standard.
Sampling of Groundwater.	AS-MU-01 (Version 01), based on NCh-ISO 5667/1:2017 and NCh411/11 Of98 standards.
Sampling of Drinking water.	AP-MU-01 (Version 01), based on NCh 409/1 Of.2005, NCh409/2. Of2004, NCh411/5-1996 standards and Manual of Test Methods for Drinking Water of the Superintendency of Sanitary Services, SISS 2007.
Measurement of Temperature in Groundwater.	AS-ME-01 (Version 01), based on Aquareed model AP-2000, Hach model HQ 40d and Hanna model HI9829, HI98130, HI98190, HI98191 and HI98194 equipment manual.
Measurement of Hydrogen potential (pH) in Groundwater.	AS-ME-02 (Version 01), based on Aquareed model AP-2000, Hach model HQ 40d and Hanna model HI9829, HI98130, HI98190, HI98191 and HI98194 equipment manual.
Measurement of Conductivity in Groundwater.	AS-ME-03 (Version 01), based on Aquareed model AP-2000, Hach model HQ 40d and Hanna model HI9829, HI98130 y HI98194 equipment manual.
Measurement of Dissolved oxygen in Groundwater.	AS-ME-04 (Version 01), based on Aquareed model AP-2000, Hach model HQ 40d and Hanna model HI9829 and HI98194 equipment manual.

Field and Range of Inspection	Regulations, Inspection Methods, Standards and/or Specifications
Measurement of Turbidity in Groundwater.	AS-ME-05 (Version 01), based on Hanna model HI9829 and Aquareed model AP-2000 equipment manual.
Measurement of Total dissolved solids in Groundwater.	AS-ME-06 (Version 01), based on Aquareed model AP-2000, Hach model HQ 40d and Hanna model HI9829, HI98130 and HI98194 equipment manual.
Measurement of Water table (Groundwater phreatic level) in Groundwater.	AS-ME-07 (Version 01), based on the user manual Pozometer N0005001 - N0005028 - N0005044 - N0005060 - N0005087 - N0005109 and NCh411 / 11 Of98 standard.
Measurement of Free chlorine (residual free chlorine) in Groundwater.	AS-ME-08 (Version 01), based on HANNA model HI 96711 and HI 97711 equipment manual.
Measurement of Total chlorine (residual chlorine) in Groundwater.	AS-ME-09 (Version 01), based on HANNA model HI 96711 and HI 97711 equipment manual.
Measurement of Oxide Reduction Potential (ORP) in Groundwater.	AS-ME-10 (Version 01), based on Aquareed Model AP-2000, WTW model ph3110 and Hanna model HI9829, HI98190, HI98191 and HI98194 equipment manual.
Measurement of Conductivity in Wastewater.	AR-ME-03 (Version 01), based on Aquareed model AP-2000, Hach model HQ 40d and Hanna model HI9829, HI98130 y HI98194 equipment manual.
Measurement of Dissolved oxygen in Wastewater.	AR-ME-04 (Version 01), based on Aquareed model AP-2000, Hach model HQ 40d and Hanna model HI9829 and HI98194 equipment manual.
Measurement of Turbidity in Wastewater.	AR-ME-05 (Version 01), based on Hanna model HI9829 and Aquareed model AP-2000 equipment manual.
Measurement of Total dissolved solids in Wastewater.	AR-ME-06 (Version 01), based on Aquareed model AP-2000, Hach model HQ 40d and Hanna model HI9829, HI98130 and HI98194 equipment manual.
Measurement of Free chlorine (residual free chlorine) in Wastewater.	AR-ME-08 (Version 01), based on HANNA model HI96711 and HI97711 equipment manual.
Measurement of Total chlorine (residual chlorine) in Wastewater.	AR-ME-09 (Version 01), based on HANNA model HI96711 and HI97711 equipment manual.
Measurement of Oxide Reduction Potential (ORP) in Wastewater.	AR-ME-10 (Version 01), based on Aquareed model AP-2000, WTW model ph3110 and Hanna model HI9829, HI98190, HI98191 and HI98194 equipment manual.
Measurement of Temperature in Drinking water.	AP-ME-01 (Version 01), based on the Aquareed model AP-2000, Hach model HQ 40d and Hanna model HI9829, HI98130, HI98190, HI98191 and HI98194 equipment manual.

Field and Range of Inspection	Regulations, Inspection Methods, Standards and/or Specifications
Measurement of Hydrogen potential (pH) in Drinking water.	AP-ME-02 (Version 01), based on the Aquareed model AP-2000, Hach model HQ 40d and Hanna model HI9829, HI98130, HI98190, HI98191 and HI98194.
Measurement of Conductivity in Drinking water.	AP-ME-03 (Version 01), based on Aquareed model AP-2000, Hach model HQ 40d and Hanna model HI9829, HI98130 and HI98194 equipment manual.
Measurement of Dissolved oxygen in Drinking water.	AP-ME-04 (Version 01), based on Aquareed model AP-2000, Hach model HQ 40d and Hanna model HI9829 and HI98194 equipment manual.
Measurement of Turbidity in Drinking water.	AP-ME-05 (Version 01), based on Hanna model HI 9829 and Aquareed model AP-2000 equipment manual.
Measurement of Total dissolved solids in Drinking water.	AP-ME-06 (Version 01), based on Aquareed model AP-2000, Hach model HQ 40d and Hanna model HI9829, HI98130 and HI98194 equipment manual.
Measurement of Free chlorine (residual free chlorine) in Drinking water.	AP-ME-08 (Version 01), based on Hanna model HI 96711 y HI97711 equipment instruction manual.
Measurement of Total chlorine (residual chlorine) in Drinking water.	AP-ME-09 (Version 01), based on Hanna model HI 96711 and HI 97711 equipment instruction manual.
Measurement of Oxide Reduction Potential (ORP) in Drinking water.	AP-ME-10 (Version 01), based on Aquareed Model AP-2000, WTW model ph3110 and Hanna model HI9829, HI98190, HI98191 and HI98194 equipment manual.
Sampling of Sludge	LC-MU-01 (Version 01), based on NOM-004-SEMARNAT-2002 Official Mexican Standard, Environmental Protection. - Sludge and Biosolids - Specifications and Maximum Permissible Limits of Contaminants for their Use and Final Disposal, August 15, 2003.
Measurements of currents with acoustic doppler current profiler (ADCP) (in seawater and surface water).	A-ME-20 (Version 01), based on Exempt Resolution No. 3612 of 2009 and the modifications indicated in Exempt Resolution No. 660 of 2018, numeral 22 of Exempt Resolution No. 3002 of 2018 and Exempt Resolution 1933 of 2021 of the Undersecretariat of Fisheries and Aquaculture and Publication 3201 Oceanographic Instructive No. 1 Technical Specifications for Oceanographic Measurements and Analysis 3rd Edition 2005 of the Hydrographic and Oceanographic Service of the Chilean Navy (SHOA).
Measurements of currents with acoustic doppler current profiler (ADCP) (in seawater and surface water).	Exempt Resolution No. 3612 of 2009 and the modifications indicated in Exempt Resolution No. 660 of 2018, numeral 22 of Exempt Resolution No. 3002

Field and Range of Inspection	Regulations, Inspection Methods, Standards and/or Specifications
	of 2018 and Exempt Resolution No. 1933 of 2021 of the Undersecretariat of Fisheries and Aquaculture.
Measurements of currents with rhodamine (in seawater and surface water).	A-ME-21 (Version 01), based on Exempt Resolution No. 3612 of 2009 and the modifications indicated in Exempt Resolution No. 660 of 2018, numeral 22 of Exempt Resolution No. 3002 of 2018 and Exempt Resolution No. 1933 of 2021 of the Undersecretariat of Fisheries and Aquaculture and Publication 3201 Oceanographic Instructive No. 1 Technical Specifications for Oceanographic Measurements and Analysis 3rd Edition 2005 of the Hydrographic and Oceanographic Service of the Chilean Navy (SHOA).
Measurements of currents with derivators (in seawater and surface water).	A-ME-22 (Version 01), based on Exempt Resolution No. 3612 of 2009 and the modifications indicated in Exempt Resolution No. 660 of 2018, numeral 22 of Exempt Resolution No. 3002 of 2018 and Exempt Resolution No. 1933 of 2021 of the Undersecretariat of Fisheries and Aquaculture and Publication 3201 Oceanographic Instructions N°1 Technical Specifications for Oceanographic Measurements and Analysis 3rd Edition 2005 for Hydrographic and Oceanographic Service of the Chilean Navy (SHOA).
Underwater filming (in seawater and surface water).	Exempt Resolution No. 3612 of 2009 and the modifications indicated in Exempt Resolution No. 660 of 2018, numeral 24 of Exempt Resolution N°3002 of 2018 and Exempt Resolution 1933 of 2021 of the Undersecretariat of Fisheries and Aquaculture.
Measurement of hydrogen potential (pH) in soil.	SU-ME-01 (Version 01), based on the Hanna equipment manuals models HI98190, HI98191, HI99121 and WTW model pH 3110.
Measurement of temperature in soil.	SU-ME-02 (Version 01), based on Hanna equipment manuals models HI98190, HI98191, HI99121 and WTW model pH 3110.

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PROGRESO PASAJE 1 NO 1560, CHIGUAYANTE
CONCEPCION 4100000, REPUBLLIC OF CHILE

Testing Laboratory TL-873

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.

Expiry Date October 1, 2024
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President

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www.ecogestionambiental.cl

Contact Name Alex Aguilera **Contact Phone** +56-41249200

Accredited to ISO/IEC 17025:2017 *Effective Date October 20, 2021*

FIELDS OF TESTING	MATERIAL/ MATRIX	DETERMINANT(S)/ ANALYTE(S)	METHOD REFERENCE
MARINE CHEMISTRY	**Soils, Sediments**	Granulometry in marine sediments (intertidal and subtidal), aquatic sediments (estuarine and fluvial) and lacustrine sediments.	S-EN-01 (Versión 02)
		Total organic matter in marine sediments (intertidal and subtidal), aquatic sediments (estuarine and fluvial) and lacustrine sediments.	S-EN-02 (Versión 02)
		Taxonomy (benthic macrofauna) in marine sediments (intertidal and subtidal), aquatic sediments (estuarine and fluvial) and lacustrine sediments.	S-EN-03 (Versión 02)
		In situ measurements of reduction oxide potential in marine sediments (intertidal and subtidal), aquatic sediments (estuarine and fluvial) and lacustrine sediments.	S-ME-01 (Versión 04)
		In situ measurements of hydrogen potential in marine sediments (intertidal and subtidal), aquatic sediments (estuarine and fluvial) and lacustrine sediments.	S-ME-01 (Versión 04)
		In situ measurements of temperature in marine sediments (intertidal and subtidal), aquatic sediments (estuarine and	S-ME-01 (Versión 04)

FIELDS OF TESTING	MATERIAL/ MATRIX	DETERMINANT(S)/ ANALYTE(S)	METHOD REFERENCE
MARINE CHEMISTRY (cont'd.)	**Soils, Sediments** (cont'd.)	fluvial) and lacustrine sediments.	
		Sampling of marine sediments (intertidal and subtidal), aquatic sediments (estuarine and fluvial) and lacustrine sediments for taxonomy tests of benthic macrofauna, granulometry and total organic matter.	S-MU-01 (Versión 04)
	Sludge, soils, lake sediments, aquatic sediments and marine sediments.	Total Organic Carbon (TOC)	S-EN-04 (Version 01) Total Organic Carbon Determination (TOC), based on TMECC, 2002 05.07 Calcination at 550°C Gravimetry.
AQUATIC BIOLOGY	**Aquatic Organisms**	Quantitative analysis of phytoplankton	A-EN-01 (Versión 02)
		Qualitative analysis of zooplankton	A-EN-02 (Versión 02)
		Quantitative analysis of zooplankton	A-EN-03 (Versión 02)
		Quantitative analysis of periphyton	A-EN-04 (Versión 03)
		Identification and determination of ictiofauna	B-EN-01 (Versión 02)
		Identification and determination of macrophytes	B-EN-02 (Versión 02)
		Sampling of ictiofauna	NCh 411/2. Of96 Water quality - Sampling - Part 2: Guide on sampling techniques.
		Sampling of macrophytes	NCh 411/2. Of96 Water quality - Sampling - Part 2: Guide on sampling techniques.
		Sampling of phytoplankton	NCh 411/2. Of96 Water quality - Sampling - Part 2: Guide on sampling techniques
		Sampling of zooplankton	NCh 411/2. Of96 Water quality - Sampling - Part 2: Guide on sampling techniques.
		Sampling of didymo	SUBPESCA, 2016. 2nd Edition Manual for the monitoring and identification of the benthic microalga Didymosphenia geminate.

FIELDS OF TESTING	MATERIAL/ MATRIX	DETERMINANT(S)/ ANALYTE(S)	METHOD REFERENCE
AQUATIC BIOLOGY (cont'd.)	**Aquatic Organisms** (cont'd.)	Qualitative analysis of didymo	SUBPESCA, 2016. 2nd Edition Manual for the monitoring and identification of the benthic microalga Didymosphenia geminate.
		Qualitative analysis of periphyton	SUBPESCA, 2016. 2nd Edition Manual for the monitoring and identification of the benthic microalga Didymosphenia geminate.
		Sampling of periphyton	SUBPESCA, 2016. 2nd Edition Manual for the monitoring and identification of the benthic microalga Didymosphenia geminate.
		Qualitative analysis of phytoplankton	SUBPESCA, 2016. 2nd Edition Manual for the monitoring and identification of the benthic microalga Didymosphenia geminate.