



CERTIFICATE OF ACCREDITATION

This is to attest that

CERTIFICACIONES Y CALIDAD SAC – CERTIFICAL SAC

AV ANTONIO DE SUCRE 1361
LIMA 15086, PERU

Testing Laboratory TL-911

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 April 1, 2026

Effective Date June 17, 2024



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Accredited to ISO/IEC 17025:2017

Effective Date June 17, 2024

FIELDS OF TESTING	MATERIAL/ MATRIX	DETERMINANT(S)/ ANALYTE(S)	METHOD REFERENCE
ENVIRONMENTAL – AIR	Weighing Filter-Analysis	Determination PM-2.5 - Low Volume	CERTIFICAL-LAB-01. EPA CFR 40 Appendix L to Part 50, 2006. Filter Weight, Determination PM-2.5 - Low Volume (Validated for Sample Weighing). Does not include sampling
		Determination PM-10 - Low Volume	CERTIFICAL-LAB-02. EPA Compendium Method IO-2.3, 1999, Item 7. Filter Weight, Determination PM-10 - Low Volume. Compendium of Method for the Determination of Inorganic compounds in ambient air (Validated for Sample Weighing). Does not include sampling.
ENVIRONMENTAL – AIR EMISSIONS	Emissions (Sampling & Analysis)	CO	CTM 030 Research Institute Method GRI96/0008, Revision 7, October 13, 1997. CO, Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers and Process Heaters Using Portable Analyzers.
		NOx	
		O ₂	
		CO	CTM 034: Test Method. September 1999. CO, Determination of Oxygen, Carbon Monoxide and Oxides of Nitrogen from Stationary Sources For Periodic Monitoring (Portable Electrochemical Analyzer Procedure)
		NOx	
		O ₂	
		NO	CTM-022 WPF Technical Support Division, OAQPS, EPA
		NO ₂	

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ENVIRONMENTAL – AIR EMISSIONS (cont'd)	Emissions (Sampling & Analysis) (cont'd)	NOx	5/ 1995. NO, Determination of Nitric Oxide, Nitrogen Dioxide and NOx Emissions From Stationary Combustion Sources by Electrochemical Analyzer.
		H ₂ S	CERTIFICIAL-LAB-09. H ₂ S in Gaseous Emission, Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen emissions from Natural Gas-Fired Engines, Boilers and Process Heaters Using Portable Analyzers (VALIDATED - Applied out of reach)- CTM 030 Research Institute Method GRI96/0008, Revision 7, October 13, 1997
		Particulate Material	NTP 900.005: 2021. ATMOSPHERIC EMISSIONS MONITORING. Determination of particulate matter emissions from stationary sources. 2° Ed.
		SO ₂	EPA CFR 40, Part 60, Appendix A. Method 6C Determination of Sulfur Dioxide Emissions From Stationary Sources (Instrumental Analyzer Procedure)
		TRS (Dimethyl disulfide, Dimethyl sulfide, Hydrogen Sulfide, Methyl mercaptan, Carbonyl Sulfide)	EPA Method 16A (8/3/2017). TRS as Sulfur Dioxide (SO ₂), Determination of Total Reduced Sulfur (TRS) Emissions From Stationary Sources (Impinger Technique)
ENVIRONMENTAL AIR STATIONARY AND AMBIENT AIR MONITORING	Capture Solutions (Sampling & Analysis)	Carbon monoxide (CO)	CERTIFICIAL-LAB-05. Determination of carbon monoxide (CO). Analysis of Air Pollutants -Peter O. Warner Validated (modified).
		Hydrogen Sulfide (H ₂ S)	CERTIFICIAL-LAB-04. Determination of the concentration of Hydrogen Sulfide (H ₂ S) in the atmosphere. Referenced in the COVENIN 3571: 2000 standard. Validated (out of scope)

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ENVIRONMENTAL AIR STATIONARY AND AMBIENT AIR MONITORING (cont'd)	Air (Sampling & Analysis)	Metals in Filter PM 10 High Volume (As)	CERTIFICIAL-LAB-07. Metals Filter PM 10 High Volume As (VALIDATED) Determination Of Metals In Ambient Particulate Matter Using Atomic Absorption (Aa) Spectroscopy - Compendium Method IO-3.2.
		Metals in Filter PM 10 High Volume (Cd, Cu, Ni, Pb, Zn)	Compendium Method IO-3.2. June 1999. Metals Filter PM 10 High Volume - Cd, Cu, Ni, Pb, Zn, Determination Of Metals In Ambient Particulate Matter Using Atomic Absorption (Aa) Spectroscopy
		Metals in Filter PM 10 High Volume (Hg)	CERTIFICIAL-LAB-08. Metals Filter PM 10 High Volume Hg (VALIDATED) Determination Of Metals In Ambient Particulate Matter Using Atomic Absorption (Aa) Spectroscopy - Compendium Method IO-3.2
		Meteorological parameters: Wind speed, wind direction environmental temperature, relative humidity, atmospheric pressure (wind rose), precipitation	ASTM D5741-96(2017). Standard Practice for Characterizing Surface Wind Using a Wind Vane and Rotating Anemometer; Meteorological Parameters: Environmental temperature, Relative humidity, Atmospheric pressure, Wind speed, Direction of the wind, Precipitation.
		Hydrogen Sulfide (H ₂ S)	CYC OP 001-2021. Determination of Hydrogen Sulfide in Air using Automatic Equipment (UV Fluorescence Method). (Validated).
	Capture Solutions (Sampling & Analysis)	Nitrogen dioxide NO ₂	ASTM D1607-91, (Reapproved 2018). Standard Test Method for Nitrogen Dioxide Content of the Atmosphere (Griess- Saltzman Reaction)
		Ozone (O ₃)	CERTIFICIAL-LAB-06. Ozone determination (O ₃). Methods Of Air Sampling And Analysis-411 (validated).

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ENVIRONMENTAL AIR STATIONARY AND AMBIENT AIR MONITORING (cont'd)	Air (Sampling & Analysis)	Non-Ionizing radiation (Magnetic Field Intensity, electric Field intensity and Magnetic Flux Density)	IEEE 644:2019. Standard Procedures for Measurement of Power Frequency Electric and Magnetic Fields from AC Power Lines; Non-ionizing Radiation (Magnetic Field Intensity, electric Field intensity and Magnetic Flux Density)
	Air (Sampling & Analysis)	Particulate Material - PM 2.5 (High Volume)	CERTIFICIAL-LAB-03.EPA CFR 40. Appendix J to part 50, 7-1-11 Edition. Particulate Material - PM 2.5 (High Volume), Reference Method for the Determination of Particulate Matter as PM 10 in the Atmosphere (VALIDATED - applied out of reach).
		Particulate Material - PM 2.5 (Low Volume)	EPA CFR 40 Appendix L to Part 50. Particulate Material - PM 2.5 (Low Volume), Reference Method for the Determination of Fine Particulate Matter as PM2.5 in the Atmosphere.
		PM10 Particulate Material (High Volume)	EPA IO-2.1, 1999. PM10 Particulate Material (High Volume), Sampling of Ambient Air for Total Suspended Particulate Matter (SPM) and PM10 Using High Volume (HV) Sampler.
		PM10 Particulate Material (Low Volume)	EPA IO-2.3, 1999. Sampling of Ambient Air for PM10 Concentration Using the Rupprecht and Patashnick (R&P) Low Volume Partisol® Sampler.
	Capture Solutions (Sampling & Analysis)	Sulfur Dioxide	EPA 40 CFR Part 50, Appendix A-2; 2010. EPA 40 CFR Part 50, Appendix A-2; 2010 Method for the Determination of Sulfur Dioxide in the atmosphere (Pasarosanine Method).
	Air (Sampling & Analysis)	Total gaseous Mercury	NTP 900.068: 2016/COR 1: 2017. Standard method for the determination of Total gaseous Mercury

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ENVIRONMENTAL FIELD TESTING	Natural Water, Wastewater, Water for Use and Human Consumption, Saline Water (Sampling & Analysis)	Conductivity (Field)	SMEWW-APHA-AWWA-WEF Part 2510 B, 24th Ed. 2023. Conductivity. Laboratory Method.
		Dissolved Oxygen (Field)	SMEWW-APHA-AWWA-WEF Part 4500-O H, 24th Ed. 2023. Oxygen (Dissolved). Optical - Probe Method.
		Flow (Field)	UNE-EN ISO 748:2023 (Flow Meters). Measurement of liquid flow in open channels - Velocity area methods using point velocity measurements (ISO 748:2021)
		Salinity (Field)	SMEWW-APHA-AWWA-WEF Part 2520 B, 24th Ed. 2023. Salinity. Electrical Conductivity Method.
	Natural Water, Water for Use and Human Consumption, Saline Water (Sampling & Analysis)	Floating Materials of Anthropogenic Origin (Field)	NMX – AA -006 -SCFI -2010. Floating Materials of Anthropogenic Origin
	Natural Water, Wastewater, Water for Use and Human Consumption. (Sampling & Analysis)	Flow (Field)	CYC OP 002. 2022 (EPA 841-B97-003) Volumetric flow rate determination for low and high flow rates. (Validated).
	Natural Water, Residual Water, Water for Use and Human Consumption, Process Water (Sampling & Analysis)	Free Residual Chlorine (Field)	SMEWW-APHA-AWWA-WEF Part 4500-Cl G, 24th Ed. 2023. Chlorine (Residual). DPD Colorimetric Method.
		Total Chlorine (Field)	SMEWW-APHA-AWWA-WEF Part 4500-Cl G, 24th Ed. 2023. Chlorine (Residual). DPD Colorimetric Method.
	Wastewater (Sampling & Analysis)	Settling Solids (Field)	SMEWW-APHA-AWWA-WEF Part 2540 F, 24th Ed. 2023. Solids. Settleable Solids.
	Natural water (Sampling & Analysis)	Oils and grease (visible film)	CYC OP 005 (NMX-AA-006-SCFI-2010) Year 2023 (Validated)
	Saline Water (Sampling & Analysis)		

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ENVIRONMENTAL FIELD TESTING (cont'd)	Emissions (Sampling & Analysis)	Hydrocarbons	EPA CTM 030. (Revision 7. 1997) Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers and Process Heaters Using Portable Analyzers / EPA CTM 022(1995) Determination of Nitric Oxide, nitrogen dioxide and NOx emissions from stationary combustion sources by electrochemical analyzer – VALIDATED (applied out of scope)
	Environment (Sampling & Analysis)	Environmental temperature	ASTM D6176-97 (Validated) Year 2023 Standard Practice for Measuring Surface Atmospheric Temperature with Electrical Resistance Temperature Sensors
	Saline water (Sampling & Analysis)	Transparency	CYC OP 003 (EPA 841-B-97-003 Volunteer Stream Monitoring A Methods Manual) Year (Validated)
	Sediments (Sampling & Analysis)	Odor	CYC OP 004 (SM-2150-B, 24th, Ed. 2017) 2023 (Validated)
ENVIRONMENTAL HYDROBIOLOGY	Natural Water (Sampling & Analysis)	Free-living Organisms (Algae)	SMEWW-APHA-AWWA-WEF Part 10200 C 1.2, F.2, c.1, 24th Ed. 2023 Plankton Concentration Techniques. Phytoplankton Counting Techniques.
		Free-living Organisms (Protozoa, Copepods, Rotifers)	SMEWW-APHA-AWWA-WEF Part 10200 C 1.2, F.2, c.1, G, 24th Ed. 2023. Plankton. Concentration Techniques. Zooplankton Counting Techniques.
		Quantitative Analysis of Periphyton	SMEWW-APHA-AWWA-WEF Part 10300 C (1 y 2), 24th Ed. 2023. Periphyton. Sample Analysis.
		Quantitative Analysis of Phytoplankton	SMEWW-APHA-AWWA-WEF Part 10200 C.2, F.2, c.1, 24th Ed. 2023. Plankton. Concentration Techniques. Phytoplankton Counting Techniques.

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ENVIRONMENTAL HYDROBIOLOGY (cont'd)	Natural Water (Sampling & Analysis) (cont'd)	Quantitative Analysis of Zooplankton	SMEWW-APHA-AWWA-WEF Part 10200 C.2, G, 24th Ed. 2023. Plankton. Concentration Techniques. Zooplankton Counting Techniques.
	Natural water (Sampling & Analysis)	Helminth Eggs and Larvae	CYC HB 003.2023. (Validated method)
	Water for human use and consumption (Sampling & Analysis)		
	Residual water (Sampling & Analysis)		
	Natural water (Sampling & Analysis)	Cysts and Oocysts of Pathogenic Protozoa	CYC HB 001.2022. (Validated method)
	Water for human use and consumption (Sampling & Analysis)		
	Natural water (Sampling & Analysis)	Free-living organisms (Nematodes in all their evolutionary states)	SMEWW-APHA-AWWA-WEF Part. 10200 C.1.2, F.2,c.1, G,24th Ed. 2023. Plankton. Concentration Techniques. Zooplankton Counting Techniques.
	Water for human use and consumption (Sampling & Analysis)		
	Natural water (Sampling & Analysis)	Parasitic Forms (Cryptosporidium sp. and Cyclospora sp.)	CYC HB 002.2022. (Validated method)
	Water for human use and consumption (Sampling & Analysis)		
ENVIRONMENTAL INORGANICS	Natural Water, Saline Water (Sampling & Analysis)	Chlorophyll A	SMEWW-APHA-AWWA-WEF Part 10150 A2. B, 24th Ed. 2023. Spectrophotometric Determination of Chlorophyll A.
		Settling Solids	SMEWW-APHA-AWWA-WEF Part 2540 F, 24th Ed. 2023. Solids. Settleable Solids.
	Natural Water, Wastewater, Water for Use and Human Consumption, Saline Water (Sampling & Analysis)	Color	SMEWW-APHA-AWWA-WEF Part 2120 C, 24th Ed. 2023. Color. Spectrophotometric-Single- Wavelength Method (Proposed).

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ENVIRONMENTAL INORGANICS (cont'd)	Natural Water, Residual Water, Water for Use and Human Consumption, Process Water (Sampling & Analysis)	Cyanide Wad	SMEWW-APHA-AWWA-WEF Part 4500-CN-I, 24th Ed. 2023. Weak Acid Dissociable Cyanide.
		Free Cyanide	CERTIFICIAL-LAB-10 (SMEWW-APHA-AWWA-WEF Part 4500-CN-E, 24th Ed. 2023/ EPA 335.4 / ASTM D7237-15a) (Validated)
		Phenols	EPA Method 9065. September 1986. Phenolics (Spectrophotometric, Manual 4-AAP with distillation).
		Total Cyanide Colorimetric	SMEWW-APHA-AWWA-WEF Part 4500-CN-C, E 24th Ed. 2023. Cyanide. Total Cyanide after Distillation
	Natural Water, Wastewater, Water for Use and Human Consumption, Saline Water (Sampling & Analysis)	Detergents	SMEWW-APHA-AWWA-WEF Part 5540 C, 24th Ed. 2023. Surfactants. Anionic Surfactants as MBAS.
	Water for Use and Human Consumption (Sampling & Analysis)	Flavor	SMEWW-APHA-AWWA-WEF Part 2160 C, 24th Ed. 2023. Flavor Rating Assessment (FRA).
	Natural Water, Water for Use and Human Consumption, Saline Water (Sampling & Analysis)	Fluoride	SMEWW-APHA-AWWA-WEF Part 4500-F - C, 24th Ed. 2023. Fluoride. Ion-Selective Electrode Method.
	Saline Water (Sampling & Analysis)	Nitrates	SMEWW-APHA-AWWA-WEF. Part 4500-NO3 - E. 24th Ed. 2023. Nitrogen (Nitrate). Cadmium Reduction Method.
		Nitrites	SMEWW-APHA-AWWA-WEF. Part 4500-NO2 - B, 24th Ed., 2023. Nitrogen (Nitrite). Colorimetric Method
		Total Hardness	SMEWW-APHA-AWWA-WEF. Part 2340 C, 24th Ed. 2023. Hardness. EDTA Titrimetric Method.

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ENVIRONMENTAL INORGANICS (cont'd)		Total Phosphorus	SMEWW-APHA-AWWA-WEF. Part 4500-P E, 24th Ed. 2023. Phosphorus. Ascorbic Acid Method.
	Natural Water, Water for Use and Human Consumption (Sampling & Analysis)	Odor	ISO 4121:2003. Sensory analysis - Guidelines for the use of quantitative response scale.
	Soils, Sediments, Sludges (Sampling & Analysis)	Chromium VI	EPA Method 3060 A Rev. 1. 1996 // EPA Method 7196 A. Rev 1. 1992. Alkaline Digestion for Hexavalent Chromium // Chromium, Hexavalent (Colorimetric)
	Soils, Sediments (Sampling & Analysis)	Color	NOM-021-SEMARNAT-2000. Specifications of fertility, salinity and soil classification, study, sampling and analysis (2nd. Section) 7.3.5 (AS-22) (Validated)
		Organic Material	UNE-EN 15935:2021 Soil, waste, treated biowaste and sludge - Determination of loss on ignition (September 2021)
		Texture	UNE-EN ISO 17892-4. Part 4: Determination of particle size distribution. September 2019
	Soils (Sampling & Analysis)	Free Cyanide	EPA Method 9013 A Rev. 2. 2014 // SMEWW-APHA- AWWA-WEF Part 4500-CN- F, 24th Ed. 2023. Cyanide extraction procedure for solids and oils // Cyanide. Cyanide-Selective Electrode Method.
	Sediments (Sampling & Analysis)	Granulometry	UNE-EN ISO 17892-4. Part 4: Determination of particle size distribution. September 2019
		Sulfides	EPA Method 9030 B Rev. 2. 1996 // EPA Method 9034 Rev.0 1996 . Acid-Soluble and Acid-Insoluble Sulfides: Distillation // Titrimetric Procedure for Acid-Soluble and Acid Insoluble Sulfides

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ENVIRONMENTAL INORGANICS (cont'd)	Natural water (Sampling & Analysis)	Total Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cesium, Chromium, Cobalt, Copper, Tin, Strontium, Gallium, Germanium, Iron, Indium, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Silver, Lead, Selenium, Silicon, Sodium, Thallium, Tellurium, Titanium, Thorium, Uranium, Vanadium, Zinc.	SMEWW-APHA-AWWA-WEF. Part 3030 K, 24th Ed 2023. Preliminary Treatment of Samples. Microwave-Assisted Digestion. // SMEWW-APHA-AWWA-WEF. Part 3125 B, 24th Ed. 2023. Metals by Inductively Coupled Plasma-Mass Spectrometry. Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) Method.
		VALIDATED: Phosphorus, Hafnium, Niobium, Zirconium, Sulfur	
		Total metals (rare earths): VALIDATED: Cerium, Scandium, Ytterbium, Yttrium, Lanthanum, Lutetium, Terbium,	
	Saline Water (Sampling & Analysis)	Total Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cesium, Chromium, Cobalt, Copper, Tin, Strontium, Gallium, Germanium, Iron, Indium, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Silver, Lead, Selenium, Silicon, Sodium, Thallium, Tellurium, Titanium, Thorium, Uranium, Vanadium, Zinc.	
		VALIDATED: Phosphorus, Sulfur	
	Residual water (Sampling & Analysis)	Total Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron,	

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ENVIRONMENTAL INORGANICS (cont'd)		Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Silver, Lead, Selenium, Silicon, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc.	SMEWW-APHA-AWWA-WEF. Part 3030 K, 24th Ed 2023. Preliminary Treatment of Samples. Microwave-Assisted Digestion. // SMEWW-APHA-AWWA-WEF. Part 3125 B, 24th Ed. 2023. Metals by Inductively Coupled Plasma-Mass Spectrometry. Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) Method. (cont'd)
	Water for Human Use and Consumption (Sampling & Analysis)	Total Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cesium, Chromium, Cobalt, Copper, Tin, Strontium, Gallium, Germanium, Iron, Indium, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Silver, Lead, Selenium, Silicon, Sodium, Thallium, Tellurium, Titanium, Thorium, Uranium, Vanadium, Zinc.	
		VALIDATED: Phosphorus, Hafnium, Niobium, Zirconium, Sulfur	
		Total metals (rare earths): VALIDATED: Cerium, Scandium, Ytterbium, Yttrium, Lanthanum, Lutetium, Terbium.	
	Natural water (Sampling & Analysis)	Dissolved Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cesium, Chromium, Cobalt, Copper, Tin, Strontium, Gallium, Germanium, Iron, Indium, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Silver, Lead, Selenium, Silicon, Sodium, Thallium, Tellurium,	SMEWW-APHA-AWWA-WEF. Part 3030 B, K, 24th Ed 2023. Preliminary Treatment of Samples. Filtration for Dissolved and Suspended Metals. Microwave-Assisted Digestion. // SMEWW-APHA-AWWA-WEF. Part 3125 B, 24th Ed. 2023. Metals by Inductively Coupled Plasma-Mass Spectrometry. Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) Method.

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ENVIRONMENTAL INORGANICS (cont'd)	Natural water (Sampling & Analysis) (cont'd)	Titanium, Thorium, Uranium, Vanadium, Zinc. VALIDATED: Phosphorus, Hafnium, Niobium, Zirconium, Sulfur Dissolved metals (rare earths): VALIDATED: Cerium, Scandium, Ytterbium, Yttrium, Lanthanum, Lutetium, Terbium.	SMEWW-APHA-AWWA-WEF. Part 3030 B, K, 24th Ed 2023. Preliminary Treatment of Samples. Filtration for Dissolved and Suspended Metals. Microwave-Assisted Digestion. // SMEWW-APHA-AWWA-WEF. Part 3125 B, 24th Ed. 2023. Metals by Inductively Coupled Plasma-Mass Spectrometry. Inductively Coupled Plasma- Mass Spectrometry (ICP-MS) Method. (cont'd)
	Saline Water (Sampling & Analysis)	Dissolved Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cesium, Chromium, Cobalt, Copper, Tin, Strontium, Gallium, Germanium, Iron, Indium, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Silver, Lead, Selenium, Silicon, Sodium, Thallium, Tellurium, Titanium, Thorium, Uranium, Vanadium, Zinc. VALIDATED: Phosphorus, Sulfur	
	Residual water (Sampling & Analysis)	Dissolved Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Silver, Lead, Selenium, Silicon, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc.	
	Water for Human Use and Consumption (Sampling & Analysis)	Dissolved Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cesium,	

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ENVIRONMENTAL INORGANICS (cont'd)	Water for Human Use and Consumption (Sampling & Analysis) (cont'd)	Chromium, Cobalt, Copper, Tin, Strontium, Gallium, Germanium, Iron, Indium, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Silver, Lead, Selenium, Silicon, Sodium, Thallium, Tellurium, Titanium, Thorium, Uranium, Vanadium, Zinc.	SMEWW-APHA-AWWA-WEF. Part 3030 B, K, 24th Ed 2023. Preliminary Treatment of Samples. Filtration for Dissolved and Suspended Metals. Microwave-Assisted Digestion. // SMEWW-APHA-AWWA-WEF. Part 3125 B, 24th Ed. 2023. Metals by Inductively Coupled Plasma-Mass Spectrometry. Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) Method. (cont'd)
		VALIDATED: Phosphorus, Hafnium, Niobium, Zirconium, Sulfur	
		Dissolved metals (rare earths): VALIDATED: Cerium, Scandium, Ytterbium, Yttrium, Lanthanum, Lutetium, Terbium.	
	Sludge (Sampling & Analysis)	Metals: Aluminum, Antimony, Arsenic, Boron, Barium, Beryllium, Calcium, Cadmium, Cobalt, Chromium, Copper, Strontium, Iron, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Lead, Potassium, Sodium, Selenium, Thallium, Vanadium, Zinc. VALIDATED: Phosphorus	EPA Method 3051 A. Revision 1. February 2007. Microwave Assisted Acid Digestion of Sediments, Sludges, Soils, and Oils // EPA Method 6020 B. Revision 2. July 2014. Inductively Coupled Plasma—Mass Spectrometry
	Soils (Sampling & Analysis)	Metals: Aluminum, Antimony, Arsenic, Boron, Barium, Beryllium, Calcium, Cadmium, Cobalt, Chromium, Copper, Strontium, Iron, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Lead, Potassium, Sodium, Selenium, Thallium, Vanadium, Zinc. VALIDATED: Phosphorus	

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FIELDS OF TESTING	MATERIAL/ MATRIX	DETERMINANT(S)/ ANALYTE(S)	METHOD REFERENCE
ENVIRONMENTAL INORGANICS (cont'd)	Sediments (Sampling & Analysis)	Metals: Aluminum, Antimony, Arsenic, Boron, Barium, Beryllium, Calcium, Cadmium, Cobalt, Chromium, Copper, Strontium, Iron, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Lead, Potassium, Sodium, Selenium, Thallium, Vanadium, Zinc. VALIDATED: Phosphorus	EPA Method 3051 A. Revision 1. February 2007. Microwave Assisted Acid Digestion of Sediments, Sludges, Soils, and Oils // EPA Method 6020 B. Revision 2. July 2014. Inductively Coupled Plasma—Mass Spectrometry (cont'd)
	Air (Sampling & Analysis)	Metals in PM 2.5/ PM 10 High Volume Filters	EPA Compendium Method IO-3.1 Selection, Preparation and Extraction of Filter Material // EPA Compendium Method IO 3.5 Determination of Metals in Ambient Particulate Matter Using Inductively Coupled Plasma/Mass Spectrometry
		Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Cobalt, Chromium, Copper, Manganese, Molybdenum, Nickel, Silver, Lead, Selenium, Thallium, Thorium, Uranium, Vanadium, Zinc.	
	Filters	Metals in PM 2.5 / PM 10 High Volume Filters	EPA Compendium Method IO-3.1 Selection, Preparation and Extraction of Filter Material // EPA Compendium Method IO 3.5 Determination of Metals in Ambient Particulate Matter Using Inductively Coupled Plasma/Mass Spectrometry
		Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Cobalt, Chromium, Copper, Manganese, Molybdenum, Nickel, Silver, Lead, Selenium, Thallium, Thorium, Uranium, Vanadium, Zinc.	
	Saline Water (Sampling & Analysis)	Chlorides	SMEWW-APHA-AWWA-WEF. Part 4500-Cl ⁻ B, 24th Ed. 2023. Chloride. Argentometric Method.
	Saline water (Sampling & Analysis)	Sulfide	SMEWW-APHA-AWWA-WEF. Part 4500-S ²⁻ D, 24th Ed. 2023. Sulfide. Methylene Blue Method.
ENVIRONMENTAL INORGANICS (cont'd)	Saline Water (Sampling & Analysis)	Sulfates	SMEWW-APHA-AWWA-WEF. Part 4500-SO ₄ ²⁻ E, 24th Ed. 2023. Sulfate. Turbidimetric Method.
	Water for Human Use and Consumption (Sampling & Analysis)	Chemical Oxygen Demand	SMEWW-APHA-AWWA-WEF. Part 5220-D, 24th Ed. 2023. Chemical Oxygen Demand

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FIELDS OF TESTING	MATERIAL/ MATRIX	DETERMINANT(S)/ ANALYTE(S)	METHOD REFERENCE
	Saline Water (Sampling & Analysis)		(COD). Closet Reflux, Colorimetric Method.
	Natural water (Sampling & Analysis)	Total Nitrogen	SMEWW-APHA-AWWA-WEF. Part 4500-NC, 24th Ed. 2023. Nitrogen. Persulfate Method
	Saline Water (Sampling & Analysis)		
	Residual water (Sampling & Analysis)		
	Water for Human Use and Consumption (Sampling & Analysis)		
	Saline Water (Sampling & Analysis)	Phenols	EPA. Method 9065. Rev. 0. 1986 Phenolics (Spectrophotometric, Manual 4-AAP with distillation)
	Water for Human Use and Consumption (Sampling & Analysis)	Oil and grease	SMEWW-APHA-AWWA-WEF Part 5520 B, 24th Ed. 2023. Oil and Grease by Liquid-Liquid, Partition-Gravimetric Method
ENVIRONMENTAL MICROBIOLOGY	Sediments (Sampling & Analysis)	Thermotolerant Coliforms	SMEWW APHA AWWA WEF Part 9221 B (2) y 9221 E (1), 24th Ed. 2023. Multiple Tube Fermentation Technique for Members of the Coliform Group. Standard Total Coliform Fermentation Technique. Fecal Coliform Procedure. Thermotolerant Coliform Test (EC Medium).
		Total Coliforms	SMEWW APHA AWWA WEF Part 9221 B (2-3), 24th Ed. 2023. Multiple Tube Fermentation Technique for Members of the Coliform Group. Standard Total Coliform Fermentation Technique.
	Natural Water (Sampling & Analysis)	Vibrio Cholerae	EPA 600/R-10/139. Standard Analytical Protocol for Vibrio cholerae O1 and O139 in Drinking Water and Surface Water.
	Natural Water, Water for Use and Human Consumption (Sampling & Analysis)	Viruses (Coliphages)	SMEWW APHA AWWA WEF Part 9224 B, 23th Ed., 2017. Detection of Coliphages. Somatic Coliphage Assay

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FIELDS OF TESTING	MATERIAL/ MATRIX	DETERMINANT(S)/ ANALYTE(S)	METHOD REFERENCE
ENVIRONMENTAL MICROBIOLOGY (cont'd)	Natural Water (Sampling & Analysis)	Salmonella	ISO 19250: 2010. Water quality - - Detection of Salmonella spp
		Total Coliform (CFU)	SMEWW-APHA-AWWA-WEF Part 9222 B, 24th Ed. 2023. Membrane Filter Technique for Members of the Coliform Group. Standard Total Coliform Membrane Filter Procedure using Endo Media
		Fecal Coliform (CFU)	SMEWW-APHA-AWWA-WEF Part 9222 D. 24th Edi. 2023. Membrane filter technique for members of the coliform group. Thermotolerant (Fecal) Coliform Membrane Filter Procedure
	Water for human use and consumption (Sampling & Analysis)	Escherichia coli (CFU)	SMEWW-APHA-AWWA-WEF Part 9222 H, 24th Ed. 2023. Membrane Filter Technique for Members of the Coliform Group. Partitioning E. coli from MF Total Coliform using EC-MUG Broth
ENVIRONMENTAL – ACOUSTIC	Environmental noise (Field measurement)	Environmental Noise	NTP-ISO 1996-1: 2020 Acoustics. Description, measurement and assessment of environmental noise. Part 1: Basic quantities and assessment procedures 2° Ed. / NTP-ISO 1996-2:2023 Acoustics. Description, measurement and assessment of environmental noise. Part 2: Determination of sound pressure levels. 3° Ed.
OCCUPATIONAL HEALTH	Ergonomics	Ergonomics of thermal stress in hot environments	ISO/TC 159/SC 5 Ergonomics of the physical environment / ISO 7243:2017 Thermal Stress, Ergonomic of the thermal environment – Assessment of heat stress using the WBGT (wet bulb globe temperature) index
	Interior Lighting	Lighting	UNE-EN 12464-1:2022. Lighting of workplaces. Part 1: Workplaces indoors

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OCCUPATIONAL HEALTH (cont'd)	Noise	Occupational Noise	NTP ISO 9612:2010 (Reviewed in 2020). Acoustics. Determination of occupational noise exposure. Engineering method
		Occupational Noise - Dosimetry (8 hours)	ISO 1999:2013. Acoustics. Estimation of noise-induced hearing loss.
	Indoor Air	Total gaseous Mercury	NIOSH Method 6009. Total Gaseous Mercury: METHOD 6009, Issue2, dated 15 August 1994 (Absorbent Tube Method (Hopcalite) -by Cold Vapor Atomic Absorption Spectrometry.
	Air (Sampling & Analysis)	Respirable Dust	NIOSH 0600, Issue 3: PARTICULATES NOT OTHERWISE REGULATED, BREATHABLE
	Air (Sampling & Analysis)	Inhalable Dust	NIOSH 0500, Issue 2: PARTICULATES NOT OTHERWISE REGULATED, TOTAL.
MICROBIOLOGY	Food	Commercial Sterility	NTC 4433:2015. Hermetically packaged foods; Commercial Sterility