



SCOPE OF ACCREDITATION TO ISO/IEC 17034:2016

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REFERENCE MATERIAL PRODUCER

Valid To: September 30, 2024

Certificate Number: 1539.03

In recognition of the successful completion of the A2LA Evaluation process, accreditation is granted to this Reference Material Producer for the production of certified reference materials of the following categories:

Certified Reference Material	Class or Type of Reference Materials/Artifact or Matrix	Concentration Range <sup>2</sup> (after dilution, if applicable)	Relative Uncertainty <sup>1</sup> (Expanded)	Measurement Technique(s)
Environmental Reference Materials	Single and Multi-component microorganisms in lyophilized pellets and in solution.			MPN Membrane Filtration Pour Plate Presence/Absence
Waters Potable Water Routine Analytes, Fresh Water Routine Analytes, Industrial Wastewater, Routine Analytes	<b>Microbiology:</b> Total Coliforms Fecal Coliforms E.Coli  Enterococci Fecal Streptococci  Heterotrophic Plate Count	Presence/Absence, (20 – 2400) CFU/100 mL (20 – 2400) MPN/100 mL  Presence/Absence, (20 – 1000) CFU/100 mL (20 – 1000) MPN/100 mL  (5 – 500) CFU/mL (5 – 500) MPN/mL	(2 to 150) %	

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Environmental Reference Materials  Waters Potable Water, Routine Analytes, Trace Elements, Organic Pollutants, Other Analytes, Industrial Wastewater, Routine Analytes, Trace Elements, Organic Pollutants, Other Analytes	Single and Multi-component organic and inorganic material in solution:  <b>Inorganic Chemistry</b> Minerals Hardness Solids Anions/Cations Nutrients Oil & Grease (HEM/SGT-HEM) Demand Trace Metals  <b>Physical Properties / pH</b> Color Turbidity Corrosivity UV254 Conductivity pH Settleable Solids	0.01 µg/L – 10 000 mg/L           (10 – 500) PC, (0.5 – 4000) NTU (-4 – +4) SI (0.05 – 0.7) cm <sup>-1</sup> (10 – 10,000) umhos/cm (2 – 12) S.U. (2 – 100) ml/L	(0.1 – 16) %           (0.2 – 10) %	Titration IC ICP/OES ICP/MS CVAA Spectrophotometry Conductivity Nephelometry Gravimetric Volumetric Ion Selective Electrode
Environmental Reference Materials Waters Potable Water Routine Analytes Trace Elements  Reference Materials for Radioactivity	Single and Multi-component radionuclide material in solution:  <b>Radiochemistry</b> Gross Alpha/Beta Alpha Emitters Beta Emitters Gamma Emitters	(1 – 50,000) pCi/L	(0.5 – 5) %	Alpha/Beta Liquid-Scintillation Gamma-Spectrometry Alpha-Spectrometry ICP/OES ICP/MS

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<p>Environmental Reference Materials</p> <p>Soils and Sludges Trace Elements, Mineral Content, Trace Organics, TCLP Leachate,</p> <p>Organic Reference Materials</p> <p>Petroleum Products Transformer Oils, PCBs</p>	<p>Single and Multi-component organic and inorganic material on soil/sludge/oil and in solution.</p> <p><b>Inorganic Chemistry</b> Metals Anions Nutrients Cyanide</p> <p><b>Physical Properties / pH</b> Corrosivity (pH) Ignitability</p> <p><b>Organic Chemistry</b> Volatile Organic Compounds (VOCs) Nitroaromatics/Nitramines Polynuclear Aromatic Hydrocarbons (PAHs) Semi-Volatile Organic Compounds (SVOC) Per-and Polyfluoroalkyl Substances (PFAS) Glycols Organochlorine Pesticides (OCPs) Carbamate Pesticides Organophosphorus Pesticides (OPPs) Chlorinated Acid Herbicides Polychlorinated Biphenyls (PCBs) - Aroclors</p> <p><b>Petroleum Hydrocarbons</b> (TPH/DRO/GRO/VPH/EPH/ORO) Oil &amp; Grease</p> <p><b>TCLP</b> Metals Volatiles Organic Compounds (VOCs) Semi-Volatile Organic Compounds (SVOC) Organochlorine Pesticides (OCPs)</p>	<p>(0.1 – 500,000) mg/kg</p> <p>(2 – 12) S.U. (100 – 200) °F</p> <p>1.0 µg/kg – 10,000 mg/kg</p> <p>(0.1 – 10,000) mg/kg</p> <p>(0.01 – 1000) mg/L</p>	<p>(0.5 – 20) %</p> <p>(0.2 – 30) %</p> <p>(0.4 – 30) %</p> <p>(0.5 – 30) %</p> <p>(0.5 – 25) %</p>	<p>Titration IC ICP/OES ICP/MS CVAA Spectrophotometry Colorimetric Conductivity Gravimetric Ion Selective Electrode Closed-Cup LC/UV LC/FLUOR LC/MS LC/MS/MS GC/FID GC/MS GC/ECD GC/NPD</p>



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<p>Environmental Reference Materials</p> <p>Health and Industrial Hygiene</p> <p>Materials on Filter Media</p> <p>Trace Elements in Blank Filters</p> <p>Reference Gases</p> <p>Gas Mixtures</p> <p>Trace Volatile Organic Compounds</p>	<p>Single and Multi-component organic and inorganic material on filter paper, on sorbent substance and in solution:</p> <p><b>Inorganic Chemistry</b> Metals (Filter)</p> <p>Particulate Matter (Filter) Metals (Impinger) Particulate Matter (Impinger)</p> <p>Hydrogen Halides/Halogens Anions/Cations Ammonia</p> <p><b>Organic Chemistry</b> Volatile Organic Compounds (Sorbent) Semi-Volatile Organic Compounds (SVOC) Organochlorine Pesticides (OCPs) Polychlorinated Biphenyls (PCBs) - Aroclors Polynuclear Aromatic Hydrocarbons (PAHs) Aldehydes/Ketone</p>	<p>1 µg/Filter – 2000 mg/Filter (10 – 2000) mg/Filter (0.0005 – 2000) µg/ml (50 – 1000) mg/L (0.1 – 2500) mg/L (0.2 – 4000) mg/dscm (0.1 – 500) mg/L</p> <p>0.01 µg/sample – 5000 µg/sample</p>	<p>(0.2 – 15) %</p> <p>(0.5 – 20) %</p>	<p>Titration IC ICP/OES ICP/MS CVAA Spectrophotometry Colorimetric Conductivity Gravimetric Ion Selective Electrode LC/UV LC/FLUOR LC/MS GC/FID GC/MS GC/ECD</p>
<p>Inorganic Reference Materials</p> <p>Pure Chemicals Primary Standards Working Standards Secondary Standards Chromatography Standards Pharmaceutical Materials</p> <p>Organic Reference Materials</p> <p>Pure Organic Compounds Pharmaceutical Materials</p>	<p>Single and Multi-component organic and inorganic material in solution:</p> <p><b>Metals/Inorganic Chemistry</b> Trace Metals Anions/Cations/Cyanide Ions Nutrients Demand Solids Total Organic Carbon (TOC) Total Inorganic Carbon Total Organic Halides (TOX) Surfactants Phenols</p> <p><b>Physical Properties / pH</b> Conductivity Turbidity pH Buffers</p>	<p>(0.001 – 20,000) mg/L</p> <p>(5 – 500,000) uS/cm (0.5 – 4000) NTU (2 – 12) S.U.</p>	<p>(0.1 – 8) %</p> <p>(0.2 – 5) %</p>	<p>Titration IC ICP/OES ICP/MS CVAA Spectrophotometry Colorimetric Infrared Conductivity Gravimetric Ion Selective Electrode Nephelometry</p>



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Ion Activity pH Standards  Ion Selective Electrode Calibrants Conductivity Standards Buffer Systems	Single and Multi-component organic and inorganic material in solution:  <b>Ultra-Pure Water Analytes</b> Conductivity Total Organic Carbon Total Inorganic Carbon	   (5 – 500,000) uS/cm (0.05 – 10,000) mg/L (0.05 – 10,000) mg/L	   (0.1 – 5) %	Titration IC ICP/OES ICP/MS CVAA Spectrophotometry Colorimetric Infrared Conductivity Gravimetric Ion Selective Electrode Nephelometry





# Accredited Reference Material Producer

A2LA has accredited

**ERA**  
Golden, CO

This accreditation covers the specific materials listed on the agreed upon Scope of Accreditation.

This producer meets the requirements of ISO 17034:2016 *General Requirements for the Competence of Reference Material Producers*. This accreditation demonstrates technical competence for a defined scope and the operation of a quality management system.



Presented this 30<sup>th</sup> day of January 2023.

A blue ink signature of Trace McInturff, written in a cursive style, positioned above a horizontal line.

Mr. Trace McInturff, Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 1539.03  
Valid to September 30, 2024

*For reference materials to which this accreditation applies, please refer to the reference material producer's Scope of Accreditation.*