



SCOPE OF ACCREDITATION TO ISO 17034:2016

INORGANIC VENTURES  
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REFERENCE MATERIALS PRODUCER

Valid To: September 30, 2020

Certificate Number: 0883.02

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:

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
Category A2.6 Trace Metals Standard	Aluminum (Al) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric
	Antimony (Sb) CRMs Containing this element – Range 0.05 µg/L–750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Arsenic (As) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Arsenic <sup>+3</sup> (As <sup>+3</sup> ) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-26	ICP-OES  ICP-MS  Iodometric titrimetric

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Arsenic <sup>+5</sup> (As <sup>+5</sup> ) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Barium (Ba) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-22	ICP-OES  ICP-MS  Gravimetric Sulfate
	<sup>135</sup> Barium( <sup>135</sup> Ba) CRMs Containing this element – Range 0.1 µg/L – 10,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Beryllium (Be) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Bismuth (Bi) CRMs Containing this element – Range 0.02 µg/L – 750,000µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Boron (B) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	<sup>10</sup> Boron( <sup>10</sup> B) CRMs Containing this element – Range 0.1 µg/L – 10,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS

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	<sup>11</sup> Boron( <sup>11</sup> B) CRMs Containing this element – Range 0.1 µg/L – 10,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Cadmium (Cd) CRMs Containing this element – Range 0.025 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric
	<sup>106</sup> Cadmium( <sup>106</sup> Cd) CRMs Containing this element – Range 0.025 µg/L – 10,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Calcium (Ca) CRMs Containing this element – Range 0.1 µg/L–120,000 µg/mL Relative uncertainty ±1%	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric
	Carbon (C) CRMs Containing this element – Range 0.1 µg/L to 100,000 µg/mL Relative uncertainty ± 1%	EPA Method 300.0 - Modified	IC
	Cerium (Ce) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric
	Cesium (Cs) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.8 – Modified WI-QC-22 EPA 300.0 – Modified	ICP-MS  Gravimetric Sulfate IC

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Chromium <sup>+3</sup> (Cr <sup>+3</sup> ) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Hexavalent Chromium (Cr+6) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPAMethod 200.8– Modified EPA Method 300.0 – Modified WI-QC-37	ICP-OES  ICP-MS  IC  Redox titrimetric
	<sup>50</sup> Chromium( <sup>50</sup> Cr) CRMs Containing this element – Range 0.1 µg/L – 10,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Cobalt (Co) CRMs Containing this element – Range 0.05 µg/L–750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric
	Copper (Cu) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric
	<sup>65</sup> Copper( <sup>65</sup> Cu) CRMs Containing this element – Range 0.1 µg/L – 10,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Dysprosium (Dy) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Erbium (Er) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric
	Europium (Eu) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric
	Gadolinium (Gd) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric
	Gallium (Ga) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric
	Germanium (Ge) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Gold (Au) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Hafnium (Hf) CRMs Containing this element – Range 0.02 µg/L–750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Holmium (Ho) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES ICP-MS EDTA titrimetric
	Iodide (I) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 –Modified WI-QC-29 WI-QC-48	ICP-OES ICP-MS Volhard titrimetric Fajans titration
	Indium (In) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 –Modified WI-QC-21	ICP-OES ICP-MS EDTA titrimetric
	Iridium (Ir) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 –Modified	ICP-OES ICP-MS
	Iron (Fe) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 –Modified WI-QC-21	ICP-OES ICP-MS EDTA titrimetric
	<sup>54</sup> Iron( <sup>54</sup> Fe) CRMs Containing this element – Range 0.1 µg/L – 10,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 –Modified	ICP-OES ICP-MS
	<sup>57</sup> Iron( <sup>57</sup> Fe) CRMs Containing this element – Range 0.1 µg/L – 10,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES ICP-MS

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Lanthanum (La) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric
	Lead (Pb) CRMs Containing this element – Range 0.025 µg/L–750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric
	<sup>204</sup> Lead( <sup>204</sup> Pb) CRMs Containing this element – Range 0.025 µg/L–10,000 µg/mL Relative uncertainty±1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	<sup>206</sup> Lead( <sup>206</sup> Pb) CRMs Containing this element – Range 0.025 µg/L – 10,000 µg/mL Relative uncertainty±1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	<sup>207</sup> Lead( <sup>207</sup> Pb) CRMs Containing this element – Range 0.025 µg/L – 10,000 µg/mL Relative uncertainty±1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Lithium (Li) CRMs Containing this element – Range 0.05 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-22	ICP-OES  ICP-MS  Gravimetric
	<sup>6</sup> Lithium( <sup>6</sup> Li) CRMs Containing this element – Range 0.05 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-22	ICP-OES  ICP-MS  Gravimetric Sulfate

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Lutetium (Lu) CRMs Containing this element – Range 0.02 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES ICP-MS EDTA titrimetric
	Magnesium (Mg) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES ICP-MS EDTA titrimetric
	<sup>25</sup> Magnesium( <sup>25</sup> Mg) CRMs Containing this element – Range 0.1 µg/L – 10,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES ICP-MS
	Manganese (Mn) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES ICP-MS EDTA titrimetric
	Mercury (Hg) CRMs Containing this element – Range 0.05 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES ICP-MS EDTA titrimetric
	Molybdenum (Mo) CRMs Containing this element – Range 0.05 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES ICP-MS
	Neodymium (Nd) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES ICP-MS EDTA titrimetric



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	Nickel (Ni) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric
	<sup>61</sup> Nickel( <sup>61</sup> Ni) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Niobium (Nb) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Palladium (Pd) CRMs Containing this element – Range 0.05 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Phosphorus (P) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-28	ICP-OES  ICP-MS  Acid/Base titrimetric
	Platinum (Pt) CRMs Containing this element – Range 0.05 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Potassium (K) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-22	ICP-OES  ICP-MS  Gravimetric Sulfate

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Praseodymium (Pr) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric
	Rhenium (Re) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Rhodium (Rh) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Rubidium (Rb) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-22	IC  ICP-MS  Gravimetric Sulfate
	Ruthenium (Ru) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Samarium (Sm) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric
	Scandium (Sc) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Selenium <sup>+4</sup> (Se <sup>+4</sup> ) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Selenium <sup>+6</sup> (Se <sup>+6</sup> ) CRMs Containing this element – Range 0.1 µg/L – 10,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	<sup>78</sup> Selenium( <sup>78</sup> Se) CRMs Containing this element – Range 0.1 µg/L – 10,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	<sup>82</sup> Selenium( <sup>82</sup> Se) CRMs Containing this element – Range 0.1 µg/L – 10,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Silicon (Si) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Silver (Ag) CRMs Containing this element – Range 0.025 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-29	ICP-OES  ICP-MS  Volhard titrimetric
	<sup>109</sup> Silver( <sup>109</sup> Ag) CRMs Containing this element – Range 0.025 µg/L – 10,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Sodium (Na) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-22	ICP-OES ICP-MS Gravimetric Sulfate
	Strontium (Sr) CRMs Containing this element – Range 0.05 µg/L–100,000µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES ICP-MS EDTA titrimetric
	<sup>86</sup> Strontium( <sup>86</sup> Sr) CRMs Containing this element – Range 0.05 µg/L – 100 µg/mL Relative uncertainty ±1%	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES ICP-MS
	Sulfur (S) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-28 & WI- QC-46	ICP-OES ICP-MS Acid/Base titrimetric
	Tantalum (Ta) CRMs Containing this element – Range 0.025 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES ICP-MS
	Tellurium (Te) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES ICP-MS
	Terbium (Tb) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES ICP-MS EDTA titrimetric

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Thallium (Tl) CRMs Containing this element – Range 0.05 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES ICP-MS
	<sup>203</sup> Thallium( <sup>203</sup> Tl) CRMs Containing this element – Range 0.05 µg/L – 10,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES ICP-MS
	<sup>205</sup> Thallium( <sup>205</sup> Tl) CRMs Containing this element – Range 0.05 µg/L – 10,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES ICP-MS
	Thorium (Th) CRMs Containing this element – Range 1 µg/L – 20,000 µg/mL Relative uncertainty ±1%	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES ICP-MS EDTA titrimetric
	Thulium (Tm) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES ICP-MS EDTA titrimetric
	Tin (Sn) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES ICP-MS
	<sup>122</sup> Tin( <sup>122</sup> Sn) CRMs Containing this element – Range 0.1 µg/L – 10,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES ICP-MS

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Titanium (Ti) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Tungsten (W) CRMs Containing this element – Range 0.05 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Uranium(U) CRMs Containing this element – Range 0.02 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Vanadium (V) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric
	Ytterbium (Yb) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric
	Yttrium (Y) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Zinc (Zn) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	ICP-OES  ICP-MS  EDTA titrimetric
	<sup>67</sup> Zinc( <sup>67</sup> Zn) CRMs Containing this element – Range 0.1 µg/L – 10,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
	Zirconium (Zr) CRMs Containing this element – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	ICP-OES  ICP-MS
Category A9.2 Ion Chromatography & Ion Selective Electrode Calibrants	3-methoxypropylamine (MPA) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Acetate (OAc) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Adipate (ADP) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Ammonium (NH <sub>4</sub> ) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified WI-QC-29 WI-QC-48	IC  Volhard titrimetric Fajans titration

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Ammonium as Nitrogen (NNH <sub>4</sub> ) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified WI-QC-29 WI-QC-48	IC  Volhard titrimetric Fajans titration
	Benzoate (BEN) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Bromate (BRO <sub>3</sub> ) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified WI-QC-29	IC  Volhard titrimetric
	Bromide (BR) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified WI-QC-29 WI-QC-48	IC  Volhard titrimetric Fajans titration
	Butyrate (BTR) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Carbonate (CO <sub>3</sub> ) CRMs Containing this component Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	WI-QC-33 WI-QC-45	Acidimetric titration / potentiometric detection
	Chlorate (CLO <sub>3</sub> ) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified EPA Method 200.7	IC  ICP-OES
	Chloride (CL) CRMs Containing this component – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified WI-QC-29 WI-QC-48	IC  Volhard titrimetric Fajans titration



Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Chlorite (CLO <sub>2</sub> ) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified WI-QC-32-9	IC  Iodometric titrimetric
	Chromate (CRO <sub>4</sub> ) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 WI-QC-37	Redox titrimetric  ICP-OES
	Citrate (CIT) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Dichloroacetate (DCA) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	DiEthanolamine (DEA) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	DiMethylamine (DMA) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Fluoride (F) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC

<b>Category and sub-category of Certified Reference Material</b>	<b>Concentration Ranges and Best Relative uncertainty<sup>1</sup></b>	<b>Test, Analysis, Measurement, Methods</b>	<b>Measurement Technique(s)</b>
	Formate (HCO) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Glutarate (GTR) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Glycolate (GLY) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Lactate (LCT) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Malate (MLA) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Maleate (MLE) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Malonate (MLO) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Methanesulfonate (MSA) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	MonoEthanolamine (MEA) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	MonoMethylamine (MMA) CRMs Containing this component– Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Nitrate (NO <sub>3</sub> ) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Nitrate as Nitrogen (NNO <sub>3</sub> ) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Nitritotriacetate (NTA) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Nitrite (NO <sub>2</sub> ) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Nitrite as Nitrogen (NNO <sub>2</sub> ) CRMs Containing this component– Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Oxalate (OXA) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC



Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Perchlorate (CLO <sub>4</sub> ) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified EPA Method 200.7	IC ICP-OES
	Phosphate (PO <sub>4</sub> ) CRMs Containing this component – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Phosphate as Phosphorous (PPO <sub>4</sub> ) CRMs Containing this component – Range 0.1 µg/L – 750,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Phthalate (KHP) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Propionate (OPR) CRMs Containing this component– Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Succinate (SCC) CRMs Containing this component– Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Sulfate (SO <sub>4</sub> ) CRMs Containing this component – Range 0.1 µg/L – 950,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	Tartrate (TRTR) CRMs Containing this component– Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Thiocyanate (SCN) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	WI-QC-29 WI-QC-48	Volhard titrimetric Fajans titration
	Thiosulfate (S <sub>2</sub> O <sub>3</sub> ) CRMs Containing this component– Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	Standard Methods 4500-Cl B – Modified WI-QC-32-35	Iodometric titrimetric
	TriEthanolamine (TEA) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	TriEthylamine (TA) CRMs Containing this component– Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	TriMethylamine (TMA) CRMs Containing this component– Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
	TetraMethylammonium (TMAH) CRMs Containing this component – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	IC
Category A4.3 Waters	Filterable, Non-Filterable, and Total Solids (QCP-SLD) Total Solids Range (140 – 800) mg/L Non-filterable Solids (20 – 100) mg/L Dissolved Solids (140 – 800) mg/L Best Relative uncertainty ± 1%	Modified Standard Methods 2540C, 2540D, 2540B respectively	Gravimetric

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Oil & Grease Standard (QCP-OG-A, QCP-OG-W) Range (20 – 200) mg/L Relative uncertainty $\pm 1\%$	Standard Methods 5520B - Modified	Gravimetric
	Custom Oil & Grease Standard (solvent matrices only) Range (8 – 200) mg/L Relative uncertainty $\pm 1\%$	Standard Method 5520B - Modified	Gravimetric
	Cation Standard (QCP-CAT) Ca <sup>+2</sup> Range (3.5 – 110 mg/L) K <sup>+1</sup> Range (4 – 40 mg/L) Mg <sup>+2</sup> Range (2 – 40 mg/L) Na <sup>+1</sup> Range (6 – 100 mg/L) Relative uncertainty $\pm 1\%$	EPA Method 200.7 – Modified	ICP-OES
	Custom Cation Standard Ca <sup>+2</sup> Range (3.5 – 200 mg/L) K <sup>+1</sup> Range (1 – 100 mg/L) Mg <sup>+2</sup> Range (1 – 200 mg/L) Na <sup>+1</sup> Range (6 – 250 mg/L) Relative uncertainty $\pm 1\%$	EPA Method 200.7 – Modified	ICP-OES
	Chromium <sup>+6</sup> Standard (QCP-CR6) Cr <sup>+6</sup> Range (45 – 900 $\mu\text{g/L}$ ) Relative uncertainty $\pm 1\%$	Standard Methods 3500-Cr B Modified EPA Method 200.7 – Modified; EPA Method 300.0 – Modified;	Spectrophotometer  ICP-OES IC
	Custom Chromium <sup>+6</sup> Standard Cr <sup>+6</sup> Range (10 – 1000 $\mu\text{g/L}$ ) Relative uncertainty $\pm 1\%$	EPA Method 200.7 – Modified; EPA Method 300.0 – Modified; Standard Methods 3500 – Cr B Mod.	ICP-OES IC Spectrophotometer
	Cyanide Standard (QCP-CN/CN-1000-25) Containing this chemical – Range (0.1 – 10000) $\mu\text{g/mL}$ Relative uncertainty $\pm 2\%$	Standard Methods 4500-CN D – Modified; WI-QC Appendix A CN	Argentometric titration
	Custom Cyanide Standard Containing this chemical – Range (0.1 – 10000) $\mu\text{g/mL}$ Relative uncertainty $\pm 2\%$	Standard Methods 4500-CN- D – Modified; WI-QC Appendix A CN	Argentometric titration
	Hg Standard (QCP-HG) Hg Range (2 – 30 $\mu\text{g/L}$ ) Relative uncertainty $\pm 1\%$	EPA Method 200.7 – Modified	ICP-OES
	Custom Hg Standard Hg Range (0.5 – 30 $\mu\text{g/L}$ ) Relative uncertainty $\pm 1\%$	EPA Method 200.7 – Modified	ICP-OES

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Metals Standard (QCP-MTL) Ag Range (26 – 1000 µg/L) Al Range (200 – 4000 µg/L) As Range (70 – 900 µg/L) Ba Range (100 – 2500 µg/L) Be Range (8 – 900 µg/L) Ca Range (3.5 – 100 mg/L) Cd Range (8 – 1000µg/L) Cr Range (17 – 1000 µg/L) Cu Range (40 – 1000 µg/L) Fe Range (200 – 4000 µg/L) Mn Range (70 – 4000 µg/L) Ni Range (80 – 3000 µg/L) Pb Range (70 – 3000 µg/L) Sb Range (90 – 900 µg/L) Se Range (90 – 2000 µg/L) Tl Range (60 – 900 µg/L) Zn Range (100 – 2000 µg/L) Relative uncertainty ± 1 %	EPA Method 200.7 – Modified	ICP-OES
	Custom Metals Standard Ag Range (4 – 1000 µg/L) Al Range (40 – 4000 µg/L) As Range (4 – 900 µg/L) Ba Range (40 – 2500 µg/L) Be Range (4 – 900 µg/L) Ca Range (3.5 – 100 mg/L) Cd Range (4 – 1000µg/L) Cr Range (17 – 2000 µg/L) Cu Range (40 – 1000 µg/L) Fe Range (40 – 4000 µg/L) Mn Range (40 – 3000 µg/L) Ni Range (2 – 3000 µg/L) Pb Range (4 – 900 µg/L) Sb Range (4 – 2000 µg/L) Se Range (4 – 2000 µg/L) Tl Range (4 – 900 µg/L) Zn Range (100 – 2000 µg/L) Relative uncertainty ± 1 %	EPA Method 200.7 – Modified	ICP-OES
	Nitrite Standard (QCP-NT) Nitrite as Nitrogen Range (0.4 – 4 mg/L) Relative uncertainty ± 1%	EPA Method 300.0 – Modified	IC
	Custom Nitrite Standard Nitrite as Nitrogen Range (0.1 – 4 mg/L) Relative uncertainty ± 1%	EPA Method 300.0 – Modified	IC



Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Simple Nutrients Standard (QCP-NUT-1) Phosphate as Phosphorous Range (0.5 – 5.5 mg/L) Nitrate as Nitrogen Range (0.25 – 40 mg/L) Ammonium as Nitrogen Range (0.65 – 20 mg/L) Relative uncertainty ± 1%	EPA Method 300.0 – Modified	IC
	Custom Simple Nutrients Standard Phosphate as Phosphorous Range (0.05 – 10) mg/L Nitrate as Nitrogen Range (0.25 – 40) mg/L Ammonium as Nitrogen Range (0.25 – 20) mg/L Relative uncertainty ± 1%	EPA Method 300.0 – Modified	IC
	pH Standard (QCP-PH) pH Range (5 – 10 units) Relative uncertainty ± 1%	Standard Methods 4500 – H+ – Modified WI-QC- AppendixA_pH	Potentiometry
	Simulated Rainwater Standard (QCP-RAIN) Ca <sup>+2</sup> Range (3.5 – 110 mg/L) Cl <sup>-</sup> Range (35 – 275 mg/L) F <sup>-</sup> Range (0.3 – 4 mg/L) K <sup>+</sup> Range (4 – 40 mg/L) Mg <sup>+2</sup> Range (2 – 40 mg/L) pH Range (5 – 10 units) Conductivity Range (200 – 1200 µmhos) Na <sup>+</sup> Range (6 – 100 mg/L) NH <sub>4</sub> <sup>+</sup> Range (0.79 – 24 mg/L) NO <sub>3</sub> <sup>-</sup> Range (1.1 – 177 mg/L) SO <sub>4</sub> <sup>-2</sup> Range (5 – 125 mg/L) Relative uncertainty ± 1%	EPA Method 200.7- Modified EPA Method 300.0 – Modified Standard Methods 4500 – H+ – Modified WI-QC- AppendixA_pH Standard Methods 2510B – Modified WI-QC_ AppendixA_ Conductance	ICP-OES  IC  Potentiometry  Electrochemical





Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Trace Metals Standard (QCP-TMS) Ag Range (26 – 1000 µg/L) Al Range (200 – 4000 µg/L) As Range (70 – 900 µg/L) B Range (800 – 2000 µg/L) Ba Range (100 – 2500 µg/L) Be Range (8 – 900 µg/L) Cd Range (8 – 1000 µg/L) Co Range (28 – 1000 µg/L) Cr Range (17 – 1000 µg/L) Cu Range (140 – 1000 µg/L) Fe Range (200 – 4000 µg/L) Mn Range (70 – 4000 µg/L) Mo Range (60 – 600 µg/L) Ni Range (80 – 3000 µg/L) Pb Range (70 – 3000 µg/L) Sb Range (90 – 900 µg/L) Se Range (90 – 2000 µg/L) Sr Range (30 – 500 µg/L) Tl Range (60 – 900 µg/L) V Range (50 – 2000 µg/L) Zn Range (100 – 2000 µg/L) Relative uncertainty ± 1%	EPA Method 200.7 – Modified	ICP-OES
	Custom Trace Metals Standard Ag Range (4 – 1000 µg/L) Al Range (40 – 4000 µg/L) As Range (4 – 900 µg/L) B Range (40 – 2500 µg/L) Ba Range (4 – 1000 µg/L) Be Range (4 – 900 µg/L) Cd Range (4 – 1000 µg/L) Co Range (17 – 2000 µg/L) Cr Range (40 – 1000 µg/L) Cu Range (40 – 1000 µg/L) Fe Range (40 – 4000 µg/L) Mn Range (40 – 4000 µg/L) Ni Range (40 – 3000 µg/L) Pb Range (2 – 3000 µg/L) Sb Range (4 – 900 µg/L) Se Range (4 – 2000 µg/L) Tl Range (4 – 900 µg/L) Zn Range (100 – 2000 µg/L) Relative uncertainty ± 1%	EPA Method 200.7 – Modified	ICP-OES



Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Water Hardness Standard (QCP-WH) Ca Range (8.7 – 275 mg/L) Mg Range (2.9 – 92 mg/L) Hardness as CaCO <sub>3</sub> Range (17 – 440 mg/L) Relative uncertainty 1 %	EPA Method 200.7 – Modified Standard Methods 2340 B – Modified	ICP-OES
	Minerals Standard (QCP-MIN) Cl <sup>-</sup> Range (35 – 275 mg/L) F <sup>-</sup> Range (0.3 – 4 mg/L) K <sup>+</sup> Range (4 – 40 mg/L) Nitrate as Nitrogen Range (0.25 – 40 mg/L) Conductivity Range (200 – 1200 µmhos) Alkalinity Range (10 – 400 mg/L) Na <sup>+</sup> Range ( 6 – 100 mg/L) SO <sub>4</sub> <sup>-2</sup> Range (5 – 125 mg/L) Relative uncertainty ± 1%	EPA Method 200.7 – Modified EPA Method 300.0 – Modified Standard Methods 2510B – Modified WI-QC_ AppendixA_ Conductance Standard Methods 2320B – Modified WI-QC-Appendix A_ Alkalinity	ICP-OES IC Electrochemical Titrimetric
	Carbon CRMs Total Organic Carbon from KHP Containing this element – Range 0.1 µg/L – 100,000 µg/mL Relative uncertainty ± 1 %	WI-QC-45	Acid/Base titrimetric
Category A9.1 pH Standards	pH 0.5 Standard Range (0.48 – 0.52 pH units) Relative uncertainty ± 0.05 pH units	Standard Methods 4500H <sup>+</sup> - Modified WI-QC Appendix A_pH	Potentiometry
	pH 1.68 Standard Range (1.66 – 1.70 pH units) Relative uncertainty ± 0.05 pH units	Standard Methods 4500H <sup>+</sup> - Modified WI-QC Appendix A_pH	Potentiometry
	pH 2 Standard Range (1.95 – 2.05 pH units) Relative uncertainty ± 0.05 pH units	Standard Methods 4500H <sup>+</sup> - Modified WI-QC Appendix A_pH	Potentiometry
	pH 3 Standard Range (2.97 – 3.03 pH units) Relative uncertainty ± 0.05 pH units	Standard Methods 4500H <sup>+</sup> - Modified WI-QC Appendix A_pH	Potentiometry
	pH 4 Standard Range (3.97 – 4.03 pH units) pH Relative uncertainty ± 0.05 pH units	Standard Methods 4500H <sup>+</sup> - Modified WI-QC Appendix A_pH	Potentiometry
	pH 5 Standard Range (4.95 – 5.05 pH units) Relative uncertainty ± 0.05 pH units	Standard Methods 4500H <sup>+</sup> - Modified WI-QC Appendix A_pH	Potentiometry
	pH 6 Standard Range (5.94 – 6.06 pH units) Relative uncertainty ± 0.05 pH units	Standard Methods 4500H <sup>+</sup> - Modified WI-QC Appendix A_pH	Potentiometry
	pH 6.86 Standard Range (6.79 – 6.93 pH units) Relative uncertainty ± 0.05 pH units	Standard Methods 4500H <sup>+</sup> - Modified WI-QC Appendix A_pH	Potentiometry

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	pH 7 Standard Range (6.97 – 7.03 pH units) Relative uncertainty $\pm 0.05$ pH units	Standard Methods 4500H <sup>+</sup> Modified WI-QC Appendix_A _pH	Potentiometry
	pH 8 Standard Range (7.92 – 8.08 pH units) Relative uncertainty $\pm 0.05$ pH units	Standard Methods 4500H <sup>+</sup> Modified WI-QC Appendix_A _pH	Potentiometry
	pH 9 Standard Range (8.91 – 9.09 pH units) Relative uncertainty $\pm 0.05$ pH units	Standard Methods 4500H <sup>+</sup> Modified WI-QC Appendix_A _pH	Potentiometry
	pH 9.18 Standard Range (9.09 – 9.27 pH units) Relative uncertainty $\pm 0.05$ pH units	Standard Methods 4500H <sup>+</sup> Modified WI-QC Appendix_A _pH	Potentiometry
	pH 10 Standard Range (9.97 – 10.03 pH units) pH Relative uncertainty $\pm 0.05$ pH units	Standard Methods 4500H <sup>+</sup> Modified WI-QC Appendix_A _pH	Potentiometry
	pH 11 Standard Range (10.89 – 11.11 pH units) Relative uncertainty $\pm 0.05$ pH units	Standard Methods 4500H <sup>+</sup> Modified WI-QC Appendix_A _pH	Potentiometry
	pH 12 Standard Range (11.75 – 12.25 pH units) Relative uncertainty $\pm 0.05$ pH units	Standard Methods 4500H <sup>+</sup> Modified WI-QC Appendix_A _pH	Potentiometry
	pH 12.47 Standard Range (12.35 – 12.59 pH units) Relative uncertainty $\pm 0.05$ pH units	Standard Methods 4500H <sup>+</sup> Modified WI-QC Appendix_A _pH	Potentiometry
	Custom pH Standards Range (0.1 – 14 pH units) Relative uncertainty $\pm 0.05$ pH units	Standard Methods 4500H <sup>+</sup> Modified WI-QC Appendix_A _pH	Potentiometry
Category Titrants	Titrant 0.1M Hydrochloric Acid Standard Range (0.098 – 0.102) M	WI-QC-47	Acid/Base
	Titrant 1.0M Hydrochloric Acid Standard Range (0.980 – 1.020) M	WI-QC-47	Acid/Base
	Titrant 0.1M Nitric Acid Standard Range (0.098 – 0.102) M Relative Uncertainty $\pm 1\%$	WI-QC-47	Acid/Base
	Titrant 1.0M Nitric Acid Standard Range (0.980 – 1.020) M Relative Uncertainty $\pm 1\%$	WI-QC-47	Acid/Base
	Titrant 0.1M Perchloric Acid Standard Range (0.098 – 0.102) M Relative Uncertainty $\pm 1\%$	WI-QC-47	Acid/Base
	Titrant 0.1M Sodium Hydroxide Standard Range (0.098 – 0.102) M Relative Uncertainty $\pm 1\%$	WI-QC-47	Acid/Base

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	Titrant 1.0M Sodium Hydroxide Standard Range (0.980 – 1.020) M Relative Uncertainty ± 1 %	WI-QC-47	Acid/Base
	Titrant 0.05M EDTA Standard Range (0.049 – 0.051) M Relative Uncertainty ± 1 %	WI-QC-47	EDTA Titration
	Titrant 0.5M EDTA Standard Range (0.490 – 0.510) M Relative Uncertainty ± 1 %	WI-QC-47	EDTA Titration
	Titrant 0.1N AGNO <sub>3</sub> Standard Range (0.098 – 0.102) N Relative Uncertainty ± 1 %	WI-QC-47	Fajans Titration
	Titrant 0.1N NA <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Standard Range (0.098 – 0.102) N Relative Uncertainty ± 1 %	WI-QC-47	Iodometric Titration
	Custom Titrants Range (0.0001 – 50) N Relative Uncertainty ± 1 %	WI-QC-47 WI- QC-21 Standard Methods 4500H <sup>+</sup> Modified Standard Methods 4500-CN- D- Modified; WI-QC_Appendix_A_CN WI-QC-32 WI-QC-27	Acid/Base EDTA titrimetric Potentiometry Argentometric titration  Redox titrimetric
Category A9.3 Conductivity Standards	2 µmhos/cm Conductivity Standard Range (1.5 – 2.5) µmhos/cm Relative uncertainty ± 10 %	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrochemical
	5 µmhos/cm Conductivity Standard Range (4.50 – 5.50) µmhos/cm Relative uncertainty ± 10 %	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrochemical
	10 µmhos/cm Conductivity Standard Range (9.0 – 11.0) µmhos/cm Relative uncertainty ± 2 %	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrochemical
	20 µmhos/cm Conductivity Standard Range (18 – 22) µmhos/cm Relative uncertainty ± 2 %	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrochemical
	75 µmhos/cm Conductivity Standard Range (73.5 – 76.5) µmhos/cm Relative uncertainty ± 1 %	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrochemical

Category and sub-category of Certified Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	84 µmhos/cm Conductivity Standard Range (82.3 – 85.7) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrochemical
	100 µmhos/cm Conductivity Standard Range (98.0 – 102.2) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrochemical
	147 µmhos/cm Conductivity Standard Range (144 - 150) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI- QC_AppendixA_ Conductance	Electrochemical
	250 µmhos/cm Conductivity Standard Range (247.5 – 252.5) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrochemical
	500 µmhos/cm Conductivity Standard Range (495 - 505) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrochemical
	1000 µmhos/cm Conductivity Standard Range (990.0 – 1,010.0) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrochemical
	1200 µmhos/cm Conductivity Standard Range (1,188.0 – 1,212.0) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrochemical
	1400 µmhos/cm Conductivity Standard Range (1,386.0 – 1,414.0) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrochemical
	1413 µmhos/cm Conductivity Standard Range (1,399 – 1,427) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrochemical
	1430 µmhos/cm Conductivity Standard Range (1,416.0 – 1,444.0) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrochemical
	10,000 µmhos/cm Conductivity Standard Range (9,900.0 – 10,100.0) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrochemical



Category and sub-category of Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
	12856 µmhos/cm Conductivity Standard Range (12,727.4 – 12,984.6) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_Conductance	Electrochemical
	20000 µmhos/cm Conductivity Standard Range (19,800.0 – 20,200.0) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_Conductance	Electrochemical
	30000 µmhos/cm Conductivity Standard Range (29,700.0 – 30,300.0) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_Conductance	Electrochemical
	40000 µmhos/cm Conductivity Standard Range (39,600.0 – 40,400.0) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_Conductance	Electrochemical
	50000 µmhos/cm Conductivity Standard Range (49,500.0 – 50,500.0) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_Conductance	Electrochemical
	58650 µmhos/cm Conductivity Standard Range (58,063 – 59,236) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_Conductance	Electrochemical
	70000 µmhos/cm Conductivity Standard Range (69,300.0 – 70,700.0) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_Conductance	Electrochemical
	100,000 µmhos/cm Conductivity Standard Range (99,000.0 – 101,000.0) µmhos/cm Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_Conductance	Electrochemical
	175000 µmhos/cm Conductivity Standard Range (173,250.0 – 176,750.0) µmhos/cm	Standard Methods 2510B Modified WI-QC_AppendixA_Conductance	Electrochemical
	Custom Conductivity Standard Range (1.0 – 250,000) µmhos/cm Relative uncertainty ± 1 - 10%	Standard Methods 2510B Modified WI-QC_AppendixA_Conductance	Electrochemical

Category and sub-category of Reference Material	Concentration Ranges and Best Relative uncertainty <sup>1</sup>	Test, Analysis, Measurement, Methods	Measurement Technique(s)
Category Releasing Agent	Lanthanum Releasing Agent RMs Range (100 µg/mL – 100,000 µg/mL) Relative Uncertainty ± 1%	WI-QC-19	ICP-OES
Category Eluent	Carbonate Eluent RMs Range (0.0005M – 3M) Relative Uncertainty ± 0.5%	WI-QC-33 WI-QC-28	Potentiometric titration Acidimetric titration
	Bicarbonate Eluent RMs Range (0.0005M – 3M) Relative Uncertainty ± 0.5%	WI-QC-33 WI-QC-28	Potentiometric titration Acidimetric titration
	Methanesulfonate Eluent RMs Range (0.1M – 5M) Relative Uncertainty ± 0.5%	WI-QC-46	Potentiometric titration
Category Ionization Buffer	Cesium Ionization Buffer RMs Range (100 µg/mL – 100,000 µg/mL) Relative Uncertainty ± 1%	WI-QC-19 WI-QC-22	ICP-OES ICP-MS Gravimetric sulfate
	Lithium Ionization Buffer RMs Range (100 µg/mL – 100,000 µg/mL) Relative Uncertainty ± 1%	WI-QC-19	ICP-OES
Category Matrix Modifier	Magnesium Matrix Modifier RMs Range (100 µg/mL – 100,000 µg/mL) Relative Uncertainty ± 1%	WI-QC-19	ICP-OES
	Phosphate Matrix Modifier RMs Range (100 µg/mL – 100,000 µg/mL) Relative Uncertainty ± 1%	WI-QC-19	ICP-OES
	Palladium Matrix Modifier RMs Range (100 µg/mL – 100,000 µg/mL) Relative Uncertainty ± 1%	WI-QC-19	ICP-OES
	Palladium and Magnesium Matrix Modifier RMs Range (100 µg/mL – 10,000 µg/mL) Relative Uncertainty ± 1%	WI-QC-18.1	ICP-OES

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<sup>1</sup> An absolute uncertainty estimate may be determined by multiplying the stated Relative uncertainty by the reported certified reference material value on the certificate. The absolute uncertainty estimate will thus be represented in the units of the value provided on the certified reference material certificate.

<sup>2</sup> This reference material producer is approved to produce Certified Reference Materials (CRM) for all items listed on the scope of accreditation.







## Accredited Reference Material Producer

A2LA has accredited

### INORGANIC VENTURES, INC.

Christiansburg, VA

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 17<sup>th</sup> day of September 2018.

Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 883.02  
Valid to September 30, 2020  
Revised July 24, 2020