Specification

Parameter	Methodology	Conformance	Range of Measurement*	Calculated Method Detection Limit**	RSD Specifications***
Acidity	Potentiometric Titration	EPA 305.1, 305.2; SM 2310 B; ASTM D 1067	1 - 2500ppm	0.42	0.97% @ 100ppm
Alkalinity (P&M, bicarbonate, carbonate, hydroxide)	Potentiometric Titration	EPA 310.1; SM 2320 B; ASTM D 1067; ISO 9963-2	0.3 - 2500ppm	0.18	0.48% @ 200ppm
Ammonia	Ion Selective Electrode	EPA 350.3; SM 4500-NH3 D; ASTM D 1426 (B)	0.1 - 17,000ppm	0.05	2.41% @ 1ppm
	Ion Selective Electrode (Standard Addition)	SM 4500-NH3 E	0.5 - 200ppm	0.1	4.24% @ 2ppm
Chloride	Potentiometric Titration	SM 5400-Cl- D; Variation of ASTM D 512 (B); ISO 9297	1 - 1000ppm	0.28	0.24% @ 100ppm
	Ion Selective Electrode	Variation of ASTM D 512 (C)	0.05 - 35,500ppm	0.01	1.55% @ 100ppm
Colour	Colorimetric	EPA 110.2; SM 2120 B	2 - 500CU	0.19	1.7% @ 5CU
Conductivity	Conductivity Cell	EPA 120.1; SM 2510 B; ASTM D1125; ISO 7888	<1 - 199,999uS	0.65	0.18% @ 1413uS
Fluoride	Ion Selective Electrode	EPA 340.2; SM 4500-F- C; ASTM D 1179 (B); ISO 10359-1	0.02 - Saturated	0.005	1.57% @ 1ppm
Nitrate	Ion Selective Electrode	SM 4500-NO3- D	0.14 - 62,000ppm	0.05	0.87% @ 100ppm
Oxidation-Reduction Potential (ORP)	Redox Electrode	SM 2580; ASTM D 1498	-2000 - 2000mV	N/A	0.10% @ 220mV
Oxygen	Dissolved Oxygen Probe	EPA 360.1; SM 4500-O G; ASTM D 888 (B); ISO 5814	0 - 19.99ppm	N/A	N/A
pH	pH Electrode	EPA 150.1, 150.2; SM 4500-H+ B; ASTM D 1293; ISO 10523	1 - 14	N/A	+/- 0.05
Salinity	By Calculation	SM 2520 B	0.1 - 42	0.002	0.15% @ 10
Temperature	Thermometric	EPA 170.1; SM 2550 B	N/A	N/A	N/A
Total Hardness	Potentiometric EDTA Titration	Adapted from EPA 130.2, SM 2340 C, ASTM D 1126	1.09 - 1500ppm	0.43	1.63% @ 94ppm
Turbidity	Nephelometric	EPA 180.1; SM 2130 B; ASTM D 1889; ISO 7027	0.1 - 2000NTU	0.05	2.95% @ 1NTU

**Data for these measuring ranges were obtained using laboratory prepared standards. Some measuring ranges may be increased by using larger capacity analysis vessels, auto-dilution and/or sample spikes. The Reporting Limits (RL) were determined based on data obtaining a coefficient of variance better than 30%. Results may differ depending on laboratory practices and sample matrices.*

***MDLs differ from RLs in that they refer to the minimum concentration of a substance that can be measured with 99% confidence that the analyte concentration is greater then zero. The MDL calculation procedure was obtained from US EPA 40 CFR Appendix B to part 136 - Definition and Procedure for the Determination of the Method Detection Limit. MDL = Standard Deviation x T-Value. T-values obtained from reference tables, 99% confidence, n-1 degrees of freedom.*

****The RSDs listed are stated for a particular measurement range. As the MDL is approached, the value will increase as described above.*

Please note that in order to obtain the above MDLs, proper analytical techniques and MANTECH recommended procedures including sample volume and reagent concentrations are to be used. Varying sample matrices may generate different results.