

Amount of substance, Water, Canada, NRC (National Research Council)

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NMI Service Identifier	Measurement Service Sub-Category	Matrix	Measurand		Dissemination Range of Measurement Capability			Range of Expanded Uncertainties as Disseminated				Range of Certified Values in Reference Materials			Range of Expanded Uncertainties for Certified Value				Mechanism(s) for Measurement Service Delivery	Comment(s)
			Analyte or Component	Quantity	From	To	Unit	From	To	Unit	Is the expanded uncertainty a relative one?	From	To	Unit	From	To	Unit	Is the expanded uncertainty a relative one?		
TEW01	Fresh water	fresh water	aluminum	Mass fraction	0.07	5000	ng/g	0.004	60	ng/g	No	49.5	49.5	ng/g	5.0	5.0	ng/g	No	CRM SLRS-5	Approved on 27 March 2013
TEW02	Fresh water	fresh water	antimony	Mass fraction	0.005	0.7	ng/g	0.0003	0.02	ng/g	No								Internal calibration service	Approved on 27 March 2013
TEW03	Fresh water	fresh water	arsenic	Mass fraction	0.05	1000	ng/g	0.005	20	ng/g	No	0.413	0.413	µg/kg	0.039	0.039	µg/kg	No	CRM SLRS-5	Approved on 27 March 2013
TEW04	Fresh water	fresh water	barium	Mass fraction	0.02	2000	ng/g	0.001	20	ng/g	No	14.0	14.0	µg/kg	0.5	0.5	µg/kg	No	CRM SLRS-5	Approved on 27 March 2013
TEW05	Fresh water	fresh water	beryllium	Mass fraction	0.001	30	ng/g	0.00005	3	ng/g	No								Internal calibration service	Approved on 27 March 2013
TEW06	Fresh water	fresh water	cadmium	Mass fraction	0.0025	15	ng/g	0.0001	1.5	ng/g	No	0.006	0.006	µg/kg	0.0014	0.0014	µg/kg	No	CRM SLRS-5	Approved on 27 March 2013
TEW07	Fresh water	fresh water	chromium	Mass fraction	0.05	1000	ng/g	0.003	10	ng/g	No	0.208	0.208	µg/kg	0.023	0.023	µg/kg	No	CRM SLRS-5	Approved on 27 March 2013
TEW08	Fresh water	fresh water	cobalt	Mass fraction	0.001	200	ng/g	0.00005	20	ng/g	No								Internal calibration service	Approved on 27 March 2013
TEW09	Fresh water	fresh water	copper	Mass fraction	0.015	1000	ng/g	0.0008	10	ng/g	No	17.4	17.4	µg/kg	1.3	1.3	µg/kg	No	CRM SLRS-5	Approved on 27 March 2013
TEW10	Fresh water	fresh water	iron	Mass fraction	0.05	1000	ng/g	0.005	10	ng/g	No	91.2	91.2	µg/kg	5.8	5.8	µg/kg	No	CRM SLRS-5	Approved on 27 March 2013
TEW11	Fresh water	fresh water	lead	Mass fraction	0.006	300	ng/g	0.0003	30	ng/g	No	0.081	0.081	µg/kg	0.006	0.006	µg/kg	No	CRM SLRS-5	Approved on 27 March 2013
TEW12	Fresh water	fresh water	manganese	Mass fraction	0.02	2000	ng/g	0.001	20	ng/g	No	4.33	4.33	µg/kg	0.18	0.18	µg/kg	No	CRM SLRS-5	Approved on 27 March 2013
TEW13	Fresh water	fresh water	molybdenum	Mass fraction	0.05	120	ng/g	0.003	12	ng/g	No	0.27	0.27	µg/kg	0.04	0.04	µg/kg	No	CRM SLRS-5	Approved on 27 March 2013
TEW14	Fresh water	fresh water	nickel	Mass fraction	0.015	1000	ng/g	0.0008	10	ng/g	No	0.476	0.476	µg/kg	0.064	0.064	µg/kg	No	CRM SLRS-5	Approved on 27 March 2013
TEW15	Fresh water	fresh water	strontium	Mass fraction	0.002	3000	ng/g	0.0001	40	ng/g	No	53.6	53.6	µg/kg	1.3	1.3	µg/kg	No	CRM SLRS-5	Approved on 27 March 2013
TEW16	Fresh water	fresh water	uranium	Mass fraction	0.03	0.15	ng/g	0.0015	0.007	ng/g	No	0.093	0.093	µg/kg	0.006	0.006	µg/kg	No	CRM SLRS-5	Approved on 27 March 2013
TEW17	Fresh water	fresh water	vanadium	Mass fraction	0.05	500	ng/g	0.003	50	ng/g	No	0.317	0.317	µg/kg	0.033	0.033	µg/kg	No	CRM SLRS-5	Approved on 27 March 2013
TEW18	Fresh water	fresh water	zinc	Mass fraction	0.025	1000	ng/g	0.0015	20	ng/g	No	0.845	0.845	µg/kg	0.095	0.095	µg/kg	No	CRM SLRS-5	Approved on 27 March 2013

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			Analyte or Component	Quantity	From	To	Unit	From	To	Unit	Is the expanded uncertainty a relative one?	From	To	Unit	From	To	Unit	Is the expanded uncertainty a relative one?		
TEW19	Sea water	seawater	arsenic	Mass fraction	0.02	10	ng/g	0.005	1	ng/g	No	1.21	1.40	µg/kg	0.09	0.12	µg/kg	No	CRM CASS-5, CRM NASS-6, CRM SLEW-3	Approved on 27 March 2013
TEW20	Sea water	seawater	cadmium	Mass fraction	0.0025	0.2	ng/g	0.0002	0.02	ng/g	No	0.021	0.047	µg/kg	0.0017	0.004	µg/kg	No	CRM CASS-5, CRM NASS-6, CRM SLEW-3	Approved on 27 March 2013
TEW21	Sea water	seawater	chromium	Mass fraction	0.05	0.6	ng/g	0.003	0.03	ng/g	No	0.103	0.181	µg/kg	0.012	0.019	µg/kg	No	CRM CASS-5, CRM NASS-6, CRM SLEW-3	Approved on 27 March 2013
TEW22	Sea water	seawater	cobalt	Mass fraction	0.001	2	ng/g	0.0001	0.02	ng/g	No								Internal calibration service	Approved on 27 March 2013
TEW23	Sea water	seawater	copper	Mass fraction	0.015	5	ng/g	0.0002	0.3	ng/g	No	0.242	1.53	µg/kg	0.025	0.12	µg/kg	No	CRM CASS-5, CRM NASS-6, CRM SLEW-3	Approved on 27 March 2013
TEW24	Sea water	seawater	iron	Mass fraction	0.05	2	ng/g	0.004	0.1	ng/g	No	0.483	1.40	µg/kg	0.045	0.11	µg/kg	No	CRM CASS-5, CRM NASS-6, CRM SLEW-3	Approved on 27 March 2013
TEW25	Sea water	seawater	lead	Mass fraction	0.006	3	ng/g	0.0003	0.3	ng/g	No	0.006	0.011	µg/kg	0.002	0.002	µg/kg	No	CRM CASS-5, CRM NASS-6, CRM SLEW-3	Approved on 27 March 2013
TEW26	Sea water	seawater	manganese	Mass fraction	0.02	8	ng/g	0.001	0.4	ng/g	No	0.516	2.56	µg/kg	0.047	0.20	µg/kg	No	CRM CASS-5, CRM NASS-6, CRM SLEW-3	Approved on 27 March 2013
TEW27	Sea water	seawater	molybdenum	Mass fraction	0.05	30	ng/g	0.005	1.5	ng/g	No	9.59	9.66	µg/kg	0.70	0.72	µg/kg	No	CRM CASS-5, CRM NASS-6	Approved on 27 March 2013
TEW28	Sea water	seawater	nickel	Mass fraction	0.015	4	ng/g	0.0002	0.2	ng/g	No	0.294	1.21	µg/kg	0.025	0.07	µg/kg	No	CRM CASS-5, CRM NASS-6, CRM SLEW-3	Approved on 27 March 2013
TEW29	Sea water	seawater	vanadium	Mass fraction	0.05	8	ng/g	0.003	0.4	ng/g	No	1.28	2.54	µg/kg	0.14	0.31	µg/kg	No	CRM CASS-5, CRM SLEW-3	Approved on 27 March 2013
TEW30	Sea water	seawater	zinc	Mass fraction	0.015	1	ng/g	0.005	0.05	ng/g	No	0.198	0.702	µg/kg	0.037	0.067	µg/kg	No	CRM CASS-5, CRM NASS-6, CRM SLEW-3	Approved on 27 March 2013
TEW31	Fresh water	fresh water	mercury	Mass fraction	1	1000	pg/g	0.1	5	pg/g	No	26.2	26.2	pg/g	1.3	1.3	pg/g	No	CRM ORMS-5	Approved on 27 March 2013
TEW32	Fresh water	fresh water	calcium	Mass fraction	0.002	100	mg/kg	0.0003	4	mg/kg	No	10.5	10.5	mg/kg	0.4	0.4	mg/kg	No	CRM SLRS-5	Approved on 27 March 2013

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TEW33	Fresh water	fresh water	potassium	Mass fraction	0.1	100	mg/kg	0.03	4	mg/kg	No	0.839	0.839	mg/kg	0.036	0.036	mg/kg	No	CRM SLRS-5	Approved on 27 March 2013
TEW34	Fresh water	fresh water	magnesium	Mass fraction	0.02	100	mg/kg	0.01	4	mg/kg	No	2.54	2.54	mg/kg	0.16	0.16	mg/kg	No	CRM SLRS-5	Approved on 27 March 2013
TEW35	Fresh water	fresh water	sodium	Mass fraction	0.03	100	mg/kg	0.01	4	mg/kg	No	5.38	5.38	mg/kg	0.10	0.10	mg/kg	No	CRM SLRS-5	Approved on 27 March 2013
TEW38	Sea water	seawater	nitrate + nitrite	Amount of substance concentration	1.8	35	µmol/l	0.1	0.6	µmol/l	No	24.9	24.9	µmol/l	1.0	1.0	µmol/l	No	CRM MOOS-2	Approved on 27 March 2013
TEW39	Sea water	seawater	nitrite	Amount of substance concentration	0.09	10	µmol/l	0.007	0.1	µmol/l	No	3.31	3.31	µmol/l	0.18	0.18	µmol/l	No	CRM MOOS-2	Approved on 27 March 2013
TEW40	Sea water	seawater	ortho-phosphate	Amount of substance concentration	0.15	5	µmol/l	0.01	0.4	µmol/l	No	1.58	1.58	µmol/l	0.1	0.1	µmol/l	No	CRM MOOS-2	Approved on 27 March 2013
TEW41	Sea water	seawater	silicate	Amount of substance concentration	0.8	80	µmol/l	0.08	6	µmol/l	No	28.8	28.8	µmol/l	1.0	1.0	µmol/l	No	CRM MOOS-2	Approved on 27 March 2013