załącznik do pytanie nr 5

INVENTORY OF MAJOR IONS AND NUTRIENTS IN WATER MATRIX REFERENCE MATERIALS

	BGR-13 Rain Water lot 0120			BIGMOOSE-14 Lake Water lot 0120			BURTAP-14 Drinking Water lot 0120			DWNSVW-15 Rain Water lot 0120			HAMIL-20.2 Harbour Water lot 1219		
	Value in mg/L			Value in mg/L			Value in mg/L			Value in mg/L			Value in mg/L		
Acidity to pH 8.3		±			±			±			±			±	
Alkalinity, Gran (as $CaCO_3$)	6.38	±	0.74		±			±		0.708	±	0.298		±	
Alkalinity, Total (as $CaCO_3$)					±		88.1	±	5.2		±		110	±	5
Aluminum	0.0090	±	0.0040	0.157	±	0.016		±			±			±	
Ammonia (as N)				0.0490	±	0.0080		±		0.186	±	0.016		±	
Boron					±		0.0240	±	0.0060		±		0.0540	±	0.0080
Calcium	1.57	±	0.13	1.42	±	0.11	34.9	±	2.9	0.318	±	0.042	46.0	±	3.4
Chloride	0.291	±	0.044	0.351	±	0.050	26.5	±	1.5	0.211	±	0.036	71.9	±	3.5
Colour (Hazen Units)				22.2	±	5.3		±			±		5.40	±	2.24
Conductivity (µS/cm, 25°C)	24.7	±	1.9	15.6	±	1.0	318	±	14	6.05	±	0.67	550	±	17
Dissolved Inorganic Carbon (DIC)	1.82	±	0.34		±			±			±		26.0	±	2.6
Dissolved Organic Carbon (DOC)		±		4.22	±	0.49	1.63	±	0.48	0.503	±	0.202	3.02	±	0.46
Fluoride		±			±		0.617	±	0.056		±		0.281	±	0.040
Magnesium	0.256	±	0.020	0.223	±	0.016	8.74	±	0.64	0.09	±	0.01	12.6	±	1.1
Nitrate + Nitrite (as N)	0.220	±	0.020	0.267	±	0.018	0.383	±	0.044	0.163	±	0.016	1.99	±	0.19
pH (units, 25°C)	6.93	±	0.30	6.14	±	0.24	8.06	±	0.22	6.064	±	0.264	8.14	±	0.20
Potassium	0.230	±	0.030	0.302	±	0.032	1.63	±	0.15	0.064	±	0.016	3.98	±	0.32
Silica (as Si)	0.0950	±	0.0360	1.57	±	0.13		±			±			±	
Silicates (as SiO_2)		±			±		1.12	±	0.11		±		1.89	±	0.18
Sodium	0.951	±	0.072	0.669	±	0.064	14.6	±	1.4	0.153	±	0.02	42.4	±	3.3
Sulfate (as SO_4)	2.64	±	0.17	2.47	±	0.15	27.0	±	1.8	0.588	±	0.068	43.4	±	2.5
Total Kjeldahl Nitrogen (TKN)		±			±			±			±			±	
Total Nitrogen	1.51	±	0.14	0.443	±	0.048	0.489	±	0.084	0.392	±	0.048	2.26	±	0.21
Hardness, Total (as $CaCO_3$)		±			±		122	±	10		±		167	±	13

	LETH-13 Drinking Water lot 1219			MISSIPPI-14 River Water lot 1219			ONTARIO-12 Lake Water lot 1219			RAIN-12 Rain Water lot 0120			SUPER-05 Lake Water lot 1219		
	Value in mg/L			Value in mg/L			Value in mg/L			Value in mg/L			Value in mg/L		
Acidity to pH 8.3		±			±			±			±			±	
Alkalinity, Gran (as $CaCO_3$)		±			±			±			±			±	
Alkalinity, Total (as $CaCO_3$)	127	±	6	114	±	7	92.8	±	4.9		±		42.9	±	2.9
Aluminum		±			±			±		0.0090	±	0.0020		±	
Ammonia (as N)	0.311	±	0.046		±			±		0.0970	±	0.0100		±	
Boron	0.0310	±	0.0040	0.0200	±	0.0020	0.0250	±	0.0060		±		0.0070	±	0.0020
Calcium	41.7	±	3.2	39.1	±	3.5	34.3	±	2.6	0.688	±	0.054	13.6	±	1.2
Chloride	20.0	±	1.0	15.9	±	0.9	22.8	±	1.1	0.189	±	0.030	1.42	±	0.16
Colour (Hazen Units)		±		39.0	±	8.8		±			±			±	
Conductivity (µS/cm, 25°C)	388	±	13	331	±	12	307	±	12	17.1	±	2.1	97.9	±	4.5
Dissolved Inorganic Carbon (DIC)	30.0	±	4.3	26.7	±	4.1	22.1	±	3.6		±		10.1	±	1.1
Dissolved Organic Carbon (DOC)	1.89	±	0.36	7.37	±	0.87	1.89	±	0.33		±		1.30	±	0.48
Fluoride	0.767	±	0.082	0.116	±	0.028	0.113	±	0.024		±		0.0380	±	0.0220
Magnesium	15.5	±	1.2	12.6	±	1.0	8.75	±	0.66	0.261	±	0.020	2.84	±	0.25
Nitrate + Nitrite (as N)		±		2.94	±	0.23		±		0.315	±	0.020	0.358	±	0.038
pH (units, 25°C)		±			±		8.07	±	0.25	4.73	±	0.14	7.81	±	0.31
Potassium	1.63	±	0.13	2.49	±	0.21	1.59	±	0.11	0.0430	±	0.0140	0.513	±	0.072
Silica (as Si)		±			±			±		0.0230	±	0.0140		±	
Silicates (as SiO_2)	2.64	±	0.17	6.18	±	0.43	0.659	±	0.070		±		2.27	±	0.20
Sodium	13.2	±	0.8	7.79	±	0.68	13.4	±	1.1	0.0760	±	0.0140	1.44	±	0.19
Sulfate (as SO_4)	41.2	±	2.1	19.4	±	1.1	25.0	±	1.2	2.91	±	0.23	3.48	±	0.45
Total Kjeldahl Nitrogen (TKN)	0.430	±	0.096		±			±			±			±	
Total Nitrogen	0.491	±	0.058	3.34	±	0.39	0.504	±	0.080	0.422	±	0.038	0.429	±	0.056
Hardness, Total (as $CaCO_3$)	168	±	14	149	±	12	122	±	8		±		45.8	±	3.8

All values are in mg/L, unless otherwise specified.

ACCREDITED

Załącznik do pytania nr 22

INVENTORY OF TRACE ELEMENTS IN WATER MATRIX REFERENCE MATERIALS

	TM-DWS.3 lot 1219	TM-15.3 lot 1219	TM-23.5 lot 1219	TM-24.4 lot 1219	TM-25.6 lot 1219	TM-27.4 lot 1219
	Value in µg/L	Value in µg/L	Value in µg/L	Value in µg/L	Value in µg/L	Value in µg/L
Aluminum	56.7 ± 6.0	90.6 ± 8.4	95.4 ± 9.1	33.0 ± 4.0	29.3 ± 2.8	90.4 ± 9.0
Antimony	3.37 ± 0.37	16.6 ± 1.4	3.43 ± 0.26	±	22.6 ± 3.7	1.60 ± 0.14
Arsenic	4.76 ± 0.44	16.2 ± 1.2	8.04 ± 0.74	5.29 ± 0.52	27.2 ± 2.1	2.21 ± 0.20
Barium	146 ± 9	13.7 ± 0.9	14.0 ± 0.9	15.0 ± 1.1	26.7 ± 1.7	14.0 ± 0.8
Beryllium	14.1 ± 1.3	15.7 ± 1.1	2.11 ± 0.21	2.07 ± 0.21	25.9 ± 2.4	1.19 ± 0.13
Bismuth	13.3 ± 3.9	11.8 ± 2.1	2.98 ± 0.61	2.18 ± 0.46	19.5 ± 4.7	0.890 ± 0.188
Boron	79.2 ± 8.2	25.9 ± 3.5	17.2 ± 2.8	15.9 ± 2.8	39.0 ± 3.6	15.6 ± 2.3
Cadmium	4.82 ± 0.40	13.1 ± 0.7	2.99 ± 0.26	3.96 ± 0.33	23.3 ± 1.8	1.06 ± 0.09
Chromium	44.1 ± 2.8	16.8 ± 0.9	7.12 ± 0.49	5.04 ± 0.46	23.7 ± 1.7	1.79 ± 0.18
Cobalt	51.5 ± 3.4	15.4 ± 0.9	7.40 ± 0.52	6.31 ± 0.51	27.4 ± 2.0	2.08 ± 0.17
Copper	163 ± 10	17.2 ± 1.5	7.66 ± 0.64	6.34 ± 0.64	25.8 ± 2.0	6.14 ± 0.66
Gallium	±	±	0.904 ± 0.058	3.18 ± 0.19	±	±
Iron	224 ± 17	26.5 ± 2.7	15.9 ± 2.20	16.1 ± 2.4	31.1 ± 3.2	11.0 ± 1.5
Lead	6.84 ± 0.59	11.6 ± 0.8	2.94 ± 0.26	5.64 ± 0.59	26.3 ± 2.2	2.83 ± 0.25
Lithium	20.1 ± 1.5	15.3 ± 1.6	9.95 ± 0.84	4.95 ± 0.45	23.8 ± 2.1	3.69 ± 0.33
Manganese	47.4 ± 3.2	18.3 ± 1.1	8.41 ± 0.58	8.22 ± 0.66	25.2 ± 1.9	2.29 ± 0.25
Molybdenum	65.5 ± 4.8	14.7 ± 1.2	4.16 ± 0.37	6.31 ± 0.58	27.0 ± 2.6	2.37 ± 0.30
Nickel	82.9 ± 5.3	17.6 ± 1.3	5.01 ± 0.46	5.06 ± 0.50	16.0 ± 1.3	2.45 ± 0.31
Rubidium	0.453 ± 0.074	0.777 ± 0.088	0.730 ± 0.060	4.22 ± 0.31	±	0.775 ± 0.070
Selenium	9.18 ± 1.22	15.9 ± 1.8	5.01 ± 0.82	3.57 ± 0.62	29.3 ± 4.0	1.81 ± 0.24
Silver	±	11.1 ± 0.9	±	8.95 ± 0.79	±	±
Strontium	239 ± 15	114 ± 7	114 ± 7	114 ± 8	75.9 ± 4.3	115 ± 7
Thallium	8.44 ± 0.77	18.2 ± 1.6	4.07 ± 0.31	4.21 ± 0.37	30.7 ± 2.6	1.48 ± 0.14
Tin	±	15.1 ± 1.3	2.83 ± 0.31	3.73 ± 0.44	23.0 ± 2.6	2.35 ± 0.21
Titanium	±	14.9 ± 1.2	3.33 ± 0.39	7.31 ± 0.66	25.1 ± 2.0	1.96 ± 0.29
Tungsten	±	±	±	±	±	±
Uranium	14.4 ± 1.0	15.5 ± 1.0	5.03 ± 0.37	4.28 ± 0.37	26.8 ± 2.0	2.02 ± 0.15
Vanadium	45.2 ± 2.9	14.2 ± 0.8	0.336 ± 0.102	7.03 ± 0.61	27.7 ± 1.9	2.28 ± 0.22
Zinc	389 ± 31	35.3 ± 3.5	±	±	45.7 ± 4.2	±

	TMDA-51.5 lot 1219	TMDA-52.4 lot 1219	TMDA-54.6 lot 1219	TMDA-61.3 lot 1219	TMDA-64.3 lot 1219
	Value in µg/L	Value in µg/L	Value in µg/L	Value in µg/L	Value in µg/L
Aluminum	105 ± 9	306 ± 25	391 ± 28	58.4 ± 6.3	293 ± 25
Antimony	15.2 ± 1.3	15.5 ± 2.2	27.2 ± 1.9	33.5 ± 3.2	124 ± 10
Arsenic	16.7 ± 1.5	24.3 ± 2.0	45.1 ± 3.2	34.9 ± 3.3	163 ± 13
Barium	72.6 ± 4.4	140 ± 8	324 ± 17	64.1 ± 4.1	287 ± 18
Beryllium	10.0 ± 0.9	16.4 ± 1.3	17.3 ± 1.2	36.9 ± 3.4	157 ± 13
Bismuth	9.67 ± 2.28	10.9 ± 2.5	14.8 ± 2.3	19.6 ± 4.7	117 ± 24
Boron	46.9 ± 5.5	11.6 ± 1.9	58.5 ± 6.2	48.3 ± 6.2	277 ± 30
Cadmium	25.7 ± 1.8	85.0 ± 5.4	157 ± 8	59.2 ± 4.4	258 ± 20
Chromium	65.1 ± 4.3	159 ± 10	422 ± 20	67.4 ± 4.8	283 ± 18
Cobalt	68.7 ± 4.6	127 ± 9	305 ± 19	63.6 ± 4.3	248 ± 16
Copper	77.4 ± 5.6	186 ± 12	394 ± 27	62.0 ± 5.1	261 ± 18
Gallium	9.88 ± 0.64	13.0 ± 0.8	±	8.41 ± 0.56	50.3 ± 3.4
Iron	108 ± 10	331 ± 28	368 ± 23	79.7 ± 7.2	299 ± 20
Lead	63.5 ± 5.7	339 ± 25	490 ± 29	55.8 ± 4.7	279 ± 22
Lithium	19.4 ± 1.9	14.2 ± 1.3	21.4 ± 1.7	34.7 ± 3.5	144 ± 14
Manganese	78.7 ± 4.3	190 ± 15	275 ± 12	76.2 ± 5.1	292 ± 16
Molybdenum	54.9 ± 4.4	202 ± 14	293 ± 19	72.8 ± 5.5	287 ± 20
Nickel	65.3 ± 4.1	266 ± 19	323 ± 18	56.8 ± 4.5	251 ± 17
Rubidium	15.3 ± 1.0	15.7 ± 0.9	±	3.21 ± 0.27	30.8 ± 2.3
Selenium	14.3 ± 2.0	21.9 ± 3.0	35.0 ± 2.9	40.3 ± 4.7	154 ± 19
Silver	12.0 ± 1.1	±	12.9 ± 1.2	±	12.4 ± 1.4
Strontium	118 ± 7	277 ± 18	574 ± 32	114 ± 7	630 ± 33
Thallium	20.3 ± 1.8	17.1 ± 1.4	28.3 ± 1.8	37.0 ± 3.2	140 ± 15
Tin	16.4 ± 1.5	18.7 ± 1.8	45.2 ± 3.6	55.5 ± 5.7	281 ± 29
Titanium	14.1 ± 1.0	112 ± 8	32.8 ± 2.7	37.2 ± 2.9	124 ± 7
Tungsten	±	±	±	±	0.382 ± 0.068
Uranium	28.7 ± 2.3	21.6 ± 1.3	57.0 ± 2.8	36.2 ± 2.6	134 ± 11
Vanadium	46.6 ± 3.5	137 ± 8	341 ± 18	70.2 ± 4.9	280 ± 18
Zinc	140 ± 12	258 ± 20	539 ± 34	72.4 ± 6.7	320 ± 26

All values are in µg/L , unless otherwise specified.