

Laboratory Evaluations for FP PT Study 0104

<i>AQC Ref.No.</i>	1683	
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Laboratory proficiency appraisals and z-score summaries for your submitted test results are enclosed.

<i>Lab</i>	F293
<i>RN</i>	
<i>MI</i>	1
<i>TE</i>	1
<i>TP</i>	1
<i>TU</i>	
<i>HG</i>	1
<i>SED</i>	1

September 17, 2014



Z-Score Summary

Environment Canada Proficiency Testing Program for Inorganic Environmental Substances

FP PT for Major Ions & Nutrients - Study Code 0104

September-12-2014

Your laboratory code is F293

	1	2	3	4	5	6	7	8	9	10
Ammonia					0.15	-0.81		-0.81	-0.98	
Boron	1.35	0.81	0.25	0.53	-0.33	-1.36	1.33	0.95	1.38	1.50
Calcium	1.13	1.11	1.36	1.17	1.39	0.71	1.08	0.93	1.47	1.24
Chloride	1.03	0.90	0.43	0.72	0.98	0.09	0.78	0.87	0.50	0.70
Colour	-0.57		-0.95			-0.57	-0.55	-0.59	-0.41	-0.68
Conductivity @ 25C	-0.75	-0.08	-0.19	0.00	0.60	0.80	0.52	0.91	1.10	0.63
Diss Organic Carbon	0.84	2.85	0.31	2.04	1.69	0.40	0.91	0.02	-0.13	0.33
Fluoride	1.06	0.51	1.19	0.88	0.92	1.19	0.70	0.65	0.70	0.54
Magnesium	1.16	0.90	1.08	0.96	1.01	0.28	1.29	0.86	1.25	1.05
Nitrate + Nitrite	0.16	-0.44	0.35	-0.31	0.75	0.60	0.47	0.25	0.63	0.62
Potassium	0.29	-0.21	1.89	0.32	0.57	-0.05	0.30	0.26	-0.08	0.31
Silicates	0.72	0.86	1.00	0.86	0.51	0.71	0.34	0.61	0.41	0.91
Sodium	1.32	0.48	1.29	0.90	1.09	0.10	1.13	0.86	1.23	1.06
Sulfate	-0.15	0.18	-0.37	0.75	0.09	-0.33	0.00	-0.82	-0.61	-0.79
Total Alkalinity	0.00	0.00	0.00	0.00	0.23	0.62	0.32	0.00	0.30	0.40
Total Hardness	1.22	1.06	1.33	1.21	1.21	0.53	1.38	1.06	1.53	1.74
Total Kjeldahl N	0.78		0.68	0.18	0.68	1.44	0.57	0.77	1.26	-0.10

NOTE: Z-Scores are not calculated for test results with "reported" flags (i.e. "<" MDL) or when the number of laboratories (N) with useable test results is <= 5.



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Laboratory Proficiency Appraisal

Environment Canada Proficiency Testing Program for Inorganic Environmental Substances

FP PT for Major Ions & Nutrients - Study Code 0104

September-16-2014

Your laboratory code is F293

Ammonia	Bias Could Not be Assessed
Boron	Ideal
Calcium	Ranking indicates a HIGH BIAS: 3.60%, blank: 0.3586
Chloride	Ranking indicates a HIGH BIAS: 2.70%, blank: -0.0386
Colour	Ideal
Conductivity @ 25C	Ideal
Diss Organic Carbon	Flag WARNING HIGH on sample(s): 2, 4
Fluoride	Ranking indicates a HIGH BIAS: 4.90%, blank: 0.0070
Magnesium	Ranking indicates a HIGH BIAS: 2.40%, blank: 0.0955
Nitrate + Nitrite	Ideal
Potassium	Ideal
Silicates	Ranking indicates a HIGH BIAS: 2.40%, blank: 0.0100
Sodium	Ranking indicates a HIGH BIAS: 3.60%, blank: -0.0211
Sulfate	Ideal
Total Alkalinity	Ideal
Total Hardness	Ranking indicates a HIGH BIAS: 3.90%, blank: 0.0113
Total Kjeldahl N	Ideal

The performance of your laboratory is rated as "fair"



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Laboratory Proficiency Appraisal

Environment Canada Proficiency Testing Program for Inorganic Environmental Substances

FP PT for Trace Elements in Water - Study Code 0104

September-16-2014

Your laboratory code is F293

Aluminum	Flag ACTION HIGH on sample(s): 1
Antimony	Ideal
Arsenic	Ranking indicates a LOW BIAS: -7.90%, blank: 0.6667 Flag WARNING LOW on sample(s): 10
Barium	Ideal
Beryllium	Ranking indicates a LOW BIAS: -12.50%, blank: 0.6478 Flag ACTION LOW on sample(s): 10 Flag WARNING LOW on sample(s): 6
Boron	Ideal
Cadmium	Ideal
Chromium	Ideal
Cobalt	Ideal
Copper	Ideal
Iron	Ranking indicates a HIGH BIAS: 6.30%, blank: -0.9174
Lead	Ideal
Manganese	Ranking indicates a HIGH BIAS: 4.10%, blank: 0.1008 Flag WARNING HIGH on sample(s): 4, 5
Molybdenum	Ideal
Nickel	Ideal
Selenium	Ideal
Silver	Ideal
Strontium	Ranking indicates a HIGH BIAS: 2.40%, blank: 0.8863
Thallium	Ranking indicates a HIGH BIAS: 4.10%, blank: 0.3082 Flag ACTION HIGH on sample(s): 1 Flag WARNING HIGH on sample(s): 8
Tin	Ranking indicates a HIGH BIAS: -1.20%, blank: 2.2937 Flag ACTION HIGH on sample(s): 3, 4, 8, 9 Flag WARNING HIGH on sample(s): 2
Titanium	Ranking indicates a LOW BIAS: -1.90%, blank: -1.0820 Flag ACTION LOW on sample(s): 3, 8, 9
Uranium	Ideal
Vanadium	Ideal
Zinc	Flag WARNING LOW on sample(s): 2

The performance of your laboratory is rated as "fair"



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Z-Score Summary

Environment Canada Proficiency Testing Program for Inorganic Environmental Substances

FP PT for Trace Elements in Water - Study Code 0104

September-12-2014

Your laboratory code is F293

	1	2	3	4	5	6	7	8	9	10
Aluminum	16.92	0.99	1.15	0.00	1.32	0.36	0.61	-0.38	0.19	-0.27
Antimony		-0.30	-0.69	-0.50	-0.64	-0.90	-0.12	-0.85	-0.16	0.13
Arsenic	-0.94	-0.61	-0.64	-0.30	-1.95	-1.68	-0.80	-1.04	-0.65	-2.29
Barium	-0.20	-0.28	-0.26	-0.16	-0.41	-1.93	0.54	0.00	-0.23	-0.31
Beryllium		-1.45	-0.97	-1.02	-1.99	-2.94	-1.96	-1.12	-1.92	-3.10
Boron	1.73	-0.18	0.18	0.97	-1.25	0.45	-1.01	-0.58	-1.11	-0.98
Cadmium	1.22	-0.86	-0.57	0.00	-0.46	-1.14	-0.54	0.60	0.10	-0.58
Chromium		0.00	-0.66	0.09	-0.54	-1.00	0.17	-0.68	-0.13	-0.30
Cobalt	1.07	0.53	0.05	0.15	-0.83	-0.83	0.49	0.20	0.24	0.54
Copper	0.42	-0.10	-0.22	0.00	-0.93	-1.75	0.34	0.40	-0.03	-0.10
Iron	1.42			1.77	1.15	1.67			0.36	1.33
Lead		0.37	0.00	0.40	0.35	-0.60	0.86	0.33	0.45	0.45
Manganese		1.30	1.56	2.24	2.46	0.98	1.42	0.56	0.83	1.27
Molybdenum	0.72	0.86	0.60	0.37	0.05	-0.66	0.25	-0.40	0.76	0.11
Nickel	0.86	0.73	0.87	0.16	-0.43	-0.65	0.77	0.65	-0.04	0.00
Selenium	-0.28	-0.29	-0.89	-0.08	-1.03	-1.02	-0.35	-0.49	-0.60	-1.37
Silver		0.15	0.84	0.63	0.68	0.98	0.48	0.62	0.00	0.46
Strontium	1.21	1.03	0.88	1.89	1.50	0.79	1.21	0.85	1.21	0.84
Thallium	7.73	1.04	1.24	1.06	1.11	0.62	1.50	2.24	1.27	1.19
Tin		2.02	10.46	3.18	0.60	0.17	1.94	11.62	4.10	-0.16
Titanium		-1.97	-3.24		-0.94	-1.38	-1.89		-3.72	-1.25
Uranium	0.93	0.37	0.58	1.53	1.04	-0.07	1.11	0.66	1.11	1.31
Vanadium		0.90	0.26	1.12	1.14	0.28	0.19	-1.23	0.18	1.34
Zinc	0.50	-2.10	-0.44	0.46	-0.81	-0.03	-0.51	0.82	0.00	-0.31

NOTE: Z-Scores are not calculated for test results with "reported" flags (i.e. "<" MDL) or when the number of laboratories (N) with useable test results is <= 5.



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Laboratory Proficiency Appraisal

Environment Canada Proficiency Testing Program for Inorganic Environmental Substances

FP PT for Total Phosphorus in Water - Study Code 0104

September-16-2014

Your laboratory code is F293

Total Phosphorus

Ideal

The performance of your laboratory is rated as "very good"



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Z-Score Summary

Environment Canada Proficiency Testing Program for Inorganic Environmental Substances

FP PT for Total Phosphorus in Water - Study Code 0104

September-16-2014

Your laboratory code is F293

	1	2	3	4	5	6	7	8	9	10
Total Phosphorus	-0.15		-0.54	0.58	-0.15	0.90	1.21	0.48	0.63	-0.22

NOTE: Z-Scores are not calculated for test results with "reported" flags (i.e. "<" MDL) or when the number of laboratories (N) with useable test results is ≤ 5 .



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Laboratory Proficiency Appraisal

Environment Canada Proficiency Testing Program for Inorganic Environmental Substances

FP PT - Total Mercury in Water-low level - Study Code 0104

September-16-2014

Your laboratory code is F293

Mercury

Ideal

The performance of your laboratory is rated as "very good"



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Z-Score Summary

Environment Canada Proficiency Testing Program for Inorganic Environmental Substances

FP PT - Total Mercury in Water-low level - Study Code 0104

September-12-2014

Your laboratory code is F293

	1	2	3	4	5
Mercury	-1.74	1.31	-1.40	-1.70	-1.52

NOTE: Z-Scores are not calculated for test results with "reported" flags (i.e. "<" MDL) or when the number of laboratories (N) with useable test results is ≤ 5 .



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Laboratory Proficiency Appraisal

Environment Canada Proficiency Testing Program for Inorganic Environmental Substances

FP PT for Trace Elements in Sediment - Study Code 0104

September-16-2014

Your laboratory code is F293

Aluminum	Ideal
Antimony	Bias Could Not be Assessed
Arsenic	Ideal
Barium	Ideal
Beryllium	Ideal
Boron	Ideal
Cadmium	Ideal
Calcium	Ideal
Chromium	Ideal
Cobalt	Ideal
Copper	Ideal
Iron	Ideal
Lead	Ideal
Magnesium	Ideal
Manganese	Ideal
Mercury	Ideal
Molybdenum	Ideal
Nickel	Ideal
Potassium	Ideal
Selenium	Bias Could Not be Assessed
Silver	Ideal
Sodium	Ideal
Strontium	Ideal
Thallium	Bias Could Not be Assessed
Tin	Ideal
Titanium	Ideal
Vanadium	Ideal
Zinc	Ideal

The performance of your laboratory is rated as "very good"



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Z-Score Summary

Environment Canada Proficiency Testing Program for Inorganic Environmental Substances

FP PT for Trace Elements in Sediment - Study Code 0104

September-12-2014

Your laboratory code is F293

	1	2	3	4	5
Aluminum	0.25	0.04	-0.10	-0.22	-0.13
Antimony				-1.20	-1.06
Arsenic	0.22	0.06	-0.14	0.15	0.41
Barium	0.37	-0.08	0.24	0.00	0.08
Beryllium	1.30	1.44	1.34	0.70	0.64
Boron	-0.31	-0.57	-0.40	-0.70	-0.76
Cadmium	0.69	0.71	0.37	0.36	0.66
Calcium	0.64	0.42	0.57	0.53	0.68
Chromium	1.04	0.78	0.57	0.39	0.65
Cobalt	0.87	0.62	0.64	0.41	0.71
Copper	0.48	-0.05	-0.03	0.13	0.44
Iron	0.36	0.20	0.37	0.09	0.40
Lead	0.77	0.35	-0.13	0.43	0.41
Magnesium	0.48	0.31	0.29	0.15	0.42
Manganese	-0.39	-0.37	-0.55	0.48	0.39
Mercury	-0.44	-0.36	0.12	-0.24	-0.07
Molybdenum	0.04	-0.05	0.14	0.15	0.17
Nickel	0.80	0.46	0.39	0.35	0.55
Potassium	0.61	0.67	0.51	0.13	0.34
Selenium	0.16	-0.15	-0.19	0.09	0.46
Silver	0.26	0.50	-0.30	0.15	-0.31
Sodium	0.26	0.14	0.05	0.00	0.29
Strontium	0.81	0.50	0.57	0.24	0.28
Thallium	0.16	1.33	1.31	0.70	0.32
Tin	0.19	0.17	1.28	0.64	0.81
Titanium	0.36	-0.14	-0.05	-0.15	-0.23
Vanadium	0.35	0.23	0.04	-0.01	0.06
Zinc	0.30	1.34	-0.04	1.44	0.51

NOTE: Z-Scores are not calculated for test results with "reported" flags (i.e. "<" MDL) or when the number of laboratories (N) with useable test results is ≤ 5 .



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