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Laboratory proficiency appraisals and z-score summaries for your submitted test results are enclosed.

<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

August 21, 2015

Laboratory Proficiency Appraisal

Environment Canada Proficiency Testing Program for Inorganic Environmental Substances

FP PT for Major Ions & Nutrients - Study Code 0106

August-21-2015

Your laboratory code is F293

Ammonia	Bias Could Not be Assessed
Boron	Ideal
Calcium	Ranking indicates a HIGH BIAS: 2.7%, blank: 0.4942
Chloride	Ideal
Colour	Ideal
Conductivity @ 25C	Ideal
Diss Organic Carbon	Ideal
Fluoride	Ideal
Magnesium	Ideal
Nitrate + Nitrite	Ideal
Potassium	Ideal
Silicates	Ranking indicates a HIGH BIAS: 5.5%, blank: 0.0383
Sodium	Ideal
Sulfate	Ideal
Total Alkalinity	Ranking indicates a LOW BIAS: -3.2%, blank: 0.4326
Total Hardness	Ranking indicates a HIGH BIAS: 3.4%, blank: 1.0605
Total Kjeldahl N	Ideal

The performance of your laboratory is rated as "good"



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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 0106

August-21-2015

Your laboratory code is F293

Aluminum	Ideal
Antimony	Ranking indicates a LOW BIAS: -2.9%, blank: -0.0775
Arsenic	Ideal
Barium	Ideal
Beryllium	Ranking indicates a LOW BIAS: -9.2%, blank: 0.5861 Flag ACTION LOW on sample(s): 6 Flag WARNING LOW on sample(s): 4
Boron	Ranking indicates a LOW BIAS: -4.1%, blank: -0.4162
Cadmium	Ideal
Chromium	Ideal
Cobalt	Ideal
Copper	Ranking indicates a LOW BIAS: -2.6%, blank: -2.1314
Iron	Ranking indicates a HIGH BIAS: 4.2%, blank: 0.4520
Lead	Ranking indicates a LOW BIAS: -0.4%, blank: -0.9447
Manganese	Ideal
Molybdenum	Ideal
Nickel	Ranking indicates a LOW BIAS: 1.2%, blank: -1.8698
Selenium	Ideal
Silver	Ideal
Strontium	Ranking indicates a LOW BIAS: -3.0%, blank: 0.2119
Thallium	Ideal
Tin	Ranking indicates a HIGH BIAS: 6.0%, blank: 8.4964 Flag ACTION HIGH on sample(s): 1, 3, 5, 7, 8, 9, 10 Flag WARNING HIGH on sample(s): 4
Titanium	Ranking indicates a LOW BIAS: -3.8%, blank: -0.6520 Flag ACTION LOW on sample(s): 1, 5 Flag WARNING LOW on sample(s): 3, 7, 9, 10
Uranium	Ranking indicates a LOW BIAS: -4.0%, blank: -0.0614
Vanadium	Ideal
Zinc	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 Total Phosphorus in Water - Study Code 0106

August-21-2015

Your laboratory code is F293

Total Phosphorus

Ideal

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



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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 0106

August-21-2015

Your laboratory code is F293

Mercury

Ideal

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



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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 0106

August-21-2015

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	Ideal
Silver	Ideal
Sodium	Ideal
Strontium	Ideal
Thallium	Ideal
Tin	Flag ACTION HIGH on sample(s): 1, 3
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 Major Ions & Nutrients - Study Code 0106

August-21-2015

Your laboratory code is F293

	1	2	3	4	5	6	7	8	9	10
Ammonia	-0.60									
Boron	0.14	-0.65	-0.36	-0.22	-0.25	-0.25	-0.70	-0.09	-0.47	0.50
Calcium	1.06	1.04	0.87	1.02	0.96	1.30	1.18	1.59	1.00	1.09
Chloride	0.25	0.56	0.41	0.67	0.70	0.74	0.29	0.28	0.11	0.13
Colour		-0.34		0.24	0.55		0.41	0.65		0.12
Conductivity @ 25C	-0.14	0.00	0.33	0.00	0.40	0.04	0.09	0.34	0.34	0.68
Diss Organic Carbon	0.40	0.53	0.03	0.07	0.35	0.21	-0.13	-0.53	-0.16	-0.65
Fluoride	-0.12	1.17	0.78	0.78	0.83	1.37	0.85	1.22	0.29	0.36
Magnesium	0.58	0.59	0.51	0.40	0.75	0.85	1.45	1.72	0.57	0.86
Nitrate + Nitrite	0.37	0.54	0.61	1.05	0.86	0.50	0.57	0.52	0.65	0.23
Potassium	-0.22	-0.46	-0.37	-0.42	-0.57	-0.15	-0.12	0.22	-0.42	-0.23
Silicates	1.37	1.01	1.94	1.75	1.45	1.79	1.32	1.26	1.25	1.54
Sodium	-0.33	0.00	-0.12	-0.36	-0.26	0.08	0.23	0.60	-0.28	-0.76
Sulfate	0.39	0.86	0.42	0.05	0.78	1.11	0.85	0.54	0.45	0.48
Total Alkalinity	-1.01	-1.20	-1.18	0.54	-1.05	-0.89	-0.31	-1.09	-1.26	-1.55
Total Hardness	1.00	1.01	1.27	1.14	1.01	0.42	1.03	0.88	0.94	1.14
Total Kjeldahl N	-0.73	0.67	0.46	-0.74	0.74		-0.65	-0.26	0.03	0.67

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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Z-Score Summary

Environment Canada Proficiency Testing Program for Inorganic Environmental Substances

FP PT for Trace Elements in Water - Study Code 0106

August-21-2015

Your laboratory code is F293

	1	2	3	4	5	6	7	8	9	10
Aluminum	-0.44	-0.50	-0.18	0.74	0.64	-0.39	0.14	0.31	0.00	-0.94
Antimony	-1.15	-0.80	-0.95	-0.19	-1.25	-0.85	-1.19	-0.64	-1.20	-1.60
Arsenic	-0.16	-0.40	-0.45	-0.30	-0.42	-1.66	-0.39	-0.14	0.09	-0.72
Barium	-0.46	-0.69	-0.86	-0.76	-0.72	-1.07	-1.00	-0.34	-0.32	-1.42
Beryllium	-1.06	-1.37	-0.40	-2.43	-0.72	-3.05	-0.51	-0.90	-0.04	-0.88
Boron	-0.71	-1.36	-0.64	-1.68	-0.35	-0.81	-0.63	-0.60	-0.16	-1.02
Cadmium	0.15	-0.45	-0.78	-0.54	-0.82	0.21	-0.51	-0.25	-0.46	-1.12
Chromium	-1.00	-0.86	-1.32	-0.82	-0.58	0.00	-0.76	-0.71	-0.56	-0.64
Cobalt	-0.16	-0.96	-0.93	-0.70	-0.74	0.81	-0.52	-0.59	-0.48	-0.81
Copper	-1.15	-1.81	-1.88	-1.67	-0.94	-0.20	-1.86	-1.55	-1.47	-2.01
Iron		0.99	0.94	1.46		1.23	1.48	0.61		0.98
Lead	-1.24	-0.12	-0.77	-1.07	-1.51	-0.09	-0.84	-0.53	-0.75	-1.37
Manganese	-0.03	0.62	0.28	0.74	0.52	0.37	0.11	0.54	0.63	0.61
Molybdenum	0.34	1.81	0.25	1.12	-0.23	1.48	0.97	1.28	0.17	0.00
Nickel	-1.87	0.26	-1.09	-0.98	-1.13	0.08	-1.62	-0.74	-0.76	-1.96
Selenium	-0.17	-0.31	-0.48	-0.47	-0.71	-1.59	-0.45	-0.48	-0.51	-0.77
Silver	-0.46	-0.43	0.00	-0.68	-0.28	-0.57	0.13	-0.58	-0.16	-0.79
Strontium	-1.33	-1.31	-1.14	-0.15	-1.37	-1.27	-1.16	-0.88	-0.84	-0.58
Thallium	-0.46	-0.10	-0.19	-1.04	-1.18	0.56	-0.86	-0.21	0.08	-0.85
Tin	52.74	1.97	15.13	2.10	40.83	1.89	16.51	4.69	30.22	58.62
Titanium	-4.35	-0.93	-2.33	-0.72	-3.14	-1.45	-2.13	-1.31	-2.29	-2.48
Uranium	-1.09	-0.60	-0.97	-1.11	-1.49	-0.74	-0.93	-0.60	-0.81	-1.59
Vanadium		0.23	-0.57	-0.12	-0.74	-0.47	-0.30	-0.17	0.01	0.13
Zinc		0.08	-1.35	-1.06	-0.69	-0.06	-1.51	-0.89	-0.74	-1.48

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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Z-Score Summary

Environment Canada Proficiency Testing Program for Inorganic Environmental Substances

FP PT for Total Phosphorus in Water - Study Code 0106

August-21-2015

Your laboratory code is F293

	1	2	3	4	5	6	7	8	9	10
Total Phosphorus		-0.30	-0.47	0.44	0.28	0.71	0.20	0.95	-0.85	1.08

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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Z-Score Summary

Environment Canada Proficiency Testing Program for Inorganic Environmental Substances

FP PT - Total Mercury in Water-low level - Study Code 0106

August-21-2015

Your laboratory code is F293

	1	2	3	4	5
Mercury	-0.64	-1.06	-0.76	-0.82	-0.63

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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Z-Score Summary

Environment Canada Proficiency Testing Program for Inorganic Environmental Substances

FP PT for Trace Elements in Sediment - Study Code 0106

August-21-2015

Your laboratory code is F293

	1	2	3	4	5
Aluminum	0.47	0.39	0.16	0.42	-0.09
Antimony		-1.15			-0.96
Arsenic	0.00	-0.14	-0.57	0.07	0.26
Barium	-0.84	-1.01	-0.36	-0.81	-1.17
Beryllium	-0.37	-0.03	-0.44	0.22	0.13
Boron	0.15	0.19	0.15	0.08	-0.50
Cadmium	-0.32	-0.64	-0.48	-0.44	-0.26
Calcium	0.67	1.13	0.65	1.06	0.26
Chromium	-0.29	0.01	-0.12	-0.17	0.04
Cobalt	-0.28	0.18	0.08	0.50	0.82
Copper	-0.59	0.44	-0.42	-0.53	-0.44
Iron	0.58	0.77	0.75	0.78	0.19
Lead	-1.42	1.45	-1.15	-0.96	0.92
Magnesium	0.54	0.73	0.20	0.60	0.23
Manganese	-0.53	-0.57	-0.32	0.75	-0.03
Mercury	-0.62	-0.03	-0.41	-0.11	-0.35
Molybdenum	-0.09	-0.08	0.02	0.21	0.41
Nickel	-0.38	-0.19	0.27	-0.12	0.11
Potassium	0.20	0.11	0.28	0.30	-0.31
Selenium	0.51	1.05	0.06	1.09	0.32
Silver	-0.61	-0.34	-0.72	-0.52	-0.11
Sodium	0.00	0.42	0.59	0.33	-0.40
Strontium	-0.31	0.03	-0.45	0.00	-0.52
Thallium	-0.23	-0.81	-0.16	-0.96	-1.00
Tin	3.42	0.40	7.01	-0.08	-0.10
Titanium	0.60	0.28	-0.28	0.01	-0.08
Vanadium	0.11	0.03	-0.22	0.15	-0.37
Zinc	-0.63	-0.89	-0.51	-0.66	0.16

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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