

BINDER #8 – Appendix K to O

**GEOCHEMICAL SAMPLING, TRENCHING AND DIAMOND DRILLING
ASSESSMENT REPORT FOR 2007
FRASERGOLD PROPERTY, WILLIAMS LAKE AREA, BRITISH COLUMBIA**

APPENDIX	NAME	PAGE
APP.K	Specific Gravity Results	119
APP.L	Check Assay Results	123
APP.M	EBA, Water Quality Sampling Summary	129
APP.N	Water Quality Sampling Laboratory Results.....	130
APP. O	List of software programs used in the support of exploration & development and report preparation	131

Geochemical Sampling, Trenching and Diamond Drilling Assessment Report for 2007
Frasergold Property, Williams Lake Area, British Columbia

Appendix K – Specific Gravity Results

HAWTHORNE GOLD CORPORATION - SG SAMPLES

CBP carbonaceous black phyllite
 KP knotted phyllite
 SLST siltstone
 BBP black banded phyllite
 QV quartz vein
 LS limestone
 P phyllite

Sample #	Hole #	From (m)	To (m)	Length (m)	Unit	Comments	Dry Weight (g)	Bath Weight (g)	Specific Gravity
SG-01	07-304B	175.39	175.57	0.18	CBP		1291.90	827.32	2.781
SG-02	07-304B	197.35	197.6	0.25	BBP	high quartz	1392.75	899.94	2.826
SG-03	07-304B	212.25	212.43	0.18	BBP		1443.55	924.94	2.783
SG-04	07-304B	224.32	224.54	0.22	BBP		1425.45	908.04	2.755
SG-05	07-304B	255.9	256.1	0.2	BBP		1268.40	805.16	2.738
SG-06	07-303	9.36	9.55	0.19	KP		1250.90	805.60	2.809
SG-07	07-303	20.19	20.42	0.23	KP	slightly silty	1405.95	898.86	2.773
SG-08	07-303	30	30.2	0.2	KP		870.78	555.70	2.764
SG-09	07-303	39.55	39.73	0.18	KP		1030.86	643.68	2.662
SG-10	07-303	47.64	47.85	0.21	KP		1077.32	696.90	2.832
SG-11	07-303	55.85	56.08	0.23	KP		1336.75	865.28	2.835
SG-12	07-303	66.71	66.89	0.18	KP		1609.00	1043.52	2.845
SG-13	07-303	75.44	75.68	0.24	KP		1618.60	1049.37	2.843
SG-14	07-303	83.05	83.24	0.19	KP		1350.70	874.40	2.836
SG-15	07-303	91.74	91.93	0.19	KP		1332.85	860.56	2.822
SG-16	07-303	101.99	102.21	0.22	KP		1366.85	884.28	2.832
SG-17	07-303	108.45	108.65	0.2	KP		1347.60	874.68	2.850
SG-18	07-303	116.16	116.38	0.22	KP		1396.65	904.80	2.840
SG-19	07-303	126.54	126.78	0.24	CBP		1441.25	920.09	2.765
SG-20	07-303	139.37	139.61	0.24	CBP		1489.50	946.70	2.744
SG-21	07-303	150.02	150.24	0.22	CBP		1297.85	828.76	2.767
SG-22	07-303	158.2	158.38	0.18	CBP		1657.40	1056.58	2.759
SG-23	07-303	165.72	165.93	0.21	CBP		1356.05	868.24	2.780
SG-24	07-303	176.4	176.59	0.19	CBP		1191.48	758.38	2.751
SG-25	07-303	185.13	185.35	0.22	CBP		1417.90	904.64	2.763

Geochemical Sampling, Trenching and Diamond Drilling Assessment Report for 2007
Frasergold Property, Williams Lake Area, British Columbia

Sample #	Hole #	From (m)	To (m)	Length (m)	Unit	Comments	Dry Weight (g)	Bath Weight (g)	Specific Gravity
SG-26	07-303	192.72	192.87	0.15	BBP		938.52	596.75	2.746
SG-27	07-303	201.52	201.72	0.2	BBP	40% quartz	1401.80	890.92	2.744
SG-28	07-303	210.73	210.89	0.16	BBP		971.28	616.58	2.738
SG-29	07-303	218.54	218.71	0.17	BBP		956.78	610.52	2.763
SG-30	07-303	227.29	227.51	0.22	BBP		1483.05	943.40	2.748
SG-31	07-303	236.45	236.61	0.16	BBP		1064.54	676.90	2.746
SG-32	07-297	6.95	7.17	0.22	KP		1043.76	669.98	2.792
SG-33	07-297	18.48	18.69	0.21	KP		1261.95	815.74	2.828
SG-34	07-297	26.87	27.05	0.18	KP	25% quartz	1196.10	775.34	2.843
SG-35	07-297	35.98	36.18	0.2	KP	high graphite; 30% quartz	1428.70	937.64	2.909
SG-36	07-297	45.29	45.43	0.14	KP		1129.10	732.04	2.844
SG-37	07-297	51.05	51.23	0.18	KP		1365.65	884.38	2.838
SG-38	07-297	65.67	65.84	0.17	KP		1273.75	822.66	2.824
SG-39	07-297	85.23	85.4	0.17	KP		1235.05	803.84	2.864
SG-40	07-297	108.51	108.67	0.16	KP		1274.80	820.94	2.809
SG-41	07-297	123.75	123.91	0.16	BBP/KP	high silt content	1072.52	690.78	2.810
SG-42	07-297	138.12	138.29	0.17	BBP	40% quartz	1260.40	806.06	2.774
SG-43	07-297	153.21	153.36	0.15	KP		1102.56	714.82	2.844
SG-44	07-297	166.27	166.42	0.15	BBP		990.70	644.06	2.858
SG-45	07-297	182.26	182.4	0.14	BBP		1124.20	731.74	2.864
SG-46	07-297	200.25	200.4	0.15	CBP		1146.62	732.16	2.767
SG-47	07-301	14.82	14.98	0.16	KP		1227.20	794.30	2.835
SG-48	07-301	30.38	30.54	0.16	KP		1224.55	793.36	2.840
SG-49	07-301	45.79	45.99	0.2	KP		1360.45	875.04	2.803
SG-50	07-301	59.58	59.74	0.16	SLST		836.96	536.39	2.785
SG-51	07-301	76.48	76.64	0.16	KP		1327.90	870.64	2.904
SG-52	07-301	93.91	94.07	0.16	KP		1250.20	805.94	2.814
SG-53	07-301	106.21	106.39	0.18	KP		1386.85	898.58	2.840
SG-54	07-301	120.7	120.84	0.14	KP		1125.64	729.96	2.845
SG-55	07-301	139.12	139.29	0.17	BBP		1386.55	898.48	2.841
SG-56	07-301	161.94	162.14	0.2	BBP		1260.15	808.42	2.790
SG-57	07-301	170.71	170.89	0.18	BBP		1436.00	917.22	2.768
SG-58	07-301	178.61	178.77	0.16	CBP		1071.16	682.72	2.758
SG-59	07-301	186.75	186.96	0.21	BBP		1480.60	950.70	2.794
SG-60	07-301	203.12	203.31	0.19	BBP		1394.05	885.98	2.744
SG-61	07-298	17.95	18.12	0.17	KP		1286.08	835.70	2.856
SG-62	07-298	26.87	27.05	0.18	SLST		908.46	577.26	2.743

Geochemical Sampling, Trenching and Diamond Drilling Assessment Report for 2007
Frasergold Property, Williams Lake Area, British Columbia

Sample #	Hole #	From (m)	To (m)	Length (m)	Unit	Comments	Dry Weight (g)	Bath Weight (g)	Specific Gravity
SG-63	07-298	35.36	35.52	0.16	QUARTZ		1100.86	682.94	2.634
SG-64	07-298	41.15	41.33	0.18	KP		857.76	555.00	2.833
SG-65	07-298	53.66	53.85	0.19	KP		1569.10	1024.90	2.883
SG-66	07-298	68.7	68.88	0.18	KP		1489.15	963.72	2.834
SG-67	07-298	78.68	78.87	0.19	KP		1646.10	1070.68	2.861
SG-68	07-298	87.98	88.19	0.21	KP		1710.15	1116.02	2.878
SG-69	07-298	99.81	99.93	0.12	KP		1043.04	677.36	2.852
SG-70	07-298	113.14	113.3	0.16	KP/SLST		1259.35	800.48	2.744
SG-71	07-298	123.45	123.59	0.14	KP		1189.86	774.14	2.862
SG-72	07-298	135.64	135.77	0.13	KP		887.12	574.99	2.842
SG-73	07-298	149.88	150.06	0.18	BBP/KP		1430.55	936.58	2.896
SG-74	07-298	160.42	160.57	0.15	KP		1250.90	810.62	2.841
SG-75	07-298	169.02	169.22	0.2	KP		1492.30	958.68	2.797
SG-76	07-298	177.37	177.55	0.18	BBP/KP		1458.90	952.66	2.882
SG-77	07-298	189.68	189.84	0.16	BBP		1289.50	836.52	2.847
SG-78	07-298	199.04	199.18	0.14	BBP		1146.92	743.00	2.839
SG-79	07-298	212.44	212.64	0.2	BBP		1619.10	1037.20	2.782
SG-80	07-298	225.28	225.43	0.15	BBP		1217.10	773.10	2.741
SG-81	07-299	7.78	7.94	0.16	KP		1098.18	707.42	2.810
SG-82	07-299	20.15	20.33	0.18	KP		1530.45	992.14	2.843
SG-83	07-299	36.35	36.53	0.18	KP		1605.40	1046.92	2.875
SG-84	07-299	45.36	45.51	0.15	BBP		1028.52	660.18	2.792
SG-85	07-299	56.35	56.5	0.15	BBP		1371.10	885.16	2.822
SG-86	07-299	69.19	69.36	0.17	BBP		1407.10	913.92	2.853
SG-87	07-299	83.93	84.13	0.2	KP		1386.70	882.50	2.750
SG-88	07-299	99.1	99.33	0.23	KP		1543.85	983.92	2.757
SG-89	07-299	120.59	120.78	0.19	P		1349.45	869.70	2.813
SG-90	07-299	135.67	135.9	0.23	BBP		1510.70	987.18	2.886
SG-91	07-299	150.15	150.34	0.19	BBP		1440.65	919.48	2.764
SG-92	07-299	170	170.18	0.18	BBP		1210.50	772.78	2.765
SG-93	07-299	190.71	190.9	0.19	BBP		1421.45	910.72	2.783
SG-94	07-299	208.59	208.77	0.18	BBP		1388.05	890.32	2.789
SG-95	07-305	14.77	14.97	0.2	KP		1747.65	1134.46	2.850
SG-96	07-305	31.93	32.13	0.2	KP		1202.65	789.56	2.911
SG-97	07-305	42.63	42.83	0.2	BBP		1370.50	891.62	2.862
SG-98	07-305	59.86	60.05	0.19	KP		1441.35	931.56	2.827
SG-99	07-305	76.44	76.63	0.19	KP/BBP		1068.36	692.94	2.846
SG-100	07-305	86.87	87.05	0.18	KP		1418.40	925.22	2.876
SG-101	07-305	100.56	100.73	0.17	KP		1471.75	952.28	2.833
SG-102	07-305	114.55	114.7	0.15	KP		1223.85	794.56	2.851

Geochemical Sampling, Trenching and Diamond Drilling Assessment Report for 2007
Frasergold Property, Williams Lake Area, British Columbia

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SG-103	07-305	134.07	134.22	0.15	KP		1350.80	876.94	2.851
SG-104	07-305	158.78	158.97	0.19	SLST/QV		1511.85	965.92	2.769
SG-105	07-305	174.77	174.93	0.16	KP		1455.15	943.54	2.844
SG-106	07-305	190.8	190.95	0.15	KP		1312.10	848.78	2.832
SG-107	07-305	205.85	206.02	0.17	KP		1395.40	908.18	2.864
SG-108	07-305	220.98	221.15	0.17	KP		1431.30	928.84	2.849
SG-109	07-305	237.45	237.6	0.15	BBP/KP		1358.25	887.38	2.885
SG-110	07-302	89.48	89.67	0.19	KP		1386.75	891.40	2.800
SG-111	07-302	101.35	101.53	0.18	KP		1295.65	840.32	2.846
SG-112	07-302	112.03	112.18	0.15	KP		1211.45	785.12	2.842
SG-113	07-302	124.62	124.77	0.15	KP		1006.10	648.48	2.813
SG-114	07-302	137.34	137.56	0.22	BBP		1349.25	870.06	2.816
SG-115	07-302	150.29	150.48	0.19	LS		1193.34	762.56	2.770
SG-116	07-302	163.31	163.48	0.17	KP		1145.00	740.14	2.828
SG-117	07-302	176.15	176.35	0.2	KP		1456.40	937.36	2.806
SG-118	07-302	196.6	196.83	0.23	KP		1569.25	1025.36	2.885
SG-119	07-302	204.27	204.48	0.21	KP		1287.00	838.28	2.868
SG-120	07-302	218.98	219.14	0.16	BBP		988.30	639.26	2.831
SG-121	07-302	228.31	228.54	0.23	BBP		1714.90	1111.34	2.841
SG-122	07-306	169.58	169.77	0.19	KP		1430.70	931.20	2.864
SG-123	07-306	180.98	181.17	0.19	KP/SLST	siliceous sediment with knots	1280.40	828.12	2.831
SG-124	07-306	192.25	192.45	0.2	KP		1400.65	900.24	2.799
SG-125	07-306	208.1	208.26	0.16	KP		992.76	640.38	2.817
SG-126	07-306	213.75	213.91	0.16	KP	10% quartz, sericite lenses	1305.80	846.86	2.845
SG-127	07-306	231.79	231.97	0.18	BBP	minor knots	1233.95	803.04	2.864
SG-128	07-306	239.88	240.06	0.18	BBP	minor knots	1389.45	904.94	2.868

Geochemical Sampling, Trenching and Diamond Drilling Assessment Report for 2007
Frasergold Property, Williams Lake Area, British Columbia

Appendix L– Check Assay Results, Comparison of ALS Chemex Lab Results to iPL Lab Results

Comparison of Check Assay Results between ALS Chemex Lab and iPL Lab

ALS SampleID	iPL SampleID	Hole_ID	From (m)	To (m)	Sample Type	QC Category	Au ppm FA ALS	Au ppm FA iPL	Au ppm SFA iPL
C138007	138007	07295	9.95	10.97	HCORE	CHKDUP	0.014		0.02
C138027	138027	07295	29.27	30.28	HCORE	CHKDUP	0.013		0.02
C138047	138047	07295	45.51	46.53	HCORE	CHKDUP	0.251		0.28
C138067	138067	07295	61.79	62.8	HCORE	CHKDUP	0.211		0.19
C138087	138087	07295	81.08	82.09	HCORE	CHKDUP	0.11		0.11
C138107	138107	07295	97.33	98.35	HCORE	CHKDUP	0.0025		0.01
C138127	138127	07295	113.59	114.6	HCORE	CHKDUP	0.166		0.18
C138147	138147	07295	132.89	133.9	HCORE	CHKDUP	0.302		0.41
C138167	138167	07295	149.15	150.17	HCORE	CHKDUP	0.145		0.15
C138187	138187	07295	165.39	166.4	HCORE	CHKDUP	0.023		0.03
C138207	138207	07295	184.71	185.72	HCORE	CHKDUP	0.036	0.03	
C138227	138227	07295	200.96	201.98	HCORE	CHKDUP	0.007	0.02	
C138247	138247	07295	217.22	218.24	HCORE	CHKDUP	1.105	1.18	1.36
C138267	138267	07296	16.05	17.07	HCORE	CHKDUP	0.03	0.03	
C138287	138287	07296	32.31	33.32	HCORE	CHKDUP	0.339	0.28	0.29
C138307	138307	07296	48.56	49.58	HCORE	CHKDUP	0.729	0.77	1.03
C138327	138327	07296	67.87	68.88	HCORE	CHKDUP	0.221	0.25	0.25
C138367	138367	07296	100.37	101.39	HCORE	CHKDUP	0.124		0.09
C138387	138387	07296	119.68	120.7	HCORE	CHKDUP	0.186		0.12
C138407	138407	07296	135.94	136.95	HCORE	CHKDUP	0.428		0.45
C138427	138427	07296	152.19	153.21	HCORE	CHKDUP	2.28		2.12
C138447	138447	07296	171.51	172.52	HCORE	CHKDUP	0.178		0.23
C138467	138467	07296	187.76	188.77	HCORE	CHKDUP	0.058		0.06
C138487	138487	07296	204.02	205.03	HCORE	CHKDUP	0.014		0.005
C138507	138507	07304A	9.24	10.26	HCORE	CHKDUP	0.008		0.02
C138527	138527	07304A	25.5	26.52	HCORE	CHKDUP	0.125		0.08
C138547	138547	07304A	41.76	42.77	HCORE	CHKDUP	0.013		0.01
C138567	138567	07304A	61.06	62.08	HCORE	CHKDUP	0.167		0.21
C138587	138587	07304A	77.32	78.33	HCORE	CHKDUP	0.489		0.64
C138607	138607	07304A	93.57	94.58	HCORE	CHKDUP	0.024		0.03
C138627	138627	07304A	112.87	113.89	HCORE	CHKDUP	0.028		0.05
C138647	138647	07304A	129.13	130.15	HCORE	CHKDUP	0.009	0.01	
C138667	138667	07304A	145.39	146.41	HCORE	CHKDUP	0.0025	0.005	
C138687	138687	07304B	13.31	14.33	HCORE	CHKDUP	0.01	0.01	
C138707	138707	07304B	29.57	30.58	HCORE	CHKDUP	0.008	0.01	
C138727	138727	07304B	45.82	46.84	HCORE	CHKDUP	0.008	0.01	

Geochemical Sampling, Trenching and Diamond Drilling Assessment Report for 2007
Frasergold Property, Williams Lake Area, British Columbia

ALS SampleID	iPL SampleID	Hole_ID	From (m)	To (m)	Sample Type	QC Category	Au ppm FA ALS	Au ppm FA iPL	Au ppm SFA iPL
C138747	138747	07304B	65.12	66.14	HCORE	CHKDUP	0.072		0.14
C138767	138767	07304B	81.38	82.4	HCORE	CHKDUP	1.605		1.98
C138787	138787	07304B	97.63	98.05	HCORE	CHKDUP	0.024		0.02
C138807	138807	07304B	116.94	117.96	HCORE	CHKDUP	0.408		0.52
C138827	138827	07304B	133.2	134.21	HCORE	CHKDUP	0.0025		0.01
C138847	138847	07304B	149.45	150.47	HCORE	CHKDUP	0.006		0.02
C138867	138867	07304B	168.76	169.77	HCORE	CHKDUP	0.009	0.005	
C138887	138887	07304B	185.01	186.03	HCORE	CHKDUP	0.011	0.01	
C138907	138907	07304B	201.27	202.29	HCORE	CHKDUP	0.009	0.01	
C138927	138927	07304B	220.58	221.59	HCORE	CHKDUP	0.018	0.01	
C138947	138947	07304B	236.83	237.85	HCORE	CHKDUP	0.013	0.01	
C138967	138967	07304B	253.09	254.1	HCORE	CHKDUP	0.013	0.01	
C138987	138987	07303	14.33	15.34	HCORE	CHKDUP	0.0025	0.005	
C139007	139007	07303	30.58	31.6	HCORE	CHKDUP	0.02	0.01	
C139027	139027	07303	46.84	47.85	HCORE	CHKDUP	0.012	0.02	
C139047	139047	07303	66.14	67.16	HCORE	CHKDUP	0.014	0.01	
C139067	139067	07303	82.4	83.42	HCORE	CHKDUP	0.018	0.01	
C139087	139087	07303	98.66	99.67	HCORE	CHKDUP	0.051	0.02	
C139107	139107	07303	117.96	118.98	HCORE	CHKDUP	0.215	0.4	0.31
C139127	139127	07303	134.22	135.22	HCORE	CHKDUP	0.006	0.005	
C139147	139147	07303	150.48	151.49	HCORE	CHKDUP	0.011	0.01	
C139167	139167	07303	169.77	170.79	HCORE	CHKDUP	0.006	0.005	
C139187	139187	07303	186.03	187.05	HCORE	CHKDUP	0.013	0.02	
C139207	139207	07303	202.29	203.3	HCORE	CHKDUP	0.01	0.01	
C139227	139227	07303	221.59	222.61	HCORE	CHKDUP	0.014	0.01	
C139247	139247	07297	3.86	4.88	HCORE	CHKDUP	0.012	0.01	
C139267	139267	07297	20.12	21.13	HCORE	CHKDUP	0.007		0.005
C139287	139287	07297	39.42	40.44	HCORE	CHKDUP	0.101		0.14
C139307	139307	07297	55.67	56.69	HCORE	CHKDUP	0.186		0.21
C139327	139327	07297	71.93	72.95	HCORE	CHKDUP	0.009		0.01
C139347	139347	07297	91.24	92.25	HCORE	CHKDUP	0.094		0.08
C139367	139367	07297	107.49	108.51	HCORE	CHKDUP	0.255		0.26
C139387	139387	07297	123.75	124.76	HCORE	CHKDUP	0.094		0.09
C139407	139407	07297	143.06	144.07	HCORE	CHKDUP	0.037		0.01
C139427	139427	07297	159.31	160.32	HCORE	CHKDUP	0.016	0.01	
C139447	139447	07297	175.56	176.58	HCORE	CHKDUP	0.0025	0.01	
C139467	139467	07297	194.87	195.89	HCORE	CHKDUP	0.014	0.01	
C139487	139487	07297	211.13	212.14	HCORE	CHKDUP	0.0025	0.01	
C139507	139507	07301	18.08	19.1	HCORE	CHKDUP	0.017	0.02	
C139527	139527	07301	37.39	38.4	HCORE	CHKDUP	0.047	0.04	

Geochemical Sampling, Trenching and Diamond Drilling Assessment Report for 2007
Frasergold Property, Williams Lake Area, British Columbia

ALS SampleID	iPL SampleID	Hole_ID	From (m)	To (m)	Sample Type	QC Category	Au ppm FA ALS	Au ppm FA iPL	Au ppm SFA iPL
C139547	139547	07301	53.64	54.66	HCORE	CHKDUP	0.63	0.59	0.75
C139567	139567	07301	69.9	70.92	HCORE	CHKDUP	0.195	0.4	0.24
C139587	139587	07301	89.21	90.22	HCORE	CHKDUP	0.062	0.06	
C139607	139607	07301	105.46	106.48	HCORE	CHKDUP	0.006	0.005	
C139627	139627	07301	121.72	122.74	HCORE	CHKDUP	0.105	0.09	
C139647	139647	07301	141.02	142.03	HCORE	CHKDUP	0.027	0.02	
C139667	139667	07301	157.28	158.3	HCORE	CHKDUP	0.016	0.01	
C139687	139687	07301	173.53	174.54	HCORE	CHKDUP	0.0025	0.005	
C139707	139707	07301	192.84	193.85	HCORE	CHKDUP	0.005	0.01	
C139727	139727	07298	4.88	6.4	HCORE	CHKDUP	0.005	0.01	
C139747	139747	07298	22.15	23.16	HCORE	CHKDUP	0.019	0.02	
C139767	139767	07298	41.45	42.47	HCORE	CHKDUP	0.031	0.03	
C139787	139787	07298	57.71	58.73	HCORE	CHKDUP	0.679	0.73	0.84
C139807	139807	07298	73.97	74.98	HCORE	CHKDUP	0.022	0.01	
C139827	139827	07298	93.27	94.29	HCORE	CHKDUP	0.045	0.05	
C139847	139847	07298	109.53	110.55	HCORE	CHKDUP	0.153	0.11	0.12
C139867	139867	07298	125.79	126.8	HCORE	CHKDUP	0.213	0.2	0.26
C139887	139887	07298	145.08	146.1	HCORE	CHKDUP	0.079	0.06	
C139907	139907	07298	161.33	162.35	HCORE	CHKDUP	0.168	0.13	0.19
C139927	139927	07298	177.6	178.61	HCORE	CHKDUP	0.013	0.01	
C139947	139947	07298	196.9	197.92	HCORE	CHKDUP	0.117	0.07	
C139967	139967	07298	213.16	214.18	HCORE	CHKDUP	0.0025	0.01	
C139987	139987	07299	5.18	6.19	HCORE	CHKDUP	0.015	0.01	
C140007	140007	07299	24.48	25.5	HCORE	CHKDUP		0.12	0.1
C140027	140027	07299	40.74	41.76	HCORE	CHKDUP	0.016	0.02	
C140047	140047	07299	57	58.01	HCORE	CHKDUP		0.55	0.43
C140067	140067	07299	76.3	77.32	HCORE	CHKDUP	0.038	0.04	
C140087	140087	07299	92.56	93.57	HCORE	CHKDUP		1.25	1.57
C140107	140107	07299	108.81	109.83	HCORE	CHKDUP		2.33	3.61
C140127	140127	07299	128.12	129.14	HCORE	CHKDUP	1.42	1.14	1.37
C140147	140147	07299	144.38	145.39	HCORE	CHKDUP	0.058	0.05	
C140167	140167	07299	160.63	161.65	HCORE	CHKDUP	0.016	0.01	
C140187	140187	07299	179.94	180.96	HCORE	CHKDUP	0.0025	0.01	
C140207	140207	07299	196.2	197.21	HCORE	CHKDUP	0.0025	0.01	
C140227	140227	07305	3.05	4.11	HCORE	CHKDUP	0.043	0.02	
C140247	140247	07305	22.46	23.47	HCORE	CHKDUP	0.136	0.06	
C140267	140267	07305	38.71	39.73	HCORE	CHKDUP	0.007	0.01	
C140287	140287	07305	54.97	55.99	HCORE	CHKDUP	0.014	0.01	
C140307	140307	07305	74.28	75.29	HCORE	CHKDUP	0.034	0.03	
C140327	140327	07305	90.53	91.54	HCORE	CHKDUP	0.007	0.005	

Geochemical Sampling, Trenching and Diamond Drilling Assessment Report for 2007
Frasergold Property, Williams Lake Area, British Columbia

ALS SampleID	iPL SampleID	Hole_ID	From (m)	To (m)	Sample Type	QC Category	Au ppm FA ALS	Au ppm FA iPL	Au ppm SFA iPL
C140347	140347	07305	106.78	107.8	HCORE	CHKDUP	0.0025	0.005	
C140367	140367	07305	126.08	127.1	HCORE	CHKDUP	0.009	0.01	
C140387	140387	07305	142.34	143.36	HCORE	CHKDUP	0.348	0.17	0.18
C140407	140407	07305	158.6	159.62	HCORE	CHKDUP	0.031	0.03	
C140427	140427	07305	177.91	178.92	HCORE	CHKDUP	0.221	0.33	0.54
C140447	140447	07305	194.57	195.58	HCORE	CHKDUP	0.053	0.05	
C140467	140467	07305	210.83	211.84	HCORE	CHKDUP	0.249	0.24	0.45
C140487	140487	07305	229.82	230.84	HCORE	CHKDUP	0.089	0.05	
C140507	140507	07300	2.02	3.02	HCORE	CHKDUP	0.01	0.02	
C140527	140527	07300	18.24	19.26	HCORE	CHKDUP	1.4	1.19	1.68
C140547	140547	07300	37.7	38.71	HCORE	CHKDUP	0.0025	0.005	
C140567	140567	07300	55.99	57	HCORE	CHKDUP	0.0025	0.005	
C140587	140587	07300	72.24	73.26	HCORE	CHKDUP	0.005	0.01	
C140607	140607	07300	91.54	92.56	HCORE	CHKDUP	0.009	0.02	
C140627	140627	07300	107.8	108.81	HCORE	CHKDUP	0.02	0.03	
C140647	140647	07300	124.05	125.07	HCORE	CHKDUP	1.145	1.36	1.21
C140667	140667	07300	143.36	144.38	HCORE	CHKDUP	0.021	0.03	
C140687	140687	07300	159.62	160.63	HCORE	CHKDUP	0.112	0.13	0.11
C140707	140707	07300	176.89	177.91	HCORE	CHKDUP	0.721	0.7	0.95
C140727	140727	07300	196.2	197.21	HCORE	CHKDUP	0.939	0.9	0.9
C140747	140747	07300	212.45	213.47	HCORE	CHKDUP	0.527	0.03	
C140767	140767	07302	13.32	14.33	HCORE	CHKDUP	0.009	0.005	
C140787	140787	07302	32.61	33.63	HCORE	CHKDUP	0.0025	0.01	
C140807	140807	07302	48.87	49.89	HCORE	CHKDUP	0.0025	0.005	
C140827	140827	07302	65.13	66.14	HCORE	CHKDUP	0.007	0.01	
C140847	140847	07302	84.43	85.45	HCORE	CHKDUP	0.037	0.04	
C140867	140867	07302	100.69	101.71	HCORE	CHKDUP	0.028	0.04	
C140887	140887	07302	116.95	117.96	HCORE	CHKDUP	0.466	0.7	0.68
C140907	140907	07302	136.25	137.27	HCORE	CHKDUP	0.461	0.48	0.47
C140927	140927	07302	152.51	153.52	HCORE	CHKDUP	0.14	0.13	0.14
C140947	140947	07302	168.76	169.77	HCORE	CHKDUP	0.137	0.13	0.17
C140967	140967	07302	188.06	189.08	HCORE	CHKDUP	0.045	0.04	
C140987	140987	07302	204.32	205.34	HCORE	CHKDUP	0.005	0.01	
C141007	141007	07302	220.58	221.59	HCORE	CHKDUP	0.339	0.45	0.4
C141027	141027	07306	9.25	10.27	HCORE	CHKDUP	0.012	0.03	
C141047	141047	07306	25.51	26.52	HCORE	CHKDUP	0.023	0.03	
C141067	141067	07306	41.76	42.78	HCORE	CHKDUP	0.008	0.03	
C141087	141087	07306	61.07	62.08	HCORE	CHKDUP	0.011	0.03	
C141107	141107	07306	77.32	78.33	HCORE	CHKDUP	0.006	0.02	
C141127	141127	07306	93.57	94.82	HCORE	CHKDUP	0.086	0.09	

Geochemical Sampling, Trenching and Diamond Drilling Assessment Report for 2007
Frasergold Property, Williams Lake Area, British Columbia

ALS SampleID	iPL SampleID	Hole_ID	From (m)	To (m)	Sample Type	QC Category	Au ppm FA ALS	Au ppm FA iPL	Au ppm SFA iPL
C141147	141147	07306	112.88	113.9	HCORE	CHKDUP	0.0025	0.01	
C141167	141167	07306	129.14	130.15	HCORE	CHKDUP	0.009	0.01	
C141187	141187	07306	145.39	146.41	HCORE	CHKDUP	0.138	0.08	
C141207	141207	07306	164.7	165.72	HCORE	CHKDUP	0.964	1.14	1.21
C141227	141227	07306	180.96	181.97	HCORE	CHKDUP	0.026	0.02	
C141247	141247	07306	197.21	198.22	HCORE	CHKDUP	0.015	0.02	
C141267	141267	07306	216.51	217.53	HCORE	CHKDUP	0.035	0.05	
C141287	141287	07306	232.77	233.78	HCORE	CHKDUP	0.006	0.02	
C141307	141307	07306	249.02	250.04	HCORE	CHKDUP	0.006	0.01	
C141327	141327	07307	4.88	6.4	HCORE	CHKDUP	0.0025	0.01	
C141347	141347	07307	22.15	23.16	HCORE	CHKDUP	0.006	0.01	
C141367	141367	07307	38.4	39.42	HCORE	CHKDUP	0.078	0.08	
C141387	141387	07307	57.71	58.73	HCORE	CHKDUP	0.0025	0.01	
C141407	141407	07307	73.97	74.98	HCORE	CHKDUP	0.0025	0.005	
C141427	141427	07307	90.22	91.24	HCORE	CHKDUP	0.02	0.02	
C141447	141447	07307	109.53	110.55	HCORE	CHKDUP	0.014	0.02	
C141467	141467	07307	125.79	126.8	HCORE	CHKDUP	0.02	0.01	
C141487	141487	07307	142.04	143.06	HCORE	CHKDUP	0.059	0.06	
C141507	141507	07307	161.34	162.36	HCORE	CHKDUP	0.156	0.15	0.18
C141527	141527	07307	177.6	178.61	HCORE	CHKDUP	0.038	0.04	
C141547	141547	07307	193.85	194.87	HCORE	CHKDUP	0.355	0.39	0.44
C141567	141567	07307	213.16	214.18	HCORE	CHKDUP	0.037	0.09	
C141587	141587	07307	229.42	230.43	HCORE	CHKDUP	0.006	0.02	
C141607	141607	07307	245.67	246.69	HCORE	CHKDUP	0.165	0.25	0.2
C141627	141627	07308	19.41	20.42	HCORE	CHKDUP	0.0025	0.01	
C141647	141647	07308	35.66	36.67	HCORE	CHKDUP	0.005	0.01	
C141667	141667	07308	51.92	52.94	HCORE	CHKDUP	0.0025	0.005	
C141687	141687	07308	71.23	72.24	HCORE	CHKDUP	0.013	0.005	
C141707	141707	07308	87.47	88.49	HCORE	CHKDUP	0.005	0.01	
C141727	141727	07308	103.73	104.75	HCORE	CHKDUP	0.381	0.27	0.44
C141747	141747	07308	123.04	124.05	HCORE	CHKDUP	0.018	0.03	
C141767	141767	07308	139.29	140.29	HCORE	CHKDUP	0.291	0.19	0.23
C141787	141787	07308	155.55	156.57	HCORE	CHKDUP	0.083	0.09	
C141807	141807	07308	174.86	175.87	HCORE	CHKDUP	0.005	0.005	
C141827	141827	07308	191.11	192.13	HCORE	CHKDUP	0.136	0.11	0.11
C141847	141847	07308	207.37	208.39	HCORE	CHKDUP	0.092	0.07	
C141867	141867	07308	226.68	227.69	HCORE	CHKDUP	0.02	0.03	
C141887	141887	07309	7.92	8.94	HCORE	CHKDUP	0.008	0.005	
C141907	141907	07309	24.18	25.2	HCORE	CHKDUP	0.008	0.005	
C141927	141927	07309	43.49	44.5	HCORE	CHKDUP	0.006	-0.01	

Geochemical Sampling, Trenching and Diamond Drilling Assessment Report for 2007
Frasergold Property, Williams Lake Area, British Columbia

ALS SampleID	iPL SampleID	Hole_ID	From (m)	To (m)	Sample Type	QC Category	Au ppm FA ALS	Au ppm FA iPL	Au ppm SFA iPL
C141947	141947	07309	59.74	60.76	HCORE	CHKDUP	0.018	0.02	
C141967	141967	07309	76	77.02	HCORE	CHKDUP	0.02	0.01	
C141987	141987	07309	95.31	96.32	HCORE	CHKDUP	0.148	0.14	0.16
C142007	142007	07309	111.56	112.58	HCORE	CHKDUP	0.231	0.16	0.19
C142027	142027	07309	127.82	128.84	HCORE	CHKDUP	0.047	0.04	
C142047	142047	07309	147.12	148.13	HCORE	CHKDUP	0.221	0.27	0.3
C142067	142067	07309	163.37	164.39	HCORE	CHKDUP	0.031	0.04	
C142087	142087	07309	179.63	180.65	HCORE	CHKDUP	0.41	0.44	0.33
C142107	142107	07309	198.94	199.95	HCORE	CHKDUP	0.016	0.02	

Appendix M – EBA, Water Quality Sampling Summary For Frasergold Property

May 23, 2008

EBA File: K23101136
ISSUED FOR USEHawthorne Gold Corp.
Suite 1818 – 701 West Georgia Street
Vancouver, BC V7Y 1C6Via Email: mmurphy@hawthornegold.com

Attention: Mr. Marlin Murphy

Dear Mr. Murphy:

**Subject: Water Quality Sampling Summary for
Frasergold Property near
Horsefly, British Columbia**

1.0 INTRODUCTION

EBA Engineering Consultants Ltd. (EBA) was retained by Hawthorne Gold Corp. (Hawthorne) to provide environmental consulting services for Frasergold property (Frasergold) near Horsefly, British Columbia. Water quality sampling was initiated in October 2007 and a technical memo was issued by EBA on October 29, 2007 updating Hawthorne on the work conducted to date. Information collected included water quality, sediment characteristics, benthic macroinvertebrate community structure, and fish distribution. Since then, field crews have visited the site monthly from October the March and work is ongoing. From the data collected on water quality, EBA is able to summarize the data and provide the relevant information below.

2.0 METHODS

2.1.1 Surface Water Quality

This section outlines the baseline water quality program including a description of sample station locations, water quality parameters and associated detection limits, sampling protocols employed in the field, sampling periods/frequency, and the QA/QC criteria. Baseline water quality conditions associated with the proposed mine site are presented in Section 3.0. Analytical results for baseline water quality data are included in Appendix A.

2.1.2 Sample Station Locations

Sample station locations for the program with associated rationale for station selection are presented in the following table. The sample stations are depicted on Figure 1.

TABLE 1: AQUATIC SAMPLE LOCATIONS				
Station Identifier	Location and type	Rationale	GPS Coordinates	
			Easting	Northing
W1	MacKay River Mid-sized Stream	To monitor the effects of waste rock dumps and open pits on surface water quality within an area that may be influenced by mine-related activities.	667159.02	5796981.3
W2	Grouse Creek Very small stream	To monitor the effects of waste rock dumps and open pits on surface water quality within a tributary whose middle reaches will be physically altered by these mine related activities.	666291.31	5797206.5
W3	Adit Creek Small waterfall	To monitor the effects of waste rock dumps and open pits on surface water quality within a tributary whose upper reaches will be physically altered by these mine related activities.	665543.76	5797912.4
W4	Eureka Brook Creek Small stream	To monitor effects on surface water quality on a creek near the downstream limits of mine activity.	664220.96	5798999.7
W5	Tear Drop Lake Creek Small stream	To monitor surface water quality in the Tear Drop Lake Creek in parallel of potential mine-related influences.	661270.08	5801431.7
W6	Hawkey Creek Mid-sized stream, cascade	To monitor surface water quality upstream of potential mine related influences. This station provides a control or reference site, but may be influenced by the exploration camp.	660206.53	5802903.3
W7	Lower MacKay River Small river with gravel bottom	To monitor effects on surface water quality beyond the initial dilution zone downstream of all mine-related influences. This station will become the compliance station for monitoring events following mine start-up.	654561.18	5806104.3
W8A+B	Horsefly River (upstream of MacKay River) Med-sized river with gravel bottom	To monitor surface water quality upstream of potential mine related influences. This station provides a control or reference site. It is duplicated from both sides of the river in order to be statistically similar with W9A+B (downstream).	654697.91	5806487.7
W9A+B	Horsefly River (downstream of MacKay River) Medium size river with gravel bottom	This station is intended to monitor water quality where fish are known to be present. It represent the most downstream of all monitoring stations and provides overall detail of the quality of water being discharged to the Horsefly River from MacKay River watershed. It is duplicated from both sides of the river in order to account for potential plume effects.	653726.3	5806272.6
W10	Eureka Bowl Creek Small stream	To monitor surface water quality in parallel of potential mine-related influences.	662635.63	5800269.2

TABLE 1: AQUATIC SAMPLE LOCATIONS				
Station Identifier	Location and type	Rationale	GPS Coordinates	
			Easting	Northing
W11	MacKay River (middle section) Small river with pools	To monitor effects on surface water quality within the initial dilution zone downstream of all mine-related influences.	664703.94	5799610.6
W12	Pegasus Creek Mid-sized stream	This station provides a control or reference site, on the north side of the valley.	664210	5800271
W14*	MacKay River (downstream of Howkley Creek) Small river with gravel and boulder bottom	To monitor effects on surface water quality within the secondary dilution zone downstream of all mine-related influences and downstream of the current mine exploration camp.	659814.04	5803017.9
W15	Frasergold Creek Small stream	To monitor the effects of potential future mine related activities. Control for interior period.	667155.08	5796285.2
W17**	Upper MacKay River Mid-sized stream	To monitor surface water quality upstream of potential mine related influences. This station provides a control or reference site.	667733.32	5795954.7

* W13 is Teardrop Lake and will be sampled during spring turnover.

** W16 is Eureka Lake and will be sampled during spring turnover.

2.1.3 Surface Water Parameters and Detection Limits

Samples were analyzed for the physical and chemical parameters of concern associated with gold mines. The parameters and associated detection limits are detailed in Table 2.

2.1.4 Surface Water Sampling Period and Frequency

The baseline period for this water quality sampling phase extended from October 2007 to March 2008. Samples were collected at each station monthly. Due to access logistics and hazardous weather conditions, not all sites were sampled during the winter months and some field water quality measurements were missed because of malfunction of equipment in the cold temperatures.

2.1.5 Surface Water Sampling Protocol

Water quality samples were collected in accordance with BC Ministry of Environment standard sampling procedures (Resource Inventory Committee, 1997). Water quality samples were collected prior to any other activity at a station (electrofishing, sediment sampling, etc.) to ensure that the samples represented natural, undisturbed conditions. Samples were collected into clean, laboratory-provided sample bottles. Each pre-labelled bottle was opened and placed under a cascade or upstream into the flow until the bottle was full. The samples were placed in a chilled cooler. Following return from the field, the samples were shipped to a certified laboratory (Eco Tech Laboratory Ltd. in Kamloops, BC) in chilled coolers under chain-of-custody protocol. Dissolved metal bottles were filled with filtered water that was fixed with nitric acid preservative.

2.1.6 Quality Assurance/Quality Control

EBA developed a comprehensive quality assurance/quality control (QA/QC) program for the field component of the water quality sampling program. This program included the use of trip blanks, the collection of field blanks and duplicated samples. Additionally, laboratory QA/QC included analyses of house blanks, sample splits and certified reference samples.

3.0 WATER QUALITY RESULTS

The following section details the baseline water quality data for the period of October 2007 through March 2008. The mean and range of measured values for water quality parameters at each station are reported in Table 3 and compared to the corresponding BC Provincial Guidelines and Canadian Council of Ministers of the Environment Guidelines for the protection of Aquatic Life (CCME). Appendix A provides all the water quality parameter results. Figure 2 summarize the parameters that exceeded guideline levels at specific sample locations. Time-series of selected water quality parameters are presented in Figures 3, 4, 5, 6, and 7 for each sample station.

3.1.1 Total Suspended Solids and Turbidity

Concentrations of total suspended solids (TSS) were typically below the analytical detection limit at all sampling stations. In no instance did TSS levels exceed the maximum (25 mg/L) provincial guideline for the protection of aquatic life in the MacKay watershed and Horsefly River. No sampling has occurred during the spring freshet to this point in time. It will be during this period that TSS values are expected to increase.

In no instance did the turbidity values in the MacKay River watershed or at the Horsefly River stations exceed the maximum (8 NTU) provincial guideline for the protection of aquatic life. No sampling has occurred during a spring freshet to this point in time. It will be during this period that turbidity values are expected to increase.

3.1.2 Physical Properties

The water of both the MacKay River watershed as well as the Horsefly River stations was consistently just over pH 7 with total alkalinity ranging from 16.75 to 52.12 mg/L. In two instances, pH was measured below guidelines in the field but the corresponding laboratory analyzed samples were well within guidelines (pH 6.5-9.0).

Based on in-situ measurements, dissolved oxygen was above guidelines (5.5-9.5 mg/L) for all sites, for the entire sampling period. This is probably because of the low water temperatures during these winter months as there is a temperature effect on dissolved oxygen in water. The aquatic environment does not consume as much dissolved oxygen during lower temperatures.

3.1.3 Nutrients

In no instances did any sample stations have concentrations of nutrients above the CCME and BCWQ Guidelines for the protection of Aquatic Life.

3.1.4 Metals

The concentrations of major elements and trace metals in water collected during the sampling program are presented in Appendix A and Figures 3 to 7. Figure 2 shows the distribution of metals that exceeded guidelines within the sampling period at each of the sample stations.

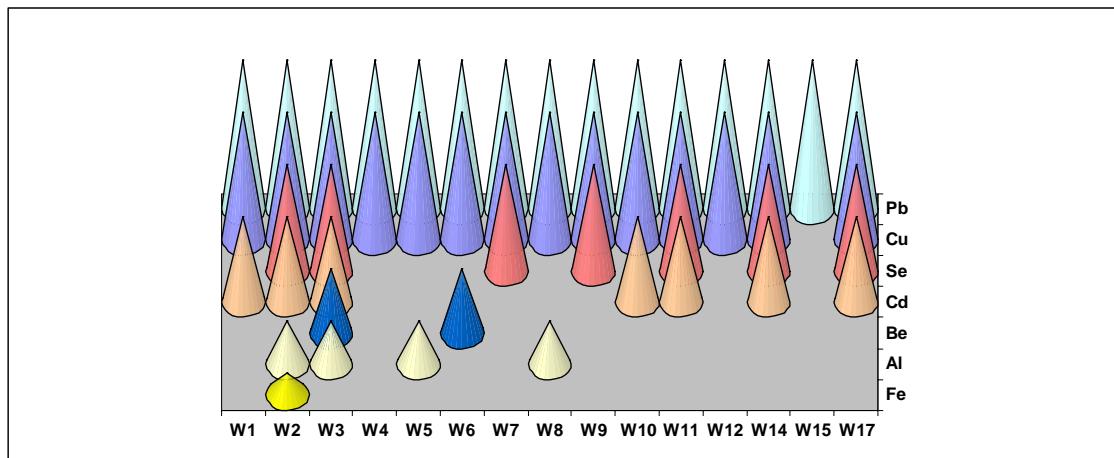


Figure 2 Occurrence of metal that exceeds guidelines during the sampling period for each sample station.

With the exception of the W15 (Frasergold Creek) station, all sample stations had average concentrations of Copper (Cu) above the CCME and BCWQ Guidelines for the protection of Aquatic Life. The measured Cu values ranged from <0.001 to 5.1 mg/L in the MacKay River watershed with the highest values occurring in Eureka Bowl Creek (W10), measured at 5.1 mg/L.

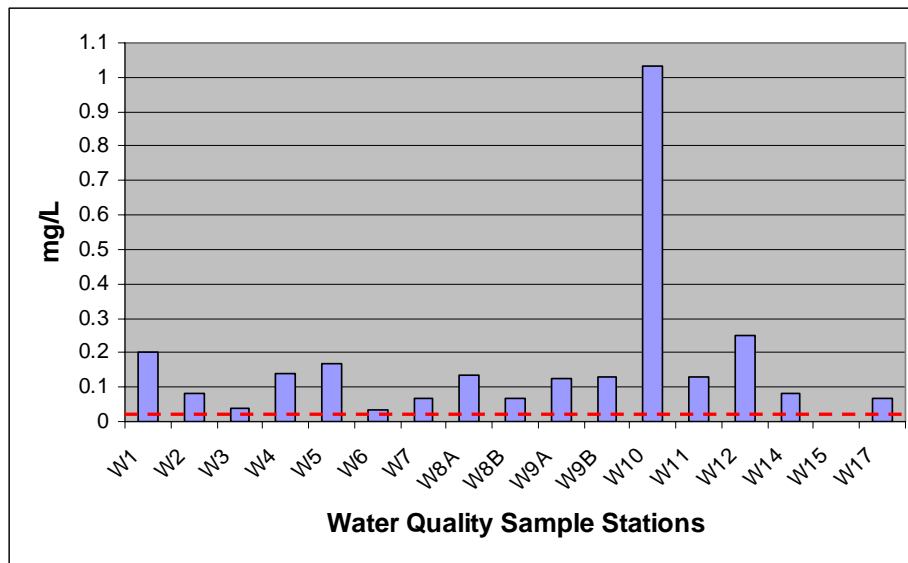


Figure 3 Distribution of mean Copper levels showing exceedance of guidelines (0.002-0.007 mg/L)

Eight sample sites (W1, W2, W3, W7, W9B, W11, W15, and W17) had average concentrations of Selenium (Se) above both Guidelines. Concentrations of Se ranged from below the analytical detection limit of 0.5 mg/L to 2.0 mg/L at the W17 (Upper MacKay River) sample station.

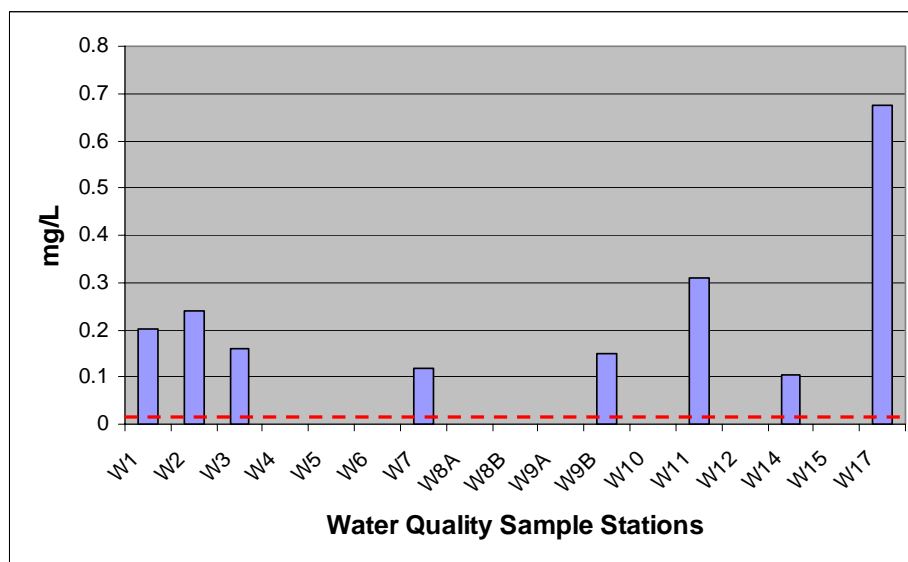


Figure 4 Distribution of mean Selenium levels showing exceedance of guideline (0.002 mg/L)

Seven sample sites (W1, W2, W3, W10, W11, W14, and W17) had average concentrations of Cadmium (Cd) above both Guidelines. Concentrations of Cd ranged from below the analytical detection limit of <0.001 mg/L to 0.029 mg/L at the W17 (Upper MacKay River) sample station.

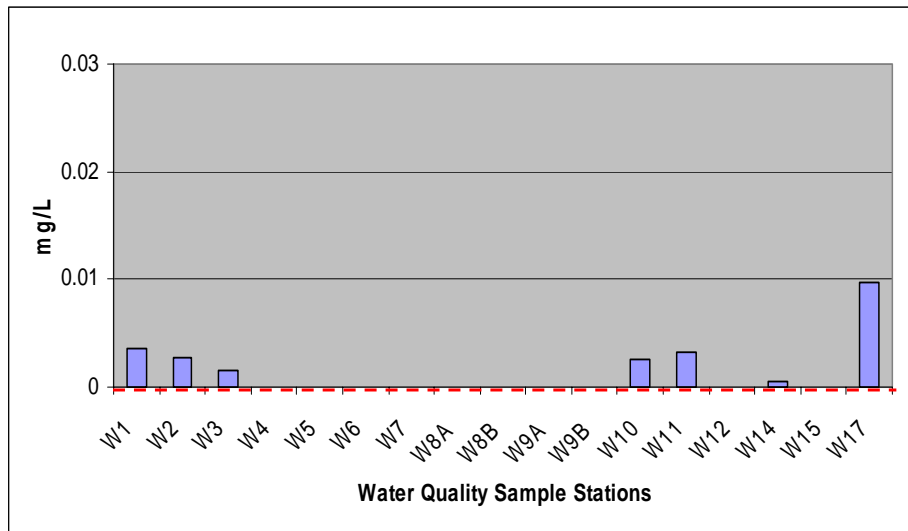


Figure 5 Distribution of mean Cadmium levels showing exceedance of guideline (0.00001 mg/L)

Only W1 had average Lead (Pb) concentrations below the Guidelines. Concentrations of Pb ranged from below the analytical detection limit of <0.001 mg/L to 0.011 mg/L at the W8A (Horsefly River upstream), W9A (Horsefly River downstream) and W11 (MacKay River) sample station. It appears that the detection limit will need to be improved.

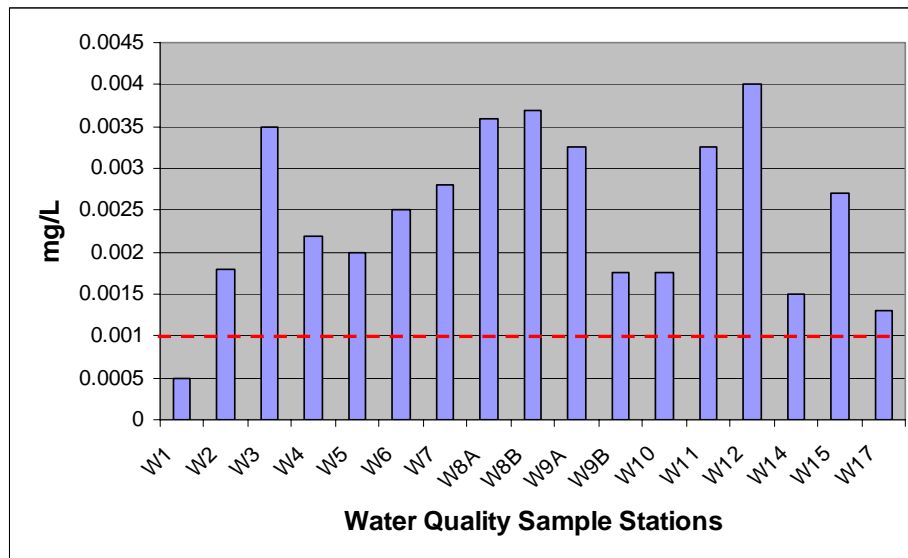


Figure 6 Distribution of mean Lead levels showing exceedance of guideline (0.001 mg/L)

Two of the sample stations (W3 and W6) had average concentrations of Beryllium (Be) above the BCWQ Guidelines. Concentrations of Be were above the analytical detection limit of 0.0053 mg/L at the W3 (Adit Creek) and W6 (Hawkley Creek) sample station.

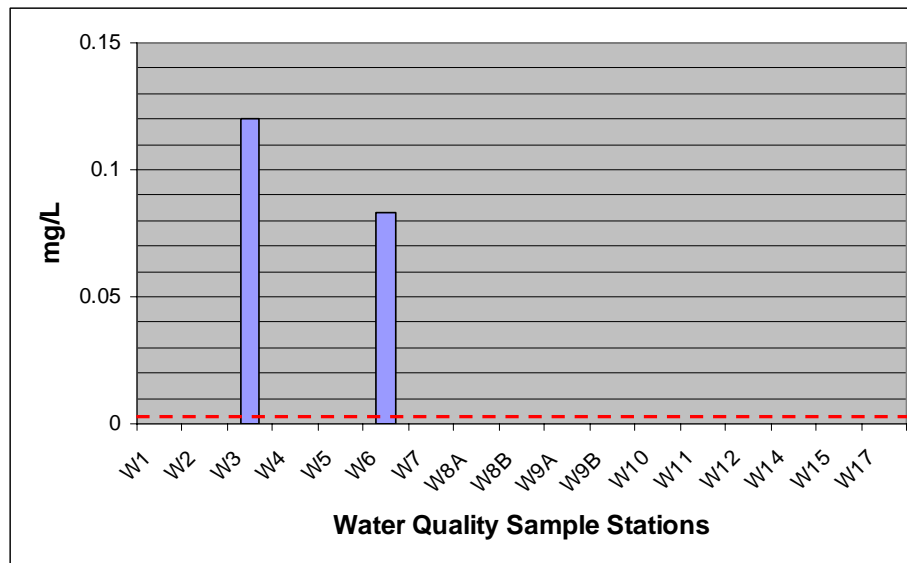


Figure 7 Distribution of mean Beryllium levels showing exceedance of guideline (0.0053 mg/L)

There were four instances where Aluminium concentrations were above BCWQG and CCME guidelines. This occurred at W2, W3, W5 in October 2007 and W8 in November 2007. Levels reached 0.398 mg/L at W2 (Grouse Creek) but average concentrations for the sampling period were all below the guidelines. Dissolved Al levels did not exceed the guideline of 0.1 mg/L. Also, Iron levels surpassed guidelines by reaching 0.411 mg/L at W2 in October 2007. All other trace metal concentrations in the submitted samples were below both the CCME and BCWQ Guidelines. It appears that detection limits need to be improved for Cadmium and Mercury to meet guideline and criteria levels.

4.0 CONCLUSION

With the exception of metals: Aluminum, Iron, Lead, Selenium, Copper, Cadmium and Beryllium, all field water quality measurements were within normal background levels/ranges and were within provincial acceptable ranges for protection of aquatic life and recreational use (EC and MoE 2001; MoE 2006; CCME 2005). Discussion will be held with Ecotech Laboratory in an effort to improve detection levels to test whether Cadmium and Mercury levels exceed guidelines.

5.0 CLOSURE

This letter incorporates and is subject to EBA's General Conditions attached in Appendix B.

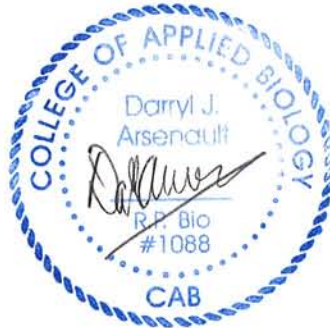
EBA trusts that this report meets your present requirements. Please contact our office at your earliest convenience if you have any questions or comments.

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Attachments:	Table 2	Surface Water Quality Parameters, Detection Limits and Guidelines
	Table 3	Summary Table of Water Quality Results
	Figure 1	Water Quality Sample Locations
	Photos	Site photos taken between October 2007 and April 2008
	Appendix A	Water Quality Results – October 2007 to March 2008 Sampling Period
	Appendix B	Environmental General Conditions

REFERENCES

- CCME. 2005b. Canadian Environmental Quality Guidelines. Update 5.0. Canadian Council of Ministers of the Environment, Winnipeg, Manitoba.
- MoE (Ministry of Environment). 1998. Guidelines for Interpreting Water Quality Data. Pollution Prevention and Remediation Branch. Victoria, British Columbia.
- MoE (Ministry of Environment). 2001. British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2001 Edition. Environmental Protection Division, British Columbia Ministry of Environment.
- MoE (Ministry of Environment). 2006. British Columbia Approved Water Quality Guidelines, 2006 Edition. Environmental Protection Division, British Columbia Ministry of Environment. 2006 Edition. Science and Information Branch. Victoria, British Columbia.



TABLES



Table 2: Surface Water Quality Parameters, Detection Limits and Guidelines				
Sample ID	RDL	Units	BC WQG ¹	CCME ²
Field Data				
Temperature (°C)	-	°C	15	-
Conductivity (us/cm)	-	us/cm	-	-
Salinity	-	%	-	-
DO (mg/L)	-	mg/L	5.0-9.0	5.5-9.5
pH (units)	-	pH units	6.5-9.0	6.5-9.0
Laboratory Data				
pH	0.01	pH units	6.5-9.0	6.5-9.0
Conductivity (umhos/cm)	1	uS/cm	-	-
Colour (Co/Pt units)	5	Co/Pt	-	-
Turbidity (NTU)	0.2	NTU	8 NTU when background 8-80	8 NTU when background 8-80
Alkalinity Total (pH 4.5)	1	mg/L	-	-
Total Suspended Solids	1	mg/L	25	-
Total Dissolved Solids	1	mg/L	-	-
Chloride	0.5	mg/L	150 - 600	-
Fluoride	0.1	mg/L	0.2	-
Nitrate (as N)	0.003	mg/L	200	13
Nitrite (as N)	0.003	mg/L	0.06 (Cl<0.2)	0.06
T.K.N. (as N)	0.05	mg/L	-	-
Total Nitrogen (as N)	0.05	mg/L	-	-
Ammonia (as N)	0.005	mg/L	2-2.08 mg/l	-
Total Phosphate (as P)	0.003	mg/L	-	-
Dissolved Phosphate (as P)	0.003	mg/L	-	-
Ortho Phosphate (as P)	0.003	mg/L	-	-
Sulphate (as SO ₄)	1	mg/L	50 - 100 mg/l	-
Hardness (as CaCO ₃)	0.5	mg/L	-	-
Cyanide	0.005	mg/L	0.005-0.01mg/l	-
Dissolved Organic Carbon	1	mg/L	-	-
Total Metals				
Aluminum	0.001	mg/L	(dissolved) 0.1 or, if pH<6.5, $e^{[1.209-(2.426 \cdot \text{pH})+(0.286 \cdot \text{pH}^2)]}$	0.005 @pH <6.5, Ca <4, DOC<2 0.1@ pH >6.5, Ca >4, DOC>2
Antimony	0.001	mg/L	0.02	-
Arsenic	0.5	mg/L	0.005	0.005
Barium	0.01	mg/L	5	-
Beryllium	0.5	mg/L	0.0053	-
Bismuth	0.001	mg/L	-	-
Boron	0.001	mg/L	1.2	-
Cadmium	0.001	mg/L	10(0.86[log H]-3.2 (ie. 0.00001 @ 30(H) 0.00003 @ 90(H) 0.00005 @ 150(H) 0.00006 @ 210(H)	0.000017 or 10(0.86[log H]-3.2)
Calcium	0.01	mg/L	-	-
Chromium	0.001	mg/L	Cr (VI) = 0.001 Cr (III) = 0.0089	Cr (VI) = 0.001 Cr (III) = 0.0089
Cobalt	0.5	mg/L	0.004	-
Copper	0.2	mg/L	(0.094(H)+2)/1000	0.002-0.004
Iron	0.005	mg/L	0.3	0.3
Lead	0.1	mg/L	$e^{(1.27 \ln(H)-1.46)}$ ie. (H)<8=0.003 - (H)300=0.33	0.001 @ 0-60(H) 0.002 @ 60-120(H) 0.004 @ 120-180(H)
Magnesium	0.1	mg/L	-	-

Table 2: Surface Water Quality Parameters, Detection Limits and Guidelines

Sample ID	RDL	Units	BC WQG ¹	CCME ²
Field Data				
Manganese	0.001	mg/L	(0.01102*H)+0.54 (ie. 0.8 @ 25(H) 1.1 @ 50(H) 1.6 @ 100(H) 2.2 @ 150(H) 3.8 @ 300(H)	-
Molybdenum	0.001	mg/L	2	0.073
Nickel	0.001	mg/L	0.025 @ 0-60(H) 0.065 @ 60-120(H) 0.11 @ 120-180(H) 0.15 @ >80(H)	0.025 @ 0-60(H) 0.065 @ 60-120 (H) 0.11 @ 120-180 (H) 0.15 @ >80(H)
Potassium	0.01	mg/L	-	-
Selenium	0.5	mg/L	0.002	-
Silicon	0.01	mg/L	-	-
Silver	0.005	mg/L	-	-
Sodium	0.1	mg/L	-	-
Tin	0.01	mg/L	400 triethyl tin 22 triphenyl tin	-
Titanium	0.007	mg/L	-	-
Uranium	0.001	mg/L	0.3	-
Vanadium	0.001	mg/L	0.006	-
Yttrium	0.001	mg/L	-	-
Zinc	0.001	mg/L	33+0.75*(H-90) (ie. 0.033 @ <90(H) 0.040 @ 100(H) 0.115 @ 200(H)	0.03
Mercury (ug/L)	0.015	mg/L	0.0001	0.000004 methylmercury 0.000026 inorganic mercury
Lithium	0.5	mg/L	-	-
Dissolved Metals				
Aluminum	0.001	mg/L	-	-
Antimony	0.001	mg/L	-	-
Arsenic	0.5	mg/L	-	-
Barium	0.01	mg/L	-	-
Beryllium	0.5	mg/L	-	-
Bismuth	0.001	mg/L	-	-
Boron	0.001	mg/L	-	-
Cadmium	0.001	mg/L	-	-
Calcium	0.01	mg/L	-	-
Chromium	0.001	mg/L	-	-
Cobalt	0.5	mg/L	-	-
Copper	0.2	mg/L	-	-
Iron	0.005	mg/L	-	-
Lead	0.1	mg/L	-	-
Magnesium	0.1	mg/L	-	-
Manganese	0.001	mg/L	-	-
Molybdenum	0.001	mg/L	-	-
Nickel	0.001	mg/L	-	-
Potassium	0.01	mg/L	-	-
Selenium	0.5	mg/L	-	-
Silicon	0.01	mg/L	-	-
Silver	0.005	mg/L	-	-

Table 2: Surface Water Quality Parameters, Detection Limits and Guidelines

Sample ID	RDL	Units	BC WQG ¹	CCME ²
Field Data				
Sodium	0.1	mg/L	-	-
Tin	0.01	mg/L	-	-
Titanium	0.007	mg/L	-	-
Uranium	0.001	mg/L	-	-
Vanadium	0.001	mg/L	-	-
Yttrium	0.001	mg/L	-	-
Zinc	0.001	mg/L	-	-
Mercury (ug/L)	0.015	mg/L	-	-
Lithium	0.5	mg/L	-	-

Notes:

ND = Not detected

RDL = Reportable Detection Limit

¹British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2006²Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the Protection of Freshwater Aquatic Life, 2005³Indicates the applicable standard is lower than the detection limit.

"-" Indicates no analysis conducted or no applicable standard available.

BOLD indicates water quality guideline exceeded

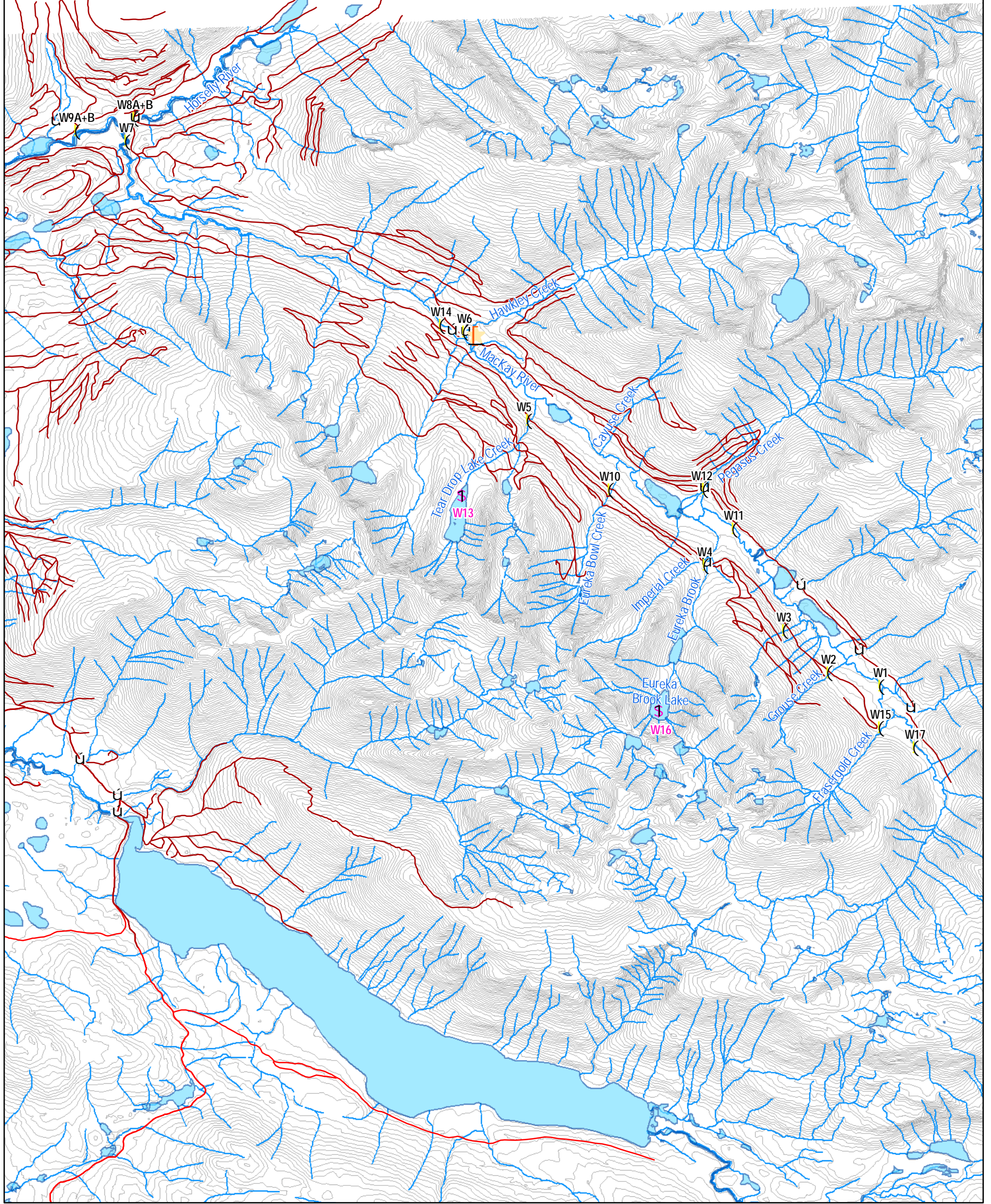
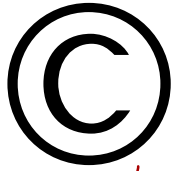
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FIGURE





LEGEND

- Approximate Camp Location
- 2007 Water Quality Station
- Water Quality Station (Future Site)
- Bridge
- Roads (Paved and Logging)
- Watercourse
- Lakes
- Contours (20 m Interval)

NOTES
Base data provided by Hawthorne Gold.

ISSUED FOR USE

WATER QUALITY SAMPLING SUMMARY FOR FRASERGOLD PROPERTY

Water Quality Sample Locations

PROJECTION UTM Zone 10	DATUM NAD83		
Scale: 1:65,000			



FILE NO. Figure 1 - Water Quality Sample Locations Summary.mxd			
PROJECT NO. K23101136	DWN SF	CKD DA	REV 0
OFFICE EBA-KELOWNA	DATE May 22, 2008		

Figure 1

C:\Keelowna\GIS\ENVIRONMENTAL\K23101136 - Fraser Gold\Maps\Figure 1 - Water Quality Sample Locations Summary.mxd



PHOTOGRAPHS





Photo 1
W1 Mackay River sample station (October 14, 2007)

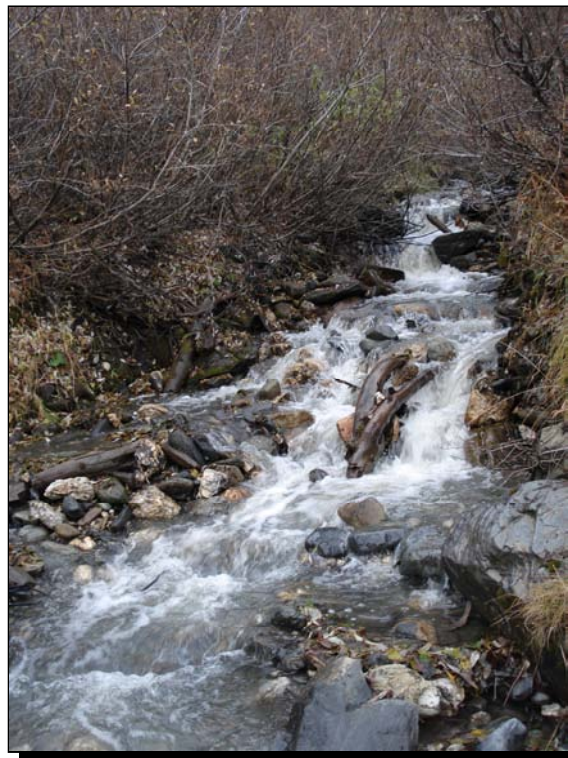


Photo 2
W2 Grouse Creek sample station (October 11, 2007)



Photo 3
W3 Audit Creek sample station (October 11, 2007)



Photo 4
W4 Eureka Brook Creek sample station (October 11, 2007)



Photo 5
W5 Tear Drop Lake Creek sample station (October 15, 2007)

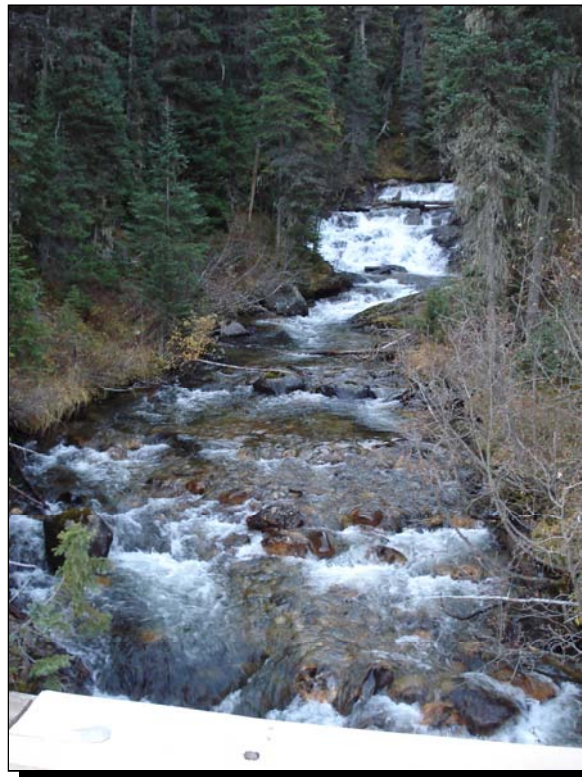


Photo 6
W6 Hawkley Creek sample station (October 13, 2007)



Photo 7
W7 Lower MacKay River sample station (October 12, 2007)



Photo 8
W8A and B Horsefly River sample station (October 12, 2007)



Photo 9
W9A and B Horsefly River sample station (October 12, 2007)



Photo 10
W10 Eureka Bowl Creek sample station (October 11, 2007)



Photo 11
W11 MacKay River sample station (October 14, 2007)



Photo 12
W12 Pegasus Creek sample station (April 29, 2008)



Photo 13
W14 MacKay River sample station (October 13, 2007)



Photo 14
W15 Frasergold Creek sample station (April 29, 2008)



Photo 15
W17 Upper MacKay River sample station (April 29, 2008)



APPENDIX

APPENDIX A WATER QUALITY RESULTS – OCTOBER 2007 TO MARCH 2008 SAMPLING PERIOD



W1 Station Water Quality Field Data, Laboratory Data, Total Metals and Dissolved Metals										
Sample ID	RDL	Units	17-Oct-07	21-Nov-07	20-Dec-07	17-Jan-08	27-Feb-08	27-Mar-08	BC WQG ¹	CCME ²
Field Data										
Temperature (°C)	-	°C	-	-	-	0.1	0.5	0.2	15	-
Conductivity (us/cm)	-	us/cm	-	-	-	-	13.9	-	-	-
Salinity	-	%	-	-	-	-	-	-	-	-
DO (mg/L)	-	mg/L	-	-	-	15.12	14.55	14.46	5.0-9.0	5.5-9.5
pH (units)	-	pH units	-	-	-	-	6.89	-	6.5-9.0	6.5-9.0
Laboratory Data										
pH	0.01	pH units	-	-	-	7.75	7.56	7.87	6.5-9.0	6.5-9.0
Conductivity (uS/cm)	1	uS/cm	-	-	-	107	128	119	-	-
Colour (Co/Pl units)	5	Co/Pl	6	-	-	7	8	<5	-	-
Turbidity (NTU)	0.2	NTU	<0.2	-	-	<0.2	<0.2	<0.2	8 NTU when background 8-80	8 NTU when background 8-80
Alkalinity Total (pH 4.5)	1	mg/L	25.2	-	-	42	48	46	-	-
Total Suspended Solids	1	mg/L	3	-	-	<1	<1	<1	25	-
Total Dissolved Solids	1	mg/L	61	-	-	109	95	90	-	-
Chloride	0.5	mg/L	<0.3	-	-	0.3	<0.3	<0.3	150 - 600	-
Fluoride	0.1	mg/L	-	-	-	0.05	0.10	<0.1	0.2	-
Nitrate (as N)	0.003	mg/L	0.099	-	-	0.162	0.074	0.183	200	13
Nitrite (as N)	0.003	mg/L	<0.003	-	-	<0.003	<0.003	<0.003	0.06 (Cl<0.2)	0.06
T.K.N. (as N)	0.05	mg/L	<0.05	-	-	0.154	<0.05	<0.05	-	-
Total Nitrogen (as N)	0.05	mg/L	0.10	-	-	0.32	0.07	0.18	-	-
Ammonia (as N)	0.005	mg/L	<0.005	-	-	0.021	<0.005	0.024	2-2.08 mg/l	-
Total Phosphate (as P)	0.003	mg/L	<0.003	-	-	<0.003	<0.003	<0.003	-	-
Dissolved Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Ortho Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Sulphate (as SO ₄)	1	mg/L	7	-	-	14	20	15	50 - 100 mg/l	-
Hardness (as CaCO ₃)	0.5	mg/L	30	-	-	46	60	57	-	-
Cyanide	0.005	mg/L	<0.005	-	-	-	-	-	0.005-0.01mg/l	-
Dissolved Organic Carbon	1	mg/L	2	-	-	<2	2	1	-	-
Total Metals										
Aluminum	0.001	mg/L	0.029	-	-	0.012	0.012	0.005	(dissolved) 0.1 or, if pH<6.5, $e^{[1.209-(2.426\text{pH})-(0.286\text{pH}^2)]}$	0.005 @pH <6.5, Ca <4, DOC<2 0.1 @ pH >6.5, Ca >4, DOC>2
Antimony	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	0.02	-
Arsenic	0.5	mg/L	<0.001	-	-	<0.5	<0.001	<0.001	0.005	0.005
Barium	0.01	mg/L	<0.01	-	-	<0.01	<0.01	<0.01	5	-
Beryllium	0.5	mg/L	<0.001	-	-	<0.5	<0.001	<0.001	0.0053	-
Bismuth	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.001	-	-	<0.001	0.026	<0.001	1.2	-
Cadmium	0.001	mg/L	<0.001	-	-	0.014	<0.001	<0.001	10(0.86[log H]-3.2 (ie. 0.00001 @ 30(H) 0.00003 @ 90(H) 0.00005 @ 150(H) 0.00006 @ 210(H)	0.000017 or 10(0.86[log H]-3.2)
Calcium	0.01	mg/L	8.55	-	-	12.22	15.19	15	-	-
Chromium	0.001	mg/L	<0.001	-	-	0.001	<0.001	<0.001	Cr (VI) = 0.001 Cr (III) = 0.0089	Cr (VI) = 0.001 Cr (III) = 0.0089
Cobalt	0.5	mg/L	<0.001	-	-	<0.5	<0.001	<0.001	0.004	-
Copper	0.2	mg/L	<0.001	-	-	0.8	<0.001	<0.001	(0.094(H)+2)/1000	0.002-0.004
Iron	0.005	mg/L	0.011	-	-	0.006	0.005	0.008	0.3	0.3
Lead	0.1	mg/L	0.002	-	-	<0.1	<0.001	<0.001	$e^{(1.27ln(H)-1.46)}$ ie. (H)-8=-0.003 - (H)300=0.33	0.001 @ 0-60(H) 0.002 @ 60-120(H) 0.004 @ 120-180(H)
Magnesium	0.1	mg/L	2.1	-	-	3.7	5.4	4.8	-	-
Manganese	0.001	mg/L	0.001	-	-	0.001	0.001	0.001	(0.01102*H)+0.54 ie. 0.8 @ 25(H) 1.1 @ 50(H) 1.6 @ 100(H) 2.2 @ 150(H) 3.8 @ 300(H)	-
Molybdenum	0.001	mg/L	<0.001	-	-	0.001	0.001	0.001	2	0.073
Nickel	0.001	mg/L	<0.001	-	-	<0.001	0.001	<0.001	0.025 @ 0-60(H) 0.065 @ 60-120(H) 0.11 @ 120-180(H) 0.15 @ >80(H)	0.025 @ 0-60(H) 0.065 @ 60-120 (H) 0.11 @ 120-180 (H) 0.15 @ >80(H)
Potassium	0.01	mg/L	0.26	-	-	0.27	0.21	0.25	-	-
Selenium	0.5	mg/L	0.001	-	-	1.9	0.002	0.002	0.002	-
Silicon	0.01	mg/L	1.42	-	-	1.74	1.73	1.89	-	-
Silver	0.005	mg/L	<0.005	-	-	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.4	-	-	0.7	0.9	0.7	-	-
Tin	0.01	mg/L	<0.01	-	-	<0.01	<0.01	<0.01	400 triethyl tin 22 triphenyl tin	-
Titanium	0.007	mg/L	<0.007	-	-	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	0.3	-
Vanadium	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	0.006	-
Yttrium	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.001	-	-	0.004	0.001	0.001	33+0.75*(H-90) (ie. 0.033 @ <90(H) 0.040 @ 100(H) 0.115 @ 200(H)	0.03
Mercury (ug/L)	0.015	mg/L	<0.015	-	-	<0.015	<0.015	<0.015	0.0001	0.000004 methylmercury 0.000026 inorganic mercury
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-
Dissolved Metals										
Aluminum	0.001	mg/L	0.027	-	-	0.011	0.011	0.003	0.1 (dissolved)	0.1 @ pH>6.5
Antimony	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	-	-
Arsenic	0.5	mg/L	<0.001	-	-	<0.5	<0.001	<0.001	-	-
Barium	0.01	mg/L	<0.01	-	-	<0.01	<0.01	<0.01	-	-
Beryllium	0.5	mg/L	<0.001	-	-	<0.5	<0.001	<0.001	-	-
Bismuth	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.001	-	-	<0.001	0.022	<0.001	-	-
Cadmium	0.001	mg/L	<0.001	-	-	0.014	<0.001	<0.001	-	-
Calcium	0.01	mg/L	8.24	-	-	12.21	14.96	14.91	-	-
Chromium	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	-	-
Cobalt	0.5	mg/L	<0.001	-	-	<0.5	<0.001	<0.001	-	-
Copper	0.2	mg/L	<0.001	-	-	0.6	<0.001	<0.001	-	-
Iron	0.005	mg/L	0.008	-	-	<0.005	<0.005	<0.005	-	-
Lead	0.1	mg/L	0.001	-	-	<0.1	<0.001	<0.001	-	-
Magnesium	0.1	mg/L	2.1	-	-	3.7	5.1	4.7	-	-
Manganese	0.001	mg/L	0.001	-	-	0.001	0.001	0.001	-	-
Molybdenum	0.001	mg/L	<0.001	-	-	0.001	0.001	0.001	-	-
Nickel	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	-	-
Potassium	0.01	mg/L	0.26	-	-	0.26	0.18	0.24	-	-
Selenium	0.5	mg/L	0.001	-	-	1.7	0.002	0.002	-	-
Silicon	0.01	mg/L	1.3	-	-	1.68	1.69	1.86	-	-
Silver	0.005	mg/L	<0.005	-	-	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.4	-	-	0.7	9	0.7	-	-
Tin	0.01	mg/L	<0.01	-	-	<0.01	<0.01	<0.01	-	-
Titanium	0.007	mg/L	<0.007	-	-	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	-	-
Vanadium	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	-	-
Yttrium	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.001	-	-	0.002	0.001	<0.001	-	-
Mercury (ug/L)	0.015	mg/L	<0.015	-	-	<0.015	<0.015	<0.015	-	-
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-

Notes:

ND = Not detected

RDL = Reportable Detection Limit

¹British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2006

²Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the Protection of Freshwater Aquatic Life, 2005

³Indicates the applicable standard is lower than the detection limit.

. Indicates no analysis conducted or no applicable standard available.

BOLD indicates water quality guideline exceeded

Indicates parameter exceeds BC Water Quality Guidelines

Indicates parameter exceeds Canadian Environmental Quality Guidelines

W2 Station Water Quality Field Data, Laboratory Data, Total Metals and Dissolved Metals										
Sample ID	RDL	Units	17-Oct-07	21-Nov-07	20-Dec-07	17-Jan-08	27-Feb-08	27-Mar-08	BC WQG ¹	CCME ²
Field Data										
Temperature (°C)	-	°C	3.55	0.7	-	0.6	0.8	0.5	15	-
Conductivity (us/cm)	-	us/cm	70	-	-	-	136	-	-	-
Salinity	-	%	0.03	0	-	0	0	0	-	-
DO (mg/L)	-	mg/L	14.82	13.98	-	18	14.57	14.45	5.0-9.0	5.5-9.5
pH (units)	-	pH units	7.08	7.03	-	-	5.7	-	6.5-9.0	6.5-9.0
Laboratory Data										
pH	0.01	pH units	-	-	-	7.81	7.67	7.87	6.5-9.0	6.5-9.0
Conductivity (uS/cm)	1	uS/cm	-	-	-	117	130	122	-	-
Colour (Co/Pt units)	5	Co/Pt	17	-	-	7	5	<5	-	-
Turbidity (NTU)	0.2	NTU	9.1	-	-	0.2	<0.2	0.3	8 NTU when background 8-80	8 NTU when background 8-80
Alkalinity Total (pH 4.5)	1	mg/L	27.3	-	-	53	59	59	-	-
Total Suspended Solids	1	mg/L	11	-	-	<1	1	<1	25	-
Total Dissolved Solids	1	mg/L	74	-	-	118	107	100	-	-
Chloride	0.5	mg/L	<0.3	-	-	<0.3	<0.3	<0.3	150 - 600	-
Fluoride	0.1	mg/L	-	-	-	0.03	0.10	<0.1	0.2	-
Nitrate (as N)	0.003	mg/L	0.022	-	-	0.149	0.16	0.239	200	13
Nitrite (as N)	0.003	mg/L	0.004	-	-	<0.003	<0.003	<0.003	0.06 (Cl<0.2)	0.06
T.K.N. (as N)	0.05	mg/L	0.09	-	-	0.132	<0.05	<0.05	-	-
Total Nitrogen (as N)	0.05	mg/L	0.12	-	-	0.281	0.16	0.24	-	-
Ammonia (as N)	0.005	mg/L	<0.005	-	-	<0.005	0.009	0.01	2-2.08 mg/l	-
Total Phosphate (as P)	0.003	mg/L	<0.003	-	-	<0.003	<0.003	<0.003	-	-
Dissolved Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Ortho Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Sulphate (as SO ₄)	1	mg/L	4	-	-	9	12	7	50 - 100 mg/l	-
Hardness (as CaCO ₃)	0.5	mg/L	33	-	-	53	63	66	-	-
Cyanide	0.005	mg/L	<0.005	-	-	-	-	-	0.005-0.01mg/l	-
Dissolved Organic Carbon	1	mg/L	3	-	-	<2	3	1	-	-
Total Metals										
Aluminum	0.001	mg/L	0.398	0.023	-	0.006	0.005	0.020	(dissolved) 0.1 or, if pH<6.5, $e^{(1.209-(2.426 \cdot \text{pH})+(0.286 \cdot \text{pH}^2))}$	0.005 @pH <6.5, Ca <4, DOC<2 0.1 @ pH >6.5, Ca >4, DOC>2
Antimony	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	0.02	-
Arsenic	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	0.005	0.005
Barium	0.01	mg/L	<0.01	<0.01	-	<0.01	<0.01	<0.01	5	-
Beryllium	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	0.0053	-
Bismuth	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.003	0.004	-	<0.001	<0.001	<0.001	1.2	-
Cadmium	0.001	mg/L	<0.001	<0.001	-	0.014	<0.001	<0.001	10(0.86[log H]-3.2 (ie. 0.00001 @ 30(H) 0.00003 @ 90(H) 0.00005 @ 150(H) 0.00006 @ 210(H))	0.000017 or 10(0.86[log H]-3.2)
Calcium	0.01	mg/L	9.2	13.8	-	14.46	17.31	18.42	-	-
Chromium	0.001	mg/L	0.001	0.001	-	<0.001	<0.001	<0.001	Cr (VI) = 0.001 Cr (III) = 0.0089	Cr (VI) = 0.001 Cr (III) = 0.0089
Cobalt	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	0.004	-
Copper	0.2	mg/L	0.001	0.001	-	0.4	<0.001	0.008	-	0.002-0.004
Iron	0.005	mg/L	0.411	0.029	-	0.008	0.007	0.016	0.3	0.3
Lead	0.1	mg/L	0.002	0.007	-	<0.1	<0.001	<0.001	$e^{(1.27 \ln(H)-1.46)}$ ie. (H)<8=0.003 - (H)300=0.33	0.001 @ 0-60(H) 0.002 @ 60-120(H) 0.004 @ 120-180(H)
Magnesium	0.1	mg/L	2.5	3.8	-	4.1	4.9	4.9	-	-
Manganese	0.001	mg/L	0.011	0.002	-	<0.001	<0.001	0.001	(0.01102 ^H)+0.54 (ie. 0.8 @ 25(H) 1.1 @ 50(H) 1.6 @ 100(H) 2.2 @ 150(H) 3.8 @ 300(H))	-
Molybdenum	0.001	mg/L	<0.001	0.001	-	<0.001	<0.001	<0.001	2	0.073
Nickel	0.001	mg/L	0.001	<0.001	-	<0.001	<0.001	<0.001	0.025 @ 0-60(H) 0.065 @ 60-120(H) 0.11 @ 120-180(H) 0.15 @ >80(H)	0.025 @ 0-60(H) 0.065 @ 60-120 (H) 0.11 @ 120-180 (H) 0.15 @ >80(H)
Potassium	0.01	mg/L	0.14	0.08	-	0.11	0.1	0.22	-	-
Selenium	0.5	mg/L	<0.001	0.001	-	1.0	0.001	0.001	0.002	-
Silicon	0.01	mg/L	1.41	1.45	-	1.32	1.22	1.41	-	-
Silver	0.005	mg/L	<0.005	<0.005	-	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.3	0.4	-	0.5	0.5	0.3	-	-
Tin	0.01	mg/L	<0.01	<0.01	-	<0.01	<0.01	<0.01	400 triethyl tin 22 triphenyl tin	-
Titanium	0.007	mg/L	<0.007	<0.007	-	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	0.3	-
Vanadium	0.001	mg/L	0.001	<0.001	-	<0.001	<0.001	<0.001	0.006	-
Yttrium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.003	0.001	-	0.004	<0.001	0.023	33+0.75 ^(H-90) (ie. 0.033 @ <90(H) 0.040 @ 100(H) 0.115 @ 200(H))	0.03
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	-	<0.015	<0.015	<0.015	0.0001	0.000004 methylmercury 0.000026 inorganic mercury
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-
Dissolved Metals										
Aluminum	0.001	mg/L	0.048	0.012	-	0.005	<0.001	<0.001	0.1 (dissolved)	0.1 @ pH>6.5
Antimony	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Arsenic	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	-	-
Barium	0.01	mg/L	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	-
Beryllium	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	-	-
Bismuth	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.003	<0.001	-	<0.001	<0.001	<0.001	-	-
Cadmium	0.001	mg/L	<0.001	<0.001	-	0.013	<0.001	<0.001	-	-
Calcium	0.01	mg/L	9.17	12.9	-	14.22	17.09	17.84	-	-
Chromium	0.001	mg/L	<0.001	<0.001	-	0.001	<0.001	<0.001	-	-
Cobalt	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	-	-
Copper	0.2	mg/L	0.001	<0.001	-	0.4	<0.001	<0.001	-	-
Iron	0.005	mg/L	0.066	0.018	-	<0.005	<0.005	<0.005	-	-
Lead	0.1	mg/L	0.002	0.004	-	<0.1	<0.001	<0.001	-	-
Magnesium	0.1	mg/L	2.4	3.5	-	4	4.8	4.9	-	-
Manganese	0.001	mg/L	0.003	0.001	-	<0.001	<0.001	<0.001	-	-
Molybdenum	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Nickel	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Potassium	0.01	mg/L	0.1	0.08	-	0.11	0.1	0.19	-	-
Selenium	0.5	mg/L	<0.001	0.001	-	0.9	0.001	0.001	-	-
Silicon	0.01	mg/L	1.17	1.43	-	1.29	1.39	1.4	-	-
Silver	0.005	mg/L	<0.005	<0.005	-	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.3	0.4	-	0.5	0.5	0.3	-	-
Tin	0.01	mg/L	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	-
Titanium	0.007	mg/L	<0.007	<0.007	-	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Vanadium	0.001	mg/L	<0.001	<0.001	-	-	<0.001	<0.001	-	-
Yttrium	0.001	mg/L	<0.001	<0.001	-	-	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.003	0.001	-	-	<0.001	0.001	-	-
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	-	-	<0.015	<0.015	-	-
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-

Notes:
 ND = Not detected
 RDL = Reportable Detection Limit
¹British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2006
²Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the Protection of Freshwater Aquatic Life, 2005
³Indicates the applicable standard is lower than the detection limit.
 "-" Indicates no analysis conducted or no applicable standard available.
BOLD indicates water quality guideline exceeded
 Indicates parameter exceeds BC Water Quality Guidelines
 Indicates parameter exceeds Canadian Environmental Quality Guidelines

W3 Station Water Quality Field Data, Laboratory Data, Total Metals and Dissolved Metals

Sample ID	RDL	Units	17-Oct-07	21-Nov-07	20-Dec-07	17-Jan-08	27-Feb-08	27-Mar-08	BC WQG ¹	CCME ²
Field Data										
Temperature (°C)	-	°C	4.06	1.3	-	0.8	0.90	0.6	15	-
Conductivity (us/cm)	-	us/cm	78	109	-	-	133	-	-	-
Salinity	-	%	0.04	0	-	0	0.00	0	-	-
DO (mg/L)	-	mg/L	16.63	15.68	-	16.64	14.65	14.27	5.0-9.0	5.5-9.5
pH (units)	-	pH units	7.62	4.69	-	-	6.63	-	6.5-9.0	6.5-9.0
Laboratory Data										
pH	0.01	pH units	-	7.67	-	7.67	7.73	7.89	6.5-9.0	6.5-9.0
Conductivity (uS/cm)	1	uS/cm	-	101	-	111	123	124	-	-
Colour (Co/Pt units)	5	Co/Pt	15	11	-	6	5	<5	-	-
Turbidity (NTU)	0.2	NTU	5.2	0.3	-	<0.2	<0.2	0.3	8 NTU when background 8-80	8 NTU when background 8-80
Alkalinity Total (pH 4.5)	1	mg/L	33.1	44.5	-	48	55	80	-	-
Total Suspended Solids	1	mg/L	5	2	-	<1	<1	<1	25	-
Total Dissolved Solids	1	mg/L	86	108	-	110	104	100	-	-
Chloride	0.5	mg/L	<0.3	<0.3	-	<0.3	<0.3	<0.3	150 - 600	-
Fluoride	0.1	mg/L	<0.3	<0.3	-	0.02	0.10	<0.1	0.2	-
Nitrate (as N)	0.003	mg/L	<0.003	<0.003	-	0.059	0.04	0.075	200	13
Nitrite (as N)	0.003	mg/L	<0.003	<0.003	-	<0.003	<0.003	<0.003	0.06 (Cl<0.2)	0.06
T.K.N. (as N)	0.05	mg/L	0.10	<0.05	-	0.26	<0.05	<0.05	-	-
Total Nitrogen (as N)	0.05	mg/L	0.10	<0.05	-	0.320	<0.05	0.08	-	-
Ammonia (as N)	0.005	mg/L	<0.005	<0.005	-	0.018	0.007	0.01	2-2.08 mg/l	-
Total Phosphate (as P)	0.003	mg/L	<0.003	0.021	-	<0.003	<0.003	<0.003	-	-
Dissolved Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Ortho Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Sulphate (as SO ₄)	1	mg/L	4	9	-	9	11	9	50 - 100 mg/l	-
Hardness (as CaCO ₃)	0.5	mg/L	37	50	-	48	63	61	-	-
Cyanide	0.005	mg/L	<0.005	-	-	-	-	-	0.005-0.01mg/l	-
Dissolved Organic Carbon	1	mg/L	3	-	-	<2	3	2	-	-
Total Metals										
Aluminum	0.001	mg/L	0.217	0.019	-	0.007	0.004	0.017	(dissolved) 0.1 or, if pH<6.5, e ^{(1.209-(2.426*pH)-(0.286*pH²))}	0.005 @pH <6.5, Ca <4, DOC<2 0.1 @ pH >6.5, Ca >4, DOC<2
Antimony	0.001	mg/L	<0.001	<0.001	-	0.001	<0.001	<0.001	0.02	-
Arsenic	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	0.005	0.005
Barium	0.01	mg/L	<0.01	<0.01	-	<0.01	<0.01	<0.01	5	-
Beryllium	0.5	mg/L	<0.001	<0.001	-	0.6	<0.001	<0.001	0.0053	-
Bismuth	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.001	0.005	-	<0.001	0.002	<0.001	1.2	-
Cadmium	0.001	mg/L	<0.001	<0.001	-	0.008	<0.001	<0.001	10(0.86[log H]-3.2 (ie. 0.00001 @ 30(H) 0.00003 @ 90(H) 0.00005 @ 150(H) 0.00006 @ 210(H))	0.000017 or 10(0.86[log H]-3.2)
Calcium	0.01	mg/L	11.01	15.5	-	14.57	18.78	18.12	-	-
Chromium	0.001	mg/L	<0.001	<0.001	-	0.001	<0.001	<0.001	Cr (VI) = 0.001 Cr (III) = 0.0089	Cr (VI) = 0.001 Cr (III) = 0.0089
Cobalt	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	0.004	-
Copper	0.2	mg/L	0.001	<0.001	-	0.2	<0.001	0.001	(0.094(H)+2)/1000	0.002-0.004
Iron	0.005	mg/L	0.252	0.02	-	0.006	0.007	0.06	0.3	0.3
Lead	0.1	mg/L	0.002	0.005	-	<0.1	<0.001	<0.001	e ^{(1.27ln(H)-1.46)} ie. (H)<8=0.003 - (H)300=0.33	0.001 @ 0-60(H) 0.002 @ 60-120(H) 0.004 @ 120-180(H)
Magnesium	0.1	mg/L	2.2	3.3	-	2.9	3.6	3.7	-	-
Manganese	0.001	mg/L	0.007	0.001	-	<0.001	<0.001	0.001	(0.01102*H)+0.54 (ie. 0.8 @ 25(H) 1.1 @ 50(H) 1.6 @ 100(H) 2.2 @ 150(H) 3.8 @ 300(H))	-
Molybdenum	0.001	mg/L	<0.001	0.001	-	0.001	<0.001	0.001	2	0.073
Nickel	0.001	mg/L	0.001	<0.001	-	<0.001	<0.001	<0.001	0.025 @ 0-60(H) 0.065 @ 60-120(H) 0.11 @ 120-180(H) 0.15 @ >80(H)	0.025 @ 0-60(H) 0.065 @ 60-120 (H) 0.11 @ 120-180 (H) 0.15 @ >80(H)
Potassium	0.01	mg/L	0.12	0.08	-	0.11	0.08	0.11	-	-
Selenium	0.5	mg/L	0.001	0.001	-	0.8	0.001	0.001	0.002	-
Silicon	0.01	mg/L	1.19	1.38	-	1.03	1.1	1.19	-	-
Silver	0.005	mg/L	<0.005	<0.005	-	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.3	0.4	-	0.3	0.4	0.3	-	-
Tin	0.01	mg/L	<0.01	<0.01	-	<0.01	<0.01	<0.01	400 triethyl tin 22 triphenyl tin	-
Titanium	0.007	mg/L	<0.007	<0.007	-	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	0.3	-
Vanadium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	0.006	-
Yttrium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.003	0.002	-	0.005	0.001	0.006	33+0.75*(H-90) (ie. 0.033 @ <90(H) 0.040 @ 100(H) 0.115 @ 200(H))	0.03
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	-	<0.015	<0.015	<0.015	0.0001	0.000004 methylmercury 0.000026 inorganic mercury
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-
Dissolved Metals										
Aluminum	0.001	mg/L	0.034	0.008	-	0.005	<0.001	<0.001	0.1 (dissolved)	0.1 @ pH>6.5
Antimony	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Arsenic	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	-	-
Barium	0.01	mg/L	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	-
Beryllium	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	-	-
Bismuth	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.001	<0.001	-	<0.001	0.002	<0.001	-	-
Cadmium	0.001	mg/L	<0.001	<0.001	-	0.005	<0.001	<0.001	-	-
Calcium	0.01	mg/L	11.01	14.4	-	14.52	18.68	18.09	-	-
Chromium	0.001	mg/L	<0.001	<0.001	-	0.001	<0.001	<0.001	-	-
Cobalt	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	-	-
Copper	0.2	mg/L	0.001	<0.001	-	0.2	<0.001	<0.001	-	-
Iron	0.005	mg/L	0.039	0.01	-	<0.005	<0.005	<0.005	-	-
Lead	0.1	mg/L	0.001	0.005	-	<0.1	<0.001	<0.001	-	-
Magnesium	0.1	mg/L	2.2	3.0	-	2.8	3.6	3.6	-	-
Manganese	0.001	mg/L	0.002	0.001	-	<0.001	<0.001	<0.001	-	-
Molybdenum	0.001	mg/L	<0.001	<0.001	-	0.001	<0.001	0.001	-	-
Nickel	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Potassium	0.01	mg/L	0.1	0.08	-	0.1	0.08	0.1	-	-
Selenium	0.5	mg/L	<0.001	0.001	-	0.8	0.001	0.001	-	-
Silicon	0.01	mg/L	1.13	1.31	-	1.01	1.1	1.13	-	-
Silver	0.005	mg/L	<0.005	<0.005	-	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.3	0.4	-	0.3	0.4	0.3	-	-
Tin	0.01	mg/L	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	-
Titanium	0.007	mg/L	<0.007	<0.007	-	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Vanadium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Yttrium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.002	0.001	-	0.005	<0.001	0.001	-	-
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	-	<0.015	<0.015	<0.015	-	-
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-

Notes:

ND = Not detected

RDL = Reportable Detection Limit

¹British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2006

²Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the Protection of Freshwater Aquatic Life, 2005

³Indicates the applicable standard is lower than the detection limit.

"-" indicates no analysis conducted or no applicable standard available.

BOLD indicates water quality guideline exceeded

[Redacted] indicates parameter exceeds BC Water Quality Guidelines

[Redacted] indicates parameter exceeds Canadian Environmental Quality Guidelines

W4 Station Water Quality Field Data, Laboratory Data, Total Metals and Dissolved Metals

Sample ID	RDL	Units	17-Oct-07	21-Nov-07	20-Dec-07	17-Jan-08	27-Feb-08	27-Mar-08	BC WQG ¹	CCME ²
Field Data										
Temperature (°C)	-	°C	4.32	0	-	0.2	0.5	0.4	15	-
Conductivity (uS/cm)	-	uS/cm	88	-	-	-	115	-	-	-
Salinity	-	%	0.04	-	-	0	0	0	-	-
DO (mg/L)	-	mg/L	14.9	-	-	16.25	14.65	14.76	5.0-9.0	5.5-9.5
pH (units)	-	pH units	7.19	7.03	-	-	6.84	-	6.5-9.0	6.5-9.0
Laboratory Data										
pH	0.01	pH units	-	7.56	-	7.62	7.61	7.78	6.5-9.0	6.5-9.0
Conductivity (uS/cm)	1	uS/cm	-	94	-	107	108	107	-	-
Colour (Co/Pl units)	5	Co/Pl	9	9	-	9	8	<5	-	-
Turbidity (NTU)	0.2	NTU	0.2	0.2	-	<0.2	<0.2	<0.2	8 NTU when background 8-80	8 NTU when background 8-80
Alkalinity Total (pH 4.5)	1	mg/L	31.5	35.3	-	41	43	42	-	-
Total Suspended Solids	1	mg/L	4	<1	-	<1	<1	<1	25	-
Total Dissolved Solids	1	mg/L	71	92	-	90	81	87	-	-
Chloride	0.5	mg/L	<0.3	<0.3	-	<0.3	<0.3	<0.3	150 - 600	-
Fluoride	0.1	mg/L	-	-	-	0.02	0.10	<0.1	0.2	-
Nitrate (as N)	0.003	mg/L	0.039	0.163	-	0.259	0.216	0.219	200	13
Nitrite (as N)	0.003	mg/L	<0.003	<0.003	-	<0.003	<0.003	<0.003	0.06 (Cl-0.2)	0.06
T.K.N. (as N)	0.05	mg/L	<0.05	<0.05	-	0.064	<0.05	<0.05	-	-
Total Nitrogen (as N)	0.05	mg/L	<0.05	0.16	-	0.162	0.22	0.22	-	-
Ammonia (as N)	0.005	mg/L	0.004	<0.005	-	<0.005	<0.005	0.009	2-2.08 mg/l	-
Total Phosphate (as P)	0.003	mg/L	<0.003	<0.003	-	<0.003	<0.003	<0.003	-	-
Dissolved Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Ortho Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Sulphate (as SO ₄)	1	mg/L	9	11	-	12	14	12	50 - 100 mg/l	-
Hardness (as CaCO ₃)	0.5	mg/L	41	45	-	42	48	50	-	-
Cyanide	0.005	mg/L	<0.005	-	-	-	-	-	0.005-0.01mg/l	-
Dissolved Organic Carbon	1	mg/L	2	-	-	<2	2	1	-	-
Total Metals										
Aluminum	0.001	mg/L	0.012	0.008	-	0.006	0.002	0.003	(dissolved) 0.1 or, if pH<6.5, $e^{(1.209(2.426^{pH}) - 0.286^{pH+2})}$	0.005 @pH <6.5, Ca <4, DOC<2 0.1 @ pH >6.5, Ca >4, DOC>2
Antimony	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	0.02	-
Arsenic	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	0.001	0.005	0.005
Barium	0.01	mg/L	0.02	0.02	-	0.02	0.02	0.03	5	-
Beryllium	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	0.0053	-
Bismuth	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.001	0.005	-	<0.001	<0.001	<0.001	1.2	-
Cadmium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	10(0.86[log H]-3.2 (ie. 0.00001 @ 30(H) 0.00003 @ 90(H) 0.00005 @ 150(H) 0.00006 @ 210(H))	0.000017 or 10(0.86[log H]-3.2)
Calcium	0.01	mg/L	15.05	16.6	-	15.56	17.78	18.3	-	-
Chromium	0.001	mg/L	<0.001	<0.001	-	0.001	<0.001	<0.001	Cr (VI) = 0.001 Cr (III) = 0.0089	Cr (VI) = 0.001 Cr (III) = 0.0089
Cobalt	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	0.004	-
Copper	0.2	mg/L	0.001	0.001	-	0.7	<0.001	0.001	(0.094(H)+2)/1000	0.002-0.004
Iron	0.005	mg/L	0.014	0.014	-	0.006	0.006	0.019	0.3	0.3
Lead	0.1	mg/L	0.001	0.01	-	<0.1	<0.001	<0.001	$e^{(1.27ln(H)-1.46)}$ ie. (H)-8=0.003 - (H)300=0.33	0.001 @ 0-60(H) 0.002 @ 60-120(H) 0.004 @ 120-180(H)
Magnesium	0.1	mg/L	0.8	0.9	-	0.8	0.9	1	-	-
Manganese	0.001	mg/L	0.001	0.001	-	0.001	<0.001	0.001	(0.01102 ^H)+0.54 (ie. 0.8 @ 25(H) 1.1 @ 50(H) 1.6 @ 100(H) 2.2 @ 150(H) 3.8 @ 300(H))	-
Molybdenum	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	2	0.073
Nickel	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	0.025 @ 0-60(H) 0.065 @ 60-120(H) 0.11 @ 120-180(H) 0.15 @ >80(H)	0.025 @ 0-60(H) 0.065 @ 60-120 (H) 0.11 @ 120-180 (H) 0.15 @ >80(H)
Potassium	0.01	mg/L	0.79	1.2	-	1.21	1.08	1.17	-	-
Selenium	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	0.002	-
Silicon	0.01	mg/L	1.31	1.9	-	1.53	1.68	1.72	-	-
Silver	0.005	mg/L	<0.005	<0.005	-	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.4	0.5	-	0.4	0.4	0.4	-	-
Tin	0.01	mg/L	<0.01	<0.01	-	<0.01	<0.01	<0.01	400 triethyl tin 22 triphenyl tin	-
Titanium	0.007	mg/L	<0.007	<0.007	-	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	0.3	-
Vanadium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	0.006	-
Yttrium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.003	0.001	-	0.002	<0.001	0.001	33+0.75 ^(H-90) (ie. 0.033 @ <90(H) 0.040 @ 100(H) 0.115 @ 200(H))	0.03
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	-	<0.015	<0.015	<0.015	0.0001	0.000004 methylmercury 0.000026 inorganic mercury
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-
Dissolved Metals										
Aluminum	0.001	mg/L	0.012	0.005	-	0.005	<0.001	0.003	0.1 (dissolved)	0.1 @ pH>6.5
Antimony	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Arsenic	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	-	-
Barium	0.01	mg/L	0.02	0.02	-	0.02	0.02	0.03	-	-
Beryllium	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	-	-
Bismuth	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Cadmium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Calcium	0.01	mg/L	14.95	16.1	-	14.91	17.43	18.28	-	-
Chromium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Cobalt	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	-	-
Copper	0.2	mg/L	0.001	0.001	-	0.6	<0.001	0.001	-	-
Iron	0.005	mg/L	0.008	0.005	-	<0.005	<0.005	<0.005	-	-
Lead	0.1	mg/L	0.001	0.006	-	<0.1	<0.001	<0.001	-	-
Magnesium	0.1	mg/L	0.8	0.8	-	0.8	0.9	1	-	-
Manganese	0.001	mg/L	0.001	0.001	-	<0.001	<0.001	<0.001	-	-
Molybdenum	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Nickel	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Potassium	0.01	mg/L	0.79	1.14	-	1.16	1.07	1.1	-	-
Selenium	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	-	-
Silicon	0.01	mg/L	1.31	1.8	-	1.52	1.64	1.62	-	-
Silver	0.005	mg/L	<0.005	<0.005	-	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.4	0.5	-	0.4	0.4	0.4	-	-
Tin	0.01	mg/L	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	-
Titanium	0.007	mg/L	<0.007	<0.007	-	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Vanadium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Yttrium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.001	<0.001	-	0.002	<0.001	<0.001	-	-
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	-	<0.015	<0.015	<0.015	-	-
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-

Notes:

ND = Not detected

RDL = Reportable Detection Limit

¹British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2006

²Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the Protection of Freshwater Aquatic Life, 2005

³Indicates the applicable standard is lower than the detection limit.

"-" Indicates no analysis conducted or no applicable standard available.

BOLD Indicates water quality guideline exceeded

[Redacted] indicates parameter exceeds BC Water Quality Guidelines

[Redacted] indicates parameter exceeds Canadian Environmental Quality Guidelines

W5 Station Water Quality Field Data, Laboratory Data, Total Metals and Dissolved Metals										
Vanadium	RDL	Units	17-Oct-07	21-Nov-07	20-Dec-07	17-Jan-08	27-Feb-08	27-Mar-08	BC WQG ¹	CCME ²
Field Data										
Temperature (°C)	-	°C	4.13	-	-	0.5	0.7	0.6	15	-
Conductivity (us/cm)	-	us/cm	68	-	-	-	58	-	-	-
Salinity	-	%	0.03	-	-	0	0	0	-	-
DO (mg/L)	-	mg/L	15	-	-	16.5	14.53	14.89	5.0-9.0	5.5-9.5
pH (units)	-	pH units	7.22	-	-	-	6.89	-	6.5-9.0	6.5-9.0
Laboratory Data										
pH	0.01	pH units	-	7.40	7.25	7.46	7.59	7.66	6.5-9.0	6.5-9.0
Conductivity (uS/cm)	1	uS/cm	-	82	-	82	88	91	-	-
Colour (Co/Pt units)	5	Co/Pt	14	12	10	9	8	<5	-	-
Turbidity (NTU)	0.2	NTU	2.9	0.6	3.7	0.3	0.4	0.3	8 NTU when background 8-80	8 NTU when background 8-80
Alkalinity Total (pH 4.5)	1	mg/L	23.1	25.7	26	27	30	29	-	-
Total Suspended Solids	1	mg/L	6	<1	11	<1	<1	<1	25	-
Total Dissolved Solids	1	mg/L	61	73	78	82	60	72	-	-
Chloride	0.5	mg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	150 - 600	-
Fluoride	0.1	mg/L	-	-	-	0.05	0.10	<0.1	0.2	-
Nitrate (as N)	0.003	mg/L	<0.003	0.04	0.449	0.071	0.038	0.082	200	13
Nitrite (as N)	0.003	mg/L	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.06 (Cl-0.2)	0.06
T.K.N. (as N)	0.05	mg/L	0.14	0.05	<0.05	0.085	0.05	<0.05	-	-
Total Nitrogen (as N)	0.05	mg/L	0.14	0.09	0.45	0.078	0.09	0.08	-	-
Ammonia (as N)	0.005	mg/L	<0.005	0.012	0.006	<0.005	0.007	0.015	2-2.08 mg/l	-
Total Phosphate (as P)	0.003	mg/L	<0.003	<0.003	0.011	<0.003	<0.003	<0.003	-	-
Dissolved Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Ortho Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Sulphate (as SO ₄)	1	mg/L	8	12	19	14	13	13	50 - 100 mg/l	-
Hardness (as CaCO ₃)	0.5	mg/L	30	37	39	34	38	42	-	-
Cyanide	0.005	mg/L	<0.005	-	-	-	-	-	0.005-0.01mg/l	-
Dissolved Organic Carbon	1	mg/L	3	-	1	<2	2	1	-	-
Total Metals										
Aluminum	0.001	mg/L	0.108	0.042	0.034	0.016	0.012	0.023	(dissolved) 0.1 or, if pH<6.5, e ^{(1.209-(2.426*pH)-(0.286*pH^2))}	0.005 @pH <6.5, Ca <4, DOC<2 0.1 @ pH >6.5, Ca >4, DOC>2
Antimony	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.02	-
Arsenic	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.005	0.005
Barium	0.01	mg/L	0.02	0.01	0.01	0.01	0.01	0.02	5	-
Beryllium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.0053	-
Bismuth	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.007	0.005	0.005	<0.001	0.002	<0.001	1.2	-
Cadmium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	10(0.86[log H]-3.2 (ie. 0.00001 @ 30(H) 0.00003 @ 90(H) 0.00005 @ 150(H) 0.00006 @ 210(H))	0.000017 or 10(0.86[log H]-3.2)
Calcium	0.01	mg/L	10.62	13.3	13.98	12.07	13.65	14.6	-	-
Chromium	0.001	mg/L	0.001	0.001	<0.001	0.001	<0.001	<0.001	Cr (VI) = 0.001 Cr (III) = 0.0089	Cr (VI) = 0.001 Cr (III) = 0.0089
Cobalt	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.004	-
Copper	0.2	mg/L	0.003	0.002	0.001	1.0	0.001	0.001	(0.094(H)+2)/1000	0.002-0.004
Iron	0.005	mg/L	0.147	0.05	0.04	0.023	0.021	0.022	0.3	0.3
Lead	0.1	mg/L	0.002	0.005	0.002	<0.1	0.003	<0.001	e ^{(1.27ln(H)-1.46)} ie. (H)-8=0.003 - (H)300=0.33	0.001 @ 0-60(H) 0.002 @ 60-120(H) 0.004 @ 120-180(H)
Magnesium	0.1	mg/L	0.8	1.1	1	0.9	1	1	-	-
Manganese	0.001	mg/L	0.005	0.002	0.003	0.001	0.001	0.001	(0.01102*H)+0.54 (ie. 0.8 @ 25(H) 1.1 @ 50(H) 1.6 @ 100(H) 2.2 @ 150(H) 3.8 @ 300(H))	-
Molybdenum	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	2	0.073
Nickel	0.001	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.025 @ 0-60(H) 0.065 @ 60-120(H) 0.11 @ 120-180(H) 0.15 @ >80(H)	0.025 @ 0-60(H) 0.065 @ 60-120 (H) 0.11 @ 120-180 (H) 0.15 @ >80(H)
Potassium	0.01	mg/L	0.94	1.31	1.34	1.18	1.16	1.3	-	-
Selenium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.002	-
Silicon	0.01	mg/L	1.75	2.28	1.96	1.86	1.16	2.04	-	-
Silver	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.3	0.4	0.5	0.3	0.3	0.3	-	-
Tin	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	400 triethyl tin 22 triphenyl tin	-
Titanium	0.007	mg/L	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.3	-
Vanadium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.006	-
Yttrium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.001	0.002	0.002	0.001	<0.001	0.001	33+0.75*(H-90) (ie. 0.033 @ <90(H) 0.040 @ 100(H) 0.115 @ 200(H))	0.03
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.0001	0.000004 methylmercury 0.000026 inorganic mercury
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-
Dissolved Metals										
Aluminum	0.001	mg/L	0.033	0.012	0.002	0.01	0.005	<0.001	0.1 (dissolved)	0.1 @ pH>6.5
Antimony	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Arsenic	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Barium	0.01	mg/L	0.01	0.02	0.01	0.01	0.01	0.02	-	-
Beryllium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Bismuth	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.007	<0.001	<0.001	<0.001	0.002	<0.001	-	-
Cadmium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Calcium	0.01	mg/L	10.52	12.7	13.75	12.06	13.49	14.33	-	-
Chromium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Cobalt	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Copper	0.2	mg/L	0.002	0.001	0.001	1.0	0.001	0.001	-	-
Iron	0.005	mg/L	0.019	0.01	<0.005	<0.005	<0.005	<0.005	-	-
Lead	0.1	mg/L	0.001	0.005	<0.001	<0.1	0.001	<0.001	-	-
Magnesium	0.1	mg/L	0.8	1.0	1	0.9	1	1	-	-
Manganese	0.001	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Molybdenum	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Nickel	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Potassium	0.01	mg/L	0.87	1.3	1.32	1.15	1.15	1.27	-	-
Selenium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Silicon	0.01	mg/L	1.7	2.15	1.92	1.84	1.09	2	-	-
Silver	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.3	0.4	0.5	0.3	0.3	0.3	-	-
Tin	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Titanium	0.007	mg/L	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Vanadium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Yttrium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.001	<0.001	0.002	0.001	<0.001	0.001	-	-
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	-	-
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-

Notes:

ND = Not detected

RDL = Reportable Detection Limit

¹British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2006

²Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the Protection of Freshwater Aquatic Life, 2005

³Indicates the applicable standard is lower than the detection limit.

*- Indicates no analysis conducted or no applicable standard available.

BOLD indicates water quality guideline exceeded

[Shaded Box] Indicates parameter exceeds BC Water Quality Guidelines

[Shaded Box] Indicates parameter exceeds Canadian Environmental Quality Guidelines

W6 Station Water Quality Field Data, Laboratory Data, Total Metals and Dissolved Metals										
Sample ID	RDL	Units	17-Oct-07	21-Nov-07	20-Dec-07	17-Jan-08	27-Feb-08	27-Mar-08	BC WQG ¹	CCME ²
Field Data										
Temperature (°C)	-	°C	4.56	-	0.7	0.5	-	0.6	15	-
Conductivity (uS/cm)	-	uS/cm	36	-	46	-	-	-	-	-
Salinity	-	%	0.02	-	0	0	-	-	-	-
DO (mg/L)	-	mg/L	14.39	-	15.43	14.8	-	14.5	5.0-9.0	5.5-9.5
pH (units)	-	pH units	6.95	-	3.78	-	-	-	6.5-9.0	6.5-9.0
Laboratory Data										
pH	0.01	pH units	-	7.30	7.07	7.36	7.4	7.64	6.5-9.0	6.5-9.0
Conductivity (uS/cm)	1	uS/cm	-	44	-	54	59	57	-	-
Colour (Co/PT units)	5	Co/PT	8	10	8	9	5	<5	-	-
Turbidity (NTU)	0.2	NTU	<0.2	0.1	<0.2	<0.2	<0.2	<0.2	8 NTU when background 8-80	8 NTU when background 8-80
Alkalinity Total (pH 4.5)	1	mg/L	10.5	15.9	20	37	22	23	-	-
Total Suspended Solids	1	mg/L	3	2	<1	<1	<1	<1	25	-
Total Dissolved Solids	1	mg/L	35	45	50	55	47	46	-	-
Chloride	0.5	mg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	150 - 600	-
Fluoride	0.1	mg/L	-	-	-	0.05	0.10	0.1	0.2	-
Nitrate (as N)	0.003	mg/L	0.205	0.201	0.228	0.210	0.267	0.256	200	13
Nitrite (as N)	0.003	mg/L	0.005	<0.003	<0.003	<0.003	<0.003	<0.003	0.06 (Cl<0.2)	0.06
T.K.N. (as N)	0.05	mg/L	0.06	0.05	<0.05	<0.05	<0.05	<0.05	-	-
Total Nitrogen (as N)	0.05	mg/L	0.27	0.25	0.23	0.210	0.27	0.260	-	-
Ammonia (as N)	0.005	mg/L	<0.005	<0.005	<0.005	0.007	<0.005	0.010	2-2.08 mg/l	-
Total Phosphate (as P)	0.003	mg/L	<0.003	<0.003	0.008	<0.003	<0.003	<0.003	-	-
Dissolved Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Ortho Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Sulphate (as SO ₄)	1	mg/L	3	4	9	5	8	4	50 - 100 mg/l	-
Hardness (as CaCO ₃)	0.5	mg/L	15	20	24	19	25	24	-	-
Cyanide	0.005	mg/L	<0.005	-	-	-	-	-	0.005-0.01mg/l	-
Dissolved Organic Carbon	1	mg/L	2	-	<1	<2	3	<1	-	-
Total Metals										
Aluminum	0.001	mg/L	0.043	0.021	0.02	0.01	0.009	0.010	(dissolved) 0.1 or, if pH<6.5, $e^{(1.209(2.426^{pH})-0.286^{pH+2})}$	0.005 @pH <6.5, Ca <4, DOC<2 0.1 @ pH >6.5, Ca >4, DOC>2
Antimony	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.02	-
Arsenic	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.005	0.005
Barium	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	5	-
Beryllium	0.5	mg/L	<0.001	<0.001	<0.001	0.5	<0.001	<0.001	0.0053	-
Bismuth	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.007	<0.001	0.028	<0.001	0.003	<0.001	1.2	-
Cadmium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	10(0.86[log H]-3.2 (ie. 0.00001 @ 30(H) 0.00003 @ 90(H) 0.00005 @ 150(H) 0.00006 @ 210(H))	0.000017 or 10(0.86[log H]-3.2)
Calcium	0.01	mg/L	4.91	6.8	7.78	6.23	8.44	7.98	-	-
Chromium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	Cr (VI) = 0.001 Cr (III) = 0.0089	Cr (VI) = 0.001 Cr (III) = 0.0089
Cobalt	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.004	-
Copper	0.2	mg/L	<0.001	<0.001	0.001	0.2	<0.001	0.003	(0.094(H)+2)/1000	0.002-0.004
Iron	0.005	mg/L	0.016	0.014	<0.005	0.009	0.01	0.012	0.3	0.3
Lead	0.1	mg/L	0.001	0.008	0.003	<0.1	0.003	<0.001	$e^{(1.27ln(H)-1.46)}$ ie. (H)<8=0.003 - (H)300=0.33	0.001 @ 0-60(H) 0.002 @ 60-120(H) 0.004 @ 120-180(H)
Magnesium	0.1	mg/L	0.6	0.9	1	0.8	1	1	-	-
Manganese	0.001	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	(0.01102 ^H)+0.54 (ie. 0.8 @ 25(H) 1.1 @ 50(H) 1.6 @ 100(H) 2.2 @ 150(H) 3.8 @ 300(H))	-
Molybdenum	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	2	0.073
Nickel	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.025 @ 0-60(H) 0.065 @ 60-120(H) 0.11 @ 120-180(H) 0.15 @ >80(H)	0.025 @ 0-60(H) 0.065 @ 60-120 (H) 0.11 @ 120-180 (H) 0.15 @ >80(H)
Potassium	0.01	mg/L	0.56	0.63	0.79	0.56	0.69	0.74	-	-
Selenium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.002	-
Silicon	0.01	mg/L	1.69	2.1	2.21	1.73	1.13	2.08	-	-
Silver	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.8	0.8	1.2	1	1.3	1.4	-	-
Tin	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	400 triethyl tin 22 triphenyl tin	-
Titanium	0.007	mg/L	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.3	-
Vanadium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.006	-
Yttrium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.002	0.001	0.003	0.002	<0.001	0.003	33+0.75 ^(H-90) (ie. 0.033 @ <90(H) 0.040 @ 100(H) 0.115 @ 200(H))	0.03
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.0001	0.000004 methylmercury 0.000026 inorganic mercury
Lithium	0.5	mg/L	-	-	-	-	<0.1	<0.5	-	-
Dissolved Metals										
Aluminum	0.001	mg/L	0.039	0.017	0.019	0.01	<0.001	0.010	0.1 (dissolved)	0.1 @ pH>6.5
Antimony	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Arsenic	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Barium	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	-	-
Beryllium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Bismuth	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.007	<0.001	0.026	<0.001	0.002	<0.001	-	-
Cadmium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Calcium	0.01	mg/L	4.68	6.3	7.75	6.2	8.18	7.92	-	-
Chromium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Cobalt	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Copper	0.2	mg/L	<0.001	<0.001	0.001	0.2	<0.001	<0.001	-	-
Iron	0.005	mg/L	0.012	0.014	<0.005	<0.005	0.007	0.005	-	-
Lead	0.1	mg/L	<0.001	0.007	0.002	<0.1	<0.001	<0.001	-	-
Magnesium	0.1	mg/L	0.6	0.8	1	0.8	1	1	-	-
Manganese	0.001	mg/L	0.001	0.001	0.001	0.001	<0.001	0.001	-	-
Molybdenum	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Nickel	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Potassium	0.01	mg/L	0.55	0.63	0.74	0.55	0.61	0.69	-	-
Selenium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Silicon	0.01	mg/L	1.59	2.07	1.99	1.7	1.08	2.07	-	-
Silver	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.7	0.8	1.2	1	1.2	1.3	-	-
Tin	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Titanium	0.007	mg/L	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Vanadium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Yttrium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.001	0.001	0.003	0.001	<0.001	0.001	-	-
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	-	-
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-

Notes:

ND = Not detected

RDL = Reportable Detection Limit

¹British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2006

²Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the Protection of Freshwater Aquatic Life, 2005

³Indicates the applicable standard is lower than the detection limit.

"-" Indicates no analysis conducted or no applicable standard available.

BOLD indicates water quality guideline exceeded

 indicates parameter exceeds BC Water Quality Guidelines

 indicates parameter exceeds Canadian Environmental Quality Guidelines

W7 Station Water Quality Field Data, Laboratory Data, Total Metals and Dissolved Metals										
Sample ID	RDL	Units	17-Oct-07	21-Nov-07	20-Dec-07	17-Jan-08	27-Feb-08	27-Mar-08	BC WQG ¹	CCME ²
Field Data										
Temperature (°C)	-	°C	3.8	-	0.2	0.1	0.2	0.4	15	-
Conductivity (uS/cm)	-	uS/cm	62	-	88	-	99	98	-	-
Salinity	-	%	0.03	-	0	0	0	0	-	-
DO (mg/L)	-	mg/L	15.49	-	16.8	15.56	15.3	14.57	5.0-9.0	5.5-9.5
pH (units)	-	pH units	7.01	-	-	-	6.89	4.94	6.5-9.0	6.5-9.0
Laboratory Data										
pH	0.01	pH units	-	7.48	7.21	7.43	7.62	7.62	6.5-9.0	6.5-9.0
Conductivity (uS/cm)	1	uS/cm	-	84	-	92	93	91	-	-
Colour (Co/PT units)	5	Co/PT	10	9	8	7	5	<5	-	-
Turbidity (NTU)	0.2	NTU	0.4	0.5	0.2	0.2	<0.2	0.2	8 NTU when background 8-80	8 NTU when background 8-80
Alkalinity Total (pH 4.5)	1	mg/L	23.1	34.2	33	36	39	14	-	-
Total Suspended Solids	1	mg/L	<1	<1	<1	<1	<1	<1	25	-
Total Dissolved Solids	1	mg/L	69	72	68	81	74	70	-	-
Chloride	0.5	mg/L	<0.3	<0.3	<0.3	0.3	<0.3	<0.3	150 - 600	-
Fluoride	0.1	mg/L	-	-	-	0.03	0.10	<0.1	0.2	-
Nitrate (as N)	0.003	mg/L	0.106	0.132	-	0.155	0.132	0.168	200	13
Nitrite (as N)	0.003	mg/L	<0.003	<0.003	<0.003	<0.003	<0.003	<0.03	0.06 (Cl-0.2)	0.06
T.K.N. (as N)	0.05	mg/L	0.09	<0.05	0.19	0.059	<0.05	<0.05	-	-
Total Nitrogen (as N)	0.05	mg/L	0.20	0.13	0.35	0.107	0.13	0.170	-	-
Ammonia (as N)	0.005	mg/L	<0.005	<0.005	0.159	0.017	<0.005	<0.005	2-2.08 mg/l	-
Total Phosphate (as P)	0.003	mg/L	<0.003	<0.003	0.012	<0.003	<0.003	<0.003	-	-
Dissolved Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Ortho Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Sulphate (as SO ₄)	1	mg/L	6	8	14	10	10	8	50 - 100 mg/l	-
Hardness (as CaCO ₃)	0.5	mg/L	28	40	40	35	41	42	-	-
Cyanide	0.005	mg/L	<0.005	-	-	-	-	-	0.005-0.01mg/l	-
Dissolved Organic Carbon	1	mg/L	2	-	1	<2	3	1	-	-
Total Metals										
Aluminum	0.001	mg/L	0.032	0.031	0.006	0.006	0.006	0.003	(dissolved) 0.1 or, if pH<6.5, $e^{(1.209(2.426 \cdot \text{pH}) - 0.286 \cdot \text{pH}^2)}$	0.005 @pH <6.5, Ca <4, DOC <2 0.1 @ pH >6.5, Ca >4, DOC >2
Antimony	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.02	-
Arsenic	0.5	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.005	0.005
Barium	0.01	mg/L	0.01	0.01	0.01	0.01	0.01	0.01	5	-
Beryllium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.0053	-
Bismuth	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.003	<0.001	<0.001	<0.001	0.001	<0.001	1.2	-
Cadmium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	10(0.86[log H]-3.2 (ie. 0.00001 @ 30(H) 0.00003 @ 90(H) 0.00005 @ 150(H) 0.00006 @ 210(H))	0.000017 or 10(0.86[log H]-3.2)
Calcium	0.01	mg/L	8.93	12.7	12.58	10.94	12.69	13.26	-	-
Chromium	0.001	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	Cr (VI) = 0.001 Cr (III) = 0.0089	Cr (VI) = 0.001 Cr (III) = 0.0089
Cobalt	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.004	-
Copper	0.2	mg/L	0.001	0.001	0.001	0.4	<0.001	0.001	(0.094(H)+2)/1000	0.002-0.004
Iron	0.005	mg/L	0.046	0.047	<0.005	0.018	0.018	0.016	0.3	-
Lead	0.1	mg/L	0.001	0.008	0.001	<0.1	0.007	<0.001	$e^{(1.27n(H)-1.46)}$ ie. (H)<8=0.003 · (H)300=0.33	0.001 @ 0-60(H) 0.002 @ 60-120(H) 0.004 @ 120-180(H)
Magnesium	0.1	mg/L	1.5	2.2	2.1	1.9	2.2	2.2	-	-
Manganese	0.001	mg/L	0.003	0.004	0.001	0.001	0.001	0.001	(0.01102 ^H)+0.54 (ie. 0.8 @ 25(H) 1.1 @ 50(H) 1.6 @ 100(H) 2.2 @ 150(H) @ 300(H))	3.8 0.073
Molybdenum	0.001	mg/L	<0.001	0.001	0.001	0.001	0.001	<0.001	2	0.073
Nickel	0.001	mg/L	0.001	0.001	<0.001	<0.001	<0.001	0.001	0.025 @ 0-60(H) 0.065 @ 60-120(H) @ 120-180(H) @ >80(H)	0.11 0.15 0.025 @ 0-60(H) 0.065 @ 60-120 (H) 0.11 @ 120-180 (H) 0.15 @ >80(H)
Potassium	0.01	mg/L	0.52	0.65	0.65	0.58	0.57	0.65	-	-
Selenium	0.5	mg/L	<0.001	0.001	0.001	0.7	0.001	0.001	0.002	-
Silicon	0.01	mg/L	1.94	2.57	2.48	2.2	1.78	2.46	-	-
Silver	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.5	0.7	0.8	0.8	0.8	0.8	-	-
Tin	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	400 triethyl tin 22 triphenyl tin	-
Titanium	0.007	mg/L	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.3	-
Vanadium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.006	-
Yttrium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.001	0.001	0.002	0.001	<0.001	0.003	33+0.75 ^(H-90) (ie. 0.033 @ <90(H) 0.040 @ 100(H) 0.115 @ 200(H))	0.03
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.0001	0.000004 methylmercury 0.000026 inorganic mercury
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-
Dissolved Metals										
Aluminum	0.001	mg/L	0.028	0.011	0.003	0.003	<0.001	0.003	0.1 (dissolved)	0.1 @ pH>6.5
Antimony	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Arsenic	0.5	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Barium	0.01	mg/L	0.01	0.01	<0.01	0.01	<0.01	0.01	-	-
Beryllium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Bismuth	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	-	-
Cadmium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Calcium	0.01	mg/L	8.5	12.1	11.9	10.57	12.59	13.22	-	-
Chromium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Cobalt	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Copper	0.2	mg/L	0.001	0.001	0.001	0.4	<0.001	0.001	-	-
Iron	0.005	mg/L	0.022	0.024	<0.005	<0.005	0.005	0.016	-	-
Lead	0.1	mg/L	0.001	0.007	0.001	<0.1	<0.001	<0.001	-	-
Magnesium	0.1	mg/L	1.4	2.0	2	1.9	2.2	2.2	-	-
Manganese	0.001	mg/L	0.003	0.003	0.001	0.001	<0.001	0.001	-	-
Molybdenum	0.001	mg/L	<0.001	0.001	0.001	0.001	0.001	<0.001	-	-
Nickel	0.001	mg/L	0.001	0.001	<0.001	<0.001	<0.001	0.001	-	-
Potassium	0.01	mg/L	0.51	0.65	0.61	0.58	0.55	0.65	-	-
Selenium	0.5	mg/L	<0.001	0.001	0.001	0.7	0.001	0.001	-	-
Silicon	0.01	mg/L	1.89	2.56	2.41	2.18	1.76	2.44	-	-
Silver	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.5	0.7	0.8	0.8	0.8	0.8	-	-
Tin	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Titanium	0.007	mg/L	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Vanadium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Yttrium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.001	0.001	0.002	0.001	<0.001	0.003	-	-
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	-	-
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-

Notes:
 ND = Not detected
 RDL = Reportable Detection Limit
¹British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2006
²Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the Protection of Freshwater Aquatic Life, 2005
³Indicates the applicable standard is lower than the detection limit.
 "-" Indicates no analysis conducted or no applicable standard available.
BOLD indicates water quality guideline exceeded
 [Grey Box] indicates parameter exceeds BC Water Quality Guidelines
 [Dark Grey Box] indicates parameter exceeds Canadian Environmental Quality Guidelines

W8A Station Water Quality Field Data, Laboratory Data, Total Metals and Dissolved Metals										
Sample ID	RDL	Units	17-Oct-07	21-Nov-07	20-Dec-07	17-Jan-08	27-Feb-08	27-Mar-08	BC WQG ¹	CCME ²
Field Data										
Temperature (°C)	-	°C	4.23	-	0	0	0	0	15	-
Conductivity (uS/cm)	-	uS/cm	32	-	45	-	54	-	-	-
Salinity	-	%	0.01	-	0	0	0	0	-	-
DO (mg/L)	-	mg/L	15.22	-	15.56	14.76	14.73	14.39	5.0-9.0	5.5-9.5
pH (units)	-	pH units	6.5	-	6.88	-	6.89	-	6.5-9.0	6.5-9.0
Laboratory Data										
pH	0.01	pH units	-	7.04	6.83	7.10	7.18	7.53	6.5-9.0	6.5-9.0
Conductivity (uS/cm)	1	uS/cm	14	9	10	53	54	52	-	-
Colour (Co/PT units)	5	Co/PT	-	-	-	9	8	<5	-	-
Turbidity (NTU)	0.2	NTU	0.2	1.9	<0.2	<0.2	<0.2	0.2	8 NTU when background 8-80	8 NTU when background 8-80
Alkalinity Total (pH 4.5)	1	mg/L	9.5	19.4	17	18	21	18	-	-
Total Suspended Solids	1	mg/L	2	2	<1	<1	<1	<1	25	-
Total Dissolved Solids	1	mg/L	44	59	49	46	42	45	-	-
Chloride	0.5	mg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	150 - 600	-
Fluoride	0.1	mg/L	-	-	-	0.03	0.10	<0.1	0.2	-
Nitrate (as N)	0.003	mg/L	0.147	0.195	0.216	0.223	0.206	0.231	200	13
Nitrite (as N)	0.003	mg/L	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.06 (Cl<0.2)	0.06
T.K.N. (as N)	0.05	mg/L	0.17	0.05	<0.05	<0.05	<0.05	<0.05	-	-
Total Nitrogen (as N)	0.05	mg/L	0.32	0.25	0.22	0.223	0.21	0.230	-	-
Ammonia (as N)	0.005	mg/L	0.074	0.005	<0.005	0.013	<0.005	<0.005	2-2.08 mg/l	-
Total Phosphate (as P)	0.003	mg/L	<0.003	<0.003	0.007	<0.003	<0.003	<0.003	-	-
Dissolved Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Ortho Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Sulphate (as SO ₄)	1	mg/L	4	6	10	7	6	4	50 - 100 mg/l	-
Hardness (as CaCO ₃)	0.5	mg/L	14	22	21	19	22	22	-	-
Cyanide	0.005	mg/L	<0.005	-	-	-	-	-	0.005-0.01mg/l	-
Dissolved Organic Carbon	1	mg/L	3	-	1	<2	2	1	-	-
Total Metals										
Aluminum	0.001	mg/L	0.058	0.15	0.025	0.022	0.01	0.014	(dissolved) 0.1 or, if pH<6.5, $e^{(1.209-(2.426 \cdot \text{pH})+(0.286 \cdot \text{pH}^2))}$	0.005 @pH <6.5, Ca <4, DOC<2 0.1 @ pH >6.5, Ca >4, DOC>2
Antimony	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.02	-
Arsenic	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.005	0.005
Barium	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	5	-
Beryllium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.0053	-
Bismuth	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.002	0.002	0.021	<0.001	0.004	<0.001	1.2	-
Cadmium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	10(0.86 log H -3.2 (ie. 0.00001 @ 30(H) 0.00003 @ 90(H) 0.00005 @ 150(H) 0.00006 @ 210(H)	0.000017 or 10(0.86 log H -3.2)
Calcium	0.01	mg/L	4.7	7.6	7.1	6.48	7.43	7.44	-	-
Chromium	0.001	mg/L	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	Cr (VI) = 0.001 Cr (III) = 0.0089	Cr (VI) = 0.001 Cr (III) = 0.0089
Cobalt	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.004	-
Copper	0.2	mg/L	<0.001	0.001	<0.001	0.8	<0.001	<0.001	(0.094(H)+2)/1000	0.002-0.004
Iron	0.005	mg/L	0.035	0.169	<0.005	0.029	0.02	0.025	0.3	0.3
Lead	0.1	mg/L	0.002	0.008	0.002	<0.1	0.008	<0.001	$e^{(1.27 \ln(H)-1.46)}$ ie. (H)<8=0.003 - (H)300=0.33	0.001 @ 0-60(H) 0.002 @ 60-120(H) 0.004 @ 120-180(H)
Magnesium	0.1	mg/L	0.5	0.8	0.7	0.7	0.8	0.7	-	-
Manganese	0.001	mg/L	0.002	0.005	0.002	0.002	0.002	0.002	(0.01102*H)+0.54 (ie. 0.8 @ 25(H) 1.1 @ 50(H) 1.6 @ 100(H) 2.2 @ 150(H) 3.8 @ 300(H)	-
Molybdenum	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	2	0.073
Nickel	0.001	mg/L	0.001	0.001	<0.001	<0.001	<0.001	<0.001	0.025 @ 0-60(H) 0.065 @ 60-120(H) 0.11 @ 120-180(H) 0.15 @ >80(H)	0.025 @ 0-60(H) 0.065 @ 60-120 (H) 0.11 @ 120-180 (H) 0.15 @ >80(H)
Potassium	0.01	mg/L	0.57	0.83	0.79	0.7	0.67	0.78	-	-
Selenium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.002	-
Silicon	0.01	mg/L	1.64	2.82	2.93	2.39	2.07	2.48	-	-
Silver	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.6	0.8	0.8	0.8	0.7	0.7	-	-
Tin	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	400 triethyl tin 22 triphenyl tin	-
Titanium	0.007	mg/L	<0.007	0.007	<0.007	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.3	-
Vanadium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.006	-
Yttrium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.002	0.003	0.002	0.003	<0.001	0.001	33+0.75*(H-90) (ie. 0.033 @ <90(H) 0.040 @ 100(H) 0.115 @ 200(H)	0.03
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.0001	0.000004 methylmercury 0.000026 inorganic mercury
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-
Dissolved Metals										
Aluminum	0.001	mg/L	0.056	0.03	0.025	0.017	<0.001	0.014	0.1 (dissolved)	0.1 @ pH>6.5
Antimony	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Arsenic	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Barium	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Beryllium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Bismuth	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.002	<0.001	0.02	<0.001	0.003	<0.001	-	-
Cadmium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Calcium	0.01	mg/L	4.38	7.1	7.09	6.45	7.19	7.29	-	-
Chromium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Cobalt	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Copper	0.2	mg/L	<0.001	<0.001	<0.001	0.7	<0.001	<0.001	-	-
Iron	0.005	mg/L	0.019	0.023	<0.005	0.007	0.018	0.018	-	-
Lead	0.1	mg/L	0.001	0.007	0.001	<0.1	0.005	<0.001	-	-
Magnesium	0.1	mg/L	0.4	0.7	0.7	0.7	0.8	0.7	-	-
Manganese	0.001	mg/L	0.002	0.003	0.002	0.002	0.002	0.002	-	-
Molybdenum	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Nickel	0.001	mg/L	0.001	0.001	<0.001	<0.001	<0.001	<0.001	-	-
Potassium	0.01	mg/L	0.57	0.79	0.77	0.68	0.66	0.75	-	-
Selenium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Silicon	0.01	mg/L	1.61	2.75	2.52	2.33	2	2.44	-	-
Silver	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.6	0.8	0.8	0.8	0.7	0.7	-	-
Tin	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Titanium	0.007	mg/L	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Vanadium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Yttrium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.001	0.002	0.002	0.001	<0.001	0.001	-	-
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	-	-
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-

Notes:

ND = Not detected

RDL = Reportable Detection Limit

¹British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2006

²Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the Protection of Freshwater Aquatic Life, 2005

³Indicates the applicable standard is lower than the detection limit.

"-" Indicates no analysis conducted or no applicable standard available.

BOLD indicates water quality guideline exceeded

[Yellow Box] Indicates parameter exceeds BC Water Quality Guidelines

[Red Box] Indicates parameter exceeds Canadian Environmental Quality Guidelines

W8B Station Water Quality Field Data, Laboratory Data, Total Metals and Dissolved Metals										
Sample ID	RDL	Units	17-Oct-07	21-Nov-07	20-Dec-07	17-Jan-08	27-Feb-08	27-Mar-08	BC WQG ¹	CCME ²
Field Data										
Temperature (°C)	-	°C	3.58	-	0.3	0	0	0	15	-
Conductivity (us/cm)	-	us/cm	32	-	50	-	54	-	-	-
Salinity	-	%	0.01	-	0	0	0	0	-	-
DO (mg/L)	-	mg/L	15.33	-	15.61	14.77	14.76	14.66	5.0-9.0	5.5-9.5
pH (units)	-	pH units	7.02	-	6.89	-	6.89	-	6.5-9.0	6.5-9.0
Laboratory Data										
pH	0.01	pH units	-	7.06	6.69	7.10	7.26	7.48	6.5-9.0	6.5-9.0
Conductivity (umhos/cm)	1	uS/cm	-	49	-	54	55	52	-	-
Colour (Co/Pl units)	5	Co/Pl	11	10	10	8	5	<5	-	-
Turbidity (NTU)	0.2	NTU	0.2	1.9	0.2	0.2	<0.2	0.2	8 NTU when background 8-80	8 NTU when background 8-80
Alkalinity Total (pH 4.5)	1	mg/L	7.4	17.1	18	21	18	19	-	-
Total Suspended Solids	1	mg/L	1	5	<1	<1	<1	<1	25	-
Total Dissolved Solids	1	mg/L	40	50	41	42	45	45	-	-
Chloride	0.5	mg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	150 - 600	-
Fluoride	0.1	mg/L	-	-	-	0.03	0.10	<0.1	0.2	-
Nitrate (as N)	0.003	mg/L	0.151	0.215	0.231	0.370	0.208	0.230	200	13
Nitrite (as N)	0.003	mg/L	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.06 (Cl<0.2)	0.06
T.K.N. (as N)	0.05	mg/L	0.17	0.06	<0.05	<0.05	<0.05	<0.05	-	-
Total Nitrogen (as N)	0.05	mg/L	0.32	0.28	0.23	0.370	0.21	0.230	-	-
Ammonia (as N)	0.005	mg/L	<0.005	<0.005	<0.005	0.008	<0.005	<0.005	2-2.08 mg/l	-
Total Phosphate (as P)	0.003	mg/L	<0.003	<0.003	0.011	<0.003	<0.003	<0.003	-	-
Dissolved Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Ortho Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Sulphate (as SO ₄)	1	mg/L	3	7	10	6	6	4	50 - 100 mg/l	-
Hardness (as CaCO ₃)	0.5	mg/L	13	22	22	19	21	22	-	-
Cyanide	0.005	mg/L	<0.005	-	-	-	-	-	0.005-0.01mg/l	-
Dissolved Organic Carbon	1	mg/L	3	-	1	<2	2	<1	-	-
Total Metals										
Aluminum	0.001	mg/L	0.063	0.155	0.026	0.022	0.01	0.020	(dissolved) 0.1 or, if pH<6.5, $e^{(1.209-(2.426 \cdot \text{pH})+(0.286 \cdot \text{pH}^2))}$	0.005 @pH <6.5, Ca <4, DOC<2 0.1 @ pH >6.5, Ca >4, DOC>2
Antimony	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.02	-
Arsenic	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.005	0.005
Barium	0.01	mg/L	<0.01	0.01	<0.01	<0.01	<0.01	0.01	5	-
Beryllium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.0053	-
Bismuth	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.003	<0.001	0.027	<0.001	0.001	<0.001	1.2	-
Cadmium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	10(0.86[log H]-3.2 (ie. 0.00001 @ 30(H) 0.00003 @ 90(H) 0.00005 @ 150(H) 0.00006 @ 210(H)	0.000017 or 10(0.86[log H]-3.2)
Calcium	0.01	mg/L	4.5	7.4	7.61	6.47	7.19	7.47	-	-
Chromium	0.001	mg/L	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	Cr (VI) = 0.001 Cr (III) = 0.0089	Cr (VI) = 0.001 Cr (III) = 0.0089
Cobalt	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.004	-
Copper	0.2	mg/L	<0.001	0.001	<0.001	0.4	<0.001	0.001	(0.094(H)+2)/1000	0.002-0.004
Iron	0.005	mg/L	0.029	0.186	<0.005	0.028	0.024	0.025	0.3	0.3
Lead	0.1	mg/L	0.001	0.01	0.004	<0.1	0.007	<0.001	$e^{(1.27 \ln(H)-1.46)}$ ie. (H)<8=0.003 - (H)300=0.33	0.001 @ 0-60(H) 0.002 @ 60-120(H) 0.004 @ 120-180(H)
Magnesium	0.1	mg/L	0.4	0.8	0.8	0.7	0.8	0.8	-	-
Manganese	0.001	mg/L	0.002	0.005	0.003	0.002	0.002	0.002	(0.01102*H)+0.54 (ie. 0.8 @ 25(H) 1.1 @ 50(H) 1.6 @ 100(H) 2.2 @ 150(H) 3.8 @ 300(H)	-
Molybdenum	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	2	0.073
Nickel	0.001	mg/L	0.001	0.001	0.001	<0.001	<0.001	<0.001	0.025 @ 0-60(H) 0.065 @ 60-120(H) 0.11 @ 120-180(H) 0.15 @ >80(H)	0.025 @ 0-60(H) 0.065 @ 60-120 (H) 0.11 @ 120-180 (H) 0.15 @ >80(H)
Potassium	0.01	mg/L	0.56	0.83	0.81	0.69	0.69	0.78	-	-
Selenium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.002	-
Silicon	0.01	mg/L	1.71	3.12	2.72	2.62	1.61	2.56	-	-
Silver	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.5	0.8	1	0.7	0.7	0.7	-	-
Tin	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	400 triethyl tin 22 triphenyl tin	-
Titanium	0.007	mg/L	<0.007	0.008	<0.007	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.3	-
Vanadium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.006	-
Yttrium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.001	0.002	0.002	0.002	<0.001	0.001	33+0.75*(H-90) (ie. 0.033 @ <90(H) 0.040 @ 100(H) 0.115 @ 200(H)	0.03
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.0001	0.00004 methylmercury 0.000026 inorganic mercury
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-
Dissolved Metals										
Aluminum	0.001	mg/L	0.057	0.03	0.025	0.017	<0.001	0.019	0.1 (dissolved)	0.1 @ pH>6.5
Antimony	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Arsenic	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Barium	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Beryllium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Bismuth	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	<0.001	<0.001	0.021	<0.001	<0.001	<0.001	-	-
Cadmium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Calcium	0.01	mg/L	4.48	7.0	7.32	6.41	7.13	7.39	-	-
Chromium	0.001	mg/L	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	-	-
Cobalt	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Copper	0.2	mg/L	<0.001	<0.001	<0.001	0.2	<0.001	<0.001	-	-
Iron	0.005	mg/L	0.019	0.023	<0.005	0.008	0.02	0.009	-	-
Lead	0.1	mg/L	0.001	0.008	0.003	<0.1	0.002	<0.001	-	-
Magnesium	0.1	mg/L	0.4	0.7	0.7	0.7	0.8	0.8	-	-
Manganese	0.001	mg/L	0.002	0.003	0.003	0.002	0.002	0.002	-	-
Molybdenum	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Nickel	0.001	mg/L	0.001	0.001	0.001	<0.001	<0.001	<0.001	-	-
Potassium	0.01	mg/L	0.56	0.78	0.76	0.68	0.65	0.74	-	-
Selenium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Silicon	0.01	mg/L	1.69	2.76	2.47	2.55	1.53	2.48	-	-
Silver	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.5	0.8	1	0.7	0.7	0.7	-	-
Tin	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Titanium	0.007	mg/L	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Vanadium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Yttrium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.001	0.002	0.001	0.002	<0.001	0.001	-	-
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	-	-
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-

Notes:

ND = Not detected
RDL = Reportable Detection Limit

¹British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2006

²Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the Protection of Freshwater Aquatic Life, 2005

³Indicates the applicable standard is lower than the detection limit.

"-" Indicates no analysis conducted or no applicable standard available.

BOLD indicates water quality guideline exceeded

indicates parameter exceeds BC Water Quality Guidelines

indicates parameter exceeds Canadian Environmental Quality Guidelines

W9A Station Water Quality Field Data, Laboratory Data, Total Metals and Dissolved Metals										
Sample ID	RDL	Units	17-Oct-07	21-Nov-07	20-Dec-07	17-Jan-08	27-Feb-08	27-Mar-08	BC WQG ¹	CCME ²
Field Data										
Temperature (°C)	-	°C	4.31	-	-	0.1	-	0.3	15	-
Conductivity (us/cm)	-	us/cm	48	-	-	-	-	94	-	-
Salinity	-	%	0.02	-	-	0	-	0	-	-
DO (mg/L)	-	mg/L	14.82	-	-	15.16	-	13.59	5.0-9.0	5.5-9.5
pH (units)	-	pH units	6.72	-	-	-	-	5.14	6.5-9.0	6.5-9.0
Laboratory Data										
pH	0.01	pH units	7.14	7.18	-	7.32	-	7.37	6.5-9.0	6.5-9.0
Conductivity (umhos/cm)	1	uS/cm	-	72	-	89	-	67	-	-
Colour (Co/PT units)	5	Co/PT	13	10	-	9	-	<5	-	-
Turbidity (NTU)	0.2	NTU	0.4	1.6	-	<0.2	-	<0.2	8 NTU when background 8-80	8 NTU when background 8-80
Alkalinity Total (pH 4.5)	1	mg/L	16.8	30.8	-	27	-	25	-	-
Total Suspended Solids	1	mg/L	1	3	-	<1	-	<1	25	-
Total Dissolved Solids	1	mg/L	55	48	-	82	-	52	-	-
Chloride	0.5	mg/L	<0.3	<0.3	-	<0.3	-	<0.3	150 - 600	-
Fluoride	0.1	mg/L	-	-	-	0.03	-	<0.1	0.2	-
Nitrate (as N)	0.003	mg/L	0.097	0.132	-	0.156	-	0.215	200	13
Nitrite (as N)	0.003	mg/L	<0.003	<0.003	-	<0.003	-	<0.003	0.06 (Cl-0.2)	0.06
T.K.N. (as N)	0.05	mg/L	0.10	0.05	-	<0.05	-	<0.05	-	-
Total Nitrogen (as N)	0.05	mg/L	0.20	0.18	-	0.156	-	0.22	-	-
Ammonia (as N)	0.005	mg/L	0.017	0.008	-	0.029	-	<0.005	2-2.08 mg/l	-
Total Phosphate (as P)	0.003	mg/L	<0.003	<0.003	-	<0.003	-	<0.003	-	-
Dissolved Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	-	<0.003	-	-
Ortho Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	-	<0.003	-	-
Sulphate (as SO ₄)	1	mg/L	5	7	-	9	-	7	50 - 100 mg/l	-
Hardness (as CaCO ₃)	0.5	mg/L	22	34	-	27	-	31	-	-
Cyanide	0.005	mg/L	<0.005	-	-	-	-	-	0.005-0.01mg/l	-
Dissolved Organic Carbon	1	mg/L	3	-	-	<2	-	1	-	-
Total Metals										
Aluminum	0.001	mg/L	0.051	0.086	-	0.014	-	0.010	(dissolved) 0.1 or, if pH<6.5, e ^{(1.209 - 2.426/pH) + (0.286/pH²)}	0.005 @pH <6.5, Ca <4, DOC <2 0.1 @ pH >6.5, Ca >4, DOC >2
Antimony	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	0.02	-
Arsenic	0.5	mg/L	<0.001	<0.001	-	<0.5	-	<0.001	0.005	0.005
Barium	0.01	mg/L	<0.01	0.01	-	<0.01	-	0.01	5	-
Beryllium	0.5	mg/L	<0.001	<0.001	-	<0.5	-	<0.001	0.0053	-
Bismuth	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Boron	0.001	mg/L	0.017	0.014	-	<0.001	-	<0.001	1.2	-
Cadmium	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	10(0.86[log H]-3.2 (ie. 0.00001 @ 30(H) 0.00003 @ 90(H) 0.00005 @ 150(H) 0.00006 @ 210(H))	0.000017 or 10(0.86[log H]-3.2)
Calcium	0.01	mg/L	7.06	11.0	-	8.62	-	10.27	-	-
Chromium	0.001	mg/L	<0.001	0.001	-	<0.001	-	<0.001	Cr (VI) = 0.001 Cr (III) = 0.0089	Cr (VI) = 0.001 Cr (III) = 0.0089
Cobalt	0.5	mg/L	<0.001	<0.001	-	<0.5	-	<0.001	0.004	-
Copper	0.2	mg/L	0.001	0.001	-	0.5	-	0.002	(0.094(H)+2)/1000	0.002-0.004
Iron	0.005	mg/L	0.045	0.114	-	0.031	-	0.02	0.3	0.3
Lead	0.1	mg/L	0.002	0.011	-	<0.1	-	<0.001	e ^{(1.270(H)-1.46)} ie. (H)<8=0.003 - (H)300=0.33	0.001 @ 0-60(H) 0.002 @ 60-120(H) 0.004 @ 120-180(H)
Magnesium	0.1	mg/L	1.1	1.8	-	1.3	-	1.4	-	-
Manganese	0.001	mg/L	0.003	0.005	-	0.002	-	0.002	(0.01102 ^H)+0.54 (ie. 0.8 @ 25(H) 1.1 @ 50(H) 1.6 @ 100(H) 2.2 @ 150(H) 3.8 @ 300(H))	-
Molybdenum	0.001	mg/L	0.001	0.001	-	<0.001	-	<0.001	2	0.073
Nickel	0.001	mg/L	0.001	0.001	-	<0.001	-	<0.001	0.025 @ 0-60(H) 0.065 @ 60-120(H) 0.11 @ 120-180(H) 0.15 @ >80(H)	0.025 @ 0-60(H) 0.065 @ 60-120 (H) 0.11 @ 120-180 (H) 0.15 @ >80(H)
Potassium	0.01	mg/L	0.58	0.74	-	0.67	-	0.73	-	-
Selenium	0.5	mg/L	<0.001	0.001	-	<0.5	-	<0.001	0.002	-
Silicon	0.01	mg/L	2.2	3	-	2.42	-	2.43	-	-
Silver	0.005	mg/L	<0.005	<0.005	-	<0.005	-	<0.005	-	-
Sodium	0.1	mg/L	0.5	0.8	-	0.8	-	1	-	-
Tin	0.01	mg/L	<0.01	<0.01	-	<0.01	-	<0.01	400 triethyl tin 22 triphenyl tin	-
Titanium	0.007	mg/L	<0.007	<0.007	-	<0.007	-	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	0.3	-
Vanadium	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	0.006	-
Yttrium	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Zinc	0.001	mg/L	0.001	0.003	-	0.002	-	0.003	33+0.75 ^(H-90) (ie. 0.033 @ <90(H) 0.040 @ 100(H) 0.115 @ 200(H))	0.03
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	-	<0.015	-	<0.015	0.0001	0.000004 methylmercury 0.000026 inorganic mercury
Lithium	0.5	mg/L	-	-	-	-	-	<0.5	-	-
Dissolved Metals										
Aluminum	0.001	mg/L	0.03	0.022	-	0.007	-	0.010	0.1 (dissolved)	0.1 @ pH>6.5
Antimony	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Arsenic	0.5	mg/L	<0.001	<0.001	-	<0.5	-	<0.001	-	-
Barium	0.01	mg/L	<0.01	0.01	-	<0.01	-	0.01	-	-
Beryllium	0.5	mg/L	<0.001	<0.001	-	<0.5	-	<0.001	-	-
Bismuth	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Boron	0.001	mg/L	0.015	<0.001	-	<0.001	-	<0.001	-	-
Cadmium	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Calcium	0.01	mg/L	7.04	10.1	-	8.61	-	10.24	-	-
Chromium	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Cobalt	0.5	mg/L	<0.001	<0.001	-	<0.5	-	<0.001	-	-
Copper	0.2	mg/L	0.001	0.001	-	0.4	-	<0.001	-	-
Iron	0.005	mg/L	0.006	0.022	-	0.007	-	0.016	-	-
Lead	0.1	mg/L	<0.001	0.011	-	<0.1	-	<0.001	-	-
Magnesium	0.1	mg/L	1	1.5	-	1.3	-	1.4	-	-
Manganese	0.001	mg/L	0.002	0.003	-	0.002	-	0.002	-	-
Molybdenum	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Nickel	0.001	mg/L	0.001	0.001	-	<0.001	-	<0.001	-	-
Potassium	0.01	mg/L	0.58	0.72	-	0.67	-	0.72	-	-
Selenium	0.5	mg/L	<0.001	0.001	-	<0.5	-	<0.001	-	-
Silicon	0.01	mg/L	2.19	2.85	-	2.4	-	2.4	-	-
Silver	0.005	mg/L	<0.005	<0.005	-	<0.005	-	<0.005	-	-
Sodium	0.1	mg/L	0.5	0.8	-	0.8	-	0.9	-	-
Tin	0.01	mg/L	<0.01	<0.01	-	<0.01	-	<0.01	-	-
Titanium	0.007	mg/L	<0.007	<0.007	-	<0.007	-	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Vanadium	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Yttrium	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Zinc	0.001	mg/L	0.001	0.003	-	0.001	-	0.001	-	-
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	-	<0.015	-	<0.015	-	-
Lithium	0.5	mg/L	-	-	-	-	-	<0.5	-	-

Notes:
 ND = Not detected
 RDL = Reportable Detection Limit
¹British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2006
²Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the Protection of Freshwater Aquatic Life, 2005
³Indicates the applicable standard is lower than the detection limit.
 "-" Indicates no analysis conducted or no applicable standard available.
BOLD indicates water quality guideline exceeded
 [Redacted] indicates parameter exceeds BC Water Quality Guidelines
 [Redacted] indicates parameter exceeds Canadian Environmental Quality Guidelines



W9B Station Water Quality Field Data, Laboratory Data, Total Metals and Dissolved Metals										
Sample ID	RDL	Units	17-Oct-07	21-Nov-07	20-Dec-07	17-Jan-08	27-Feb-08	27-Mar-08	BC WQG ¹	CCME ²
Field Data										
Temperature (°C)	-	°C	4.31	-	-	0.1	-	0.3	15	-
Conductivity (us/cm)	-	us/cm	48	-	-	-	-	92	-	-
Salinity	-	%	0.02	-	-	0	-	0	-	-
DO (mg/L)	-	mg/L	14.82	-	-	15.16	-	13.65	5.0-9.0	5.5-9.5
pH (units)	-	pH units	6.72	-	-	-	-	4.75	6.5-9.0	6.5-9.0
Laboratory Data										
pH	0.01	pH units	7.20	7.22	-	7.51	-	7.39	6.5-9.0	6.5-9.0
Conductivity (umhos/cm)	1	uS/cm	-	66	-	88	-	81	-	-
Colour (Co/Pt units)	5	Co/Pt	14	10	-	5	-	<5	-	-
Turbidity (NTU)	0.2	NTU	0.3	1.0	-	<0.2	-	<0.2	8 NTU when background 8-80	8 NTU when background 8-80
Alkalinity Total (pH 4.5)	1	mg/L	14.7	26.2	-	34	-	33	-	-
Total Suspended Solids	1	mg/L	3	3	-	<1	-	<1	25	-
Total Dissolved Solids	1	mg/L	50	48	-	84	-	68	-	-
Chloride	0.5	mg/L	<0.3	<0.3	-	<0.3	-	<0.3	150 - 600	-
Fluoride	0.1	mg/L	-	-	-	0.03	-	<0.1	0.2	-
Nitrate (as N)	0.003	mg/L	0.110	0.125	-	0.135	-	0.189	200	13
Nitrite (as N)	0.003	mg/L	<0.003	<0.003	-	<0.003	-	<0.003	0.06 (Cl<0.2)	0.06
T.K.N. (as N)	0.05	mg/L	0.08	0.06	-	0.155	-	<0.05	-	-
Total Nitrogen (as N)	0.05	mg/L	0.19	0.18	-	0.145	-	0.19	-	-
Ammonia (as N)	0.005	mg/L	<0.005	0.055	-	0.009	-	<0.005	2-2.08 mg/l	-
Total Phosphate (as P)	0.003	mg/L	<0.003	<0.003	-	<0.003	-	<0.003	-	-
Dissolved Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	-	<0.003	-	-
Ortho Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	-	<0.003	-	-
Sulphate (as SO ₄)	1	mg/L	5	6	-	10	-	7	50 - 100 mg/l	-
Hardness (as CaCO ₃)	0.5	mg/L	22	32	-	35	-	35	-	-
Cyanide	0.005	mg/L	<0.005	-	-	-	-	-	0.005-0.01mg/l	-
Dissolved Organic Carbon	1	mg/L	3	-	-	<2	-	1	-	-
Total Metals										
Aluminum	0.001	mg/L	0.055	0.079	-	0.008	-	0.012	(dissolved) 0.1 or, if pH<6.5, $e^{(1.209-(2.426 \cdot \text{pH})-(0.286 \cdot \text{pH}^2))}$	0.005 @pH <6.5, Ca <4, DOC<2 0.1 @ pH >6.5, Ca >4, DOC>2
Antimony	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	0.02	-
Arsenic	0.5	mg/L	<0.001	<0.001	-	<0.5	-	<0.001	0.005	0.005
Barium	0.01	mg/L	<0.01	0.01	-	0.01	-	0.01	5	-
Beryllium	0.5	mg/L	<0.001	<0.001	-	<0.5	-	<0.001	0.0053	-
Bismuth	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Boron	0.001	mg/L	0.001	0.004	-	<0.001	-	<0.001	1.2	-
Cadmium	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	10(0.86[log H]-3.2 (ie. 0.00001 @ 30(H) 0.00003 @ 90(H) 0.00005 @ 150(H) 0.00006 @ 210(H)	0.000017 or 10(0.86[log H]-3.2)
Calcium	0.01	mg/L	7.22	10.4	-	10.73	-	11.25	-	-
Chromium	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	Cr (VI) = 0.001 Cr (III) = 0.0089	Cr (VI) = 0.001 Cr (III) = 0.0089
Cobalt	0.5	mg/L	<0.001	<0.001	-	<0.5	-	<0.001	0.004	-
Copper	0.2	mg/L	0.001	0.001	-	0.5	-	0.003	(0.094(H)+2)/1000	0.002-0.004
Iron	0.005	mg/L	0.04	0.103	-	0.021	-	0.019	0.3	0.3
Lead	0.1	mg/L	0.003	0.004	-	<0.1	-	<0.001	$e^{(1.271(\text{pH})-1.46)}$ ie. (H)-8=0.003 - (H)300=0.33	0.001 @ 0-60(H) 0.002 @ 60-120(H) 0.004 @ 120-180(H)
Magnesium	0.1	mg/L	1	1.6	-	1.9	-	1.7	-	-
Manganese	0.001	mg/L	0.003	0.004	-	0.002	-	0.002	(0.01102*H)+0.54 (ie. 0.8 @ 25(H) 1.1 @ 50(H) 1.6 @ 100(H) 2.2 @ 150(H) 3.8 @ 300(H)	-
Molybdenum	0.001	mg/L	<0.001	<0.001	-	0.001	-	<0.001	2	0.073
Nickel	0.001	mg/L	0.001	0.001	-	0.001	-	<0.001	0.025 @ 0-60(H) 0.065 @ 60-120(H) 0.11 @ 120-180(H) 0.15 @ >80(H)	0.025 @ 0-60(H) 0.065 @ 60-120 (H) 0.11 @ 120-180 (H) 0.15 @ >80(H)
Potassium	0.01	mg/L	0.59	0.75	-	0.59	-	0.71	-	-
Selenium	0.5	mg/L	<0.001	<0.001	-	0.6	-	<0.001	0.002	-
Silicon	0.01	mg/L	2.19	3.04	-	2.24	-	2.26	-	-
Silver	0.005	mg/L	<0.005	<0.005	-	<0.005	-	<0.005	-	-
Sodium	0.1	mg/L	0.5	0.8	-	0.8	-	0.9	-	-
Tin	0.01	mg/L	<0.01	<0.01	-	<0.01	-	<0.01	400 triethyl tin 22 triphenyl tin	-
Titanium	0.007	mg/L	<0.007	<0.007	-	<0.007	-	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	0.3	-
Vanadium	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	0.006	-
Yttrium	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Zinc	0.001	mg/L	0.002	0.001	-	0.001	-	0.001	33+0.75*(H-90) (ie. 0.033 @ <90(H) 0.040 @ 100(H) 0.115 @ 200(H)	0.03
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	-	<0.015	-	<0.015	0.0001	0.000004 methylmercury 0.000026 inorganic mercury
Lithium	0.5	mg/L	-	-	-	-	-	<0.5	-	-
Dissolved Metals										
Aluminum	0.001	mg/L	0.033	0.022	-	<0.001	-	0.012	0.1 (dissolved)	0.1 @ pH>6.5
Antimony	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Arsenic	0.5	mg/L	<0.001	<0.001	-	<0.5	-	<0.001	-	-
Barium	0.01	mg/L	<0.01	0.01	-	<0.01	-	0.01	-	-
Beryllium	0.5	mg/L	<0.001	<0.001	-	<0.5	-	<0.001	-	-
Bismuth	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Boron	0.001	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	-
Cadmium	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Calcium	0.01	mg/L	6.91	9.7	-	10.66	-	11.23	-	-
Chromium	0.001	mg/L	<0.001	<0.001	-	0.001	-	<0.001	-	-
Cobalt	0.5	mg/L	<0.001	<0.001	-	<0.5	-	<0.001	-	-
Copper	0.2	mg/L	0.001	0.001	-	0.2	-	<0.001	-	-
Iron	0.005	mg/L	0.007	0.024	-	<0.005	-	0.014	-	-
Lead	0.1	mg/L	<0.001	0.004	-	<0.1	-	<0.001	-	-
Magnesium	0.1	mg/L	1	1.5	-	1.9	-	1.7	-	-
Manganese	0.001	mg/L	0.002	0.003	-	0.001	-	0.002	-	-
Molybdenum	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Nickel	0.001	mg/L	0.001	0.001	-	<0.001	-	<0.001	-	-
Potassium	0.01	mg/L	0.57	0.72	-	0.58	-	0.69	-	-
Selenium	0.5	mg/L	<0.001	<0.001	-	0.6	-	<0.001	-	-
Silicon	0.01	mg/L	2.18	2.92	-	2.21	-	2.22	-	-
Silver	0.005	mg/L	<0.005	<0.005	-	<0.005	-	<0.005	-	-
Sodium	0.1	mg/L	0.5	0.8	-	0.8	-	0.9	-	-
Tin	0.01	mg/L	<0.01	<0.01	-	<0.01	-	<0.01	-	-
Titanium	0.007	mg/L	<0.007	<0.007	-	<0.007	-	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Vanadium	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Yttrium	0.001	mg/L	<0.001	<0.001	-	<0.001	-	<0.001	-	-
Zinc	0.001	mg/L	0.001	0.001	-	0.001	-	0.001	-	-
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	-	<0.015	-	<0.015	-	-
Lithium	0.5	mg/L	-	-	-	-	-	<0.5	-	-

Notes:

ND = Not detected

RDL = Reportable Detection Limit

¹British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2006

²Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the Protection of Freshwater Aquatic Life, 2005

³Indicates the applicable standard is lower than the detection limit.

*- Indicates no analysis conducted or no applicable standard available.

BOLD indicates water quality guideline exceeded

[Red Box] Indicates parameter exceeds BC Water Quality Guidelines

[Grey Box] Indicates parameter exceeds Canadian Environmental Quality Guidelines

W10 Station Water Quality Field Data, Laboratory Data, Total Metals and Dissolved Metals

Sample ID	RDL	Units	17-Oct-07	21-Nov-07	20-Dec-07	17-Jan-08	27-Feb-08	27-Mar-08	BC WQG ¹	CCME ²
Field Data										
Temperature (°C)	-	°C	3.76	-	-	0.4	0.7	0.6	15	-
Conductivity (us/cm)	-	us/cm	83	-	-	-	107.9	-	-	-
Salinity	-	%	0.04	-	-	0	0	0	-	-
DO (mg/L)	-	mg/L	14.89	-	-	16.34	14.6	14.6	5.0-9.0	5.5-9.5
pH (units)	-	pH units	7.17	-	-	-	6.73	-	6.5-9.0	6.5-9.0
Laboratory Data										
pH	0.01	pH units	7.36	7.34	-	7.51	7.53	7.44	6.5-9.0	6.5-9.0
Conductivity (umhos/cm)	1	uS/cm	-	67	-	100	102	104	-	-
Colour (Co/PT units)	5	Co/PT	9	9	-	5	8	<5	-	-
Turbidity (NTU)	0.2	NTU	0.4	0.1	-	<0.2	<0.1	<0.2	8 NTU when background 8-80	8 NTU when background 8-80
Alkalinity Total (pH 4.5)	1	mg/L	24.2	26.2	-	30	30	29	-	-
Total Suspended Solids	1	mg/L	3	<1	-	<1	<1	<1	25	-
Total Dissolved Solids	1	mg/L	74	46	-	91	83	80	-	-
Chloride	0.5	mg/L	<0.3	<0.3	-	<0.3	<0.3	<0.3	150 - 600	-
Fluoride	0.1	mg/L	-	-	-	0.02	0.1	<0.1	0.2	-
Nitrate (as N)	0.003	mg/L	0.026	0.081	-	0.103	0.096	0.141	200	13
Nitrite (as N)	0.003	mg/L	<0.003	<0.003	-	<0.003	<0.003	<0.003	0.06 (Cl<0.2)	0.06
T.K.N. (as N)	0.05	mg/L	0.16	<0.05	-	<0.05	0.06	<0.05	-	-
Total Nitrogen (as N)	0.05	mg/L	0.19	0.08	-	0.103	0.16	0.14	-	-
Ammonia (as N)	0.005	mg/L	<0.005	0.015	-	<0.005	<0.005	<0.005	2-2.08 mg/l	-
Total Phosphate (as P)	0.003	mg/L	<0.003	<0.003	-	<0.003	<0.003	<0.003	-	-
Dissolved Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Ortho Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Sulphate (as SO ₄)	1	mg/L	13	13	-	18	17	17	50 - 100 mg/l	-
Hardness (as CaCO ₃)	0.5	mg/L	39	40	-	40	46	46	-	-
Cyanide	0.005	mg/L	<0.005	-	-	-	-	-	0.005-0.01mg/l	-
Dissolved Organic Carbon	1	mg/L	2	-	-	<2	-	2<1	-	-
Total Metals										
Aluminum	0.001	mg/L	0.018	0.007	-	0.006	0.001	0.005	(dissolved) 0.1 or, if pH<6.5, e ^{(1.209-(2.426*pH)+(0.286*pH²))}	0.005 @pH <6.5, Ca <4, DOC<2 0.1 @ pH >6.5, Ca >4, DOC>2
Antimony	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	0.02	-
Arsenic	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	0.005	0.005
Barium	0.01	mg/L	0.01	0.01	-	0.01	0.01	0.02	5	-
Beryllium	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	0.0053	-
Bismuth	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.002	0.002	-	<0.001	<0.001	<0.001	1.2	-
Cadmium	0.001	mg/L	<0.001	<0.001	-	0.013	<0.001	<0.001	10(0.86[log H]-3.2 (ie. 0.00001 @ 30(H) 0.00003 @ 90(H) 0.00005 @ 150(H) 0.00006 @ 210(H))	0.000017 or 10(0.86[log H]-3.2)
Calcium	0.01	mg/L	14.44	15.0	-	14.65	17.13	16.87	-	-
Chromium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	Cr (VI) = 0.001 Cr (III) = 0.0089	Cr (VI) = 0.001 Cr (III) = 0.0089
Cobalt	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	0.004	-
Copper	0.2	mg/L	0.013	0.007	-	5.1	0.005	0.006	(0.094(H)+2)/1000	0.002-0.004
Iron	0.005	mg/L	0.012	0.015	-	0.008	0.029	0.007	0.3	0.3
Lead	0.1	mg/L	0.001	0.004	-	<0.1	0.003	<0.001	e ^{(1.27ln(H)-1.46)} ie. (H)<8=0.003 - (H)300=0.33	0.001 @ 0-60(H) 0.002 @ 60-120(H) 0.004 @ 120-180(H)
Magnesium	0.1	mg/L	0.8	0.8	-	0.9	0.8	0.9	-	-
Manganese	0.001	mg/L	0.001	0.001	-	<0.001	0.003	<0.001	(0.01102*H)+0.54 (ie. 0.8 @ 25(H) 1.1 @ 50(H) 1.6 @ 100(H) 2.2 @ 150(H) 3.8 @ 300(H))	-
Molybdenum	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	2	0.073
Nickel	0.001	mg/L	0.001	0.001	-	0.001	0.001	0.001	0.025 @ 0-60(H) 0.065 @ 60-120(H) 0.11 @ 120-180(H) 0.15 @ >80(H)	0.025 @ 0-60(H) 0.065 @ 60-120 (H) 0.11 @ 120-180 (H) 0.15 @ >80(H)
Potassium	0.01	mg/L	0.7	0.7	-	0.67	0.69	0.76	-	-
Selenium	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	0.002	-
Silicon	0.01	mg/L	2.47	2.74	-	2.63	1.88	2.72	-	-
Silver	0.005	mg/L	<0.005	<0.005	-	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.4	0.5	-	0.5	0.4	0.4	-	-
Tin	0.01	mg/L	<0.01	<0.01	-	<0.01	<0.01	<0.01	400 triethyl tin 22 triphenyl tin	-
Titanium	0.007	mg/L	<0.007	<0.007	-	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	0.3	-
Vanadium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	0.006	-
Yttrium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.002	0.002	-	0.003	0.002	0.002	33+0.75*(H-90) (ie. 0.033 @ <90(H) 0.040 @ 100(H) 0.115 @ 200(H))	0.03
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	-	<0.015	<0.015	<0.015	0.0001	0.000004 methylmercury 0.000026 inorganic mercury
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-
Dissolved Metals										
Aluminum	0.001	mg/L	0.016	0.005	-	0.005	<0.001	0.005	0.1 (dissolved)	0.1 @ pH>6.5
Antimony	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Arsenic	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	-	-
Barium	0.01	mg/L	0.01	0.01	-	0.01	0.01	0.02	-	-
Beryllium	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	-	-
Bismuth	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.002	<0.001	-	<0.001	<0.001	<0.001	-	-
Cadmium	0.001	mg/L	<0.001	<0.001	-	0.012	<0.001	<0.001	-	-
Calcium	0.01	mg/L	14.43	14.3	-	14.63	16.89	16.77	-	-
Chromium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Cobalt	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	-	-
Copper	0.2	mg/L	0.013	0.005	-	5.1	0.005	0.005	-	-
Iron	0.005	mg/L	<0.005	<0.005	-	<0.005	<0.005	<0.005	-	-
Lead	0.1	mg/L	<0.001	0.004	-	<0.1	0.003	<0.001	-	-
Magnesium	0.1	mg/L	0.8	0.7	-	0.9	0.8	0.9	-	-
Manganese	0.001	mg/L	0.001	<0.001	-	<0.001	<0.001	0.001	-	-
Molybdenum	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Nickel	0.001	mg/L	0.001	0.001	-	0.001	0.001	0.001	-	-
Potassium	0.01	mg/L	0.7	0.7	-	0.66	0.67	0.75	-	-
Selenium	0.5	mg/L	<0.001	<0.001	-	<0.5	<0.001	<0.001	-	-
Silicon	0.01	mg/L	2.46	2.73	-	2.54	1.87	2.69	-	-
Silver	0.005	mg/L	<0.005	<0.005	-	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.4	0.5	-	0.5	0.4	0.4	-	-
Tin	0.01	mg/L	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	-
Titanium	0.007	mg/L	<0.007	<0.007	-	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Vanadium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Yttrium	0.001	mg/L	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.002	0.002	-	0.002	<0.001	0.002	-	-
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	-	<0.015	<0.015	<0.015	-	-
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-

Notes:

ND = Not detected

RDL = Reportable Detection Limit

¹British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2006

²Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the Protection of Freshwater Aquatic Life, 2005

³Indicates the applicable standard is lower than the detection limit.

"-" Indicates no analysis conducted or no applicable standard available.

BOLD indicates water quality guideline exceeded

[Yellow Box] indicates parameter exceeds BC Water Quality Guidelines

[Red Box] indicates parameter exceeds Canadian Environmental Quality Guidelines

W11 Station Water Quality Field Data, Laboratory Data, Total Metals and Dissolved Metals

Sample ID	RDL	Units	17-Oct-07	21-Nov-07	20-Dec-07	17-Jan-08	27-Feb-08	27-Mar-08	BC WQG ¹	CCME ²
Field Data										
Temperature (°C)	-	°C	-	-	-	0	0.1	0.50	15	-
Conductivity (us/cm)	-	us/cm	-	-	-	-	108	-	-	-
Salinity	-	%	-	-	-	-	-	-	-	-
DO (mg/L)	-	mg/L	-	-	-	13.61	13.73	13.18	5.0-9.0	5.5-9.5
pH (units)	-	pH units	-	-	-	-	6.89	-	6.5-9.0	6.5-9.0
Laboratory Data										
pH	0.01	pH units	7.20	-	-	7.33	7.48	7.37	6.5-9.0	6.5-9.0
Conductivity (umhos/cm)	1	uS/cm	-	-	-	106	98	100	-	-
Colour (Co/Pt units)	5	Co/Pt	7	-	-	7	5	<5	-	-
Turbidity (NTU)	0.2	NTU	0.2	-	-	0.2	<0.1	<0.2	8 NTU when background 8-80	8 NTU when background 8-80
Alkalinity Total (pH 4.5)	1	mg/L	28.9	-	-	39	39	40	-	-
Total Suspended Solids	1	mg/L	5	-	-	<1	2	<1	25	-
Total Dissolved Solids	1	mg/L	81	-	-	92	78	78	-	-
Chloride	0.5	mg/L	<0.3	-	-	<0.3	<0.3	<0.3	150 - 600	-
Fluoride	0.1	mg/L	-	-	-	0.02	0.1	<0.1	0.2	-
Nitrate (as N)	0.003	mg/L	0.078	-	-	0.116	0.117	0.162	200	13
Nitrite (as N)	0.003	mg/L	<0.003	-	-	<0.003	<0.003	<0.003	0.06 (Cl<0.2)	0.06
T.K.N. (as N)	0.05	mg/L	<0.05	-	-	<0.05	<0.05	<0.05	-	-
Total Nitrogen (as N)	0.05	mg/L	0.08	-	-	0.116	0.12	0.16	-	-
Ammonia (as N)	0.005	mg/L	<0.005	-	-	<0.005	<0.005	0.008	2-2.08 mg/l	-
Total Phosphate (as P)	0.003	mg/L	<0.003	-	-	<0.003	<0.003	<0.003	-	-
Dissolved Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Ortho Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Sulphate (as SO ₄)	1	mg/L	7	-	-	13	11	10	50 - 100 mg/l	-
Hardness (as CaCO ₃)	0.5	mg/L	38	-	-	41	46	48	-	-
Cyanide	0.005	mg/L	<0.005	-	-	-	-	-	0.005-0.01mg/l	-
Dissolved Organic Carbon	1	mg/L	1	-	-	<2	2	<1	-	-
Total Metals										
Aluminum	0.001	mg/L	0.02	-	-	0.004	0.011	<0.001	(dissolved) 0.1 or, if pH<6.5, $e^{[1.209(2.426^{\text{pH}})-(0.286^{\text{pH}^2})]}$	0.005 @pH <6.5, Ca <4, DOC<2 0.1 @ pH >6.5, Ca >4, DOC>2
Antimony	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	0.02	-
Arsenic	0.5	mg/L	<0.001	-	-	<0.5	<0.001	<0.001	0.005	0.005
Barium	0.01	mg/L	<0.01	-	-	<0.01	<0.01	0.01	5	-
Beryllium	0.5	mg/L	<0.001	-	-	<0.5	<0.001	<0.001	0.0053	-
Bismuth	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.006	-	-	<0.001	<0.001	<0.001	1.2	-
Cadmium	0.001	mg/L	<0.001	-	-	0.013	<0.001	<0.001	10(0.86[log H]-3.2 (ie. 0.00001 @ 30(H) 0.00003 @ 90(H) 0.00005 @ 150(H) 0.00006 @ 210(H)	0.000017 or 10(0.86[log H]-3.2)
Calcium	0.01	mg/L	10.75	-	-	11.48	12.8	13.7	-	-
Chromium	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	Cr (VI) = 0.001 Cr (III) = 0.0089	Cr (VI) = 0.001 Cr (III) = 0.0089
Cobalt	0.5	mg/L	<0.001	-	-	<0.5	<0.001	<0.001	0.004	-
Copper	0.2	mg/L	0.001	-	-	0.5	<0.001	0.001	(0.094(H)+2)/1000	0.002-0.004
Iron	0.005	mg/L	0.037	-	-	0.02	0.023	0.023	0.3	0.3
Lead	0.1	mg/L	0.002	-	-	<0.1	0.011	<0.001	$e^{(1.27\ln(H)-1.46)}$ ie. (H)<8=0.003 - (H)300=0.33	0.001 @ 0-60(H) 0.002 @ 60-120(H) 0.004 @ 120-180(H)
Magnesium	0.1	mg/L	2.7	-	-	3.1	3.3	3.3	-	-
Manganese	0.001	mg/L	0.005	-	-	0.009	0.011	0.009	(0.01102*H)+0.54 (ie. 0.8 @ 25(H) 1.1 @ 50(H) 1.6 @ 100(H) 2.2 @ 150(H) 3.8 @ 300(H)	-
Molybdenum	0.001	mg/L	0.001	-	-	0.001	0.001	0.001	2	0.073
Nickel	0.001	mg/L	0.001	-	-	<0.001	<0.001	0.001	0.025 @ 0-60(H) 0.065 @ 60-120(H) 0.11 @ 120-180(H) 0.15 @ >80(H)	0.025 @ 0-60(H) 0.065 @ 60-120 (H) 0.11 @ 120-180 (H) 0.15 @ >80(H)
Potassium	0.01	mg/L	0.28	-	-	0.3	0.23	0.4	-	-
Selenium	0.5	mg/L	0.001	-	-	1.2	0.002	0.001	0.002	-
Silicon	0.01	mg/L	1.91	-	-	1.78	1.23	2.05	-	-
Silver	0.005	mg/L	<0.005	-	-	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.5	-	-	0.8	0.6	0.8	-	-
Tin	0.01	mg/L	<0.01	-	-	<0.01	<0.01	<0.01	400 triethyl tin 22 triphenyl tin	-
Titanium	0.007	mg/L	<0.007	-	-	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	0.3	-
Vanadium	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	0.006	-
Yttrium	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.004	-	-	0.002	0.002	0.002	33+0.75*(H-90) (ie. 0.033 @ <90(H) 0.040 @ 100(H) 0.115 @ 200(H)	0.03
Mercury (ug/L)	0.015	mg/L	<0.015	-	-	<0.015	<0.015	<0.015	0.0001	0.000004 methylmercury 0.000026 inorganic mercury
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-
Dissolved Metals										
Aluminum	0.001	mg/L	0.017	-	-	0.003	0.002	<0.001	0.1 (dissolved)	0.1 @ pH>6.5
Antimony	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	-	-
Arsenic	0.5	mg/L	<0.001	-	-	<0.5	<0.001	<0.001	-	-
Barium	0.01	mg/L	<0.01	-	-	<0.01	<0.01	0.01	-	-
Beryllium	0.5	mg/L	<0.001	-	-	<0.5	<0.001	<0.001	-	-
Bismuth	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	-	-
Cadmium	0.001	mg/L	<0.001	-	-	0.011	<0.001	<0.001	-	-
Calcium	0.01	mg/L	10.45	-	-	11.33	12.39	13.65	-	-
Chromium	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	-	-
Cobalt	0.5	mg/L	<0.001	-	-	<0.5	<0.001	<0.001	-	-
Copper	0.2	mg/L	0.001	-	-	0.3	<0.001	<0.001	-	-
Iron	0.005	mg/L	0.01	-	-	<0.005	0.02	0.019	-	-
Lead	0.1	mg/L	<0.001	-	-	<0.1	0.004	<0.001	-	-
Magnesium	0.1	mg/L	2.6	-	-	3.1	3.3	3.3	-	-
Manganese	0.001	mg/L	0.005	-	-	0.009	0.007	0.009	-	-
Molybdenum	0.001	mg/L	0.001	-	-	0.001	0.001	0.001	-	-
Nickel	0.001	mg/L	0.001	-	-	<0.001	<0.001	<0.001	-	-
Potassium	0.01	mg/L	0.28	-	-	0.29	0.22	0.31	-	-
Selenium	0.5	mg/L	0.001	-	-	1.1	0.001	0.001	-	-
Silicon	0.01	mg/L	1.9	-	-	1.76	1.18	2.04	-	-
Silver	0.005	mg/L	<0.005	-	-	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.5	-	-	0.8	0.6	0.7	-	-
Tin	0.01	mg/L	<0.01	-	-	<0.01	<0.01	<0.01	-	-
Titanium	0.007	mg/L	<0.007	-	-	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	-	-
Vanadium	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	-	-
Yttrium	0.001	mg/L	<0.001	-	-	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.003	-	-	0.001	<0.001	0.002	-	-
Mercury (ug/L)	0.015	mg/L	<0.015	-	-	<0.015	<0.015	<0.015	-	-
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-

Notes:

ND = Not detected

RDL = Reportable Detection Limit

¹British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2006

²Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the Protection of Freshwater Aquatic Life, 2005

³Indicates the applicable standard is lower than the detection limit.

"-" Indicates no analysis conducted or no applicable standard available.

BOLD indicates water quality guideline exceeded

[Light Grey Box] indicates parameter exceeds BC Water Quality Guidelines

[Dark Grey Box] indicates parameter exceeds Canadian Environmental Quality Guidelines

W12 Station Water Quality Field Data, Laboratory Data, Total Metals and Dissolved Metals

Sample ID	RDL	Units	17-Oct-07	21-Nov-07	20-Dec-07	17-Jan-08	27-Feb-08	27-Mar-08	BC WQG ¹	CCME ²
Field Data										
Temperature (°C)	-	°C	4.28	-	0.7	0.3	0.6	0.5	15	-
Conductivity (us/cm)	-	us/cm	0.02	-	0	0	0	0	-	-
Salinity	-	%	70	-	77	-	87	-	-	-
DO (mg/L)	-	mg/L	15.28	-	15.34	15.05	14.45	14.68	5.0-9.0	5.5-9.5
pH (units)	-	pH units	7.2	-	5.33	-	6.89	-	6.5-9.0	6.5-9.0
Laboratory Data										
pH	0.01	pH units	7.25	7.42	6.97	7.41	7.55	7.51	6.5-9.0	6.5-9.0
Conductivity (umhos/cm)	1	uS/cm	-	69	-	82	83	85	-	-
Colour (Co/Pl units)	5	Co/Pl	14	9	8	6	3	<5	-	-
Turbidity (NTU)	0.2	NTU	1.3	0.2	0.2	<0.2	<0.1	<0.2	8 NTU when background 8-80	8 NTU when background 8-80
Alkalinity Total (pH 4.5)	1	mg/L	18.9	28.5	28	30	32	33	-	-
Total Suspended Solids	1	mg/L	13	<1	<1	<1	<1	<1	25	-
Total Dissolved Solids	1	mg/L	57	48	63	67	71	63	-	-
Chloride	0.5	mg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	150 - 600	-
Fluoride	0.1	mg/L	-	-	-	0.02	0.1	<0.1	0.2	-
Nitrate (as N)	0.003	mg/L	0.238	0.307	0.355	0.335	0.43	0.402	200	13
Nitrite (as N)	0.003	mg/L	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.06 (Cl-0.2)	0.06
T.K.N. (as N)	0.05	mg/L	0.13	<0.05	<0.05	<0.05	<0.05	0.09	-	-
Total Nitrogen (as N)	0.05	mg/L	0.37	0.31	0.36	0.335	0.45	0.49	-	-
Ammonia (as N)	0.005	mg/L	<0.005	0.005	<0.005	0.006	<0.005	0.021	2-2.08 mg/l	-
Total Phosphate (as P)	0.003	mg/L	0.019	<0.003	0.017	<0.003	<0.003	<0.003	-	-
Dissolved Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Ortho Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Sulphate (as SO ₄)	1	mg/L	4	6	12	10	9	8	50 - 100 mg/l	-
Hardness (as CaCO ₃)	0.5	mg/L	26	32	35	32	38	39	-	-
Cyanide	0.005	mg/L	<0.005	-	-	-	-	-	0.005-0.01mg/l	-
Dissolved Organic Carbon	1	mg/L	3	-	1	<2	2	1	-	-
Total Metals										
Aluminum	0.001	mg/L	0.188	0.021	0.015	0.011	0.019	0.008	(dissolved) 0.1 or, if pH<6.5, $e^{(1.209-(2.426 \cdot \text{pH})+(0.286 \cdot \text{pH}^2))}$	0.005 @pH <6.5, Ca <4, DOC <2 0.1 @ pH >6.5, Ca >4, DOC >2
Antimony	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.02	-
Arsenic	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.005	0.005
Barium	0.01	mg/L	0.01	0.01	0.01	0.01	0.01	0.02	5	-
Beryllium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.0053	-
Bismuth	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.008	<0.001	0.024	<0.001	<0.001	<0.001	1.2	-
Cadmium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	10(0.86[log H]-3.2 (ie. 0.00001 @ 30(H) 0.00003 @ 90(H) 0.00005 @ 150(H) 0.00006 @ 210(H)	0.000017 or 10(0.86[log H]-3.2)
Calcium	0.01	mg/L	8.62	10.8	11.38	10.4	12.38	12.68	-	-
Chromium	0.001	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	Cr (VI) = 0.001 Cr (III) = 0.0089	Cr (VI) = 0.001 Cr (III) = 0.0089
Cobalt	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.004	-
Copper	0.2	mg/L	0.001	<0.001	0.001	1.5	<0.001	0.001	(0.094(H)+2)/1000	0.002-0.004
Iron	0.005	mg/L	0.22	0.014	<0.005	0.008	0.008	<0.005	0.3	0.3
Lead	0.1	mg/L	0.002	0.006	0.006	<0.1	0.01	<0.001	$e^{(1.27 \ln(H)-1.46)}$ ie. (H)<8=0.003 - (H)300=0.33	0.001 @ 0-60(H) 0.002 @ 60-120(H) 0.004 @ 120-180(H)
Magnesium	0.1	mg/L	1.1	1.5	1.5	1.5	1.6	1.7	-	-
Manganese	0.001	mg/L	0.006	<0.001	<0.001	<0.001	0.001	<0.001	(0.11102 ^H)+0.54 (ie. 0.8 @ 25(H) 1.1 @ 50(H) 1.6 @ 100(H) 2.2 @ 150(H) 3.8 @ 300(H)	-
Molybdenum	0.001	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	2	0.073
Nickel	0.001	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.025 @ 0-60(H) 0.065 @ 60-120(H) 0.11 @ 120-180(H) 0.15 @ >80(H)	0.025 @ 0-60(H) 0.065 @ 60-120 (H) 0.11 @ 120-180 (H) 0.15 @ >80(H)
Potassium	0.01	mg/L	0.91	0.85	1.94	0.9	0.85	1.02	-	-
Selenium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.002	-
Silicon	0.01	mg/L	2.15	2.35	2.48	2.34	1.41	2.74	-	-
Silver	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.5	0.6	3.3	0.7	0.6	0.8	-	-
Tin	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	400 triethyl tin 22 triphenyl tin	-
Titanium	0.007	mg/L	0.011	<0.007	<0.007	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.3	-
Vanadium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.006	-
Yttrium	0.001	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.001	0.001	0.003	0.005	<0.001	0.002	33+0.75*(H-90) (ie. 0.033 @ <90(H) 0.040 @ 100(H) 0.115 @ 200(H)	0.03
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.0001	0.000004 methylmercury 0.000026 inorganic mercury
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-
Dissolved Metals										
Aluminum	0.001	mg/L	0.029	0.017	0.013	0.014	0.006	0.008	0.1 (dissolved)	0.1 @ pH>6.5
Antimony	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Arsenic	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Barium	0.01	mg/L	<0.01	0.01	0.01	0.01	0.01	0.02	-	-
Beryllium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Bismuth	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.007	<0.001	0.017	<0.001	<0.001	<0.001	-	-
Cadmium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Calcium	0.01	mg/L	8.16	10.0	11.04	10.39	12.35	12.65	-	-
Chromium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Cobalt	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Copper	0.2	mg/L	0.001	<0.001	0.001	0.3	<0.001	0.001	-	-
Iron	0.005	mg/L	<0.005	0.006	<0.005	<0.005	<0.005	<0.005	-	-
Lead	0.1	mg/L	0.001	0.006	0.003	<0.1	0.006	<0.001	-	-
Magnesium	0.1	mg/L	1	1.4	1.4	1.5	1.6	1.7	-	-
Manganese	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	-	-
Molybdenum	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Nickel	0.001	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Potassium	0.01	mg/L	0.81	0.85	1.84	0.81	0.84	0.91	-	-
Selenium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Silicon	0.01	mg/L	1.93	2.33	2.46	2.33	1.39	2.58	-	-
Silver	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.5	0.6	3.3	0.7	0.6	0.8	-	-
Tin	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Titanium	0.007	mg/L	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Vanadium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Yttrium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.001	0.001	0.003	0.002	<0.001	0.002	-	-
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	-	-
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-

Notes:

ND = Not detected

RDL = Reportable Detection Limit

¹ British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2006

² Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the Protection of Freshwater Aquatic Life, 2005

³ Indicates the applicable standard is lower than the detection limit.

*- Indicates no analysis conducted or no applicable standard available.

BOLD indicates water quality guideline exceeded

 Indicates parameter exceeds BC Water Quality Guidelines

 Indicates parameter exceeds Canadian Environmental Quality Guidelines

W14 Station Water Quality Field Data, Laboratory Data, Total Metals and Dissolved Metals										
Sample ID	RDL	Units	17-Oct-07	21-Nov-07	20-Dec-07	17-Jan-08	27-Feb-08	27-Mar-08	BC WQG ¹	CCME ²
Field Data										
Temperature (°C)	-	°C	2.65	-	0.2	0	0.5	0.2	15	-
Conductivity (us/cm)	-	us/cm	67	-	86	-	94	-	-	-
Salinity	-	%	0.03	-	0	0	0	0	-	-
DO (mg/L)	-	mg/L	16.67	-	16.28	16.79	14.91	14.95	5.0-9.0	5.5-9.5
pH (units)	-	pH units	7.29	-	-	-	6.89	-	6.5-9.0	6.5-9.0
Laboratory Data										
pH	0.01	pH units	7.35	7.44	7.07	7.43	7.57	7.59	6.5-9.0	6.5-9.0
Conductivity (umhos/cm)	1	uS/cm	-	72	-	87	87	89	-	-
Colour (Co/Pt units)	5	Co/Pt	9	10	10	9	5	<5	-	-
Turbidity (NTU)	0.2	NTU	0.4	1.4	0.3	0.2	<0.1	0.2	8 NTU when background 8-80	8 NTU when background 8-80
Alkalinity Total (pH 4.5)	1	mg/L	23.1	28.5	33	34	37	35	-	-
Total Suspended Solids	1	mg/L	<1	3	<1	<1	<1	<1	25	-
Total Dissolved Solids	1	mg/L	60	49	74	72	76	65	-	-
Chloride	0.5	mg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	150 - 600	-
Fluoride	0.1	mg/L	-	-	-	0.02	0.1	<0.1	0.2	-
Nitrate (as N)	0.003	mg/L	0.130	0.130	0.171	0.17	0.154	0.189	200	13
Nitrite (as N)	0.003	mg/L	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.06 (Cl-0.2)	0.06
T.K.N. (as N)	0.05	mg/L	<0.05	<0.05	<0.05	<0.05	0.12	<0.05	-	-
Total Nitrogen (as N)	0.05	mg/L	0.13	0.13	0.17	0.170	0.28	0.19	-	-
Ammonia (as N)	0.005	mg/L	<0.005	0.007	<0.005	0.01	<0.005	<0.005	2-2.08 mg/l	-
Total Phosphate (as P)	0.003	mg/L	<0.003	0.004	0.019	<0.003	<0.003	<0.003	-	-
Dissolved Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Ortho Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Sulphate (as SO ₄)	1	mg/L	7	6	14	11	12	9	50 - 100 mg/l	-
Hardness (as CaCO ₃)	0.5	mg/L	31	36	38	35	39	41	-	-
Cyanide	0.005	mg/L	<0.005	-	-	-	-	-	0.005-0.01mg/l	-
Dissolved Organic Carbon	1	mg/L	2	-	<1	<2	2	1	-	-
Total Metals										
Aluminum	0.001	mg/L	0.029	0.073	0.013	0.007	0.006	0.005	(dissolved) 0.1 or, if pH<6.5, e ^[1.209-(2.426*pH)-(0.286*pH²)]	0.005 @pH <6.5, Ca <4, DOC<2 0.1 @ pH >6.5, Ca >4, DOC>2
Antimony	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.02	-
Arsenic	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.005	0.005
Barium	0.01	mg/L	0.01	0.01	<0.01	0.01	0.01	0.02	5	-
Beryllium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.0053	-
Bismuth	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.002	0.001	0.029	<0.001	<0.001	<0.001	1.2	-
Cadmium	0.001	mg/L	<0.001	<0.001	<0.001	0.003	<0.001	<0.001	10(0.86log H)-3.2 (ie. 0.0001 @ 30(H) 0.0003 @ 90(H) 0.0005 @ 150(H) 0.0006 @ 210(H)	0.000017 or 0(0.86log H)-3.2)
Calcium	0.01	mg/L	9.67	11.5	11.89	11.22	11.81	12.88	-	-
Chromium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	Cr (VI) = 0.001 Cr (III) = 0.0089	Cr (VI) = 0.001 Cr (III) = 0.0089
Cobalt	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	0.004	-
Copper	0.2	mg/L	0.001	0.001	<0.001	0.5	<0.001	0.001	(0.094(H)+2)/1000	0.002-0.004
Iron	0.005	mg/L	0.041	0.122	<0.005	0.018	0.026	0.031	0.3	0.3
Lead	0.1	mg/L	0.001	0.005	<0.001	<0.1	0.003	<0.001	e ^{(1.27ln(H)-1.46)} ie. (H)-<8=0.003 - (H)300=0.33	0.001 @ 0-60(H) 0.002 @ 60-120(H) 0.004 @ 120-180(H)
Magnesium	0.1	mg/L	1.7	2.1	2	1.9	2.1	2.2	-	-
Manganese	0.001	mg/L	0.004	0.009	0.003	0.004	0.004	0.005	(0.01102*H)+0.54 (ie. 0.8 @ 25(H) 1.1 @ 50(H) 1.6 @ 100(H) 2.2 @ 150(H) 3.8 @ 300(H)	-
Molybdenum	0.001	mg/L	0.001	0.001	0.001	0.001	0.001	<0.001	2	0.073
Nickel	0.001	mg/L	0.001	0.001	<0.001	<0.001	<0.001	<0.001	0.025 @ 0-60(H) 0.065 @ 60-120(H) 0.11 @ 120-180(H) 0.15 @ >80(H)	0.025 @ 0-60(H) 0.065 @ 60-120 (H) 0.11 @ 120-180 (H) 0.15 @ >80(H)
Potassium	0.01	mg/L	0.55	0.59	0.49	0.66	0.56	0.66	-	-
Selenium	0.5	mg/L	0.001	0.001	0.001	0.6	0.001	0.001	0.002	-
Silicon	0.01	mg/L	2.04	2.26	2.49	2.05	1.26	2.21	-	-
Silver	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.5	0.7	0.8	0.7	0.7	0.8	-	-
Tin	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	400 triethyl tin 22 triphenyl tin	-
Titanium	0.007	mg/L	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.3	-
Vanadium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.006	-
Yttrium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.002	0.002	<0.001	0.002	<0.001	0.001	33+0.75*(H-90) (ie. 0.033 @ <90(H) 0.040 @ 100(H) 0.115 @ 200(H)	0.03
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.0001	0.000004 methylmercury 0.000026 inorganic mercury
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-
Dissolved Metals										
Aluminum	0.001	mg/L	0.02	0.011	0.005	0.003	<0.001	0.005	0.1 (dissolved)	0.1 @ pH>6.5
Antimony	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Arsenic	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Barium	0.01	mg/L	0.01	0.01	<0.001	0.01	0.01	0.02	-	-
Beryllium	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Bismuth	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Cadmium	0.001	mg/L	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	-	-
Calcium	0.01	mg/L	9.54	10.5	11.62	11.12	11.44	12.59	-	-
Chromium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Cobalt	0.5	mg/L	<0.001	<0.001	<0.001	<0.5	<0.001	<0.001	-	-
Copper	0.2	mg/L	0.001	0.001	<0.001	0.5	<0.001	<0.001	-	-
Iron	0.005	mg/L	0.009	0.023	<0.005	<0.005	0.008	0.019	-	-
Lead	0.1	mg/L	<0.001	0.004	<0.001	<0.1	<0.001	<0.001	-	-
Magnesium	0.1	mg/L	1.7	1.9	2	1.8	2.1	2.1	-	-
Manganese	0.001	mg/L	0.004	0.006	0.003	0.004	0.002	0.005	-	-
Molybdenum	0.001	mg/L	<0.001	0.001	0.001	<0.001	0.001	<0.001	-	-
Nickel	0.001	mg/L	0.001	0.001	<0.001	<0.001	<0.001	<0.001	-	-
Potassium	0.01	mg/L	0.54	0.58	0.48	0.66	0.56	0.64	-	-
Selenium	0.5	mg/L	0.001	0.001	0.001	0.6	0.001	0.001	-	-
Silicon	0.01	mg/L	2.02	2.23	2.27	2.03	1.21	2.17	-	-
Silver	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	0.5	0.7	0.8	0.7	0.7	0.8	-	-
Tin	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Titanium	0.007	mg/L	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Vanadium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Yttrium	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	0.002	0.001	<0.001	0.001	<0.001	0.002	-	-
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	-	-
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-

Notes:

ND = Not detected

RDL = Reportable Detection Limit

¹British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2006

²Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the Protection of Freshwater Aquatic Life, 2005

³Indicates the applicable standard is lower than the detection limit.

"-" Indicates no analysis conducted or no applicable standard available.

BOLD indicates water quality guideline exceeded

 indicates parameter exceeds BC Water Quality Guidelines

 indicates parameter exceeds Canadian Environmental Quality Guidelines

W15 Station Water Quality Field Data, Laboratory Data, Total Metals and Dissolved Metals

Sample ID	RDL	Units	17-Oct-07	21-Nov-07	20-Dec-07	17-Jan-08	27-Feb-08	27-Mar-08	BC WQG ¹	CCME ²
Field Data										
Temperature (°C)	-	°C	3.83	0.8	-	-	-	0.4	15	-
Conductivity (us/cm)	-	us/cm	88	177	-	-	-	-	-	-
Salinity	-	%	0.04	0	-	-	-	0	-	-
DO (mg/L)	-	mg/L	14.45	14.58	-	-	-	14.34	5.0-9.0	5.5-9.5
pH (units)	-	pH units	7.35	4.78	-	-	-	-	6.5-9.0	6.5-9.0
Laboratory Data										
pH	0.01	pH units	7.58	7.66	-	-	-	7.96	6.5-9.0	6.5-9.0
Conductivity (umhos/cm)	1	uS/cm	-	111	-	-	-	134	-	-
Colour (Co/Pt units)	5	Co/Pt	7	8	-	-	-	<5	-	-
Turbidity (NTU)	0.2	NTU	0.3	0.1	-	-	-	<0.2	8 NTU when background 8-80	8 NTU when background 8-80
Alkalinity Total (pH 4.5)	1	mg/L	35.7	47.9	-	-	-	56	-	-
Total Suspended Solids	1	mg/L	2	<1	-	-	-	<1	25	-
Total Dissolved Solids	1	mg/L	87	94	-	-	-	100	-	-
Chloride	0.5	mg/L	<0.3	<0.3	-	-	-	<0.3	150 - 600	-
Fluoride	0.1	mg/L	-	-	-	-	-	<0.1	0.2	-
Nitrate (as N)	0.003	mg/L	0.023	0.088	-	-	-	0.167	200	13
Nitrite (as N)	0.003	mg/L	<0.003	<0.003	-	-	-	<0.003	0.06 (Cl<0.2)	0.06
T.K.N. (as N)	0.05	mg/L	0.05	<0.05	-	-	-	<0.05	-	-
Total Nitrogen (as N)	0.05	mg/L	0.07	0.09	-	-	-	0.17	-	-
Ammonia (as N)	0.005	mg/L	<0.005	0.009	-	-	-	0.012	2-2.08 mg/l	-
Total Phosphate (as P)	0.003	mg/L	0.010	<0.003	-	-	-	<0.003	-	-
Dissolved Phosphate (as P)	0.003	mg/L	-	-	-	-	-	<0.003	-	-
Ortho Phosphate (as P)	0.003	mg/L	-	-	-	-	-	<0.003	-	-
Sulphate (as SO ₄)	1	mg/L	7	10	-	-	-	10.4	50 - 100 mg/l	-
Hardness (as CaCO ₃)	0.5	mg/L	45	57	-	-	-	65	-	-
Cyanide	0.005	mg/L	<0.005	-	-	-	-	-	0.005-0.01mg/l	-
Dissolved Organic Carbon	1	mg/L	-	-	-	-	-	1	-	-
Total Metals										
Aluminum	0.001	mg/L	0.015	0.004	-	-	-	0.002	(dissolved) 0.1 or, if pH<6.5, e ^{(1.209(2.426)pH)-(0.286)pH²)}	0.005 @pH <6.5, Ca <4, DOC<2 0.1 @ pH >6.5, Ca >4, DOC>2
Antimony	0.001	mg/L	<0.001	<0.001	-	-	-	<0.001	0.02	-
Arsenic	0.5	mg/L	<0.001	<0.001	-	-	-	<0.001	0.005	0.005
Barium	0.01	mg/L	<0.01	<0.01	-	-	-	<0.01	5	-
Beryllium	0.5	mg/L	<0.001	<0.001	-	-	-	<0.001	0.0053	-
Bismuth	0.001	mg/L	<0.001	<0.001	-	-	-	<0.001	-	-
Boron	0.001	mg/L	<0.001	<0.001	-	-	-	<0.001	1.2	-
Cadmium	0.001	mg/L	<0.001	<0.001	-	-	-	<0.001	10(0.86[log H]-3.2 (ie. 0.00001 @ 30(H) 0.00003 @ 90(H) 0.00005 @ 150(H) 0.00006 @ 210(H))	0.000017 or 10(0.86[log H]-3.2)
Calcium	0.01	mg/L	12.18	15.3	-	-	-	17.62	-	-
Chromium	0.001	mg/L	<0.001	<0.001	-	-	-	<0.001	Cr (VI) = 0.001 Cr (III) = 0.0089	Cr (VI) = 0.001 Cr (III) = 0.0089
Cobalt	0.5	mg/L	<0.001	<0.001	-	-	-	<0.001	0.004	-
Copper	0.2	mg/L	<0.001	<0.001	-	-	-	<0.001	(0.094(H)+2)/1000	0.002-0.004
Iron	0.005	mg/L	0.007	0.007	-	-	-	<0.005	0.3	0.3
Lead	0.1	mg/L	0.001	0.007	-	-	-	<0.001	e ^{(1.27ln(H)-1.46)} ie. (H)<8=0.003 - (H)300=0.33	0.001 @ 0-60(H) 0.002 @ 60-120(H) 0.004 @ 120-180(H)
Magnesium	0.1	mg/L	3.5	4.7	-	-	-	5.2	-	-
Manganese	0.001	mg/L	0.001	<0.001	-	-	-	<0.001	(0.01102*H)+0.54 (ie. 0.8 @ 25(H) 1.1 @ 50(H) 1.6 @ 100(H) 2.2 @ 150(H) 3.8 @ 300(H))	-
Molybdenum	0.001	mg/L	0.001	0.001	-	-	-	0.001	2	0.073
Nickel	0.001	mg/L	<0.001	<0.001	-	-	-	<0.001	0.025 @ 0-60(H) 0.065 @ 60-120(H) 0.11 @ 120-180(H) 0.15 @ >80(H)	0.025 @ 0-60(H) 0.065 @ 60-120 (H) 0.11 @ 120-180 (H) 0.15 @ >80(H)
Potassium	0.01	mg/L	0.09	0.08	-	-	-	0.09	-	-
Selenium	0.5	mg/L	0.001	0.002	-	-	-	0.002	0.002	-
Silicon	0.01	mg/L	1.49	1.69	-	-	-	1.56	-	-
Silver	0.005	mg/L	<0.005	<0.005	-	-	-	<0.005	-	-
Sodium	0.1	mg/L	0.4	0.5	-	-	-	0.6	-	-
Tin	0.01	mg/L	<0.01	<0.01	-	-	-	<0.01	400 triethyl tin 22 triphenyl tin	-
Titanium	0.007	mg/L	<0.007	<0.007	-	-	-	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	-	-	-	0.001	0.3	-
Vanadium	0.001	mg/L	<0.001	<0.001	-	-	-	<0.001	0.006	-
Yttrium	0.001	mg/L	<0.001	<0.001	-	-	-	<0.001	-	-
Zinc	0.001	mg/L	0.001	0.001	-	-	-	0.001	33+0.75*(H-90) (ie. 0.033 @ <90(H) 0.040 @ 100(H) 0.115 @ 200(H))	0.03
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	-	-	-	<0.015	0.0001	0.00004 methylmercury 0.000026 inorganic mercury
Lithium	0.5	mg/L	-	-	-	-	-	<0.5	-	-
Dissolved Metals										
Aluminum	0.001	mg/L	0.015	0.004	-	-	-	<0.001	0.1 (dissolved)	0.1 @ pH>6.5
Antimony	0.001	mg/L	<0.001	<0.001	-	-	-	<0.001	-	-
Arsenic	0.5	mg/L	<0.001	<0.001	-	-	-	<0.001	-	-
Barium	0.01	mg/L	<0.01	<0.01	-	-	-	<0.01	-	-
Beryllium	0.5	mg/L	<0.001	<0.001	-	-	-	<0.001	-	-
Bismuth	0.001	mg/L	<0.001	<0.001	-	-	-	<0.001	-	-
Boron	0.001	mg/L	<0.001	<0.001	-	-	-	<0.001	-	-
Cadmium	0.001	mg/L	<0.001	<0.001	-	-	-	<0.001	-	-
Calcium	0.01	mg/L	12.1	14.9	-	-	-	17.36	-	-
Chromium	0.001	mg/L	<0.001	<0.001	-	-	-	<0.001	-	-
Cobalt	0.5	mg/L	<0.001	<0.001	-	-	-	<0.001	-	-
Copper	0.2	mg/L	<0.001	<0.001	-	-	-	<0.001	-	-
Iron	0.005	mg/L	<0.005	<0.005	-	-	-	<0.005	-	-
Lead	0.1	mg/L	0.001	0.004	-	-	-	<0.001	-	-
Magnesium	0.1	mg/L	3.5	4.4	-	-	-	5.2	-	-
Manganese	0.001	mg/L	0.001	<0.001	-	-	-	<0.001	-	-
Molybdenum	0.001	mg/L	0.001	0.001	-	-	-	0.001	-	-
Nickel	0.001	mg/L	<0.001	<0.001	-	-	-	<0.001	-	-
Potassium	0.01	mg/L	0.09	0.08	-	-	-	0.08	-	-
Selenium	0.5	mg/L	0.001	0.002	-	-	-	0.002	-	-
Silicon	0.01	mg/L	1.45	1.69	-	-	-	1.44	-	-
Silver	0.005	mg/L	<0.005	<0.005	-	-	-	<0.005	-	-
Sodium	0.1	mg/L	0.4	0.5	-	-	-	0.6	-	-
Tin	0.01	mg/L	<0.01	<0.01	-	-	-	<0.01	-	-
Titanium	0.007	mg/L	<0.007	<0.007	-	-	-	<0.007	-	-
Uranium	0.001	mg/L	<0.001	<0.001	-	-	-	0.001	-	-
Vanadium	0.001	mg/L	<0.001	<0.001	-	-	-	<0.001	-	-
Yttrium	0.001	mg/L	<0.001	<0.001	-	-	-	<0.001	-	-
Zinc	0.001	mg/L	0.001	<0.001	-	-	-	0.001	-	-
Mercury (ug/L)	0.015	mg/L	<0.015	<0.015	-	-	-	<0.015	-	-
Lithium	0.5	mg/L	-	-	-	-	-	<0.5	-	-

Notes:

ND = Not detected

RDL = Reportable Detection Limit

¹British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2006

²Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the Protection of Freshwater Aquatic Life, 2005

³Indicates the applicable standard is lower than the detection limit.

"-" Indicates no analysis conducted or no applicable standard available.

BOLD indicates water quality guideline exceeded

[Redacted] indicates parameter exceeds BC Water Quality Guidelines

[Redacted] indicates parameter exceeds Canadian Environmental Quality Guidelines

W17 Station Water Quality Field Data, Laboratory Data, Total Metals and Dissolved Metals										
Sample ID	RDL	Units	17-Oct-07	21-Nov-07	20-Dec-07	17-Jan-08	27-Feb-08	27-Mar-08	BC WQG ¹	CCME ²
Field Data										
Temperature (°C)	-	°C	-	-	-	0.3	-	0.60	15	-
Conductivity (us/cm)	-	us/cm	-	-	-	-	-	-	-	-
Salinity	-	%	-	-	-	14.85	-	14.65	-	-
DO (mg/L)	-	mg/L	-	-	-	-	-	-	5.0-9.0	5.5-9.5
pH (units)	-	pH units	-	-	-	-	-	-	6.5-9.0	6.5-9.0
Laboratory Data										
pH	0.01	pH units	-	-	-	7.32	7.67	7.81	6.5-9.0	6.5-9.0
Conductivity (umhos/cm)	1	uS/cm	-	-	-	54	115	131	-	-
Colour (Co/Pl units)	5	Co/Pl	-	-	-	5	6	<5	-	-
Turbidity (NTU)	0.2	NTU	-	-	-	<0.2	<0.1	<0.2	8 NTU when background 8-80	8 NTU when background 8-80
Alkalinity Total (pH 4.5)	1	mg/L	-	-	-	23	43	49	-	-
Total Suspended Solids	1	mg/L	-	-	-	<1	<1	<1	25	-
Total Dissolved Solids	1	mg/L	-	-	-	42	100	102	-	-
Chloride	0.5	mg/L	-	-	-	<0.3	<0.3	<0.3	150 - 600	-
Fluoride	0.1	mg/L	-	-	-	0.04	0.1	<0.1	0.2	-
Nitrate (as N)	0.003	mg/L	-	-	-	0.227	0.189	0.107	200	13
Nitrite (as N)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	0.06 (Cl<0.2)	0.06
T.K.N. (as N)	0.05	mg/L	-	-	-	0.176	0.10	<0.05	-	-
Total Nitrogen (as N)	0.05	mg/L	-	-	-	0.202	0.29	0.11	-	-
Ammonia (as N)	0.005	mg/L	-	-	-	-	<0.005	<0.005	2-2.08 mg/l	-
Total Phosphate (as P)	0.003	mg/L	-	-	-	0.012	<0.003	<0.003	-	-
Dissolved Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Ortho Phosphate (as P)	0.003	mg/L	-	-	-	<0.003	<0.003	<0.003	-	-
Sulphate (as SO ₄)	1	mg/L	-	-	-	6	19	20	50 - 100 mg/l	-
Hardness (as CaCO ₃)	0.5	mg/L	-	-	-	20	55	64	-	-
Cyanide	0.005	mg/L	-	-	-	-	-	-	0.005-0.01mg/l	-
Dissolved Organic Carbon	1	mg/L	-	-	-	<2	2	<1	-	-
Total Metals										
Aluminum	0.001	mg/L	-	-	-	0.002	0.016	0.002	(dissolved) 0.1 or, if pH<6.5, $e^{[1.209-(2.426 \cdot \text{pH})+(0.286 \cdot \text{pH}^2)]}$	0.005 @pH <6.5, Ca <4, DOC<2 0.1 @ pH >6.5, Ca >4, DOC>2
Antimony	0.001	mg/L	-	-	-	<0.001	<0.001	<0.001	0.02	-
Arsenic	0.5	mg/L	-	-	-	<0.5	<0.001	<0.001	0.005	0.005
Barium	0.01	mg/L	-	-	-	<0.01	<0.01	<0.01	5	-
Beryllium	0.5	mg/L	-	-	-	<0.5	<0.001	<0.001	0.0053	-
Bismuth	0.001	mg/L	-	-	-	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	-	-	-	<0.001	<0.001	<0.001	1.2	-
Cadmium	0.001	mg/L	-	-	-	0.029	<0.001	<0.001	10(0.86[log H]-3.2 (ie. 0.00001 @ 30(H) 0.00003 @ 90(H) 0.00005 @ 150(H) 0.00006 @ 210(H))	0.000017 or 10(0.86[log H]-3.2)
Calcium	0.01	mg/L	-	-	-	13	15.7	16.63	-	-
Chromium	0.001	mg/L	-	-	-	<0.001	<0.001	<0.001	Cr (VI) = 0.001 Cr (III) = 0.0089	Cr (VI) = 0.001 Cr (III) = 0.0089
Cobalt	0.5	mg/L	-	-	-	<0.5	<0.001	<0.001	0.004	-
Copper	0.2	mg/L	-	-	-	0.2	<0.001	<0.001	(0.094(H)+2)/1000	0.002-0.004
Iron	0.005	mg/L	-	-	-	0.006	0.006	<0.005	0.3	0.3
Lead	0.1	mg/L	-	-	-	<0.1	0.004	<0.001	$e^{(1.27 \ln(H)-1.46)}$ ie. (H)<8=0.003 - (H)300=0.33	0.001 @ 0-60(H) 0.002 @ 60-120(H) 0.004 @ 120-180(H)
Magnesium	0.1	mg/L	-	-	-	4.7	4.4	5.5	-	-
Manganese	0.001	mg/L	-	-	-	<0.001	0.002	<0.001	(0.01102*H)+0.54 (ie. 0.8 @ 25(H) 1.1 @ 50(H) 1.6 @ 100(H) 2.2 @ 150(H) 3.8 @ 300(H))	-
Molybdenum	0.001	mg/L	-	-	-	0.001	0.001	0.001	2	0.073
Nickel	0.001	mg/L	-	-	-	<0.001	<0.001	0.001	0.025 @ 0-60(H) 0.065 @ 60-120(H) 0.11 @ 120-180(H) 0.15 @ >80(H)	0.025 @ 0-60(H) 0.065 @ 60-120 (H) 0.11 @ 120-180 (H) 0.15 @ >80(H)
Potassium	0.01	mg/L	-	-	-	0.191	0.25	0.2	-	-
Selenium	0.5	mg/L	-	-	-	2.0	0.002	0.003	0.002	-
Silicon	0.01	mg/L	-	-	-	1.86	1.37	2.12	-	-
Silver	0.005	mg/L	-	-	-	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	-	-	-	0.8	0.6	0.7	-	-
Tin	0.01	mg/L	-	-	-	<0.01	<0.01	<0.01	400 triethyl tin 22 triphenyl tin	-
Titanium	0.007	mg/L	-	-	-	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	-	-	-	<0.001	<0.001	<0.001	0.3	-
Vanadium	0.001	mg/L	-	-	-	<0.001	<0.001	<0.001	0.006	-
Yttrium	0.001	mg/L	-	-	-	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	-	-	-	0.002	<0.001	0.002	33+0.75*(H-90) (ie. 0.033 @ <90(H) 0.040 @ 100(H) 0.115 @ 200(H))	0.03
Mercury (ug/L)	0.015	mg/L	-	-	-	<0.015	<0.015	<0.015	0.0001	0.000004 methylmercury 0.000026 inorganic mercury
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-
Dissolved Metals										
Aluminum	0.001	mg/L	-	-	-	<0.001	0.014	<0.001	0.1 (dissolved)	0.1 @ pH>6.5
Antimony	0.001	mg/L	-	-	-	<0.001	<0.001	<0.001	-	-
Arsenic	0.5	mg/L	-	-	-	<0.5	<0.001	<0.001	-	-
Barium	0.01	mg/L	-	-	-	<0.01	<0.01	<0.01	-	-
Beryllium	0.5	mg/L	-	-	-	<0.5	<0.001	<0.001	-	-
Bismuth	0.001	mg/L	-	-	-	<0.001	<0.001	<0.001	-	-
Boron	0.001	mg/L	-	-	-	<0.001	<0.001	<0.001	-	-
Cadmium	0.001	mg/L	-	-	-	0.029	<0.001	<0.001	-	-
Calcium	0.01	mg/L	-	-	-	12.93	15.39	16.57	-	-
Chromium	0.001	mg/L	-	-	-	<0.001	<0.001	<0.001	-	-
Cobalt	0.5	mg/L	-	-	-	<0.5	<0.001	<0.001	-	-
Copper	0.2	mg/L	-	-	-	0.2	<0.001	<0.001	-	-
Iron	0.005	mg/L	-	-	-	<0.005	0.005	<0.005	-	-
Lead	0.1	mg/L	-	-	-	<0.1	0.002	<0.001	-	-
Magnesium	0.1	mg/L	-	-	-	4.7	4.3	5.5	-	-
Manganese	0.001	mg/L	-	-	-	<0.001	<0.001	<0.001	-	-
Molybdenum	0.001	mg/L	-	-	-	0.001	0.001	0.001	-	-
Nickel	0.001	mg/L	-	-	-	<0.001	<0.001	0.001	-	-
Potassium	0.01	mg/L	-	-	-	0.187	0.25	0.2	-	-
Selenium	0.5	mg/L	-	-	-	2.0	0.002	0.002	-	-
Silicon	0.01	mg/L	-	-	-	1.78	1.36	2.06	-	-
Silver	0.005	mg/L	-	-	-	<0.005	<0.005	<0.005	-	-
Sodium	0.1	mg/L	-	-	-	0.8	0.6	0.7	-	-
Tin	0.01	mg/L	-	-	-	<0.01	<0.01	<0.01	-	-
Titanium	0.007	mg/L	-	-	-	<0.007	<0.007	<0.007	-	-
Uranium	0.001	mg/L	-	-	-	<0.001	<0.001	<0.001	-	-
Vanadium	0.001	mg/L	-	-	-	<0.001	<0.001	<0.001	-	-
Yttrium	0.001	mg/L	-	-	-	<0.001	<0.001	<0.001	-	-
Zinc	0.001	mg/L	-	-	-	0.002	<0.001	0.002	-	-
Mercury (ug/L)	0.015	mg/L	-	-	-	<0.015	<0.015	<0.015	-	-
Lithium	0.5	mg/L	-	-	-	-	<0.5	<0.5	-	-

Notes:

ND = Not detected

RDL = Reportable Detection Limit

¹British Columbia Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 2006

²Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the Protection of Freshwater Aquatic Life, 2005

³Indicates the applicable standard is lower than the detection limit.

"-" Indicates no analysis conducted or no applicable standard available.

BOLD indicates water quality guideline exceeded

[Shaded Box] indicates parameter exceeds BC Water Quality Guidelines

[Shaded Box] indicates parameter exceeds Canadian Environmental Quality Guidelines



APPENDIX

APPENDIX B ENVIRONMENTAL GENERAL CONDITIONS



ENVIRONMENTAL REPORT – GENERAL CONDITIONS

This report incorporates and is subject to these “General Conditions”.

1.0 USE OF REPORT

This report pertains to a specific site, a specific development, and a specific scope of work. It is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation from the site or proposed development would necessitate a supplementary investigation and assessment.

This report and the assessments and recommendations contained in it are intended for the sole use of EBA’s client. EBA does not accept any responsibility for the accuracy of any of the data, the analysis or the recommendations contained or referenced in the report when the report is used or relied upon by any party other than EBA’s client unless otherwise authorized in writing by EBA. Any unauthorized use of the report is at the sole risk of the user.

This report is subject to copyright and shall not be reproduced either wholly or in part without the prior, written permission of EBA. Additional copies of the report, if required, may be obtained upon request.

2.0 LIMITATIONS OF REPORT

This report is based solely on the conditions which existed on site at the time of EBA’s investigation. The client, and any other parties using this report with the express written consent of the client and EBA, acknowledge that conditions affecting the environmental assessment of the site can vary with time and that the conclusions and recommendations set out in this report are time sensitive.

The client, and any other party using this report with the express written consent of the client and EBA, also acknowledge that the conclusions and recommendations set out in this report are based on limited observations and testing on the subject site and that conditions may vary across the site which, in turn, could affect the conclusions and recommendations made.

The client acknowledges that EBA is neither qualified to, nor is it making, any recommendations with respect to the purchase, sale, investment or development of the property, the decisions on which are the sole responsibility of the client.

2.1 INFORMATION PROVIDED TO EBA BY OTHERS

During the performance of the work and the preparation of this report, EBA may have relied on information provided by persons other than the client. While EBA endeavours to verify the accuracy of such information when instructed to do so by the client, EBA accepts no responsibility for the accuracy or the reliability of such information which may affect the report.

3.0 LIMITATION OF LIABILITY

The client recognizes that property containing contaminants and hazardous wastes creates a high risk of claims brought by third parties arising out of the presence of those materials. In consideration of these risks, and in consideration of EBA providing the services requested, the client agrees that EBA’s liability to the client, with respect to any issues relating to contaminants or other hazardous wastes located on the subject site shall be limited as follows:

1. With respect to any claims brought against EBA by the client arising out of the provision or failure to provide services hereunder shall be limited to the amount of fees paid by the client to EBA under this Agreement, whether the action is based on breach of contract or tort;
2. With respect to claims brought by third parties arising out of the presence of contaminants or hazardous wastes on the subject site, the client agrees to indemnify, defend and hold harmless EBA from and against any and all claim or claims, action or actions, demands, damages, penalties, fines, losses, costs and expenses of every nature and kind whatsoever, including solicitor-client costs, arising or alleged to arise either in whole or part out of services provided by EBA, whether the claim be brought against EBA for breach of contract or tort.

4.0 JOB SITE SAFETY

EBA is only responsible for the activities of its employees on the job site and is not responsible for the supervision of any other persons whatsoever. The presence of EBA personnel on site shall not be construed in any way to relieve the client or any other persons on site from their responsibility for job site safety.

5.0 DISCLOSURE OF INFORMATION BY CLIENT

The client agrees to fully cooperate with EBA with respect to the provision of all available information on the past, present, and proposed conditions on the site, including historical information respecting the use of the site. The client acknowledges that in order for EBA to properly provide the service, EBA is relying upon the full disclosure and accuracy of any such information.

6.0 STANDARD OF CARE

Services performed by EBA for this report have been conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions in the jurisdiction in which the services are provided. Engineering judgement has been applied in developing the conclusions and/or recommendations provided in this report. No warranty or guarantee, express or implied, is made concerning the test results, comments, recommendations, or any other portion of this report.

7.0 EMERGENCY PROCEDURES

The client undertakes to inform EBA of all hazardous conditions, or possible hazardous conditions which are known to it. The client recognizes that the activities of EBA may uncover previously unknown hazardous materials or conditions and that such discovery may result in the necessity to undertake emergency procedures to protect EBA employees, other persons and the environment. These procedures may involve additional costs outside of any budgets previously agreed upon. The client agrees to pay EBA for any expenses incurred as a result of such discoveries and to compensate EBA through payment of additional fees and expenses for time spent by EBA to deal with the consequences of such discoveries.

8.0 NOTIFICATION OF AUTHORITIES

The client acknowledges that in certain instances the discovery of hazardous substances or conditions and materials may require that regulatory agencies and other persons be informed and the client agrees that notification to such bodies or persons as required may be done by EBA in its reasonably exercised discretion.

9.0 OWNERSHIP OF INSTRUMENTS OF SERVICE

The client acknowledges that all reports, plans, and data generated by EBA during the performance of the work and other documents prepared by EBA are considered its professional work product and shall remain the copyright property of EBA.

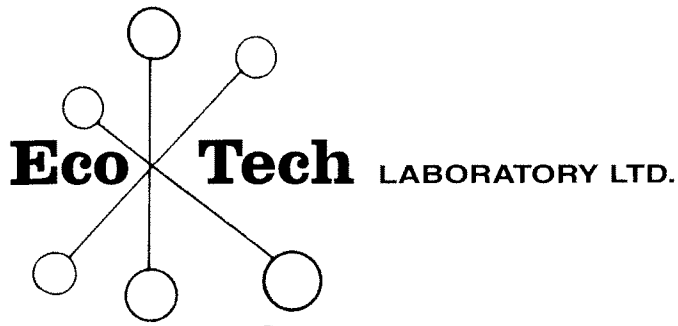
10.0 ALTERNATE REPORT FORMAT

Where EBA submits both electronic file and hard copy versions of reports, drawings and other project-related documents and deliverables (collectively termed EBA's instruments of professional service), the Client agrees that only the signed and sealed hard copy versions shall be considered final and legally binding. The hard copy versions submitted by EBA shall be the original documents for record and working purposes, and, in the event of a dispute or discrepancies, the hard copy versions shall govern over the electronic versions. Furthermore, the Client agrees and waives all future right of dispute that the original hard copy signed version archived by EBA shall be deemed to be the overall original for the Project.

The Client agrees that both electronic file and hard copy versions of EBA's instruments of professional service shall not, under any circumstances, no matter who owns or uses them, be altered by any party except EBA. The Client warrants that EBA's instruments of professional service will be used only and exactly as submitted by EBA.

The Client recognizes and agrees that electronic files submitted by EBA have been prepared and submitted using specific software and hardware systems. EBA makes no representation about the compatibility of these files with the Client's current or future software and hardware systems.

Appendix N – Water Quality Sampling Laboratory Results



ASSAYING, GEOCHEMISTRY
ANALYTICAL CHEMISTRY
ENVIRONMENTAL TESTING
ISO 9001 Accredited Co.

10041 Dallas Drive, Kamloops, BC V2C 6T4
Phone (250) 573-5700 Fax (250) 573-4557
E-mail: info@ecotechlab.com
www.ecotechlab.com

CHEMICAL ANALYSIS REPORT

Date: 16-Nov-07

Et. File No. E07-2315

Report On: Sediment Analysis

Project: Frasergold

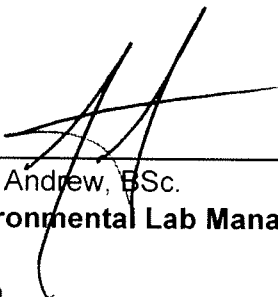
Report To: **HAWTHORNE GOLD CORP.**
Suite 1818 - 701 West Georgia
Vancouver, BC V7Y 1C6

EBA ENGINEERING
#150 - 1715 Dickson Ave.
Kelowna, BC V1Y 9G6

Attention: Marlin Murphy - Hawthorne Gold Corp.
Alison Tremain - EBA Engineering
Darryl Arsenault - EBA Engineering

Samples Received: October 18, 2007
Samples Dated: October 11 - October 14, 2007

ECO TECH LABORATORY LTD.



John Andrew, BSc.
Environmental Lab Manager

JA/Im
Email: atremain@eba.ca; cc: darsenault@eba.ca
Fax: (604) 629-0923

SAMPLE IDENTIFICATION - Sediment

Samples Labelled:

#1. ID #:	W1
#2. ID #:	W2
#3. ID #:	W4
#4. ID #:	W5
#5. ID #:	W6
#6. ID #:	W7
#7. ID #:	W8 B
#8. ID #:	W9 / 9A
#9. ID #:	W10
#10. ID #:	W11
#11. ID #:	W14
#12. ID #:	W16

RESULTS OF ANALYSIS - Sediment

<i>PARAMETER</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>DETECTION LIMIT</i>
<i>LOCATION</i>	<i>W1</i>	<i>W2</i>	<i>W4</i>	<i>W5</i>	
<i>DATE OF SAMPLING</i>	<i>14-Oct</i>	<i>11-Oct</i>	<i>11-Oct</i>	<i>11-Oct</i>	
pH (Units)	7.44	-	-	-	0.01
Loss on Ignition (LOI) (%)	-	-	-	-	1
Cyanide (mg/kg)	-	-	-	-	-

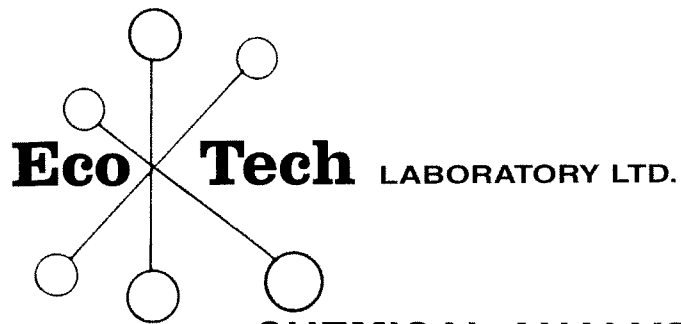
<i>PARAMETER</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>DETECTION LIMIT</i>
<i>LOCATION</i>	<i>W6</i>	<i>W7</i>	<i>W8B</i>	<i>W9/9A</i>	
<i>DATE OF SAMPLING</i>	<i>13-Oct</i>	<i>12-Oct</i>	<i>12-Oct</i>	<i>12-Oct</i>	
pH (Units)	-	7.01	6.55	7.10	0.01
Loss on Ignition (LOI) (%)	-	3.0	-	-	1
Cyanide (mg/kg)	-	<0.1	-	-	-

<i>PARAMETER</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>DETECTION LIMIT</i>
<i>LOCATION</i>	<i>W10</i>	<i>W11</i>	<i>W14</i>	<i>W16</i>	
<i>DATE OF SAMPLING</i>	<i>11-Oct</i>	<i>14-Oct</i>	<i>13-Oct</i>	<i>13-Oct</i>	
pH (Units)	-	7.10	7.25	-	0.01
Loss on Ignition (LOI) (%)	-	-	-	-	1
Cyanide (mg/kg)	-	-	-	-	-

PARAMETER

TOTAL METALS:

Ag	0.25	ppm	Na	0.082	ppm
Al	1.03	%	Nb	0.67	ppm
As	24.8	ppm	Ni	32.6	ppm
Ba	68.3	ppm	P	669	ppm
Bi	0.17	ppm	Pb	11.76	ppm
Ca	0.46	%	Rb	10.8	ppm
Cd	0.52	ppm	Re	0.001	ppm
Ce	19.57	ppm	S	0.10	%
Co	11.2	ppm	Sb	0.43	ppm
Cr	162.7	ppm	Sc	3.3	ppm
Cs	0.76	ppm	Se	1.2	ppm
Cu	94.2	ppm	Sn	0.4	ppm
Fe	2.66	%	Sr	26.0	ppm
Ga	3.0	ppm	Ta	<0.05	ppm
Ge	7.3	ppm	Te	0.06	ppm
Hf	0.04	ppm	Th	3.1	ppm
Hg	22	ppb	Ti	0.068	%
In	<0.02	ppm	Tl	0.10	ppm
K	0.15	%	U	0.8	ppm
La	10.5	ppm	V	60	ppm
Li	9.9	ppm	W	<0.1	ppm
Mg	0.67	%	Zn	79.6	ppm
Mn	345	ppm	Zr	2.12	ppm
Mo	7.33	ppm			



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CHEMICAL ANALYSIS REPORT

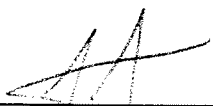
Date: 8-Nov-07
Et. File No. E07-2314
Report On: Water Analysis
Project: Frasergold
Report To: **HAWTHORNE GOLD CORP.**
Suite 1818 - 701 West Georgia
Vancouver, BC V7Y 1C6

EBA ENGINEERING
#150 - 1715 Dickson Ave.
Kelowna, BC V1Y 9G6

Attention: **Marlin Murphy - Hawthorne Gold Corp.**
Allison Tremain - EBA Engineering
Darryl Arsenault - EBA Engineering

Samples Received: October 19, 2007
Samples Dated: October 17, 2007

ECO TECH LABORATORY LTD.



John Andrew, BSc.
Environmental Lab Manager

JA/Im
Email: atremain@eba.ca; cc: darsenault@eba.ca
Fax: (604) 629-0923

SAMPLE IDENTIFICATION - Water

Samples Labelled:

#1. ID #:	W9A
#2. ID #:	W9B
#3. ID #:	W10
#4. ID #:	W11
#5. ID #:	W12
#6. ID #:	W14
#7. ID #:	W16
#8. ID #:	W17
#9. ID #:	Duplicate

RESULTS OF ANALYSIS - Water

PARAMETER	YOUR SAMPLES				
	<u>W9A</u>	<u>W9B</u>	<u>W10</u>	<u>W11</u>	<u>W12</u>
pH (units)	7.14	7.20	7.36	7.20	7.25
True colour (units)	13	14	9	7	14
Turbidity (NTU)	0.4	0.3	0.4	0.2	1.3
Alkalinity Total (pH 4.5)	16.8	14.7	24.2	28.9	18.9
Total Suspended Solids (mg/L)	1	3	3	5	13
Total Dissolved Solids	55	50	74	81	57
Chloride	<0.3	<0.3	<0.3	<0.3	<0.3
Nitrate (as N)	0.097	0.110	0.026	0.078	0.238
Nitrite (as N)	<0.003	<0.003	<0.003	<0.003	<0.003
T.K.N. (as N)	0.10	0.08	0.16	<0.05	0.13
Total Nitrogen (as N)	0.20	0.19	0.19	0.08	0.37
Ammonia (as N)	0.017	<0.005	<0.005	<0.005	<0.005
Total Phosphate (as P)	<0.003	<0.003	<0.003	<0.003	0.019
Sulphate (as SO ₄)	5	5	13	7	4
Hardness (as CaCO ₃)	22	22	39	38	26
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005

PARAMETER	YOUR SAMPLES			
	<u>W14</u>	<u>W16</u>	<u>W17</u>	<u>Duplicate</u>
pH (units)	7.35	7.58	6.92	-
True colour (units)	9	7	5	-
Turbidity (NTU)	0.4	0.3	<0.2	-
Alkalinity Total (pH 4.5)	23.1	35.7	31.5	-
Total Suspended Solids (mg/L)	<1	2	1	-
Total Dissolved Solids	60	87	74	-
Chloride	<0.3	<0.3	<0.3	-
Nitrate (as N)	0.130	0.023	<0.003	0.075
Nitrite (as N)	<0.003	<0.003	<0.003	0.005
T.K.N. (as N)	<0.05	0.05	0.06	<0.05
Total Nitrogen (as N)	0.13	0.07	0.06	0.08
Ammonia (as N)	<0.005	<0.005	0.023	<0.005
Total Phosphate (as P)	<0.003	0.010	<0.003	<0.003
Sulphate (as SO ₄)	7	7	10	8
Hardness (as CaCO ₃)	31	45	43	38
Cyanide	<0.005	<0.005	<0.005	<0.005

Results expressed in mg/L unless otherwise indicated.

RESULTS OF ANALYSIS - Water

PARAMETER	YOUR SAMPLES					Detection Limits
	W9A	W9B	W10	W11	W12	
TOTAL METALS:						
Aluminum	0.051	0.055	0.018	0.02	0.188	0.001
Antimony	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Barium	<0.01	<0.01	0.01	<0.01	0.01	0.01
Beryllium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Boron	0.017	0.001	0.002	0.006	0.008	0.001
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Calcium	7.06	7.22	14.44	10.75	8.62	0.01
Chromium	<0.001	<0.001	<0.001	<0.001	0.001	0.001
Cobalt	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Copper	0.001	0.001	0.013	0.001	0.001	0.001
Iron	0.045	0.04	0.012	0.037	0.22	0.005
Lead	0.002	0.003	0.001	0.002	0.002	0.001
Magnesium	1.1	1	0.8	2.7	1.1	0.1
Manganese	0.003	0.003	0.001	0.005	0.006	0.001
Molybdenum	0.001	<0.001	<0.001	0.001	0.001	0.001
Nickel	0.001	0.001	0.001	0.001	0.001	0.001
Potassium	0.58	0.59	0.7	0.28	0.91	0.01
Selenium	<0.001	<0.001	<0.001	0.001	<0.001	0.001
Silicon	2.2	2.19	2.47	1.91	2.15	0.01
Silver	<0.005	<0.005	<0.005	<0.005	<0.005	0.005
Sodium	0.5	0.5	0.4	0.5	0.5	0.1
Tin	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Titanium	<0.007	<0.007	<0.007	<0.007	0.011	0.007
Uranium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Vanadium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Yttrium	<0.001	<0.001	<0.001	<0.001	0.001	0.001
Zinc	0.001	0.002	0.002	0.004	0.001	0.001
Mercury (ug/L)	<0.015	<0.015	<0.015	<0.015	<0.015	0.015

Results expressed in mg/L unless otherwise indicated.

RESULTS OF ANALYSIS - Water

PARAMETER	YOUR SAMPLES				Detection Limits
	W14	W16	W17	Duplicate	
TOTAL METALS:					
Aluminum	0.029	0.015	0.009	0.028	0.001
Antimony	<0.001	<0.001	<0.001	<0.001	0.001
Arsenic	<0.001	<0.001	<0.001	<0.001	0.001
Barium	0.01	<0.01	<0.01	<0.01	0.01
Beryllium	<0.001	<0.001	<0.001	<0.001	0.001
Bismuth	<0.001	<0.001	<0.001	<0.001	0.001
Boron	0.002	<0.001	0.002	0.004	0.001
Cadmium	<0.001	<0.001	<0.001	<0.001	0.001
Calcium	9.67	12.18	11.56	10.64	0.01
Chromium	<0.001	<0.001	<0.001	<0.001	0.001
Cobalt	<0.001	<0.001	<0.001	<0.001	0.001
Copper	0.001	<0.001	<0.001	0.001	0.001
Iron	0.041	0.007	<0.005	0.045	0.005
Lead	0.001	0.001	0.001	0.004	0.001
Magnesium	1.7	3.5	3.5	2.7	0.1
Manganese	0.004	0.001	0.002	0.006	0.001
Molybdenum	0.001	0.001	0.001	0.001	0.001
Nickel	0.001	<0.001	<0.001	0.001	0.001
Potassium	0.55	0.09	0.15	0.29	0.01
Selenium	0.001	0.001	0.001	0.001	0.001
Silicon	2.04	1.49	1.62	1.85	0.01
Silver	<0.005	<0.005	<0.005	<0.005	0.005
Sodium	0.5	0.4	0.6	0.5	0.1
Tin	<0.01	<0.01	<0.01	<0.01	0.01
Titanium	<0.007	<0.007	<0.007	<0.007	0.007
Uranium	<0.001	<0.001	<0.001	<0.001	0.001
Vanadium	<0.001	<0.001	<0.001	<0.001	0.001
Yttrium	<0.001	<0.001	<0.001	<0.001	0.001
Zinc	0.002	0.001	0.002	0.002	0.001
Mercury (ug/L)	<0.015	<0.015	<0.015	<0.015	0.015

Results expressed in mg/L unless otherwise indicated.

RESULTS OF ANALYSIS - Water

Et. No. E07-2314

PARAMETER	YOUR SAMPLES					Detection Limits
	W9A	W9B	W10	W11	W12	
<u>DISSOLVED METALS:</u>						
Aluminum	0.03	0.033	0.016	0.017	0.029	0.001
Antimony	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Barium	<0.01	<0.01	0.01	<0.01	<0.01	0.01
Beryllium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Boron	0.015	0.001	0.002	<0.001	0.007	0.001
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Calcium	7.04	6.91	14.43	10.45	8.16	0.01
Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Cobalt	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Copper	0.001	0.001	0.013	0.001	0.001	0.001
Iron	0.006	0.007	<0.005	0.01	<0.005	0.005
Lead	<0.001	<0.001	<0.001	<0.001	0.001	0.001
Magnesium	1	1	0.8	2.6	1	0.1
Manganese	0.002	0.002	0.001	0.005	<0.001	0.001
Molybdenum	<0.001	<0.001	<0.001	0.001	<0.001	0.001
Nickel	0.001	0.001	0.001	0.001	0.001	0.001
Potassium	0.58	0.57	0.7	0.28	0.81	0.01
Selenium	<0.001	<0.001	<0.001	0.001	<0.001	0.001
Silicon	2.19	2.18	2.46	1.9	1.93	0.01
Silver	<0.005	<0.005	<0.005	<0.005	<0.005	0.005
Sodium	0.5	0.5	0.4	0.5	0.5	0.1
Tin	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Titanium	<0.007	<0.007	<0.007	<0.007	<0.007	0.007
Uranium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Vanadium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Yttrium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Zinc	0.001	0.001	0.002	0.003	0.001	0.001
Mercury (ug/L)	<0.015	<0.015	<0.015	<0.015	<0.015	0.015

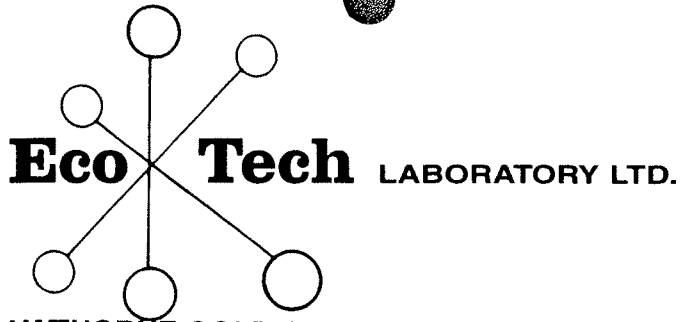
Results expressed in mg/L unless otherwise indicated.

RESULTS OF ANALYSIS - Water

PARAMETER	YOUR SAMPLES				Detection Limits
	W14	W16	W17	Duplicate	
<u>DISSOLVED METALS:</u>					
Aluminum	0.02	0.015	0.008	0.008	0.001
Antimony	<0.001	<0.001	<0.001	<0.001	0.001
Arsenic	<0.001	<0.001	<0.001	<0.001	0.001
Barium	0.01	<0.01	<0.01	<0.01	0.01
Beryllium	<0.001	<0.001	<0.001	<0.001	0.001
Bismuth	<0.001	<0.001	<0.001	<0.001	0.001
Boron	0.002	<0.001	0.001	<0.001	0.001
Cadmium	<0.001	<0.001	<0.001	<0.001	0.001
Calcium	9.54	12.1	11.53	10.39	0.01
Chromium	<0.001	<0.001	<0.001	<0.001	0.001
Cobalt	<0.001	<0.001	<0.001	<0.001	0.001
Copper	0.001	<0.001	<0.001	<0.001	0.001
Iron	0.009	<0.005	<0.005	<0.005	0.005
Lead	<0.001	0.001	<0.001	<0.001	0.001
Magnesium	1.7	3.5	3.5	2.6	0.1
Manganese	0.004	0.001	0.001	0.002	0.001
Molybdenum	<0.001	0.001	0.001	0.001	0.001
Nickel	0.001	<0.001	<0.001	0.001	0.001
Potassium	0.54	0.09	0.15	0.26	0.01
Selenium	0.001	0.001	0.001	0.001	0.001
Silicon	2.02	1.45	1.6	1.72	0.01
Silver	<0.005	<0.005	<0.005	<0.005	0.005
Sodium	0.5	0.4	0.6	0.5	0.1
Tin	<0.01	<0.01	<0.01	<0.01	0.01
Titanium	<0.007	<0.007	<0.007	<0.007	0.007
Uranium	<0.001	<0.001	<0.001	<0.001	0.001
Vanadium	<0.001	<0.001	<0.001	<0.001	0.001
Yttrium	<0.001	<0.001	<0.001	<0.001	0.001
Zinc	0.002	0.001	0.002	0.001	0.001
Mercury (ug/L)	<0.015	<0.015	<0.015	<0.015	0.015

Results expressed in mg/L unless otherwise indicated.

End of Report



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 www.ecotechlab.com

HAWTHORNE GOLD CORP.
 Suite 1818 - 701 West Georgia
Vancouver, BC
 V7Y 1C6

18-Jan-08

INVOICE

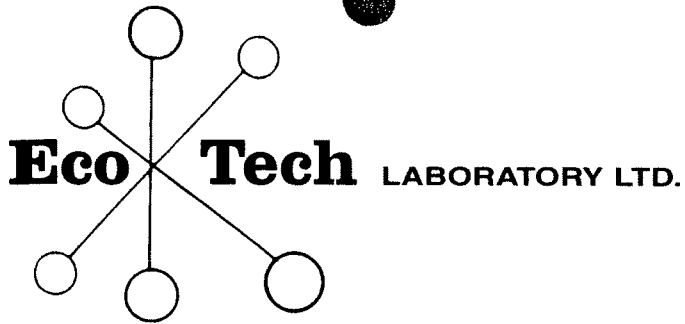
INVOICE # E07-2314D

ANALYSES	PRICE/SAMPLE	AMOUNT
<i>Samples Received: October 19, 2007</i>		
<i>Samples Dated: October 17, 2007</i>		
<i>Project: Frasergold</i>		
8	DOC Analyses	40.00
		320.00
	<i>SUBTOTAL:</i>	320.00
	<i>& 5% G.S.T.</i>	16.00
	TOTAL DUE & PAYABLE UPON RECEIPT:	\$ 336.00

THANK YOU!

G.S.T. REGISTRATION NUMBER R101565356

TERMS: NET 30 DAYS. INTEREST AT RATE OF 2% PER MONTH (24% PER ANNUM) WILL BE CHARGED ON OVERDUE ACCOUNTS.



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www.ecotechlab.com

CHEMICAL ANALYSIS REPORT

Date: 18-Jan-08

Et. File No. E07-2314D

Report On: Water Analysis

Project: Frasergold

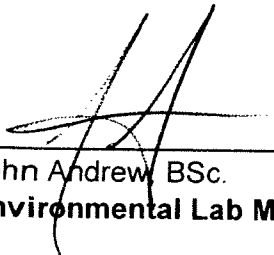
Report To: **HAWTHORNE GOLD CORP.**
Suite 1818 - 701 West Georgia
Vancouver, BC V7Y 1C6

EBA ENGINEERING
#150 - 1715 Dickson Ave.
Kelowna, BC V1Y 9G6

Attention: **Marlin Murphy - Hawthorne Gold Corp.**
Allison Tremain - EBA Engineering
Darryl Arsenault - EBA Engineering

Samples Received: October 19, 2007
Samples Dated: October 17, 2007

ECO TECH LABORATORY LTD.



John Andrew, BSc.
Environmental Lab Manager

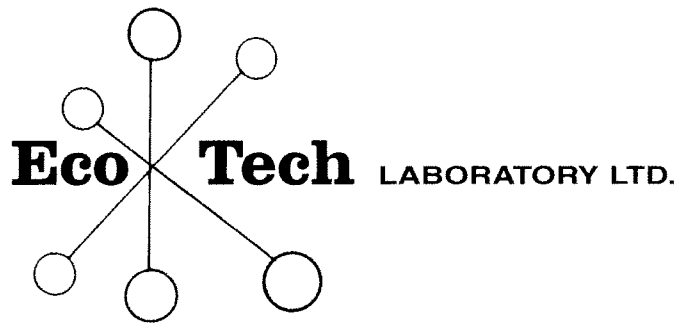
JA/Im
Email: atremain@eba.ca; cc: darsenault@eba.ca
Fax: (604) 629-0923

RESULTS OF ANALYSIS - Water

<i>PARAMETER</i>	<i>YOUR SAMPLES</i>					<i>Detection Limit</i>
	<u>W9A</u>	<u>W9B</u>	<u>W10</u>	<u>W11</u>	<u>W12</u>	
Dissolved Organic Carbon	3	3	2	1	3	1

<i>PARAMETER</i>	<i>YOUR SAMPLES</i>			<i>Detection Limit</i>
	<u>W14</u>	<u>W16</u>	<u>W17</u>	
Dissolved Organic Carbon	2	1	<1	1

Results expressed in mg/L unless otherwise indicated.



ASSAYING, GEOCHEMISTRY
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CHEMICAL ANALYSIS REPORT

Date: 8-Nov-07

Et. File No. E07-2313

Report On: Water Analysis

Project: Frasergold


Report To: **HAWTHORNE GOLD CORP.**
Suite 1818 - 701 West Georgia
Vancouver, BC V7Y 1C6

EBA ENGINEERING
#150 - 1715 Dickson Ave.
Kelowna, BC V1Y 9G6

Attention: **Marlin Murphy - Hawthorne Gold Corp.**
Alison Tremain - EBA Engineering
Darryl Arsenault - EBA Engineering

Samples Received: October 19, 2007
Samples Dated: October 17, 2007

ECO TECH LABORATORY LTD.



John Andrew, BSc.
Environmental Lab Manager

JA/lm
Email: atremain@eba.ca; cc: darsenault@eba.ca
Fax: (604) 629-0923

SAMPLE IDENTIFICATION - Water

Samples Labelled:

#1. ID #:	W1
#2. ID #:	W2
#3. ID #:	W3
#4. ID #:	W4
#5. ID #:	W5
#6. ID #:	W6
#7. ID #:	W7
#8. ID #:	W8A
#9. ID #:	W8B

RESULTS OF ANALYSIS - Water

PARAMETER	YOUR SAMPLES				
	<u>W1</u>	<u>W2</u>	<u>W3</u>	<u>W4</u>	<u>W5</u>
Colour (Co/Pt units)	6	17	15	9	14
Turbidity (NTU)	<0.2	9.1	5.2	0.2	2.9
Alkalinity Total (pH 4.5)	25.2	27.3	33.1	31.5	23.1
Total Suspended Solids	3	11	5	4	6
Total Dissolved Solids	61	74	86	71	61
Chloride	<0.3	<0.3	<0.3	<0.3	<0.3
Nitrate (as N)	0.099	0.022	<0.003	0.039	<0.003
Nitrite (as N)	<0.003	0.004	<0.003	<0.003	<0.003
T.K.N. (as N)	<0.05	0.09	0.10	<0.05	0.14
Total Nitrogen (as N)	0.10	0.12	0.10	<0.05	0.14
Ammonia (as N)	<0.005	<0.005	<0.005	0.004	<0.005
Total Phosphate (as P)	<0.003	<0.003	<0.003	<0.003	<0.003
Sulphate (as SO ₄)	7	4	4	9	8
Hardness (as CaCO ₃)	30	33	37	41	30
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005

PARAMETER	YOUR SAMPLES			
	<u>W6</u>	<u>W7</u>	<u>W8A</u>	<u>W8B</u>
Colour (Co/Pt units)	8	10	14	11
Turbidity (NTU)	<0.2	0.4	0.2	0.2
Alkalinity Total (pH 4.5)	10.5	23.1	9.5	7.4
Total Suspended Solids	3	<1	2	1
Total Dissolved Solids	35	69	44	40
Chloride	<0.3	<0.3	<0.3	<0.3
Nitrate (as N)	0.205	0.106	0.147	0.151
Nitrite (as N)	0.005	<0.003	<0.003	<0.003
T.K.N. (as N)	0.06	0.09	0.17	0.17
Total Nitrogen (as N)	0.27	0.20	0.32	0.32
Ammonia (as N)	<0.005	<0.005	0.074	<0.005
Total Phosphate (as P)	<0.003	<0.003	<0.003	<0.003
Sulphate (as SO ₄)	3	6	4	3
Hardness (as CaCO ₃)	15	28	14	13
Cyanide	<0.005	<0.005	<0.005	<0.005

Results expressed in mg/L unless otherwise indicated.

RESULTS OF ANALYSIS - Water

PARAMETER	YOUR SAMPLES					Detection Limits
	W1	W2	W3	W4	W5	
TOTAL METALS:						
Aluminum	0.029	0.398	0.217	0.012	0.108	0.001
Antimony	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Barium	<0.01	<0.01	<0.01	0.02	0.02	0.01
Beryllium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Boron	0.001	0.003	0.001	0.001	0.007	0.001
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Calcium	8.55	9.2	11.01	15.05	10.62	0.01
Chromium	<0.001	0.001	<0.001	<0.001	0.001	0.001
Cobalt	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Copper	<0.001	0.001	0.001	0.001	0.003	0.001
Iron	0.011	0.411	0.252	0.014	0.147	0.005
Lead	0.002	0.002	0.002	0.001	0.002	0.001
Magnesium	2.1	2.5	2.2	0.8	0.8	0.1
Manganese	0.001	0.011	0.007	0.001	0.005	0.001
Molybdenum	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Nickel	<0.001	0.001	0.001	<0.001	0.001	0.001
Potassium	0.26	0.14	0.12	0.79	0.94	0.01
Selenium	0.001	<0.001	0.001	<0.001	<0.001	0.001
Silicon	1.42	1.41	1.19	1.31	1.75	0.01
Silver	<0.005	<0.005	<0.005	<0.005	<0.005	0.005
Sodium	0.4	0.3	0.3	0.4	0.3	0.1
Tin	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Titanium	<0.007	<0.007	<0.007	<0.007	<0.007	0.007
Uranium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Vanadium	<0.001	0.001	<0.001	<0.001	<0.001	0.001
Yttrium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Zinc	0.001	0.003	0.003	0.003	0.001	0.001
Mercury (ug/L)	<0.015	<0.015	<0.015	<0.015	<0.015	0.015

Results expressed in mg/L unless otherwise indicated.

RESULTS OF ANALYSIS - Water

PARAMETER	YOUR SAMPLES				Detection Limits
	W6	W7	W8A	W8B	
TOTAL METALS:					
Aluminum	0.043	0.032	0.058	0.063	0.001
Antimony	<0.001	<0.001	<0.001	<0.001	0.001
Arsenic	<0.001	<0.001	<0.001	<0.001	0.001
Barium	<0.01	0.01	<0.01	<0.01	0.01
Beryllium	<0.001	<0.001	<0.001	<0.001	0.001
Bismuth	<0.001	<0.001	<0.001	<0.001	0.001
Boron	0.007	0.003	0.002	0.003	0.001
Cadmium	<0.001	<0.001	<0.001	<0.001	0.001
Calcium	4.91	8.93	4.7	4.5	0.01
Chromium	<0.001	0.001	<0.001	<0.001	0.001
Cobalt	<0.001	<0.001	<0.001	<0.001	0.001
Copper	<0.001	0.001	<0.001	<0.001	0.001
Iron	0.016	0.046	0.035	0.029	0.005
Lead	0.001	0.001	0.002	0.001	0.001
Magnesium	0.6	1.5	0.5	0.4	0.1
Manganese	0.001	0.003	0.002	0.002	0.001
Molybdenum	<0.001	<0.001	<0.001	<0.001	0.001
Nickel	<0.001	0.001	0.001	0.001	0.001
Potassium	0.56	0.52	0.57	0.56	0.01
Selenium	<0.001	<0.001	<0.001	<0.001	0.001
Silicon	1.69	1.94	1.64	1.71	0.01
Silver	<0.005	<0.005	<0.005	<0.005	0.005
Sodium	0.8	0.5	0.6	0.5	0.1
Tin	<0.01	<0.01	<0.01	<0.01	0.01
Titanium	<0.007	<0.007	<0.007	<0.007	0.007
Uranium	<0.001	<0.001	<0.001	<0.001	0.001
Vanadium	<0.001	<0.001	<0.001	<0.001	0.001
Yttrium	<0.001	<0.001	<0.001	<0.001	0.001
Zinc	0.002	0.001	0.002	0.001	0.001
Mercury (ug/L)	<0.015	<0.015	<0.015	<0.015	0.015

Results expressed in mg/L unless otherwise indicated.

RESULTS OF ANALYSIS - Water

PARAMETER	YOUR SAMPLES					Detection Limits
	W1	W2	W3	W4	W5	
DISSOLVED METALS:						
Aluminum	0.027	0.048	0.034	0.012	0.033	0.001
Antimony	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Barium	<0.01	<0.01	<0.01	0.02	0.01	0.01
Beryllium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Boron	0.001	0.003	0.001	0.001	0.007	0.001
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Calcium	8.24	9.17	11.01	14.95	10.52	0.01
Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Cobalt	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Copper	<0.001	0.001	0.001	0.001	0.002	0.001
Iron	0.008	0.066	0.039	0.008	0.019	0.005
Lead	0.001	0.002	0.001	0.001	0.001	0.001
Magnesium	2.1	2.4	2.2	0.8	0.8	0.1
Manganese	0.001	0.003	0.002	0.001	0.001	0.001
Molybdenum	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Nickel	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Potassium	0.26	0.1	0.1	0.79	0.87	0.01
Selenium	0.001	<0.001	<0.001	<0.001	<0.001	0.001
Silicon	1.3	1.17	1.13	1.31	1.7	0.01
Silver	<0.005	<0.005	<0.005	<0.005	<0.005	0.005
Sodium	0.4	0.3	0.3	0.4	0.3	0.1
Tin	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Titanium	<0.007	<0.007	<0.007	<0.007	<0.007	0.007
Uranium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Vanadium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Yttrium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Zinc	0.001	0.003	0.002	0.001	0.001	0.001
Mercury (ug/L)	<0.015	<0.015	<0.015	<0.015	<0.015	0.015

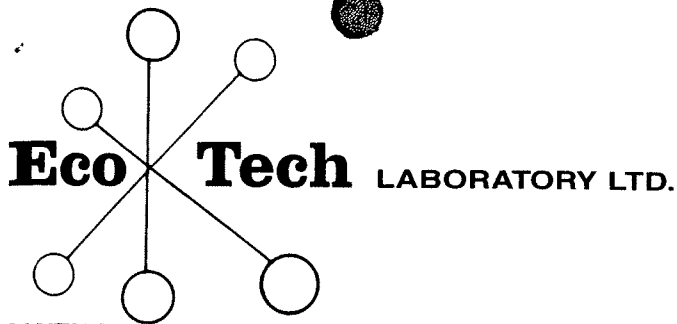
Results expressed in mg/L unless otherwise indicated.

RESULTS OF ANALYSIS - Water

PARAMETER	YOUR SAMPLES				Detection Limits
	W6	W7	W8A	W8B	
<u>DISSOLVED METALS:</u>					
Aluminum	0.039	0.028	0.056	0.057	0.001
Antimony	<0.001	<0.001	<0.001	<0.001	0.001
Arsenic	<0.001	<0.001	<0.001	<0.001	0.001
Barium	<0.01	0.01	<0.01	<0.01	0.01
Beryllium	<0.001	<0.001	<0.001	<0.001	0.001
Bismuth	<0.001	<0.001	<0.001	<0.001	0.001
Boron	0.007	<0.001	0.002	<0.001	0.001
Cadmium	<0.001	<0.001	<0.001	<0.001	0.001
Calcium	4.68	8.5	4.38	4.48	0.01
Chromium	<0.001	<0.001	<0.001	<0.001	0.001
Cobalt	<0.001	<0.001	<0.001	<0.001	0.001
Copper	<0.001	0.001	<0.001	<0.001	0.001
Iron	0.012	0.022	0.019	0.019	0.005
Lead	<0.001	0.001	0.001	0.001	0.001
Magnesium	0.6	1.4	0.4	0.4	0.1
Manganese	0.001	0.003	0.002	0.002	0.001
Molybdenum	<0.001	<0.001	<0.001	<0.001	0.001
Nickel	<0.001	0.001	0.001	0.001	0.001
Potassium	0.55	0.51	0.57	0.56	0.01
Selenium	<0.001	<0.001	<0.001	<0.001	0.001
Silicon	1.59	1.89	1.61	1.69	0.01
Silver	<0.005	<0.005	<0.005	<0.005	0.005
Sodium	0.7	0.5	0.6	0.5	0.1
Tin	<0.01	<0.01	<0.01	<0.01	0.01
Titanium	<0.007	<0.007	<0.007	<0.007	0.007
Uranium	<0.001	<0.001	<0.001	<0.001	0.001
Vanadium	<0.001	<0.001	<0.001	<0.001	0.001
Yttrium	<0.001	<0.001	<0.001	<0.001	0.001
Zinc	0.001	0.001	0.001	0.001	0.001
Mercury (ug/L)	<0.015	<0.015	<0.015	<0.015	0.015

Results expressed in mg/L unless otherwise indicated.

End of Report



ASSAYING, GEOCHEMISTRY
ANALYTICAL CHEMISTRY
ENVIRONMENTAL TESTING
ISO 9001 Accredited Co.

10041 Dallas Drive, Kamloops, BC V2C 6T4
Phone (250) 573-5700 Fax (250) 573-4557
E-mail: info@ecotechlab.com
www.ecotechlab.com

HAWTHORNE GOLD CORP.
Suite 1818 - 701 West Georgia
Vancouver, BC
V7Y 1C6

18-Jan-08

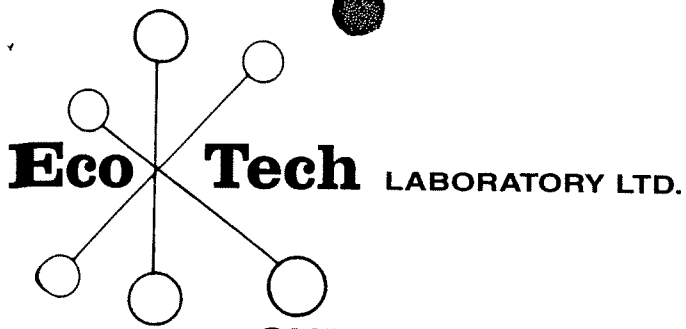
INVOICE

INVOICE # E07-2313D

ANALYSES	PRICE/SAMPLE	AMOUNT
<i>Samples Received: October 19, 2007</i>		
<i>Samples Dated: October 17, 2007</i>		
<i>Project: Frasergold</i>		
9	DOC Analyses	40.00
		360.00
	SUBTOTAL:	360.00
	& 5% G.S.T.	18.00
	TOTAL DUE & PAYABLE UPON RECEIPT:	\$ 378.00

THANK YOU!

G.S.T. REGISTRATION NUMBER R101565356
TERMS: NET 30 DAYS. INTEREST AT RATE OF 2% PER MONTH (24% PER ANNUM) WILL
BE CHARGED ON OVERDUE ACCOUNTS.



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CHEMICAL ANALYSIS REPORT

Date: 18-Jan-08
Et. File No. E07-2313D
Report On: Water Analysis
Project: Frasergold
Report To: **HAWTHORNE GOLD CORP.**
Suite 1818 - 701 West Georgia
Vancouver, BC V7Y 1C6

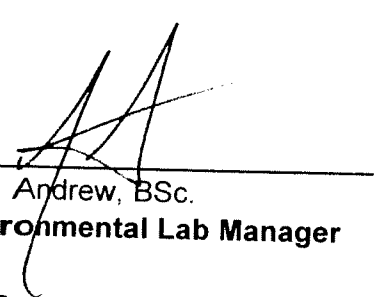
EBA ENGINEERING
#150 - 1715 Dickson Ave.
Kelowna, BC V1Y 9G6

Attention: **Marlin Murphy - Hawthorne Gold Corp.**
Alison Tremain - EBA Engineering
Darryl Arsenault - EBA Engineering

Samples Received: October 19, 2007

Samples Dated: October 17, 2007

ECO TECH LABORATORY LTD.



John Andrew, BSc.
Environmental Lab Manager

JA/lm

Email: atremain@eba.ca; cc: darsenault@eba.ca
Fax: (604) 629-0923

SAMPLE IDENTIFICATION - Water

Samples Labelled:

#1. ID #:	W1
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#3. ID #:	W3
#4. ID #:	W4
#5. ID #:	W5
#6. ID #:	W6
#7. ID #:	W7
#8. ID #:	W8A
#9. ID #:	W8B

HAWTHORNE GOLD

18-Jan-08

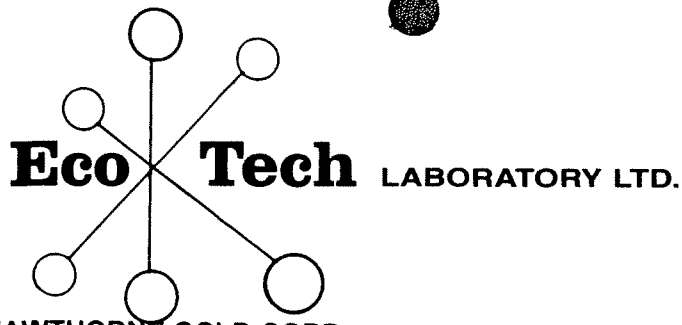
RESULTS OF ANALYSIS - Water

Et. No. E07-2313D

PARAMETER	YOUR SAMPLES					Detection Limit
	<u>W1</u>	<u>W2</u>	<u>W3</u>	<u>W4</u>	<u>W5</u>	
Dissolved Organic Carbon	2	3	3	2	3	1

PARAMETER	YOUR SAMPLES				Detection Limit
	<u>W6</u>	<u>W7</u>	<u>W8A</u>	<u>W8B</u>	
Dissolved Organic Carbon	2	2	3	3	1

Results expressed in mg/L unless otherwise indicated.



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10-Jan-08

INVOICE

INVOICE # E07-2779

<i>A N A L Y S E S</i>	<i>P R I C E / S A M P L E</i>	<i>A M O U N T</i>
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Samples Received: December 24, 2007

Samples Dated: December 20, 2007

Project: Frasergold

7	Water Analyses	250.00	1750.00
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	<i>SUBTOTAL:</i>		1750.00
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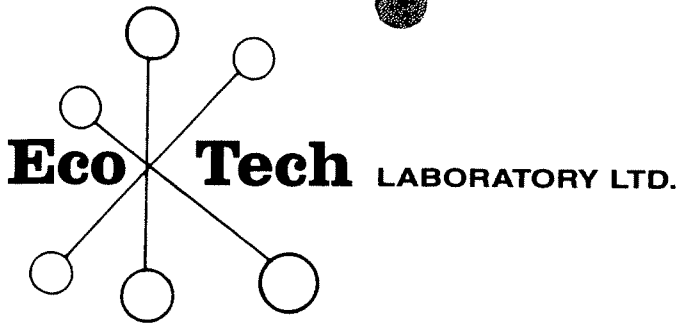
	& 5% G.S.T.		87.50
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	TOTAL DUE & PAYABLE UPON RECEIPT:	\$	1837.50
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THANK YOU!!

G.S.T. REGISTRATION NUMBER R101565356

**TERMS: NET 30 DAYS. INTEREST AT RATE OF 2% PER MONTH (24% PER ANNUM) WILL
 BE CHARGED ON OVERDUE ACCOUNTS.**



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CHEMICAL ANALYSIS REPORT

Date: 10-Jan-08

Et. File No. E07-2779

Report On: Water Analysis

Project: Frasergold

Report To: **HAWTHORNE GOLD CORP.**
Suite 1818 - 701 West Georgia
Vancouver, BC V7Y 1C6

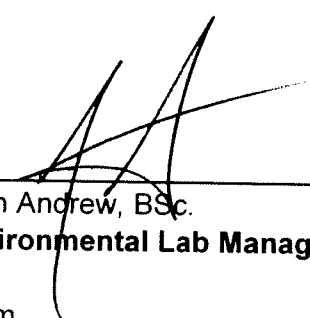
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Attention: **Marlin Murphy - Hawthorne Gold Corp.**
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Samples Received: December 24, 2007

Samples Dated: December 20, 2007

ECO TECH LABORATORY LTD.



John Andrew, BSc.
Environmental Lab Manager

JA/lm

Email: mmurphy@hawthornegold.com, atremain@eba.ca; cc: darsenault@eba.ca

SAMPLE IDENTIFICATION - Water

Samples Labelled:

#1. ID #:	W5
#2. ID #:	W6
#3. ID #:	W7
#4. ID #:	W8A
#5. ID #:	W8B
#6. ID #:	W12
#7. ID #:	W14

PARAMETER	YOUR SAMPLES				
	<u>W5</u>	<u>W6</u>	<u>W7</u>	<u>W8A</u>	<u>W8B</u>
pH (units)	7.25	7.07	7.21	6.83	6.69
Colour (Co/Pt units)	10	8	8	10	10
Turbidity (NTU)	3.7	<0.2	0.2	<0.2	0.2
Alkalinity Total (pH 4.5)	26	20	33	17	18
Total Suspended Solids	11	<1	<1	<1	<1
Total Dissolved Solids	78	50	68	49	41
Chloride	<0.3	<0.3	<0.3	<0.3	<0.3
Nitrate (as N)	0.449	0.228	0.164	0.216	0.231
Nitrite (as N)	<0.003	<0.003	<0.003	<0.003	<0.003
T.K.N. (as N)	<0.05	<0.05	0.19	<0.05	<0.05
Total Nitrogen (as N)	0.45	0.23	0.35	0.22	0.23
Ammonia (as N)	0.006	<0.005	0.159	<0.005	<0.005
Total Phosphate (as P)	0.011	0.008	0.012	0.007	0.011
Sulphate (as SO ₄)	19	9	14	10	10
Hardness (as CaCO ₃)	39	24	40	21	22

PARAMETER	YOUR SAMPLES	
	<u>W12</u>	<u>W14</u>
pH (units)	6.97	7.07
Colour (Co/Pt units)	8	10
Turbidity (NTU)	0.2	0.3
Alkalinity Total (pH 4.5)	28	33
Total Suspended Solids	<1	<1
Total Dissolved Solids	63	74
Chloride	<0.3	<0.3
Nitrate (as N)	0.355	0.171
Nitrite (as N)	<0.003	<0.003
T.K.N. (as N)	<0.05	<0.05
Total Nitrogen (as N)	0.36	0.17
Ammonia (as N)	<0.005	<0.005
Total Phosphate (as P)	0.017	0.019
Sulphate (as SO ₄)	12	14
Hardness (as CaCO ₃)	35	38

Results expressed in mg/L unless otherwise indicated.

RESULTS OF ANALYSIS - Water

Et. No.

E07-2779

PARAMETER	YOUR SAMPLES					Detection Limits
	W5	W6	W7	W8A	W8B	
TOTAL METALS:						
Aluminum	0.034	0.02	0.006	0.025	0.026	0.001
Antimony	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Barium	0.01	<0.01	0.01	<0.01	<0.01	0.01
Beryllium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Boron	0.005	0.028	<0.001	0.021	0.027	0.001
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Calcium	13.98	7.78	12.58	7.1	7.61	0.01
Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Cobalt	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Copper	0.001	0.001	0.001	<0.001	<0.001	0.001
Iron	0.04	<0.005	<0.005	<0.005	<0.005	0.005
Lead	0.002	0.003	0.001	0.002	0.004	0.001
Magnesium	1	1	2.1	0.7	0.8	0.1
Manganese	0.003	0.001	0.001	0.002	0.003	0.001
Molybdenum	<0.001	<0.001	0.001	<0.001	<0.001	0.001
Nickel	<0.001	<0.001	<0.001	<0.001	0.001	0.001
Potassium	1.34	0.79	0.65	0.79	0.81	0.01
Selenium	<0.001	<0.001	0.001	<0.001	<0.001	0.001
Silicon	1.96	2.21	2.48	2.93	2.72	0.01
Silver	<0.005	<0.005	<0.005	<0.005	<0.005	0.005
Sodium	0.5	1.2	0.8	0.8	1	0.1
Tin	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Titanium	<0.007	<0.007	<0.007	<0.007	<0.007	0.007
Uranium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Vanadium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Yttrium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Zinc	0.002	0.003	0.002	0.002	0.002	0.001
Mercury (ug/L)	<0.015	<0.015	<0.015	<0.015	<0.015	0.015

Results expressed in mg/L unless otherwise indicated.

RESULTS OF ANALYSIS - Water

Et. No.

E07-2779

PARAMETER	YOUR SAMPLES		Detection Limits
	W12	W14	
TOTAL METALS:			
Aluminum	0.015	0.013	0.001
Antimony	<0.001	<0.001	0.001
Arsenic	<0.001	<0.001	0.001
Barium	0.01	<0.01	0.01
Beryllium	<0.001	<0.001	0.001
Bismuth	<0.001	<0.001	0.001
Boron	0.024	0.029	0.001
Cadmium	<0.001	<0.001	0.001
Calcium	11.38	11.89	0.01
Chromium	<0.001	<0.001	0.001
Cobalt	<0.001	<0.001	0.001
Copper	0.001	<0.001	0.001
Iron	<0.005	<0.005	0.005
Lead	0.006	<0.001	0.001
Magnesium	1.5	2	0.1
Manganese	<0.001	0.003	0.001
Molybdenum	<0.001	0.001	0.001
Nickel	<0.001	<0.001	0.001
Potassium	1.94	0.49	0.01
Selenium	<0.001	0.001	0.001
Silicon	2.48	2.49	0.01
Silver	<0.005	<0.005	0.005
Sodium	3.3	0.8	0.1
Tin	<0.01	<0.01	0.01
Titanium	<0.007	<0.007	0.007
Uranium	<0.001	<0.001	0.001
Vanadium	<0.001	<0.001	0.001
Yttrium	<0.001	<0.001	0.001
Zinc	0.003	<0.001	0.001
Mercury (ug/L)	<0.015	<0.015	0.015

Results expressed in mg/L unless otherwise indicated.

RESULTS OF ANALYSIS - Water

Et. No.

E07-2779

PARAMETER	YOUR SAMPLES					Detection Limits
	W5	W6	W7	W8A	W8B	
DISSOLVED METALS:						
Aluminum	0.002	0.019	0.003	0.025	0.025	0.001
Antimony	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Barium	0.01	<0.01	<0.01	<0.01	<0.01	0.01
Beryllium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Boron	<0.001	0.026	<0.001	0.02	0.021	0.001
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Calcium	13.75	7.75	11.9	7.09	7.32	0.01
Chromium	<0.001	<0.001	<0.001	<0.001	0.001	0.001
Cobalt	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Copper	0.001	0.001	0.001	<0.001	<0.001	0.001
Iron	<0.005	<0.005	<0.005	<0.005	<0.005	0.005
Lead	<0.001	0.002	0.001	0.001	0.003	0.001
Magnesium	1	1	2	0.7	0.7	0.1
Manganese	<0.001	0.001	0.001	0.002	0.003	0.001
Molybdenum	<0.001	<0.001	0.001	<0.001	<0.001	0.001
Nickel	<0.001	<0.001	<0.001	<0.001	0.001	0.001
Potassium	1.32	0.74	0.61	0.77	0.76	0.01
Selenium	<0.001	<0.001	0.001	<0.001	<0.001	0.001
Silicon	1.92	1.99	2.41	2.52	2.47	0.01
Silver	<0.005	<0.005	<0.005	<0.005	<0.005	0.005
Sodium	0.5	1.2	0.8	0.8	1	0.1
Tin	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Titanium	<0.007	<0.007	<0.007	<0.007	<0.007	0.007
Uranium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Vanadium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Yttrium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Zinc	0.002	0.003	0.002	0.002	0.001	0.001
Mercury (ug/L)	<0.015	<0.015	<0.015	<0.015	<0.015	0.015

Results expressed in mg/L unless otherwise indicated.

RESULTS OF ANALYSIS - Water

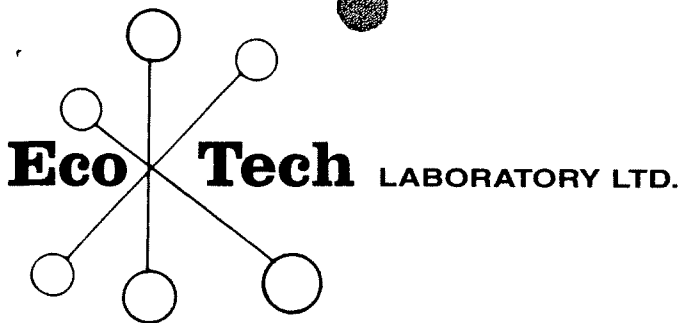
Et. No.

E07-2779

PARAMETER	YOUR SAMPLES		Detection Limits
	W12	W14	
<u>DISSOLVED METALS:</u>			
Aluminum	0.013	0.005	0.001
Antimony	<0.001	<0.001	0.001
Arsenic	<0.001	<0.001	0.001
Barium	0.01	<0.001	0.01
Beryllium	<0.001	<0.001	0.001
Bismuth	<0.001	<0.001	0.001
Boron	0.017	<0.001	0.001
Cadmium	<0.001	<0.001	0.001
Calcium	11.04	11.62	0.01
Chromium	<0.001	<0.001	0.001
Cobalt	<0.001	<0.001	0.001
Copper	0.001	<0.001	0.001
Iron	<0.005	<0.005	0.005
Lead	0.003	<0.001	0.001
Magnesium	1.4	2	0.1
Manganese	<0.001	0.003	0.001
Molybdenum	<0.001	0.001	0.001
Nickel	<0.001	<0.001	0.001
Potassium	1.84	0.48	0.01
Selenium	<0.001	0.001	0.001
Silicon	2.46	2.27	0.01
Silver	<0.005	<0.005	0.005
Sodium	3.3	0.8	0.1
Tin	<0.01	<0.01	0.01
Titanium	<0.007	<0.007	0.007
Uranium	<0.001	<0.001	0.001
Vanadium	<0.001	<0.001	0.001
Yttrium	<0.001	<0.001	0.001
Zinc	0.003	<0.001	0.001
Mercury (ug/L)	<0.015	<0.015	0.015

Results expressed in mg/L unless otherwise indicated.

End of Report



HAWTHORNE GOLD CORP.
 Suite 1818 - 701 West Georgia
 Vancouver, BC
 V7Y 1C6

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 Phone (250) 573-5700 Fax (250) 573-4557
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 www.ecotechlab.com

18-Jan-08

INVOICE

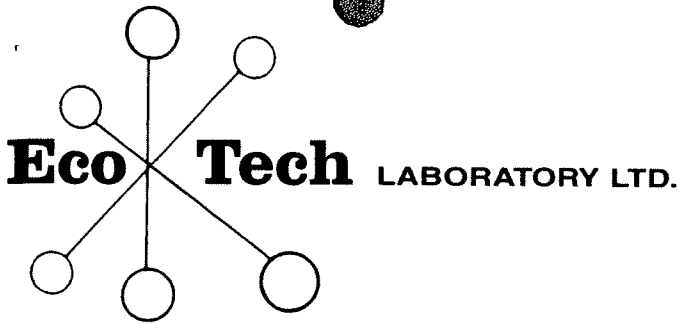
INVOICE # E07-2779D

ANALYSES	PRICE/SAMPLE	AMOUNT
<p><i>Samples Received: December 24, 2007</i> <i>Samples Dated: December 20, 2007</i></p> <p><i>Project: Frasergold</i></p>		
7	DOC Analyses	280.00
	40.00	
	SUBTOTAL:	280.00
	& 5% G.S.T.	14.00
	TOTAL DUE & PAYABLE UPON RECEIPT:	\$ 294.00

THANK YOU!

G.S.T. REGISTRATION NUMBER R101565356

TERMS: NET 30 DAYS. INTEREST AT RATE OF 2% PER MONTH (24% PER ANNUM) WILL
 BE CHARGED ON OVERDUE ACCOUNTS.



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www.ecotechlab.com

CHEMICAL ANALYSIS REPORT

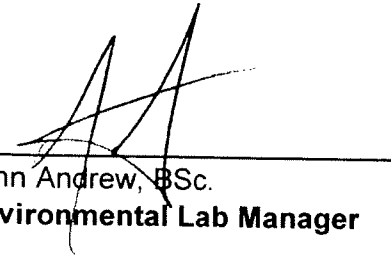
Date: 18-Jan-08
Et. File No. E07-2779D
Report On: Water Analysis
Project: Frasergold
Report To: **HAWTHORNE GOLD CORP.**
Suite 1818 - 701 West Georgia
Vancouver, BC V7Y 1C6

EBA ENGINEERING
#150 - 1715 Dickson Ave.
Kelowna, BC V1Y 9G6

Attention: **Marlin Murphy - Hawthorne Gold Corp.**
Alison Tremain - EBA Engineering
Darryl Arsenault - EBA Engineering

Samples Received: December 24, 2007
Samples Dated: December 20, 2007

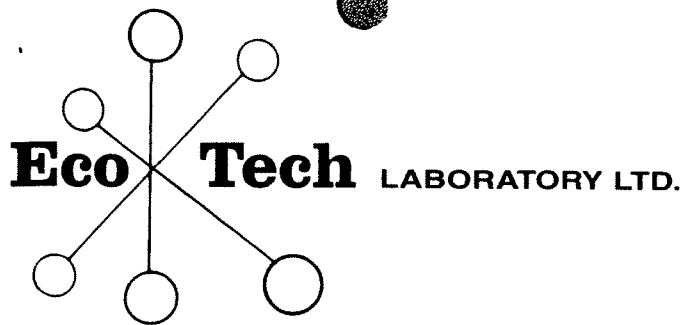
ECO TECH LABORATORY LTD.



John Andrew, BSc.
Environmental Lab Manager

JA/lm

Email: mmurphy@hawthornegold.com, atremain@eba.ca; cc: darsenault@eba.ca



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CHEMICAL ANALYSIS REPORT

Date: 18-Jan-08

Et. File No. E07-2779D

Report On: Water Analysis

Project: Frasergold

Report To: **HAWTHORNE GOLD CORP.**
Suite 1818 - 701 West Georgia
Vancouver, BC V7Y 1C6


EBA ENGINEERING
#150 - 1715 Dickson Ave.
Kelowna, BC V1Y 9G6

Attention: **Marlin Murphy - Hawthorne Gold Corp.**
Alison Tremain - EBA Engineering
Darryl Arsenault - EBA Engineering

Samples Received: December 24, 2007

Samples Dated: December 20, 2007

ECO TECH LABORATORY LTD.



John Andrew, BSc.
Environmental Lab Manager

JA/lm

Email: mmurphy@hawthornegold.com, atremain@eba.ca; cc: darsenault@eba.ca

SAMPLE IDENTIFICATION - Water

Samples Labelled:

#1. ID #:	W5
#2. ID #:	W6
#3. ID #:	W7
#4. ID #:	W8A
#5. ID #:	W8B
#6. ID #:	W12
#7. ID #:	W14

**EBA ENGINEERING
RESULTS OF ANALYSIS - Water**

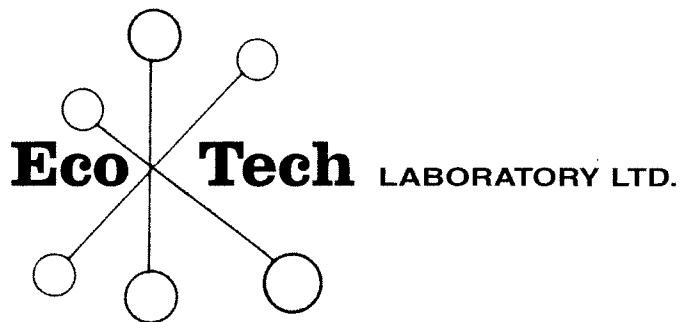
18-Jan-08
Et. No. E07-2779D

PARAMETER	YOUR SAMPLES					Detection Limit
	<u>W5</u>	<u>W6</u>	<u>W7</u>	<u>W8A</u>	<u>W8B</u>	
Dissolved Organic Carbon	1	<1	1	1	1	1

PARAMETER	YOUR SAMPLES		Detection Limit
	<u>W12</u>	<u>W14</u>	
Dissolved Organic Carbon	1	<1	1

Results expressed in mg/L unless otherwise indicated.

End of Report



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CHEMICAL ANALYSIS REPORT

Date: 4-Dec-07

Et. File No. E07-2589

Report On: Water Analysis

Project: Frasergold

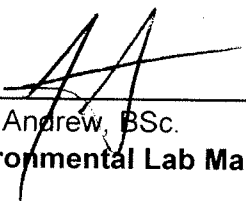
Report To: **HAWTHORNE GOLD CORP.**
Suite 1818 - 701 West Georgia
Vancouver, BC V7Y 1C6

EBA ENGINEERING
#150 - 1715 Dickson Ave.
Kelowna, BC V1Y 9G6

Attention: **Marlin Murphy - Hawthorne Gold Corp.**
Alison Tremain - EBA Engineering
Darryl Arsenault - EBA Engineering

Samples Received: November 22, 2007
Samples Dated: November 20 & 21, 2007

ECO TECH LABORATORY LTD.



John Andrew, BSc.
Environmental Lab Manager

JA/lm

Email: mmurphy@hawthornegold.com, atremain@eba.ca; cc: darsenault@eba.ca

SAMPLE IDENTIFICATION - Water

Samples Labelled:

#1. ID #:	W9A
#2. ID #:	W9B
#3. ID #:	W10
#4. ID #:	W12
#5. ID #:	W14
#6. ID #:	W15

RESULTS OF ANALYSIS - Water

Et. No. E07-2589

PARAMETER	YOUR SAMPLES					
	<u>W9A</u>	<u>W9B</u>	<u>W10</u>	<u>W12</u>	<u>W14</u>	<u>W15</u>
DATE OF SAMPLING	21-Nov	21-Nov	20-Nov	21-Nov	20-Nov	20-Nov
pH	7.18	7.22	7.34	7.42	7.44	7.66
Colour (Co/Pt units)	10	10	9	9	10	8
Conductivity	72	66	67	69	72	111
Turbidity (NTU)	1.6	1.0	0.1	0.2	1.4	0.1
Alkalinity Total (pH 4.5)	30.8	26.2	26.2	28.5	28.5	47.9
Total Suspended Solids	3	3	<1	<1	3	<1
Total Dissolved Solids	48	48	46	48	49	94
Chloride	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Nitrate (as N)	0.132	0.125	0.081	0.307	0.130	0.088
Nitrite (as N)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
T.K.N. (as N)	0.05	0.06	<0.05	<0.05	<0.05	<0.05
Total Nitrogen (as N)	0.18	0.18	0.08	0.31	0.13	0.09
Ammonia (as N)	0.008	0.055	0.015	0.005	0.007	0.009
Total Phosphate (as P)	<0.003	<0.003	<0.003	<0.003	0.004	<0.003
Sulphate (as SO ₄)	7	6	13	6	6	10
Hardness (as CaCO ₃)	34	32	40	32	36	57

Results expressed in mg/L unless otherwise indicated.

RESULTS OF ANALYSIS - Water

PARAMETER	YOUR SAMPLES						Detection Limits
	W9A	W9B	W10	W12	W14	W15	
TOTAL METALS:							
Aluminum	0.086	0.079	0.007	0.021	0.073	0.004	0.001
Antimony	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Barium	0.01	0.01	0.01	0.01	0.01	<0.01	0.01
Beryllium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Boron	0.014	0.004	0.002	<0.001	0.001	<0.001	0.001
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Calcium	11.0	10.4	15.0	10.8	11.5	15.3	0.01
Chromium	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Cobalt	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Copper	0.001	0.001	0.007	<0.001	0.001	<0.001	0.001
Iron	0.114	0.103	0.015	0.014	0.122	0.007	0.005
Lead	0.011	0.004	0.004	0.006	0.005	0.007	0.001
Magnesium	1.8	1.6	0.8	1.5	2.1	4.7	0.1
Manganese	0.005	0.004	0.001	<0.001	0.009	<0.001	0.001
Molybdenum	0.001	<0.001	<0.001	<0.001	0.001	0.001	0.001
Nickel	0.001	0.001	0.001	<0.001	0.001	<0.001	0.001
Potassium	0.74	0.75	0.7	0.85	0.59	0.08	0.01
Selenium	0.001	<0.001	<0.001	<0.001	0.001	0.002	0.001
Silicon	3	3.04	2.74	2.35	2.26	1.69	0.01
Silver	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.005
Sodium	0.8	0.8	0.5	0.6	0.7	0.5	0.1
Tin	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Titanium	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	0.007
Uranium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Vanadium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Yttrium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Zinc	0.003	0.001	0.002	0.001	0.002	0.001	0.001
Mercury (ug/L)	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.015

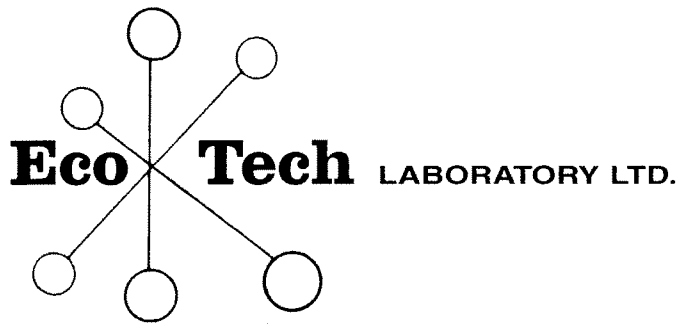
Results expressed in mg/L unless otherwise indicated.

RESULTS OF ANALYSIS - Water

PARAMETER	YOUR SAMPLES						Detection Limits
	W9A	W9B	W10	W12	W14	W15	
DISSOLVED METALS:							
Aluminum	0.022	0.022	0.005	0.017	0.011	0.004	0.001
Antimony	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Barium	0.01	0.01	0.01	0.01	0.01	<0.01	0.01
Beryllium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Boron	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Calcium	10.1	9.7	14.3	10.0	10.5	14.9	0.01
Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Cobalt	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Copper	0.001	0.001	0.005	<0.001	0.001	<0.001	0.001
Iron	0.022	0.024	<0.005	0.006	0.023	<0.005	0.005
Lead	0.011	0.004	0.004	0.006	0.004	0.004	0.001
Magnesium	1.5	1.5	0.7	1.4	1.9	4.4	0.1
Manganese	0.003	0.003	<0.001	<0.001	0.006	<0.001	0.001
Molybdenum	<0.001	<0.001	<0.001	<0.001	0.001	0.001	0.001
Nickel	0.001	0.001	0.001	<0.001	0.001	<0.001	0.001
Potassium	0.72	0.72	0.7	0.85	0.58	0.08	0.01
Selenium	0.001	<0.001	<0.001	<0.001	0.001	0.002	0.001
Silicon	2.85	2.92	2.73	2.33	2.23	1.69	0.01
Silver	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.005
Sodium	0.8	0.8	0.5	0.6	0.7	0.5	0.1
Tin	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Titanium	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	0.007
Uranium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Vanadium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Yttrium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Zinc	0.003	0.001	0.002	0.001	0.001	<0.001	0.001
Mercury (ug/L)	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.015

Results expressed in mg/L unless otherwise indicated.

End of Report



ASSAYING, GEOCHEMISTRY
ANALYTICAL CHEMISTRY
ENVIRONMENTAL TESTING
ISO 9001 Accredited Co.

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CHEMICAL ANALYSIS REPORT

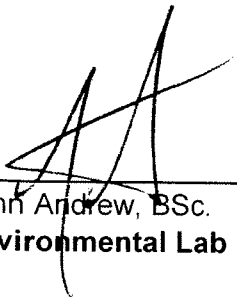
Date: 4-Dec-07
Et. File No. E07-2588
Report On: Water Analysis
Project: Frasergold
Report To: **HAWTHORNE GOLD CORP.**
Suite 1818 - 701 West Georgia
Vancouver, BC V7Y 1C6

EBA ENGINEERING
#150 - 1715 Dickson Ave.
Kelowna, BC V1Y 9G6

Attention: **Marlin Murphy - Hawthorne Gold Corp.**
Alison Tremain - EBA Engineering
Darryl Arsenault - EBA Engineering

Samples Received: November 22, 2007
Samples Dated: November 20 & 21, 2007

ECO TECH LABORATORY LTD.



John Andrew, BSc.
Environmental Lab Manager

JA/Im

Email: mmurphy@hawthornegold.com, atremain@eba.ca; cc: darsenault@eba.ca

SAMPLE IDENTIFICATION - Water

Samples Labelled:

#1. ID #:	W2
#2. ID #:	W3
#3. ID #:	W4
#4. ID #:	W5
#5. ID #:	W6
#6. ID #:	W7
#7. ID #:	W8A
#8. ID #:	W8B

RESULTS OF ANALYSIS - Water

Et. No. E07-2588

PARAMETER	YOUR SAMPLES				
	W2	W3	W4	W5	W6
DATE OF SAMPLING	20-Nov	20-Nov	20-Nov	20-Nov	20-Nov
pH	7.59	7.67	7.56	7.40	7.30
Colour (Co/Pt units)	9	11	9	12	10
Conductivity	98	101	94	82	44
Turbidity (NTU)	0.6	0.3	0.2	0.6	0.1
Alkalinity Total (pH 4.5)	42.2	44.5	35.3	25.7	15.9
Total Suspended Solids	<1	2	<1	<1	2
Total Dissolved Solids	105	108	92	73	45
Chloride	<0.3	<0.3	<0.3	<0.3	<0.3
Nitrate (as N)	0.104	<0.003	0.163	0.04	0.201
Nitrite (as N)	<0.003	<0.003	<0.003	<0.003	<0.003
T.K.N. (as N)	<0.05	<0.05	<0.05	0.05	0.05
Total Nitrogen (as N)	0.10	<0.05	0.16	0.09	0.25
Ammonia (as N)	0.010	<0.005	<0.005	0.012	<0.005
Total Phosphate (as P)	<0.003	0.021	<0.003	<0.003	<0.003
Sulphate (as SO ₄)	7	9	11	12	4
Hardness (as CaCO ₃)	48	50	45	37	20

PARAMETER	YOUR SAMPLES		
	W7	W8A	W8B
DATE OF SAMPLING	21-Nov	21-Nov	21-Nov
pH	7.48	7.04	7.06
Colour (Co/Pt units)	9	9	10
Conductivity	84	48	49
Turbidity (NTU)	0.5	1.9	1.9
Alkalinity Total (pH 4.5)	34.2	19.4	17.1
Total Suspended Solids	<1	2	5
Total Dissolved Solids	72	59	50
Chloride	<0.3	<0.3	<0.3
Nitrate (as N)	0.132	0.195	0.215
Nitrite (as N)	<0.003	<0.003	<0.003
T.K.N. (as N)	<0.05	0.05	0.06
Total Nitrogen (as N)	0.13	0.25	0.28
Ammonia (as N)	<0.005	0.005	<0.005
Total Phosphate (as P)	<0.003	<0.003	<0.003
Sulphate (as SO ₄)	8	6	7
Hardness (as CaCO ₃)	40	22	22

Results expressed in mg/L unless otherwise indicated.

RESULTS OF ANALYSIS - Water

PARAMETER	YOUR SAMPLES					Detection Limits
	W2	W3	W4	W5	W6	
TOTAL METALS:						
Aluminum	0.023	0.019	0.008	0.042	0.021	0.001
Antimony	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Barium	<0.01	<0.01	0.02	0.02	<0.01	0.01
Beryllium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Boron	0.004	0.005	0.005	0.005	<0.001	0.001
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Calcium	13.8	15.5	16.6	13.3	6.8	0.01
Chromium	0.001	<0.001	<0.001	0.001	<0.001	0.001
Cobalt	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Copper	0.001	<0.001	0.001	0.002	<0.001	0.001
Iron	0.029	0.02	0.014	0.05	0.014	0.005
Lead	0.007	0.005	0.01	0.005	0.008	0.001
Magnesium	3.8	3.3	0.9	1.1	0.9	0.1
Manganese	0.002	0.001	0.001	0.002	0.001	0.001
Molybdenum	0.001	0.001	<0.001	<0.001	<0.001	0.001
Nickel	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Potassium	0.08	0.08	1.2	1.31	0.63	0.01
Selenium	0.001	0.001	<0.001	<0.001	<0.001	0.001
Silicon	1.45	1.38	1.9	2.28	2.1	0.01
Silver	<0.005	<0.005	<0.005	<0.005	<0.005	0.005
Sodium	0.4	0.4	0.5	0.4	0.8	0.1
Tin	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Titanium	<0.007	<0.007	<0.007	<0.007	<0.007	0.007
Uranium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Vanadium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Yttrium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Zinc	0.001	0.002	0.001	0.002	0.001	0.001
Mercury (ug/L)	<0.015	<0.015	<0.015	<0.015	<0.015	0.015

Results expressed in mg/L unless otherwise indicated.

RESULTS OF ANALYSIS - Water

PARAMETER	YOUR SAMPLES			Detection Limits
	W7	W8A	W8B	
TOTAL METALS:				
Aluminum	0.031	0.15	0.155	0.001
Antimony	<0.001	<0.001	<0.001	0.001
Arsenic	<0.001	<0.001	<0.001	0.001
Barium	0.01	<0.01	0.01	0.01
Beryllium	<0.001	<0.001	<0.001	0.001
Bismuth	<0.001	<0.001	<0.001	0.001
Boron	<0.001	0.002	<0.001	0.001
Cadmium	<0.001	<0.001	<0.001	0.001
Calcium	12.7	7.6	7.4	0.01
Chromium	<0.001	0.001	0.001	0.001
Cobalt	<0.001	<0.001	<0.001	0.001
Copper	0.001	0.001	0.001	0.001
Iron	0.047	0.169	0.186	0.005
Lead	0.008	0.008	0.01	0.001
Magnesium	2.2	0.8	0.8	0.1
Manganese	0.004	0.005	0.005	0.001
Molybdenum	0.001	<0.001	<0.001	0.001
Nickel	0.001	0.001	0.001	0.001
Potassium	0.65	0.83	0.83	0.01
Selenium	0.001	<0.001	<0.001	0.001
Silicon	2.57	2.82	3.12	0.01
Silver	<0.005	<0.005	<0.005	0.005
Sodium	0.7	0.8	0.8	0.1
Tin	<0.01	<0.01	<0.01	0.01
Titanium	<0.007	0.007	0.008	0.007
Uranium	<0.001	<0.001	<0.001	0.001
Vanadium	<0.001	<0.001	<0.001	0.001
Yttrium	<0.001	<0.001	<0.001	0.001
Zinc	0.001	0.003	0.002	0.001
Mercury (ug/L)	<0.015	<0.015	<0.015	0.015

Results expressed in mg/L unless otherwise indicated.

RESULTS OF ANALYSIS - Water

Et. No. E07-2588

PARAMETER	YOUR SAMPLES					Detection Limits
	W2	W3	W4	W5	W6	
DISSOLVED METALS:						
Aluminum	0.012	0.008	0.005	0.012	0.017	0.001
Antimony	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Barium	<0.01	<0.01	0.02	0.02	<0.01	0.01
Beryllium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Boron	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Calcium	12.9	14.4	16.1	12.7	6.3	0.01
Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Cobalt	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Copper	<0.001	<0.001	0.001	0.001	<0.001	0.001
Iron	0.018	0.01	0.005	0.01	0.014	0.005
Lead	0.004	0.005	0.006	0.005	0.007	0.001
Magnesium	3.5	3.0	0.8	1.0	0.8	0.1
Manganese	0.001	0.001	0.001	<0.001	0.001	0.001
Molybdenum	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Nickel	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Potassium	0.08	0.08	1.14	1.3	0.63	0.01
Selenium	0.001	0.001	<0.001	<0.001	<0.001	0.001
Silicon	1.43	1.31	1.8	2.15	2.07	0.01
Silver	<0.005	<0.005	<0.005	<0.005	<0.005	0.005
Sodium	0.4	0.4	0.5	0.4	0.8	0.1
Tin	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Titanium	<0.007	<0.007	<0.007	<0.007	<0.007	0.007
Uranium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Vanadium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Yttrium	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Zinc	0.001	0.001	<0.001	<0.001	<0.001	0.001
Mercury (ug/L)	<0.015	<0.015	<0.015	<0.015	<0.015	0.015

Results expressed in mg/L unless otherwise indicated.

RESULTS OF ANALYSIS - Water

PARAMETER	YOUR SAMPLES			Detection Limits
	W7	W8A	W8B	
<u>DISSOLVED METALS:</u>				
Aluminum	0.011	0.03	0.03	0.001
Antimony	<0.001	<0.001	<0.001	0.001
Arsenic	<0.001	<0.001	<0.001	0.001
Barium	0.01	<0.01	<0.01	0.01
Beryllium	<0.001	<0.001	<0.001	0.001
Bismuth	<0.001	<0.001	<0.001	0.001
Boron	<0.001	<0.001	<0.001	0.001
Cadmium	<0.001	<0.001	<0.001	0.001
Calcium	12.1	7.1	7.0	0.01
Chromium	<0.001	<0.001	<0.001	0.001
Cobalt	<0.001	<0.001	<0.001	0.001
Copper	0.001	<0.001	<0.001	0.001
Iron	0.024	0.023	0.023	0.005
Lead	0.007	0.007	0.008	0.001
Magnesium	2.0	0.7	0.7	0.1
Manganese	0.003	0.003	0.003	0.001
Molybdenum	0.001	<0.001	<0.001	0.001
Nickel	0.001	0.001	0.001	0.001
Potassium	0.65	0.79	0.78	0.01
Selenium	0.001	<0.001	<0.001	0.001
Silicon	2.56	2.75	2.76	0.01
Silver	<0.005	<0.005	<0.005	0.005
Sodium	0.7	0.8	0.8	0.1
Tin	<0.01	<0.01	<0.01	0.01
Titanium	<0.007	<0.007	<0.007	0.007
Uranium	<0.001	<0.001	<0.001	0.001
Vanadium	<0.001	<0.001	<0.001	0.001
Yttrium	<0.001	<0.001	<0.001	0.001
Zinc	0.001	0.002	0.002	0.001
Mercury (ug/L)	<0.015	<0.015	<0.015	0.015

Results expressed in mg/L unless otherwise indicated.

End of Report

Appendix O – Software programs used in support of the exploration program and development and the preparation of the report.

Vendor - Product

1. Microsoft - Windows XP
2. GemCom - XplorerPac v6.0
3. Maxwell GeoServices - Datashed 4.3.2
4. Microsoft - Office 2003
5. ESRI - ArcGIS 9.2 (SP5)
6. ESRI - Spatial Analyst 9.2
7. Adobe - Acrobat Writer 8.0
8. MeasureIT 2 (FlexIT tool) v2.0 build 156
9. Microsoft – SQL Server 2005