APPENDIX I

Water Quality (Groundwater and Surface Water)

Table 1
Water Analytical Results - Inorganics
Redmond Property, Labrador Iron Mines, Schefferville Project, Labrador

Parameter	Units	CWQG FWAL	GCDWQ	RDL+	RP1			RP2					RP3				RP4						RP5	
Sampling Date					4/1/2008	6/6/2008	9/16/2008	4/24/2007	9/23/2007	4/1/2008	6/6/2008	9/13/2008	4/24/2007	9/23/2007	6/6/2008	9/13/2008	9/15/2008	4/24/2007	9/23/2007	4/1/2008	4/1/2008	6/6/2008	3/31/2008	9/15/2008
INORGANICS																								
Total Alkalinity (Total as CaCO3)	mg/L	NG	NG	5	38	39	39	ND	ND	<10	<10	<10	87	15	87	84	87	180	63	120	110	73	71	94
Dissolved Chloride (Cl)	mg/L	NG	NG	1	3	2	<2	ND	ND	<2	<2	<2	1	ND	<2	<2	<2	ND	ND	<2	<2	<2	<2	<2
Colour	TCU	NG	≤15*	5	<1	2	1	ND	ND	<1	6	5	**39**	**15**	2	11	6	ND	7	**28**	**30**	5	1	7
Total Dissolved Solids	mg/L	NG	NG	10	60	70	110	12	NA	<20	<20	50	340	NA	110	130	130	190	NA	100	100	90	70	140
Hardness (CaCO3)	mg/L	NG	NG	1	67	55	50	3	8	18	9	9	120	50	102	95	100	180	72	137	123	85	110	106
Nitrate + Nitrite	mg/L	NG	NG	0.05	0.5	0.4	0.3	0.17	0.09	0.4	0.3	0.3	0.07	ND	0.3	0.2	0.2	ND	0.15	<0.2	<0.2	0.2	0.4	0.3
Nitrite (N)	mg/L	0.06	NG	0.01	<0.1	<0.1	0.3	ND	0.34	<0.1	<0.1	<0.1	ND	ND	<0.1	<0.1	<0.1	ND		<0.1	<0.1	<0.1	<0.1	<0.1
Nitrogen (Ammonia Nitrogen)	mg/L	NG	NG	0.05	<0.05	<0.05	0.08	ND	0.07	0.05	<0.05	0.09	0.6	ND	<0.05	0.14	0.10	0.09	0.07	0.12	0.12	<0.05	<0.05	0.13
Dissolved Organic Carbon (C)	mg/L	NG	NG	0.5	<1	<1	<1	0.6	0.5	<1	<1	<1	6.5	4.3	<1	<1	2	1.2	1.3	1	<1	1	<1	<1
Total Organic Carbon (C)	mg/L	NG	NG	0.5	NA	3	<1	0.8	0.8	NA	1	<1	10	3.7	19	2	2	3.7	1.2	NA	NA	17	NA	<1
Orthophosphate (P)	mg/L	NG	NG	0.01	<0.003	0.003	<0.003	ND	ND	<0.003	<0.003	<0.003	ND	ND	0.004	0.003	<0.003	ND	ND	<0.003	<0.003	0.003	0.004	0.003
pH	pH	6.5 - 9	6.5 - 8.5	N/A	7.92	7.84	7.89	**6.46**	6.51	6.87	6.9	6.93	7.52	7.23	8.09	8.04	8.17	7.57	7.79	7.68	7.7	8.04	8.09	8.03
Reactive Silica (SiO2)	mg/L	NG	NG	0.5	3.9	3.8	3.1	0.8	1.7	2.2	1.8	1.8	4	0.7	6.3	5.2	4.6	19	3.3	14	11.9	4	6.4	6.5
Dissolved Sulphate (SO4)	mg/L	NG	NG	2	9	9	9	ND	3	5	4	3	42	30	10	4	4	2	3	3	3	4	7	10
Turbidity	NTU	NG	NG	0.1	0.17	0.75	0.34	2.4	1.8	0.35	2.2	1.7	3.9	0.6	0.31	0.57	0.42	21	0.2	4.7	5.4	0.21	0.17	1.2
Conductivity	uS/cm	NG	NG	1	111	99.6	98	11	18	21.6	16.5	15.2	260	96	185	159	167	320	120	207	208	147	151	196
Bromide	mg/L	NG	NG	0.1	<0.1	<0.1	0.08	NA	NA	<0.1	<0.1	<0.1	NA	NA	<0.1	<0.1	<0.1	NA	NA	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoride	mg/L	NG	1.5	0.1	<0.1	<0.1	<0.1	NA	NA	<0.1	<0.1	<0.1	NA	NA	<0.1	<0.1	<0.1	NA	NA	<0.1	<0.1	<0.1	<0.1	<0.1
RCAP CALCULATIONS																								
Nitrate (N)	mg/L	NG	45	N/A	0.5	0.4	0.03	NC	NA	0.4	0.3	0.3	8.16	NA	0.3	0.2	0.2	7.71	NA	<0.1	<0.1	0.2	0.4	0.3
Anion Sum	me/L	NG	NG	N/A	0.9	0.9	0.9	0.01	0.09	0.1	0.1	<0.1	2.64	0.92	1.7	1.5	1.5	3.63	1.34	2	1.9	1.3	1.4	1.8
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	NG	NG	1	38	39	39	ND	ND	<10	<10	<10	87	15	86	83	86	179	63	119	109	72	70	93
Calculated TDS	mg/L	NG	≤500*	1	50	55	51	3	9	13	8	8	145	57	96	86	89	191	69	120	109	76	88	102
Carb. Alkalinity (calc. as CaCO3)	mg/L	NG	NG	1	<10	<10	<10	ND	ND	<10	<10	<10	ND	ND	<10	<10	<10	ND	ND	<10	<10	<10	<10	<10
Cation - Anion Balance	%	NG	NG	N/A	19.5	Low EC	Low EC	NA	NA	Low EC	Low EC	Low EC	NA	NA	10.2	12.2	13.0	NA	NA	14.8	13.6	12.9	24.2	9.4
Cation Sum	me/L	NG	NG	N/A	1.4	1.2	1.0	0.08	0.17	0.4	0.2	0.2	2.62	1.04	2.1	1.9	2.0	3.67	1.46	2.7	2.5	1.7	2.2	2.2
Conductivity % Difference	%	NG	NG	N/A	6.9	5.4	-2.1	NA	NA	30	5.6	12.1	NA	NA	-4.5	0.2	-0.4	NA	NA	5.3	-4.5	-3.2	12.8	-5.2
Computed Conductivity	uS/cm	NG	NG	N/A	119	105	95.9	NA	NA	29.2	17.4	17.2	NA	NA	177	159	166	NA	NA	218	199	142	172	186
Ion Balance (% Difference)	%	NG	NG	N/A	148	Low EC	Low EC	77.8	30.8	Low EC	Low EC	Low EC	0.38	6.12	123	128	130	0.55	4.29	135	132	130	164	121
Langelier Index (@ 20C)	N/A	NG	NG	N/A	-0.7	-0.9	-0.8	NC	NC	-6.2	-6.5	-6.5	-0.393	-1.89	0	-0.1	0.0	0.107	-0.58	-0.1	-0.2	-0.2	0	0.0
Langelier Index (@ 4C)	N/A	NG	NG	N/A	NA	NA	NA	NC	NC	NA	NA	NA	-0.644	-2.15	NA	NA	NA	-0.143	-0.832	NA	NA	NA	NA	NA
Saturation pH (@ 20C)	N/A	NG	NG	N/A	8.59	8.69	8.74	NC	NC	13	13.4	13.4	7.91	9.12	8.13	8.15	8.13	7.46	8.37	7.82	7.91	8.23	8.1	8.08
Saturation pH (@ 4C)	N/A	NG	NG	N/A	NA	NA	NA	NC	NC	NA	NA	NA	8.16	9.38	NA	NA	NA	7.71	8.62	NA	NA	NA	NA	NA

All results expressed as indicated

RDL+ - Analytical Reportable Detection Limit

CWQG, FWAL = CCME Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (2006 Update)

GCDWQ = CCME Canadian Water Quality Guidelines for Drinking Water Quality

334 Exceeds CWQG FWAL Standards

334 Exceeds GCDWQ Standards

ND = Not detected

NC = Non-calculable

NG = No Guideline

NA = Not Analysed

N/A = Not Applicable

Table 2
Surface Water Analytical Results - Metals
Redmond Property, Labrador Iron Mines, Schefferville Project, Labrador

Parameter	Units	Criteria 1	Criteria 2	RDL+	RP1			RP2					RP3				RP4						RP5	
		CWQG FWAL	GCDWQ																					
Sampling Date					1-Apr-08	6-Jun-08	15-Sep-08	24-Apr-07	23-Sep-07	1-Apr-08	6-Jun-08	13-Sep-08	24-Apr-07	23-Sep-07	6-Jun-08	13-Sep-08	24-Apr-07	23-Sep-07	1-Apr-08	1-Apr-08	6-Jun-08	15-Sep-08	31-Mar-08	15-Sep-08
Total Metals																								
Total Aluminum (Al)	ug/L	5-100	100	10	<10	70	<10	32	NA	<10	20	20	42	NA	<10	<10	16	NA	<10	<10	<10	<10	50	0.02
Total Antimony (Sb)	ug/L	NG	6**	2	<5	<5	<5	ND	NA	<5	<5	<5	ND	NA	<5	<5	ND	NA	<5	<5	<5	<5	<5	<5
Total Arsenic (As)	ug/L	5	10	2	<1	<1	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	ND	NA	<1	<1	<1	<1	<1	<1
Total Barium (Ba)	ug/L	NG	1000	5	<10	<10	<10	ND	NA	<10	<10	<10	11	NA	<10	<10	ND	NA	<10	<10	<10	<10	<10	<10
Total Beryllium (Be)	ug/L	NG	NG	2	<1	<1	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	ND	NA	<1	<1	<1	<1	<1	<1
Total Bismuth (Bi)	ug/L	NG	NG	2	<1	<1	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	ND	NA	<1	<1	<1	<1	<1	<1
Total Boron (B)	ug/L	NG	5000**	5	<50	<50	<50	ND	NA	<50	<50	<50	ND	NA	<50	<50	ND	NA	<50	<50	<50	<50	<50	<50
Total Cadmium (Cd)	ug/L	0.017	5	0.3	<0.1	<0.1	<0.1	ND	NA	<0.1	<0.1	<0.1	ND	NA	<0.1	<0.1	ND	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Calcium (Ca)	ug/L	NG	NG	100	14600	11000	9800	1200	1600	4100	2000	2300	33000	10000	19400	18700	47000	14000	29200	26000	17700	19000	25100	20300
Total Chromium (Cr)	ug/L	NG	50	2	<1	<1	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	ND	NA	<1	<1	<1	<1	<1	<1
Total Cobalt (Co)	ug/L	NG	NG	1	<0.5	<0.5	<0.5	ND	NA	<0.5	<0.5	<0.5	ND	NA	<0.5	<0.5	ND	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Copper (Cu)	ug/L	2-4	≤1000*	2	<1	<1	<1	ND	ND	<1	<1	<1	ND	ND	<1	<1	ND	ND	<1	<1	<1	<1	<1	<1
Total Iron (Fe)	ug/L	300	≤300*	50	<50	180	<50	ND	30	<50	140	<50	**3300**	NA	100	120	320	**5800**	70	**2290**	**1720**	120	120	<50	240
Total Lead (Pb)	ug/L	1-7	10	0.5	<1	<1	<1	ND	NA	<1		<1	ND	NA	<1	<1	ND	NA	<1	<1	<1	<1	<1	<1
Total Magnesium (Mg)	ug/L	NG	NG	100	7300	6700	6100	600	900	1800	900	900	16000	5900	12900	11700	23000	8700	15600	14100	9.9	12800	11400	13500
Total Manganese (Mn)	ug/L	NG	≤50	2	3	13	12	10	ND	5	7	3	**780**	10	42	74	**160**	ND	**91**	**81**	14	3	**57**	**111**
Total Mercury (Hg)	ug/L	NG	1	0.01	<0.1	<0.1	<0.1	ND	NA	<0.1	<0.1	<0.1	ND	NA	<0.1	<0.1	ND	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Molybdenum (Mo)	ug/L	73	NG	2	<1	<1	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	ND	NA	<1	<1	<1	<1	<1	<1
Total Nickel (Ni)	ug/L	25-150	NG	2	<2	<2	<2	ND	NA	<2	<2	<2	ND	NA	<2	<2	ND	NA	<2	<2	<2	<2	<2	<2
Total Phosphorus (P)	ug/L	NG	NG	100	<50	<30	<50	ND	NA	<50	<30	<50	ND	NA	<30	<50	ND	NA	<50	<50	<30	<50	<50	<50
Total Potassium (K)	ug/L	NG	NG	100	<1000	<1000	<1000	200	100	<1000	<1000	<1000	900	300	<1000	<1000	1100	300	<1000	<1000	<1	<1000	<1000	<1000
Total Selenium (Se)	ug/L	1	10	2	<5	<5	<5	ND	NA	<5	<5	<5	ND	NA	<5	<5	ND	NA	<5	<5	<5	<5	<5	<5
Total Silicon (Si)	ug/L	NG	NG	100	1800	1800	1500	NA	NA	1200	1000	900	NA	NA	2500	2400	NA	NA	6200	5700	1600	2200	3000	3100
Total Silver (Ag)	ug/L	NG	NG	0.5	<0.1	<0.1	<0.1	ND	NA	<0.1	<0.1	<0.1	NA	NA	<0.1	<0.1	ND	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Sodium (Na)	ug/L	NG	≤200000*	100	1400	1200	1200	300	100	<500	<500	<500	600	500	600	<500	800	400	<500	<500	<500	<500	600	600
Total Strontium (Sr)	ug/L	NG	NG	5	9	9	7	ND	NA	5	3	3	19	NA	12	9	12	NA	18	12	9	9	13	11
Total Thallium (Tl)	ug/L	0.8	NG	0.1	<0.3	<0.3	<0.3	ND	NA	<0.3	<0.3	<0.3	ND	NA	<0.3	<0.3	ND	NA	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total Tin (Sn)	ug/L	NG	NG	2	<1	<1	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	ND	NA	<1	<1	<1	<1	<1	<1
Total Titanium (Ti)	ug/L	NG	NG	2	<2	3	<2	ND	NA	<2	<2	<2	ND	NA	<2	<2	ND	NA	<2	<2	<2	<2	<2	<2
Tungsten (W)-Total	ug/L	NG	NG	10	<10	<10	<10	NA	NA	<10	<10	<10	NA	NA	<10	<10	NA	NA	<10	<10	<10	<10	<10	<10
Total Uranium (U)	ug/L	NG	20**	0.1	<5	<5	<5	ND	NA	<5	<5	<5	ND	NA	<5	<5	0.4	NA	<5	<5	<5	<5	<5	<5
Total Vanadium (V)	ug/L	NG	NG	2	<1	<1	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	ND	NA	<1	<1	<1	<1	<1	<1
Total Zinc (Zn)	ug/L	30	≤5000*	5	26	<3	<3	29	ND	20	<3	5	11	ND	3	<3	16	ND	28	5	3	<3	**153**	7
Zirconium (Zr)-Total	ug/L	NG	NG	4	<4	<4	<0.004	NA	NA	<4	<4	<0.004	NA	NA	<4	<0.004	NA	NA	<4	<4	<4	<4	<4	<4
Dissolved Metals																								
Dissolved Aluminum (Al)	ug/L	NG	NG	10	<10	<10	<10	ND	NA	<10	<10	<10	20	NA	<10	<10	ND	NA	<10	<10	<10	<10	<10	<10
Dissolved Antimony (Sb)	ug/L	NG	NG	2	<5	<5	<5	ND	NA	<5	<5	<5	ND	NA	<5	<5	ND	NA	<5	<5	<5	<5	<5	<5
Dissolved Arsenic (As)	ug/L	NG	NG	2	<1	<1	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	ND	NA	<1	<1	<1	<1	<1	<1
Dissolved Barium (Ba)	ug/L	NG	NG	5	<10	<10	<10	ND	NA	<10	<10	<10	10	NA	<10	<10	ND	NA	<10	<10	<10	<10	<10	<10
Dissolved Beryllium (Be)	ug/L	NG	NG	2	<1	<1	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	ND	NA	<1	<1	<1	<1	<1	<1
Dissolved Bismuth (Bi)	ug/L	NG	NG	2	<1	<1	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	ND	NA	<1	<1	<1	<1	<1	<1
Dissolved Boron (B)	ug/L	NG	NG	5	<50	<50	<50	ND	NA	<50	<50	<50	ND	NA	<50	<50	ND	NA	<50	<50	<50	<50	<50	<50
Dissolved Cadmium (Cd)	ug/L	NG	NG	0.3	<0.1	<0.1	<0.1	ND	NA	<0.1	<0.1	<0.1	ND	NA	<0.1	<0.1	ND	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Calcium (Ca)	ug/L	NG	NG	500	11200	10200	10400	NA	NA	2100	1600	1500	NA	NA	20500	18100	NA	NA	26300	25000	16700	19300	16000	20600
Dissolved Chromium (Cr)	ug/L	NG	NG	2	<1	<1	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	ND	NA	<1	<1	<1	<1	<1	<1
Dissolved Cobalt (Co)	ug/L	NG	NG	1	<0.5	<0.5	<0.5	ND	NA	<0.5	<0.5	<0.5	ND	NA	<0.5	<0.5	ND	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Copper (Cu)	ug/L	NG	NG	2	<1	<1	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	ND	NA	<1	<1	<1	<1	<1	<1
Dissolved Iron (Fe)	ug/L	NG	NG	50	<50	<50	<50	ND	NA	<50	<50	<50	**1800**	NA	<50	<50	220	NA	<50	<50	<50	<50	<50	<50
Dissolved Lead (Pb)	ug/L	NG	NG	0.5	<1	<1	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	ND	NA	<1	<1	<1	<1	<1	<1
Dissolved Magnesium (Mg)	ug/L	NG	NG	500	7200	6300	6100	NA	NA	120	900	1000	NA	NA	13000	10700	NA	NA	15000	14100	10100	11200	10700	12100
Dissolved Manganese (Mn)	ug/L	NG	NG	2	<1	6	<1	8	NA	2	6	<1	680	NA	42	60	120	NA	84	76	0.01	2	6	108
Mercury Dissolved (Hg)	ug/L	NG	NG	0.1	<0.1	<0.1	<0.1	NA	NA	<0.1	<0.1	<0.1	NA	NA	<0.1	<0.1	NA	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Molybdenum (Mo)	ug/L	NG	NG	2	<1	<1	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	ND	NA	<1	<1	<1	<1	<1	<1
Dissolved Nickel (Ni)	ug/L	NG	NG	2	<2	<2	<2	ND	NA	<2	<2	<2	ND	NA	<2	<2	ND	NA	<2	<2	<2	<2	<2	<2
Dissolved Phosphorus (P)	ug/L	NG	NG	50	<50	<50	<50	NA	NA	<50	<50	<50	NA	NA	<50	<50	NA	NA	<50	<50	<50	<50	<50	<50
Dissolved Potassium (K)	ug/L	NG	NG	1000	<1000	<1000	<1000	NA	NA	<1000	<1000	<1000	NA	NA	<1000	<1000	NA	NA	<1000	<1000	<1000	<1000	<1000	<1000
Dissolved Selenium (Se)	ug/L	NG	NG	2	<5	<5	<5	ND	NA	<5	<5	<5	ND	NA	<5	<5	ND	NA	<5	<5	<5	<5	<5	<5
Dissolved Silicon (Si)	ug/L	NG	NG	100	1800	1800	1600	NA	NA	1000	800	800	NA	NA	2900	2800	NA	NA	6500	5500	1900	2400	3000	3400
Dissolved Silver (Ag)	ug/L	NG	NG	0.5	<0.1	<0.1	<0.1	ND	NA	<0.1	<0.1	<0.1	ND	NA	<0.1	<0.1	ND	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Sodium (Na)	ug/L	NG	NG	500	1300	1100	1200	NA	NA	<500	<500	<500	NA	NA	600	<500	NA	NA	<500	<500	<500	<500	500	600
Dissolved Strontium (Sr)	ug/L	NG	NG	5	7	7	7	ND	NA	3	3	3	18	NA	0.011	9	11	NA	12	11	9	9	7	11
Dissolved Thallium (Tl)	ug/L	NG	NG	0.1	<0.3	<0.3	<0.3	ND	NA	<0.3	<0.3	<0.3	ND	NA	<0.3	<0.3	ND	NA	<0.3	<0.0003	<0.0003	<0.3	<0.3	<0.3
Dissolved Tin (Sn)	ug/L	NG	NG	2	<1	<1	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	ND	NA	<1	<1	<1	<1	<1	<1
Dissolved Titanium (Ti)	ug/L	NG	NG	2	<2	<2	<2	ND	NA	<2	<2	<2	ND	NA	<2	<2	ND	NA	<2	<2	<2	<2	<2	<2
Dissolved Tungsten (W)	ug/L	NG	NG	10	<10	<10	<10	NA	NA	<10	<10	<10	NA	NA	<10	<10	NA	NA	<10	<10	<10	<10	<10	<10
Dissolved Uranium (U)	ug/L	NG	NG	0.1	<5	<5	<5	ND	NA	<5	<5	<5	ND	NA	<5	<5	0.4	NA	<5	<5	<5	<5	<5	<5
Dissolved Vanadium (V)	ug/L	NG	NG	2	<1	<1	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	ND	NA	3	<1	<1	<1	1	<1
Dissolved Zinc (Zn)	ug/L	NG	NG	5	<6	6	<3	20	NA	3	7	<3	ND	NA	5	<3	5	NA	<3	<3	3	4	<3	3
Dissolved Zirconium (Zr)		NG	NG	4	<4	<4	<4	NA	NA	<4	<4	<4	NA	NA	<4	<4	NA	NA	<4	<4	<4	<4	<4	<4

All results expressed as indicated
RDL+ - Analytical Reportable Detection Limit
CWQG, FWAL = CCME Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (2006 Update)
GCDWQ = CCME Canadian Water Quality Guidelines for Drinking Water Quality

334	Exceeds CCME FWAL Standards
334	Exceeds GCDWQ Standards
ND = Not detected	N/A = Not Applicable
NA = Not Analyzed	
NG = No Guidelines	
* Aesthetic Objective	** Interim Maximum Acceptable Concentration

Table 3
Water Analytical Results - Inorganics
James Property, Labrador Iron Mines, Schefferville Project, Labrador

Parameter	Units	CCME FWAL	CCME DW	RDL+	JP1			JP2			JP3		JP4					JP5				JP6	
Sampling Date					*4/26/2007*	*9/23/2007*	*9/13/2008*	*4/26/2007*	*9/23/2007*	*9/13/2008*	*4/26/2007*	*9/13/2008*	*4/26/2007*	*9/23/2007*	*3/31/2008*	*6/9/2008*	*9/13/2008*	*4/26/2007*	*9/23/2007*	*3/31/2008*	9/14/2008	*6/9/2008*	*9/13/2008*
INORGANICS																							
Total Alkalinity (Total as CaCO3)	mg/L	NG	NG	5	76	71	73	73	74	74	81	23	10	11	14	<10	10	69	75	<10	70	13	22
Dissolved Chloride (Cl)	mg/L	NG	NG	1	1	ND	<2	1	ND	<2	1	<2	ND	ND	<2	<2	<2	ND	ND	<2	<2	<2	<2
Colour	TCU	NG	≤15*	5	ND	ND	5	ND	ND	4	ND	6	ND	ND	<1	<1	4	ND	ND	1	4	2	<1
Total Dissolved Solids	mg/L	NG	NG	10	88	NA	420	90	NA	80	89	90	39	NA	<20	<20	<20	91	NA	70	120	30	30
Hardness (CaCO3)	mg/L	NG	NG	1	77	81	83	75	89	88	87	31	14	12	23	11	13	78	86	110	73	19	28
Nitrate + Nitrite	mg/L	NG	NG	0.05	0.27	0.09	0.2	0.24	0.27	0.2	0.24	<0.2	0.24	0.24	0.2	0.3	0.2	0.33	0.27	0.4	0.2	0.2	0.2
Nitrite (N)	mg/L	0.06	NG	0.01	ND	NA	<0.1	ND	NA	<0.1	ND	<0.1	ND	NA	<0.1	<0.1	<0.1	ND	NA	<0.1	<0.1	<0.1	<0.1
Nitrogen (Ammonia Nitrogen)	mg/L	NG	NG	0.05	ND	0.06	0.06	ND	0.07	0.07	ND	0.05	ND	0.06	<0.05	<0.05	0.06	ND	0.07	<0.05	0.09	0.06	<0.05
Dissolved Organic Carbon (C)	mg/L	NG	NG	0.5	ND	ND	<1	ND	ND	2	0.6	<1	0.7	ND	<1	<1	1	ND	ND	<1	<1	<1	1
Total Organic Carbon (C)	mg/L	NG	NG	0.5	ND	0.5	<1	0.5	ND	3	0.5	<1	ND	ND	NA	<1	<1	0.9	ND	NA	<1	NA	<1
Orthophosphate (P)	mg/L	NG	NG	0.01	ND	ND	0.003	ND	ND	0.003	ND	<0.003	ND	ND	<0.003	0.003	<0.003	ND	ND	0.004	<0.003	<0.003	0.004
pH	pH	6.5 - 9	6.5 - 8.5	N/A	7.98	7.9	8.11	8.17	7.93	8.13	8.44	7.47	7.09	6.81	7.22	6.91	6.97	7.99	7.88	8.09	7.98	7.54	7.12
Reactive Silica (SiO2)	mg/L	NG	NG	0.5	5.9	4.7	6.8	5.4	5.4	7.1	5.6	5.9	4.9	4.2	5.1	4.1	5.9	5.4	5.3	6.4	6.5	3.9	6.4
Dissolved Sulphate (SO4)	mg/L	NG	NG	2	6	5	7	6	6	7	6	2	ND	ND	<2	2	<2	6	6	7	7	2	4
Turbidity	NTU	NG	NG	0.1	0.3	0.5	0.49	0.2	0.7	0.46	ND	0.31	ND	0.2	0.12	0.14	0.14	0.4	1.2	0.17	0.72	0.12	0.10
Conductivity	uS/cm	NG	NG	1	160	140	146	150	150	144	170	42.4	29	23	25.2	23	23.9	160	150	151	141	36.5	48.5
Bromide	mg/L	NG	NG	0.1	NA	NA	<0.1	NA	NA	<0.1	NA	<0.1	NA	NA	<0.1	<0.1	<0.1	NA	NA	<0.1	<0.1	<0.1	<0.1
Fluoride	mg/L	NG	1.5	0.1	NA	NA	<0.1	NA	NA	<0.1	NA	<0.1	NA	NA	<0.1	<0.1	<0.1	NA	NA	<0.1	<0.1	<0.1	<0.1
RCAP CALCULATIONS																							
Nitrate (N)	mg/L	NG	45	N/A	0.27	NA	0.2	0.24	NA	0.2	0.24	0.1	0.24	NA	0.2	0.3	0.2	0.33	NA	0.4	0.2	0.2	0.2
Anion Sum	me/L	NG	NG	N/A	1.7	1.54	1.4	1.63	1.61	1.4	1.79	0.4	0.22	0.23	0.2	<0.1	0.2	1.53	1.64	1.4	1.3	0.3	0.5
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	NG	NG	1	75	70	72	71	73	73	79	23	10	11	14	<10	<10	68	74	70	69	13	22
Calculated TDS	mg/L	NG	≤500*	1	86	80	78	82	86	81	91	26	17	16	17	7	11	81	86	88	73	17	27
Carb. Alkalinity (calc. as CaCO3)	mg/L	NG	NG	1	ND	ND	<10	ND	ND	<10	2	<10	ND	ND	<10	<10	<10	ND	ND	<10	<10	<10	<10
Cation - Anion Balance	%	NG	NG	N/A	NA	NA	9.7	NA	NA	12.6	NA	Low EC	NA	NA	Low EC	Low EC	Low EC	NA	NA	24.2	5.2	Low EC	Low EC
Cation Sum	me/L	NG	NG	N/A	1.57	1.65	1.7	1.53	1.82	1.8	1.76	0.6	0.29	0.25	0.5	0.2	0.3	1.59	1.75	2.2	1.5	0.4	0.6
Conductivity % Difference	%	NG	NG	N/A	NA	NA	-0.5	NA	NA	5.4	NA	21.0	NA	NA	33.2	-33.9	-5.8	NA	NA	12.8	-5.8	-6.2	7.4
Computed Conductivity	uS/cm	NG	NG	N/A	NA	NA	145	NA	NA	152	NA	52.4	NA	NA	35.2	16.3	22.6	NA	NA	172	133	34.3	52.2
Ion Balance (% Difference)	%	NG	NG	N/A	3.98	3.45	122	3.16	6.12	129	0.85	Low EC	13.7	4.17	Low EC	Low EC	Low EC	1.92	3.24	164	111	Low EC	Low EC
Langelier Index (@ 20C)	N/A	NG	NG	N/A	-0.245	-0.381	-0.2	-0.085	-0.295	-0.1	0.28	-1.6	-2.74	-3.06	-2.1	-6.5	-2.9	-0.269	-0.354	0	-0.4	-2	-2.1
Langelier Index (@ 4C)	N/A	NG	NG	N/A	-0.496	-0.633	NA	-0.336	-0.546	NA	0.029	NA	-2.99	-3.31	NA	NA	NA	-0.52	-0.605	NA	NA	NA	NA
Saturation pH (@ 20C)	N/A	NG	NG	N/A	8.23	8.28	8.28	8.26	8.23	8.23	8.16	9.09	9.83	9.78	9.37	13.4	9.87	8.26	8.23	8.1	8.36	9.59	9.23
Saturation pH (@ 4C)	N/A	NG	NG	N/A	8.48	8.53	NA	8.51	8.48	NA	8.41	NA	10.1	10.1	NA	NA	NA	8.51	8.49	NA	NA	NA	NA

All results expressed as indicated

RDL+ - Analytical Reportable Detection Limit

CWQG, FWAL = CCME Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (2006 Update)

GCDWQ DW = CCME Canadian Water Quality Guidelines for Drinking Water Quality

334 Exceeds CWQG FWAL Standards

334 Exceeds GCDWQ Standards

ND = Not detected

NC = Non-calculable

NG = No Guideline

NA = Not Analysed

N/A = Not Applicable

Table 4
Surface Water Analytical Results - Metals
James Property, Labrador Iron Mines, Schefferville Project, Labrador

Parameter	Units	Criteria 1	Criteria 2	RDL+	JP1			JP2			JP3		JP4					JP5				JP6	
		CCME FWAL	CCME DW																				
Sampling Date					*26-Apr-07*	*9/23/2007*	*9/13/2008*	*26-Apr-07*	*9/23/2007*	*9/13/2008*	*26-Apr-07*	*9/13/2008*	*26-Apr-07*	*9/23/2007*	*31-Mar-08*	*9-Jun-08*	*9/13/2008*	*26-Apr-07*	*9/23/2007*	*31-Mar-08*	*14-Sep-08*	*9-Jun-08*	*9/13/2008*
Total Metals																							
Total Aluminum (Al)	ug/L	5-100	100	10	ND	NA	<10	ND	NA	<10	ND	20	ND	NA	20	<10	<10	ND	NA	50	<10	<10	<10
Total Antimony (Sb)	ug/L	NG	6**	2	ND	NA	<5	ND	NA	<5	ND	<5	ND	NA	<5	<5	<5	ND	NA	<5	<5	<5	<5
Total Arsenic (As)	ug/L	5	10	2	ND	NA	<1	ND	NA	<1	ND	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	<1	<1
Total Barium (Ba)	ug/L	NG	1000	5	ND	NA	<10	ND	NA	<10	ND	<10	ND	NA	<10	<10	<10	ND	NA	<10	<10	<10	<10
Total Beryllium (Be)	ug/L	NG	NG	2	ND	NA	<1	ND	NA	<1	ND	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	<1	<1
Total Bismuth (Bi)	ug/L	NG	NG	2	ND	NA	<1	ND	NA	<1	ND	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	<1	<1
Total Boron (B)	ug/L	NG	5000**	5	ND	NA	<50	ND	NA	<50	ND	<50	ND	NA	<50	<50	<50	ND	NA	<50	<50	<50	<50
Total Cadmium (Cd)	ug/L	0.017	5	0.3	ND	NA	<0.1	ND	NA	<0.1	ND	<0.1	ND	NA	<0.1	<0.1	<0.1	ND	NA	<0.1	<0.1	<0.1	<0.1
Total Calcium (Ca)	ug/L	NG	NG	100	17000	16000	15900	17000	18000	17600	19000	7000	2900	2400	5900	2000	2500	17000	17000	25100	15000	3800	5300
Total Chromium (Cr)	ug/L	NG	50	2	ND	NA	<1	ND	NA	<1	ND	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	<1	<1
Total Cobalt (Co)	ug/L	NG	NG	1	ND	NA	<0.5	ND	NA	<0.5	ND	<0.5	ND	NA	<0.5	<0.5	<0.5	ND	NA	<0.5	<0.5	<0.5	<0.5
Total Copper (Cu)	ug/L	2-4	≤1000*	2	ND	ND	<1	ND	ND	<1	ND	<1	ND	ND	<1	<1	<1	ND	ND	<1	<1	<1	<1
Total Iron (Fe)	ug/L	300	≤300*	50	ND	40	80	ND	30	80	ND	110	ND	ND	<50	<50	50	ND	30	<50	110	<50	<50
Total Lead (Pb)	ug/L	1-7	10	0.5	ND	NA	<1	ND	NA	<1	ND	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	<1	<1
Total Magnesium (Mg)	ug/L	NG	NG	100	11000	9900	10600	11000	11000	10800	12000	3200	1900	1600	1900	1400	1700	11000	11000	11400	10200	2400	3700
Total Manganese (Mn)	ug/L	NG	≤50	2	10	ND	21	7	NA	13	ND	36	8	ND	15	4	16	21	10	**57**	20	9	2
Total Mercury (Hg)	ug/L	NG	1	0.01	ND	NA	<0.1	ND	NA	<0.1	ND	<0.1	ND	NA	<0.1	<0.1	<0.1	ND	NA	<0.1	<0.1	<0.1	<0.1
Total Molybdenum (Mo)	ug/L	73	NG	2	ND	NA	<1	ND	NA	<1	ND	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	<1	<1
Total Nickel (Ni)	ug/L	25-150	NG	2	ND	NA	<2	ND	NA	<2	ND	<2	ND	NA	<2	<2	<2	ND	NA	<2	<2	<2	<2
Total Phosphorus (P)	ug/L	NG	NG	100	ND	NA	<50	ND	NA	<50	ND	<50	ND	NA	<50	30	<50	ND	NA	<50	<50	30	<50
Total Potassium (K)	ug/L	NG	NG	100	500	400	<1000	500	500	<1000	400	<1000	200	100	<1000	<1000	<1000	500	400	<1000	<1000	<1000	<1000
Total Selenium (Se)	ug/L	1	10	2	ND	NA	<5	ND	NA	<5	ND	<5	ND	NA	<5	<5	<5	ND	NA	<5	<5	<5	<5
Total Silicon (Si)	ug/L	NG	NG	100	NA	NA	3200	NA	NA	3300	NA	2800	NA	NA	2400	2000	2800	NA	NA	3000	3100	1800	3000
Total Silver (Ag)	ug/L	NG	NG	0.5	ND	NA	0.6	ND	NA	0.8	ND	0.8	ND	NA	<0.1	<0.1	0.7	ND	NA	<0.1	<0.1	<0.0001	0.9
Total Sodium (Na)	ug/L	NG	≤200000*	100	500	600	<500	600	400	<500	500	<500	200	ND	<500	<500	<500	600	400	600	<500	<500	<500
Total Strontium (Sr)	ug/L	NG	NG	5	7	NA	7	7	NA	9	7	4	ND	NA	4	2	2	7	NA	13	8	3	2
Total Thallium (Tl)	ug/L	0.8	NG	0.1	ND	NA	<0.3	ND	NA	<0.3	ND	<0.3	ND	NA	<0.3	<0.3	<0.3	ND	NA	<0.3	<0.3	<0.3	<0.3
Total Tin (Sn)	ug/L	NG	NG	2	ND	NA	<1	ND	NA	<1	ND	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	<1	<1
Total Titanium (Ti)	ug/L	NG	NG	2	ND	NA	<2	ND	NA	<2	ND	<2	ND	NA	<2	<2	<2	ND	NA	<2	<2	<2	<2
Tungsten (W)-Total	ug/L	NG	NG	10	NA	NA	<10	NA	NA	<10	NA	<10	NA	NA	<10	<10	<10	NA	NA	<10	<10	<10	<10
Total Uranium (U)	ug/L	NG	20**	0.1	0.2	NA	<5	0.2	NA	<5	0.2	<5	ND	NA	<5	<5	<5	0.1	NA	<5	<5	<5	<5
Total Vanadium (V)	ug/L	NG	NG	2	ND	NA	<1	ND	NA	<1	ND	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	<1	<1
Total Zinc (Zn)	ug/L	30	≤5000*	5	6	ND	7	8	ND	21	5	34	ND	ND	**41**	<3	<3	5	ND	**153**	<3	<3	7
Zirconium (Zr)-Total	ug/L	NG	NG	4	NA	NA	<4	NA	NA	<4	NA	<4	NA	NA	<4	<4	<4	NA	NA	<4	<4	<4	<4
Dissolved Metals																							
Dissolved Aluminum (Al)	ug/L	5-100	100	10	ND	NA	<10	ND	NA	<10	ND	<10	ND	NA	<10	<10	<10	ND	NA	<10	<10	<10	<10
Dissolved Antimony (Sb)	ug/L	NG	NG	2	ND	NA	<5	ND	NA	<5	ND	<5	ND	NA	<5	<5	<5	ND	NA	<5	<5	<5	<5
Dissolved Arsenic (As)	ug/L	5	25	2	ND	NA	<1	ND	NA	<1	ND	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	<1	<1
Dissolved Barium (Ba)	ug/L	NG	1000	5	ND	NA	<10	ND	NA	<10	ND	<10	ND	NA	<10	<10	<10	ND	NA	<10	<10	<10	<10
Dissolved Beryllium (Be)	ug/L	NG	NG	2	ND	NA	<1	ND	NA	<1	ND	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	<1	<1
Dissolved Bismuth (Bi)	ug/L	NG	NG	2	ND	NA	<1	ND	NA	<1	ND	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	<1	<1
Dissolved Boron (B)	ug/L	NG	5000	5	ND	NA	<50	ND	NA	<50	ND	<50	ND	NA	<50	<50	<50	ND	NA	<50	<50	<50	<50
Dissolved Cadmium (Cd)	ug/L	0.017	5	0.3	ND	NA	<0.1	ND	NA	<0.1	ND	<0.1	ND	NA	<0.1	<0.1	<0.1	ND	NA	<0.1	<0.1	<0.1	<0.1
Dissolved Calcium (Ca)	ug/L	NG	NG	500	NA	NA	14200	NA	NA	15100	NA	4100	NA	NA	2800	1900	2300	NA	NA	16000	13700	3800	4200
Dissolved Chromium (Cr)	ug/L	NG	50	2	ND	NA	<1	ND	NA	<1	ND	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	<1	<1
Dissolved Cobalt (Co)	ug/L	NG	NG	1	ND	NA	<0.5	ND	NA	<0.5	ND	<0.5	ND	NA	<0.5	<0.5	<0.5	ND	NA	<0.5	<0.5	<0.5	<0.5
Dissolved Copper (Cu)	ug/L	2.4	<1000	2	ND	NA	<1	ND	NA	<1	ND	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	<1	<1
Dissolved Iron (Fe)	ug/L	300	<300	50	ND	NA	<50	ND	NA	<50	ND	<50	ND	NA	<50	<50	<50	ND	NA	<50	<50	<50	<50
Dissolved Lead (Pb)	ug/L	1-7	10	0.5	ND	NA	<1	ND	NA	<1	ND	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	<1	<1
Dissolved Magnesium (Mg)	ug/L	NG	NG	500	NA	NA	10100	NA	NA	11400	NA	3100	NA	NA	1800	1300	1700	NA	NA	10700	9400	2600	3500
Dissolved Manganese (Mn)	ug/L	NG	NG	2	3	NA	<1	ND	NA	<1	ND	22	6	NA	<1	3	8	17	NA	6	<1	3	1
Mercury Dissolved (Hg)	ug/L		0.001	0.1	NA	NA	<0.1	NA	NA	<0.1	NA	<0.1	NA	NA	<0.1	<0.1	<0.1	NA	NA	<0.1	<0.1	<0.1	<0.1
Dissolved Molybdenum (Mo)	ug/L	73	NG	2	ND	NA	<1	ND	NA	<1	ND	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	<1	<1
Dissolved Nickel (Ni)	ug/L	25-150	NG	2	ND	NA	<2	ND	NA	<2	ND	<2	ND	NA	<2	<2	<2	ND	NA	<2	<2	<2	<2
Dissolved Phosphorus (P)	ug/L		NG	50	NA	NA	<50	NA	NA	<50	NA	<50	NA	NA	<50	<50	<50	NA	NA	<50	<50	<50	<50
Dissolved Potassium (K)	ug/L	NG	NG	1000	NA	NA	<1000	NA	NA	<1000	NA	<1000	NA	NA	<1000	<1000	<1000	NA	NA	<1000	<1000	<1000	<1000
Dissolved Selenium (Se)	ug/L	1	10	2	ND	NA	<5	ND	NA	<5	ND	<5	ND	NA	<5	<5	<5	ND	NA	<5	<5	<5	<5
Dissolved Silicon (Si)	ug/L	NG	NG	100	NA	NA	3700	NA	NA	3500	NA	2700	NA	NA	2400	1900	2800	NA	NA	3000	3100	1800	3100
Dissolved Silver (Ag)	ug/L	NG	NG	0.5	ND	NA	<0.1	ND	NA	<0.1	ND	<0.1	ND	NA	<0.1	<0.1	<0.1	ND	NA	<0.1	<0.1	<0.0001	<0.1
Dissolved Sodium (Na)	ug/L		<200	500	NA	NA	<500	NA	NA	<500	NA	<500	NA	NA	<500	<500	<500	NA	NA	500	<500	<500	<500
Dissolved Strontium (Sr)	ug/L	NG	NG	5	7	NA	7	6	NA	7	7	2	ND	NA	3	3	2	7	NA	7	8	2	2
Dissolved Thallium (Tl)	ug/L	0.8	NG	0.1	ND	NA	<0.3	ND	NA	<0.3	ND	<0.3	ND	NA	<0.3	<0.3	<0.3	ND	NA	<0.3	<0.3	<0.3	<0.3
Dissolved Tin (Sn)	ug/L	NG	NG	2	ND	NA	<1	ND	NA	<1	ND	<1	ND	NA	<1	<1	<1	ND	NA	<1	<1	<1	<1
Dissolved Titanium (Ti)	ug/L	NG	NG	2	ND	NA	<2	ND	NA	<2	ND	<2	ND	NA	<2	<2	<2	ND	NA	<2	<2	<2	<2
Dissolved Tungsten (W)	ug/L	NG	NG	10	NA	NA	<10	NA	NA	<10	NA	<10	NA	NA	<10	<10	<10	NA	NA	<10	<10	<10	<10
Dissolved Uranium (U)	ug/L	NG	NG	0.1	0.2	NA	<5	0.2	NA	<5	0.2	<5	ND	NA	<5	<5	<5	0.2	NA	<5	<5	<5	<5
Dissolved Vanadium (V)	ug/L	NG	NG	2	ND	NA	1	ND	NA	<1	ND	<1	ND	NA	<1	<1	<1	ND	NA	1	<1	<1	<1
Dissolved Zinc (Zn)	ug/L	30	<5000	5	ND	NA	3	ND	NA	<3	ND	<3	ND	NA	<3	4	<3	ND	NA	<3	<3	<3	3
Dissolved Zirconium (Zr)		NG	NG	4	NA	NA	<4	NA	NA	<4	NA	<4	NA	NA	<4	<4	<4	NA	NA	<4	<4	<4	<4

All results expressed as indicated

RDL+ - Analytical Reportable Detection Limit

CWQG, FWAL = CCME Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (2006 Update)

GCDWQ DW = CCME Canadian Water Quality Guidelines for Drinking Water Quality

334	Exceeds CWQG FWAL Standards
334	Exceeds GCDWQ Standards
ND = Not detected	N/A = Not Applicable
NA = Not Analyzed	NG = No Guideline
* Aesthetic Objective	** Interim Maximum Acceptable Concentration

Table 5
Water Analytical Results - Inorganics
Offsite Property Samples, Labrador Iron Mines, Schefferville Project, Labrador

Parameter	Units	CWQG FWAL	GCWDG	RDL+	Spring			Slimy L.		Bean L. Outlet		Bean L.		Ruth Outet			Ruth Pit
Sampling Date					3/31/2008	7/6/2008	9/15/2008	7/6/2008	9/15/2008	6/6/2008	*9/14/2008*	4/3/2008	*9/13/2008*	4/1/2008	6/10/2008	9/14/2008	9/14/2008
INORGANICS																	
Total Alkalinity (Total as CaCO3)	mg/L	NG	NG	5	78	75	67	66	71	63	74	57	70	59	55	55	53
Dissolved Chloride (Cl)	mg/L	NG	NG	1	<2	<2	<2	7	<2	<2	<2	<2	7	<2	2	<2	<2
Colour	TCU	NG	≤15*	5	<1	2	15	4	5	3	4	2	5	<1	4	2	3
Total Dissolved Solids	mg/L	NG	NG	10	70	90	120	80	120	80	110	50	120	50	30	110	100
Hardness (CaCO3)	mg/L	NG	NG	1	140	108	80	74	74	73	71	82	69	76	66	66	65
Nitrate + Nitrite	mg/L	NG	NG	0.05	0.4	0.4	0.2	0.3	0.2	0.2	<0.2	0.5	<0.2	0.3	0.3	0.2	0.2
Nitrite (N)	mg/L	0.06	NG	0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrogen (Ammonia Nitrogen)	mg/L	NG	NG	0.05	<0.05	0.07	0.10	0.06	0.07	0.07	0.08	<0.05	0.07	0.06	<0.05	0.07	0.18
Dissolved Organic Carbon (C)	mg/L	NG	NG	0.5	<1	<1	<1	<1	<1	6.3	<1	<1	1	<1	<1	<1	<1
Total Organic Carbon (C)	mg/L	NG	NG	0.5	NA	<1	6	<1	<1	8	<1	NA	<1	NA	<1	2	<1
Orthophosphate (P)	mg/L	NG	NG	0.01	0.01	0.005	<0.003	0.004	0.003	<0.003	<0.003	<0.003	<0.003	0.003	0.005	<0.003	<0.003
pH	pH	6.5 - 9	6.5 - 8.5	N/A	8.13	8.09	8.05	8.01	8.06	7.99	8.10	7.73	8.05	7.97	8.04	8.06	8.05
Reactive Silica (SiO2)	mg/L	NG	NG	0.5	7	6.2	6.1	4.8	6.6	5.8	6.5	6.3	6.2	6.2	5.5	5.0	5.2
Dissolved Sulphate (SO4)	mg/L	NG	NG	2	7	7	7	7	7	6	6	7	6	7	7	6	6
Turbidity	NTU	NG	NG	0.1	<0.1	0.28	3.8	0.69	0.85	0.42	0.58	0.52	0.59	0.19	1.9	0.44	0.62
Conductivity	uS/cm	NG	NG	1	160	154	137	145	144	134	139	127	136	131	119	117	118
Bromide	mg/L	NG	NG	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoride	mg/L	NG	1.5	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
RCAP CALCULATIONS																	
Nitrate (N)	mg/L	NG	45	N/A	0.4	0.4	0.2	0.3	0.2	0.02	<0.1	0.4	<0.1	0.3	0.3	0.2	0.2
Anion Sum	me/L	NG	NG	N/A	1.5	1.4	1.3	1.5	1.3	1.2	1.4	1.1	1.5	1.1	1.1	1.1	1
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	NG	NG	1	77	74	66	65	70	2	73	57	69	58	55	54	52
Calculated TDS	mg/L	NG	≤500*	1	104	90	74	79	74	68	73	70	77	69	65	61	60
Carb. Alkalinity (calc. as CaCO3)	mg/L	NG	NG	1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Cation - Anion Balance	%	NG	NG	N/A	31.4	20.7	12.5	1.1	4.9	10.9	2.8	19	-3.6	15.1	8.1	12.2	13.2
Cation Sum	me/L	NG	NG	N/A	2.8	2.2	1.6	1.5	1.5	1.5	1.4	1.6	1.4	1.6	1.3	1.3	1.3
Conductivity % Difference	%	NG	NG	N/A	24.9	11.1	1.8	0.8	-6.8	-4.8	1.4	6	1.4	-0.2	2.2	-0.5	-3.1
Computed Conductivity	uS/cm	NG	NG	N/A	205	172	139	146	135	128	132	135	140	131	122	116	114
Ion Balance (% Difference)	%	NG	NG	N/A	191	152	129	102	110	124	106	147	93.1	136	118	128	130
Langelier Index (@ 20C)	N/A	NG	NG	N/A	0.2	0	-0.3	-0.3	-0.3	-0.4	-0.2	-0.6	-0.3	-0.4	-0.5	-0.4	-0.5
Langelier Index (@ 4C)	N/A	NG	NG	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Saturation pH (@ 20C)	N/A	NG	NG	N/A	7.92	8.06	8.34	8.32	8.35	8.38	8.33	8.34	8.38	8.38	8.49	8.49	8.51
Saturation pH (@ 4C)	N/A	NG	NG	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

All results expressed as indicated
RDL+ - Analytical Reportable Detection Limit
CWQG, FWAL = CCME Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (2006 Update)
GCDWQ = CCME Canadian Water Quality Guidelines for Drinking Water Quality

334	Exceeds CWQG FWAL Standards
334	Exceeds GCDWQ Standards

ND = Not detected
NC = Non-calculable
NG = No Guideline
NA = Not Analysed
N/A = Not Applicable

Table 6
Surface Water Analytical Results - Metals
Offsite Property Samples, Labrador Iron Mines, Schefferville Project, Labrador

Parameter	Units	Criteria 1	Criteria 2	RDL+	Spring			Slimy L.		Bean L. Outlet		Bean L.		Ruth Outlet			Ruth Pit
		CWGQ FWAL	GCDWQ														
Sampling Date					*31-Mar-08*	*06-Jul-08*	*15-Sep-08*	*06-Jul-08*	*15-Sep-08*	*6-Jun-08*	*14-Sep-08*	*3-Apr-08*	*13-Sep-08*	*1-Apr-08*	*10-Jun-08*	*14-Sep-08*	*14-Sep-08*
Total Metals																	
Total Aluminum (Al)	ug/L	5-100	100	10	**160**	20	100	20	<10	<10	<10	30	<10	<10	30	<10	<10
Total Antimony (Sb)	ug/L	NG	6**	2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Arsenic (As)	ug/L	5	10	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Barium (Ba)	ug/L	NG	1000	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total Beryllium (Be)	ug/L	NG	NG	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Bismuth (Bi)	ug/L	NG	NG	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Boron (B)	ug/L	NG	5000**	5	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Total Cadmium (Cd)	ug/L	0.017	5	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Calcium (Ca)	ug/L	NG	NG	100	36000	26200	14900	15800	15000	14400	14800	17700	14800	15400	12600	12500	12500
Total Chromium (Cr)	ug/L	NG	50	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Cobalt (Co)	ug/L	NG	NG	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Copper (Cu)	ug/L	2-4	≤1000*	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Iron (Fe)	ug/L	300	≤300*	50	60	<50	170	<50	100	110	100	70	160	<50	60	<50	<50
Total Lead (Pb)	ug/L	1-7	10	0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Magnesium (Mg)	ug/L	NG	NG	100	12100	10300	10500	8500	10200	9100	10200	9300	10300	9100	8300	8400	8100
Total Manganese (Mn)	ug/L	NG	≤50	2	**54**	14	42	33	24	17	17	**51**	28	3	2	1	1
Total Mercury (Hg)	ug/L	NG	1	0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Molybdenum (Mo)	ug/L	73	NG	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Nickel (Ni)	ug/L	25-150	NG	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Total Phosphorus (P)	ug/L	NG	NG	100	<50	<50	<50	<50	<50	40	<50	<50	<50	<50	30	<50	<50
Total Potassium (K)	ug/L	NG	NG	100	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Total Selenium (Se)	ug/L	1	10	2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Silicon (Si)	ug/L	NG	NG	100	3100	2900	2800	2000	3100	2500	3100	2900	2900	2700	2600	2700	2400
Total Silver (Ag)	ug/L	NG	NG	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.0001	<0.1	<0.1
Total Sodium (Na)	ug/L	NG	≤200000*	100	600	<500	500	<500	<500	<500	<500	<500	<500	700	600	600	600
Total Strontium (Sr)	ug/L	NG	NG	5	19	13	8	8	8	8	8	9	9	8	7	8	8
Total Thallium (Tl)	ug/L	0.8	NG	0.1	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total Tin (Sn)	ug/L	NG	NG	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Titanium (Ti)	ug/L	NG	NG	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Tungsten (W)-Total	ug/L	NG	NG	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total Uranium (U)	ug/L	NG	20**	0.1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Vanadium (V)	ug/L	NG	NG	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Zinc (Zn)	ug/L	30	≤5000*	5	**230**	85	<3	54	<3	<3	<3	**76**	<3	8	<3	<3	<3
Zirconium (Zr)-Total	ug/L	NG	NG	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Dissolved Metals																	
Dissolved Aluminum (Al)	ug/L	NG	NG	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dissolved Antimony (Sb)	ug/L	NG	NG	2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dissolved Arsenic (As)	ug/L	NG	NG	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Barium (Ba)	ug/L	NG	NG	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dissolved Beryllium (Be)	ug/L	NG	NG	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Bismuth (Bi)	ug/L	NG	NG	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Boron (B)	ug/L	NG	NG	5	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Dissolved Cadmium (Cd)	ug/L	NG	NG	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Calcium (Ca)	ug/L	NG	NG	500	18600	15700	14600	13800	13800	14600	13600	13900	12900	13800	12.2	11400	12200
Dissolved Chromium (Cr)	ug/L	NG	NG	2	<1	2	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Cobalt (Co)	ug/L	NG	NG	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Copper (Cu)	ug/L	NG	NG	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Iron (Fe)	ug/L	NG	NG	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Dissolved Lead (Pb)	ug/L	NG	NG	0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Magnesium (Mg)	ug/L	NG	NG	500	11700	9500	9600	8100	9500	9000	9100	9100	8900	9000	8300	8000	8000
Dissolved Manganese (Mn)	ug/L	NG	NG	2	<1	<1	4	<1	<1	<1	<1	36	<1	<1	<1	<1	<1
Mercury Dissolved (Hg)	ug/L	NG	NG	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Molybdenum (Mo)	ug/L	NG	NG	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Nickel (Ni)	ug/L	NG	NG	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Dissolved Phosphorus (P)	ug/L	NG	NG	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Dissolved Potassium (K)	ug/L	NG	NG	1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Dissolved Selenium (Se)	ug/L	NG	NG	2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dissolved Silicon (Si)	ug/L	NG	NG	100	3300	2900	2800	2200	3100	2700	3100	2900	2800	2900	2600	2500	2500
Dissolved Silver (Ag)	ug/L	NG	NG	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Sodium (Na)	ug/L	NG	NG	500	500	<500	500	<500	<500	<500	<500	500	<500	700	<500	600	600
Dissolved Strontium (Sr)	ug/L	NG	NG	5	7	6	8	7	8	8	8	7	8	87	7	7	7
Dissolved Thallium (Tl)	ug/L	NG	NG	0.1	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Dissolved Tin (Sn)	ug/L	NG	NG	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Titanium (Ti)	ug/L	NG	NG	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Dissolved Tungsten (W)	ug/L	NG	NG	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dissolved Uranium (U)	ug/L	NG	NG	0.1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dissolved Vanadium (V)	ug/L	NG	NG	2	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Zinc (Zn)	ug/L	NG	NG	5	<3	<3	<3	<3	<3	8	5	<3	4	<3	3	<3	<3
Dissolved Zirconium (Zr)		NG	NG	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4

All results expressed as indicated

RDL+ - Analytical Reportable Detection Limit

CWQG, FWAL = CCME Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (2006 Update)

GCDWQ = CCME Canadian Water Quality Guidelines for Drinking Water Quality

334	Exceeds CWQG FWAL Standards
334	Exceeds GCDWQ Standards
ND = Not detected	N/A = Not Applicable
NA = Not Analyzed	NG = No Guidance
* Aesthetic Objective	** Interim Maximum Acceptable Concentration

APPENDIX J

Hydrological Field Study Methods

Hydrological Field Survey Methods

WESA conducted a field survey at the Project site to monitor stream flow. Methods used by WESA to monitor stream flow at the Project site in 2008 are described.

Water Balance Approach

James Creek and Bean Lake are the focal points for the water balance assessment of the James Property since these are the closest surface waters features and because shallow groundwater from the site flows to the east/southeast, toward the lake. The approach taken with respect to the water balance involved measuring surface water flow into and out of the lake, estimating groundwater discharge to the lake, and incorporating evaporation data from available meteorological data sources.

Methodology

Methodologies and data sources used in determining the surface water inputs to the water balance are described in this section.

Surface Water

Velocity-Area Method of Discharge Calculation

The Velocity-Area Method of calculating stream discharge (Q) estimates Q as the product of flow velocity (V) and cross-sectional area (A):

$$Q=(V)(A)$$

In order to calculate the discharge of a channel, the channel cross-section must first be divided into several subsections. A tag line was set up perpendicular to the flow direction at each pre-selected gauging station to ensure accurate measurements of each subsection width. The stream depth was measured at these specific intervals across the stream, which allowed a stream profile to be constructed. From this profile, the cross-sectional area of the stream at the gauging site was determined. The average velocity of the cross-section was measured using the FP101 Global Flow Probe. The methodology outlined in the probe manual (Global Water, 2004) was utilized whereby the probe is moved in a serpentine pattern across the stream cross-section yielding a single average flow velocity. This average velocity was then multiplied by the cross-sectional area to determine stream discharge.

Continuous Stream Depth Measurement

Water level dataloggers were installed at five locations (SG-1, 2, 4, 5, and 8) on June 7, 2008. One additional datalogger was installed at SG-4 on July 7, 2008 to measure barometric pressure. Solinst® Levelogger® Gold Model 3001 and Barologger Gold dataloggers were used. These loggers are equipped with the datalogger, battery, pressure transducer, and temperature sensor. All loggers were programmed to record real-time data every 15 minutes which could be downloaded from the loggers using direct read cables.

Loggers at SG-1, 2, and 8 were installed in natural stream cross-sections using a length of 1.5-inch diameter ABS pipe extended horizontally from one bank to the other, perpendicular to the direction of flow. This pipe not only anchored the Levelogger, but also served as the tag line

used for cross-section measurements. A second length of ABS pipe was bolted vertically to the horizontal piece such that it extended down to the streambed. This vertical ABS pipe had holes drilled through it to allow water to pass into and through the pipe in order for the water depth inside the ABS to reflect the water level of the stream. The vertical ABS acted as a sort of "stilling-well" in which the Levelogger was contained. The Levelogger was secured inside the vertical ABS by attaching the direct read cable to it with zip-ties. The direct read cable was attached to the Levelogger and run along the ABS pipe (secured using zip-ties) to the shore where the other end remained on a spool to allow for easier downloading of the Levelogger. Figures 1 and 2 show leveloggers set up in a stream.

Figure 1 SG2 Stream Gauge Levelogger Looking Southeast

Figure 2 SG1 Stream Gauge Levellogger

Sites SG-4 and 5 required Leveloggers to be mounted in culverts using threaded steel rods. A hole was drilled in the top of the culvert through which the steel rod was inserted until it came in contact with the bottom of the culvert (Figure 3).

Figure 3 SG4 Levellogger Looking West

Precipitation

Precipitation was estimated using the meteorological data collected at the Schefferville Airport weather station from May to November 2008. This weather station is located approximately 4 km from the site. Weather patterns in the area can be extremely localized; consequently, the precipitation data for the Schefferville airport do not necessarily reflect the precipitation at Bean Lake on a day-to-day basis. However, it is assumed that over the course of a season, the precipitation at Schefferville would be a reasonable approximation of the amount of rainfall at Bean Lake, given the proximity of the site to the weather station and the similar elevations of each. Furthermore, a comparison of the James Property stream gauge data with the Schefferville precipitation data shows a qualitative correlation between higher levels of precipitation at Schefferville, and higher water levels in the monitored streams (Figures 4 to 7).

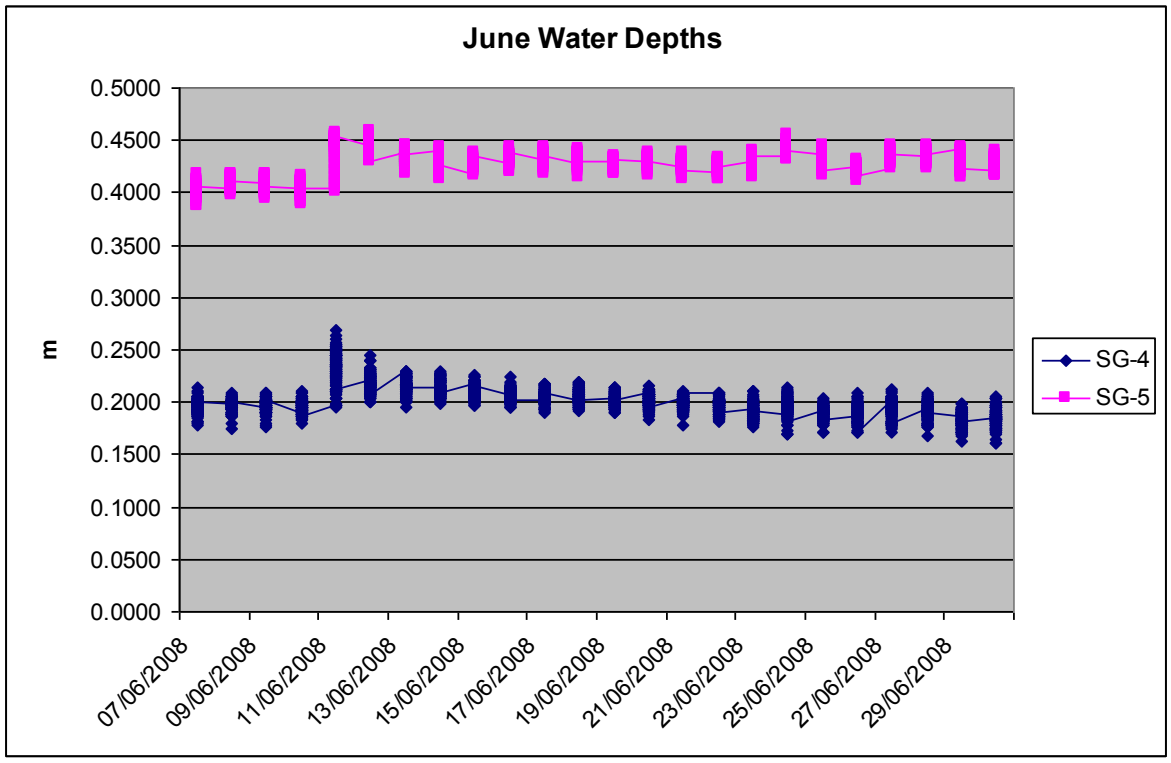


Figure 4 Stream Gauge Data, June 7 to 29

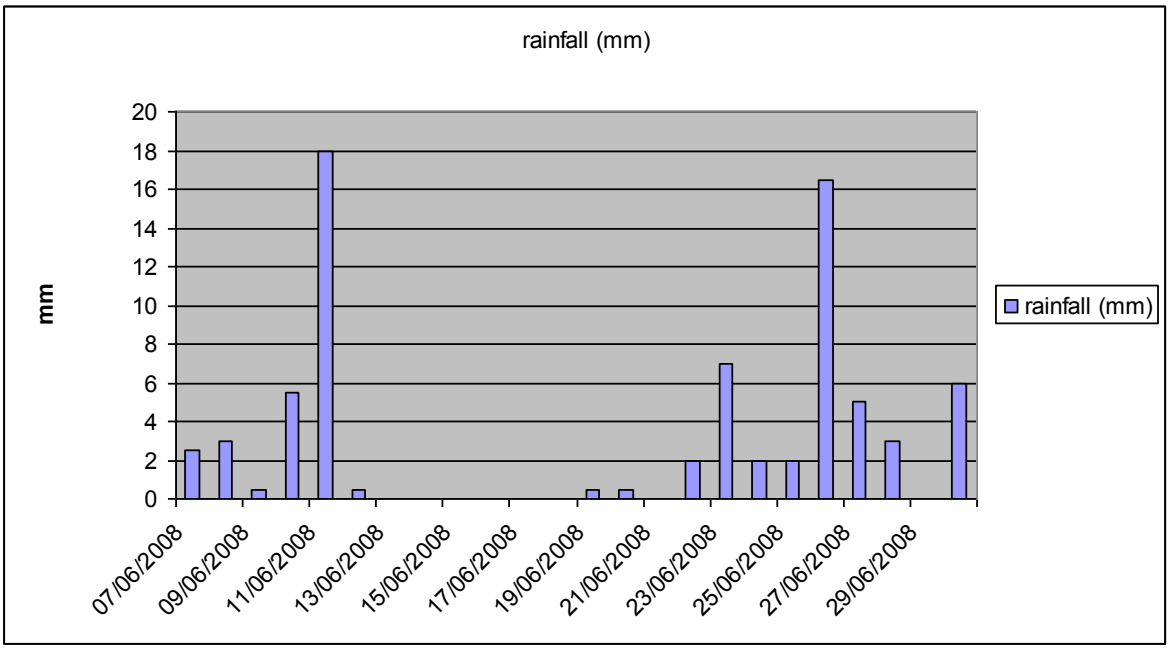


Figure 5 Rainfall Data, June 7 to 29

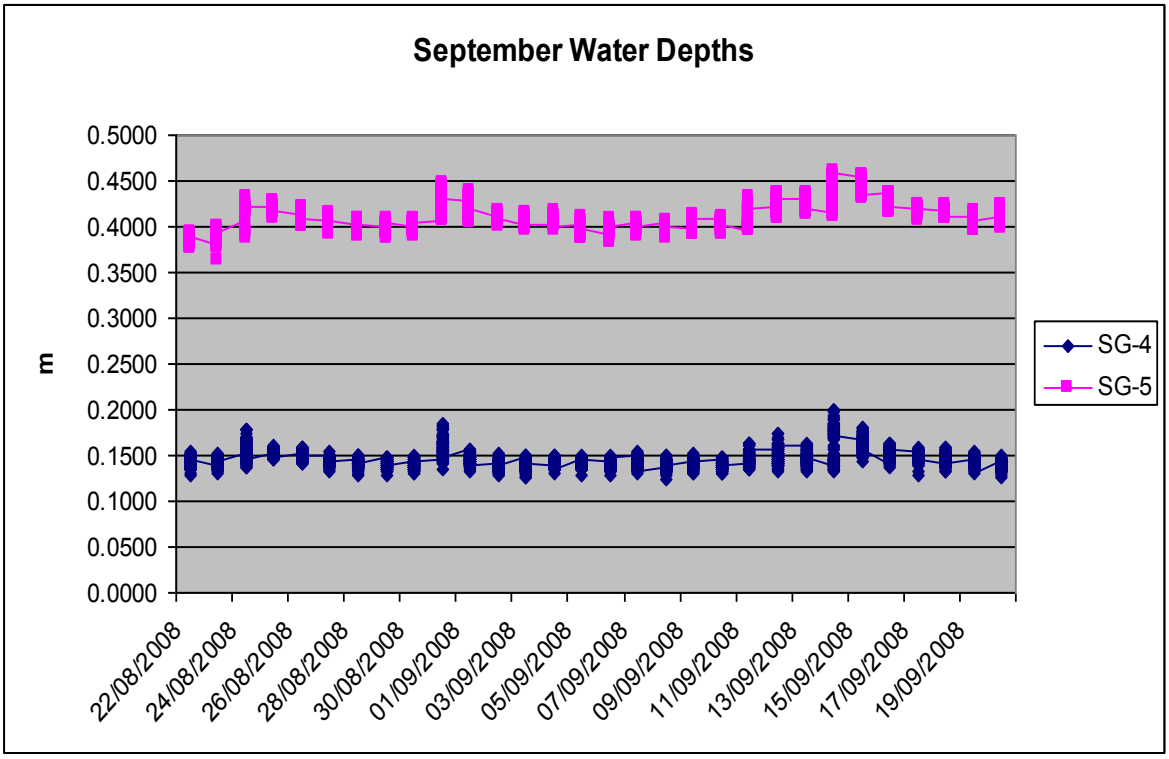


Figure 6 Stream Gauge Data, August 22 to September 19

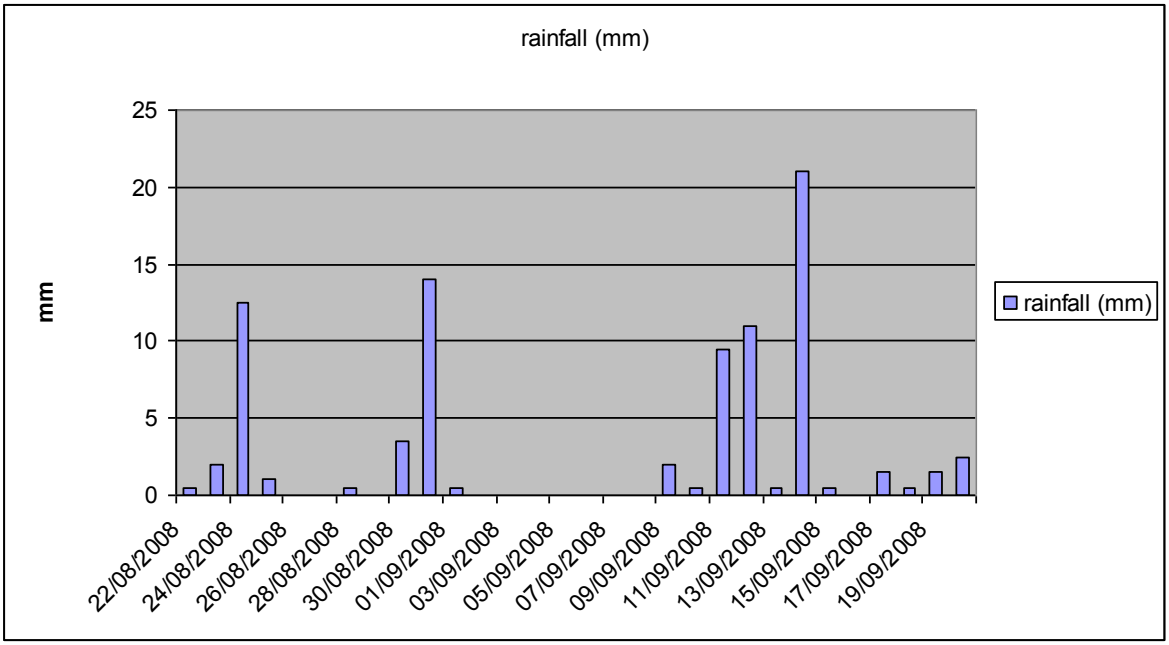


Figure 7 Rainfall Data, August 22 to September 19

Stream Gauges (James)

The stream gauges collected water level readings every 15 minutes. Water level readings were corrected for barometric pressure.

The locations of the stream gauges are described as follows:

SG-1: The northern of two springs in the proposed mine area (James North Spring). The stream gauge was installed in a stream about 3.3 m wide, with a depth of approximately 30 cm at its deepest point.

SG-2: The southern spring in the proposed mine area (James South Spring). This small stream is approximately 90 cm wide, with a depth of about 20 cm.

SG-4: The combined drainage of the two springs (unnamed tributary), just before it enters Bean Lake, passes through a culvert (formerly a 24" round culvert, now deformed such that the sides in the lower portion form a V-shape).

SG-8: The main inflow to Bean Lake (at the north end of the lake) is James Creek, a stream approximately 2.9 m wide and 30 cm deep.

SG-5: The outflow from Bean Lake passes through a 12 ft corrugated steel culvert.

The combined inflows to Bean Lake (surface and groundwater) and the combined outflows (surface water flow and evaporation) are presented in Figures 9 and 10.

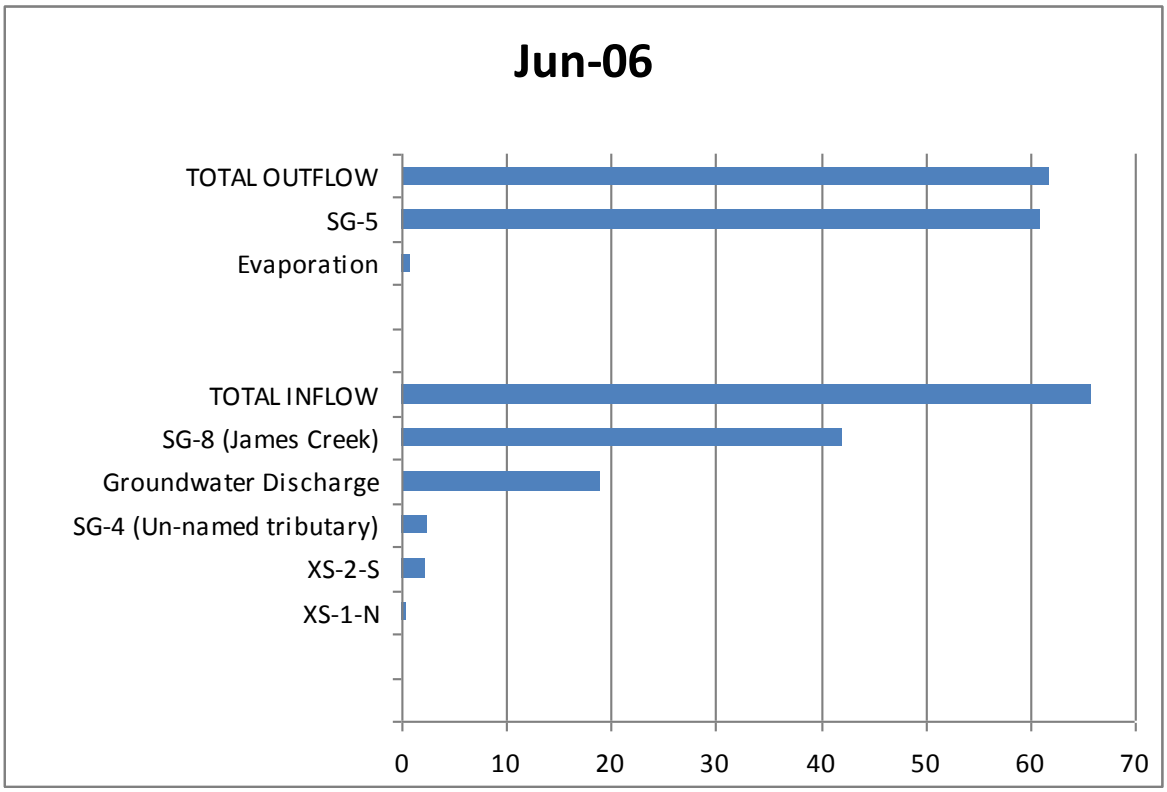


Figure 9 Components of the Water Balance for June 6

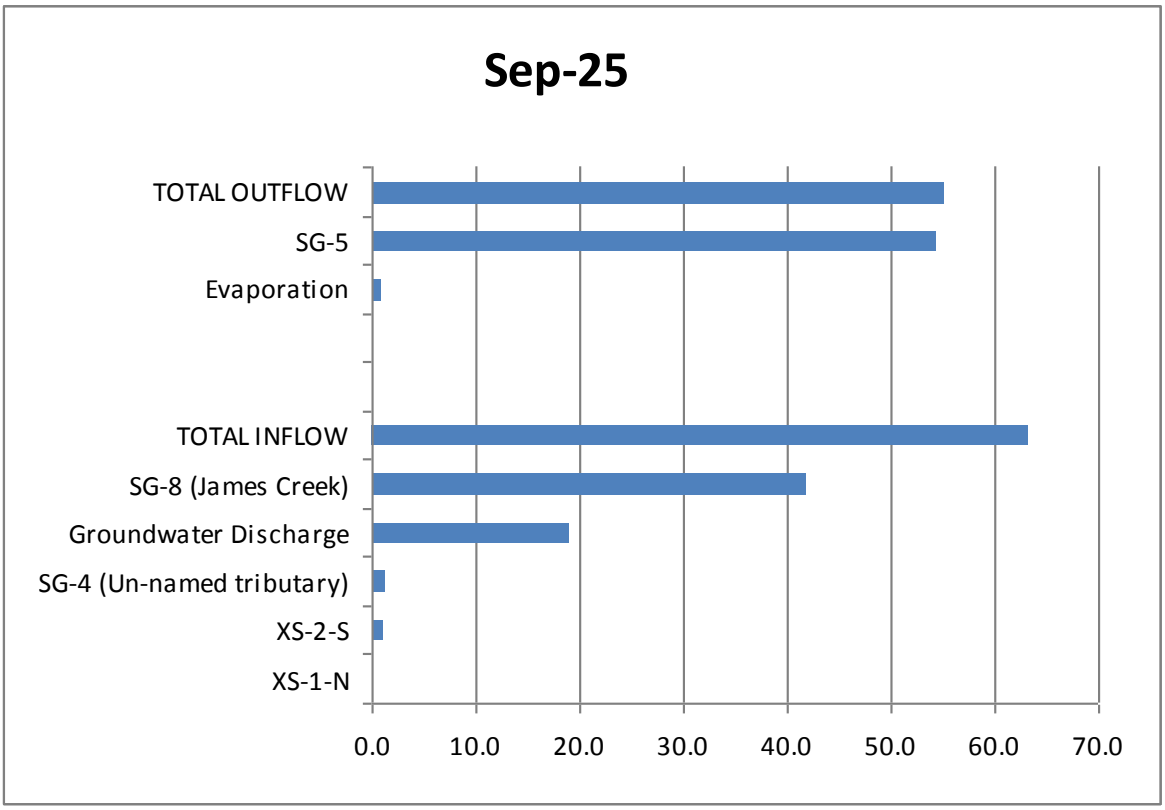


Figure 10 Components of the Water Balance for September 25

Comparison of Measured flow rates - for Theoretical Rates – James Creek and Bean Lake Watershed

Theoretical maximum runoff (R) estimates for the James Creek/Bean Lake watershed can be made by determining inputs to the watershed from precipitation (P) and subtracting the potential evapotranspiration (ET) based on the area of the watershed and published P and ET rates for the area. This approach assumes that any infiltration that occurs eventually discharges back to surface further along in the system.

The area of the watershed is estimated to be 1305 hectares. Precipitation data obtained from Environment Canada for the area for the period of 1949 to 2007 indicates average annual precipitation of 775 mm. A potential ET rate for the area of 375 mm was obtained from the Newfoundland and Labrador Water Atlas. Using these values yields an average annual runoff value of 5222504 m^3. This works out to 28230 m^3/day using a six month period as a basis and 14308 m^3/day over a twelve month period. These maximum theoretical values are considerably lower than the stream flow rates that were measured in James Creek from June to October 2008 if the measured flow rates are extrapolated over a full year.

The most likely explanation for this is that the stream flow measurements over the spring/summer/fall of 2008 represent well above average flow conditions and the flow rates drop substantially during the winter months. Longer term full season monitoring would be required to determine if this is the case.

Stream Gauges (Redmond)

The locations of the stream gauges are described as follows:

SG-3: Installed on June 6, removed on September 25. The stream gauge was installed in a stream about 2.5 m wide, with a depth of approximately 35 cm at its deepest point (Figure 11).

SG-7: Installed on July 30, removed on September 25. The gauge measured the combined drainage in the former railway turnaround north of the existing Redmond 2 pit and proposed Redmond 2B pit (Figure 12).

Figure 11 Stream Location SG3 Looking South

Figure 12 Stream Gauge Location SG7 Looking South

APPENDIX K

Vegetation Species List and Photographs

VASCULAR PLANT SPECIES LIST

Labrador Iron Mines Vegetation Assessment

SCIENTIFIC NAME	COMMON NAME	FAMILY
Achillea millefolium	Common Yarrow	ASTERACEAE
Alnus viridis ssp. crispa	Green Alder	BETULACEAE
Amelanchier arborea	Common Serviceberry	ROSACEAE
Andromeda sp.	Bog Rosemary	ERICACEAE
Aster sp.	Aster	ASTERACEAE
Betula glandulosa	Dwarf Birch	BETULACEAE
Betula papyrifera	Paper Birch	BETULACEAE
Betula pumila	Swamp Birch	BETULACEAE
Carex aquatilis	Water Sedge	CYPERACEAE
Carex sp.	… Sedge	CYPERACEAE
Chamaedaphne calyculata	Leatherleaf	ERICACEAE
Cornus canadensis	Bunchberry	CORNACEAE
Deschampsia flexuosa	Common Hairgrass	POACEAE
Empetrum sp.	Crowberry	ERICACEAE
Epilobium angustifolium	Fireweed	ONAGRACEAE
Epilobium sp.		ONAGRACEAE
Eriophorum sp.	Cottonrass	CYPERACEAE
Fragaria sp.	Strawberry	ROSACEAE
Geranium macrorrhizum	Bigroot cranesbill	GERANIACEAE
Heracleum sp.	Hogweed	APIACEA
Juncus sp.	Rush	JUNCACEAE
Larix laricina	Tamarack	PINACEAE
Ledum groenlandicum	Common Labrador Tea	ERICACEAE
Lonicera involucrata	Twinberry Honeysuckle	CAPRIFOLIACEAE
Lycopodium sp.	Clubmoss	LYCOPODIACEAE
Menyanthes trifoliata	Buckbean	MENYANTHACEAE
Picea glauca	White Spruce	PINACEAE
Picea mariana	Black Spruce	PINACEAE
Potentilla palustris	Silverweed	ROSACEAE
Pyrola sp.		PYROLACEAE
	Orchid	ORCHIDACEAE
Ribes glandulosum	Skunk Currant	GROSSULARIACEAE
Rubus chamaemorus	Cloudberry	ROSACEAE
Rubus idaeus	Raspberry	ROSACEAE
Salix arctophila	Arctic Willow	SALICACEAE
Salix bebbiana	Bebb's Willow	SALICACEAE
Salix reticulata	Net-leaved Willow	SALICACEAE
Salix sp.	Willow	SALICACEAE
Salix vestita	Rock Willow	SALICACEAE
Vaccinium angustifolium	Late Lowbush Blueberry	ERICACEAE
Vaccinium macrocarpon	Large Cranberry	ERICACEAE
Vaccinium uliginosum	Bog Bilberry	ERICACEAE
MOSSES		
Aulacomnium palustre	Ribbed Bog Moss	Aulacomniaceae
Dicranum spp.		Dicranaceae
Hylocomium splendens	Stair-Step Moss	Hylocomiaceae
Marchantia polymorpha	Green-Tongue Liverwort	Marchantiaceae
Mnium spp.	Mniums	Mniaceae
Pleurozium schreberi	Schreber's Moss	Hylocomiaceae
Polytrichum commune	Common Hair Cap Moss	Polytrichaceae
Polytrichum juniperinum	Juniper Moss	Polytrichaceae
Ptilium crista-castrensis	Plume Moss	Hypnaceae
Sphagnum angustifolium	Poor-Fen Peat Moss	Sphagnaceae
Sphagnum fuscum	Common Brown Peat Moss	Sphagnaceae
Sphagnum warnstorfii	Warnstorf's Peat Moss	Sphagnaceae
LICHENS		
Cladina rangiferina	Reindeer Lichen	Cladoniaceae
Cladina stellaris	Coral Lichen	Cladoniaceae
Cladonia cenotea	Powdered Funnel Cladonia	Cladoniaceae
Cladonia chlorophaea	False Pixie Cup	Cladoniaceae
Cladonia coniocraea	Powder Horn Lichen	Cladoniaceae
Cladonia cristatella	British Soldiers	Cladoniaceae

J-1 – Shrub/spruce over glacial till,

J-2 – Spruce/shrub over glacial till

J-3 – Sedge/open water Fen

J-4 – Mixed woods (birch/spruce) over gravel

J-5 – Alder stand over gravel

J-6 – Closed sedge/moss fen over slightly decomposed peat

J-7 – Spruce/moss stand over glacial till

J-8 – Spruce/shrub over glacial till

i) Crowberry

ii) Bunchberry

iii) Clubmoss

iv) Dwarf Birch

v) False Pixie Cup

vi) Bearberry

vii) British Soldiers

viii) Bog bilberry

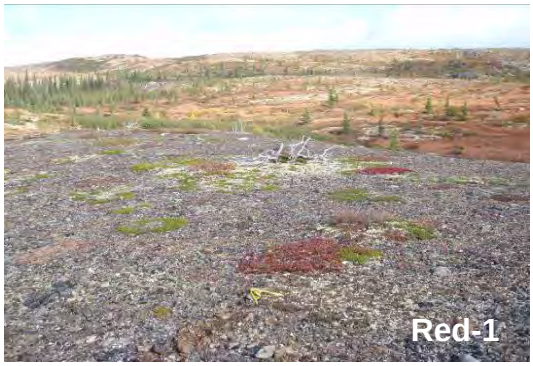
ix) Pyrola sp

x) Bog laurel

SY-1 – Shrub/spruce over till

SY-2 – Alder stand over exposed till,

SY-3 – Shrub/herb over till



Red-1- Open lichen/shrub over bedrock

Red 2 - Open lichen/shrub/moss over bedrock

Red-3 – Deciduous shrub/herb over glacial till

Red-4 – Closed sedge/moss fen,

Red-5 – Spruce/tamarack/shrub over glacial till

Red-6 – Spruce/shrub over glacial till

Red-7 – Closed sedge/willow fen

Red-8 – Closed ribbed fen - hummocks

Red-9 – Closed ribbed fen - sedge/open water

APPENDIX L

Bird Species Observed During Survey

Avifauna Species List

Table 1 Avifauna Observations for the James Property (James Mine North and James Mine South)

Ring-neck Duck (*Aythya collaris*) – G5 Preferred Habitat: Habitat consists of small (<4 ha) wetlands with some surrounding woody vegetation, often in heavily forest areas; shallow swamps, marshes and bogs with emergent vegetation. May also be found near reedy lakes or rivers; during migration also rivers, larger lakes, and ponds with marshy edges. Observation: Probable breeding – Pair observed in breeding season in suitable habitat.
Osprey (*Pandion haliaetus*) – G5 Preferred Habitat: Habitat consists of lakes, rivers. Species nests in trees near water's edge or on large rocks. Species will use artificial structures as well such as transmission lines. Observation: Confirmed breeding – Adult carrying food for young.
Bald Eagle (*Haliaeetus leucocephalus*) – G4 Preferred Habitat: Habitat requires large continuous area of deciduous or mixed woods around large lakes, and rivers. Requires an area of 255 ha for nesting, shelter, feeding, and roosting. Species prefers open woods with 30 to 50% canopy cover, nests in tall trees 50 to 200m from shore. Species requires tall, dead, partially dead trees within 400 m of nest for perching. Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.
Short-billed Dowitcher (*Limnodromus griseus*) – G5 Preferred Habitat: Habitat consists of mudflats, estuaries, shallow marshes, pools, ponds, flooded fields and sandy beaches. Species prefers shallow salt water with soft muddy bottoms, but will visit various wetlands during migration. Species nests in grassy or mossy tundra and wet meadows, in muskeg. Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.
Herring Gull (*Larus argentatus*) – G5 Preferred Habitat: Habitat consists of undisturbed open, rocky islands, peninsulas or cliffs along lakes or rivers. May also be found on sand dunes or headlands with various types of shores and islands. Observation: Possible breeding – Species observed in breeding season in suitable

nesting habitat.

Northern Flicker (*Colaptes auratus*) –

Preferred Habitat: Habitat consists of open deciduous, coniferous or mixed woodlands; forest edges; suburbs, farm woodlots and wetlands. May also use dead or dying trees with a diameter at breast height (dbh) >30 cm. This species is adaptable and is not dependent on forest size.

Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.

Yellow-bellied Flycatcher (*Empidonax flaviventris*) – G5

Preferred Habitat: Habitat consists of coniferous forest of pine and spruce with dense shrubs. Species may also br found in shrubby swamps with spruce, and alder. Can be found in low, wet swampy thickets bordering ponds, streams, bogs, and talus slopes.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Gray Jay (*Perisoreus Canadensis*) – G5

Preferred Habitat: Habitat consists of coniferous, mixed wood forests; forest openings, and bogs. Species is highly territorial, common in Labrador.

Observation: Probable breeding – Agitated behavior or anxiety calls of adults

Common Raven (*Corvus corax*) – G5

Preferred Habitat: Habitat consists of relatively undisturbed habitat of boreal or mixed forest. May nest on steep cliffs or in tall trees, uses and builds onto same nest in consecutive years.

Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.

Boreal Chickadee (*Poecile hudsonicus*) – G5

Preferred Habitat: Habitat consists of conifers (spruce), wooded swamps, bogs, and thickets. Species nests in natural cavities, woodpecker holes, or their own excavation in decaying wood. Species territory is about 1-2 ha of woodland.

Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.

Winter Wren (*Troglodytes troglodytes*) – G5

Preferred Habitat: Habitat consists of coniferous forest with hemlock-pine communities; cedar swamps; spruce bogs and deep woods with dense undergrowth. May also be found near downed wood close to forest streams. Species nests in cavities of uprooted trees, old stumps, and brush piles, also nests in soft trees with dbh >10 cm. Species

appears to need at least 30 ha of forest and is considered an interior species.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Ruby-crowned Kinglet* (*Regulus calendula*) – G5

Preferred Habitat: Habitat consists of coniferous or mixed woodlands with stands of fir, spruce, tamarack or pine, evergreen stands in a variety of habitats. As well as, coniferous open or edge areas with thickets of brush, and bogs.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Gray-cheeked Thrush (*Catharus minimus*) – G5, S3S4

Preferred Habitat: Habitat consists of moist northern woodlands and riparian areas up to Arctic tundra.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Swainson's Thrush* (*Catharus ustulatus*) – G5

Preferred Habitat: Habitat consists of coniferous forest interiors (spruce, fir), with deciduous shrubs. May also be found in low, damp woods near water and riverbanks. The species may also be observed in young or mature stands and will also use mixed woods.

Observation: Probable breeding – Agitated behavior or anxiety calls of adults.

Hermit Thrush (*Catharus guttatus*) – G5

Preferred Habitat: Habitat consists of boreal forest or Great Lakes-St. Lawrence forest zones. Consisting of rocky, dry, jack pine forests, as well as dry sandy coniferous or deciduous woods with dense young undergrowth. Species may also be found in spruce bogs, borders of wooded swamps and damp forest, and brushy pasture. Species appears to need at least 100 ha of forest in south.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Tennessee Warbler (*Vermivora peregrine*) – G5

Preferred Habitat: Habitat consists of brushy, semi-open land including grassy openings in coniferous, deciduous or mixed woods with dense shrubs and scattered clumps of young deciduous trees. Species can also be found in treed fens or boggy areas, dry pine plantations and beach ridges.

Observation: Possible breeding – Signing male present or breeding calls heard in

breeding season in suitable habitat.

Orange-crowned Warbler (*Vermivora celata*) – G5

Preferred Habitat: Habitat consists of open deciduous or mixed woods with shrub undergrowth as well as second growth in clearings or burns, brushy thickets and tall stands of shrubbery

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Nashville Warbler (*Vermivora ruficapilla*) – G5

Preferred Habitat: Habitat consists of wet, open coniferous, deciduous or mixed woods of young secondary growth. May also be found in cedar, spruce swamps; dry or moist overgrown pastures and old field with scattered trees and shrubs and edges. Species nests in depressions in ground under dead, dry bracken fern.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Yellow Warbler (*Dendroica petechia*) – G5

Preferred Habitat: Habitat: Habitat consists of open areas with dense scrub, shrubby wetland areas; stream and river banks or lakeshores with scattered small trees or dense shrubbery. May also be found in farmlands, orchards or suburban yards.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Wilson's Warbler (*Wilsonia pusilla*) – G5

Preferred Habitat: Habitat consists of boggy areas with cedar, tamarack or spruce. As well as swampy, brushy lands, streamside thickets and tangles. Species may also be found in wet, wooded high shrubs or low deciduous trees.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Fox Sparrow* (*Passerella iliaca*) – G5

Preferred Habitat: Habitat consists of thickets and edges of coniferous, mixed, or second-growth forests or chaparral.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Lincoln's Sparrow (*Melospiza lincolnii*) – G5

Preferred Habitat: Habitat consists of muskegs, bogs, swamps; regenerated stands following cutting or fires and hedgerows. Species may also be found in spruce forests with clearings; willow, alder thickets; low brushy growth with openings of grass or sedge, and edges of lakes, rivers.

Observation: Probable breeding – Agitated behavior or anxiety calls of adults.

White-throated Sparrow* (*Zonotrichia albicollis*) – G5

Preferred Habitat: Habitat consists of coniferous or mixed, semi-open forests with jack pine or spruce, balsam fir, aspen, and white birch. May also be found in old cut-overs or burns with forest regeneration and slash piles, brushy clearings, and borders of bogs. Species nests on the ground in brush piles or under logs.

Observation: Probable breeding – Agitated behavior or anxiety calls of adults.

White-crowned Sparrow (*Zonotrichia leucophrys*) – G5

Preferred Habitat: Species breeds in shrub growth in open areas such as woodland edge, forest burns, willow clumps on tundra, and stream edges. Species nests on ground; may winter in southern Ontario

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

White-wing Crossbill* (*Loxia leucoptera*)

Preferred Habitat: Habitat consists of boreal forest with tamarack, spruce, fir or hemlock.

Observation: Probable breeding – Pair observed in their breeding season in suitable habitat.

American Robin (*Turdus migratorius*) – G5

Preferred Habitat: Habitat consists of residential areas, lawns, gardens, ornamental trees, shrubberies. May also be found in forest edges and openings, burns, cut-over areas, as well as fens, bogs; lake or river shores.

Observation: Confirmed breeding – Recently fledged young or downy young.

Yellow-rumped Warbler* (*Dendroica coronata*) – G5

Preferred Habitat: Habitat consists of dry coniferous or mixed forests dominated by fir, spruce, pine, hemlock or cedar with scattered openings from logging, fire or abandoned fields. May also be found in evergreen plantations; young coniferous growth at woodland edges as well as wetter habitat of black spruce or tamarack. Species is

adaptable and opportunistic.

Observation: Confirmed breeding – Adult carrying food for young.

Blackpoll Warbler (*Dendroica striata*) – G5

Preferred Habitat: Habitat consists of coniferous forests during breeding season, and during migration found chiefly in tall trees.

Observation: Confirmed breeding – Adult carrying food for young.

Northern Waterthrush* (*Seiurus noveboracensis*) – G5

Preferred Habitat: Habitat consists of cool, shady, wet ground with open shallow pools of water; shrubby tangles, and fallen logs. May also be found in wooded swamps, bogs, creek, stream banks or swampy lakeshores. Species nests in banks, upturned tree roots or under mossy logs or stumps.

Observation: Confirmed breeding – Adult carrying food for young.

Dark-eye Junco* (*Junco hyemalis*) – G5

Preferred Habitat: Habitat consists of coniferous woodlands with aspen, birch and clearings; young jack pine stands; burned areas, and forest edges. Species may also be found in borders of streams or clearings. Nests in depression on ground, under roots, rocks or logs. Winters in conifers, hedgerows or brushy field borders.

Observation: Confirmed breeding – Adult carrying food for young.

Alder Flycatcher (*Empidonax alnorum*) – G5

Preferred Habitat: Habitat consists of open areas with alder, willow thickets bordering lakes or streams; low damp thickets in or near bogs, and swamps or marshes. Species prefers alders, willows, elders or sumacs.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

* represents species most frequently observed within the site

Table 2 Avifauna Results for Silver Yards Property

Green-winged Teal (*Anas crecca*) – G5 Preferred Habitat: Habitat consists of marshes, rivers, lakes or ponds, and shorelines. Species nests in upland areas, dense stands of grass or brush from 36- 100 m from wetland edge. Species nests occasionally found far from water. Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.
Osprey (*Pandion haliaetus*) – G5 Preferred Habitat: Habitat consists of lakes, rivers. Species nests in trees near water's edge or on large rocks. Species will use artificial structures such as transmission lines. Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.
Spotted Sandpiper (*Actitis macularia*) – G5 Preferred Habitat: Habitat consists of a variety of habitat types near water. Species often forages on floating logs Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.
Alder Flycatcher (*Empidonax alnorum*) – G5 Preferred Habitat: Habitat consists of open areas with alder, willow thickets bordering lakes or streams; low damp thickets in or near bogs, and swamps or marshes. Species prefers alders, willows, elders or sumacs. Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.
Gray Jay (*Perisoreus Canadensis*) – G5 Preferred Habitat: Habitat consists of coniferous, mixed wood forests; forest openings, and bogs. Species is highly territorial, common in Labrador. Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.
Common Raven* (*Corvus corax*) – G5 Preferred Habitat: Habitat consists of relatively undisturbed habitat of boreal or mixed forest. May nest on steep cliffs or in tall trees, uses and builds onto same nest in consecutive years. Observation: Probable breeding – Agitated behavior or anxiety calls of adults.

Ruby-crowned Kinglet* (*Regulus calendula*) – G5

Preferred Habitat: Habitat consists of coniferous or mixed woodlands with stands of fir, spruce, tamarack or pine, evergreen stands in a variety of habitats. As well as, coniferous open or edge areas with thickets of brush, and bogs.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Gray-cheeked Thrush (*Catharus minimus*) – G5, S3S4

Preferred Habitat: Habitat consists of moist northern woodlands and riparian areas up to Arctic tundra.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Swainson's Thrush* (*Catharus ustulatus*) – G5

Preferred Habitat: Habitat consists of coniferous forest interiors (spruce, fir), with deciduous shrubs. May also be found in low, damp woods near water and riverbanks. The species may also be observed in young or mature stands and will also use mixed woods.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Hermit Thrush (*Catharus guttatus*) – G5

Preferred Habitat: Habitat consists of boreal forest or Great Lakes-St. Lawrence forest zones. Consisting of rocky, dry, jack pine forests, as well as dry sandy coniferous or deciduous woods with dense young undergrowth. Species may also be found in spruce bogs, borders of wooded swamps and damp forest, and brushy pasture. Species appears to need at least 100 ha of forest in south.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Tennessee Warbler (*Vermivora peregrine*) – G5

Preferred Habitat: Habitat consists of brushy, semi-open land including grassy openings in coniferous, deciduous or mixed woods with dense shrubs and scattered clumps of young deciduous trees. Species can also be found in treed fens or boggy areas, dry pine plantations and beach ridges.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Orange-crowned Warbler (*Vermivora celata*) – G5

Preferred Habitat: Habitat consists of open deciduous or mixed woods with shrub undergrowth as well as second growth in clearings or burns, brushy thickets and tall stands of shrubbery

Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.

Yellow Warbler (*Dendroica petechia*) – G5

Preferred Habitat: Habitat: Habitat consists of open areas with dense scrub, shrubby wetland areas; stream and river banks or lakeshores with scattered small trees or dense shrubbery. May also be found in farmlands, orchards or suburban yards.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Yellow-rumped Warbler (*Dendroica coronata*) – G5

Preferred Habitat: Habitat consists of dry coniferous or mixed forests dominated by fir, spruce, pine, hemlock or cedar with scattered openings from logging, fire or abandoned fields. May also be found in evergreen plantations; young coniferous growth at woodland edges as well as wetter habitat of black spruce or tamarack. Species is adaptable and opportunistic.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Blackpoll Warbler (*Dendroica striata*) – G5

Preferred Habitat: Habitat consists of coniferous forests during breeding season, and during migration found chiefly in tall trees.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Northern Waterthrush* (*Seiurus noveboracensis*) – G5

Preferred Habitat: Habitat consists of cool, shady, wet ground with open shallow pools of water; shrubby tangles, and fallen logs. May also be found in wooded swamps, bogs, creek, stream banks or swampy lakeshores. Species nests in banks, upturned tree roots or under mossy logs or stumps.

Observation: Confirmed breeding – Adult carrying food for young.

Wilson's Warbler (*Wilsonia pusilla*) – G5

Preferred Habitat: Habitat consists of boggy areas with cedar, tamarack or spruce. As well as swampy, brushy lands, streamside thickets and tangles. Species may also be found in wet, wooded high shrubs or low deciduous trees.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Fox Sparrow* (*Passerella iliaca*) – G5

Preferred Habitat: Habitat consists of thickets and edges of coniferous, mixed, or second-growth forests or chaparral.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Lincoln's Sparrow (*Melospiza lincolnii*) – G5

Preferred Habitat: Habitat consists of muskegs, bogs, swamps; regenerated stands following cutting or fires and hedgerows. Species may also be found in spruce forests with clearings; willow, alder thickets; low brushy growth with openings of grass or sedge, and edges of lakes, rivers.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

White-throated Sparrow* (*Zonotrichia albicollis*) – G5

Preferred Habitat: Habitat consists of coniferous or mixed, semi-open forests with jack pine or spruce, balsam fir, aspen, and white birch. May also be found in old cut-overs or burns with forest regeneration and slash piles, brushy clearings, and borders of bogs. Species nests on the ground in brush piles or under logs.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

White-crowned Sparrow * (*Zonotrichia leucophrys*) – G5

Preferred Habitat: Species breeds in shrub growth in open areas such as woodland edge, forest burns, willow clumps on tundra, and stream edges. Species nests on ground; may winter in southern Ontario

Observation: Confirmed breeding – Recently fledge young or downy young.

Dark-eye Junco* (*Junco hyemalis*) – G5

Preferred Habitat: Habitat consists of coniferous woodlands with aspen, birch and clearings; young jack pine stands; burned areas, and forest edges. Species may also be found in borders of streams or clearings. Nests in depression on ground, under roots, rocks or logs. Winters in conifers, hedgerows or brushy field borders.

Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.

White-wing Crossbill (*Loxia leucoptera*) – G5

Preferred Habitat: Habitat consists of boreal forest with tamarack, spruce, fir or hemlock.

Observation: Probable breeding – Pair observed in their breeding season in suitable

habitat.
Common Redpoll* (*Carduelis flammea*) – G5 Preferred Habitat: Habitat consists of low shrub tundra or barren-lands with patches of spruce, tamarack, alder, and willow thickets. Species winters near alder, birches in snow-covered weedy fields and frequents feeders. Observation: Confirmed breeding – Recently fledge young or downy young.
Pine Siskin (*Carduelis pinus*) – G5 Preferred Habitat: Habitat consists of coniferous, mixed woods; coniferous plantations; alder thickets, as well as weed patches next to forests. Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.

- represents species most frequently observed within the site

Table 3 Avifauna Results for Redmond Property

Greater Scaup (*Aythya marila*) – G5 Preferred Habitat: Habitat consists of pond, marshes and lakes. Observation: Probable – Pair observed in breeding season in suitable habitat.
Common Goldeneye (*Bucephala clangula*) – G5 Preferred Habitat: Habitat consists of wetlands, rivers or lakes with deep (~2 m) water; open lakes with nearby woodlands and marshy edges. May also be found in bulrush in water 1m deep Species breeding distribution depends on availability of trees >30 cm diameter at breast height (dbh). Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.
Osprey (*Pandion haliaetus*) – G5 Preferred Habitat: Habitat consists of lakes, rivers. Species nests in trees near water's edge or large rocks. Species will use artificial structures such as transmission lines. Observation: Probable breeding – Nest building or excavation of nest hole.
Spruce Grouse (*Falcipennis Canadensis*) – G5 Preferred Habitat: Habitat consists of dense stands of conifers, young jack pine, upland black spruce forests on stream borders, tamarack swamps, cedar bogs, and muskegs. Species nests on ground under woody debris. Observation: Confirmed breeding – recently fledge young or downy young.

Semipalmated Plover (*Charadrius semipalmatus*) – G5

Preferred Habitat: Breeding habitat consists of sandy or mossy tundra from Alaska to Newfoundland and Nova Scotia. Species winters on mudflats, salt marshes, and lakeshores along coastal California and the Carolinas south.

Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.

Greater Yellowlegs (*Tringa melanoleuca*) – G5

Preferred Habitat: Habitat consists of fens, bogs, sloughs, shallow ponds surrounded or interspersed with tree, shrub cover.

Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.

Solitary Sandpiper (*Tringa solitaria*) – G5

Preferred Habitat: Habitat consists of open, wet northern coniferous forest woodlands, wetlands, ponds, and lakes. Species nests in abandoned bird nests in trees.

Observation: Probable breeding – Nest building or excavation of nest hole.

Spotted Sandpiper (*Actitis macularia*) – G5

Preferred Habitat: Habitat consists of a variety of habitat types near water. Species often forages on floating logs

Observation: Probable breeding – Agitated behavior or anxiety calls of adults.

Wilson's Snipe (*Gallinago gallinago*) – G5

Preferred Habitat: Habitat consists of freshwater marshes and swamps. Species often frequents open landscapes.

Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.

American Three-toed woodpecker (*Picoides tridactylus*) – G5

Preferred Habitat: Habitat consists of moist, mature or old growth coniferous woodlands of cedar-balsam fir. Species may be found near burns with stands of dead timber, as well as riparian areas, bogs. Species is loosely colonial where nesting habitat is particularly suitable and food supply abundant, furthermore uses dead trees > 30 cm dbh, and needs extensive (40 ha) of forest.

Observation: Probable breeding – Courtship or display between male and female or two males including courtship feeding and copulation.

Northern Flicker (*Colaptes auratus)* – G5

Preferred Habitat: Habitat consists of open deciduous, coniferous or mixed woodlands; forest edges; suburbs, farm woodlots and wetlands. May also use dead or dying trees with a diameter at breast height (dbh) >30 cm. This species is very adaptable and is not dependent on forest size.

Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.

Yellow-bellied Flycatcher (*Empidonax flaviventris*) – G5

Preferred Habitat: Habitat consists of coniferous forest of pine and spruce with dense shrubs. Species may also br found in shrubby swamps with spruce, and alder. Can be found in low, wet swampy thickets bordering ponds, streams, bogs, and talus slopes.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Alder Flycatcher (*Empidonax alnorum*) – G5

Preferred Habitat: Habitat consists of open areas with alder, willow thickets bordering lakes or streams; low damp thickets in or near bogs, and swamps or marshes. Species prefers alders, willows, elders or sumacs.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Gray Jay* (*Perisoreus Canadensis*) – G5

Preferred Habitat: Habitat consists of coniferous, mixed wood forests; forest openings, and bogs. Species is highly territorial, common in Labrador.

Observation: Confirmed breeding – Recently fledged young or downy young.

Common Raven (*Corvus corax*) – G5

Preferred Habitat: Habitat consists of relatively undisturbed habitat of boreal or mixed forest. May nest on steep cliffs or in tall trees, uses and builds onto same nest in consecutive years.

Observation: Confirmed breeding – Recently fledge young or downy young.

Boreal Chickadee (*Poecile hudsonicus*) – G5

Preferred Habitat: Habitat consists of conifers (spruce), wooded swamps, bogs, and thickets. Species nests in natural cavities, woodpecker holes, or their own excavation in decaying wood. Species territory is about 1-2 ha of woodland.

Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.

Ruby-crowned Kinglet* (*Regulus calendula*) – G5

Preferred Habitat: Habitat consists of coniferous or mixed woodlands with stands of fir, spruce, tamarack or pine, evergreen stands in a variety of habitats. As well as, coniferous open or edge areas with thickets of brush, and bogs.

Observation: Confirmed breeding – Recently fledge young or downy young.

Gray-cheeked Thrush (*Catharus minimus*) – G5, S3S4

Preferred Habitat: Habitat consists of moist northern woodlands and riparian areas up to Arctic tundra.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Swainson's Thrush* (*Catharus ustulatus*) – G5

Preferred Habitat: Habitat consists of coniferous forest interiors (spruce, fir), with deciduous shrubs. May also be found in low, damp woods near water and riverbanks. The species may also be observed in young or mature stands and will also use mixed woods.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Hermit Thrush (*Catharus guttatus*) – G5

Preferred Habitat: Habitat consists of boreal forest or Great Lakes-St. Lawrence forest zones. Consisting of rocky, dry, jack pine forests, as well as dry sandy coniferous or deciduous woods with dense young undergrowth. Species may also be found in spruce bogs, borders of wooded swamps and damp forest, and brushy pasture. Species appears to need at least 100 ha of forest in south.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

American Robin (*Turdus migratorius*) – G5

Preferred Habitat: Habitat consists of residential areas, lawns, gardens, ornamental trees, shrubberies. May also be found in forest edges and openings, burns, cut-over areas, as well as fens, bogs; lake or river shores.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

American Pipit (*Anthus rubescens*) – G5

Preferred Habitat: Habitat consists of Arctic and alpine tundra, beaches, barren fields, agricultural lands, and golf courses.

Observation: Possible breeding – Species observed in breeding season in suitable

nesting habitat.

Tennessee Warbler (*Vermivora peregrine*) – G5

Preferred Habitat: Habitat consists of brushy, semi-open land including grassy openings in coniferous, deciduous or mixed woods with dense shrubs and scattered clumps of young deciduous trees. Species can also be found in treed fens or boggy areas, dry pine plantations and beach ridges.

Observation: Probable breeding – Agitated behavior or anxiety calls of adults.

Orange-crowned Warbler (*Vermivora celata*) – G5

Preferred Habitat: Habitat consists of open deciduous or mixed woods with shrub undergrowth as well as second growth in clearings or burns, brushy thickets and tall stands of shrubbery.

Observation: Confirmed breeding – Adult carrying food for young**.**

Yellow Warbler (*Dendroica petechia*) – G5

Preferred Habitat: Habitat: Habitat consists of open areas with dense scrub, shrubby wetland areas; stream and river banks or lakeshores with scattered small trees or dense shrubbery. May also be found in farmlands, orchards or suburban yards.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Yellow-rumped Warbler* (*Dendroica coronata*) – G5

Preferred Habitat: Habitat consists of dry coniferous or mixed forests dominated by fir, spruce, pine, hemlock or cedar with scattered openings from logging, fire or abandoned fields. May also be found in evergreen plantations; young coniferous growth at woodland edges as well as wetter habitat of black spruce or tamarack. Species is adaptable and opportunistic.

Observation: Confirmed breeding – Adult carrying food for young.

Blackpoll Warbler (*Dendroica striata*) – G5

Preferred Habitat: Habitat consists of coniferous forests during breeding season, and during migration found chiefly in tall trees.

Observation: Probable breeding – Agitated behavior or anxiety calls of adults.

Northern Waterthrush (*Seiurus noveboracensis*) – G5

Preferred Habitat: Habitat consists of cool, shady, wet ground with open shallow pools of water; shrubby tangles, and fallen logs. May also be found in wooded swamps, bogs, creek, stream banks or swampy lakeshores. Species nests in banks, upturned tree roots or under mossy logs or stumps.

Observation: Probable breeding – Agitated behavior or anxiety calls of adults.

Wilson's Warbler (*Wilsonia pusilla*) – G5

Preferred Habitat: Habitat consists of boggy areas with cedar, tamarack or spruce. As well as swampy, brushy lands, streamside thickets and tangles. Species may also be found in wet, wooded high shrubs or low deciduous trees.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

American Tree Sparrow (*Spizella arborea*) – G5

Preferred Habitat: Habitat consists of open areas with scattered trees, brush; low-lying tundra with stands of shrubs, stunted trees, especially willow, birch, alder. During winter, species may be found in weedy, brushy fields, open country with groves of small trees, hedgerows, and marshes

Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.

Fox Sparrow* (*Passerella iliaca*) – G5

Preferred Habitat: Habitat consists of thickets and edges of coniferous, mixed, or second-growth forests or chaparral.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Lincoln's Sparrow* (*Melospiza lincolnii*) – G5

Preferred Habitat: Habitat consists of muskegs, bogs, swamps; regenerated stands following cutting or fires and hedgerows. Species may also be found in spruce forests with clearings; willow, alder thickets; low brushy growth with openings of grass or sedge, and edges of lakes, rivers.

Observation: Confirmed breeding – Adult carrying food for young.

White-throated Sparrow* (*Zonotrichia albicollis*) – G5

Preferred Habitat: Habitat consists of coniferous or mixed, semi-open forests with jack pine or spruce, balsam fir, aspen, and white birch. May also be found in old cut-overs or burns with forest regeneration and slash piles, brushy clearings, and borders of bogs. Species nests on the ground in brush piles or under logs.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

White-crowned Sparrow (*Zonotrichia leucophrys*) – G5

Preferred Habitat: Species breeds in shrub growth in open areas such as woodland edge, forest burns, willow clumps on tundra, and stream edges. Species nests on

ground; may winter in southern Ontario

Observation: Confirmed breeding – Recently fledge young or downy young.

Dark-eye Junco* (*Junco hyemalis*) – G5

Preferred Habitat: Habitat consists of coniferous woodlands with aspen, birch and clearings; young jack pine stands; burned areas, and forest edges. Species may also be found in borders of streams or clearings. Nests in depression on ground, under roots, rocks or logs. Winters in conifers, hedgerows or brushy field borders.

Observation: Confirmed breeding – Recently fledge young or downy young.

Rusty Blackbird (Euphagus carolinus) – G5, Special Concern - COSEWIC

Preferred Habitat: Habitat consists of openings in coniferous woodlands bordering bodies of water as well as tree- bordered marshes, beaver ponds, muskegs, bogs, and fens or wooded swamps. Species may also be found in stream borders with alder, willow; wooded islands on lakes.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

Pine Grosbeak (*Pinicola enucleator*) – G5

Preferred Habitat: Habitat consists of open coniferous forests with spruce or fir as well as forest edges, and clearings.

Observation: Possible breeding – Signing male present or breeding calls heard in breeding season in suitable habitat.

White-wing Crossbill (*Loxia leucoptera*) – G5

Preferred Habitat: Habitat consists of boreal forest with tamarack, spruce, fir or hemlock.

Observation: Probable breeding – Pair observed in their breeding season in suitable habitat.

Common Redpoll (*Carduelis flammea*) – G5

Preferred Habitat: Habitat consists of low shrub tundra or barren-lands with patches of spruce, tamarack, alder, and willow thickets. Species winters near alder, birches in snow-covered weedy fields and frequents feeders.

Observation: Possible breeding – Species observed in breeding season in suitable nesting habitat.

* represents species most frequently observed within the site

Table 4 Avifauna Species Observed in the Project Area

SPECIES	JAMES	REDMOND	SILVER YARDS/ BURNT AND RUTH PITS
Green-winged Teal			1 / H
Ring-necked Duck	4 / P		
Greater Scaup		2 / P	
White-winged Scoter		1 / X	
Common Goldeneye		1 / H	
Osprey	1 / CF	1 / N	1 / H
Bald Eagle	1 / H		
Spruce Grouse		6 / FY	
Semipalmated Plover		2 / H	
Greater Yellowlegs		1 / H	
Solitary Sandpiper		2 / N	
Spotted Sandpiper		2 / A	2 / H
Short-billed Dowitcher	1 / H		
Wilson's Snipe		1 / H	
Herring Gull	1 / H		65 / X
American Three-toed Woodpecker		1 / D	
Northern Flicker	1 / H	1 / H	
Yellow-bellied Flycatcher	1 / S	1 / S	
Alder Flycatcher	1 / S	1 / S	1 / S

Gray Jay	2 / A	3 / FY	1 / H
Common Raven	1 / H	3 / FY	3 / A
Boreal Chickadee	1 / H	1 / H	
Winter Wren	2 / S		
Ruby-crowned Kinglet	3 / S	3 / CF	2 / S
Gray-cheeked Thrush	1 / S	1 / S	3 / S
Swainson's Thrush	3 / A	2 / S	2 / S
Hermit Thrush	1 / S	2 / S	1 / S
American Robin	2 / FY	2 / S	
American Pipit		1 / H	
Tennessee Warbler	1 / S	2 / A	1 / S
Orange-crowned Warbler	1 / S	1 / CF	1 / H
Nashville Warbler	1 / S		
Yellow Warbler	1 / S	1 / S	1 / S
Yellow-rumped Warbler	3 / CF	6 / CF	4 / S
Blackpoll Warbler	5 / CF	2 / A	2 / S
Northern Waterthrush	3 / CF	2 / A	4 / CF
Wilson's Warbler	2 / S	1 / S	2 / S
American Tree Sparrow		1 / H	
Fox Sparrow	3 / S	3 / S	2 / S
Lincoln's Sparrow	2 / A	5 / CF	2 / S
White-throated Sparrow	6 / A	1 / S	2 / S

White-crowned Sparrow	2 / S	7 / FY	3 / FY
Dark-eyed Junco	3 / CF	6 / FY	2 / H
Rusty Blackbird		1 / S	
Pine Grosbeak		1 / S	
White-winged Crossbill	19 / P	45 / P	26 / P
Common Redpoll		2 / H	3 / FY
Pine Siskin			1 / H
Species Totals	**31**	**40**	**26**

APPENDIX M

Breeding and Migratory Birds of the Study Area

Table 1 Breeding and Migratory Birds of Labrador Iron Mines Study Area

Common Name	Scientific Name	Status*		Breeding**	Migratory	Other	
		Species at Risk (national)	Species at Risk (provincial)	Observed (O) or Possible (P)	Possible	Year-round or Over-wintering	Rare/ Unlikely to occur
Common Loon	*Gavia immer*			O			
Red-throated loon	*Gavia stellata*			O			
American Bittern	*Botaurus lentiginosus*			P			
Great Blue Heron	*Ardea herodias*				P		
Canada Goose	*Branta canadensis*			O			
Wood Duck	*Aix sponsa*				P		
Green-winged Teal	*Anas crecca*			O			
Ring-necked Duck	*Aythya collaris*			O			
American Black Duck	*Anas rubripes*			O			
Mallard	*Anas platyrhynchos*			P			
Northern Pintail	*Anas acuta*			P			
Northern Shoveler	*Anas clypeata*				P		
Blue-winged Teal	*Anas discors*				P		
Gadwall	*Anas strepera*						X
American Wigeon	*Anas americana*				P		
Greater Scaup	*Aythya marila*			O			
Lesser Scaup	*Aythya affinis*			P			
Harlequin Duck	*Histrionicus histrionicus*		Vulnerable	P			
Long-tailed Duck	*Clangula hyemalis*			P			
Surf Scoter	*Melanitta perspicillata*			P			
White-winged Scoter	*Melanitta fusca*			O			
Black Scoter	*Melanitta nigra*			P			
Common Goldeneye	*Bucephala clangula*			O			
Barrow's Goldeneye	*Bucephala islandica*	SC	Vulnerable	P			
Hooded Merganser	*Lophodytes cucullatus*			P			
Common Merganser	*Mergus merganser*			O			
Red-breasted Merganser	*Mergus serrator*			O			
Osprey	*Pandion haliaetus*			O			
Sharp-shinned Hawk	*Accipiter striatus*			P			
Northern Harrier	*Circus cyaneus*			P			
Bald Eagle	*Haliaeetus leucocephalus*			O			
Golden Eagle	*Aquila chrysaetos*			P			
Northern Goshawk	*Accipiter gentilis*			P			
Red-tailed Hawk	*Buteo jamaicensis*			P			
Rough-legged Hawk	*Buteo lagopus*			P			
American Kestrel	*Falco sparverius*			P			
Merlin	*Falco columbarius*			P			
Peregrine Falcon	*Falco peregrinus*	SC	Vulnerable		P		
Gyrfalcon	*Falco rusticolus*						X
Ruffed Grouse	*Bonasa umbellus*			P		year-round	
Spruce Grouse	*Falcipennis canadensis*			O		year-round	
Willow Ptarmigan	*Lagopus lagopus*			O		year-round	
Rock Ptarmigan	*Lagopus mutus*			P		year-round	
Black-bellied Plover	*Pluvialis squatarola*				P		

Common Name	Scientific Name	Status*		Breeding**	Migratory	Other	
		Species at Risk (national)	Species at Risk (provincial)	Observed (O) or Possible (P)	Possible	Year-round or Over-wintering	Rare/ Unlikely to occur
American Golden Plover	*Pluvialis dominica*				P		
Killdeer	*Charadrius vociferus*						X
Semipalmated Plover	*Charadrius semiplamatus*			O			
Greater Yellowlegs	*Tringa melanoleuca*			O			
Solitary Sandpiper	*Tringa solitaria*			O			
Spotted Sandpiper	*Actitis macularia*			O			
Ruddy Turnstone	*Arenaria interpres*						X
Sanderling	*Calidris alba*						X
Red Knot	*Calidris canutus*	END	Endangered				X
Dunlin	*Calidris alpina*				P		
White-rumped Sandpiper	*Calidris fuscicollis*				P		
Semipalmated Sandpiper	*Calidris pusilla*				P		
Least Sandpiper	*Calidris minutilla*			O			
Short-billed Dowitcher	*Limnodromus griseus*			O			
Wilson's Snipe	*Gallinago delicata*			O			
American Woodcock	*Scolopax minor*						X
Red-necked Phalarope	*Phalaropus lobatus*			P			
Black-legged Kittiwake	*Rissa tridactyla*						X
Sabine's Gull	*Xema sabini*						X
Herring Gull	*Larus argentatus*			O			
Iceland Gull	*Larus glaucoides*						X
Great Black-backed Gull	*Larus marinus*						X
Lesser Black-backed Gull	*Larus fuscus*						X
Glaucous Gull	*Larus hyperboreus*						X
Common Tern	*Sterna hirundo*			P			
Arctic Tern	*Sterna paradisaea*			P			
Mourning Dove	*Zenaida macroura*				P		
Great Horned Owl	*Bubo virginianus*			P		year-round	
Great Gray Owl	*Strix nebulosa*						X
Snowy Owl	*Bubo scandiaca*				P	over-winter	
Northern Hawk Owl	*Surnia ulula*			P		year-round	
Short-eared Owl	*Asio flammeus*	SC	Vulnerable	P			
Boreal Owl	*Aegolius funereus*			P		year-round	
Chimney Swift	*Chaetura pelagica*	THR	Threatened				X
Common Nighthawk	*Chordeiles minor*	THR	Threatened	P			
Belted Kingfisher	*Ceryle alcyon*			P			
Yellow-bellied Sapsucker	*Sphyrapicus varius*			P			
Hairy Woodpecker	*Picoides villosus*			P		year-round	
Three-toed Woodpecker	*Picoides tridactylus*			O		year-round	
Black-backed Woodpecker	*Picoides arcticus*			P		year-round	
Northern Flicker	*Colaptes auratus*			O			
Olive-sided Flycatcher	*Contopus cooperi*	THR		P			
Yellow-bellied Flycatcher	*Empidonax flaviventris*			O			
Alder Flycatcher	*Empidonax alnorum*			O			
Eastern Kingbird	*Tyrannus tyrannus*						X
Horned Lark	*Eremophila alpestris*			O			

Common Name	Scientific Name	Status*		Breeding**	Migratory	Other	
		Species at Risk (national)	Species at Risk (provincial)	Observed (O) or Possible (P)	Possible	Year-round or Over-wintering	Rare/ Unlikely to occur
Tree Swallow	*Tachycineta bicolor*			O			
Bank Swallow	*Riparia riparia*			P			
Gray Jay	*Perisoreus canadensis*			O		year-round	
American Crow	*Corvus brachyrhynchos*			P			
Common Raven	*Corvus corax*			O		year-round	
Boreal Chickadee	*Poecile hudsonica*			O		year-round	
Red-breasted Nuthatch	*Sitta canadensis*			P		Year-round	
Winter Wren	*Troglodytes troglodytes*			O			
Golden-crowned Kinglet	*Regulus satrapa*			P			
Ruby-crowned Kinglet	*Regulus calendula*			O			
Gray-cheeked Thrush	*Catharus minimus*		Vulnerable	O			
Swainson's Thrush	*Catharus ustulatus*			O			
Hermit Thrush	*Catharus guttatus*			O			
American Robin	*Turdus migratorius*			O			
American Pipit	*Anthus rubescens*			O	P		
Bohemian Waxwing	*Bombycilla garrulus*			P		year-round	
Cedar Waxwing	*Bombycilla cedrorum*						X
Philadelphia Vireo	*Vireo philadelphicus*			P			
Northern Shrike	*Lanius excubitor*			P			
European Starling	*Sturnus vulgaris*						X
Tennessee Warbler	*Vermivora peregrina*			O			
Orange-crowned Warbler	*Vermivora celata*			O			
Nashville Warbler	*Vermivora ruficapilla*			O			
Yellow Warbler	*Dendroica petechia*			O			
Black-throated Green Warbler	*Dendroica virens*			P			
Yellow-rumped Warbler	*Dendroica coronata*			O			
Palm Warbler	*Dendroica palmarum*			P			
Blackpoll Warbler	*Dendroica striata*			O			
Common Yellowthroat	*Geothlypis trichas*						X
Northern Waterthrush	*Seiurus noveboracensis*			O			
Wilson's Warbler	*Wilsonia pusilla*			O			
American Tree Sparrow	*Spizella arborea*			O			
Savannah Sparrow	*Passerculus sandwichensis*			P			
Lincoln's Sparrow	*Melospiza lincolnii*			O			
Swamp Sparrow	*Melospiza georgiana*			P			
Fox Sparrow	*Passerella iliaca*			O			
White-throated Sparrow	*Zonotrichia albicollis*			O			
White-crowned Sparrow	*Zonotrichia leucophrys*			O			
Dark-eyed Junco	*Junco hyemalis*			O			
Snow Bunting	*Plectrophenax nivalis*				P		
Lapland Longspur	*Calcarius lapponicus*				P		
Rusty Blackbird	*Euphagus carolinus*	SC	Vulnerable	O			
Hoary Redpoll	*Carduelis hornemanni*					over-winter	
Common Redpoll	*Carduelis flammea*			O		year-round	
Purple Finch	*Carpodacus purpureus*						X
Pine Grosbeak	*Pinicola enucleator*			O			

Common Name	Scientific Name	Status*		Breeding**	Migratory	Other	
		Species at Risk (national)	Species at Risk (provincial)	Observed (O) or Possible (P)	Possible	Year-round or Over-wintering	Rare/ Unlikely to occur
Pine Siskin	*Carduelis pinus*			O			
White-winged Crossbill	*Loxia leucoptera*			O		year-round	
Number of Species: 138							
Number of national Species at Risk: 8							
Number of provincial Species at Risk: 9							
*National Species at Risk are those listed by COSEWIC = Committee on the Status of Endangered Wildlife in Canada							
Provincial Species at Risk are those listed by Newfoundland and Labrador Regulation 57/02,							
Endangered Species List Regulations under the Endangered Species Act							
END = Endangered, THR = Threatened, SC = Special Concern							
**Observed (O): Observed during point-count surveys conducted July 2008							
**Possible (P): Though not observed during point counts, study area falls within or just north of their range of occurrence							
Data on 'Possible' species range of occurrence taken from range maps illustrated in:							
Sibley, D.A. 2003. The Sibley Field Guide to Birds of Eastern North America. Chanticleer Press, Inc. New York.							