

Table 7. - Continued -

Sample Location	Location		Sample Date	Total Metals and Minerals ($\mu\text{g/g d.w.}$)													
	ID	Lab ID		Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Strontium			
Analytical Detection Limit				0.05	2	0.09	1	0.02	0.2	7	0.1	1	2	0.02			
Lalor Lake	LL-1	LL-1	8/9/2007	15.2	2,450	273	<1	1.41	20.9	856	1.6	<1	206	17.3			
	LL-2	LL-2	8/9/2007	4.73	2,990	243	<1	2.08	27.1	984	1.8	<1	178	20.9			
		LL-4	8/9/2007	2.55	3,100	244	<1	1.85	28.6	1,080	1.9	<1	189	21.9			
		LL-5	8/9/2007	3.87	2,580	259	<1	1.65	23.0	839	1.6	<1	183	17.7			
		LL-3	<i>Mean</i> 8/9/2007	3.72	2,890	249	<1	1.86	26.2	968	1.8	<1	183	20.2			
	LL-3	LL-3	8/9/2007	6.36	2,750	213	<1	1.57	22.4	912	1.5	<1	221	17.4			
Cook Lake	CL-1	CL-1	12/9/2007	12.7	6,540	286	<1	0.62	26.6	2,800	0.8	<1	197	14.2			
	CL-2	CL-2	12/9/2007	22.0	9,400	417	<1	0.75	37.4	4,070	1.2	<1	267	20.5			
	CL-3	CL-3	12/9/2007	8.24	6,000	327	<1	0.37	22.0	2,380	0.4	<1	148	13.2			
Unnamed Lake 1	UL1-2B	UL1-1	15/9/2007	5.35	2,880	651	<1	0.65	11.2	663	1.1	<1	74	32.2			
Maw Lake	ML-1	ML-1	9/9/2007	15.6	2,070	198	<1	1.08	14.1	469	1.2	<1	286	23.3			
	ML-2	ML-2	9/9/2007	18.7	1,930	218	<1	1.07	13.8	442	1.3	<1	237	20.2			
	ML-3	ML-3	9/9/2007	9.18	2,660	344	<1	0.67	13.0	634	1.3	<1	142	28.2			
Unnamed Creek 1	UC1-1	UC1-1	15/9/2007	7.04	1,680	134	<1	1.26	16.9	439	1.7	<1	71	20.1			
Varnson Lake	VL-2	VL-2	10/9/2007	8.36	2,890	256	<1	0.96	18.7	1,140	0.9	<1	118	23.1			
Manitoba Sediment Quality Guidelines				35			0.17										
Guidelines				91.3			0.486										
Ontario Sediment Quality Guidelines						460			16								
LEL						1,100			75								
SEL																	

Table 7. - Continued -

Sample Location	Location ID	Lab ID	Sample Date	Total Metals and Minerals (µg/g d.w.)										Nutrients			Carbon (%)			CaCO ₃ Equivale nt
				Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	Nitrogen	Phosphor us	Total Organic	Inorganic	Combustion	Tot. Nitrogen	Total Phosphor us	Tot. by Combustion			
Analytical Detection Limit				0.2	4	0.03	0.02	0.06	2	0.01	90	0.1	0.1	0.1	0.1	0.1	0.7			
Lalor Lake	LL-1	LL-1	8/9/2007	<0.2	<4	232	1.15	25.5	61	3.04	720	30.8	0.1	0.1	31.0	2.1				
	LL-2	LL-2	8/9/2007	<0.2	<4	310	1.72	29.8	66	2.77	640	29.4	0.1	0.1	29.5	1.5				
		LL-4	8/9/2007	<0.2	<4	362	1.82	28.8	65	2.93	620	31.8	<0.1	<0.1	31.8	1.2				
		LL-5	8/9/2007	<0.2	<4	252	1.88	25.0	59	2.84	530	32.1	0.1	0.1	32.3	1.7				
		LL-3	8/9/2007	<0.2	<4	308	1.81	27.9	63	2.85	597	31.1	<0.1	<0.1	31.2	1.5				
			<i>Mean</i>																	
			8/9/2007	<0.2	<4	322	1.39	23.3	57	2.90	630	31.6	<0.1	<0.1	31.6	1.0				
Cook Lake	CL-1	CL-1	12/9/2007	<0.2	<4	668	1.14	31.3	68	1.80	1,120	17.1	<0.1	<0.1	17.1	0.9				
	CL-2	CL-2	12/9/2007	0.3	<4	802	1.71	46.9	98	1.74	1,210	16.2	0.1	0.1	16.3	1.2				
	CL-3	CL-3	12/9/2007	<0.2	<4	657	0.76	27.2	59	1.26	920	12.8	<0.1	<0.1	12.8	0.8				
Unnamed Lake 1	UL1-2B	UL1-1	15/9/2007	<0.2	<4	331	3.56	13.9	47	2.06	1,040	32.8	0.1	0.1	32.9	1.5				
Maw Lake	ML-1	ML-1	9/9/2007	<0.2	<4	130	0.56	11.0	65	3.40	830	32.4	0.1	0.1	32.6	1.7				
	ML-2	ML-2	9/9/2007	<0.2	<4	132	0.61	11.5	66	2.93	570	28.2	0.2	0.2	28.3	1.9				
	ML-3	ML-3	9/9/2007	<0.2	<4	269	0.95	13.2	69	2.81	790	32.2	0.2	0.2	32.4	2.3				
Unnamed Creek 1	UC1-1	UC1-1	15/9/2007	<0.2	<4	173	2.07	12.5	84	2.61	710	32.0	<0.1	<0.1	32.0	1.0				
Varnson Lake	VL-2	VL-2	10/9/2007	<0.2	<4	340	1.96	15.1	77	2.74	850	30.5	<0.1	<0.1	30.5	1.3				
Manitoba Sediment Quality Guidelines																				
Guidelines																				
PEL																				
Ontario Sediment Quality Guidelines																				
LEL																				
SEL																				
Value refers to TKN.																				

Table 7. - Continued -

Sample Location	Location		Sample		Total Metals and Minerals ($\mu\text{g/g d.w.}$)											
	ID	Lab ID	Lab ID	Date	Aluminum	Arsenic	Barium	Beryllium	Boron	Bismuth	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron
					3	0.03	0.04	0.06	0.6	0.02	0.02	7	0.1	0.01	0.2	6
Squall Lake	SL-1	SL-1	13/9/2007		16,000	4.12	159	0.78	7.9	0.27	0.39	5,160	52.2	13.60	27.0	33,200
	SL-2	SL-2	13/9/2007		16,200	4.33	132	0.71	6.8	0.24	0.35	4,770	48.0	12.70	25.4	27,900
	SL-3	SL-3	13/9/2007		17,100	5.27	152	0.79	7.3	0.28	0.46	5,440	52.6	13.60	29.4	28,800
	SL-4	SL-4	13/9/2007		17,200	5.07	148	0.72	6.7	0.25	0.34	4,900	49.0	13.20	23.4	35,700
Snow Creek	SC-1	SC-1	15/9/2007		5,720	1.63	44.7	0.23	3.3	0.06	0.11	3,560	20.7	5.59	10.5	9,410
	SC-2	SC-2	15/9/2007		10,000	4.58	84.6	0.39	5.3	0.13	0.25	6,140	33.1	7.92	20.4	15,400
Snow Lake Narr.	SLN-1	SLN-1	15/9/2007		16,200	11.50	167	0.77	6.8	0.26	0.43	5,830	47.0	12.40	36.5	26,700
	SLN-2	SLN-2	15/9/2007		10,900	8.60	101	0.55	5.7	0.16	0.30	4,590	35.5	11.90	27.0	19,200
	SLN-3	SLN-3	15/9/2007		3,210	4.59	27.3	0.12	2.3	0.04	0.09	1,510	7.9	3.25	6.8	5,590
Tern Lake	TL-2B	TL-1	11/9/2007		4,500	3.67	60.4	0.21	4.7	0.05	0.14	8,590	11.7	3.34	11.7	15,000
Tern Ditch	TD-1	TD-1	15/9/2007		7,970	24.70	117	0.31	13.5	0.07	0.29	20,200	19.6	6.15	27.9	13,700
Tern Creek	TC-1	TC-1	15/9/2007		7,490	22.10	84.9	0.26	8.4	0.13	0.64	12,300	23.0	8.85	27.6	10,700
Manitoba Sediment Quality Guidelines																
Guidelines						5.9					0.6		37.3		35.7	20,000
PEL						17					3.5		90		197	40,000
Ontario Sediment Quality Guidelines																
LEL																
SEL																

Table 7. - Continued -

Sample Location	Location		Sample		Total Metals and Minerals (µg/g d.w.)										
	ID	Lab ID	Date	Date	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Strontium
					0.05	2	0.09	1	0.02	0.2	7	0.1	1	2	0.02
Squall Lake	SL-1	SL-1	13/9/2007	13/9/2007	16.2	9,690	579	<1	0.39	36.2	4,040	0.4	<1	270	20.5
	SL-2	SL-2	13/9/2007	13/9/2007	14.6	8,950	488	<1	0.36	34.1	3,670	0.4	<1	244	18.4
	SL-3	SL-3	13/9/2007	13/9/2007	17.6	9,670	479	<1	0.44	38.1	4,110	0.5	<1	280	20.6
	SL-4	SL-4	13/9/2007	13/9/2007	14.6	8,960	854	<1	0.30	33.5	3,700	0.4	<1	242	19.4
Snow Creek	SC-1	SC-1	15/9/2007	15/9/2007	3.96	3,530	243	<1	0.29	10.0	897	0.2	<1	72	10.1
	SC-2	SC-2	15/9/2007	15/9/2007	8.18	5,380	482	<1	0.28	20.7	2,020	0.4	<1	114	17.9
Snow Lake Narr.	SLN-1	SLN-1	15/9/2007	15/9/2007	17.1	9,420	659	<1	0.41	33.5	4,040	0.5	<1	231	18.7
	SLN-2	SLN-2	15/9/2007	15/9/2007	11.2	6,960	477	<1	0.27	25.1	2,800	0.4	<1	156	14.9
	SLN-3	SLN-3	15/9/2007	15/9/2007	3.24	1,590	226	<1	0.10	5.2	646	0.1	<1	74	4.69
Tern Lake	TL-2B	TL-1	11/9/2007	11/9/2007	3.24	2,040	295	<1	0.30	8.0	539	0.9	<1	79	22.1
Tern Ditch	TD-1	TD-1	15/9/2007	15/9/2007	6.24	4,660	343	<1	0.96	15.3	1,450	0.9	<1	92	58.2
Tern Creek	TC-1	TC-1	15/9/2007	15/9/2007	14.7	4,280	227	<1	0.81	22.2	1,460	1.1	<1	202	26.3
Manitoba Sediment Quality Guidelines															
Guidelines					35			0.17							
PEL					91.3			0.486							
Ontario Sediment Quality Guidelines															
LEL						460				16					
SEL						1,100				75					

Table 7. - Continued -

Sample Location	Location ID	Lab ID	Sample Date	Total Metals and Minerals (µg/g d.w.)							Nutrients		Carbon (%)		CaCO ₃ Equivale nt
				Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	Nitrogen	Phosphor us	Total Organic	Inorganic	Combustion	
Analytical Detection Limit				0.2	4	0.03	0.02	0.06	2	0.01	90	0.1	0.1	0.1	0.7
Squall Lake	SL-1	SL-1	13/9/2007	0.3	<4	1,070	2.39	41.9	104	0.65	540	6.1	<0.1	6.1	0.7
	SL-2	SL-2	13/9/2007	0.3	<4	987	2.22	39.7	99	0.71	960	7.4	<0.1	7.4	<0.7
	SL-3	SL-3	13/9/2007	0.3	<4	1,030	2.37	43.4	109	0.95	1,030	8.2	<0.1	8.2	<0.7
	SL-4	SL-4	13/9/2007	0.3	<4	992	2.34	40.7	98	0.81	1,220	7.4	<0.1	7.4	1.1
Snow Creek	SC-1	SC-1	15/9/2007	<0.2	<4	453	1.24	20.2	30	0.27	590	4.7	<0.1	4.7	<0.7
	SC-2	SC-2	15/9/2007	<0.2	<4	692	2.13	28.1	57	0.55	730	8.6	<0.1	8.6	0.8
Snow Lake Narr.	SLN-1	SLN-1	15/9/2007	0.3	<4	935	2.13	44.4	104	0.77	1,000	7.8	0.1	7.9	1.4
	SLN-2	SLN-2	15/9/2007	0.3	<4	678	1.73	24.9	79	0.44	690	4.4	<0.1	4.4	<0.7
	SLN-3	SLN-3	15/9/2007	<0.2	<4	211	0.50	8.2	24	0.13	540	1.1	<0.1	1.1	0.7
Tern Lake	TL-2B	TL-1	11/9/2007	<0.2	<4	280	1.96	11.6	23	0.85	520	15.6	<0.1	15.6	1.0
Tern Ditch	TD-1	TD-1	15/9/2007	<0.2	<4	507	2.60	24.0	103	1.32	450	31.4	<0.1	31.4	1.3
Tern Creek	TC-1	TC-1	15/9/2007	<0.2	<4	445	0.91	20.1	157	2.07	810	25.6	<0.1	25.6	1.1
Manitoba Sediment Quality Guidelines															
Guidelines															
PEL															
Ontario Sediment Quality Guidelines															
LEL											0.055 ¹	600			1
SEL											0.48¹	2,000			10

¹Value refers to TKN.

Table 8. Supporting sediment quality analysis results.

Sample Location	Location ID	Lab ID	Sample Date	Particle Size Composition (%)			Texture
				Sand	Silt	Clay	
Analytical Detection Limit				1	1	1	-
Lalor Lake	LL-1	LL-1	8/9/2007	3	56	41	silty clay
	LL-2	LL-2	8/9/2007	2	52	46	silty clay
		LL-4	8/9/2007	1	50	49	silty clay
		LL-5	8/9/2007	2	59	39	silty clay loam
		Mean		2	54	45	
	LL-3	LL-3	8/9/2007	2	30	68	clay
Maw Lake	ML-1	ML-1	9/9/2007	1	37	62	clay
	ML-2	ML-2	9/9/2007	2	37	61	clay
	ML-3	ML-3	9/9/2007	6	40	54	silty clay
Unnamed Creek 1	UC1-1	UC1-1	15/9/2007	1	28	71	clay
Varnson Lake	VL-2	VL-2	10/9/2007	2	47	51	silty clay
Cook Lake	CL-1	CL-1	12/9/2007	2	28	70	clay
	CL-2	CL-2	12/9/2007	2	28	70	clay
	CL-3	CL-3	12/9/2007	12	41	47	silty clay
Unnamed Lake 1	UL1-2B	UL1-1	15/9/2007	11	40	48	silty clay
Squall Lake	SL-1	SL-1	13/9/2007	14	34	52	clay
	SL-2	SL-2	13/9/2007	6	42	52	silty clay
	SL-3	SL-3	13/9/2007	5	32	63	clay
	SL-4	SL-4	13/9/2007	3	38	59	clay
Snow Creek	SC-1	SC-1	15/9/2007	73	13	13	sandy loam
	SC-2	SC-2	15/9/2007	31	31	37	clay loam
Snow Lake Narrows	SLN-1	SLN-1	15/9/2007	2	37	61	clay
	SLN-2	SLN-2	15/9/2007	49	19	32	sandy clay loam
	SLN-3	SLN-3	15/9/2007	87	5	8	loamy sand
Tern Lake	TL-2B	TL-1	11/9/2007	55	12	33	sandy clay loam
Tern Ditch	TD-1	TD-1	15/9/2007	14	31	55	clay
Tern Creek	TC-1	TC-1	15/9/2007	2	28	70	clay

Table 9. Phytoplankton species biomass (mg/m³) and relative abundance (%) in Lalor, Maw, Varnson, and Tern lakes, September 2007.

Class	Species	Biomass (mg/ m ³)				Relative abundance (%)			
		Lalor	Maw	Varnson	Tern	Lalor	Maw	Varnson	Tern
Bacillariophyceae	<i>Achnanthes minutissima</i>	0.13	0.54	0.04	0.24	0.04	0.31	0.01	0.19
	<i>Amphiprora ornata</i>	-	-	4.00	-	-	-	0.89	-
	<i>Cyclotella</i> sp.	0.40	-	-	-	0.13	-	-	-
	<i>Cymbella</i> sp.	-	-	5.40	-	-	-	1.20	-
	<i>Fragilaria crotonensis</i>	-	-	0.96	0.30	-	-	0.21	0.24
	<i>Melosira</i> sp.	4.32	0.72	-	-	1.39	0.41	-	-
	<i>Navicula</i> sp.	0.45	11.84	0.19	1.60	0.14	6.80	0.04	1.28
	<i>Neidium</i> sp.	-	-	1.35	1.13	-	-	0.30	0.90
	<i>Nitzschia</i> sp.	-	-	1.25	0.13	-	-	0.28	0.10
	<i>Synedra acus</i>	0.03	-	0.19	0.19	0.01	-	0.04	0.15
	<i>Synedra ulna</i>	-	-	-	0.38	-	-	-	0.30
	<i>Pinnularia</i> sp.	-	4.00	5.40	-	-	2.30	1.20	-
<i>Sub-total</i>		5.33	17.10	18.78	3.96	1.71	9.83	4.16	3.17
Chlorophyceae	<i>Actinastrum hantzschii</i>	-	-	0.38	-	-	-	0.09	-
	<i>Botryococcus braunii</i>	-	-	18.90	-	-	-	4.19	-
	<i>Cosmarium</i> sp.	1.20	-	0.90	-	0.39	-	0.20	-
	<i>Crucigenia quadrata</i>	-	-	-	0.16	-	-	-	0.13
	<i>Crucigenia</i> sp.	-	-	0.03	-	-	-	0.01	-
	<i>Dictyosphaerium pulchellum</i>	0.34	-	129.60	-	0.11	-	28.73	-
	<i>Elakatothrix</i> sp.	-	-	-	0.02	-	-	-	0.02
	<i>Monoraphidium</i> sp.	0.26	0.05	0.29	23.20	0.08	0.03	0.06	18.57
	<i>Pediastrum tetras</i>	-	-	0.09	0.20	-	-	0.02	0.16
	<i>Scenedesmus bijuga</i>	0.06	-	0.03	0.24	0.02	-	0.01	0.19
	<i>Scenedesmus quadricauda</i>	-	0.01	0.01	0.02	-	0.00	0.00	0.02
	<i>Spondylosium planum</i>	-	-	1.02	-	-	-	0.23	-
<i>Sub-total</i>		1.86	0.06	151.25	23.85	0.60	0.03	33.53	19.09
Chrysophyceae	<i>Dinobryon</i> sp.	1.43	0.36	3.04	0.20	0.46	0.20	0.67	0.16
	<i>Mallomonas</i> sp.	0.38	-	0.07	0.68	0.12	-	0.02	0.54
	Unidentified	-	-	-	51.20	-	-	-	40.98
<i>Sub-total</i>		1.81	0.36	3.11	52.07	0.58	0.20	0.69	41.68
Cryptophyceae	<i>Cryptomonas rostratiformis</i>	6.40	8.40	-	-	2.06	4.83	-	-
	<i>Cryptomonas</i> sp.	0.64	-	1.13	10.80	0.21	-	0.25	8.64
	<i>Rhodomonas minuta</i>	8.06	0.52	4.88	25.92	2.59	0.30	1.08	20.75
<i>Sub-total</i>		15.10	8.92	6.01	36.72	4.86	5.12	1.33	29.39
Euglenophyceae	<i>Euglena</i> sp.	-	-	-	3.20	-	-	-	2.56
	<i>Trachelomonas</i> sp.	-	0.34	4.00	0.90	-	0.19	0.89	0.72
<i>Sub-total</i>		0.00	0.34	4.00	4.10	0.00	0.19	0.89	3.28
Cyanophyceae	<i>Anabaena</i> sp.	-	6.00	0.40	-	-	3.45	0.09	-
	<i>Aphanizomenon flos-aquae</i>	1.15	0.64	0.80	-	0.37	0.37	0.18	-
	<i>Chroococcus</i> sp.	1.60	-	0.18	-	0.51	-	0.04	-
	<i>Coelosphaerium</i> sp.	200.00	19.20	225.00	2.40	64.29	11.03	49.88	1.92
	<i>Gomphosphaeria</i> sp.	0.80	-	23.44	-	0.26	-	5.20	-
	<i>Lyngbya limnetica</i>	-	0.56	2.04	0.64	-	0.32	0.45	0.51
	<i>Lyngbya</i> sp.	-	-	-	0.40	-	-	-	0.32
	<i>Merismopedia</i> sp.	-	0.05	-	-	-	0.03	-	-
	<i>Microcystis</i> sp.	-	102.40	-	-	-	58.84	-	-
	<i>Oscillatoria</i> sp.	0.24	0.52	0.14	-	0.08	0.30	0.03	-
	<i>Pseudoanabaena</i> sp.	75.20	13.44	-	-	24.17	7.72	-	-
<i>Rhabdoderma</i> sp.	-	-	0.16	-	-	-	0.04	-	
<i>Sub-total</i>		278.99	142.81	252.16	3.44	89.68	82.05	55.90	2.75
Peridineae	<i>Ceratium hirundinella</i>	6.40	-	12.80	-	2.06	-	2.84	-
	<i>Glenodinium</i> sp.	1.60	0.86	1.35	0.80	0.51	0.50	0.30	0.64
	<i>Peridinium</i> sp.	-	3.60	1.60	-	-	2.07	0.35	-
<i>Sub-total</i>		8.00	4.46	15.75	0.80	2.57	2.56	3.49	0.64
Total		311.1	174.0	451.1	124.9	100	100	100	100

Table 10. Abundance of zooplankton (individuals/m³) collected in net tows from Lalor, Maw, Varnson, and Tern lakes.

	Lalor Lake	Maw Lake	Varnson Lake	Tern Lake
Site	LL-2	ML-2	VL-2	TL-2B
Date	7/9/2007	9/9/2007	10/9/2007	11/9/2007
Volume filtered (m ³)	0.270	0.539	0.539	0.809
Crustacea				
Cladocera				
<i>Bosmina longirostris</i>	0	0	0	1.2
<i>Holopedium gibberum</i>	0	0	13.0	2.5
<i>Diaphanosoma leuchtenbergianum</i>	0	3.7	9.3	11.1
<i>Chydorus sphaericus</i>	0	0	0	1.2
<i>Ceriodaphnia</i> sp.	0	0	3.7	0
Ephippia	0	7.4	0	0
Copepoda				
<i>Diaptomus oregonensis</i>	196.7	302.4	489.8	2018.6
<i>Diaptomus</i> copepodite	118.7	120.6	148.4	455.2
<i>Eucyclops agilis</i>	0	0	0	2.5
<i>Epischura nevadensis</i>	0	0	1.9	1.2
<i>Diaptomus ashlandi</i>	0	0	3.7	0
Insecta				
Chironomidae larva	0	0	0	1.2
Arachnida				
Acarina	0	0	1.9	0
Total	315.4	434.1	671.7	2,494.7

Table 11. Date, time, location (UTM), water depth, and sediment description for benthic invertebrate sampling in Lalor, Maw, Varnson, and Tern lakes and Unnamed Lake 1.

Lake	Site ID	Date	Time	UTM (Zone 14 U)		Water Depth (m)	Sampling Site Description
				Easting	Northing		
Lalor	LL-1B	7/9/2007	14:15	425777	6082092	1.4	Sediments organic, soft and ultra-fine, pungent odour with aquatic vegetation present
	LL-2B	7/9/2007	14:00	425863	6081913	1.9	Sediments organic, soft and ultra-fine with aquatic vegetation present
	LL-3B	7/9/2007	13:45	425739	6081521	1.7	Sediments organic, soft and ultra-fine
	LL-4B	7/9/2007	13:30	425719	6081294	1.8	Sediments organic, soft and ultra-fine
	LL-5B	7/9/2007	13:15	425727	6081029	1.4	Sediments organic, soft and ultra-fine with aquatic vegetation present
	LL-6B	7/9/2007	13:00	425731	6080869	1.2	Sediments organic, soft and ultra-fine
Maw	ML-1B	9/9/2007	14:00	425537	6082938	1	Sediments organic, soft and ultra-fine, slight pungent odour
	ML-2B	9/9/2007	14:15	425504	6082808	1	Sediments organic, soft and ultra-fine with aquatic vegetation present
	ML-3B	9/9/2007	13:25	425673	6082802	1.3	Sediments organic, soft and ultra-fine, slight pungent odour
	ML-4B	9/9/2007	13:45	425748	6082918	1	Sediments organic, soft and ultra-fine, slight pungent odour
	ML-5B	9/9/2007	13:10	425783	6082715	0.8	Sediments organic, soft and ultra-fine with decaying aquatic vegetation and small woody debris
	ML-6B	9/9/2007	12:55	425732	6082583	0.9	Sediments organic, soft and ultra-fine with decaying aquatic vegetation and small woody debris
Varnson	VL-1B	10/9/2007	15:35	426309	6088098	1.6	Sediments organic, soft and ultra-fine with aquatic vegetation present
	VL-2B	10/9/2007	15:30	426121	6087960	1.2	Sediments organic, soft and ultra-fine with aquatic vegetation present
	VL-3B	10/9/2007	15:20	425972	6087790	1.8	Sediments organic, soft and ultra-fine with aquatic vegetation present and small woody debris
	VL-4B	10/9/2007	15:10	425818	6087547	1.8	Sediments organic, soft and ultra-fine with aquatic vegetation present
	VL-5B	10/9/2007	15:00	425708	6087267	1.7	Sediments organic, soft and ultra-fine with aquatic vegetation present
	VL-6B	10/9/2007	14:50	425630	6086974	1.5	Sediments organic, soft and ultra-fine with aquatic vegetation present
Tern	TL-1B	11/9/2007	17:05	430166	6081926	1.4	Sediments organic, soft and ultra-fine with aquatic vegetation present
	TL-2B	11/9/2007	16:26	430340	6081866	1.6	Sediments organic, soft and ultra-fine
	TL-3B	11/9/2007	17:15	430525	6081830	1.1	Sediments organic, soft and ultra-fine, pungent odour with aquatic vegetation present
Unnamed Lake 1	UL1-1B	13/9/07	9:35	425448	6080748	0.9	Sediments organic, soft and ultra-fine, pungent odour with aquatic vegetation present
	UL1-2B	13/9/07	9:50	425450	6080604	1.5	Sediments organic, soft and ultra-fine
	UL1-3B	13/9/07	10:15	425448	6080484	1.5	Sediments organic, soft and ultra-fine

Table 12. Abundance of benthic invertebrates (individuals/m²) collected in Lalor, Maw, Varnson, and Tern lakes and Unnamed Lake 1.

Taxon	Life Stage	Lalor Lake				Maw Lake							
		LL-1B	LL-2B	LL-3B	LL-4B	LL-5B	LL-6B	ML-1B	ML-2B	ML-3B	ML-4B	ML-5B	ML-6B
Annelida													
Oligochaeta				87	43	43							
Hirudinea				87	87	130					43		
<i>Total Annelida</i>				87	130	43					43		
Crustacea													
Ostracoda												43	
Amphipoda												130	43
Talitridae						43						87	174
<i>Total Crustacea</i>						43						130	174
Mollusca													
Bivalvia													
Pisidiidae			391	130	43	348					174	130	174
Gastropoda													
Ancylidae													
Planorbidae			43			43							
Valvatidae													
unidentified													
<i>Gastropoda</i>													
<i>Total Mollusca</i>			435	130	43	348				174	130	174	87
Platyhelminthes													
Insecta													
Odonata													
Zygoptera													
Coenagrionidae	Larvae												
Corduliidae	Larvae												
Ephemeroptera													
Caenidae	Larvae		87								130	43	87
Trichoptera													
Hydroptilidae	Larvae												
Leptoceridae	Larvae		43							43			
Diptera													
Ceratopogonid	Larvae	261	2,217	130	87	1,261	1,217	565	174	217	348		43
Chaoboridae	Larvae												
Chironomidae	Pupae					87	43						
Chironomidae	Larvae	348	4,348	304	130	1,348	870	435	435	652	2,217	609	87
Chironominae	Larvae							43	43	130	43	43	
Orthetinae	Larvae	87	348	43	43	261	261	174	130	87	43	130	43
Tanyptodinae	Larvae												
Tipulidae	Larvae	696	7,043	435	261	2,957	2,391	1,217	783	1,000	2,870	826	261
<i>Total Insecta</i>													
Terrestrial Invertebrates													
<i>Total Invertebrates</i>		696	7,478	565	391	3,435	2,826	1,435	1,000	1,261	3,043	1,174	348

Table 12. - continued -

Taxon	Life Stage	Varnson Lake			Term Lake			Unnamed Lake					
		VL-1B	VL-2B	VL-3B	VL-4B	VL-5B	VL-6B	TL-1B	TL-2B	TL-3B	UL1-1B	UL1-2B	UL1-3B
Annellida													
Oligochaeta			2,391	87				348		5,913		43	
Hirudinea			130										
Total Annellida			2,522	87				348		5,913		43	
Crustacea													
Ostracoda				43								43	
Amphipoda													
Talitridae		43		43								43	
Total Crustacea		43		43								87	
Mollusca													
Bivalvia													
Pisidiidae		1,565	174	348		43		43	261			87	
Gastropoda													
Aneyiidae		87	130					43		1,304			
Planorbidae			391					87		435			
Valvatidae		174	43	87									
unidentified		43											
Gastropoda													
Total Mollusca		1,870	739	435		43		174	261	1,739		87	
Platyhelminthes													
unidentified				43									
Insecta													
Odonata													
Zygoptera													
Coenagrionidae	Larvae							43					
Corduliidae	Larvae		217										
Ephemeroptera													
Caenidae	Larvae	1,913	391	348									
Trichoptera													
Hydroptilidae	Larvae							43		348		43	
Leptoceridae	Larvae	43								87			
Diptera													
Ceratopogonidae	Larvae	130											
Chaoboridae	Larvae			43				43					
Chironomidae	Pupae												
Chironomidae	Larvae		43										
Chironominae	Larvae	1,304	5,348	522		43		6,522	565	20,174		217	43
Orthocladinae	Larvae		304					261		609			
Tanypodinae	Larvae	174	826	478				217	87	348			
Tipulidae	Larvae		43										
Total Insecta		3,565	7,174	1,435		174		7,217	652	21,652		261	43
Terrestrial Invertebrates													
unidentified												43	
Total Invertebrates		5,478	10,435	2,043	0	217	20,348	7,739	913	29,391	522	0	43

Table 13. UTM, date, hours fished, and depth of experimental gill nets set in Lalor, Maw, Varnson and, Tern lakes. No fish were captured using experimental gill nets.

	UTM			Date Set	Hours Fished	Depth (m)
	Zone	Easting	Northing			
Lalor Lake						
Experimental gill net	14U	425728	6081319	7/9/2007	27.25	0.5
Experimental gill net	14U	425741	6080927	7/9/2007	27.17	0.5- 0.4
Experimental gill net	14U	425845	6081912	7/9/2007	26.5	1-2
Maw Lake						
Experimental gill net	14U	425741	6082886	9/9/2007	23.17	1-1.2
Varnson Lake						
Experimental gill net	14U	425793	6087652	10/9/2007	24.67	1.3-1.7
Experimental gill net	14U	426138	6087943	10/9/2007	24.08	1-1.9
Tern Lake						
Experimental gill net	14U	430336	6081835	11/9/2007	47.75	1.3-1.6

Table 14. UTM's, date, hours fished, depth of sampling gear, CPUEs* and number of fish captured (in brackets) for fish collections conducted in Lalor, Maw, Varnson, and Tern lakes.

Lake and Gear Type	UTM			Fish Collection Information			Fish Species				
	Zone	Easting	Northing	Date Set	Hours Fished	Gear Depth (m)	Brook stickleback	Fathead minnow	Central mudminnow		
Lalor Lake											
Swedish gill net	14U	425967	6081723	7/9/07	22.58	1.5-1.5	0.04 (1)	0.4 (9)	0.04 (1)		
Swedish gill net	14U	425765	6081393	8/9/07	3.83	1.3-1.2	0	0	0		
Minnow trap	14U	425697	6081936	7/9/07	22.33	0.61	0.63 (14)	0	0		
Minnow trap	14U	426026	6082009	7/9/07	22.42	0.61	0.18 (4)	0	0		
Minnow trap	14U	425590	6081380	7/9/07	22.00	0.76	0.14 (3)	0	0		
Minnow trap	14U	425634	6080970	7/9/07	21.67	0.30	0.46 (10)	0.37 (8)	0		
Minnow trap	14U	425828	6081063	8/9/07	2.50	0.61	0	0	0		
Minnow trap	14U	425720	6081664	8/9/07	2.42	-	0	0	0		
Minnow trap	14U	425724	6082233	8/9/07	2.33	0.30	0.86 (2)	0	0		
Minnow trap	14U	426030	6081819	8/9/07	2.25	0.30	0.44 (1)	0	0		
Maw Lake											
Swedish gill net	14U	425628	6082857	9/9/07	23.25	1.3-1.3	0.22 (5)	2.28 (53)	0		
Minnow trap	14U	425464	6082967	9/9/07	23.30	0.30	0.09 (2)	0.04 (1)	0		
Minnow trap	14U	425651	6082601	9/9/07	23.33	0.61	0	0	0		
Minnow trap	14U	425734	6083022	9/9/07	5.50		0	0	0		
Minnow trap	14U	425437	6082939	9/9/07	22.87	0.61	0.04 (1)	0.04 (1)	0.04 (1)		
Minnow trap	14U	425760	6082792	9/9/07	17.62		0	0	0		
Varnson Lake											
Swedish gill net	14U	426147	6087868	10/9/07	24.25	2-1.8	0	0.54 (13)	0.08 (2)		
Swedish gill net	14U	425676	6086943	10/9/07	24.5	1-1.4	0.12 (3)	0.24 (6)	0.73 (18)		
Minnow trap	14U	426406	6088231	10/9/07	20.50	0.6	0	0	0		
Minnow trap	14U	425801	6087091	10/9/07	19.75	-	0	0	0		
Minnow trap	14U	425541	6087605	10/9/07	21.42	-	0	0	0		
Minnow trap	14U	425899	6087561	10/9/07	21.50	-	0.37 (8)	0	0		
Minnow trap	14U	426212	6088233	11/9/07	2.58	1.06	0.78 (2)	0	0		
Minnow trap	14U	425557	6087547	11/9/07	2.50	-	0	0	0		
Tern Lake											
Swedish gill net	14U	430175	6081784	11/9/07	47.92	1.2-1.2	0	0	0		
Swedish gill net	14U	430358	6081971	11/9/07	47	1-1.4	0	0	0		
Minnow trap	14U	430048	6081967	11/9/07	47.33	0.3	0.04 (2)	0	0		
Minnow trap	14U	430338	6081683	11/9/07	47.67	0.3	0.02 (1)	0	0		
Minnow trap	14U	430477	6081675	11/9/07	47.62	0.5	0.02 (1)	0	0		
Minnow trap	14U	430571	6081871	11/9/07	47.58	0.76	0.11 (5)	0	0		
Minnow trap	14U	430338	6081683	13/9/07	1.50	0.3	4.67 (7)	0	0		
Minnow trap	14U	430571	6081871	13/9/07	1.33	0.8	3.01 (4)	0	0		

*CPUE gill net: Number of fish/30 m/ hour, CPUE minnow trap: Number of fish/ hour.

Table 15. Sample size (n), mean \pm standard deviation (SD), minimum and maximum of length and weight, and mean condition factor (K) of fish species captured, by sampling gear type, for Lalor, Maw, Varnson and Tern lakes.

	n	Length (mm)		Weight (g)		K
		Mean \pm SD	Min. Max.	Mean \pm SD	Min. Max.	
Lalor Lake						
Brook stickleback	1	72	-	3.09	-	0.82
Swedish gill net	11	37.3 \pm 7.7	21.4 45.8	0.42 \pm 0.2	0.17 0.64	0.82
Seine	35	56.4 \pm 6.6	35.2 70.3	1.37 \pm 0.51	0.34 2.50	0.73
Minnow trap	47	52.3 \pm 11.0	21.4 72	1.18 \pm 0.66	0.17 3.09	0.75
<i>Combined gear</i>						
Central mudminnow	1	118.8	-	16.98	-	1.01
Swedish gill net						
Fathead minnow	9	65.6 \pm 2.7	61.7 69.5	3.67 \pm 0.56	2.71 4.72	1.30
Swedish gill net	7	31.4 \pm 2.7	28.0 35.8	0.30 \pm 0.09	0.23 0.47	0.96
Seine	8	60.7 \pm 1.4	58.8 63.0	2.84 \pm 0.20	2.52 3.10	1.27
Minnow trap	24	54.0 \pm 15.1	28.0 69.5	2.41 \pm 1.47	0.23 4.72	1.19
<i>Combined gear</i>						
Maw Lake						
Brook stickleback	7	65.8 \pm 9.9	48.7 73.1	2.72 \pm 1.13	0.88 3.74	0.89
Swedish gill net	37	34.7 \pm 6.9	22.3 55	0.39 \pm 0.24	0.09 1.33	0.86
Seine	1	48.1	-	0.88	-	0.79
Minnow trap	45	39.8 \pm 13.5	22.3 73.1	0.76 \pm 0.97	0.09 3.74	0.86
<i>Combined gear</i>						
Central mudminnow	1	70.5	-	3.34	-	0.95
Minnow trap						
Fathead minnow	21	64.1 \pm 2.6	60.1 70.5	3.63 \pm 0.53	2.88 4.99	1.37
Swedish gill net	10	22.9 \pm 2.4	19.8 27.5	0.12 \pm 0.05	0.06 0.22	0.97
Seine	2	52.2 \pm 0.9	51.6 52.8	1.66 \pm 0.09	1.59 1.72	1.16
Minnow trap	33	50.9 \pm 19.1	19.8 70.5	2.44 \pm 1.68	0.06 4.99	1.24
<i>Combined gear</i>						
Varnson Lake						
Brook stickleback	3	69.4 \pm 6.1	63.4 75.6	3.15 \pm 0.88	2.17 3.89	0.92
Swedish gill net	10	53.7 \pm 2.5	49.8 57.3	1.20 \pm 0.17	0.94 1.39	0.77
Minnow trap	13	57.3 \pm 7.6	49.8 75.6	1.65 \pm 0.94	0.94 3.89	0.81
<i>Combined gear</i>						
Central mudminnow	20	94.1 \pm 13.9	68.7 113.8	10.11 \pm 4.46	3.52 17.96	1.13
Swedish gill net						
Fathead minnow	19	74.1 \pm 18.9	61.4 111.0	6.31 \pm 4.99	3.21 16.11	1.36
Swedish gill net						
Tern Lake						
Brook stickleback	20	57.4 \pm 7.4	35.9 69.4	1.55 \pm 0.58	0.41 2.87	0.78
Minnow trap						

Table 16. Logarithmically transformed length-weight regression equation and correlation coefficient (r^2) of fish species captured among Study Area lakes.

Lake	Species	Regression Equation	r^2
Lalor	Brook stickleback	$\text{Log}_{10} \text{ length} = 0.74 \times \text{Log}_{10} \text{ weight} + 1.48$	0.87
	Fathead minnow	$\text{Log}_{10} \text{ length} = 0.57 \times \text{Log}_{10} \text{ weight} + 1.45$	0.98
Maw	Brook stickleback	$\text{Log}_{10} \text{ length} = 0.71 \times \text{Log}_{10} \text{ weight} + 1.45$	0.89
	Fathead minnow	$\text{Log}_{10} \text{ length} = 0.71 \times \text{Log}_{10} \text{ weight} + 1.35$	0.98
Varnson	Brook stickleback	$\text{Log}_{10} \text{ length} = 0.27 \times \text{Log}_{10} \text{ weight} + 1.71$	0.97
	Fathead minnow	$\text{Log}_{10} \text{ length} = 0.36 \times \text{Log}_{10} \text{ weight} + 1.61$	0.99
	Central mudminnow	$\text{Log}_{10} \text{ length} = 0.31 \times \text{Log}_{10} \text{ weight} + 1.67$	0.98
Tern	Brook stickleback	$\text{Log}_{10} \text{ length} = 0.33 \times \text{Log}_{10} \text{ weight} + 1.70$	0.96

Table 17. Summary results of metal concentrations in whole bodies of forage fish collected in Study Area lakes. Values represent means and standard deviations (SD) for samples with greater than 50% detection frequency or ranges for samples with lower detection frequencies.

Lake	Species	Supporting Information			Metal Concentration (µg/g w.w.)												
		Length (mm)	Weight (g)		Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium	Cobalt		
Lalor Lake	Brook stickleback	Mean/Range	60.3	1.69	1.9	<0.05- <0.3	<0.2- <0.5	3.6	<0.05- <0.3	<0.05- <0.3	<0.5- <3	<0.005- 0.02	12630	<0.3- <2	<0.03- 0.2		
		SD	6.4	0.63	2.3	-	-	1.6	-	-	-	-	4490	-	-		
		n	20	20	20	20	20	20	20	20	20	20	20	20	20	20	
Lalor Lake	Fathead minnow	Mean/Range	58.9	2.85	4.6	<0.05- <0.5	<0.2- 2.3	8.3	<0.05- <0.5	<0.05- <0.5	<0.5- <5	0.005- 0.02	9265	<0.3- <3	<0.03- 0.3		
		SD	11.2	1.20	7.7	-	-	3.7	-	-	-	-	3741	-	-		
		n	20	20	20	20	20	20	20	20	20	20	20	20	20	20	
Maw Lake	Brook stickleback	Mean/Range	49.9	1.34	4.9	<0.1- <0.5	<0.2- <1	6.4	<0.1- <0.5	<0.1- <0.5	<1- <5	<0.01- <0.05	12655	<0.6- <3	<0.06- <0.3		
		SD	14.0	1.24	4.7	-	-	4.0	-	-	-	-	4576	-	-		
		n	20	20	20	20	20	20	20	20	20	20	20	20	20	20	
Maw Lake	Fathead minnow	Mean/Range	64.0	3.61	1.8	<0.1	<0.2	12	<0.1	<0.1	<1	<0.01- 0.02	9695	<0.6	<0.06		
		SD	2.6	0.53	1.7	-	-	6.3	-	-	-	-	3884	-	-		
		n	20	20	20	20	20	20	20	20	20	20	20	20	20	20	
Varnson Lake	Central mudminnow	Mean/Range	94.1	10.11	2.5	<0.1	<0.2	1.3	<0.1	<0.1	<1	<0.01- 0.03	5845	<0.6	<0.06		
		SD	13.9	4.46	7.3	-	-	0.5	-	-	-	-	1958	-	-		
		n	20	20	20	20	20	20	20	20	20	20	20	20	20	20	
Varnson Lake	Fathead minnow	Mean/Range	74.1	6.31	4.3	<0.05- <0.1	<0.1- <0.2	3.8	<0.05- <0.1	<0.05- <0.1	<0.5- <1	<0.005- 0.01	7091	<0.3- <0.6	<0.03- 0.06		
		SD	18.9	4.99	8.2	-	-	2.5	-	-	-	-	4697	-	-		
		n	19	19	19	19	19	19	19	19	19	19	19	19	19	19	
Tern Lake	Brook stickleback	Mean/Range	57.5	1.55	7.1	<0.05- <0.1	0.3	3.2	<0.05- <0.1	<0.05- <0.5	<0.5- <5	<0.005- 0.1	12210	<0.3- <3	<0.03- <0.3		
		SD	7.4	0.58	22	-	0.1	1.9	-	-	-	-	4489	-	-		
		n	20	20	20	20	20	20	20	20	20	20	20	20	20	20	

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3.5

Table 17. - Continued -

Lake	Species	Metal Concentration ($\mu\text{g/g w.w.}$)												
		Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Strontium
Lalor Lake	Brook stickleback	Mean/Range	46	<0.03-0.04	468	12	0.05	<0.05-<0.3	<0.05-<0.3	2885	<0.2-<0.5	<0.05-<0.3	1228	7.2
		SD	40	-	72	5	0.02	-	-	221	-	-	271	2.8
		n	20	20	20	20	20	20	20	20	20	20	20	20
Lalor Lake	Fathead minnow	Mean/Range	71	<0.03-0.15	392	10	0.04	<0.05-<0.5	<0.05-<0.5	3000	<0.2-<1	<0.05-<0.5	743	6.1
		SD	63	-	49	4	0.02	-	-	326	-	-	242	2.4
		n	20	20	20	20	20	20	20	20	20	20	20	20
Maw Lake	Brook stickleback	Mean/Range	75	<0.06-<0.3	469	22	0.04	<0.1-<0.5	<0.1-<0.5	2775	<0.2-<1	<0.1-<0.5	1146	8.4
		SD	44	-	87	16	0.02	-	-	238	-	-	231	3.1
		n	20	20	20	20	20	20	20	20	20	20	20	20
Maw Lake	Fathead minnow	Mean/Range	59	<0.06	359	11	0.04	<0.1	<0.1	2560	<0.2-0.2	<0.1	520	7.3
		SD	36	-	56	6	0.01	-	-	185	-	-	116	2.7
		n	20	20	20	20	20	20	20	20	20	20	20	20
Varnson Lake	Central mudminnow	Mean/Range	42	<0.06-0.14	330	3.2	0.06	<0.1	<0.1	2860	<0.2-0.3	<0.1	695	4.2
		SD	30	-	54	2.2	0.05	-	-	248	-	-	148	1.3
		n	20	20	20	20	20	20	20	20	20	20	20	20
Varnson Lake	Fathead minnow	Mean/Range	59	<0.03-0.07	329	5	0.06	<0.05-<0.1	<0.05-<0.1	2737	<0.2-0.3	<0.05-<0.1	499	5.4
		SD	121	-	62	4	0.11	-	-	364	-	-	132	3.4
		n	19	19	19	19	19	19	19	19	19	19	19	19
Tem Lake	Brook stickleback	Mean/Range	45	<0.06-0.3	456	12	0.06	<0.05-<0.5	<0.05-<0.5	2980	<0.2-<1	<0.05-<0.1	1174	10
		SD	61	-	54	5	0.02	-	-	305	-	-	248	4.6
		n	20	20	20	20	20	20	20	20	20	20	20	20
MWQSOG guideline														

0.5

0.5

Table 17. - Continued -

Lake	Species	Metal Concentration (µg/g w.w.)									
		Thallium	Tin	Titanium	Tungsten	Uranium	Vanadium	Zinc	Mean/ Range	SD	n
Lalor Lake	Brook stickleback	<0.003-<0.02	<0.3-<2	<0.5-<3	<0.001-0.016	<0.005-<0.03	<0.05-<0.3	42	-	16	20
Lalor Lake	Fathead minnow	<0.006-<0.03	<0.3-<3	<0.5-<5	<0.001-0.048	<0.005-<0.05	<0.05-<0.5	32	-	10	20
Maw Lake	Brook stickleback	<0.006-<0.03	<0.6-<3	<1-<5	<0.002-0.012	<0.01-<0.05	<0.1-<0.5	42	-	15	20
Maw Lake	Fathead minnow	<0.006	<0.6	<1	<0.002-0.008	<0.01	<0.1	26	-	7	20
Varnson Lake	Central mudminnow	<0.006	<0.6	<1-3	<0.002	<0.01	<0.1	99	-	72	20
Varnson Lake	Fathead minnow	<0.003-<0.006	<0.3-<0.6	<0.5-<1	<0.002-0.003	<0.005-0.01	<0.05-<0.1	25	-	12	19
Tem Lake	Brook stickleback	<0.003-<0.03	<0.3-<3	<0.5-1.9	<0.001-0.015	<0.005-<0.05	<0.05-0.47	46	-	15	20

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Table 18. Comparison of water quality data collected from Squall Lake in September 2000 (Bezte and Fazakas 2001) and September 2007 (this study).

Parameter	Unit	2000		2007
		Duplicate 1	Duplicate 2	Lake-Wide Mean
<i>Routine</i>				
Total Suspended Solids	mg/L	8	8	6
Total Dissolved Solids	mg/L	52	84	82
Hardness (CaCO ₃)	mg/L	49	49	48.5
Ammonia-Nitrogen	mg/L	0.04	0.05	0.021
Nitrate-Nitrogen	mg/L	<0.03	<0.03	0.013
Nitrite-Nitrogen	mg/L	<0.03	<0.03	<0.01
Phosphorus, Total	mg/L	0.016	0.017	0.017
<i>In Situ</i>				
Dissolved Oxygen	mg/L		10.76	10.36
pH	-		7.44	7.72
Temperature	°C		9.2	12.4
<i>Metals</i>				
Aluminum (Al)	mg/L	0.12	0.03	0.096
Antimony (Sb)	mg/L	0.0034	0.0010	<0.001
Arsenic (As)	mg/L	0.0034	0.0004	0.0009
Barium (Ba)	mg/L	0.011	0.011	0.0083
Beryllium (Be)	mg/L	<0.002	<0.002	<0.001
Bismuth (Bi)	mg/L	<0.0001	<0.0001	<0.0002
Boron (B)	mg/L	<0.05	<0.05	<0.03
Cadmium (Cd)	mg/L	<0.0002	<0.0002	<0.00002
Calcium (Ca)	mg/L	12	12	11.4
Chromium (Cr)	mg/L	<0.005	<0.005	<0.001
Copper (Cu)	mg/L	<0.001	<0.001	0.001
Iron (Fe)	mg/L	0.130	0.129	0.19
Lead (Pb)	mg/L	0.0002	0.0003	<0.0005
Magnesium (Mg)	mg/L	4.50	4.50	4.350
Manganese (Mn)	mg/L	0.019	0.019	0.0141
Mercury (Hg)	mg/L	<0.0002	<0.0002	<0.00005
Molybdenum (Mo)	mg/L	<0.005	<0.005	<0.0002
Nickel (Ni)	mg/L	0.003	<0.002	<0.002
Potassium (K)	mg/L	1.2	1.1	1.1
Selenium (Se)	mg/L	<0.0004	<0.0004	<0.001
Silicon (Si)	mg/L	2.2	2.3	1.8
Silver (Ag)	mg/L	<0.0004	<0.0004	<0.0001
Sodium (Na)	mg/L	3	2	1.80
Strontium (Sr)	mg/L	0.03	0.03	0.0249
Thallium (Tl)	mg/L	<0.0001	<0.0001	<0.0001
Tin (Sn)	mg/L	<0.05	<0.05	<0.0006
Titanium (Ti)	mg/L	0.004	0.003	0.0034
Vanadium (V)	mg/L	<0.001	<0.001	<0.001
Zinc (Zn)	mg/L	0.059	0.050	<0.01

Table 19. Comparison of sediment quality data collected from Squall Lake in September 2000 (Bezte and Fazakas 2001) and September 2007 (this study). Note that sediments collected in 2000 represent the upper 10 cm whereas sediments collected in 2007 represent the upper 5 cm. Data are compared to Manitoba (Williamson 2002) and Ontario (Persaud et al. 1993) sediment quality guidelines. PEL = probable effect level; SQG = sediment quality guideline; LEL = lowest effect level; and SEL = severe effect level. Values in red and blue exceed the MB PEL and SQGs, respectively. Values in red and blue italics exceed the Ontario LEL and SEL guidelines, respectively.

Parameter	Trace Elements ($\mu\text{g/g d.w.}$)			Sediment Quality Guidelines			
	2000		2007	Manitoba		Ontario	
	Duplicate 1	Duplicate 2	Lake-Wide Mean	SQG	PEL	LEL	SEL
Aluminum (Al)	6,850	6,200	16,625	-	-	-	-
Arsenic (As)	3.4	2.6	4.70	5.9	17	-	-
Barium (Ba)	41.7	45.8	148	-	-	-	-
Beryllium (Be)	<1	<1	0.75	-	-	-	-
Bismuth (Bi)	<1	<1	0.26	-	-	-	-
Cadmium (Cd)	<0.5	<0.5	0.39	0.6	3.5	-	-
Calcium (Ca)	2,810	4,130	5,068	-	-	-	-
Chromium (Cr)	35.3	14.7	50.5	37.3	90	-	-
Copper (Cu)	10	11	26.3	35.7	197	-	-
Iron (Fe)	8,640	9,120	31,400	-	-	20,000	40,000
Lead (Pb)	<5	7	15.8	35	91.3	-	-
Magnesium (Mg)	2,306	2,320	9,318	-	-	-	-
Manganese (Mn)	291	528	600	-	-	460	1,100
Mercury (Hg)	0.07	0.06	<1	0.17	0.486	-	-
Molybdenum (Mo)	<1	<1	0.37	-	-	-	-
Nickel (Ni)	18	7	35.5	-	-	16	75
Selenium (Se)	0.5	0.5	0.4	-	-	-	-
Silver (Ag)	<1	<1	<1	-	-	-	-
Strontium (Sr)	12	19	19.7	-	-	-	-
Thallium (Tl)	<1	<1	0.3	-	-	-	-
Tin (Sn)	<5	<5	<4	-	-	-	-
Titanium (Ti)	355	336	1,020	-	-	-	-
Vanadium (V)	16	15	41.4	-	-	-	-
Zinc (Zn)	27.7	35.7	103	123	315	-	-