Table 4-14

Comparison of 1993 and 1998 Surface Water Quality for Selected Metals

Metal	Comparisons between 1998 and 1993 Levels			
	Lower in 98	Higher In 98	Equal	Not Possible
Arsenic	9	1		3
Calcium	12	1		
Chromium	8			5
Copper	2	3		8
Iron	8	5		
Lead	4	1		8
Manganese	9	4		
Nickel	6			7
Zinc	7	2	1	3

TABLE 4-15: COMPARISON OF 1998 SURFACE WATER METAL LEVELS WITH ECOLOGICAL SCREENING CRITERIA
SHEET 1 OF 2

Brooks/Ponds/Wetlands			New Cranberry Pond				Heron Pond	Sierra Wetland				Heron Pond	Slate Rock Brook					
Metal	Screening Values		SPD-98-01X	'-01XDuplicate	SPD-98-02X	SPD-98-03X	SPD-98-04X	SPD-98-05X	SPD-98-06X	'-06XDuplicate	SPD-98-07X	SPD-98-08X	SPD-98-09X	SPD-98-10X	SPD-98-11X	SPD-98-13X	SPD-98-14X	SPD-98-15X
	ug/l	Source	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Antimony	30.0	US EPA	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic	50.0	Quebec	<5.0	<5.0	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	2.4	1.8	<1.6	<1.6	<1.6	1.9
Barium	50,000	Quebec	<10.0	<10.0	5.2	3.8	2.4	18.8	8.0	8.2	7.2	2.9	4.3	3.7	3.7	3.5	3.6	4.0
Beryllium	5.3	US EPA	<3.0	<3.0	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	0.11
Cadmium	0.47	US EPA	<3.0	<3.0	0.33	0.38	0.31	0.39	0.26	0.28	0.38	0.4	0.34	0.29	0.36	0.29	0.25	0.38
Chromium (total)	11.0	US EPA	<5.0	<5.0	1.1	2.1	<0.60	1.9	<0.60	<0.60	0.95	<0.65	<0.60	<0.60	0.80	<0.60	0.62	0.78
Cobalt	5.0	US EPA	<5.0	<5.0	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.60	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Copper	2.03	US EPA	<5.0	5.0	5.3	6.8	2.8	17.0	4.7	4.4	6.0	2.8	3.3	3.3	3.2	2.7	2.3	3.5
Iron	1,000	US EPA	472	481	805	475	353	4240	98.0	130	487	525	940	665	680	290	570	710
Lead	0.23	US EPA	3.5	5.2	2.3	<1.3	<1.3	19.0	<1.3	<1.3	<1.3	1.4	1.6	<1.3	1.5	<1.3	3.0	1.6
Manganese	100	US EPA	32.7	35.5	58.0	29.6	54	498	23.4	23.2	21.0	61.5	78.5	26.6	27.7	27.2	22.8	33.8
Mercury	0.012	US EPA	<0.20	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel	15.4	US EPA	<5.0	<5.0	<1.2	<1.2	1.4	3.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
Selenium	20.0	US EPA	<5.0	<5.0	<1.5	<1.5	<1.5	1.5	<1.5	<1.5	<1.5	<1.5	<1.5	1.5	<1.5	<1.5	<1.5	1.5
Silver	0.12	US EPA	<3.0	<3.0	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	0.8	<0.60	<0.60	0.62	<0.60	<0.60	<0.60
Thallium	0.30	Ontario	<10.0	<10.0	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8
Vanadium	7.0	Ontario	<5.0	<5.0	<0.70	<0.70	<0.70	2.6	<0.70	<0.70	0.86	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70
Zinc	18.50	US EPA	19.7	14.9	31.0	16.2	15.8	32.9	20.0	0.55	17.4	13.0	15.2	0.55	35.4	17.8	17.2	0.55

Notes:

US EPA and Quebec values are chronic criteria. Ontario values are proposed Provincial Water Quality Guidelines.

Values for cadmium, copper, lead, nickel, and zinc are hardness dependent. 12.7 mg/l hardness used (E&E, 1994).

Aluminum excluded since US EPA criteria is based on clay free water sample.

Calcium, magnesium, potassium, and sodium excluded since no criteria are available for these metals.

No sample taken at station SPD-98-12X.

TABLE 4-15: COMPARISON OF 1998 SURFACE WATER METAL LEVELS WITH ECOLOGICAL SCREENING CRITERIA
SHEET 2 OF 2

Brooks/Ponds/Wetlands			Slate R. B.	Spec. Pond	Spectacle Brook			Clear Pond		Spec. Wet	Ponk. Pond	Ponakin Brook			Ponakin Brook Wetland			Cranberry Pond	
Metal	Screening Values		SPD-98-16X	SPD-98-17X	SPD-98-18X	SPD-98-19X	-19X Duplicate	SPD-98-20X	SPD-98-21X	SPD-98-22X	SPD-98-23X	SPD-98-24X	SPD-98-25X	SPD-98-26X	SPD-98-27X	SPD-98-28X	SPD-98-29X	SPD-98-30X	SPD-98-31X
	ug/l	Source	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Antimony	30.0	US EPA	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<3.9	<2.0	<2.0
Arsenic	50.0	Quebec	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	5.5	<1.6	<1.6	2.4	2.2	5.9	<5.0	21.6	<1.6	<1.6
Barium	50,000	Quebec	3.5	12.2	10.4	16.0	15.5	4.7	5.4	9.8	4.6	4.0	2.9	2.4	9.2	10.0	24.7	5.1	5.4
Beryllium	5.3	US EPA	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<3.0	0.54	<0.11	<0.11
Cadmium	0.47	US EPA	0.24	0.23	0.28	0.16	0.31	0.28	0.32	0.32	0.34	0.30	0.31	0.22	0.29	<3.0	0.37	0.25	0.30
Chromium (total)	11.0	US EPA	<0.60	< 0.60	0.72	<0.60	<0.60	<0.60	<0.60	0.64	<0.60	<0.60	<0.60	<0.60	0.91	<5.0	2.6	<0.60	<0.60
Cobalt	5.0	US EPA	<0.65	<0.65	<0.65	0.90	<0.65	<0.65	<0.65	0.94	<0.65	<0.65	<0.65	<0.65	3.0	<5.0	11.1	<0.65	<0.65
Copper	2.03	US EPA	2.9	2.6	4.1	4.1	5.8	2.5	2.9	3.3	2.9	3.0	2.5	2.3	3.7	<5.0	4.8	4.6	25.0
Iron	1,000	US EPA	710	202	298	250	268	188	284	3620	442	510	432	354	2920	786	11800	313	344
Lead	0.23	US EPA	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	3.2	<1.3	<1.3	1.6	<1.3	4.6	3.1	9.9	4.2	9.0
Manganese	100	US EPA	41.6	61.5	266	318	310	53.5	86.5	248	23.6	27.5	33.5	22.0	550	76.5	2020	22.2	21.4
Mercury	0.012	US EPA	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10
Nickel	15.4	US EPA	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	< 5.0	3.6	<1.2	<1.2
Selenium	20.0	US EPA	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<5.0	<3.0	<1.5	<1.5
Silver	0.12	US EPA	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	0.62	<0.60	<0.60	<0.60	0.80	<0.60	<0.60	<3.0	<1.2	<0.60	<0.60
Thallium	0.30	Ontario	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<10.0	<5.7	<2.8	<2.8
Vanadium	7.0	Ontario	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	1.4	<0.70	<0.70	0.96	<0.70	2.0	<5.0	6.1	<0.70	<0.70
Zinc	18.50	US EPA	14.2	11.1	14.9	15.2	20.4	21.2	10.7	52.5	13.0	11.6	14.8	12.0	33.6	10	56.5	17.9	12.8

Notes:

US EPA and Quebec values are chronic criteria. Ontario values are proposed Provincial Water Quality Guidelines.

Values for cadmium, copper, lead, nickel, and zinc are hardness dependent. 12.7 mg/l hardness used (E&E, 1994).

Aluminum excluded since US EPA criteria is based on clay free water sample.

Calcium, magnesium, potassium, and sodium excluded since no criteria are available for these metals.

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Brooks/Ponds/Wetlands		New Cranberry Pond				Heron Pond	Sierra Wetland				Heron Pond
SAMPLE ID	Screening Values	SPD-98-01X	-01XDuplicate	SPD-98-02X	SPD-98-03X	SPD-98-04X	SPD-98-05X	SPD-98-06X	-06X Duplicate	SPD-98-07X	SPD-98-08X
units	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g
TAL Metals Aluminum	1620-10500	9480	7430	3610	6590	9060	7690	3920	4160	4800	**16700**
Antimony	0.5	<2.4	**2.2**	**5.7**	<5.2	<4.5	<2.8	<0.64	<0.67	<0.65	<1.9
Arsenic	0.80-26.0	14.5	10.4	11.5	21.5	**50.4**	4.9	1.6	2.1	1.8	9.6
Barium	8.0-26.2	**41.3**	**35.5**	**65.4**	**63.9**	34.0	**71.4**	**38.1**	**44.5**	19.3	**32.3**
Beryllium	0.5	0.39	0.32	0.46	<0.45	0.33	**0.86**	**1.1**	**1.6**	0.39	**0.64**
Cadmium	0.5	<1.3	<0.98	<2.5	<2.9	0.95	<1.6	0.36	<0.38	<0.37	**0.65**
Calcium	<500-1100	**1980**	**1530**	**5480**	**6190**	**2130**	**2520**	**1510**	**1670**	267	**1130**
Chromium (total)	<4.1-15.9	10.6	8.3	5.0	14.6	10.0	4.6	6.4	6.8	2.6	14.4
Cobalt	<1.4-7.2	4.3	3.9	2.0	5.5	<1.5	<0.84	1.6	1.7	0.26	3.2
Copper	2.2-14.3	**47.6**	**50.6**	**21.4**	**29.1**	**16.1**	**31.1**	5.9	6.5	3.7	13.0
Iron	2380-7900	7050	5550	4340	8410	**10700**	2040	2740	2600	1640	**11100**
Lead	3.5-12.5	**54.8**	**45.7**	**101**	**109**	**55.7**	**357**	**22.7**	**29.7**	**18.9**	**27.9**
Magnesium	<500-3100	1220	1050	708	975	16.3	407	686	660	95.1	1400
Manganese	83.9-600	132	96.7	171	455	0.56	39.8	47.9	47.1	8.6	88.5
Mercury		<0.24	0.21	0.24	0.27	0.13	0.34	0.06	0.06	0.07	0.07
Nickel	<1.7-18.6	7.8	5.7	2.1	6.7	4.7	2.6	3.6	3.5	1.3	8.8
Potassium	<200-292	**669**	**553**	**346**	**872**	**539**	**381**	**456**	**436**	281	**451**
Selenium	0.2	<2.6	<1.9	**6.3**	<5.6	**4.1**	**3.1**	**1.1**	**1.8**	**0.74**	<1.5
Silver	0.2	<0.72	<0.53	<1.4	<1.6	<1.4	<0.84	<0.20	<0.20	<0.20	<0.59
Sodium	<200-289	<258	209	<483	630	381	<300	83.2	96.8	77.1	<160
Thallium		<2.6	<1.9	<4.8	<5.6	<6.6	<3.0	<0.70	<0.73	<0.71	<2.8
Vanadium	<3.4-13.3	**20.3**	**16.1**	**15.9**	**23.3**	**19.1**	13.1	4.6	4.4	4.3	**20.8**
Zinc	14.4-55.6	**65.7**	54.6	**56.0**	**147**	32.6	33.0	9.9	12.1	6.1	40.9
Units		µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Explosives											
2-Amino-4,6-dinitrotoluene		<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
4-Amino-2,6,dinitrotoluene		<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
1,3-Dinitrobenzene		<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
2,4-Dinitrotoluene		<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
2,6-Dinitrotoluene		<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
HMX		<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0
Nitrobenzene		<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
2-Nitrotoluene		<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0
3-Nitrotoluene		<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0
4-Nitrotoluene		<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0
RDX		<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0
Tetryl		<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0
1,3,5-Trinitrobenzene		<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
2,4,6-Trinitrotoluene		<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
%Total Organic Carbon		22.1	8.27	55.9	68.7	19.3	35.3	10.6	11.8	12.9	8.98
Grainsize % silt or clay		37		28	42	26	19	20		56	24

Note: %silt or clay defined by sieve mesh size #200

> Screening Value Bolded values exceed screening values in Appendix A of Ecological Sampling Work Plan (Stone & Webster, 1998)

Brooks/Ponds/Wetlands		Slate Rock Brook								Spectacle Pond	Spectacle Brook		
SAMPLE ID	Screening Values	SPD-98-09X	SPD-98-10X	SPD-98-11X	SPD-98-12X	SPD-98-13X	SPD-98-14X	SPD-98-15X	SPD-98-16X	SPD-98-17X	SPD-98-18X	SPD-98-19X	-19XDuplicate
Units	µg/g	µg/g	µg/g	µg/g	•	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g
TAL Metals Aluminum	1620-10500	7790	5630	7190	•	8930	**10700**	6850	7140	5450	**14200**	2860	2480
Antimony	0.5	<0.53	<1.3	<0.99	•	<5.9	<1.2	<0.91	<0.75	<0.55	<1.4	<0.31	<0.40
Arsenic	0.80-26.0	11.4	6.2	9.1	•	7.7	6.5	9.0	9.4	4.0	4.0	2.1	3.0
Barium	8.0-26.2	20.8	21.4	23.8	•	**70.3**	24.6	17.1	12.4	12.6	23.9	7.2	8.3
Beryllium	0.5	0.29	0.31	0.35	•	**0.82**	0.30	0.27	0.21	0.18	1.4	0.11	0.11
Cadmium	0.5	0.25	0.47	0.42	•	**2.1**	0.49	0.33	0.28	0.22	<0.78	<0.18	<0.23
Calcium	<500-1100	1030	**1100**	**1100**	•	**7000**	**3810**	772	583	478	**1700**	205	225
Chromium (total)	<4.1-15.9	14.1	10.7	12.4	•	14.9	**16.8**	**37.1**	10.9	9.3	7.1	4.4	4.5
Cobalt	<1.4-7.2	4.3	4.9	5.8	•	4.8	5.0	4.3	3.8	2.3	0.96	1.3	1.5
Copper	2.2-14.3	12.0	9.7	10.4	•	**27.4**	**14.3**	8.8	11.0	5.9	12.0	1.3	1.6
Iron	2380-7900	**13100**	7420	**9670**	•	6320	**15200**	**10700**	**13400**	**8420**	2500	4190	4110
Lead	3.5-12.5	9.4	**25.3**	**26.9**	•	**96.1**	11.9	**18.7**	10.4	10.1	**27.2**	4.6	5.1
Magnesium	<500-3100	2780	1400	1710	•	1540	2760	1860	2120	1750	691	880	812
Manganese	83.9-600	156	257	269	N	163	202	197	210	94.3	136	124	201
Mercury		<0.02	0.04	<0.04	O	0.22	<0.04	0.03	<0.02	<0.02	0.08	<0.02	<0.02
Nickel	<1.7-18.6	12.7	6.5	8.2	T	12.9	17.2	17.4	9.9	8.5	4.1	3.8	3.3
Potassium	<200-292	**833**	**447**	**548**		**475**	**724**	**490**	**369**	**451**	**456**	170	118
Selenium	0.2	<0.40	**1.4**	**0.85**	S	**4.8**	**1.0**	**0.77**	<0.58	<0.43	**2.1**	<0.34	<0.44
Silver	0.2	<0.16	<0.40	<0.30	A	<1.8	<0.37	<0.28	<0.23	<0.17	<0.42	<0.09	<0.12
Sodium	<200-289	92.8	142	106	M	<491	209	97.4	98.1	88.2	**345**	54.9	<43.7
Thallium		<0.77	<1.9	<1.4	P	<8.6	<1.8	<1.3	<1.1	<0.81	<1.5	<0.34	<0.44
Vanadium	<3.4-13.3	11.8	9.8	11.9	L	**16.3**	11.9	10.4	9.2	7.5	6.3	3.4	3.3
Zinc	14.4-55.6	31.0	39.1	41.6	E	**97.1**	39.0	31.9	33.5	28.2	17.1	8.9	8.6
Units		µg/kg	µg/kg	µg/kg	D	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Explosives					•								
2-Amino-4,6-dinitrotoluene		<250.0	<250.0	<250.0	•	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
4-Amino-2,6,dinitrotoluene		<250.0	<250.0	<250.0	•	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
1,3-Dinitrobenzene		<250.0	<250.0	<250.0	•	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
2,4-Dinitrotoluene		<250.0	<250.0	<250.0	•	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
2,6-Dinitrotoluene		<250.0	<250.0	<250.0	•	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
HMX		<500.0	<500.0	<500.0	•	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0
Nitrobenzene		<250.0	<250.0	<250.0	•	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
2-Nitrotoluene		<500.0	<500.0	<500.0	•	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0
3-Nitrotoluene		<500.0	<500.0	<500.0	•	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0
4-Nitrotoluene		<500.0	<500.0	<500.0	•	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0
RDX		<500.0	<500.0	<500.0	•	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0
Tetryl		<500.0	<500.0	<500.0	•	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0
1,3,5-Trinitrobenzene		<250.0	<250.0	<250.0	•	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
2,4,6-Trinitrotoluene		<250.0	<250.0	<250.0	•	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
%Total Organic Carbon		<.132	7.17	13.6	•	42.2	4.52	7.25	5.74	.906	22.6	2.96	.395
Grainsize % silt or clay		2	27	16	•	50	6	14	57400	2	23	2	
Note: %silt or clay defined by sieve mesh size #200													

> **Screening Value** Bolded values exceed screening values in Appendix A of Ecological Sampling Work Plan (Stone & Webster, 1998)

Brooks/Ponds/Wetlands		Clear Pond		Spectacle Brk. Wetland	Ponakin Brook Pond	Ponakin Brook			Ponakin Brook Wetland			Cranberry Pond	
SAMPLE ID	Screening Values	SPD-98-20X	SPD-98-21X	SPD-98-22X	SPD-98-23X	SPD-98-24X	SPD-98-25X	SPD-98-26X	SPD-98-27X	SPD-98-28X	SPD-98-29X	SPD-98-30X	SPD-98-31X
Units	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g
TAL Metals Aluminum	1620-10500	8780	7270	**14800**	7180	4030	6570	**13100**	**20900**	**19900**	**21000**	**11200**	2730
Antimony	0.5	<1.6	<1.0	<4.5	<2.6	<1.1	<0.52	<0.50	<2.7	<1.3	<2.7	<0.91	<0.93
Arsenic	0.80-26.0	7.5	5.0	**56.5**	14.1	13.3	10.5	20.9	**49.6**	**33.2**	**52.7**	9.6	1.3
Barium	8.0-26.2	23.7	19.1	**105**	33.0	22.1	10.4	14.6	**59.5**	**86.4**	**121**	25.5	10.0
Beryllium	0.5	0.31	0.30	1.6	0.35	0.21	0.22	0.44	**0.91**	**1.7**	**2.2**	0.40	0.12
Cadmium	0.5	**0.52**	0.34	**2.5**	**0.66**	0.31	0.22	0.54	**0.90**	**1.0**	**1.8**	0.46	0.23
Calcium	<500-1100	**1960**	974	**4910**	**2460**	729	332	526	**2500**	**2600**	**4420**	**1210**	440
Chromium (total)	<4.1-15.9	8.0	7.6	**26.5**	10.5	6.4	9.2	**18.2**	**21.1**	**18.4**	**19.6**	**43.9**	2.6
Cobalt	<1.4-7.2	2.0	2.0	**14.8**	4.2	4.0	3.3	6.8	**15.6**	**22.2**	**33.4**	4.1	<0.31
Copper	2.2-14.3	**135**	7.2	**30.9**	**22.7**	7.2	5.7	9.6	**35.7**	**15.9**	**26.9**	**33.6**	8.5
Iron	2380-7900	7850	5690	**23400**	**9870**	**8360**	**10200**	**27800**	**28200**	**19400**	**22300**	**17200**	881
Lead	3.5-12.5	**21.9**	**21.5**	**87.3**	**20.3**	6.1	5.7	12.4	**29.9**	**48.2**	**67.8**	**85.7**	**42.8**
Magnesium	<500-3100	914	862	2250	1790	1090	1700	3970	2640	2440	2760	**3810**	139
Manganese	83.9-600	112	101	**777**	346	425	185	432	**1590**	**1260**	**1700**	190	15.2
Mercury		0.04	0.03	0.21	<0.07	<0.03	<0.02	<0.02	0.09	0.14	0.27	<0.02	0.03
Nickel	<1.7-18.6	5.3	5.1	**19.3**	9.2	4.5	7.8	17.4	15.0	16.6	**23.0**	**19.4**	1.3
Potassium	<200-292	225	206	**804**	**591**	**540**	**316**	**415**	**1000**	**1270**	**1550**	**881**	165
Selenium	0.2	<1.2	<0.78	**5.5**	<2.0	<0.82	<0.40	**1.2**	<2.1	**1.5**	**3.1**	<0.70	<0.72
Silver	0.2	**0.50**	<0.31	**1.5**	**0.81**	<0.33	<0.16	<0.16	<0.82	<0.39	<0.82	**0.87**	<0.29
Sodium	<200-289	133	112	**507**	246	115	64.1	63.5	**312**	221	<291	113	108
Thallium		<2.3	<1.5	<6.6	<3.8	<1.6	<0.75	<0.74	<3.9	<1.4	<2.9	<1.3	<1.4
Vanadium	<3.4-13.3	12.3	10.2	**38.3**	12.9	7.0	8.8	**18.4**	**26.9**	0.39	33.3	**16.9**	2.8
Zinc	14.4-55.6	**59.5**	30.1	**182**	**61.0**	28.8	23.8	45.7	**78.3**	1.4	**145**	0.26	8.3
Units		µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Explosives													
-Amino-4,6-dinitrotoluene		<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
4-Amino-2,6,dinitrotoluene		<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
1,3-Dinitrobenzene		<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
2,4-Dinitrotoluene		<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
2,6-Dinitrotoluene		<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
HMX		<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0
Nitrobenzene		<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
2-Nitrotoluene		<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0
3-Nitrotoluene		<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0
4-Nitrotoluene		<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0
RDX		<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0
Tetryl		<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0	<500.0
1,3,5-Trinitrobenzene		<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
2,4,6-Trinitrotoluene		<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0	<250.0
%Total Organic Carbon		6.84	2.69	28.3	9.23	3.34	0.904	0.621	12.9	11.1	22.6	0.841	5.26
Grainsize % silt or clay		11	17	55	6	6	4	0	48	55	44	3	13

Note: %silt or clay defined by sieve mesh size #200

> **Screening Value** Bolded values exceed screening values in Appendix A of Ecological Sampling Work Plan (Stone & Webster, 1998)

TABLE 4-17: RELATIVE CONCENTRATIONS OF SELECTED METALS IN 1998 SEDIMENT SAMPLES

Location	Sample ID Number	Relative Concentration									
		As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Zn	TOC
SPIA MONITORING AREA											
New Cranberry Pond	SPD-98-01										
New Cranberry Pond	SPD-98-02										
New Cranberry Pond	SPD-98-03										
Heron Pond	SPD-98-04										
Heron Pond	SPD-98-08										
Sierra Wetland	SPD-98-05										
Sierra Wetland	SPD-98-06										
Sierra Wetland	SPD-98-07										
Slate Rock Brook	SPD-98-09										
Slate Rock Brook	SPD-98-10										
Slate Rock Brook	SPD-98-11										
Slate Rock Brook	SPD-98-13										
Slate Rock Brook	SPD-98-14										
Slate Rock Brook	SPD-98-15										
Slate Rock Brook	SPD-98-16										
Cranberry Pond	SPD-98-30										
Cranberry Pond	SPD-98-31										
SPIA BACKGROUND AREAS											
Spectacle Pond	SPD-98-17										
Spectacle Brook	SPD-98-18										
Spectacle Brook	SPD-98-19										
Clear Pond	SPD-98-20										
Clear Pond	SPD-98-21										
Spectacle Brk Wetland	SPD-98-22										
Ponakin Brook Pond	SPD-98-23										
Ponakin Brook	SPD-98-24										
Ponakin Brook	SPD-98-25										
Ponakin Brook	SPD-98-26										
Ponakin Brk Wetland	SPD-98-27										
Ponakin Brk Wetland	SPD-98-28										
Ponakin Brk Wetland	SPD-98-29										

Non detect or lowest one-third: Middle one-third: Upper one-third

TABLE 4-18
CORRELATIONS BETWEEN METAL LEVELS AND TOC AND PERCENT FINES

Metal	Correlation Coefficient (r)	
	TOC	Percent Fines (silt + clay)
Arsenic	0.217	0.522
Barium	0.612	0.730
Beryllium	0.247	0.608
Cadmium	0.679	0.686
Calcium	0.826	0.574
Chromium	-0.089	0.067
Copper	0.596	0.547
Iron	-0.171	0.150
Lead	0.578	0.244
Magnesium	-0.309	-0.158
Manganese	0.096	0.498
Mercury	0.697	0.438
Nickel	-0.140	0.141
Selenium	0.785	0.529
Vanadium	0.412	0.411
Zinc	0.590	0.510

Notes: If metal was not detected, value set at one-half detection limit.
$P < 0.05 = 0.361$; $p < 0.01 = 0.463$; $df = 28$
Correlations significant at $p < 0.01$ are shaded.
For copper, samples SPD-98-20X and SPD-30X are deleted as outliers.

TABLE 4-19
METAL LEVELS IN SPIA VS BACKGROUND LOCATIONS

Metal	Monitored Area (n=17)		Background Area (n=13)	
	Mean (mg/kg)	Range (mg/kg)	Mean (mg/kg)	Range (mg/kg)
Arsenic	10.9	1.3 - 50.4	21.0	2.1 – 56.5
Cadmium	0.67	< 0.37 – 2.1	0.73	< 0.18 – 2.5
Chromium	13.6	2.6 – 43.9	12.8	4.4 – 26.5
Copper	17.9	3.7 – 47.6	24.3	1.3 – 135
Lead	63.2	9.4 – 357	27.9	4.6 – 67.8
Manganese	153	0.5 – 210	560	94.3 – 1700
Mercury	0.10	< 0.02 – 0.34	0.07	< 0.02 – 0.27
Nickel	8.4	2.1 – 19.4	10.7	3.8 – 23.0
Zinc	41.9	0.26 – 147	54.6	1.4 – 182
TOC (%)	18.8	0.06 – 68.7	9.6	0.6 – 22.6
(% Fines)	22.9	3 – 50	21	0 – 55

TABLE 4-20

RESULTS OF STATISTICAL ANALYSIS

Factor	DF	SS	MS	F
TOC	1	42,400	42,400	18.4*
% Fines	1	1281	1281	0.56
Location	1	1271	1271	0.55
Habitat	2	31,038	15,519	6.73*
Location X Habitat	2	55.9	55.9	0.02
Residual	22	50,727	2306	
Total	29	1267445		

*: $p < 0.01$; $r^2 = 0.60$

Ta[illegible] [illegible]1
Comparison of 199[illegible] Sediment Results

SAMPLE ID	SPD-93-01X	SPD-98-01X	-01XDuplicate 1998	SPD-93-02X	SPD-98-02X	SPD-93-03X	SPD-98-03X	SPD-93-04X	SPD-98-04X	SPD-93-05X	SPD-98-05X	SPD-93-06X	SPD-98-06X	-06XDuplicate 1998	SPD-93-07X	SPD-98-07X
Units	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g
TAL Metals Aluminum	5900	9480	7430	7740	3610	2200	6590	5000	9060	5800	7690	17000	3920	4160	6600	4800
Antimony		<2.4	2.2		5.7		<5.2		<4.5		<2.8		<0.64	<0.67		<0.65
Arsenic	3.37	14.5	10.4	15.5	11.5	1.91	21.5	3.24	50.4	4.75	4.9	23	1.6	2.1	9.78	1.8
Barium	12	41.3	35.5	73.8	65.4	10.1J	63.9	20.3	34.0	18.8	71.4	78.2	38.1	44.5	30	19.3
Beryllium	0.321J	0.39	0.32	0.508J	0.46	0.120J	<0.45	0.282J	0.33	0.246J	0.86	0.805J	1.1	1.6	0.335J	0.39
Cadmium		<1.3	<0.98		<2.5		<2.9		0.95		<1.6		0.36	<0.38		<0.37
Calcium	<500	1980	1530	5380J	5480	2190	6190	729J	2130	926	2520	3570	1510	1670	625J	267
Chromium (total)	6.33B	10.6	8.3	<2.00	5.0	11.0B	14.6	8.90B	10.0	9.47B	4.6	23	6.4	6.8	10.6B	2.6
Cobalt	2.76	4.3	3.9	7.10J	2.0	2.13	5.5	2.45	<1.5	3.72	<0.84	13	1.6	1.7	4.36	0.26
Copper	4.5	47.6	50.6	30.2	21.4	2.53	29.1	4.67	16.1	31.8	31.1	19.7	5.9	6.5	3.73	3.7
Iron	4300	7050	5550	5730	4340	2800	8410	4600	10700	5700	2040	18000	2740	2600	4800	1640
Lead	8.09	54.8	45.7	92.7	101	6.84	109	12.1	55.7	8.74	357	35.7	22.7	29.7	18.3	18.9
Magnesium	853	1220	1050	<500	708	787J	975	1350	16.3	1290	407	3360	686	660	1080	95.1
Manganese	48.3	132	96.7	224	171	51.9	455	57	0.56	118	39.8	170	47.9	47.1	83.5	8.6
Mercury		<0.24	0.21		0.24		0.27		0.13		0.34		0.06	0.06		0.07
Nickel	5.96B	7.8	5.7	14.2	2.1	4.01B	6.7	6.50B	4.7	7.81B	2.6	22.1	3.6	3.5	6.40B	1.3
Potassium	306	669	553	858J	346	173J	872	604	539	542	381	1580	456	436	412	281
Selenium	<0.200R	<2.6	<1.9	<0.200R	6.3	0.968J	<5.6	0.443J	4.1	0.465J	3.1	<0.200R	1.1	1.8	<0.200R	0.74
Silver	<0.200	<0.72	<0.53	1.90J	<1.4	<0.200	<1.6	<0.200	<1.4	<0.200	<0.84	<0.200	<0.20	<0.20	<0.200	<0.20
Sodium	156J	<258	209	<200	<483	<200	630	189J	381	216J	<300	<200	83.2	96.8	<0.200	77.1
Thallium		<2.6	<1.9		<4.8		<5.6		<6.6		<3.0		<0.70	<0.73		<0.71
Vanadium	6.83	20.3	16.1	26.5	15.9	4.64	23.3	9.49	19.1	9.91	13.1	28.4	4.6	4.4	11.9	4.3
Zinc	19.1	65.7	54.6	213	56.0	18.1	147	26	32.6	45.6	33.0	94.3	9.9	12.1	26.8	6.1
Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Explosives																
2-Amino-4,6-dinitrotoluene		<250.0	<250.0		<250.0		<250.0		<250.0		<250.0		<250.0	<250.0		<250.0
4-Amino-2,6,dinitrotoluene		<250.0	<250.0		<250.0		<250.0		<250.0		<250.0		<250.0	<250.0		<250.0
1,3-Dinitrobenzene		<250.0	<250.0		<250.0		<250.0		<250.0		<250.0		<250.0	<250.0		<250.0
2,4-Dinitrotoluene		<250.0	<250.0		<250.0		<250.0		<250.0		<250.0		<250.0	<250.0		<250.0
2,6-Dinitrotoluene		<250.0	<250.0		<250.0		<250.0		<250.0		<250.0		<250.0	<250.0		<250.0
HMX		<500.0	<500.0		<500.0		<500.0		<500.0		<500.0		<500.0	<500.0		<500.0
Nitrobenzene		<250.0	<250.0		<250.0		<250.0		<250.0		<250.0		<250.0	<250.0		<250.0
2-Nitrotoluene		<500.0	<500.0		<500.0		<500.0		<500.0		<500.0		<500.0	<500.0		<500.0
3-Nitrotoluene		<500.0	<500.0		<500.0		<500.0		<500.0		<500.0		<500.0	<500.0		<500.0
4-Nitrotoluene		<500.0	<500.0		<500.0		<500.0		<500.0		<500.0		<500.0	<500.0		<500.0
RDX		<500.0	<500.0		<500.0		<500.0		<500.0		<500.0		<500.0	<500.0		<500.0
Tetryl		<500.0	<500.0		<500.0		<500.0		<500.0		<500.0		<500.0	<500.0		<500.0
1,3,5-Trinitrobenzene		<250.0	<250.0		<250.0		<250.0		<250.0		<250.0		<250.0	<250.0		<250.0
2,4,6-Trinitrotoluene		<250.0	<250.0		<250.0		<250.0		<250.0		<250.0		<250.0	<250.0		<250.0
Units	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g
Total Organic Carbon	41100	221000	82700	499000	559000	49700	687000	42100	193000	68900	353000	192000	106000	118000	36800	129000
Grainsize % silt or clay		37			28		42		26		19		20			56
Note: % silt or clay definedby sieve mesh size #200																
> 1993 values																
For 1993 data:																
B - Attributable to field or laboratory contamination																
C - Confirmed by reanalysis																
J - Estimated Value																
K - Result biased high																
L - Result biased low																
R - Result rejected																
U - Unconfirmed (reanalysis performed, compound not found)																

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Comparison of 199[illegible] Sediment Results

SAMPLE ID	SPD-93-08X	SPD-98-08X	SPD-93-09X	SPD-98-09X	SPD-93-10X	SPD-98-10X	SPD-93-11X	-11XDuplicate 1993	SPD-98-11X	SPD-93-12X	SPD-98-12X	SPD-93-13X	SPD-98-13X	SPD-93-14X	SPD-98-14X
Units	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	*	µg/g	µg/g	µg/g	µg/g
TAL Metals Aluminum	8900	16700	2300	7790	12000	5630	2400	2200	7190	869	*	4450	8930	2220	10700
Antimony		<1.9		<0.53		<1.3			<0.99		*		<5.9		<1.2
Arsenic	7.79	9.6	3.28	11.4	11.7	6.2	4.07	2.81	9.1	0.515	*	10.7	7.7	3.9	6.5
Barium	26.7	32.3	7.72	20.8	44.6	21.4	8.16	7.79	23.8	<5.00	*	38.7	70.3	16.3	24.6
Beryllium	0.332J	0.64	<0.500	0.29	<0.500	0.31	<0.500	<0.500	0.35	<0.500	*	<0.500	0.82	<0.500	0.30
Cadmium		0.65		0.25		0.47			0.42		*		2.1		0.49
Calcium	<500	1130	<500	1030	<500	1100	929	<500	1100	<500	*	5080	7000	2260	3810
Chromium (total)	18.4	14.4	6.04B	14.1	18.1	10.7	5.80B	6.20B	12.4	<2.00	*	16.7	14.9	5.87BJ	16.8
Cobalt	6.35	3.2	3.05	4.3	13.6	4.9	3.48	3.74	5.8	<1.00	*	7.72	4.8	29.3	5.0
Copper	6.78	13.0	4.14	12.0	15.1	9.7	4.02	3.68	10.4	14	*	8.75	27.4	5.25	14.3
Iron	13000	11100	6900	13100	13000	7420	5900	5100	9670	966	*	4730	6320	2780	15200
Lead	19.8	27.9	6.8	9.4	70	25.3	8.62	6.61	26.9	3.69	*	25.1	96.1	21.1	11.9
Magnesium	1830	1400	676	2780	1700	1400	1120	<500	1710	<500	*	<500	1540	<500	2760
Manganese	138	88.5	94.8	156	730	257	94.8	170	269	19.8	N	357	163	174	202
Mercury		0.07		<0.02		0.04			<0.04		O		0.22		<0.04
Nickel	10.2	8.8	5.49B	12.7	14.4	6.5	5.54B	5.92B	8.2	2.21B	T	13.4	12.9	6.80B	17.2
Potassium	327J	451	<200	833	<200	447	<200	<200	548	<200		<200	475	<200	724
Selenium	<0.200R	<1.5	<0.200R	<0.40	<0.200R	1.4	<0.200R	<0.200R	0.85	<0.200R	S	1.66J	4.8	0.654J	1.0
Silver	<0.200	<0.59	<0.200	<0.16	<0.200	<0.40	<0.200	<0.200	<0.30	<0.200	A	<0.200	<1.8	<0.200	<0.37
Sodium	<0.200	<160	<0.200	92.8	<0.200	142	<0.200	<0.200	106	<200	M	<200	<491	<200	209
Thallium		<2.8		<0.77		<1.9			<1.4		P		<8.6		<1.8
Vanadium	21.6	20.8	5.41	11.8	25	9.8	6.79	5.74	11.9	<2.00	L	<2.00	16.3	<2.00	11.9
Zinc	27.4	40.9	21.8	31.0	69.2	39.1	17.8	22.5	41.6	14	E	52.4	97.1	27.7	39.0
Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	D	µg/kg	µg/kg	µg/kg	µg/kg
Explosives											*				
2-Amino-4,6-dinitrotoluene		<250.0		<250.0		<250.0			<250.0		*		<250.0		<250.0
4-Amino-2,6-dinitrotoluene		<250.0		<250.0		<250.0			<250.0		*		<250.0		<250.0
1,3-Dinitrobenzene		<250.0		<250.0		<250.0			<250.0		*		<250.0		<250.0
2,4-Dinitrotoluene		<250.0		<250.0		<250.0			<250.0		*		<250.0		<250.0
2,6-Dinitrotoluene		<250.0		<250.0		<250.0			<250.0		*		<250.0		<250.0
HMX		<500.0		<500.0		<500.0			<500.0		*		<500.0		<500.0
Nitrobenzene		<250.0		<250.0		<250.0			<250.0		*		<250.0		<250.0
2-Nitrotoluene		<500.0		<500.0		<500.0			<500.0		*		<500.0		<500.0
3-Nitrotoluene		<500.0		<500.0		<500.0			<500.0		*		<500.0		<500.0
4-Nitrotoluene		<500.0		<500.0		<500.0			<500.0		*		<500.0		<500.0
RDX		<500.0		<500.0		<500.0			<500.0		*		<500.0		<500.0
Tetryl		<500.0		<500.0		<500.0			<500.0		*		<500.0		<500.0
1,3,5-Trinitrobenzene		<250.0		<250.0		<250.0			<250.0		*		<250.0		<250.0
2,4,6-Trinitrotoluene		<250.0		<250.0		<250.0			<250.0		*		<250.0		<250.0
Units	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	*	µg/g	µg/g	µg/g	µg/g
Total Organic Carbon	62900	89800	6940	<1320	62400	71700	6980	10100	136000	13400	*	252000	422000	71700	45200
Grainsize % silt or clay		24		2		27			16		*		50		6
Note: %silt or clay definedby sieve mesh size #200											*				
> 1993 values															
For 1993 data:															
B - Attributable to field or laboratory contamination															
C - Confirmed by reanalysis															
J - Estimated Value															
K - Result biased high															
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Values

Brooks/Ponds/Wetlands				New Cranberry Pond				Heron Pond	Sierra Wetland				Heron Pond
SAMPLE ID	Rojko 1990	Lowest Effect	Severe Effect	SPD-98-01X	-01XDuplicate	SPD-98-02X	SPD-98-03X	SPD-98-04X	SPD-98-05X	SPD-98-06X	-06X Duplicate	SPD-98-07X	SPD-98-08X
	"Normal" Levels	Level	Level										
units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Arsenic	< 25	6	33	14.5	10.4	11.5	21.5	50.4	4.9	1.6	2.1	1.8	9.6
Cadmium	< 5	0.6	10	<1.3	<0.98	<2.5	<2.9	0.95	<1.6	0.36	<0.38	<0.37	0.65
Chromium (total)	< 30	26	110	10.6	8.3	5.0	14.6	10.0	4.6	6.4	6.8	2.6	14.4
Copper	< 70	16	110	47.6	50.6	21.4	29.1	16.1	31.1	5.9	6.5	3.7	13.0
Iron	< 30000	20000	40000	7050	5550	4340	8410	10700	2040	2740	2600	1640	11100
Lead	< 200	31	250	54.8	45.7	101	109	55.7	357	22.7	29.7	18.9	27.9
Manganese	< 350	460	1100	132	96.7	171	455	0.56	39.8	47.9	47.1	8.6	88.5
Mercury	< 0.35	0.2	2	<0.24	0.21	0.24	0.27	0.13	0.34	0.06	0.06	0.07	0.07
Nickel	< 35	16	75	7.8	5.7	2.1	6.7	4.7	2.6	3.6	3.5	1.3	8.8
Zinc	< 250	120	820	65.7	54.6	56.0	147	32.6	33.0	9.9	12.1	6.1	40.9
%Total Organic Carbon		1.00	10.0	22.1	8.27	55.9	68.7	19.3	35.3	10.6	11.8	12.9	8.98
Grainsize % silt or clay				37		28	42	26	19	20		56	24
Note: %silt or clay defined by sieve mesh size #200													
>LEL	Shaded values exceed the Lowest Effect Level for Sediment Quality (Ministry of Environment and Energy, 1993)												
> SEL	Values in black cells exceed the Severe Effect Level for Sediment Quality (Ministry of Environment and Energy, 1993)												

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Brooks/Ponds/Wetlands				Slate Rock Brook								Spectacle Pond	Spectacle Brook		
SAMPLE ID	Rojko 1990	Lowest Effect	Severe Effect	SPD-98-09X	SPD-98-10X	SPD-98-11X	SPD-98-12X	SPD-98-13X	SPD-98-14X	SPD-98-15X	SPD-98-16X	SPD-98-17X	SPD-98-18X	SPD-98-19X	-19XDuplicate
	"Normal" Levels	Level	Level												
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	*	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Arsenic	< 25	6	33	11.4	6.2	9.1	N	7.7	6.5	9.0	9.4	4.0	4.0	2.1	3.0
Cadmium	< 5	0.6	10	0.25	0.47	0.42	O	2.1	0.49	0.33	0.28	0.22	<0.78	<0.18	<0.23
Chromium (total)	< 30	26	110	14.1	10.7	12.4	T	14.9	16.8	37.1	10.9	9.3	7.1	4.4	4.5
Copper	< 70	16	110	12.0	9.7	10.4	*	27.4	14.3	8.8	11.0	5.9	12.0	1.3	1.6
Iron	< 30000	20000	40000	13100	7420	9670	S	6320	15200	10700	13400	8420	2500	4190	4110
Lead	< 200	31	250	9.4	25.3	26.9	A	96.1	11.9	18.7	10.4	10.1	27.2	4.6	5.1
Manganese	< 350	460	1100	156	257	269	M	163	202	197	210	94.3	136	124	201
Mercury	< 0.35	0.2	2	<0.02	0.04	<0.04	P	0.22	<0.04	0.03	<0.02	<0.02	0.08	<0.02	<0.02
Nickel	< 35	16	75	12.7	6.5	8.2	L	12.9	17.2	17.4	9.9	8.5	4.1	3.8	3.3
Zinc	< 250	120	820	31.0	39.1	41.6	E	97.1	39.0	31.9	33.5	28.2	17.1	8.9	8.6
%Total Organic Carbon		1.00	10.0	<.132	7.17	13.6	D	42.2	4.52	7.25	57.4	.906	22.6	2.96	0.395
Grainsize % silt or clay				2	27	16	*	50	6	14	7	2	23	2	
Note: %silt or clay defined by sieve mesh size #200															

>LEL	Shaded values exceed the Lowest Effect Level for Sediment Quality (Ministry of Environment and Energy, 1993)
> SEL	Values in black cells exceed the Severe Effect Level for Sediment Quality (Ministry of Environment and Energy, 1993)

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Brooks/Ponds/Wetlands				Clear Pond		Spectacle Brk. Wetland	Ponakin Brook Pond	Ponakin Brook			Ponakin Brook Wetland			Cranberry Pond	
SAMPLE ID	Rojko 1990	Lowest Effect	Severe Effect	SPD-98-20X	SPD-98-21X	SPD-98-22X	SPD-98-23X	SPD-98-24X	SPD-98-25X	SPD-98-26X	SPD-98-27X	SPD-98-28X	SPD-98-29X	SPD-98-30X	SPD-98-31X
	"Normal" Levels	Level	Level												
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Arsenic	< 25	6	33	7.5	5.0	56.5	14.1	13.3	10.5	20.9	49.6	33.2	52.7	9.6	1.3
Cadmium	< 5	0.6	10	0.52	0.34	2.5	0.66	0.31	0.22	0.54	0.90	1.0	1.8	0.46	0.23
Chromium (total)	< 30	26	110	8.0	7.6	26.5	10.5	6.4	9.2	18.2	21.1	18.4	19.6	43.5	2.6
Copper	< 70	16	110	135	7.2	330.9	22.7	7.2	5.7	9.6	35.7	15.9	26.9	33.6	8.5
Iron	< 30000	20000	40000	7850	5690	23400	9870	8360	10200	27800	28200	19400	22300	17200	881
Lead	< 200	31	250	21.9	21.5	87.3	20.3	6.1	5.7	12.4	29.9	48.3	67.8	65.7	42.8
Manganese	< 350	460	1100	112	101	777	346	425	185	432	1590	1260	1700	190	15.2
Mercury	< 0.35	0.2	2	0.04	0.03	0.21	<0.07	<0.03	<0.02	<0.02	0.09	0.14	0.27	<0.02	0.03
Nickel	< 35	16	75	5.3	5.1	19.3	9.2	4.5	7.8	17.4	15.0	16.6	23.0	19.4	1.3
Zinc	< 250	120	820	59.5	30.1	182	61.0	28.8	23.8	45.7	78.3	1.4	145	0.26	8.3
%Total Organic Carbon		1.00	10.0	6.84	2.69	28.3	9.23	3.34	.904	.621	12.9	11.1	22.6	.841	5.26
Grainsize % silt or clay				11	17	55	6	6	4	0	48	55	44	3	13
Note: %silt or clay defined by sieve mesh size #200															

>LEL	Shaded values exceed the Lowest Effect Level for Sediment Quality (Ministry of Environment and Energy, 1993)
> SEL	Values in black cells exceed the Severe Effect Level for Sediment Quality (Ministry of Environment and Energy, 1993)