

Annual Report 2011 **Effluent Water Quality Site E1 - Tailings Storage Supernatant**

Sample Point	E1	E1	E1	E1	E1	E1	E1	E1	E1	E1	E1	E1
Date	10-Jan-11	3-Feb-11	7-Mar-11	6-Apr-11	12-May-11	9-Jun-11	14-Jul-11	4-Aug-11	8-Sep-11	5-Oct-11	1-Nov-11	5-Dec-11
Conductivity (in situ) (µs/cm)	1902		1671	1439	1055	1076	1105	1174		1280	1337	1337
pH (in situ) (pH)	8.42		9.45	8.35	7.94	8.31	8.32	8.12		8.43	8.35	9.47
Temperature (in situ) (Degrees Celcius)	2.8		3.7	3.3	11.6	17.2	17	18		9.4	2.5	3.3
Alkalinity (CaCO3) (mg/L)	28.4	21	16.4	36.9	35.6	34.3	35.9	36	31.2	31.5	34.6	27.7
Conductivity (µs/cm)	1870	1740	1620	1340	1020	1040	1100	1150	1210	1250	1260	1270
Hardness (as CaCO3) (mg/L)	879	769	681	565	409	433	456	474	470	472	479	452
pH (pH)	7.68	8.54	8.7	7.81	7.71	7.74	7.8	7.79	7.89	7.77	7.58	8.23
Total Dissolved Solids (mg/L)	1600	1450	1340	1100	784	815	841	913	943	988	981	996
Total Suspended Solids (mg/L)	<3	13.3	6.8	9.6	13.8	8.7	3.5	<3	3.7	24.2	16.9	5.3
Turbidity (ntu)	1.82	10.4	3.73	6.93	16.1	2.81	3.32	1.85	2.04	18.5	30.1	5.17
Chloride (Cl) (mg/L)	37.6	35.5	33	28.2	19.7	17.7	17.7	20.3	21	22.3	23.3	24.5
Fluoride (F) (mg/L)						0.49						0.76
Sulfate (SO4) (mg/L)	994	899	829	657	474	525	508	547	573	575	596	587
Ammonia (as N) (mg/L)	0.46	0.654	0.612	0.719	0.407	0.196	0.0619	0.125	0.0869	0.126	0.179	0.348
Nitrate (as N) (mg/L)	7.9	7.7	7.33	5.94	4.59	4.95	5.21	5.68	5.38	5.4	6.02	5.69
Nitrate and Nitrite (as N) (mg/L)	8.05	7.85	7.48	6.13	4.68	4.99	5.31	5.76	5.47	5.5	6.12	5.81
Nitrite (as N) (mg/L)	0.15	0.151	0.155	0.185	0.092	0.04	0.093	0.073	0.087	0.1	0.097	0.126
Nitrogen N-WDGWA (mg/L)												
Total Nitrogen (mg/L)	8.5	10.1	7.97	6.51	6.33	7.12	7.52	7.14	8.16	6.79	8.6	8.77
Orthophosphate-Dissolved (as P) (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus (P) Total Dissolved (mg/L)	0.0096	0.0073	0.0057	0.0072	0.0048	0.0027	<0.002	<0.002		<0.0020	<0.0020	0.0044
Phosphorus (P) Total (mg/L)	0.0162	0.0185	0.0142	0.0288	0.0382	0.0094	0.0071	0.0035	0.0042	0.0281	0.0512	0.0114
Dissolved Metals												
Aluminum (Al)-Dissolved (mg/L)	0.0082	0.0093	0.0109	0.0132	0.015	0.0229	0.0203	0.0428	0.0255	0.0154	0.0145	0.0155
Antimony (Sb)-Dissolved (mg/L)	0.00454	0.00322	0.0019	0.00131	0.00088	0.00102	0.00116	0.00119	0.00148	0.00165	0.00163	0.00163
Arsenic (As)-Dissolved (mg/L)	0.00209	0.00157	0.00132	0.00118	0.00101	0.00131	0.00151	0.00158	0.00191	0.002	0.00201	0.00194
Barium (Ba)-Dissolved (mg/L)	0.0734	0.0902	0.0909	0.0616	0.0585	0.0697	0.0814	0.0778	0.0804	0.0794	0.0775	0.0717
Cadmium (Cd)-Dissolved (mg/L)	<0.00005	0.000037	<0.00005	<0.00005	<0.00005	<0.00005	<0.00004	<0.00008	<0.00020	<0.000050	<0.000050	<0.000060
Calcium (Ca)-Dissolved (mg/L)	305	272	242	195	136	147	159	163	165	168	171	164
Chromium (Cr)-Dissolved (mg/L)	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Copper (Cu)-Dissolved (mg/L)	0.0017	0.00154	<0.001	0.0018	0.00323	0.00262	0.00264	0.00254	0.00164	0.00189	0.00092	0.00091
Iron (Fe)-Dissolved (mg/L)	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.030	<0.030	<0.030	<0.030
Lead (Pb)-Dissolved (mg/L)	<0.00005	<0.00005	<0.0001	<0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050
Lithium (Li)-Dissolved (mg/L)	0.0103	0.0067	<0.01	<0.01	0.006	0.00537	0.00431	0.00592	0.00697	0.00604	0.00708	0.0057
Magnesium (Mg)-Dissolved (mg/L)	28.7	21.9	18.7	19	17.1	16	14.1	16.1	14	12.4	13	10.6
Manganese (Mn)-Dissolved (mg/L)	0.0504	0.0265	0.0154	0.0691	0.0361	0.000078	0.0123	0.032	0.000167	0.00818	0.0166	0.00709
Molybdenum (Mo)-Dissolved (mg/L)	0.24	0.223	0.228	0.167	0.127	0.141	0.16	0.17	0.185	0.19	0.198	0.206
Nickel (Ni)-Dissolved (mg/L)	<0.0005	<0.0005	<0.001	<0.001	0.00051	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Potassium (K)-Dissolved (mg/L)	24.4	21	19.1	16.7	11.5	15	17.7	19.9	24.4	23.4	24.8	31
Selenium (Se)-Dissolved (mg/L)	0.0266	0.0232	0.0222	0.018	0.0166	0.0204	0.0212	0.021	0.0231	0.0226	0.0217	0.022
Silicon (Si)-Dissolved (mg/L)	5.63	5.87	5.88	5.38	4.33	5.13	5.99	5.51	6.75	7.33	6.91	7.51
Silver (Ag)-Dissolved (mg/L)	<0.00001	<0.00001	<0.00002	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved (mg/L)	103	93.3	101	78.1	55.2	58.5	65.3	64	77.3	77.3	86.6	96.4
Strontium (Sr)-Dissolved (mg/L)	2.32	1.97	2.08	1.56	1.35	1.47	1.42	1.45	1.4	1.42	1.48	1.49
Tin (Sn)-Dissolved (mg/L)	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Zinc (Zn)-Dissolved (mg/L)	<0.003	<0.003	<0.006	<0.006	<0.003	<0.003	<0.003	0.0059	<0.0030	<0.0030	<0.0030	<0.0030
Total Metals												

* Note - these results are for data from 1997 to 2011

Sample (n)	Count >MDL	Min	Max	Mean
159	159	182.2	2001	753.3107
160	160	3.07	10.26	8.187869
163	163	0.8	25.4	9.139571
182	173	16.4	163	73.66763
19	19	1020	1990	1463.684
184	184	71.3	970	220.7533
19	19	6.59	8.7	7.804737
141	137	3.8	2450	536.692
168	138	3.1	1320	135.1486
183	183	0.27	1150	139.5441
48	48	17.5	44	27.87083
2	2	0.49	0.76	0.625
177	177	2.5	1100	267.178
183	140	0.006	0.719	0.119081
88	88	0.004	8.15	3.105602
181	159	0.005	8.33	1.909214
145	114	0.001	1.19	0.108937
2	2	0.5	1.42	0.96
80	80	1.01	10.1	4.53525
183	89	0.001	0.239	0.020027
136	110	0.002	0.734	0.036219
143	142	0.0024	0.684	0.056466
171	170	0.0082	3.59	0.063831
171	170	0.00015	0.00519	0.00186
171	170	0.001	0.006	0.002821
171	171	0.0261	0.2	0.053301
171	94	0.00001	0.00044	0.000121
171	171	17.9	341	77.08246
170	36	0.0002	0.0057	0.001238
184	170	0.00018	0.601	0.023836
171	61	0.005	0.992	0.077672
171	76	0.00002	0.0015	0.000219
158	130	0.0022	0.036	0.009639
171	171	2.73	30.5	8.460819
171	171	0.000078	0.36	0.028961
184	184	0.0076	0.565	0.125703
171	36	0.0001	0.0028	0.000824
171	171	8.69	38.3	19.94988
171	170	0.0007	0.0333	0.010855
170	170	0.26	8.76	3.806529
170	8	0.00001	0.00003	1.51E-05
170	170	32.2	116	70.64882
169	169	0.144	6.6	1.244479
158	41	0.00005	0.00053	0.000131
168	84	0.0004	0.0097	0.001714

Annual Report 2011
Effluent Water Quality Site E1 - Tailings Storage Supernatant

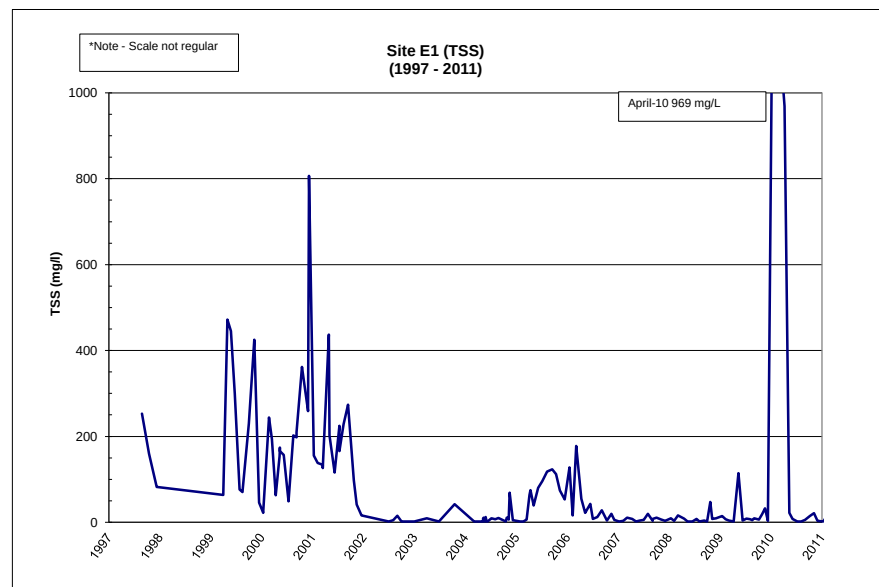
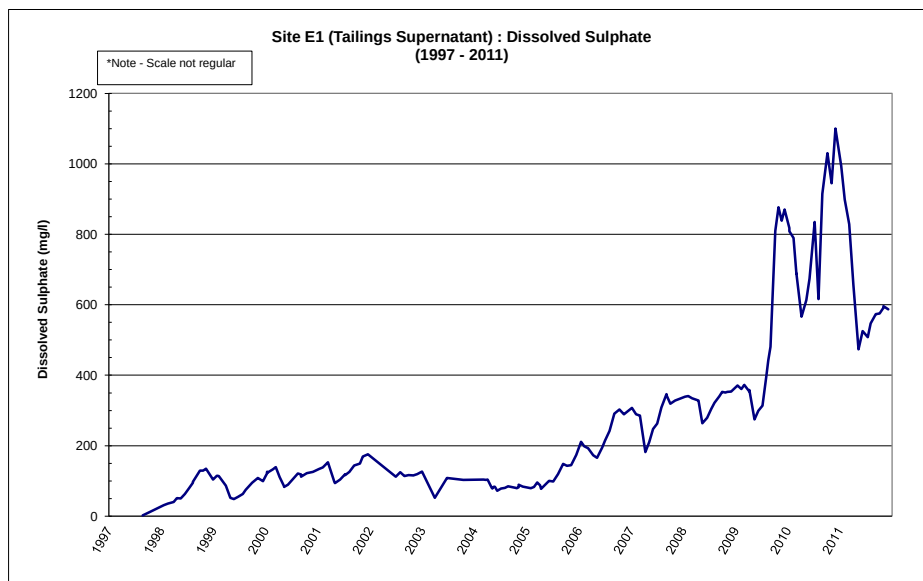
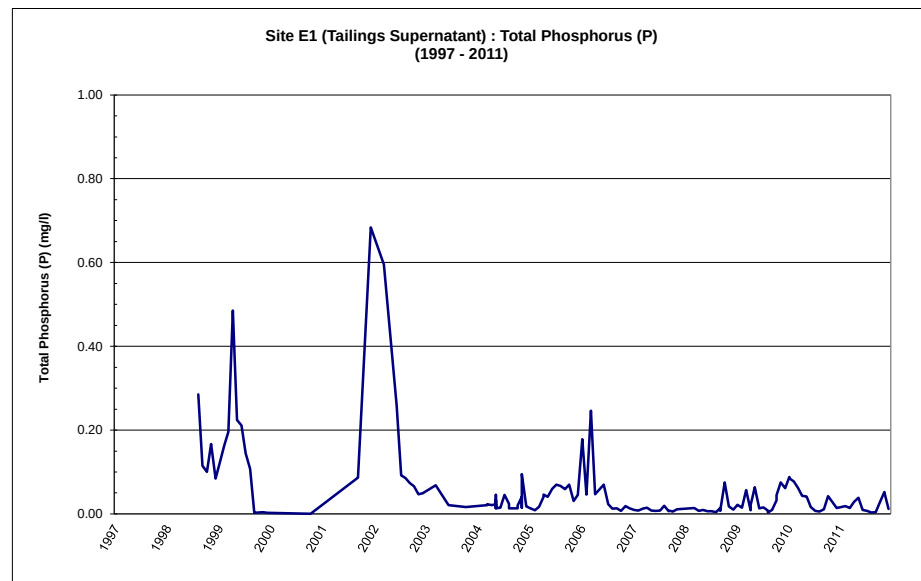
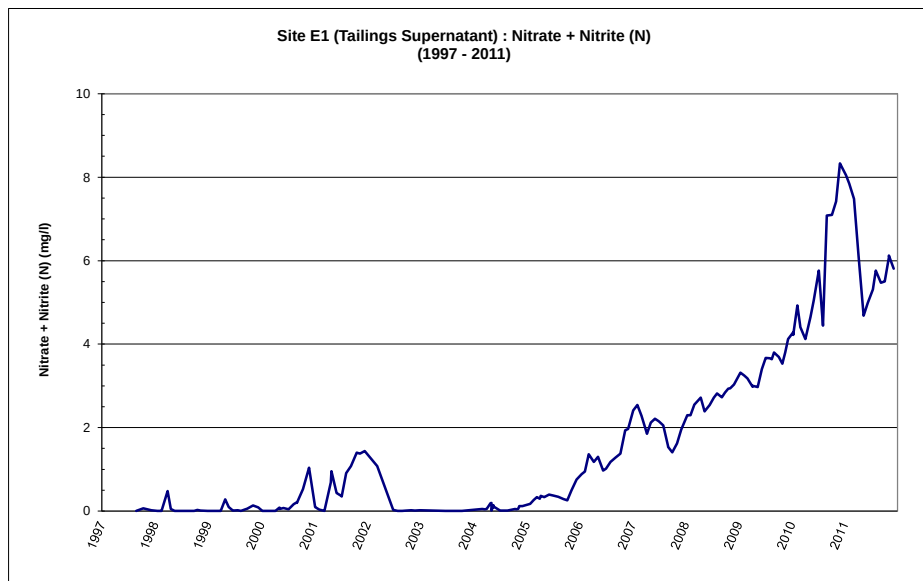
Sample Point	E1	E1	E1	E1	E1	E1	E1	E1	E1	E1	E1	E1
Date	10-Jan-11	3-Feb-11	7-Mar-11	6-Apr-11	12-May-11	9-Jun-11	14-Jul-11	4-Aug-11	8-Sep-11	5-Oct-11	1-Nov-11	5-Dec-11
Aluminum (Al)-Total (mg/L)	0.0658	0.597	0.133	0.586	0.695	0.14	0.219	0.137	0.0833	0.515	1.97	0.134
Antimony (Sb)-Total (mg/L)	0.00506	0.00325	0.00152	0.00138	0.00087	0.001	0.00124	0.00117	0.00142	0.00158	0.00165	0.00154
Arsenic (As)-Total (mg/L)	0.00215	0.00189	0.00155	0.00153	0.00125	0.00125	0.00165	0.00154	0.00189	0.00221	0.00259	0.0019
Barium (Ba)-Total (mg/L)	0.0788	0.107	0.0982	0.0705	0.0669	0.0741	0.089	0.0805	0.0788	0.0927	0.105	0.07
Cadmium (Cd)-Total (mg/L) (mg/L)	<0.00006	<0.00002	0.000023	0.000027	<0.00002	<0.00002	<0.00002	<0.00002	0.000031	0.000023	0.00005	0.000027
Calcium (Ca)-Total (mg/L)	310	276	244	202	134	149	168	165	164	165	175	156
Chromium (Cr)-Total (mg/L)	<0.0005	<0.0005	<0.001	<0.001	0.00053	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	0.00209	<0.00050
Copper (Cu)-Total (mg/L)	0.00681	0.0158	0.0052	0.0139	0.0275	0.00627	0.0102	0.00572	0.00554	0.0224	0.0275	0.00462
Iron (Fe)-Total (mg/L) (mg/L)	0.043	0.318	0.08	0.504	0.462	0.075	0.119	0.066	0.041	0.331	1.69	0.069
Lead (Pb)-Total (mg/L)	<0.00005	0.000172	<0.0001	0.00115	0.000126	<0.00005	0.000094	<0.00005	0.000071	0.000203	0.00056	<0.000050
Lithium (Li)-Total (mg/L)	0.0111	0.0068	<0.01	<0.01	0.0062	0.00522	0.00538	0.00659	0.0069	0.00629	0.00895	0.0053
Magnesium (Mg)-Total (mg/L)	29.1	22.4	18.8	19.8	17.1	16.2	14.9	16.6	14	12.4	14	10.2
Manganese (Mn)-Total (mg/L)	0.0551	0.042	0.0195	0.0824	0.0543	0.0078	0.0181	0.0374	0.00634	0.0219	0.0598	0.0103
Molybdenum (Mo)-Total (mg/L)	0.274	0.233	0.174	0.178	0.125	0.152	0.167	0.176	0.186	0.188	0.204	0.202
Nickel (Ni)-Total (mg/L)	<0.0005	<0.0005	<0.001	0.0011	0.00079	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	0.00165	<0.00050
Potassium (K)-Total (mg/L)	25.4	23.2	20.5	17.2	11.7	15.4	18.9	20.3	23.8	23.7	26.7	29.8
Selenium (Se)-Total (mg/L)	0.025	0.0249	0.0221	0.0187	0.0158	0.0186	0.0221	0.0203	0.0219	0.0223	0.0216	0.0201
Silicon (Si)-Total (mg/L)	5.87	7.49	6.15	7.33	5.62	5.47	6.69	5.9	6.89	8.21	11.2	7.37
Silver (Ag)-Total (mg/L)	<0.00001	<0.00001	<0.00002	0.000049	<0.00001	<0.00001	<0.00001	0.000018	<0.000010	<0.000010	0.00001	<0.000010
Sodium (Na)-Total (mg/L)	106	104	108	79.5	55.9	60.4	69.6	66.3	75.8	79	91.1	93
Strontium (Sr)-Total (mg/L)	2.63	2.03	1.57	1.67	1.34	1.57	1.51	1.49	1.43	1.42	1.55	1.48
Tin (Sn)-Total (mg/L)	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	0.00023	<0.00010	<0.00010
Zinc (Zn)-Total (mg/L)	<0.003	<0.003	<0.006	<0.006	<0.003	0.0037	0.0044	<0.003	<0.0030	<0.0030	0.0062	<0.0030
Dissolved Organic Carbon (mg/L)	9.58	10.7	10.6	9.4	5.82	5.8	4.67	4.76	4.1	4.03	4.98	6.16
Mineral Oil & Grease (mg/L)				<5		<5		<5			<5.0	
Coliform Bacteria - Total (CFU/100mL)												
Coliform Bacteria - Total (MPN/100mL)				15								
E. coli (ct/100mL)				<1								

* Note - these results are for data from 1997 to 2011

Sample (n)	Count >MDL	Min	Max	Mean
184	184	0.0534	20.4	2.814853
173	172	0.00047	0.00516	0.001808
184	183	0.0012	0.17	0.004571
173	173	0.0376	0.45	0.108192
173	113	0.00001	0.00641	0.000184
185	185	21	342	74.16919
173	74	0.00019	0.00707	0.001817
184	177	0.00225	2.5	0.183095
184	184	0.033	17.4	1.571337
184	163	0.000051	0.0481	0.001749
157	128	0.0022	0.0401	0.010742
185	185	4.05	30	9.090865
184	184	0.00604	0.39	0.072037
184	181	0.0163	0.287	0.123875
184	97	0.0003	0.0859	0.003926
184	184	9.04	38.7	20.96815
184	183	0.0006	0.0334	0.010142
185	185	0.33	47.2	9.872124
172	65	0.00001	0.00013	0.000034
183	183	0.0024	119	69.36613
183	183	0.217	6.64	1.19977
157	53	0.00005	0.00209	0.000293
182	135	0.0005	0.0687	0.009139
150	150	2.19	10.7	5.213067

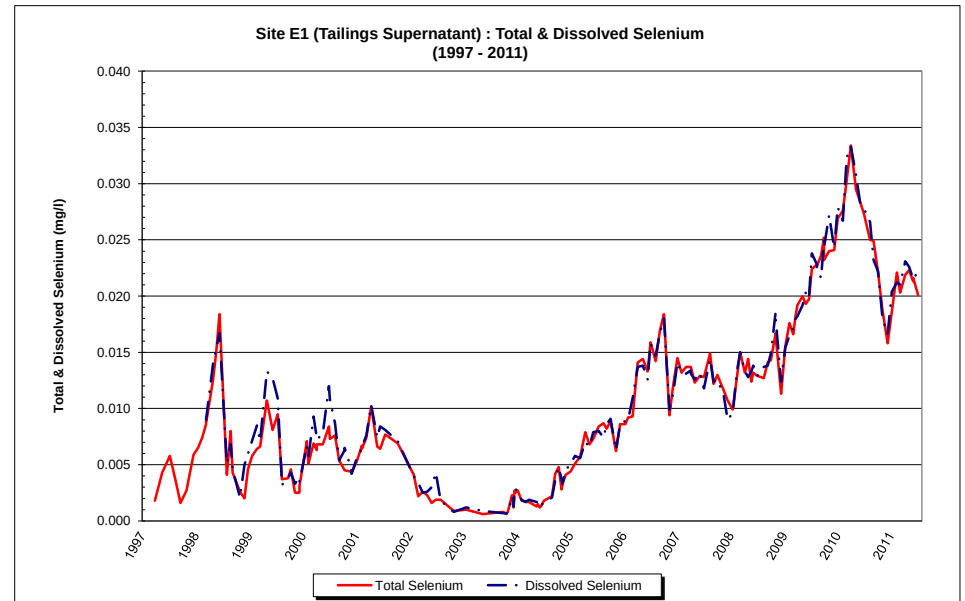
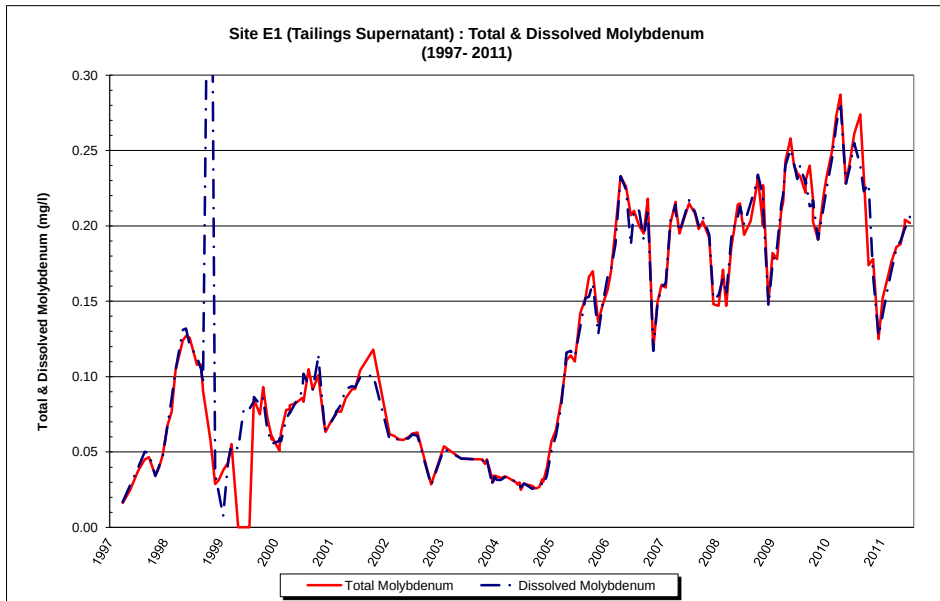
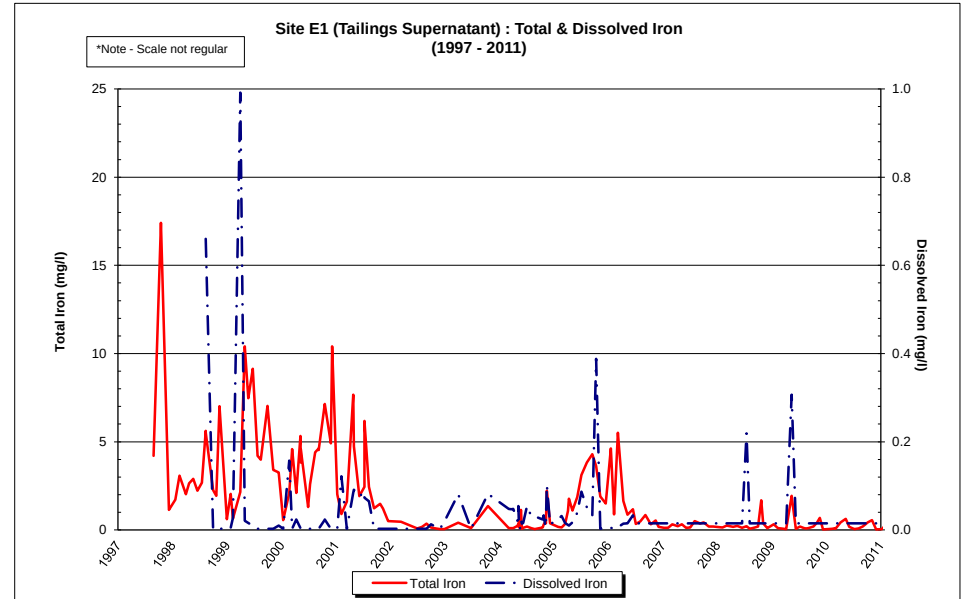
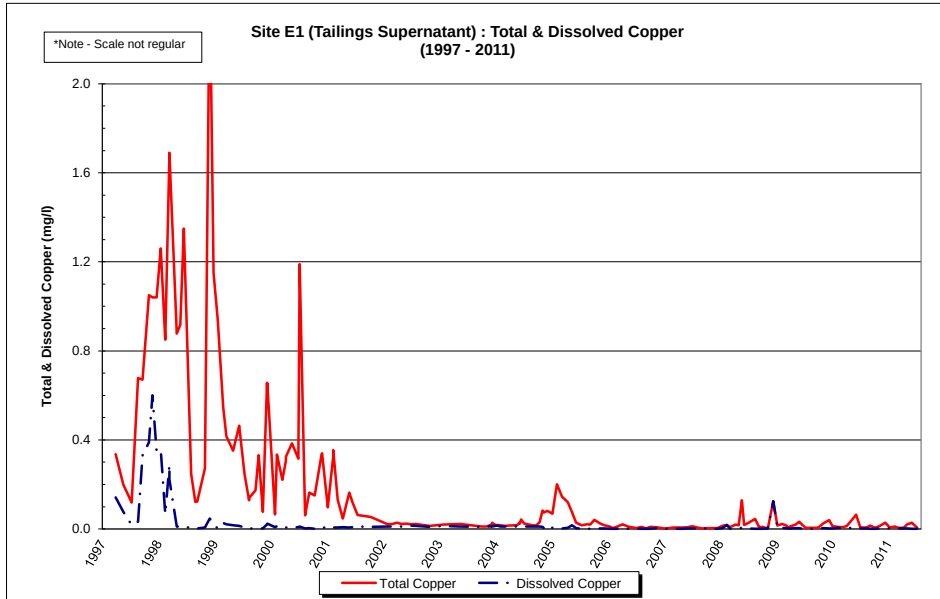
Annual Report 2011

Water Quality at Site E1 (Tailings Supernatant)



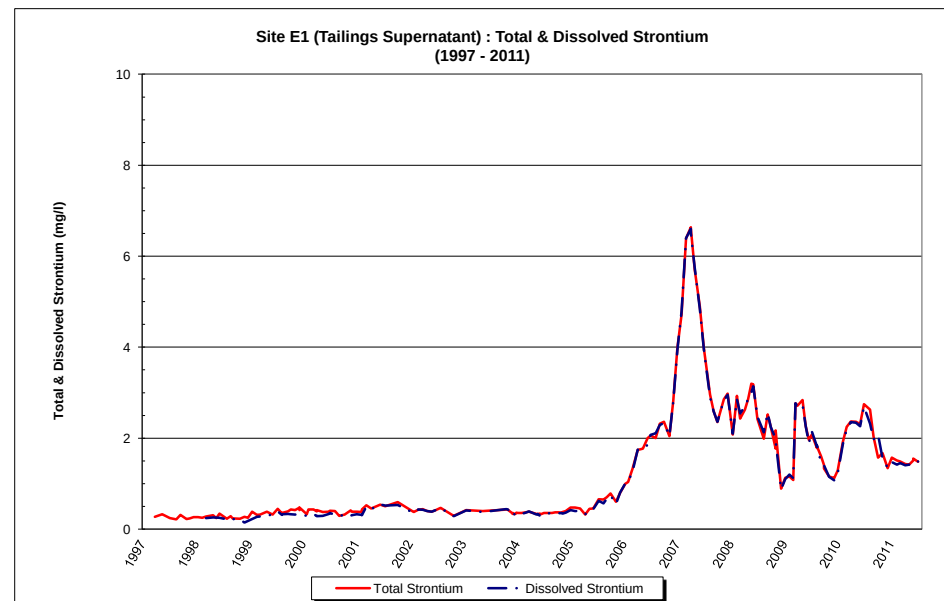
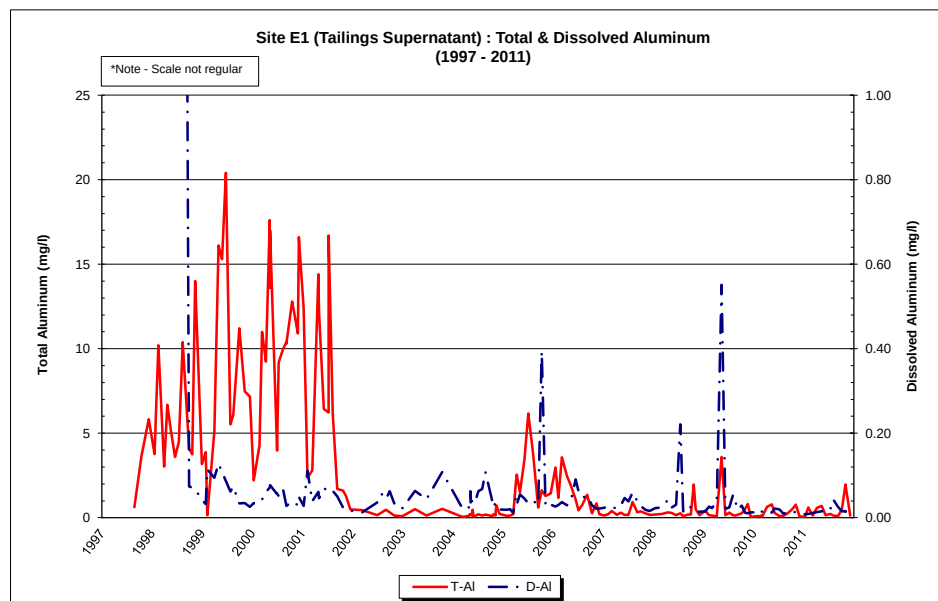
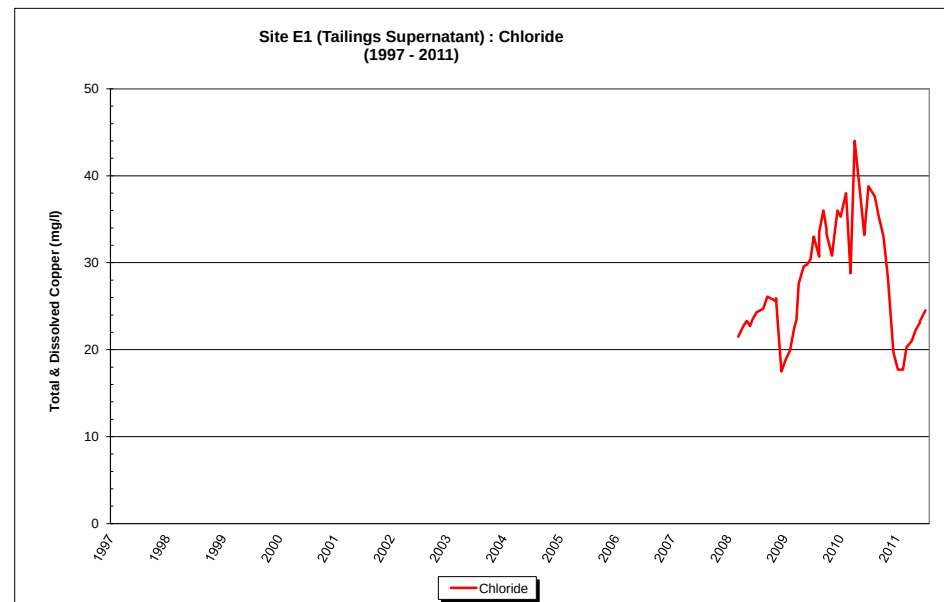
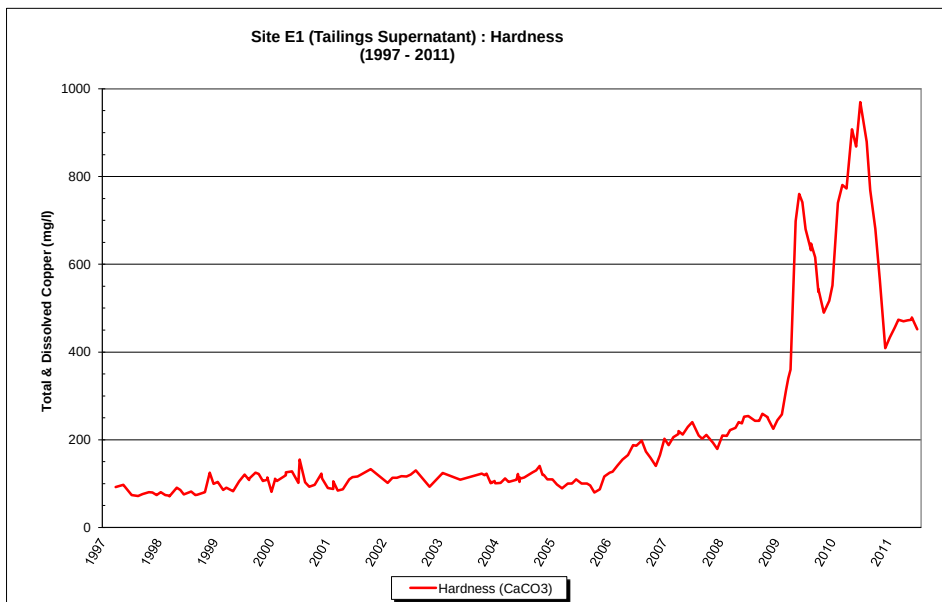
Annual Report 2011

Water Quality at Site E1 (Tailings Supernatant)



Annual Report 2011

Water Quality at Site E1 (Tailings Supernatant)



Annual Report 2011 **Effluent Water Quality Site E4 - Main Embankment Seepage Pond**

Sample Point	E4	E4	E4	E4	E4	E4	E4	E4	E4	E4	E4	E4
Date	10-Jan-11	3-Feb-11	8-Mar-11	5-Apr-11	12-May-11	9-Jun-11	13-Jul-11	4-Aug-11	8-Sep-11	5-Oct-11	1-Nov-11	5-Dec-11
Conductivity (in situ) (µs/cm)	1583			1138	1017	1117	1111	1188	1201	1240	1254	1283
pH (in situ) (pH)	7.49			7.57	7.78	8.42	8.32	9.2	8.17	8.07	8.18	8.06
Temperature (in situ) (Degrees Celcius)	1.3			12.2	11.7	16.7	15.6	16.7	13.9	9.1	4.3	3.5
Alkalinity (CaCO3) (mg/L)	76.5	76.9	101	105	90.3	51.8	50.8	63.5	81.9	90.2	86.6	79.1
Conductivity (µs/cm)	1550	1510	1340	1090	999	1080	1100	1170	1190	1200	1230	1210
Hardness (as CaCO3) (mg/L)	711	668	558	508	423	473	466	506	496	493	491	497
pH (pH)	7.8	7.84	8.01	7.94	8	8.09	7.86	8	8.05	8.05	8.05	7.97
Total Dissolved Solids (mg/L)	1280	1230	1070	859	752	786	847	912	916	914	911	903
Total Suspended Solids (mg/L)	<3	5.3	10.1	64.2	37.2	4	3.5	<3	<3.0	<3.0	<3.0	4.7
Turbidity (ntu)	2.26	2.77	6.96	45.8	27.8	1.19	3.17	1.61	1.11	1.81	1.43	3.31
Chloride (Cl) (mg/L)	31.9	30.2	27	16	18.7	18	18.3	21.4	21.7	22.6	22.8	22.7
Fluoride (F) (mg/L)						0.53						0.67
Sulfate (SO4) (mg/L)	756	715	597	475	427	513	503	544	535	537	536	545
Ammonia (as N) (mg/L)	0.0612	0.0399	0.0616	0.0119	0.0075	0.0137	0.0128	0.0172	0.031	0.0417	0.0228	0.032
Nitrate (as N) (mg/L)	5.97	5.45	3.61	3.77	3.82	4.23	3.99	4.43	2.9	2.64	3.29	3.3
Nitrate and Nitrite (as N) (mg/L)	6.02	5.47	3.64	3.77	3.84	4.26	4.06	4.5	2.99	2.71	3.36	3.35
Nitrite (as N) (mg/L)	0.049	0.022	0.027	<0.01	0.016	0.028	0.07	0.069	0.095	0.066	0.075	0.053
Nitrogen N-WDGWA (mg/L)												
Total Nitrogen (mg/L)	6.17	6.7	3.73	4.14	5.03	6.55	5.66	5.44	4.27	3.12	4.68	4.92
Orthophosphate-Dissolved (as P) (mg/L)	<0.001	0.0044	0.0039	0.0041	<0.001	<0.001	<0.001	<0.001	<0.0010	<0.0010	0.0025	0.003
Phosphorus (P) Total Dissolved (mg/L)	0.009	0.0121	0.0125	0.0108	0.0054	0.0041	0.004	0.0048	0.0054	0.0073	0.0074	0.0074
Phosphorus (P) Total (mg/L)	0.0231	0.0223	0.0305	0.0993	0.0397	0.0077	0.0126	0.0101	0.0123	0.0145	0.0114	0.0157
Aluminum (Al)-Dissolved (mg/L)	<0.003	<0.003	<0.003	0.0045	0.009	0.0152	0.0037	<0.003	0.0032	<0.0030	<0.0030	0.0146
Antimony (Sb)-Dissolved (mg/L)	0.00172	0.0016	0.00083	0.00064	0.0007	0.00102	0.00097	0.00082	0.00071	0.00051	0.00058	0.00063
Arsenic (As)-Dissolved (mg/L)	0.00168	0.00163	0.00173	0.001	0.00111	0.00155	0.00166	0.00157	0.00185	0.00141	0.00164	0.00145
Barium (Ba)-Dissolved (mg/L)	0.0478	0.0495	0.0528	0.0504	0.0425	0.0352	0.0382	0.0411	0.0424	0.0533	0.0458	0.0403
Cadmium (Cd)-Dissolved (mg/L)	<0.0002	0.000177	<0.00015	<0.0002	<0.00008	<0.00008	<0.00007	<0.00015	<0.000060	<0.000080	<0.000080	<0.00020
Calcium (Ca)-Dissolved (mg/L)	236	220	181	163	137	152	151	164	160	159	160	163
Chromium (Cr)-Dissolved (mg/L)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Copper (Cu)-Dissolved (mg/L)	0.00457	0.00571	0.00374	0.00639	0.00359	0.00507	0.00352	0.00334	0.00244	0.00213	0.00242	0.00373
Iron (Fe)-Dissolved (mg/L)	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.030	<0.030	<0.030	<0.030
Lead (Pb)-Dissolved (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050
Lithium (Li)-Dissolved (mg/L)	0.0104	0.0073	0.0067	<0.005	0.0053	0.00558	0.00574	0.0064	0.00695	0.00504	0.00641	0.00714
Magnesium (Mg)-Dissolved (mg/L)	29.6	29	25.5	24.5	19.8	23	21.8	23.3	23.5	23	22	21.8
Manganese (Mn)-Dissolved (mg/L)	0.243	0.244	0.406	0.21	0.182	0.0532	0.0523	0.0609	0.000392	0.0753	0.121	0.148
Molybdenum (Mo)-Dissolved (mg/L)	0.221	0.173	0.15	0.145	0.136	0.153	0.15	0.167	0.159	0.139	0.165	0.161
Nickel (Ni)-Dissolved (mg/L)	<0.0005	<0.0005	0.0006	0.00059	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Potassium (K)-Dissolved (mg/L)	15.2	14.6	12.9	8.19	8.25	9.29	10.2	11.1	12.3	11.3	12.2	12.3
Selenium (Se)-Dissolved (mg/L)	0.0174	0.0151	0.00952	0.0123	0.0111	0.0172	0.015	0.0147	0.0126	0.0106	0.0115	0.0122
Silicon (Si)-Dissolved (mg/L)	5.88	6.03	6.27	5.26	4.66	3.72	4.88	5.09	3.81	5.06	5.29	5.78
Silver (Ag)-Dissolved (mg/L)	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved (mg/L)	88.8	85.3	82.3	47.1	51.9	62.4	64	63.8	74.8	74.5	78.6	81.8
Strontium (Sr)-Dissolved (mg/L)	2.62	1.98	1.86	1.86	1.52	1.6	1.57	1.75	1.67	1.59	1.66	1.74
Tin (Sn)-Dissolved (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Zinc (Zn)-Dissolved (mg/L)	<0.003	<0.003	<0.003	0.0161	<0.003	<0.003	<0.003	<0.003	<0.0030	<0.0030	<0.0030	0.0037
Aluminum (Al)-Total (mg/L)	0.0845	0.109	0.345	2.21	1.76	0.174	0.189	0.0705	0.0417	0.0693	0.0634	0.136
Antimony (Sb)-Total (mg/L)	0.00185	0.00158	0.00087	0.00075	0.0007	0.00102	0.00096	0.0008	0.00069	0.00054	0.00057	0.00058
Arsenic (As)-Total (mg/L)	0.00185	0.00179	0.00206	0.00222	0.00166	0.00165	0.00176	0.00172	0.0019	0.0014	0.00171	0.000712
Barium (Ba)-Total (mg/L)	0.0497	0.049	0.0578	0.0707	0.0559	0.0404	0.0394	0.0419	0.0438	0.0542	0.0461	0.0415
Cadmium (Cd)-Total (mg/L) (mg/L)	<0.0002	0.000178	<0.00015	0.000133	0.000064	0.000036	0.000053	0.000047	0.000062	0.000027	0.00005	0.000085
Calcium (Ca)-Total (mg/L)	240	221	185	162	139	159	154	169	160	161	157	162
Chromium (Cr)-Total (mg/L)	<0.0005	<0.0005	0.00054	0.00516	0.00345	0.00057	0.00053	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Copper (Cu)-Total (mg/L)	0.00726	0.00901	0.0135	0.0309	0.0119	0.0137	0.00562	0.00485	0.00457	0.00404	<0.0040	0.00629

* Note - these results are for data from 2001 to 2011

Sample (n)	Count >MDL	Min	Max	Mean	95th Percentile	StDv
139	139	178.1	1604	703.9583	1241.4	279.0062
140	140	6.57	9.82	8.1257	9.0645	0.543109
142	142	0	22.9	9.36162	20.265	6.731048
153	138	41.7	196	116.2181	159.15	31.0729
18	18	844	1550	1200.056	1516	205.2174
153	153	86.4	754	256.7039	519.6	128.7057
18	18	7.8	8.77	8.047222	8.294	0.207444
142	142	174	1280	488.0141	915.9	233.7826
149	88	1	133	10.77614	29.125	15.94875
149	148	0.48	62.1	6.880541	24.5	9.405047
43	43	7.17	31.9	20.23884	30.05	4.841355
2	2	0.53	0.67	0.6	0.663	0.098995
150	150	19.8	756	210.8747	544.55	162.2244
153	125	0.006	0.319	0.04365	0.1336	0.044959
89	86	0.0575	5.97	1.836157	4.17	1.304662
59	56	0.005	28.9	5.447929	21.775	6.965076
112	99	0.0017	0.227	0.032194	0.08294	0.034077
5	5	3.06	12.2	6.676	11.256	3.76889
103	102	0.214	29.2	3.96102	17.045	5.470574
153	75	0.001	0.0687	0.009041	0.03	0.010889
148	146	0.004	0.109	0.016697	0.046	0.014023
148	148	0.007	0.223	0.036224	0.072735	0.026949
154	124	0.0011	0.135	0.010352	0.03216	0.021309
154	150	0.00009	0.00172	0.000308	0.000775	0.000245
154	153	0.0006	0.0063	0.001925	0.002928	0.000682
154	154	0.0184	0.0919	0.053176	0.07621	0.014482
153	78	0.000018	0.00034	9.89E-05	0.000242	6.86E-05
153	153	17.6	237	78.96275	168	43.12524
154	31	0.0002	0.0048	0.001222	0.004	0.001297
154	141	0.0002	0.0133	0.002889	0.0062	0.00179
154	43	0.005	0.198	0.045279	0.153	0.048546
154	48	0.00002	0.00048	8.32E-05	0.000263	9.15E-05
154	86	0.0007	0.0104	0.003333	0.006938	0.002071
153	153	7.3	39.4	14.59477	24.58	5.265942
154	153	0.00015	0.858	0.149767	0.5144	0.187426
154	154	0.00737	0.221	0.094702	0.16035	0.044651
154	18	0.0005	0.0012	0.000656	0.000937	0.00017
152	152	2	15.2	7.380066	13.225	3.213625
152	142	0.0005	0.181	0.00623	0.012585	0.01535
151	151	0.14	8.09	4.458424	6.945	1.732804
152	4	0.00001	0.000015	1.13E-05	1.43E-05	2.5E-06
150	150	5.93	88.8	48.62553	77.835	18.49163
152	152	0.279	2.62	0.878579	1.768	0.487811
152	32	0.00005	0.00059	0.000154	0.000458	0.000134
152	83	0.0006	0.0863	0.004422	0.0117	0.009722
153	153	0.0029	2.21	0.213645	0.717	0.324225
153	150	0.0001	0.00185	0.000322	0.000777	0.000251
153	152	0.0006	0.0061	0.002091	0.003284	0.000712
153	153	0.0204	0.104	0.057339	0.08338	0.015633
152	99	0.00002	0.00035	9.57E-05	0.000231	6.56E-05
153	153	18.2	240	78.49804	167.2	43.47145
153	63	0.0002	0.00848	0.001438	0.004	0.001438
153	148	0.0007	0.0309	0.005128	0.012095	0.004086

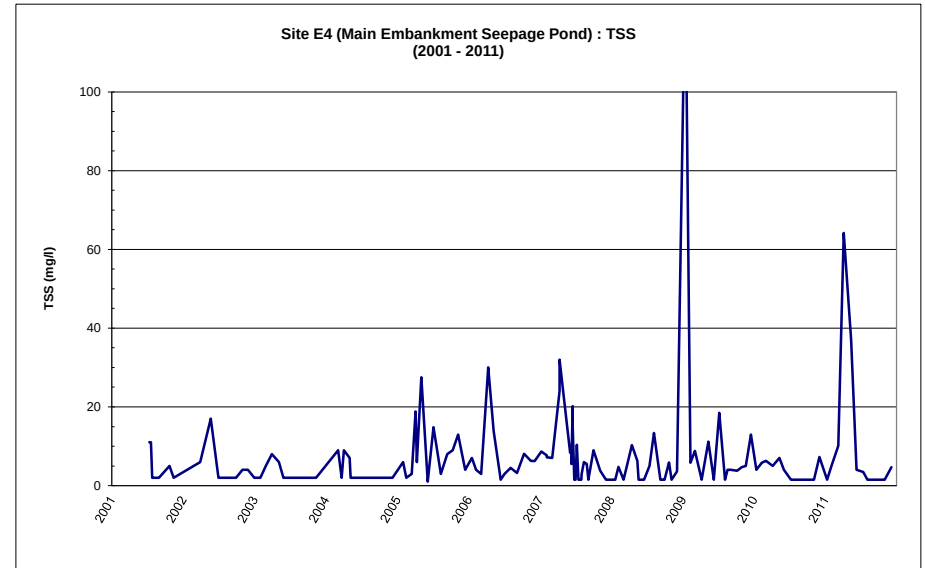
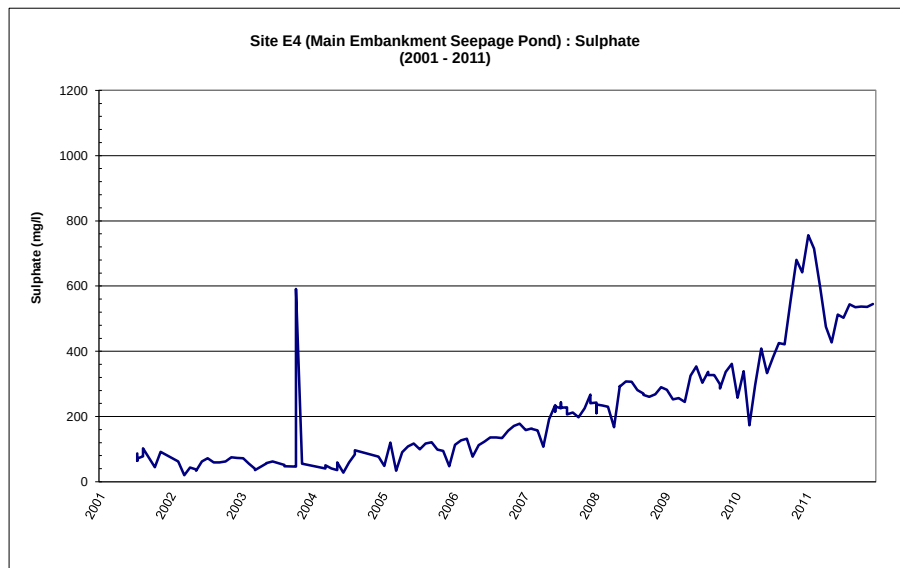
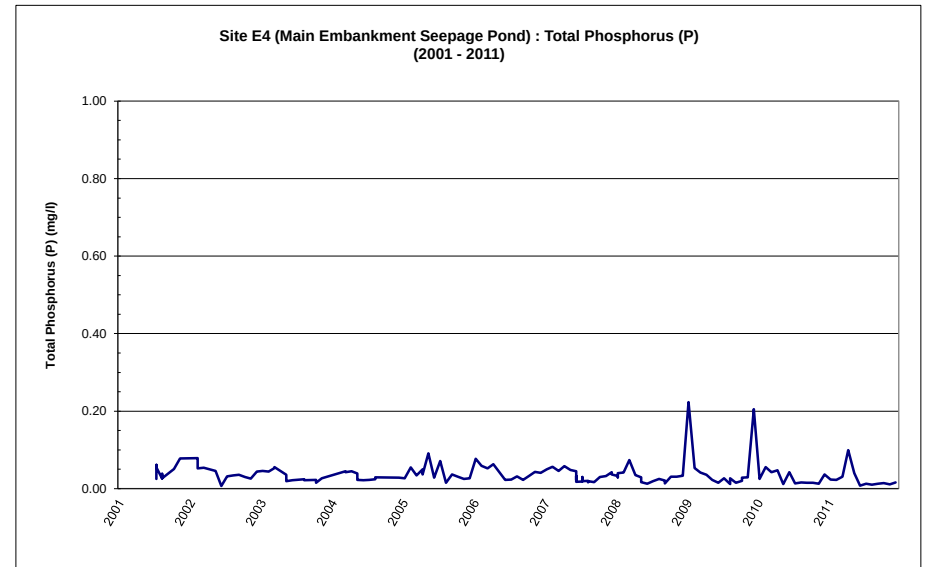
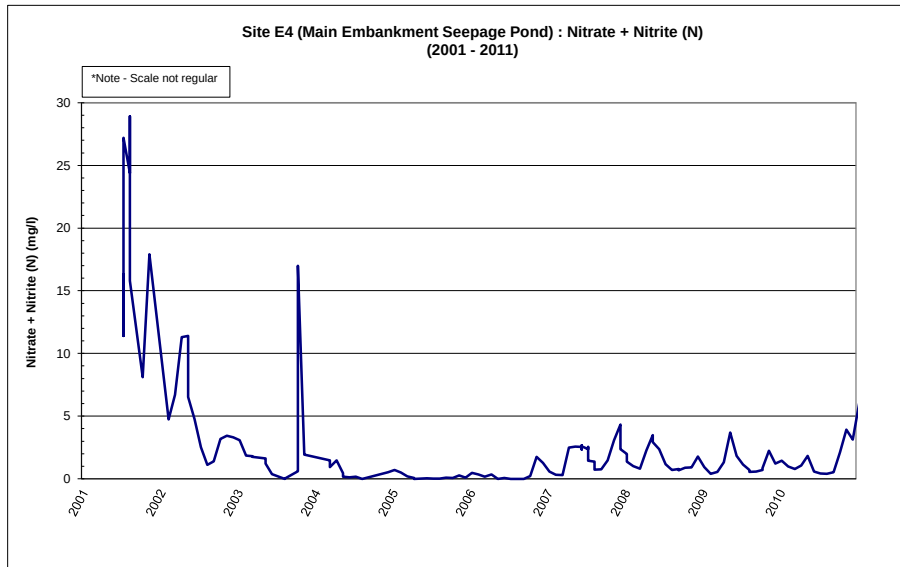
Annual Report 2011
Effluent Water Quality Site E4 - Main Embankment Seepage Pond

Sample Point	E4	E4	E4	E4	E4	E4	E4	E4	E4	E4	E4	E4
Date	10-Jan-11	3-Feb-11	8-Mar-11	5-Apr-11	12-May-11	9-Jun-11	13-Jul-11	4-Aug-11	8-Sep-11	5-Oct-11	1-Nov-11	5-Dec-11
Iron (Fe)-Total (mg/L) (mg/L)	0.102	0.162	0.347	3.34	1.75	0.15	0.195	0.089	0.062	0.083	0.078	0.171
Lead (Pb)-Total (mg/L)	0.000074	0.000051	0.000151	0.00151	0.000489	0.000064	0.000072	<0.00005	0.000086	0.000059	<0.000050	0.000068
Lithium (Li)-Total (mg/L)	0.0087	0.0071	0.0072	0.0073	0.0067	0.0071	0.00624	0.00646	0.00705	0.00523	0.00627	0.00655
Magnesium (Mg)-Total (mg/L)	30	29.3	26.3	24.8	20.5	24.4	22.1	24.1	23.7	23.3	21.7	21.6
Manganese (Mn)-Total (mg/L)	0.249	0.247	0.439	0.508	0.232	0.0883	0.0741	0.076	0.156	0.108	0.125	0.164
Molybdenum (Mo)-Total (mg/L)	0.197	0.177	0.154	0.15	0.14	0.166	0.153	0.165	0.16	0.144	0.161	0.157
Nickel (Ni)-Total (mg/L)	0.00059	0.00054	0.00095	0.00464	0.00283	0.00052	0.00057	<0.0005	<0.00050	0.00052	<0.00050	<0.00050
Potassium (K)-Total (mg/L)	15.2	14.6	13.7	8.6	8.62	10.5	10.5	12	12.2	11.4	12.3	12.7
Selenium (Se)-Total (mg/L)	0.0171	0.0152	0.01	0.0119	0.0106	0.0214	0.0147	0.0149	0.0115	0.0104	0.011	0.0111
Silicon (Si)-Total (mg/L)	6.18	6.29	7.15	9.83	7.31	4.23	5.2	5.41	3.92	5.29	5.29	5.92
Silver (Ag)-Total (mg/L)	<0.00001	<0.00001	<0.00001	0.000015	<0.00001	<0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total (mg/L)	88.9	84.3	86.2	48.6	52.6	71.1	65.1	72.7	75.1	74.9	78.5	84
Strontium (Sr)-Total (mg/L)	2.31	1.99	1.94	1.92	1.58	1.75	1.59	1.77	1.69	1.65	1.63	1.7
Tin (Sn)-Total (mg/L)	<0.0001	<0.0001	<0.0001	0.00049	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Zinc (Zn)-Total (mg/L)	0.0049	0.0034	0.0045	0.0435	0.0065	0.0041	0.0073	0.0055	0.004	<0.0030	<0.0030	0.0048
Dissolved Organic Carbon (mg/L)	6.74	7.06	5.22	4.73	4.64	4.66	3.34	3.5	3.98	3.82	2.99	3.29
Mineral Oil & Grease (mg/L)		<5				<5		<5			<5.0	
Coliform Bacteria - Total (CFU/100mL)											>201	
Coliform Bacteria - Total (MPN/100mL)			19									
E. coli (ct/100mL)												
E. coli (MPN/100mL)			<1								7	

* Note - these results are for data from 2001 to 2011

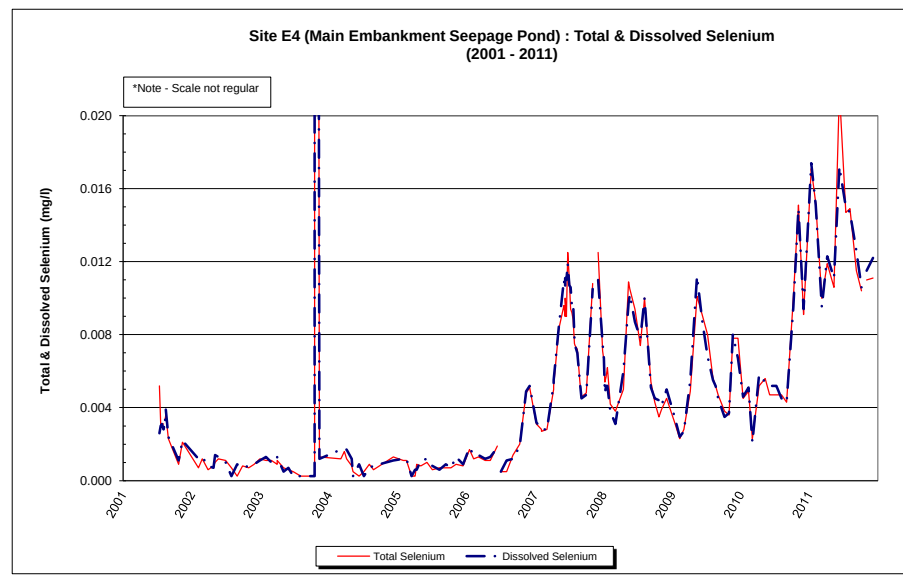
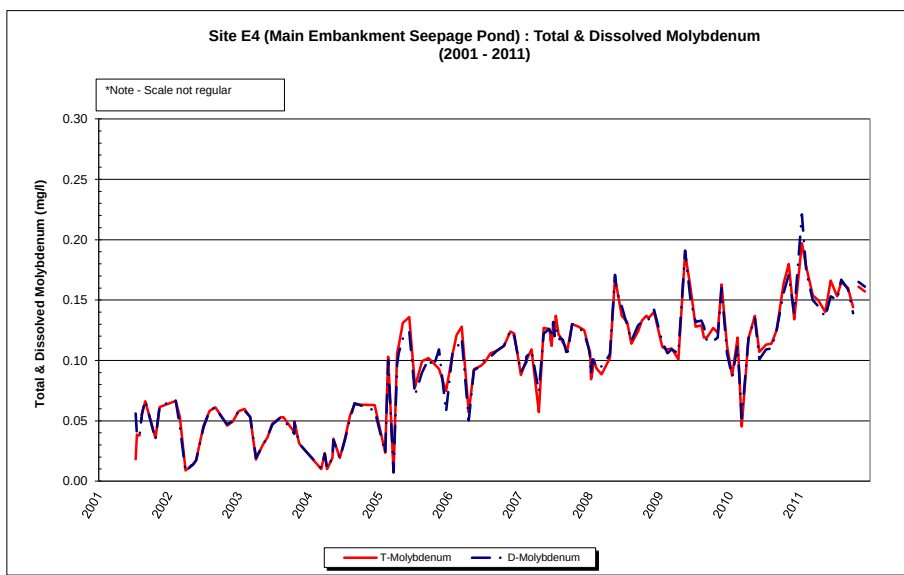
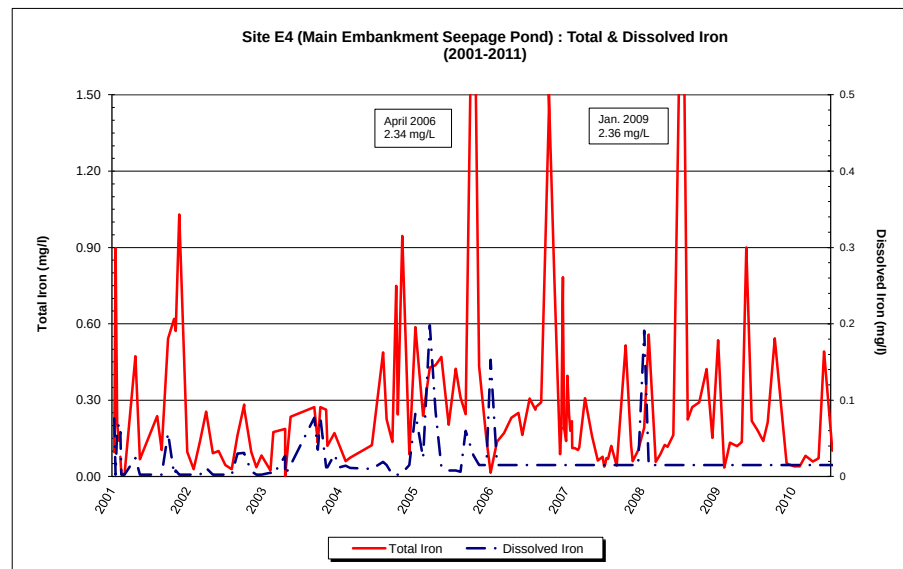
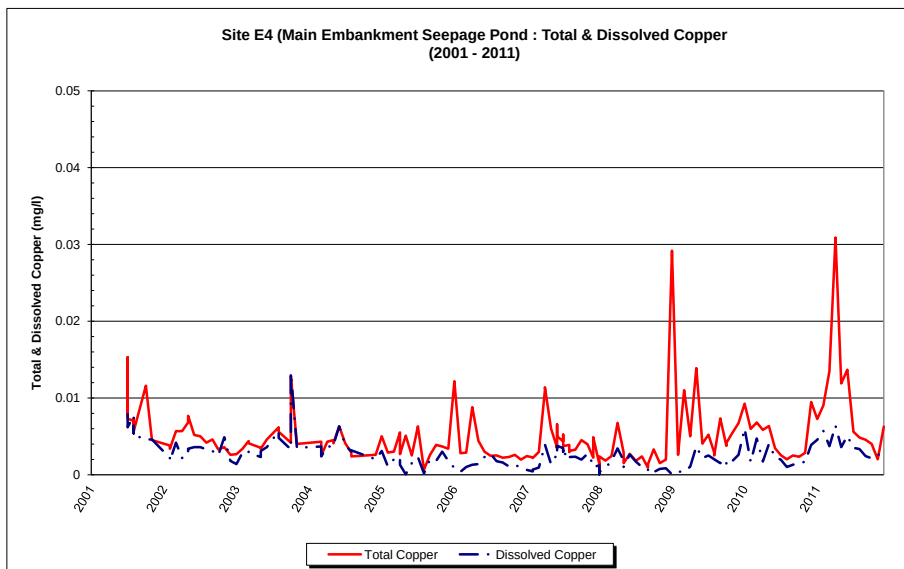
Sample (n)	Count >MDL	Min	Max	Mean	95th Percentile	StDv
153	149	0.008	3.34	0.299785	0.9268	0.442484
153	117	0.00002	0.0141	0.000338	0.00064	0.001336
153	91	0.0003	0.0087	0.003562	0.00715	0.00207
153	153	7.25	40.2	14.54948	24.56	5.38278
153	153	0.00409	0.919	0.198643	0.561	0.196729
153	153	0.00696	0.197	0.095454	0.1634	0.045268
152	54	0.0005	0.0095	0.001224	0.003444	0.001422
151	151	2	15.4	7.493245	13.65	3.297204
151	141	0.0005	0.182	0.006194	0.0125	0.015502
151	151	0.22	10	4.81551	7.26	1.878437
151	16	0.00001	0.00005	1.89E-05	0.000035	1.08E-05
149	149	5.56	92.6	48.76497	80	19.19404
151	151	0.267	2.49	0.892066	1.8	0.491006
151	28	0.00005	0.00187	0.000291	0.001427	0.000464
151	120	0.0006	0.105	0.005579	0.01374	0.011233
149	149	2.7	10.3	4.814564	7.8	1.477971

Annual Report 2011 **Water Quality at Site E4 (Main Embankment Seepage Pond)**

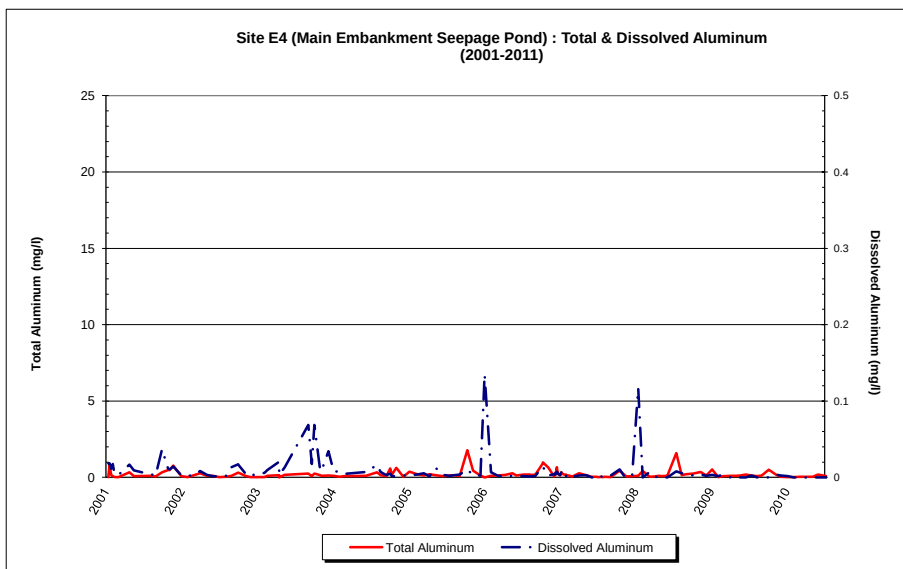
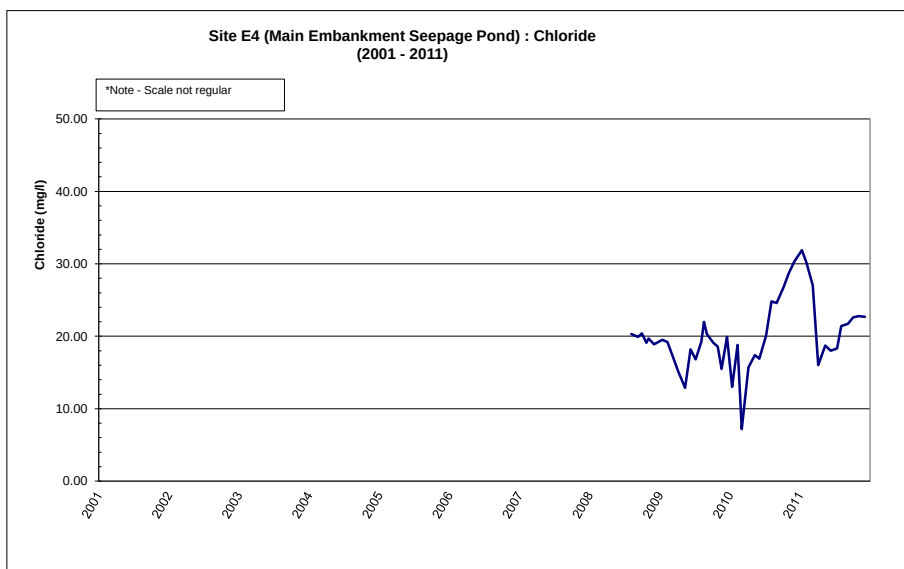
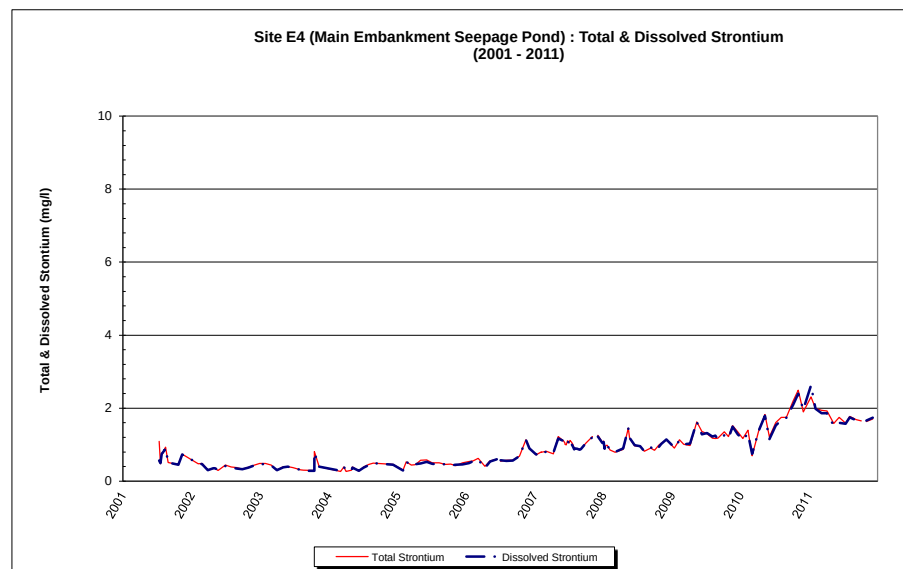
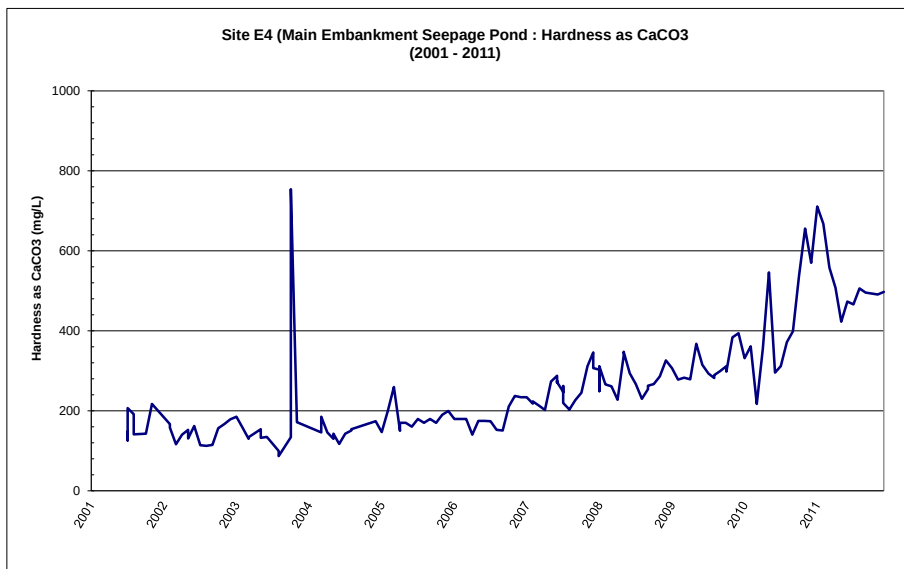


Annual Report 2011

Water Quality at Site E4 (Main Embankment Seepage Pond)



Annual Report 2011 **Water Quality at Site E4 (Main Embankment Seepage Pond)**



Annual Report 2011 **Effluent Water Quality Site E5 - Main Embankment Drain Composite**

Sample Point	E5	E5	E5	E5	E5	E5	E5	E5	E5	E5	E5	E5	E5
Date	10-Jan-11	3-Feb-11	7-Mar-11	5-Apr-11	5-Apr-11	12-May-11	9-Jun-11	13-Jul-11	3-Aug-11	8-Sep-11	5-Oct-11	1-Nov-11	5-Dec-11
Conductivity (in situ) (µs/cm)	1133		1155		1314	1160	1288	1212	1219	1141	1139	1155	1149
pH (in situ) (pH)	7.6		7.58		7.65	7.51	7.85	7.96	7.88	7.89	7.8	7.81	7.92
Temperature (in situ) (Degrees Celcius)	7.3		7.4		6.2	7.5	8.4	7.5	7.7	7.4	7.9	7	7
Alkalinity (CaCO3) (mg/L)	111	110	112	88.9	89.5	97.5	100	102	93	98	97.4	100	98
Conductivity (µs/cm)	1120	1140	1140	1270	1260	1120	1210	1210	1200	1150	1120	1120	1090
Hardness (as CaCO3) (mg/L)	425	421	413	567	547	452	504	514	479	437	411	422	399
pH (pH)	7.94	7.95	8.06	7.93	7.92	7.93	7.73	8.07	7.94	8	7.99	8.02	8.06
Total Dissolved Solids (mg/L)	839	835	851	982	1010	846	945	917	930	863	842	840	787
Total Suspended Solids (mg/L)	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3.0	<3.0	<3.0	<3.0
Turbidity (ntu)	0.4	10	0.26	0.51	0.55	0.4	0.19	0.41	0.26	0.29	0.28	0.61	0.31
Chloride (Cl) (mg/L)	26.5	26	25.9	20.9	20.8	22.9	24	22	24.8	23.7	23.1	23.4	23.4
Fluoride (F) (mg/L)							0.84						0.95
Sulfate (SO4) (mg/L)	453	451	458	587	577	484	547	520	526	480	440	469	456
Ammonia (as N) (mg/L)	0.072	0.0715	0.0778	0.0635	0.0694	0.0495	0.0611	0.0194	0.0651	0.0568	0.0561	0.0608	0.0571
Nitrate (as N) (mg/L)	1.63	1.64	1.59	4.1	3.71	3.54	3.03	3.34	3.44	2.74	2.29	2.46	1.89
Nitrate and Nitrite (as N) (mg/L)	1.7	1.7	1.65	4.16	3.78	3.6	3.07	3.43	3.55	2.88	2.44	2.62	2.06
Nitrite (as N) (mg/L)	0.076	0.0653	0.06	0.066	0.07	0.054	0.048	0.098	0.111	0.142	0.147	0.153	0.173
Nitrogen N-WDGVWA (mg/L)													
Total Nitrogen (mg/L)	1.66	1.92	1.63	4.63	7.24	4.73	5.32	4.92	4.03	3.48	2.91	3.32	2.68
Orthophosphate-Dissolved (as P) (mg/L)	0.0147	0.0165	0.0158	0.023	0.023	0.0223	0.0179	0.0187	0.0143	0.0183	0.0177	0.0158	0.0152
Phosphorus (P) Total Dissolved (mg/L)	0.0278	0.0275	0.0255	0.0302	0.0305	0.0318	0.0278	0.0284	0.0231		0.0276	0.0253	0.0258
Phosphorus (P) Total (mg/L)	0.0337	0.0327	0.0315	0.0399	0.0404	0.0351	0.0328	0.0336	0.0259	0.034	0.0315	0.0302	0.0285
Dissolved Metals													
Aluminum (Al)-Dissolved (mg/L)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0030	<0.0030	0.003	0.0035
Antimony (Sb)-Dissolved (mg/L)	0.00038	0.00038	0.00038	0.00053	0.00053	0.00033	0.00035	0.00035	0.00044	0.00041	0.00042	0.00043	0.00044
Arsenic (As)-Dissolved (mg/L)	0.00161	0.00164	0.00175	0.00133	0.00146	0.00145	0.0016	0.00148	0.00153	0.00154	0.00161	0.00161	0.00162
Barium (Ba)-Dissolved (mg/L)	0.0727	0.0798	0.0766	0.0734	0.0724	0.07	0.0774	0.0735	0.0646	0.0654	0.0607	0.0614	0.06
Cadmium (Cd)-Dissolved (mg/L)	<0.00006	<0.00007	<0.00008	0.000113	<0.0003	<0.00009	<0.00009	<0.00006	<0.00008	<0.00020	<0.000070	<0.000070	<0.000090
Calcium (Ca)-Dissolved (mg/L)	136	135	132	182	176	144	163	167	152	138	131	134	126
Chromium (Cr)-Dissolved (mg/L)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Copper (Cu)-Dissolved (mg/L)	0.00102	0.00175	0.00155	0.00353	0.00615	0.00157	0.0017	0.00154	0.00184	0.00203	0.00185	0.00089	0.00128
Iron (Fe)-Dissolved (mg/L)	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.030	<0.030	<0.030	<0.030
Lead (Pb)-Dissolved (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050
Lithium (Li)-Dissolved (mg/L)	0.0057	0.0055	0.0057	0.0057	0.0051	0.0051	0.005	0.00462	0.00577	0.00607	0.00539	0.00595	0.00674
Magnesium (Mg)-Dissolved (mg/L)	20.5	20.3	20.2	27	26.1	22.2	23.9	23.5	23.8	22.2	20.6	21	20.2
Manganese (Mn)-Dissolved (mg/L)	0.357	0.38	0.396	0.398	0.388	0.293	0.363	0.327	0.435	0.44	0.46	0.452	0.377
Molybdenum (Mo)-Dissolved (mg/L)	0.152	0.145	0.154	0.216	0.201	0.185	0.179	0.176	0.191	0.173	0.17	0.174	0.172
Nickel (Ni)-Dissolved (mg/L)	<0.0005	<0.0005	0.00097	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	0.00059	<0.00050
Potassium (K)-Dissolved (mg/L)	14.6	14.7	15.5	12.4	12.9	11.7	13.5	13.1	13.2	13.6	13.5	14	15.9
Selenium (Se)-Dissolved (mg/L)	0.0054	0.0055	0.00476	0.0158	0.0136	0.0114	0.0109	0.0106	0.00912	0.00678	0.00574	0.00564	0.005
Silicon (Si)-Dissolved (mg/L)	6.9	6.76	6.74	6.21	6.27	6.22	6.59	6.6	6.36	6.39	6.36	6.34	6.48
Silver (Ag)-Dissolved (mg/L)	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved (mg/L)	78.7	81.5	85.3	65.1	63.9	66.6	79.8	77	73.2	82	82.1	82.1	89.9
Strontium (Sr)-Dissolved (mg/L)	1.88	1.79	1.81	2.49	2.3	2	2.1	2.05	2.08	1.85	1.79	1.82	1.92
Tin (Sn)-Dissolved (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Zinc (Zn)-Dissolved (mg/L)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0030	<0.0030	<0.0030	<0.0030
Total Metals													
Aluminum (Al)-Total (mg/L)	0.0044	0.0068	0.0061	0.0198	0.0243	0.0104	0.0046	0.0052	0.007	0.0067	0.006	0.0085	0.0051
Antimony (Sb)-Total (mg/L)	0.00042	0.00039	0.00037	0.00055	0.00056	0.00033	0.00036	0.00035	0.00045	0.00042	0.00041	0.00043	0.00042
Arsenic (As)-Total (mg/L)	0.00169	0.00185	0.00198	0.00157	0.00161	0.00145	0.00168	0.0016	0.00161	0.00161	0.00164	0.00167	0.0016
Barium (Ba)-Total (mg/L)	0.0718	0.0819	0.0788	0.0751	0.0675	0.0692	0.0789	0.0749	0.066	0.0641	0.0607	0.0624	0.0567
Cadmium (Cd)-Total (mg/L) (mg/L)	<0.00006	<0.00008	<0.00009	0.000133	<0.00035	<0.00009	<0.0001	<0.00007	<0.00009	<0.00020	<0.000070	<0.000080	<0.000080

* Note - these results are for data from 1998 to 2011:

Sample (n)	Count >MDL	Min	Max	Mean
93	93	360	1465	861.9677
94	94	6.43	8.7	7.719064
96	96	1.6	18.2	7.83125
103	102	47.3	226	127.9814
19	19	950	1270	1133.684
103	103	150	645	316.767
19	19	7.73	8.11	7.989474
86	86	298	1040	612.6395
102	12	1	56.7	13.05
102	102	0.18	19.1	1.003333
37	37	19.4	27	23.19189
2	2	0.84	0.95	0.895
103	103	10.9	587	260.1544
103	85	0.005	0.247	0.069152
72	72	0.119	9.07	1.938194
32	32	0.617	127	24.8905
84	67	0.001	0.746	0.055799
83	83	0.33	127	11.03301
103	101	0.0011	0.127	0.021817
93	93	0.0089	0.141	0.036498
92	92	0.0259	0.116	0.04522
103	79	0.0015	0.348	0.007887
102	98	0.00006	0.00206	0.000359
103	103	0.0004	0.0051	0.001753
102	102	0.0214	0.216	0.081597
102	40	0.00002	0.00039	0.000132
103	103	46	221	99.98544
102	21	0.0002	0.0057	0.000109
103	95	0.00015	0.0282	0.002859
103	21	0.002	0.405	0.057095
103	17	0.00002	0.0007	0.000102
101	65	0.0018	0.00674	0.004401
103	103	7.48	35.8	16.24699
103	103	0.0024	0.76	0.304534
103	103	0.00141	0.216	0.118097
103	10	0.00005	0.0011	0.000725
103	102	0.093	15.9	10.1613
103	101	0.0001	0.0291	0.005541
103	103	2.9	11.8	6.777961
102	1	0.00001	0.00001	0.00001
102	102	8.03	89.9	60.52284
103	103	0.278	2.49	1.141981
101	10	0.00008	0.00039	0.000168
103	28	0.00005	0.0168	0.00337
95	91	0.0018	1.53	0.039079
95	93	0.0001	0.00214	0.000383
95	95	0.0006	0.00348	0.001865
95	95	0.044	0.218	0.085017
95	39	0.00002	0.000462	0.000142

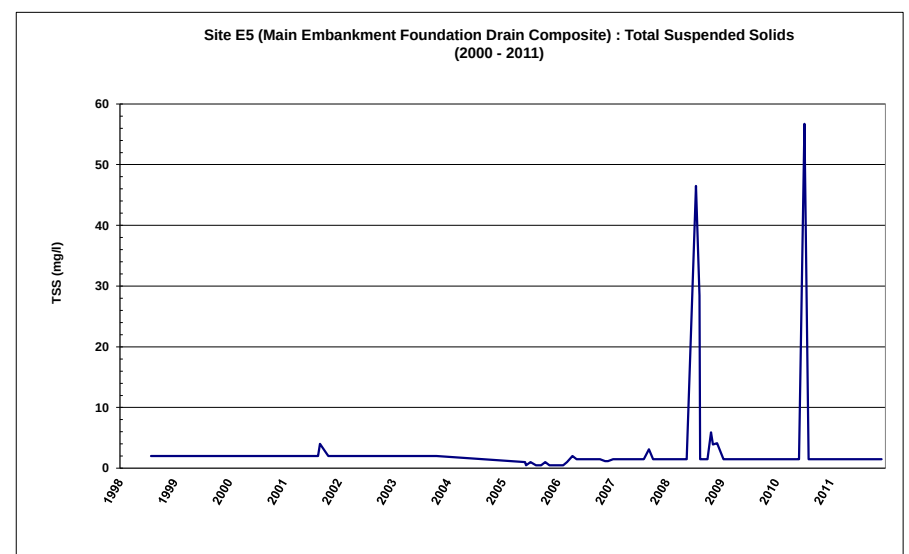
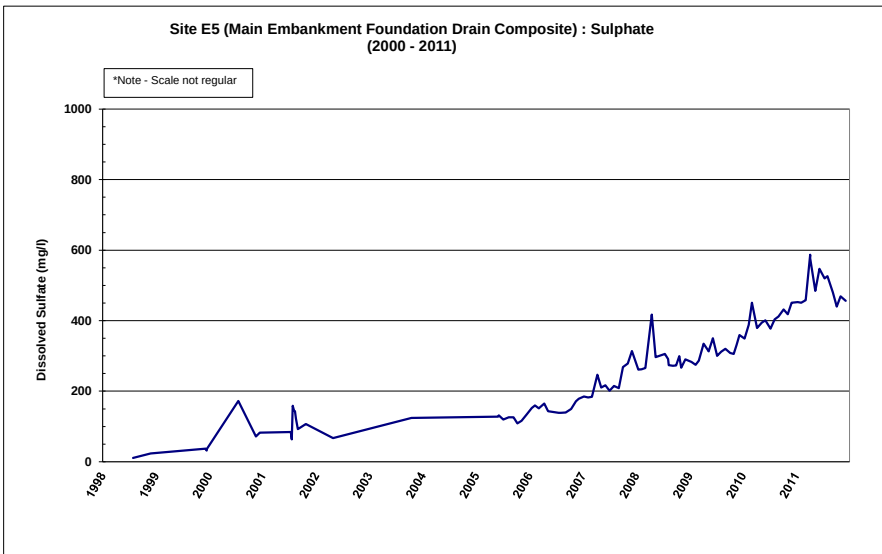
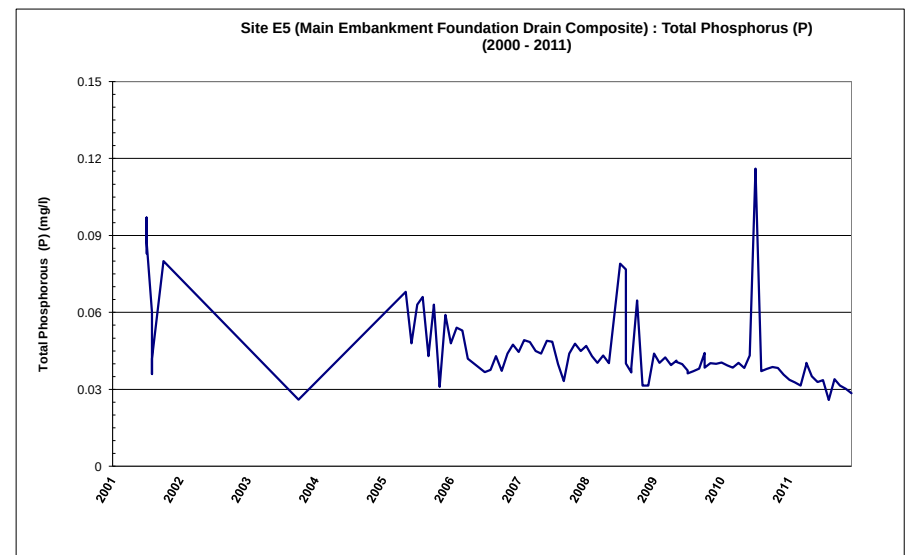
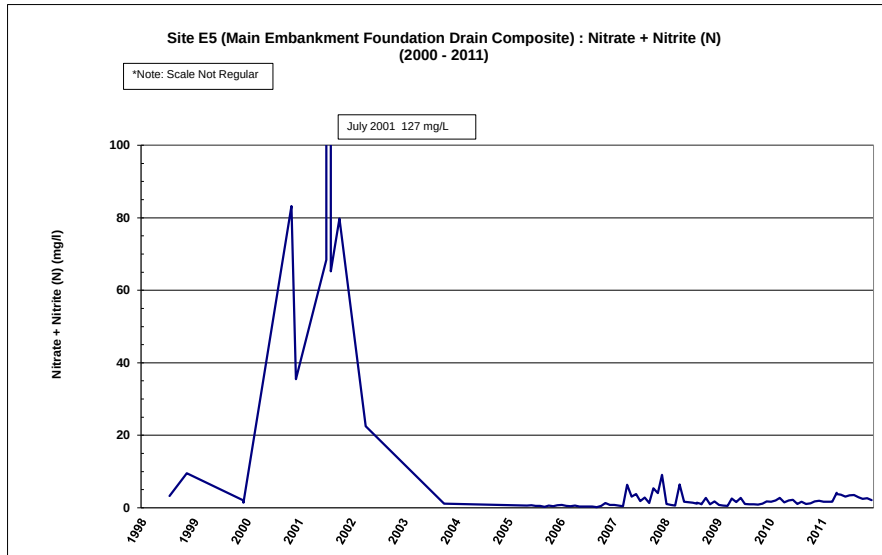
Annual Report 2011
Effluent Water Quality Site E5 - Main Embankment Drain Composite

Sample Point	E5	E5	E5	E5	E5	E5	E5	E5	E5	E5	E5	E5	E5
Date	10-Jan-11	3-Feb-11	7-Mar-11	5-Apr-11	5-Apr-11	12-May-11	9-Jun-11	13-Jul-11	3-Aug-11	8-Sep-11	5-Oct-11	1-Nov-11	5-Dec-11
Calcium (Ca)-Total (mg/L)	137	138	137	188	168	143	163	168	155	137	131	136	123
Chromium (Cr)-Total (mg/L)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Copper (Cu)-Total (mg/L)	0.00263	0.00311	0.0029	0.0286	0.052	0.00293	0.00275	0.00236	0.00302	0.00315	0.00327	<0.0035	0.0029
Iron (Fe)-Total (mg/L) (mg/L)	0.063	0.062	0.06	0.13	0.193	0.045	0.046	0.053	0.05	0.042	0.039	0.05	0.043
Lead (Pb)-Total (mg/L)	<0.00005	0.000053	<0.00005	0.000076	0.000229	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	0.000055	<0.000050	<0.000050
Lithium (Li)-Total (mg/L)	0.006	0.0058	0.0057	0.0066	<0.005	<0.005	0.00545	0.0049	0.00606	0.00617	0.00578	0.006	0.00583
Magnesium (Mg)-Total (mg/L)	21.1	20.9	21.1	28.2	25.4	22	24.1	23.6	24.5	21.2	20.7	21.2	19.5
Manganese (Mn)-Total (mg/L)	0.355	0.396	0.415	0.421	0.368	0.298	0.384	0.331	0.452	0.454	0.465	0.467	0.363
Molybdenum (Mo)-Total (mg/L)	0.176	0.154	0.16	0.232	0.187	0.187	0.187	0.181	0.192	0.173	0.176	0.178	0.161
Nickel (Ni)-Total (mg/L)	<0.0005	<0.0005	<0.0005	0.00054	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Potassium (K)-Total (mg/L)	14	15	16.1	13	11.9	11.6	14.3	13.2	13.5	13.5	13.4	14.4	15.2
Selenium (Se)-Total (mg/L)	0.00549	0.0055	0.00488	0.0163	0.0131	0.0108	0.0103	0.0102	0.00888	0.00635	0.00558	0.00536	0.00459
Silicon (Si)-Total (mg/L)	7.01	6.93	7	6.46	6.13	6.2	6.62	6.62	6.55	6.25	6.4	6.37	6.22
Silver (Ag)-Total (mg/L)	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000010	0.000024	<0.000010	<0.000010
Sodium (Na)-Total (mg/L)	77	84.2	89.6	68	60.5	67.1	84.6	77.9	75	81.5	82.3	84.2	85.5
Strontium (Sr)-Total (mg/L)	2.12	1.86	1.88	2.6	2.27	1.98	2.17	2.11	2.12	1.86	1.86	1.84	1.8
Tin (Sn)-Total (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Zinc (Zn)-Total (mg/L)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.0035	<0.0030	<0.0030	<0.0030	<0.0030
Dissolved Organic Carbon (mg/L)	4.38	3.89	3.63	3.2	2.69	3.55	3.76	3.55	3.92	4.06	4.18	3.42	3.2

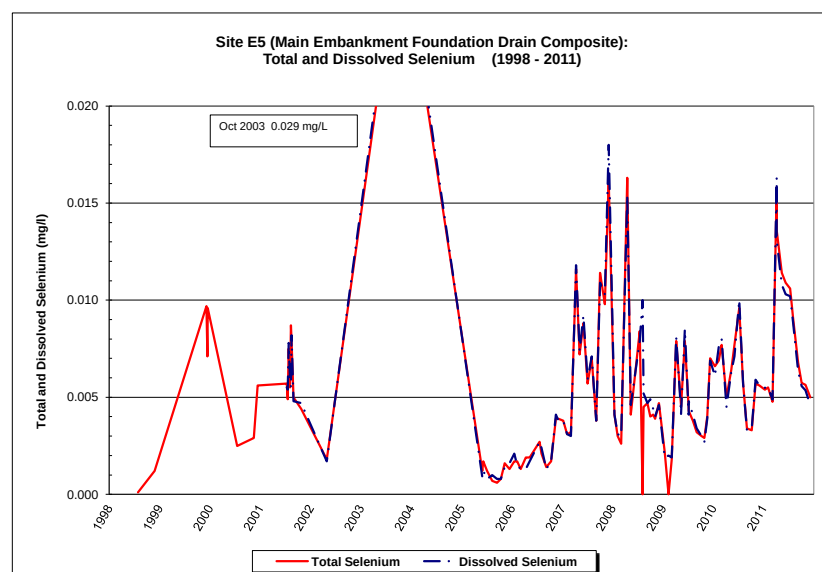
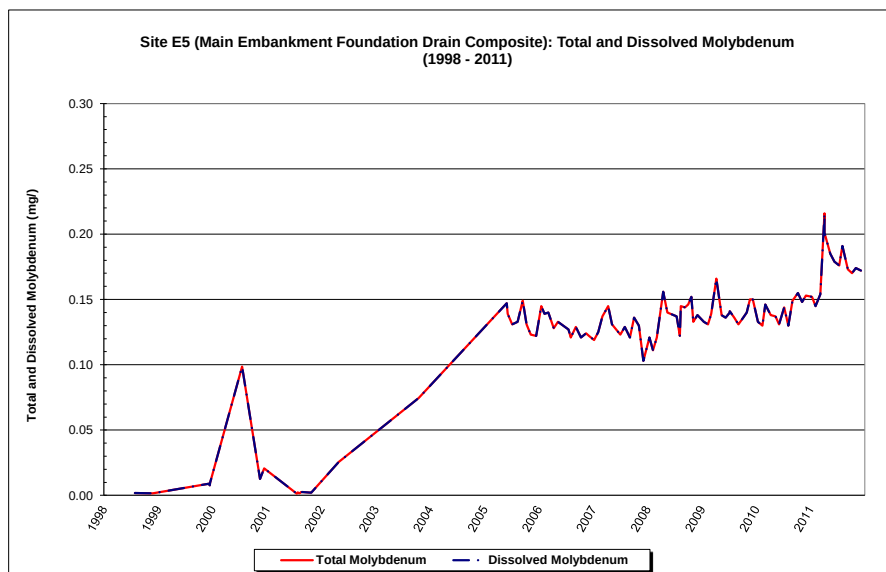
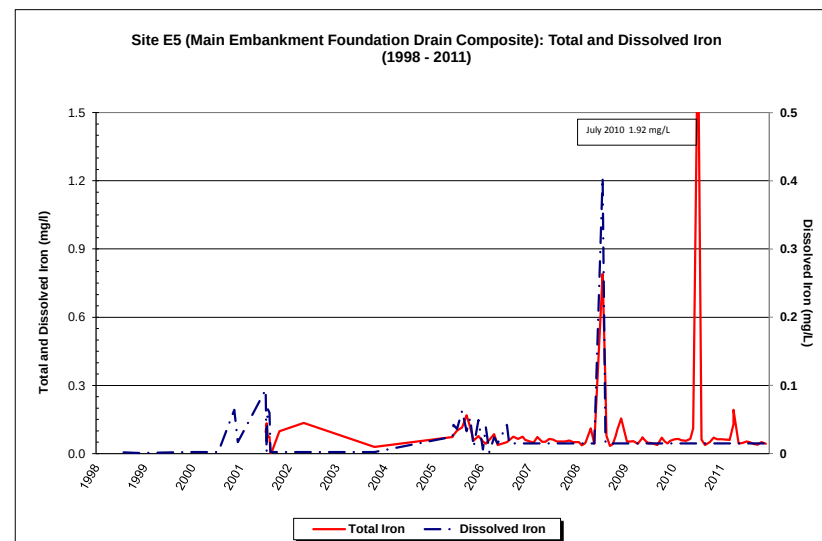
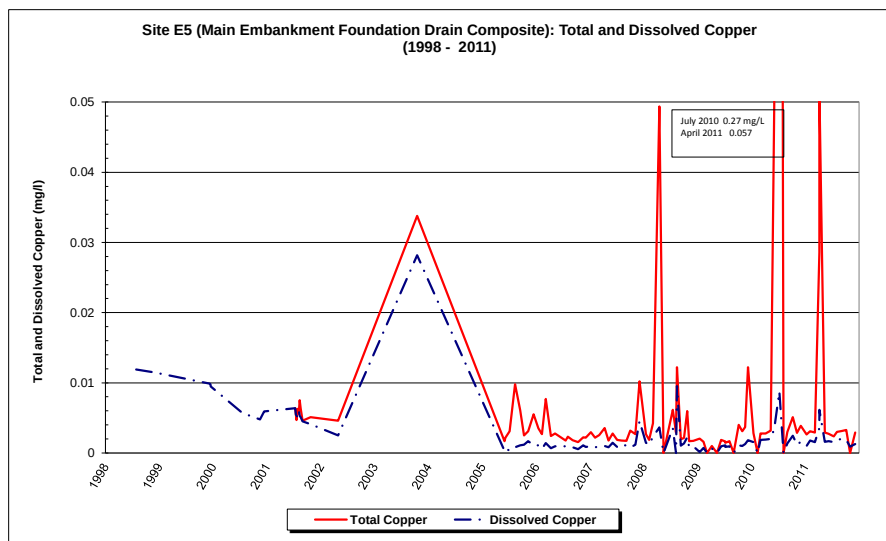
* Note - these results are for data from 1998 to 2011.

Sample (n)	Count >MDL	Min	Max	Mean
94	94	46.8	210	101.2947
95	22	0.0002	0.0057	0.000927
96	88	0.00101	0.27	0.008873
95	93	0.006	1.92	0.096527
95	33	0.00002	0.00062	0.000109
95	58	0.0019	0.0066	0.004676
94	94	7.69	31.8	16.22351
95	95	0.00509	0.843	0.328578
96	96	0.00174	0.232	0.127637
95	14	0.00054	0.0016	0.000956
95	95	2.56	16.1	10.90642
95	94	0.0008	0.0299	0.005562
94	94	3.32	10.3	6.617979
95	7	0.00001	0.000068	2.46E-05
93	93	15.2	89.6	64.87419
95	95	0.293	2.6	1.205916
95	10	0.00006	0.00082	0.000244
95	20	0.0006	0.0053	0.00218
92	90	2.1	6.7	3.274

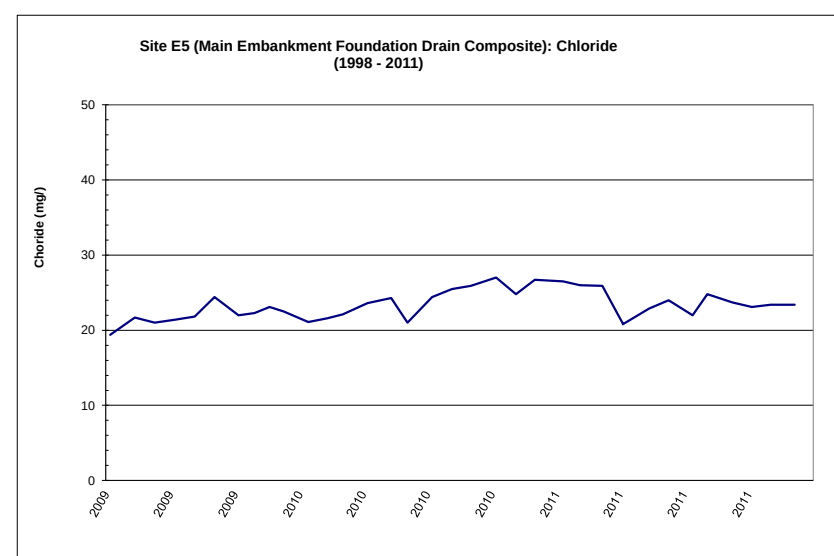
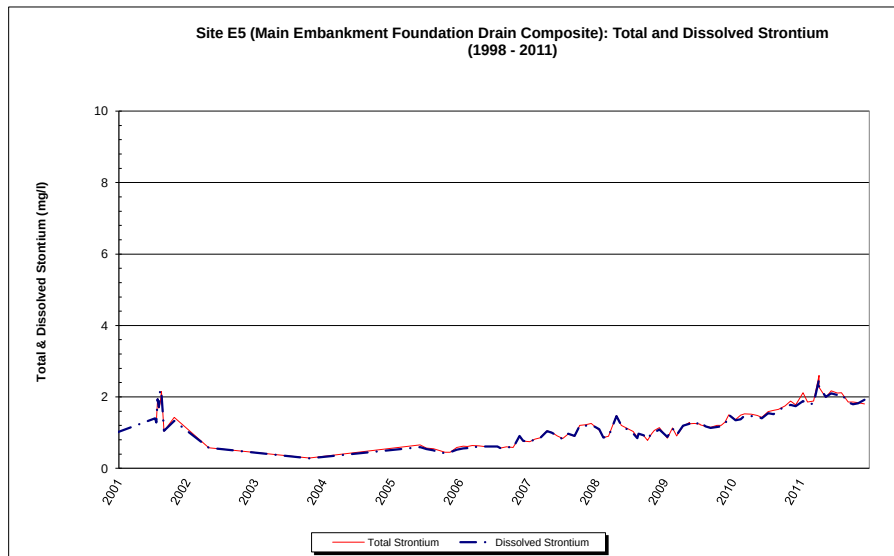
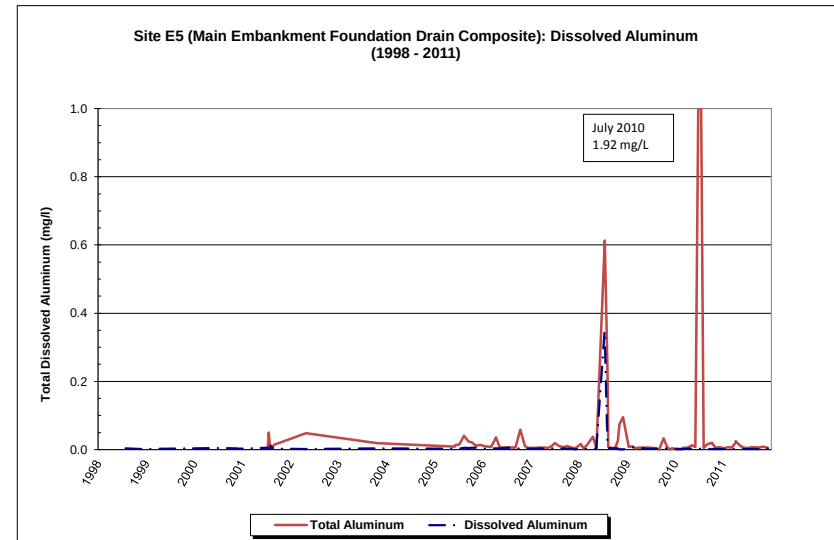
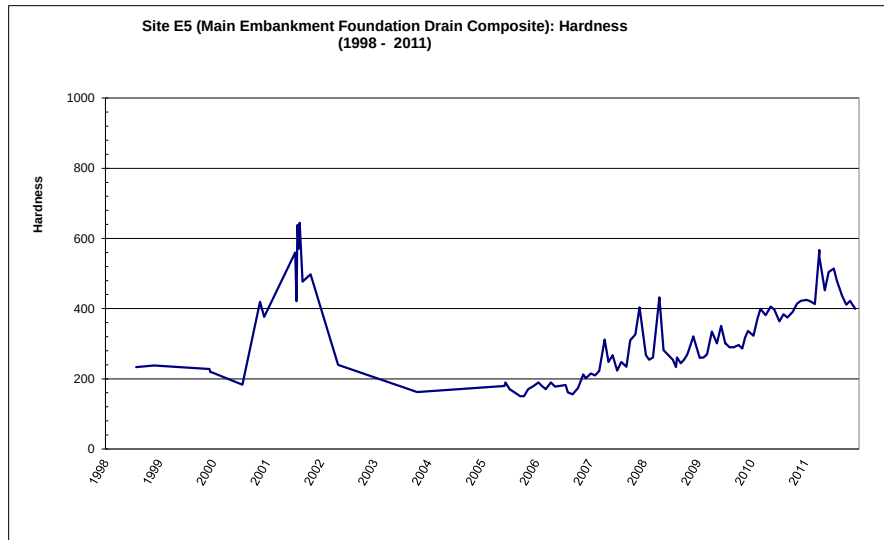
Annual Report 2011 **Water Quality Site E5 (Main Embankment Foundation Drain Composite)**



Annual Report 2011 **Water Quality Site E5 (Main Embankment Foundation Drain Composite)**



Annual Report 2011
Water Quality Site E5 (Main Embankment Foundation Drain Composite)



Annual Report 2011
Effluent Water Quality Site E7 - Perimeter Seepage Pond Supernatant

Sample Point	E7	E7	E7	E7	E7	E7
Date	22-Apr-09	8-Jun-11	3-Aug-11	8-Sep-11	5-Oct-11	1-Nov-11
Conductivity (in situ) (µs/cm)	339	1393	1339	1348	1388	1245
pH (in situ) (pH)	6.83	7.99	8.16	8.2	7.86	8.17
Temperature (in situ) (Degrees Celcius)	9.3	13.1	15.6	14.4	8.2	2.9
Alkalinity (CaCO3) (mg/L)	47.6	95.4	100	130	91.9	109
Conductivity (µs/cm)		1380	1310	1350	1360	1180
Hardness (as CaCO3) (mg/L)	157	772	722	725	618	618
pH (pH)		8.06	8.08	8.16	8.07	8.12
Total Dissolved Solids (mg/L)	252	1170	1160	1130	1100	955
Total Suspended Solids (mg/L)	16.5	12	14	8.3	4.2	<3.0
Turbidity (ntu)	28.7	4.34	7.35	4.95	2.64	4.24
Chloride (Cl) (mg/L)	0.6	6	7.7	6.1	17.7	8.6
Fluoride (F) (mg/L)						
Sulfate (SO4) (mg/L)	99.1	701	652	644	629	552
Ammonia (as N) (mg/L)	<0.005	0.0061	<0.005	0.0173	0.005	0.005
Nitrate (as N) (mg/L)	2.99	10	7.69	7.76	3.77	6.68
Nitrate and Nitrite (as N) (mg/L)		10	7.69	7.8	3.78	6.69
Nitrite (as N) (mg/L)	0.0046	0.014	<0.01	0.043	0.01	0.015
Total Nitrogen (mg/L)	5.06	14.8	8.07	11.9	5.41	9.52
Orthophosphate-Dissolved (as P) (mg/L)	0.0053	0.0012	0.0018	<0.0010	0.0025	0.0024
Phosphorus (P) Total Dissolved (mg/L)	0.0109	0.0031	0.0049		0.006	0.005
Phosphorus (P) Total (mg/L)	0.0426	0.0145	0.0404	0.0129	0.0128	0.0107
Dissolved Metals						
Aluminum (Al)-Dissolved (mg/L)	0.0946	0.0063	0.024	<0.0060	<0.0060	0.0052
Antimony (Sb)-Dissolved (mg/L)	<0.0001	0.00057	0.00051	0.00103	0.00057	0.00055
Arsenic (As)-Dissolved (mg/L)	0.00035	0.00063	0.00053	0.00083	0.00092	0.00073
Barium (Ba)-Dissolved (mg/L)	0.0219	0.0549	0.0593	0.0455	0.0428	0.0423
Cadmium (Cd)-Dissolved (mg/L)	0.000056	<0.0001	<0.00007	<0.00020	<0.000080	<0.00010
Calcium (Ca)-Dissolved (mg/L)	47.5	242	224	230	198	192
Chromium (Cr)-Dissolved (mg/L)	<0.0005	<0.0005	<0.001	<0.0010	<0.0010	<0.00050
Copper (Cu)-Dissolved (mg/L)	0.0151	0.0077	0.007	0.0044	0.0037	0.00654
Iron (Fe)-Dissolved (mg/L)	0.085	<0.03	<0.03	<0.030	<0.030	<0.030
Lead (Pb)-Dissolved (mg/L)	<0.00005	<0.00005	<0.0001	<0.00010	<0.00010	<0.000050
Lithium (Li)-Dissolved (mg/L)	<0.005	0.0053	0.0053	0.0078	0.0085	0.0059
Magnesium (Mg)-Dissolved (mg/L)	9.4	40.9	39.3	36.6	30.1	33.6
Manganese (Mn)-Dissolved (mg/L)	0.0289	0.0479	0.032	0.139	0.0199	0.0966
Molybdenum (Mo)-Dissolved (mg/L)	0.0209	0.213	0.162	0.176	0.166	0.122
Nickel (Ni)-Dissolved (mg/L)	0.00089	0.0007	<0.001	<0.0010	<0.0010	0.00065

* Note - these results are for data from 2001 to 2011

Sample (n)	Count >MDL	Min	Max	Mean
58	58	46	1393	690.5345
58	58	6.83	9.17	7.939121
58	58	0	23.5	10.25
62	50	47.6	577	143.13
5	5	1180	1380	1316
61	61	50.6	772	358.682
5	5	8.06	8.16	8.098
53	53	60	1170	539.5849
58	30	2.3	36	11.35333
59	59	0.54	43.4	6.995085
6	6	0.6	17.7	7.783333
60	60	11	1660	242.2383
62	46	0.005	0.895	0.055211
22	22	1.44	58	7.83
37	33	0.08	22.7	6.093333
36	26	0.0036	0.043	0.016538
31	31	2.35	23.4	10.17161
62	27	0.0011	0.029	0.007852
60	51	0.0025	0.032	0.010522
61	60	0.008	0.077	0.021775
62	53	0.0008	0.103	0.013243
63	59	0.00009	0.00119	0.000364
63	62	0.0001	0.0013	0.000725
63	63	0.0104	0.0875	0.048879
63	46	0.00001	0.000171	4.5E-05
62	62	16.8	242	113.0855
63	16	0.0003	0.0042	0.001219
63	63	0.0022	0.0151	0.004846
63	23	0.006	0.341	0.042391
63	26	0.00002	0.0003	7.92E-05
63	44	0.0003	0.0085	0.002205
62	62	1.87	40.9	19.28258
63	63	0.00003	1.54	0.124453
63	63	0.00165	0.284	0.057197
63	6	0.0005	0.0031	0.001073

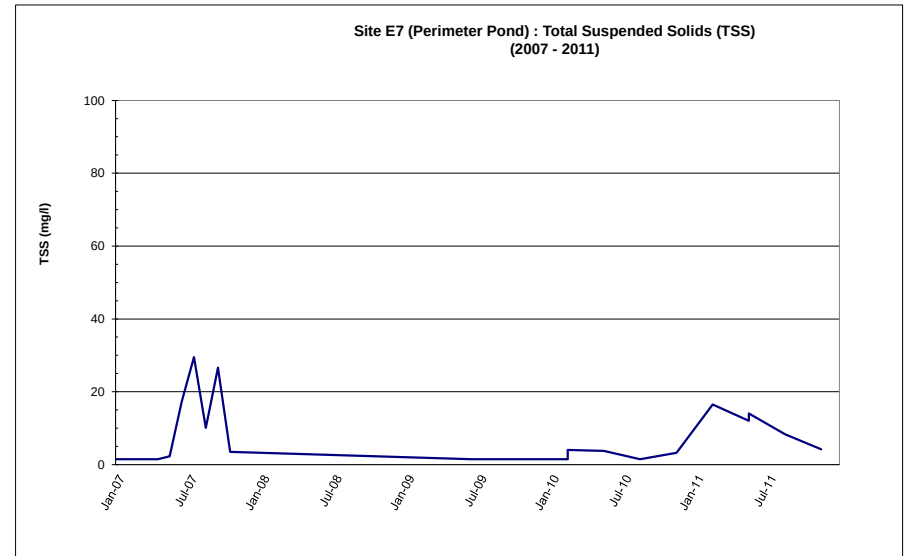
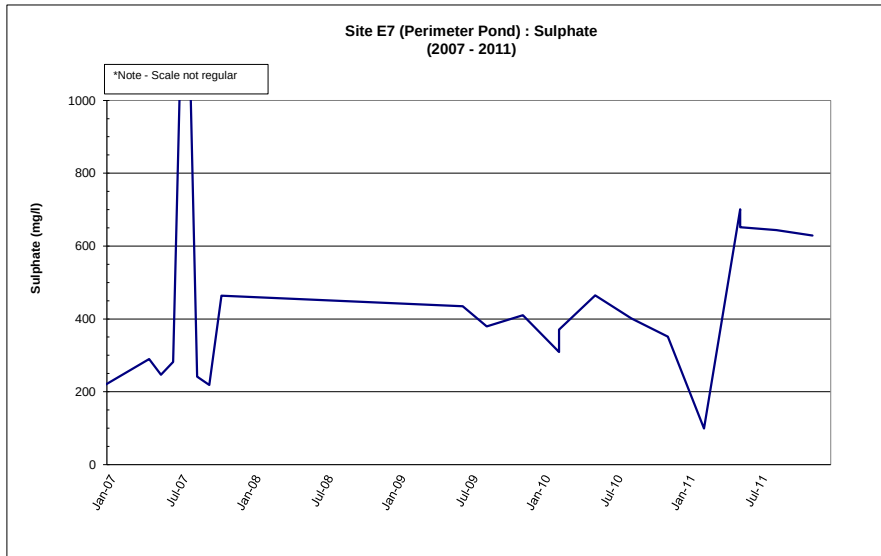
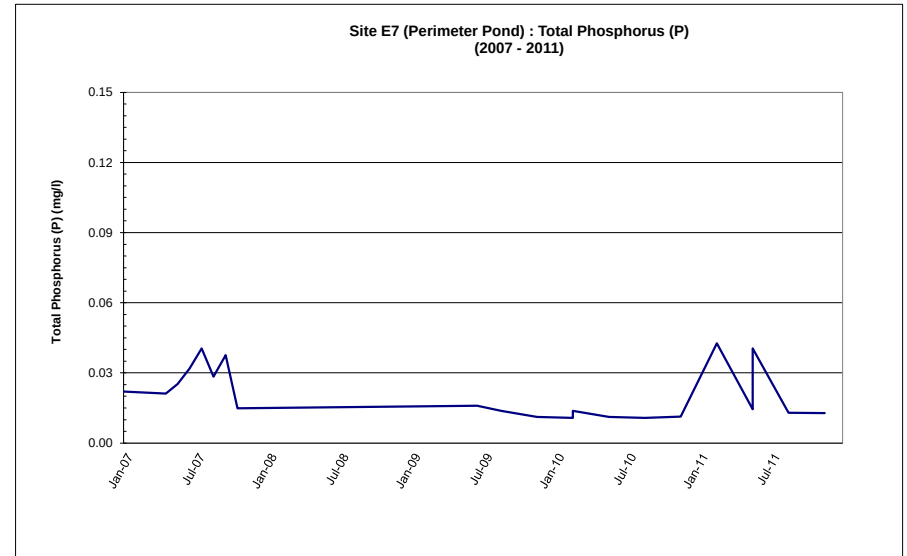
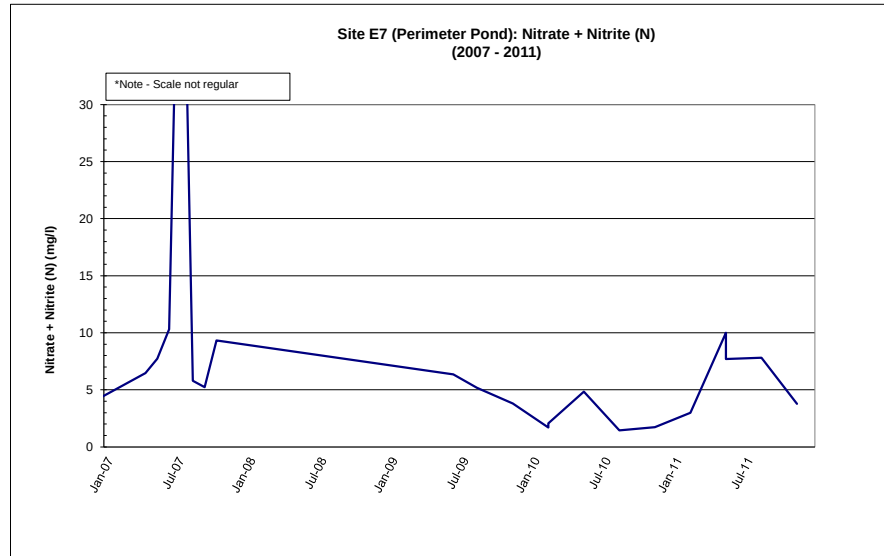
Annual Report 2011
Effluent Water Quality Site E7 - Perimeter Seepage Pond Supernatant

Sample Point	E7	E7	E7	E7	E7	E7
Date	22-Apr-09	8-Jun-11	3-Aug-11	8-Sep-11	5-Oct-11	1-Nov-11
Potassium (K)-Dissolved (mg/L)	1.24	5.54	6	5.28	15.1	7.71
Selenium (Se)-Dissolved (mg/L)	0.0058	0.0532	0.029	0.0122	0.012	0.0139
Silicon (Si)-Dissolved (mg/L)	3.98	5.05	5	6.54	4.95	5.57
Silver (Ag)-Dissolved (mg/L)	0.000011	<0.00001	<0.00002	<0.000020	<0.000020	<0.000010
Sodium (Na)-Dissolved (mg/L)	4.02	30.3	31.3	37.8	68.1	38.6
Strontium (Sr)-Dissolved (mg/L)	0.355	4.48	4.35	5.16	4.68	3.58
Tin (Sn)-Dissolved (mg/L)	<0.0001	<0.0001	<0.0002	<0.00020	<0.00020	<0.00010
Zinc (Zn)-Dissolved (mg/L)	0.0012	<0.003	<0.006	<0.0060	<0.0060	0.0053
Total Metals						
Aluminum (Al)-Total (mg/L)	1.66	0.234	0.319	0.191	0.0964	0.263
Antimony (Sb)-Total (mg/L)	0.00011	0.00054	0.00049	0.00104	0.00053	0.00052
Arsenic (As)-Total (mg/L)	0.00082	0.00064	0.00064	0.0009	0.00089	0.00076
Barium (Ba)-Total (mg/L)	0.0364	0.0589	0.0625	0.0498	0.0421	0.0446
Cadmium (Cd)-Total (mg/L) (mg/L)	0.0001	<0.00011	<0.00008	<0.00025	<0.000080	<0.00010
Calcium (Ca)-Total (mg/L)	47	245	228	232	193	188
Chromium (Cr)-Total (mg/L)	0.00313	0.00051	<0.001	<0.0010	<0.0010	0.00057
Copper (Cu)-Total (mg/L)	0.0286	0.0123	0.011	0.0095	0.0066	0.0121
Iron (Fe)-Total (mg/L) (mg/L)	1.63	0.215	0.299	0.193	0.107	0.229
Lead (Pb)-Total (mg/L)	0.000482	0.000078	<0.0001	<0.00010	<0.00010	<0.000050
Lithium (Li)-Total (mg/L)	<0.005	0.0052	0.0048	0.0083	0.0083	0.00589
Magnesium (Mg)-Total (mg/L)	9.99	42	40.2	37.4	29.8	32.9
Manganese (Mn)-Total (mg/L)	0.0573	0.059	0.0438	0.241	0.0262	0.101
Molybdenum (Mo)-Total (mg/L)	0.0223	0.212	0.146	0.18	0.155	0.12
Nickel (Ni)-Total (mg/L)	0.00383	0.00105	<0.001	0.0011	<0.0010	0.0009
Potassium (K)-Total (mg/L)	1.61	5.93	6.04	5.37	14.6	7.62
Selenium (Se)-Total (mg/L)	0.0058	0.0487	0.0282	0.0119	0.0125	0.013
Silicon (Si)-Total (mg/L)	7.11	5.58	5.7	7.04	5.05	6.02
Silver (Ag)-Total (mg/L)	0.00002	<0.00001	0.00004	<0.000020	<0.000020	<0.000010
Sodium (Na)-Total (mg/L)	4.25	32.6	31.8	38.7	66.6	37.9
Strontium (Sr)-Total (mg/L)	0.38	4.48	3.87	5.3	4.48	3.47
Tin (Sn)-Total (mg/L)	<0.0001	<0.0001	<0.0002	<0.00020	<0.00020	<0.00010
Zinc (Zn)-Total (mg/L)	0.0061	0.0037	<0.006	0.0088	<0.0060	0.0071
Dissolved Organic Carbon (mg/L)	13	4.44	5.14	3.21	3.25	4.34

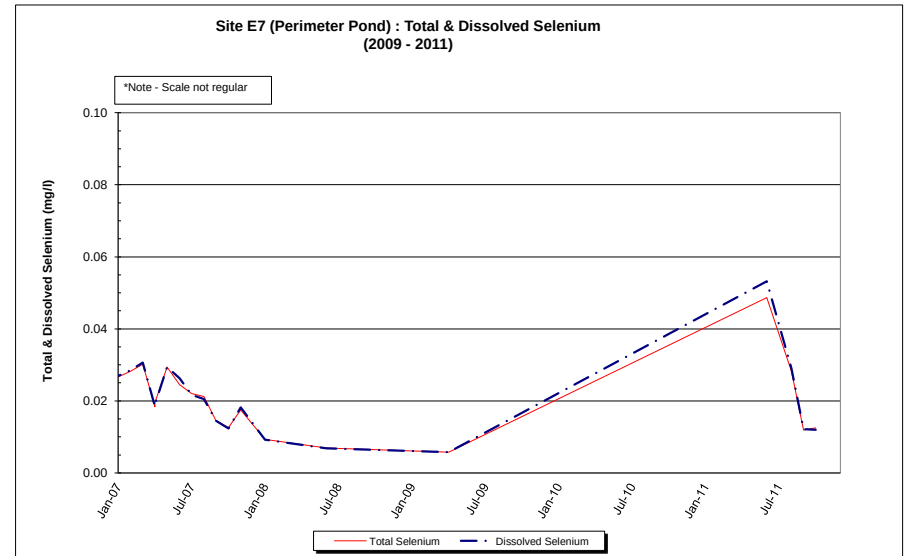
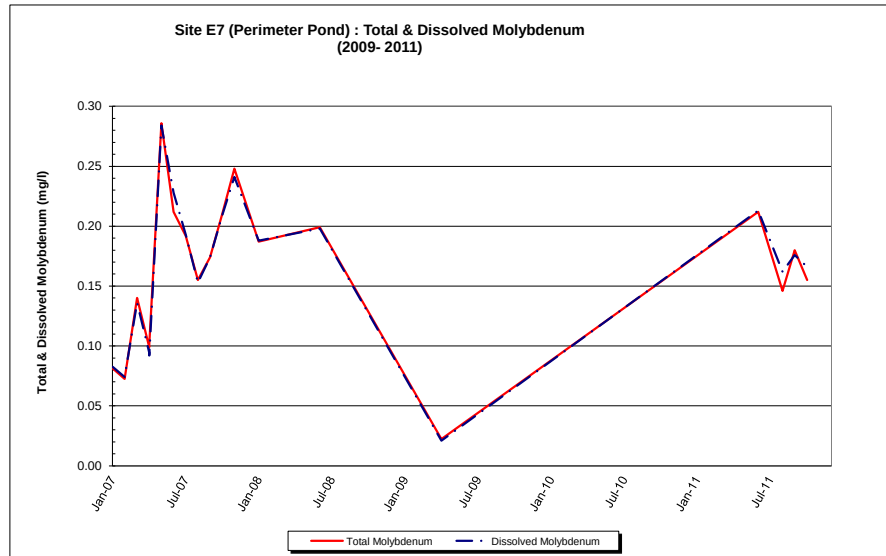
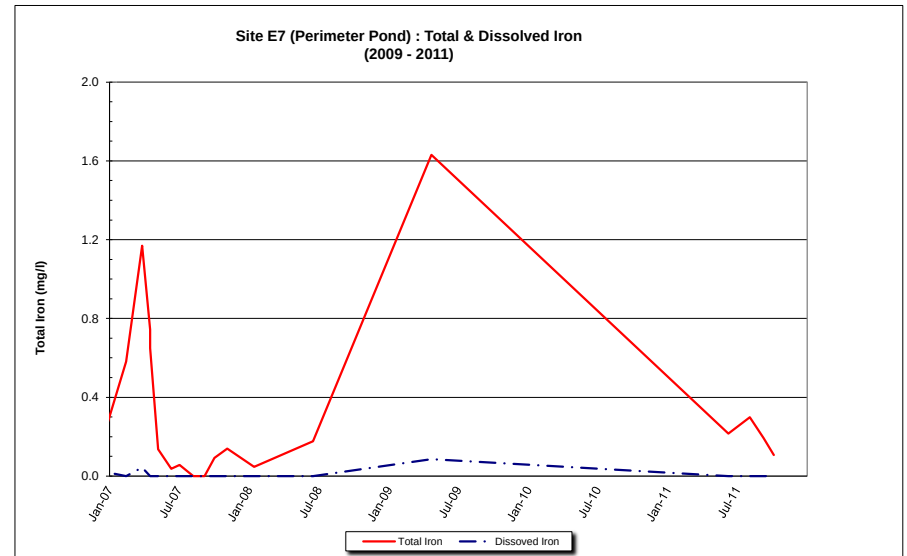
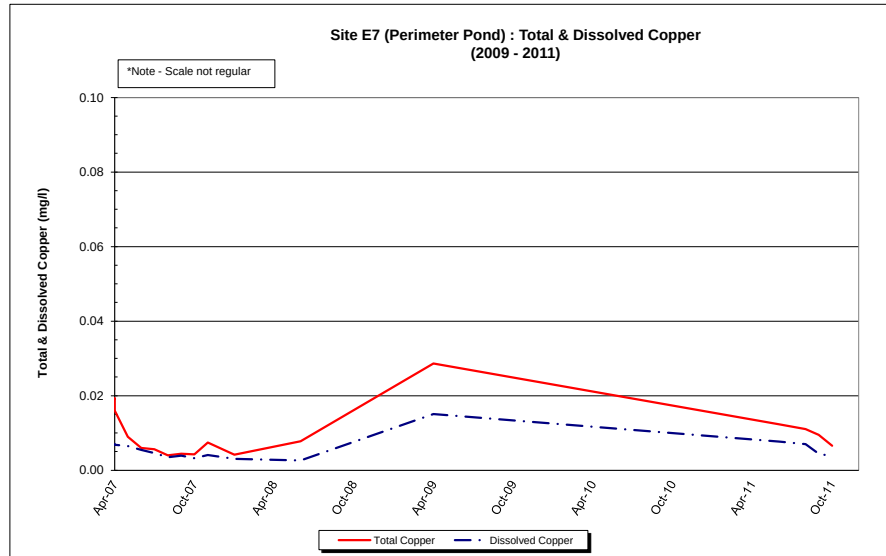
* Note - these results are for data from 2001 to 2

Sample (n)	Count >MDL	Min	Max	Mean
63	63	0.93	15.1	3.701746
63	61	0.0012	0.0532	0.010144
62	62	0.8	8.98	3.537903
63	2	0.00001	0.000011	1.05E-05
62	62	2.89	71.5	18.62952
63	63	0.0931	5.16	1.211748
63	28	0.00006	0.00078	0.000206
63	51	0.0006	0.0451	0.00548
63	62	0.0163	1.66	0.222911
63	60	0.00009	0.0012	0.000375
63	63	0.0002	0.0014	0.000835
63	63	0.0114	0.09	0.052646
63	49	0.00001	0.00052	5.76E-05
63	63	17.1	245	111.2159
63	33	0.0003	0.0054	0.001195
63	63	0.0025	0.0292	0.008499
63	59	0.037	2.91	0.330169
63	46	0.00003	0.00072	0.000241
63	45	0.0003	0.01	0.002513
63	63	1.91	42	19.10016
63	63	0.0047	1.55	0.153897
63	63	0.00139	0.286	0.056915
63	11	0.0007	0.00383	0.001532
63	61	0.99	14.6	3.76082
63	61	0.0007	0.0487	0.009969
63	63	0.88	9.21	3.94
63	11	0.00001	0.000084	3.01E-05
63	63	2.58	70	18.26349
63	63	0.0942	5.3	1.213448
63	24	0.00005	0.00153	0.000232
63	55	0.0011	0.0634	0.008298
56	56	0.6	13	5.543393

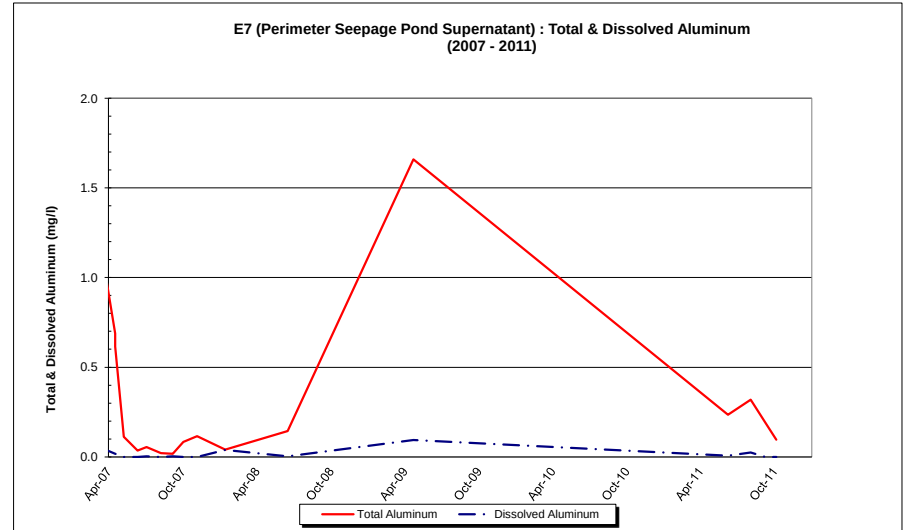
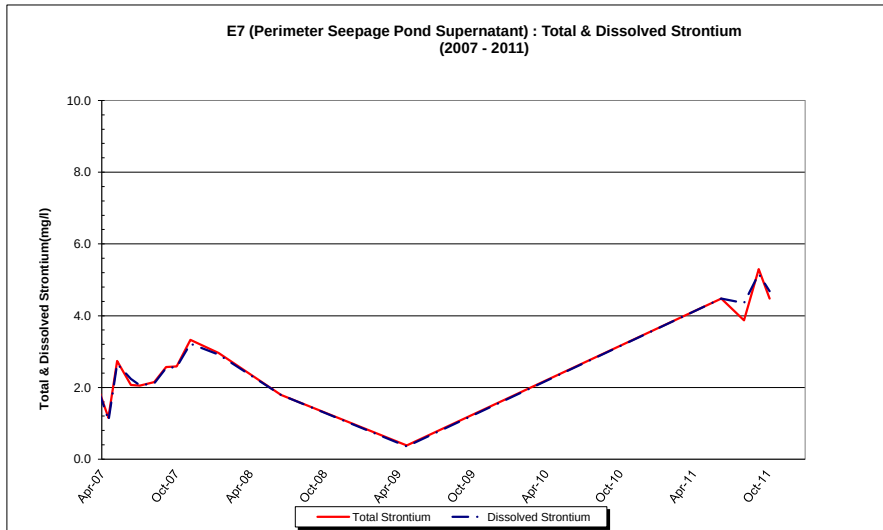
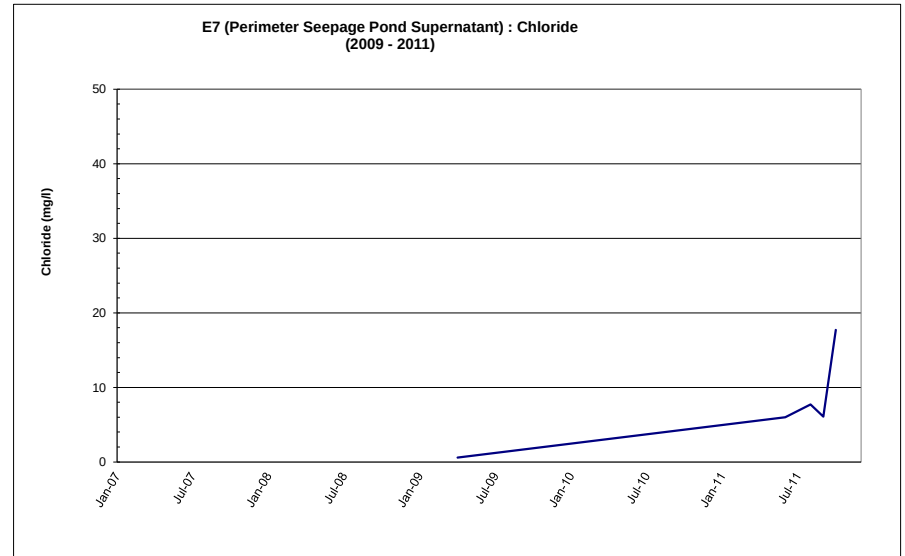
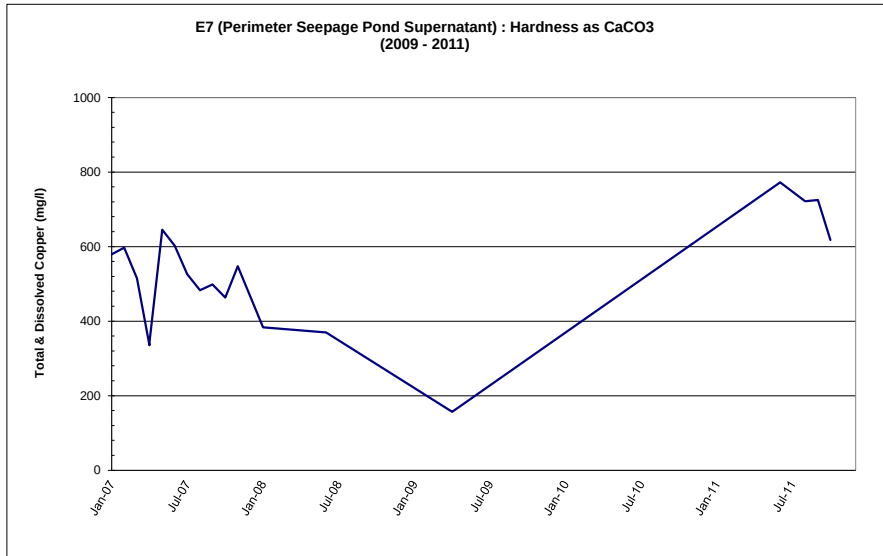
Annual Report 2011 **Water Quality at Site E7 (Perimeter Seepage Pond Supernatant)**



Annual Report 2011 **Water Quality at Site E7 (Perimeter Seepage Pond Supernatant)**



Annual Report 2011 **Water Quality at Site E7 (Perimeter Seepage Pond Supernatant)**



Annual Report 2011
Effluent Water Quality Site E8 - Cariboo Pit Supernatant

Sample Point	E8	E8	E8	E8	E8
Date	2-Feb-11	12-May-11	12-May-11	3-Aug-11	17-Nov-11
Conductivity (in situ) (µs/cm)	1496		1420	1353	1187
pH (in situ) (pH)	7.87		7.67	8.17	8.2
Temperature (in situ) (Degrees Celcius)	3.6		8.4	14.8	0.5
Alkalinity (CaCO3) (mg/L)	108	105	105	102	121
Conductivity (µs/cm)	1460	1360	1310	1330	1080
Hardness (as CaCO3) (mg/L)	824	733	723	744	598
pH (pH)	7.91	7.96	7.93	8.16	8.24
Total Dissolved Solids (mg/L)	1240	1140	1060	1130	857
Total Suspended Solids (mg/L)	<3	5.8	<3	5.3	3.8
Turbidity (ntu)	2.15	2.6	1.29	0.89	5.53
Chloride (Cl) (mg/L)	12.6	13.9	11.5	10.5	6.3
Fluoride (F) (mg/L)					
Sulfate (SO4) (mg/L)	728	682	663	663	474
Ammonia (as N) (mg/L)	<0.005	<0.005	<0.005	<0.005	0.0122
Nitrate (as N) (mg/L)	5.84	5.84	5.65	5.94	6.47
Nitrate and Nitrite (as N) (mg/L)	5.84	5.85	5.65	5.96	6.5
Nitrite (as N) (mg/L)	<0.01	0.011	<0.01	0.028	0.0321
Nitrogen N-WDGBA (mg/L)					
Total Nitrogen (mg/L)	7.38	8.56	7.37	6.88	10.8
Orthophosphate-Dissolved (as P) (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.0010
Phosphorus (P) Total Dissolved (mg/L)	<0.002	0.0023	<0.002	<0.002	0.005
Phosphorus (P) Total (mg/L)	0.0067	0.0081	0.0075	0.0117	0.0154
Dissolved Metals					
Aluminum (Al)-Dissolved (mg/L)	<0.003	<0.006	<0.006	<0.006	0.176
Antimony (Sb)-Dissolved (mg/L)	0.00163	0.00148	0.00141	0.00184	0.00175
Arsenic (As)-Dissolved (mg/L)	0.00184	0.00173	0.00169	0.00225	0.00266
Barium (Ba)-Dissolved (mg/L)	0.0427	0.0427	0.0393	0.0419	0.0514
Cadmium (Cd)-Dissolved (mg/L)	<0.00016	<0.00016	<0.00018	<0.00014	<0.00012
Calcium (Ca)-Dissolved (mg/L)	260	232	230	236	186
Chromium (Cr)-Dissolved (mg/L)	<0.0005	<0.001	<0.001	<0.001	<0.00050
Copper (Cu)-Dissolved (mg/L)	0.0241	0.023	0.0238	0.0211	0.0203
Iron (Fe)-Dissolved (mg/L)	<0.03	<0.03	<0.03	<0.03	0.059
Lead (Pb)-Dissolved (mg/L)	<0.00005	<0.0001	<0.0001	<0.0001	0.000072
Lithium (Li)-Dissolved (mg/L)	<0.005	<0.01	<0.01	0.0042	0.00635
Magnesium (Mg)-Dissolved (mg/L)	42.4	37.2	36.5	37.5	32.1
Manganese (Mn)-Dissolved (mg/L)	0.0967	0.0635	0.0535	0.0403	0.0275
Molybdenum (Mo)-Dissolved (mg/L)	0.211	0.187	0.165	0.203	0.134

* Note - these results are for data from 2001 to 2

Sample (n)	Count >MDL	Min	Max	Mean
53	53	85	1525	645.5321
51	51	6.59	9.59	8.091765
51	51	0.3	20.3	8.547059
57	52	36.8	254	114.8846
6	6	1080	1500	1340
58	58	36.7	838	318.6276
6	6	7.88	8.24	8.013333
35	35	41	3380	678.2
53	28	2.3	128	13.99643
56	56	0.32	5330	100.0268
13	13	6.3	14.7	10.88231
56	56	10.3	736	212.2
57	46	0.0058	3.3	0.346561
35	34	2.79	29.57	7.891794
22	22	0.294	11.8	4.008818
44	39	0	2.47	0.196015
25	25	1.3	25.1	8.4548
57	28	0.001	0.163	0.022946
41	27	0.002	0.15	0.024711
46	42	0.0035	0.211	0.03999
56	46	0.0011	0.176	0.01217
56	56	0.00025	0.0328	0.002598
56	56	0.0007	0.0051	0.002083
56	56	0.0111	0.0904	0.048298
56	40	0.00001	0.00047	0.000135
55	55	7.23	267	99.06964
56	8	0.0003	0.0037	0.00175
58	57	0.0016	0.361	0.047395
56	7	0.009	0.071	0.042143
56	22	0.00002	0.00232	0.000264
48	26	0.0004	0.0156	0.004883
56	56	0.0326	42.4	16.48701
55	55	0.00007	0.164	0.049468
58	57	0.0107	0.229	0.085646

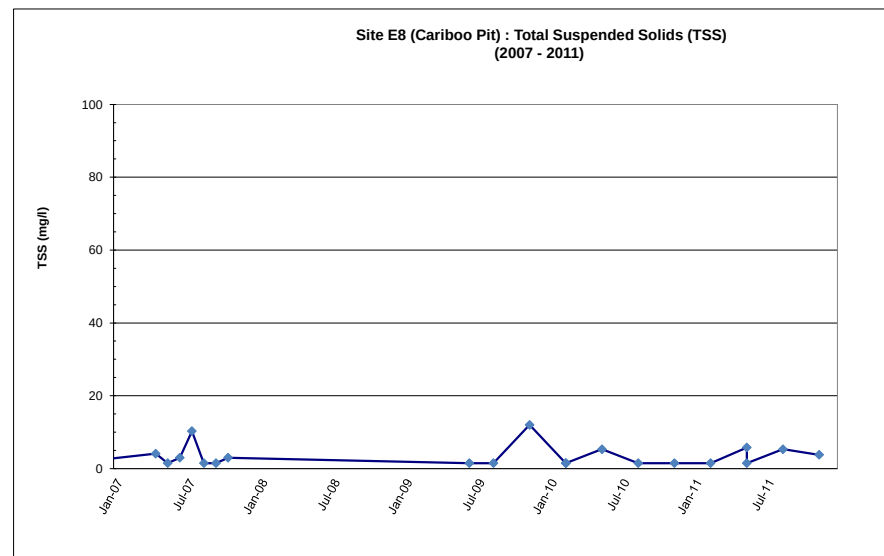
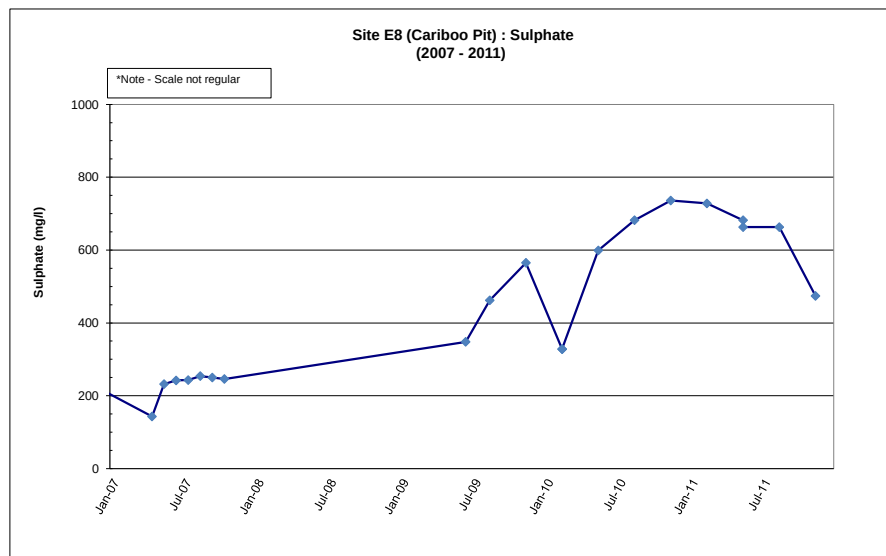
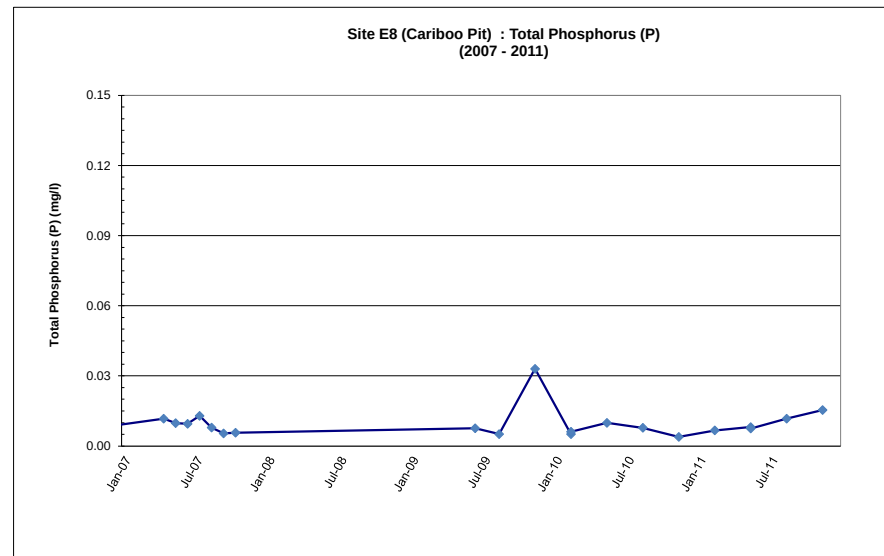
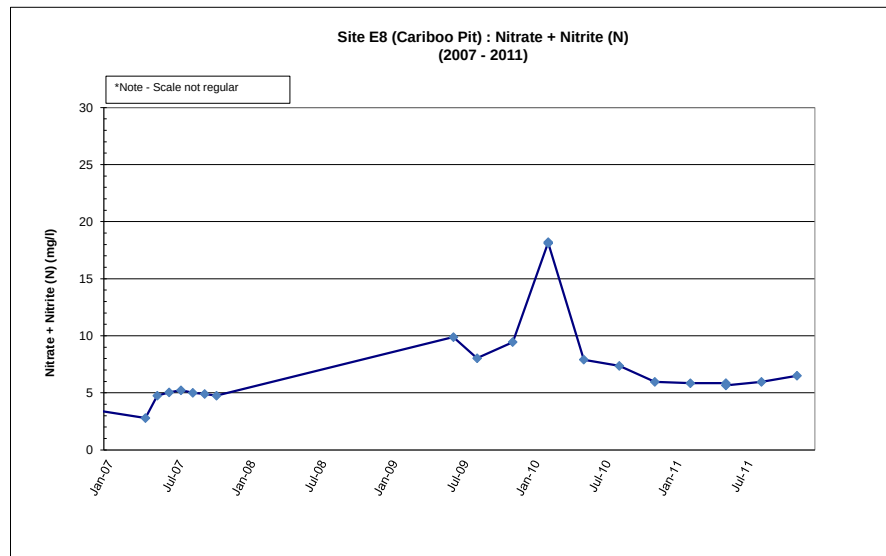
Annual Report 2011
Effluent Water Quality Site E8 - Cariboo Pit Supernatant

Sample Point	E8	E8	E8	E8	E8
Date	2-Feb-11	12-May-11	12-May-11	3-Aug-11	17-Nov-11
Nickel (Ni)-Dissolved (mg/L)	<0.0005	<0.001	<0.001	<0.001	<0.00050
Potassium (K)-Dissolved (mg/L)	3.49	3.2	3.1	3.05	2.23
Selenium (Se)-Dissolved (mg/L)	0.0135	0.0163	0.0223	0.0197	0.0512
Silicon (Si)-Dissolved (mg/L)	5.52	5.4	5.38	5.53	9.18
Silver (Ag)-Dissolved (mg/L)	<0.00001	<0.00002	<0.00002	<0.00002	0.000026
Sodium (Na)-Dissolved (mg/L)	40.7	37.1	33.3	31.2	25.7
Strontium (Sr)-Dissolved (mg/L)	3.1	2.72	2.48	2.82	1.77
Tin (Sn)-Dissolved (mg/L)	<0.0001	<0.0002	<0.0002	<0.0002	<0.00010
Zinc (Zn)-Dissolved (mg/L)	<0.003	<0.006	<0.006	<0.006	<0.0030
Total Metals					
Aluminum (Al)-Total (mg/L)	0.132	0.0863	0.0809	0.078	0.223
Antimony (Sb)-Total (mg/L)	0.00165	0.00152	0.00152	0.00183	0.00167
Arsenic (As)-Total (mg/L)	0.00192	0.00178	0.00181	0.00233	0.00243
Barium (Ba)-Total (mg/L)	0.0463	0.0462	0.0438	0.0435	0.052
Cadmium (Cd)-Total (mg/L) (mg/L)	<0.00016	<0.00016	<0.00018	<0.00014	<0.00012
Calcium (Ca)-Total (mg/L)	258	233	233	240	177
Chromium (Cr)-Total (mg/L)	<0.0005	<0.001	<0.001	<0.001	<0.00050
Copper (Cu)-Total (mg/L)	0.0357	0.0324	0.0341	0.0294	0.041
Iron (Fe)-Total (mg/L) (mg/L)	0.108	0.065	0.068	0.073	0.12
Lead (Pb)-Total (mg/L)	0.000067	<0.0001	<0.0001	<0.0001	0.000146
Lithium (Li)-Total (mg/L)	<0.005	<0.01	<0.01	0.0047	0.00672
Magnesium (Mg)-Total (mg/L)	42.5	37.7	38	38.5	31.3
Manganese (Mn)-Total (mg/L)	0.103	0.0693	0.0623	0.0457	0.0299
Molybdenum (Mo)-Total (mg/L)	0.212	0.191	0.182	0.2	0.136
Nickel (Ni)-Total (mg/L)	0.00053	<0.001	<0.001	<0.001	<0.00050
Potassium (K)-Total (mg/L)	3.53	3.25	3.38	3.16	2.33
Selenium (Se)-Total (mg/L)	0.0136	0.0161	0.0217	0.0194	0.042
Silicon (Si)-Total (mg/L)	5.83	5.62	5.74	5.78	8.75
Silver (Ag)-Total (mg/L)	<0.00001	<0.00002	<0.00002	<0.00002	0.000032
Sodium (Na)-Total (mg/L)	40.7	37.5	36.3	32	26.6
Strontium (Sr)-Total (mg/L)	3.12	2.79	2.72	2.86	1.8
Tin (Sn)-Total (mg/L)	<0.0001	<0.0002	<0.0002	<0.0002	<0.00010
Zinc (Zn)-Total (mg/L)	<0.003	<0.006	<0.006	<0.006	<0.0030
Dissolved Organic Carbon (mg/L)	2.86	2	2.96	1.72	3.12

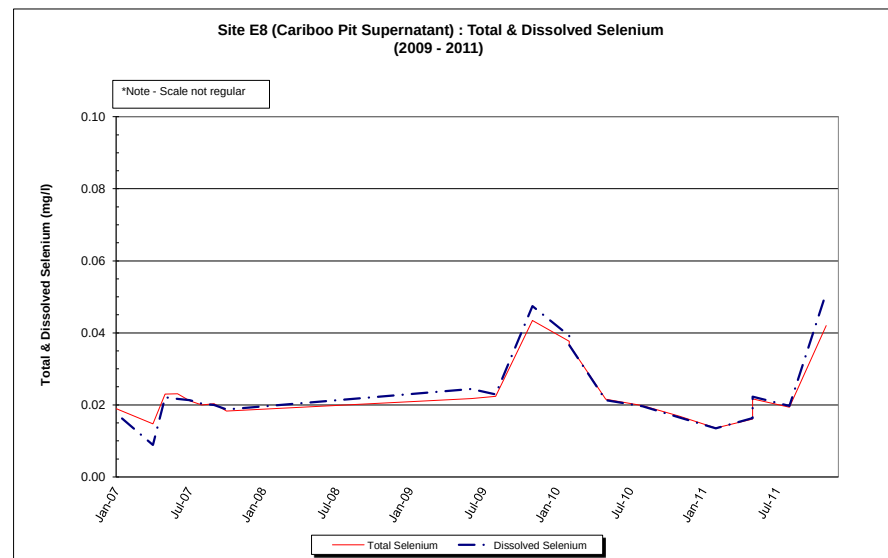
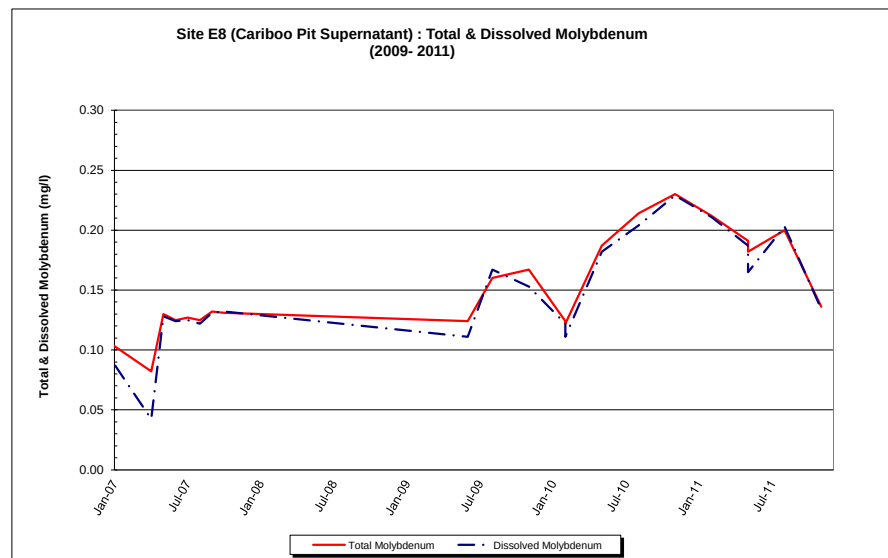
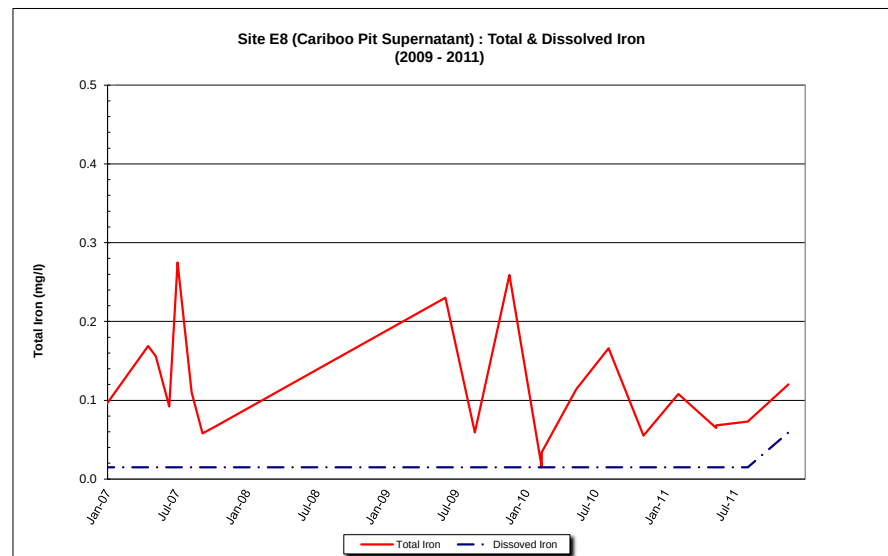
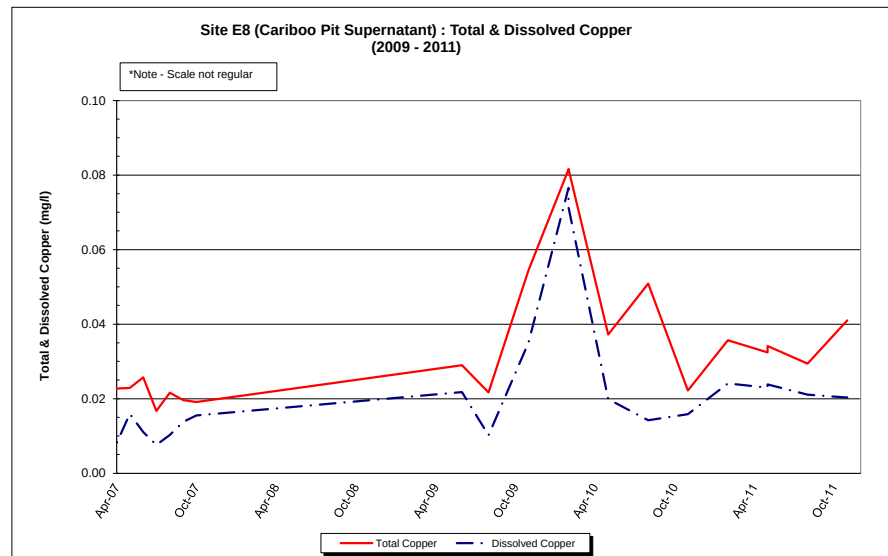
* Note - these results are for data from 2001 to 2

Sample (n)	Count >MDL	Min	Max	Mean
56	5	0.0001	0.001	0.000514
56	56	0.17	8.81	2.425125
56	56	0.0046	0.48	0.0429
55	55	1.65	12.1	6.185818
56	5	0.00001	0.00003	1.92E-05
55	55	1.67	46.5	21.96455
55	55	0.0396	3.33	1.0065
49	16	0.00007	0.00046	0.000164
55	34	0.0005	0.0189	0.00264
60	60	0.0018	108	3.816762
58	58	0.00021	0.0331	0.00256
60	60	0.0006	0.0543	0.003931
58	58	0.023	0.135	0.057488
58	41	0.00001	0.00029	0.000143
59	59	11.5	267	102.6322
58	10	0.00011	0.00352	0.00134
60	60	0.0131	10.2	0.429287
60	55	0.005	143	5.430109
60	49	0.000067	0.074	0.003427
47	25	0.001	0.0181	0.005301
59	59	1.94	83.2	19.21169
60	60	0.00409	5.54	0.247594
60	57	0.0113	0.23	0.087554
60	21	0.0003	0.102	0.014531
60	59	0.3	8.99	2.66339
60	60	0.0052	0.513	0.04172
59	59	2.68	25.2	7.477966
58	16	0.00001	0.00006	2.14E-05
58	58	2.48	44.1	21.66552
60	60	0.0548	3.39	1.029127
49	17	0.00006	0.00185	0.000286
59	42	0.001	0.507	0.027781
43	39	1.07	7	2.674103

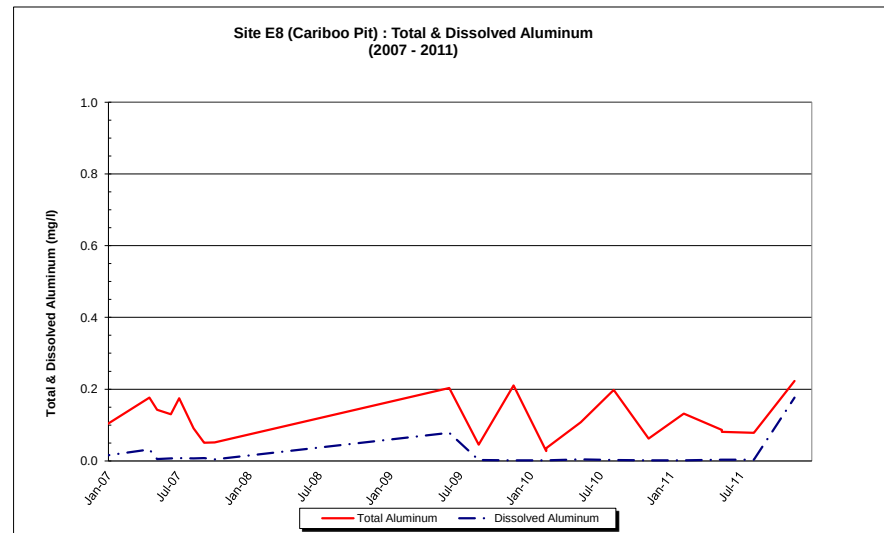
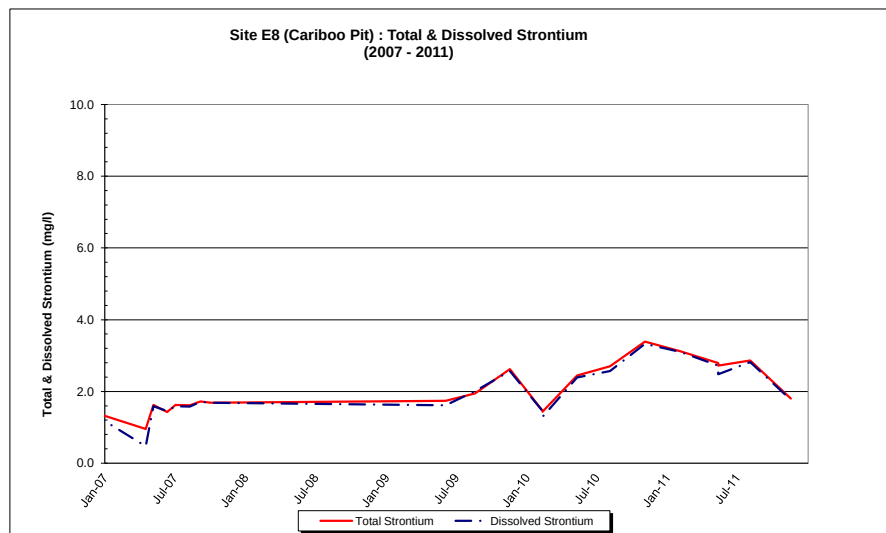
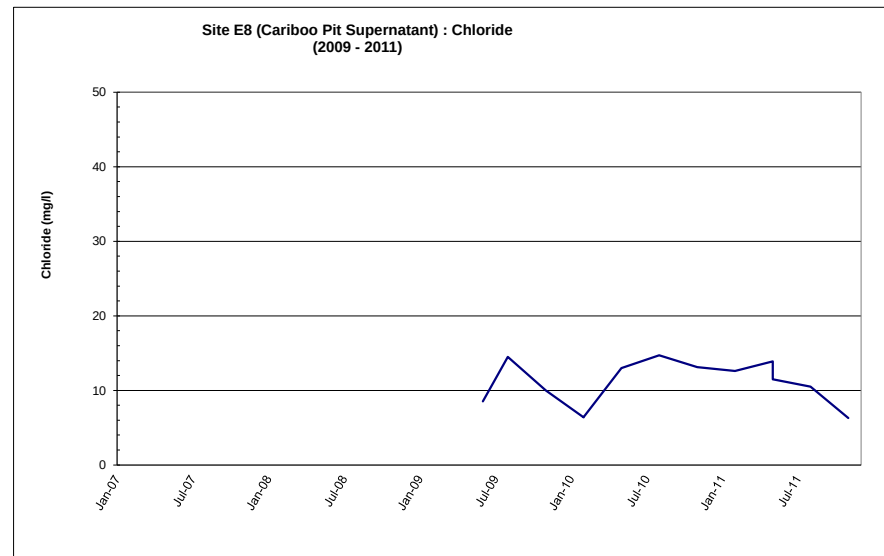
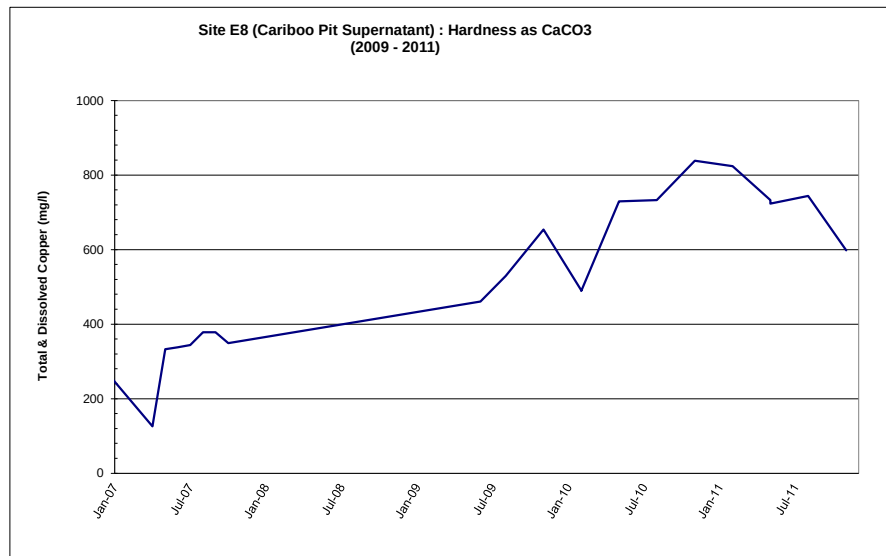
Annual Report 2011 **Water Quality at Site E8 (Cariboo Pit Supernatant)**



Annual Report 2011 **Water Quality at Site E8 (Cariboo Pit Supernatant)**



Annual Report 2011 **Water Quality at Site E8 (Cariboo Pit Supernatant)**



Annual Report 2011
Water Quality Site W1 - Morehead Creek

Sample Point	W1	W1	W1	W1
Date	1-Feb-11	12-May-11	4-Aug-11	1-Nov-11
Conductivity (in situ) (µs/cm)	25	78	121	176
pH (in situ) (pH)	8.23	6.97	7.75	7.81
Temperature (in situ) (Degrees Celcius)	0.1	2.6	12.2	1.2
Alkalinity (CaCO3) (mg/L)	45.5	26.1	53.2	74.9
Conductivity (µs/cm)	109	74.4	119	168
Hardness (as CaCO3) (mg/L)	52	35.8	58.3	82.4
pH (pH)	7.5	7.43	7.93	7.95
Total Dissolved Solids (mg/L)	88	85	100	114
Total Suspended Solids (mg/L)	1.5	1.5	1.5	1.5
Turbidity (ntu)	2.53	3.27	2.04	2.16
Chloride (Cl) (mg/L)	2.68	5.7	2.81	4.38
Fluoride (F) (mg/L)				
Sulfate (SO4) (mg/L)	6.62	4.5	4.13	6.65
Ammonia (as N) (mg/L)	0.009	<0.005	0.0132	0.0117
Nitrate (as N) (mg/L)	0.104	0.044	0.0439	0.0544
Nitrate and Nitrite (as N) (mg/L)	0.105	0.044	0.0439	0.0544
Nitrite (as N) (mg/L)	0.0013	<0.005	<0.001	<0.0010
Total Nitrogen (mg/L)	0.37	0.41	0.45	0.35
Orthophosphate-Dissolved (as P) (mg/L)	0.0021	0.0049	0.002	0.0024
Phosphorus (P) Total Dissolved (mg/L)	0.0092	0.0142	0.0076	0.0071
Phosphorus (P) Total (mg/L)	0.0165	0.0278	0.015	0.0113
Dissovled Metals				
Aluminum (Al)-Dissolved (mg/L)	0.0658	0.114	0.0342	0.0126
Antimony (Sb)-Dissolved (mg/L)	<0.0001	<0.0001	<0.0001	<0.00010
Arsenic (As)-Dissolved (mg/L)	0.00026	0.0003	0.00039	0.0003
Barium (Ba)-Dissolved (mg/L)	0.0128	0.00975	0.0146	0.0132
Cadmium (Cd)-Dissolved (mg/L)	<0.00001	<0.00001	<0.00001	<0.000010
Calcium (Ca)-Dissolved (mg/L)	15.1	10.3	17.3	25
Chromium (Cr)-Dissolved (mg/L)	<0.0005	<0.0005	<0.0005	<0.00050
Copper (Cu)-Dissolved (mg/L)	0.00533	0.00786	0.00453	0.00278
Iron (Fe)-Dissolved (mg/L)	0.17	0.136	0.195	0.173
Lead (Pb)-Dissolved (mg/L)	<0.00005	<0.00005	<0.00005	<0.000050
Lithium (Li)-Dissolved (mg/L)	<0.005	<0.005	<0.0005	<0.00050
Magnesium (Mg)-Dissolved (mg/L)	3.5	2.42	3.65	4.88
Manganese (Mn)-Dissolved (mg/L)	0.0256	0.00522	0.0232	0.0358

* Note - these results are for data from 1995 to 2011

Sample (n)	Count >MDL	Min	Max	Mean
96	96	4	236	110.5823
99	99	2.03	8.49	7.3966
85	85	0.1	37	6.9965
115	108	26.1	510	55.5111
5	5	74.4	185	131.08
119	119	30.3	139	53.569
5	5	7.43	7.95	7.684
71	57	4	150	80.28070
99	99	0.5	76	5.36111
116	116	0.7	11.5	2.47905
26	24	0.031	5.7	1.91629
14	14	0.006	0.07	0.05186
116	116	0.005	17.4	3.68116
117	59	0.0006	0.038	0.01407
53	44	0.004	0.295	0.04323
114	114	0.002	0.299	0.03841
90	54	0.001	0.019	0.00309
33	33	0.11	0.72	0.39842
116	84	0.001	0.037	0.00653
59	54	0.0024	0.037	0.01235
94	89	0.001	0.117	0.02476
100	100	0.0013	0.14	0.03821
100	55	0.00005	0.00027	0.00009
99	88	0.0001	0.00103	0.00039
100	93	0.00745	0.0264	0.01240
100	24	0.00001	0.0001	0.0000282
100	100	9.27	42.8	16.7456
100	26	0.0002	0.0027	0.000815
132	132	0.0005	7.7	0.062729
100	100	0.054	0.622	0.1969
100	51	0.00002	0.00031	0.000079
74	19	0.0002	0.0004	0.000258
100	100	1.99	7.75	3.3909
100	99	0.0006	0.312	0.032156

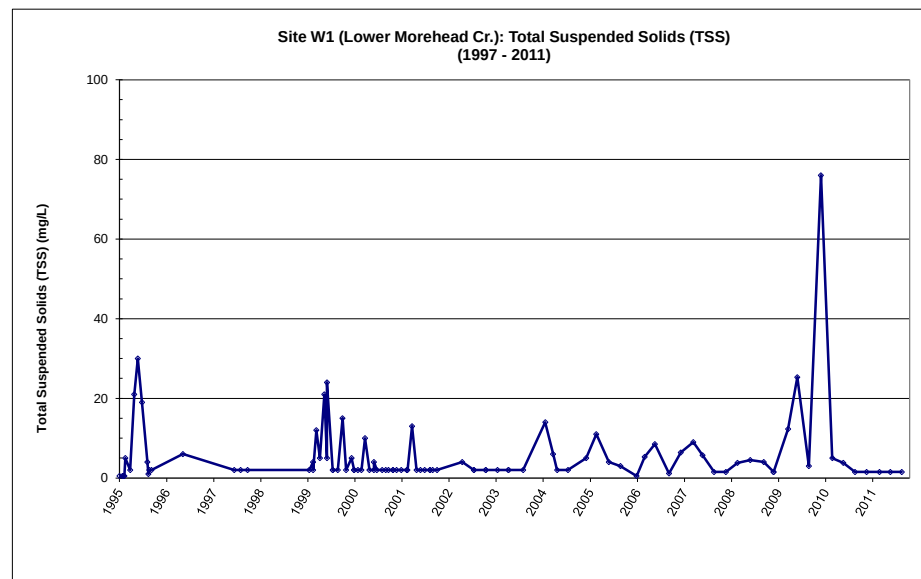
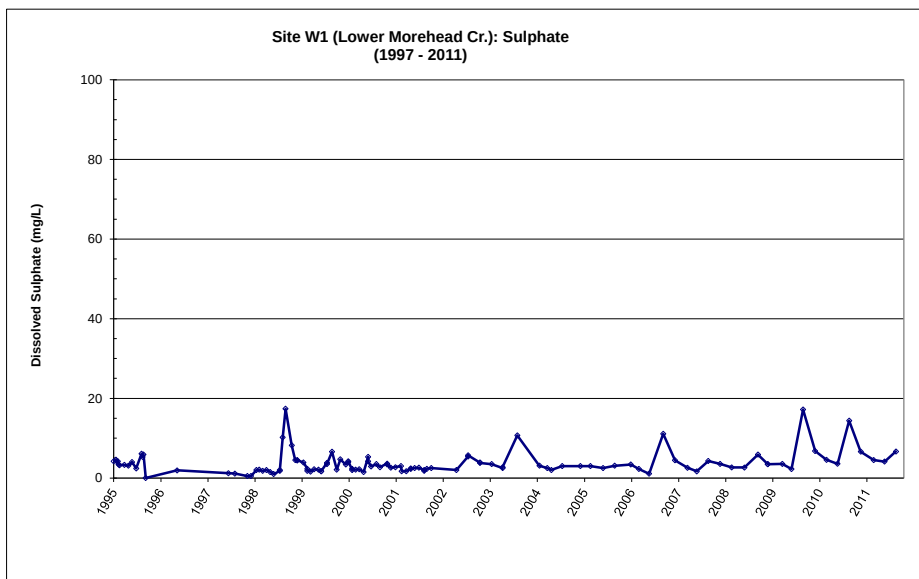
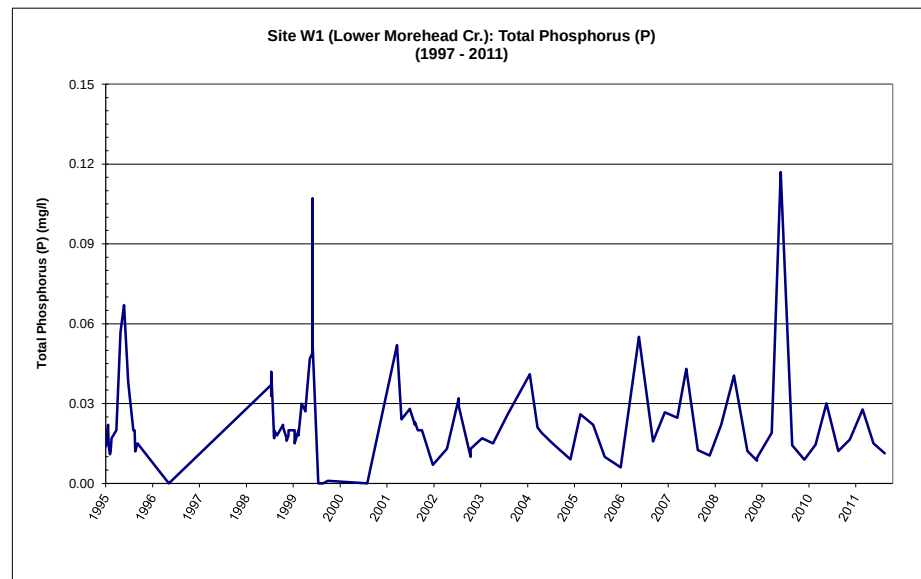
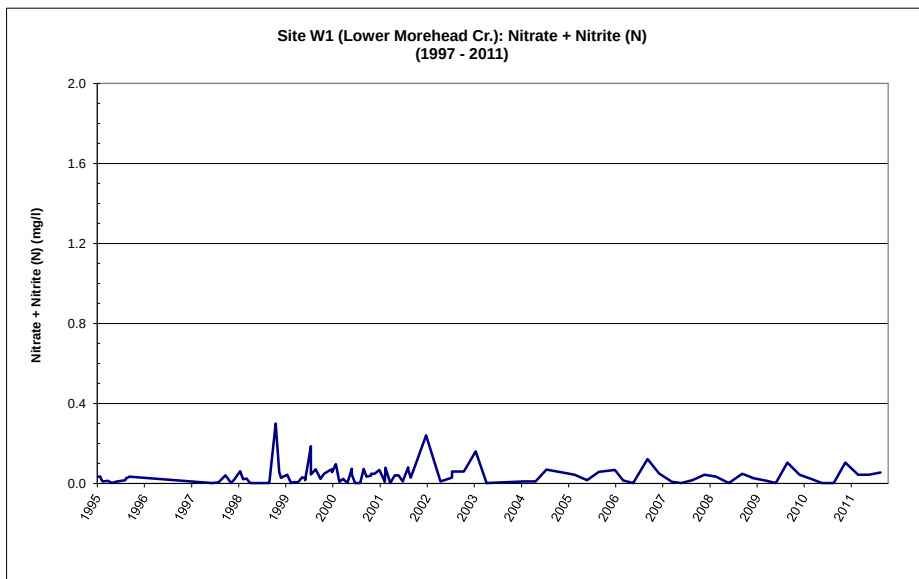
Annual Report 2011
Water Quality Site W1 - Morehead Creek

Sample Point	W1	W1	W1	W1
Date	1-Feb-11	12-May-11	4-Aug-11	1-Nov-11
Molybdenum (Mo)-Dissolved (mg/L)	0.00057	0.000357	0.00069	0.00064
Nickel (Ni)-Dissolved (mg/L)	<0.0005	0.00055	<0.0005	<0.00050
Potassium (K)-Dissolved (mg/L)	0.529	0.674	0.418	0.555
Selenium (Se)-Dissolved (mg/L)	<0.001	<0.0005	<0.0005	<0.00050
Silicon (Si)-Dissolved (mg/L)	3.11	4.02	3.95	4.67
Silver (Ag)-Dissolved (mg/L)	<0.00001	<0.00001	<0.00001	<0.000010
Sodium (Na)-Dissolved (mg/L)	3.17	1.97	2.62	4.3
Strontium (Sr)-Dissolved (mg/L)	0.116	0.0651	0.135	0.152
Tin (Sn)-Dissolved (mg/L)	<0.0001	<0.0001	<0.0001	<0.00010
Zinc (Zn)-Dissolved (mg/L)	<0.003	0.0038	0.0146	<0.0030
Total Metals				
Aluminum (Al)-Total (mg/L)	0.15	0.269	0.155	0.0791
Antimony (Sb)-Total (mg/L)	<0.0001	<0.0001	<0.0001	<0.00010
Arsenic (As)-Total (mg/L)	0.00028	0.00037	0.0005	0.00034
Barium (Ba)-Total (mg/L)	0.0141	0.0116	0.0166	0.0156
Cadmium (Cd)-Total (mg/L) (mg/L)	<0.00001	0.000012	<0.00001	<0.000010
Calcium (Ca)-Total (mg/L)	15.4	10.7	18	25.7
Chromium (Cr)-Total (mg/L)	<0.0005	0.00094	0.00057	<0.00050
Copper (Cu)-Total (mg/L)	0.00614	0.0102	0.0062	0.002
Iron (Fe)-Total (mg/L) (mg/L)	0.286	0.278	0.37	0.307
Lead (Pb)-Total (mg/L)	<0.00005	0.000127	0.000065	<0.000050
Lithium (Li)-Total (mg/L)	<0.005	<0.005	<0.0005	<0.00050
Magnesium (Mg)-Total (mg/L)	3.59	2.52	3.82	5.04
Manganese (Mn)-Total (mg/L)	0.0326	0.014	0.0405	0.0434
Molybdenum (Mo)-Total (mg/L)	0.00059	0.000411	0.000678	0.000681
Nickel (Ni)-Total (mg/L)	<0.0005	<0.0005	<0.0005	<0.00050
Potassium (K)-Total (mg/L)	0.559	0.721	0.449	0.577
Selenium (Se)-Total (mg/L)	<0.001	<0.0005	<0.0005	<0.00050
Silicon (Si)-Total (mg/L)	3.34	4.37	4.35	4.92
Silver (Ag)-Total (mg/L)	0.000014	0.000013	<0.00001	<0.000010
Sodium (Na)-Total (mg/L)	3.27	2.03	2.82	4.35
Strontium (Sr)-Total (mg/L)	0.116	0.0733	0.141	0.158
Tin (Sn)-Total (mg/L)	<0.0001	<0.0001	<0.0001	<0.00010
Zinc (Zn)-Total (mg/L)	<0.003	0.0037	0.0102	<0.0030
Dissolved Organic Carbon (mg/L)	11	14.8	12.5	8.79

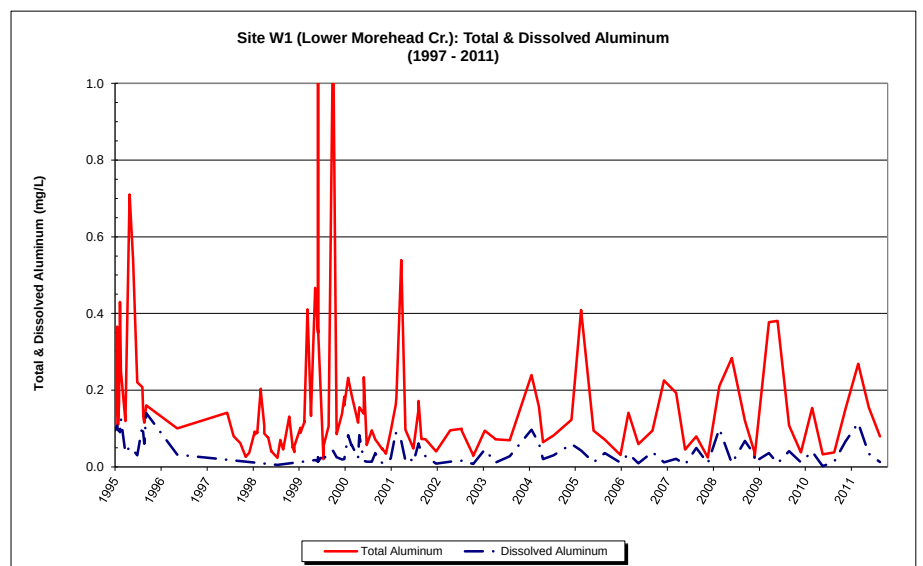
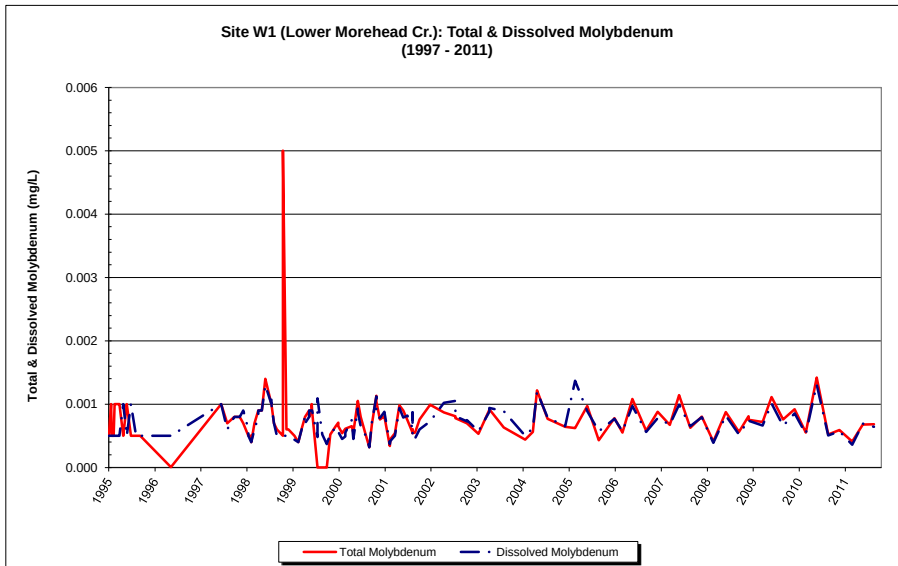
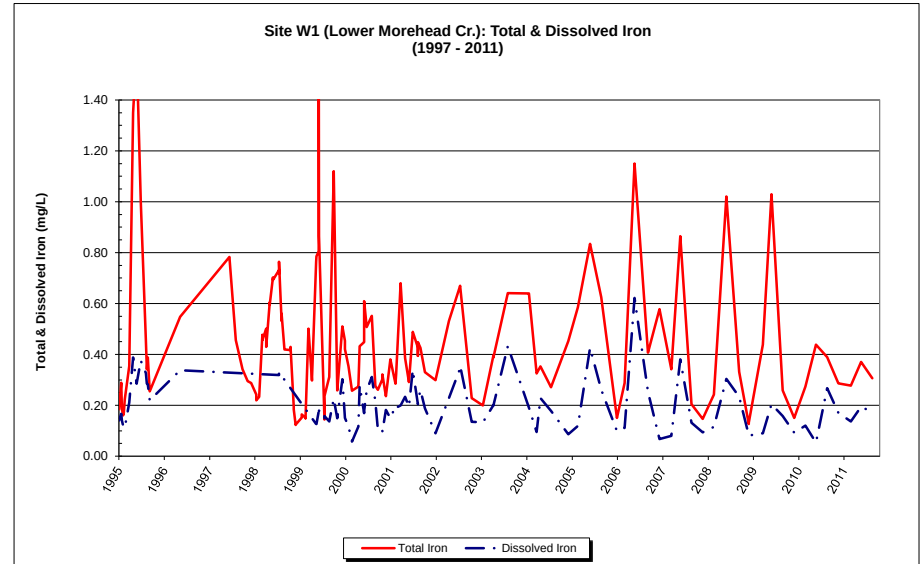
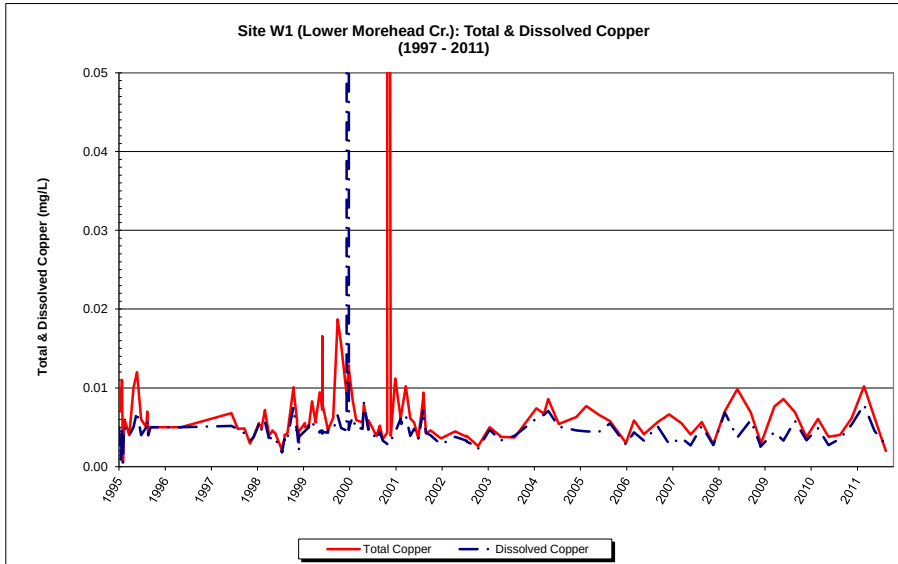
* Note - these results are for data from 1995 to 2011

Sample (n)	Count >MDL	Min	Max	Mean
131	131	0.00032	0.00137	0.000699
100	12	0.0003	0.001	0.000521
100	100	0.19	1.06	0.5334
100	3	0.0002	0.0018	0.000933
96	96	1.43	7.82	3.368125
100	9	0.00001	0.00005	0.000018
99	99	1.79	6.06	3.197879
100	100	0.0651	0.291	0.117165
77	31	0.00005	0.00091	0.000164
100	66	0.0003	0.0146	0.002048
133	133	0.0201	1.16	0.15383
116	76	0.00005	0.00037	0.00010
132	126	0.0001	0.0025	0.00050
116	109	0.0079	0.0326	0.01452
116	32	0.00001	0.00014	0.00003
132	132	8.96	41.3	16.07977
116	51	0.00018	0.002	0.00074
133	133	0.0005	0.269	0.00803
133	133	0.123	1.84	0.44263
133	96	0.00003	0.00239	0.00019
73	32	0.0002	0.0007	0.00031
133	133	1.71	7.7	3.24286
133	133	0.0058	0.584	0.06089
133	133	0.0000025	0.005	0.00073
133	56	0.0001	0.0016	0.00044
118	117	0.19	0.95	0.53362
130	3	0.0001	0.0001	0.00010
133	133	1.25	10.5	3.321617
116	31	0.00001	0.00007	0.000017
118	118	1.73	6.38	3.104068
133	133	0.0002	0.306	0.117020
76	34	0.00005	0.013	0.000589
133	103	0.0004	0.0165	0.002961
67	65	0.88	14.9	9.498308

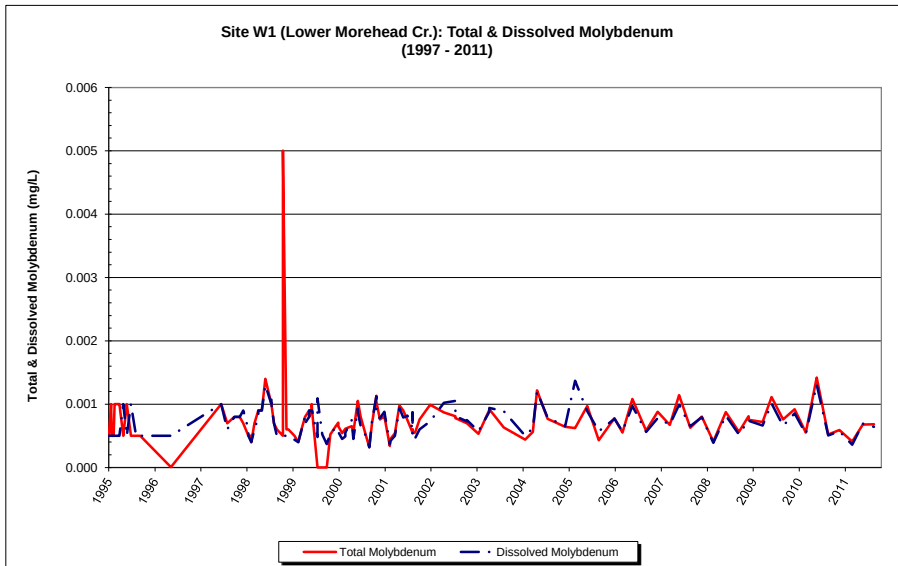
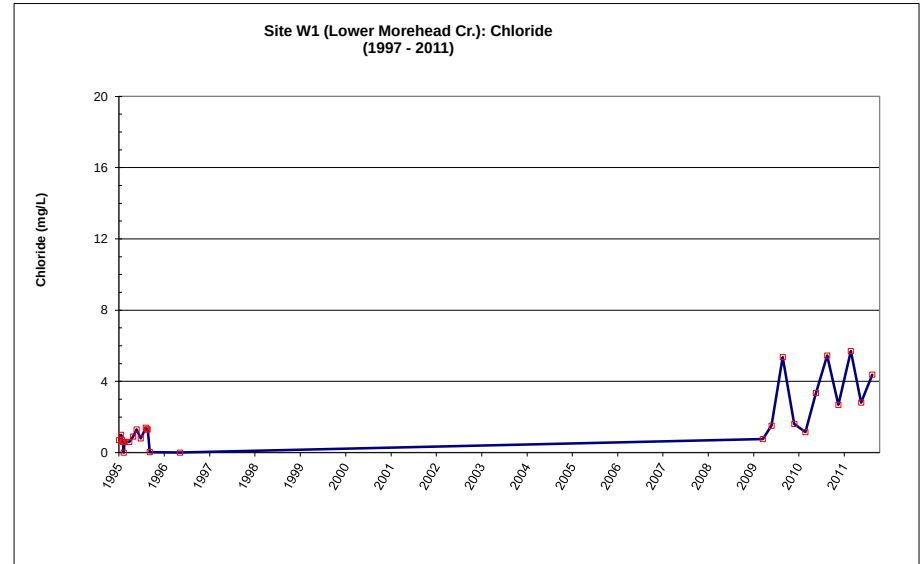
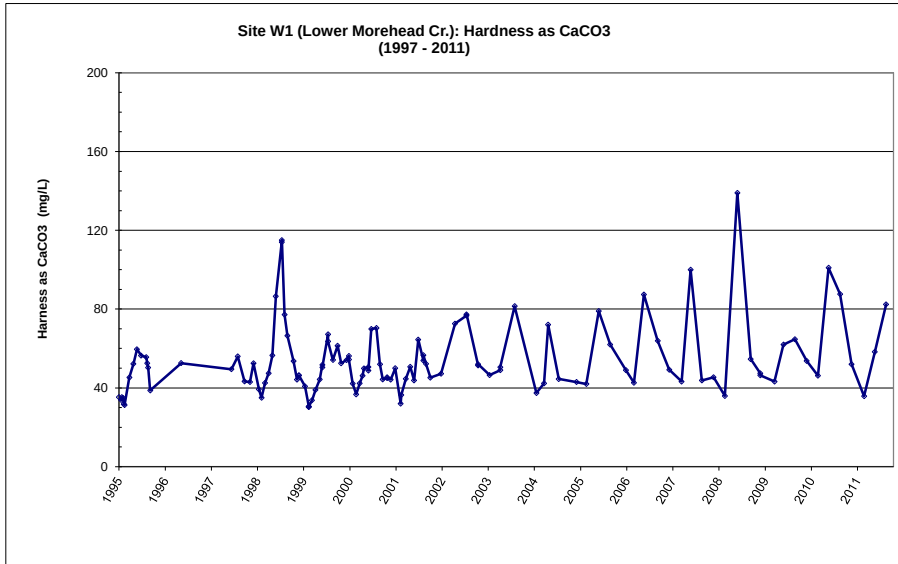
Annual Report 2011 **Water Quality at Site W1 (Lower Morehead Creek)**



Annual Report 2011
Water Quality at Site W1 (Lower Morehead Creek)



Annual Report 2011
Water Quality at Site W1 (Lower Morehead Creek)



Annual Report 2011
Water Quality Site W3a - Mine Drainage Creek

Sample Point	W3a	W3a	W3a	W3a	W3a
Date	8-Mar-11	25-May-11	20-Sep-11	6-Oct-11	1-Nov-11
Conductivity (in situ) (µs/cm)	190	142	284	310	259
pH (in situ) (pH)	7.96	7.38	7.69	7.74	7.81
Temperature (in situ) (Degrees Celcius)		4.3	6.7	6.7	1.9
Alkalinity (CaCO3) (mg/L)	60.9	25.8	53.9	51.8	47.6
Conductivity (µs/cm)	186	136	282	301	243
Hardness (as CaCO3) (mg/L)	81.6	61	131	141	111
pH (pH)	8.03	7.57	7.89	7.91	7.94
Total Dissolved Solids (mg/L)	127	111	184	226	185
Total Suspended Solids (mg/L)	1.5	1.5	1.5	1.5	1.5
Turbidity (ntu)	0.49	1.37	0.25	0.47	2.03
Chloride (Cl) (mg/L)	6.36	8.3	14.1	14.2	12.3
Fluoride (F) (mg/L)					
Sulfate (SO4) (mg/L)	23.2	26.7	64.1	75.2	53.4
Ammonia (as N) (mg/L)	<0.005	<0.005	<0.0050	<0.0050	<0.0050
Nitrate (as N) (mg/L)	0.111	0.082	0.0204	<0.0050	0.0571
Nitrate and Nitrite (as N) (mg/L)	0.111	0.082	0.0204	0.00255	0.0571
Nitrite (as N) (mg/L)	<0.001	<0.005	<0.0010	<0.0010	<0.0010
Total Nitrogen (mg/L)	0.224	0.38	0.16	0.17	0.23
Orthophosphate-Dissolved (as P) (mg/L)	0.0058	0.0042	0.0046	0.0035	0.0024
Phosphorus (P) Total Dissolved (mg/L)	0.0069	0.0072		0.0057	0.0049
Phosphorus (P) Total (mg/L)	0.0097	0.0115	0.0077	0.0074	0.0084
Dissolved Metals					
Aluminum (Al)-Dissolved (mg/L)	0.0135	0.0872	0.0106	0.0112	0.0318
Antimony (Sb)-Dissolved (mg/L)	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved (mg/L)	0.00046	0.00035	0.00046	0.00047	0.0004
Barium (Ba)-Dissolved (mg/L)	0.00677	0.00678	0.0109	0.0116	0.0092
Cadmium (Cd)-Dissolved (mg/L)	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Dissolved (mg/L)	22.5	16.1	35.8	38.7	30
Chromium (Cr)-Dissolved (mg/L)	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050
Copper (Cu)-Dissolved (mg/L)	0.00658	0.0179	0.00883	0.00818	0.00868
Iron (Fe)-Dissolved (mg/L)	0.015	0.076	<0.030	<0.030	0.053
Lead (Pb)-Dissolved (mg/L)	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050
Lithium (Li)-Dissolved (mg/L)	<0.005	<0.005	<0.00050	<0.00050	0.00056
Magnesium (Mg)-Dissolved (mg/L)	6.2	5.07	10	10.8	8.67
Manganese (Mn)-Dissolved (mg/L)	0.000356	0.0012	0.000932	0.000694	0.00164

* Note - these results are for data from 1995 to 2011

Sample (n)	Count >MDL	Min	Max	Mean
77	77	51.6	310	133.853
78	78	6.38	9.5	7.492
66	66	0.15	13.1	5.486
93	85	14	84.1	39.474
5	5	136	301	229.600
93	93	25.2	141	59.454
5	5	7.57	8.03	7.868
55	50	13	226	106.760
87	87	0.5	48.3	4.863
94	94	0.25	12.3	1.444
12	12	2.16	14.2	8.70917
94	94	3.9	75.2	18.31894
61	15	0.005	0.044	0.01368
46	42	0.0176	1.94	0.23407
89	89	0.001	1.94	0.26246
66	35	0.001	0.021	0.00347
35	31	0.14	14.4	0.84100
93	74	0.001	0.132	0.01441
47	46	0.0049	0.079	0.01784
74	65	0.006	0.109	0.02120
77	77	0.0106	0.329	0.07323
77	22	0.00005	0.00013	0.00007
77	66	0.0001	0.0008	0.00051
77	65	0.00434	0.0116	0.00678
76	35	0.00001	0.00016	0.00003
75	75	7.52	38.7	16.76560
77	16	0.0002	0.002	0.00057
95	95	0.004	0.0884	0.02121
77	75	0.015	0.287	0.08321
77	37	0.00002	0.00106	0.00011
64	37	0.0002	0.0008	0.00044
72	72	1.56	10.8	4.52444
77	71	0.000356	0.0512	0.00498

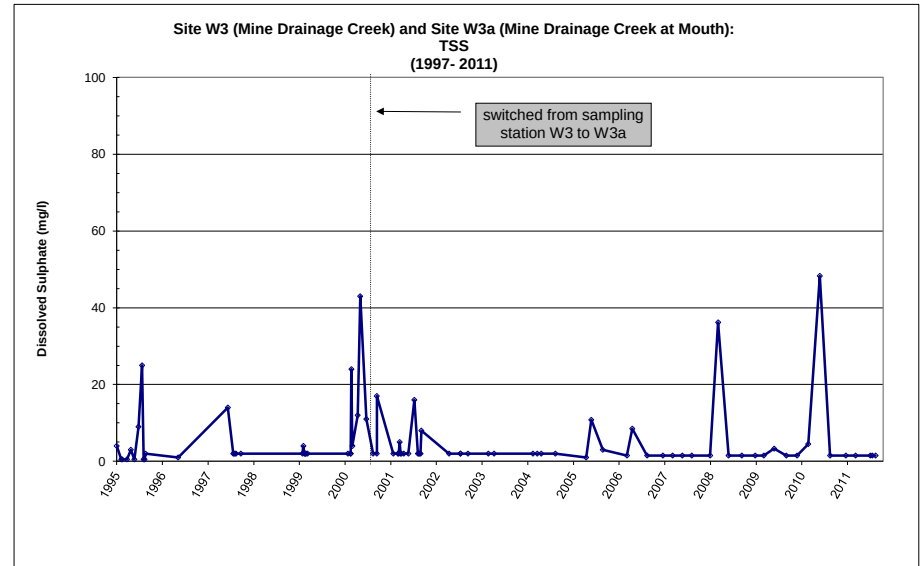
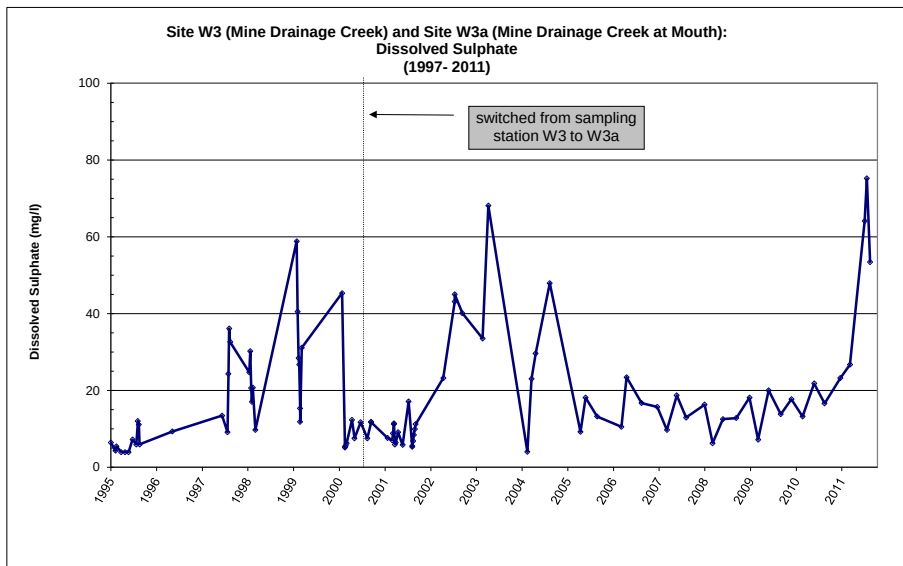
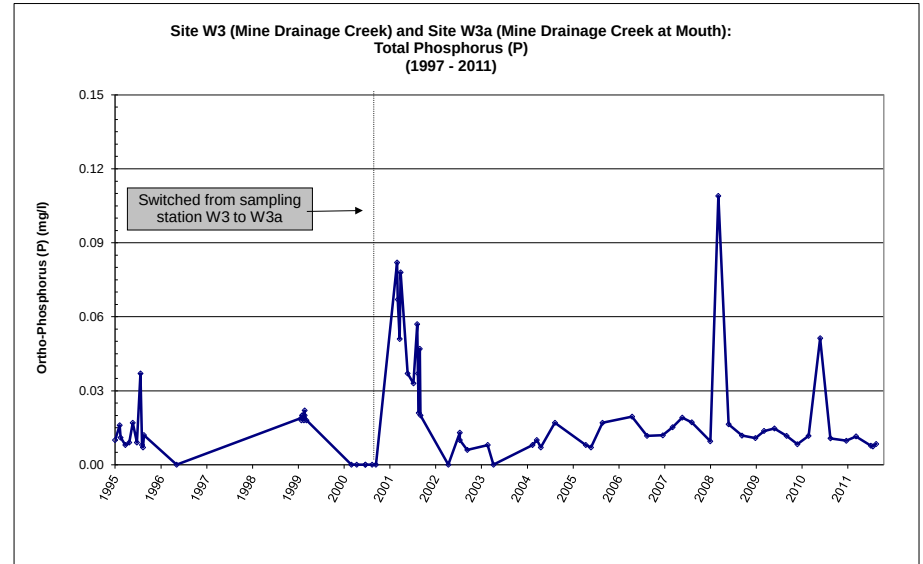
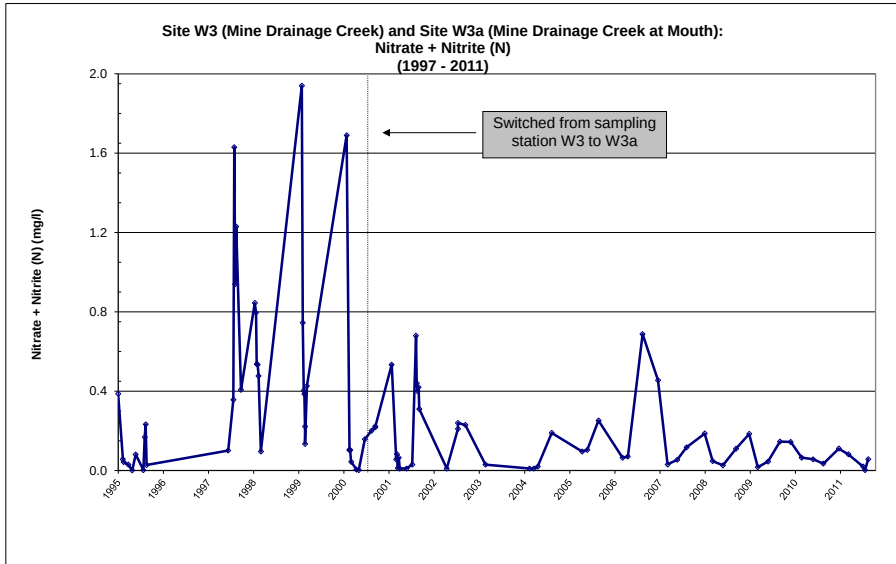
Annual Report 2011
Water Quality Site W3a - Mine Drainage Creek

Sample Point	W3a	W3a	W3a	W3a	W3a
Date	8-Mar-11	25-May-11	20-Sep-11	6-Oct-11	1-Nov-11
Molybdenum (Mo)-Dissolved (mg/L)	0.00653	0.00225	0.00538	0.00518	0.00427
Nickel (Ni)-Dissolved (mg/L)	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050
Potassium (K)-Dissolved (mg/L)	0.75	0.547	0.672	0.715	0.742
Selenium (Se)-Dissolved (mg/L)	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050
Silicon (Si)-Dissolved (mg/L)	8.05	6.87	9	9.19	8.31
Silver (Ag)-Dissolved (mg/L)	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved (mg/L)	5.45	3.44	6.65	6.74	5.71
Strontium (Sr)-Dissolved (mg/L)	0.0994	0.0684	0.162	0.159	0.154
Tin (Sn)-Dissolved (mg/L)	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010
Zinc (Zn)-Dissolved (mg/L)	<0.003	<0.003	<0.0030	<0.0030	<0.0030
Total Metals					
Aluminum (Al)-Total (mg/L)	0.0373	0.183	0.0215	0.0209	0.0933
Antimony (Sb)-Total (mg/L)	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total (mg/L)	0.00059	0.00041	0.00049	0.00044	0.0005
Barium (Ba)-Total (mg/L)	0.0071	0.00781	0.011	0.0114	0.00992
Cadmium (Cd)-Total (mg/L) (mg/L)	<0.00001	0.000013	0.000012	<0.000010	0.00001
Calcium (Ca)-Total (mg/L)	23.2	16.4	35.8	39.1	30.2
Chromium (Cr)-Total (mg/L)	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050
Copper (Cu)-Total (mg/L)	0.00778	0.0209	0.00963	0.00858	0.0101
Iron (Fe)-Total (mg/L) (mg/L)	0.046	0.188	0.036	0.033	0.117
Lead (Pb)-Total (mg/L)	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050
Lithium (Li)-Total (mg/L)	<0.005	<0.005	<0.00050	<0.00050	0.00054
Magnesium (Mg)-Total (mg/L)	6.44	5.15	10.3	10.9	8.89
Manganese (Mn)-Total (mg/L)	0.00197	0.00656	0.00166	0.00165	0.00344
Molybdenum (Mo)-Total (mg/L)	0.00686	0.00237	0.00575	0.00527	0.00428
Nickel (Ni)-Total (mg/L)	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050
Potassium (K)-Total (mg/L)	0.763	0.567	0.689	0.695	0.773
Selenium (Se)-Total (mg/L)	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050
Silicon (Si)-Total (mg/L)	8.36	7.16	9.15	9.26	8.57
Silver (Ag)-Total (mg/L)	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total (mg/L)	5.6	3.5	6.76	6.62	5.85
Strontium (Sr)-Total (mg/L)	0.102	0.0726	0.171	0.162	0.159
Tin (Sn)-Total (mg/L)	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010
Zinc (Zn)-Total (mg/L)	<0.003	<0.003	<0.0030	<0.0030	<0.0030
Dissolved Organic Carbon (mg/L)	4.26	10.2	5.44	5.38	6.42

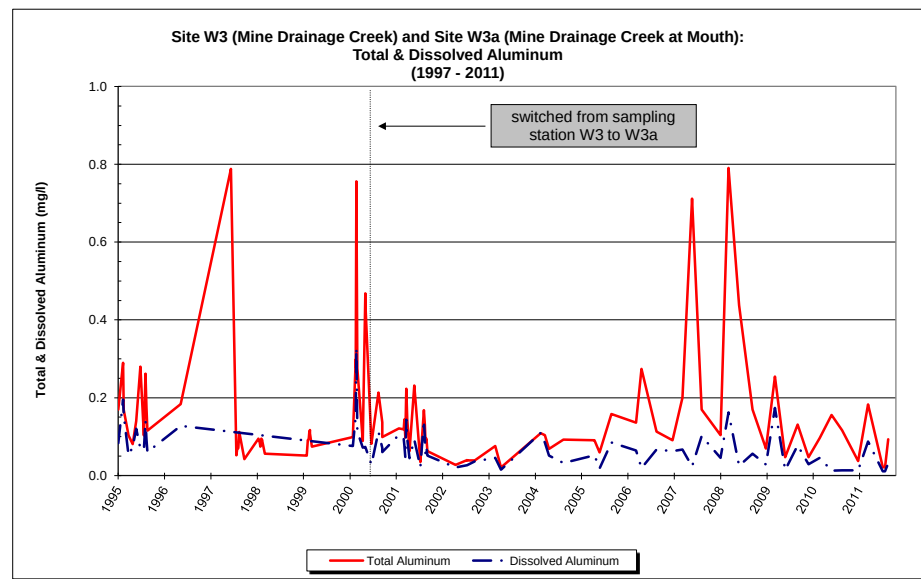
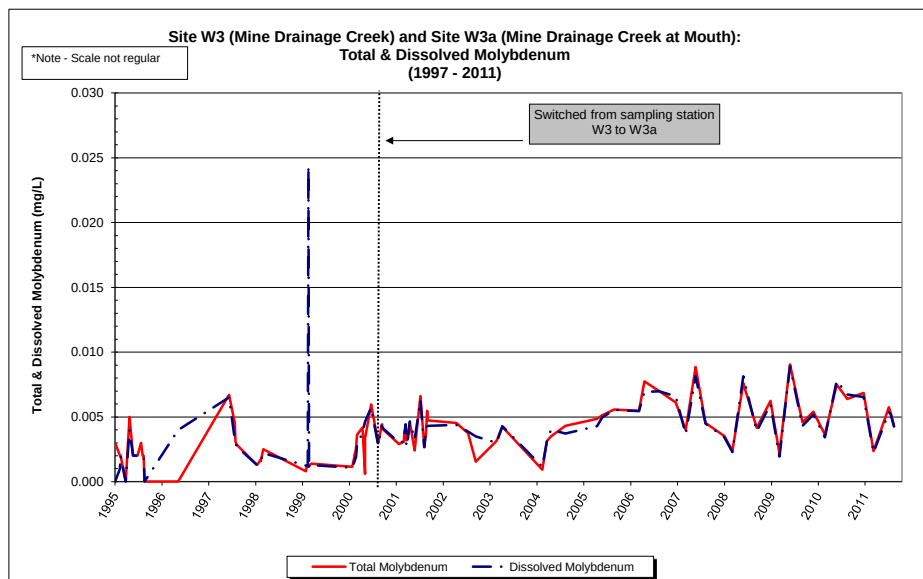
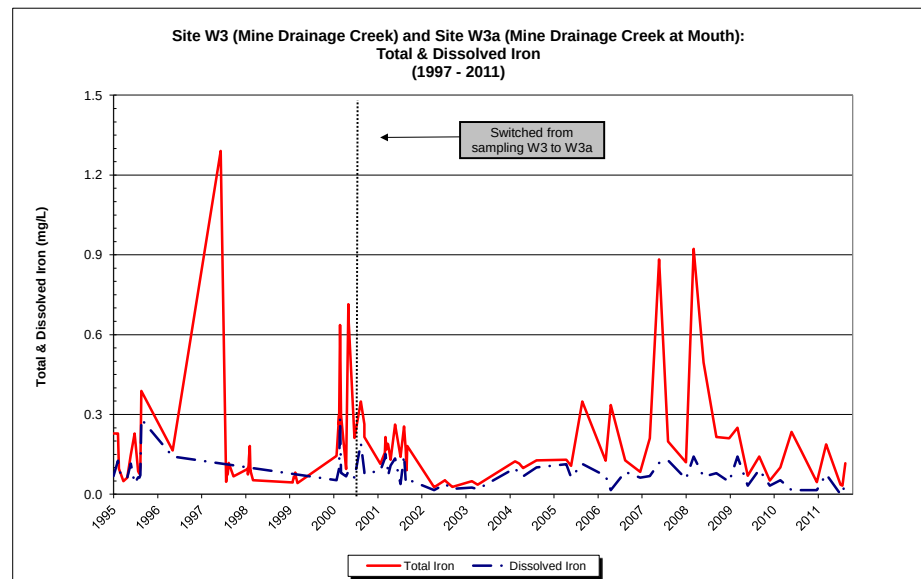
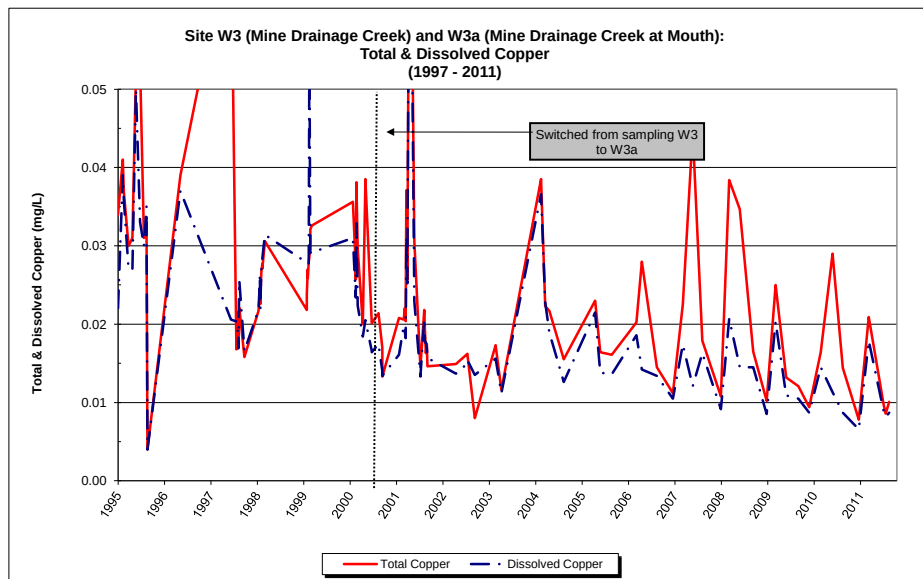
* Note - these results are for data from 1995 to 2011

Sample (n)	Count >MDL	Min	Max	Mean
95	92	0.001	0.0244	0.00389
77	0			
77	77	0.23	0.997	0.61916
77	9	0.0006	0.0018	0.00082
75	75	4.08	9.19	7.36813
64	13	0.00001	0.00006	0.00002
76	75	1.39	6.74	3.93227
77	77	0.035	0.162	0.07435
64	24	0.00006	0.00027	0.00014
77	49	0.0008	0.0438	0.00334
99	99	0.0204	0.791	0.15253
84	27	0.00005	0.00019	0.00008
97	88	0.0001	0.00112	0.00049
84	73	0.00398	0.0173	0.00785
84	45	0.00001	0.00038	0.00004
101	101	7.52	39.1	16.59762
84	26	0.0002	0.00186	0.00062
99	99	0.004	0.0903	0.02465
99	99	0.026	1.29	0.18469
95	62	0.00002	0.0025	0.00020
62	35	0.0002	0.0008	0.00052
101	101	1.56	10.9	4.39941
99	99	0.001	0.435	0.01701
99	96	0.0006	0.00904	0.00355
99	33	0.0001	0.61	0.01919
87	84	0.3	1.21	0.63244
99	31	0.0002	8.9	0.28797
101	101	0.00004	9.37	6.88376
62	34	0.00001	3.4	0.10002
89	89	0.063	6.76	3.81846
99	98	0.035	0.171	0.07458
62	30	0.00006	0.0166	0.00083
98	83	0.0006	0.0413	0.00477
59	59	4.26	17.9	9.11

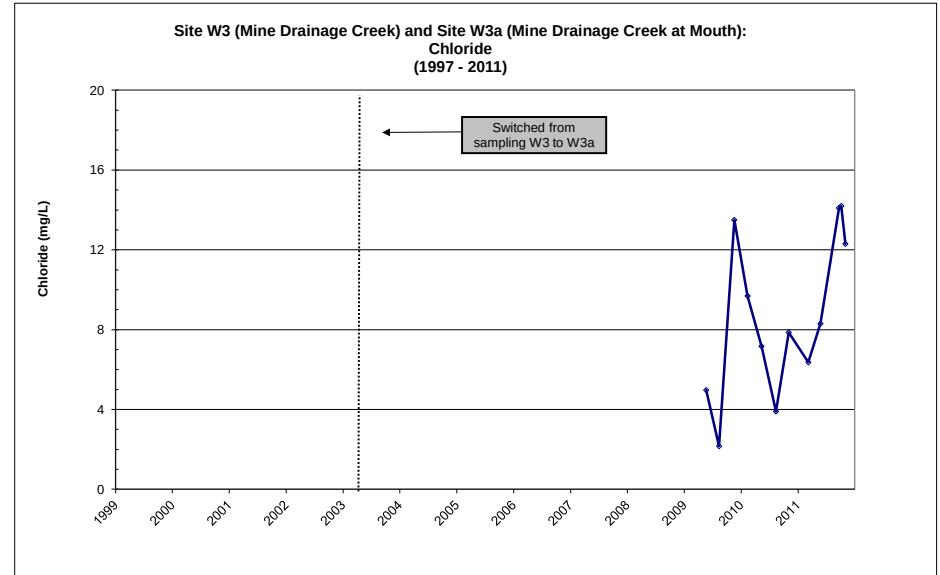
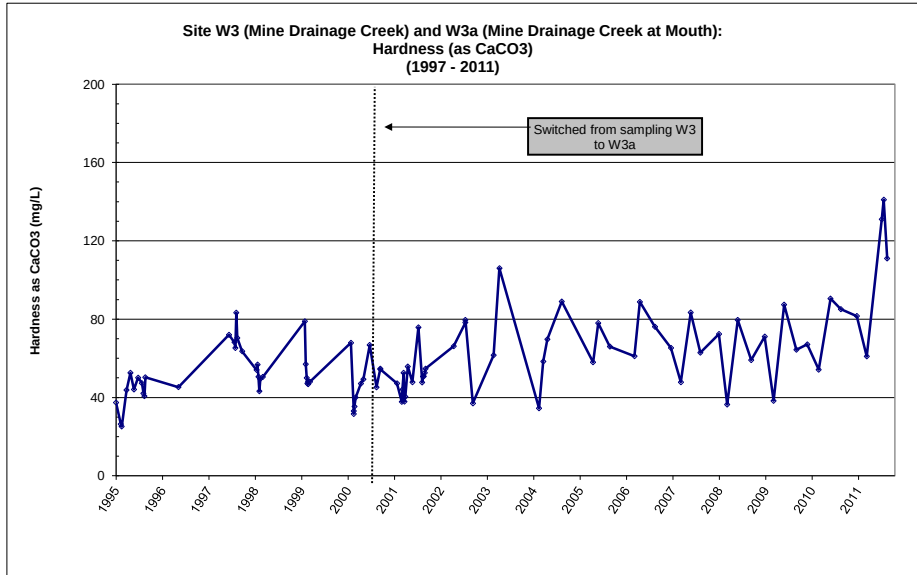
Annual Report 2011 Water Quality at Site W3 (Mine Drainage Creek) and W3a (Mine Drainage Creek at Mouth)



Annual Report 2011 **Water Quality at Site W3 (Mine Drainage Creek) and W3a (Mine Drainage Creek at Mouth)**



Annual Report 2011
Water Quality at Site W3 (Mine Drainage Creek) and W3a (Mine Drainage Creek at Mouth)



Annual Report 2011
Water Quality Site W4 - North Dump Creek

Sample Point	W4	W4	W4	W4	W4	W4	W4	W4	W4	W4	W4	W4	W4	W4	W4	W4
Date	10-Jan-11	9-Feb-11	15-Feb-11	7-Mar-11	5-Apr-11	4-May-11	11-May-11	18-May-11	26-May-11	1-Jun-11	9-Jun-11	14-Jul-11	4-Aug-11	8-Sep-11	20-Sep-11	30-Sep-11
Conductivity (in situ) (µs/cm)	168	616	559	457	416	193	166	148	174	194	234	289	295	320	335	333
pH (in situ) (pH)	8.03	8.12	8.15	8.3	7.73	7.43	7.83	7.67	7.5	7.88	7.84	8.42	8.07	8.02	8.11	8.14
Temperature (in situ) (Degrees Celcius)	0.1	0.3	0.6	0.1	0.6	1.7	3	2.3	3	4.5	6.3	7.7	8.2	8.2	9.3	7.7
Alkalinity (CaCO3) (mg/L)	144	143	146	149	145	63.8	51.2	50.2	61.3	69.6	85.2	117	117	146	147	154
Conductivity (µs/cm)	412	1000	543	451	393		162				224	280	288	332	327	332
Hardness (as CaCO3) (mg/L)	225	574	297	235	222	95.6	79.3	72.1	91.8	101	122	163	160	181	181	179
pH (pH)	8.14	8.04	8.14	8.25	8.09		7.94				7.81	8.13	8.25	8.22	8.2	8.31
Total Dissolved Solids (mg/L)	275	783	382	301	266	163	140	119	127	136	153	187	190	215	218	216
Total Suspended Solids (mg/L)	28	3.5	1.5	1.5	10.2	37.5	111	26.9	4.9	3.2	1.5	1.5	3.3	3	1.5	1.5
Turbidity (ntu)	14.3	1.83	0.71	0.35	4.26	45.6	83.2	21.2	6.52	4.7	2.85	2.4	3.37	3.09	2.39	1.39
Chloride (Cl) (mg/L)	0.79	2.5	1.12	0.8	0.68	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Fluoride (F) (mg/L)											0.053					
Sulfate (SO4) (mg/L)	68.1	338	124	79.4	63	29.1	28.7	21.7	23.9	27.3	32.7	35	36.6	35.3	33.2	32.6
Ammonia (as N) (mg/L)	<0.005	<0.005	<0.0050	<0.005	<0.005	<0.005	0.0069	<0.005	<0.005	<0.005	<0.005	0.0083	<0.0050	<0.0050	<0.0050	<0.0050
Nitrate (as N) (mg/L)	2.83	22.9	7.03	3.76	1.9	0.156	0.269	0.174	0.1	0.0844	0.0746	0.091	0.0909	0.15	0.144	0.114
Nitrate and Nitrite (as N) (mg/L)	2.83	22.9	7.03	3.76	1.9	0.156	0.269	0.174	0.1	0.0844	0.0746	0.091	0.0909	0.15	0.144	0.114
Nitrite (as N) (mg/L)	<0.001	<0.01	<0.0010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			<0.0010	<0.0010	<0.0010
Total Nitrogen (mg/L)	2.9	29.3	9.94	3.87	2.29	0.43	0.72	0.41	0.21	0.25	0.27	0.28	0.22	0.31	0.24	0.22
Orthophosphate-Dissolved (as P) (mg/L)	0.0136	0.0152	0.0152	0.0144	0.016	0.0176	0.0142	0.0107	0.009	0.0113	0.0135	0.0143	0.015	0.017	0.017	0.0164
Phosphorus (P) Total Dissolved (mg/L)	0.0162	0.0173	0.0156	0.0162	0.017	0.0201	0.019	0.0179	0.0142	0.0142	0.0167	0.0156	0.0157			
Phosphorus (P) Total (mg/L)	0.0541	0.0237	0.0172	0.0178	0.0355	0.0888	0.157	0.0586	0.0253	0.0216	0.0204	0.0215	0.0244	0.0258	0.0235	0.0223
Dissolved Metals																
Aluminum (Al)-Dissolved (mg/L)	0.0051	0.0015	0.0015	0.0015	0.0179	0.143	0.0528	0.161	0.152	0.0867	0.0345	0.0118	0.0192	0.0049	0.0074	0.0056
Antimony (Sb)-Dissolved (mg/L)	<0.0001	<0.0001	<0.00010	<0.0001	0.00011	0.00012	<0.0001	0.00011	0.00011	0.00011	0.00012	<0.0001	<0.0001	0.0001	<0.00010	<0.00010
Arsenic (As)-Dissolved (mg/L)	0.00034	0.00033	0.00033	0.00032	0.00035	0.00036	0.00031	0.00044	0.00028	0.00028	0.00029	0.00033	0.00031	0.00028	0.00031	0.00032
Barium (Ba)-Dissolved (mg/L)	0.0236	0.0656	0.0337	0.0264	0.0252	0.0121	0.00772	0.0077	0.00913	0.0104	0.0123	0.0172	0.0176	0.0214	0.0207	0.0212
Cadmium (Cd)-Dissolved (mg/L)	<0.00001	0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000013	<0.00001	<0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Dissolved (mg/L)	73	178	94.6	75.2	71.2	31.6	26.4	24.2	31.3	34.2	41	55.1	60.8	60.8	60.7	59.2
Chromium (Cr)-Dissolved (mg/L)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050
Copper (Cu)-Dissolved (mg/L)	0.00203	0.00262	0.00222	0.0019	0.00331	0.00794	0.00835	0.0119		0.00949	0.0067	0.00485	0.00519	0.00337	0.00339	0.0031
Iron (Fe)-Dissolved (mg/L)	0.015	0.015	0.015	0.015	0.015	0.123	0.052	0.136	0.12	0.084	0.015	0.015	0.015	0.015	0.015	0.015
Lead (Pb)-Dissolved (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000055	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050
Lithium (Li)-Dissolved (mg/L)	<0.005	<0.005	<0.0050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.00052	<0.0005	0.0007	0.0007	<0.00050	0.00061
Magnesium (Mg)-Dissolved (mg/L)	10.3	31.6	14.8	11.5	10.7	4.02	3.29	2.85	3.32	3.79	4.66	6.09	6.01	6.99	7.2	7.43
Manganese (Mn)-Dissolved (mg/L)	0.012	0.00144	0.000437	0.000284	0.000925	0.00246	0.00124	0.00245	0.00209	0.00157	0.00139	0.0005	0.00375	0.00783	0.0111	0.0115
Molybdenum (Mo)-Dissolved (mg/L)	0.0128	0.0147	0.0126	0.013	0.0119	0.00436	0.00359	0.00388	0.00465	0.00521	0.00616	0.00732	0.00716	0.00846	0.00867	0.00891
Nickel (Ni)-Dissolved (mg/L)	0.00067	<0.0005	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050

Annual Report 2011
Water Quality Site W4 - North Dump Creek

Sample Point	W4	W4	W4	W4	W4	W4	W4	W4	W4	W4	W4	W4	W4	W4	W4	W4
Date	10-Jan-11	9-Feb-11	15-Feb-11	7-Mar-11	5-Apr-11	4-May-11	11-May-11	18-May-11	26-May-11	1-Jun-11	9-Jun-11	14-Jul-11	4-Aug-11	8-Sep-11	20-Sep-11	30-Sep-11
Potassium (K)-Dissolved (mg/L)	0.806	1.33	0.952	0.817	0.865	0.556	0.455	0.402	0.403	0.439	0.502	0.592	0.559	0.674	0.686	0.684
Selenium (Se)-Dissolved (mg/L)	0.00364	0.0128	0.00517	0.00439	0.00314	0.00102	0.00152	0.00123	0.00102	0.00101	0.0019	0.00113	0.00096	0.0012	0.00122	0.0012
Silicon (Si)-Dissolved (mg/L)	5.7	5.69	5.64	5.66	5.92	5.6	5.28	5.35	5.69	5.9	5.93	6.32	6.52	6.51	6.5	6.49
Silver (Ag)-Dissolved (mg/L)	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000014	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved (mg/L)	4.25	8.6	5.33	4.62	4.24	1.85	1.7	1.55	1.67	1.87	2.15	2.72	2.64	3.15	3.35	3.41
Strontium (Sr)-Dissolved (mg/L)	0.486	1.35	0.672	0.519	0.471	0.152	0.107	0.102	0.114	0.14	0.184	0.246	0.244	0.292	0.316	0.303
Tin (Sn)-Dissolved (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010
Zinc (Zn)-Dissolved (mg/L)	<0.003	<0.003	<0.0030	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0030	<0.0030	<0.0030	<0.0030
Total Metals																
Aluminum (Al)-Total (mg/L)	0.404	0.0802	0.0187	0.0114	0.148	1.41	5.13	1.67	0.569	0.357	0.205	0.13	0.236	0.156	0.171	0.0848
Antimony (Sb)-Total (mg/L)	<0.0001	<0.0001	<0.00010	<0.0001	<0.0001	0.00012	0.00015	0.00012	0.00012	0.00012	0.00012	0.00016	<0.0001	0.0001	<0.00010	<0.00010
Arsenic (As)-Total (mg/L)	0.00046	0.00038	0.0003	0.00034	0.00037	0.00072	0.00166	0.00073	0.00039	0.00037	0.00034	0.00034	0.00036	0.00036	0.00036	0.00034
Barium (Ba)-Total (mg/L)	0.0283	0.0717	0.0341	0.0292	0.0272	0.027	0.0571	0.0225	0.0134	0.0136	0.0146	0.0187	0.0203	0.0235	0.0225	0.0219
Cadmium (Cd)-Total (mg/L) (mg/L)	0.000016	0.000017		<0.00001	0.000014	0.000025	0.000056	0.000026	0.000012	0.000014	0.000011	0.000012	0.000011	0.000011	0.000011	<0.000010
Calcium (Ca)-Total (mg/L)	73.4	182	96	79.1	71.6	30.9	30	24.3	31.8	35.4	42.1	55.3	54.9	61.1	60.7	60.2
Chromium (Cr)-Total (mg/L)	0.00078	<0.0005	<0.00050	<0.0005	<0.0005	0.00216	0.00767	0.00262	0.001	0.00072	0.00058	0.00058	0.00056	<0.00050	0.00053	0.00051
Copper (Cu)-Total (mg/L)	0.00574	0.00357	0.0027	0.00242	0.0045	0.0159	0.0373	0.0222	0.0141	0.0201	0.00825	0.00596	0.00693	0.00481	0.00463	0.00376
Iron (Fe)-Total (mg/L) (mg/L)	0.376	0.065	0.015	0.015	0.135	1.12	4.66	1.46	0.451	0.302	0.158	0.112	0.217	0.143	0.175	0.118
Lead (Pb)-Total (mg/L)	0.000134	<0.00005	<0.000050	<0.00005	<0.00005	0.00089	0.00146	0.000446	0.000136	0.00009	<0.00005	<0.00005	0.000058	<0.000050	<0.000050	<0.000050
Lithium (Li)-Total (mg/L)	<0.005	<0.005	<0.0050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0006	<0.0005	0.00066	0.00077	<0.00050	0.00074
Magnesium (Mg)-Total (mg/L)	10.5	32.6	15.1	12	10.8	4.33	5.01	3.3	3.49	3.99	4.86	6.17	6.27	7.31	7.32	7.65
Manganese (Mn)-Total (mg/L)	0.0325	0.00707	0.00141	0.000968	0.00662	0.0316	0.117	0.0355	0.00874	0.00671	0.00493	0.00876	0.01	0.0158	0.0161	0.0137
Molybdenum (Mo)-Total (mg/L)	0.0133	0.0153	0.0132	0.0136	0.0122	0.00401	0.00409	0.00343	0.00472	0.00539	0.00653	0.00754	0.00777	0.00873	0.0092	0.00941
Nickel (Ni)-Total (mg/L)	0.00051	<0.0005	<0.00050	<0.0005	<0.0005	0.00161	0.00601	0.002	0.0007	0.0046	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050
Potassium (K)-Total (mg/L)	0.897	1.46	0.989	0.894	0.907	0.715	1.26	0.628	0.471	0.5	0.558	0.618	0.596	0.723	0.723	0.706
Selenium (Se)-Total (mg/L)	0.00406	0.0135	0.00678	0.00411	0.00313	0.00095	0.00135	0.00105	0.00099	0.00106	0.0011	0.00109	0.00091	0.00111	0.00111	0.00106
Silicon (Si)-Total (mg/L)	6.59	5.93	5.76	5.89	6.29	7.67	15.1	8.06	6.58	6.73	6.43	6.64	7.13	6.98	6.98	6.74
Silver (Ag)-Total (mg/L)	<0.00001	<0.00001	<0.000010	<0.00001	<0.00001	0.000018	0.000044	0.00003	0.000017	<0.00001	<0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total (mg/L)	4.35	9.32	5.47	5.26	4.35	1.9	1.99	1.61	1.71	1.97	2.31	2.8	2.69	3.28	3.45	3.46
Strontium (Sr)-Total (mg/L)	0.504	1.4	0.691	0.543	0.485	0.154	0.137	0.0956	0.115	0.145	0.196	0.251	0.253	0.299	0.333	0.317
Tin (Sn)-Total (mg/L)	<0.0001	<0.0001	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Zinc (Zn)-Total (mg/L)	<0.003	<0.003	<0.0030	<0.003	<0.003	0.0052	0.0122	0.0047	<0.003	0.0073	<0.003	<0.003	<0.0030	<0.0030	<0.0030	<0.0030
Dissolved Organic Carbon (mg/L)	2.67	5.13	2.83	2.25	4.12	8.6	7.4	7.56	6.95	6.78	5.23	4.2	3.99	3.56	3.37	2.57

Annual Report 2011 **Water Quality Site W4 - North Dump Creek**

Sample Point	W4	W4	W4	W4	W4	W4
Date	6-Oct-11	12-Oct-11	19-Oct-11	1-Nov-11	5-Dec-11	5-Dec-11
Conductivity (in situ) (µs/cm)	336	341	350	347	335	188
pH (in situ) (pH)	8.29	8.14	8.15	8.25	8.24	8.22
Temperature (in situ) (Degrees Celcius)	7	6.4	6.2	6	2.4	0.1
Alkalinity (CaCO3) (mg/L)	151	153	152	147	139	139
Conductivity (µs/cm)	334	336	332	318	308	309
Hardness (as CaCO3) (mg/L)	187	187	185	177	166	166
pH (pH)	8.26	8.23	8.21	8.24	8.28	8.28
Total Dissolved Solids (mg/L)	222	216	214	204	198	190
Total Suspended Solids (mg/L)	1.5	1.5	5.9	1.5	1.5	1.5
Turbidity (ntu)	1.51	1.59	2.38	1.31	1.48	1.36
Chloride (Cl) (mg/L)	0.25	0.25	0.25	0.25	0.25	0.25
Fluoride (F) (mg/L)					0.096	0.096
Sulfate (SO4) (mg/L)	32	31.4	30.5	28.3	29	29
Ammonia (as N) (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrate (as N) (mg/L)	0.0806	0.0868	0.0877	0.11	0.224	0.225
Nitrate and Nitrite (as N) (mg/L)	0.0816	0.0868	0.0877	0.11	0.224	0.225
Nitrite (as N) (mg/L)	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen (mg/L)	0.21	0.17	0.19	0.17	0.26	0.28
Orthophosphate-Dissolved (as P) (mg/L)	0.016	0.0173	0.017	0.0143	0.0149	0.0147
Phosphorus (P) Total Dissolved (mg/L)	0.0183	0.0196		0.0163	0.016	0.0158
Phosphorus (P) Total (mg/L)	0.0208	0.0225	0.0249	0.0183	0.0196	0.0171
Dissolved Metals						
Aluminum (Al)-Dissolved (mg/L)	0.0052	0.0072	0.0053	0.007	0.0059	0.0061
Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved (mg/L)	0.00032	0.00032	0.00031	0.00028	0.0003	0.0003
Barium (Ba)-Dissolved (mg/L)	0.0202	0.022	0.0216	0.0191	0.017	0.0172
Cadmium (Cd)-Dissolved (mg/L)	<0.000010	0.000012	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Dissolved (mg/L)	62.7	62.7	61.9	59.1	55.4	55.5
Chromium (Cr)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper (Cu)-Dissolved (mg/L)	0.00288	0.003	0.00277	0.00272	0.00241	0.00242
Iron (Fe)-Dissolved (mg/L)	0.015	0.015	0.015	0.015	0.015	0.015
Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium (Li)-Dissolved (mg/L)	<0.00050	<0.00050	0.00056	<0.00050	<0.00050	<0.00050
Magnesium (Mg)-Dissolved (mg/L)	7.36	7.27	7.4	7.12	6.79	6.77
Manganese (Mn)-Dissolved (mg/L)	0.0116	0.0111	0.013	0.0111	0.00753	0.00732
Molybdenum (Mo)-Dissolved (mg/L)	0.00872	0.00949	0.00949	0.00894	0.00979	0.00922
Nickel (Ni)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050

* Note - these results are for data from 1995 to 2011

Sample (n)	Count >MDL	Min	Max	Mean
232	232	0	1375	380.6719828
232	232	2.21	8.81	7.965685345
222	222	-0.2	11.5	4.287612613
257	238	26.3	308	110.1247899
23	23	162	1000	391.5217391
258	258	32.8	803	212.8197674
23	23	7.36	8.33	8.15
222	213	3.5	1110	306.6140845
250	250	0.5	1060	15.4844
260	260	0.13	83.2	2.648538462
75	75	0.25	12.5	1.365733333
9	9	0.04	0.096	0.061666667
258	258	3.6	539	92.95077519
259	64	0.005	12	0.208078125
133	131	0.0017	22.9	4.574846565
255	255	0	22.9	2.409994902
194	69	0.001	0.858	0.033585507
154	149	0.037	31.6	5.605516779
258	239	0.001	0.118	0.016810879
218	187	0.005	0.087	0.021457219
242	242	0.00025	0.25	0.023652686
254	254	0.0015	0.334	0.035049606
255	130	0.00005	0.00047	0.000122846
255	248	0.0001	0.00162	0.000434839
255	251	0.00731	0.11	0.030600199
255	140	0.00001	0.00048	3.72571E-05
253	253	10.7	242	68.59486166
255	42	0.0002	0.0025	0.000830238
259	259	0.0019	0.023	0.007938996
255	255	0.0025	0.247	0.039527451
255	87	0.00002	0.00124	8.87816E-05
239	117	0.0002	0.0009	0.000418718
253	253	1.44	48.4	11.44545455
255	250	0.000284	0.267	0.009022544
260	260	0.0005	0.0595	0.010983115
255	6	0.00059	0.0042	0.001518333

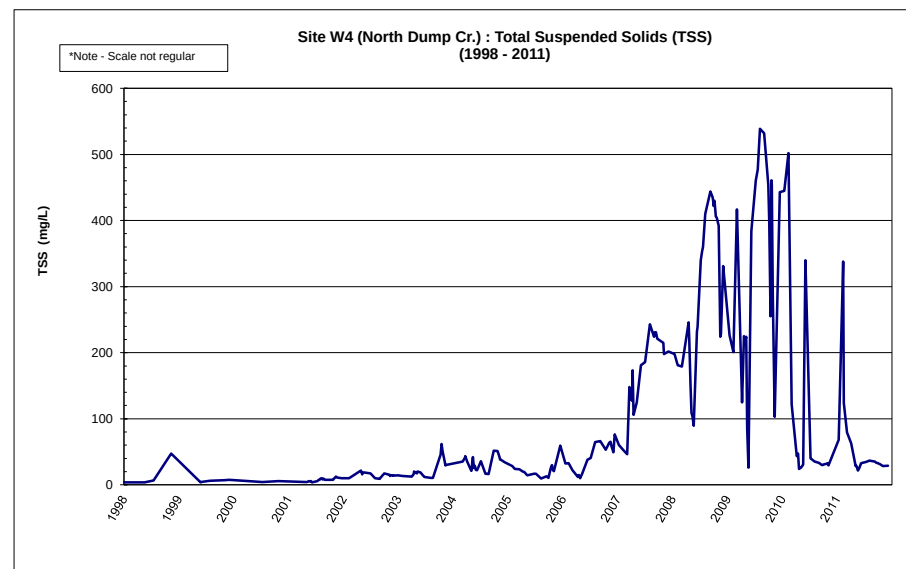
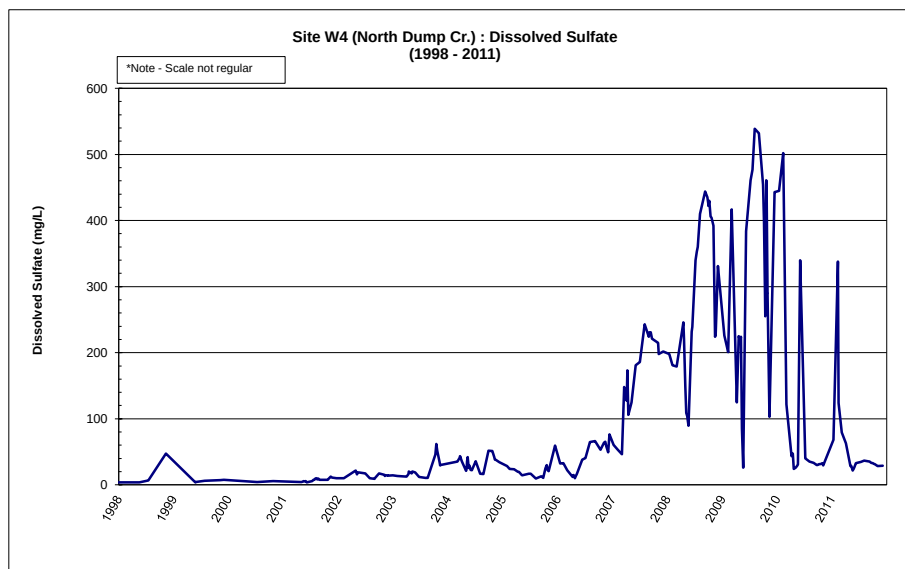
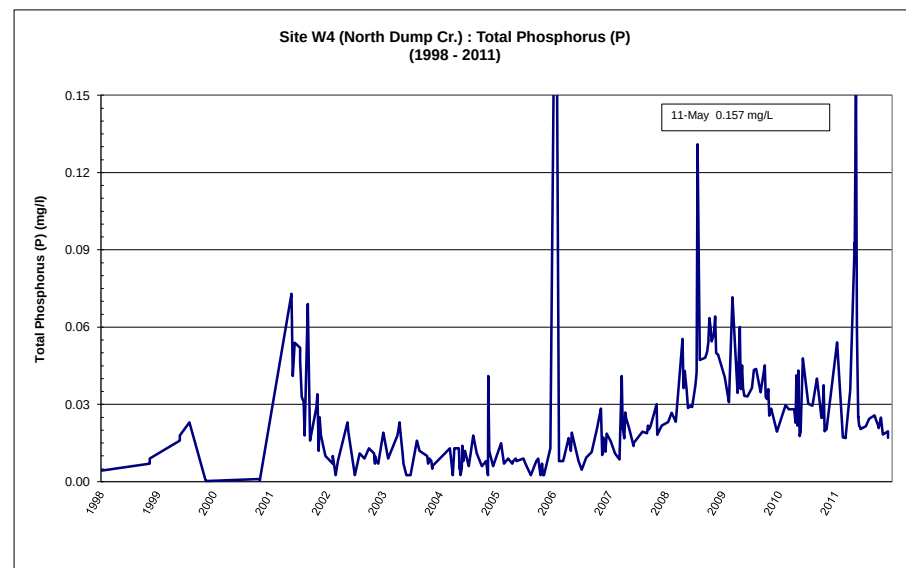
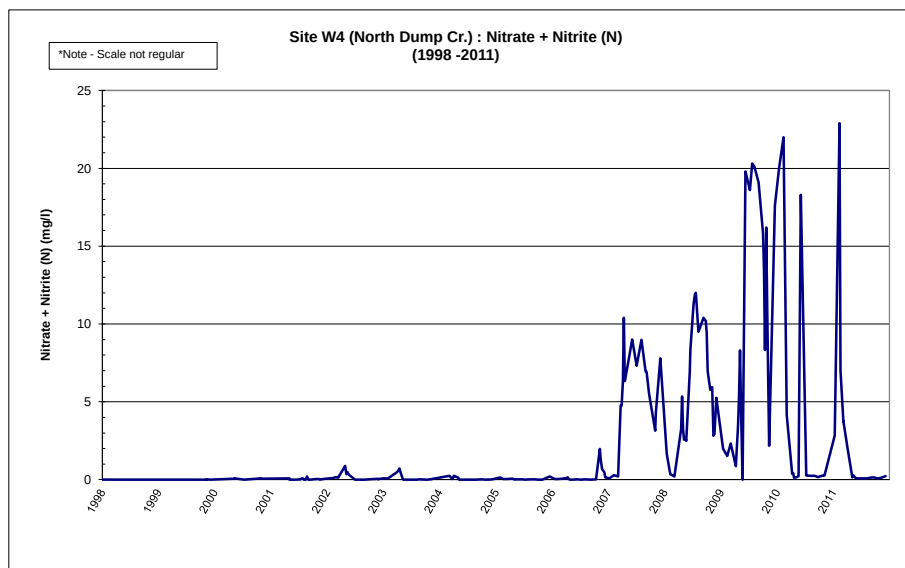
Annual Report 2011 **Water Quality Site W4 - North Dump Creek**

Sample Point	W4	W4	W4	W4	W4	W4
Date	6-Oct-11	12-Oct-11	19-Oct-11	1-Nov-11	5-Dec-11	5-Dec-11
Potassium (K)-Dissolved (mg/L)	0.676	0.758	0.673	0.626	0.577	0.556
Selenium (Se)-Dissolved (mg/L)	0.00127	0.00127	0.00132	0.00137	0.00177	0.00173
Silicon (Si)-Dissolved (mg/L)	6.55	6.25	6.44	6.05	5.8	5.82
Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved (mg/L)	3.37	3.49	3.44	3.3	3.29	3.12
Strontium (Sr)-Dissolved (mg/L)	0.3	0.323	0.317	0.285	0.291	0.288
Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Zinc (Zn)-Dissolved (mg/L)	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Total Metals						
Aluminum (Al)-Total (mg/L)	0.0518	0.125	0.0682	0.0586	0.0457	0.0387
Antimony (Sb)-Total (mg/L)	<0.00010	<0.00010	0.00011	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total (mg/L)	0.00033	0.00037	0.00033	0.0003	0.00029	0.00027
Barium (Ba)-Total (mg/L)	0.021	0.0233	0.0233	0.0199	0.0172	0.0167
Cadmium (Cd)-Total (mg/L) (mg/L)	<0.000010	0.000012	0.000012	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total (mg/L)	64	64.3	63.3	59.5	53.5	52.4
Chromium (Cr)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper (Cu)-Total (mg/L)	0.00348	0.00413	0.00372	0.00175	0.00292	0.00279
Iron (Fe)-Total (mg/L) (mg/L)	0.06	0.133	0.079	0.059	0.05	0.046
Lead (Pb)-Total (mg/L)	<0.000050	<0.000050	0.000497	<0.000050	<0.000050	<0.000050
Lithium (Li)-Total (mg/L)	<0.00050	0.00065	<0.00050	0.00052	<0.00050	<0.00050
Magnesium (Mg)-Total (mg/L)	7.53	7.54	7.66	7.18	6.63	6.5
Manganese (Mn)-Total (mg/L)	0.0151	0.0171	0.0152	0.0123	0.0091	0.00855
Molybdenum (Mo)-Total (mg/L)	0.00898	0.00991	0.0102	0.00902	0.00909	0.00901
Nickel (Ni)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Potassium (K)-Total (mg/L)	0.694	0.802	0.709	0.628	0.556	0.537
Selenium (Se)-Total (mg/L)	0.0011	0.00121	0.00128	0.00134	0.00155	0.0015
Silicon (Si)-Total (mg/L)	6.76	6.73	6.74	6.18	5.7	5.59
Silver (Ag)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total (mg/L)	3.41	3.65	3.6	3.29	3.09	2.97
Strontium (Sr)-Total (mg/L)	0.308	0.331	0.333	0.292	0.288	0.283
Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Zinc (Zn)-Total (mg/L)	<0.0030	<0.0030	<0.0030	<0.0030	0.0045	<0.0030
Dissolved Organic Carbon (mg/L)	3.15	3.08	2.6	2.53	2.34	2.38

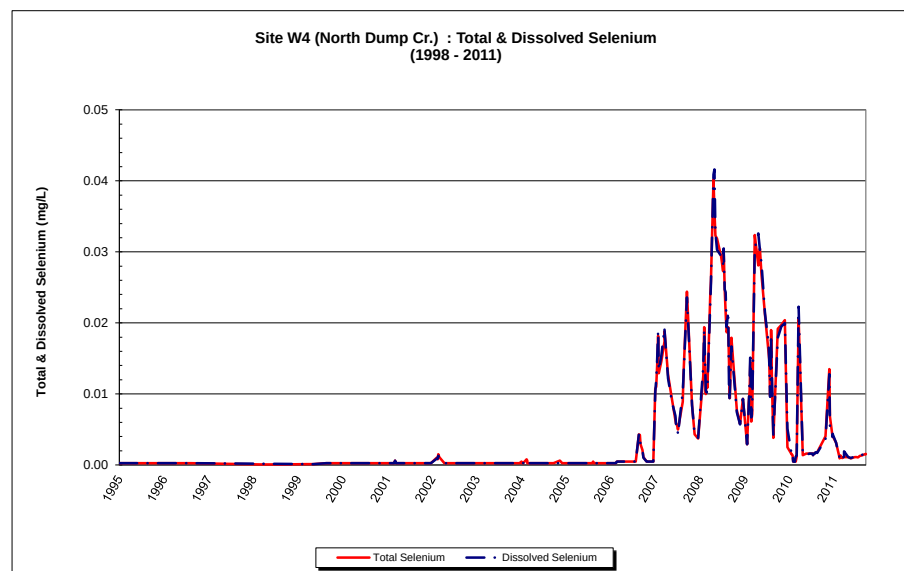
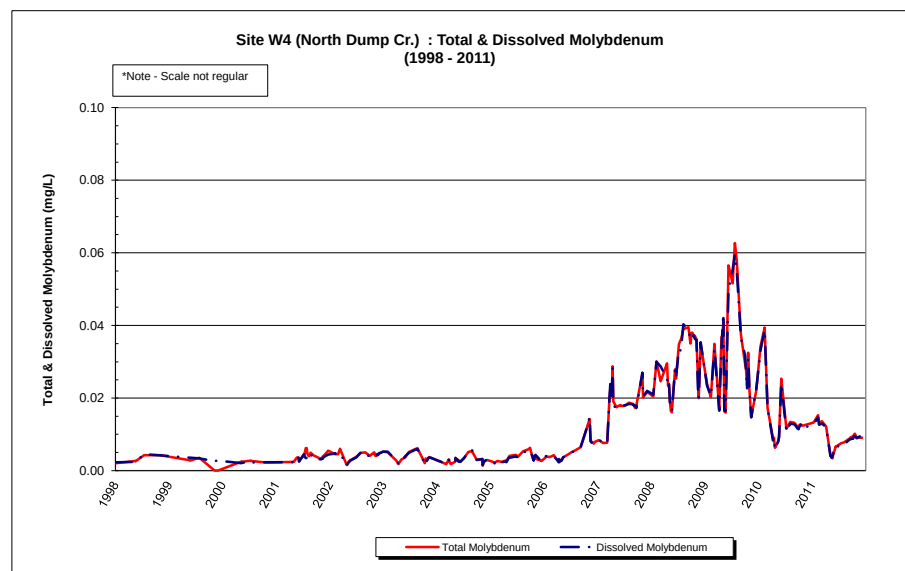
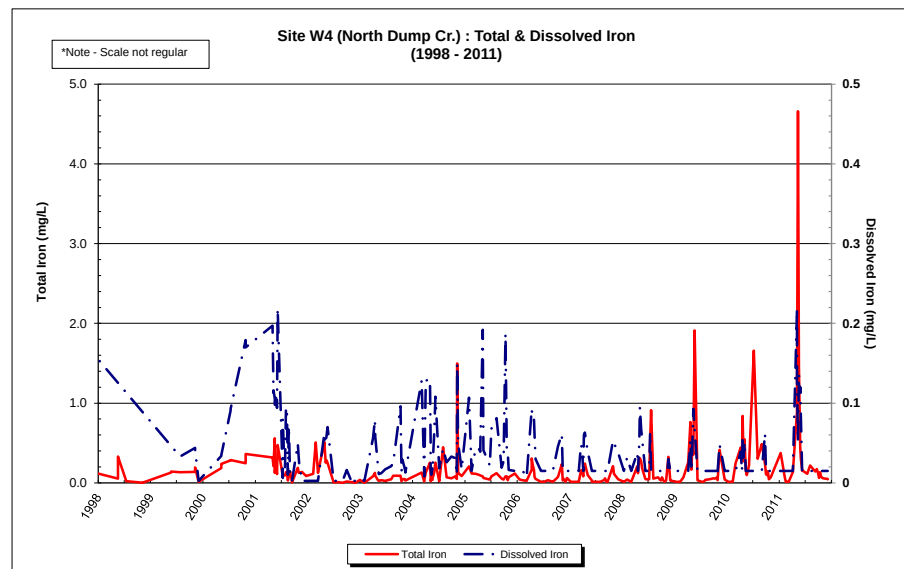
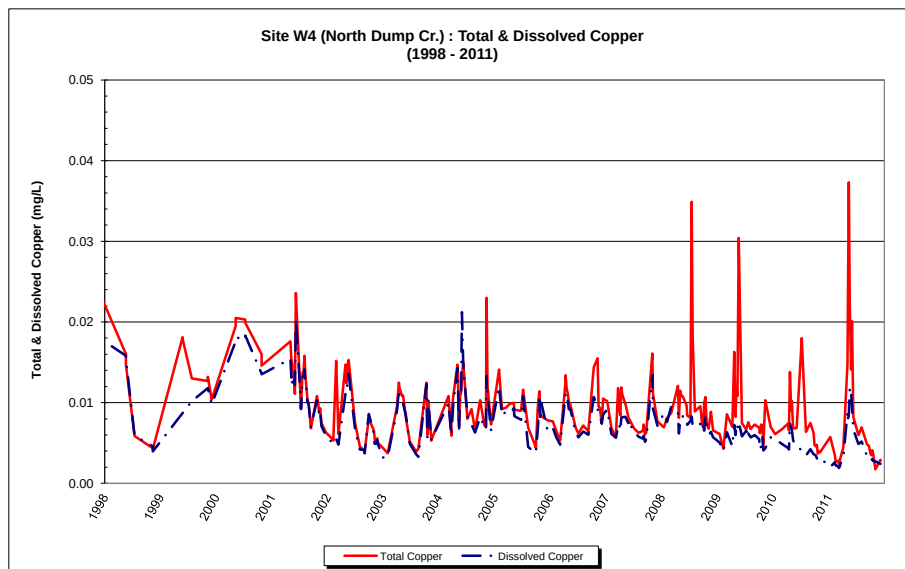
* Note - these results are for data from 1995 to 2011

Sample (n)	Count >MDL	Min	Max	Mean
255	254	0.26	3.55	1.035712598
255	255	0.0001	0.0416	0.004994431
253	253	4.28	7.84	5.843280632
255	39	0.00001	0.0001	2.32821E-05
253	253	1.18	16.1	4.844268775
255	255	0.04	2.66	0.508176078
241	57	0.00005	0.00064	0.000160175
255	128	0.0005	0.0158	0.001542969
258	258	0.0039	5.13	0.16240969
257	147	0.00005	0.00092	0.000133741
260	253	0.0001	0.00167	0.000477668
256	253	0.0078	0.117	0.032014071
254	169	0.00001	0.00021	3.85917E-05
259	259	11.2	243	66.51235521
257	86	0.0001	0.00767	0.000909186
259	259	0.00175	0.238	0.011168301
259	259	0.0005	4.66	0.171482625
260	146	0.00002	0.00146	0.00014524
235	114	0.0002	0.0009	0.000467895
260	260	1.37	49.2	11.18084615
260	257	0.000968	0.451	0.018912988
259	259	0.000005	0.0627	0.011007703
260	48	0.0002	0.00601	0.001528542
247	242	0.26	3.66	1.08003719
259	259	0.00005	0.0402	0.004777181
260	260	2.4	15.1	5.968461538
257	65	0.00001	0.00013	2.81692E-05
247	247	1.03	17.3	4.883684211
259	259	0.041	2.79	0.504011583
237	52	0.00005	0.00171	0.000244038
259	139	0.0005	0.0122	0.002269784
231	230	2.07	25.1	8.085086957

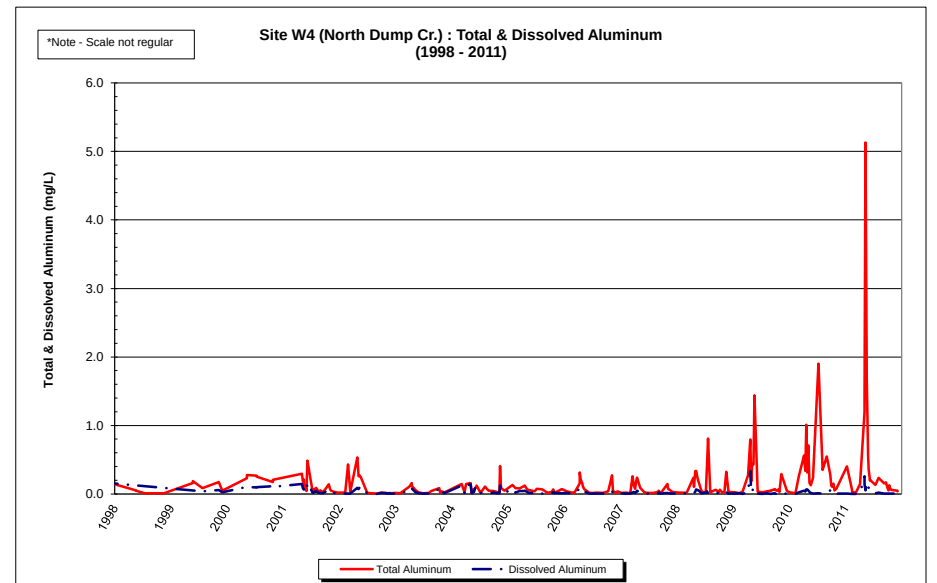
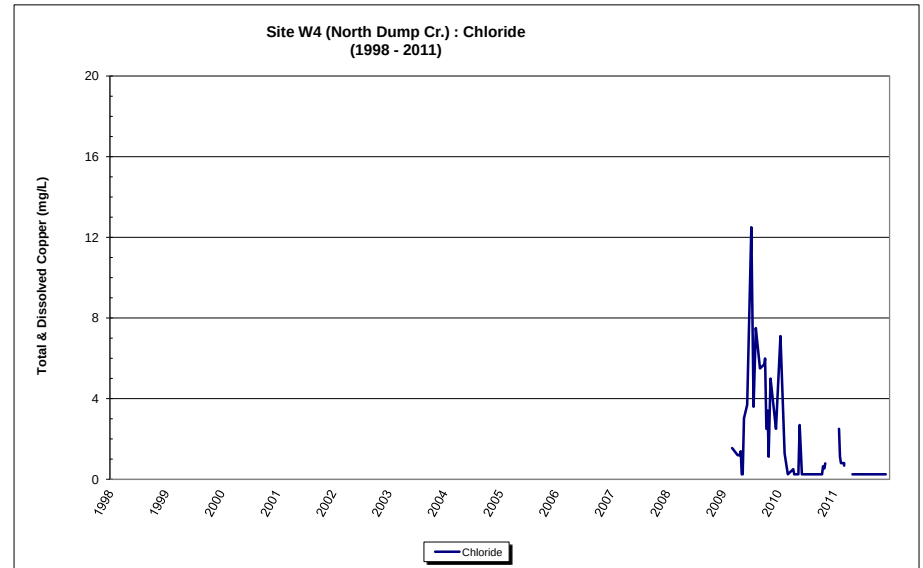
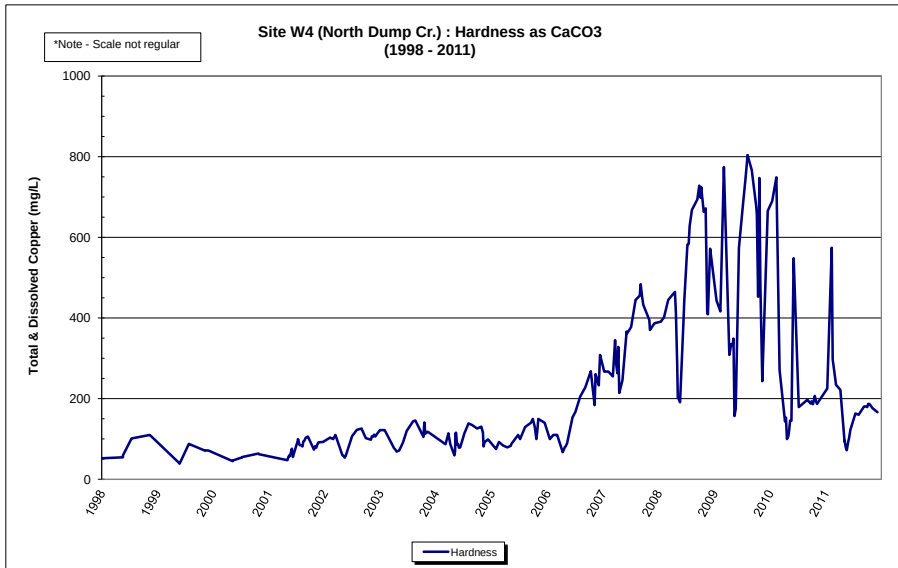
Annual Report 2011 **Water Quality at Site W4 (North Dump Creek Up/s of Polley L. FSR)**



Annual Report 2011 **Water Quality at Site W4 (North Dump Creek Up/s of Polley L. FSR)**



Annual Report 2011
Water Quality at Site W4 (North Dump Creek Up/s of Polley L. FSR)



Annual Report 2011

Water Quality Site W5 -Bootjack Creek Above Hazeltine

Sample Point	W5	W5	W5	W5	W5	W5	W5	W5	W5	W5	W5	W5	W5	W5	W5
Date	2-Feb-11	11-May-11	9-Jun-11	14-Jul-11	4-Aug-11	8-Sep-11	20-Sep-11	30-Sep-11	6-Oct-11	6-Oct-11	12-Oct-11	19-Oct-11	1-Nov-11	1-Dec-11	15-Dec-11
Conductivity (in situ) (µs/cm)	90	48	105	144	138	303	317	310	325	343	332	307	309	236	270
pH (in situ) (pH)	7.73	7.06	7.66	8.1	7.82	7.93	7.89	7.98	8	8.05	8.06	8.02	8.32	7.93	7.9
Temperature (in situ) (Degrees Celsius)	0.1	2.4	11.8	7.7	9.8	8.3	8.7	6.2	4.9	4.2	5.9	3.9	0.6	0.1	0.1
Alkalinity (CaCO3) (mg/L)	82.4	20.6	47.5	64.3	61.4	112	111	115	109	108	108	117	104	79.9	101
Conductivity (µs/cm)	227	45.8	99.4	141	135	302	310	332	324	254	322	298	258	217	250
Hardness (as CaCO3) (mg/L)	115	24.5	51.3	71.8	69.4	155	160	169	166	133	161	152	129	107	128
pH (pH)	7.94	7.37	7.6	7.88	7.98	8.13	8.08	8.27	8.1	8.13	8.13	8.14	8.07	8.05	8.11
Total Dissolved Solids (mg/L)	148	71	96	113	127	203	205	204	226	174	224	192	168	155	172
Total Suspended Solids (mg/L)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3.8	3.2	1.5	1.5	1.5
Turbidity (ntu)	1.24	2.17	0.79	1.25	1.18	0.34	0.51	0.28	0.41	0.81	1.35	1.05	1.01	2.18	0.4
Chloride (Cl) (mg/L)	0.74	0.25	1.25	0.25	0.25	0.25	0.25	0.25	0.54	1.2	0.68	0.66	0.95	0.79	0.64
Fluoride (F) (mg/L)			0.1												
Sulfate (SO4) (mg/L)	33.1	1.96	4.7	8.94	8.05	48.9	53.7	59.3	60	26.7	60.5	42	29.5	23.6	29.5
Ammonia (as N) (mg/L)	<0.005	<0.005	0.0123	0.0126	0.0098	<0.0050	<0.0050	<0.0050	<0.0050	0.0063	<0.0050	<0.0050	<0.0050	0.0066	0.0072
Nitrate (as N) (mg/L)	0.468	0.0583	<0.025	0.0744	0.0859	0.14	0.204	0.3	0.36	0.047	0.443	0.0596	0.928	2.57	0.673
Nitrate and Nitrite (as N) (mg/L)	0.468	0.0583	0.0125	0.0744	0.0859	0.14	0.204	0.3	0.361	0.0496	0.443	0.0596	0.928	2.57	0.673
Nitrite (as N) (mg/L)	<0.001	<0.001	<0.005	<0.001	<0.001	<0.0010	<0.0010	<0.0010	0.0011	0.0026	<0.0010	<0.0010	<0.0010	0.0019	<0.0010
Nitrogen N-WDGA (mg/L)															
Total Nitrogen (mg/L)	0.66	0.56	0.56	0.59	0.66	0.42	0.33	0.48	0.58	0.32	0.64	0.22	1.1	3.87	0.87
Orthophosphate-Dissolved (as P) (mg/L)	0.0041	0.0021	0.0019	0.0028	0.0036	0.0035	0.0023	0.0029	0.002	0.0039	0.0017	0.0013	0.0021	0.0024	0.0032
Phosphorus (P) Total Dissolved (mg/L)	0.0074	0.0098	0.0094	0.0101	0.0112				0.0042	0.0081	0.0047		0.0046	0.0083	0.0084
Phosphorus (P) Total (mg/L)	0.0096	0.0173	0.0122	0.0136	0.0149	0.009	0.0062	0.0061	0.0053	0.0133	0.0064	0.0069	0.0066	0.0095	0.0085
Dissolved Metals															
Aluminum (Al)-Dissolved (mg/L)	0.0228	0.215	0.0964	0.0805	0.114	0.0153	0.0137	0.0113	0.0129	<0.0030	0.012	0.0087	0.0131	0.0371	
Antimony (Sb)-Dissolved (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Arsenic (As)-Dissolved (mg/L)	0.00026	0.00024	0.00036	0.00042	0.00042	0.00033	0.00032	0.00029	0.00029	0.00044	0.00032	0.00025	0.0003	0.00032	
Barium (Ba)-Dissolved (mg/L)	0.0137	0.00637	0.01	0.012	0.0117	0.0201	0.0188	0.0193	0.0181	0.00749	0.019	0.0193	0.015	0.0131	
Cadmium (Cd)-Dissolved (mg/L)	<0.00001	<0.00001	<0.00001	<0.00001	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Calcium (Ca)-Dissolved (mg/L)	32.1	7.01	14.8	20.4	19.9	44	45.2	48.2	47	41	45.9	43	36.6	30.8	
Chromium (Cr)-Dissolved (mg/L)	<0.0005	0.00064	0.00065	0.00058	0.00066	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Copper (Cu)-Dissolved (mg/L)	0.00296	0.00578	0.00669	0.00537	0.00568	0.00223	0.00209	0.00232	0.00187	0.00107	0.00204	0.00175	0.0022	0.0031	
Iron (Fe)-Dissolved (mg/L)	0.046	0.121	0.92	0.123	0.187	0.015	0.034	0.036	0.015	0.015	0.031	0.036	0.041	0.081	
Lead (Pb)-Dissolved (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Lithium (Li)-Dissolved (mg/L)	<0.005	<0.005	0.00056	<0.0005	<0.0005	0.00114	0.00087	0.00109	0.00066	<0.00050	0.00106	0.00087	0.00099	0.00083	
Magnesium (Mg)-Dissolved (mg/L)	8.46	1.69	3.47	5.06	4.82	10.9	11.4	11.7	11.9	7.56	11.3	10.9	9.1	7.42	
Manganese (Mn)-Dissolved (mg/L)	0.0149	0.00076	0.00321	0.00713	0.0077	0.000433	0.0104	0.00922	0.00414	0.00178	0.0108	0.00775	0.00861	0.0056	
Molybdenum (Mo)-Dissolved (mg/L)	0.00239	0.000376	0.00159	0.00247	0.00224	0.00675	0.00686	0.00699	0.0068	0.00186	0.00728	0.0063	0.0049	0.00376	
Nickel (Ni)-Dissolved (mg/L)	<0.0005	0.00073	0.00084	0.00077	0.0009	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Potassium (K)-Dissolved (mg/L)	0.725	0.463	0.598	0.501	0.442	0.845	0.915	0.942	0.963	0.601	1.12	0.994	0.973	0.751	
Selenium (Se)-Dissolved (mg/L)	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	0.00067	0.00095	0.00128	<0.00050	0.00164	<0.00050	<0.00050	<0.00050	
Silicon (Si)-Dissolved (mg/L)	6.69	4.06	4.67	5.74	5.8	7.87	7.82	7.76	7.81	4.42	7.47	7.5	6.43	6.22	
Silver (Ag)-Dissolved (mg/L)	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Sodium (Na)-Dissolved (mg/L)	5.3	1.58	2.84	3.67	3.4	5.81	6.06	6.15	6.18	5.46	6.4	6.27	6.31	4.9	
Strontium (Sr)-Dissolved (mg/L)	0.171	0.0555	0.123	0.154	0.162	0.229	0.237	0.226	0.217	0.246	0.226	0.225	0.195	0.183	
Tin (Sn)-Dissolved (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	0.00025	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Zinc (Zn)-Dissolved (mg/L)		<0.003	0.0042	<0.003	0.0034	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	
Total Metals															
Aluminum (Al)-Total (mg/L)	0.0398	0.316	0.151	0.126	0.158	0.0285	0.0187	0.0162	0.0166	0.0142	0.0264	0.0158	0.019	0.0492	0.0268
Antimony (Sb)-Total (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total (mg/L)	0.00029	0.00024	0.00039	0.00044	0.00044	0.00033	0.00031	0.0003	0.00031	0.00044	0.00036	0.00027	0.00028	0.00032	0.0003
Barium (Ba)-Total (mg/L)	0.0138	0.00738	0.0108	0.0131	0.0127	0.021	0.0192	0.0194	0.0195	0.0079	0.0197	0.0203	0.0147	0.0133	0.0149
Cadmium (Cd)-Total (mg/L) (mg/L)	<0.00001	<0.00001	<0.00001	<0.00001	0.000011	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total (mg/L)	32	7.17	15.3	21.2	19.6	44.3	45.8	48.4	48.6	41	48	44	34.5	30.6	36.6
Chromium (Cr)-Total (mg/L)	<0.0005	0.00098	0.00089	0.00081	0.00084	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper (Cu)-Total (mg/L)	0.00319	0.00673	0.00731	0.00592	0.0062	0.00247	0.00232	0.00215	0.00216	0.00129	0.00246	0.00212	<0.0025	0.00325	0.00233
Iron (Fe)-Total (mg/L) (mg/L)	0.072	0.216	0.15	0.178	0.283	0.058	0.05	0.043	0.04	0.07	0.057	0.053	0.066	0.099	0.06
Lead (Pb)-Total (mg/L)	<0.00005	0.00006	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium (Li)-Total (mg/L)	<0.005	<0.005	<0.0005	<0.0005	0.00063	0.00125	0.00087	0.00104	0.00082	<0.00050	0.00113	0.00089	0.00092	0.00081	0.00096
Magnesium (Mg)-Total (mg/L)	8.45	1.75	3.53	5.23	4.83	11.1	11.8	11.9	12.4	7.63	11.9	11.2	8.63	7.56	8.99

* Note - these results are for data from 1995 to 2011

Sample (n)				
Count >MDL	Min	Max	Mean	
119	119	43	353	148.91176
118	118	2.28	8.59	7.60754
106	106	-0.2	16.5	5.50472
139	134	14.8	374	62.48582
16	16	45.8	332	236.32500
137	137	24.5	175	72.08978
16	16	7.37	8.27	8.00625
80	67	4	230	118.50746
123	123	0.5	158	4.43455
138	138	0.28	357	5.09565
37	37	0.25	1.25	0.58622
14	14	0.04	0.1	0.06714
132	132	1.3	74.4	13.58962
1	0			
136	63	0.005	0.086	0.01140
70	68	0.004	2.57	0.25066
133	133	0.0025	2.57	0.16557
112	75	0.001	0.062	0.00527
44	41	0.15	3.87	0.70693
135	102	0.001	0.102	0.00728
56	52	0.0042	0.048	0.01128
86	86	0.00025	0.159	0.01531
119	117	0.0071	0.592	0.12126
119	49	0.00005	0.0002	0.00008
119	109	0.0002	0.001	0.00040
119	115	0.00603	0.0243	0.01119
119	29	0.00001	0.0003	0.00003
117	117	7.01	164	21.66103
119	58	0.0002	0.0052	0.00092
137	137	0.0005	0.0752	0.00544
119	119	0.001	0.92	0.15918
119	64	0.00003	0.0015	0.00019
97	58	0.00002	0.0011	0.00048
117	117	1.69	13.4	5.32966
119	114	0.00025	0.331	0.01301
137	137	0.0003	0.0073	0.00140
119	56	0.0004	0.003	0.00076
119	119	0.42	1.43	0.75715
119	22	0.0003	0.0034	0.00130
116	116	3.6	9.13	5.44310
119	25	0.00001	3E-05	0.00001
116	116	1.42	7.37	3.64828
119	119	0.0555	0.258	0.12895
103	39	0.00005	0.001	0.00019
119	77	0.0006	0.043	0.00245
139	139	0.0095	2.26	0.22679
127	62	0.00005	0.0004	0.00008
139	137	0.0001	0.027	0.00061
127	122	0.0056	0.069	0.01279
127	23	0.00001	0.0005	0.00005
139	139	6.94	48.6	19.91935
127	69	0.0002	0.0059	0.00103
139	137	0.00121	0.096	0.00706
139	138	0.007	2.27	0.29615
139	92	0.00002	0.0042	0.00033
96	65	0.0002	0.0013	0.00054
139	139	1.75	21.9	5.32575

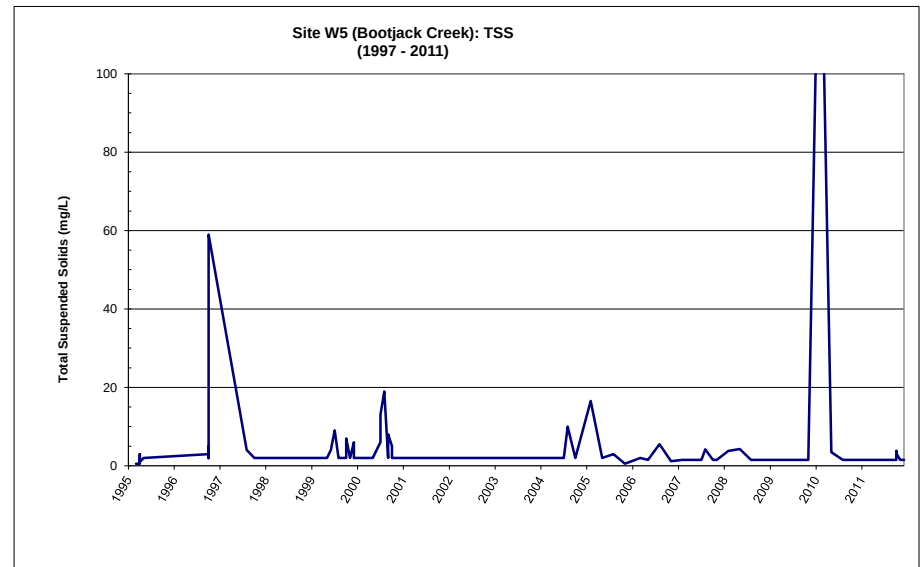
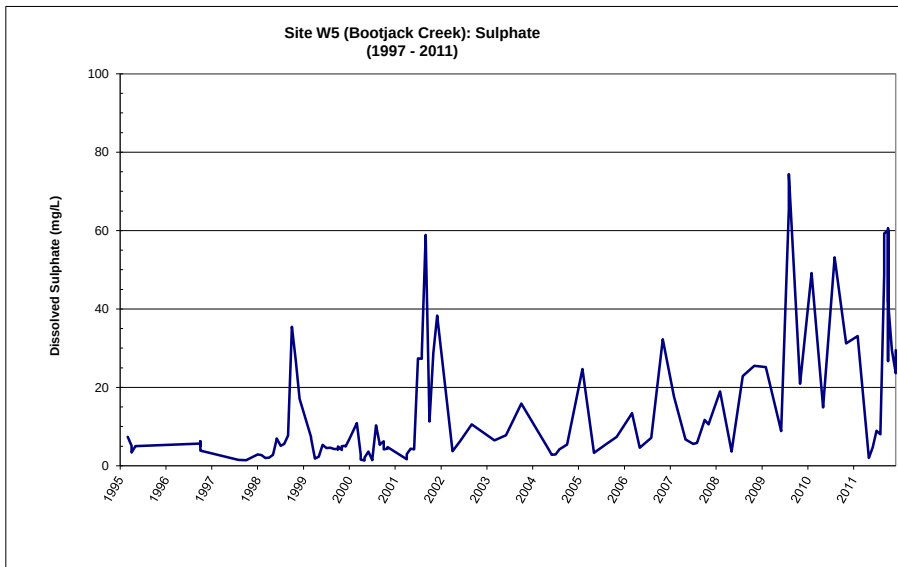
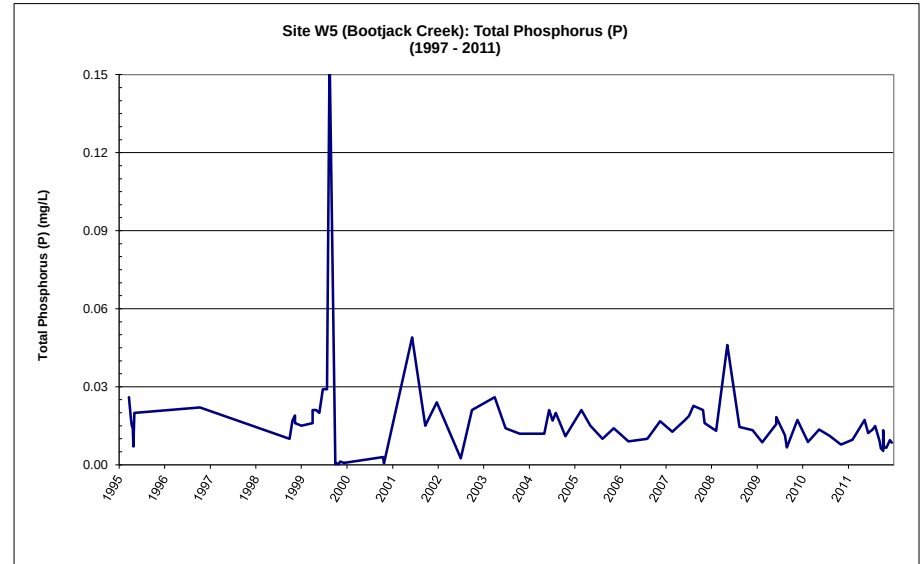
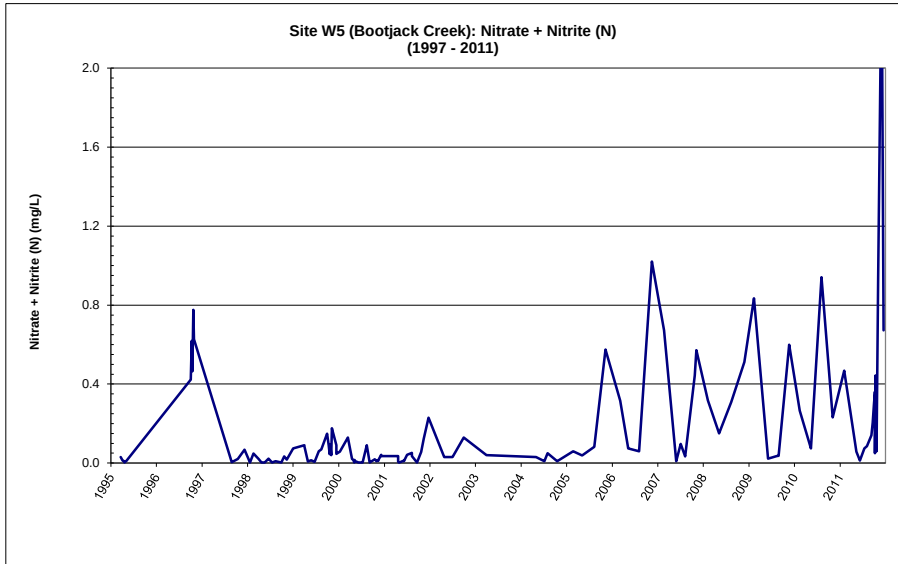
Annual Report 2011 **Water Quality Site W5 -Bootjack Creek Above Hazeltine**

Sample Point	W5	W5	W5	W5	W5	W5	W5	W5	W5	W5	W5	W5	W5	W5	W5
Date	2-Feb-11	11-May-11	9-Jun-11	14-Jul-11	4-Aug-11	8-Sep-11	20-Sep-11	30-Sep-11	6-Oct-11	6-Oct-11	12-Oct-11	19-Oct-11	1-Nov-11	1-Dec-11	15-Dec-11
Manganese (Mn)-Total (mg/L)	0.0209	0.00709	0.00692	0.0147	0.0147	0.0144	0.0131	0.0109	0.00896	0.0157	0.0178	0.0126	0.0128	0.00685	0.00814
Molybdenum (Mo)-Total (mg/L)	0.00247	0.000408	0.00186	0.00261	0.00235	0.00707	0.00735	0.00718	0.00754	0.00192	0.00769	0.00656	0.00468	0.00379	0.00552
Nickel (Ni)-Total (mg/L)	<0.0005	0.00081	0.00081	0.00092	0.00093	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0005	<0.00050
Potassium (K)-Total (mg/L)	0.74	0.493	0.619	0.512	0.435	0.849	0.952	0.946	1.02	0.594	1.16	1.03	0.927	0.782	0.738
Selenium (Se)-Total (mg/L)	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	0.00067	0.00092	0.00129	<0.00050	0.00155	<0.00050	<0.00050	<0.00050	<0.00050
Silicon (Si)-Total (mg/L)	6.69	4.31	4.87	6.01	5.89	7.96	8.02	7.85	8.14	4.49	7.81	7.66	6.1	6.23	7.07
Silver (Ag)-Total (mg/L)	<0.00001	0.000011	<0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total (mg/L)	5.42	1.63	3	3.75	3.23	5.98	6.4	6.23	6.56	5.4	6.71	6.44	6.13	5.37	5.9
Strontium (Sr)-Total (mg/L)	0.171	0.0597	0.131	0.159	0.163	0.234	0.251	0.231	0.237	0.249	0.235	0.235	0.185	0.181	0.19
Tin (Sn)-Total (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00065
Zinc (Zn)-Total (mg/L)	<0.003	0.0032	<0.003	<0.003	0.0037	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Dissolved Organic Carbon (mg/L)	8.45	13	14.3	13.6	17.3	5.83	5.09	4.69	5.02	5.41	4.9	4.57	6.36	8.42	6.96

* Note - these results are for data from 1995 to 2011

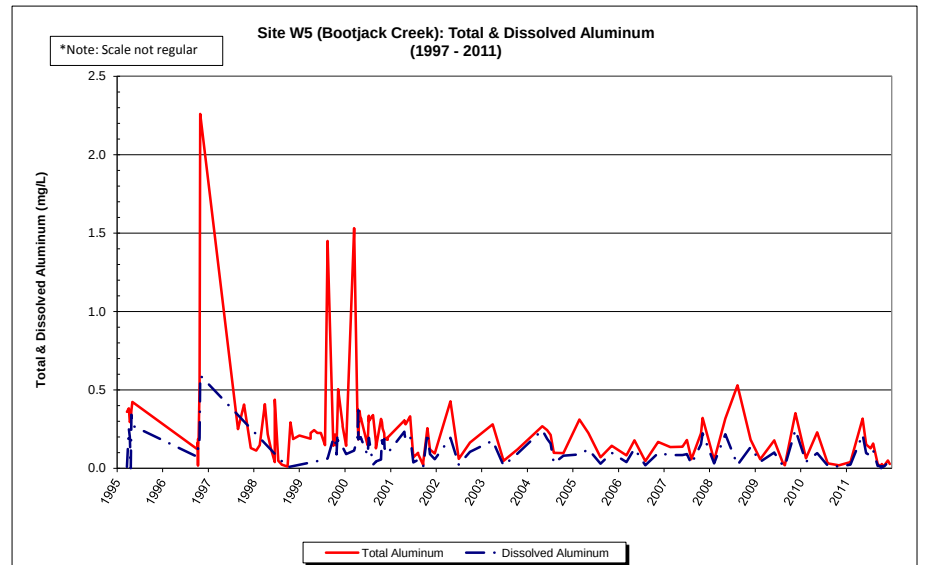
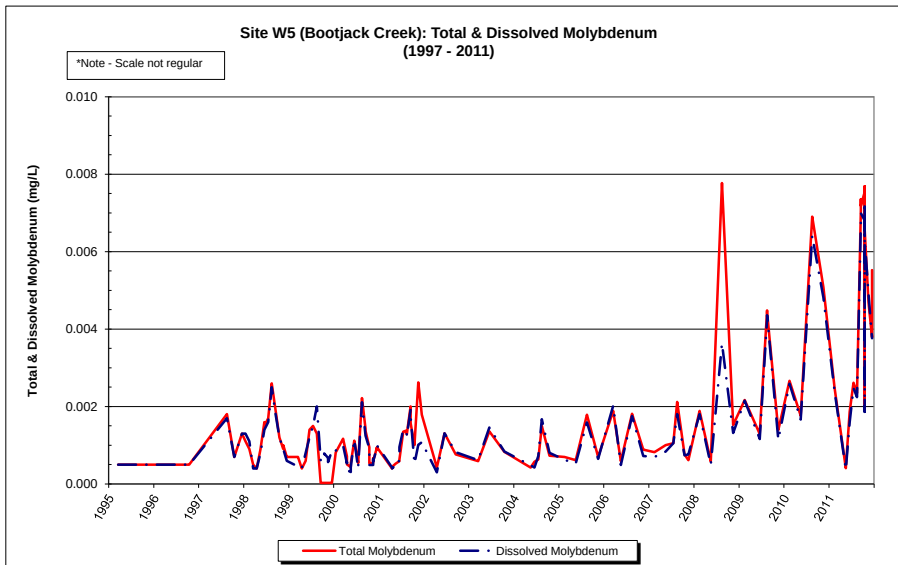
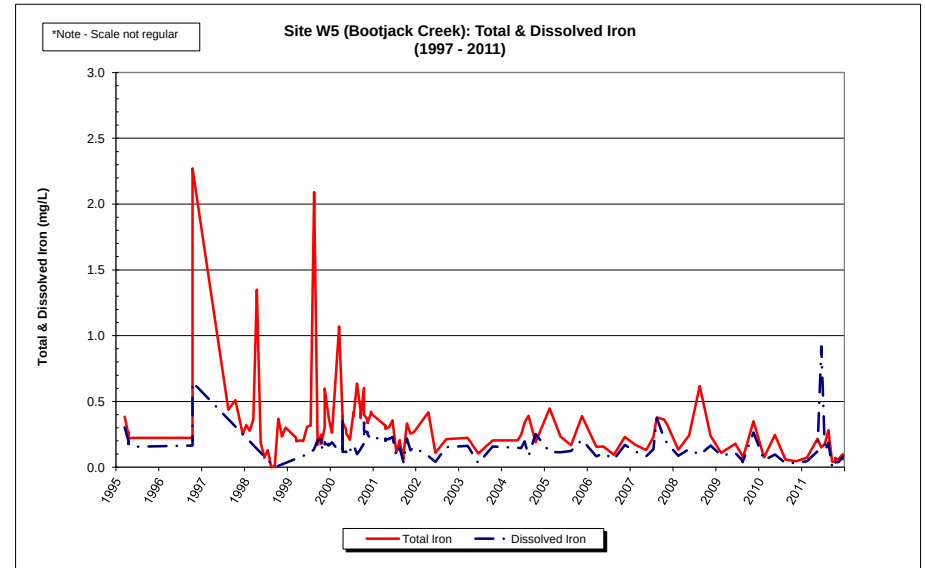
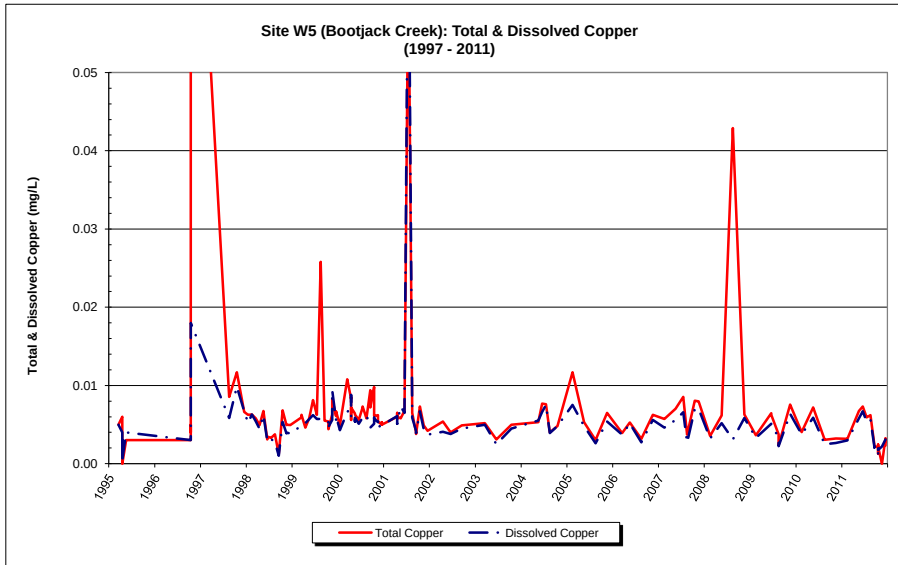
Sample (n)	Count >MDL	Min	Max	Mean
139	139	0.0036	0.377	0.02572
139	139	2.5E-05	0.0078	0.00149
139	86	0.0003	0.006	0.00085
126	125	0.435	1.57	0.80998
136	34	0.0001	0.004	0.00107
139	139	2	9.6	5.43356
127	50	0.00001	6E-05	0.00002
126	126	1.5	9.26	3.73214
139	139	0.0466	2.95	0.15337
102	47	0.00005	0.0019	0.00029
139	108	0.0006	0.0352	0.00333
88	88	4.26	23.6	12.70170

Annual Report 2011
Water Quality at Site W5 (Bootjack Creek Above Hazeltine Creek)

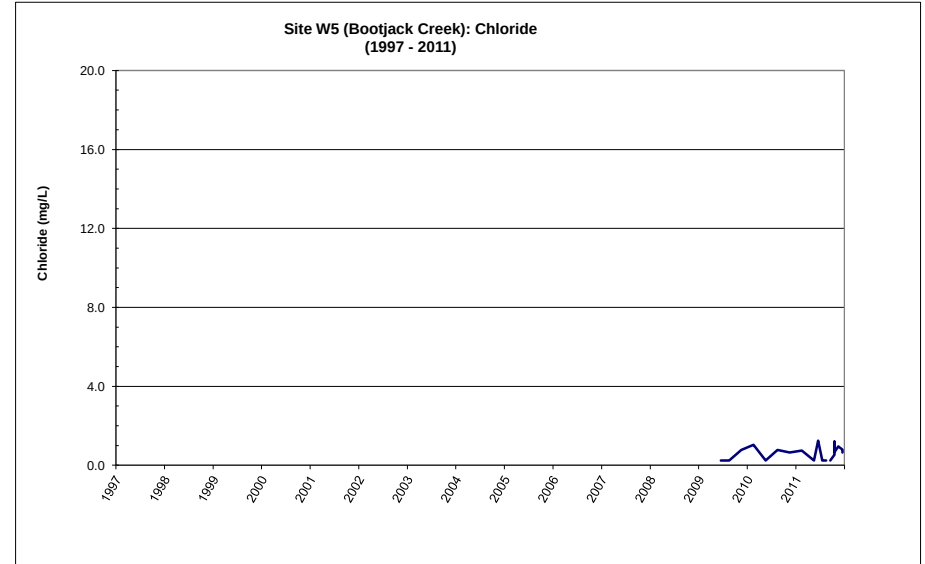
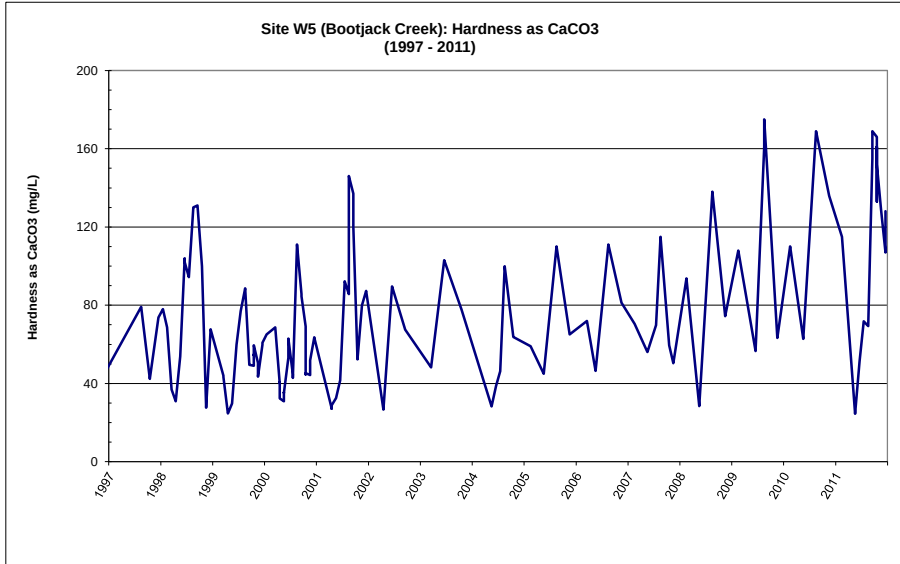


Annual Report 2011

Water Quality at Site W5 (Bootjack Creek Above Hazeltine Creek)



Annual Report 2011
Water Quality at Site W5 (Bootjack Creek Above Hazeltine Creek)



Annual Report 2011

Water Quality Site W7 - Upper Hazeltine Creek

Sample Point	W7	W7	W7	W7	W7	W7	W7	W7	W7	W7	W7	W7	W7
Date	10-Jan-11	2-Feb-11	2-Feb-11	7-Mar-11	5-Apr-11	11-May-11	8-Jun-11	14-Jul-11	4-Aug-11	4-Aug-11	25-Aug-11	8-Sep-11	20-Sep-11
Conductivity (in situ) (µs/cm)	135		152	230	216	144	199	202		203	211	220	224
pH (in situ) (pH)	8.05		7.47	7.55	7.69	7.31	7.67	8.65		8.41	8.44	7.89	8.14
Temperature (in situ) (Degrees Celcius)	0.1		0.1	1.4	0.6	4.3	15.5	14.7		16.6	15.5	11.2	10.4
Alkalinity (CaCO3) (mg/L)	88	83.7	83.4	83	68.2	49.5	72.7	76.8	78.4	75.7	82.7	86.7	90.7
Conductivity (µs/cm)	228	225	223	222	204	135	194	198	167	197	208	218	223
Hardness (as CaCO3) (mg/L)	116	115	114	109	106	65.4	98.5	105	86.8	103	107	110	112
pH (pH)	7.9	7.89	7.83	8.03	7.91	7.77	8.02	8.14	8.13	8.21	8.02	8.11	8.16
Total Dissolved Solids (mg/L)	151	141	149	148	162	107	124	127	128	134	138	145	144
Total Suspended Solids (mg/L)	1.5	1.5	1.5	1.5	1.5	1.5	6.7	4.8	3.3	4.7	4.3	3.7	1.5
Turbidity (ntu)	1.25	2.25	1.93	0.38	4.96	2.44	1.56	2.41	1.28	2.32	1.24	2.31	1.05
Chloride (Cl) (mg/L)	0.57	0.59	0.54	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.55	0.67
Fluoride (F) (mg/L)													
Sulfate (SO4) (mg/L)	31.1	32.6	33	31.7	33.9	18.4	27.1	26.7	9.83	26.5	27.2	27.1	27
Ammonia (as N) (mg/L)	<0.005	<0.005	<0.005	0.0058	<0.005	<0.005	0.0217	0.0155	0.0117	0.0174	0.0117	0.0092	0.0062
Nitrate (as N) (mg/L)	0.175	0.109	0.108	0.0904	0.799	0.0163	0.01	0.0179	0.0352	0.0355	0.0283	0.0437	0.0236
Nitrate and Nitrite (as N) (mg/L)	0.175	0.109	0.108	0.0904	0.799	0.0163	0.01	0.0179	0.0352	0.0355	0.0283	0.0458	0.0236
Nitrite (as N) (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0010	0.002	<0.0010
Total Nitrogen (mg/L)	0.363	0.33	0.34	0.323	1.14	0.48	0.37	0.44	0.54	0.37	0.29	0.22	0.22
Orthophosphate-Dissolved (as P) (mg/L)	0.0191	0.02	0.0204	0.026	0.0147	0.0036	0.0118	<0.001	0.0039	0.0053	0.0052	0.0082	0.0048
Phosphorus (P) Total (mg/L)	0.0272	0.023	0.0243	0.0289	0.0228	0.0113	0.0154	0.0046	0.0093	0.0088			
Phosphorus (P) Total (mg/L)	0.0352	0.0349	0.0324	0.0321	0.0346	0.0234	0.0262	0.0237	0.0157	0.0222	0.023	0.0256	0.0198
Dissolved Metals													
Aluminum (Al)-Dissolved (mg/L)	0.0054	0.0045	0.005	0.0015	0.0788	0.0985	0.0128	0.0167	0.0304	0.0193	0.0098	0.0041	0.0058
Antimony (Sb)-Dissolved (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved (mg/L)	0.00046	0.00044	0.00044	0.00043	0.00044	0.00032	0.0004	0.00047	0.00067	0.00048	0.0005	0.00052	0.00049
Barium (Ba)-Dissolved (mg/L)	0.00761	0.00911	0.00927	0.00794	0.00905	0.00734	0.00707	0.00693	0.0124	0.00741	0.00663	0.00755	0.00681
Cadmium (Cd)-Dissolved (mg/L)	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Dissolved (mg/L)	36.9	36.5	36.2	34.8	33.4	20.3	31.5	33.9	25	33.1	34	34.6	35
Chromium (Cr)-Dissolved (mg/L)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050
Copper (Cu)-Dissolved (mg/L)	0.00149	0.00223	0.00215	0.00144	0.00298	0.00363	0.00191	0.00173	0.00234	0.00176	0.00137	0.00128	0.00122
Iron (Fe)-Dissolved (mg/L)	0.015	0.015	0.015	0.015	0.091	0.078	0.015	0.036	0.12	0.042	0.015	0.015	0.015
Lead (Pb)-Dissolved (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050
Lithium (Li)-Dissolved (mg/L)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.00054	<0.0005	<0.00050	<0.00050	<0.00050
Magnesium (Mg)-Dissolved (mg/L)	5.89	5.78	5.81	5.43	5.57	3.6	4.81	4.95	5.92	4.96	5.32	5.66	6
Manganese (Mn)-Dissolved (mg/L)	0.00555	0.00343	0.00321	0.00437	0.00694	0.00159	0.00682	0.015	0.00861	0.0116	0.000373	0.000155	0.0107
Molybdenum (Mo)-Dissolved (mg/L)	0.00206	0.00192	0.00201	0.00198	0.00162	0.00129	0.00204	0.00206	0.00103	0.00212	0.0022	0.00206	0.00205
Nickel (Ni)-Dissolved (mg/L)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00058	<0.0005	<0.0005	0.001	<0.0005	<0.00050	<0.00050	<0.00050
Potassium (K)-Dissolved (mg/L)	0.476	0.471	0.494	0.46	0.553	0.42	0.408	0.375	0.509	0.358	0.381	0.432	0.46
Selenium (Se)-Dissolved (mg/L)	0.00071	<0.001	<0.001	0.00068	0.00067	0.00057	0.00105	0.00072	<0.0005	0.00068	0.0007	0.0006	0.00058
Silicon (Si)-Dissolved (mg/L)	4.32	4.18	4.21	3.85	4.3	3.53	3.4	3.54	4.12	3.5	3.45	3.57	3.7
Silver (Ag)-Dissolved (mg/L)	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved (mg/L)	4.71	4.8	4.85	4.74	3.91	2.98	3.9	4.26	3.36	4.06	4.86	4.6	4.94
Strontium (Sr)-Dissolved (mg/L)	0.257	0.241	0.255	0.235	0.218	0.137	0.221	0.214	0.164	0.215	0.247	0.226	0.24
Tin (Sn)-Dissolved (mg/L)	<0.0001	0.00043	0.00071	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010
Zinc (Zn)-Dissolved (mg/L)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0030	<0.0030	<0.0030
Total Metals													
Aluminum (Al)-Total (mg/L)	0.0642	0.086	0.0744	0.0183	0.386	0.23	0.0872	0.105	0.0832	0.0985	0.0436	0.155	0.0233
Antimony (Sb)-Total (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total (mg/L)	0.00051	0.00051	0.00052	0.00046	0.00055	0.00036	0.0004	0.00048	0.00071	0.00054	0.00053	0.00056	0.00054
Barium (Ba)-Total (mg/L)	0.00907	0.0109	0.0111	0.00823	0.0118	0.0083	0.00816	0.00793	0.0132	0.00834	0.00714	0.00869	0.00729
Cadmium (Cd)-Total (mg/L)	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000012	<0.00001	<0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total (mg/L)	37.5	37.1	37.2	35.6	33.4	20.7	32.2	33.9	25.5	33.4	33.7	33.1	35.6
Chromium (Cr)-Total (mg/L)	<0.0005	0.00132	0.00116	<0.0005	0.00091	0.00083	<0.0005	0.00058	0.00068	<0.0005	<0.00050	0.0005	<0.00050
Copper (Cu)-Total (mg/L)	0.00223	0.00627	0.00528	0.00162	0.00391	0.00436	0.0027	0.00221	0.00265	0.00222	0.00164	0.00216	0.00148
Iron (Fe)-Total (mg/L)	0.091	0.116	0.106	0.015	0.421	0.192	0.106	0.138	0.202	0.15	0.07	0.244	0.06

Annual Report 2011
Water Quality Site W7 - Upper Hazeltine Creek

Sample Point	W7	W7	W7	W7	W7	W7	W7	W7	W7	W7	W7	W7	W7
Date	10-Jan-11	2-Feb-11	2-Feb-11	7-Mar-11	5-Apr-11	11-May-11	8-Jun-11	14-Jul-11	4-Aug-11	4-Aug-11	25-Aug-11	8-Sep-11	20-Sep-11
Lead (Pb)-Total (mg/L)	<0.00005	0.000187	0.000155	<0.00005	0.000107	0.000051	0.000086	<0.00005	<0.00005	<0.00005	<0.000050	0.000068	<0.000050
Lithium (Li)-Total (mg/L)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0005	0.00062	<0.0005	<0.00050	<0.00050	<0.00050
Magnesium (Mg)-Total (mg/L)	5.99	6.08	6.04	5.6	5.71	3.68	4.9	4.97	6.04	5.09	5.36	5.55	6.21
Manganese (Mn)-Total (mg/L)	0.0148	0.00944	0.0082	0.00648	0.0142	0.00789	0.0229	0.032	0.0178	0.0308	0.024	0.0487	0.0178
Molybdenum (Mo)-Total (mg/L)	0.00209	0.00229	0.00204	0.00205	0.00173	0.00135	0.00214	0.00204	0.0011	0.00222	0.00223	0.00194	0.00225
Nickel (Ni)-Total (mg/L)	<0.0005	<0.0005	<0.0005	<0.0005	0.00085	0.00073	<0.0005	<0.0005	0.00107	<0.0005	<0.00050	<0.00050	<0.00050
Potassium (K)-Total (mg/L)	0.515	0.517	0.579	0.473	0.607	0.445	0.415	0.393	0.52	0.377	0.395	0.428	0.482
Selenium (Se)-Total (mg/L)	0.0007	<0.001	<0.001	0.00073	0.00069	0.00055	0.00068	0.00071	<0.0005	0.00071	0.00066	0.0006	0.00056
Silicon (Si)-Total (mg/L)	4.5	4.58	4.56	3.99	4.92	3.85	3.6	3.72	4.29	3.75	3.55	3.75	3.9
Silver (Ag)-Total (mg/L)	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total (mg/L)	5.05	4.95	5.09	4.83	4.11	3.12	3.97	4.26	3.42	4.13	4.93	4.33	5.16
Strontium (Sr)-Total (mg/L)	0.259	0.274	0.255	0.249	0.234	0.141	0.216	0.214	0.169	0.224	0.254	0.216	0.256
Tin (Sn)-Total (mg/L)	<0.0001	0.00062	0.00083	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010
Zinc (Zn)-Total (mg/L)	0.0033	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.0037	0.0032	<0.0030	<0.0030	<0.0030
Dissolved Organic Carbon (mg/L)	6.2	6.28	62	5.38	9.37	11.1	6.52	6.77	15.9	7.1	5.72	5.99	5.67

Annual Report 2011

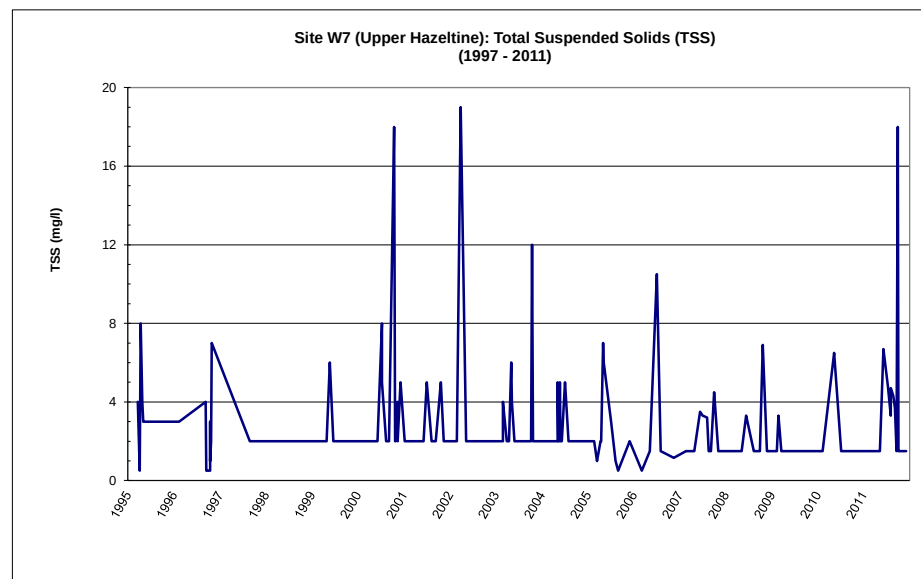
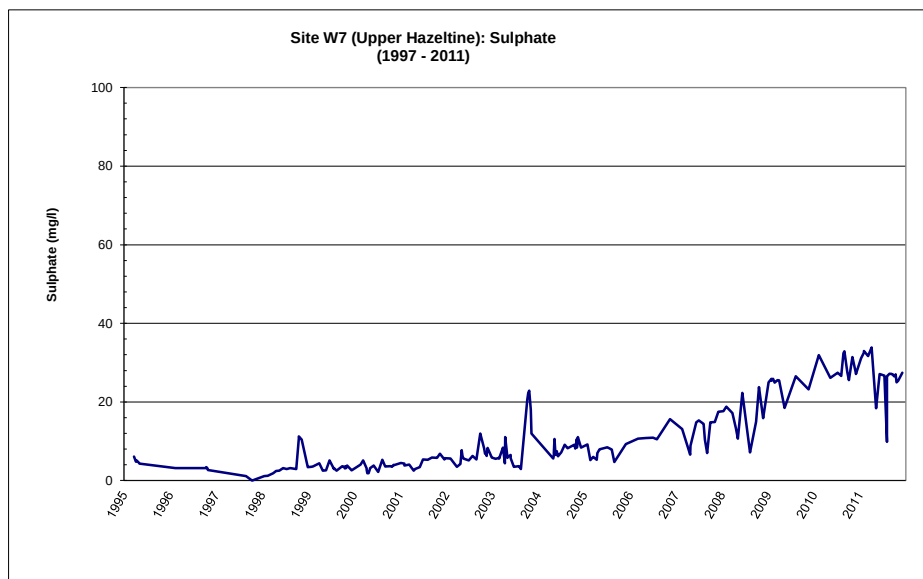
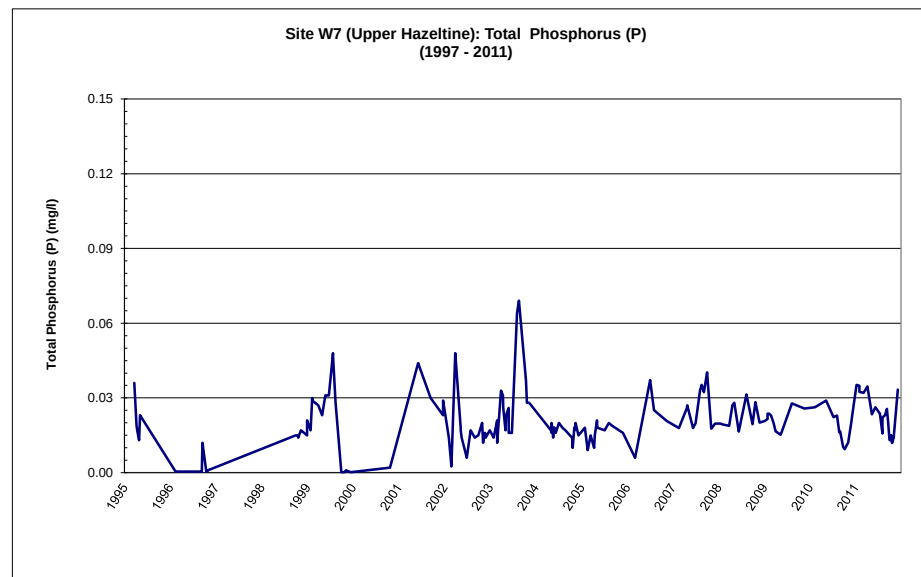
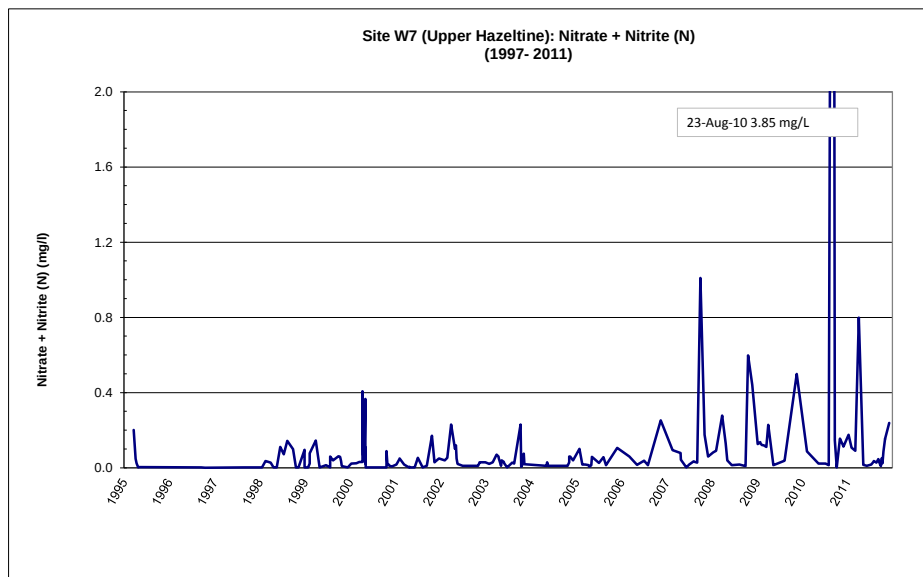
Water Quality Site W7 - Upper Hazeltine Creek

Sample Point	W7	W7	W7	W7	W7	W7	* Note - these results are for data from 1995 to 2011				
Date	30-Sep-11	6-Oct-11	12-Oct-11	19-Oct-11	1-Nov-11	5-Dec-11	Sample (n)	Count >MDL	Min	Max	Mean
Conductivity (in situ) (µs/cm)	242	268	264	267	268	240	186	186	8.08	348	162.953656
pH (in situ) (pH)	8.08	8.05	8.07	7.96	8.23	7.96	187	187	2.61	9.14	7.741406
Temperature (in situ) (Degrees Celcius)	6.9	4.1	7.1	5.6	1.6	0.1	175	175	-1.1	21.2	6.674571
Alkalinity (CaCO3) (mg/L)	104	108	109	111	109	89.1	215	196	33.8	195	73.081122
Conductivity (µs/cm)	245	255	254	255	254	234	26	26	135	330	227.461538
Hardness (as CaCO3) (mg/L)	117	133	130	131	132	113	214	214	39.4	189	80.372897
pH (pH)	8.26	8.13	8.15	8.05	8.12	8.12	25	25	7.77	8.26	8.066400
Total Dissolved Solids (mg/L)	151	172	167	152	159	145	159	146	5	231	116.732877
Total Suspended Solids (mg/L)	18	1.5	1.5	1.5	1.5	1.5	196	196	0.5	19	2.699745
Turbidity (ntu)	0.74	0.78	0.55	0.55	0.78	0.93	217	217	0.1	16	1.791843
Chloride (Cl) (mg/L)	0.97	1.2	1.27	1.37	1.28	0.66	53	53	0.25	2.53	0.650755
Fluoride (F) (mg/L)						0.067	7	7	0.04	0.07	0.048143
Sulfate (SO4) (mg/L)	26.5	26.6	27	25	25.4	27.4	211	210	1.1	33.9	10.677
Ammonia (as N) (mg/L)	0.0056	0.0067	0.0086	0.0076	0.0081	0.0171	215	107	0.005	0.1	0.0142869
Nitrate (as N) (mg/L)	0.0094	0.0486	0.0245	0.0871	0.153	0.238	94	87	0.003	10.7	0.2805897
Nitrate and Nitrite (as N) (mg/L)	0.0094	0.0514	0.0245	0.0871	0.153	0.239	213	213	0.001	10.8	0.1335775
Nitrite (as N) (mg/L)	<0.0010	0.0028	<0.0010	<0.0010	<0.0010	0.0012	167	83	0.001	0.188	0.0072723
Total Nitrogen (mg/L)	0.21	0.33	0.26	0.23	0.34	0.42	78	78	0.15	13.9	0.6464103
Orthophosphate-Dissolved (as P) (mg/L)	0.0042	0.004	0.0062	0.0039	0.0071	0.0261	212	159	0.001	0.084	0.0100610
Phosphorus (P) Total Dissolved (mg/L)		0.0085	0.0113		0.0112	0.0295	132	128	0.0032	0.057	0.0144742
Phosphorus (P) Total (mg/L)	0.0132	0.013	0.0151	0.0119	0.0139	0.0333	171	171	0.00025	0.069	0.0200471
Dissolved Metals											
Aluminum (Al)-Dissolved (mg/L)	0.0035	0.0015	0.0038	0.0015	0.0036	0.0055	193	193	0.0015	0.61	0.0502249
Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	194	34	0.00005	0.0001	0.0000685
Arsenic (As)-Dissolved (mg/L)	0.00048	0.00046	0.00051	0.00046	0.00047	0.00051	195	193	0.0001	0.0011	0.0004309
Barium (Ba)-Dissolved (mg/L)	0.0075	0.00775	0.00801	0.00863	0.00756	0.00695	194	181	0.00373	0.0125	0.0065277
Cadmium (Cd)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	194	41	0.00001	0.00046	0.0000388
Calcium (Ca)-Dissolved (mg/L)	35.8	40.8	40.2	40.1	40.5	35.1	194	194	11.9	54.9	25.6309278
Chromium (Cr)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	195	53	0.0002	0.0041	0.0010370
Copper (Cu)-Dissolved (mg/L)	0.0012	0.00111	0.00116	0.00118	0.00106	0.00124	215	215	0.0005	0.0791	0.0030623
Iron (Fe)-Dissolved (mg/L)	0.031	0.015	0.035	0.037	0.037	0.015	194	194	0.0025	0.39	0.0832861
Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	194	88	0.00002	0.00143	0.0001498
Lithium (Li)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	171	66	0.0002	0.0009	0.0003188
Magnesium (Mg)-Dissolved (mg/L)	6.79	7.53	7.32	7.5	7.64	6.08	195	195	2.26	12.6	4.4882051
Manganese (Mn)-Dissolved (mg/L)	0.0121	0.0021	0.0106	0.00876	0.0104	0.00551	195	191	0.000155	0.052	0.0087217
Molybdenum (Mo)-Dissolved (mg/L)	0.00194	0.00186	0.00196	0.00182	0.00187	0.00198	215	215	0.00028	0.0029	0.0009591
Nickel (Ni)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	195	28	0.0001	0.0088	0.0009814
Potassium (K)-Dissolved (mg/L)	0.534	0.61	0.655	0.62	0.608	0.473	195	195	0.27	2.91	0.5072205
Selenium (Se)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00056	194	57	0.0005	0.0016	0.0007863
Silicon (Si)-Dissolved (mg/L)	4.03	4.39	4	3.95	4.52	4.55	192	192	2.76	8.3	4.0007292
Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	195	9	0.00001	0.00005	0.0000189
Sodium (Na)-Dissolved (mg/L)	5.19	5.47	5.63	5.52	5.35	4.72	193	193	2.09	9.49	4.1017098
Strontium (Sr)-Dissolved (mg/L)	0.24	0.248	0.255	0.26	0.241	0.239	194	193	0.0641	0.285	0.1349720
Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	178	60	0.00005	0.0009	0.0001728
Zinc (Zn)-Dissolved (mg/L)	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	194	108	0.0006	0.0436	0.0019778
Total Metals											
Aluminum (Al)-Total (mg/L)	0.018	0.0158	0.0172	0.0148	0.0123	0.0225	220	220	0.0081	0.63	0.1019664
Antimony (Sb)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	210	48	0.00005	0.00026	0.0000844
Arsenic (As)-Total (mg/L)	0.00048	0.00045	0.00078	0.00047	0.00044	0.00049	221	217	0.00008	0.034	0.0007408
Barium (Ba)-Total (mg/L)	0.00803	0.00793	0.00819	0.00904	0.00772	0.00689	209	196	0.0039	0.0133	0.0069831
Cadmium (Cd)-Total (mg/L) (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	209	49	0.00001	0.00075	0.0000528
Calcium (Ca)-Total (mg/L)	36.8	42.1	40.7	41.3	41.3	35.2	219	219	12	54.6	24.7232877
Chromium (Cr)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	210	80	0.0002	0.0051	0.0010389
Copper (Cu)-Total (mg/L)	0.00138	0.00126	0.00133	0.00121	0.00055	0.00145	220	220	0.0005	0.0771	0.0033281
Iron (Fe)-Total (mg/L) (mg/L)	0.065	0.073	0.072	0.074	0.065	0.048	220	220	0.004	1.01	0.1695273

Annual Report 2011
Water Quality Site W7 - Upper Hazeltine Creek

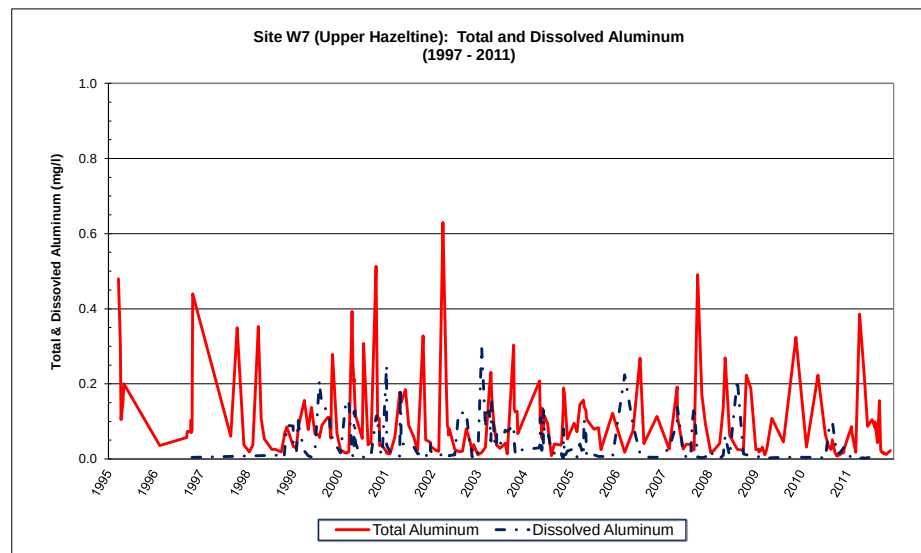
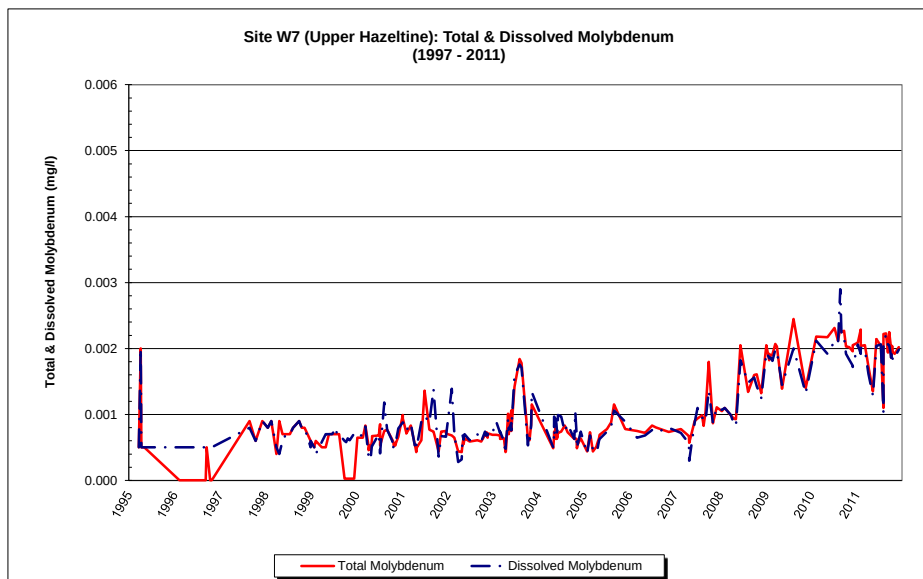
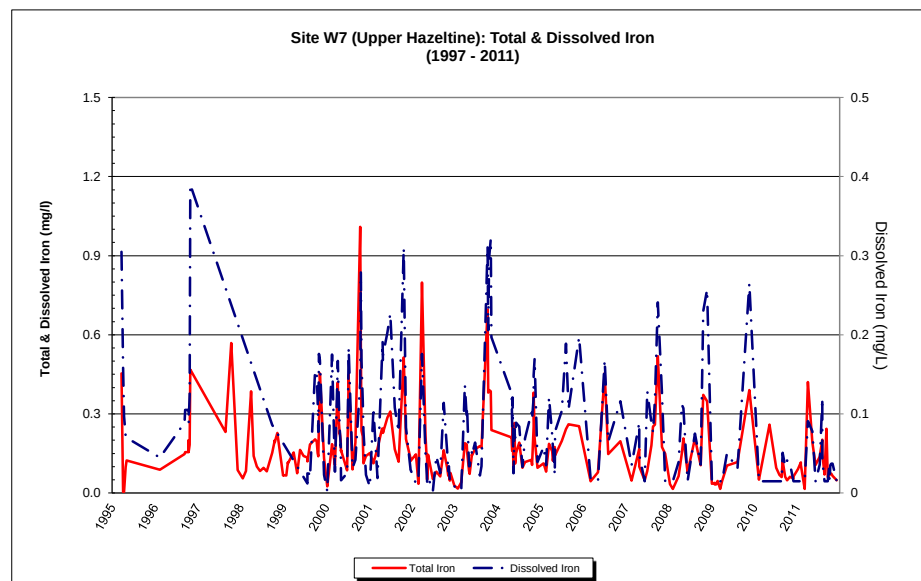
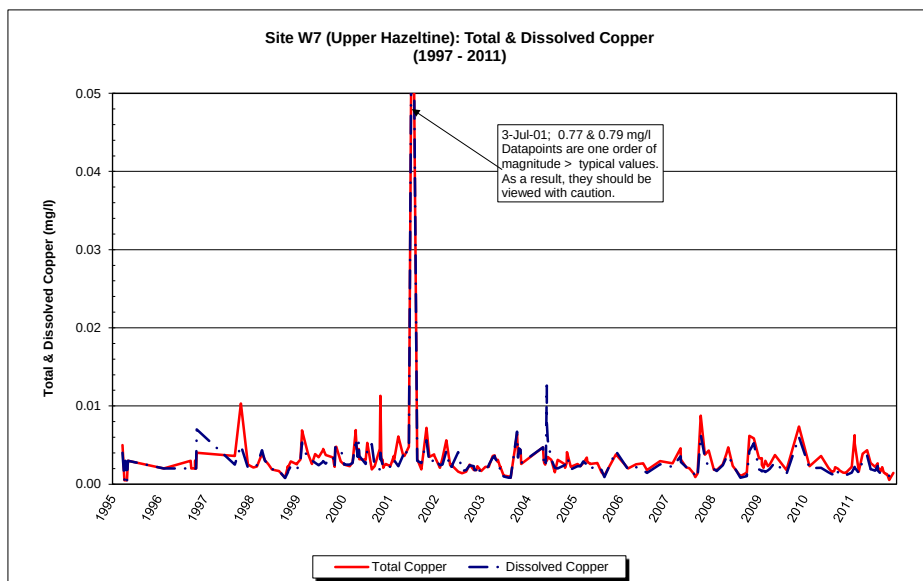
Sample Point	W7	W7	W7	W7	W7	W7	* Note - these results are for data from 1995 to 2011				
Date	30-Sep-11	6-Oct-11	12-Oct-11	19-Oct-11	1-Nov-11	5-Dec-11	Sample (n)	Count >MDL	Min	Max	Mean
Lead (Pb)-Total (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	219	135	0.00002	0.0212	0.0003067
Lithium (Li)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	174	84	0.0002	0.00062	0.0003252
Magnesium (Mg)-Total (mg/L)	7.09	7.82	7.48	7.82	7.79	6.1	220	220	2.15	12.7	4.3325909
Manganese (Mn)-Total (mg/L)	0.0169	0.0159	0.0143	0.0146	0.012	0.00958	221	221	0.00196	0.0768	0.0174256
Molybdenum (Mo)-Total (mg/L)	0.00208	0.00186	0.00204	0.00195	0.00192	0.00202	220	220	0.000005	0.00245	0.0009328
Nickel (Ni)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	221	71	0.0001	0.01	0.0007907
Potassium (K)-Total (mg/L)	0.567	0.603	0.669	0.657	0.627	0.469	208	206	0.28	1.16	0.5009126
Selenium (Se)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00051	217	61	0.0001	0.0014	0.0007459
Silicon (Si)-Total (mg/L)	4.26	4.61	4.11	4.18	4.6	4.59	219	219	1.3	8.4	3.9798447
Silver (Ag)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	210	30	0.00001	0.00009	0.0000197
Sodium (Na)-Total (mg/L)	5.39	5.39	5.78	5.8	5.52	4.73	207	207	2.1	9.37	4.0398551
Strontium (Sr)-Total (mg/L)	0.256	0.249	0.263	0.274	0.248	0.235	220	220	0.0646	0.298	0.1328
Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	180	55	0.00005	0.00161	0.000206909
Zinc (Zn)-Total (mg/L)	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	220	132	0.0005	0.0418	0.0026735
Disolved Organic Carbon (mg/L)	5.36	5.39	5.35	4.61	5.1	5.46	165	165	1	62	9.1890909

Annual Report 2011 **Water Quality at Site W7 (Upper Hazeltine Creek)**

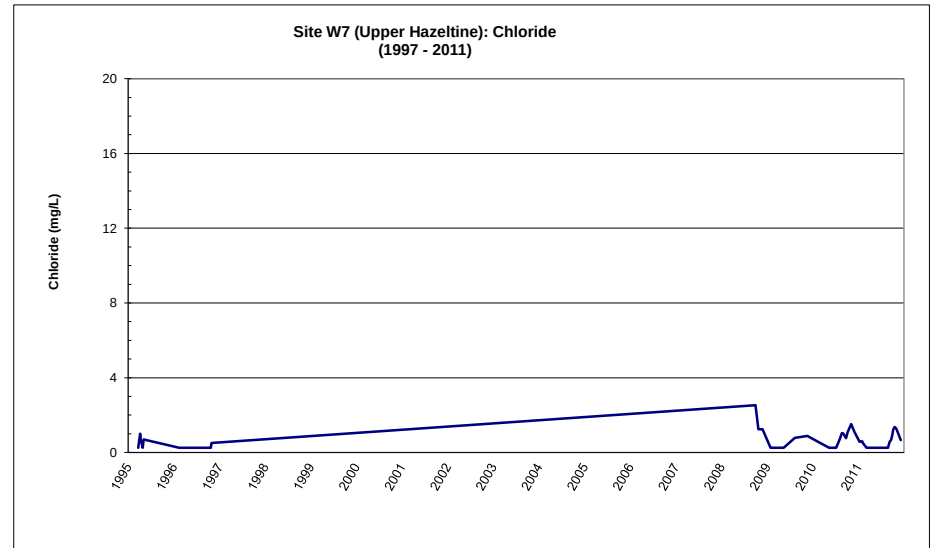
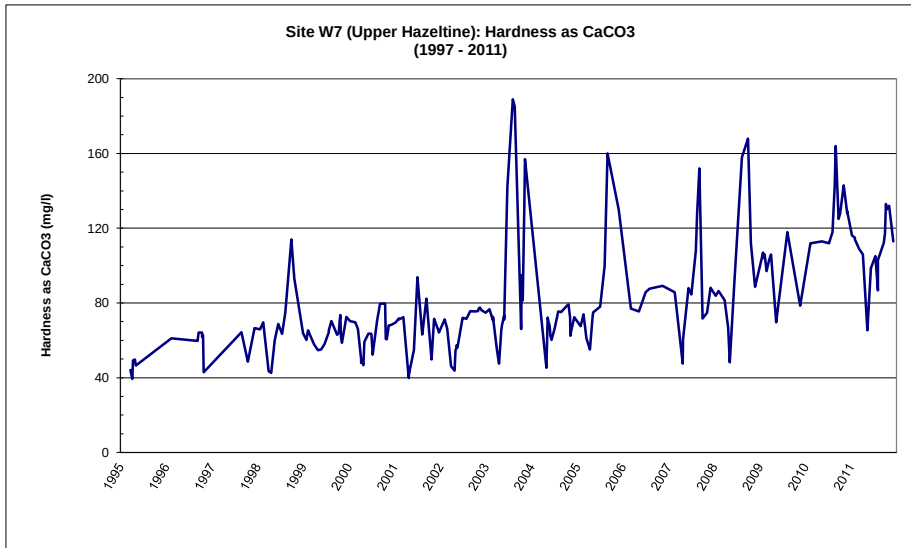


Annual Report 2011

Water Quality at Site W7 (Upper Hazeltine Creek)



Annual Report 2011
Water Quality at Site W7 (Upper Hazeltine Creek)



Annual Report 2011
Water Quality Site W8 - NE Edney Creek Tributary

Sample Point	W8	W8	W8	W8	W8	W8	W8	W8	W8	W8
Date	10-Jan-11	7-Mar-11	5-Apr-11	4-May-11	11-May-11	18-May-11	26-May-11	1-Jun-11	9-Jun-11	14-Jul-11
Conductivity (in situ) (µs/cm)	275	303	107	98	107	102	153	176	232	290
pH (in situ) (pH)	8.02	8.06	7.14	6.86	7.15	7.19	7.4	6.9	7.95	8.36
Temperature (in situ) (Degrees Celcius)	-0.01	0.25	0.2	2.7	1	4.9	2	9.6	10.1	9.2
Alkalinity (CaCO3) (mg/L)	182	170	69.5	39.4	48.5	45.9	73.9	89	118	154
Conductivity (µs/cm)	363	345	168		103				222	285
Hardness (as CaCO3) (mg/L)	195	176	88.9	48.9	55.3	55.5	80.5	92.9	123	161
pH (pH)	8.21	8.24	7.67		7.72				7.89	8.18
Total Dissolved Solids (mg/L)	223	215	162	120	129	127	166	149	165	195
Total Suspended Solids (mg/L)	1.5	1.5	5.2	5	5.9	1.5	68.9	3.2	11.3	1.5
Turbidity (ntu)	0.85	0.58	3.65	3.62	2.93	3.33	1.78	1.43	4.94	0.72
Chloride (Cl) (mg/L)	3.81	3.36	0.88	0.56	1.25	8.2	1.25	1.25	1.25	2.26
Fluoride (F) (mg/L)									<0.10	
Sulfate (SO4) (mg/L)	17.4	18	15.9	5.24	3.5	2.5	3.5	3.2	3.4	3.77
Ammonia (as N) (mg/L)	<0.005	<0.005	<0.005	0.0069	0.0076	0.008	0.0059	0.0118	0.0151	0.0128
Nitrate (as N) (mg/L)	0.14	0.127	0.282	0.119	0.0125	<0.05	0.0125	0.032	0.0125	0.0351
Nitrate and Nitrite (as N) (mg/L)	0.14	0.127	0.282	0.119	0.0125	0.0255	0.0125	0.032	0.0125	0.0351
Nitrite (as N) (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.005	<0.01	<0.005	<0.005	<0.005	<0.001
Nitrogen N-WDGA (mg/L)										
Orthophosphate-Dissolved (as P) (mg/L)	0.0146	0.0143	0.0052	0.0107	0.0067	0.0058	0.0044	0.0059	0.0087	0.0117
Phosphorus (P) Total Dissolved (mg/L)	0.0199	0.0177	0.0211	0.0252	0.0219	0.0265	0.0196	0.0172	0.0172	0.0177
Phosphorus (P) Total (mg/L)	0.021	0.0198	0.0378	0.0338	0.0275	0.0314	0.0242	0.0204	0.0362	0.0209
Dissolved Metals										
Aluminum (Al)-Dissolved (mg/L)	0.0099	0.012	0.155	0.196	0.167	0.211	0.148	0.106	0.0572	0.0356
Antimony (Sb)-Dissolved (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Arsenic (As)-Dissolved (mg/L)	0.00115	0.00122	0.00045	0.00038	0.00044	0.00049	0.00061	0.00067	0.00084	0.00106
Barium (Ba)-Dissolved (mg/L)	0.00908	0.0101	0.0105	0.00897	0.0094	0.00912	0.0107	0.0104	0.0109	0.0108
Cadmium (Cd)-Dissolved (mg/L)	<0.00001	<0.00001	<0.00001	0.000014	<0.00001	0.000039	0.000012	<0.00001	<0.00001	<0.00001
Calcium (Ca)-Dissolved (mg/L)	44.8	39.9	23	13.1	14.5	15	20.1	23	29.6	38.8
Chromium (Cr)-Dissolved (mg/L)	0.00083	0.00071	0.00075	0.0008	0.00077	0.0008	0.00096	0.0008	0.00084	0.00079
Copper (Cu)-Dissolved (mg/L)	0.00051	0.00067	0.00361	0.00457	0.00432	0.00483	0.00425	0.00357	0.00234	0.00146
Iron (Fe)-Dissolved (mg/L)	0.036	0.043	0.174	0.155	0.153	0.178	0.179	0.131	0.097	0.103
Lead (Pb)-Dissolved (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Lithium (Li)-Dissolved (mg/L)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.00099	0.00074
Magnesium (Mg)-Dissolved (mg/L)	20.1	18.5	7.65	3.95	4.62	4.4	7.35	8.63	11.8	15.6
Manganese (Mn)-Dissolved (mg/L)	0.00823	0.0135	0.0108	0.00561	0.00132	0.00182	0.00901	0.0134	0.0256	0.0208

Annual Report 2011
Water Quality Site W8 - NE Edney Creek Tributary

Sample Point	W8	W8	W8	W8	W8	W8	W8	W8	W8	W8
Date	10-Jan-11	7-Mar-11	5-Apr-11	4-May-11	11-May-11	18-May-11	26-May-11	1-Jun-11	9-Jun-11	14-Jul-11
Molybdenum (Mo)-Dissolved (mg/L)	0.00169	0.00154	0.000683	0.00052	0.000608	0.000682	0.000977	0.0011	0.00158	0.00204
Nickel (Ni)-Dissolved (mg/L)	<0.0005	<0.0005	0.00122	0.00137	0.00133	0.0015	0.00184	0.00155	0.00121	0.00085
Potassium (K)-Dissolved (mg/L)	0.993	1.03	1.13	1.7	1.78	1.73	1.69	1.66	1.47	1.09
Selenium (Se)-Dissolved (mg/L)	0.00054	<0.0005	0.00059	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Silicon (Si)-Dissolved (mg/L)	7.86	7.4	4.74	3.53	3.67	3.56	4.57	4.99	5.76	6.65
Silver (Ag)-Dissolved (mg/L)	<0.00001	<0.00001	0.000014	0.000016	0.000017	0.000026	0.000022	0.000011	<0.00001	<0.00001
Sodium (Na)-Dissolved (mg/L)	9.4	9.62	3.95	2.51	2.72	2.49	3.99	4.58	6.01	7.51
Strontium (Sr)-Dissolved (mg/L)	0.359	0.318	0.162	0.0942	0.105	0.0999	0.15	0.171	0.225	0.285
Tin (Sn)-Dissolved (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Zinc (Zn)-Dissolved (mg/L)	<0.003	<0.003	<0.003	0.0038	<0.003	0.0076	<0.003	0.0052	<0.003	0.0049
Total Metals										
Aluminum (Al)-Total (mg/L)	0.0214	0.0501	0.327	0.295	0.288	0.321	0.2	0.166	0.0954	0.0582
Antimony (Sb)-Total (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Arsenic (As)-Total (mg/L)	0.00125	0.0012	0.00058	0.00039	0.0005	0.00055	0.00062	0.00074	0.0009	0.00111
Barium (Ba)-Total (mg/L)	0.00993	0.0105	0.0125	0.0103	0.0106	0.0104	0.0104	0.0118	0.0117	0.0112
Cadmium (Cd)-Total (mg/L) (mg/L)	<0.00001	<0.00001	0.000026	0.000015	0.000012	0.000053	0.000013	0.000019	<0.00001	<0.00001
Calcium (Ca)-Total (mg/L)	44.5	40.8	22.8	13.4	14.7	15.1	20.6	24.2	30.9	38.6
Chromium (Cr)-Total (mg/L)	0.00102	0.00097	0.00131	0.00107	0.00124	0.00124	0.00114	0.00111	0.00113	0.00097
Copper (Cu)-Total (mg/L)	0.00086	0.00086	0.00435	0.00484	0.00476	0.00549	0.00422	0.00414	0.00285	0.00158
Iron (Fe)-Total (mg/L) (mg/L)	0.062	0.103	0.456	0.258	0.299	0.32	0.239	0.211	0.157	0.145
Lead (Pb)-Total (mg/L)	<0.00005	<0.00005	0.000106	0.000056	0.000062	0.000085	<0.00005	0.000083	<0.00005	<0.00005
Lithium (Li)-Total (mg/L)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.00086	0.00078
Magnesium (Mg)-Total (mg/L)	21	19.1	7.63	4.16	4.68	4.45	7.53	9.07	12.3	15.6
Manganese (Mn)-Total (mg/L)	0.0132	0.0159	0.0708	0.0139	0.0218	0.0235	0.0183	0.0212	0.0368	0.0275
Molybdenum (Mo)-Total (mg/L)	0.00198	0.0016	0.000714	0.000552	0.000726	0.000615	0.00105	0.00123	0.0019	0.00208
Nickel (Ni)-Total (mg/L)	0.00103	<0.0005	0.00146	0.00151	0.00158	0.00181	0.0015	0.00154	0.00116	0.00082
Potassium (K)-Total (mg/L)	1.06	1.05	1.16	1.75	1.81	1.76	1.73	1.79	1.55	1.11
Selenium (Se)-Total (mg/L)	0.00052	<0.0005	0.00061	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Silicon (Si)-Total (mg/L)	8.22	7.7	4.89	3.84	3.89	3.72	4.78	5.37	6.04	6.63
Silver (Ag)-Total (mg/L)	<0.00001	<0.00001	0.000019	0.000016	0.000021	0.000033	0.000023	0.000014	<0.00001	<0.00001
Sodium (Na)-Total (mg/L)	10.1	9.64	4.01	2.57	2.75	2.51	4.02	4.84	6.34	7.66
Strontium (Sr)-Total (mg/L)	0.387	0.333	0.163	0.0941	0.104	0.1	0.154	0.18	0.242	0.287
Tin (Sn)-Total (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Zinc (Zn)-Total (mg/L)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.0041	0.0039	<0.003
Dissolved Organic Carbon (mg/L)	5.62	6.11	22.2	29.1	22.4	29	30.6	24.6	17	14

Annual Report 2011
Water Quality Site W8 - NE Edney Creek Tributary

Sample Point	W8	W8	W8	W8	W8	W8	W8	W8	W8
Date	4-Aug-11	8-Sep-11	20-Sep-11	30-Sep-11	6-Oct-11	12-Oct-11	19-Oct-11	1-Nov-11	5-Dec-11
Conductivity (in situ) (µs/cm)	299	376	382	358	397	382	385	362	324
pH (in situ) (pH)	7.6	7.36	8.25	7.68	7.93	7.17	8.22	8.22	8.29
Temperature (in situ) (Degrees Celcius)	9.4	7.4	6.6	5.5	3.9	6.1	5.3	2.2	1
Alkalinity (CaCO3) (mg/L)	155	210	207	214	202	201	198	180	150
Conductivity (µs/cm)	291	387	381	392	379	378	373	345	303
Hardness (as CaCO3) (mg/L)	162	207	204	209	202	199	200	186	157
pH (pH)	8.25	8.24	8.29	8.52	8.29	8.27	8.23	8.27	8.25
Total Dissolved Solids (mg/L)	202	234	236	217	236	232	221	206	183
Total Suspended Solids (mg/L)	3.3	4.3	1.5.0	1.5.0	1.5.0	1.5.0	1.5.0	1.5.0	1.5.0
Turbidity (ntu)	1.08	0.71	0.38	0.25	0.28	0.44	0.38	0.63	1.07
Chloride (Cl) (mg/L)	2.8	4.75	4.82	4.9	4.92	5.04	5.07	4.84	3.43
Fluoride (F) (mg/L)									0.09
Sulfate (SO4) (mg/L)	3.8	6.86	6.88	7.04	7.48	7.78	8.27	8.19	12.6
Ammonia (as N) (mg/L)	0.0106	<0.0050	<0.0050	0.005	<0.0050	<0.0050	<0.0050	<0.0050	0.0086
Nitrate (as N) (mg/L)	0.054	0.0356	0.0188	0.0115	<0.0050	<0.0050	<0.0050	0.0371	0.171
Nitrate and Nitrite (as N) (mg/L)	0.054	0.0356	0.0188	0.0115	0.00255	0.00255	0.00255	0.0389	0.171
Nitrite (as N) (mg/L)	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0018	<0.0010
Nitrogen N-WDGWA (mg/L)									
Orthophosphate-Dissolved (as P) (mg/L)	0.0121	0.0138	0.0131	0.012	0.0114	0.0113	0.0107	0.0111	0.0118
Phosphorus (P) Total Dissolved (mg/L)	0.0175				0.0148	0.0155		0.0149	0.0183
Phosphorus (P) Total (mg/L)	0.0218	0.0398	0.0182	0.0165	0.0158	0.0171	0.0162	0.016	0.02
Dissolved Metals									
Aluminum (Al)-Dissolved (mg/L)	0.0399	0.0109	0.0093	0.0076	0.008	0.008	0.0072	0.012	0.031
Antimony (Sb)-Dissolved (mg/L)	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved (mg/L)	0.00109	0.00132	0.00135	0.00133	0.00127	0.00138	0.00133	0.00117	0.00112
Barium (Ba)-Dissolved (mg/L)	0.0114	0.0114	0.0106	0.0108	0.00969	0.0108	0.0109	0.00948	0.00881
Cadmium (Cd)-Dissolved (mg/L)	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Dissolved (mg/L)	38.8	46.3	45.8	47.8	45.3	45.3	44.7	41.8	35.8
Chromium (Cr)-Dissolved (mg/L)	0.00075	0.00077	0.00082	0.00083	0.00077	0.00076	0.00071	0.0008	0.00085
Copper (Cu)-Dissolved (mg/L)	0.00145	0.00025	0.00025	0.00056	0.00025	0.00025	0.00025	0.00059	0.00125
Iron (Fe)-Dissolved (mg/L)	0.119	0.015	0.015	0.03	0.015	0.015	0.015	0.045	0.092
Lead (Pb)-Dissolved (mg/L)	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium (Li)-Dissolved (mg/L)	0.00126	0.00162	0.00122	0.00144	0.00106	0.00138	0.0013	0.00126	0.00072
Magnesium (Mg)-Dissolved (mg/L)	15.8	22.2	21.9	21.8	21.6	20.8	21.4	19.8	16.3
Manganese (Mn)-Dissolved (mg/L)	0.0235	0.000937	0.0103	0.0105	0.0124	0.00964	0.00813	0.00951	0.0122

Annual Report 2011
Water Quality Site W8 - NE Edney Creek Tributary

Sample Point	W8	W8	W8	W8	W8	W8	W8	W8	W8
Date	4-Aug-11	8-Sep-11	20-Sep-11	30-Sep-11	6-Oct-11	12-Oct-11	19-Oct-11	1-Nov-11	5-Dec-11
Molybdenum (Mo)-Dissolved (mg/L)	0.00221	0.00276	0.00252	0.00255	0.0023	0.00245	0.00229	0.0019	0.00153
Nickel (Ni)-Dissolved (mg/L)	0.0009	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Potassium (K)-Dissolved (mg/L)	1.09	1.07	1.11	1.09	1.08	1.3	1.17	1.13	1.01
Selenium (Se)-Dissolved (mg/L)	<0.0005	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Silicon (Si)-Dissolved (mg/L)	6.74	7.85	7.83	7.88	7.81	7.54	7.93	7.48	7
Silver (Ag)-Dissolved (mg/L)	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved (mg/L)	7.14	10.2	10.8	10.4	9.9	10.5	10.1	9.18	8.65
Strontium (Sr)-Dissolved (mg/L)	0.295	0.383	0.391	0.381	0.351	0.381	0.374	0.322	0.292
Tin (Sn)-Dissolved (mg/L)	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Zinc (Zn)-Dissolved (mg/L)	<0.003	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0031
Total Metals									
Aluminum (Al)-Total (mg/L)	0.178	0.0173	0.0183	0.0171	0.0131	0.0133	0.0116	0.016	0.0383
Antimony (Sb)-Total (mg/L)	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total (mg/L)	0.00112	0.0013	0.00135	0.00123	0.00126	0.0014	0.0013	0.0012	0.00101
Barium (Ba)-Total (mg/L)	0.013	0.0114	0.0111	0.0108	0.00979	0.0112	0.0115	0.00953	0.00806
Cadmium (Cd)-Total (mg/L) (mg/L)	0.000012	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total (mg/L)	39.6	46.8	47.1	47.8	46.3	46.7	45.6	41.4	33.6
Chromium (Cr)-Total (mg/L)	0.00123	0.00088	0.00083	0.00094	0.00079	0.00085	0.00097	0.00088	0.00095
Copper (Cu)-Total (mg/L)	0.00194	0.00025	0.00052	0.00051	0.00025	0.00025	0.00025	0.0005	0.00138
Iron (Fe)-Total (mg/L) (mg/L)	0.369	0.047	0.046	0.043	0.041	0.041	0.041	0.053	0.109
Lead (Pb)-Total (mg/L)	0.000058	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium (Li)-Total (mg/L)	0.00144	0.00172	0.00121	0.00141	0.00118	0.00153	0.00137	0.00117	0.00066
Magnesium (Mg)-Total (mg/L)	16.1	22.6	23	21.7	22	21.5	22	19.8	15.6
Manganese (Mn)-Total (mg/L)	0.0453	0.0142	0.0126	0.0141	0.0134	0.0122	0.0113	0.0102	0.0132
Molybdenum (Mo)-Total (mg/L)	0.00225	0.00285	0.00276	0.00264	0.00239	0.00259	0.00246	0.00207	0.00143
Nickel (Ni)-Total (mg/L)	0.00114	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Potassium (K)-Total (mg/L)	1.13	1.05	1.15	1.08	1.05	1.35	1.21	1.12	0.953
Selenium (Se)-Total (mg/L)	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Silicon (Si)-Total (mg/L)	7.03	7.97	8.12	7.81	7.96	7.77	8.14	7.44	6.61
Silver (Ag)-Total (mg/L)	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total (mg/L)	7.3	10.2	11.4	10.3	9.84	10.9	10.5	9.33	8.2
Strontium (Sr)-Total (mg/L)	0.307	0.383	0.425	0.385	0.365	0.399	0.394	0.323	0.253
Tin (Sn)-Total (mg/L)	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Zinc (Zn)-Total (mg/L)	<0.003	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Dissolved Organic Carbon (mg/L)	18.5	5.15	5.1	4.5	5.37	4.81	4.47	7.14	9.13

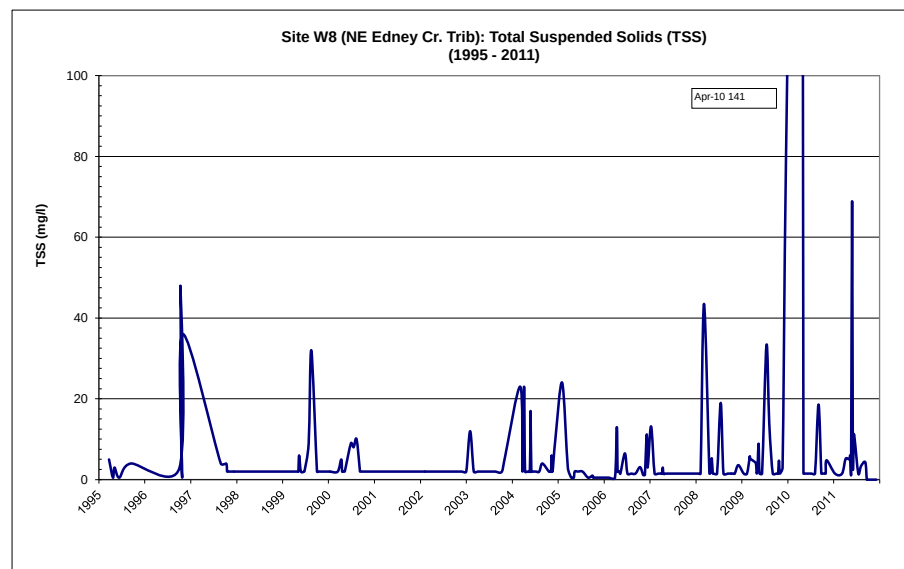
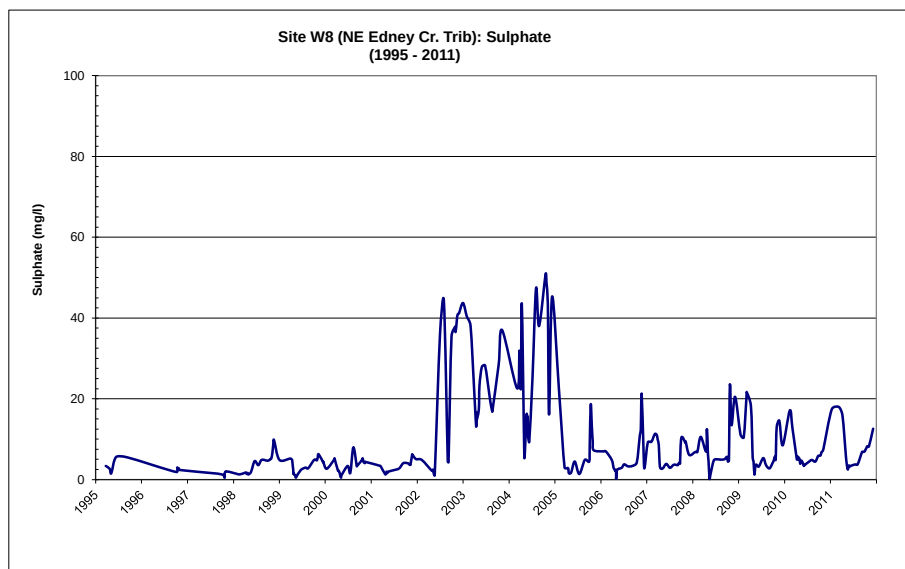
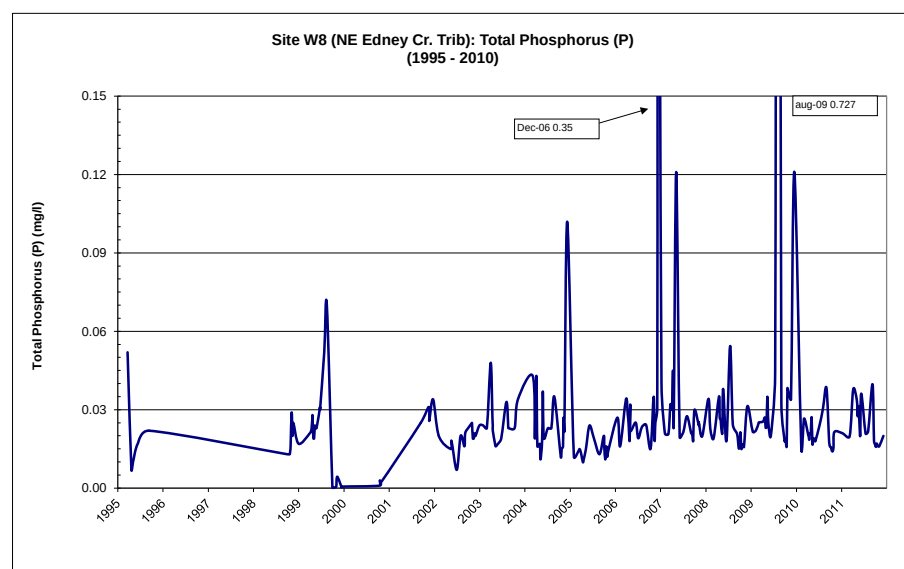
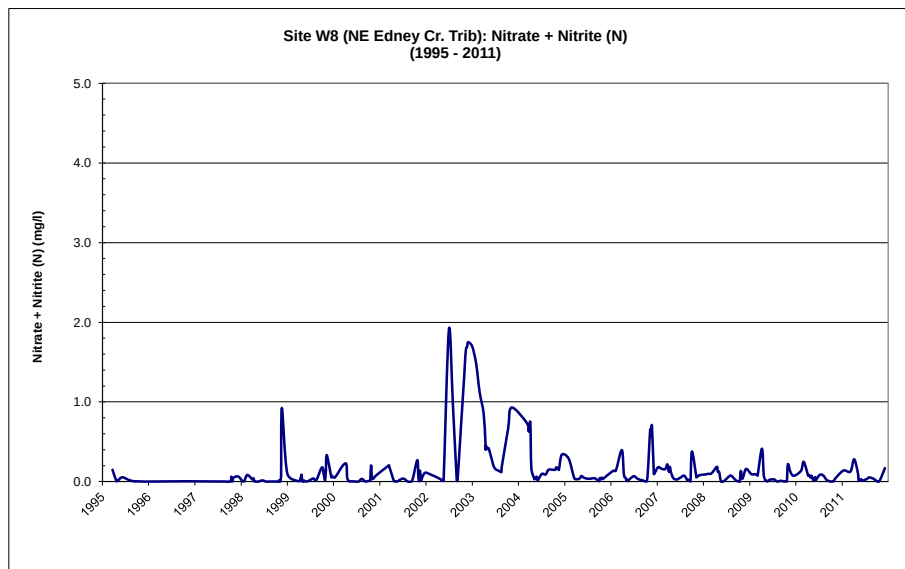
Annual Report 2011
Water Quality Site W8 - NE Edney Creek Tributary

Sample Point	* Note - these results are for data from 1995 to 2011				
Date	Sample (n)	Count >MDL	Min	Max	Mean
Conductivity (in situ) (µs/cm)	252	251	52	581	243.8119522
pH (in situ) (pH)	253	253	2.63	8.89	7.837944664
Temperature (in situ) (Degrees Celcius)	245	245	-0.2	15.4	4.478285714
Alkalinity (CaCO3) (mg/L)	287	264	15.6	244	122.1170455
Conductivity (µs/cm)	21	21	103	392	318.4285714
Hardness (as CaCO3) (mg/L)	287	287	19.3	223	124.5327526
pH (pH)	21	21	7.34	8.52	8.132380952
Total Dissolved Solids (mg/L)	223	199	4	499	174.9075377
Total Suspended Solids (mg/L)	266	259	0.5	183	8.738803089
Turbidity (ntu)	288	288	0.19	137	3.3775
Chloride (Cl) (mg/L)	72	72	0.25	8.2	2.523055556
Fluoride (F) (mg/L)	7	6	0.009	0.09	0.043166667
Sulfate (SO4) (mg/L)	287	287	0.25	50.8	9.138675958
Ammonia (as N) (mg/L)	288	111	0.005	0.551	0.016708108
Nitrate (as N) (mg/L)	149	128	0.001	0.916	0.095589063
Nitrate and Nitrite (as N) (mg/L)	284	284	0.0025	1.91	0.157179225
Nitrite (as N) (mg/L)	228	98	0.001	0.237	0.007920408
Nitrogen N-WDGWA (mg/L)					
Orthophosphate-Dissolved (as P) (mg/L)	284	247	0.001	0.257	0.011470445
Phosphorus (P) Total Dissolved (mg/L)	193	193	0.0021	0.331	0.019011917
Phosphorus (P) Total (mg/L)	231	231	0.00025	0.727	0.027894156
Dissolved Metals					
Aluminum (Al)-Dissolved (mg/L)	255	255	0.0025	0.355	0.073119216
Antimony (Sb)-Dissolved (mg/L)	255	78	0.00005	0.00109	9.24359E-05
Arsenic (As)-Dissolved (mg/L)	256	253	0.0001	0.002	0.000883953
Barium (Ba)-Dissolved (mg/L)	256	252	0.00404	0.0265	0.010598214
Cadmium (Cd)-Dissolved (mg/L)	256	101	0.00001	0.00057	4.02574E-05
Calcium (Ca)-Dissolved (mg/L)	256	256	5.21	51.2	30.8265625
Chromium (Cr)-Dissolved (mg/L)	256	202	0.0002	0.0064	0.000934604
Copper (Cu)-Dissolved (mg/L)	286	286	0.00001	0.0815	0.002931748
Iron (Fe)-Dissolved (mg/L)	256	256	0.0025	0.455	0.116662109
Lead (Pb)-Dissolved (mg/L)	256	124	0.00002	0.0337	0.000397597
Lithium (Li)-Dissolved (mg/L)	235	122	0.0002	0.0019	0.000901557
Magnesium (Mg)-Dissolved (mg/L)	256	256	1.54	23.4	12.49832031
Manganese (Mn)-Dissolved (mg/L)	256	255	0.00006	0.0609	0.0097846

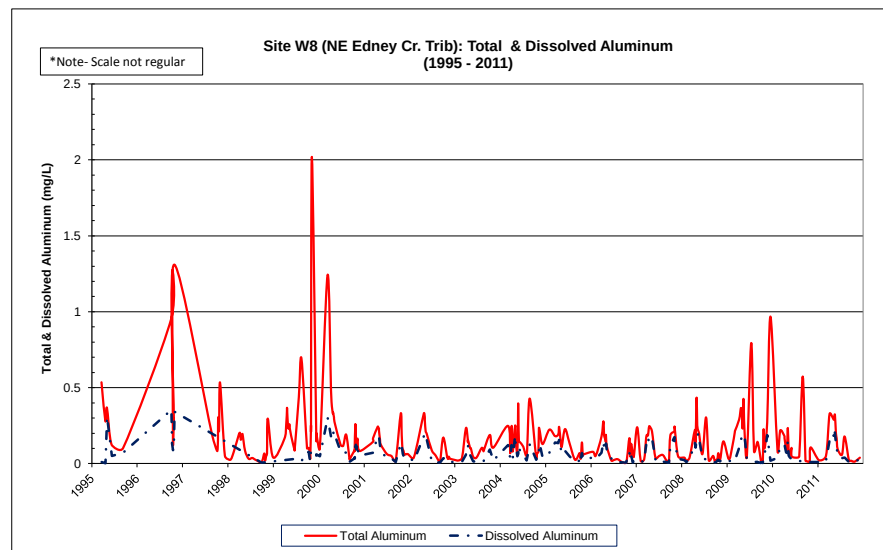
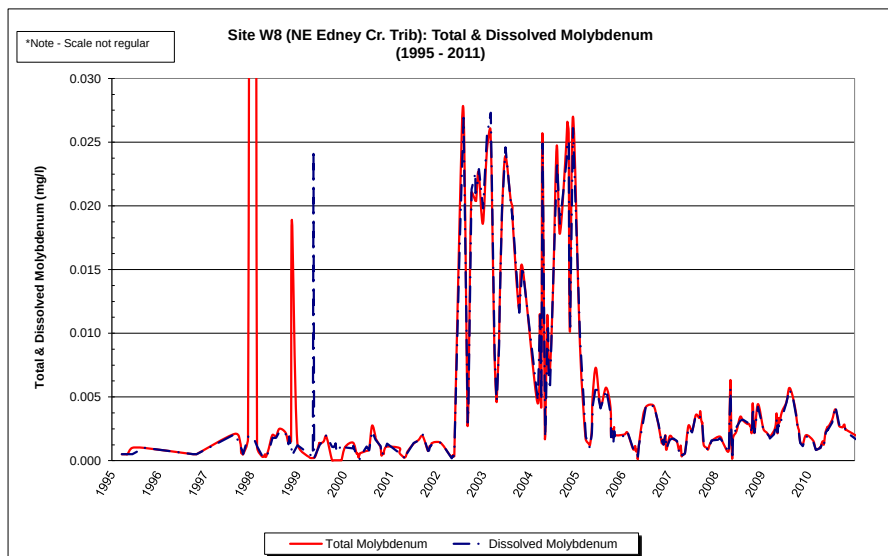
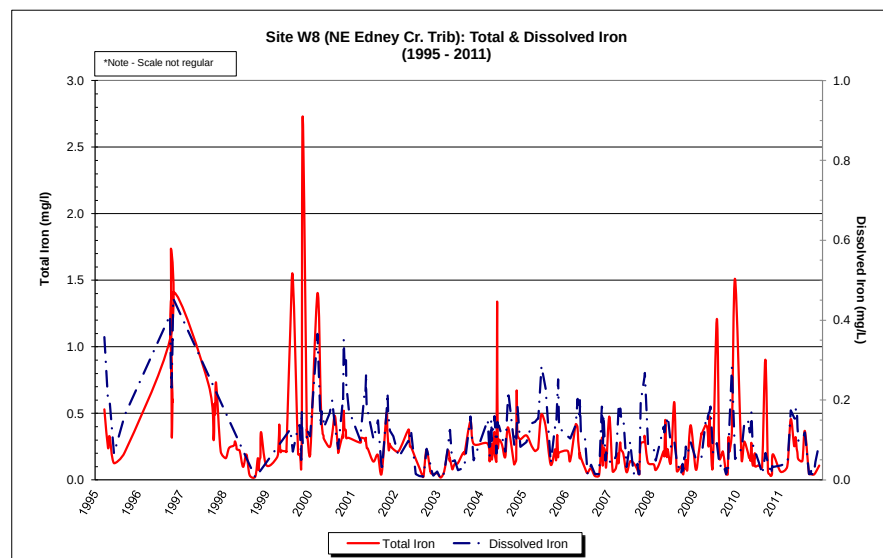
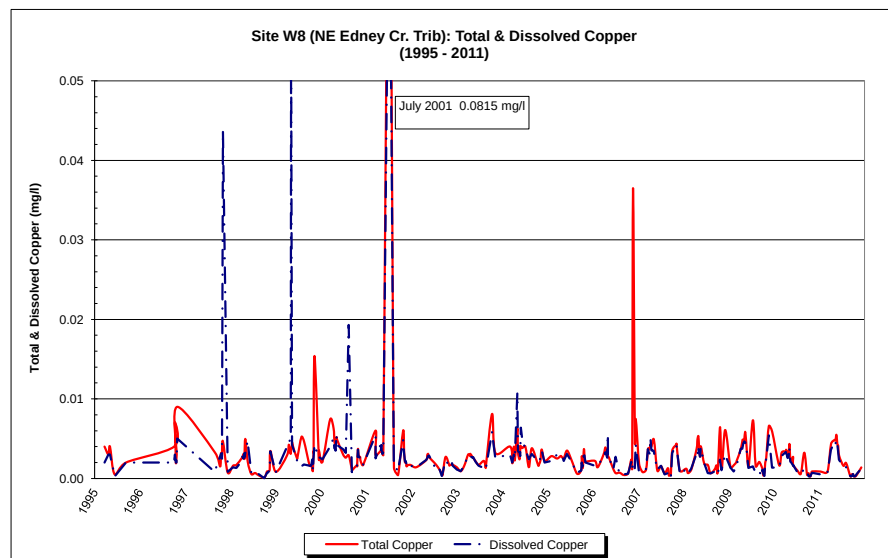
Annual Report 2011
Water Quality Site W8 - NE Edney Creek Tributary

Sample Point	* Note - these results are for data from 1995 to 2011				
Date	Sample (n)	Count >MDL	Min	Max	Mean
Molybdenum (Mo)-Dissolved (mg/L)	285	285	0.00008	0.0273	0.004076004
Nickel (Ni)-Dissolved (mg/L)	256	131	0.0002	0.002	0.000951832
Potassium (K)-Dissolved (mg/L)	256	255	0.27	3.46	1.164635294
Selenium (Se)-Dissolved (mg/L)	256	51	0.0004	0.0014	0.000698627
Silicon (Si)-Dissolved (mg/L)	255	255	2.8	9.56	5.635333333
Silver (Ag)-Dissolved (mg/L)	256	35	0.00001	0.0001	2.18286E-05
Sodium (Na)-Dissolved (mg/L)	255	255	1.58	29.1	8.52372549
Strontium (Sr)-Dissolved (mg/L)	256	256	0.0654	0.43	0.239895703
Tin (Sn)-Dissolved (mg/L)	241	67	0.00005	0.00075	0.000152388
Zinc (Zn)-Dissolved (mg/L)	256	137	0.0005	0.0683	0.00259854
Total Metals					
Aluminum (Al)-Total (mg/L)	291	291	0.0081	2.02	0.167680756
Antimony (Sb)-Total (mg/L)	273	85	0.00005	0.00259	0.000113529
Arsenic (As)-Total (mg/L)	291	289	0.0001	0.089	0.001205813
Barium (Ba)-Total (mg/L)	273	271	0.00423	0.03	0.01149214
Cadmium (Cd)-Total (mg/L) (mg/L)	273	117	0.00001	0.00011	3.20513E-05
Calcium (Ca)-Total (mg/L)	291	291	5.29	49.4	29.66766323
Chromium (Cr)-Total (mg/L)	273	234	0.0002	0.01	0.001153632
Copper (Cu)-Total (mg/L)	290	290	0.0001	0.0824	0.003039448
Iron (Fe)-Total (mg/L) (mg/L)	291	291	0.019	2.73	0.270635739
Lead (Pb)-Total (mg/L)	289	179	0.00002	0.00136	0.000168788
Lithium (Li)-Total (mg/L)	234	127	0.0002	0.0022	0.000938819
Magnesium (Mg)-Total (mg/L)	291	291	1.54	23.5	12.08597938
Manganese (Mn)-Total (mg/L)	291	291	0.00227	0.236	0.021286632
Molybdenum (Mo)-Total (mg/L)	290	290	0.000025	0.198	0.004706152
Nickel (Ni)-Total (mg/L)	291	181	0.0001	0.005	0.001137072
Potassium (K)-Total (mg/L)	279	274	0.39	4.59	1.147492701
Selenium (Se)-Total (mg/L)	288	80	0.0001	0.003	0.000600375
Silicon (Si)-Total (mg/L)	291	291	1.01	10.2	5.647292096
Silver (Ag)-Total (mg/L)	273	83	0.00001	0.00017	2.19518E-05
Sodium (Na)-Total (mg/L)	279	279	0.0009	28.8	8.148497849
Strontium (Sr)-Total (mg/L)	289	289	0.0184	0.448	0.23747128
Tin (Sn)-Total (mg/L)	240	58	0.00005	0.00379	0.000271897
Zinc (Zn)-Total (mg/L)	291	180	0.0005	0.0439	0.003191667
Dissolved Organic Carbon (mg/L)	226	226	3.4	35.6	12.90088496

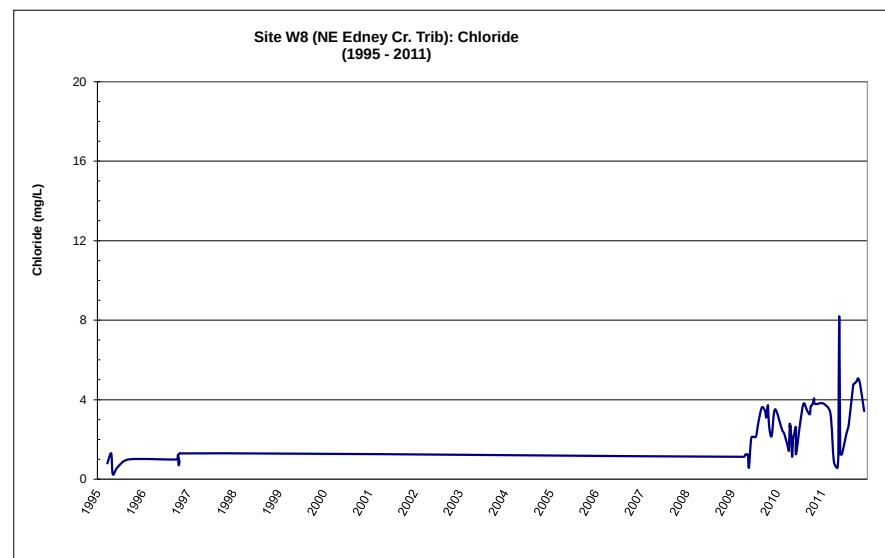
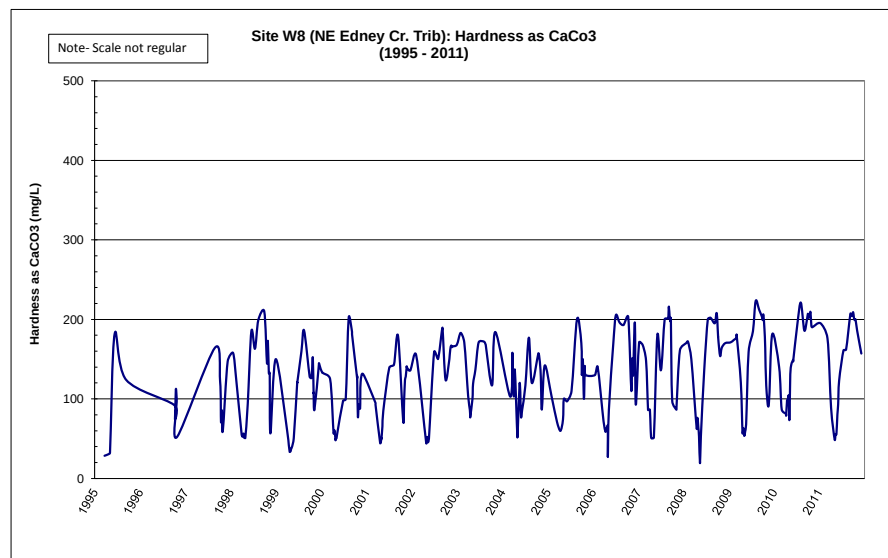
Annual Report 2011 **Water Quality at Site W8 (Northeast Edney Creek Tributary)**



Annual Report 2010
Figure:B.9-2
Water Quality at Site W8 (Northeast Edney Creek Tributary)



Annual Report 2011
Water Quality at Site W8 (Northeast Edney Creek Tributary)



Annual Report 2011

Water Quality Site W8z - SW Edney Creek Tributary

Sample Point	W8z	W8z	W8z	W8z	W8z	W8z	W8z	W8z	W8z	W8z
Date	10-Jan-11	2-Feb-11	4-May-11	11-May-11	18-May-11	26-May-11	1-Jun-11	9-Jun-11	14-Jul-11	4-Aug-11
Conductivity (in situ) (µs/cm)	122	24	39	37	35	49	54	61	74	77
pH (in situ) (pH)	7.59	7.47	6.24	6.78	6.51	7.38	6.52	6.82	7.51	7.17
Temperature (in situ) (Degrees Celcius)	0.1	0.1	0.1	3	2.6	2	8.8	10.7	11	11.2
Alkalinity (CaCO3) (mg/L)	58.9	30.3	20.4	14.2	20.3	23.5	26.6	29.7	37.7	38.3
Conductivity (µs/cm)	121	75.8		34.8				56.2	72.2	73.7
Hardness (as CaCO3) (mg/L)	58.4	37.3	20.6	18.8	18.8	25.7	29	32.2	40.3	41.7
pH (pH)	7.48	7.33		7.2				7.18	7.5	7.67
Total Dissolved Solids (mg/L)	112	105	73	72	69	82	82	89	103	110
Total Suspended Solids (mg/L)	3.5	1.5	4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Turbidity (ntu)	3.06	4.33	1.61	1	2.32	0.59	0.8	0.99	0.92	1.01
Chloride (Cl) (mg/L)	1.17	1.25	0.25	1.25	2.5	1.25	2.5	1.25	0.25	0.25
Fluoride (F) (mg/L)								<0.10		
Sulfate (SO4) (mg/L)	2.52	4	0.25	1.25	2.5	1.25	2.5	1.25	0.25	0.25
Ammonia (as N) (mg/L)	<0.005	<0.005	0.0052	<0.005	<0.005	0.0058	0.0059	0.016	0.015	0.0126
Nitrate (as N) (mg/L)	0.0117	0.15	0.0172	<0.025	<0.05	<0.025	<0.05	<0.025	<0.005	<0.005
Nitrate and Nitrite (as N) (mg/L)	0.0117	0.15	0.0172	0.0125	0.0255	0.0125	0.0255	0.0125	0.00255	0.00255
Nitrite (as N) (mg/L)	<0.001	<0.005	<0.001	<0.005	<0.01	<0.005	<0.01	<0.005	<0.001	<0.001
Nitrogen N-WDGWA (mg/L)										
Total Nitrogen (mg/L)	0.614	0.88	0.52	0.67	0.4	0.39	0.69	0.79	0.87	0.98
Orthophosphate-Dissolved (as P) (mg/L)	0.0024	<0.001	0.0012	0.0011	<0.001	<0.001	<0.001	0.0012	<0.001	0.0017
Phosphorus (P) Total Dissolved (mg/L)	0.0151	0.0223	0.0112	0.0104	0.0122	0.0123	0.0117	0.0139	0.0149	0.0151
Phosphorus (P) Total (mg/L)	0.0333	0.0361	0.0174	0.0157	0.0163	0.0142	0.014	0.0158	0.0174	0.0176
Aluminum (Al)-Dissolved (mg/L)	0.173	0.282	0.214	0.197	0.208	0.205	0.201	0.221	0.211	0.193
Antimony (Sb)-Dissolved (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Arsenic (As)-Dissolved (mg/L)	0.00036	0.00043	0.00026	0.00024	0.00028	0.00034	0.00033	0.00042	0.00047	0.0005
Barium (Ba)-Dissolved (mg/L)	0.0115	0.00753	0.00495	0.00423	0.00432	0.00515	0.0058	0.00646	0.00749	0.00739
Cadmium (Cd)-Dissolved (mg/L)	0.000026	0.000016	0.000011	0.000014	0.00002	0.000015	0.000016	0.00003	0.000016	0.000017
Calcium (Ca)-Dissolved (mg/L)	14.8	9.87	5.44	5.03	5.09	6.95	7.88	8.67	10.8	11.2
Chromium (Cr)-Dissolved (mg/L)	0.00101	0.00182	0.00106	0.00091	0.00093	0.00116	0.00122	0.00142	0.00149	0.00133
Copper (Cu)-Dissolved (mg/L)	0.00344	0.00539	0.00323	0.00308	0.00317	0.00382	0.0044	0.00454	0.00394	0.00354
Iron (Fe)-Dissolved (mg/L)	0.175	0.379	0.184	0.154	0.167	0.213	0.202	0.229	0.285	0.327
Lead (Pb)-Dissolved (mg/L)	<0.00005	0.000102	<0.00005	<0.00005	<0.00005	<0.00005	0.000056	<0.00005	<0.00005	<0.00005
Lithium (Li)-Dissolved (mg/L)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0005	<0.0005	<0.0005
Magnesium (Mg)-Dissolved (mg/L)	5.19	3.08	1.71	1.51	1.49	2.02	2.27	2.55	3.22	3.31
Manganese (Mn)-Dissolved (mg/L)	0.0141	0.00549	0.00199	0.000789	0.000748	0.00157	0.0018	0.00294	0.00377	0.00413
Molybdenum (Mo)-Dissolved (mg/L)	0.000077	0.000112	0.000079	0.000095	0.000093	0.000099	0.000091	0.000106	0.000104	0.000088
Nickel (Ni)-Dissolved (mg/L)	0.00135	0.00182	0.00125	0.00116	0.00123	0.00164	0.00189	0.00216	0.00232	0.00227
Potassium (K)-Dissolved (mg/L)	1.31	0.517	0.603	0.517	0.484	0.524	0.554	0.571	0.403	0.346
Selenium (Se)-Dissolved (mg/L)	<0.0005	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Silicon (Si)-Dissolved (mg/L)	5.87	6	3.85	3.83	3.46	3.6	3.8	3.73	4.26	4.72
Silver (Ag)-Dissolved (mg/L)	<0.00001	0.000015	<0.00001	<0.00001	<0.00001	0.000012	0.000014	0.000012	0.000012	<0.00001
Sodium (Na)-Dissolved (mg/L)	4.98	3.74	2.08	1.89	1.86	2.28	2.53	2.92	3.35	3.05
Strontium (Sr)-Dissolved (mg/L)	0.192	0.123	0.0639	0.0586	0.06	0.0824	0.094	0.106	0.14	0.144
Tin (Sn)-Dissolved (mg/L)	<0.0001	0.00023	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Zinc (Zn)-Dissolved (mg/L)	<0.003	<0.003	<0.003	<0.003	<0.003	0.0032	<0.003	0.0064	0.0037	<0.003
Aluminum (Al)-Total (mg/L)	0.294	0.374	0.244	0.228	0.261	0.23	0.23	0.245	0.238	0.241
Antimony (Sb)-Total (mg/L)	<0.0001	0.00012	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Arsenic (As)-Total (mg/L)	0.00044	0.00049	0.00028	0.00025	0.0004	0.00034	0.00035	0.00041	0.00048	0.00047
Barium (Ba)-Total (mg/L)	0.0128	0.009	0.00534	0.00457	0.00479	0.00539	0.00628	0.00698	0.00774	0.00774
Cadmium (Cd)-Total (mg/L) (mg/L)	0.00003	0.00002	0.000015	0.000012	0.000015	0.000014	0.000016	0.000017	0.000018	0.000017
Calcium (Ca)-Total (mg/L)	15.2	10.2	5.52	5.12	5.25	7.13	7.91	9	11	11.2
Chromium (Cr)-Total (mg/L)	0.00149	0.00206	0.00122	0.00118	0.00124	0.00129	0.00134	0.0017	0.00174	0.00168
Copper (Cu)-Total (mg/L)	0.0045	0.0079	0.00335	0.0033	0.00339	0.00395	0.00419	0.00473	0.00395	0.00361
Iron (Fe)-Total (mg/L) (mg/L)	0.296	0.478	0.218	0.199	0.245	0.237	0.218	0.247	0.336	0.38
Lead (Pb)-Total (mg/L)	0.000087	0.000154	<0.00005	<0.00005	0.000068	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Lithium (Li)-Total (mg/L)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.00054	<0.0005	<0.0005
Magnesium (Mg)-Total (mg/L)	5.29	3.22	1.76	1.51	1.55	2.06	2.25	2.64	3.23	3.33
Manganese (Mn)-Total (mg/L)	0.0201	0.0127	0.00272	0.00205	0.00246	0.00194	0.00221	0.00309	0.00499	0.00686
Molybdenum (Mo)-Total (mg/L)	0.000092	0.000182	0.000087	0.000131	0.000117	0.000113	0.000116	0.000144	0.000115	0.00012
Nickel (Ni)-Total (mg/L)	0.00162	0.00199	0.0013	0.00123	0.00137	0.00165	0.00188	0.00225	0.00229	0.00226

* Note - these results are for data from 1995 to 2011

Sample (n)	Count >MDL	Min	Max	Mean
89	89	18	924	83.0854
91	91	6.05	8.62	7.1810
93	93	-0.2	15.7	3.8828
97	97	8.6	134	30.7649
10	10	34.8	121	74.98
97	97	17.8	58.4	32.2320
10	10	7.18	7.67	7.389
95	90	7.3	140	87.1922
97	97	0.5	97	7.5299
97	97	0.51	10.7	2.0682
35	35	0.25	2.5	0.8769
1	0			
97	97	0.25	17.9	1.6778
97	30	0.0052	0.029	0.0116
84	55	0.0052	1.2	0.1808
97	97	0.0025	1.2	0.1150
90	23	0.001	0.039	0.0124
90	90	0.25	2.14	0.7694
97	78	0.0011	0.034	0.0035
95	90	0.0022	0.043	0.0178
94	94	0.0025	0.1	0.0250
96	96	0.113	0.323	0.2066
96	18	0.00005	0.00015	0.0001
96	96	0.00019	0.0005	0.0003
96	96	0.0041	0.0136	0.0066
96	40	0.00001	0.00011	0.0000
96	96	4.76	14.8	8.5330
96	94	0.0004	0.00182	0.0011
97	97	0.00221	0.0126	0.0039
96	96	0.102	0.55	0.2558
96	53	0.00003	0.00063	0.0001
96	2	0.0002	0.0003	0.0003
96	96	1.44	5.19	2.6090
96	96	0.000748	0.141	0.0060
97	97	0.000055	0.00123	0.0001
96	96	0.00082	0.00232	0.0015
96	95	0.346	3.15	0.6096
96	0			
96	96	3.11	6	4.5229
96	45	0.00001	0.000664	0.0000
96	96	1.64	4.98	3.1123
96	96	0.0474	0.192	0.0998
96	5	0.00005	0.00023	0.0001
96	75	0.0009	0.0232	0.0024
97	97	0.136	0.667	0.2746
96	30	0.00006	0.0002	0.0001
97	97	0.00021	0.0007	0.0004
96	96	0.00437	0.0152	0.0073
96	51	0.00001	0.00011	0.0000
97	97	4.66	15.2	8.5530
96	94	0.0003	0.00233	0.0013
97	97	0.00262	0.0154	0.0044
97	97	0.123	1.16	0.3445
97	68	0.00005	0.00686	0.0002
95	7	0.0002	0.00054	0.0003
97	97	1.43	5.29	2.6270
97	97	0.00125	0.196	0.0137
97	95	0.00062	0.00111	0.00012
97	95	0.0011	0.0048	0.0017

Annual Report 2011
Water Quality Site W8z - SW Edney Creek Tributary

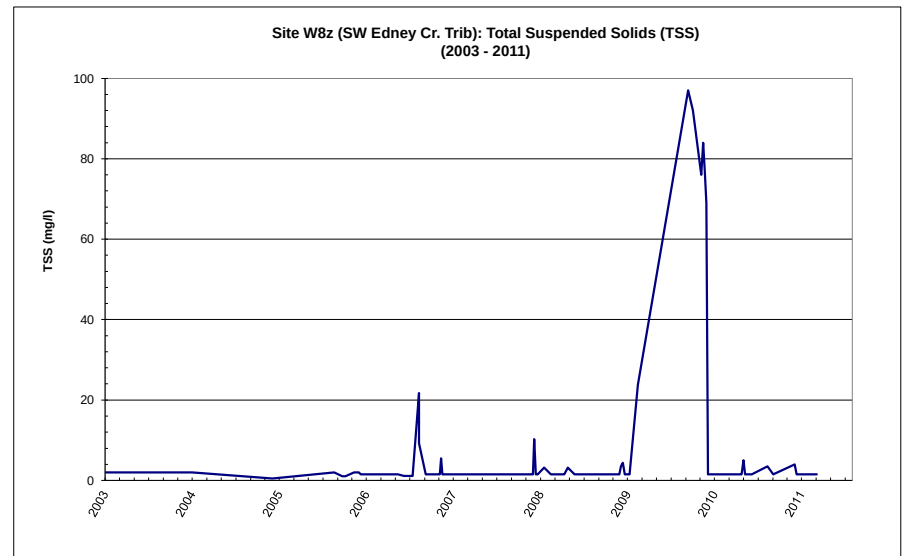
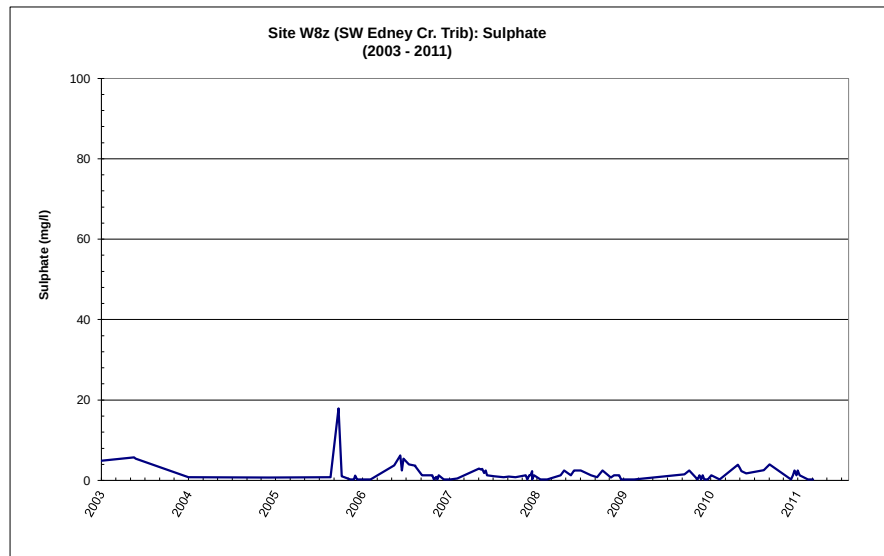
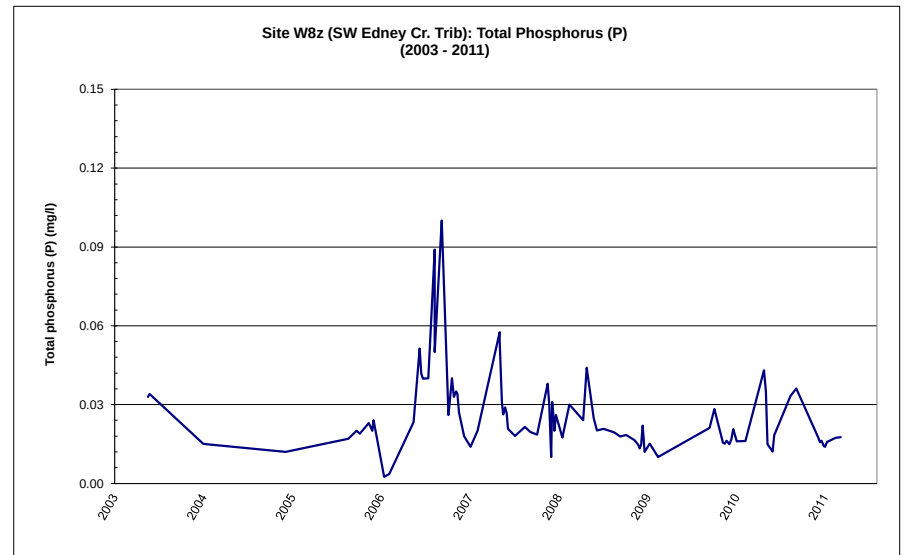
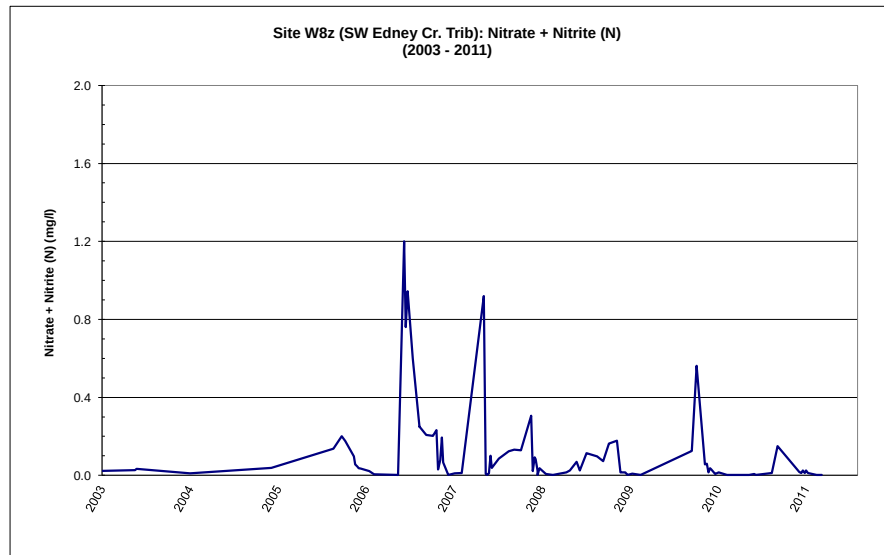
Sample Point	W8z	W8z	W8z	W8z	W8z	W8z	W8z	W8z	W8z	W8z
Date	10-Jan-11	2-Feb-11	4-May-11	11-May-11	18-May-11	26-May-11	1-Jun-11	9-Jun-11	14-Jul-11	4-Aug-11
Potassium (K)-Total (mg/L)	1.38	0.533	0.614	0.531	0.496	0.52	0.578	0.592	0.404	0.353
Selenium (Se)-Total (mg/L)	<0.0005	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Silicon (Si)-Total (mg/L)	6.28	6.35	4.01	3.93	3.64	3.69	3.82	3.9	4.37	4.73
Silver (Ag)-Total (mg/L)	<0.00001	0.000018	0.000015	0.000011	<0.00001	0.000011	0.000015	0.000012	0.000014	0.000012
Sodium (Na)-Total (mg/L)	5.25	3.79	2.14	1.97	1.9	2.32	2.57	3.09	3.31	3.07
Strontium (Sr)-Total (mg/L)	0.2	0.132	0.0657	0.0611	0.0573	0.0749	0.094	0.113	0.139	0.144
Tin (Sn)-Total (mg/L)	<0.0001	0.00029	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Zinc (Zn)-Total (mg/L)	0.0036	0.0035	<0.003	<0.003	0.0054	<0.003	0.0031	0.0035	<0.003	<0.003
Dissolved Organic Carbon (mg/L)	19.9	29.7	21.4	15.6	18.2	25.1	25.2	22.7	22.5	29.1

* Note - these results are for data from 1995 to 2011

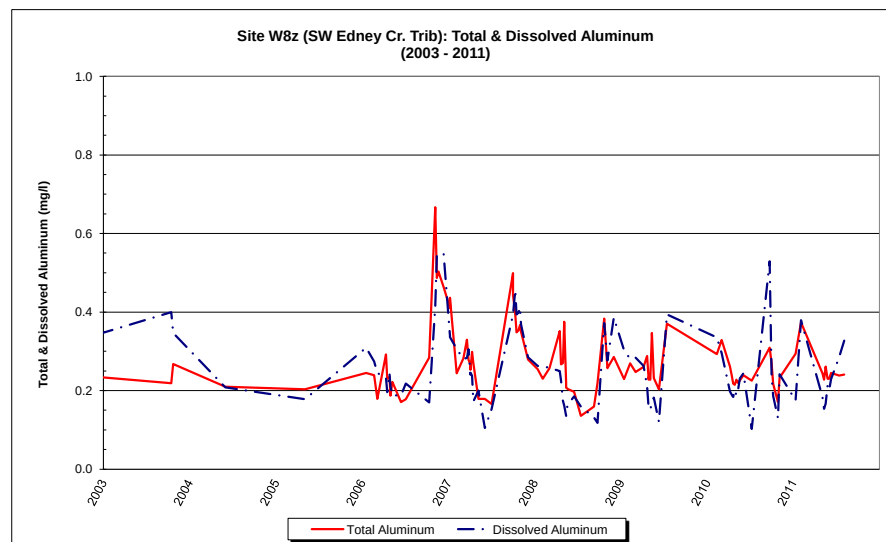
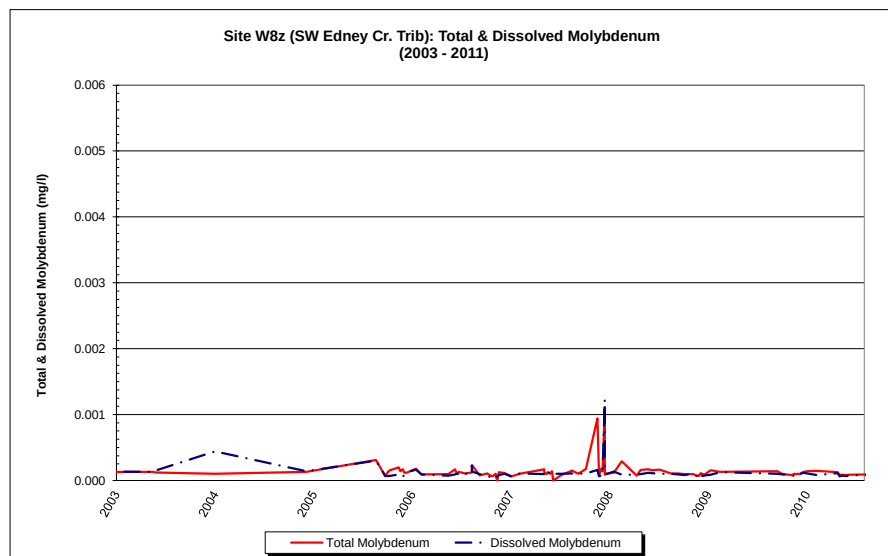
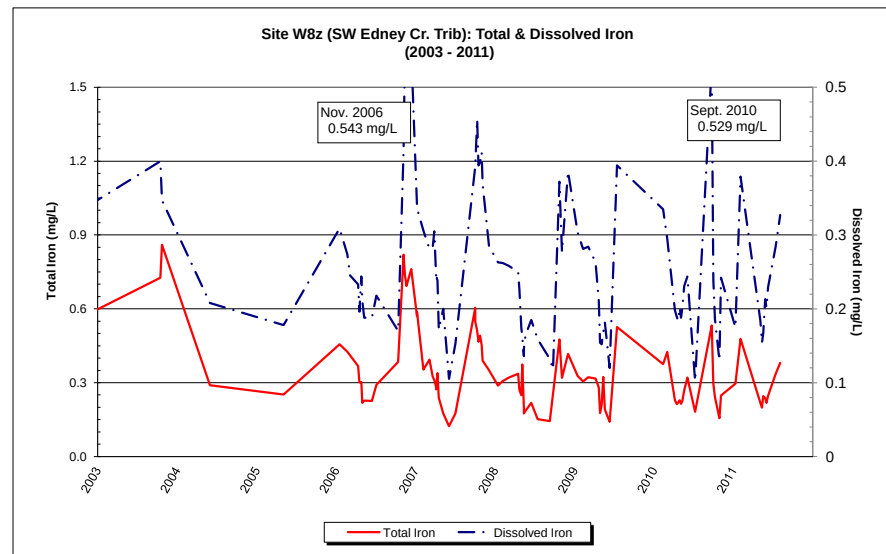
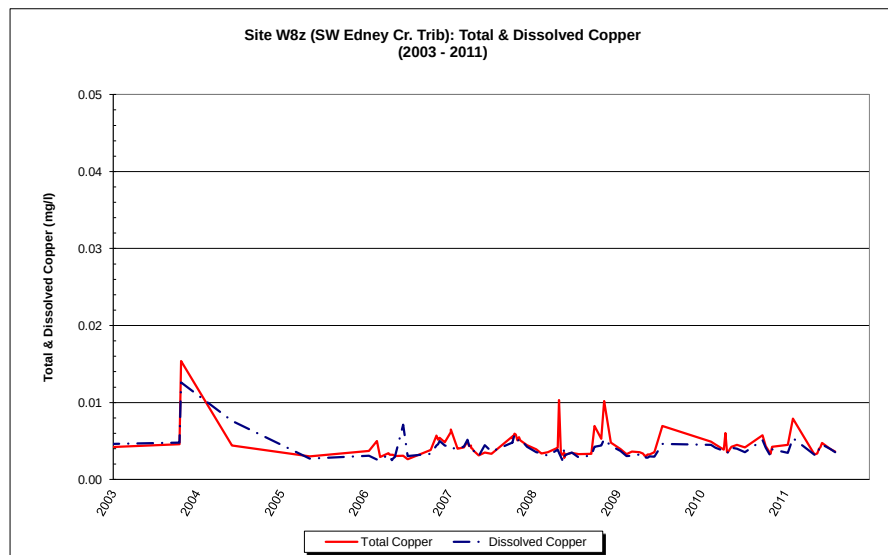
Sample (n)	Count >MDL	Min	Max	Mean
97	94	0.353	3.25	0.6375
96	0			
97	97	2.489	6.35	4.5448
96	68	0.00001	0.000897	0.0000
97	97	1.71	5.25	3.1934
97	97	0.0466	0.2	0.1043
96	5	0.00013	0.00044	0.0003
97	69	0.001	0.0409	0.0031
96	96	4.35	33.5	21.5547

Annual Report 2011

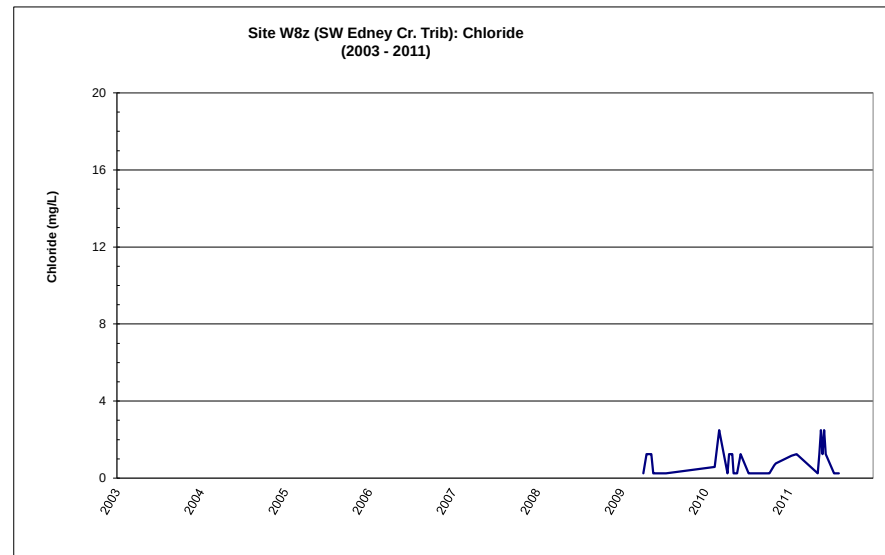
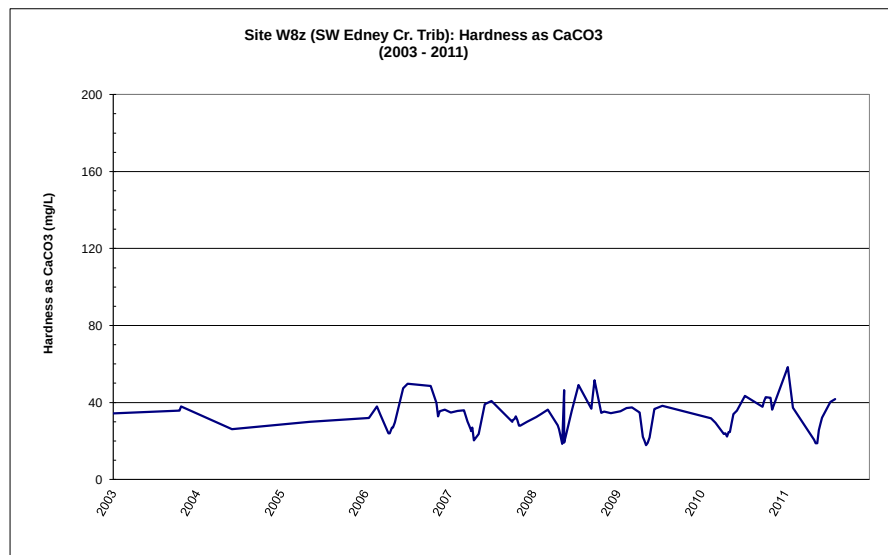
Water Quality at Site W8z (Southwest Edney Creek Tributary -- Control)



Annual Report 2011 **Water Quality at Site W8z (Southwest Edney Creek Tributary -- Control)**



Annual Report 2011
Water Quality at Site W8z (Southwest Edney Creek Tributary -- Control)



Annual Report 2011 **Water Quality Site W11 - Lower Edney Creek**

Sample Point	W11	W11	W11	W11
Date	15-Jun-11	4-Aug-11	25-Aug-11	3-Nov-11
Conductivity (in situ) (µs/cm)	174	172	234	292
pH (in situ) (pH)	7.84	7.93	8.01	8
Temperature (in situ) (Degrees Celcius)	11.9	14.2	11.7	2.5
Alkalinity (CaCO3) (mg/L)	71.9	78.3	105	142
Conductivity (µs/cm)	167	167	232	281
Hardness (as CaCO3) (mg/L)	83	88.1	121	146
pH (pH)	7.9	8.12	7.94	8.23
Total Dissolved Solids (mg/L)	130	129	154	166
Total Suspended Solids (mg/L)	4.3	1.5	3.3	1.5
Turbidity (ntu)	1.36	1.24	0.45	0.57
Chloride (Cl) (mg/L)	<2.5	<0.5	<0.50	0.8
Fluoride (F) (mg/L)				
Sulfate (SO4) (mg/L)	14.7	9.7	19.7	13.9
Ammonia (as N) (mg/L)	0.0096	0.0104	0.0068	<0.0050
Nitrate (as N) (mg/L)	<0.025	0.0341	0.0469	0.0226
Nitrate and Nitrite (as N) (mg/L)	0.015	0.0341	0.0469	0.0226
Nitrite (as N) (mg/L)	<0.005	<0.001	<0.0010	<0.0010
Total Nitrogen (mg/L)	0.41	0.56	0.28	0.16
Orthophosphate-Dissolved (as P) (mg/L)	0.0045	0.0035	0.0064	0.0023
Phosphorus (P) Total Dissolved (mg/L)	0.0099	0.0092		0.0047
Phosphorus (P) Total (mg/L)	0.0167	0.0151	0.0129	0.0051
Dissolved Metals				
Aluminum (Al)-Dissolved (mg/L)	0.029	0.0305	0.0074	0.0041
Antimony (Sb)-Dissolved (mg/L)	<0.0001	<0.0001	<0.00010	<0.00010
Arsenic (As)-Dissolved (mg/L)	0.00054	0.00069	0.0007	0.00089
Barium (Ba)-Dissolved (mg/L)	0.0106	0.0126	0.016	0.019
Cadmium (Cd)-Dissolved (mg/L)	<0.00001	<0.00001	<0.000010	<0.000010
Calcium (Ca)-Dissolved (mg/L)	25	25.4	36.2	40.2
Chromium (Cr)-Dissolved (mg/L)	<0.0005	<0.0005	<0.00050	<0.00050
Copper (Cu)-Dissolved (mg/L)	0.00254	0.00246	0.00139	0.00099
Iron (Fe)-Dissolved (mg/L)	0.064	0.122	0.015	0.015
Lead (Pb)-Dissolved (mg/L)	<0.00005	<0.00005	<0.000050	<0.000050
Lithium (Li)-Dissolved (mg/L)	<0.0005	0.00053	0.00066	0.00098
Magnesium (Mg)-Dissolved (mg/L)	5.01	5.97	7.35	11
Manganese (Mn)-Dissolved (mg/L)	0.00534	0.00877	0.0163	0.0205

* Note - these results are for data from 1995 to 2011

Sample (n)	Count >MDL	Min	Max	Mean
58	58	41	318	173.268966
57	57	6.69	8.47	7.794772
44	44	-0.2	22.1	8.502273
66	65	38.3	160	84.009231
5	5	167	309	231.200000
65	65	44.5	160	88.009231
5	5	7.9	8.23	8.074000
52	48	3	194	116.895833
60	60	0.5	38	4.260000
65	65	0.28	7.25	1.819692
24	17	0.5	1.1	0.812353
14	14	0.03	0.09	0.047857
65	65	0.5	21.8	7.388615
65	23	0.0007	0.125	0.023296
41	38	0.005	0.583	0.071113
65	65	0.0025	0.585	0.054815
56	31	0.001	0.0831	0.005477
26	26	0.16	0.86	0.403846
64	58	0.0017	0.035	0.005860
21	21	0.002	0.017	0.008862
55	55	0.0007	0.064	0.016238
58	58	0.0023	0.412	0.034762
58	9	0.00005	0.0002	0.000090
58	57	0.0001	0.0011	0.000573
58	50	0.00728	0.0235	0.013037
58	8	0.00001	0.0001	0.000043
58	58	12.1	44.3	25.467241
58	11	0.0003	0.0031	0.000949
63	63	0.0005	0.005	0.002248
58	58	0.015	0.272	0.099862
58	23	0.00002	0.00032	0.000087
40	17	0.0003	0.00098	0.000534
58	58	2.86	12.2	6.066724
58	55	0.0016	0.0811	0.015111

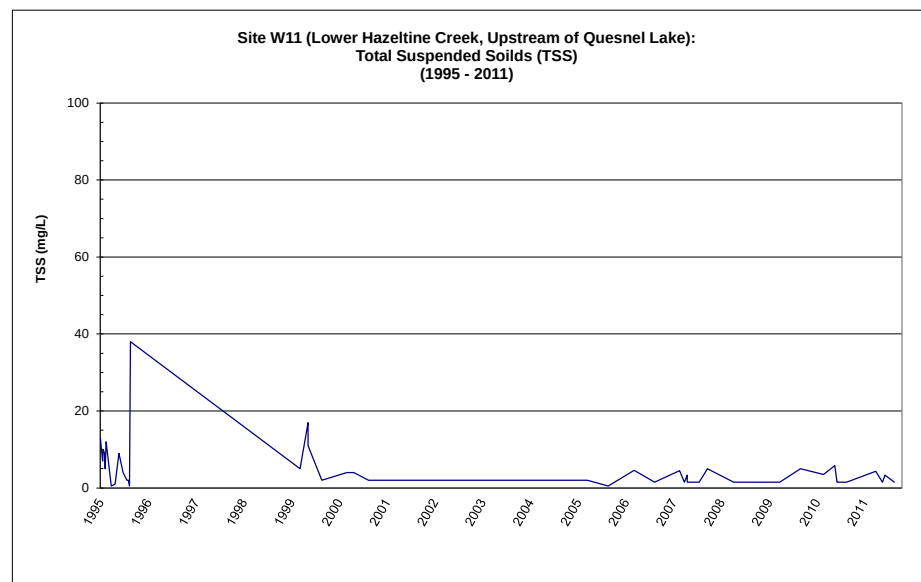
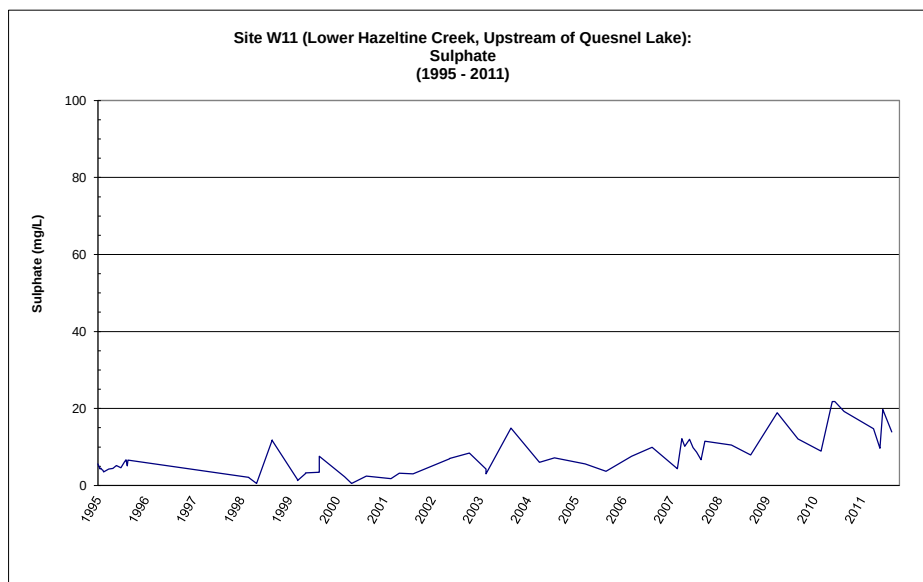
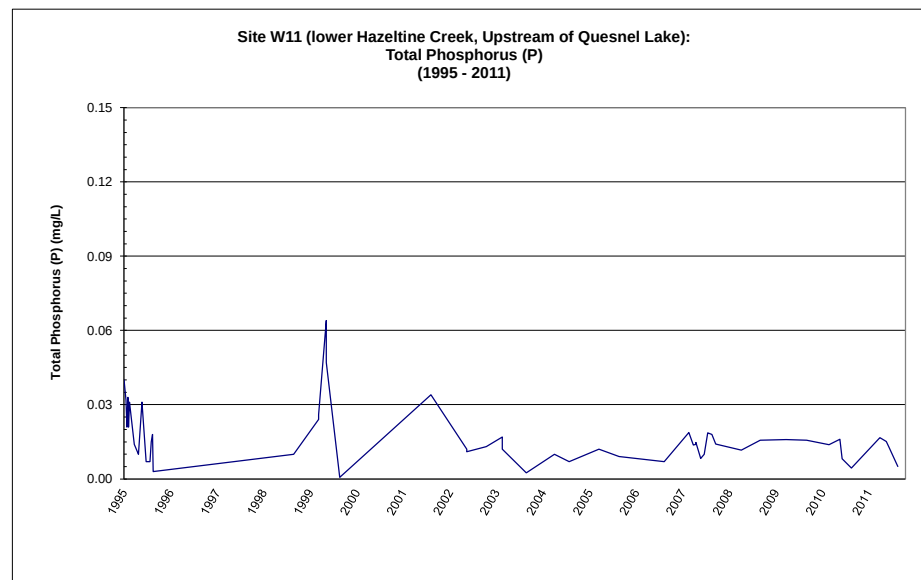
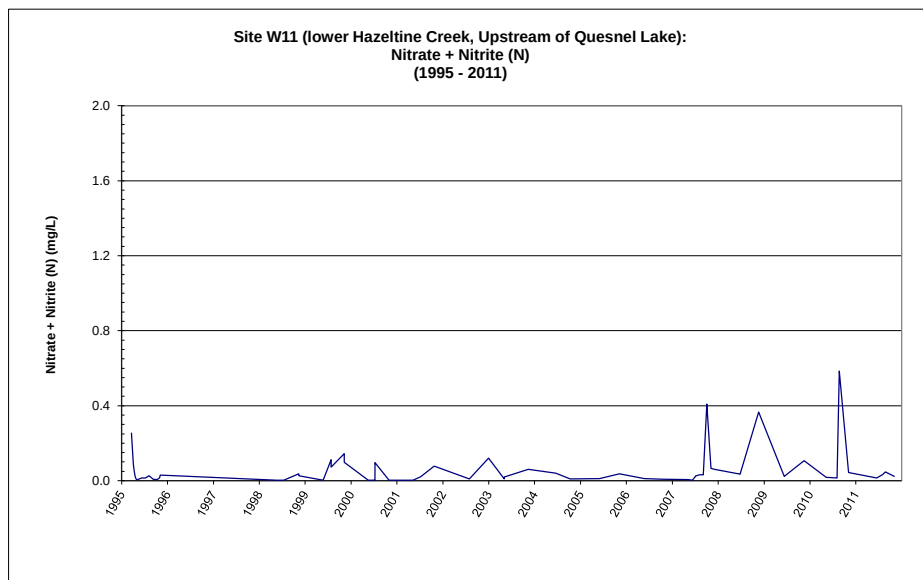
Annual Report 2011 **Water Quality Site W11 - Lower Edney Creek**

Sample Point	W11	W11	W11	W11
Date	15-Jun-11	4-Aug-11	25-Aug-11	3-Nov-11
Molybdenum (Mo)-Dissolved (mg/L)	0.00132	0.001	0.0017	0.00132
Nickel (Ni)-Dissolved (mg/L)	0.00074	0.00106	<0.00050	0.00053
Potassium (K)-Dissolved (mg/L)	0.526	0.506	0.628	0.81
Selenium (Se)-Dissolved (mg/L)	0.00051	<0.0005	<0.00050	<0.00050
Silicon (Si)-Dissolved (mg/L)	3.78	4.18	4.1	4.65
Silver (Ag)-Dissolved (mg/L)	<0.00001	<0.00001	<0.000010	<0.000010
Sodium (Na)-Dissolved (mg/L)	3.58	3.37	5.81	7.44
Strontium (Sr)-Dissolved (mg/L)	0.166	0.165	0.254	0.257
Tin (Sn)-Dissolved (mg/L)	<0.0001	<0.0001	<0.00010	<0.00010
Zinc (Zn)-Dissolved (mg/L)	<0.003	<0.003	<0.0030	<0.0030
Total Metals				
Aluminum (Al)-Total (mg/L)	0.0924	0.0762	0.0224	0.008
Antimony (Sb)-Total (mg/L)	<0.0001	<0.0001	<0.00010	<0.00010
Arsenic (As)-Total (mg/L)	0.00053	0.00067	0.00073	0.00088
Barium (Ba)-Total (mg/L)	0.0115	0.0132	0.0166	0.0192
Cadmium (Cd)-Total (mg/L) (mg/L)	<0.00001	<0.00001	<0.000010	<0.000010
Calcium (Ca)-Total (mg/L)	25.5	25.4	37	39.7
Chromium (Cr)-Total (mg/L)	0.00059	0.00064	<0.00050	<0.00050
Copper (Cu)-Total (mg/L)	0.00296	0.00267	0.00165	0.00111
Iron (Fe)-Total (mg/L) (mg/L)	0.145	0.2	0.056	0.032
Lead (Pb)-Total (mg/L)	<0.00005	<0.00005	<0.000050	<0.000050
Lithium (Li)-Total (mg/L)	0.00052	0.00054	0.00074	0.001
Magnesium (Mg)-Total (mg/L)	5.14	6.02	7.68	11
Manganese (Mn)-Total (mg/L)	0.015	0.0177	0.0265	0.0265
Molybdenum (Mo)-Total (mg/L)	0.00139	0.00109	0.00177	0.00138
Nickel (Ni)-Total (mg/L)	0.00076	0.00105	0.00051	<0.00050
Potassium (K)-Total (mg/L)	0.544	0.505	0.665	0.81
Selenium (Se)-Total (mg/L)	<0.0005	<0.0005	<0.00050	<0.00050
Silicon (Si)-Total (mg/L)	3.98	4.3	4.29	4.65
Silver (Ag)-Total (mg/L)	<0.00001	<0.00001	<0.000010	<0.000010
Sodium (Na)-Total (mg/L)	3.62	3.32	6.11	7.61
Strontium (Sr)-Total (mg/L)	0.174	0.168	0.268	0.266
Tin (Sn)-Total (mg/L)	<0.0001	<0.0001	<0.00010	<0.00010
Zinc (Zn)-Total (mg/L)	<0.003	0.0039	<0.0030	<0.0030
Dissolved Organic Carbon (mg/L)	12.7	16.5	6.43	5.59

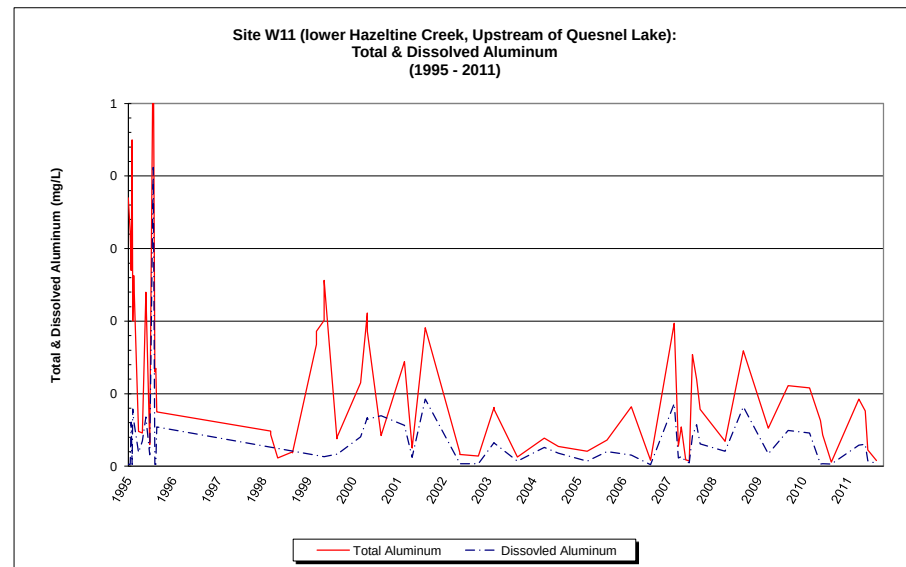
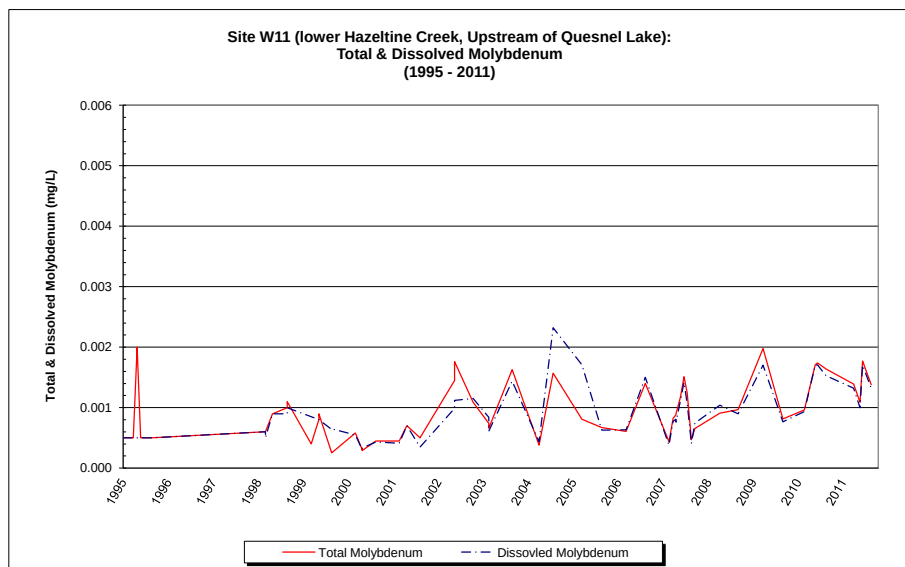
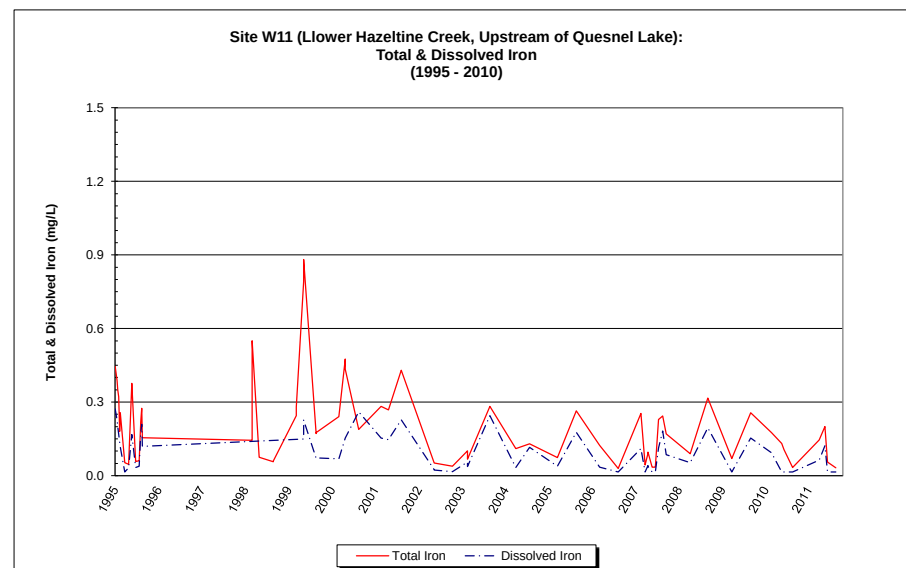
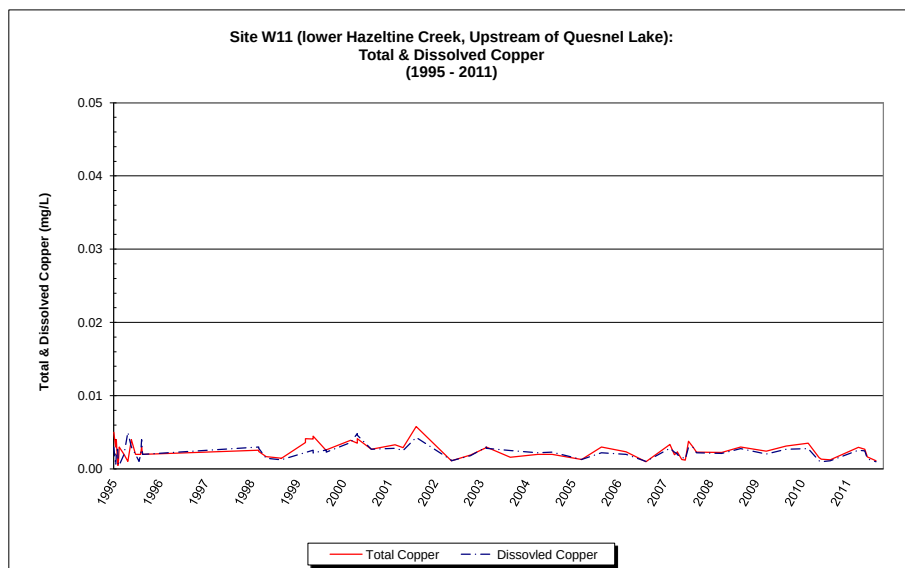
* Note - these results are for data from 1995 to 2011

Sample (n)	Count >MDL	Min	Max	Mean
63	63	0.00031	0.00232	0.000847
58	30	0.0005	0.0011	0.000789
58	58	0.47	1.05	0.677690
58	3	0.0005	0.001	0.000670
58	58	2.18	5.13	3.8428
58	3	0.00002	0.00011	0.000050
58	58	1.81	9.72	4.4355
58	58	0.075	0.294	0.1488
42	13	0.00006	0.00038	0.0001
58	21	0.0006	0.005	0.0017
66	66	0.0059	0.611	0.1099
63	13	0.00005	0.00024	0.000078
66	65	0.0001	0.0017	0.000616
63	57	0.00746	0.025	0.0137
63	9	0.00001	0.00005	0.000028
66	66	12.8	44.6	25.2015
63	25	0.00006	0.004	0.000958
66	66	0.0005	0.0058	0.002511
66	66	0.03	0.881	0.205273
66	29	0.00003	0.0004	0.000134
41	20	0.0003	0.0011	0.000560
66	66	3.06	21.3	6.2555
66	66	0.00502	0.167	0.027861
66	66	0.0002505	0.002	0.000856
66	47	0.0004	0.002	0.000914
52	51	0.495	1.06	0.662725
66	3	0.0006	0.0012	0.000833
66	66	1.5	6.4	3.9397
63	8	0.00001	0.0001	0.000024
52	52	0.0007	9.49	4.4539
66	66	0.075	0.309	0.150032
43	11	0.0001	0.00076	0.000281
66	31	0.0005	0.0936	0.006442
39	39	3.61	22.1	10.541026

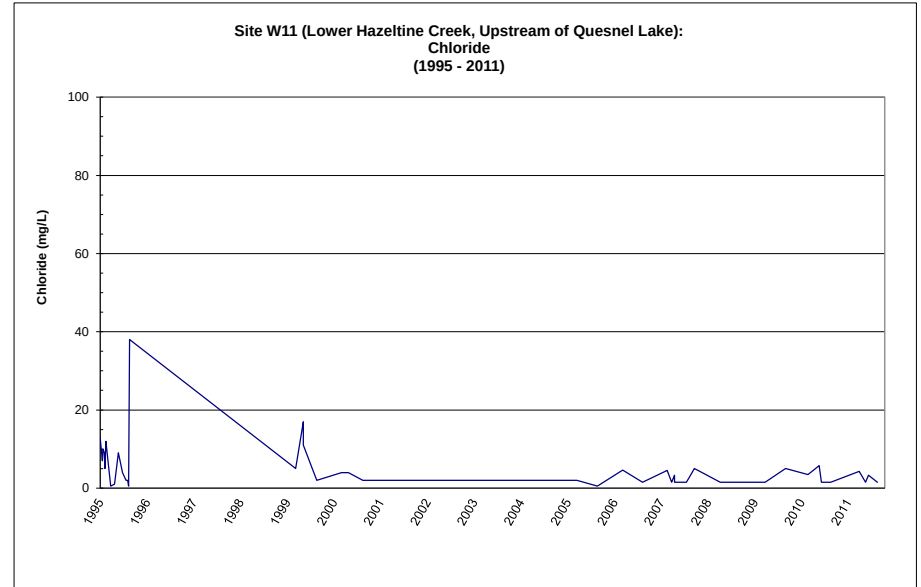
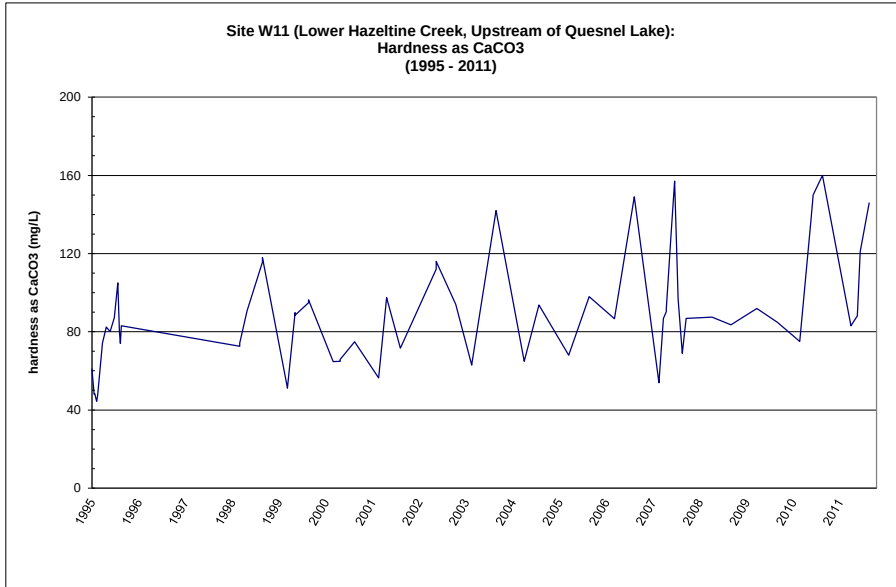
Annual Report 2011
Water Quality at Site W11 (lower Hazeltime Creek Upstream of Quesnel Lake)



Annual Report 2011 **Water Quality at Site W11 (lower Hazeltine Creek Upstream of Quesnel Lake)**



Annual Report 2011
Water Quality at Site W11 (lower Hazeltine Creek Upstream of Quesnel Lake)



Annual Report 2011
Water Quality Site W12 - 6K Creek at Road

Sample Point	W12	W12	W12	W12
Date	1-Feb-11	12-May-11	4-Aug-11	1-Nov-11
Conductivity (in situ) (µs/cm)	197	97	193	224
pH (in situ) (pH)	7.25	6.91	7.6	7.91
Temperature (in situ) (Degrees Celcius)	0.1	2.3	13.2	1.4
Alkalinity (CaCO3) (mg/L)	81.4	32.7	79.1	101
Conductivity (µs/cm)	190	91.6	187	211
Hardness (as CaCO3) (mg/L)	97.2	44.6	100	110
pH (pH)	7.63	7.53	8	8.06
Total Dissolved Solids (mg/L)	139	92	149	148
Total Suspended Solids (mg/L)	1.5	1.5	4.7	1.5.0
Turbidity (ntu)	1.37	1.6	2.53	1.16
Chloride (Cl) (mg/L)	2.65	1.25	4.95	3.03
Fluoride (F) (mg/L)				
Sulfate (SO4) (mg/L)	15.4	10.9	11.1	8.19
Ammonia (as N) (mg/L)	0.0059	<0.005	0.0073	0.005
Nitrate (as N) (mg/L)	0.0145	0.05	0.0078	<0.0050
Nitrate and Nitrite (as N) (mg/L)	0.0145	0.05	0.0471	0.00251
Nitrite (as N) (mg/L)	<0.001	<0.005	0.0393	<0.0010
Total Nitrogen (mg/L)	0.25	0.34	0.49	0.37
Orthophosphate-Dissolved (as P) (mg/L)	0.0017	<0.001	0.002	<0.0010
Phosphorus (P) Total Dissolved (mg/L)	0.0075	0.0083	0.0066	0.0051
Phosphorus (P) Total (mg/L)	0.0104	0.0148	0.0134	0.0083
Dissolved Metals				
Aluminum (Al)-Dissolved (mg/L)	0.0141	0.0589	0.0211	0.0075
Antimony (Sb)-Dissolved (mg/L)	<0.0001	<0.0001	<0.0001	<0.00010
Arsenic (As)-Dissolved (mg/L)	0.00025	0.00022	0.00045	0.0003
Barium (Ba)-Dissolved (mg/L)	0.0119	0.0075	0.0127	0.0108
Cadmium (Cd)-Dissolved (mg/L)	<0.00001	<0.00001	<0.00001	<0.000010
Calcium (Ca)-Dissolved (mg/L)	29.7	13.6	31.4	34
Chromium (Cr)-Dissolved (mg/L)	<0.0005	<0.0005	<0.0005	<0.00050
Copper (Cu)-Dissolved (mg/L)	0.00445	0.00748	0.00514	0.00259
Iron (Fe)-Dissolved (mg/L)	0.195	0.084	0.195	0.083
Lead (Pb)-Dissolved (mg/L)	<0.00005	<0.00005	<0.00005	<0.000050
Lithium (Li)-Dissolved (mg/L)	<0.005	<0.005	<0.0005	<0.00050
Magnesium (Mg)-Dissolved (mg/L)	5.56	2.62	5.21	6.03

* Note - these results are for data from 1995 to 2011

Sample (n)	Count >MDL	Min	Max	Mean
77	77	3	238	137.106494
77	77	6.64	9.4	7.484675
77	77	-0.5	15.7	5.427013
91	86	23.2	137	66.952326
5	5	91.6	211	171.12
94	94	28.2	121	70.232979
5	5	7.53	8.06	7.79
41	40	47	184	116.525
92	91	0.5	122	3.267582
91	91	0.37	3.03	1.424066
0	0			
12	12	0.25	4.95	1.83
1	1	0.04	0.04	0.04
90	90	0.5	31.4	4.795222
92	48	0.005	0.083	0.017156
32	23	0.0078	0.21	0.0347
92	92	0.0025	0.221	0.032062
68	38	0.001	0.0393	0.005279
36	34	0.23	0.54	0.381147
89	49	0.001	0.073	0.009659
50	47	0.0022	0.078	0.012774
60	59	0.00025	0.074	0.013494
95	94	0.0001	0.1	0.028715
95	22	0.00005	0.00022	0.0000759
95	88	0.0001	0.0009	0.0004039
95	93	0.00557	0.0146	0.0086569
95	16	0.00001	0.00014	0.00004
92	92	8.71	37.5	21.8784
95	26	0.0003	0.0029	0.001108
95	95	0.0005	0.041	0.006302
95	95	0.0025	0.472	0.158826
95	54	0.00002	0.00126	0.000118
88	50	0.0002	0.0006	0.00032
92	92	1.58	6.51	3.945761

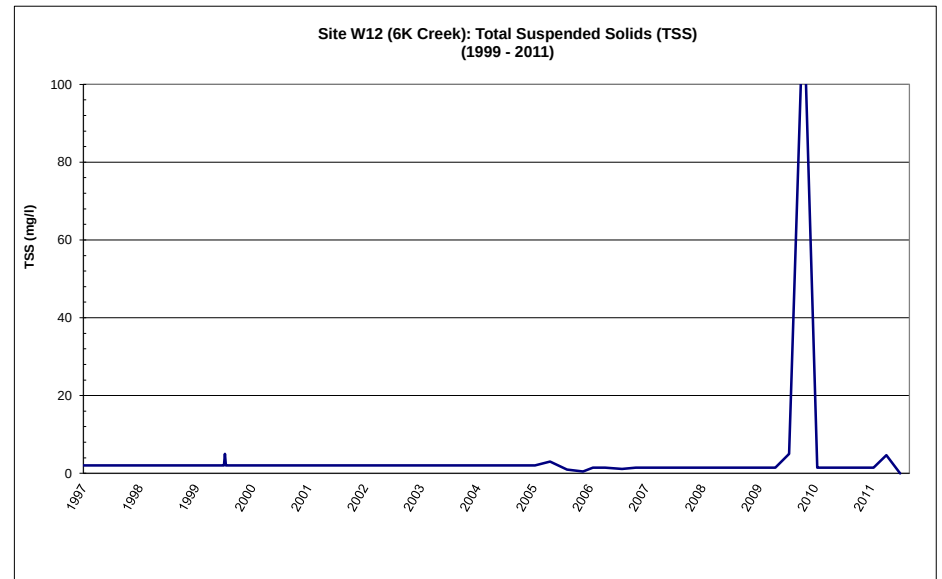
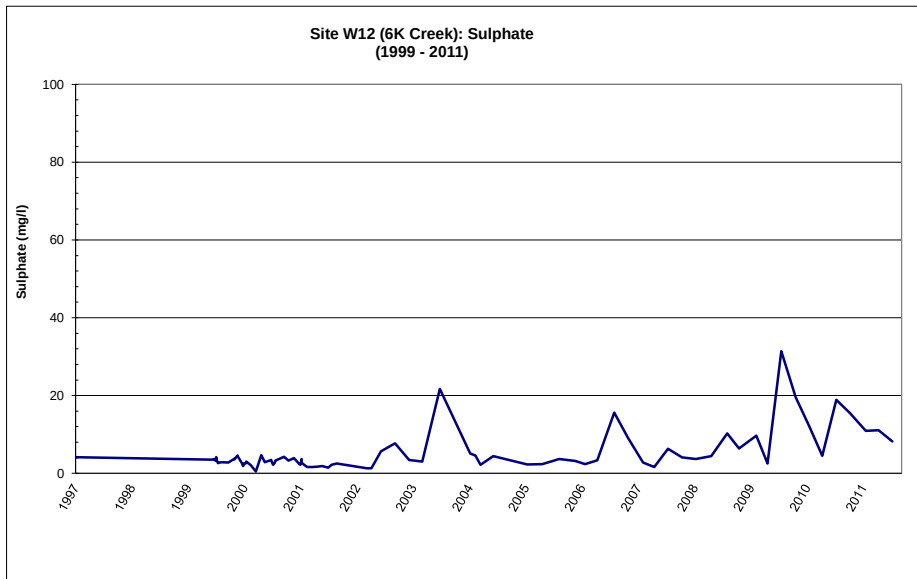
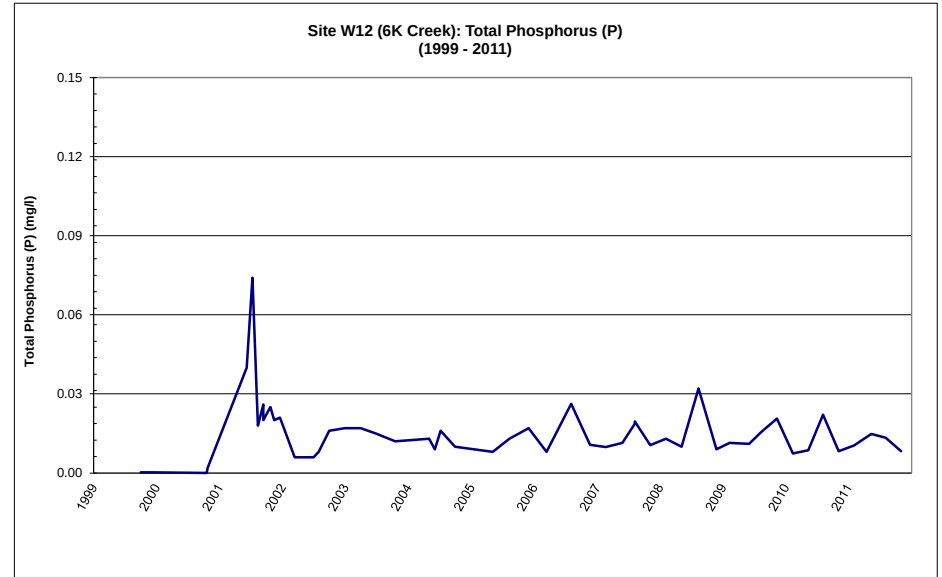
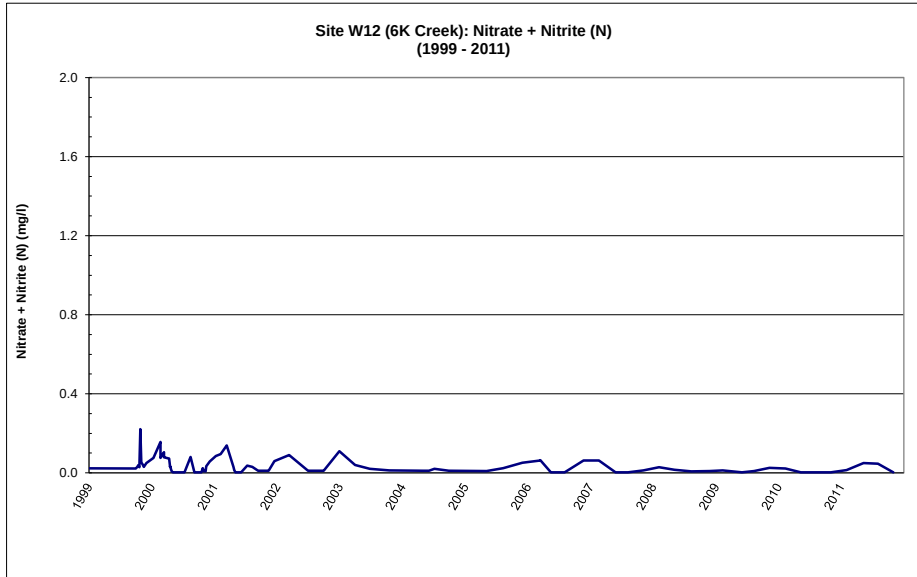
Annual Report 2011
Water Quality Site W12 - 6K Creek at Road

Sample Point	W12	W12	W12	W12
Date	1-Feb-11	12-May-11	4-Aug-11	1-Nov-11
Manganese (Mn)-Dissolved (mg/L)	0.0618	0.00377	0.0543	0.0341
Molybdenum (Mo)-Dissolved (mg/L)	0.000613	0.000438	0.000813	0.000493
Nickel (Ni)-Dissolved (mg/L)	<0.0005	<0.0005	<0.0005	<0.00050
Potassium (K)-Dissolved (mg/L)	0.46	0.412	0.184	0.582
Selenium (Se)-Dissolved (mg/L)	<0.001	<0.0005	<0.0005	<0.00050
Silicon (Si)-Dissolved (mg/L)	7.33	4.8	6.12	7.06
Silver (Ag)-Dissolved (mg/L)	<0.00001	<0.00001	<0.00001	<0.000010
Sodium (Na)-Dissolved (mg/L)	4.94	2.13	3.45	5.12
Strontium (Sr)-Dissolved (mg/L)	0.132	0.0628	0.151	0.158
Tin (Sn)-Dissolved (mg/L)	<0.0001	<0.0001	<0.0001	<0.00010
Zinc (Zn)-Dissolved (mg/L)	<0.003	0.0035	<0.003	<0.0030
Total Metals				
Aluminum (Al)-Total (mg/L)	0.0317	0.128	0.128	0.0198
Antimony (Sb)-Total (mg/L)	<0.0001	<0.0001	<0.0001	<0.00010
Arsenic (As)-Total (mg/L)	0.00027	0.00031	0.00049	0.00035
Barium (Ba)-Total (mg/L)	0.0124	0.00825	0.0145	0.0113
Cadmium (Cd)-Total (mg/L) (mg/L)	<0.00001	0.000013	<0.00001	<0.000010
Calcium (Ca)-Total (mg/L)	29.8	13.7	32.3	34.7
Chromium (Cr)-Total (mg/L)	<0.0005	0.00051	0.00053	<0.00050
Copper (Cu)-Total (mg/L)	0.00496	0.00868	0.00641	0.00175
Iron (Fe)-Total (mg/L) (mg/L)	0.303	0.159	0.392	0.147
Lead (Pb)-Total (mg/L)	<0.00005	<0.00005	<0.00005	<0.000050
Lithium (Li)-Total (mg/L)	<0.005	<0.005	0.00054	<0.00050
Magnesium (Mg)-Total (mg/L)	5.69	2.68	5.31	6.16
Manganese (Mn)-Total (mg/L)	0.0698	0.0109	0.0869	0.0384
Molybdenum (Mo)-Total (mg/L)	0.000646	0.000473	0.000904	0.000528
Nickel (Ni)-Total (mg/L)	<0.0005	<0.0005	<0.0005	<0.00050
Potassium (K)-Total (mg/L)	0.453	0.397	0.196	0.588
Selenium (Se)-Total (mg/L)	<0.001	<0.0005	<0.0005	<0.00050
Silicon (Si)-Total (mg/L)	7.58	4.96	6.56	7.26
Silver (Ag)-Total (mg/L)	<0.00001	0.000012	<0.00001	<0.000010
Sodium (Na)-Total (mg/L)	4.98	2.17	3.55	5.28
Strontium (Sr)-Total (mg/L)	0.136	0.065	0.155	0.162
Tin (Sn)-Total (mg/L)	<0.0001	<0.0001	<0.0001	<0.00010
Zinc (Zn)-Total (mg/L)	<0.003	<0.003	<0.003	<0.0030
Dissolved Organic Carbon (mg/L)	10.2	12.2	15.4	11.2

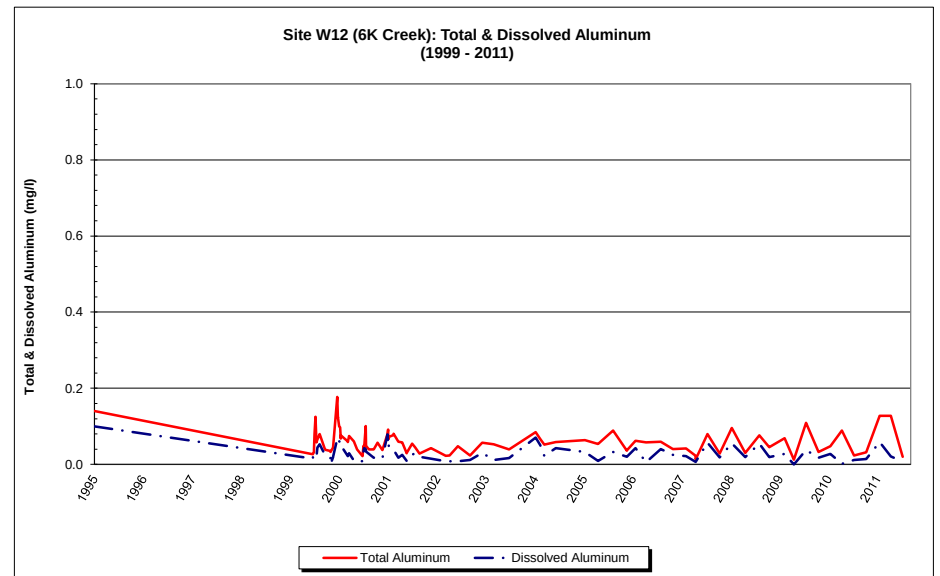
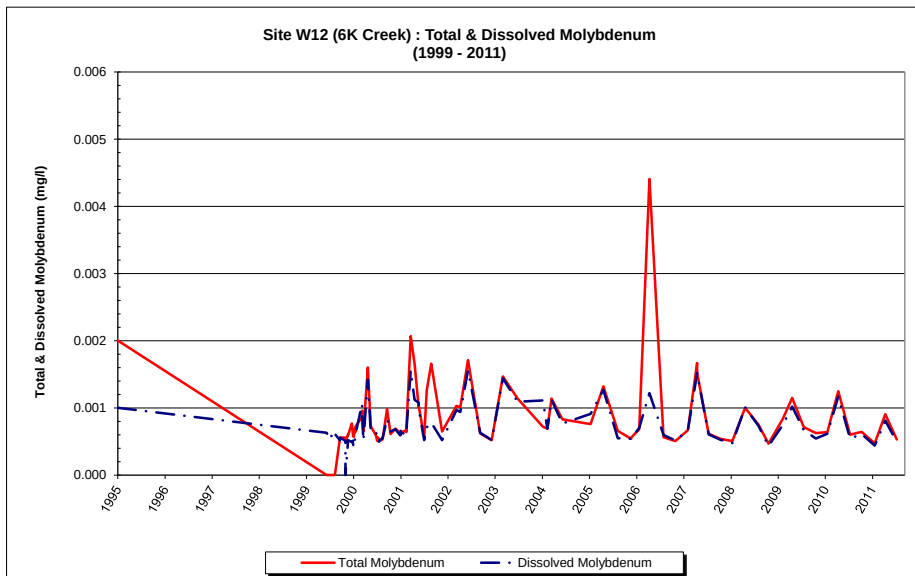
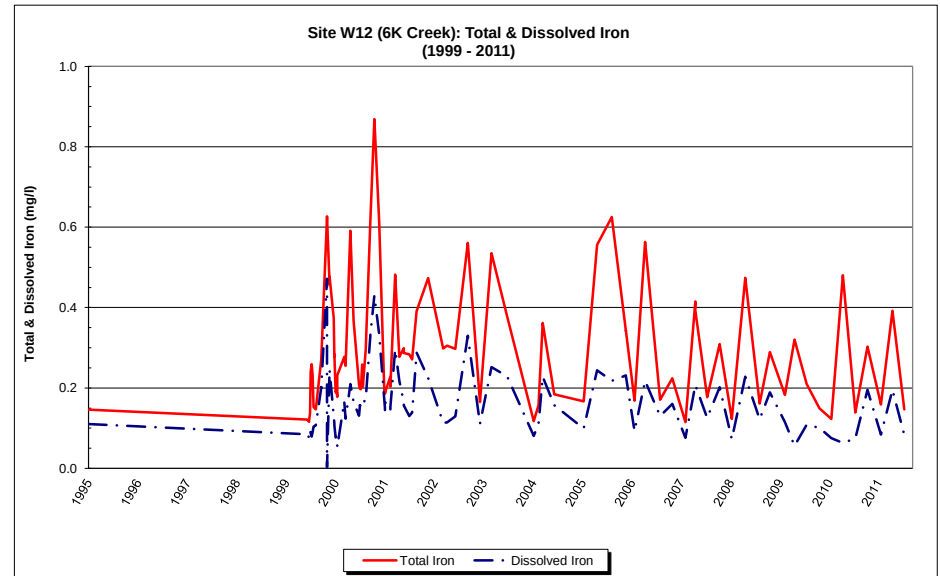
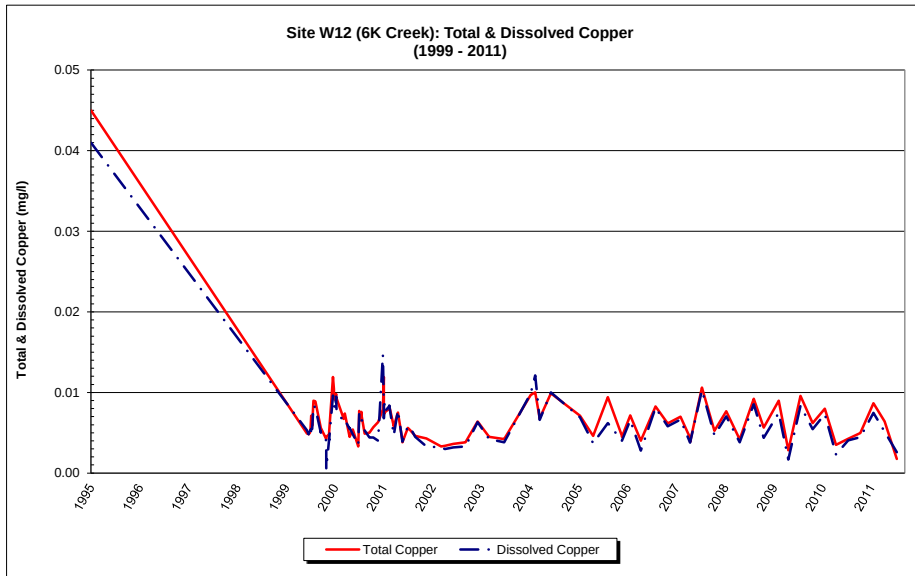
* Note - these results are for data from 1995 to 2011

Sample (n)	Count >MDL	Min	Max	Mean
95	94	0.00019	0.274	0.050888
95	94	0.00041	0.00156	0.000746
95	1	0.0013	0.0013	0.0013
95	94	0.14	0.78	0.313309
95	3	0.0005	0.0006	0.000533
92	92	2.36	9.99	5.657609
95	24	0.00001	0.00012	0.0000191
92	92	1.52	8.46	3.993696
95	94	0.036	0.172	0.103540
94	36	0.00006	0.00099	0.000249
95	65	0.0005	0.0102	0.00162
92	92	0.0128	0.177	0.05898
92	25	0.00005	0.00049	0.00011
92	91	0.0001	0.0013	0.00044
92	91	0.00602	0.0178	0.00930
92	4	0.000013	0.00004	0.00003
92	92	8.71	37.3	21.81533
92	35	0.00009	0.00273	0.000876
92	92	0.00175	0.045	0.00682
92	92	0.115	0.869	0.29480
92	59	0.00002	0.00126	0.00014
85	48	0.0002	0.0007	0.00034
92	92	1.58	6.38	3.91728
92	92	0.00775	0.387	0.07067
92	83	0.000467	0.00441	0.00087
92	12	0.00053	0.0009	0.00066
91	90	0.13	0.82	0.31549
92	2	0.0005	0.0007	0.0006
92	92	3.62	10.1	5.68011
92	36	0.00001	0.00043	0.00003
91	91	2.09	8.87	3.97462
92	92	0.036	0.185	0.10657
91	42	0.00006	0.0019	0.00032
92	61	0.0005	0.0157	0.00194
77	77	1.11	18.4	11.81273

Annual Report 2011
Water Quality at Site W12 (6K Creek at Road)



Annual Report 2011
Water Quality at Site W12 (6K Creek at Road)



Annual Report 2011
Water Quality at Site W12 (6K Creek at Road)

