

Supplementary Materials: Performance of an Underground Stormwater Detention Chamber and Comparison with Stormwater Management Ponds

Jennifer Drake, Dean Young and Nicholas McIntosh

Table S1. Water quality statistical analysis results.

Pollutant	Units	PWQO ¹	Inlet			Hatch ²			Outlet		
			Range	Avg	Med	Range	Avg	Med	Range	Avg	Med
TSS	mg/L	–	109–783	293	195.5	24.6–421	136	106.8	4.5–174	52.3	42.6
Turbidity	FTU	5	80–776	312	236	31.9–470	143	109.5	5.87–251	70.3	52
Ammonia + Ammonium	mg/L	1.4	0.1–1.9	0.50	0.24	0.06–0.30	0.19	0.208	0.06–0.26	0.18	0.182
Nitrite	mg/L	0.06 ²	0.04–0.14	0.07	0.0605	0.04–0.20	0.08	0.0535	0.02–0.21	0.06	0.047
Nitrate + Nitrite	mg/L	10 ³	0.07–0.77	0.49	0.549	0.51–1.3	0.81	0.8195	0.47–1.1	0.70	0.665
Nitrogen; total	mg/L	–	0.76–17.8	3.99	1.145	0.9–4.3	1.69	1.285	0.85–2.4	1.38	1.16
Total Kjeldahl	mg/L	–	0.15–17.5	3.55	0.86	0.13–3.5	0.96	0.58	0.14–1.8	0.74	0.585
Phosphate	mg/L	0.03 ²	0.05–1.1	0.31	0.12	0.02–0.15	0.08	0.0726	0.03–0.15	0.08	0.076
Total Phosphorus	mg/L	30	0.14–1.2	0.42	0.29	0.02–0.26	0.15	0.1285	0.07–0.19	0.12	0.111
Aluminum	µg/L	100	1200–7760	2740	1955	364–2350	1120	925.5	126–1470	646	601
Antimony	µg/L	20 ⁴	0.3–0.6	0.47	0.5	0.4–0.7	0.51	0.5	0.4–3.9	1.06	0.7
Arsenic	µg/L	0.1	0.6–1.5	1.00	1.05	0.8–1.2	1.04	1.05	0.7–1.3	0.90	0.8
Barium	µg/L	1000 ³	28.7–135	62.8	53.2	31.4–68.8	46.3	46.45	23.5–44.7	32.1	32
Boron	µg/L	11 ⁵	23–36	30.3	31	30–58	40.6	41	25–44	35.4	35.5
Cobalt	µg/L	0.9	1.1–5.4	2.22	1.7	0.5–2.5	1.13	0.9	0.2–1.3	0.63	0.65
Copper	µg/L	5	6.7–22.6	14.6	13.75	6.5–10.3	7.78	7.55	4–8.4	6.44	6.85
Iron	µg/L	300	870–8000	2450	1575	400–1660	920	780	110–1030	520	560
Lead	µg/L	5 ⁶	2.7–12.7	5.30	4.15	1.4–5.6	2.71	2.35	0.3–3.3	1.43	1.35
Manganese	µg/L	–	76.4–393	175	137.2	39–283	113	91.5	10.8–130	46.4	41.4
Nickel	µg/L	25	2.3–11.3	4.50	3.35	2.0–4.2	2.69	2.3	0.9–2.2	1.63	1.75
Strontium	µg/L	–	126–281	208	201.5	223–379	286	274.5	158–303	226	220
Titanium	µg/L	–	11.1–19.7	14.5	13.9	7.7–17.3	11.7	11.25	4.2–21.5	10.2	10.1
Vanadium	µg/L	7	3.3–14.6	6.00	4.6	1.9–4.9	3.09	3	0.9–4.8	2.40	2.5
Zinc	µg/L	20	16.2–106	45.3	35.25	14.5–37.5	21.7	20.55	6.5–21.3	13.0	12.85

¹ Provincial Water Quality Objective (PWQO); ² Canadian Water Quality Guideline; ³ Drinking Water Quality Guideline; ⁴ Interim PWQO; ⁵ PWQO for Hardnes <75 mg/L;

⁶ PWQO for Hardness >80 mg/L.