

Notes About Constructed Wetland Calculations

Kadlec Calculations

Table 1: Typical Media Characteristics for Subsurface Flow Wetlands

	BOD	TSS	Organic N	NH ₄ -N	NO _x N	TN	TP	FC
k ₂₀ , m/yr	180	1000	35	34	50	27	12	95
Θ	1.0	1.0	1.05	1.04	1.09	1.05	1	1
C*, mg/L	3.5+0.053 C _i	7.8+0.063 C _i	1.5	0	0	1.5	0.02	10

Table 2: Possible Effluent Values at Certain Areas

Area (m ²)	BOD	TSS	Organic N	NH ₄ -N	NO _x N	TN	TP	FC
500	18.64	13.16	5.98	21.79	12.28	19.04	6.54	183093
1000	12.65	13.16	3.83	11.87	5.02	12.27	5.28	33529.6
10000	12.4	13.16	1.36	0	0	1.36	0.13	10

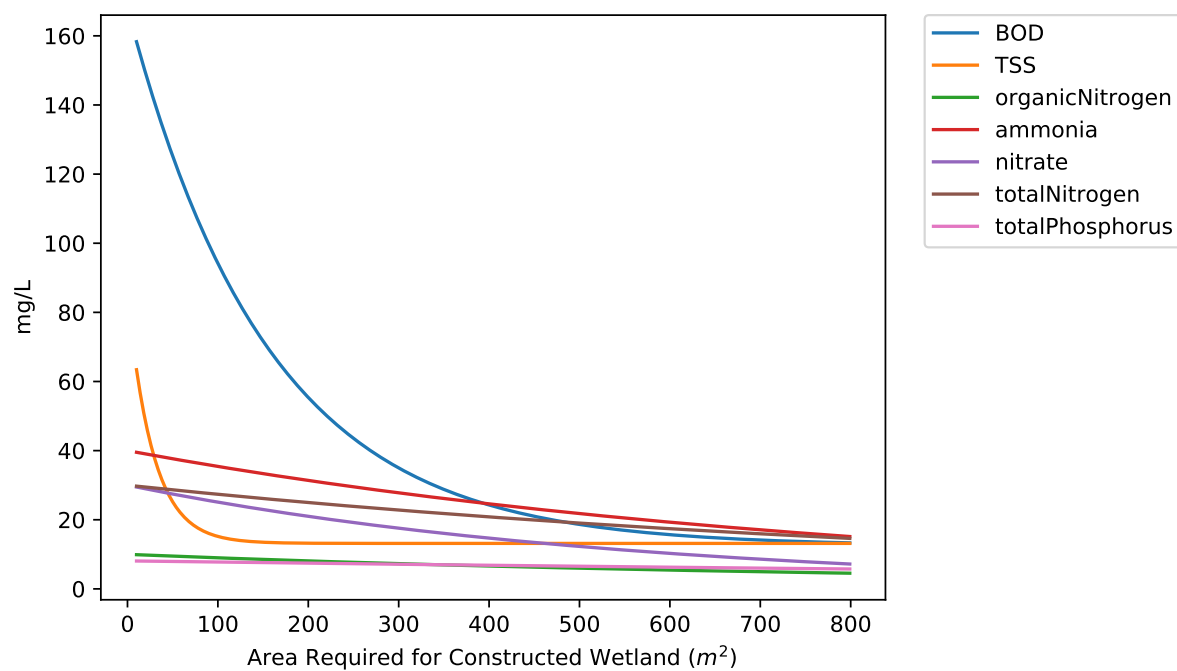


Figure 1: Kadlec Effluent

Reed Calculations

Table 3: Typical Media Characteristics for Subsurface Flow Wetlands

Media Type	Effective Size (D_{10})(mm)	Porosity (n)(%)	Hydraulic Conductivity (K_s)(m/d)
Coarse Sand	2	28-32	100.04 - 1000.4
Gravelly Sand	8	30-35	500.2 - 5002.0
Fine Gravel	16	35-38	1000.4 - 10004.0
Medium Gravel	32	36-40	10004.0 - 50020.0
Coarse Rock	128	38-45	50020.0 - 250100.0

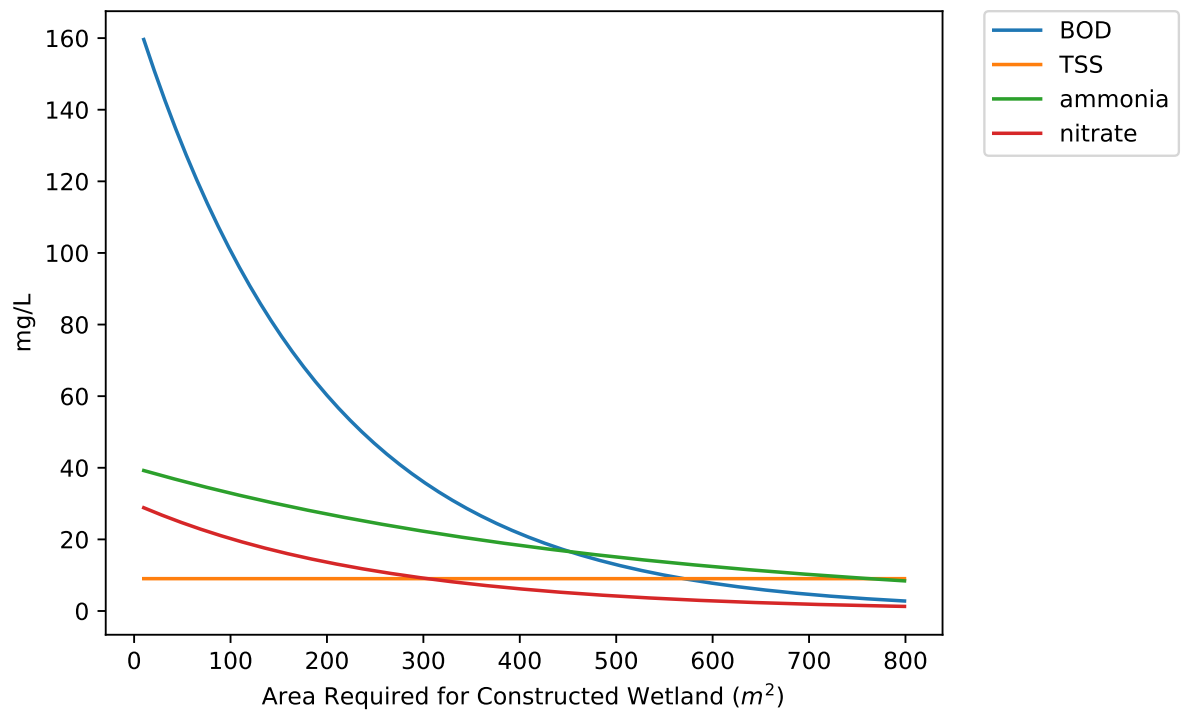


Figure 2: Reed Effluent

Testing (Figure 1)