

Supplemental Data

Table S-1: Average MX FP removals for each biofilter (Trials 1-3)

	Trial 1		Trial 2		Trial 3	
	Removal (ng/L)	Removal (%)	Removal (ng/L)	Removal (%)	Removal (ng/L)	Removal (%)
CONT15	1.8	30	1.7	28	1.2	20
CONT30	1.3	23	2.0	33	3.5	59
CYC15	2.4	40	2.3	38	2.6	45
CYC30	2.9	48	2.7	43	3.3	55

Table S-2: Statistical comparison of biofilter operation using paired t-tests (Trials 1-3)

Treatments Compared		MX FP	ATP	DO	pH	DOC	UV254
CONT15	CONT30	0.119	0.674	0.043	0.324	<i>0.078</i>	0.319
CONT15	CYC15	0.142	0.047	0.018	0.036	<i>0.100</i>	0.688
CONT15	CYC30	<i>0.068</i>	0.029	0.008	0.015	0.042	0.037
CONT30	CYC15	0.305	0.294	0.017	0.007	0.215	0.458
CONT30	CYC30	<i>0.052</i>	<i>0.093</i>	0.007	0.007	0.853	0.227
CYC15	CYC30	0.557	0.029	0.025	0.019	0.049	0.024

Bold and *italic* values indicate a significant difference ($p \leq 0.05$ or $p \leq 0.1$, respectively) when comparing operating conditions.

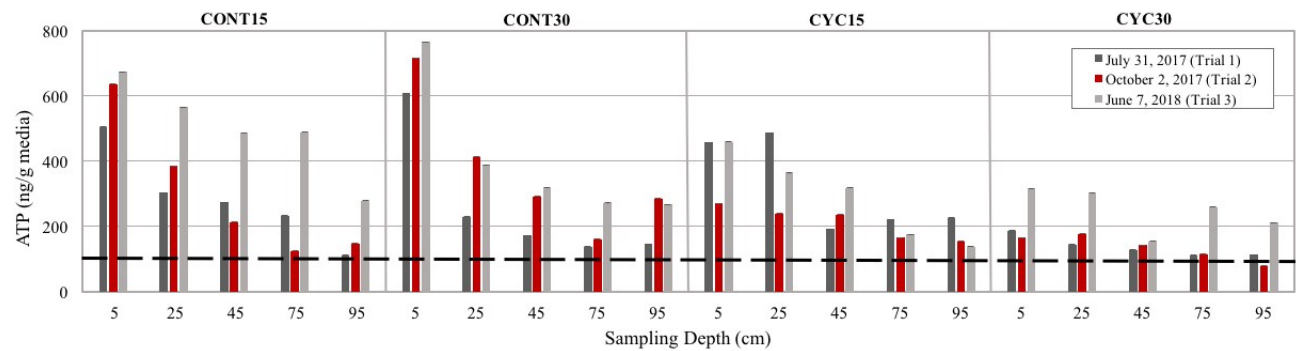


Figure S-1a: ATP depth profiles for trials 1-3 (ambient precursor levels). (Dashed line denotes 100 ng/g media ATP threshold.)

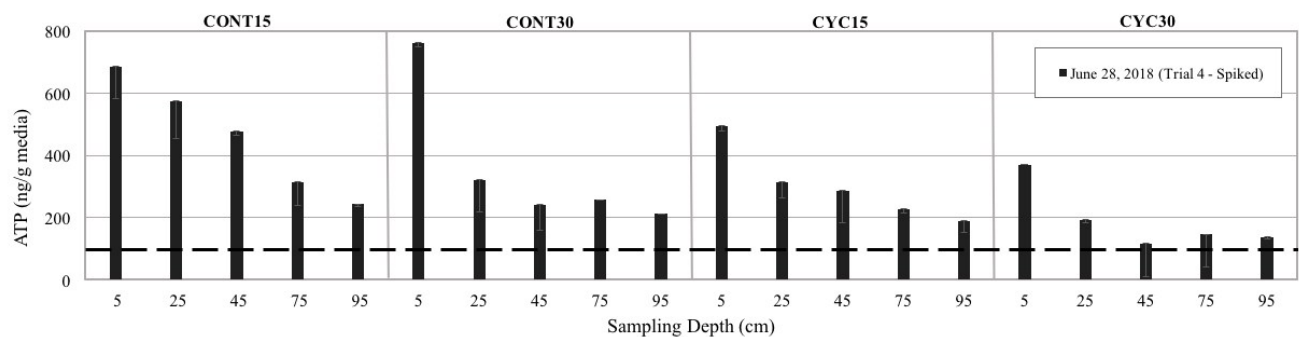


Figure S-1b: ATP depth profiles for trial 4 (humic acid spike). (Dashed line denotes 100 ng/g media ATP threshold.)

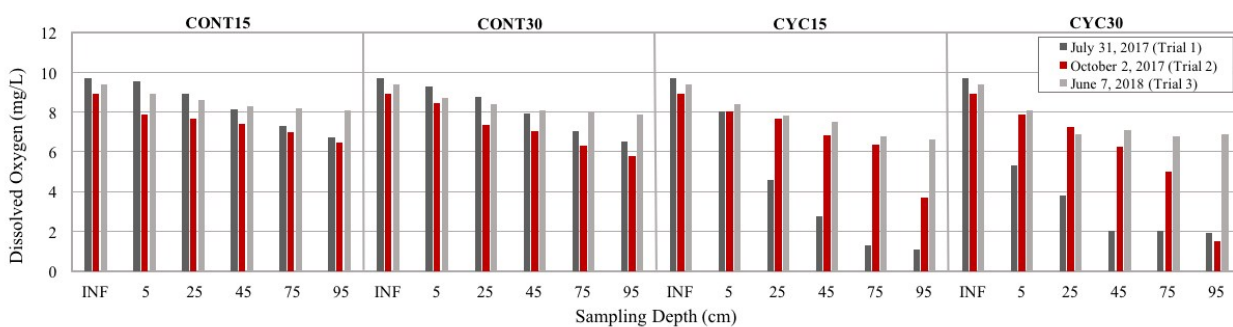


Figure S-2a: Dissolved oxygen depth profiles for trials 1-3 (ambient precursor levels).

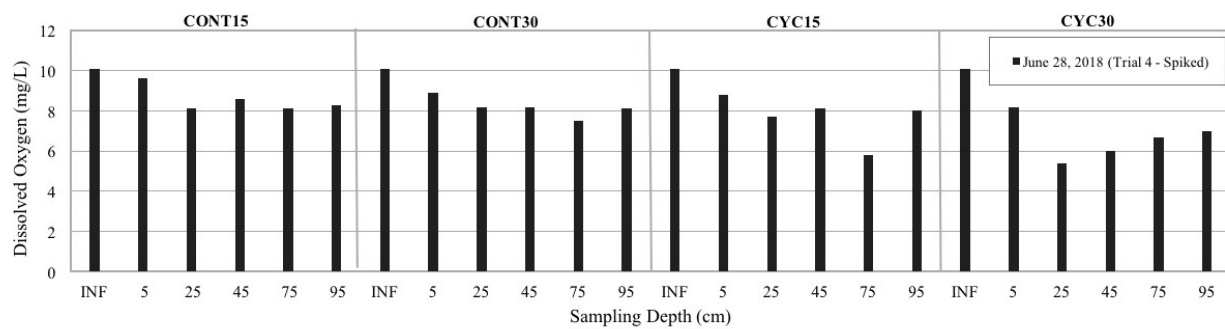


Figure S-2b: Dissolved oxygen depth profiles for trial 4 (humic acid spike).

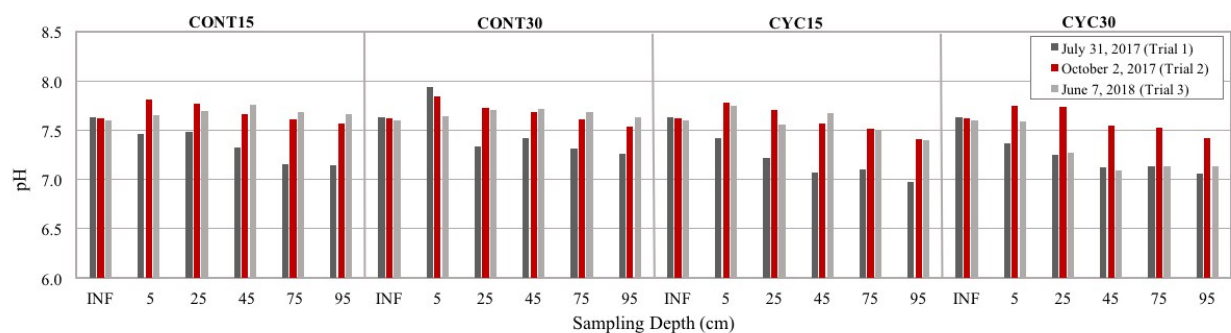


Figure S-3a: pH depth profiles for trials 1-3 (ambient precursor levels).

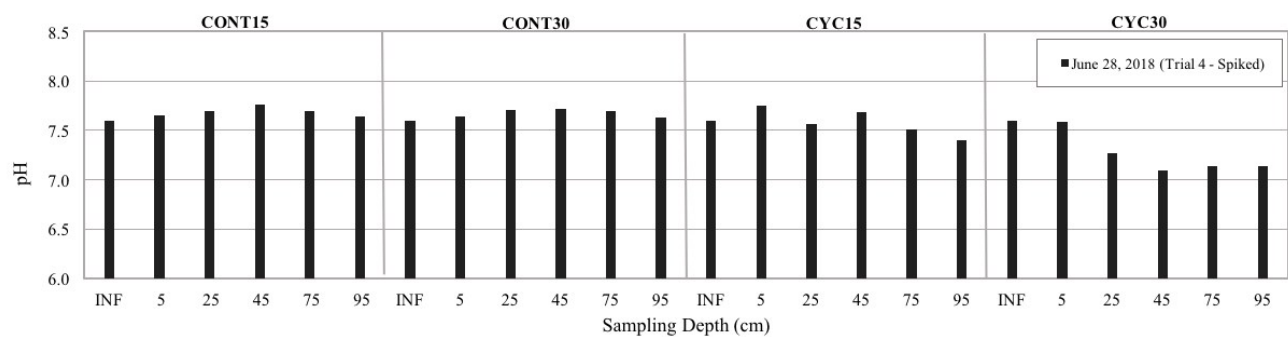


Figure S-3b: pH depth profiles for trial 4 (humic acid spike).

Table S-3: Pearson correlation coefficient for ambient and humic spiked trials.

	Ambient Trials				Spiked Trial			
	CONT15	CONT30	CYC15	CYC30	CONT15	CONT30	CYC15	CYC30
MX FP Reduction per ATP	0.9208	0.9593	0.8021	0.8831	0.9248	0.9708	0.7977	0.9333
MX FP Reduction per DO	0.9413	0.9761	0.8817	0.9549	0.8249	0.8708	0.6303	0.9078
MX FP Reduction per pH	0.9744	0.8093	0.7236	0.9166	-0.3520	0.0009	0.6835	0.8285
MX FP Reduction per UV254	0.4163	0.6833	0.5816	0.8569	0.8160	0.7119	0.1440	0.2656
MX FP Reduction per DOC	0.3730	0.8172	0.8119	0.9123	0.9502	0.8804	0.9928	0.9603

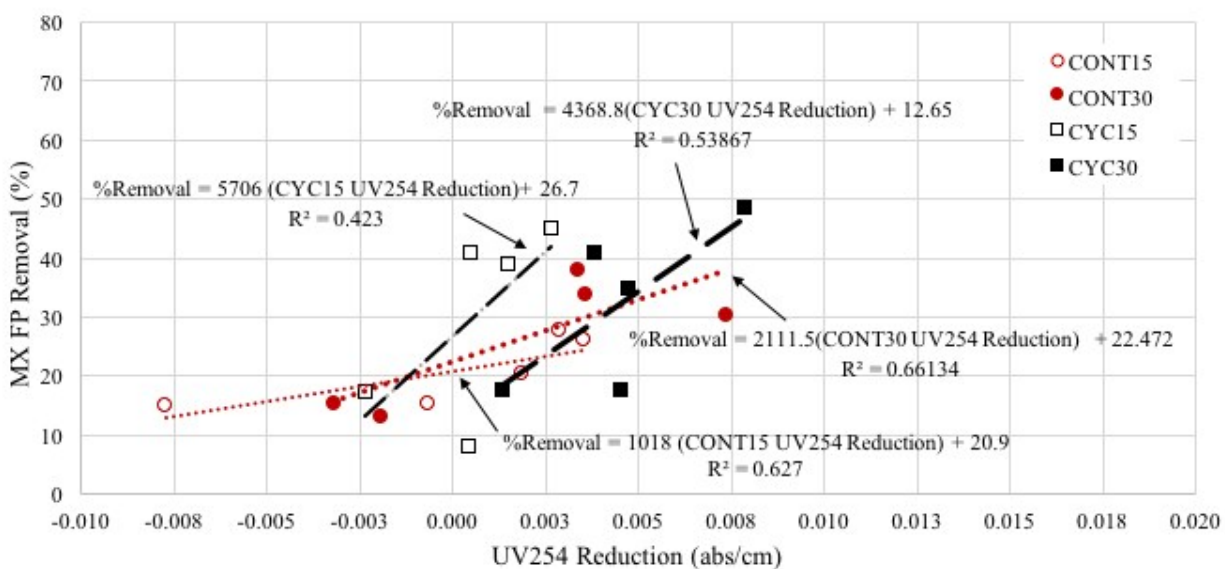


Figure S-4a: %MX FP removal vs average UV₂₅₄ reduction for trials 1-3 (ambient precursor concentration).

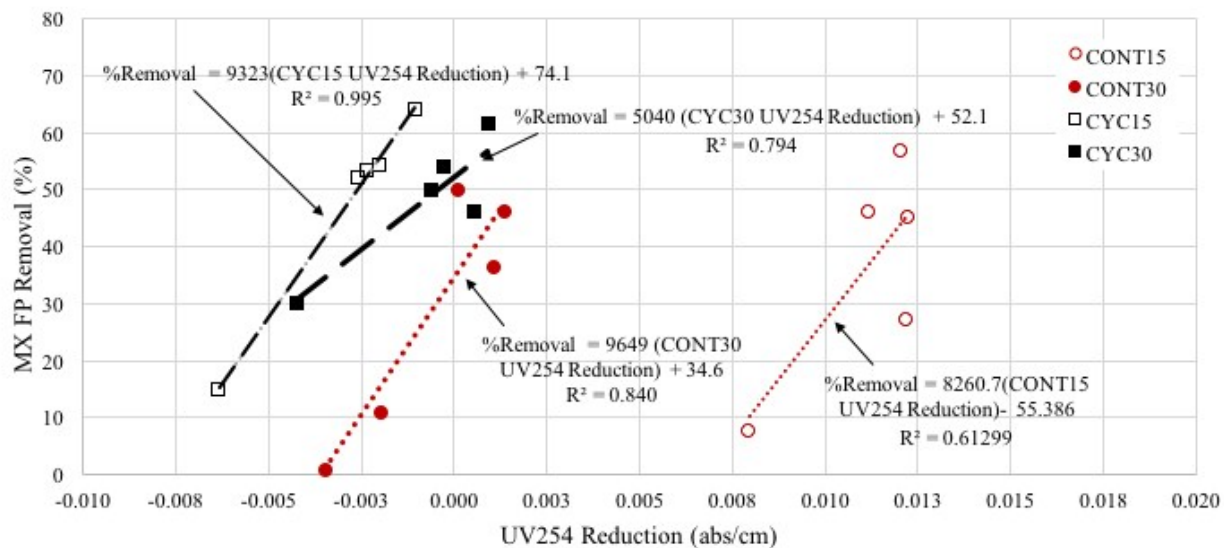


Figure S-4b: %MX FP removal vs average UV₂₅₄ reduction for trial 4 (humic acid spike).

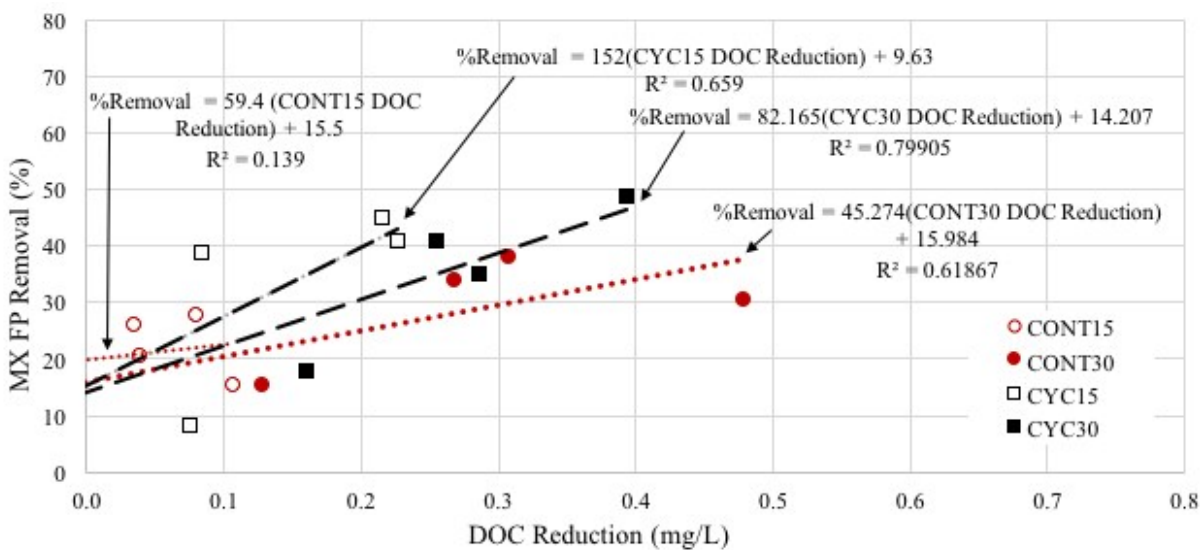


Figure S-5a: %MX FP removal vs average DOC reduction for trials 1-3 (ambient precursor concentration).

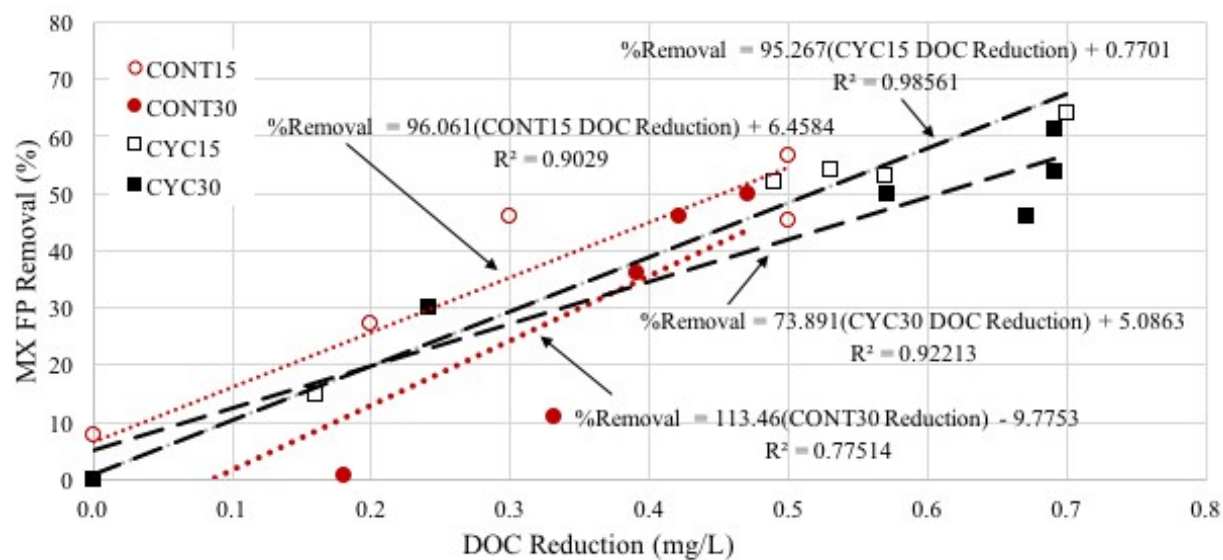


Figure S-5b: %MX FP removal vs average DOC reduction for trial 4 (humic acid spike).

Table S-4: Comparison of biofilter operation for ambient and spiked trials.

	Trials 1-3 (Average)		Trial 4	
	CONT vs CYC	EBCT15 vs EBCT30	CONT vs CYC	EBCT15 vs EBCT30
MX FP Reduction/ATP	0.0061	0.0288	0.0003	0.0159
MX FP Reduction/ Cumulative ATP	0.0026	0.0196	0.0061	0.0288
MX FP Reduction / DO Consumption	0.0192	0.4641	0.634	0.012
MX FP Reduction / DOC Reduction	0.1166	0.7846	0.9677	0.2823

Bold values indicate a significant difference ($p \leq 0.05$) when comparing operating conditions.

Table S-5 Comparison of biofilter operation using paired t-tests for trials 1-3 (ambient precursors)

Treatments Compared		MX FP Reduction/ ATP	MX FP Reduction/ Cumulative ATP	MX FP Reduction / DO Consumption	MX FP Reduction / DOC Reduction
CONT15	CONT30	0.300	0.529	0.684	0.359
CONT15	CYC15	<i>0.078</i>	<i>0.054</i>	0.221	0.126
CONT15	CYC30	0.026	0.004	0.203	0.349
CONT30	CYC15	<i>0.113</i>	<i>0.076</i>	0.005	0.202
CONT30	CYC30	0.036	0.008	0.008	0.448
CYC15	CYC30	0.044	0.007	0.237	0.251

Bold and *italic* values indicate a significant difference ($p \leq 0.05$ or $p \leq 0.1$, respectively) when comparing operating conditions.