

Inactivation of *Pseudomonas aeruginosa* and Methicillin-resistant *Staphylococcus aureus* in an open water system with ozone generated by a compact, atmospheric DBD plasma reactor

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Table 1: Results obtained from repeated active ozonation experiments on water contaminated with *P. aeruginosa*. Columns two through eight shows the bacterial counts in Colony Forming Units per milliliter (CFU/ml) for active ozonation experiments at time points, t = 0, 1, 2, 3, 4, 5 and 10 minutes. The Control count is defined as the bacterial count at the start of the experiment (t=0 minutes).

Expt. No.	Control count at t=0 min (CFU/ml)	Count at t=1 min (CFU/ml)	Count at t=2 minutes (CFU/ml)	Count at t=3 minutes (CFU/ml)	Count at t=4 minutes (CFU/ml)	Count at t=5 minutes (CFU/ml)	Count at t=10 minutes (CFU/ml)
1	2.7×10^4	1.6×10^3	5.8×10^2	10	0	0	0
2	1.1×10^5	3.3×10^3	7.1×10^2	10	0	0	0
3	1.1×10^5	6.3×10^3	2×10^2	10	0	0	0
4	6×10^4	5.8×10^3	1.1×10^3	20	0	0	0

Table 2: Results obtained from repeated active ozonation experiments on water contaminated with Methicillin-resistant *Staphylococcus aureus* (MRSA). Columns two through eight shows the bacterial counts in Colony Forming Units per milliliter (CFU/ml) for active ozonation experiments at time points, t = 0, 1, 2, 3, 4, 5 and 10 minutes. The Control count is defined as the bacterial count at the start of the experiment (t=0 minutes).

Expt. No.	Control count, at t=0 min (CFU/ml)	Count at t=1 min (CFU/ml)	Count at t=2 minutes (CFU/ml)	Count at t=3 minutes (CFU/ml)	Count at t=4 minutes (CFU/ml)	Count at t=5 minutes (CFU/ml)	Count at t=10 minutes (CFU/ml)
1	1.2×10^5	10	0	0	0	0	0
2	1.1×10^5	10	0	0	0	0	0
3	2.4×10^5	5.7×10^2	0	0	0	0	0
4	2.4×10^5	60	0	0	0	0	0
5	1.1×10^6	20	0	0	0	0	0

Table 3. Ozone measurements were taken in water during active ozonation at time points, t= 3, 4, 5 and 10 minutes. The Hach 2064400 oz-2 Color Disc Test Kit was used to take the measurements. The upper and lower limits of detection of the Color Disc were 0.05 mg/L and 2.2 mg/L respectively, with each step on the disc representing an increment of 0.05 mg/L. The average of 11 measurements at each time point was taken to calculate the ozone concentration at a time point.

Ozone concentration (mg/L)			
Trials/ time	2 min	4 min	5 min
1	0.05	0.1	0.1
2	0.05	0.1	0.15
3	0.05	0.05	0.1
4	0.05	0.1	0.1
5	0	0.1	0.15
6	0.05	0.1	0.1
7	0.05	0.15	0.2
8	0	0.1	0.1
9	0.05	0.05	0.1
10	0.05	0.1	0.15
11	0.05	0.1	0.15
Average	0.041	0.095	0.127