

Powell Water Systems, Inc.
Summary of Contaminant Removal Rates
Electrocoagulation Technology

Biologicals			
Contaminant	Before	After	% Removal
Bacteria	110,000,000 cfu	2,700 cfu	99+
Coliform	318,000,000 cfu	ND (<1) cfu	99+
E. coli	>2,419.2 mpn	ND (<0.01) mpn	99+
Enterococcus	83 mpn	ND (<10) mpn	82
Total Coliform	>2,419.2 mpn	ND (<0.1) mpn	99+
Cyanotoxin	67.1 ug/l	2.2 ug/l	97

Dyes			
Contaminant	Before (NTU)	After (NTU)	% Removal
Ref. 006-691	125.1	12.1	90
Ref. 006-692	129.4	2.2	98
Ref. 006-854	68.30	0.68	99+
Ref. 006-851	2,340	4.5	99+

Hydrocarbons			
Contaminant	Before (mg/l)	After (mg/l)	% Removal
Benzene	90.1	0.3590	99+
Ethyl Benzene	428	0.372	99+
MP-Xylene	41.6	0.057	99+
MTBE	21.58	0.0462	99+
O-Xylene	191	0.416	99+
PCB	0.0007	ND (<0.0001)	85
Petroleum Hydrocarbons	72.5	ND (<0.2)	99+
Toluene	28,480	0.227	99+

Nutrients			
Contaminant	Before (mg/l)	After (mg/l)	% Removal
Ammonia	49	19.4	60
Nitrate	11.7	2.6	77
Nitrite	21	12	42
Nitrogen TKN	1,118.88	59.08	94
Phosphate	28	ND (0.2)	99+
Potassium	200	110	45
Sulfate	104	68	34

Pesticides			
Contaminant	Before (mg/l)	After (mg/l)	% Removal
Aldrin	0.063	ND (0.001)	98
Chlorpyrifos	5.87	ND (0.03)	99+
Cypermethrin	1.3	0.07	94
DDT	0.261	0.002	99+
Diazinon	34	0.21	99+
Lindane	0.143	ND (0.001)	99+
Propetamphos	80.87	0.36	99+

Metals / Minerals			
Contaminant	Before (mg/l)	After (mg/l)	% Removal
Aluminum	224	ND (0.7)	99+
Arsenic	0.076	ND (<0.002)	97
Barium	0.014	ND (<0.001)	93
Boron	4.86	1.41	70
Cadmium	0.125	ND (<0.004)	96
Calcium	1,321	21.4	98
Chromium	139.	ND (<0.1)	99+
Cobalt	0.1238	0.0214	82
Copper	0.7984	ND (<0.0020)	99+
Cyanide (free)	723	ND (<0.02)	99+
Fluoride	1.1	0.415	62
Gold	5.72	1.38	75
Iron	68.34	0.19	99+
Lead	0.59	0.0032	99+
Magnesium	13.15	0.04	99+
Manganese	1.061	0.018	98
Mercury	0.72	ND (<0.003)	98
Molybdenum	0.35	0.029	91
Nickel	183	0.07	99+
Platinum	4.4	0.68	84
Selenium	68	38	44
Silicon	21.07	ND (0.10)	99+
Silver	0.0081	0.0006	92
Tin	0.213	ND (<0.020)	90
Vanadium	0.262	ND (<0.002)	99+
Zinc	221	0.140	99+

Organics			
Contaminant	Before (mg/l)	After (mg/l)	% Removal
BOD ₅	1,050	14	98
NTU	35.38	0.32	99+
TSS	1,560	8	99+

Radioisotopes			
Contaminant	Before	After	% Removal
Americium-241	71.99 pCi/l	0.57 pCi/l	99+
Plutonium-239	29.85 pCi/l	0.29 pCi/l	99+
Radium	1093 pCi/l	0.10 pCi/l	99+
Uranium	0.13 mg/l	0.0002 mg/l	99+

Abbreviations

mg/l = milligrams per liter or parts per million
 ug/l = microgram per liter or parts per billion
 pCi/l = picocuries per liter
 cfu = colony forming unit
 mpn = most probable number
 NTU = nephelometric turbidity units
 ND = not detectable at the reporting limit