

Electro Catalytic AOP

EC-AOP Target Contaminants

- Kills bacteria & pathogens by destroying cell walls
- Eliminates existing Hydrogen Sulfide (H₂S)
- Treats out ammonia
- Oxidizes iron (Fe²⁺) and heavy metals
- Reduces NORMS
- Eliminates or reduces BOD, COD & TOC
- Hydrocarbon & VOC removal
- Breaks down pharmaceuticals
- Breaks down pesticides
- Breaks down chlorocarbon, aromatics, phenolics, dyes, petroleum constituents
- Removal of suspended & colloidal solids
- Breaks oil/water emulsions – oxidizes and removes lower percentile oil constituents
- Removes fats, oils & greases
- Removes complex organics
- Reduces phosphates and nitrogen levels
- Achieves either total separation/precipitation of dissolved organics or achieve complete mineralization



Watch the Process



Explore the Technology



LOTIC Oceania - info@loticoceania.com

Contaminant Removal Efficiency — LOTIC EC-AOP Case Studies

Parameter	Before EC-AOP	After EC-AOP	% Removed
Aldrin (Pesticide)	0.063	0.001	98.40%
Aluminum	224	0.69	99.70%
Aldrin (Pesticide)	0.063	0.001	98.40%
Arsenic	0.076	<0.0022	97.10%
Barium	0.0145	<0.0010	93.10%
Benzene	90.1	0.359	99.60%
BOD	100	12	88.00%
Boron	4.86	1.41	70.80%
Cadmium	0.1252	0.0062	95.00%
Calcium	1321	21.4	98.40%
Chlorpyrifos (Pesticide)	5.87	0.01	99.80%
Chromium	1.05	0.034	96.80%
Cobalt	0.1238	0.0214	82.70%
Copper	0.793	0.0662	91.70%
Cyanide (Free)	723	<0.020	99.90%
Cypermethrin (Pesticide)	0.143	0.0032	97.80%
DDT (Pesticide)	0.261	0.002	99.20%
Diazinon (Pesticide)	34	0.05	99.90%
Ethyl Benzene	428	0.372	99.90%
Fluoride	1.1	0.415	62.30%
Gold	5.7	0.24	95.80%
Iron	68.34	0.1939	99.70%
Lead	1.06	0.0218	97.90%
Lindane (Pesticide)	0.143	0.0031	99.30%
Magnesium	13.35	0.018	99.90%
Manganese	2.2	0.0148	99.30%
Mercury	0.73	<0.0031	99.60%
Molybdenum	0.65	0.0112	98.30%
MP-Xylene	41.68	0.057	99.90%
MTBE	21.58	0.076	99.60%
Nickel	1.86	0.07	96.20%
Nitrate	116	2.6	77.80%
Nitrite	21	1.4	93.30%
Nitrogen TKN	1118.88	59	94.70%
NTU (Turbidity)	35.34	0.25	99.30%
O-Xylene	191	0.416	99.80%
PCB (Arochlor 1248)	0.20007	<0.0001	99.90%
Petroleum Hydrocarbons	12000	0.2	99.90%
Phosphate	28	6	78.60%
Platinum	0.25	0.006	97.60%
Potassium	2000	1160	42.00%
Propetamphos (Pesticid	0.007	0.0044	94.00%
Selenium	68	38	44.00%

Variation in contaminant removal performance is primarily influenced by differences in the water matrix. In low-strength industrial or synthetic test waters, where target pollutants are present in trace concentrations and organic loading is minimal, the LOTIC EC-AOP system demonstrates exceptionally high removal efficiencies—often exceeding 95%—for heavy metals, pesticides, and persistent organics. In high-strength wastewater streams such as municipal or agricultural effluent, elevated levels of COD, BOD, suspended solids, and nutrients like ammonia and TKN can reduce treatment efficiency. These compounds consume oxidants, compete for reactive sites, and may require longer contact times or additional treatment steps, resulting in lower overall removal rates in these more complex matrices.