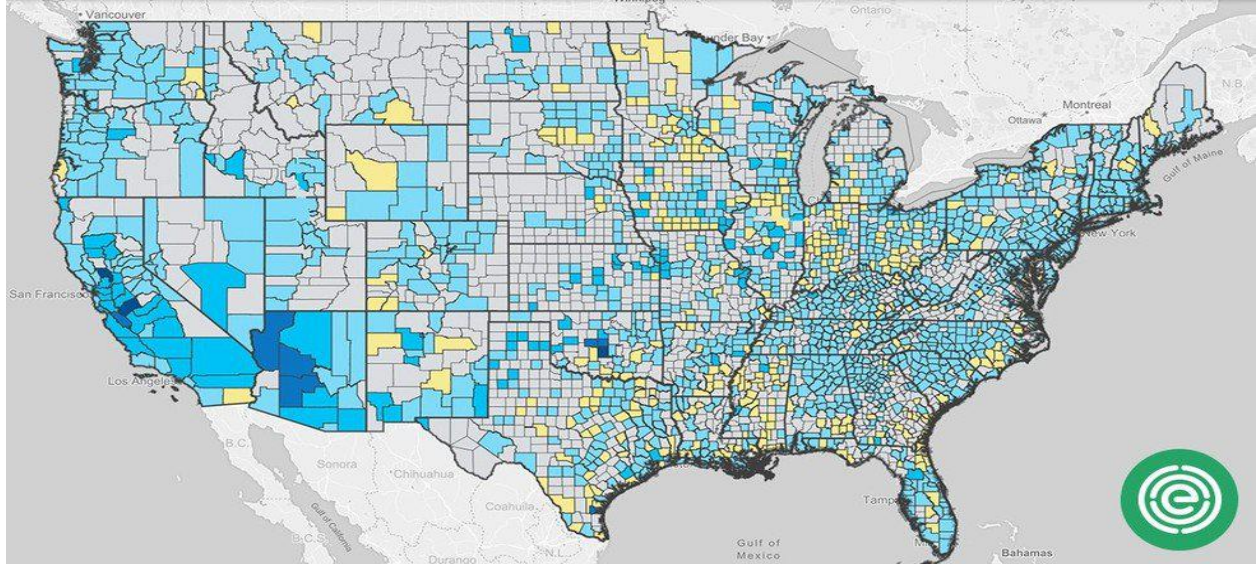


GWT^(r) EOXTM Advanced Oxidation Wastewater Treatment System Specification Sheet

Emerging Contaminants & Tertiary Oxidation for Decentralized Wastewater Treatment



What is Advanced Oxidation?

The Advanced oxidation process (AOP), in a general sense, is a set of chemical treatment processes engineered to remove organic (and sometimes inorganic) compounds in water and wastewater by oxidation through chemical reactions with hydroxyl radicals ($\cdot\text{OH}$).

In typical wastewater treatment applications, however, this term usually refers more specifically to a subset of such chemical processes that employ a chemical or electrochemical treatments. These treatments create these hydroxyl radicals and other oxidizing molecules to oxidize and remove organic or inorganic compounds in a typical wastewater source.

What is Electrochemical Oxidation?

Electrochemical oxidation (EO), also known as electro-oxidation, is a technique used for wastewater treatment, mainly for industrial effluents or for certain tertiary domestic wastewater effluent applications. It is a type of advanced oxidation process.

The most general layout comprises electrodes, operating as anode and cathode, connected to an electrical power source. Using electrical input and sufficient supporting electrolyte in this process, strong oxidizing compounds are formed, which interact with the contaminants and degrade them. These refractory compounds are thus converted into reaction intermediates and, ultimately, into water and lastly into CO_2 by complete mineralization.

Why is Treatment Important?

Advanced oxidation processes (AOPs) are the most favorable and attractive option for the effective removal of organic pollutants in wastewater. In recent years, many harmful chemicals are released in effluent from industries and have been identified in the environment. These particular chemicals are hazardous to both human beings and aquatic biota. They can cause severe damages to marine environment, animals and humans.

There is a strong need to treat toxic pollutants with a proper treatment option. AOP treatment is important based on its suitable applicability for the treatment of wastewater containing harmful chemicals.

What is EOX?

GWT^(r) EOX^(tm) advanced oxidation treatment process is a patent pending proprietary modular treatment solution utilizing electrochemistry in a tertiary oxidation treatment process.

This particular EOX process utilizes electro generated free radicals and oxygen compounds to significantly reduce/remove difficult recalcitrant chemical compounds including pharmaceutical residuals, reductions of COD, ammonia and certain organics in lower flow rate industrial or decentralized domestic wastewater treatment.

Utilizing the EOX technology enables for the reduction of highly contaminated industrial wastewater streams or decentralized domestic wastewater streams with to meet compliance guidelines with lower operating costs.

Services Offered:

- Lab/Bench Treatability Testing Services with Validation by Third Party Lab

Systems:

- These systems are modular systems designed based on the treatment application and flow rates of the water to be treated with typical flow rates up to 92.5 GPM-184.5 GPM (500-1000 m³/d) per system.

Advantages:

- Compact system solution foot print
- Rapid reaction rates
- Optimized for removal of biologically toxic & non degradable compounds
- Optimization of unstable radical formation to oxidize contaminants
- Can be used with post polishing treatment systems to optimize treatment operating costs by up to 50%
- Does not concentrate the waste contaminants, such as membranes
- Can be controlled via process automation for simple operation
- Reduced labor input costs

Simple Process Flow Diagram

Tank EOX NatZeo or Carbon System

GWT - Innovation in Water(r)



For questions relating to the EOX advanced oxidation treatment system for industrial or tertiary domestic wastewater oxidation, contact us via phone at 877 267 3699 or reach us via email at customersupport@genesishwatertech.com.