Managing PFAS in Wastewater Effluent

Removal of polyfluoroalkyl substances (PFAS) at East Canyon Water Reclamation Facility.

Project Summary and Goals

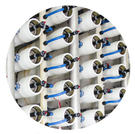
The purpose of this project is to explore technologies for reducing perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) concentrations in the liquid stream at the East Canyon Water Reclamation Facility (ECWRF). The design goal is to reduce effluent concentrations to < 2 ng/L through the addition of a new treatment process added to the existing wastewater treatment plant.

Treatment Alternatives

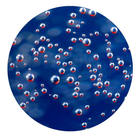
Do Nothing

Granular Activated Carbon

Ion Exchange Resin



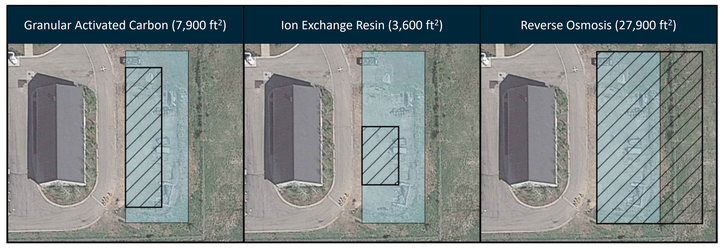
Reverse Osmosis



Destruction Technologies

Selection Criteria

1. Cost Efficiency (40%)
2. Consistent Removal Efficiency (40%)
3. Minimal Space Requirement (5%)
4. Environmental Impact (15%)



Footprints of analyzed alternatives, shown in black hatched area, and available area, shown in blue.

Proposed location of new PFAS treatment building at ECWRF.

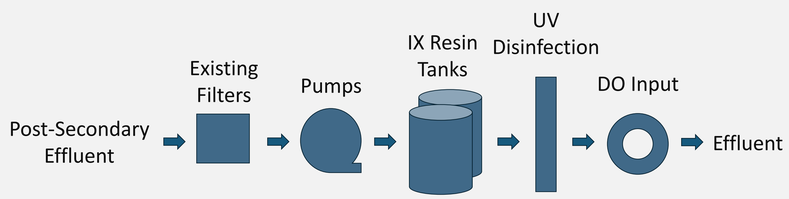
Selected tank system (AqueoUS 2023).

East Canyon Water Reclamation Facility (Bench 2023).

Selected Alternative

The recommended treatment alternative is an application of ion exchange resin. This alternative was selected based on the selection criteria as well as the fact that it offers PFAS destruction.

Energy Usage	Removal Efficiency	Predicted Footprint	Cost
530,000 kWh/year	77-99%	3,650 ft^2	$0.51/1000 gal treated



Proposed treatment process flow diagram.

FCD Engineering Team

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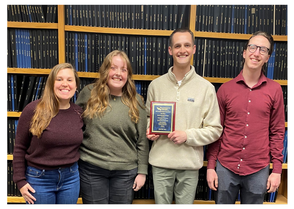

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FCD ENGINEERING