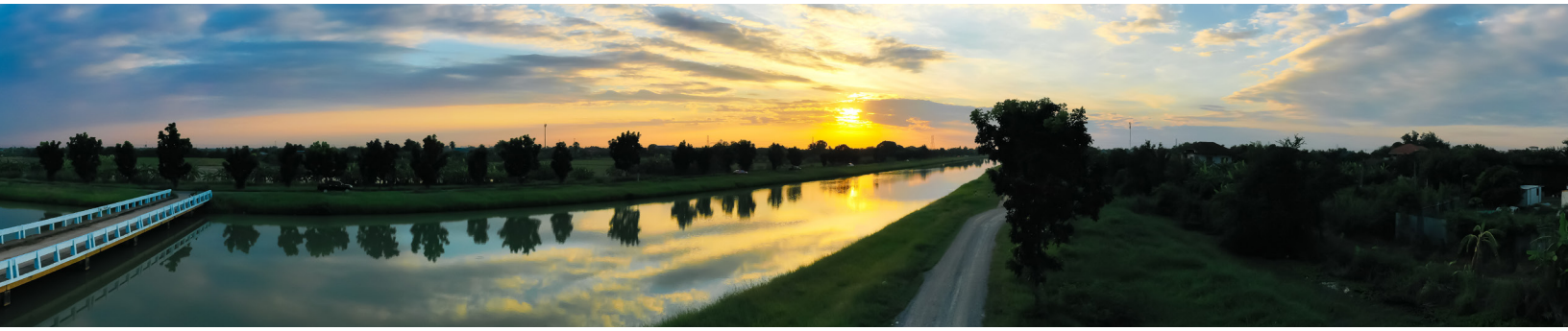
Salinity in Wastewater

Partnering with Businesses to Respond to Lowered TDS Discharge Requirements



Technical Challenge. Agencies across the United States are establishing criteria to reduce salinity allowed in discharge permits due to increasing concentrations in drinking water and surface water. Salinity is typically regulated in concentrations of total dissolved solids (TDS), specific conductivity, or electric conductivity. Salinity can be added to wastewater in various ways, including via general waste, cooking, food production and wastewater sterilization using chlorine. Removing salinity from wastewater can be complicated and expensive.

Solution

Apex has been helping clients reduce salinity in wastewater through source reduction, including drinking water source blending, product use, and implementing alternative sterilization methods. Salinity can also be removed more economically in potable water than in wastewater, so moving treatment to earlier in the process can save money and reduce operational problems.

Our Approach

We work with our clients to determine the source of the salinity, recommend the best source reduction approaches, and provide treatment options for cost effective solutions to meet permit requirements.

Example Projects

Big Box Store Super Center • Yucca Valley, CA

Apex operates a 20K gallon per day (gpd) wastewater treatment plant (WWTP) that serves the Super Center and two outparcel restaurants. Since Apex could not control the quality of the incoming wastewater several treatment options were evaluated for salinity reduction. After small scale studies, Apex determined that ultraviolet (UV) sterilization would decrease the effluent concentrations to meet permit limits at a significant cost reduction to salinity treatment methods.

Retail Distribution Center • Red Bluff, CA

Apex operates a 20K gpd WWTP for a 1.5M square foot distribution center. Apex helped the client enter a monitoring program for salinity which eliminated immediate discharge limits. Apex is working with the client to determine the best path forward to reduce salinity discharges in the future.

Confidential Food Production Facility • Cromwell, KY

Apex provided the client with a conceptual optimization plan to increase aerobic treatment and clarification effectiveness for a 2M gpd WWTP. The conceptual design included temporary treatment facilities while optimization construction was completed on the existing WWTP.

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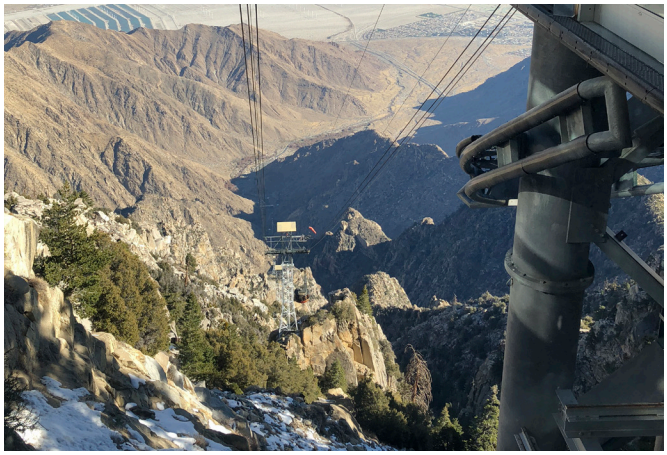

Palm Springs Aerial Tramway • Palm Springs, CA

Apex operates and maintains two WWTPs, one at the Valley Station and one at the Mountain Station. Apex could not dictate the salinity sources but worked with the Regional Water Quality Control Board to reduce monitoring and compliance requirements when the new Valley WWTP was installed.

Confidential Food Production Facility • Holcomb, KS

Apex provides groundwater monitoring and reporting to the Kansas Department of Environmental Quality (DEQ) for salinity and nutrient effects on groundwater from wastewater effluent injection. Apex has helped optimize injection to reduce impacts on groundwater and operate in accordance with their current permit.

Uniform Cleaning and Maintenance Facility • Roswell, NM

Apex completed detailed sampling for salinity and water quality parameters throughout the water softening and laundry operations to determine the salinity changes in the process water at different stages of the operation. Apex helped provide insight into the process that increased salinity the most and alternative chemicals and treatment to reduce salinity discharges.

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