Plating Industry White Papers

STANLEY TOOLWORKS / BLACK & DECKER

Plating Wastewater Treatment Application:
Wastewater generated from chrome and nickel plating operations.
Prior Treatment Method:
Chrome and nickel streams were segregated because of characteristics. Chrome was reduced from hexavalent to trivalent state then combined with the nickel stream. The full stream was then precipitated via typical hydroxide precipitation methodology. Broad swings in the contaminate concentrations resulted in poor treatment and the facility was issued several NOVs.
Our process for Plating Wastewater Treatment:
Ecolotron installed a new EC Reactor and reaction tank to conduct a pilot / feasibility study. Because of the EC system's ability to treat a variety of wastes over a broad pH range the chrome and nickel streams no longer needed to be segregated. The streams were

combined in a common equalization sump with pH control, pumped through the EC Reactor then returned to the existing flash / floc tank for polymer addition prior to the existing clarifier.

Results for Plating Industry Wastewater Treatment:

The flow rate was increased from fifty to eighty gallons per minute average with a peak flow rate of 120 gallons per minute. Chrome and nickel concentrations in the discharged water have been considerably lower, never exceeding the discharge limit. Sludge volume for offsite disposal has decreased by 60% and the regulating authority has issued a letter of commendation to Stanley congratulating them for their corrective action and improvement of effluent quality. The equipment never left the location and was purchased by Stanley. Ongoing performance has resulted in expansion into Stanley's other plating facilities and is the new standard for wastewater treatment.