



Corrugated Printing Facility Zero Discharge

Background

This company imports corrugated board and prints the labels using a flexographic machine. The facility had a wastewater treatment system using the traditional liquid chemistry of aluminum chloride, caustic for pH adjustment, and an anionic flocculant. The effluent was often out of compliance due to copper from the color pigments in the inks. The system required continual adjustment of the 3 chemistries to obtain treatability and a cake dry enough for disposal contributing directly to operational costs from the wastewater operations operator. The dewatering press required 2 hours, on average, to clean the plates. Once a week, they had to disassemble the press and pressure wash the plates, which took 5 hours to complete.

Facilities goals

The facility needed to relocate to a new location, as they had outgrown their existing one. In the negotiations with the city and county, it was determined that the hook-up fee would be over \$250,000. Management determined that zero discharge and reuse of the wastewater for wash down was the only viable solution.

New Process

IE was retained to assist in the installation of the new treatment system and convert the system to use with Floccin 1106. Some of the existing tanks were used, as well as a new reaction tank, filter press, ozone re-circulation in the finished water tank, post filtration, and pressurization tank. The processed water was then sent back to the flexographic machine for wash down use. These modifications cost the facility \$42,000 in equipment.



Result from Process Modifications

Since startup, the cost per gallon is 40% less than that of the previous chemistry, saving \$12,000/year in chemistry alone. The wastewater operator has only the Floccin-1106 to use (versus coagulant/ flocculant/ caustic), which saves 2 hours per day of labor. The water quality is consistently clear and the ozonation keeps the bacterial count low (good printing quality with no odors). The sludge is consistently dry and cleaning the press takes only 20 minutes. In addition, they no longer have to pressure wash the plates. Extra savings comes from 1,000 gal/day less water from the city, no sewer hookup fee to the city, no sewer bills or analytical costs to prove discharge compliance.

