

POLLUTION PREVENTION

IN RHODE ISLAND

Case studies of the Rhode Island On-Site Technical Assistance Program

Electronics Mfg. Vibratory Solution

Parts manufacturer uses ultrafiltration to recycle vibratory solution.

Industry \ Contact

SIC Code: 3451 Electronics Hardware Manufacturer, Rhode Island.

Contact: Company #55 - Vemaline, Inc.

Technology Description

The company manufactures metal and molded plastic parts, using a variety of finishing processes. It employs about 35 people.

The company had been discharging 800 gallons-per-day (GPD) of spent vibratory solution into the sewer. After consulting with DEM's Pollution Prevention Program, the company installed a 100 GPD Infnitex ultrafiltration system (UF) to allow reuse of the vibratory solution. This effort has successfully eliminated sewer discharge of the vibratory solution.

Feedstock Materials

Up to 1000 gallons of water per day and about 300 gallons of Roto Finish soap annually.

Wastes

Up to 1000 gallons per day of wastewater discharged to the sewer system

Costs

The 100 GPD Ultrafiltration system, manufactured by Infnitex, cost \$44,000 (including tanks and filter press)

Operation \ Maintenance

The system requires about 10 hours a week in maintenance and one hour a week of cleaning. Membranes need to be replaced once every 2-3 years at a cost of about \$6,000.

Savings

1000 gallons of water conserved daily; about 2/3 of the soap is recycled, resulting in soap savings of around \$2,000.

The company had not been paying to discharge wastewater. However, impending regulatory action would have resulted in significant fines. Other disposal costs to remove dried solids have arisen, but disposal of this non-hazardous waste is minimal.

Payback Period

Undetermined. Avoided costs may have been significant.

Impact

The company has been off the city sewer system since May of 1994. It can now avoid dumping any water down the drain.

Initiating a pollution prevention program led to improvements in the way the company handles chemicals, including more efficient labeling and storage of clean and used oils and cleaners.

Switching to a cleaner manufacturing process has made the company eligible for economic development incentives offered by local municipalities.