

POLLUTION PREVENTION

IN RHODE ISLAND

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

Screw Machine Manufacturing Tubbing Solution

Screw machine product manufacturer uses ultrafiltration to recycle tubing solution.

Industry \ Contact

SIC Code: 3451 Screw Machine Product Manufacturer, Rhode Island.

Contact: Company #66

Technology Description

The company manufactures screw machine products. Average employment of the company is 82.

Originally the company discharged spent tubing fluid to the sewer. After consulting with DEM's Pollution Prevention Section, the company installed an ultrafiltration system to recycle its tubing solution. The company originally used Clepo 8-10A powdered soap in its tubing operation, but parts spotting occurred when this soap was recycled through ultrafiltration. Spotting was eliminated by switching to Clepo 8-18 liquid soap in the tubing operation. This system recycles much of the water and soap solution while creating much less sludge than would otherwise be generated by chemical treatment.

Feedstock Materials

100 gallons per week of process water. Clepo 8-10A tubing soap manufactured by Frederick Gumm Chemical Co. of Kearny, NJ

Wastes

100 gallons-per-week of spent tubing solution

Costs

50 gallons-per-day (GPD) Splitter Jr. ultrafiltration system manufactured by Infnitex of Buffalo, NY: \$3,500

Operation \ Maintenance

Annual energy and labor costs: less than \$500

Savings

Process water reduced from 5,000 gallons per year to approximately 100 gallons per year.
Clepo 8-18 liquid soap recycled

Treatment \ Disposal

100 gallons per week of spent tubing solution discharged to sewer.

Payback Period

Estimated less than 5 years

Impact

The company has decreased its use of 5,000 gallons of process water per year to 100 gallons per year. The company has found that, by utilizing ultrafiltration, a "closed-loop" tubing process could be implemented. As a result, no wastewater is being generated or discharged to the sewer. Ultrafiltration allows for the recycling of the tubing solution, including the tubing soap while generating small amounts of sludge. Other advantages to ultrafiltration technology are that no hazardous chemicals are involved and operating costs are low.