

# POLLUTION PREVENTION

## IN RHODE ISLAND

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

### Electronics Mfg. 1,1,1-trichloroethane

**Parts manufacturer switches from 1,1,1-trichloroethane to aqueous cleaning.**

#### **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 purchasing 3 to 5 drums of 1,1,1-trichloroethane every 2-3 months. Its manufactured parts are cleaned by cold-dipping. In May of 1993, with the assistance of DEM's Pollution Prevention Program, the company purchased a centrifugal aqueous cleaning system manufactured by Barrett. The company uses a skimmer that was built on site to remove waste from the system and prolong the life of the cleaner. Aqueous cleaner is removed annually by United Recovery.

#### **Feedstock Materials**

20-30 drums of 1,1,1-trichloroethane were purchased annually

#### **Wastes**

Over 90% of the 1,1,1-trichloroethane used evaporated into the air. The remaining oil-contaminated solvent was shipped off site as hazardous waste.

#### **Costs**

The Barrett centrifugal aqueous cleaning system cost \$30,000.

**Operation \ Maintenance**

Compared to the 1,1,1-trichloroethane cleaning process, the aqueous cleaning operation requires 4 to 5 times the time and labor to operate.

**Savings**

The company saved \$12,000 annually in its purchase of 1,1,1-trichloroethane.

The company saved \$300 annually in its disposal of waste 1,1,1-trichloroethane.

**Payback Period**

Undetermined. Had the company decided to continue using the solvent, purchase and disposal costs would have at least tripled by 1995. In addition, 1,1,1-trichloroethane will be phased out by 1996 as required by federal mandate. Based on the phaseout, this pollution prevention implementation step is a necessity, despite higher labor costs.

**Impact**

The company no longer purchases 1,1,1-trichloroethane, a substance with ozone-depleting properties. Chlorinated solvents have been under strict regulation and have seen steep price increases; phaseout of most chlorinated solvents is imminent.

Initiating a pollution prevention program lead 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.