Textile Printing
Color Reuse

**Textile printer eliminates concentrated pigment discharge to the sewer through a "waste work-off" color matching system.**

**Industry \ Contact**
SIC Code: 2291 Rotary Screen Textile Printing, Rhode Island.
Contact: Company # 89

**Technology Description**
The company employs 230 people. It is engaged in the preparation, printing, and finishing of textile. The company principally supplies its product to the home fashions industry.

The company’s printing facility applies aqueous-based pigment emulsions onto its prepared fabric with 5 rotary screen print machines. The print machines can produce patterns with up to 24 different colors and yield approximately 6,000,000 yards of printed fabric monthly. During an individual print pattern’s run through the machine, a print machine operator calls for more pigment to be made by the color shop. The operator bases the need for more color on the machine's consumption of each color per yard of fabric previously run (i.e. liters/yard).

Excess pigment left at the end of a pattern's run was originally washed out to the sewer in a barrel washer. With the aid of DEM's Pollution Prevention Program, the company purchased an ACS Spectrophotometer equipped with a personal computer and "Waste Work-off" software to reduce this waste stream at the source. Operators now run waste pigment samples through the spectrophotometer, which yields shade-change formulas for matching the pigments to other patterns not yet printed. Approximately 5 barrels of waste color is produced and reused daily.

**Feedstock Materials**
150 drums of pigment concentrate used per day

**Wastes**
5 drums of waste pigment concentrate sent to sewer daily

For more information, contact: RI Department of Environmental Management, Office of Technical and Customer Assistance, 235 Promenade Street, Providence, RI 02908  Phone: (401) 222-6822
Costs
ACS Spectrophotometer, PC, and Software; $40,000.

Operation \ Maintenance
Labor: 3 hr/day, 5 day/wk, 50 wk/yr; $9,000 Annually
Energy: Negligible

Savings
5 drums of pigment concentrate recovered daily ($100 /drum); $125,000 annually
Pigment concentrate no longer discharged to sewer
Sewer surcharges on Biological Oxygen Demand and Total Suspended Solids eliminated; $1,000 annually

Payback Period
Approximately 4 months

Impact
The company has eliminated a 5 drum-per-day discharge of pigment concentrate to the local sewer. The company has found that by utilizing computer and spectrophotometer technology it can reformulate leftover pigments to match the colors needed in upcoming patterns. This reshading procedure has not only eliminated the concentrated pigment discharge and the rinse waters associated with it, but it has also reduced the pigment feedstock requirements by 5 drums per day.