

## **3.12.2 Photo Processing Industry: Custom/Retail Labs**

### *Tip Sheet #1*

**WASTE ORIGIN:** **Film and Print Processing** (Color and B&W Films and Papers), **Color Film, Color Paper, and B&W Film and Paper**

**WASTE TYPES:** Spent Process Chemicals (Developer, Fixer, Bleach Fix), Contaminated Washwaters, Silver Concentration of Spent Process Chemicals, and Washwaters

#### **WASTE REDUCTION AND RECYCLING METHODS:**

- ! Reduce **wash water volume** using automatic timer controls.
- ! Use **metal replacement cartridges** (MRCs) for silver recovery, both as a standalone method or with other recovery technologies.
- ! Use an **electrowinning device for silver recovery**; appropriate equipment type depends on the solution volume or flow rate, the concentration of silver, and the level of automation and design sophistication desired.
- ! Use an electrowinning device with metal replacement **cartridges tailing** (polishes the effluent from straight electrowinning).
- ! Use a dedicated electrolytic unit to desilver **spent fixer**. Use a unit used only for recycling fixer, since the recovery process must be done continuously rather than in batch process. (Batch treatment results in an inconsistent chemical composition, compromising processing control.)
- ! Recycle **bleach fix** using a continuous electrolytic system and a three-step desilvering process with metal replacement cartridges (desilvering, restoring bleaching ability, replenish strength of film, and paper processing chemicals).
- ! Whenever possible, regenerate **color developer**. Work with photochemical supplier for most appropriate chemicals and equipment.
- ! Contact **local or state solid and hazardous waste agencies** for:
  - ! Vendor information on **small silver recovery units**;
  - ! Lists of area **silver recycling services**, silver recoverers, or silver refiner;
  - ! Environmental **compliance records** of in- and out-of-state silver refiners;
  - ! Technical assistance.
- ! Contact **other photo finishers** about their experiences with silver recoverers, recyclers and refiners; contact any references provided by the recoverer or recycler; talk with some area generators that were not specified as references.

#### **Sources:**

*Code of Management Practice for Silver Dischargers*, Silver Coalition/Assn. of Metropolitan Sewerage Agencies (AMSA), September 1995.

*Environmental Management and Pollution Prevention: A Guide for Photo Processors*, Washington State Department of Ecology, September 1994, Publ. 94-138.

Fact Sheet: *Opportunities for Printers to Reduce Image Processing Costs by Minimizing Waste and Recovering Silver*, University of Wisconsin-Extension, Solid and Hazardous Waste Education Center.

Project Summary: *Waste Minimization Opportunity Assessment: A Photofinishing Facility*, U.S. EPA, Publ. EPA/600/S2-91/039.