

A Printing Pollution Prevention Opportunities Checklist

Prepared by Alison Gemmell
 CH2M Hill and
 Philip Lo, CSDLA, 12/90.

Charles W Carry
 Chief Engineer and General Manager
 Telephone (213) 699-7411, (213) 685-5217,
 Fax: (213) 695-6139

Solid Waste Management
 County Sanitation Districts Of Los Angeles
 County
 1955 Workman Mill Road,
 Whittier, CA 90603-4998

Mailing Address:

PO. Box 4998,
 Whittier, CA 90607-4998

The keys to pollution prevention in printing are material substitution (nonmetal inks), minimization of changeover, and ink recycling.

Y/N	Opportunities	Comments
	I. Good Operating Practice	
	Segregate waste streams	Spent fix baths should be segregated from rinsewaters and developer solutions because silver recovery is more efficient on more the more concentrated spent fix waste stream.
	Control inventory	Do not allow material to exceed shelf life and then have to be discarded as waste. Use materials on a first-in, first-out basis. Do not get rid of expired products by discharging to wastewater treatment system.
	Adjust replenishment	Adjust chemical replenishment rates and wash water flow rates on photoprocessor to optimize bath life and reduce wastewater quantity.
	Keep lids on solutions	In storage, keep lids on bulk solutions to prevent oxidation and contamination of these solutions.
	Minimize spills	Use dry method cleanups.
	Return used ink to vendor	Purchase ink from distributors that will take back unused or spent ink, so ink will not be discharged to the newer.
	Run similar jobs at once	Minimizes need for cleaning between jobs.
	Use non-dry aerosol	Special non-drying aerosol materials can be sprayed on ink fountains to keep them from drying out overnight. Fewer ink fountain cleanings required.

II. Material substitution	
Change to silverless film	Silver does not end up in rinse waters or spent fix baths when this type of film is used. Examples include vesicular, diazo, and electrostatic films.
Change to ultraviolet inks	Will not dry in ink fountain overnight. Reduces need for fountain cleaning.
II. Process Modification	
Add ammonium thiosulfate	Addition of this chemical to silver contaminated bath extends the useful life of the bath
Purchase new developing machines that use less rinsewater (e.g., countercurrent rinsing) and/or have squeegees or air blades	To reduce dragout from chemical baths to rinse waters.
Purchase waterless paper and film developing machines	To reduce the volume of fix waste.
Add acetic acid	Acetic acid added to the fix bath keeps the pH low to maximize soluble complexes, therefore, extend bath life.
Install electronic Imaging	Eliminates need for photoprocessing. Expensive.
Install laser platemaking	Eliminates need for photoprocessing. Expensive.
Use flexographic process	Replaces metal etch processes for plate processing.
IV. Material Recovery	
Recover fix bath silver	Install electrowin unit on fix bath of photoprocessor. Extends bath life.
Install electrowin	Install electrowin unit on first rinse and developer waste streams to recover silver from solution and reduce toxicity of wastewater.
Metal replacement canister	Install canister on rinse waters and on effluent of wastewater electrowin to recover silver from solution and reduce toxicity of wastewater.
Install rinsewater recycling	Reduces wastewater.
Recycle inks	Recycle inks to make black ink instead of discharging to sewer.

(WP, Printer)

Last Updated: January 8, 1996

Contact Pinellas County's Pollution Prevention and Resource Recovery (P2R2) Program at 464-4761 for Waste Reduction Assistance