

KODAK RELIABLE IMAGE TIP # 52

PROCESSING LAB DECOMMISSIONING PROCEDURE

Objective:

To remove all chemicals and chemically contaminated equipment, piping, and building materials from processing facilities prior to property sale or termination of property lease. This closure plan provides a standard method that may be expanded to include facility-specific issues.

Environmental Cleanup Team:

Facility cleanup will include many non-routine maintenance tasks that are unique for each facility. All team members must be willing to develop and follow safe work practices. The cleanup team will normally include technicians from the local facility and/or outside contractors. Personnel without technical skills may be included under the direct supervision of the cleanup crew. Unskilled personnel will not handle hazardous chemicals or power tools.

Team Leadership:

A team leader will be designated for each facility closure project. The team leader will have the following responsibilities:

- Plan, coordinate and supervise the activities of the cleanup team to accomplish the objective.
- Assist the cleanup team in development of safe work practices and ensure their use.
- Document the team's efforts with the Environmental Closure Checklist.

Standard Closure Equipment:

- Air compressor (portable is acceptable).
- Garden hoses with spray nozzle (3/4" ID).
- Pressure washer (electric or gas with extension hoses - do not operate gas units inside).
- Wet vacuum.
- Brooms, squeegees, mops, mop bucket.
- Safety glasses, face shields, chemical aprons, chemical gloves, leather gloves and hard hats.
- Active outside telephone line maintained at all times.
- Eyewash and emergency showers (existing in facility or rental).

Safety Requirements:

- **Chemical Safety** - Cleanup team members that work in chemical areas must be familiar with the chemicals they may come into contact with and have received Hazard Communication Training for Chemical Workers. Material Safety Data Sheets must be maintained on site during chemical cleanup activities. All cleanup workers should be aware that dangerous amounts of chlorine gas could be released if chlorine bleach contacts fixer or bleach-fix (including dried deposits). Avoid the use of chlorine bleach to clean tanks containing process chemicals or dried chemical deposits on the floor.
- **Personal Protective Equipment** - Safety glasses, face shields, chemical aprons, chemical gloves, leather gloves, hard hats, and safety shoes should be used where appropriate. All workers should review each task and select appropriate safety equipment. Safety glasses with side shields AND a face shield must be worn when removing rinsed chemical lines from overhead. Hard hats must be worn when demolishing walls or mezzanines.
- **Emergency Planning** - An outside line telephone must be maintained at all times with emergency numbers (ambulance, police, fire, alarm company) posted nearby. Fire safety systems and emergency lighting must be maintained through closure.
- **Lone Operator** - No worker will operate power equipment or manage hazardous chemicals while alone in the facility. A lone worker will carry a portable phone to summon help in an emergency.
- **Lockout / Tagout** - All workers must be familiar with lockout / tagout procedures and understand the lockout/tagout system that will be used during closure activities.
- **Safety Equipment** - Existing emergency eyewash and showers must be tested and maintained until chemical activities are completed (rental units may be substituted if required).
- **Asbestos** – For buildings constructed prior to 1980, the potential for asbestos-containing materials (ACM) must be evaluated. The asbestos inspection report for the facility (if performed) may identify mastic under floor tile as an ACM. If small amounts of floor tile must be removed it should be wetted with water and gently peeled up with a large putty knife. If tile is brittle and breaks easily use a heat gun to soften tile for removal. Remember that floor tile mastic cannot release fibers until exposed - seal any exposed mastic with shellac. Never use tile chipping or sanding equipment on floor tile. If large areas of tile must be removed an asbestos remediation contractor will be retained.

Action Items for Cleanup Team:

The actual sequence of activities is left to the discretion of the Team Leader to optimize available resources.

1. Review existing facility permits, licenses, and local regulations regarding notification requirements prior to shutdown.

2. Team leader will review the asbestos inspection report for the facility, if available.
3. Team leader will review potential chemical hazards, appropriate personal protective equipment, and location of safety equipment with the cleanup team.
4. Team leader will review safe working practices related to asbestos containing materials, lone operator policy, and lockout/tagout procedures with the cleanup team.
5. Team leader will ensure standard closure equipment is available when required. Equipment should be stored in a secure location.
6. Transfer all process solutions containing silver (fix, bleach-fix, low-flow wash) to the silver recovery system as soon as possible after processing ceases. NOTE: the cleanup task will be substantially more difficult if process chemicals are allowed to dry and crystallize.
7. Other tank solutions should be emptied from processors the week after processing ceases. Adhere to local wastewater discharge ordinances.
8. All processor tanks must be cleaned by: removing filters, filling with water and circulating to remove chemical residue from the tempering systems three times (triple rinsing). Remove bottom plates (if any) from tanks and rinse out any residue. Rinse water may be drained to the sewer if allowed by local ordinance.
9. Rinse exterior of processors and drain trays to remove chemical deposits before removal.
10. Pressure wash any platforms to remove chemical deposits. The cleaned wood can be disposed as solid waste.
11. Remove cleaned processors and transfer to other facilities or dispose as solid waste. Stainless steel may be recycled as scrap metal.
12. After all silver solutions have been treated, drain the primary silver recovery equipment into the secondary recovery system (i.e. electrolytic plating units to the TMT system or metallic replacement cartridges (MRCs)). Fill primary units with water and circulate to flush remaining chemicals. Remove any silver sludge from the ballast tanks and drum for shipment to the silver refiner. Pressure wash interior and exterior of all ballast and collection tanks.
13. After all silver solutions have been treated place all filters from TMT system in drum for shipment to the refiner. Fill TMT unit with hot water and mix to flush remaining chemicals. Pressure wash interior and exterior of settling and filter bag tanks to remove yellow residue. All rinse water may be drained to the sewer if allowed by local ordinance. For MRCs, prepare units for shipment to silver refiner.
14. Properly package and ship all reclaimed silver materials to the silver refiner. The cleanup team is responsible for making the last shipment of reclaimed

silver to the refiner. They will coordinate documentation and obtain proper shipping documents.

15. All replenisher-holding tanks in chemical mix should be emptied and immediately rinsed with water. Processing solutions should be discharged at rates that simulate production rates to avoid excessive loading problems for the treatment plant (if allowed by local ordinance).
16. Fill empty chemical tanks (mixing, replenisher, collection, holding) with hot water and drain three times. Remove any chemical residue on the exterior of the tanks with pressure washer.
17. Transfer any tanks requested by other labs. Cut plastic and fiberglass tanks in half vertically and dispose as solid waste. Recycle any remaining metal tanks as scrap metal.
18. Rinse all chemical lines (replenishment, regeneration, and silver recovery) with hot water and drain through the quick fill valves at processors. Perform this rinse a total of three times for all chemical lines. Drain all rinse water from lines (low pressure air assist may be used with drain valves open - never pressurize closed PVC pipe). Mark each end of all rinsed lines for reference during removal.
19. Remove all process chemical lines from overheads and/or trenches. Safety glasses with side shields must be worn when removing chemical lines. A face shield must also be used with safety glasses when removing overhead lines. Rinse exterior of any lines with chemical deposits and stockpile all rinsed lines in a designated storage area. Never allow lines that have not been triple rinsed to be placed in this area.
20. Select two 12" pieces of rinsed line at random and send to an independent lab for a silver TCLP test. Do not dispose until test results verify pipe is not hazardous (TCLP value less than 5 mg/L for silver), and can be disposed as solid waste. The analytical results must be included in the permanent closure file for this facility.
21. Remove all flex hose or ducting associated with processing equipment. Materials should be evaluated for proper disposal.
22. Rinse all pump stations by disconnecting input lines and filling the tank with a water hose until the station has cycled four times. Remove any sludge from the tank and drum for shipment to the refiner. Rinse interior and exterior of pump station to remove all chemical deposits.
23. Transfer all remaining photo processing equipment to other facilities or dispose as solid waste.
24. Remove building air compressors and pick up residual oil with granular absorbent (kitty litter is acceptable). Drum oil saturated absorbent for proper disposal. Clean floor with a soap solution and brush, followed with a pressure wash to remove any oil deposits. Collect the rinse water with a wet vacuum and

allow to settle. Decant any floating oil and pour into used oil absorbent drum. Remaining rinse water may be sent to the drain if allowed by local ordinance.

25. Remove all film and paper processor darkroom walls. Separate all sheetrock and wood that is saturated with processing chemicals for disposal. For exterior walls, replace all sheetrock which exhibit signs of water/chemical damage.
26. Clean (wash down with sponge and detergent) any mildly stained walls in process areas that are structurally sound and not saturated with chemicals. Repaint as required after all chemical deposits are removed.
27. Triple rinse all floors in chemical areas with pressure washer to remove all chemical deposits. It may be necessary to replace heavily stained tile/linoleum. Representative samples of removed floor materials should be evaluated for proper disposal (i.e. solid vs. hazardous waste).
28. Flush all floor drains and inspect traps. If visible "sludge" or debris is present, clean traps, containerize removed material and evaluate for proper disposal.
29. Remove any concrete processor pads, spill containment curbs, or drainage structures above the floor surface. Repair any damage to concrete surfaces with vinyl concrete repair compound. Strip and scrub all floors with floor machine and wax tile floors.
30. All unused process chemical products that can be used by another operating facility will be transferred by common carrier. Company or rental vehicles and facility employees will NOT transport hazardous chemicals if they are not properly trained or licensed as a transporter. Department of Transportation (DOT) for container labels and bill of lading apply for chemical shipments.
31. Search the entire facility and grounds and collect ALL chemical substances for disposal. These include: cleaning compounds, driveway sealer, paint and thinner, motor oil, gasoline, compressor oil, carpet adhesive, process chemicals, drums of acids, boiler or cooling tower treatment chemicals, air conditioning Freon, pesticides and herbicides. Place in a designated chemical collection area (incompatible chemicals must be segregated). Recycle chemical products or prepare a disposal inventory list for remaining hazardous chemicals. Obtain a copy of the MSDS for each product - the waste disposal contractor will require this information.
32. Arrange for proper disposal by an approved disposal contractor. The team leader will coordinate the pickup with the disposal contractor and sign the waste manifests. The waste manifests must be included in the permanent closure file for this facility.
33. Remove all remaining debris and sweep entire facility. Facility should be left in move-in condition.
34. Photo document the cleaned facility with a roll of film showing all chemical areas.