

Environmental Standard Operating Procedure			
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Title: Photographic Development

1.0 PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to provide environmental guidelines for managing the waste stream from the development of dental x-rays.

2.0 APPLICATION

This guidance applies to those individuals who come in contact with the chemicals used in processing dental x-rays at any dental clinics located onboard Marine Corps Air Station (MCAS) Miramar.

3.0 REFERENCES

- 40 CFR 262.34
- 40 CFR 263.10
- RCRA Subtitle C

4.0 PROCEDURE

3.1 Discussion:

Routine x-ray dental procedures generate small quantities of spent x-ray processing solutions. The "bite wings" contain the photographic film requiring development. Several types of hazardous and non-hazardous wastes are generated in the development process and include developer, fixer, and water rinsate.

Developer is corrosive and requires proper handling. The film processor is cleaned with a non-hazardous cleaner containing 1% Sodium hydroxide (NAOH). Silver is a heavy metal essential in x-ray image formation. Effluent fixer contains high levels of silver, and is classified as hazardous waste (HW). Free silver ions are very toxic to aquatic organisms.

Effluent fixer shall be collected in an approved container labeled HW. Containers of HW are collected every six months or when the container becomes full. Full containers are picked up within 72 hours and transferred to the 60-Day Accumulation Area next to building 2621. Small quantity generator requirements specify specific container labeling requirements along with the maintenance of a HW Log in accordance with Resource Conservation Recovery Act (RCRA) Subtitle C (40 Code of Federal Regulations (CFR) Part 262).

4.2 Operational Controls:

The following procedures apply:

1. MSDSs (Material Data Safety Sheets) for developer, fixer, and cleaner for the AT2000 Processor are located in central hallway.
2. Operation Manual for the AT2000 Processor must be available and in a designated location known to all personnel.
3. Conduct new-hire orientation and initial training.
4. Maintain required current training and certifications for all staffs.
5. HW handlers must wear the following PPE to including chemical goggles, a lab apron, industrial rubber gloves for corrosives and closed toe shoes while cleaning the processor or changing the chemicals.
6. Keep fire extinguishers nearby and readily accessible.
7. Ensure eyewash is operating properly.
8. Keep a fully stocked Spill Kit nearby in a designated location known to all personnel.
9. Clean AT2000 weekly. The roller assembly is removed from the processor and relocated over the sink where it is sprayed with a dilute sodium hydroxide cleaning solution, rinsed with clean water, wiped dry, and re-assembled per the manufacturers' instructions.
10. One gallon containers of developer and fixer are fed into the AT2000 per manufacturers instructions.
11. Used developer and rinse water are considered non-hazardous wastes and are allowed down sink drains.
12. Effluent fixer is collected in approved 5-gallon containers. A HW label must be placed on the container the moment the first drop of hazardous waste is put in the container. The label should contain the command name, address (to include building number), and phone number, satellite accumulation start date, contents, hazard class and physical state.
13. Place secondary containment pan under fixer collection container.
14. Maintain HW Log, which includes container type, accumulation start date, accumulation end date, date container taken to HW 60-Day Accumulation Site, HW Manifest number, etc.
15. Provide inventory of HW containers, at 60-Day Accumulation Site, to Base Environmental Office.
16. Spills must be cleaned up as soon as they are identified and according to established spill response procedures.
17. Report spills to Command Safety Office using the Hazardous Substance Release/Spill Report.

18. Post signs for "No Smoking", Radiation-If you are female and suspect you may be pregnant..., Exit, Photographic Lab (In Use), and Command Name, address, and phone number.
19. If there are any specific situations or other concerns not addressed by this procedure, contact the Camp Pendleton Environmental Management Office (EMO).

4.3 Documentation and Record Keeping:

The following records must be maintained for the photographic development of dental x-rays:

1. MSDSs for all chemicals used in the AT2000 Processor.
2. Processor inspection records.
3. HW labels includes command name, address (to include building number), and phone number, Satellite Accumulation Start Date, contents, hazard class and physical hazard.
4. Hazardous Waste Log includes the container type, accumulation start date, accumulation end date, HW manifest number.
5. Spill Kit Inventory (updated to reflect current inventory on stock).
6. Indoctrination (INDOC) Safety Sheet (one for each practice: lists potential hazard classes, control measures and reporting forms for the specific practice).
7. Hazmat Admin Binder (includes the following):
 - a. Hazmat Control & Mgt (HMC&M) Program [Battalion Order/NDCCPINST 5100.2]
 - b. Training Certificates/Records
 - i. Appointment Letters
 - ii. Training Certificates (40-hour, 8-hour, etc.)
 - iii. Hazmat Business Plan Training Records (all-hands, annually)
 - iv. Emergency Response Training Records (all-hands, annually)
 - c. HM Business Plan
 - i. Emergency Response Plan
 - ii. Personnel Training Description
 - iii. Map Symbols
 - iv. Site Map (Emergency Exit Procedures)

- v. Emergency Equipment List & HM Inventory
- d. Bio-hazardous Waste Program
 - i. Medical Waste Management Plan
 - ii. Bio-hazardous Waste Training (All-hands, annually)
- e. Weekly Site Inspections (HW)

4.4 Training:

All affected personnel must be trained in this SOP and the following per level of exposure/handling:

Occupational Health and Safety Manager:

1. 40-hour Hazardous Waste Operations and Emergency Response (HazWOPER) Training
2. 8-hour HazWOPER Refresher Training (annual)

X-Ray Technician/Developer:

1. X-Ray Certification
2. Hazard Communication (HazCom) Training
3. Hazardous Waste Training

HW Handlers:

1. HazCom Training
2. Procedures for handling HM/HW

4.5 Emergency Preparedness and Response Procedures:

Refer to Marine Corps Order (MCO) P5090.2A, Subject: Oil/Hazardous Substance Spill/Spill Prevention Control & Countermeasures (OHSS/SPCC) for MCAS Miramar.

4.6 Inspection and Corrective Action:

The Environmental Compliance Coordinator (ECC) shall designate personnel to perform inspections. The ECC shall ensure deficiencies noted during the inspections are corrected immediately. Actions taken to correct each deficiency shall be recorded on the inspection sheet.

X-Ray Photographic Development – Inspection Checklist

Date:	Time:
Installation:	Work Center:
Inspector's Name:	Signature:

Inspection Items	Yes	No	Comments
1. Are the MSDSs for all chemicals, including developer, fixer, and processor cleaner, available and current? <i>(29 CFR 1910)</i>			
2. Is Operation Manual available? <i>(MCO P5090.2A)</i>			
3. Are training and inspection records maintained and available for inspection for up to three years? <i>(MCO P5090.2A 9104.1(k)(5)- inspection only)</i>			
4. Is proper PPE being worn? <i>(29 CFR 1910; CCO 5090.5)</i>			
5. Are spill kits and fire extinguishers kept nearby? <i>(29 CFR 1910)</i>			
6. Is eyewash operating properly? <i>(29 CFR 1910)</i>			
7. Is processor cleaned and operated per manufactures' recommendations? <i>(MCO P5090.2A)</i>			
8. Is all HW stored in appropriate, approved containers? Are transfer containers equipped with lids? <i>[40 CFR 262.34(c)(1)(i)]</i>			
9. Is secondary containment pan under fixer collection container? <i>(40 CFR, 22 CCR)</i>			
10. Is the HW Log maintained with type of containers, accumulation start date, accumulation end date, date container taken to 60-Day Accumulation Area, and HW manifest number? <i>[Subtitle C (40 CFR Part 262)]</i>			
11. Is the Environmental Management Department contacted when containers are full and require transfer to the 60-Day Accumulation Area? <i>[Subtitle C (40 CFR Part 262)]</i>			
12. Are spills properly cleaned up immediately? <i>(40 CFR, 22 CCR, MCO P5090.2A)</i>			
13. Are spills properly reported to Command Safety?			

<i>(MCO P5090.2A)</i>			
14. Post signs for "No Smoking", Radiation-If you are female and suspect you may be pregnant..., Exit, Photographic Lab (In Use), and Command Name, address, and phone number. <i>(29 CFR 1910, MCO P5090.2A)</i>			

ADDITIONAL COMMENTS:

CORRECTIVE ACTION TAKEN:

Environmental Compliance Coordinator:

Name: _____

Signature: _____

Date: _____