

# **Dental hazardous waste training for minimal quantity (MiniQG) and very small quantity (VSQG) generators**

## **Minnesota Technical Assistance Program**



# Outline

Dental Hazardous Waste training for minimal quantity generators (MiniQG) and very small quantity generators (VSQG)

- Who is MnTAP?
- Purpose of the training
- Healthcare hazardous waste
  - Pharmaceuticals
  - Infectious waste
  - Other waste streams
- Setting up a waste storage area



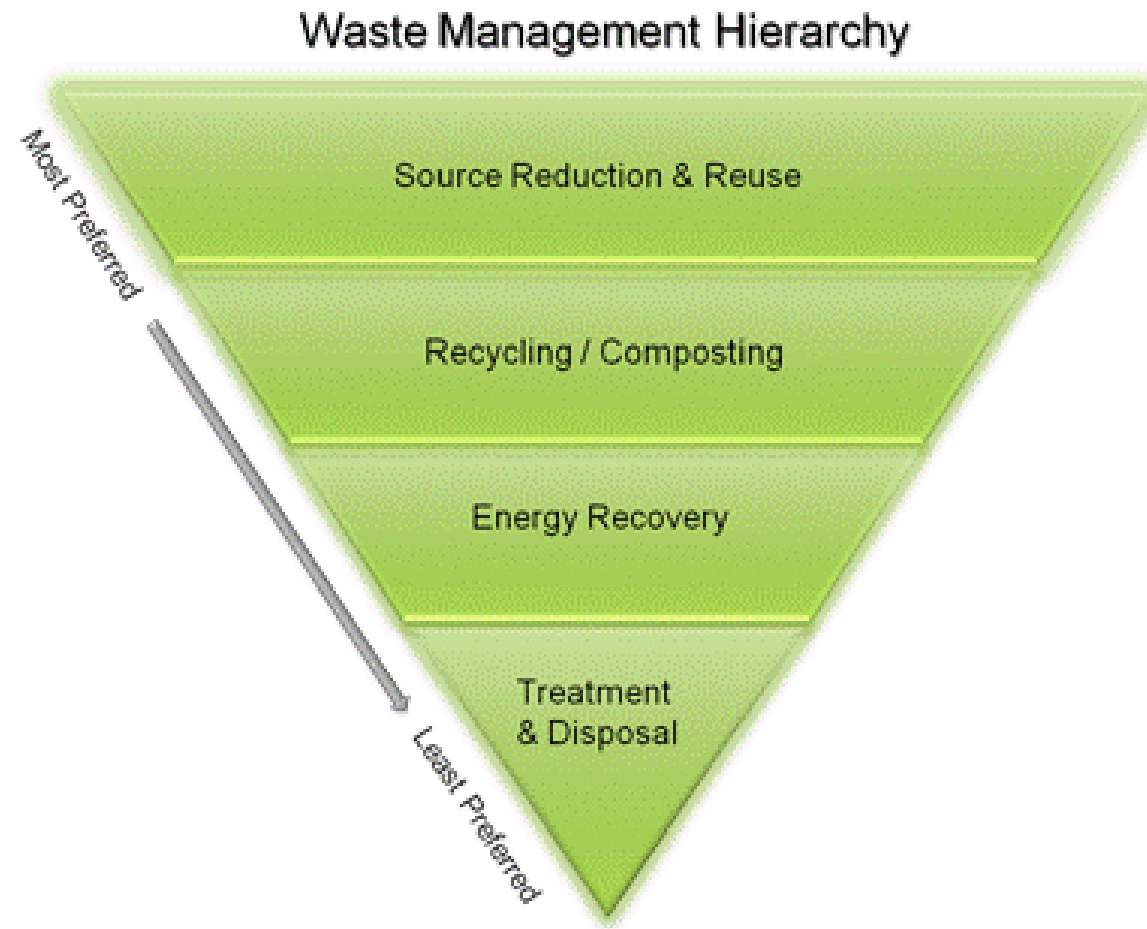
# Minnesota Technical Assistance Program

Strengthening Minnesota businesses by improving operational efficiency while saving money through energy and water conservation and waste prevention.

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# Why waste prevention?



<http://www2.epa.gov/smm/advancing-sustainable-materials-management-facts-and-figures>



# MnTAP Services

- On-Site Assistance
  - Site assessments
  - Intern program
  - Team facilitation
  - Demonstrations/research
- Minnesota Materials Exchange
- Outreach and Training





# Healthcare Resources

- [mntap.umn.edu/health/index.htm](http://mntap.umn.edu/health/index.htm)

-or-

- [www.mntap.umn.edu](http://www.mntap.umn.edu)
- Industries
  - Facilities
  - Healthcare



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## Minnesota Technical Assistance Program

### Pollution Prevention for Healthcare Facilities

The primary mission of healthcare is to provide quality care for our communities. Implementing pollution prevention practices can help your facility support both community and environmental health in Minnesota.

MnTAP can provide assistance to help you increase resource efficiency, reduce waste, reduce costs, and increase regulatory compliance. MnTAP has worked with a range of healthcare facilities including hospitals, surgery centers, clinical laboratories, dental offices, family practice and specialty clinics, imaging and radiology, long-term care, pharmacies, and veterinary clinics.

The information found in the healthcare section of our website can help your facility comply with waste regulations and meet sustainability goals. Navigate by selecting a topic or type of facility.

#### Types of Facilities

- [Hospitals and Surgery Centers](#)
- [Dental Clinics](#)
- [Long-Term Care Facilities](#)
- [Medical and Specialty Clinics](#)
- [Pharmacies](#)
- [Veterinary Clinics](#)
- [Imaging and Radiology](#)
- [Clinical Laboratories](#)

#### Healthcare Topics

- [Healthcare Waste Regulatory Resources](#)
  - Hazardous Waste
  - Universal Waste
  - Infectious Waste
  - HIPPA Documents
  - Waste Training Program Tools
- [Healthcare Sustainability Resources](#)
  - Energy Efficiency
  - Environmentally Preferable Purchasing
  - Green Building Design
  - Healthy Food
  - Infection Prevention, Disinfection, Sterilization, and Green Cleaning
  - Waste Pollution and Conservation
  - Water Use and Reduction
- [About MnTAP's Work with Healthcare](#)

A group of four healthcare professionals (three women and one man) standing together, smiling. They are wearing white lab coats or blue scrubs. The man is in the center, wearing a white lab coat. The women are on either side of him, two in blue scrubs and one in a white lab coat. They are all holding clipboards or papers.



# Who can benefit from this training?

- Healthcare staff working in small to medium-sized locations that have been identified as MiniQG or VSQG waste generators
- Training recommended within 6 months of employment with annual retraining
- “Staff” includes anyone who:
  - 1) Packages or prepares hazardous materials, such as the person who oversees the hazardous waste program at your site
  - 2) Dispenses, delivers or comes into contact with pharmaceuticals, facility or lab chemicals, or other hazardous wastes (such as batteries and electronics)
  - 3) Has the title of: physician, nurse, medical assistant, therapist, pharmacist, laboratory technician, maintenance worker, environmental services staff, clinic administrator, administrative assistant, and so on.



# What will I learn?

At the conclusion of the learning program the participant will be able to:

- Dispose of uncontrolled pharmaceutical waste
- Dispose of infectious waste
- Dispose of other chemical wastes, batteries and electronics
- Know what to do in the case of a hazardous waste emergency (large or small spill)
- Set up and manage a hazardous waste location



# What is hazardous waste?

- The federal Environmental Protection Agency (EPA) defines hazardous waste as “a waste with properties that make it dangerous or capable of having a harmful effect on human health or the environment.”
- The hazardous waste regulatory and enforcement agency in our state is the Minnesota Pollution Control Agency (MPCA). In the Twin Cities, the seven metro counties are in charge of hazardous waste enforcement.
- All healthcare facilities in Minnesota are subject to unannounced hazardous waste inspections by county, state or federal regulators.



# Why are there laws to regulate healthcare hazardous waste?



- Numerous scientific studies have determined that the hazardous properties found in some pharmaceuticals are polluting our environment and our groundwater.
- Publicly owned treatment works (POTWs) do not effectively treat waste pharmaceuticals, thus creating an issue for both humans (who can develop resistance to common antibiotics, for example) and ecosystem health.



# What might be hazardous in my office?

Many items in healthcare are hazardous waste. This may include:

- Pharmaceuticals (partial vials, expired, etc)
- Disinfectants and cleaning chemicals
- Laboratory kits and chemicals
- Aerosol cans and hand sanitizer
- Batteries, electronics, lightbulbs and medical equipment
- Any material bearing the words “poison, poisonous, toxic, lethal, fatal or deadly” or with a “skull & crossbones” graphic





# Categories of Waste Generators

- Minimal Quantity Generator (MiniQG)
  - Less than 100 pounds of hazardous waste per year
  - No acute hazardous waste
  - Not all counties accept this designation
- Very Small Quantity Generator (VSQG)
  - Less than 220 pounds of hazardous waste generated per month
- Small Quantity Generator (SQG)
  - >220 pounds but <2200 pounds of hazardous waste generated per month
- Large Quantity Generator (LQG)
  - >2200 pounds of hazardous waste per month
  - OR >2.2 pounds of acute hazardous waste generated per month



# How do I dispose of it? *Pharmaceuticals*

- Pharmaceuticals generally get collected in a black RCRA\* waste box (pictured)
- Your black box should be kept in a medication prep area (out of reach of patients/visitors)
- Draw up your medications as usual. If any unusable portion remains in the vial, dispose of it in the black box
- Pills, creams, and other types of pharmaceuticals can also be disposed of in your black box



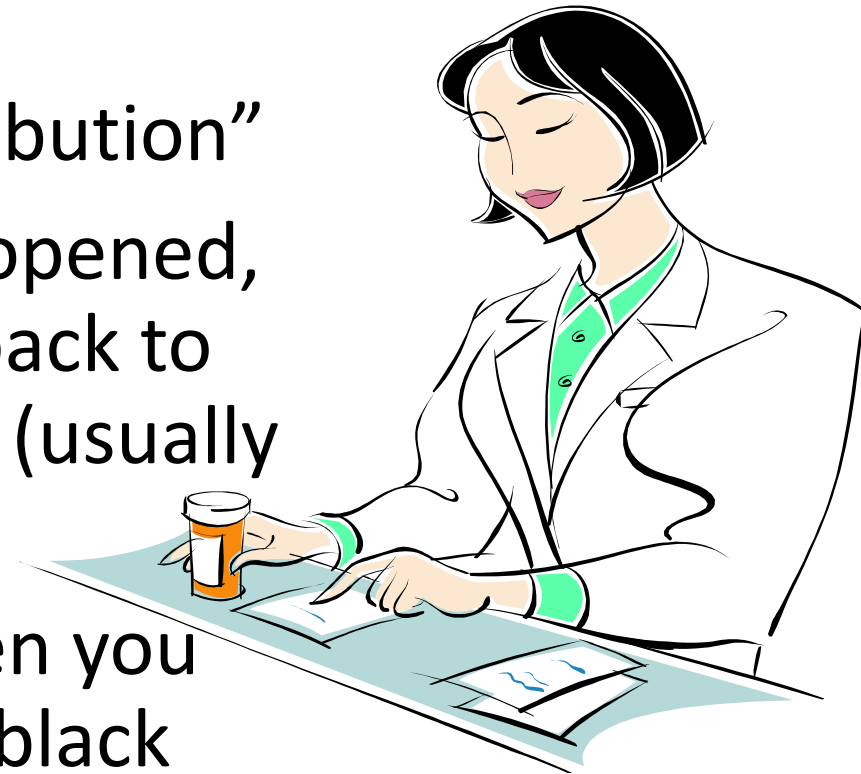
\*Resource Conservation and Recovery Act (RCRA)



# How do I dispose of it?

## *Unused and Unexpired Pharmaceuticals*

- Some facilities, depending on volume and location, may participate in “reverse distribution”
- Reverse distribution is when you send unopened, unexpired, and unused pharmaceuticals back to the manufacturer or wholesale pharmacy (usually for financial credit)
- If you do not use a reverse distributor, then you must throw your unusable items into the black box





# Source Reduction *Tip*

- **Purchase only what you need** – the proper dosage, package size and amount so that you use products before expiration date
- **First in first out** - rotate stocks of pharmaceuticals and chemicals to efficiently use product
- **Check out emergency kits** – rotate out products close to expiration date





# Source Reduction *Tip*

- “Free” samples of pharmaceutical products turn into pharmaceutical waste when not used
- Extra pharmaceutical waste costs your business money and time to manage and dispose
- Just say “no thank you” to offers of free samples that you do not know you will use



# Are all pharmaceuticals hazardous?

No! However...

- If you only want to collect items that have been deemed to be hazardous, the state requires that you FORMALLY EVALUATE YOUR WASTE STREAM

What is an evaluation?

- You must create a list of all waste generated at your facility and indicate, via an evaluation process (testing, research, etc) whether each type is or is not a hazardous waste
- More information about waste evaluations can be found on MnTAP's healthcare hazardous waste webpage

<http://www.mntap.umn.edu/health/pharmwaste.html>  
<http://www.pca.state.mn.us/index.php/view-document.html?gid=4001>



# Are empty containers hazardous?

- Generally, no! Empty containers such as vials, packaging, blister packs, IVs, and sharp-free syringes are *not* considered hazardous
- “Empty” rule of thumb: All you can get out by reasonable means and less than 3% by volume
- Hazardous waste can be as much as 15x the cost of regular trash; only use a black box when you *must* do so



Note – While empty vials and syringes are not considered hazardous if the needle is attached or the glass is broken, they must be placed in a SHARPS waste container



# Exception to the “empty” rule

There are four p-listed (**acutely toxic**) drugs. Not only do the leftover medications (if there are any) go into a black box, but so do the packaging they come in. This includes foil wrappers, blister packs, vials or any other packaging type.

1. Warfarin (Coumadin)
2. Physostigmine
3. Arsenic Trioxide
4. Nicotines (unused)





# Can I dispose of medications for our patients?

- In general, it is unlawful to accept medication back from patients. Some counties *do* allow residents to drop off medications, so patients should check with their county for more details on local program availability.
- You may also print and give patients handouts created by the MPCA describing how to safely dispose of medication and needles (link below to hand-outs).

<https://www.pca.state.mn.us/sites/default/files/w-hhw4-67.pdf>

<https://www.pca.state.mn.us/living-green/managing-unwanted-medications>





# How do I dispose of it? *Infectious Waste*

There are generally three types of infectious waste generated at small healthcare facilities:

- Sharps waste - any item with projections capable of piercing the skin. This includes needles, blades, and scalpels. All sharps must be disposed of in properly designated containers.
- Red bag waste - any item *saturated* with blood or body fluids or bags and IV tubing containing whole blood products. This does not include gowns or gloves (unless contaminated with blood), gauze or band-aids, or garbage. All red bag waste must go in a properly designated “red bag” container.
- Yellow bag waste - used *only* when chemotherapy is administered or there is “large tissue” disposal occurring. For more information on yellow bag waste, visit MnTAP’s Healthcare Infectious Waste webpage.





# Not Infectious Waste



Most of these items could have been placed in the regular trash.



**Red bags** are for items dripping or saturated in blood or body fluids



# It Pays to Pay Attention (to Waste)



**Cost =  
\$2.00/lb**



**Cost =  
\$0.25/lb**



**Cost =  
\$0.04/lb**



# How do I dispose of it? *Chemicals and Laboratory Wastes*

- Unused, unwanted or outdated chemicals should be placed in the hazardous waste storage area and have the words “hazardous waste” somewhere on the container. Containers must be dated and tightly closed before being left in the hazardous waste storage area.
- Care should be taken when storing incompatible wastes near one another; for example, acids and bases should be stored with some distance between them. You should use secondary containment (like a plastic tote) for storing all hazardous wastes.
- Empty containers can go into regular trash or recycling.
- Some choose to use a hazardous waste vendor to evaluate, sort and dispose of hazardous chemicals correctly.



# How do I dispose of it?

## *Batteries, Electronics, and Light Bulbs*

- All batteries (including alkaline and rechargeable) should be collected for recycling. Place in an appropriate collection bin at your facility; if you don't have one, you can make one by labeling a pail or box with "Waste batteries for recycling."
  - Note – Isolate "button" batteries with tape
- Anything with a circuit board should also be collected in the hazardous waste storage area. For large items (computers or medical equipment), contact your regional hazardous waste facility for assistance with donation or proper disposal.
- Fluorescent and other types of light bulbs must be collected as universal (hazardous) waste in a *closed* container.



# Special Waste Topics

- Cidex and glutaraldehyde, if expired and unused, are hazardous wastes. The *used* liquid is not a hazardous waste; however, best practice would be to neutralize these chemicals before sewerage (several low-cost neutralizers exist on the market).
- If you are using lead-based sterilization indicator tape, pouches, or arrows, you'll need to dispose of it as hazardous waste.
- Imaging departments, clinical laboratories, nuclear medicine, dental offices, and veterinarian clinics tend to create wastes not seen elsewhere. For detailed information on these wastes, please visit MnTAP's Healthcare Special Waste Topics webpage.



# Special Waste Topic - *Mercury*

- Dental amalgam is considered a universal waste in Minnesota
  - Should not be disposed of in trash
  - Can be disposed of to sewer only with permission from wastewater authority
  - Can NOT be disposed of to septic systems
  - Collect and dispose as universal waste
- What is amalgam waste?
  - Amalgam scrap
  - Chair-side trap filters containing amalgam
  - Vacuum pump filters containing amalgam
  - Saliva ejectors if used in dental procedures involving amalgam
  - Used amalgam capsules
  - Extracted teeth with amalgam restorations
  - Waste items that are contaminated with amalgam

<http://www.ada.org/en/member-center/oral-health-topics/amalgam-separators>



Amalgam BMP from ADA: <http://www.ada.org/en/member-center/oral-health-topics/amalgam-separators>

Do	Don't
<i>Do</i> use precapsulated alloys with a variety of sizes	<i>Don't</i> use bulk mercury
<i>Do</i> recycle used disposable amalgam capsules	<i>Don't</i> put used disposable amalgam capsules in biohazard containers
<i>Do</i> salvage, store, and recycle non-contact amalgam	<i>Don't</i> put non-contact amalgam waste in biohazard or infectious waste containers (red bags), or regular trash
<i>Do</i> salvage (contact) amalgam pieces from restorations after removal and recycle their contents	<i>Don't</i> put contact amalgam waste in biohazard or infectious waste containers (red bags), or regular trash
<i>Do</i> use chair-side traps, vacuum pump filters, and amalgam separators to retain and recycle amalgam	<i>Don't</i> rinse devices containing amalgam over drains or sinks
<i>Do</i> recycle teeth that contain amalgam restorations	<i>Don't</i> dispose of extracted teeth that contain amalgam restorations in biohazard, infectious waste (red bag), or sharps containers or regular trash
<i>Do</i> manage amalgam waste through recycling	<i>Don't</i> flush amalgam waste down the drain or toilet
<i>Do</i> use line cleaners that minimize dissolution of amalgam	<i>Don't</i> use bleach or chlorine-containing cleaners to flush wastewater lines



# Amalgam Separator Systems

- Voluntary program in MN by agreement between MPCA and MDA to keep mercury waste out of the environment
- Works by solids separation
- Approved devices for MN - <https://www.pca.state.mn.us/quick-links/managing-dental-waste>
- Mercury waste is considered a universal waste in Minnesota

[http://www.ecy.wa.gov/programs/hwtr/business\\_type/mercury\\_dental\\_amalgam.html](http://www.ecy.wa.gov/programs/hwtr/business_type/mercury_dental_amalgam.html)



# Special Waste Topic - *Lead*

- Sources of lead waste from dental offices
  - Lead aprons
  - Lead foils from X-ray film
  - Lead-lined film storage boxes
- Lead must be treated as universal waste
  - Collected
  - Labeled and stored in hazardous waste area
  - Disposed of with other universal waste



<http://www.top5reviewed.com/wp-content/uploads/2016/06/xray-apron.jpg>  
<http://www.rpdinc.com/3980-thickbox/lead-lined-storage-container.jpg>  
[http://upload.wikimedia.org/wikipedia/commons/8/89/Dental\\_x-ray\\_film\\_05.JPG](http://upload.wikimedia.org/wikipedia/commons/8/89/Dental_x-ray_film_05.JPG)



# Source Reduction *Tip*

- Switch from film to digital radiography
  - Reduce use of hazardous materials like X-ray developers and fixers
  - Eliminate hazardous waste generation from lead foils from X-ray film packets, spent developers and fixers
  - Save staff time and improve office throughput
- Cost saving opportunities
  - Material costs per X-ray: \$.50 - \$1.00
  - Labor per X-ray: 7 – 15 min
  - Return on investment may be as little as one year

<http://www.dentistryiq.com/articles/dem/print/volume-11/issue-3/equipment/digital-radiography-a-change-for-the-better.html>

<http://www.dentaleconomics.com/articles/print/volume-102/issue-11/feature/you-can-t-afford-not-to-go-digital.html>



# Special Waste Topic - *Paint*

- New opportunity for residential and small business paint waste recycling and disposal – PaintCare
  - <https://www.paintcare.org/paintcare-states/minnesota/#/everyone>
- PaintCare operates a paint stewardship program on behalf of paint manufacturers in eight states
- Search for drop-off sites by zip code
  - <https://www.paintcare.org/drop-off-locations/#/find-a-drop-off-site>

- ✓ Architectural Paint
- ✓ Primers
- ✓ Stains
- ✓ Varnishes
- ✓ Sealers



- ✗ Aerosol spray cans
- ✗ Solvents
- ✗ Non-architectural paint



# Emergency Preparedness

If there has been a chemical or biological spill at your facility, please note the following:

- Do not attempt to clean spills beyond your capability. If it is rapidly spreading beyond your control or is an unknown substance, call for emergency help.
- Do not clean spills without hazard knowledge of the spilled material and proper protective equipment; immediately notify your supervisor if there has been a spill.
- Manage spill response materials (spill kit contents or paper towels) as hazardous. If you do not know where your spill kit(s) are located, contact your supervisor.
- For large spills (typically more than 5 gallons), you should call your hazardous waste disposal company or another first responder as identified on your **emergency contact list**.
- Five general rules to follow in the event of a spill:
  - EVACUATE (leave spill area, alert others)
  - CONFINE (close doors, isolate the spill with absorbent material)
  - REPORT (to your supervisor, facility manager, emergency response)
  - SECURE (until help arrives)
  - ASSIST (provide information about the spilled material)



# Labeling and Storing Hazardous Waste

- Create a hazardous waste storage area in a secure location
- Label each container
  - “Hazardous Waste”
  - Description of the contents
  - Date it entered storage
  - Close containers tightly before placing in storage area
- Store hazardous waste with secondary containment (e.g. a plastic container)
- Do not store incompatible wastes (such as acids and bases) close to one another
- Perform and document weekly inspections of storage area
- Post an emergency contact list
- There are time limits on how long you can keep waste on-site
  - Less than 2,200 pounds of waste may be stored indefinitely. Once 2,200 pounds of waste has accumulated, ship the waste off site within 180 days\*\*
    - \*\*If disposal arrangements have been made and the receiving facility is more than 200 miles from the generation site, you may store waste up to 270 days – but do not exceed the volume accumulation limit.



# Storage Area Inspection Log, Emergency Contact List, and Secondary Containment

## Containers you might see

- Pharmaceuticals – “Black” box
- Infectious – Red bag
- Sharps
- Universal waste
  - Fluorescent light bulbs
  - Batteries
  - Amalgam-related
- Trash and recycling

## Postings

- Weekly inspection sheet
- Emergency contact list
- Training information (optional)

Free templates, checklists, and hazardous waste training tools, on the MnTAP website at [www.mntap.umn.edu](http://www.mntap.umn.edu) and search for “waste training programs designed for healthcare.”





# A Word About Paperwork

- Keep hazardous waste records
  - Copies of current licenses and the HWID
  - Employee training records
  - Weekly container inspection logs
  - Shipping manifests
- **You, the facility,** are ultimately responsible for any errors on the manifest; check your manifests carefully before signing them
- You may be required to show copies of these records to regulators
- KEEP manifests - they are needed to fill out annual hazardous waste licensing paperwork

<http://mntap.umn.edu/health/hazardous.html#steps>



# Thank you!

- Please take time to document your training today; we have a template available on our website:  
[www.mntap.umn.edu/health/wastetraining.html](http://www.mntap.umn.edu/health/wastetraining.html)
- For no-cost technical assistance on this or other topics, please call 612-624-1300 or email us at [mntap@umn.edu](mailto:mntap@umn.edu).



# References for Dental Wastes

- General

- <http://www.hercenter.org/wastereduction/dentalwastes.cfm> - Healthcare Environmental Resource Center
- <http://www.mntap.umn.edu/health/dental.html> - MnTAP Dental site
- <https://www.pca.state.mn.us/sites/default/files/w-hw3-35.pdf> - (Regulatory Consensus on Healthcare Issues – MPCA)

- Training

- <https://www.pca.state.mn.us/sites/default/files/p-tr2-16.pdf>
- <http://www.mntap.umn.edu/health/wastetraining.html>

- Resources

- <https://www.mndental.org/files/MDA-Hazardous-Infectious-Dual-Waste-Resource-List-7-29-16.pdf> - Disposal companies
- <http://www.mntap.umn.edu/health/Employee%20record%20of%20training.pdf>
- <http://www.mntap.umn.edu/health/Emergency%20contact%20list.pdf>
- <http://www.mntap.umn.edu/health/Storage%20area%20inspection%20log.pdf>



NAME OF FACILITY: \_\_\_\_\_

## HEALTHCARE HAZARDOUS WASTE STORAGE AREA INSPECTION LOG

All facilities are required WEEKLY to visually inspect the hazardous waste storage area. All containers including black boxes must be tightly closed. All containers must be labeled with the contents, an accumulation start date, and the date it entered storage. There should be no observed leaks or spills. The storage area should not be accessible to unauthorized persons. The storage time limit must fall within the appropriate range for your generator size (for VSQG/MiniQG = indefinitely until 2200 pounds is reached; for SQG = up to 6600 pounds and within 180 days of accumulation start date; for LQG = unlimited pounds within 90 days of accumulation start date).

Date	Visual inspection done by (name)	Containers closed? Y/N	Containers labeled? Y/N	Void of leaks and spills? Y/N	Storage time limit OK? Y/N	Is the area secure? Y/N	Comments/additional notes

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NAME OF FACILITY: \_\_\_\_\_

### EMPLOYEE RECORD OF TRAINING

Please place this completed form in your employee file. Any employee who generates or comes into contact with hazardous waste must undergo training. Keep all records of training for three years beyond termination date. Training records must be made available upon request from a regulatory agency inspector.

EMPLOYEE NAME \_\_\_\_\_

EMPLOYEE JOB TITLE \_\_\_\_\_

DATE OF INITIAL TRAINING \_\_\_\_\_

DATES OF SUBSEQUENT TRAINING(S) \_\_\_\_\_

Small quantity and Large quantity generators must train employees at least 1x per year  
(Mini quantity and Very Small quantity generators must train at least once within the first 6 months of hire)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

METHOD OF INSTRUCTION \_\_\_\_ MnTAP hazardous waste generator PowerPoint training \_\_\_\_\_

The following topics are covered in the PowerPoint training:

- Training rationale
- Duties requiring training
- Training documentation requirements
- Hazardous waste definitions
- Examples of waste generated
- Hazardous waste evaluation
- Hazardous waste manifests
- Generator size
- Container management (labeling, compatibility, containment, storage)
- Common incompatible wastes
- Inspection requirements for storage areas
- Hazardous waste security
- Waste storage time limits
- Pollution prevention ideas
- Basic chemical hygiene concepts
- Chemical spill response procedures
- Infectious waste description, proper tying of bags, manifests
- Summary of ten rules for hazardous waste management

*We certify that the employee named above has completed this training program.*

Employee Signature \_\_\_\_\_

Supervisor Signature \_\_\_\_\_

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NAME OF FACILITY: \_\_\_\_\_ **EMERGENCY CONTACT LIST**

Post this list near or in your hazardous waste storage area.

### ON-SITE EMERGENCY CONTACTS (designate 2 or 3)

These persons should be versed in your emergency plan in the event of a spill or other hazardous waste emergency. Training is available on MnTAP's website.

Name and Title \_\_\_\_\_ Mobile phone \_\_\_\_\_

Name and Title \_\_\_\_\_ Mobile phone \_\_\_\_\_

Name and Title \_\_\_\_\_ Mobile phone \_\_\_\_\_

### NEAREST EMERGENCY SERVICES (for true emergencies dial 911)

Fire Department \_\_\_\_\_

Police Department \_\_\_\_\_

Hospital \_\_\_\_\_

MN Duty Officer (24-hour spill reporting) 1-651-649-5451 or 1-800-422-0798

### LOCATION OF NEAREST RESPONSE EQUIPMENT

Fire extinguishers \_\_\_\_\_

Fire alarm pull \_\_\_\_\_

Spill kit(s) \_\_\_\_\_

### HAZARDOUS WASTE DISPOSAL COMPANY

This company responds to mercury spills (company name, contact person, phone)

This company responds to other small spills (company name, contact person, phone)

This company responds to large hazmat events (name, contact person, phone)

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