

## 9 - EMPTY FLASK DISPOSITION AND TRANSPORT

**Title:** Empty Flask Disposition and Transport

**Doc. No.** 2015-MMTS-9

### Approval Signatures and Date

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*NOTE: This document will be reviewed at least annually to ensure its suitability.*

### Revision History

Rev. No.	Change description	Author
2	Change description Crosswalk Between NDEP CAPP Review Comments (dated 2014-12-09, 2015-01-30 and 2015-02-26) and Mercury Storage and Transfer Program Document Contents March 10, 2015	Burton Packard and Renee Rodriguez
1	Pg. 9-1, added QP.EMS.HG.0004 to references. Pgs. 9-4 and 9-5, §9.3.3, changed text to make Proc. 9 consistent with QP.EMS.HG.0004 and deleted text that no longer applies.	

*NOTE: Hard copies of this document may not be the current version. Refer to the "IAmTheKey" to verify the current version.*

### Reference Documents

Document number	Document title
QP.EMS.HG.0004	Waste Analysis and Characterization Plan for Mobile Mercury Transfer System

## 9.1 PURPOSE

This procedure describes empty flask, drum, and pallet disposition activities in the Flask Handling Area and Building 110-66.

## 9.2 SCOPE

This procedure covers the following activities:

- Plug, bag, and place emptied flasks into the nonhazardous waste drum.
- Pick up from the Flask Handling Area, transport, and place a pallet of drums containing empty flasks in the warehouse at a specified location.
- Transport a pallet of empty drums and place a pallet in the Flask Handling Area
- Remove hazardous wastes and transfer them to the hazardous waste drum

## 9.3 OPERATIONS

### 9.3.1 Dispose of Emptied Flasks

*NOTE: The first four steps of this section are also contained in Procedure 7, Fume Hood 2 – Mercury Transfer, Section 7.4.4, Dispose of Emptied Flasks.*

- After the emptied flasks have been inverted and “shaken” under the fume hood to remove small quantities of remaining mercury, a Flask Handling Area worker removes each flask one at a time from the shaker tray, reinstalls a steel plug, places the flask in a prepositioned plastic bag, seals the bag, picks up the bagged flask and places it in the adjacent 30-gallon non-hazardous waste drum.

*NOTE: Two workers are required for packaging empty flasks. One worker maintains clean gloves to prevent mercury contamination on the outside of the bagged flasks.*

*NOTE: A fume removal snorkel (the cart mounted Airfiltronix<sup>®</sup> unit) should be positioned to reduce the potential for mercury vapors in the breathing zone immediately adjacent to the open drum of bagged empty flasks (see Figure 9-1).*

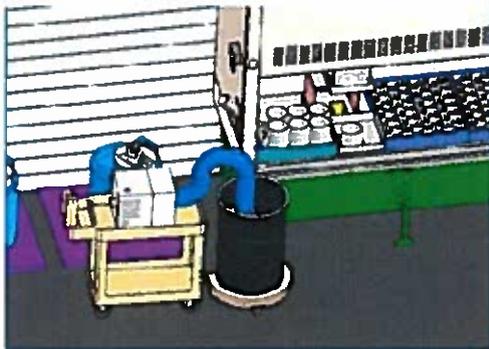
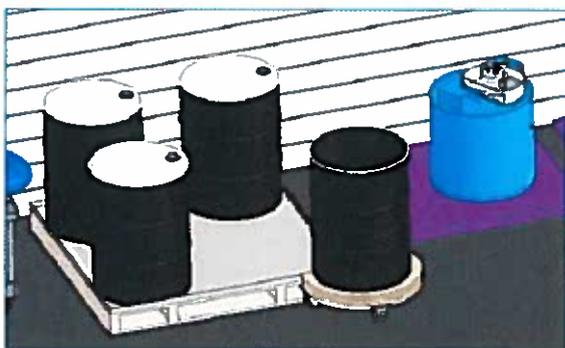


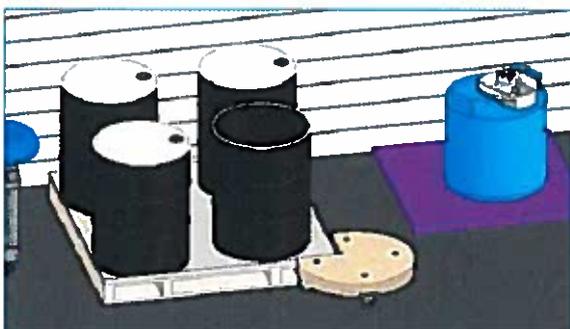
Figure 8-1 Drum on dolly with Airfiltronix<sup>®</sup> snorkel unit on cart

**NOTE:** A drum (either full or empty) should never be opened for a casual inspection. A drum should be opened solely to access flasks or to place waste material and only when all equipment is on hand for monitoring and ventilation.

- The workers repeat the previous actions until the drum is filled; place the lid and locking ring on the drum; seal the drum; mark the drum as containing “non-hazardous waste – empty flasks;” and transport the drum to the pallet for drums of empty flasks (see Figures 9-2 and 9-3).



**Figure 8-2** Drum on dolly next to the pallet with drip pan



**Figure 8-3** Drum is moved from the dolly onto the drip pan, which is lower than the dolly

- A worker assists the forklift operator to remove a pallet of filled drums and replace it with a pallet of empty drums.

**NOTE:** With assistance of MMTS supervisor, a Flask Handling Area worker arranges for a pallet of empty waste drums when needed.

**NOTE:** Breathing zone monitoring is periodically required to ensure that flask-surface vapors are being properly contained in the bagged flasks.

### 9.3.2 Pallets of Non-Hazardous Wastes

- After notification by the Facility Manager and with assistance from the Flask Handling Area worker, the forklift operator
  - Removes pallets containing drums filled with empty flasks and places them in Building 110-66 at the designated location.

- Retrieves a pallet of empty drums from Building 110-66 and places the pallet in the Flask Handling Area of the MMTS.
- The Facility Manager records that a pallet of drums filled with empty flasks, has been placed in Building 110-66 and that a pallet of empty drums has been placed in the MMTS.

### 9.3.3 Hazardous Waste Removal from MMTS

- At the end of each workday, a Flask Handling Area worker places all hazardous wastes in sealed bags and transports them through Fume Hood 2 and Fume Hood 1 and places them in the hazardous waste drum located in the Drum Handling Area.

*NOTE: A drum (either full or empty) should never be opened for a casual inspection. A drum should be opened solely to access flasks or to place waste material and only when all equipment is on hand for monitoring and ventilation.*

*NOTE: A fume removal snorkel should be positioned to reduce the potential for mercury vapors in the breathing zone immediately adjacent to the drum of hazardous wastes prior to opening the drum.*

- At the end of each workday, a Drum Handling Area worker inspects any drums containing hazardous wastes
  - If the drum is full, the worker seals the drum and marks it as hazardous waste, U151, MMTS process debris as directed in Waste Analysis and Characterization Plan for the Mobile Mercury Transfer System (QP.EMS.HG.0004). The worker then arranges to have the drum moved to the appropriate satellite accumulation area and notifies the Facility Manager.
  - If the drum is not full, the worker closes the drum in accord with the container closure requirements of Waste Analysis and Characterization Plan for the Mobile Mercury Transfer System (QP.EMS.HG.0004).
- After receiving notification from the Drum Handling Area worker, the Facility Manager
  - Inspects the hazardous waste drum to determine that it is properly sealed and marked.
  - Instructs the forklift operator to coordinate with the Drum Handling Area workers to remove the hazardous waste drum and take it to the 90-day hazardous waste accumulation area in Building 110-66.
- As soon as possible consistent with maintaining operations, the forklift operator
  - With the assistance of Drum Handling Area workers, removes the drum filled with hazardous wastes.
  - Transports the drum to the 90-day hazardous waste accumulation area in Building 110-66.
- The Drum Handling Area worker moves the pallet to the designated location.

- The Facility Manager records that a drum filled with hazardous wastes has been placed in the 90-day hazardous waste accumulation area in Building 110-66.

*NOTE: A fume removal snorkel should be positioned to reduce the potential for mercury vapors in the breathing zone immediately adjacent to the open drum of bagged hazardous wastes.*

*NOTE: The Facility Manager keeps track of the length of time hazardous wastes have been in Building 110-66 and coordinates with SOC Environmental Services to have them removed consistent with Waste Analysis and Characterization Plan for the Mobile Mercury Transfer System (QP.EMS.HG.0004).*

#### **9.4 RECORDS**

See Procedure 2015-MMTS-10, “Waste Management,” for details of records required when placing hazardous wastes in 110-66.

#### **9.5 ATTACHMENTS**

T-5 flasks (most common in the DLA stockpile – 56,845) – 8 flasks placed vertical in 30 gallon drum (Attachment 9.1)

T-5 flasks (most common in the DLA stockpile – 56,845 flasks) – 8 flasks placed vertical and 8 flasks placed horizontal – 16 flasks per drum (Attachment 9.2)

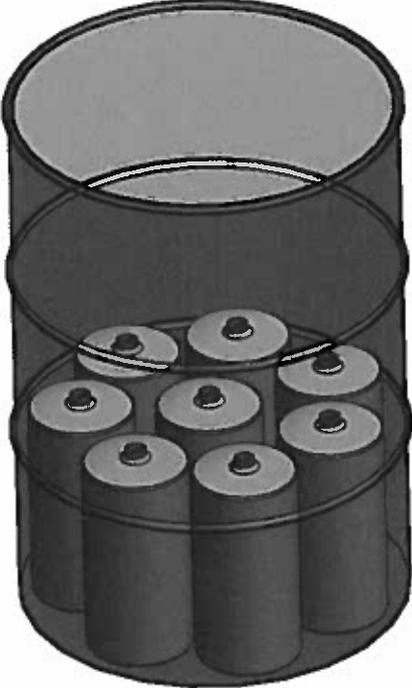
T-5 flasks (most common in the DLA stockpile – 56,845 flasks) – 8 flasks placed vertical and 8 flasks placed vertical (assumed no “cupped” bottom) and 2 flasks placed horizontal – 18 flasks per drum (Attachment 9.3)

T-1, T-2, and T-3 flasks – 12 flasks dropped into 30 gallon drum (Attachment 9.4)

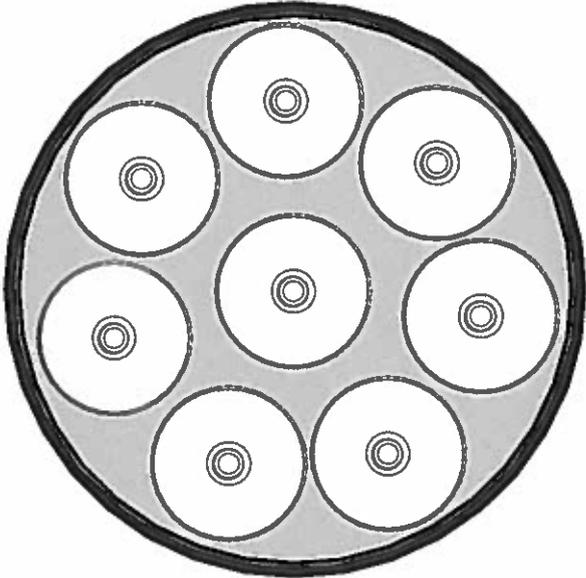
T-1 flasks – 8 flasks placed vertical in 30 gallon drum (Attachment 9.5)

T-2 flasks – 9 flasks placed vertical in 30 gallon drum (Attachment 9.6)

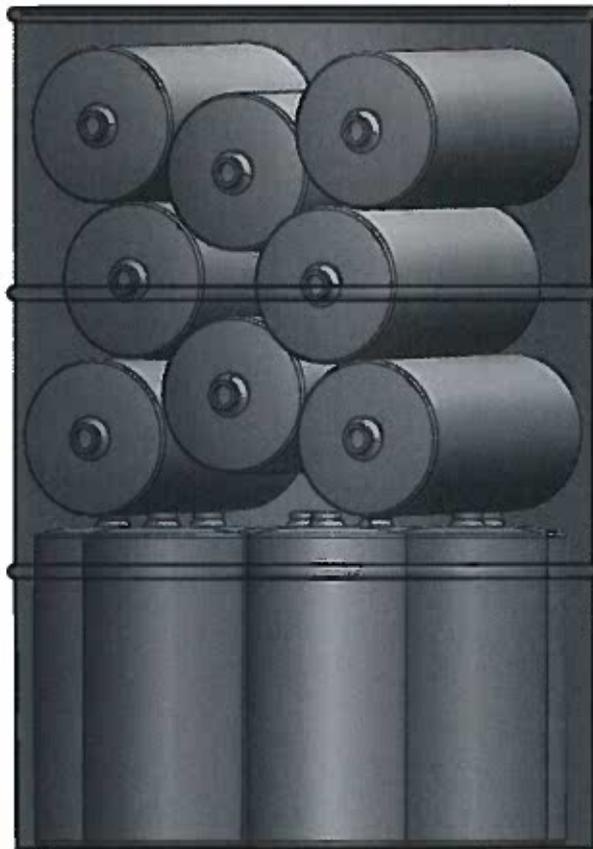
ATTACHMENT 9.1 T-5 flasks (most common in the DLA stockpile – 56,845) – 8 flasks placed vertical in 30 gallon drum



T-5 flasks  
(most common in stockpile - 56,845)  
8 flasks placed vertical  
in 30 gallon drum



ATTACHMENT 9.2 T-5 flasks (most common in the DLA stockpile – 56,845 flasks) – 8 flasks placed vertical and 8 flasks placed horizontal – 16 flasks per drum



**T-5 flasks**  
(most common in stockpile - 56,845 flasks)  
**8 flasks** placed vertical  
and  
**8 flasks** placed horizontal  
**16 flasks** per drum

56,845 flasks = **1895** pallets  
16 flasks per drum  
80 flasks per pallet  
**710** pallets required for disposal  
instead of 948  
238 pallets = **1190 drums** for recycling

ATTACHMENT 9.3 T-5 flasks (most common in the DLA stockpile – 56,845 flasks) – 8 flasks placed vertical and 8 flasks placed vertical (assumed no “cupped” bottom) and 2 flasks placed horizontal – 18 flasks per drum



**T-5 flasks**  
(most common in stockpile - 56,845 flasks)  
**8** flasks placed vertical  
and  
**8** flasks placed vertical  
(assumed no "cupped" bottom)  
and  
**2** flasks placed horizontal  
  
**18** flasks per drum

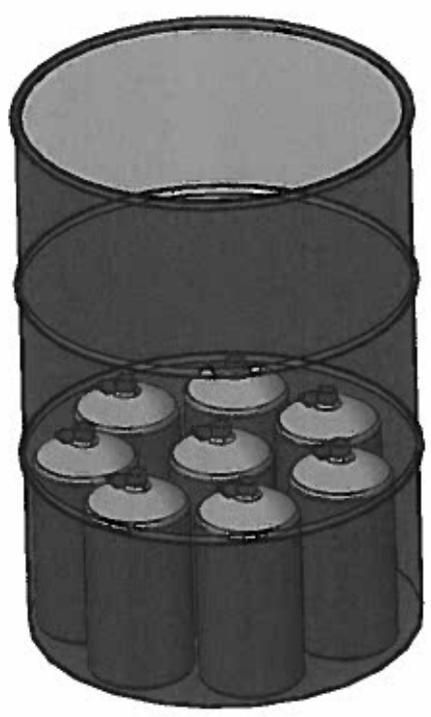
ATTACHMENT 9.4 T-1, T-2, and T-3 flasks – 12 flasks dropped into 30 gallon drum ()



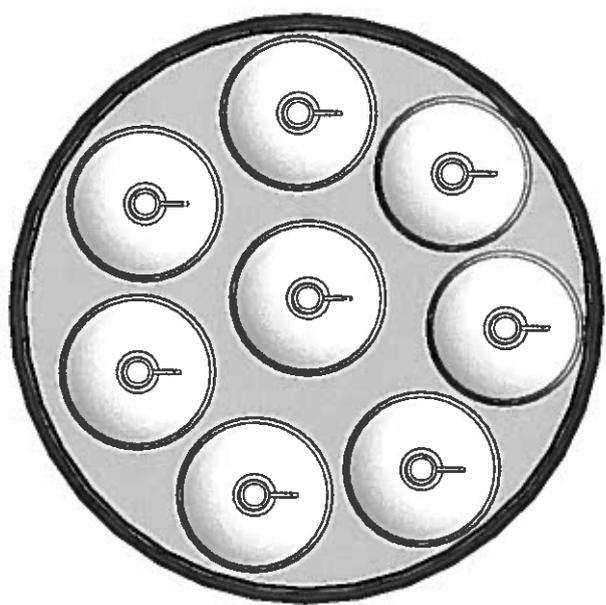
T-1, T-2, and T-3 flasks  
12 flasks dropped  
into 30 gallon drum



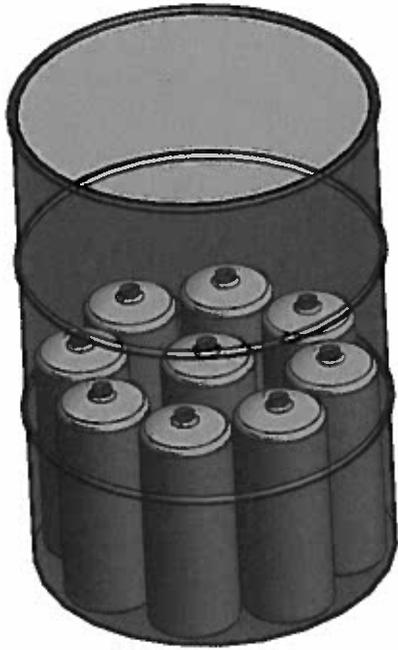
ATTACHMENT 9.5 T-1 flasks – 8 flasks placed vertical in 30 gallon drum ()



T-1 flasks  
8 flasks placed vertical  
in 30 gallon drum



ATTACHMENT 9.6 T-2 flasks – 9 flasks placed vertical in 30 gallon drum ()



T-2 flasks  
9 flasks placed vertical  
in 30 gallon drum

