

2 - METRIC TON CONTAINER SET-UP

Title: Metric Ton Container Set-up

Doc. No. 2015-MMTS-2

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
1	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

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

2.1 PURPOSE

This procedure describes the activities and requirements that deal with:

- Transporting the empty MT containers from Building 110-66 to the loading dock outside the MMTS.
- Handling and placement of MT containers on the scales located inside the MMTS.
- Installation of the quick disconnect (QD) transfer fitting needed to fill the MT container with elemental mercury.

2.2 SCOPE

This procedure covers the following activities:

- Fork lift operation to move one or both MT containers from Building 110-66 to the loading dock and from the loading dock into the Flask Handling Area.
- Placement of one or both MT containers onto the digital scales located inside the MMTS.
- Installation of the transfer fitting into the 3-inch half-coupling of the MT container.

NOTE: All operations involving the QD transfer fitting will include local area venting using one or more of the overhead snorkels placed in the vicinity of these tasks or using the cart-mounted Airfiltronix™ snorkel.

2.3 OPERATIONS

A single MT container will be transported from Building 110-66 to the 12-ft rollup door at the north end of the MMTS. The empty container will be placed gently onto an unoccupied digital scale. The QD transfer fitting will be installed into the half-coupling of the container that is to be filled. If so directed by the MMTS Facility Manager, the operator repeats these handling steps to place a second metric ton container on the other digital scale.

NOTE: Peristaltic pumping operations (i.e., transferring mercury) are never permitted while MT containers are being moved into place or undergoing set up operations.

2.3.1 Required Equipment and Supplies (PPE as specified on page XI of the Executive Summary under General Safety and Health)

The following equipment is required for operations:

- Two (2) threaded portions of the transfer fitting (one for each MT container) are needed to mate to the collar portion of the fitting
- Torque wrench for installing the 3-inch NPT plug
- Yellow Teflon® tape to wrap the 3-inch container plugs

2.3.2 Locate and Position MT Containers

2.3.2.1 Forklift operator (material handler)

- Locates and transports an empty MT container from within 110-66 to the MMTS, as needed.

NOTE: The empty container weighs approximately 225 lb. The fork lift tines must be spaced at ~ 12½ inches center-to-center to ensure the tines fit the pockets.

- Gently places a MT container on a scale inside the MMTS roll up door under the direction of a Flask Handling Area worker (inside the MMTS), who helps direct elevation and placement of the container on the approximate center of the scale.
- Repeats this operation for MT containers as they are needed in the MMTS.
- On mornings when a partially filled MT container is sitting on a scale, the forklift operator (under the direction of a co-worker) cautiously lifts the MT container one to two inches above the scale while the co-worker re-zeros the scale at the scale display mounted on Fume Hood 2. Upon completion of the re-zeroing activity, the forklift operator gently places the MT container back on the scale.

2.3.2.2 Flask Handling Area worker

- Opens the roll up door
- Ensures that the scale reading is zero before positioning the container.

On mornings when a partially filled MT container is sitting on a scale, the worker communicates with the forklift operator, ensures that all cables and hoses are out of the way of the container lift and re-zeros the scale at the scale display mounted on Fume Hood 2.

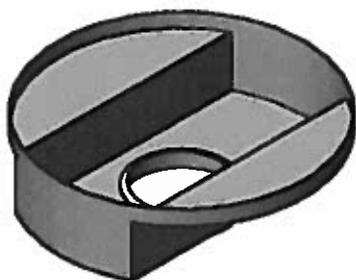
Note: The Flask Handling Area worker may be the same worker responsible for operating the pumping station for transferring mercury (Refer to Procedure 2015-MMTS-7, “Fume Hood 2 – Mercury Transfer”).

2.3.3 Setup and Installation of the QD Transfer Fitting

Flask Handling Area worker

- After the MT container has been positioned on a scale, record the tare (container weight) before removing the 3-in. national pipe thread (NPT) plug from the container. Zero-out the tare weight at the scale display before the QD fitting has been installed.

NOTE: The nominal weight of the empty MT container, including the 3-in. NPT plug, is 225 lbs. The total weight of the drip collar (set-up) and QD in place, minus the 3-in. national pipe thread (NPT) plug, is ~ 3-5 lbs. The actual mercury added is determined after the QD and drip collar are removed and the 3-in. plug is placed back on the container.



- After removing the plug, place three (3) wraps of yellow Teflon[®] tape on the threads; place the plug in a storage

Figure 1-1 Drip collar for MT

bucket for reinstallation after the MT container has been filled.

- Install the drip collar (see Figure 2.1) over the top of the MT container being certain to allow clear access to the NPT half coupling; the collar provides local containment in the unlikely event of mercury drips when the fill tube is extracted. Place a layer of gauze, cheesecloth or equivalent in the drip collar and over all exposed horizontal surfaces of the MT container.

NOTE: *It is imperative that no mercury comes in contact with the external surfaces of the MT container.*

- Screw the threaded (lower) portion of the QD transfer fitting into the MT container, hand-tight. (**NOTE:** *The threaded fitting is to be installed with bare threads, i.e., no Teflon[®] tape on the threads.*)
- Remove the QD transfer fitting from its port on the fume hood wall. Hold cheesecloth, a gauze pad or equivalent on the base of the fill tube to minimize incidental transfer of mercury during handling of the QD fitting.
- Figure 2.2 shows the assembled transfer QD fitting. Figure 2.3 shows the QD fitting separated into the threaded portion and the upper portion.

NOTE: *The upper portion of the QD fitting is connected to the Tygon[®] transfer tube (shown in green), the fill-vent line, and a conductivity probe.*

- The fitting needs to be in place in the Fume Hood 2 the holster (storage port) at the end of each work day to contain potential mercury vapors when the exhaust fan is not running.

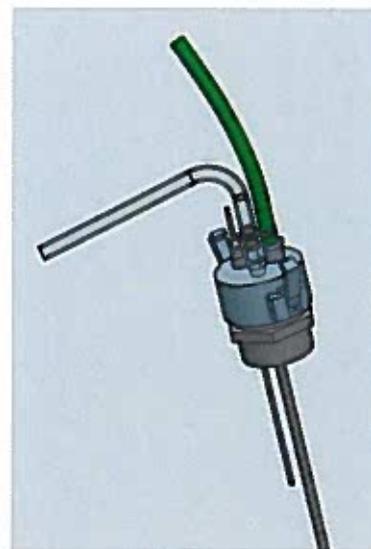


Figure 1-2 Transfer fitting assembly

- The upper portion of the QD fitting is then inserted into the container and the locking clamps engaged. After a visual inspection by the Facility Manager and concurrence that other procedure requirements are met, mercury transfer operations may commence.

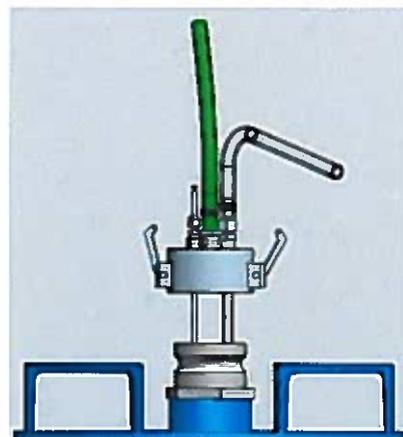


Figure 1-3 Upper portion of transfer fitting being inserted into MT container