

US EPA ARCHIVE DOCUMENT

TRANS CYCLE INDUSTRIES OF OHIO, LLC
Environmental, Health, and Safety Program

Subject: Sampling & Wipe Testing	SOP No. 800-320	SECTION Facility - General
	Date Reviewed 11/18/2017	Pages 4
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Synopsis:

This procedure is designed to ensure that: (1) sampling is done in a manner, which is safe for TCI personnel, the associated equipment and the environment; and (2) consistent, representative samples are obtained.

1.0 SAMPLING METHODOLOGY

Whether for a small or large number of units, TCI personnel are fully trained with all the equipment needed to safely and efficiently draw samples from the units to be tested.

1.1. Oil Sampling

Depending on the type, size, and number of units to be sampled, one of the following methods will be employed:

NOTE: ALL UNITS MUST BE VENTED/PRESSURE RELEASED BEFORE PUNCTURE.

1. Draw sample from bottom drain valve, or
2. Remove top cover and draw sample using a one-use disposable pipet, or
3. Use a cordless drill & bit to puncture the top of the unit. Then, use a disposable pipet to draw the sample.

All methods used are completed only after the unit is restored to a totally sealed condition. Drain valves are shut and plugged, top covers are secured, and the holes are sealed with gasketed screws.

1.1.1 Sample Identification, Packaging, and Shipping

1. Each sample obtained is identified as following:
 - a. Location
 - b. Date and time of sampling
 - c. Name of sampler
 - d. Source (ex: type equipment and serial number)

2. The samples are packaged in special styrofoam mailers to ensure against leakage or damage in handling.
3. The samples are delivered or shipped to the appropriate lab by our personnel.

1.2 WIPE TESTING

This procedure describes the proper method of performing the wipe test specified in the PCB Spill Cleanup Plan or in taking a test for a Generator.

After the elements of a spill have been removed and the surface area cleaned in accordance with PCB spill cleanup procedures, mark off 10 cm square (4" x 4") spaces using a permanent marking pen every three to four feet along the spill area. Also, mark off at least two clean areas outside the known spill area for background samples.

1.2.1 Procedure:

1. Mark off 10 cm square sample locations using a disposable template and a permanent marking pen or use an impervious disposable template by itself.
2. Prepare wiping pads and sample containers.
 - a. Open 3" x 3" gauze pads and place them in the sample bottles. Make up one more sample container than needs to be used as a field blank;
 - b. Measure 6 mL of hexane or iso-octane into each sample container;
 - c. Be sure all pads are wet with hexane or iso-octane and placed into each sample container;
 - d. Close lids on the sample bottles.

CAUTION: Read SDS warning on hexane or iso-octane label. Use only with adequate ventilation. Material is flammable and evaporates readily.

3. Put on surgical latex protective gloves.
4. Remove gauze pad from sample bottle.
5. Wipe 10 cm x 10 cm sample area thoroughly with gauze pad. Wipe first in one direction until area has been wiped once. Fold gauze pad to expose new surface. Then wipe in a direction at right angle to the first direction.
6. Carefully roll or fold gauze pad and place in the sample bottle.
7. Level sample bottle.
8. Remove gloves and place in a plastic bag for disposal in PCB contaminated trash. Use new gloves for each sample.
9. The extra sample bottle with its gauze pad is not used to wipe an area. This is a field blank sample; label it and submit it with the other samples.

1.2.3 Sample Identification, Packing and Shipping

Follow the procedures detailed in 1.1.1 above.

1.3 SAMPLING PROTOCOL FOR ELECTRICAL BUSHINGS

The following procedure details how to determine the PCB content of the dielectric fluid in transformer bushings. Sampling porcelain bushings requires the adherence to specific guidelines that protect the employee from toxic exposures to PCB and hazardous physical exposures to cuts, pinches, flying metal particles, and splashes associated with this procedure. However, keep in mind that this written SOP is only an aid to instruction and should be accompanied by actual hands-on instruction.

THESE PROCEDURES APPLY TO ALL SIZES OF BUSHINGS TO BE SAMPLED USING THE FOLLOWING METHOD: CORDLESS DRILL WITH COBALT DRILL BIT PROCEDURES

1.3.1 Personal Protective Equipment Required

During these procedure, the sampler must wear Tyvek (or equivalent) coveralls; safety glasses and splash shield; nitrile, Kevlar, and leather gloves; Kevlar sleeves; Kevlar apron; and steel toe boots.

1.3.2 Tools Required

The following equipment is required: fire blanket; spill pan, bucket, pipettes, sample vials, nitrile sampling gloves, hex wrench set, punch, hammer, Hilti (or equivalent) gun, screws, rubber washers

1.3.3 Procedures

As bushings are unloaded from trailer, ensure that the bushings have been properly placed in slots and arranged to allow easy access to the top (head) of each unit with the drain port (if available) turned up. Do not crowd the bushings to allow safe and easy access. Label each bushing correctly according to their PCB level as shipped.



1. Cover with Fire oil in bushing.

Blanket to access



2. Don clean nitrile gloves and remove a new pipette and sample vial from their packs.
3. Squeeze pipette bulb and insert the pipette into the drilled hole and release the bulb to draw oil sample into it.
4. Apply label to the sample vial with serial number or unique identifying number.
5. Inject silicone into drilled hole in bushing to prevent oil spill.
6. Remove nitrile gloves and discard along with used pipette into bucket for later disposal.
7. Repeat as needed.

If bushing head is constructed of steel or the copper/aluminum/brass is too thick to penetrate, consider the unit as PCB and store in PCB Storage Area for shipment off-site for disposal/recycling.

1.4 Laboratories

TCI will utilize EPA certified laboratories for all analysis. In certain circumstances, TCI will utilize the laboratory at TCI of Alabama, LLC.