

TECHNICAL UPDATE - TU-3004

SUBJECT: Cleaning Water Soluble Materials from Tubes

This Technical Update reports a simple method of cleaning, dirt, particulates, testing fluids, and other water soluble materials from sample and calibration tubes used in gas analyzer testing bundles. This method uses no solvents or chemicals and can be used on all types of tubing. This procedure can be used on bundles before or after installation.

This procedure is not useful when the tubing is completely blocked, or for heavy contamination. For heavy contamination and blockage, see TU-5013.

Items and materials needed for this procedure:

1. source of clean, warm water
2. compressed dry air or nitrogen
3. 1/4" or 3/8" Fluoropolymer (FEP or PFA) tubing
4. Stainless Steel Tube Unions, sized for the tubing to be cleaned
5. 5 gallon water jug with spout (available in camping supply aisles at most department stores)
6. electrical tape.

Procedure:

As with all procedures, adhere to local safety rules and obtain work permits where required.

1. Attach a length of Fluoropolymer tubing to the "drain" end of the tubing being cleaned using a tube union. The drain end should be the lowest point in the bundle, usually inside the analyzer house. Route this tubing to an area outside the analyzer house. If there is no area close to the site that can be used, route the tubing into a catch bucket.
2. Attach a short length of Fluoropolymer tubing to the opposite end of the tube being cleaned.
3. Insert the other end of this tubing into the water jug that has been filled with warm water. Tape the tubing to the spout of the water jug to provide a seal.
4. Invert the jug and allow the water to feed through the tube. At this point, it is advantageous to have someone check the output of the drain tube for contaminants.
5. Remove the jug when empty. Attach a pressure line to the tube being cleaned and flow dry air or nitrogen at a rate of 6-10 lpm for 10 minutes to dry the tube.
note: one method to accomplish this is to attach a tube "jumper" between the tube being cleaned and another tube in the bundle at the probe end. Flow air or nitrogen from the calibration gas manifold up through this tube to the probe and back down the tube being cleaned.

At this point, the tube should be clean of any water soluble materials and can be placed in service.

