

Sampling Instructions for Low Level Mercury Analysis (Method 1631)

Please read very carefully prior to sample collection.

- 1) If sampling equipment other than the sample bottles is required, follow these instructions:
 - a) Use the instructions for gloves in step three below.
 - b) Clean any equipment with detergent and mild acid, rinse well with tap water, and then rinse well with distilled or deionized water.
 - c) Collect an equipment blank by dipping the equipment into a bottle of deionized water obtained from the lab. Alternately, pour deionized water over the equipment and collect in the equipment blank bottle provided by the lab.
 - d) Store clean equipment in a sealed clear polyethylene bag until use.
 - e) Prior to sampling, send the equipment blank to the lab for analysis, to verify that the equipment will not contaminate the samples.
- 2) If you are collecting by this method to meet requirements for your NPDES permit under Special Condition 9, the sample is required to be collected as a *grab* sample. Collect samples upwind if possible.
- 3) This method is very sensitive and detects mercury (Hg) at *ppt* (parts per trillion) levels. Talc free gloves must be worn when collecting the sample(s). In the clean hands/dirty hands sampling technique of EPA-1669 one person handles all equipment and the other person handles the sample bottles. If one person must do the sampling, wear multiple layers of gloves so that dirty gloves can be easily removed to expose clean gloves when handling the bottles. The bottles you are given have been pre-certified by Teklab to ensure there is no contamination from the containers prior to sample collection.
- 4) If you are collecting one sample, you will receive a total of 3 containers in a polyethylene bag. One container of *deionized water*, one empty container to transfer the deionized into for a *field blank*, and one container for the actual sample. If you are collecting more than one sample, only one field blank container is required per 10 samples, per *sample site*.
- 5) Prepare the field blank sample first by opening the empty sample container and filling it with the deionized (DI) water, provided by Teklab, Inc. **Do not overfill**, as contamination is possible. Close the lid immediately and return to polyethylene bag. Discard the jar that had contained the deionized water, **do not re-use**.
- 6) Fill sample containers for each sampling site and close the lids immediately. Label samples and return to the polyethylene bag. Submit the sample(s) to Teklab **within 48 hours of collection**. Samples will only be accepted Monday through Friday.
- 7) Please indicate the analysis and method number **Hg 1631** on the chain of custody submitted with the sample(s). This will ensure the analysis meets the required minimum detection limits.

Glossary

Deionized Water: Water that has had its mineral ions removed. This is a physical process that uses special resins that bind to and filter out mineral salts from water (such as sodium, calcium and iron for example).

Field Blank: A sample bottle of clean matrix, usually deionized water, that accompanies a sample or group of samples from one sample site back to the lab. The field blank is analyzed at the lab to determine if the sample or samples were contaminated with the target analyte during the sampling process.

Grab: A sample taken by one filling of a sample bottle, from one sampling point, at one moment in time.

PPT: Parts-per notation is often used in the measure of dilutions or concentrations in chemistry. In this case, part-per-trillion is equivalent to 1/20 of a drop of water added to a two-meter-deep Olympic-sized swimming pool. 1 PPT in water = 1 ng/L of water.

Sample Site: The location of one sampling point.