

## **Overview**

Samples collected for bacteriological contaminants require the utmost care to ensure a clean and representative sample. Samples can easily be contaminated by the environment or by the sampler who fails to follow proper aseptic technique in the collection process. Samples **MUST** be collected in sterilized containers supplied by the laboratory (or purchased specifically for the purpose). The use of non-sterilized, common containers can produce erroneous results that are not representative of the source being tested. Laboratory supplied containers are sterilized and sealed to ensure cleanliness and include a special chemical to neutralize any residual chlorine disinfectant present in the sample. Non-sterilized containers can result in false positive for your samples and the presence of residual chlorine will result in the invalidation of your test results. Non BSK provided containers will require proof of Neutralization of Disinfectant Residual in accordance with TNI requirements per Section 1.7.5.2. (BSK form #BSK-SR-0006)

## **Sample Containers**

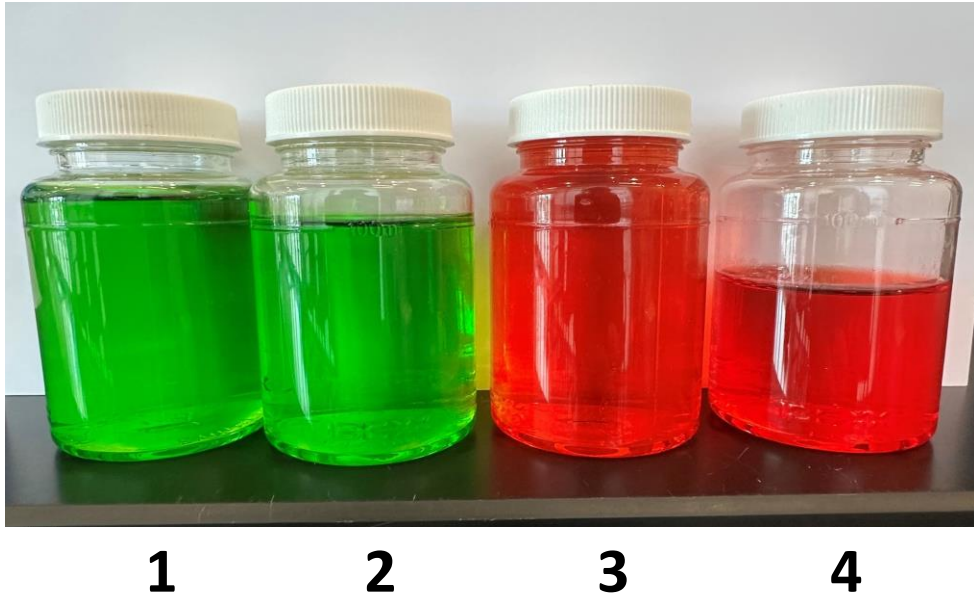
100mL sterilized polystyrene (or similar) bottle with powdered sodium thiosulfate ( $\text{Na}_2\text{S}_2\text{O}_3$ )

## **Sample Collection Procedures**

1. Remove any attachments on sampling port where applicable (i.e. aerators, hoses, backflow prevention devices if possible).
2. Ensure surrounding area is clear, free of debris, protected from wind and rain.
3. Flush system for 5-10 minutes to clear standing water.
4. Disinfect the sampling port with an appropriate technique.
  - Gas Torch – Use on metallic sampling ports, do not overheat
  - Chlorine bleach solution (10-50%) – Use on PVC sampling ports, will slowly tarnish metal ports
  - Alcohol (Ethanol, Isopropyl alcohol) – May not be effective on some bacterial species
  - Other recommended bacteriological sampling, collection, and handling procedures
5. Open the port gently and allow water to flow an additional 2-3 minutes (especially if using chlorine).
6. Reduce flow to a small stream, roughly the diameter of a pencil.
7. Break seal on sample container, being careful not to touch inside of bottle or cap.
8. Fill the bottle up to at least the 100mL mark. **DO NOT** underfill. If in doubt the container can be filled up to the beginning of the shoulder. (See picture on Reverse)
9. Immediately cap the container.
10. Keep samples cool ( $<10^\circ\text{C}$  or  $50^\circ\text{F}$ ) and deliver to the laboratory as soon as possible, no later than 24 hours after sample collection.

**Fill Line:**

Standard Methods requires that, for proper mixing to occur, samples should have  $\geq 1$  inch of headspace. If the laboratory does not receive samples with adequate headspace, we are required to pour the sample into another larger sterile container, vigorously shake the sample and then pour 100mL of sample back into the original container. This process must be completed carefully and aseptically to avoid contaminating the sample. It involves additional sample containers and additional labor, slowing the processing of samples.

**BSK Policy:**

Note examples in the picture provided above: Both bottles with green liquid (bottles 1 and 2) are considered acceptable. The first bottle with red liquid (bottle 3) does not have *adequate headspace* and the second bottle with red liquid (bottle 4) does not contain the minimum of 100mL required and is considered to have *inadequate volume*.

BSK has the following options of each scenario:

➤ **Inadequate Headspace**

- Sample is rejected at the lab and must be recollected, or
- Sample is accepted and a \$15.00 Overfill charge is applied per sample

➤ **Inadequate Volume**

- Sample is rejected and must be recollected