Minerals, Metals, and Radiologicals

## Overview

Samples collected for minerals, metals and radiologicals are similar in that they use all require a common preservative (Nitric Acid, $HNO_3$), have no thermal preservation requirement, and have exceptionally long hold times (six months to one year).

While it is not a customary practice with drinking water, if dissolved metals are required, the proper procedure is to filter the sample in the field at the time of collection. Samples are filtered through a sub-micron filter (0.45um) that only allows dissolved constituents to pass. Once filtered, the sample is collected in the same nitric acid preserved container.

- Field filtration is critical to the proper sampling and analysis of dissolved metals. Regulations specify the "in field" requirement and therefore the laboratory will qualify the results if filtration in the laboratory was required. If the preference is to have the sample filtered by the laboratory, then the sample must be collected in an unpreserved container. The nitric acid preservative ensures that any mineral or metal stay in solution once collected. The preservative will also dissolved any suspended particulates that may exist in the sample as well. Once these suspended particles are in solution, there is no way for the laboratory to determine the true dissolved mineral and metal content.

## Sample Containers

250mL - 1L Nitric Acid Preserved Plastic (Red Cap)
250mL Unpreserved Plastic (White Cap) – Dissolved Metals Only

## 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. Reduce flow to a small stream, gentle enough to avoid splashing and overflowing of container.
5. Uncap sample container, ensuring cap remains pointed down or is otherwise protected.
6. Do NOT rinse the bottle prior to sampling. Any liquids found inside are the added preservatives and must remain in the container.
7. Fill the bottle up to the neck of the container but do not overflow.
8. Immediately cap the container.
9. No thermal preservation is required but can be chilled if other constituents are being requested.