BROOKS APPLIED LABS

Collection and Handling of Water Samples for Trace

Instruction Course on Sampling for Trace Metals using the"Clean Hands/Dirty Hands" Method

This course is designed for anyone collecting ambient water samples for the analysis of low-level total and dissolved mercury and other trace metals, as well as various metals species (including methylmercury and inorganic arsenic species). This one-day course will include a half-day in a classroom with lectures covering the circumstances in which low-level detection limits would be desired or required, EPA analytical methods that must be used, proper handling and preservation of samples, necessary sampling supplies, considerations that should be made prior to and during sampling activities in order to collect samples correctly and avoid contamination, various sampling and field-filtration techniques, and field quality assurance sample collection requirements. The second half of the day, students will engage in hands-on field exercises, where they will be given the opportunity to practice several surface water sampling protocols using various sample collection methods and following the "Clean Hands/Dirty Hands" sampling techniques. Time permitting, sample collection techniques and recommendations for additional sample matrices may be discussed that are specific to the student's needs and area of interest. Instructors will cover:

Why the Need for Low-Level Metals Detection?

Reasons why low-level metals detection and EPA Sample Collection Method 1669 is desired and becoming required. A brief discussion regarding the Clean Water Act, Total Maximum Daily Loads, and drivers for low-level detection.

EPA 1600 Series Methods

Various EPA Analytical Methods (1600-series) available for trace metals analysis. Instruction will also be provided for proper handling and preservation of samples prior to or immediately following laboratory receipt.

Sampling Supplies & Equipment

The correct equipment and supplies that MUST be used in order to successfully collect a water sample for trace-level metals analysis. Surface and subsurface sampling supplies will be discussed, including equipment needed for proper field filtration.

Considerations Before & During Sample Collection

In order to obtain credible and scientifically defensible data, considerations should be made before and during sample collection. The instructor will discuss what should be included in a sample analysis plan when collecting ambient water quality samples for low-level metals analysis. Participants will gain an understanding of different sources of contamination or interferences that can cause problems with trace metals analysis and ways to avoid contamination.

Clean Hands/Dirty Hands Sampling Technique

EPA Method 1669 "Clean Hands/Dirty Hands" for several different sampling methods and a practical demonstration.