

Soil Sample Collection for Volatile Organic Compound Analysis by Bulk Sampling Methods

FSOP 2.1.6 (May 17, 2012)

Ohio EPA Division of Environmental Response and Revitalization

1.0 Scope and Applicability

This FSOP describes field procedures used by Division of Environmental Response and Revitalization (DERR) remedial response personnel to collect soil and other solids by bulk sampling methods for volatile organic compound (VOC) analysis (e.g., using a sampling spatula to manually fill unpreserved laboratory supplied containers with soil). Bulk sampling procedures are not compliant with U.S. EPA SW 846 Method 5035 or 5035A sampling requirements. Field procedures that are compliant with Methods 5035 and 5035A are described in FSOP 2.1.7, Soil Sample Collection for Volatile Organic Compound Analysis by U.S. EPA Methods 5035 and 5035A. Methods 5035 and 5035A are preferred for collecting soil and solid VOC samples and should be used by DERR personnel whenever possible. DERR recognizes, however, that certain regulatory programs or laboratory certification programs may not allow or support the use of the U.S. EPA Method 5035 or 5035A procedures.

2.0 Definitions

Not applicable

3.0 Health and Safety Considerations

- 3.1 Wear appropriate personal protective equipment as specified in the project health and safety plan (HASP) while conducting sampling activities.
- 3.2 Conduct air monitoring as specified in the project HASP during sampling activities. Refer to Table 1 of FSOP 1.1, Initial Site Entry.

4.0 Procedure Cautions

- 4.1 Be familiar with all relevant program requirements, laboratory capabilities or certification requirements and project data quality objectives to ensure that the procedures described in this FSOP are appropriate for the sampling event. For example, if Ohio EPA Voluntary Action Program (VAP) laboratory certified data is needed, bulk containers may only be submitted for high concentration samples (> 200 ppb) using SW-846 Method 8260B. If bulk containers are submitted for low level analysis (< 200 ppb) using Method 8260B, the data will not be certified.
- 4.2 Soil and solid samples must be collected immediately from the sampling collection device, placed in the laboratory-supplied container, and preserved on ice. Do not perform headspace screening or sample logging activities or otherwise handle or manipulate soil or other solid materials intended for laboratory analysis prior to placing the sample in a laboratory-supplied container. Delaying sample collection or handling the sample excessively prior to collection will likely result in a significant loss of VOCs and compromise sample integrity.

- 4.3 Always wear clean sampling gloves before collecting each sample.

5.0 Personnel Qualifications

Ohio EPA personnel performing field sampling activities must meet DERR's qualifications for performing work at uncontrolled hazardous waste sites.

6.0 Equipment and Supplies

The following is a list of equipment and supplies that are generally required for bulk soil or solid sampling:

- 6.1 Chain-of-custody form
- 6.2 Ice
- 6.3 Laboratory-supplied containers
- 6.4 Paper towels
- 6.5 Sample cooler
- 6.6 Sample labels
- 6.7 Sampling gloves
- 6.8 Stainless steel spatula or spoon
- 6.9 Trip blanks
- 6.10 Water-proof markers and pens

7.0 Procedures

- 7.1 Obtain the sample directly from the sampling device (e.g., direct-push core barrel, split barrel sampler, auger bucket, trowel, etc.) with a decontaminated stainless steel spatula or spoon and immediately place the sample in an appropriate laboratory-supplied container. Do not screen, log, homogenize or unnecessarily handle the sample before placing it into the container.
- 7.2 Fill the container completely so that there is no headspace visible in the container.
- 7.3 Wipe any soil or debris from the outside of the container with a clean paper towel and place the lid on the container.
- 7.4 Immediately place the labeled sample container in a cooler with ice and trip blank samples.
- 7.5 Decontaminate stainless steel spatulas, spoons, and any other sampling equipment used between samples in accordance with FSOP 1.6, Sampling Equipment Decontamination.
- 7.6 Follow all applicable criteria in FSOP 1.5, Sample Custody and Handling, when handling or shipping/transporting samples to the laboratory.

8.0 Data and Records Management

Refer to FSOP 1.3, Field Documentation.

9.0 Quality Control and Quality Assurance

Quality assurance/quality control (QA/QC) samples will depend on the site-specific work plan, DQOs, or laboratory requirements. QA/QC requirements need to be determined prior to ordering sample containers or devices.

10.0 Attachments

None

11.0 References

FSOP 1.1, Initial Site Entry

FSOP 1.3, Field Documentation

FSOP 1.5, Sample Custody and Handling

FSOP 1.6, Sampling Equipment Decontamination

FSOP 2.1.7, Soil Sample Collection for Volatile Organic Compound Analysis Compliant with U.S. EPA SW-846 Methods 5035 and 5035A