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ENVIRONMENTAL RESTORATION PROJECT

A Department of Energy Environmental Cleanup Program

Environmental Restoration Project
Standard Operating Procedure

for: # Coliwasa Sampler for Liquids and Slurries

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Revision Log

Revision No.	*Effective Date*	*Prepared By*	*Description of Changes*	*Affected Pages*
0	0 07/20/01)		New procedure	All
1	12/13/01	Roy Bohn	Eliminates Attachments of example coliwasa,containerized waste sampling record, and data form completion.	Attachments
Reviewed	03/01/2004	Mark Thacker	Deemed Adequate	All

Standard Operating Procedure Title

Table of Contents

Coliwasa Sampler for Liquids and Slurries

1.0 PURPOSE

This Standard Operating Procedure (SOP) describes the process for Coliwasa sampling of liquids and slurries at the Los Alamos National Laboratory (Laboratory) Environmental Restoration (ER) Project.

2.0 SCOPE

This SOP is a mandatory document and shall be implemented by all ER Project participants when using the Composite Liquid Waste Sampler (Coliwasa) for the ER Project.

Note: Subcontractors performing work under the ER Project's quality program shall follow this SOP for Coliwasa Sampler for Liquids and Slurries or may use their own procedure(s) as long as the substitute meets the requirements prescribed by the ER Project Quality Management Plan, and is approved by the ER Project's Quality Program Project Leader (QPPL) before the commencement of the designated activities.

3.0 TRAINING

3.1 ER Project personnel using this SOP are trained by reading the procedure, and the training is documented at http://erinternal.lanl.gov/Training/Trainingmain.shtml in accordance with QP-2.2.

3.2 The **Field Team Leader** (FTL) shall monitor the proper implementation of this procedure and ensures that relevant team members have completed all applicable training assignments in accordance with QP-2.2.

4.0 DEFINITIONS

Note: A glossary of definitions is located on the ER Project internal homepage http://erinternal.lanl.gov/WritingGuide.shtml.

4.1 *Bung*— Screw type opening on top of drums.

4.2 *Bung Wrench*— Wrench used to open and close bung on top of drums.

4.3 *Coliwasa*— Composite Liquid Waste Sampler. The Coliwasa is designed to collect liquid. It permits the representative sampling of multiphase liquids with a wide range of viscosity, corrosivity, volatility, and solids.

4.4 *Site-Specific Health and Safety Plan (SSHASP)*—A health and safety plan that is specific to a site or ER-related field activity that has been approved by an ER health and safety representative. This document contains information specific to the project including scope of work, relevant history, descriptions of hazards by activity associated with the project site(s), and techniques for exposure mitigation (e.g., personal protective equipment [PPE]) and hazard mitigation.

5.0 BACKGROUND AND PRECAUTIONS

5.1 This SOP shall be used in conjunction with an approved SSHASP. Also, consult the SSHASP for information on and use of all PPE.

5.2 The Coliwasa is designed to collect liquid. It permits the representative sampling of multiphase wastes with a wide range of viscosity, corrosivity, volatility, and solids. Its simple design makes it easy to use and allows the rapid collection of samples, thus minimizing the exposure of the sample collector to potential hazards from the liquids. The sampler is commercially available, as either a reuseable or disposable unit, but is relatively easy and inexpensive to fabricate. The cost of fabrication is low enough that the contaminated parts may be discarded after a single use when they cannot be easily cleaned. The use of disposable units decreases the likelihood of cross-contamination.

5.3 The main parts of the Coliwasa consist of the sampling tube, the stop-cock, and the closure system. The sampling tube consists of a 5-foot (1.52-m) by 1 5/8-inch (4.13-cm) inner diameter translucent plastic pipe; usually made of polyvinyl chloride (PVC), PTFE or borosilicate-glass plumbing tube.

5.4 Coliwasas are constructed of either plastic or glass. The plastic type consists of a translucent plastic sampling tube. The glass Coliwasa uses borosilicate-glass plumbing pipe as the sampling tube. The plastic Coliwasa is used to sample most containerized liquid wastes except for wastes containing ketones, nitrobenzene, dimethylforamide, mesityl oxide, and tetrahydrofuran.

Note: The glass Coliwasa is used to sample all other containerized liquids that cannot be sampled with the plastic Coliwasa except strong alkali and hydrofluoric acid solutions.

5.5 The Coliwasa sampler has the following limitations:

- Not suitable for sampling in containers over 5 feet (1.5-m) deep.
- Cannot be used for sampling hydrofluoric acid and concentrated alkalia solutions.

6.0 RESPONSIBLE PERSONNEL

The following personnel are responsible for activities identified in this procedure.

6.1 Author

6.2 ER Project Personnel

6.3 Focus Area Leader

6.4 Quality Program Project Leader

6.5 Team Leader

6.6 Waste Management Coordinators

6.7 Subcontractor Personnel

7.0 EQUIPMENT

7.1 A checklist of suggested equipment and supplies needed to implement this procedure is provided in Attachment A.

8.0 PROCEDURE

Note: ER Project personnel may produce paper copies of this procedure printed from the controlled-document electronic file located at http://erinternal.lanl.gov/home_links/Library_proc.shtml. However, it is each person's responsibility to ensure that they trained to and utilizes the current version of this procedure. The author may be contacted if text is unclear. The Document Control Coordinator may be contacted if the author cannot be located.

Note: Deviations from SOPs are made in accordance with QP-4.2, Standard Operating Procedure Development, and documented in accordance with QP-5.7, Notebook Documentation for Environmental Restoration Techncial Activities.

8.1 Assemble the necessary equipment and appropriate protective clothing. (LANL-ER HASP, Personal Protective Equipment)

8.2 Pack and transport the equipment to the site.

8.3 Use new equipment or decontaminate all equipment per the instructions in LANL-ER-SOP-01.08, Field Decontamination of Drilling and Sampling Equipment.

8.4 For drum and other containerized liquid sampling use the following procedure.

8.4.1 Open only drums where contents are known and are included in the approved SSHASP.

Note: A bulging container indicates pressure and should receive special handling. Stand back and determine the extent to which the container is bulging from its original shape. Call a safety officer and/or the owner of the container so that a best estimate of the container's hazards may be assessed. Opening a pressurized container must be performed according to the requirements of an approved SSHASP and a remote handling device may berequired.

8.4.2 Draw the sample from the bung openings whenever possible.

8.5 Insert the open Coliwasa into the desired liquid phase to be sampled and obtain the sample.

8.6 Close the Coliwasa and remove the sample within the Coliwasa from the container being sampled.

8.7 Transfer the sample from the Coliwasa to the sample container.

8.8 Decontaminate reusable samplers before reuse, or use a new sampler to prevent contamination or cross-contamination.

8.9 Repeat steps 8.3 through 8.7 until all samples have been collected.

8.10 For drum and containerized materials, reclose the container.

8.11 Perform Lessons Learned

During the performance of work, ER Project personnel shall identify, document, and submit lessons learned, as appropriate in accordance with QP-3.2, Lessons Learned, located at: http://erinternal.lanl.gov/home_links/Library_proc.shtml.

9.0 REFERENCES

ER Project personnel using this procedure should become familiar with the contents of the following documents to properly implement this SOP.

ER Project Quality Management Plan located at http://erinternal.lanl.gov/home_links/Library_proc.htm.

The following documents are cited within this procedure.

For ER documents, we list the procedure or document number and the title separated by a comma. There is no punctuation at the end of these entries.

ER-QP-2.2, Personnel Orientation and Training

ER-QP-4.2, Standard Operating Procedure Development

ER-QP-5.7, Notebook Documentation for Environmental Restoration Technical Activities.

ER-SOP-1.02, Sample Container and Preservation

ER-SOP-1.04, Sample Control and Field Documentation

ER-SOP-1.06, Management of Environmental Restoration Project Wastes

ER-SOP-1.08, Field Decontamination of Drilling and Sampling Equipment

EPA, "Test Methods for Evaluating Solid Waste," Vol. II: Field Manual Physical/Chemical Methods, Office of Solid Waste and Emergency Response, Washington D.C., 1986

EPA Region IV, “Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual,” (Environmental Services Division, Athens, GA, 1991).

10.0 RECORDS

10.1 ER Project personnel are responsible for submitting the following records to RPF in accordance with QP-4.4.

10.1.1 Completed and reviewed field notebook.

10.1.2 Notebook attachments and/or data, applicable

10.1.3 Sample Collection Logs

10.1.4 Chain of Custody/Request for Analysis Forms

11.0 ATTACHMENTS

Attachment A: Equipment and Supplies Checklist for Coliwasa Sampler for Liquids and Slurries (1 page) located at http://erinternal.lanl.gov/Quality/user/forms.asp

Using a token card, click here to record "self-study" training to this procedure.

Equipment and Supplies Checklist for Using a Coliwasa Sampler for Liquids and Slurries

- ☐ Coliwasa
- ☐ Bung Wrench
- ☐ Sample Containers
- ☐ Sample Collection Logs
- ☐ Chain of Custody/Request for Analyses Forms
- ☐ Chain of custody seals
- ☐ Any PPE listed or required in the SSHASP
- ☐ Sample Container Labels
- ☐ Field Notebook

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