

SPLITTING SURFACE WATER SAMPLES WITH A DEKAPORT SPLITTER

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This document fully satisfies the requirements of P300, Integrated Work Management, in order to systematically describe the work activity, the associated hazards, and the controls that **MUST** be employed to mitigate the risks.

REVISION HISTORY

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EP-DIV-SOP-20218, R0.	06/16/2014	New document	New document

**SUPERSEDED BY
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1. PURPOSE AND SCOPE

This procedure describes the process for splitting surface water samples using the Dekaport Splitter. This procedure applies to all Los Alamos National Laboratory (LANL) personnel and any subcontractors who process surface water samples in the Storm Water Processing Facility.

2. BACKGROUND

Surface water samples are collected across Los Alamos National Laboratory for a variety of projects. The Dekaport Splitter is used to ensure mixing and splitting of water samples when paired analyses are to be performed. Sample splitting and other sample processing are conducted in the Storm Water Processing Facility (SWPF). Processing samples should be conducted based on project requirements in accordance with the applicable sampling procedure.

Use of the Dekaport Sample Splitter is restricted to NON-NPDES Individual Permit Samples. Per EPA 833-8-92-001, NPDES Storm Water Sampling Guidance Document Section 3.5.1 Decontamination of Sample Equipment Containers requires an acid rinse of equipment for metals analysis. Current process restrictions do not allow the use of an acid rinse as part of equipment decontamination in the Storm Water Processing Facility.

3. REFERENCES

- EP-ERS8-SOP-056, Sample Containers and Preservation
- EP-DIV-SOP-20217, Processing Surface Water Samples
- EPA 833-8-92-001, NPDES Storm Water Sampling Guidance Document
- SOP 5181, Notebook and Logbook Documentation for Environmental Directorate Technical and Field Activities

4. TRAINING PREREQUISITES

Orientation to the Processing Facility by an experienced individual is required. Personnel performing this procedure will be familiar with the most current versions of the following procedures:

- EP-DIV-SOP-20217, Processing Storm Water Samples
- SOP 5181, Notebook and Logbook Documentation for Environmental Directorate Technical and Field Activities

5. PRECAUTIONS AND LIMITATIONS

This procedure is used with an approved Integrated Work Document (IWD) and/or other safety documents as required. Use of acids and bases requires an IWD. Review IWDs for facility specific requirements, training, precautions and access controls.

6. PREREQUISITE ACTIONS

6.1 Equipment and Tools

- Copy of this procedure
- Copy of Integrated Work Document (IWD)
- Safety glasses
- Nitrile gloves
- Lab Coat
- Dekaport Splitter with hard FPE tubing attached
- Level
- Large spill containment tray
- Carboy for mixing
- Certified clean glass and poly sample containers
- Deionized water – 2 or more gallons
- Alconox
- Decontamination supplies (e.g. paper towels, plastic tubs, squirt bottles, soft scrub brush)
- Waste supplies (e.g. bags in various sizes, drum liners, liquid storage container)
- Large clean clear plastic bag to completely cover splitter

7. STEP-BY-STEP PROCESS DESCRIPTION

7.1 Dekaport Splitter Setup

Sample Processor

- [1] Confirm with the Sample Data Manager that use of the Dekaport Splitter is indicated.
- [2] Place the pre-cleaned splitter in the large spill containment tray.
- [3] Use a level to ensure the top of the splitter is level from all directions.

CAUTION

Ensure the splitter is as level as possible. If the splitter is not level, the sample volumes will not be even and the process will need to be repeated

7.1 Dekaport Splitter Setup (continued)

- [4] Place sample containers under each splitter tube. Use containers that are larger than the minimum sample volume required ensuring sample is not spilled in the event of an uneven split.

7.2 Equipment Blank

Sample Processor

- [1] Pour the required amount of deionized water as required on Form 20217-1, Sample Processing Log; through the splitter (refer to EP-DIV-SOP-20217).
- [2] Recombine the deionized water into one sample container. This ensures the entirety of the equipment and sampler containers are included.

7.3 Splitting a Sample

The Dekaport Splitter has 10 ports and the number cannot be decreased. Directing more than one tube into a sample bottle often results in a spilled sample. It is preferred to place bottles under each tube and recombining samples as needed.

Sample Processor

- [1] Combine all sample water to be split in the mixing carboy and agitate.
- [2] Slowly pour the sample through the splitter. While pouring, swirl the sample to keep material suspended for an even split. The water level should be kept near the top of the reservoir chamber so that as much head pressure is maintained as possible to ensure even flow through the tubes.
- [3] If the volumes are uneven, the water or sediment levels do not appear even, or any port plugs, recombine the split samples into the composite container, re-level the splitter and repeat steps 1 and 2.
- [4] Secure lids on the sample bottles and refer to EP-DIV-SOP-20217, Processing Surface Water Samples, for any additionally requested processing.

7.4 Cleaning the Dekaport Splitter

Equipment must be cleaned immediately after use to ensure material does not dry and stick to the inside of the splitter.

Sample Processor

- [1] Prepare an Alconox wash and tap water rinse in squirt bottles and wash tubs.
- [2] Clean the inside of the splitter and rinse. A soft brush may be used.
- [3] In the wash tubs, wash sample containers to be reused and all equipment that has contacted sample material.
- [4] Use approximately 3 liters of deionized water as the final rinse in the splitter and all other equipment.
- [5] The hard FEP tubing may be replaced at the discretion of the Sample Processor. Replacement tubes shall all be the same length.

7.5 Waste Management

Sample Processor

- [1] A significant amount of decontamination liquids is generated by this process. Liquid waste and contact waste is to be containerized, labeled, and disposed of in accordance with the current Waste Characterization Strategy Form.
- [2] All containerized waste stored in the Storm Water Processing Facility shall be listed on the Storm Water Monitoring Program Waste Accumulation Log.

7.6 Storage

Sample Processor

- [1] Cover the clean, DRY splitter and associated equipment with clean clear plastic bags.

