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Standard Practice for Sampling with a Dipper or Pond Sampler¹

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1. Scope

1.1 This practice describes the procedure and equipment for taking surface samples of water or other liquids using a dipper. A pond sampler or dipper with extension handle allows the operator to sample streams, ponds, waste pits, and lagoons as far as 15 ft from the bank or other secure footing. The dipper is useful in filling a sample bottle without contaminating the outside of the bottle.

1.2 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

- D 4687 Guide for General Planning of Waste Sampling²
- D 5088 Practice for Decontamination of Field Equipment Used at Nonradioactive Waste Sites³

2.2 Other Documents:

- EPA-600/2-80-018 Samplers and Sampling Procedures for Hazardous Waste Streams⁴
- EPA-600/4-84-076 Characterization of Hazardous Waste Sites-A Methods Manual: Volume II. Available Sampling Methods, Second Edition⁴

3. Summary of Practice

3.1 The dipper is lowered into the liquid and lifted out while avoiding splashing or otherwise disturbing the surface layer. The sample is then poured into a sample container.

4. Significance and Use

4.1 This practice is intended for use in the sampling of surface waters and other liquids.

4.2 Dipper equipment is uncomplicated in construction, simple to use, and relatively easy to decontaminate; however, this practice will not provide accurate results with multiphase liquids.

4.3 This practice is to be used by personnel acquiring samples.

4.4 The dipper is best used to take a *surface* sample of liquid. No attempt should be made to take subsurface samples with a dipper because mixing and dilution will occur as the dipper is brought to the surface. Subsurface layers must be sampled using a device that can be closed prior to bringing it to the surface (for example, a COLIWASA, tube sampler, or bottle sampler).

4.5 The dipper is not appropriate for sampling multiphase liquids if quantitative characterization is needed.

4.6 When volatile organic analysis (VOA) will be performed, samples obtained with a dipper should be poured into an appropriate container (VOA vial) with minimal air contact and agitation.

4.7 This practice should be used in conjunction with Guide D 4687, which covers sampling plans, safety, Quality Assurance (QA), preservation, decontamination, labeling, and chain-of-custody procedures, also Practice D 5088, which covers decontamination of field equipment used at waste sites. Other documents pertinent to this practice are EPA-600/2-80-018 and EPA-600/4-84-076.

5. Sampling Equipment

5.1 Dippers may be fabricated as shown in Fig. 1 and are also available commercially (see Fig. 2). Disposable dippers are convenient for use with hazardous materials. Dippers selected must be constructed of materials compatible with the liquid being sampled and with the tests or analyses to be performed. Light weight and rigidity are important characteristics of the extension handle.

6. Sample Containers

6.1 Plastic, glass, or other nonreactive containers should be used. Refer to Guide D 4687 for further information on containers.

7. Procedure

7.1 Have sample containers ready for use.

7.2 Assemble the dipper and, if desired, the extension handle for the pond sampler.

7.3 Lower the dipper slowly into the liquid. The dipper should be on its side so that liquid runs into the container without bubbling or swirling. Rotate the dipper so that the lip of the container is up, preventing the sample from running out. Lift the dipper from the liquid.

¹ This practice is under the jurisdiction of ASTM Committee D34 on Waste Management and is the direct responsibility of Subcommittee D34.01.03 on Sampling Preservation.

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² *Annual Book of ASTM Standards*, Vol 11.04.

³ *Annual Book of ASTM Standards*, Vol 04.08.

⁴ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

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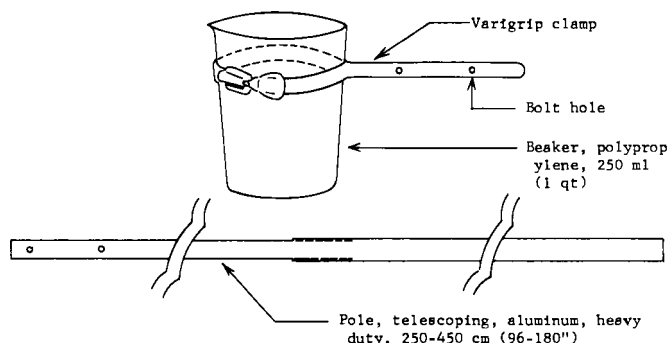


FIG. 1 Dipper with Extension Handle (also known as a Pond Sampler)

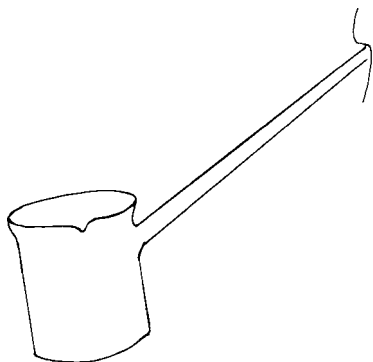


FIG. 2 Typical Commercially Available Dipper

7.4 Remove the cap from the sample container, and tilt the container slightly.

7.5 Pour the sample from the dipper down the inside of the

sample container. Avoid splashing of the sample.

7.6 Leave adequate air space in the container to allow for expansion, except for VOA vials. Fill VOA vials to the lip, and seal with no headspace to prevent loss of volatiles.

7.7 Complete the field log book and chain-of-custody forms.

7.8 Decontaminate the used equipment in accordance with Practice D 5088.

8. Keywords

8.1 dipper; liquid sampling; pond sampler; sampling; waste

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