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Standard Guide for Sampling Oil/Water Mixtures for Oil Spill Recovery Equipment[1]

This standard is issued under the fixed designation F1084; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide is intended for sampling flowing or stationary oil/water mixtures. It is intended for use with oil spill recovery devices either in testing or in documentation of field performance.

1.2 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.3 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D1796 Test Method for Water and Sediment in Fuel Oils by the Centrifuge Method (Laboratory Procedure)

D4007 Test Method for Water and Sediment in Crude Oil by the Centrifuge Method (Laboratory Procedure)

F625 Practice for Classifying Water Bodies for Spill Control Systems

3. Significance and Use

3.1 This guide provides techniques for obtaining representative samples of oil and water mixtures. This information is necessary in the calculation of oil recovery efficiency and oil recovery rates for oil collection devices.

3.2 *Sampling Stationary Mixtures*—When recovered oil/water mixtures are contained within a holding tank and the relative oil content of the recovered fluid is needed, the sampling technique is somewhat dependent on the container. Two techniques are outlined in this guide. If the container has a flat bottom with straight sides perpendicular to the base (or nearly so), either stationary technique can be implemented, with the stratified sampling method preferred. If the container is irregular in either the horizontal or vertical cross section, the mixing method is preferred.

3.3 *Sampling Flowing Mixtures*—To sample flowing mixtures containing both oil and water, turbulence is induced, to create a homogenous mixture while sampling. The oil content in the sample taken from the flowing stream can then be used to quantify the performance-rating criterion (see Procedure Section of Test Method D1796).

4. Number of Samples

4.1 Take a minimum of four samples under each set of conditions to average results and store the samples separately. In less ideal sampling conditions, take additional samples.

5. Containers

5.1 A dry, water-washed glass sample container.

6. Labeling

6.1 Mark the sample container with the source, type of oil, date and time of sampling, the name of the person taking the sample, and a sample number. Require water and oil-resistant labeling. If several receiving containers are to be sampled, they must be identified and the samples marked for later coordination.

7. Preservation and Storage

7.1 The samples do not require special treatment to preserve their integrity other than ensuring that they remain sealed until analyzed. Note date and time of analysis for each sample.

8. Procedure

8.1 *Baseline Data*—The test fluids may be crude, refined, or synthetic oils. Record type, specific gravity, viscosity, and

[1] This guide is under the jurisdiction of ASTM Committee F20 on Hazardous Substances and Oil Spill Response and is the direct responsibility of Subcommittee F20.12 on Removal.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.