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Standard Guide for the Determination of Technetium-99 in Soil¹

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1. Scope

1.1 This document is intended to serve as a reference for laboratories wishing to perform Tc-99 analyses in soil. Several options are given for selection of a tracer and for the method of extracting the Tc from the soil matrix. Separation of Tc from the sample matrix is performed using an extraction chromatography resin. Options are then given for the determination of the Tc-99 activity in the original sample. It is up to the user to determine which options are appropriate for use, and to generate acceptance data to support the chosen procedure.

1.2 Due to the various extraction methods available, various tracers used, variable detection methods used, and lack of certified reference materials for Tc-99 in soil, there is insufficient data to support a single method written as a standard method.

2. Referenced Documents

2.1 ASTM Standards:

¹ This guide is under the jurisdiction of ASTM Committee C-26 on Nuclear Fuel Cycle and is the direct responsibility of Subcommittee D C26.05 on Methods of Test. Current edition approved February 10, 1998; 2003. Published August 2003. Originally approved in 1998. Last previous edition approved in 1998 as C 1387-98.