



Designation: C 1111 – 9804

Standard Test Method for Determining Elements in Waste Streams by Inductively Coupled Plasma-Atomic Emission Spectroscopy¹

This standard is issued under the fixed designation C 1111; 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 test method covers the determination of trace, minor, and major elements in waste streams by inductively coupled plasma-atomic emission spectroscopy (ICP-AES) following an acid digestion of the sample. Waste streams from manufacturing processes of nuclear and non-nuclear materials can be analyzed. This test method is applicable to the determination of total metals. Results from this test method can be used to characterize waste received by treatment facilities and to formulate appropriate treatment recipes. The results are also usable in process control within waste treatment facilities.

1.2 This test method is applicable only to waste streams that contain radioactivity levels ~~which~~ that do not require special personnel or environmental protection.

1.3 A list of the elements determined in waste streams and the corresponding lower reporting limit is found in Table 1.

1.4 This test method has been used successfully for treatment of a large variety of waste solutions and industrial process liquids. The composition of such samples is highly variable, both between waste stream types and within a single waste stream. As a result of this variability, a single acid digestion scheme may not be expected to succeed with all sample matrices. Certain elements may be recovered on a semi-quantitative basis, while most results will be highly quantitative.

1.5 *This standard does not purport to address all of the safety problems, 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.*

¹ This test method is under the jurisdiction of ASTM Committee C-26 on Nuclear Fuel Cycle and is the direct responsibility of Subcommittee C26.05 on Methods of Test. Current edition approved ~~July 10, 1998~~ Jan. 1, 2004. Published ~~October 1998~~ February 2004. Originally published as C 1111-88; approved in 1988. Last previous edition C 1111-88 (1993)^{ε1} approved in 1998 as C 1111-98.