

Memorandum

Florida Department of Environmental Protection

TO: District Waste Program Administrators
District Solid Waste Engineers

FROM: Richard B. Tedder, Program Administrator
Solid Waste Section

DATE: August 12, 2004

SUBJECT: Testing for Arsenic in RSM
SWM-21.38



The Department was recently asked a question about which analytical tests can be used to determine arsenic concentrations in Recovered Screen Material (RSM). This memorandum has been prepared in response to this question and was developed with the assistance of Ms. Silky Labie, Bureau of Laboratories, Environmental Assessment Section.

As you know, on September 28, 1998 the Department issued a guidance document for RSM titled, "Guidelines for the Management of Recovered Screen Material from C&D Debris Recycling Facilities in Florida." This document recommends using U.S. Environmental Protection Agency (EPA) Method 3050B, or other appropriate EPA methods, as the digestion procedure for the eight RCRA metals, including arsenic. However, no analytical method for determining the concentrations of the metals in the resulting extract is specified in the document. The reason for this is that both the EPA and the Department recognized several analytical methods may be used effectively for determining the metal concentrations. Among the potentially applicable analytical methods are EPA Method 6010B (ICP-AES), EPA Method 6020 (ICP-MS), EPA Method 7060A (Graphite Furnace AA) and EPA Method 7061A (Flame Atomic Absorption Spectrometry). Any of these methods may be used if the appropriate data quality objectives are considered and achieved as described below.

When selecting an analytical method for analyzing metals in RSM, the laboratory must be aware of certain data quality objectives including sensitivity, accuracy and selectivity. First, the method selected must have a detection limit that is lower than the applicable RSM decision level. In addition, because of the complexity of the sample matrix, each of the four methods mentioned above can produce differing results. Therefore, the accuracy of each result (as evidenced by adding known concentrations of metals to a known amount of RSM sample) must be evaluated. Whatever method is selected, the laboratory must be prepared to demonstrate that the analytical method chosen was sufficiently sensitive, and produced results of known accuracy with minimal interferences.

If you have any questions about this memorandum, please feel free to contact me at 850/245-8735 or Mr. Lee Martin, P. E. at 850/245-8734.