

PPC 9445.1984(01)

RCRA METHODS AND QUALITY ASSURANCE ACTIVITIES

APR 23 1984

MEMORANDUM

SUBJECT: Notes on RCRA Methods and QA Activities

TO: Addressees

The response to my previous RCRA Methods and QA Activities memo was very gratifying. We very much appreciate the comments and suggestions that you sent us. In this memo I will address some of the topics you suggested in your comments. The topics to be discussed are:

- Delisting Spot-Check Program
- Performance Audit Program for Volatile POHC
- Method 3030 - Acid Digestion of Oils, Greases and Waxes
- EP Toxicity - pH Adjustment
- Method 3550 - Sonication Extraction
- pH of Oil/Grease

Delisting Spot-Check Program

OSW has a program which is approximately a year old now, in which unannounced visits are made to facilities that have submitted delisting petitions. Included in these visits are both on-site waste management facilities and commercial, off-site, multiple waste treatment facilities.

The purpose of the spot-check program is to collect representative samples of the material being managed in order to verify data submitted in the facility's delisting petition, and, if appropriate, to inspect the treatment process and ensure that exclusion contingencies are being

observed.

A total of eleven visits have been made (one to Region I, two to Region II and four each to Regions III and V). As a result of the inspections, recommendations were made to deny the petitions submitted by three of the facilities. In some cases, recommendations to the Regions for enforcement action resulted from these checks.

The spot-check program will continue with trips planned to Regions IV, V, and VII by late spring. Both the Regional Office and the appropriate State office are notified and invited to accompany the OSW team on these visits.

Performance Audit Program for Volatile POHC

EMSL-RTP has prepared standard cylinders of organic substances in nitrogen in support of the OAQPS and RCRA monitoring programs. Each cylinder contains the following five organic compounds; carbon tetrachloride chloroform, perchloroethylene, vinyl chloride and benzene. Some cylinders have compound concentrations in the range of 7 to 90 ppb suitable for auditing the VOST and others are in the range of 90 to 430 ppb and suitable for auditing a bag sampler.

While it is presently not required, OSW is considering the implementation of a performance audit program that would require source test measurements during all hazardous waste trial burns. Since EMSL-RTP is already in a position to conduct audits of VOST and bag sampling operations, we recommend that Regional permit and ESD personnel immediately begin to require use of the RTP audit cylinders during all source measurement programs.

Please direct all requests for audits to Florence Richardson of my staff. She will record the requests and forward them to EMSL-RTP for scheduling. This will permit us to determine the future resource implications of such a requirement. We would also appreciate any suggestions that you may have for implementing the program.

Method 3030 - Acid Digestion of Oils, Greases and Wastes

Region V has initiated analyses of waste oils to determine their hazardous characteristics, and the determination of metals is one of the principal waste oil analyses of interest. The lead and barium contents of waste oil are important because of their use as gasoline additives.

Prior to the metals' analyses, recovery data for oils spiked with organometallic standards were collected. The spike recoveries were definitely unacceptable for barium, lead, mercury and selenium.

We appreciate Region V bringing this problem to our attention, EMSL-Cinn is currently evaluating all of the SW-846 digestion methods. In response to comments such as these, we are considering modifications or adjustments to the current methods and also methods from other sources in the evaluation program. The report on the evaluation of this method is scheduled to be prepared and available for review by July, 1984.

Method 1310 EP Toxicity

One question frequently asked is "What is the procedure to use if the maximum amount of 0.5N acetic acid has been added to the extractor and pH 5.0 \pm 0.2 has not been reached?

- In such a case the 4 meq/gm maximum amount of acid specified is controlling and no additional acid should be added to the system. Under such conditions the extraction is conducted at the pH reached after the maximum amount of acid is added.

"Also, when the EP toxicity test is performed for oily or greasy samples that cannot be filtered, it is permissible to heat these at low temperature to remove organics and then determine the metals present."

- Materials that do not pass the 0.45 μ m filter are considered as solids, irrespective of their liquid properties, and thus must be extracted with the acetic acid solution. They are not considered to be an extract as would an oil that passes through the filter.

pH of Oil and Greases

Another question that is often raised deals with how to measure the pH of oily materials.

- It is impossible to determine the pH of non-aqueous materials. In cases where the material is multiphasic, containing both an oil and a water layer, the water layer can be measured.

Clarification of Method 3550

"A laboratory inquired about method 3550 and wanted to know if the results were to be reported in dry weight. This methods states 'a weighed sample of solid waste is ground, etc., etc.' The sample referred to is the 'as received material' not a dried portion."

- Unless specifically stated in a method, results are to be reported "as received" and the sample is not dried before analysis.

NOTE

ORD provides vital QA support to the RCRA program through a number of laboratories. From time to time I thought it might be worthwhile to highlight these laboratories and describe some of the support they provide. In this memo we will highlight Quality Assurance at EMSL-Cinn, EMSL-LV and EMSL-RTP.

The EMSL-Cinn QAB staff is headed up by John A. Winter with Harold Clements and Ed Berg as section chiefs. They are responsible for preparing and distributing certain types of laboratory performance evaluation samples, quality control samples and reference materials. They also maintain and operate the EPA repository of toxic and hazardous materials and thus are responsible for distributing analytical standards to laboratories performing RCRA testing. The repository of calibration standards have been verified by multiple laboratory analyses as to percent purity of the neat compounds and concentration of solutions in the sealed ampules.

Responsibility for developing and distributing non-aqueous standard reference materials, maintaining the Quality Assurance materials Bank, evaluation of biological testing methods and

development of leaching procedures is with EMSL-LV. Compounds in the bank are not calibration standards but are of various levels of purity and may or may not have been fully verified. Gareth Pearson is the Branch Chief. Llew Williams is the Project Leader for the Ames mutagenicity and daphnia magna bioassay projects and for development of the second generation Extraction Procedure. These activities will be discussed in a future memo.

EMSL-RTP provides QA materials and conducts audits of laboratories dealing with airborne or gaseous sampling and analysis. As previously stated in this memo EMSL-RTP provides cylinders of standard gases for ensuring the measurement of organic compounds in trial burns and/or landfills. Darryl von Lehmden heads up this QA effort.

Once again let me thank you for your interest and please keep sending us your comments and ideas for future memos.

David Friedman
Manager
Methods Program

May 1984