UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1201 ELM STREET
DALLAS, TEXAS 75270

August 19, 1986

Peter Pache, Manager
Groundwater and Hazardous Waste Bureau
Environmental Improvement Division
New Mexico Health and Environment Department
P.O. Box 968
Santa Fe, New Mexico 87504-0968

Dear Mr. Pache:

I have enclosed a copy of the August 6, 1986, memorandum from Daryl J. Von Lehmden concerning the use of the audit gas cylinders for trial burns. These audit cylinders are available to you and I recommend their use.

If you have any questions, please call Henry Onsgard or me at (214) 767-8941.

Sincerely yours,

William K. Honker, Chief
Permits Section

Enclosure

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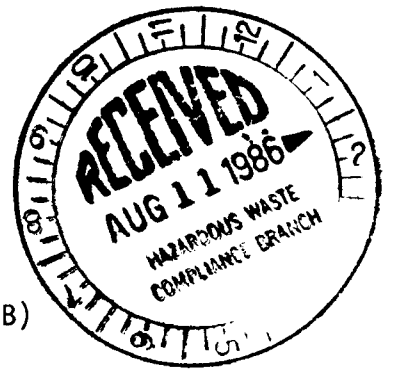
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Environmental Monitoring Systems Laboratory
Research Triangle Park, North Carolina 27711

Date: August 6, 1986

Subject: Results from RCRA Audits and Recommendations

From: Darryl J. von Lehmden
Senior Scientific Advisor
Quality Assurance Division, EMSL/RTP (MD-77)

To: David Friedman
Manager, Methods Program
Office of Solid Waste and Emergency Response (WH-562B)



During the fall of 1983 EMSL/RTP demonstrated the usefulness of ppb cylinder gases for auditing the accuracy of VOST (volatile organic sampling train) and bag sampling measurements. Since that time, 43 audits have been initiated associated with RCRA testing. Attached is a summary of the measurement system accuracy for each of the 43 audits. The audit results are organized according to the three types of audit cylinders currently available (i.e., Groups I, II, and III). The audit requester was responsible for designating to the auditee those organics in the audit cylinder which were part of the audit. Therefore, in the attached summary, the notation of "NA" (no analysis) indicates the requester was not interested in that organic during the audit.

Analysis of the audit results shows the following:

A. EPA region and state permit writers should be encouraged to request an audit as part of every trial burn test.

In June 1985, OSW (David Friedman) stated in a widely distributed memorandum (Memo #7 on RCRA methods and QA activities): "Requiring permit applicants to conduct audits during the trial burn adds an important weapon to the QA arsenal. OSW strongly recommends instituting this requirement." Some EPA regions have made frequent requests for RCRA audits, others have made none. Only three states have made requests for RCRA audits. I believe it would be useful for OSW to restate its position to the permit writers on the importance of requiring an audit as part of the trial burn test.

B. Limit of agreement that an auditee should meet are identified.

Based on the empirical results from the audits, we currently have selected a limit of agreement that the auditee should meet at ± 50% accuracy. Audit requesters should not become concerned with trial burn results unless the audit results exceed an accuracy of 50%. When the 50% accuracy limit is exceeded, logic must be applied to keep the audit results in the proper perspective. For example, if a trial burn achieves far more than the required 99.99% DRE (let's say 99.999% DRE), then an audit accuracy >50% of one or more POHC may not be significant. In addition, once the 50% limit has been exceeded, the sign (+ or -) of the accuracy is significant. A plus

accuracy may not be as important as a negative accuracy. The negative accuracy implies the tester may not be measuring all the POHC in the combustion effluent. This will result in a ficticiously high DRE.

C. Bag collection should be evaluated.

An extensive evaluation of the VOST method by EMSL/RTP has been completed. Even though VOST is the method of choice for trial burns, it is apparent from the audit results that bag collection is also being used (primarily by EPA Region 4). Limited audit results received so far on bag collection suggest bag collection may be an acceptable alternative to the VOST. However, the limits of bag collection (including the effect of stack gas moisture, stability of bag-collected POHC, minimum detectable limits for POHC, etc.) need to be defined. An evaluation of the bag collection method should be completed.

Also attached is a list of all organics compounds and the concentration ranges currently available for RCRA audits. Group IV audit cylinders are currently under development and will be available in December 1986. Permit writers may request an audit by contacting Robert Lampe, EMSL/RTP at FTS 629-4531.

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