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SELECTION OF NON-USEPA APPROVED METHODS FOR SUBPART X PERMITS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

NOV 19 1990

MEMORANDUM

SUBJECT: Request for US EPA Headquarters Assistance in Selection of Non-US EPA Approved Methods for RCRA Subpart X Permits

FROM: David Bussard
Director
Characterization and Assessment Division (OS-330)

TO: Terry L. Anderson
Chief
RCRA Implementation Branch
US EPA, Region VIII

This memo is in response to the request by Terry Anderson, Chief of the RCRA Implementation Branch, Region VIII, for Office of Solid Waste (OSW) headquarters guidance on appropriate analytical methods for the analysis of the following eleven compounds (with CAS Nos.), in air, from open burning/open detonation, for which no approved USEPA methods apparently exist:

Cyanogen chloride	(506-77-4)
1,1-Diethylhydrazine	(616-40-0)
1,1-Dimethylhydrazine	(57-14-7)
1,2-Dimethylhydrazine	(540-73-8)
Ethyleneimine	(151-56-4)
Hydrazine	(301-01-2)
Hydrogen cyanide	(74-90-8)
Methylhydrazine	(60-34-4)
Nitric oxide	(10102-43-9)
Toluene diisocyanate	(584-44-9)
o-Toluidine hydrochloride	(95-53-4)

United Technologies advocates the use of Draeger tubes for these

analyses, while Region VIII advocates the use of supercritical fluid chromatography (SFC).

From our experience, OSW agrees with the Region VIII position that Draeger tubes are inappropriate for use in this application, because they are prone to giving false negative responses. However, it is also our opinion that SFC is inappropriate as well for this application. SFC is an unproved technique for environmental analyses, and shows little promise of future applicability, particularly for the above list of compounds. Therefore, SFC has a low priority in OSW's methods development program.

Toluene diisocyanate and o-toluidine hydrochloride (as o-toluidine) can be determined by SW-846 Method 8270. They should also be amenable to sample preparation by one of the methods listed in the "Compendium of Methods for the Determination of Toxic organic Compounds in Ambient Air", EPA-600/4-84-041, and its subsequent updates, originally issued in April, 1984 by EPA's Atmospheric Research and Exposure Assessment Laboratory in Research Triangle Park, North Carolina. Methods for nitric oxide and other gases in air may be available from the Office of Air Quality, Planning and Standards (OAQPS) in Durham, North Carolina. OAQPS has published a number of ambient air methods in the Federal Register as a part of their regulations.

Other sources of applicable methodology for analysis or monitoring of these compounds in ambient air include the manufacturers of the compounds in question and the National Institute for Occupational Safety and Health (NIOSH). The manufacturers need to monitor the quality of their products through assay methods, and also to monitor air exposure of their workers to these compounds during the course of the manufacturing process. Exposure monitoring methodology is a specialty of NIOSH, and they publish many volumes of analytical methods. Manufacturers of the compounds of concern should be found in the trade publication "Chemical Sources", which is commonly used by chemical purchasers.

If we can be of further assistance, please feel free to call Barry Lesnik of my staff at FTS: 382-7459.

cc: Chet Oszman