Permit

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Los Alamos
NATIONAL LABORATORY

Risk Reduction & Environmental Stewardship Division
Water Quality & Hydrology Group (RRES-WQH)
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Date: March 12, 2003
Refer to: RRES-WQH: 03-062

Mr. John Young
LANL Corrective Action Project Leader
Permits Management Program
New Mexico Environment Department, Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

SUBJECT: COMPARISON OF ANALYTICAL METHODS SW846 AND 40 CFR 136

Dear Mr. Young:

Per your request, the Laboratory's Water Quality and Hydrology Group (RRES-WQH) had Analytical Quality Associates, Inc. (AQA) compare the analytical methods (SW846 vs. 40 CFR 136) for metals, PCBs, radionuclides and high explosives (HE). Currently, RRES-WQH is contracted to use General Engineering Laboratories (GEL) for analytical work conducted under the water quality compliance and environmental surveillance programs. AQA personnel reviewed the standard operating procedures and analytical methods used by GEL. AQA's summary of this comparison is provided below:

- For metals there is no technical difference in analytical methods using SW846 (Methods) and 40 CFR 136 (Methods). In fact, GEL uses the same SOP for 200.7 and 6010b and the same SOP for 200.8 and 6020.

- The comparison for PCBs using (Method 608) or (Method 8082) by GC are the same. GEL uses the same SOP. However, the sample preparation is different. Method 8082 has a sulfuric acid digestion that destroys the pesticides that may interfere with the PCB analysis and Method 608 does not.

- The quality control requirements for GEL are specified in the Laboratory's Statement of Work and these meet or exceed both 40 CFR 136 and SW846 requirements.

- In general, SW846 mimics the EPA water methods but incorporates additional requirements so that the procedures are also applicable for solids and wastes.

- RRES-WQH's NPDES program currently uses SW 846, Method 8830 for HE analyses.

- Analytical SW846 does not cover radio-chemistry. NPDES rad analyses are completed as follows: Gross Alpha: EPA 900.0 / EPA 9310; Gross Beta: EPA 900.0 / EPA 9310; Radium-226: EPA 903.2; Radium-228: EPA 904.0 / EPA 9320; and Tritium: EPA 906.0. The EPA 900 methods are called for under SDWA. The EPA 9300 methods are called for under RCRA. A tritium method is not specified under RCRA. Neither is a radium-226 method specified under RCRA. However, *Total Radium* is specified under RCRA (by EPA 9315).

Based on the information provided above, the analytical methods for SW846 and 40 CFR 136 are comparable. Please contact me at (505) 665-8572 or Mike Saladen, RRES-WQH, at (505) 665-6085 if you have questions or additional information is needed.

Sincerely,

Billy Turney

Billy Turney
Water Quality & Hydrology Group

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