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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

June 18, 1997

Mr. George Dials, Manager
Carlsbad Area Office
Department of Energy
P. O. Box 3090
Carlsbad, New Mexico 88221

Mr. Joe Epstein, General Manager
Westinghouse Electric Corporation
P.O. Box 2078
Carlsbad, New Mexico 88220

Dear Messrs. Dials and Epstein:

RE: Request for additional information, WIPP Groundwater Monitoring Plan EPA I.D. Number NM4890139088

On February 25, 1997, the Hazardous and Radioactive Materials Bureau (**HRMB**) requested a revised groundwater monitoring plan for inclusion in the administrative record and the draft permit. The Department of Energy and Westinghouse (**DOE/WID**) responded to this request on March 21, 1997, by submitting a revised Appendix D18 entitled "WIPP Groundwater Monitoring Program Plan" (**GMP**) designed to replace the material previously found in the WIPP RCRA Part B permit application.

Following a detailed review, HRMB has found the GMP to be technically inadequate. The enclosed attachment lists the information necessary for HRMB to incorporate the GMP into the draft permit. The attachment contains requests for both general and specific information.

HRMB wishes to clarify how it intends to incorporate field and laboratory procedures (which DOE/WID provided as Attachments A and B to the GMP) into the draft permit. HRMB prefers not to physically incorporate these procedures directly into the draft permit, but instead to reference them in a manner similar to that proposed for the "Transuranic Waste Characterization Sampling and Analytical Methods Manual." In the case of Attachment A (WIPP Procedures), HRMB possesses a controlled distribution copy of these procedures, which will serve as the official copy on the condition that each procedure used in the GMP is directly referenced and briefly summarized at the appropriate location in the GMP. In the case of Attachment B (Contract Laboratory Operating Procedures), HRMB will require a complete set of procedures for informational purposes after DOE/WID has addressed the relevant requests for information.

HRMB seeks clarification from DOE/WID on the request for a groundwater monitoring waiver contained in Chapter E of the WIPP RCRA Part B permit application. At the May 16, 1997, meeting between DOE/WID and HRMB, your staff provided additional written information reflecting changes you wanted to make in the current permit application. Although the first item on the list described updates for portions of the application which referenced or relied upon a no-migration variance petition or determination, it did not address Chapter E (page E-1, lines 34 - 38) of the application, which still describes DOE's plans to petition EPA for a no-migration variance. Further, on page E-2, lines 1 - 4, the application states, "Based on these analyses the DOE requests that the New Mexico Environment Department (NMED) Secretary find that there is no potential for migration of liquid from the repository to the uppermost or other aquifers during the active life of the facility, including the post-closure care period." HRMB recommends that DOE/WID revise the remaining references to the no-migration petition in the application, and reconsider the request for a groundwater monitoring waiver in view of the March 16, 1996 Notice of Deficiency (NOD) requiring submittal of "...plans for monitoring potential groundwater releases of RCRA constituents..."

HRMB also seeks clarification from DOE/WID regarding the use of the term "New Text" on the Cross Reference Summary Table provided with the March 21, 1997 submittal of the GMP. In the context of this table, "New Text" appears to indicate newly written information not previously provided in earlier versions of the application. However, based upon subsequent HRMB requests for information (e.g., the April 29, 1997 request for modeling and parameter selection information), DOE/WID must clearly indicate whether this "New Text" clarifies, modifies, or supplements previously submitted material, and if so, indicate the corresponding location of the previously submitted material in the permit application. Under 20 NMAC 4.1.1103, the application is complete so long as the additional information is necessary to "clarify, modify, or supplement previously submitted material."

HRMB urges you to submit the requested information as soon as possible. In the meantime, HRMB staff will continue development of other portions of the draft permit. Provide HRMB with three hardcopies and an electronic copy (in WordPerfect 5.2 format) of the revised GMP and all other submitted information. Upon receipt, HRMB will coordinate with our technical contractor to review and evaluate the information for completeness and technical adequacy. As usual, you may coordinate shipment of the hardcopies and electronic copy to our office and that of our technical contractor with Mr. Steve Zappe of my staff.

Thank you for your cooperation. If you have any questions, please contact Mr. Zappe at (505) 827-1561.

Sincerely,

Benito J. Garcia, Chief
Hazardous and Radioactive Materials Bureau

Attachment

cc: Ed Kelley, NMED
Stu Dinwiddie, HRMB
Steve Zappe, HRMB
Susan McMichael, NMED OGC
David Neleigh, EPA Region 6
Frank Marcinowski, EPA ORIA
Connie Walker, A.T. Kearney
File: Red WIPP '97
Track: WIPP, 6/5/97, Dials, Garcia, RE:

General Comments

1. The WIPP Groundwater Monitoring Plan (GMP) includes numerous references to procedures that are not included in the GMP. For example, Section D18-1b states that detailed sampling equipment decontamination/installation, purge requirements, and field water quality measurements are included in Attachment A. However, Attachment A does not include detailed information (i.e., specific WIPP SOPs) addressing the cited technical areas. Detailed protocol for assembling, installing, and controlling pumping and sampling systems is not found in the procedures generated, approved, and maintained by the site documentation process included in Attachment A. In addition, the GMP often states that procedures are in place, but does not specify the procedure number, and does not summarize contents of the procedure (e.g., D18-8a(3), well purging). Further, the GMP sometimes references a procedure number, but does not include this procedure in Attachment A or summarize applicable procedure content within the GMP (e.g., WP02-3, Environmental Procedures Manual, as referenced in Section D18-8b(5)). Revise the GMP to identify all necessary procedures and summarize the procedure contents, specifically referencing each procedure indicated to be applicable within the context of the technical material being discussed. Submit informational copies of all additional procedures not currently in Attachment A.

2. The GMP does not specifically describe, in Section D18-6d(1), how parameter stability is determined during serial sampling. This is important, as stabilization of groundwater parameters is critical to acquiring representative samples, and the GMP does not indicate how stability will be determined. The GMP must be revised to specifically detail how parameter stability will be assessed, including criteria for determining whether non-stabilization of some parameters does not qualify the quality of the final sample to be collected.

3. The GMP includes numerous tables, forms, etc., within Attachment A pertinent to sample collection/transfer, groundwater level monitoring, etc. The tables within this attachment should be modified, as appropriate, to include wells in the GMP detection monitoring system.

4. The GMP does not include a discussion of, and independent data validation of, the data that is generated by the laboratory. Indicate if such a validation is performed and what organization will perform the data validation. Also, indicate the report format of such a report and a list of people that will receive this report.

Specific Comments

1. Section D18-5b(3) states that the "Evaluation of sample blanks will be performed following EPA Functional Guidelines for Data Validation". To ensure completeness, revise the text to specifically reference these guidelines by the exact title and EPA

document number. Also, indicate how blanks which are analyzed for wet chemistry but have no Functional Guidelines are evaluated.

2. Section D18-5b(3) states that QC samples including trip blanks, field blanks and method blanks will be analyzed. However, the frequency at which these samples will be collected and analyzed was not specified. Revise the text to provide this information.

3. Section D18-6c of the text lists the field and laboratory analytical parameters to be analyzed. The text at the top of page D18-24 states that total dissolved solids, total suspended solids, density, calcium, magnesium, and potassium will be analyzed for. However, Table D18-3 does not include all of these parameters. Clarify and ensure that the text and tables are consistent.

4. Section D18-6e(4) indicates that two duplicate samples will be collected during background sample collection, and the GMP also indicates that duplicates will be collected with each serial sample. The GMP also indicates, in Section D18-5b(2)b, that 1 in 20 of non-radiological samples will undergo duplicate analysis to determine precision. The term "duplicate" appears to be used inconsistently, and the GMP should be clarified to be sure that no confusion arises.

5. Section D18-8a(1) states that specific gravity is tested in the field to identify a steady state condition of water chemistry. However, specify gravity has not been identified as a field parameter on Table D18-3. Clarify and ensure that the text and table are consistent. Also, clarify the differences, if any, between measurements of specific gravity versus density (see comment 3 above). Use consistent terminology, if possible.

Comments on Attachment B - Contract Laboratory Operating Procedures

The comments below are addressed by SOP number as provided in Attachment B of the Groundwater Monitoring Plan. Because WIPP personnel do not have direct control over these procedures, responses to these comments in the form of revised SOPs may require additional time to prepare. As stated in the cover letter, NMED will require a complete set of these procedures for informational purposes after DOE/WID has addressed the following requests for information.

1. SOP QC-001-03: Nonconformance and Corrective Action. Section 2.0 of the SOP states that "many nonconformances require that the client be notified so that they may provide direction." The SOP should be revised to discuss or provide general guidelines on which situations require that the client be notified.

2. SOP QC-004-05: Water Quality Check. Page 5 of the SOP includes Table 1 which includes the conductivity of 0.01 M KCL determined at various temperatures. However, the text of the SOP does not discuss the use of the table or the information in the table as related to the method. Provide this information.

3. SOP QC-005-02: Preparation and Control of QA Documents. The SOP should be revised to reference SOP QC-014-00, which discusses the information that is required in a QC Manual.

   Section 5.3 of the SOP describes the procedures in place to update the QA Manual or any SOPs. Section 5.3.3 indicates how modifications to an SOP are performed and includes an "SOP Modification Form". Indicate how any changes made to the QA Manual are performed, and if a separate "Modification Form" is needed.

4. SOP QC-007-01 Organic Preparation Data Verification. This SOP discusses only the procedures to review the extraction summaries for the samples. However the SOP is entitled "Organic Preparation" which should include verification of all data associated with the preparation of all samples prepared for a method. For example, this would include preparation of the working standards (such as the calibration standard solutions, internal standards, etc..), not just the sample extracts. Clarify and ensure that the SOP includes complete information.

5. SOP QC-010-02 Determining Method Detection Limits (MDLs), Estimated Quantitation Limits (EQLS), and Instrument Detection Limits (IDLs). Section 5.1.1 of the SOP outlines the procedures for estimating the MDL. The first criteria identified is "previous experience". This information should be expanded to indicate what level of experience is required.

   Item C should be revised to state that "The concentration value that corresponds to the region of the standard curve...". Also, Section 5.1.4 of the SOP states that "500 Series Methods require that these replicates be analyzed over a period of several days." Clarify and revise the SOP to clearly define "several days".

   Section 5.1.5 of the SOP should be revised to state that a minimum of three analyses of a matrix spike containing the analyte of interest at a concentration three to five times the estimated MDL will be performed. Therefore, the Student t-distribution table should be revised to also include the information for 3-5 samples.

   The information provided in Section 5.2 of the SOP should be expanded to state that the IDL should be determined by multiplying the average of the standard deviations obtained by three. Also, ensure that each measurement (of the seven consecutive measurements per each of the three days) is preformed as though it were a separate analytical sample (i.e., each measurement must be followed by a rinse and/or any other procedure normally performed between the analysis of separate samples). Ensure that IDLs are determined and reported for each wavelength used in the analysis of the samples.

6. SOP QC-012-01: Internal Quality Assurance and Audit Procedure. The SOP should be revised to indicate whether the results of the audit are summarized in a report. If so, the SOP should include the contents of such a report and who receives this information. Also, the SOP should indicate what, if any, corrective action procedures

are to be taken during an audit. To ensure traceability and completeness, the audit checklists should be revised to include the date of the audit and the name of the person conducting the audit.

7. SOP QC-013-00: Requirements for Proof of Analyst Proficiency. The SOP should indicate how often an analyst is tested to ensure that their analytical proficiency is sufficient and consistently maintained (e.g., at the beginning of each project). The SOP discusses only the on the job analytical procedures that each analyst is required to perform correctly in order to ensure proficiency. However, no information on the required education or experience required has been outlined. Personnel qualifications should be documented in terms of education experience and training, and should be periodically reviewed to ensure adequacy to current requirements.

8. SOP QC-014-00: Subcontractor Approval Process. Section 5.0, first paragraph of the SOP, states that the results of the PE will be examined. The results of the PE are compared to predetermined acceptance limits for a given analyses. Indicate who performs this comparison and include these acceptance limits in the SOP as guidance. Also, ensure that record of all PE samples are maintained by the laboratory; problems identified should be immediately corrected. Revise the SOP to include more detailed and complete information. For example, Section 5.1.1.3 of the should be revised to address the QA objectives for comparability and representativeness of the data. Section 5.1.1.11 should be revised to expanded to include the who will conduct the audits, the procedures and the contents of the report. SOP QC-013-00 should be referenced for the information provided in Section 5.1.4.3 .

9. SOP AD-014-01: Preventative Maintenance in the Wet Chemistry Laboratory. Revise the information provided to include a list of the critical spare parts necessary for maintaining the equipment.

10. SOP AD-013-01: Inorganic Data Validation. This SOP should be revised to discuss and define any qualifiers that the laboratory may assign to any data that does not meet the QC limits.

11. SOP CW-007-00: Total Phenolics. Section 2.0 of the SOP states that method "does not differentiate between different kinds of phenols." However, the SOP should also state that the method is capable of measuring phenolic materials at the 5 ug/l level when the colored end of the product is extracted and concentrated in a solvent phase using phenol as a standard, and that the method is capable of measuring phenolic materials at the greater than 25 ug/l level in the aqueous phase (without solvent extraction) using phenol as a standard.

    Section 5.1.1 of the SOP should specify that all of the distillation apparatus is all glass; Section 5.1 should also be revised to include the following: pH meter, filter paper, and membrane filters. Finally, Section 5.7 of the SOP should also include preparation of the curve that is referenced in the calculation equation.

12. SOP CW-010-01: Fluoride by Ion Selective Electrode. Revise Section 6.0 to include a Teflon stir bar.

13. SOP OP-004-01: GPC Operating Procedure. Section 5.1.3, page 2 of 5, identifies the components of the GPC calibration solution. According to CLP SOW OLM03 the methylene chloride should contain 1.0 mg/ml and 0.2 mg/ml of bis-2-ethylhexyl phthalate and methoxychlor, respectively. However, the SOP states that these concentrations should be 0.5 mg/ml and 0.1 mg/ml for the two compounds. Clarify and justify the deviation from the referenced method. Also, ensure that the calibration solution is stored in an amber glass bottle with a Teflon lined screw-cap at 4°C and protected from light and also that the calibration standard is replaced at a minimum of every six months.

14. SOP AD-015-00: Preventative Maintenance in the Inorganic Instrumentation Laboratory. The SOP should be revised to include a list of the critical spare parts necessary for maintaining the equipment.

15. SOP CW-004-02: Total Cyanide. The SOP is based on SW-846 Method 9010A. The SOP should be revised to include the following equipment in Section 5.0: hot plate/heating mantle, pH meter, amber light, refrigerator, and Erlenmeyer flask. As outlined in SW-846 Method 9010A, Section 9.0 should be revised to include the following information:

    - Interferences are eliminated using the distillation procedure; and,
    - When present in large quantities, fatty acids, detergents, surfactants and other compounds may cause foaming during distillation, making endpoint of the titration difficult to detect. These compounds may be extracted at pH 6-7.

16. SOP CW-002-01: Chloride by Mercuric Nitrate Titration. Section 9.0 of the SOP should be expanded to include the following information:

    - Sulfite interference can be eliminated by oxidizing the 50 ml of sample solution with 0.5-1 ml of H_2O_2; and
    - Ferric and chromate ions interfere when present in excess of 10 mg/l

17. SOP IP-021-00: Digestion Procedure for Metals in Aqueous Samples Using SW-846, Method 3020A(modified). Section 2.0 of the SOP states that the procedure is applicable to selenium and zinc. However, according to SW-846 Method 3020A, selenium and zinc are not included. Clarify and justify the inclusion of these compounds. According to SW-846 Method 3020A, quality control information for the method should also include the verification of the concentration of all calibration standards against a quality control check sample obtained from outside a source. Section 9.0 of the SOP should be revised to include this information.

18. SOP IP-003-01: Digestion Procedure for Metals in Aqueous Samples Using SW-846 Methods 3010A, 3020A. Section 2.0 of the SOP states that the procedure for preparation of ICP samples is applicable to lithium. However, according to SW-846, Method 3010A does not include lithium. Clarify and justify the inclusion of this compound.

19. SOP CW-017-00: Total and Ortho Phosphorus. The SOP should be revised to include the interferences for the method. The following information should be included:

    - High iron concentrations and arsenate are determined to be interferents.

20. SOP CW-034-01: Bromide. The SOP is based on EPA Method 320.1. According to the EPA method, the following reagents should be listed in Section 6.0 of the SOP:

    - Sodium thiosulfate stock solution;
    - Sodium thiosulfate standard titrant;
    - Sodium thiosulfate working standard;
    - Potassium Biiodate Standard;
    - Starch solution; and,
    - Nitrogen gas:Cylinder.

21. SOP CW-035-00: Iodide. The SOP is based on EPA Method 345.1. According to the EPA method, the following reagents should be listed in Section 6.0 of the SOP:

    - Sodium thiosulfate stock solution;
    - Sodium thiosulfate standard titrant;
    - Sodium thiosulfate working standard;
    - Potassium Biiodate Standard;
    - Starch solution; and,
    - Nitrogen gas:Cylinder.

22. SOP CW-036-00: Dissolved Reactive Silica by Ammonium Molybdate Colorimetry. The SOP is based on EPA Method 370.1. According to the EPA method, the following reagents should be listed in Section 6.0 of the SOP:

    - Sodium bicarbonate powder;
    - 1N Sulfuric Acid;
    - Permanent color solution (potassium chromate solution and borax solution); and,
    - Reducing agent.

23. SOP II-004-00: Total Organic Halides in Waters. The SOP should be revised to include a discussion of the interferences in the method. Specifically, the following information should be included:

- Method interferences may be caused by contaminants, reagents or glassware.
- The use of high-purity reagents and gases helps to minimize interference problems.
- Purity of activated carbon must be verified before use. Only carbon samples that register less than 1,000 ng Cl/40 mg should be used.
- Particulate matter will prevent the passage of the sample throughout the adsorption column. Therefore, all particulates must be eliminated from the sample.

24. SOP GC-001-00: New Column Testing. Section 5.2 of the SOP states that the Group Leader, Operations Manager, or QA Manager must sign off on the data for the new column, prior to sample analysis. Indicate where the manager signs off (i.e., on the chromatogram, or lab notebook) and also indicate where this data is kept.

25. SOP GX-004-00: Preventative Maintenance in the GC Laboratory. The SOP should be revised to include a list of the critical spare parts necessary for maintaining the equipment.

26. SOP GX-006-01: Documentation of Run Logs for GC Analysis. Section 5.3 of the SOP states "Analysts must generate these instrument run logs every day and have them checked by another analyst for accuracy and completeness." Indicate whether this second analyst check is documented. Also, indicate what corrective measures are in place if the second analyst detects and error in the run logs.

27. No SOPs have been submitted for the data validation procedures for wet chemistry and organic analysis. Provide this information.