



**Department of Energy**

Carlsbad Area Office  
P. O. Box 3090  
Carlsbad, New Mexico 88221

June 14, 2000

2000  
RECEIVED

Mr. Steve Zappe, WIPP Project Leader  
Hazardous Waste Permits Program  
Hazardous and Radioactive Material Bureau  
New Mexico Environment Department  
P. O. Box 26110  
Santa Fe, NM 87505

Dear Mr. Zappe:

The purpose of this letter is to document a verbal report made to Mr. J. Kieling on June 13, 2000 regarding the receipt of suspect analytical results from the recent analysis of groundwater samples for trace metals and physical parameters as required by the WIPP Hazardous Waste Permit, V.J.2. What follows is a description of what was found, steps being taken to verify the suspect results, and action being taken to prevent recurrence.

In accordance with requirements in the WIPP Hazardous Waste Permit, various metals and physical parameters in the WIPP waste stream are monitored as part of the Detection Monitoring Program (DMP) as required in Module V and Attachment L of the Permit. These data are compared to background measurements collected over a two-year period and previously reported to the NMED. We are currently completing Round 10 of sampling and analysis under the DMP. Upon the first verification and validation cycle of groundwater data from the wells sampled in round 10, the following trace metals and physical parameters were reported from the contract laboratory at concentrations above those expected based on the groundwater background measurements:

- |          |           |                        |
|----------|-----------|------------------------|
| Antimony | Lead      | Silica                 |
| Arsenic  | Lithium   | Thallium               |
| Bromide  | Magnesium | Specific conductance   |
| Cadmium  | Nickel    | Total Dissolved Solids |
| Calcium  | Potassium | Total Organic Halogens |

The analytical data received do not provide evidence of contamination in the Culebra formation for the following reasons:



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- First and foremost, there have been no hazardous wastes received at the WIPP.
- The outliers appear in both the up-gradient and down-gradient wells.
- These data anomalies are characteristic of analytical problems associated with the analysis of the high salinity brines that are characteristic of the WIPP groundwater. These problems arise because of the high dilutions that are necessary to perform analyses.
- In most cases, the analytical results of the samples and blind duplicate samples did not correlate.
- The statistical background for the DMP was established using analytical results from the initial five sampling rounds. If the analytical results from sampling rounds six through nine are included in the baseline, then the results from Round 10 would represent background. This indicates that for the high-salinity groundwaters around WIPP, the minimum number of background samples mandated by the permit may have been insufficient to construct a statistically representative background.

The contract laboratory retained a sample from the original sample submitted for each of these wells and was instructed to re-analyze the samples. The laboratory was also directed to pay close attention to their bench chemistry procedures and verify their quality assurance practices. The sample results should be available by June 15, 2000. The results will then be compared to the baseline and the NMED will be expeditiously informed of the results. Should laboratory quality practices be the issue, measures will be taken to enhance quality control, including such measures as additional blanks and duplicates, third party analyses and possibly additional surveillance.

If no problems are identified with the analysis, the CAO will propose a course of action. This course of action will likely include expanding the background to include all pre-hazardous waste measurements.

Due to this anomaly in evaluating the groundwater data as required by the Permit, the CAO requests the NMED grant a 30-day extension to the reporting date for DMP Round 10.

Thank you for your time and consideration concerning this matter. If you have any questions, please contact me at (505) 234-7462.

Sincerely,  


Herbert L. Plum  
RCRA Compliance Manager

Mr. Steve Zappe

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cc w/enclosure:  
J. Bearzi, NMED  
J. Kieling, NMED