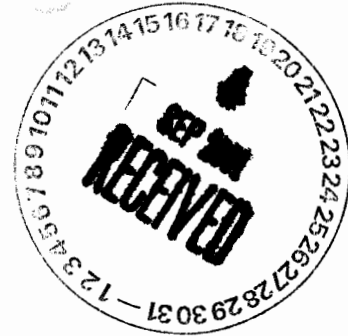




Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221
September 14, 2001



Mr. James Bearzi
New Mexico Environment Department
2905 E. Rodeo Park Drive, Bldg. 1
Santa Fe, NM 87505

RE: WIPP Comments on the Use of Micropurging and Low-Flow Sampling Techniques for Compliance Ground Water Monitoring Position Paper

Dear Mr. Bearzi:

The purpose of this letter is to provide to you the Waste Isolation Pilot Plant (WIPP) comments on the micropurging paper and a viewpoint on the applicability of implementing these ground water sampling techniques as part of the WIPP ground water sampling program. WIPP is jointly operated by the Department of Energy/Carlsbad Field Office (DOE/CBFO), owner, and Westinghouse TRU Solutions (WTS), the Management and Operating contractor. The WIPP is permitted to operate Hazardous Waste Facility Permit (HWFP) EPA ID Number NM4890139088. Thank you for affording WIPP the opportunity to review and provide comments on this technical document.

While the *Use of Micropurging and Low-Flow Sampling Techniques for Compliance Ground Water Monitoring* position paper provides some excellent alternatives to purging the traditional three to five well bore volumes prior to collection of a sample, it is uncertain at this time of the applicability of these techniques for the WIPP. This is due to the specific groundwater characteristics and the requirements noted in the WIPP HWFP for ground water monitoring. Following are specific points that affect the monitoring of Culebra ground water formation around the WIPP.

- Many facilities pay a significant amount for disposal fees for disposition of purged ground water. With the availability of two evaporation ponds, the WIPP does not have to pay for disposal of purged ground water at this time.
- Due the nature of the thickness and stratification of the Culebra Member of the Rustler Formation, the WIPP RCRA monitoring wells utilize a 20 foot screened section to allow water to flow from the formation into the well bore. The EPA and the NMED approved this deviation at the time the wells were being planned. This deviation was due to the fact that the Culebra has specific individual zones that are more transmissive than the entire formation is as a whole.



- Historical sampling experience has shown that several well-bore volumes of water must be removed from these wells before we reach an equilibrium state with respect to the serial-sampling parameters. The described methods are purposely designed to produce a very small volume of purged water prior to sampling and would probably not be effective for WIPP wells.
- In Section 6, first two paragraphs, the statement is made that sample filtration may induce artifacts into the sample, as well as increased turbidity. It is unclear how filtering a sample would increase turbidity. Filtering removes suspended solids from the water sample. This statement needs additional clarification. If micropurging techniques were to be implemented for the WIPP ground water monitoring, this will require further evaluation with respect to sample turbidity.
- In Section 6, next to the last paragraph, some of the discussion here seems to suggest that suspended material resulting from well construction or pumping should be considered as a real part of the metals concentrations for the natural ground water. The text also states that filtering a sample will not give "truly dissolved" analytical results. Filtering removed suspended material not dissolved metals. It is unclear as to why this concept is proposed and will need further investigation prior to implementation.
- Many older WIPP wells were constructed of iron casing and stand in brine water. Substantial pumping is required to fully purge the wells of corrosion products to allow for a realistically representative sample to be collected. To reach the desired steady-state condition, WIPP has had to pump hundreds of gallons of water from the non-water quality sampling program groundwater monitoring wells.

Specific comments:

- Last sentence on page 2, background information from bottom of page: "...low-flow techniques have primarily been tested in two-inch diameter wells, however..." Tests should be performed on larger diameter wells before assuming that the technique is adequate.
- Third line from the top of page 3, Background information at top of page: "...results may not be indicative of water chemistry in the entire screened interval, rather..." The author could state why this low-flow technique is still being pursued in view of the RCRA and NMED requirements for representative sampling. The paper should really address how the proposed technique meets current regulatory requirements.
- Section 6, page 11, last paragraph: Could the Author please provide clarity regarding why low-flow purging and sampling result in low turbidity of ground water samples.

- Page 15, first sentence: It is not until this page that the statement is made that not any well can qualify for low-flow purging and sampling. A Well Selection Criteria must be met first. This is a significant qualifier. The need for the well selection criteria evaluation should be brought to the front of the paper. What virtue does this technique have if its application is so severely limited?
- Section 10, page 15, middle of page: The author cites and advantage to low-flow purging to be the fact that purged water is not generated. However, the issue of evaporation of casing water over time and the concentration of constituents is not addressed as a concern with respect to representativeness. Therefore, prior to finalization of this paper, evaporation of water in the casing should be addressed.

In conclusion, we want to thank you for allowing WIPP to review the *Use of Micropurging and Low-Flow Sampling Techniques for Compliance Ground Water Monitoring* position paper. At this time, due to the specific requirements in the WIPP HWFP which require traditional ground water sampling techniques the micropurging and low-flow we do not believe it is appropriate to request permit modification to implement the theories presented.

If you have any questions pertaining to these comments, please contact me at (505) 234-7462.

Sincerely,



H.L. Plum
RCRA Compliance Manager

cc:
S. Zappe, NMED