

NEW MEXICO  
**HEALTH AND ENVIRONMENT**  
DEPARTMENT

Post Office Box 968  
Santa Fe, New Mexico 87504-0968

**HAZARDOUS WASTE BUREAU**  
(505) 827-2929

*Garrey Carruthers*  
GARREY CARRUTHERS  
Governor

LARRY GORDON  
Secretary

CARLA L. MUTH  
Deputy Secretary

August 14, 1987

Ms. Tanga Winkle  
U.S. EPA (6H-HS)  
1445 Ross Avenue  
Dallas, Texas 75202-2733

Re: Los Alamos National Laboratory  
NM 0890010515

Dear Ms. Winkle:

The enclosed July 30, 1987 letter from DOE to EID documents several items. Attachment 2 provides information on the presence of solvents (F002 and F005) in the surface impoundment at TA-16. Attachment 5 appears to be either a modification to the closure plan for the SI at TA-16 or a modification to the NPDES outfall, possibly both. Please share the letter with the NPDES people there. I've given a copy to our Surface Water Bureau.

The original letter also included eight additional attachments, all draft standard operating procedures. They address material handling at the points of waste generation. Because they were drafts, not final, and only remotely germane to the issue of the possible illegal discharge through the SI, I decided not to reproduce them. If you feel they are needed, let me know and I'll send them.

If you have any questions, please call.

Sincerely,

*C. Kelley Crossman*

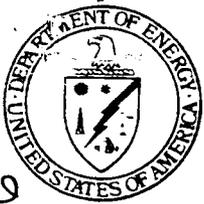
C. Kelley Crossman  
Environmental Supervisor

cc: EID Surface Water Bureau



5882

NM890010515



**Department of Energy**

Albuquerque Operations  
Los Alamos Area Office  
Los Alamos, New Mexico 87544

JUL 3 0 1987



CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Michael Burkhardt  
Director, NMEID  
Harold Runnels Building  
Santa Fe, NM 87501

RECEIVED

JUL 3 1 1987

Dear Mr. Burkhardt:

HAZARDOUS WASTE SECTION

Pursuant to our March 12, 1987 letter to you, enclosed are results of soil sampling performed by the Los Alamos National Laboratory (the Laboratory) after a discharge from a surface impoundment in Technical Area (TA) 16. The discharge contained barium above the Extraction Procedure (EP) toxicity criteria of 100 mg/l. The Laboratory sampled downgradient from the discharge into the ephemeral channel to determine if barium levels indicating a Resource Conservation and Recovery Act (RCRA) hazardous waste (i.e., above 100 mg/l) were in the soil.

The analytical results indicate that measured levels (26.0 mg/l) somewhat above background (0.8 mg/l), although well below the EP toxic criteria (100.0 mg/l), exist within 3 feet of the discharge point. These levels quickly decrease to near background concentrations in samples taken 10 feet and 40 feet from the discharge (6.6 mg/l and 2.7 mg/l, respectively). Due to these low levels, we do not see the need for further evaluation related to this discharge.

Pursuant to our June 5, 1987 letter to you, enclosed are results of recent wastewater sampling for barium on other high explosive Outfalls, specifically, Outfalls 056 and 058. As stated in the June 5, 1987 letter, a composite sampling program was begun on other specific high explosive Outfalls, and as the data became available it would be transmitted to EPA and EID. Sampling from other high explosive Outfalls is continuing.

Our letter of March 12, 1987 stated we were planning to install a treatment system to ensure that future discharges of relatively elevated levels of barium would not occur. We proposed to install this treatment system and have it operational by September, 1987. We have since chosen to eliminate barium in our processes rather than treat barium as originally proposed. We anticipate elimination of barium in our processes to occur by September 1988.



We are currently developing a substitute composition to replace barium in our explosive manufacturing processes. Although this development is proceeding, our use of barium-containing compositions must continue in a very limited capacity until another composition can be proven effective. We are treating all barium-containing sludge and effluent in sumps prior to collection for disposal/burning at the pressure vessels. This treatment renders the barium insoluble prior to effluent discharge through permitted Outfall Number 055.

Generally, the treatment procedure for the sludge and effluent in the sumps is: 1) the sump that will receive barium-containing waste is emptied, 2) machining or cleaning waste effluent is discharged into the sump until an indicator light shows the discharge portion of the sump to be two-thirds full, 3) cleaning or machining operations then cease until the sump's contents have been treated and emptied, 4) prior to emptying, contents of the sump are sampled and the appropriate amount of chemicals (hydrochloric acid and sodium sulfate) to adequately fix the barium in a nonsoluble form is determined, 5) diluted hydrochloric acid and sodium sulfate are then added to the sump, mixed, and allowed to settle, and 6) contents of the sump are removed by vacuum truck and drained through a cloth filter onto the pressure vessels for burning. This ensures that the eventual effluent from the pressure vessels into the surface impoundment does not contain elevated levels of barium.

We have expanded our Standard Operating Procedures (SOP) to include significant changes in process. These changes include reducing the amount of water associated with manufacturing barium-containing explosives and inert products and, consequently, reducing the amount dissolved in the washdown water; isolating activities that have potential to empty barium-containing wastewater into the collection sumps; and treating barium in the sumps prior to disposal. These SOPs have been included as enclosures.

Also in the March 12, 1987 letter, we committed to analyze influent entering the surface impoundment for a broad spectrum of other potential contaminants (specifically, volatiles, semi-volatiles and nitroaromatics). Results from these analyses are enclosed and indicate a need for treating organic constituents. We are changing our treatment system design to address removal of organics by filtering the effluent through an activated carbon adsorption tank. A copy of the treatment system design is enclosed.

This treatment system will be operational by mid-September, 1987. Once it is on-line, we will remove the remaining liquid from the surface impoundment. Before removal, the liquid will be sampled and analyzed for elevated levels of barium from discharges prior to our treatment in sumps. If only de minimus levels exist, we will discharge the fluid through the carbon treatment system to ensure removal of organic compounds. If higher

M. Burkhart

3

concentrations of barium are evident, we will pump the fluid into a stock tank for treatment similar to that performed in the sumps. The treated fluid will then be discharged through the cloth filter, pressure vessels, and carbon treatment system.

Eliminating barium from our manufacturing processes and removing organic compounds from our effluents are waste minimization steps in our continued efforts to maintain environmental compliance.

If this approach does not meet with your approval, please contact Mr. James Phoenix of my staff at 667-5288.

Sincerely,

  
Harold E. Valencia  
Area Manager

7229A

Enclosure:  
As stated

13 Atch

cc:

A. Tiedman, LANL, ADS, MS A120  
J. Aragon, LANL, HSE-DO, MS K491  
T. Gunderson (HSE8-87-730, 7-14), LANL, HSE-8, MS K490  
A. Drypolcher, LANL, HSE-8, MS K490

XC : EID Surface Water  
EPA (6 H-HS)