



GARY E. JOHNSON
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous & Radioactive Materials Bureau
2044 Galisteo
P.O. Box 26110
Santa Fe, New Mexico 87502
(505) 827-1557
Fax (505) 827-1544



MARK E. WEIDLER
SECRETARY

EDGAR T. THORNTON, III
DEPUTY SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

March 13, 1996

Mr. Joseph C. Vozella, Chief
Environment, Safety and Health
Los Alamos Area Office
Department of Energy
Los Alamos, NM 87544

RE: Notice of Deficiency
RFI Report for MDA-K, Technical Area 33
Los Alamos National Laboratory (NM0890010515)

Dear Mr. Vozella:

The Hazardous and Radioactive Materials Bureau (HRMB) of the New Mexico Environment Department (NMED) has reviewed Los Alamos National Laboratory's (LANL) RFI Report for MDA-K, Technical Area 33, dated September 29, 1995, and has determined it to be deficient.

LANL shall provide a response to the enclosed list of deficiencies within forty-five (45) days from the receipt of this letter. Please address one copy of your response to me and one to each of the individuals listed below.



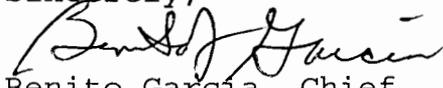
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Should you have any questions concerning this Notice of Deficiency, please contact either Mr. Robert Dinwiddie at 505/827-1561 or Ms. Teri Davis at 505/827-1558 concerning permitting or technical issues, respectively.

Sincerely,



Benito Garcia, Chief
Hazardous and Radioactive Materials Bureau

enclosures

cc: David Neleigh, Chief, US EPA Region 6
Ronald Kern, Technical Compliance Program Manager, NMED-HRMB
Barbara Hoditschek, RCRA Permits Program Manager, NMED-HRMB
Jim Piatt, Chief, NMED-SWQB

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List of Deficiencies
RFI REPORT FOR MDA-K, PRSs 33-002 (a,b,c,d,e)
Los Alamos National Laboratory

1. 4.1.2.2 Results of Field Screening:

Paragraph states that tritium "sniffers" were set up in work areas and that no tritium was detected during drilling. The risk analysis indicates that a possible credible exposure pathway is inhalation resulting from tritium flux from the soil. Paragraph 4.1.2.2 should disclose the sensitivity and type of instrument used to monitor for tritium and discuss wind direction and instrument location on the day(s) monitoring/drilling occurred. This should be reported regardless of the DOE allowable effective dose equivalent.

2. 4.1.3.1.2. Surface Tritium Results:

LANL should include a discussion on how the conclusion was reached that airborne stack releases from the tritium facility were the source of tritium on the surface of MDA-K. Does the aerial concentration distribution pattern match the prevailing wind direction? Could the distribution down-slope be due to mechanical soil transport which is continuing today toward existing drainages?

3. 4.1.3.1.3. Deep Borehole Results:

Paragraph 4.1.3.1.3 indicates that analytical results from deep borehole sampling were compared to background values determined from surface sampling. LANL shall revise the report to integrate background values from subsurface sampling if such information is available. If subsurface background data is not available, a discussion should be included to indicate why it is appropriate/inappropriate to use surface values in place of subsurface values.

4. 4.1.3.2.1. Borehole Observations -- Chaquehui Anomaly:

- a. This discussion should be expanded to explain why subsurface groundwater flow to the springs in Chaquehui Canyon is the source of the tritium anomaly. The geochemical mechanisms for tritium to be transported in solution from the tritium facility and precipitated in sediments near springs should be documented. Assuming groundwater is the medium of transport, can a time relationship be established between the emplacement of the 100 foot tritium spike, records of precipitation or facility outfall, and the Chaquehui Canyon sediment anomaly? If not, other potential sources of tritium should be investigated.

- b. Table 4-7: An explanation should be provided for the unusually wide variation in the tritium activities (pCi/L) measured from October 1991 to August 1994, from samples collected from approximately the same locations.

5. **4.1.3.2.2 Borehole Interpretations:**

- a. As stated in 4.1.3.2.2 "active discharges from the building continue." Paragraph 4.1 states that no personnel are stationed in the building and all equipment has been removed. An explanation should be included as to the source and reason for current discharges from the building, and if these current discharges are significant enough to cause migration of subsurface tritium.

- b. Chaquehui Anomaly

The explanation for the Chaquehui Anomaly in 4.1.3.2.2 does not agree with the explanation cited in 4.1.3.2.1.

6. **4.1.3.3. Risk Assessment:**

The Rio Grande River should be reconsidered as a possible exposure pathway due to the presence of tritium in sediment samples collected from near the confluence of Chaquehui Canyon and the Rio Grande. As indicated by the report, the origin of tritium at this location is unknown and the variation in activity is unusually great.

7. **4.2 SWMU 33-002(b) Sump TA-33-134:**

The description of the sump should provide an estimated date for when the sump was last used to dispose of significant amounts of waste. The rubble fill should be described in terms of particle size to determine the likelihood of waste migration from the sump. Any indication of sump overflow should be noted.

8. **4.2.2 Field Investigation:**

The unspecified drilling method and sampling adjacent to the sump was inadequate as indicated by a penetration depth of only 30 inches.

9. **4.3 SWMU 33-002(c) Sump TA-33-133:**

Same comments as for SWMU 33-002(b), Sump TA-33-134.