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November 15, 1993

Ms. Diana Webb, LANL/AIP/POC
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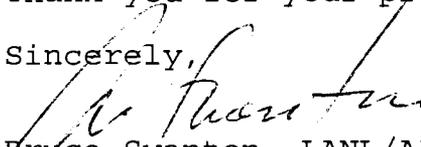
RE: Review of LANL's May 1992 RCRA Facility Investigation
(RFI) Work Plan for Operable Unit (OU) 1148

Dear Ms. Webb:

The enclosed attachment provides the Department of Energy (DOE) the Agreement-In-Principle's (AIP) technical comments for the above referenced RFI Work Plan as received by the Hazardous and Radioactive Materials Bureau's (HRMB) Technical Compliance Program.

Thank you for your prompt attention to this matter.

Sincerely,


Bruce Swanton, LANL/AIP/POC, Program Manager
Hazardous and Radioactive Materials Bureau

BS/td
Attachment

Circ. copy: Benito Garcia, HRMB Bureau Chief
Steve Alexander, HRMB
Barbara Hoditscheck, HRMB
Neil Weber, DOE Oversight Bureau Chief

Circ. copy: Glen Saums, SWQB Program Manager
Dennis McQuillan, GWPRB Program Manager

cc: Teri Davis, HRMB/AIP
File LANL Red93
Barbara Driscoll, EPA Region 6
Don Krier, LANL OUPL



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M E M O R A N D U M

To: Steve Alexander, Manager
NMED, RCRA Technical Section

Through: Bruce Swanton, POC/EM Oversight Program, LANL

From: Danny Katzman, AIP/LANL

Date: September 3, 1993

Subject: **Review of LANL's Operable Unit 1148 RFI Work Plan, submitted May 1992.**

The Hazardous and Radioactive Materials Bureau (HRMB) Agreement in Principle (AIP) staff have completed the review of the Operable Unit (OU) 1148 RCRA Facility Investigation (RFI) Work Plan. This memo details the comments stemming from the review. For clarity, the memo is divided into two sections. Section 1 contains comments concerning non-HSWA issues and is provided in this memo for the sake of completeness of the Work Plan review. These non-HSWA issues are those that are not specific to the RCRA regulations. Section 2 contains technical comments and recommendations on Hazardous and Solid Waste Amendment (HSWA) issues. The AIP program is submitting these HSWA-related comments and technical recommendations to the HRMB's RCRA Permitting and Enforcement/Technical Programs because of eventual New Mexico HSWA authorization. The following comments are numbered for easy reference. The letter "p" refers to the paragraph within the given section.

SECTION 1. NON-HSWA ISSUES

General Comments

- 1). Section 1.2.3.2 of the OU 1148 RFI Work Plan implies that DOE Order 5820.2A requires that near-surface disposal units containing transuranic-contaminated (TRU) waste need to be shown capable of preventing migration of these wastes into the environment only over a 100-year time period. A review by AIP staff of the DOE order, as well as the TRU-waste specific document (DOE/JIO-025) referenced in Attachment 1, page 3, paragraph 22 of the order does not support the interpretation

implied in the Work Plan.

Technically valid evaluations of potential risk at a site proposed for permanent disposal are based on the possibility of movement of contaminants into the environment over the life of the contaminants rather than for a period of 100 years. A technically sound evaluation would consider factors such as reasonably likely seismic hazards, cliff retreat rates, surficial erosion rates, and possible eventual vadose zone transport to the main aquifer.

Specific Comments

MDA J

2). Section 5.1.4.1.7

Phase I surface-water runoff sampling results (as well as all surface water data associated with stream courses) should be compared to New Mexico's Water Quality Control Commission standards.

3). Section 5.1.4.2.5, p1

There is no apparent relevance for the comparison of Environmental Surveillance Program results to Phase I sediment sampling in the primary runoff area.

SECTION 2, HSWA-RELATED ISSUES

General Comments

- 4). Where appropriate, data should be collected for use in ecological risk assessments (e.g. the surface-migration pathway that leads to wetlands in Pajarito Canyon). Levels of contamination that are protective of human health may not be sufficient for protection of ecologically sensitive areas and species. It may be necessary to establish screening action levels (SALs) that address this issue.
- 5). The OU 1148 RFI Work Plan proposes several Phase II Sampling and Analysis Plans (SAPs) designed to determine the vertical and lateral extent of contamination. The Phase II SAPs contain descriptions of the number of samples and approximate locations and depths of those samples. It is not understood how the number and location of samples necessary for the determination of extent of contamination can be determined prior to Phase I results. Phase II SAPs should be detailed and submitted for review. (See Comment #s 17, 20, 23, 28, and 30)

- 6). Randomly selected sampling locations within grids proposed for surface drainage channels do not adequately represent the drainage channel in most of the grids illustrated in the Work Plan (e.g. channel S6, figure 5.4-8). Evenly-spaced samples, supplemented with judgmental samples in obvious sediment-storage areas, are more likely to accurately assess the presence of possible COC distribution in a drainage channel. (See comment #s 8, 13, 19, and 29)
- 7). It is recommended that both angled and vertical boreholes drilled for early-phase investigations at the MDAs be designed for use as long-term vadose-zone monitoring wells.

Specific Comments

MDA J

- 8). Section 5.1.4.2.5, p1

In order to review the nine randomly-selected sample locations, more detail is needed on the nature of the runoff area, such as width and depth of the main runoff channel with respect to the width of the sampling grid. In addition, with respect to random sampling, see Section 1, Comment #6.

- 9). Section 5.1.4.3.5.1, p3

Table 5.1-12 does not indicate that gravimetric moisture measurements will be obtained from core taken from the angled borehole at Pit 1. This information is necessary for understanding moisture characteristics beneath the MDA.

In addition to samples collected at a minimum spacing of 20 feet (actual location determined from field screening), it is recommended that samples be collected from intermediate points in the borehole core where field screening detects COCs.

- 10). Section 5.1.4.5.5, p1

The depth at which soil samples will be collected should be included in the sampling plan.

MDA H

- 11). Section 5.2.1.1, p5

After discussions with the Hazardous and Radioactive Materials Bureau RCRA Permits Section staff, it should be noted that RFI Work Plans can not be considered as closure plan modifications.

- 12). Section 5.2.4.1.5, p1

A map of MDA H that includes topography is necessary for evaluation of the

surface-water runoff sampling location proposed for Phase I.

It is not technically valid for only 1 sample to be taken in Phase I. Large variations can occur in the amount of surface runoff and associated suspended-sediment load depending in part on the amount of pre-storm-event moisture in the soil. Samples collected from more than one event would likely provide a better understanding of the potential for transport of COCs from the area.

13). Section 5.2.4.2.5, p1

Referring to random sample locations, see Comment #6.

14). Section 5.2.4.2.7, p1

Phase II samples collected at "sample nodes where COCs exceeded the health risk-based criteria in Phase I" will not serve to "determine the extent of contamination in the drainageway".

15). Section 5.2.4.3.5.1, p1

A minimum of two additional boreholes, one on each long side of MDA H, may be necessary for determining whether subsurface migration has occurred from the site. In addition, the boreholes on the north side of MDA H should be placed closer to the row of sealed shafts.

16). Section 5.2.4.3.5.1

Refer to table 5.2-14. See comment # 9 regarding use of field screening.

17). Section 5.2.4.3.7, p1

Regarding Phase II SAPs, see Comment #5.

MDA L

18). Section 5.3.4.1.5, p1

It is not possible to determine if the surface-water-runoff sample location lies within the "flume" described in section 5.3.1.1. There is no detail as to when the sample will be collected. If possible, it should occur during the first rainfall event of the season capable of being sampled.

It is recommended that samples not be filtered and that totals analyses be conducted for COCs.

It is recommended that surface runoff samples be taken in the vicinity of Pit A and trenches B,C, and D.

19). Section 5.3.4.2.5, p2

Referring to random sample locations, see Comment #6.

It is recommended that surface sediment samples be collected from drainages in the immediate vicinity of Pit A and trenches B,C, and D.

20). Section 5.3.4.2.7, p1

Regarding to Phase II SAPs, see Comment #5.

21). Section 5.3.4.3.3.6, p4

"The third deep borehole will be located at the southeast corner of the perimeter fence. This location is immediately downgradient of all the MDA L disposal pits and shafts, and heavier-than-air VOCs may be moving in this direction." It is not understood how the gradient was determined for vapor-phase transport in the vicinity of MDA L disposal pits and shafts.

22). Section 5.3.4.3.5.1, p3

Referring to Figure 5.3-7, Location of boreholes at Pit A. Given the rationale for installing the angled boreholes, "to determine the nature of any residual rock contamination" (page 5-148, Task 1, Borehole Installation, Bullet 2), a more ideal location for these boreholes would be the area of maximum detected contamination (i.e. south of Pit A).

23). Section 5.3.4.3.7, p1

Referring to Phase II SAPs, see Comment #5.

24). Section 5.3.4.4.4

Referring to Task 1 and 2 rationale. It is not understood how existing vapor-monitoring wells can be used to determine the extent of contamination unless these wells extend to depths and positions beyond the extent of the VOC plume.

MDA G

25). Section 5.4.1.2.1.8, "Environmental Monitoring Beyond MDA G Boundary"

The sampling stations referred to in this section do not appear on figures 5.4-1 and 5.4-2 as implied. A map showing the locations of these sampling stations is needed to evaluate the validity of the plan.

The nine sediment sampling stations should be routinely sampled.

26). Section 5.4.1.2.3.2

The pathways of "vadose-zone transport and water dispersion by migration and evapotranspiration" should be considered potential pathways of concern under the current land-use patterns in the vicinity of TA-54 due to the potential for these mechanisms to result in off-site transport.

27). Section 5.4.4.1.5, p1

Analysis of two sets of nine samples would be useful for assessment of potential variability in the runoff pathways.

28). Section 5.4.4.1.7, p1

Regarding Phase II SAPs, see Comment #5.

29). Section 5.4.4.2.4, p1

Regarding random sample locations, see Comment #6.

30). Section 5.4.4.2.7, p1

The proposed Phase II plan does not appear to allow the flexibility necessary for the determination of extent of contamination. See Comment #5.

31). Section 5.4.4.3, Borehole Sampling at MDA G

The following comments on drilling activities at Area G reflect review of the plans as presented in the draft response (dated 7/27/93) to EPA's NOD on the Work Plan. The AIP recommends that no boreholes be drilled to the top of the basalt at this time. The purpose of early-phase investigations at MDA G should be to determine if a release has occurred from a unit, therefore, it is recommended that the "shallow" (20 feet below the depth of the adjacent pit or shaft) boreholes referred to in the NOD response, as well as additional "shallow" boreholes, be drilled in order to adequately cover the areas around high-priority units within Area G. In addition, many or all "shallow" boreholes should be angled to intercept positions beneath pits and trenches where liquid migration from the unit is a possibility.

Regarding the definition of "beyond institutional control", the AIP interprets that a release from any unit, whether inside or outside a fenced area, constitutes migration "beyond institutional control" and should be characterized.

32). Section 5.4.4.7.5, p2

Regarding soil tritium sampling, earth-tide effects may cause significant variability in tritium-vapor emanation from the ground surface such that at

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least two sets of 162 samples, rather than one set, would be necessary to assess that variability.

SWMUs Proposed for No Further Action

- 33). The AIP will be assessing archival information and conducting site visits in order to evaluate the suitability of each NFA nomination. Upon completion of the NFA review process, a separate memo will be delivered by the AIP to the NMED RCRA Technical Compliance Program.

If you have any questions regarding this review, please feel free to contact Teri Davis at 672-0448.