

M E M O R A N D U M

TO: STEPHANIE KRUSE, RCRA PERMITTING PROGRAM

THROUGH: BARBARA HODITSHECK, MANAGER, RCRA PERMITTING PROGRAM

THROUGH: ^{SMA} STEVE ALEXANDER, MANAGER, RCRA TECHNICAL COMPLIANCE PROGRAM

FROM: ^{ZW} LEE WINN, RCRA TECHNICAL COMPLIANCE PROGRAM

DATE: FEBRUARY 28, 1994

RE: REVIEW OF RESPONSE TO THE SEPTEMBER 30, 1993, NOTICE OF DEFICIENCY (NOD) FOR THE LANL MIXED WASTE SURFACE IMPOUNDMENTS TA-53-166 NE AND TA-53-166 NW: CLEAN CLOSURE PLAN

On January 14, 1994, the New Mexico Environment Department (NMED) received the response to the September 30, 1993 Notice of Deficiency (NOD). The NOD consisted of comments provided by the NMED for its review of the Los Alamos National Laboratory (LANL) document Interim Status Closure Plan for Surface Impoundments TA-53-166 NE and TA-53-166 NW, Technical Area 53.

On November 18, 1993 the NMED held a meeting with representatives from LANL and the Department of Energy (DOE) to clarify the September 30, 1993 NOD comments. During that meeting LANL discussed providing a demonstration of "no potential for migration" to satisfy requirements of 40 CFR 264.90(b)(4). They also agreed to provide a contingency ground-water monitoring plan in the event that the no potential for migration demonstration was not accepted or eventual migration through the vadose zone is determined.

Neither the "no potential for migration" demonstration nor the contingency ground-water monitoring plan were submitted. LANL's explanation as to their failure to submit these two submittals is discussed in item P.4-1, of the January 14, 1994 response to the NOD. LANL essentially states that 40 CFR 270.1(c)(5) does not require a facility to meet all "40 CFR 264 ground-water monitoring requirements for interim status undergoing clean closure." Therefore,

"LANL does understand that it will be necessary to demonstrate that groundwater contamination has not occurred in order to meet clean closure requirements.

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The specific requirements for such a demonstration are not specified in the closure regulations, but policy guidance...."

As to the question of "no potential for migration" demonstration the RCRA Technical Compliance Program (RCRA TCP), following review of the geology and hydrogeology of the area, has significant concerns about whether LANL could make a valid demonstration. It appears that LANLs plan to demonstrate "no migration" by sampling the vadose zone using the described sampling program (see Section 3.2 and 3.3) and past sampling data is inadequate. An additional concern, should HRMB require LANL to submit this information, is the impact on scheduling sufficient time to review the submittal.

The RCRA TCP was asked by the Permitting Program to evaluate the January 14, 1994 submittal for four items: 1) the "no potential for migration" demonstration, 2) the contingency groundwater monitoring plan which included the number of wells and their locations, 3) the response to the sampling and analysis plan comments in Appendix I, and 4) review of the entire submittal for any obvious discrepancies. As discussed previously, items 1 and 2 are not included. The responses to the sampling and analysis plan (item 3) comments are included in Attachment I. The obvious discrepancies (item 4) are included in Attachment II.

cc: Barbara Hoditscheck
Steve Alexander
LANL 1994 Red File

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ATTACHMENT I

The following are technical comments regarding the responses to the sampling and analysis portion of the response which was titled Attachment I.

ITEM RESPONSE

- 1 LANL's explanation for using totals analysis and the "twenty times" approximation appears to be valid. However, because totals analysis is based on dry weight and the liquid phase of the sludge will be removed, NMED may choose to require that if a constituent is found in quantities of "fifteen times" the TCLP value, then the constituent should be determined to be a toxicity characteristic hazardous waste. As for general comment number 6, which states that equivalent methods should be approved by the Secretary of this Department..., that is a Permitting/administrative decision. It is reasonable to accept the "fifteen times" approach.
- 3 Please describe the difficulties of sampling related to the physical properties of sampling the entire sludge column?
- 4 B) **"The total length of the borehole would then be over 300 feet. Installation of such boreholes was judged to be infeasible."** LANL must provide reasoning and explanation for this judgement. LANL must drill angled boreholes which intersect the north-south trending fractures and collect core samples at these fracture junctures. LANL must continually monitor these fractures. If LANL determines there are constituents detected in the vadose zone, LANL must monitor the ground water. LANL must include in this plan a description of how they intend to locate the angled boreholes and how they plan to monitor the fractures. LANL must also include a ground-water monitoring plan as a contingency for the possibility that contaminants of concern are determined to be migrating in the vadose zone.

ATTACHMENT II

The following are comments from a review of the entire document for obvious discrepancies.

ITEM RESPONSE

1. In response to LANL's comment regarding General Comment number 8, LANL refers to their Installation Work Plan (IWP) which outlines the procedure to be used in risk assessment methodology. Here LANL is referring to a document that will not be reviewed or approved by NMED but the EPA. The IWP is a document required under the HSWA permit. LANL may not refer to documents which have not been approved previously by NMED. Further, LANL's closure plan must be a complete stand-alone document. Therefore, risk assessment methodology should be

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included.

2. This risk assessment methodology must include consideration of multiple contaminants. Consideration of multiple contaminants and the need for determining the cumulative Hazardous Index and/or Cumulative Risk is crucial. Additionally, the risk assessment approach must consider all exposure pathways, both current and future.
3. Clean Closure standards for single constituents, in environmental media such as soil, may follow Subpart S guidelines using screening action levels (**SALs**). When multiple constituents of concern are detected, then proposed 40 CFR 264.525 Subpart S guidance applies. More specifically applicable is proposed 40 CFR 264.525(d)(1)(iii)(A) regarding media cleanup standards for multiple contaminants in the medium. The preamble to Subpart S guidance in the July 27, 1990 Federal Register, page 30827, states:

"In considering the risks posed by multiple contaminants, the Agency will follow the procedures and principles established in its "Guidelines for the Health Risk Assessment of Chemical Mixtures."

The "Guidelines for the Health Risk Assessment of Chemical Mixtures" document was subsequently superseded by "Risk Assessment Guidance for Superfund Volume I, Human Health Evaluation Manual Part A," Document #EPA/540/1-89/002, December 1989. This guidance document is the basis for baseline risk assessment.

Therefore, when multiple constituents of concern are involved, or when acceptable SALs are exceeded, a baseline risk assessment must be conducted to characterize risk and determine the appropriate standard. Additionally, when conducting a baseline risk assessment in environmental media, all contaminants must be considered including PCBs, herbicides, and pesticides.

4. Appendix B. Table B-1. LANL should sample for Appendix VIII constituents used in chemical warfare such as phosgene, nitrogen mustard, etc. Additionally, LANL should provide a description of the major usage for each chemical listed in this table.
5. Appendix B. Tables B-2-B-6. The ND designations under the Estimated Detection Limit column refer to a note that states that "the estimated detection limit has not been determined due to possible poor performance with purge and trap extraction for this analyte." Does this mean that these

analytes will be tested under the described method wherein the detection limit will be determined at the time of analyses or does LANL intend to sample for these compounds using different analytical methods?

6. Appendix B. Tables B-2-B-6. These tables must have a column listing SALs for each compound. A separate table must be included with the current RfD and slope factor toxicological data from IRIS, HEAST or U.S. EPA sources. These data, and sources (including date) must be listed in the table along with calculated SAL.

It is appropriate when utilizing the risk assessment approach that all J-flag, Tentatively Identified Compounds, or detected quantities be included in the assessment.