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Stu

U. S. Department of Energy
Los Alamos Area Office, MS A316
Environmental Restoration Program
Los Alamos, New Mexico 87544
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Date: March 24, 1997
Refer to: EM/ER:97-086

Mr. Benito Garcia
NMED-HRMB
P.O. Box 26110
Santa Fe, NM 87502

SUBJECT: RESPONSE TO THE NOD FOR TA 0, PRSs 0-028(a, b) RFI REPORT (FORMER OPERABLE UNIT 1071)

Dear Mr. Garcia:

Enclosed is a copy of the Los Alamos National Laboratory's response to the New Mexico Environment Department's Notice of Deficiency (NOD) concerning the Technical Area 0, Potential Release Sites 0-028(a, b) Resource Conservation and Recovery Act Facility Investigation Report. A certification form signed by the appropriate officials is also enclosed. The enclosed response repeats each comment from the NOD for convenience in reviewing.

Please contact Garry Allen at (505) 667-3394 or Bonnie Koch at (505) 665-7202, if you have any questions regarding the response to the NOD.

Sincerely,

Jorg Jansen, Program Manager
LANL/ER Project

Sincerely,

Theodore J. Taylor, Program Manager
DOE/LAO

JJ/TT/rfr

- Enclosures: (1) Response to NOD for TA-0, PRSs 0-028(a, b) RFI Report
(2) Certification



0-14/14011041-101-11041041/A-0

TL

Cy (w/ encs.):

G. Allen, CST-18, MS E525
D. Griswold, AL-ERD, MS A906
J. Harry, EES-5, MS M992
B. Koch, LAAO, MS A316
N. Naraine, DOE-HQ, EM-453
D. Neleigh, EPA, R.6, 6PD-N (2 copies)
C. Rodriguez, CIO, MS M707
T. Taylor, LAAO, MS A316
J. White, ESH-19, MS K498
EM/ER File (CT #234), MS M992
RPF, MS M707
S. Dinwiddie, NMED-HRMB
M. Leavitt, NMED-GWQB
J. Parker, NMED-OB
G. Saums, NMED-SWQB
S. Yanicak, NMED-AIP, MS J993

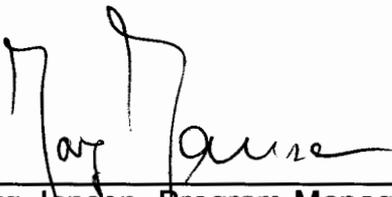
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J. Levings, AL-ERD, MS A906
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CERTIFICATION

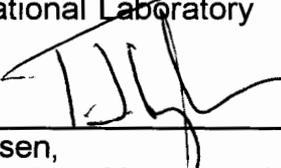
I certify under penalty of law that these documents and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violation.

Document Title: Response to the NOD for TA-0. PRSs 0-028(a. b) RFI Report (Former OU 071)

Name:  Date: 3-26-97
Jorg Jansen, Program Manager
Environmental Restoration Project
Los Alamos National Laboratory

or

Tom Baca, Program Director
Environmental Management
Los Alamos National Laboratory

Name:  Date: 3/24/97
Mathew Johansen,
Acting Assistant Area Manager of
Environment, Safety, and Health Branch
DOE-Los Alamos Area Office

or

Theodore J. Taylor, Program Manager
Environment Restoration Program
DOE-Los Alamos Area Office

**RESPONSE TO NOTICE OF DEFICIENCY
FOR TECHNICAL AREA (TA) 0, POTENTIAL RELEASE SITES (PRSs) 0-028(a, b)**

NMED COMMENT:

Page 31: first paragraph: "Thirty-seven samples were collected from PRSs 0-028 (a, b) and were analyzed for VOCs and SVOCs". No rationale was provided to explain the deviation from RFI Workplan for OU 1071, Page 5-84: "Ten cores will be augured at the golf course and six at the ball fields" . . . "Three samples will be collected from each core hole; one from the uppermost 6-in., a second from the interval midway through the soil or from the interval with a positive field screen response, and a third from the tuff contact". In accordance with the approved RFI Workplan, a total of 16 core holes would be augured with three samples taken per core hole; this yields a total of 48 samples (16 x 3).

The RFI Report only references and provides data for 37 samples. Core Holes Nos., 00-04754, 00-04755, 00-04759, 00-04763, 00-04764 and 00-04765, listed in Table 5.1.6-1 (RFI Report) did not have three (3) samples taken per core hole as indicated in the RFI Workplan. LANL shall explain the deviation from the RFI workplan with regards to the total number of samples taken and why the previously specified sample intervals were not sampled for each core hole. (Best Professional Judgment (BPJ))

LANL RESPONSE:

Samples were collected from ten core holes that were hand-augured with a 2-in. auger to the contact with native tuff, as specified in the approved Resource Conservation and Recovery Act (RCRA) facility investigation (RFI) work plan. The soil depth to the tuff contact was very shallow at several sampling locations, and insufficient material was present in cores from these locations to collect three complete analytical samples. Coreholes 00-04754, 00-04764, and 00-04765 produced only enough material for one complete analytical suite, and Coreholes 00-04755, 00-04759, and 00-04763 produced only enough material for two complete analytical suites. None of the field screening measurements were elevated above background, and fixed laboratory analytical data confirmed these screening results. Because the required cores were drilled as specified in the work plan and no contamination was found, it was determined that no additional samples were necessary to characterize the site.

NMED COMMENT:

Page 34: first paragraph: It states, "Of the organics that were not detected in any sample collected from PRSs 0-028(a, b), seven had reporting limits (RPLs) greater than SALs. . . . In addition, twenty-eight others do not have SALs to which the RPLs can be compared."

To have RPLs higher than SALs is unacceptable. LANL shall submit the RPLs information to determine whether re-sampling is necessary. The information includes RPLs of those seven chemicals along with their respective SALs, and of the twenty-eight undetected chemicals. The EPA/NMED will assess the hazardous effect of those chemicals in accordance with EPA's health-based number from the Integrated Risk Information System (IRIS data). (BPJ)

LANL RESPONSE:

The undetected chemicals discussed in the RFI report are either volatile organic compounds (VOCs) analyzed by Environmental Protection Agency (EPA) Method 8260, or semivolatile organic compounds (SVOCs) analyzed by EPA Method 8270. These methods have been rigorously studied and approved for environmental samples by the EPA as discussed in EPA SW-846 methodology. In addition, these methods are specified in Los Alamos National Laboratory's analytical subcontracts, and they are routinely used for VOC and SVOC analyses. None of the samples analyzed for these undetected chemicals had interference or other laboratory problems that would have caused the RPLs to be artificially raised. Therefore, the RPLs for these chemicals represent the lowest values that can currently be achieved by these methods.

For seven of these undetected chemicals, the EPA SW-846 methods yielded reporting limits that were greater than the screening action levels (SALs). This fact represents a limitation of current analytical technology. For the remaining 28 undetected chemicals, SALs have not been developed because there is currently no toxicity information in the IRIS database for these chemicals. While SALs based on surrogate chemicals might have been developed, that approach was not considered warranted because these chemicals were not expected to be associated with PRSs 0-028(a, b), as described below.

None of the undetected chemicals are expected to be present at PRSs 0-028(a, b). As discussed in the RFI report, the undetected chemicals are polycyclic aromatic hydrocarbons (PAHs) and other organics. PAHs are products of combustion of organic materials and are associated with both natural (e.g., forest fires) and anthropogenic (e.g., combustion of fossil fuels) sources. Historical Laboratory operations may have resulted in the production of PAHs. However, PAHs are not expected to be present at PRSs 0-028(a, b) because they are relatively insoluble in water. Any PAHs associated with Laboratory operations would have been contained in the treatment plant sludge product. They are not expected to be present in the treatment plant effluent distributed through spray irrigation at PRSs 0-028(a, b). The remaining undetected organics are used in a variety of applications (e.g., degreasing operations and general organic chemistry research), and it is possible that they were associated with Laboratory operations. However, none are expected to have been used in quantities sufficient to still be detectable today. In addition, these organics are relatively volatile and, if they had been present in the treatment plant effluent, they would be expected to have evaporated during spray irrigation.

Because none of the undetected chemicals were expected to be present at PRSs 0-028(a, b), and the results of analyses using accepted EPA SW-846 methods indicate that these chemicals are not present at the site, no further investigation of these chemicals is warranted.

NMED COMMENT:

Sections 2.2.1 (geologic setting) and 2.3.2 (groundwater) need to provide a more complete discussion of the alluvial fan hydrogeology and explain why the alluvial fan contains no perched aquifers or springs at the site. It is a fact that alluvial fans present geologic conditions that are excellent for obtaining groundwater in large quantities from wells sunk into their permeable materials. Typically, water infiltrates readily into the coarse materials at the head of a fan and moves down the fan under hydrostatic head. During much of the time stream channels across a fan are dry and much of the water is likely to sink into the coarse alluvium near the fan apex. It is extremely rare for an alluvial fan not to contain useable sources of ground water. The report's determination that no perched aquifers or springs exist is contrary to the geological nature of an alluvial fan and should be verified by further study (See Section 2.3.2). The geologic description should also discuss how the fans age ("paleo fan") influences the ground water supply. (BPJ)

LANL RESPONSE:

Section 2.2.1 of the RFI report states that, "Post-Bandelier alluvium is up to 30 ft thick at the golf course and consists of poorly sorted clay rich sand, gravel, and cobbles derived mainly from the Tschicoma Formation." However, this information does not fully characterize the geology at PRSs 0-028(a, b).

The site of PRSs 0-028(a, b) is a recreational area that includes a golf course. The golf course has been reoriented several times since it was originally built in 1945. As a result, the alluvium at the site has been extensively reworked, and the true depth of the alluvium is unknown. The alluvium at PRSs 0-028(a, b) consists of poorly sorted, very compact clay-rich sediment that is derived mainly from the Tschicoma Formation and contains occasional clasts of pumice and tuff. No sand, gravel, or cobble layers were encountered in any of the core holes drilled during the RFI, and there was no indication that the alluvium was sorted to provide pathways for significant water migration. Because the extensive reworking of the soil at the site has resulted in the destruction of any natural alluvial fan characteristics that might have been present, it is highly unlikely that perched aquifers or springs exist at the site. Therefore, no further investigation is warranted.