



TA21

 ENTERED

300 UNION BOULEVARD, SUITE 600, LAKEWOOD, CO 80228

PHONE: (303) 763-7188  
FAX: (303) 763-4896

**TECHLAW INC.**  
September 10, 2001

Mr. Carl Will  
State of New Mexico Environment Department  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East  
Building One  
Santa Fe, New Mexico 87505-6303



**Reference: Work Assignment No. Y513, 06082.600; State of New Mexico Environment Department, Santa Fe, New Mexico; General Permit Support Contracts; NMED-HSW Corrective Action Chapter of the RCRA Permit Renewal for the Los Alamos National Laboratory; Review of Corrective Action Order Sections Investigative Requirements by Specific Area; Task 03 Deliverable**

Dear Mr. Will:

Enclosed please find the deliverable for the above-referenced work assignment. This deliverable consists of review comments for Technical Area 21 (TA-21) of the Los Alamos National Laboratory (LANL) Corrective Action Order (CAO). A draft of the deliverable was e-mailed to you on Friday, September 7, 2001, at [carl\\_will@nmenv.state.nm.us](mailto:carl_will@nmenv.state.nm.us). The deliverable is formatted in Microsoft Word 2000.

In general, TechLaw found the TA-21 section to be well written, with the necessary level of detail. However, several inconsistencies were noted both within the TA-21 section and between other parts of the CAO as reviewed by TechLaw. The deliverable consists of a discussion of these inconsistencies, followed by some minor editorial and typographical errors noted during the review.

If you have any questions, please feel free to contact Ms. Paige Walton at (801) 582-9329.

Sincerely,

June K. Dreith  
Project Manager

32387



Mr. Carl Will  
September 7, 2001  
Page 2

Enclosure

cc: Mr. John Young, NMED  
Mr. John Kieling, NMED  
Mr. James Bearzi, NMED  
Ms. Paige Walton, TechLaw  
Mr. B. Jordan, TechLaw Central Files  
D. Romero, Denver TechLaw Files

**TASK 03 DELIVERABLE**

**TECHNICAL REVIEW COMMENTS FOR THE CORRECTIVE ACTION ORDER  
AREA-SPECIFIC REQUIREMENTS FOR  
TECHNICAL AREA 21 (TA-21)**

**NMED-HSW Corrective Action Chapter of the  
RCRA Permit Renewal for the Los Alamos National Laboratory**

**Submitted by:**

**TechLaw, Inc.  
300 Union Boulevard, Suite 600  
Lakewood, CO 80228**

**Submitted to:**

**Mr. Carl Will  
Mr. James Bearzi  
State of New Mexico Environment Department  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East  
Building One  
Santa Fe, New Mexico 87505**

**In response to:**

**Work Assignment No. Y513, 06082.600**

**September 2001**

**TECHNICAL AREA-SPECIFIC REQUIREMENTS  
TECHNICAL REVIEW COMMENTS FOR THE  
LANL CORRECTIVE ACTION ORDER SECTION (IV.C.2) FOR  
TECHNICAL AREA 21 (TA-21)**

**Section IV.C.2.2 Background**

1. The eighth paragraph in this section of the Corrective Action Order (Order) states that a caisson was built at the northwest corner of absorption bed 1 at Material Disposal Area (MDA) T in 1959. However, the sixth paragraph in Section 1.3.1 of the Sampling and Analysis Plan (SAP) for MDA T (dated February 1996) indicates that the caisson was located at the northeast corner of absorption bed 1. The New Mexico Environment Department (NMED) may wish to consult other sources to verify the correct location of the caisson.
  
2. The fourteenth paragraph in this section of the Order states that MDA U is believed to have received wastewater from 1948 until 1987. However, the SAP for MDA U (dated September 1998) states in Sections 2.1.1 (first paragraph) and 2.1.2 (seventh paragraph) that the two absorption beds received liquid radioactive effluents until 1968 and cooling water effluents until 1976. The SAP goes on to indicate that site stabilization activities for MDA U began in 1985. NMED may wish to verify the accuracy of the 1987 final operation date reported in the Order for the absorption beds.

**Section IV.C.2.3 General**

3. The first paragraph in this section of the Order directs Los Alamos National Laboratory (LANL) to use the background concentrations calculated in Ryti et al. (1998) for comparison with the background concentrations detected in the soils at MDAs A, B, T, U and V. While there is no concern with using previously established background values, it should be noted that this approach is not consistent with the approach presented in other sections of the Order. For example, sub-item number 10 in the "General" section in other portions of the Order (e.g., Section C.54.1.A in the TA-54 requirements, Section IV.B.2.a in the Canyon requirements, and Section IV.C.4.3 in the MDA C requirements) instructs LANL to provide NMED with "a list of general chemistry, metals and radionuclide background concentrations and documentation of the methods used for establishing the background values." While the TA-54, Canyon, and MDA C requirements allow LANL to derive site-specific background values appropriate for those areas, the TA-21 requirements do not provide for this flexibility, but instead, directs the facility to apply established background levels. NMED may wish to review the two different approaches and decide how to maintain consistency within the Order.

**Sections IV.C.2.4.b; IV.C.2.6.b; IV.C.2.7.b; IV.C.2.8.b; and IV.C.2.9.b, Drilling Explorations**

4. Sub-item number 1 in all of these sections directs LANL to advance a minimum number of borings at the different MDAs (fifteen at MDA A, eight at MDA B, eleven at MDA T, twelve at MDA U, and fifteen at MDA V). According to the Order, three of the borings will extend to the base of the Cerro Toledo Interval at MDAs A, T, U and V, while two of the borings will extend to that depth at MDA B. However, the Order does not specify the required depths of the remaining borings at each MDA. One possible exception to this is at MDA A, where it appears that the minimum depth for all borings will be the base of the Cerro Toledo Interval (refer to Section IV.C.2.5.b, second sentence). NMED may wish to consider whether a minimum depth for the remaining borings should be specified in the Order.

Another apparent inconsistency with regard to the proposed number and depths of the boreholes occurs in Sections IV.C.2.4.c, IV.C.2.6.c, IV.C.2.7.c, IV.C.2.8.c, and IV.C.2.9.c (Soil and Rock Sampling sections). Sub-item number 3 in each of these sections states that a minimum of four core samples from the tuff overlying the Cerro Toledo Interval shall be collected and submitted for laboratory permeability testing. For this requirement to be fulfilled, either four borings will have to be advanced to the top of the Cerro Toledo Interval (in contrast to the two or three discussed above) or two separate core samples will have to be collected from one of the three borings to yield a total of four samples. NMED may wish to consider further how these four samples will be collected.

In addition, the Order does not specify whether the borings which will be advanced at each of the material disposal areas will be vertical or inclined borings. NMED may wish to consider whether the Order should specify that a certain number of the borings be inclined to increase the likelihood of intercepting contaminants migrating directly downward beneath the waste disposal units. NMED may also wish to consider whether the Order should specify that the borings be located equitably around the different waste management units so the borings will not be clustered around only one or two units at each MDA.

**Sections IV.C.2.7 and IV.C.2.8 MDA T and MDA U Corrective Action Requirements**

5. Neither Section IV.C.2.7 nor IV.C.2.8 provide for the investigation of the paleochannel discussed in the site-specific SAPs for these MDAs. NMED may wish to consider whether any Order-specific investigation activities be included for the paleochannel located in the vicinity of these MDAs.

## Typographical and/or Editorial Comments

Several typographical and/or editorial mistakes were observed during the review of the Order. A listing of these items follows.

- Section IV.C.2.1, sixth paragraph, first sentence: Change “addressed” to “addresses.”
- Section IV.C.2.2, third and fourth paragraphs: Several of the commas and periods in the sentences have been inadvertently included as superscripts. The superscripts should be removed from these punctuation marks.
- Section IV.C.2.2, fifteenth paragraph, seventh sentence: The sentence should be corrected to read “40 million gallons of wastewater were disposed. . .”
- Section IV.C.2.5.a: The reference in the sentence should be changed to Section IV.B.2.c.4.
- Section IV.C.2.5.b, sub-item 5: The text should be changed to read “for analysis of the analytes listed in Item 4 above.”
- Section IV.C.2.5.c: The reference in the sentence should be changed to Section IV.B.2.c.7.
- Section IV.C.2.6.f: The reference in the sentence should be changed to Section IV.C.2.5.
- Section IV.C.2.7.a, last sentence: The sentence should be changed to read “included in the required characterization work plan for MDA I and shall . . .”
- Section IV.C.2.7.f: The reference in the sentence should be changed to Section IV.C.2.5.
- Section IV.C.2.8: The title of the section should be corrected to remove the word “specific.”
- Section IV.C.2.8.f: The reference in the sentence should be changed to Section IV.C.2.5.
- Section IV.C.2.9: The title of the section should be corrected to remove the word “specific.”
- Section IV.C.2.9.f: The reference in the sentence should be changed to Section IV.C.2.5.
- Section IV.C.2.8.g: The reference in the title should be changed to IV.C.2.9.g.