file LANC
Rcd FY 86

**Department of Energy**
Albuquerque Operations
Los Alamos Area Office
Los Alamos, New Mexico 87544

NOV 13 1986

RECEIVED
NOV 17 1986
EID DIRECTOR'S OFFICE

P25 2331030

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

TA-50
TA-54
TA-16

RECEIVED
NOV 17 1986
HAZARDOUS WASTE SECTION

Ms. Denise Fort, Director
N.M. Environmental Improvement Division
P. O. Box 968
Santa Fe, New Mexico 87504-0968

Dear Ms. Fort:

**Notice of Violation (NOV) dated October 14, 1986**

The enclosed information is the Department of Energy's (DOE) official response to the New Mexico Environmental Improvement Division's (EID) Notice of Violation (NOV) that was transmitted in a letter dated October 14, 1986 and received on October 16, 1986. In addition, as the result of investigations by the Laboratory's Comprehensive Environmental Assessment and Response Program (CEARP), it was discovered that hazardous waste (15 pounds of lithium hydride) was disposed in a shaft at TA-54, Area H after November of 1980. We are amending the Area L land disposal closure plan to include this shaft at Area H (Enclosure 1).

This submittal also comprises amendments to Los Alamos National Laboratory's January 1986 Parts A/B hazardous waste permit application. Amended pages (Enclosure 5) are provided, where appropriate, to substitute for existing pages in the January submittal.

The following is a synopsis of the response:

DEFICIENCY 1a: The TA-50 Industrial Wastewater Treatment Facility (IWTF) receives/has received hazardous waste from the Batch Waste Treatment Facility (BWTF) or the controlled air incinerator and therefore must be included in the Part B.

Response: The IWTF has never received a hazardous waste from the BWTF. Prior to 1984, the Batch Waste Treatment unit at the facility consisted of a portable 200 gallon tank which never discharged to the IWTF. Wastes were received in 55 gallon drums, treated in the tank, placed back into the drums and transferred to TA-54, Area L. There was neither a physical connection between nor a discharge from this unit to the IWTF. The replacement unit, housed in TA-50, Building 1, Room 24b has never received a hazardous waste. Although the replacement unit has a direct connection to the IWTF no hazardous waste will be directed through it. The piping is valved and only after characteristic wastes, as defined in New Mexico Hazardous Waste Management Regulations (HWMR-3), have been treated and no longer exhibit those characteristics will they be discharged to the IWTF. In contrast, listed wastes treated at the replacement facility will be processed under procedures similar to those for the old unit and transferred to TA-54, Area L.

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The controlled air incinerator has not discharged any emission control system effluent to the IWTF which has contained a RCRA waste. Only characteristic mixed wastes have been burned at this facility. The effluent discharged to the IWTF no longer exhibited these characteristics.

No listed wastes have been burned in the facility to date. In the future, effluent resulting from the incineration of listed wastes or which still exhibits any characteristic will not discharge to the IWTF. All effluent from the incinerator is discharged to a holding tank. If a listed waste is burned, the waste will be pumped from the tank and transferred to TA-54, Area L for further treatment or storage awaiting off-site disposal. If a characteristic waste is burned and the effluent no longer exhibits any characteristic, the waste from the holding tank will be pumped to the IWTF. The waste from the tank is automatically discharged, however, it takes a conscientious effort to discharge the scrubber solution to the tank. This would preclude the accidental discharge of hazardous waste to the IWTF.

A certification statement attesting to these facts is Enclosure 2.

DEFICIENCY 1b: The Lagoon at the TA-16 burning ground has toxic levels of barium in the liquid.

Response: The TA-16 Lagoon was constructed to consolidate and contain the effluent from two National Pollutant Discharge Elimination System (NPDES) outfalls until chemical analysis could be conducted. If the NPDES effluent limitations were not exceeded, the liquid in the Lagoon would be discharged. No hazardous waste has been placed into this unit although barium below EP toxicity levels is present in the influent. Last Spring and Summer the liquid was allowed to remain in the Lagoon for a prolonged period. During this period of time the barium concentrated through evaporation so that the EP Toxicity level was exceeded. Due to continued operations at the facility, the Lagoon had reached its maximum capacity and liquid was backing into the piping. Indeed, the Laboratory fearted that, if allowed to continue to accumulate, the liquid would overflow a manhole into the environment. The Laboratory considered this situation to be similar to a spill in that it was an unexpected and unforeseen occurrence. The Laboratory undertook immediate treatment activities in response to the potential discharge in accordance with 206.A.4.g.1 (HWMR-3). The liquid was treated with a flocculant to remove the barium. The treated barium was taken to TA-54 and the liquid discharged under the NPDES permit. The Laboratory then instituted administrative procedures to insure the situation does not recur.

The Laboratory does not believe its action at the Lagoon to be the treatment, storage or disposal of a hazardous waste. The Laboratory believes it beneficially treated a small quantity of hazardous material

inadvertently accumulated in the Lagoon before it posed an environmental problem. We never contemplated that the Laboratory would be required to expend significant resources which could be effectively used elsewhere for environmental compliance activities to permit the Lagoon or close the facility under HWMR-3. Nonetheless, we have decided to submit a closure plan (Enclosure 3) to avoid prolonged debate or eventual enforcement action.

DEFICIENCY 2: Part B paragraph 3.1.1. states the waste will be sent off-site for disposal. The Part A indicates most waste will be incinerated.

Response: While this appears to be an inconsistency, it, in fact, is not. As per the instructions for filling out the Part A, only the process codes for wastes which are treated, stored or disposed of at the facility are included. Hazardous waste treatment, storage or disposal accomplished off-site is therefore not included in the Part A. It is our intention to conduct these activities on-site for some of the waste and to send some of the waste off-site. The Part B is being modified in this submittal (Enclosure 5, Page 3-2) to clarify this point. Appendix G is also being modified so that it is consistent with Part A.

DEFICIENCY 3: Statements on Page 4-3 says the effluent from the BWTF is placed in drums for disposal. On Page 4-5 it is implied the effluent will be discharged to the TA-50 Radioactive Liquid Waste Treatment Plant.

Response: While Page 4-3 states the effluent can be sent either to the TA-50 Plant or drummed, only the effluent resulting from the treatment of a characteristic waste which no longer exhibits these characteristics will be sent to the TA-50 Plant. The Part B is being modified with this submittal (Enclosure 5, Vol. I, Pages 4-3, 4-5 & Appendix M-2, Pages 2 & 3) to clarify the destination of these wastes.

DEFICIENCY 4: There is no provision to prevent run-off from TA-54, Area L.

Response: Your staff has agreed, via a telephone conversation with Mr. Boyd Hamilton, that run-off for Area L does not need to be addressed in the Part B since a permit for land disposal is not sought. This will be addressed at a later date by your office in the closure plan review.

DEFICIENCY 5: References to design standards for the Area L treatment tanks was not provided.

Response: Although the tanks were not designed to any established design specifications, we have provided information (Enclosure 5, pages 2-5 & 2-5a) on their design to aid you in determining if they are adequate for our intended treatment.

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DEFICIENCY 6 & 7: The required information for the TA-16 Lagoon and groundwater protection data is not provided.

Response: These are addressed in our response to DEFICIENCY 1b above.

DEFICIENCY 8: EPA Forms 3510-1 and 3510-3 do not contain original signatures and the copies are neither legible nor reproducible.

Response: Reproducible copies of these forms with original signatures are Enclosure 4.

DEFICIENCY 9: Application paragraph 6.2 indicates that warning signs in English only will be posted at the incinerator.

Response: This is being corrected in the Part B with this submittal (Enclosure 5, Page 6-2). Bilingual signs were posted in response to the August 26, 1985 - Notice of Violation, letter.

DEFICIENCY 10: Handling of wastes to be incinerated is not described in sufficient detail to determine if precautions are taken to prevent mixing of incompatible wastes.

Response: New language is being incorporated with this submittal (Enclosure 5, Pages 4-8 & 4-9) to address the necessary precautions.

DEFICIENCY 11: Additional description of the emergency response equipment is needed--in particular the "organic solvent spill" and "acid and caustic spill" kits.

Response: Additional information is included in this submittal (Enclosure 5, Pages 7-12 & 7-13) describing these spill kits.

DEFICIENCY 12: Application Tables 9-6, 9-7 and 9-11 do not provide total schedule time.

Response: The total schedule time is being added by this submittal (Enclosure 5, Tables 9-6, 9-7 & 9-11).

DEFICIENCY 13: Table 9-11 indicates a total schedule time of 470 days when only a maximum 180 days are allowed in the regulations.

Response: A number of the events in Table 9-11 occur concurrently and therefore cannot be added together to arrive at a total time. The appropriate total time is being added in this submittal (Enclosure 5, Table 9-11).

NOV. 1 3 1986

DEFICIENCY 14: A definitive distinction as to which wastes are to be treated in which Area L tanks should be made so that compatibility may be evaluated.

Response: This information is being supplied with this submittal (Enclosure 5, Page 2-5a).

DEFICIENCY 15: There is no proposed measurement program to monitor the BWTF tanks for wall deterioration under the Kynar lining.

Response: A definitive non-destructive test procedure is included with this submittal (Enclosure 5, Pages 6-3 & 6-8).

If you have any questions regarding this submittal, please contact Mr. James Phoenix (667-5288) of my staff.

Sincerely,

Harold E. Valencia
Area Manager

Enclosures:
(Original and 2 copies)

cc w/enclosures:
C. Castillo, EPA, (6H-HS), Dallas, Texas
Raymond L. Miller, ESHD, AL

LTP:JAP:0299

NOV. 13 1986

# ENCLOSURE 2

## DEFICIENCY 1a

## CERTIFICATION STATEMENT - NO HAZARDOUS WASTE FROM THE BATCH WASTE TREATMENT PLANT OR THE CONTROLLED AIR INCINERATOR

NOV. 1 3 1986

DEFICIENCY 14: A definitive distinction as to which wastes are to be treated in which Area L tanks should be made so that compatibility may be evaluated.

Response: This information is being supplied with this submittal (Enclosure 5, Page 2-5a).

DEFICIENCY 15: There is no proposed measurement program to monitor the BWTF tanks for wall deterioration under the Kynar lining.

Response: A definitive non-destructive test procedure is included with this submittal (Enclosure 5, Pages 6-3 & 6-8).

If you have any questions regarding this submittal, please contact Mr. James Phoenix (667-5288) of my staff.

Sincerely,

Harold E. Valencia
Area Manager

Enclosures:
(Original and 2 copies)

cc w/enclosures:
C. Castillo, EPA, (6H-HS), Dallas, Texas
Raymond L. Miller, ESHD, AL

LTP:JAP:0299

NOV. 13 1986

# ENCLOSURE 4

# DEFICIENCY 8

## EPA FORMS 3510-1 & 3510-3 DO NOT CONTAIN ORIGINAL SIGNATURES & ARE NOT REPRODUCIBLE

Replacement Pages for Part A in the Part B, Volume I.

NOV. 13 1986

FORM 1 — EPA — U.S. ENVIRONMENTAL PROTECTION AGENCY

# GENERAL INFORMATION

(Consolidated Permits Program
(Read "General Instructions" before starting.)

GENERAL INSTRUCTIONS

I. EPA I.D. NUMBER

II. FACILITY NAME

III. FACILITY MAILING ADDRESS

IV. FACILITY LOCATION

Department of Energy
Attn: Mr. Harold E. Valencia
Los Alamos Area Office
Los Alamos, NM 87544

I. EPA I.D. NUMBER

| F | N | M | 0 | 8 | 9 | 0 | 0 | 1 | 0 | 5 | 1 | 5 | A | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (*the area to the left of the label space lists the information that should appear*), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete items I, III, V, and VI (*except VI-B which must be completed regardless*). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

## II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

| SPECIFIC QUESTIONS | MARK 'X' Yes | No | FORM ATTACHED | SPECIFIC QUESTIONS | MARK 'X' Yes | No | FORM ATTACHED |
|---|---|---|---|---|---|---|---|
| A. Is this facility a **publicly owned treatment works** which results in a discharge to waters of the U.S.? (FORM 2A) | | X | | B. Does or will this facility (*either existing or proposed*) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B) | | X | |
| C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C) | X | | NO | D. Is this a proposed facility (*other than those described in A or B above*) which will result in a discharge to waters of the U.S.? (FORM 2D) | | X | |
| E. Does or will this facility treat, store, or dispose of **hazardous wastes**? (FORM 2) | X | | YES | F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4) | | X | |
| G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4) | | X | | H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4) | X | | |
| I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5) | | X | | J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5) | | X | |

## III. NAME OF FACILITY

SKIP LOS ALAMOS NATIONAL LABORATORY

## IV. FACILITY CONTACT

| A. NAME & TITLE (last, first, & title) | B. PHONE (area code & no.) | |
|---|---|---|
| HAROLD E VALENCIA | 505 677 5105 | FTS 843-5105 |

## V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX: LOS ALAMOS AREA OFFICE

| B. CITY OR TOWN | C. STATE | D. ZIP CODE |
|---|---|---|
| LOS ALAMOS | NM | 87544 |

## VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER: LOS ALAMOS

B. COUNTY NAME: LOS ALAMOS

| C. CITY OR TOWN | D. STATE | E. ZIP CODE | F. COUNTY CODE |
|---|---|---|---|
| LOS ALAMOS | NM | 87544 | |



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CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST: (specify) NATIONAL SECURITY

B. SECOND: (specify)

C. THIRD: (specify)

D. FOURTH: (specify)

VIII. OPERATOR INFORMATION

A. NAME: LOS NATIONAL LABORATORY

B. Is the name listed in Item VIII-A also the owner? ☐ YES ☒ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.): F = FEDERAL, S = STATE, P = PRIVATE, M = PUBLIC (other than federal or state), O = OTHER (specify) (specify)

D. PHONE (area code & no.): 505 667 5021

E. STREET OR P.O. BOX: PO BOX 1663 MS K490

F. CITY OR TOWN: LOS ALAMOS

G. STATE: NM

H. ZIP CODE: 87545

IX. INDIAN LAND: Is the facility located on Indian lands? ☐ YES ☒ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water): N NM0028855

B. PSD (Air Emissions from Proposed Sources): P

C. UIC (Underground Injection of Fluids): U

D. OTHER (specify): NM0028576 (specify)

E. RCRA (Hazardous Wastes): R

F. OTHER (specify) (specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

The mission of Los Alamos National Laboratory (LANL) is the application of science and technology to solve national problems including weapons development and energy supply and conservation programs, while basic science research complements and strengthens its fundamental technical capabilities. The LANL is owned by the US Department of Energy and operated under contract by the University of California.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

| A. NAME & OFFICIAL TITLE (type or print) | B. SIGNATURE | C. DATE SIGNED |
|---|---|---|
| Harold E. Valencia<br>Los Alamos Area Manager | H E Valencia | 11/12/86 |

COMMENTS FOR OFFICIAL USE ONLY



NOV 12 1986

3 RCRA

EPA

# HAZARDOUS WASTE PERMIT APPLICATION

*Consolidated Permits Program*

*(This information is required under Section 3005 of RCRA.)*

EPA I.D. NUMBER: F N M 0 8 9 0 0 1 0 5 1 5 — T/A C: 1

## FOR OFFICIAL USE ONLY

| APPLICATION APPROVED | DATE RECEIVED (yr., mo., & day) | COMMENTS |
|---|---|---|
| | | |

## II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below *(mark one box only)* to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's EPA I.D. Number in Item I above.

**A. FIRST APPLICATION** *(place an "X" below and provide the appropriate date)*

[X] 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

FOR EXISTING FACILITIES, PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

| C | YR. | MO. | DAY |
|---|---|---|---|
| 8 | 5 7 | — — | — — |

[ ] 2. NEW FACILITY *(Complete item below.)*

FOR NEW FACILITIES, PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR IS EXPECTED TO BEGIN

| YR. | MO. | DAY |
|---|---|---|
| | | |

**B. REVISED APPLICATION** *(place an "X" below and complete Item I above)*

[X] 1. FACILITY HAS INTERIM STATUS

[ ] 2. FACILITY HAS A RCRA PERMIT

## III. PROCESSES – CODES AND DESIGN CAPACITIES

**A. PROCESS CODE** – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code*(s)* in the space provided. If a process will be used that is not included in the list of codes below, then describe the process *(including its design capacity)* in the space provided on the form *(Item III-C)*.

**B. PROCESS DESIGN CAPACITY** – For each code entered in column A enter the capacity of the process.

1. AMOUNT – Enter the amount.
2. UNIT OF MEASURE – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

| PROCESS | PROCESS CODE | APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY |
|---|---|---|
| **Storage:** | | |
| CONTAINER *(barrel, drum, etc.)* | S01 | GALLONS OR LITERS |
| TANK | S02 | GALLONS OR LITERS |
| WASTE PILE | S03 | CUBIC YARDS OR CUBIC METERS |
| SURFACE IMPOUNDMENT | S04 | GALLONS OR LITERS |
| **Disposal:** | | |
| INJECTION WELL | D79 | GALLONS OR LITERS |
| LANDFILL | D80 | ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER |
| LAND APPLICATION | D81 | ACRES OR HECTARES |
| OCEAN DISPOSAL | D82 | GALLONS PER DAY OR LITERS PER DAY |
| SURFACE IMPOUNDMENT | D83 | GALLONS OR LITERS |

| PROCESS | PROCESS CODE | APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY |
|---|---|---|
| **Treatment:** | | |
| TANK | T01 | GALLONS PER DAY OR LITERS PER DAY |
| SURFACE IMPOUNDMENT | T02 | GALLONS PER DAY OR LITERS PER DAY |
| INCINERATOR | T03 | TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR |
| OTHER *(Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)* | T04 | GALLONS PER DAY OR LITERS PER DAY |

| UNIT OF MEASURE | UNIT OF MEASURE CODE |
|---|---|
| GALLONS | G |
| LITERS | L |
| CUBIC YARDS | Y |
| CUBIC METERS | C |
| GALLONS PER DAY | U |
| LITERS PER DAY | V |
| TONS PER HOUR | D |
| METRIC TONS PER HOUR | W |
| GALLONS PER HOUR | E |
| LITERS PER HOUR | H |
| ACRE-FEET | A |
| HECTARE-METER | F |
| ACRES | B |
| HECTARES | Q |

**EXAMPLE FOR COMPLETING ITEM III** *(shown in line numbers X-1 and X-2 below)*: A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

C DUP T/A C 1

| LINE NUMBER | A. PROCESS CODE (from list above) | B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify) | B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code) | FOR OFFICIAL USE ONLY | LINE NUMBER | A. PROCESS CODE (from list above) | B. PROCESS DESIGN CAPACITY 1. AMOUNT | B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code) | FOR OFFICIAL USE ONLY |
|---|---|---|---|---|---|---|---|---|---|
| X-1 | S 0 2 | 600 | G | | 5 | | | | |
| X-2 | T 0 3 | 20 | E | | 6 | | | | |
| 1 | S 0 1 | 17880 | G | | 7 | | | | |
| 2 | T 0 1 | 7680 | J | | 8 | | | | |
| 3 | T 0 4 | NA (SEC IIIC) | | | 9 | | | | |
| 4 | T 0 3 | 0.15 | D | | 10 | | | | |



NOV. 13 1980

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

Discrete pieces of High Explosives (HE) waste are collected, packaged, and burned at the TA-16 burning ground. HE contaminated equipment, pipe, etc. that have been flash burned at TA-16 have been disposed of at Area P. Two burn pads (388, 399) are used to burn the discrete pieces of HE while pad 387 is used to flash the equipment. Two pressure vessels (401, 406) are used to burn HE sludge from various processing facilities located at the Laboratory. The sludge is collected at various sumps located throughout the HE processing areas and taken directly to the pressure vessels for treatment. The sumps are regulated under NPDES permits. The sludge is placed on layers of sand in the vessels, the water allowed to drain from the bottom into an evaporation pond and the residue on the sand burned. These vessels do not contain an accumulation of liquids; therefore, they are not considered tanks. Sand from burn pads 388 and 399 have been found to be EP toxic for Barium. This sand has in the past been disposed of at Area P. Engineering drawings and location of the sites are included under item V. Design capacities are not applicable as the treatment process is performed on an as-needed basis.

T03

The incinerator at TA-50 Building 37 has been used to burn methanol and ethanol contaminated with transuranic waste. This incinerator was originally built to treat transuranic waste and has been operating since 1979. Mixed waste containing the methanol and ethanol were burned in this incinerator before November 1980.

## IV. DESCRIPTION OF HAZARDOUS WASTES

**A. EPA HAZARDOUS WASTE NUMBER** — Enter the four-digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four-digit number(s) from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

**B. ESTIMATED ANNUAL QUANTITY** — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

**C. UNIT OF MEASURE** — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

| ENGLISH UNIT OF MEASURE | CODE | METRIC UNIT OF MEASURE | CODE |
|---|---|---|---|
| POUNDS | P | KILOGRAMS | K |
| TONS | T | METRIC TONS | M |

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

**D. PROCESSES**

1. PROCESS CODES:
   For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.
   For non-listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.
   Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

**NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER** — Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

**EXAMPLE FOR COMPLETING ITEM IV** *(shown in line numbers X-1, X-2, X-3, and X-4 below)* — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

| LINE NO. | A. EPA HAZARD. WASTE NO (enter code) | B. ESTIMATED ANNUAL QUANTITY OF WASTE | C. UNIT OF MEASURE (enter code) | D. PROCESSES 1. PROCESS CODES (enter) | D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1)) |
|---|---|---|---|---|---|
| X-1 | K054 | 900 | P | T03 D80 | |
| X-2 | D002 | 400 | P | T03 D80 | |
| X-3 | D001 | 100 | P | T03 D80 | |
| X-4 | D002 | | | | Included with above |

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CONTINUE ON PAGE 3

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EPA I.D. NUMBER (enter from page 1): W N M 0 8 9 0 0 1 0 5 1 5

FOR OFFICIAL USE ONLY: W DUP 2 DUP

## IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

| No. | A. EPA HAZARD. WASTE NO. (enter code) | B. ESTIMATED ANNUAL QUANTITY OF WASTE | C. UNIT OF MEASURE (enter code) | D. PROCESSES 1. PROCESS CODES (enter) | | | | D. PROCESSES 2. PROCESS DESCRIPTION (If a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|
| 1 | D001 | 50000 | P | S01 | T03 | | | |
| 2 | D002 | 150000 | P | S01 | | T01 | | |
| 3 | D003 | 5000 | P | S01 | T04 | | | |
| 4 | D003 | 5000 | P | S01 | T03 | T01 | | Lithium Hydride only |
| 5 | D004 | 2000 | P | S01 | | | | |
| 6 | D005 | 20000 | P | S01 | | | | Sand from clean out of explosives burn pads. |
| 7 | D005 | 250* | P | S01 | | | | |
| 8 | D006 | 250* | P | S01 | T01 | | | |
| 9 | D007 | 1000 | P | S01 | T01 | | | |
| 10 | D008 | 2000 | P | S01 | | | | |
| 11 | D009 | 1500 | P | S01 | | T01 | | |
| 12 | D010 | 250* | P | S01 | | | | |
| 13 | D011 | 250* | P | S01 | T01 | | | |
| 14 | D012 | 250* | P | S01 | T03 | | | |
| 15 | D016 | 750* | P | S01 | T03 | | | |
| 16 | | END OF D DESIGNATOR | | | | | | |
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CONTINUE ON REVERS



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EPA I.D. NUMBER (enter from page 1)

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FOR OFFICIAL USE ONLY

| W | DUP | 2 | DUP |
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## IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

| LINE | A. EPA HAZARD. WASTE NO. (enter code) | B. ESTIMATED ANNUAL QUANTITY OF WASTE | C. UNIT OF MEASURE (enter code) | D. PROCESSES 1. PROCESS CODES (enter) | | | | 2. PROCESS DESCRIPTION (if a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|
| 1 | F001 | 1000 | P | S01 | | | | |
| 2 | F002 | 3000 | P | S01 | | | | |
| 3 | F003 | 2000 | P | S01 | | | | |
| 4 | F004 | 250* | P | S01 | | | | |
| 5 | F005 | 250* | P | S01 | | | | |
| 6 | F006 | 250* | P | S01 | | T01 | | |
| 7 | F007 | 12500 | P | S01 | | T01 | | |
| 8 | F008 | 1000 | P | S01 | | T01 | | |
| 9 | F009 | 6000 | P | S01 | | T01 | | |
| 10 | F027 | 700 | P | S01 | | T03 | | |
| 11 | F028 | 700 | P | S01 | | | | |
| | | END OF F DESIGNATOR | | | | | | |
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EPA I.D. NUMBER (enter from page 1)

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## IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

| LINE NO. | A. EPA HAZARD. WASTE NO. (enter code) | B. ESTIMATED ANNUAL QUANTITY OF WASTE | C. UNIT OF MEASURE (enter code) | D. PROCESSES 1. PROCESS CODES (enter) | | | | 2. PROCESS DESCRIPTION (if a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|
| 1 | K044 | 50000 | P | S01 | | T04 | | |
| 2 | K047 | 250* | P | S01 | | T04 | | |
| 3 | | END OF K DESIGNATOR | | | | | | |
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EPA I.D. NUMBER (enter from page 1): W N M 0 8 9 0 0 1 0 5 1 5 — T/A C: 1

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## IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

| LINE NO. | A. EPA HAZARD. WASTE NO. (enter code) | B. ESTIMATED ANNUAL QUANTITY OF WASTE | C. UNIT OF MEASURE (enter code) | D. PROCESSES 1. PROCESS CODES (enter) | D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1)) |
|---|---|---|---|---|---|
| 1 | P001 | 250* | P | S01 | |
| 2 | P002 | 250* | P | S01 | |
| 3 | P003 | 250* | P | S01 | |
| 4 | P004 | 250* | P | S01 | |
| 5 | P005 | 250* | P | S01 | |
| 6 | P006 | 250* | P | S01 T04 | |
| 7 | P007 | 250* | P | S01 | |
| 8 | P008 | 250* | P | S01 | |
| 9 | P009 | 250* | P | S01 T04 | |
| 10 | P010 | 250* | P | S01 | |
| 11 | P011 | 250* | P | S01 | |
| 12 | P012 | 250* | P | S01 | |
| 13 | P013 | 250* | P | S01 T01 | |
| 14 | P014 | 250* | P | S01 | |
| 15 | P015 | 6000 | P | S01 | |
| 16 | P016 | 250* | P | S01 | |
| 17 | P017 | 250* | P | S01 | |
| 18 | P018 | 250* | P | S01 | |
| 19 | P020 | 250* | P | S01 | |
| 20 | P021 | 250* | P | S01 T01 | |
| 21 | P022 | 250* | P | S01 T04 | |
| 22 | P023 | 250* | P | S01 | |
| 23 | P024 | 250* | P | S01 | |
| 24 | P026 | 250* | P | S01 | |
| 25 | P027 | 250* | P | S01 | |
| 26 | P028 | 250* | P | S01 | |

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EPA I.D. NUMBER (enter from page 1): W N M 0 8 9 0 0 1 5 1 5 — T/A/C 1

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## IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

| Z O J Z | A. EPA HAZARD. WASTE NO. (enter code) | B. ESTIMATED ANNUAL QUANTITY OF WASTE | C. UNIT OF MEASURE (enter code) | D. PROCESSES 1. PROCESS CODES (enter) | | | | 2. PROCESS DESCRIPTION (if a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|
| 1 | P 0 2 9 | 250* | P | S 0 1 | | T 0 1 | | |
| 2 | P 0 3 0 | 250* | P | S 0 1 | T 0 1 | | | |
| 3 | P 0 3 1 | 250* | P | S 0 1 | T 0 4 | | | |
| 4 | P 0 3 3 | 250* | P | S 0 1 | T 0 4 | | | |
| 5 | P 0 3 4 | 250* | P | S 0 1 | | | | |
| 6 | P 0 3 6 | 250* | P | S 0 1 | | | | |
| 7 | P 0 3 7 | 250* | P | S 0 1 | | | | |
| 8 | P 0 3 8 | 250* | P | S 0 1 | | | | |
| 9 | P 0 3 9 | 250* | P | S 0 1 | | | | |
| 10 | P 0 4 0 | 250* | P | S 0 1 | | | | |
| 11 | P 0 4 1 | 250* | P | S 0 1 | | | | |
| 12 | P 0 4 2 | 250* | P | S 0 1 | | | | |
| 13 | P 0 4 3 | 250* | P | S 0 1 | | | | |
| 14 | P 0 4 4 | 250* | P | S 0 1 | | | | |
| 15 | P 0 4 5 | 250* | P | S 0 1 | | | | |
| 16 | P 0 4 6 | 250* | P | S 0 1 | | | | |
| 17 | P 0 4 7 | 250* | P | S 0 1 | | | | |
| 18 | P 0 4 8 | 250* | P | S 0 1 | | | | |
| 19 | P 0 4 9 | 250* | P | S 0 1 | | | | |
| 20 | P 0 5 0 | 250* | P | S 0 1 | | | | |
| 21 | P 0 5 1 | 250* | P | S 0 1 | | | | |
| 22 | P 0 5 4 | 250* | P | S 0 1 | T 0 1 | T 0 4 | | |
| 23 | P 0 5 6 | 250* | P | S 0 1 | | | | |
| 24 | P 0 5 7 | 250* | P | S 0 1 | | | | |
| 25 | P 0 5 8 | 250* | P | S 0 1 | | | | |
| 26 | P 0 5 9 | 250* | P | S 0 1 | | | | |

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EPA I.D. NUMBER (enter from page 1): W N M 0 8 9 0 0 1 0 5 1 5 T/A 1

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## IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

| LINE NO. | A. EPA HAZARD. WASTE NO. (enter code) | B. ESTIMATED ANNUAL QUANTITY OF WASTE | C. UNIT OF MEASURE (enter code) | D. PROCESSES 1. PROCESS CODES (enter) | | | | 2. PROCESS DESCRIPTION (if a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|
| 1 | P060 | 250* | P | S01 | | | | |
| 2 | P062 | 250* | P | S01 | | | | |
| 3 | P063 | 250* | P | S01 | T04 | | | |
| 4 | P064 | 250* | P | S01 | T04 | | | |
| 5 | P065 | 250* | P | S01 | T04 | | | |
| 6 | P066 | 250* | P | S01 | | | | |
| 7 | P067 | 250* | P | S01 | | | | |
| 8 | P068 | 250* | P | S01 | | | | |
| 9 | P069 | 250* | P | S01 | | T04 | | |
| 10 | P070 | 250* | P | S01 | | | | |
| 11 | P071 | 250* | P | S01 | | T04 | | |
| 12 | P072 | 250* | P | S01 | | | | |
| 13 | P073 | 250* | P | S01 | T01 | T04 | | |
| 14 | P074 | 250* | P | S01 | | T01 | | |
| 15 | P075 | 250* | P | S01 | | | | |
| 16 | P076 | 250* | P | S01 | T01 | T04 | | |
| 17 | P077 | 250* | P | S01 | | T04 | | |
| 18 | P078 | 250* | P | S01 | T01 | | | |
| 19 | P081 | 250* | P | S01 | T04 | | | |
| 20 | P082 | 250* | P | S01 | | | | |
| 21 | P084 | 250* | P | S01 | | | | |
| 22 | P085 | 250* | P | S01 | | | | |
| 23 | P087 | 250* | P | S01 | | | | |
| 24 | P088 | 250* | P | S01 | | | | |
| 25 | P089 | 250* | P | S01 | | | | |
| 26 | P092 | 250* | P | S01 | | | | |

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EPA I.D. NUMBER (enter from page 1): W N M 0 8 9 0 0 1 0 5 1 5 T/A 1

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## IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

| LINE NO. | A. EPA HAZARD. WASTE NO. (enter code) | B. ESTIMATED ANNUAL QUANTITY OF WASTE | C. UNIT OF MEASURE (enter code) | D. PROCESSES 1. PROCESS CODES (enter) | | | | D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|
| 1 | P093 | 250* | P | S01 | T03 | | | |
| 2 | P094 | 250* | P | S01 | T03 | | | |
| 3 | P095 | 250* | P | S01 | T03 | | | |
| 4 | P096 | 250* | P | S01 | T04 | | | |
| 5 | P097 | 250* | P | S01 | T03 | | | |
| 6 | P098 | 250* | P | S01 | T01 | | | |
| 7 | P099 | 250* | P | S01 | T01 | | | |
| 8 | P101 | 250* | P | S01 | T03 | | | |
| 9 | P102 | 250* | P | S01 | T03 | | | |
| 10 | P103 | 250* | P | S01 | T03 | | | |
| 11 | P104 | 250* | P | S01 | T01 | | | |
| 12 | P105 | 250* | P | S01 | | | | |
| 13 | P106 | 250* | P | S01 | T01 | | | |
| 14 | P107 | 250* | P | S01 | T04 | | | |
| 15 | P108 | 250* | P | S01 | T03 | | | |
| 16 | P109 | 250* | P | S01 | T03 | | | |
| 17 | P110 | 250* | P | S01 | T03 | | | |
| 18 | P111 | 250* | P | S01 | T03 | | | |
| 19 | P112 | 250* | P | S01 | T03 | T04 | | |
| 20 | P113 | 250* | P | S01 | | | | |
| 21 | P114 | 250* | P | S01 | | | | |
| 22 | P115 | 250* | P | S01 | | | | |
| 23 | P116 | 250* | P | S01 | | | | |
| 24 | P118 | 250* | P | S01 | T03 | | | |
| 25 | P119 | 250* | P | S01 | | | | |
| 26 | P120 | 250* | P | S01 | | | | |

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EPA I.D. NUMBER (enter from page 1)

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## IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

| | A. EPA HAZARD. WASTE NO. (enter code) | B. ESTIMATED ANNUAL QUANTITY OF WASTE | C. UNIT OF MEASURE (enter code) | D. PROCESSES 1. PROCESS CODES (enter) | D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1)) |
|---|---|---|---|---|---|
| 1 | P121 | 250* | P | S01 T01 | |
| 2 | P122 | 250* | P | S01 T04 | |
| 3 | P123 | 250* | P | S01 T03 | |
| 4 | | END OF P DESIGNATOR | | | |
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EPA I.D. NUMBER (enter from page 1): W N M D 8 9 0 0 1 0 5 1 5

FOR OFFICIAL USE ONLY: W DUP 2 DUP

## IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

| LINE NO. | A. EPA HAZARD. WASTE NO. (enter code) | B. ESTIMATED ANNUAL QUANTITY OF WASTE | C. UNIT OF MEASURE (enter code) | D. PROCESSES 1. PROCESS CODES (enter) | D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1)) |
|---|---|---|---|---|---|
| 1 | U001 | 250* | P | S01 T03 | |
| 2 | U002 | 3500 | P | S01 T03 | |
| 3 | U003 | 250* | P | S01 T03 | |
| 4 | U004 | 250* | P | S01 T03 | |
| 5 | U005 | 250* | P | S01 | |
| 6 | U006 | 250* | P | S01 T04 | |
| 7 | U007 | 250* | P | S01 T03 | |
| 8 | U008 | 250* | P | S01 T03 T04 | |
| 9 | U009 | 250* | P | S01 T03 | |
| 10 | U010 | 250* | P | S01 T03 | |
| 11 | U011 | 250* | P | S01 T03 | |
| 12 | U012 | 250* | P | S01 T03 | |
| 13 | U014 | 250* | P | S01 T03 | |
| 14 | U015 | 250* | P | S01 T03 | |
| 15 | U016 | 250* | P | S01 T03 | |
| 16 | U017 | 250* | P | S01 T03 | |
| 17 | U018 | 250* | P | S01 T03 | |
| 18 | U019 | 750 | P | S01 | |
| 19 | U020 | 250* | P | S01 T03 T04 | |
| 20 | U021 | 250* | P | S01 T03 | |
| 21 | U022 | 250* | P | S01 T03 | |
| 22 | U023 | 250* | P | S01 T03 T04 | |
| 23 | U024 | 250* | P | S01 T03 | |
| 24 | U025 | 250* | P | S01 T03 | |
| 25 | U026 | 250* | P | S01 T03 | |
| 26 | U027 | 250* | P | S01 T03 | |

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EPA I.D. NUMBER (enter from page 1): W N M 0 8 9 0 0 1 0 5 1 5 T/A 1

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## IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

| LINE NO. | A. EPA HAZARD. WASTE NO. (enter code) | B. ESTIMATED ANNUAL QUANTITY OF WASTE | C. UNIT OF MEASURE (enter code) | D. PROCESSES 1. PROCESS CODES (enter) | | | | D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|
| 1 | U028 | 250* | P | S01 | T03 | | | |
| 2 | U029 | 250* | P | S01 | T03 | | | |
| 3 | U030 | 250* | P | S01 | T03 | | | |
| 4 | U031 | 250* | P | S01 | T03 | | | |
| 5 | U032 | 250* | P | S01 | T01 | | | |
| 6 | U033 | 250* | P | S01 | T04 | | | |
| 7 | U034 | 250* | P | S01 | T03 | | | |
| 8 | U035 | 250* | P | S01 | T03 | | | |
| 9 | U036 | 250* | P | S01 | T03 | | | |
| 10 | U037 | 250* | P | S01 | T03 | | | |
| 11 | U038 | 250* | P | S01 | T03 | | | |
| 2 | U039 | 250* | P | S01 | T03 | | | |
| 13 | U041 | 250* | P | S01 | T03 | | | |
| 14 | U042 | 250* | P | S01 | T03 | T04 | | |
| 15 | U043 | 250* | P | S01 | T04 | | | |
| 16 | U044 | 1000 | P | S01 | T03 | | | |
| 17 | U045 | 250* | P | S01 | T04 | | | |
| 18 | U046 | 250* | P | S01 | T03 | | | |
| 19 | U047 | 250* | P | S01 | T03 | | | |
| 20 | U048 | 250* | P | S01 | T03 | | | |
| 21 | U049 | 250* | P | S01 | T03 | | | |
| 22 | U050 | 250* | P | S01 | T03 | | | |
| 23 | U051 | 250* | P | S01 | T03 | | | |
| 24 | U052 | 250* | P | S01 | T03 | | | |
| 25 | U053 | 250* | P | S01 | T03 | | | |
| 26 | U055 | 250* | P | S01 | T03 | | | |

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EPA I.D. NUMBER (enter from page 1): W N M 0 8 9 0 0 1 0 5 1 5 T/A 1

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## IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

| LINE NO. | A. EPA HAZARD. WASTE NO. (enter code) | B. ESTIMATED ANNUAL QUANTITY OF WASTE | C. UNIT OF MEASURE (enter code) | D. PROCESSES 1. PROCESS CODES (enter) | | | | D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|
| 1 | U056 | 250* | P | S01 | T03 | | | |
| 2 | U057 | 250* | P | S01 | T03 | | | |
| 3 | U058 | 250* | P | S01 | T03 | | | |
| 4 | U059 | 250* | P | S01 | T03 | | | |
| 5 | U060 | 250* | P | S01 | T03 | | | |
| 6 | U061 | 250* | P | S01 | T03 | | | |
| 7 | U062 | 250* | P | S01 | T03 | | | |
| 8 | U063 | 250* | P | S01 | T03 | | | |
| 9 | U064 | 250* | P | S01 | T03 | | | |
| 10 | U066 | 250* | P | S01 | T03 | | | |
| 11 | U067 | 250* | P | S01 | T03 | | | |
| 12 | U068 | 250* | P | S01 | T03 | | | |
| 13 | U069 | 250* | P | S01 | T03 | | | |
| 14 | U070 | 250* | P | S01 | T03 | | | |
| 15 | U071 | 250* | P | S01 | T03 | | | |
| 16 | U072 | 250* | P | S01 | T03 | | | |
| 17 | U073 | 250* | P | S01 | T03 | | | |
| 18 | U074 | 250* | P | S01 | T03 | | | |
| 19 | U075 | 250* | P | S01 | T04 | | | |
| 20 | U076 | 250* | P | S01 | T03 | | | |
| 21 | U077 | 250* | P | S01 | T03 | | | |
| 22 | U078 | 250* | P | S01 | T03 | | | |
| 23 | U079 | 250* | P | S01 | T03 | | | |
| 24 | U080 | 3000 | P | S01 | T03 | | | |
| 25 | U081 | 250* | P | S01 | T03 | | | |
| 26 | U082 | 250* | P | S01 | T03 | | | |

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EPA I.D. NUMBER (enter from page 1): W N M 0 8 9 0 0 1 0 5 1 5 T/A L 1

FOR OFFICIAL USE ONLY: W DUP C 2 DUP

## IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

| LINE NO. | A. EPA HAZARD. WASTE NO. (enter code) | B. ESTIMATED ANNUAL QUANTITY OF WASTE | C. UNIT OF MEASURE (enter code) | D. PROCESSES 1. PROCESS CODES (enter) | | | | D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|
| 1 | U083 | 250* | P | S01 | T03 | | | |
| 2 | U084 | 250* | P | S01 | T03 | | | |
| 3 | U085 | 250* | P | S01 | T03 | | | |
| 4 | U086 | 250* | P | S01 | T03 | | | |
| 5 | U087 | 250* | P | S01 | T03 | | | |
| 6 | U088 | 250* | P | S01 | T03 | | | |
| 7 | U089 | 250* | P | S01 | T03 | | | |
| 8 | U090 | 250* | P | S01 | T03 | | | |
| 9 | U091 | 250* | P | S01 | T03 | | | |
| 10 | U092 | 250* | P | S01 | T04 | | | |
| 11 | U093 | 250* | P | S01 | T03 | | | |
| 12 | U094 | 250* | P | S01 | T03 | | | |
| 13 | U095 | 250* | P | S01 | T03 | | | |
| 14 | U096 | 250* | P | S01 | T03 | | | |
| 15 | U097 | 250* | P | S01 | T03 | | | |
| 16 | U098 | 250* | P | S01 | T03 | | | |
| 17 | U099 | 250* | P | S01 | T03 | | | |
| 18 | U101 | 250* | P | S01 | T03 | | | |
| 19 | U102 | 250* | P | S01 | T03 | | | |
| 20 | U103 | 250* | P | S01 | T03 | | | |
| 21 | U105 | 250* | P | S01 | T03 | | | |
| 22 | U106 | 250* | P | S01 | T03 | | | |
| 23 | U107 | 250* | P | S01 | T03 | | | |
| 24 | U108 | 250* | P | S01 | T03 | | | |
| 25 | U109 | 250* | P | S01 | T03 | | | |
| 26 | U110 | 250* | P | S01 | T03 | | | |



NOV. 13 1986

EPA I.D. NUMBER (enter from page 1): W N M 0 8 9 0 0 1 0 5 1 5 F/A C 1

FOR OFFICIAL USE ONLY: W DUP C 2 DUP

## IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

| LINE NO. | A. EPA HAZARD. WASTE NO. (enter code) | B. ESTIMATED ANNUAL QUANTITY OF WASTE | C. UNIT OF MEASURE (enter code) | D. PROCESSES 1. PROCESS CODES (enter) | D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1)) |
|---|---|---|---|---|---|
| 1 | U 1 1 1 | 250* | P | S 0 1 T 0 3 | |
| 2 | U 1 1 2 | 250* | P | S 0 1 T 0 3 T 0 4 | |
| 3 | U 1 1 3 | 250* | P | S 0 1 T 0 3 T 0 4 | |
| 4 | u 1 1 4 | 250* | P | S 0 1 T 0 3 | |
| 5 | U 1 1 5 | 250* | P | S 0 1 T 0 3 T 0 4 | |
| 6 | U 1 1 6 | 250* | P | S 0 1 T 0 3 | |
| 7 | U 1 1 7 | 250* | P | S 0 1 T 0 3 T 0 4 | |
| 8 | U 1 1 8 | 250* | P | S 0 1 T 0 3 T 0 4 | |
| 9 | U 1 1 9 | 250* | P | S 0 1 T 0 3 | |
| 10 | U 1 2 0 | 250* | P | S 0 1 T 0 3 | |
| 11 | U 1 2 1 | 250* | P | S 0 1 | |
| 12 | U 1 2 2 | 250* | P | S 0 1 T 0 3 | |
| 13 | U 1 2 3 | 250* | P | S 0 1 | |
| 14 | U 1 2 4 | 250* | P | S 0 1 T 0 3 | |
| 15 | U 1 2 5 | 250* | P | S 0 1 T 0 3 | |
| 16 | U 1 2 6 | 250* | P | S 0 1 T 0 3 | |
| 17 | U 1 2 7 | 250* | P | S 0 1 T 0 3 | |
| 18 | U 1 2 8 | 205* | P | S 0 1 T 0 3 | |
| 19 | U 1 2 9 | 250* | P | S 0 1 T 0 3 | |
| 20 | U 1 3 0 | 250* | P | S 0 1 T 0 3 | |
| 21 | U 1 3 1 | 250* | P | S 0 1 T 0 3 | |
| 22 | U 1 3 2 | 250* | P | S 0 1 T 0 3 | |
| 23 | U 1 3 3 | 250* | P | S 0 1 T 0 3 T 0 4 | |
| 24 | U 1 3 4 | 250* | P | S 0 1 T 0 1 T 0 4 | |
| 25 | U 1 3 5 | 250* | P | S 0 1 T 0 4 | |
| 26 | U 1 3 6 | 250* | P | S 0 1 | |

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EPA I.D. NUMBER (enter from page 1): W N M 0 8 9 0 0 1 0 5 1 5 — T/A C: 1

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## IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

| NO. | A. EPA HAZARD. WASTE NO. (enter code) | B. ESTIMATED ANNUAL QUANTITY OF WASTE | C. UNIT OF MEASURE (enter code) | D. PROCESSES 1. PROCESS CODES (enter) | | | | 2. PROCESS DESCRIPTION (if a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|
| 1 | U137 | 250* | P | S01 | T03 | | | |
| 2 | U138 | 250* | P | S01 | T03 | | | |
| 3 | U139 | 250* | P | S01 | T03 | | | |
| 4 | U140 | 250* | P | S01 | T03 | | | |
| 5 | U141 | 250* | P | S01 | T03 | | | |
| 6 | U142 | 250* | P | S01 | T03 | | | |
| 7 | U143 | 250* | P | S01 | T03 | | | |
| 8 | U144 | 250* | P | S01 | | | | |
| 9 | U145 | 250* | P | S01 | | | | |
| 10 | U146 | 250* | P | S01 | | | | |
| 11 | U147 | 250* | P | S01 | T03 | | | |
| 12 | U148 | 250* | P | S01 | T03 | | | |
| 13 | U149 | 250* | P | S01 | T03 | | | |
| 14 | U150 | 250* | P | S01 | T03 | | | |
| 15 | U151 | 250* | P | S01 | T03 | | | |
| 16 | U152 | 250* | P | S01 | | | | |
| 17 | U153 | 250* | P | S01 | T03 | | | |
| 18 | U154 | 250* | P | S01 | T03 | | | |
| 19 | U155 | 250* | P | S01 | T03 | | | |
| 20 | U156 | 250* | P | S01 | T03 | | | |
| 21 | U157 | 1000 | P | S01 | T03 | | | |
| 22 | U158 | 250* | P | S01 | T03 | | | |
| 23 | U159 | 1000 | P | S01 | T03 | | | |
| 24 | U160 | 250* | P | S01 | T04 | T03 | | |
| 25 | U161 | 250* | P | S01 | T03 | | | |
| 26 | U162 | 250* | P | S01 | T03 | | | |

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NOTE: Photocopy this page before completing it.

| EPA I.D. NUMBER (enter from page 1) | FOR OFFICIAL USE ONLY |
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| W N M 0 8 9 0 0 1 0 5 1 5 T/A 1 | W DUP 2 DUP |

## IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

| LINE NO. | A. EPA HAZARD. WASTE NO. (enter code) | B. ESTIMATED ANNUAL QUANTITY OF WASTE | C. UNIT OF MEASURE (enter code) | D. PROCESSES 1. PROCESS CODES (enter) | D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1)) |
|---|---|---|---|---|---|
| 1 | U163 | 250* | P | S01 T03 | |
| 2 | U164 | 250* | P | S01 T03 | |
| 3 | U165 | 250* | P | S01 T03 | |
| 4 | U166 | 250* | P | S01 T03 | |
| 5 | U167 | 250* | P | S01 T03 | |
| 6 | U168 | 250* | P | S01 T03 | |
| 7 | U169 | 250* | P | S01 T03 | |
| 8 | U170 | 250* | P | S01 T03 | |
| 9 | U171 | 250* | P | S01 T03 | |
| 10 | U172 | 250* | P | S01 T03 | |
| 11 | U173 | 250* | P | S01 T03 | |
| 12 | U174 | 250* | P | S01 T03 | |
| 13 | U176 | 250* | P | S01 T03 | |
| 14 | U177 | 250* | P | S0.1 T03 | |
| 15 | U178 | 250* | P | S01 T03 | |
| 16 | U179 | 250* | P | S01 T03 | |
| 17 | U180 | 250* | P | S01 T03 | |
| 18 | U181 | 250* | P | S01 T03 | |
| 19 | U182 | 250* | P | S01 T03 | |
| 20 | U183 | 250* | P | S01 T03 | |
| 21 | U184 | 250* | P | S01 T03 | |
| 22 | U185 | 250* | P | S01 T03 | |
| 23 | U186 | 250* | P | S01 T03 | |
| 24 | U187 | 250* | P | S01 T03 | |
| 25 | U188 | 250* | P | S01 T03 | |
| 26 | U189 | 250* | P | S01 T03 T04 | |

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(enter "A", "B", "C", etc. behind the "3" to identify photocopied pages)

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EPA I.D. NUMBER (enter from page 1): W N M 0 8 9 0 0 1 0 5 1 5 T/A 1

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## IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

| LINE NO. | A. EPA HAZARD. WASTE NO. (enter code) | B. ESTIMATED ANNUAL QUANTITY OF WASTE | C. UNIT OF MEASURE (enter code) | D. PROCESSES 1. PROCESS CODES (enter) | | | | D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|
| 1 | U190 | 250* | P | S01 | T03 | | | |
| 2 | U191 | 250* | P | S01 | T03 | | | |
| 3 | U192 | 250* | P | S01 | T03 | | | |
| 4 | U193 | 250* | P | S01 | T03 | | | |
| 5 | U194 | 250* | P | S01 | T03 | | | |
| 6 | U196 | 250* | P | S01 | T03 | | | |
| 7 | U197 | 250* | P | S01 | T03 | | | |
| 8 | U200 | 250* | P | S01 | T03 | | | |
| 9 | U201 | 250* | P | S01 | T03 | | | |
| 10 | U202 | 250* | P | S01 | T03 | | | |
| 11 | U203 | 250* | P | S01 | T03 | | | |
| 12 | U204 | 250* | P | S01 | | | | |
| 13 | U205 | 250* | P | S01 | T04 | | | |
| 14 | U206 | 250* | P | S01 | T03 | | | |
| 15 | U207 | 250* | P | S01 | T03 | | | |
| 16 | U208 | 250* | P | S01 | T03 | | | |
| 17 | U209 | 250* | P | S01 | T03 | | | |
| 18 | U210 | 250* | P | S01 | T03 | | | |
| 19 | U211 | 250* | P | S01 | T03 | | | |
| 20 | U212 | 250* | P | S01 | T03 | | | |
| 21 | U213 | 250* | P | S01 | T03 | T04 | | |
| 22 | U214 | 250* | P | S01 | T03 | | | |
| 23 | U215 | 250* | P | S01 | | | | |
| 24 | U216 | 250* | P | S01 | | | | |
| 25 | U217 | 250* | P | S01 | T04 | | | |
| 26 | U218 | 250* | P | S01 | T03 | | | |

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NOV. 13 1986

| W | N | M | 0 | 8 | 9 | 0 | 0 | 1 | 0 | 5 | 1 | 5 | | | W | DUP | | 2 | DUP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

## IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

| | A. EPA HAZARD. WASTE NO. (enter code) | B. ESTIMATED ANNUAL QUANTITY OF WASTE | C. UNIT OF MEASURE (enter code) | D. PROCESSES 1. PROCESS CODES (enter) | | | | 2. PROCESS DESCRIPTION (if a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|
| 1 | U 2 1 9 | 250* | P | S 0 1 | | | | |
| 2 | U 2 2 0 | 1000 | P | S 0 1 | T 0 3 | | | |
| 3 | U 2 2 1 | 250* | P | S 0 1 | T 0 3 | | | |
| 4 | U 2 2 2 | 250* | P | S 0 1 | T 0 3 | | | |
| 5 | U 2 2 3 | 1000 | P | S 0 1 | T 0 3 | | | |
| 6 | U 2 2 5 | 250* | P | S 0 1 | T 0 3 | | | |
| 7 | U 2 2 6 | 2000 | P | S 0 1 | T 0 3 | | | |
| 8 | U 2 2 7 | 250* | P | S 0 1 | T 0 3 | | | |
| 9 | U 2 2 8 | 4000 | P | S 0 1 | T 0 3 | | | |
| 10 | U 2 3 0 | 250* | P | S 0 1 | T 0 3 | | | |
| 11 | U 2 3 1 | 250* | P | S 0 1 | T 0 3 | | | |
| 12 | U 2 3 2 | 250* | P | S 0 1 | T 0 3 | | | |
| 13 | U 2 3 3 | 250* | P | S 0 1 | T 0 3 | | | |
| 14 | U 2 3 4 | 250* | P | S 0 1 | T 0 4 | | | |
| 15 | U 2 3 5 | 250* | P | S 0 1 | T 0 3 | | | |
| 16 | U 2 3 6 | 250* | P | S 0 1 | T 0 3 | | | |
| 17 | U 2 3 7 | 250* | P | S 0 1 | T 0 3 | | | |
| 18 | U 2 3 8 | 250* | P | S 0 1 | T 0 3 | | | |
| 19 | U 2 3 9 | 1000 | P | S 0 1 | T 0 3 | | | |
| 20 | U 2 4 0 | 250* | P | 0 1 | T 0 3 | | | |
| 21 | U 2 4 2 | 250* | P | S 0 1 | T 0 3 | | | |
| 22 | U 2 4 3 | 250* | P | S 0 1 | T 0 3 | | | |
| 23 | U 2 4 4 | 250* | P | S 0 1 | T 0 3 | | | |
| 24 | U 2 4 6 | 250* | P | S 0 1 | | | | |
| 25 | U 2 4 7 | 250* | P | S 0 1 | T 0 3 | | | |
| 26 | | END OF U DESIGNATOR | | | | | | |

EPA Form 3510-3 (6-80)

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. Continued from the front.

## IV. DESCRIPTION OF HAZARDOUS WASTE (continued)

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 3.

All entries with an asterick in column IVB on page 3A are generated in labpack quantities only. If a new process/experiment will generate more than the stated quantity, a revised Part A will be submitted.

EPA I.D. NO. *(enter from page 1)*

F NM0890010515 T/A C 6

## V. FACILITY DRAWING

All existing facilities must include in the space provided on page 5 a scale drawing of the facility *(see instructions for more detail).*

## VI. PHOTOGRAPHS

All existing facilities must include photographs *(aerial or ground—level)* that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas *(see instructions for more detail).*

## VII. FACILITY GEOGRAPHIC LOCATION

| LATITUDE *(degrees, minutes, & seconds)* | LONGITUDE *(degrees, minutes, & seconds)* |
|---|---|
| 35 49 051 | 106 14 015 |

## VIII. FACILITY OWNER

☐ A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

| 1. NAME OF FACILITY'S LEGAL OWNER | 2. PHONE NO. *(area code & no.)* |
|---|---|
| E United States Department of Energy | 505-667-5101 |

| 3. STREET OR P.O. BOX | 4. CITY OR TOWN | 5. ST. | 6. ZIP CODE |
|---|---|---|---|
| F Los Alamos Area Office | G Los Alamos | NM | 87544 |

## IX. OWNER CERTIFICATION

*I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.*

| A. NAME *(print or type)* | B. SIGNATURE | C. DATE SIGNED |
|---|---|---|
| Harold E. Valencia<br>Los Alamos Area Manager | H E Valencia | 11/12/86 |

## X. OPERATOR CERTIFICATION

*I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.*

| A. NAME *(print or type)* | B. SIGNATURE | C. DATE SIGNED |
|---|---|---|
| Siegfried S. Hecker, Director<br>Los Alamos National Laboratory | Siegfried S. Hecker | 11/10/86 |



CONTINUE ON PAGE 5

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The following drawings are attached to the revised Part A dated 10/31/84.

ENG-R 5277 Sheets 2 & 5 - "S" Site showing location of burn pits area - also relationship of "S" Site to rest of Lab. TA-40 & TA-14 locations where HE waste may be destroyed.

TA-16 - Structure Location Plan - Structural designation of pressure vessels (401, 406) and burn pads (387, 388, 399).

ENG-C-27630 - Pressure Vessel (406)

ENG-C-25937 - Pressure Vessel (401)

ENG-C-5849 - Burn Pads (387, 388, 389).

LA-RV-1-13.1 and LA-RV-P-9 - Batch Waste Treatment System at TA-50-1.

Area L Chemical Storage Facility, TA-54.

Area L Chemical Storage Facility, shed.

ENG-R-5277 Shed 10 - TA-15 and TA-36 - firing points where HE waste may be destroyed.

ENG-R-5277 Sheet 11 - TA-39 firing points where HE waste may be destroyed.

ENG-R-5277 Sheet 5 - TA-14 and TA-40 firing points where HE waste may be destroyed.

1. The following drawings are attached to the revised Part A dated 7/26/84:

   Figure 1 - Technical Area Location Plan

   Figure 4 - TA-50 Structure Location Plan showing location of the Batch Waste Treatment Facility in Building 1 and the controlled air incinerator in Building 37.

   Figure 5 - TA-54 Structure Location Plan showing Area L.

2. The following drawings are attached to the revised Part A dated April 1, 1985:

   TDF (Fig. 4-3 of Part B)

   TDF (Fig. 4-4 of Part B)

   TA-54 Area L Storage Area (2 drawings)

3. The following are new submittals:

   TA-54 Area L Storage Area Drawings, Revised July 25, 1985 (2 drawings)

   Photographs:

   TA-3, SM-40 = Temporary chemical waste storage

   TA-3, SM-102 - South Side, LiH room

   TA-9-39 (2 photographs) - Structure and bilingual sign for storage

   TA-14-23 - Building with bilingual sign



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3. (cont'd.)

TA-14-23 and 35 - Building 23 with firing pad 35

TA-15, Phermex - Firing pad

TA-16, Area P - Area with bilingual sign

TA-16-387 - Burn pad

TA-16-406 - Storage area (temp)

TA-16-394 - Burn pad

TA-16-401 - Storage area (temp)

TA-16-389 - Building used as control point

TA-16-399 - Burn pad

TA-16-388 - Burn pad

TA-22, TD 96-3 - Temporary storage area with bilingual sign

TA-22, TD 96 - Structure used as storage area (temp)

TA-22, TD 24 - Structure used as storage area (temp)

TA-36-8, Kappa 8 - Firing pad

TA-39, AC-6 - Firing pad

TA-39, AC-57 - Firing pad

TA-40, DF-2 - Structure used as temporary storage area

TA-50-1 - West side of building with BWT

TA-50-1, Batch Waste Treatment - East doors to BWT (middle of photo, in background)

TA-50-37 - TDF facility (east side)

TA-54, Area L (5 photographs)

**Department of Energy**
Albuquerque Operations
Los Alamos Area Office
Los Alamos, New Mexico 87544

NOV 0 6 1986

RECEIVED
NOV 0 1986
Hazardous Waste
Management Div.

0397

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

Ms. Denise Fort, Director
N.M. Environmental Improvement Division
P. O. Box 968
Santa Fe, New Mexico 87504-0968

NM0890010515

Dear Ms. Fort:

**COMPLIANCE ORDER/SCHEDULE DATED MAY 7, 1985**
**DOCKET NUMBER 001007**

The enclosed information is the Department of Energy's (DOE)/Los Alamos National Laboratory's official response to your Division's Compliance Order/Schedule (Docket Number 001007), Paragraph 24.C, dated May 7, 1985.

Paragraph 24.C requires the DOE/Laboratory to submit a written report documenting the findings of Area L surface impoundment investigations. The enclosure, which provides additional documentation for the Laboratory's groundwater monitoring waiver in compliance with Section 206.C.2.a (3) of the New Mexico Hazardous Waste Management Regulations, is entitled: "Results of Area L Surface Impoundment Characterization."

If you have any questions concerning this response, please call James Phoenix of my staff at 667-5288.

Sincerely,

Original signed by
Harold E. Valencia

Harold E. Valencia
Area Manager

RECEIVED
1986 NOV 12 PM 3:46
EPA REGION VI
HAZARDOUS WASTE
COMPLIANCE BRANCH

1 Enclosure

cc:
A. Davis, US EPA, Dallas, Texas

LTP:CEB:0286

## RESULTS OF AREA L SURFACE IMPOUNDMENT CHARACTERIZATION

This report addresses the requirement in Paragraph 24. C of the New Mexico Environmental Improvement Division's (EID) Compliance Order/Schedule (Docket Number 001007) dated May 7, 1985. Paragraph 24.C requires the Laboratory to submit to EID the results of investigatory activities at the Area L surface impoundment. Sample analytical results and data interpretation are included in this report.

### A. General Information

#### 1. Test samples

Two holes, located as shown in Figure 1, were drilled adjacent to the surface impoundment. These two holes, numbered LLC-85-17 and LLC-85-18, are 150 and 100 ft deep respectively. Data was also obtained from (1) a 60 ft test hole drilled approximately 50 ft southwest of Drill Hole Number LLC-85-17 and (2) a core sample taken from 0 to 29 in. in the surface impoundment.

In Drill Hole Numbers LLC-85-17 and LLC-85-18, core samples for laboratory analysis were taken at ten ft intervals. Samples were analyzed for extractable process (EP) toxicity constituents, volatile organic compounds and miscellaneous additional parameters previously agreed upon with EID personnel (lithium, copper, ammonia, fluoride, total dissolved solids, pH and soil moisture). In the test hole, core samples taken at 5 ft intervals were analyzed for all of the above constituents, with the exception of volatile organic compounds. Samples from the core in the surface impoundment were taken at 4 in. intervals and analyzed for nitrate, chloride, sulfate, fluoride, copper, lithium, total dissolved solids, conductivity and pH.

#### 2. Background samples

Six background soil samples, each consisting of a 3.5 in. diameter X 4 in. deep plug, were taken in the vicinity of Area L. Sample locations are given in Figure 1 and detailed descriptions of each sampling location are in Table III.

### B. Analytical Results

All EP toxicity constituents in all test samples were below the regulated concentration, with the exception of one chromium measurement in the 10 to 20 ft depth interval of core from Drill Hole Number LLC-85-18 (see Table I).

None of the "target" (analytical laboratory terminology referring to volatile organic compounds analyzed for and

listed in Table II) volatile organic compounds in Table II were detected in the drill hole core samples.

Results of miscellaneous chemical analyses on six background soil samples are given in Table III. Some of the miscellaneous additional parameters analyzed for were above background levels; total dissolved solids were present at levels significantly above background. Miscellaneous chemical analyses for Area L drill hole core samples are given in Table IV.

Refer to a previous submittal (Devaurs, 1985) for further detail on sampling methodology, analytical methodology, and quality assurance/quality control for both organic and inorganic samples.

C. Data Interpretation

The low soil moisture, found in both test and background samples taken near the Area L surface impoundment, and also found more generally in vadose zone characterization activities at TA-54 (BFEC, 1986), indicates that potential contaminant migration should not be driven by water. This has been documented in previous submittals to EID (BFEC, 1986; Devaurs and Purtymun, 1985; water balance calculations), and should be substantiated by neutron probe soil moisture monitoring after two autumn storms to be conducted at Area L this fall as required in Paragraph 25, Task 4 of the Compliance Order/Schedule. Additionally, since EP toxicity and volatile organic analyses of core samples indicated that none of these constituents are present, there is little potential for migration of contaminants from the surface impoundment. The March 1987 Compliance Order submittal should further substantiate this argument.

REFERENCES CITED

BFEC, 1986: Bendix Field Engineering Corporation, "Vadose Zone Characterization of Technical Area 54, Waste Disposal Areas G and L, Los Alamos National Laboratory, New Mexico; Report 3: Preliminary Assessment of the Hydrologic System," 1986.

Devaurs, 1985: Devaurs, M., "Core Analyses and Observation Well Data from Mesita del Buey Waste Disposal Areas and Adjacent Canyons," Los Alamos National Laboratory LA-UR-85-4003 (November 1985).

Devaurs and Purtymun, 1985: Devaurs, M., and W. D. Purtymun, "Hydrologic Characteristics of the Alluvial Aquifers in Mortandad, Canada del Buey and Pajarito Canyons," Los Alamos National Laboratory LA-UR-85-4002 (November 1985).

Figure 1 Map of T Area L locating drill holes adjacent surface impoundment and background soil sample locations.

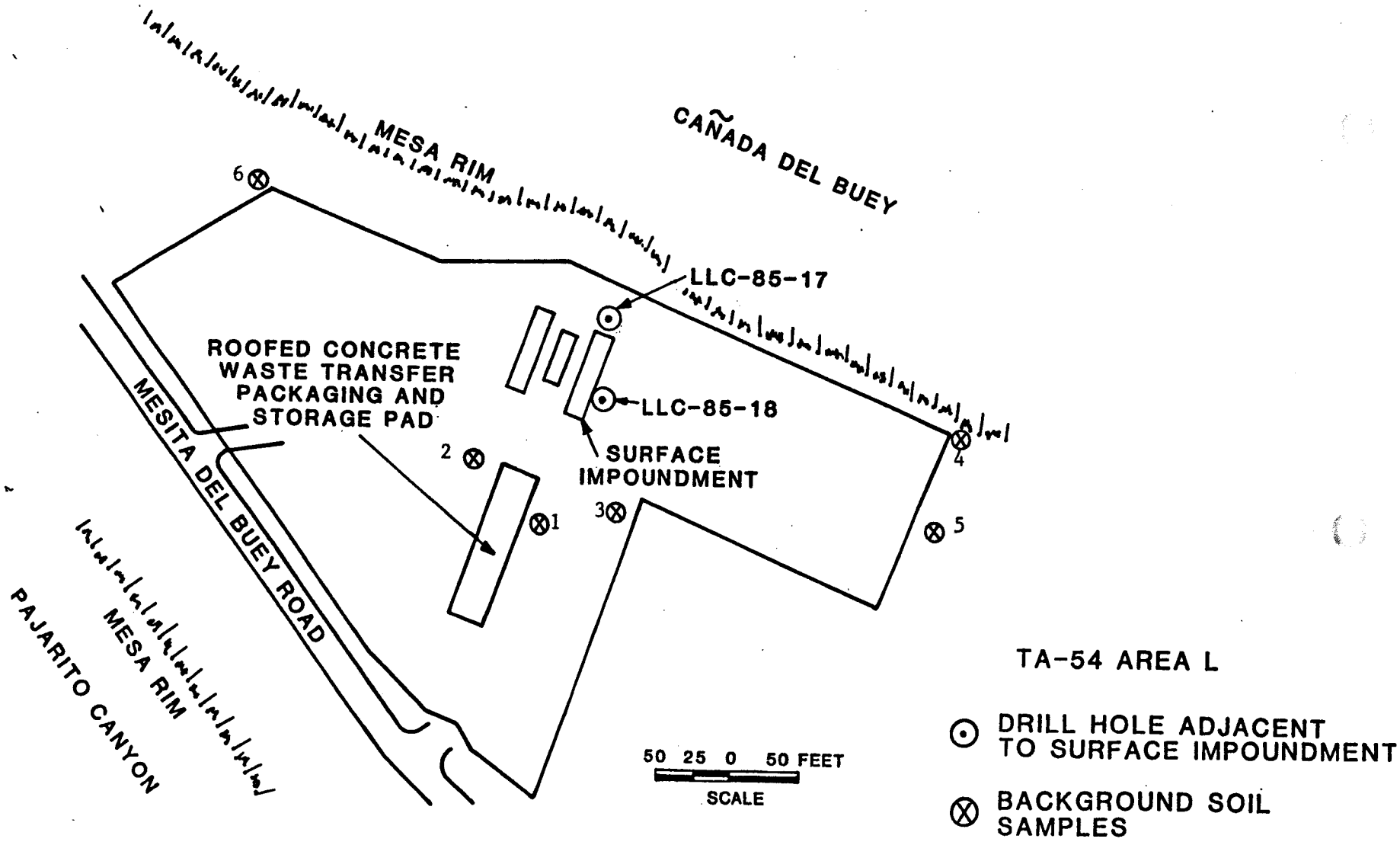

TABLE I. EP TOXICITY ANALYTICAL RESULTS FOR SAMPLES FROM DRILL HOLES ADJACENT TO AREA L SURFACE IMPOUNDMENT DRILL HOLE NUMBER LLC-85-17

| Parameter | EP Toxic Regulated Concentration[1] (mg/L) | Detection Limit (mg/L)[2] | Depth Intervals in Feet | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 | 90-100 | 100-110 | 110-120 | 120-130 | 130-140 | 140-150 |
| Arsenic | 5.0 | 0.05 ± 0.025 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Barium | 100. | 1.0 ± 1.0 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Cadmium | 1.0 | 0.1 ± 0.1 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Chromium | 5.0 | 0.5 ± 0.5 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Lead | 5.0 | 0.5 ± 0.5 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Mercury | 0.2 | 0.01 ± 0.01 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Selenium | 1.0 | 0.05 ± 0.025 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Silver | 5.0 | 0.5 ± 0.5 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

[1]Hazardous Waste Management Regulations (HWMR) 201.B.5.
[2]ND = Not Detected.

TABLE I. (continued)
DRILL HOLE NUMBER LLC-85-18

| Parameter | EP Toxic Regulated Concentration[1] (mg/L) | Detection Limit (mg/L)[2] | Depth Intervals in Feet | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70[3] | 70-80 | 80-90 | 90-100 |
| Arsenic | 5.0 | 0.05 ± 0.025 | ND | ND | ND | ND | ND | ND | -- | ND | ND | ND |
| Barium | 100. | 1.0 ± 1.0 | ND | ND | ND | ND | ND | ND | -- | ND | ND | ND |
| Cadmium | 1.0 | 0.1 ± 0.1 | ND | ND | ND | ND | ND | ND | -- | ND | ND | ND |
| Chromium | 5.0 | 0.5 ± 0.5 | ND | 6.6 | ND | ND | ND | ND | -- | ND | ND | ND |
| Lead | 5.0 | 0.5 ± 0.5 | ND | ND | ND | ND | ND | ND | -- | ND | ND | ND |
| Mercury | 0.2 | 0.01 ± 0.01 | ND | ND | ND | ND | ND | ND | -- | ND | ND | ND |
| Selenium | 1.0 | 0.05 ± 0.025 | ND | ND | ND | ND | ND | ND | -- | ND | ND | ND |
| Silver | 5.0 | 0.5 ± 0.5 | ND | ND | ND | ND | ND | ND | -- | ND | ND | ND |

[1]Hazardous Waste Management Regulations (HWMR) 201.B.5.
[2]ND = Not Detected.
[3]No sample available; no core recovery.

TABLE I. (continued)
Surface Impoundment Test Hole

| Parameter | EP Toxic Regulated Concentration[1] (mg/L) | Detection Limit[2] (mg/L) | Depth Intervals in Feet | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0-5 | 5-6 | 9-10 | 14-15 | 19-20 | 24-25 | 29-30 | 34-35 | 39-40 | 44-45 | 49-50 | 49-50 | 54-55 | 59-60 |
| Arsenic | 5.0 | 0.5 ± 0.5 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Barium | 100.0 | 0.22 ± 0.20 | ND | ND | ND | ND | ND | 0.26 | ND | ND | ND | ND | ND | ND | ND | ND |
| Cadmium | 1.0 | 0.01 ± 0.01 | ND | ND | ND | ND | ND | 0.02 | ND | ND | ND | ND | ND | ND | ND | ND |
| Chromium | 5.0 | 0.23 ± 0.20 | ND | ND | ND | ND | ND | 0.77 | 0.57 | ND | ND | ND | ND | ND | ND | ND |
| Lead | 5.0 | 0.07 ± 0.07 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Mercury | 0.2 | 0.0002 ± 0.0002 | 0.0003 | 0.0002 | 0.0003 | 0.0003 | 0.0011 | 0.0003 | ND | 0.0003 | ND | ND | ND | ND | ND | ND |
| Selenium | 1.0 | 0.01 ± 0.01 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Silver | 5.0 | 0.20 ± 0.20 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

[1] Hazardous Waste Management Regulations (HWMR) 201.8.5.
[2] ND = Not Detected.

Note: The ± value represents the uncertainty term for the analysis.

TABLE I. (continued)

Surface Impoundment Core Sample

| Parameter | EP Toxic Regulated Concentration[1] (mg/L) | 0-4 | 4-8 | 8-12 | 12-16 | 16-20 | 20-29 |
|---|---|---|---|---|---|---|---|
| Arsenic | 5.0 | 0.015 | 0.006 | 0.005 | 0.002 | 0.002 | 0.002 |
| Barium | 100.0 | 0.184 | <0.13 | <0.13 | 0.87 | 0.83 | <0.13 |
| Cadmium | 1.0 | 0.013 | 0.014 | 2.15 | 11.10 | 3.59 | 1.04 |
| Chromium | 5.0 | 0.23 | 1.06 | 8.51 | 20.8 | 15.8 | 13.2 |
| Lead | 5.0 | <0.50 | 0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Mercury | 0.2 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Silver | 5.0 | <0.024 | <0.024 | <0.024 | <0.024 | <0.024 | <0.024 |

[1]Hazardous Waste Management Regulations (HWMR) 201.B.5.

TABLE II - Characteristics of Target Volatile Organic Compounds

| Compound | Retention Time (minutes) | Detection Limits[1] $H_2O$ (ppb) | Soil (ug/kg) | Internal Standard |
|---|---|---|---|---|
| 1,1-Dichloroethylene | 4.26 | -- | -- | -- |
| Methylene Chloride | 4.36 | 5 | 521 | BCM |
| T 1,2-Dichloroethylene | 4.63 | 5 | 521 | BCM |
| 1,1-Dichloroethane | 4.76 | 10 | 1042 | BCM |
| Chloroform | 5.27 | 10 | 1042 | 1C2 |
| 1,1,1-Trichloroethane | 5.68 | 15 | 1563 | BCM |
| 1,2-Dichloroethane | 5.72 | 8 | 833 | BCM |
| Benzene | 5.96 | 5 | 521 | BCM |
| Carbon Tetrachloride | 5.98 | 20 | 2083 | BCM |
| Trichloroethylene | 6.65 | 5 | 521 | 1C2BP |
| 1,2-Dichloropropane | 6.69 | 5 | 521 | BCM |
| Bromodichloromethane | 6.86 | 10 | 1042 | 14 DCB |
| Toluene | 8.36 | 5 | 521 | 1C2BP |
| 1,1,2-Trichloroethane | 8.37 | 15 | 1527 | 1C2BP |
| Chlorodibromomethane | 9.15 | 10 | 1042 | 14 DCB |
| Tetrachloroethylene | 9.52 | 20 | 2083 | 1C2BP |
| Chlorobenzene | 10.56 | 12 | 1250 | 1C2BP |
| Ethylbenzene | 10.83 | 8 | 833 | 14 DCB |
| Bromoform | 11.71 | 10 | 1042 | 14 DCB |
| 1,1,2,2-Tetrachloro-ethane | 12.35 | 20 | 2083 | 14 DCB |
| Bromobenzene | 12.95 | 22 | 2292 | 1C2BP |
| 1,3-Dichlorobenzene | 14.75 | 5 | 521 | 14 DCB |
| 1,4-Dichlorobenzene | 14.91 | -- | -- | --- |
| 1,2-Dichlorobenzene | 15.48 | 5 | 521 | 14DCB |

Internal Standards =

| | |
|---|---|
| Bromochloromethane(BCM) | 5.23 |
| 1-Chloro-2-Bromo-propane (1C2BP) | 8.52 |
| 1,4-Dichlorobutane (14DCB) | 12.15 |

[1]The detection limit is based on the intercept of the external standard calibration curve and assumes 100% recovery.

TABLE III. Miscellaneous Chemical Analyses for Five Background Soil Samples Taken Near Area L

| Parameter | Sampling Location[1] No. 1 | No. 2 | No.3 | No. 4 | No. 5 | No. 6 | Mean ± Std. Dev. |
|---|---|---|---|---|---|---|---|
| Lithium (mg/L) | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 ± 0 |
| Copper (mg/L) | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 ± 0 |
| $NH_3$-N (mg/L) | 0.0 | 0.02 | 0.14 | 0.0 | 0.0 | 0.0 | 0.03 ± 0.05 |
| F (mg/L) | 0.32 | <0.20 | 0.32 | 0.25 | 0.46 | 0.49 | 0.34 ± 0.11 |
| TDS (mg/L) | 58 | 29 | 61 | 24 | 74 | 40 | 48 ± 20 |
| pH | 9.3 | 7.2 | 8.2 | 7.2 | 7.2 | 6.7 | 7.6 ± 1.0 |
| Soil Moisture (%) | 9.1 | 12.0 | 9.5 | 7.9 | 10.5 | 10.2 | 9.9 ± 1.4 |

ample No. 1 was taken 2 ft outside the Area L storage pad, and was taken in uff used as fill originating from Area G. Sample No. 2 was taken 24 ft west of the northwest corner of the Area L storage pad in undisturbed tuff. Sample No. 3 was taken 70 ft east of the northeast corner of the Area L storage pad in natural, but disturbed tuff. Sample No. 4 was taken one ft outside the northeast corner of Area L fence. Sample No. 5 was taken approximately 20 ft outside the center of the east Area L fence. Sample No. 6 was taken 10 ft outside the northwest corner of the Area L fence.

TABLE IV. Miscellaneous Chemical Analyses on Core From Drill Holes Adjacent to Area L Surface Impoundment

Drill Hole Number LLC-85-17

| Parameter | Background Level[1] | Depth Interval in Feet | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 | 90-100 | 100-110 | 110-120 | 120-130 | 130-140 | 140-150 |
| Lithium (Li) (mg/L) | <0.05 ± 0 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Copper (Cu) (mg/L) | <0.20 ± 0 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.12 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| $NH_3$-N (mg/L) | 0.03 ± 0.05 | 0.41 | 0.22 | 0.97 | 3.10 | 0.83 | 0.90 | 0.24 | 1.30 | 0.25 | 0.25 | 0.32 | 0.82 | 0.087 | 0.32 | 0.33 |
| F (mg/L) | 0.34 ± 0.11 | 0.31 | 3.59 | 3.76 | 1.44 | 3.96 | 5.59 | 5.10 | 6.64 | 4.90 | 5.68 | 6.66 | 6.68 | 6.87 | 6.80 | 6.27 |
| TDS (mg/L) | 48 ± 20 | 17 | 54 | 79 | 185 | 34 | 40 | 43 | 47 | 27 | 30 | 51 | 39 | 74 | 66 | 46 |
| pH | 7.6 ± 1.0 | 6.6 | 6.0 | 7.9 | 8.8 | 5.9 | 5.8 | 5.5 | 6.0 | 5.9 | 6.0 | 5.8 | 5.8 | 6.1 | 6.1 | 6.6 |
| Soil moisture (%) | 9.9 ± 1.4 | 9.1 | 4.0 | 7.4 | 5.5 | 4.1 | 0.7 | 0.9 | 0.6 | 1.2 | 2.5 | 5.3 | 5.7 | 8.4 | 3.0 | 4.3 |

[1]Determined from 6 soil samples taken in Area L (see Figure 1 and Table III).

TABLE IV. (continued)

Drill Hole Number LLC-85-18

Depth Interval in Feet

| Parameter | Background Level[1] | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70[2] | 70-80 | 80-90 | 90-100 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lithium (Li) (mg/L) | <0.05 ± 0 | <0.05 | 0.12 | <0.05 | <0.05 | <0.05 | <0.05 | -- | <0.05 | <0.05 | <0.05 |
| Copper (Cu) (mg/L) | <0.20 ± 0 | <0.1 | 10.0 | <0.1 | <0.1 | <0.1 | <0.1 | -- | <0.1 | <0.1 | <0.1 |
| $NH_3$-N | 0.03 ± 0.05 | 0.30 | 0.38 | 0.38 | 0.20 | 0.34 | 0.053 | -- | 0.18 | 0.10 | 0.15 |
| F (mg/L) | 0.34 ± 0.11 | 0.37 | 17.0 | 2.63 | 3.51 | 3.30 | 3.45 | -- | 2.31 | 6.86 | 7.53 |
| TDS (mg/L) | 48 ± 20 | 22 | 188 | 88 | 37 | 52 | 113 | -- | 91 | 75 | 79 |
| pH | 7.6 ± 1.0 | 5.5 | 3.8 | 8.6 | 5.9 | 7.4 | 8.7 | -- | 7.9 | 6.2 | 6.8 |
| Soil Moisture (%) | 9.9 ± 1.4 | 11.6 | 6.3 | 9.0 | 8.4 | 8.3 | 5.7 | -- | 2.5 | 0.1 | 1.6 |

[1] Determined from 6 soil samples taken in Area L (see Figure 1 and Table III).
[2] No sample available; all core cost in drilling accident.

TABLE IV. (continued)

Surface Impoundment Test Hole

Depth Interval in Feet

| Parameter | Background Level[1] | 0-5 | 5-6 | 9-10 | 14-15 | 19-20 | 24-25 | 29-30 | 34-35 | 39-40 | 44-45 | 49-50 | 49-50 | 54-55 | 59-60 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Li (mg/L) | <0.05 ± 0 | <0.02 | <0.02 | 3.0 | 0.13 | 0.64 | 1.10 | 0.06 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Cu (mg/L) | <0.02 ± 0 | <0.03 | <0.03 | 0.22 | 1.60 | 1.50 | 4.90 | 1.10 | 0.03 | 0.14 | 0.04 | 0.03 | 0.03 | 0.09 | <0.03 |
| $NH_3$-N (mg/L) | 0.03 ± 0.05 | 3.2 | 4.0 | 11.0 | 11.0 | 7.0 | 25.0 | 16.0 | 7.4 | 1.1 | 4.7 | 1.0 | 1.7 | 0.64 | 0.15 |
| F (mg/L) | 0.34 ± 0.11 | 0.0139 | 0.0049 | 0.0053 | 0.0027 | 0.0028 | 0.0021 | 0.0015 | 0.0007 | 0.0013 | 0.0022 | 0.0030 | 0.0032 | 0.0030 | 0.0044 |
| TDS (mg/L) | 48 ± 20 | 56.0 | 30.0 | 651.0 | 237.0 | 128.0 | 528.0 | 505.0 | 341.0 | 225.0 | 245.0 | 273.0 | 261.0 | 54.0 | 72.0 |
| Soil Moisture (%) | 9.9 ± 1.4 | 9.3 | 11:5 | 12.4 | 6.9 | 9.5 | 20.3 | 19.9 | 7.9 | 7.3 | 6.4 | 5.7 | 5.6 | 2.6 | 4.7 |

[1]Determined from 6 soil samples taken in Area L (see Figure 1 and Table III).

Table IV. (continued)

Surface Impoundment Core Sample
(Depth Interval in Inches)

| Parameter | 0-4 | 4-8 | 8-12 | 12-16 | 16-20 | 20-29 |
|---|---|---|---|---|---|---|
| Nitrate (mg/L) | <30. | <30. | <30. | <30 | <30. | <30. |
| Chloride (mg/L) | 980 | 440 | 340 | 210 | 200 | 200 |
| Sulfate (mg/L) | 36 | 20 | 19 | 490 | 540 | 440 |
| Fluoride (mg/L) | 28 | 28 | 13 | 10 | 10 | 10 |
| Copper (mg/L) | 13.6 | 7.6 | 73.4 | 178 | 93.5 | 61.0 |
| Lithium (mg/L) | 0.45 | 0.24 | 0.27 | 0.60 | 0.39 | 0.33 |
| TDS (mg/L) | 2928 | 973 | 941 | 2159 | 1894 | 1404 |
| COND (mg/L) | 4500 | 2300 | 2800 | 3590 | 3150 | 2500 |
| pH | 8.9 | 8.9 | 8.6 | 8.4 | 8.0 | 8.0 |