



**Department of Energy**

Albuquerque Operations Office  
Los Alamos Area Office  
Los Alamos, New Mexico 87544

MAY 02 1997



CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Benito J. Garcia, Bureau Chief  
Hazardous and Radioactive Materials Bureau  
New Mexico Environment Department  
2044 Galisteo Street, Building A  
P. O. Box 26110  
Santa Fe, NM 87505

Dear Mr. Garcia:

Subject: Resource Conservation and Recovery Act (RCRA) Permit Modification  
Request: Technical Area 3, Building 29, Rooms 9010 and 9020 Container  
Storage Areas, Los Alamos National Laboratory Hazardous Waste Facility  
Permit No. NM890010515-1

The purpose of this letter is to submit a proposed permit modification for and request approval of two Transuranic (TRU) mixed waste Container Storage Areas (CSA) in Wing 9 of the Chemistry and Metallurgy Research Facility at LANL Technical Area 3, Building 29. The proposed revisions will modify the LANL RCRA Hazardous Waste Facility Permit issued to the Department of Energy and the University of California by the New Mexico Environmental Improvement Division (now the New Mexico Environment Department) on November 8, 1989. LANL's Hazardous Waste Facility Permit and United States Environmental Protection Agency identification numbers are NM0890010515-1 and NM0890010515 respectively.

These CSAs are currently operated under New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20 NMAC 4.1), Subpart IV, revised March 1, 1997, standards as the areas were originally included in the LANL "Hazardous Waste Permit Application Part A for Mixed Waste," of January 25, 1991. The Room 9010 CSA is currently being used as the location for the Actinide Source-Term Waste Test Program enclosures supporting radionuclide research experiments for the Waste Isolation Pilot Plant. This permit modification requests the same storage capacity as that included in the 1991 Mixed Waste Part A. If approved, the permit modification will allow the operation of these two storage areas pursuant to 20 NMAC 4.1, Subpart V, March 1, 1997, permitted standards.

The proposed Class 3 permit modification has been prepared in accordance with 20 NMAC 4.1, Subpart IX, §270.42(b), March 1, 1997. The enclosed permit modification package follows the format of permit application submittals to allow an organized and familiar presentation of the required information. The proposed permit modification is designed to reference general information applicable to all waste management units at LANL as provided in the "General Part B Permit Application



7A-3

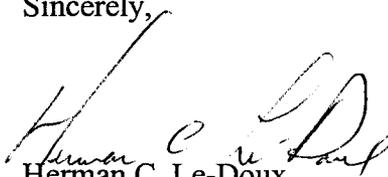
TL

MAY 02 1997

Information for Los Alamos National Laboratory," submitted to the Hazardous and Radioactive Materials Bureau (HRMB) on August 27, 1996. The permit modification also incorporates the LANL TRU Mixed Waste Analysis Plan as approved by HRMB effective February 28, 1997. This unit specific package contains a Part A permit application for the two container storage areas and the permit modification request.

If you should have any questions or comments concerning this permit modification, please contact Jody Plum of my staff at (505) 665-5042.

Sincerely,



Herman C. Le-Doux  
Acting Area Manager

LAAMEP:3JP-039

Enclosure

cc w/enclosure

Stuart Dinwiddie

Permit Program Manager  
Hazardous and Radioactive Materials Bureau  
New Mexico Environment Department  
2044 Galisteo Street, Building A  
P. O. Box 26110  
Santa Fe, NM 87505

Teri Davis

Permit Supervisor  
Hazardous and Radioactive Materials Bureau  
New Mexico Environment Department  
2044 Galisteo Street, Building A  
P. O. Box 26110  
Santa Fe, NM 87505

LA-UR-07-1841

Approved for public release;  
distribution is unlimited.

<i>Title:</i>	Part A Permit Application for Container Storage Areas at Technical Area 3, Building 29, May 1997, Revision 0.0
<i>Author(s):</i>	Gian A. Bacigalupa, ENV-RCRA Larry R. Field, ADTR Margaret R. Reneau, Peak TCI
<i>Intended for:</i>	New Mexico Environment Department- Hazardous Waste Bureau



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Document: LANL TA-3-29 Part A  
Revision No.: 0.0  
Date: May 1997

# **Part A Permit Application for Container Storage Areas at Technical Area 3, Building 29**

Los Alamos National Laboratory  
Hazardous and Solid Waste Group (ESH-19)  
Los Alamos, New Mexico 87545

May 1997

Document: LANL TA-3-29 Part A  
Revision No.: 0.0  
Date: May 1997

**Summary of Changes to the Technical Area 3, Building 29 (TA-3-29)  
Unit Descriptions**

<b>Old Description<sup>a</sup></b>	<b>Description in this Part A Permit Application</b>
Container storage area in TA-3-29, Room 9030, Wing 9, Basement	Container storage area in TA-3-29, Wing 9, Basement Room 9030 <sup>b</sup>
Container storage area in TA-3-29, Rooms 9010 and 9020, Wing 9, Basement	Container storage area in TA-3-29, Wing 9, Basement Room 9010  Container storage area in TA-3-29, Wing 9, Basement Room 9020

<sup>a</sup> As described in the Los Alamos National Laboratory (LANL), 1994, "RCRA Part A Permit Application for Mixed Waste," Revision 2.0, Los Alamos National Laboratory, Los Alamos, New Mexico.

<sup>b</sup> Unit to be closed under New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart VI, (3-1-97), requirements. Permitted status is not requested for this container storage area.

Document: LANL TA-3-29 Part A  
 Revision No.: 0.0  
 Date: May 1997

**Clarification of Design Capacity for Processes  
 in the Technical Area 3, Building 29 (TA-3-29)  
 Part A Permit Application**

(Justification Required)

Los Alamos National Laboratory (LANL) is providing clarification of the following design capacities pursuant to the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20 NMAC 4.1), Subpart IX, 270.72(a), (3-1-97). This information is being submitted with this Part A permit application, as required by 20 NMAC 4.1, Subpart IX, 270.72, (3-1-97).

	Old Capacity <sup>a</sup>	New Capacity	Justification
<b>Container Storage:</b>			
TA-3-29, Wing 9, Basement Room 9030	2,000 gallons (gal)	2,000 gal	No change in capacity. Unit to be closed under New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart VI, (3-1-97), requirements. Permitted status is not requested for this container storage area.
TA-3-29, Wing 9, Basement Rooms 9010 and 9020	16,500 gal	Room 9010 11,200 gal  Room 9020 5,300 gal	No change in capacity. Old capacity reflects combined capacity of Rooms 9010 and 9020. New value shows capacity for each room.

<sup>a</sup> As specified in the Los Alamos National Laboratory (LANL), 1994, "RCRA Part A Permit Application for Mixed Waste," Revision 2.0, Los Alamos National Laboratory, Los Alamos, New Mexico.

For EPA Regional Use Only



United States Environmental Protection Agency  
Washington, DC 20460

# Hazardous Waste Permit Application Part A

(Read the instructions before starting)

Date Received  
Month Day Year

I. Installation's EPA ID Number (Mark 'X' in the appropriate box)

A. First Part A Submission       B. Part A Amendment # \_\_\_\_\_

C. Installation's EPA ID Number      D. Secondary ID Number (If applicable)

N M 0 8 9 0 0 1 0 5 1 5

II. Name of Facility

L O S A L A M O S N A T I O N A L L A B O R A T O R Y

III. Facility Location (Physical address not P.O. Box or Route Number)

A. Street

Street (Continued)

City or Town      State      Zip Code

L O S A L A M O S      N M      8 7 5 4 5 -

County Code (FIPS)      County Name

0 2 8      L O S A L A M O S

B. Land Type (Enter code)      C. Geographic Location      D. Facility Existence Date

(F)      LATITUDE (Degree, Minutes, & Seconds)      LONGITUDE (Degree, Minutes & Seconds)      Month Day Year

F      3 5 4 9 0 5 1      1 0 6 1 4 0 1 5      0 1 0 1 1 9 4 3

IV. Facility Mailing Address

Street or P.O. Box

P O B O X 1 6 6 3

City or Town      State      Zip Code

L O S A L A M O S      N M      8 7 5 4 5 -

V. Facility Contact (Person to be contacted regarding waste activities at facility)

Name (Last)      (First)

T O D D      G T H O M A S

Job Title      Phone Number (Area Code and Number)

A R E A M A N A G E R      5 0 5 - 6 6 7 - 5 1 0 5

VI. Facility Contact Address (See instructions)

A. Contact Address Location Mailing Other      B. Street or P.O. Box

     5 2 8 3 5 T H S T R E E T

City or Town      State      Zip Code

L O S A L A M O S      N M      8 7 5 4 4 -

EPA I.D. Number (Enter from page 1)												Secondary ID Number (Enter from page 1)											
N M 0 8 9 0 0 1 0 5 1 5																							
<b>VII. Operator Information (See instructions)</b>																							
Name of Operator																							
U N I V E R S I T Y O F C A L I F O R N I A																							
Street or P.O. Box																							
P O B O X 1 6 6 3																							
City or Town																		State			ZIP Code		
L O S A L A M O S																		N M			8 7 5 4 5 -		
Phone Number (Area Code and Number)												B. Operator Type			C. Change of Operator Indicator			Date Changed					
5 0 5 - 6 6 7 - 5 0 6 1												F			Yes No X			Month		Day		Year	
<b>VIII. Facility Owner (See instructions)</b>																							
A. Name of Facility's Legal Owner																							
U S D E P A R T M E N T O F E N E R G Y																							
Street or P.O. Box																							
5 2 8 3 5 T H S T R E E T																							
City or Town																		State			ZIP Code		
L O S A L A M O S																		N M			8 7 5 4 -		
Phone Number (Area Code and Number)												B. Owner Type			C. Change of Owner Indicator			Date Changed					
5 0 5 - 6 6 7 - 5 0 6 1												F			Yes No Y			Month		Day		Year	
<b>IX. SIC Codes (4-digit, in order of significance)</b>																							
Primary												Secondary											
9 7 1 1				(Description) NATIONAL SECURITY								(Description)											
Secondary												Secondary											
				(Description)								(Description)											
<b>X. Other Environmental Permits (See instructions)</b>																							
A. Permit Type (Enter code)			B. Permit Number												C. Description								
N			N M R 0 0 A 3 8 4												NPDES Storm Water General Permit								
N			N M 0 0 2 8 3 5 5												NPDES								
N			N M 0 0 2 8 5 7 6												NPDES (Fenton Hill Geothermal Site)								
R			N M 0 8 9 0 0 1 0 5 1 5 1												RCRA (Hazardous Waste Permit)								
E															RAD NESHAPs Preconstr. Approvals:								
E															Low Level Waste/Mixed Waste Incin.								
E															Dual Axis Radiographic Hydrotest Fac								
E															Ground Test Accelerator								
E															Independent Management Activity								

<b>X. Other Environmental Permits (continued)</b>		
<b>A. Permit Type</b>	<b>B. Permit Number</b>	<b>C. Description</b>
		<b>RAD. NESHAPS PRECONSTRUCTION APPROVALS (Cont'd)</b>
E		Facilitywide Application for Existent Emissions
E		TA-21, D&D Activity
E		TA-50, Bldg. 83 - Mobile Decontamination Trailer
E		TA-54, TRU Retrieval Domes
		<b>STATE AIR QUALITY PERMITS:</b>
E	AQCR 301	Open Burning
E		TA-11 Fuel Fire Burn
E		TA-36 HE-Contaminated Wood Burning
E		TA-14 HE-Contaminated Material Burning
E		TA-16 HE-Contaminated Material Burning
E		TA-33 & TA-39 LIDAR Test Burning
E	AQCR 702	Beryllium Machining
E	#632	TA-35, Bldg. 213, Beryllium Machining Emissions
E	#634-M-1	TA-3, Bldg. 141, Beryllium Processing Emissions
E	#635	TA-3, Bldg. 39, Beryllium Machining Emissions
E	#741	TA-3, Bldg. 35, Planned Beryllium Machining Emissions
E	#1081-M-1	TA-55, Bldg. 4, Beryllium Machining Emissions
		<b>STATE SEPTIC TANK PERMITS:</b>
E	LA-01	State Septic Tank Permit
E	LA-02	State Septic Tank Permit
E	LA-03	State Septic Tank Permit
E	LA-04	State Septic Tank Permit

EPA I.D. Number  
NM0890010515

<b>X. Other Environmental Permits (continued)</b>		
<b>A. Permit Type</b>	<b>B. Permit Number</b>	<b>C. Description</b>
E	LA-05	State Septic Tank Permit
E	LA-06	State Septic Tank Permit
E	LA-07	State Septic Tank Permit
E	LA-08	State Septic Tank Permit
E	LA-09	State Septic Tank Permit
E	LA-11	State Septic Tank Permit
E	LA-12	State Septic Tank Permit
E	LA-13	State Septic Tank Permit
E	LA-14	State Septic Tank Permit
E	LA-15	State Septic Tank Permit
E	LA-16	State Septic Tank Permit
E	LA-17	State Septic Tank Permit
E	LA-18	State Septic Tank Permit
E	LA-19	State Septic Tank Permit
E	LA-21	State Septic Tank Permit
E	LA-22	State Septic Tank Permit
E	LA-23	State Septic Tank Permit
E	LA-24	State Septic Tank Permit
E	LA-25	State Septic Tank Permit
E	LA-26	State Septic Tank Permit
E	LA-27	State Septic Tank Permit
E	LA-28	State Septic Tank Permit
E	LA-29	State Septic Tank Permit
E	LA-30	State Septic Tank Permit

EPA I.D. Number  
NM0890010515

<b>X. Other Environmental Permits (continued)</b>		
<b>A. Permit Type</b>	<b>B. Permit Number</b>	<b>C. Description</b>
E	LA-31	State Septic Tank Permit
E	LA-32	State Septic Tank Permit
E	LA-33	State Septic Tank Permit
E	LA-34	State Septic Tank Permit
E	LA-35	State Septic Tank Permit
E	LA-36	State Septic Tank Permit
E	LA-37	State Septic Tank Permit
E	LA-38	State Septic Tank Permit
E	LA-39	State Septic Tank Permit
E	LA-42	State Septic Tank Permit
E	LA-43	State Septic Tank Permit
E	LA-44	State Septic Tank Permit
E	LA-45	State Septic Tank Permit
E	LA-46	State Septic Tank Permit
E	LA-47	State Septic Tank Permit
E	LA-48	State Septic Tank Permit
E	LA-49	State Septic Tank Permit
E	LA-50	State Septic Tank Permit
E	LA-51	State Septic Tank Permit
E	LA-52	State Septic Tank Permit
E	LA-53	State Septic Tank Permit
E	LA-54	State Septic Tank Permit
E	LA-55	State Septic Tank Permit
E	LA-56	State Septic Tank Permit

EPA I.D. Number  
NM0890010515

<b>X. Other Environmental Permits (continued)</b>		
<b>A. Permit Type</b>	<b>B. Permit Number</b>	<b>C. Description</b>
E	LA-57	State Septic Tank Permit
E	LA-58	State Septic Tank Permit
E	LA-59	State Septic Tank Permit
E	LA-60	State Septic Tank Permit
E	LA-61	State Septic Tank Permit
E	LA-124	State Septic Tank Permit
E	SF880257	State Septic Tank Permit
E	SF880258	State Septic Tank Permit
E	SF880259	State Septic Tank Permit
E	SF880260	State Septic Tank Permit
E	SF880261	State Septic Tank Permit
E	SF890023	State Septic Tank Permit
E	SF890024	State Septic Tank Permit
E	SF890025	State Septic Tank Permit
E	SF89031R	State Septic Tank Permit
E	SF89032R	State Septic Tank Permit
E	SF89033R	State Septic Tank Permit
E	SF89034R	State Septic Tank Permit
E	SF89035R	State Septic Tank Permit
E	SF89036R	State Septic Tank Permit
E	SF890588	State Septic Tank Permit
E	SF890589	State Septic Tank Permit
E	SF890590	State Septic Tank Permit
E	SF900022	State Septic Tank Permit

EPA LD. Number (Enter from page 1)

Secondary ID Number (Enter from page 1)

N M 0 8 9 0 0 1 0 5 1 5

**XI. Nature of Business (Provide a brief description)**

The principal mission of LANL includes the research, design, development, and analysis of weapons components for the nation's nuclear arsenal. This effort is supported by research programs such as nuclear physics, hydrodynamics, conventional explosives, chemistry, metallurgy, radiochemistry, and biology. In addition to its defense program efforts, LANL supports energy research and environmental missions with programs including medium-energy physics; space nuclear systems; controlled thermonuclear fusion; laser research; environmental research; geothermal, solar, and fossil energy research; nuclear safeguards; biomedical research; and space physics. In 1992, LANL expanded its mission in support of environmental management to include development of new programs in the areas of health and biotechnology, environmental technologies, and industrial partnerships.

**XII. Process 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. Thirteen lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. For "other" processes (i.e., D99, S99, T04 and X99), describe the process (including its design capacity) in the space provided in item XII.
- B. PROCESS DESIGN CAPACITY** - For each code entered in column A, enter the capacity of the process.
  1. **AMOUNT** - Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process.
  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.
- C. PROCESS TOTAL NUMBER OF UNITS** - Enter the total number of units used with the corresponding process code.

PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY	PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY	
D79	Underground Injection	Gallons; Liters; Gallons Per Day; or Liters Per Day	T87	Smelting, Melting, Or Refining Furnace Titanium Dioxide Chloride Process Oxidation Reactor Methane Reforming Furnace Pulping Liquor Recovery Furnace Combustion Device Used in The Recovery Of Sulfur Values From Spent Sulfuric Acid Halogen Acid Furnaces Other Industrial Furnaces Listed in 40 CFR §260.10	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour	
D80	Landfill	Acre-feet or Hectare-meter	T88			
D81	Land Treatment	Acres or Hectares	T89			
D82	Ocean Disposal	Gallons Per Day r Liters Per Day	T90			
D83	Surface Impoundment	Gallons or Liters	T91			
D88	Other Disposal	Any Unit of Measure Listed Below	T92			
S01	Container (Barrel, Drum, Etc.)	Gallons or Liters	T93			
S02	Tank	Gallons or Liters	T94			Cubic Yards or Cubic Meters
S03	Waste Pile	Cubic Yards or Cubic Meters	<b>Miscellaneous (Subpart X):</b>			
S04	Surface Impoundment	Gallons or Liters	X01			Open Burning/Open Detonation
S05	Drip Pad	Gallons or Liters	X02	Mechanical Processing	Short Tons Per Hour; Metric Tons Per Hour; Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; or Kilograms Per Hour	
S06	Containment Building-Storage	Cubic Yards or Cubic Meters	X03	Thermal Unit	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; or Btu's Per Hour	
S08	Other Storage	Any Unit of Measure Listed Below	X04	Geologic Repository	Cubic Yards or Cubic Meters	
T01	Tank	Gallons Per Day or Liters Per Day	X99	Other Subpart X	Any Unit of Measure Listed Below	
T02	Surface Impoundment	Gallons Per Day or Liters Per Day				
T03	Incinerator	Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; or Btu's Per Hour				
T04	Other Treatment	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour				
T80	Boiler	Gallons or Liters				
T81	Cement Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour				
T82	Lime Kiln					
T83	Aggregate Kiln					
T84	Phosphate Kiln					
T85	Coke Oven					
T86	Blast Furnace					

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
Gallons .....	G	Short Tons Per Hour .....	D	Cubic Yards .....	Y
Gallons Per Hour .....	E	Metric Tons Per Hour .....	W	Cubic Meters .....	C
Gallons Per Day .....	U	Short Tons Per Day .....	N	Acres .....	B
Liters .....	L	Metric Tons Per Day .....	S	Acre-feet .....	A
Liters Per Hour .....	H	Pounds Per Hour .....	J	Hectares .....	Q
Liters Per Day .....	V	Kilograms Per Hour .....	R	Hectare-meter .....	F
				Btu's Per Hour .....	I

<b>EPA I.D. Number (Enter from page 1)</b>	<b>Secondary ID Number (Enter from page 1)</b>
N M 0 8 9 0 0 1 0 5 1 5	

**XII. Process Codes and Design Capabilities (Continued)**

**EXAMPLE FOR COMPLETING ITEM XII (Shown in line number X-1 below): A facility has a storage tank, which can hold 533,788 gallons.**

Line Number	A. Process Code <small>(From list above)</small>				B. PROCESS DESIGN CAPACITY		C. Process Total Number Of Units	For Official Use Only
	1. Amount (Specify)					2. Unit Of Measure <small>(Enter code)</small>		
X 1	S	0	2	5 3 3 7 8 8		G	0 0 1	
1	S	0	1	18,500 (see Item XIX on pg. 7 of 7)		G	003	
2								
3								
4								
5								
6								
7								
8								
9								
1 0								
1 1								
1 2								
1 3								

**NOTE: If you need to list more than 13 process codes, attach an additional sheet(s) with the information in the same format as above. Number the lines sequentially, taking into account any lines that will be used for "other" processes (i.e., D99, S99, T04 and X99) in Item XIII.**

**XIII. Other Processes (Follow instructions from Item XII for D99, S99, T04 and X99 process codes)**

Line Number <small>(Enter as in pag. 12)</small>	A. Process Code <small>(From list above)</small>				B. PROCESS DESIGN CAPACITY		C. Process Total Number Of Units	D. Description Of Process
	1. Amount (Specify)					2. Unit Of Measure <small>(Enter code)</small>		
X 1	T	0	4				In-situ Vitrification	
1								
2								
3								
4								



EPA I.D. Number (enter from Page 1)  
**NM0890010515**

Secondary ID Number (enter from Page 1)

XIV. Description of Hazardous Wastes (Continued)

Line Number	A. EPA Hazardous 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	D002	10,000	P	S01		Transuranic Mixed Waste (TRUMW)
2	D004	1,000	P	S01		TRUMW
3	D005	1,000	P	S01		TRUMW
4	D006	1,000	P	S01		TRUMW
5	D007	1,000	P	S01		TRUMW
6	D008	10,000	P	S01		TRUMW
7	D009	1,000	P	S01		TRUMW
8	D010	1,000	P	S01		TRUMW
9	D011	1,000	P	S01		TRUMW
10	D019	1,000	P	S01		TRUMW
11	D021	1,000	P	S01		TRUMW
12	D022	1,000	P	S01		TRUMW
13	D028	1,000	P	S01		TRUMW
14	D040	1,000	P	S01		TRUMW
15	F002	1,000	P	S01		TRUMW
16	F003	10,000	P	S01		TRUMW
17	F004	10,000	P	S01		TRUMW
18	F005	10,000	P	S01		TRUMW
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						

<b>EPA I.D. Number (Enter from page 1)</b>	<b>Secondary ID Number (Enter from page 1)</b>																								
<table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width:12.5%;">N</td><td style="width:12.5%;">M</td><td style="width:12.5%;">0</td><td style="width:12.5%;">8</td><td style="width:12.5%;">9</td><td style="width:12.5%;">0</td><td style="width:12.5%;">0</td><td style="width:12.5%;">1</td><td style="width:12.5%;">0</td><td style="width:12.5%;">5</td><td style="width:12.5%;">1</td><td style="width:12.5%;">5</td> </tr> </table>	N	M	0	8	9	0	0	1	0	5	1	5	<table border="1" style="width:100%; border-collapse: collapse; height: 20px;"> <tr> <td style="width:12.5%;"></td><td style="width:12.5%;"></td> </tr> </table>												
N	M	0	8	9	0	0	1	0	5	1	5														

**XV. Map**

Attach to this application a topographic map, or other equivalent 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 this map area. See instructions for precise requirements.

**XVI. Facility Drawing**

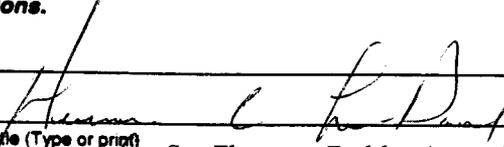
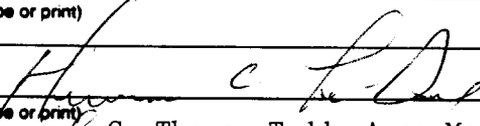
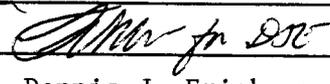
All existing facilities must include a scale drawing of the facility (see instructions for more detail).

**XVII. Photographs**

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

**XVIII. Certification(s)**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate 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 violations.

Owner Signature 	Date Signed 5/11/97
Name and Official Title (Type or print) G. Thomas Todd, Area Manager, DOE, LAAO	
Owner Signature	Date Signed
Name and Official Title (Type or print)	
Operator Signature 	Date Signed 5/11/97
Name and Official Title (Type or print) G. Thomas Todd, Area Manager, DOE, LAAO	
Operator Signature 	Date Signed 4/29/97
Name and Official Title (Type or print) Dennis J. Erickson, Division Director, LANL, ESH Division	

**XIX. Comments**

The container storage area in TA-3-29, Room 9030 (2,000 gallon capacity) will be closed under New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart VI, (3-1-97) requirements. Permitted status is not requested for this container storage area.

**Note:** Mail completed form to the appropriate EPA Regional or State Office. (Refer to instructions for more information)

Document: LANL TA-3-29 Part A  
Revision No.: 0.0  
Date: May 1997

## **ATTACHMENT 1**

# **EXPLANATION OF PROCESS CODE LISTINGS AND DESIGN CAPACITIES FOR MIXED WASTE CONTAINER STORAGE AREAS AT TECHNICAL AREA (TA) 3, BUILDING 29**

**EXPLANATION OF PROCESS CODE LISTINGS  
 AND DESIGN CAPACITIES FOR MIXED WASTE CONTAINER STORAGE AREAS AT  
 TECHNICAL AREA (TA) 3, BUILDING 29**

**Line 1 S01 Container Storage**

Description	Capacity	SWMU <sup>a</sup> No.	Associated Structure No./Area
<b>TA-3-29:</b>			
Container storage area <sup>b</sup>	11,200 gallons	TBD <sup>c</sup>	TA-3-29, Wing 9, Basement Room 9010
Container storage area <sup>b</sup>	5,300 gallons	TBD	TA-3-29, Wing 9, Basement Room 9020
Container storage area <sup>d</sup>	2,000 gallons	TBD	TA-3-29, Wing 9, Basement Room 9030
<b>TOTAL S01</b>	<b>18,500 gallons</b>		

**Explanation of Symbols/Abbreviations**

- <sup>a</sup> SWMU = solid waste management unit.
- <sup>b</sup> Unit is used for mixed waste storage.
- <sup>c</sup> TBD = SWMU No. to be determined.
- <sup>d</sup> Unit to be closed under New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart VI, (3-1-97) requirements. Permitted status is not requested for this container storage area.

Document: LANL TA-3-29 Part A  
Revision No.: 0.0  
Date: May 1997

**ATTACHMENT 2**  
**TOPOGRAPHIC MAPS**

Document: LANL TA-3-29 Part A  
Revision No.: 0.0  
Date: May 1997

**LIST OF TOPOGRAPHIC MAPS**

<u>MAP NO.</u>	<u>MAP TITLE</u>
1	Contour Map Showing All Technical Areas (TA) at Los Alamos National Laboratory (LANL)
2	Contour Map Showing Mixed Waste Units at Technical Area (TA) 3, Building 29
3	Location Map of Water Supply Wells, Monitoring Wells, Test Wells, Springs, and Surface Water Sampling Stations
4	Los Alamos National Laboratory (LANL) National Pollutant Discharge Elimination System (NPDES) Outfall Locations
5	Location Map of Technical Area (TA) 57, Fenton Hill Geothermal Site

---

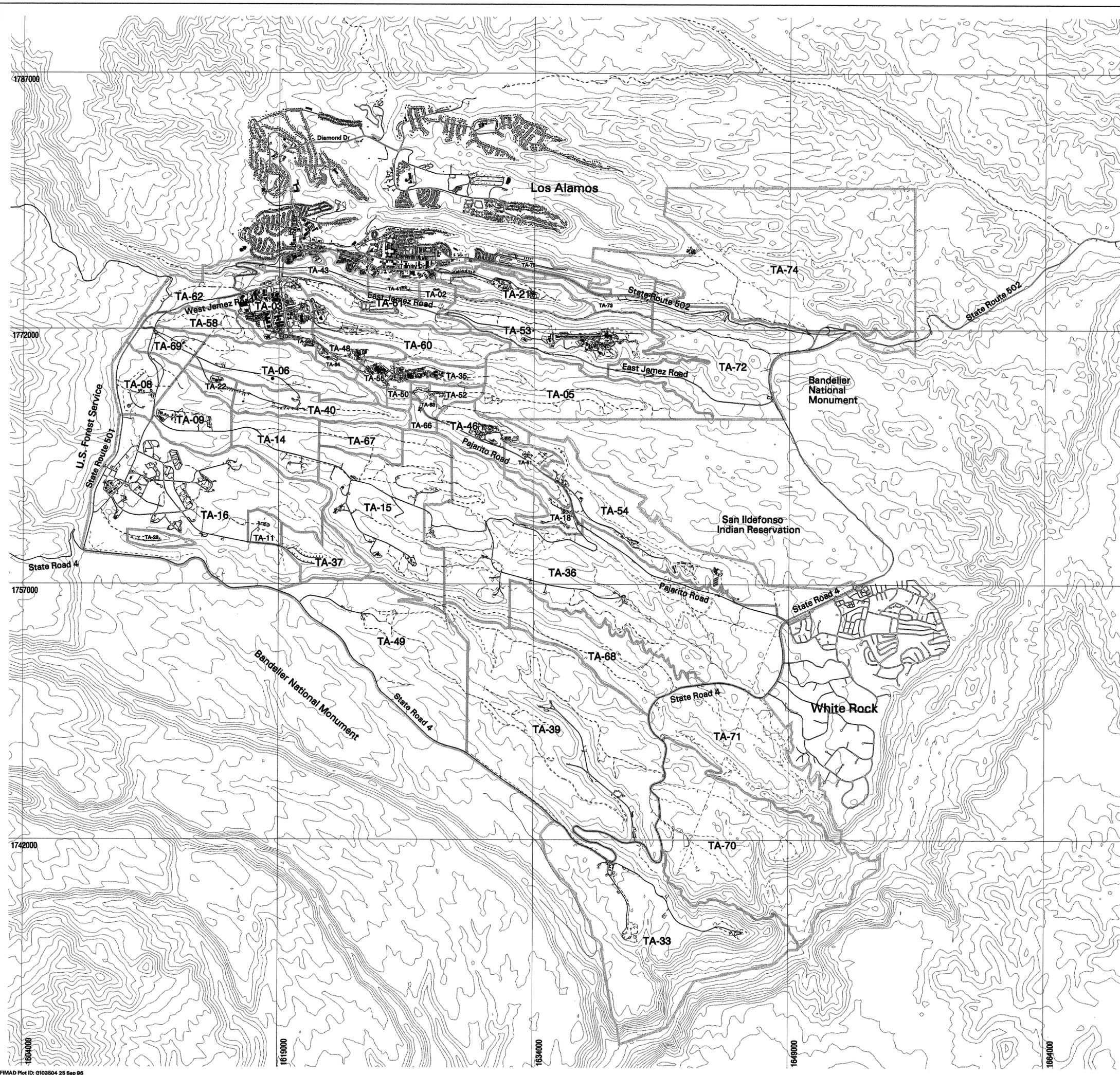
Note: For topographic maps showing LANL's other hazardous and mixed waste units, refer to the "General Part B Permit Application Information for Los Alamos National Laboratory," 1996, Los Alamos National Laboratory, Los Alamos, New Mexico.

# Map 1: Contour Map Showing All Technical Areas (TA) at Los Alamos National Laboratory (LANL)

-  Boundary, LANL
-  Boundary, TA
-  Contours, 100 foot
-  Roads, Dirt
-  Roads, Paved
-  Trail
-  Building

NOTE: TA-57, Fenton Hill Site, not shown

5501-A



State Plane Coordinate System, New Mexico Central Zone, 1983 North American Datum

Grid provides NM State Plane coordinates in feet.  
Grid interval, in feet: 15000  
Feet per inch on map = 3000

SCALE 1:36000

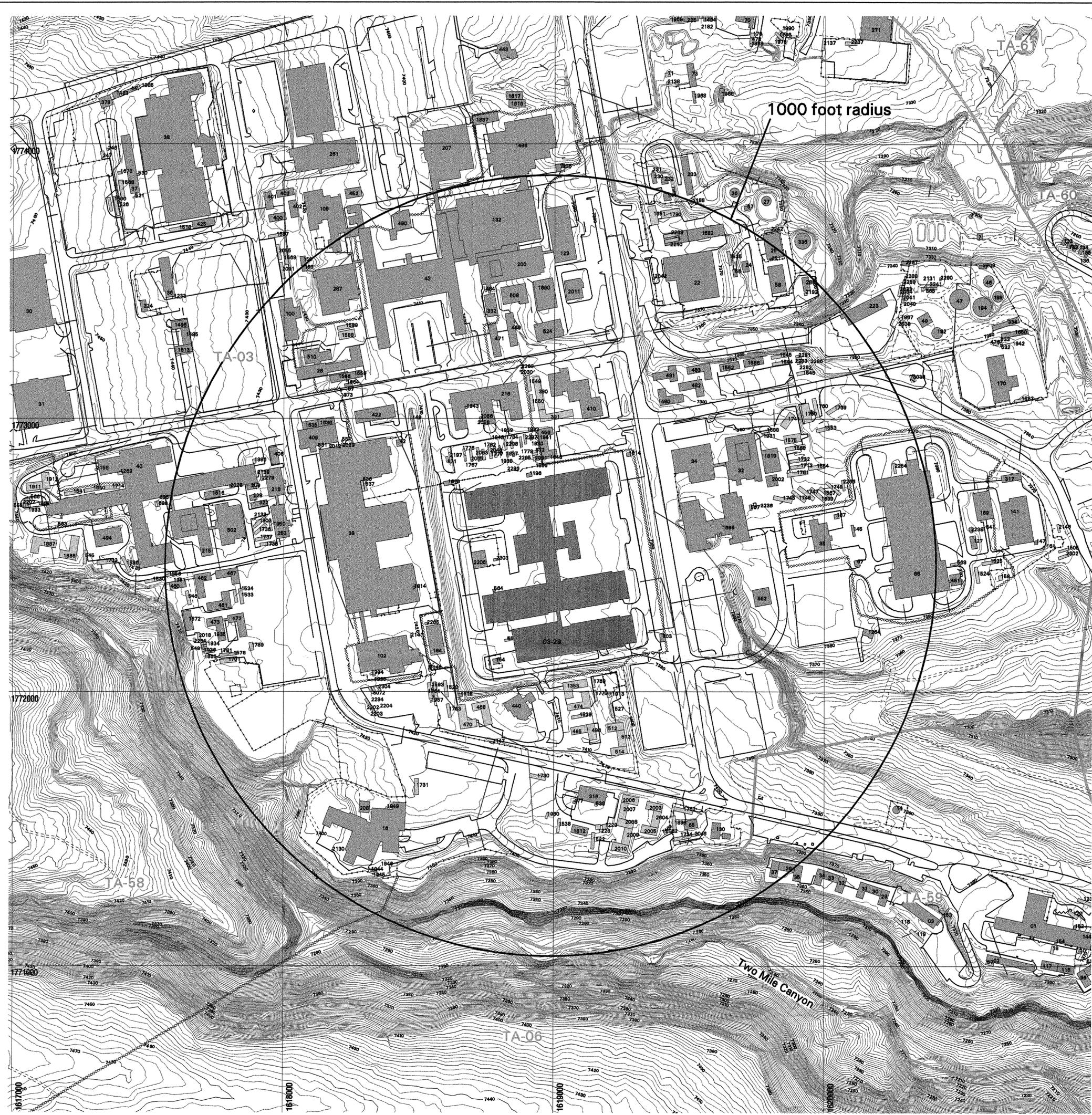
METERS: 0, 6000, 12000, 18000, 24000, 30000

FEET: 0, 2000, 4000, 6000, 8000, 10000, 12000, 14000, 16000, 18000, 20000, 22000, 24000, 26000, 28000, 30000

NOTICE: This information on this map is provisional. Feature locations are dependent on scale and symbology and their accuracy may not have been confirmed. Los Alamos National Laboratory boundary is based on legal description established in 1996. Contour data are from a September 1981 aerial survey. All other data are from various sources and are part of the FIMAD repository.

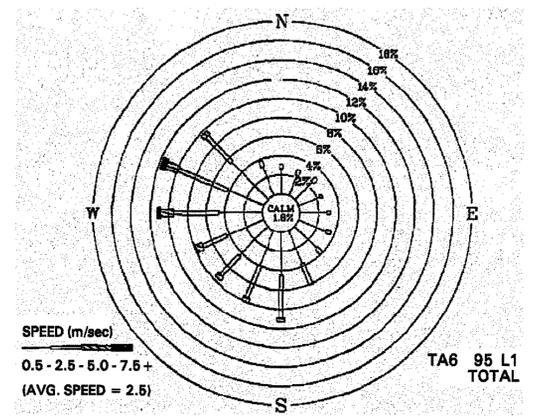
University of California  
Los Alamos National Laboratory  
Earth and Environmental Sciences Division  
**FIMAD** Facility for Information Management, Analysis, and Display  
FIMAD is the electronic data repository for the Environmental Restoration Project at Los Alamos National Laboratory.

Produced by: Marcia Jones  
Date: September 25, 1996 FIMAD Plot ID: G103504



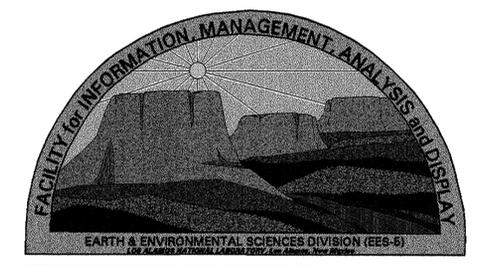
- ### LEGEND
- Boundary, TA
  - Contours, 2 foot
  - Contours, 10 foot
  - Fence, Industrial
  - Fence, Security
  - Roads, Dirt
  - Roads, Paved
  - Road/Trail
  - Storm Drain/Culvert
  - Stream, Intermittent
  - Permanent Structure
  - Temporary Structure
  - Underground Structure
  - Structure 03-29

**WIND ROSE TA-6**  
Observed at 36 ft

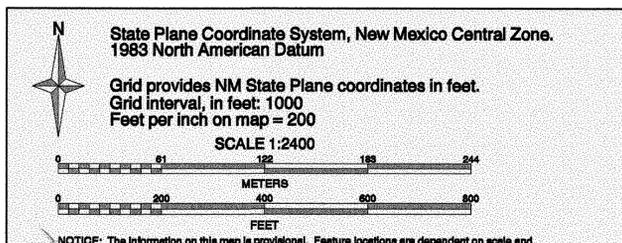


5501-B

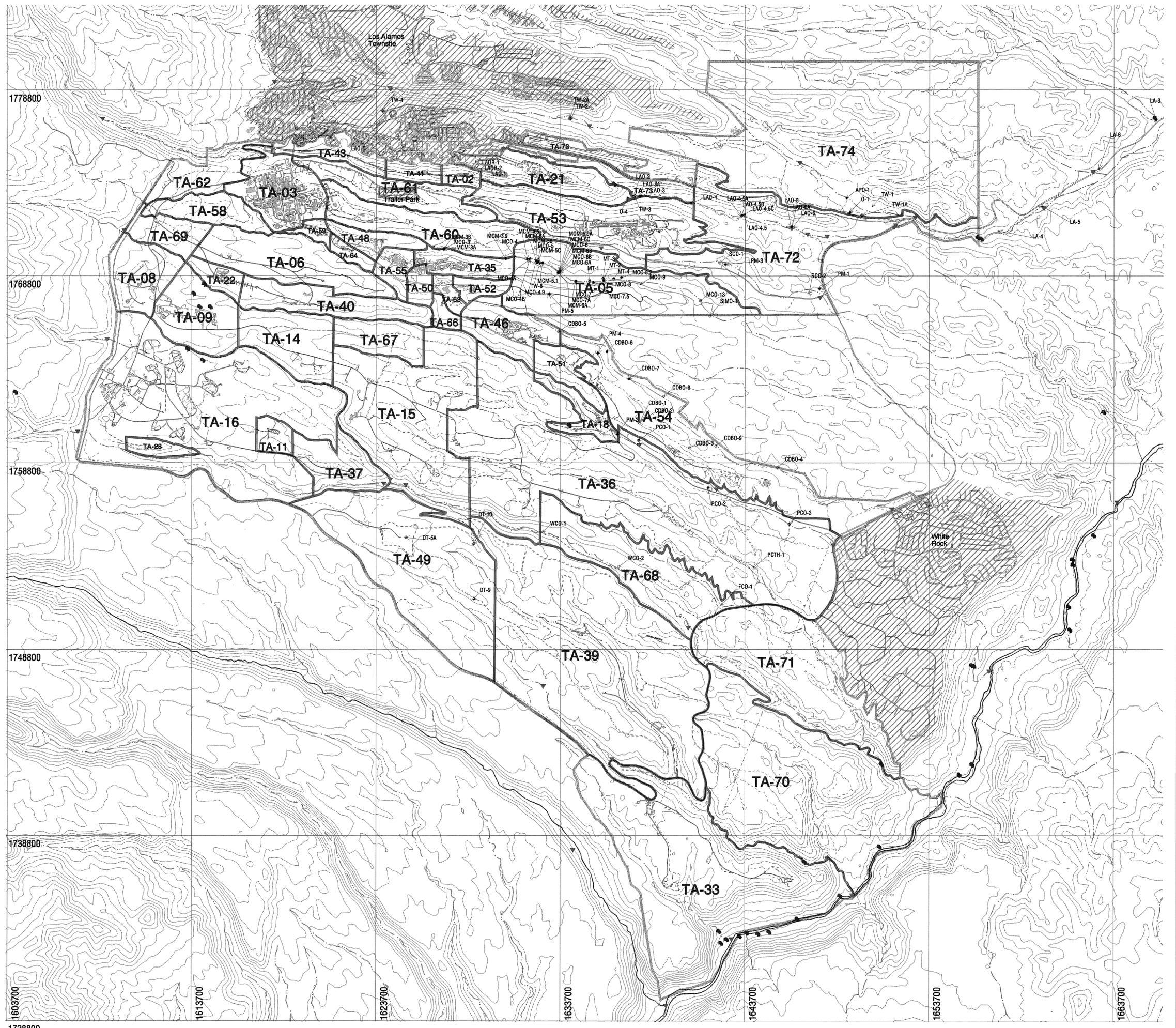
**MAP 2: Contour Map Showing Mixed Waste Units at Technical Area (TA) 3, Building 29**



Produced by: Marcia Jones  
Date: March 11, 1997  
FIMAD Plot ID: G105449



NOTICE: The information on this map is provisional. Feature locations are dependent on scale and symbology and their accuracy may not have been confirmed. Los Alamos National Laboratory boundary based on legal description established in 1995. Contour data are from a September 1991 aerial survey. All other data are from various sources and are part of the FIMAD repository.



- LEGEND**
- Boundary, Los Alamos National Laboratory
  - Boundary, Technical Area (TA)
  - Contours, 100 foot
  - Roads, Dirt
  - Roads, Paved
  - Road/Trail
  - Stream, Intermittent
  - Stream, Perennial
  - Building
  - Residential Areas

**PERCHED ALLUVIAL MONITORING WELLS**  
 (Old wells are pre-1990, new wells installed since 1990 according to EPA guidelines)

- New Dry Well
  - Old Dry Well
  - New Saturated Well
  - Old Saturated Well
- MAIN AQUIFER WELLS**
- Water Supply Well
  - Test Well
- OTHER**
- LAOR Well
  - Abandoned/Plugged Well
  - Surface Water Sampling Station
  - Spring

5501-C

**MAP 3:**  
 Location Map of Water Supply Wells,  
 Monitoring Wells, Test Wells, Springs, and  
 Surface Water Sampling Stations

State Plane Coordinate System, New Mexico Central Zone,  
 1983 North American Datum

Grid provides NM State Plane coordinates in feet.  
 Grid interval, in "feet": 10000  
 Feet per inch on map = 2500

SCALE 1:30000

**NOTICE:** The information on this map is provisional. Feature locations are dependent on scale and symbology and their accuracy may not have been confirmed. Los Alamos National Laboratory boundary is based on legal description established in 1995. Other boundary, structure and utility data are from Los Alamos National Laboratory Engineering Division and Los Alamos County Utility and Engineering Departments. Contour data are from Los Alamos National Laboratory Environmental Restoration Project aerial survey, September, 1991.

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 Los Alamos National Laboratory  
 Earth and Environmental Sciences Division  
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 Restoration Project at Los Alamos National Laboratory.

Produced by: Doug Walther  
 Date: June 09, 1995 FIMAD Plot ID: G103506

# NPDES OUTFALL LOCATIONS

## NPDES Outfall Locations

### LEGEND

-  County Boundary
-  Drainage
-  LANL Boundary
-  Roads, Paved
-  100-ft Contours
-  20-ft Contours

### OUTFALL CATEGORIES

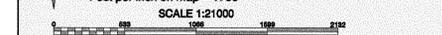
-  01A
-  02A
-  03A
-  04A
-  05A
-  06A
-  Miscellaneous



5501-D

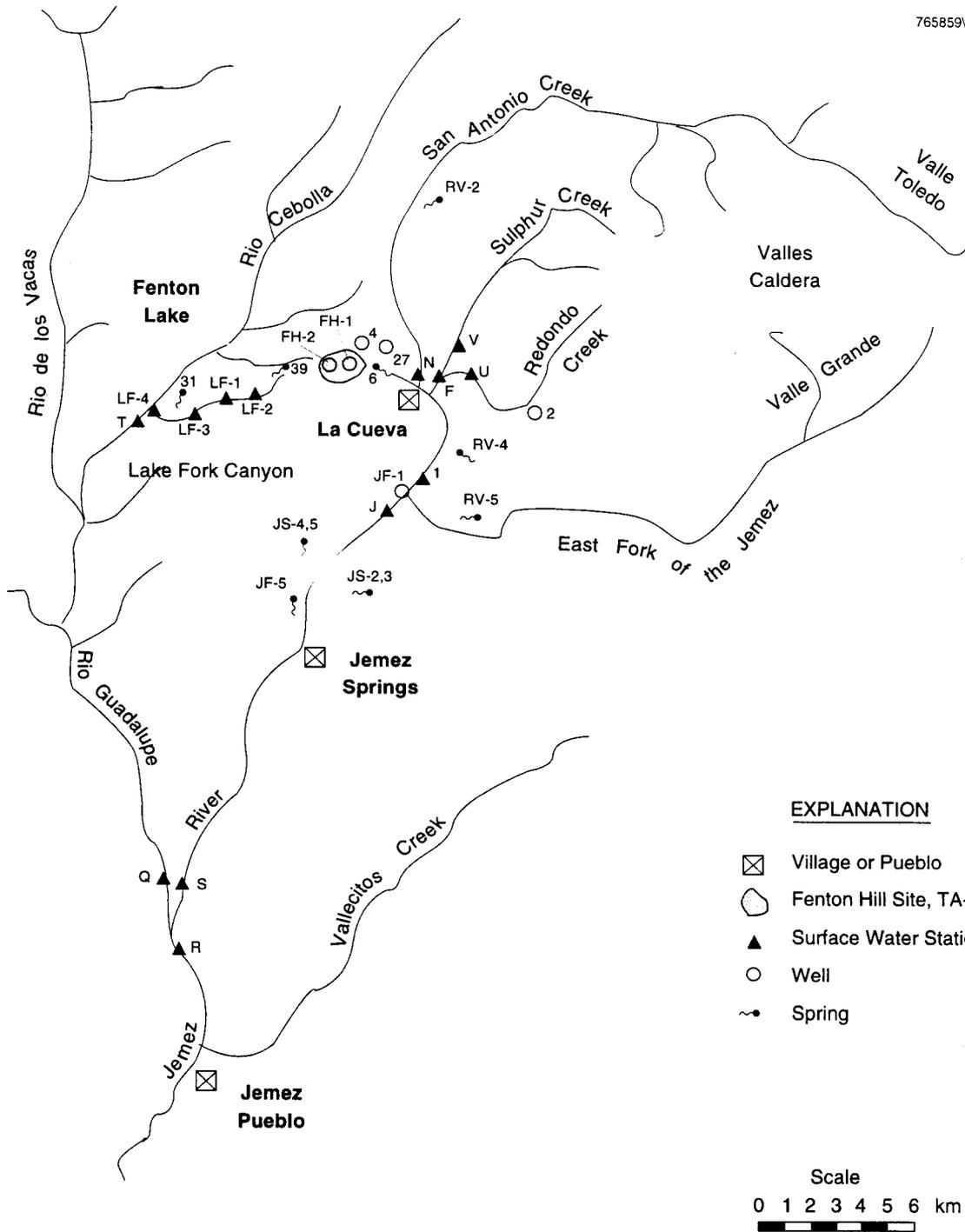
**MAP 4:  
LOS ALAMOS NATIONAL LABORATORY (LANL)  
NATIONAL POLLUTANT DISCHARGE ELIMINATION  
SYSTEM (NPDES) OUTFALL LOCATIONS**

 State Plane Coordinate System, New Mexico Central Zone, 1983 North American Datum  
 Grid provides NM State Plane coordinates in feet.  
 Grid interval, in feet: 10000  
 Feet per inch on map = 1750  
 SCALE 1:21000

 METERS  
 FEET

NOTICE: The information on this map is provisional. Feature locations are dependent on scale and photography and their accuracy may not have been confirmed. Los Alamos National Laboratory boundary is based on legal description established in 1968. Other boundary, structure and utility data are from Los Alamos National Laboratory Engineering Division and Los Alamos County Utility and Engineering Departments. Contour data are from Los Alamos National Laboratory Environmental Restoration Project aerial survey, September, 1991.

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**FIMAD** Facility for Information Management, Analysis and Display  
 FIMAD is the electronic data repository for the Environmental Restoration Project at Los Alamos National Laboratory.  
 Produced by: Doug Walther  
 Date: June 09, 1995 FIMAD Plot ID: G103505



Reference: "Environmental Surveillance at Los Alamos During 1992," 1994, LA-12764-ENV, Los Alamos National Laboratory, Los Alamos, New Mexico.

**Map 5**  
 Location Map of Technical Area (TA) 57, Fenton Hill Geothermal Site

Document: LANL TA-3-29 Part A  
Revision No.: 0.0  
Date: May 1997

**ATTACHMENT 3**  
**FACILITY DRAWINGS**

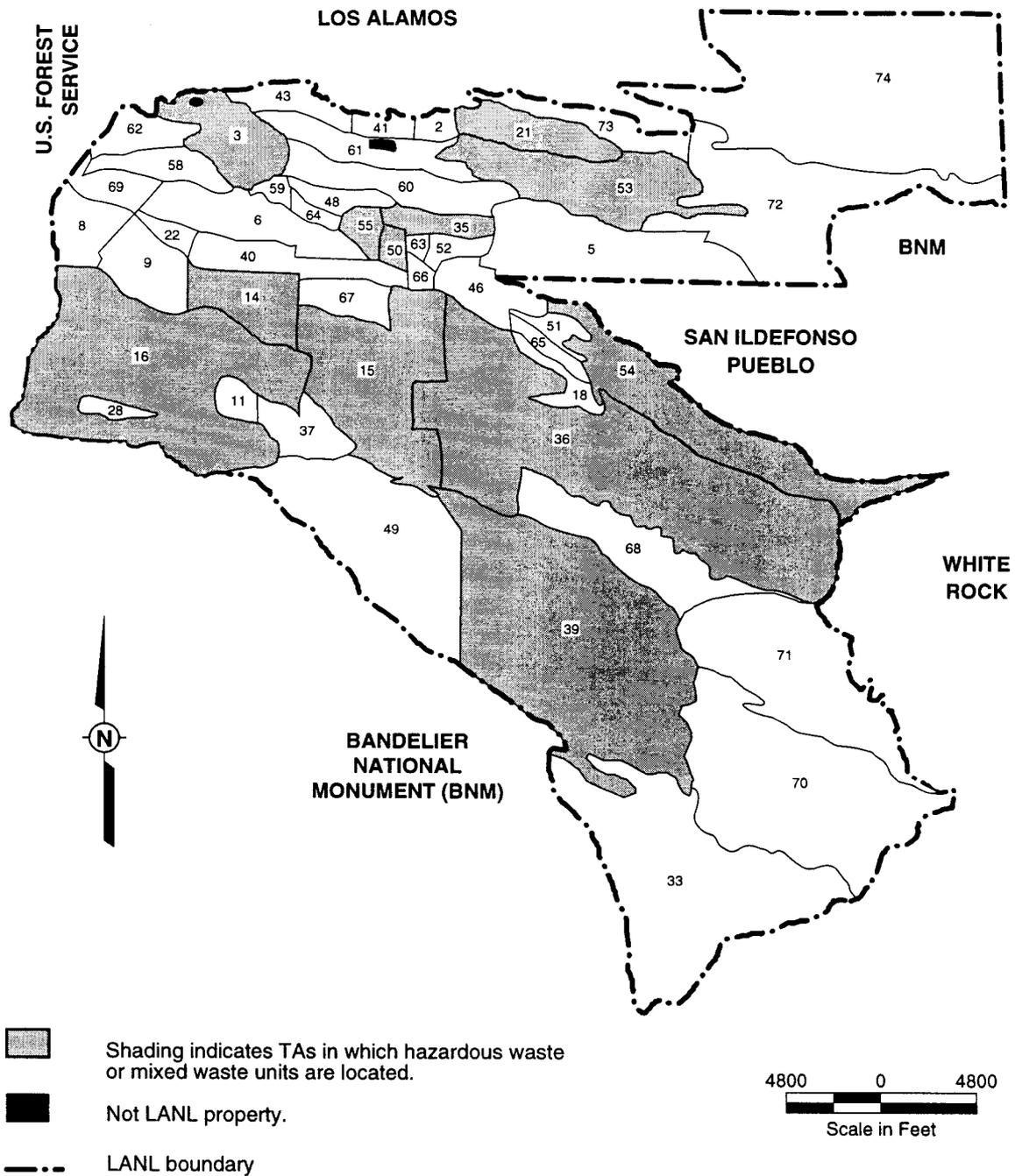
Document: LANL TA-3-29 Part A  
Revision No.: 0.0  
Date: May 1997

### LIST OF FACILITY DRAWINGS

<u>FIGURE NO.</u>	<u>TITLE</u>
1	Location Map of Los Alamos National Laboratory (LANL) Technical Areas (TA)
2	Technical Area (TA) 3, Building 29 - Site Location Map
3	Location Map Showing the Container Storage Areas at Technical Area (TA) 3, Building 29, Wing 9, Basement Rooms 9010, 9020, and 9030

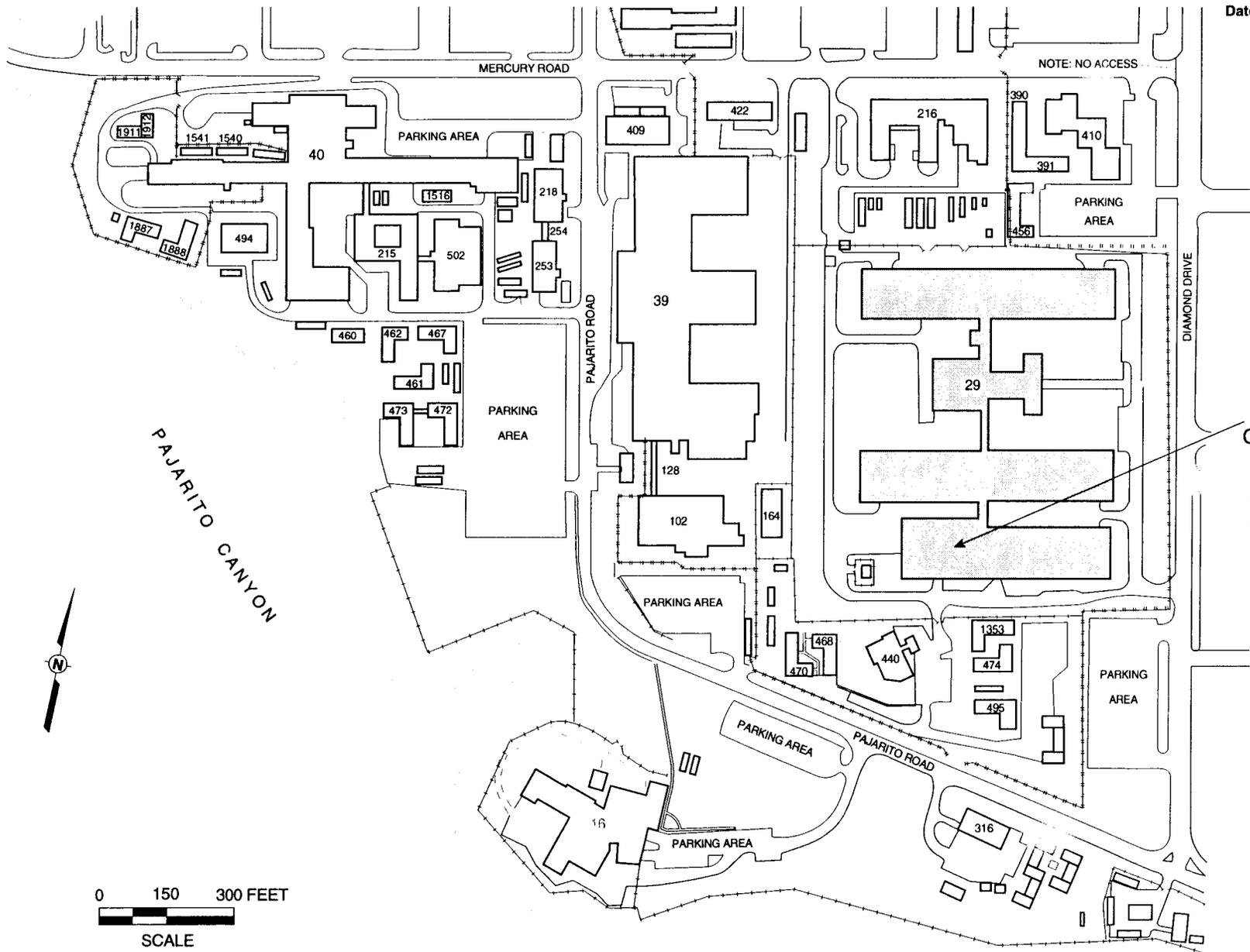
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Note: For facility drawings showing Los Alamos National Laboratory's other hazardous and mixed waste units, refer to the "RCRA Part A Permit Application for Mixed Waste," Revision 2.0, 1994, Los Alamos National Laboratory, Los Alamos, New Mexico, and/or subsequent unit- or TA-specific Part A permit applications.



Note: TA-57, the Fenton Hill Geothermal Site, is not shown on this figure.

**Figure 1**  
Location Map of Los Alamos National Laboratory (LANL) Technical Areas (TA)



TA-3-29  
Process Code S01  
Container Storage Areas

(Note: Container Storage Areas are located in the basement of TA-3-29. See Figure 3 for basement detail.)

Figure 2  
Technical Area (TA) 3, Building 29 - Site Location Map

Document: LANL TA-3-29 Part A  
Revision No.: 0.0  
Date: May 1997

**Figure 3**  
Location Map Showing the Container Storage Areas at  
Technical Area (TA) 3, Building 29, Wing 9, Basement Rooms 9010 and 9020

**[This figure has been provided to the New Mexico Environment Department under separate cover as Unclassified Controlled Nuclear Information (UCNI) defined by Section 148 of the Atomic Energy Act.]**

Document: LANL TA-3-29 Part A  
Revision No.: 0.0  
Date: May 1997

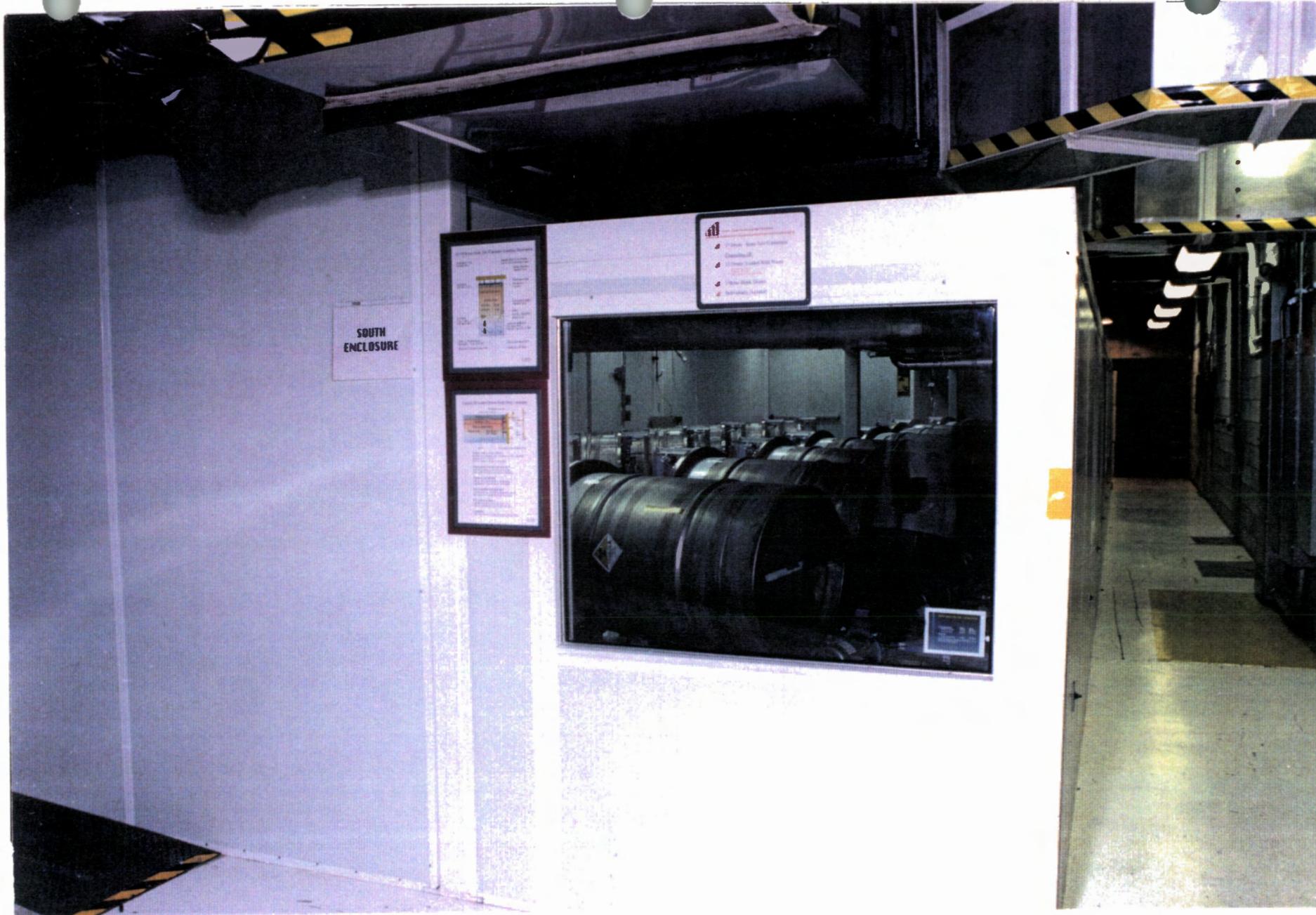
**ATTACHMENT 4**  
**PHOTOGRAPHS**

**LIST OF PHOTOGRAPHS**

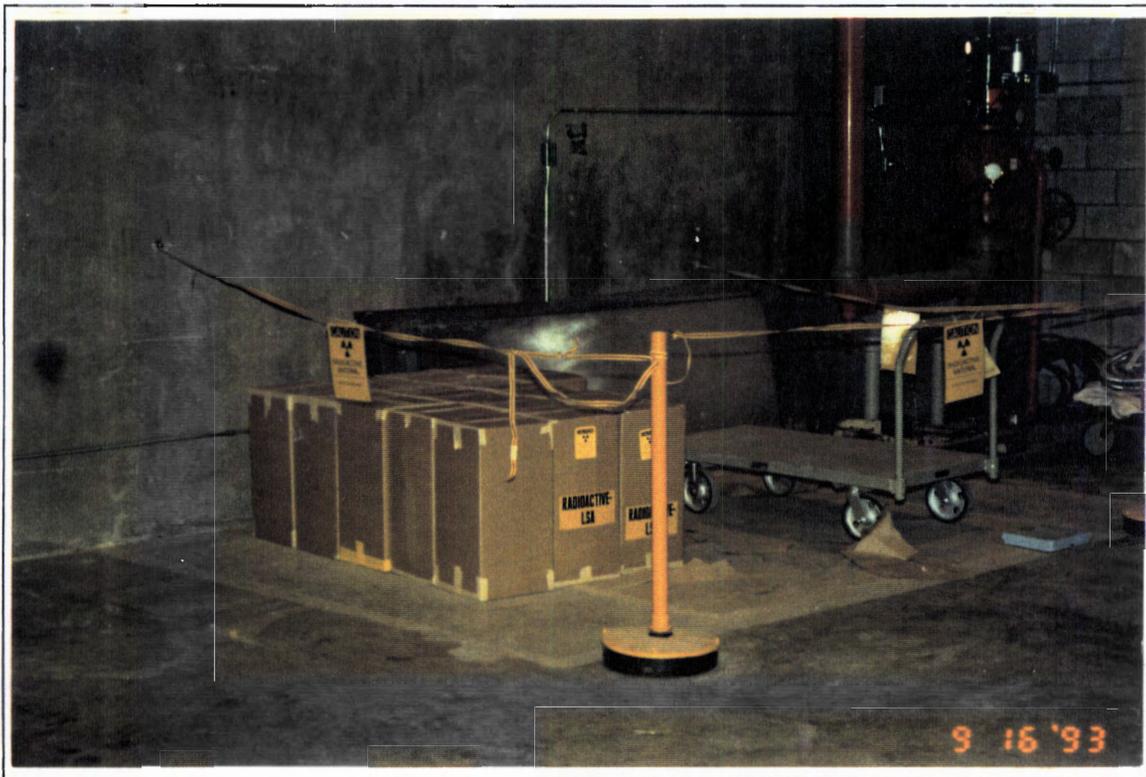
<u>PHOTOGRAPH CAPTION</u>	<u>PAGE</u>
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Note: For photographs showing Los Alamos National Laboratory's other hazardous and mixed waste units, refer to the "RCRA Part A Permit Application for Mixed Waste," Revision 2.0, 1994, Los Alamos National Laboratory, Los Alamos, New Mexico, and/or subsequent unit- or TA-specific Part A permit applications.



TA-3-29, Wing 9, Basement Room 9010, Process Code S01, Container Storage Area



TA-3-29, Wing 9, Basement Room 9020, Process Code S01, Container Storage Area



TA-3-29, Wing 9, Basement Room 9030, Process Code S01, Container Storage Area  
(Unit to be closed under 20 NMAC 4.1, Subpart VI, (3-1-97) requirements. Permitted status is not requested for this container storage area.)

LA-UR-07-1840

Approved for public release;  
distribution is unlimited.

*Title:* Permit Modification Request, Technical Area 3, Building 29,  
Rooms 9010 and 9020, Container Storage Areas, May 1997,  
Revision 0.0

*Author(s):* Gian A. Bacigalupa, ENV-RCRA  
Larry R. Field, ADTR  
Margaret R. Reneau, Peak TCI

*Intended for:* New Mexico Environment Department- Hazardous Waste  
Bureau



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Document: LANL TA-3-29 Permit Mod  
Revision No.: 0.0  
Date: May 1997

**Permit Modification Request**  
**Technical Area 3, Building 29**  
**Rooms 9010 and 9020**  
**Container Storage Areas**

*Prepared by:*  
Los Alamos National Laboratory  
Hazardous and Solid Waste Group (ESH-19)  
Los Alamos, New Mexico 87545

May 1997

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Document: LANL TA-3-29 Permit Mod  
Revision No.: 0.0  
Date: May 1997

## LIST OF ATTACHMENTS

ATTACHMENT  
NO.

TITLE

7-1            Emergency Equipment

## LIST OF ABBREVIATIONS/ACRONYMS

AR	Administrative Requirement
CAM	continuous air monitor
40 CFR	Code of Federal Regulations, Title 40
cm	centimeter
cm/hr	centimeters per hour
CMR	Chemistry and Metallurgy Research
CSA	container storage area
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
ESH-1	LANL's Health Physics Operations Group
ESH-5	LANL's Industrial Hygiene and Safety Group
ft	foot/feet
HEPA	high-efficiency particulate air
IDC	Item Description Code
LANL	Los Alamos National Laboratory
MSDS	material safety data sheet
20 NMAC 4.1	New Mexico Administrative Code, Title 20, Chapter 4, Part 1
NMED	New Mexico Environment Department
NMEID	New Mexico Environmental Improvement Division
NPDES	National Pollutant Discharge Elimination System
PCB	polychlorinated biphenyl
PPE	personal protective equipment
PTLA	Protection Technology Los Alamos

**LIST OF ABBREVIATIONS/ACRONYMS  
(Continued)**

PVC	polyvinyl chloride
QA	quality assurance
QA/QC	quality assurance/quality control
QC	quality control
RCRA	Resource Conservation and Recovery Act
RTR	real-time radiography
STTP	Actinide Source-Term Waste Test Program
SW-846	EPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods"
SWB	standard waste box
SWMU	solid waste management unit
TA	technical area
TCLP	toxicity characteristic leaching procedure
TRU	transuranic
TRUCON	TRUPACT-II content
WAP	waste analysis plan
WIPP	Waste Isolation Pilot Plant

## 1.0 INTRODUCTION

This unit-specific permit modification request has been prepared for submittal to the New Mexico Environment Department (NMED) to meet certain requirements of the New Mexico Hazardous Waste Act and implementing regulations, specifically, the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20 NMAC 4.1), (3-1-97). The U.S. Environmental Protection Agency (EPA), Region 6, is also being provided with a copy of this unit-specific permit modification request.

General information applicable to all units at Los Alamos National Laboratory (LANL) is provided in the "General Part B Permit Application Information for Los Alamos National Laboratory" (LANL, 1996a), hereinafter referred to as the LANL General Part B. This unit-specific permit modification request contains only the information specific to the units addressed herein; the LANL General Part B addresses all other permit application and permit modification request requirements and is referenced in this document, as appropriate.

Pursuant to 20 NMAC 4.1, Subpart IX, 270.42(b)(1)(ii), (3-1-97), LANL is requesting a Class 2 permit modification to their existing Hazardous Waste Facility Permit, ID Number NM0890010515, issued by the New Mexico Health and Environment Department Environmental Improvement Division (NMEID, 1989). As required by 20 NMAC 4.1, Subpart IX, 270.42(b)(1)(i), (3-1-97), the exact changes to be made to the permit conditions and supporting documents referenced by the permit are described in Table 1-1.

This permit modification request addresses mixed waste container storage areas at the Technical Area (TA) 3, Building 29 (TA-3-29), Chemistry and Metallurgy Research (CMR) Building, Rooms 9010 and 9020. These container storage areas were included in the "Hazardous Waste Permit Application—Part A—for Mixed Waste" (LANL, 1991), and are currently used for storage of mixed waste pursuant to 20 NMAC 4.1, Subpart VI, (3-1-97), container storage requirements. These mixed waste units were also included in Revision 1.0 (LANL, 1993a) and Revision 2.0 (LANL, 1994) of the Part A for mixed waste.

In accordance with direction from NMED, a unit-specific Part A permit application for the units addressed in this unit-specific permit modification request is being submitted to NMED, pursuant

to 20 NMAC 4.1, Subpart V, 270.10(g)(1), and 20 NMAC 4.1, Subpart IX, 270.72, (3-1-97). The "Part A Permit Application for Container Storage Areas at Technical Area 3 Building 29" (LANL, 1997), hereinafter referred to as the CMR Part A, is being submitted with this unit-specific permit modification request as a separate document. Following is a list of the mixed waste container storage areas at TA-3-29, for which this permit modification request is being submitted.

- **TA-3-29, Wing 9 Basement, Room 9010: Container Storage Area** is included in LANL's CMR Part A permit application, which is being submitted with this permit modification request. This container storage area was originally identified in the "Hazardous Waste Permit Application—Part A—for Mixed Waste" (LANL, 1991), submitted January 25, 1991 to NMED. It was also included in Revision 1.0 (LANL, 1993a) and Revision 2.0 (LANL, 1994) of the Part A for mixed waste. The area is used to store containers of transuranic (TRU) mixed waste. (The definition of TRU mixed waste is provided in Attachment A.2 of the "Proposed Hazardous Waste Facility Permit Modification—Technical Area 50, Building 1; Rooms 35, 36, and 38/38A Container Storage Areas, Building 69; Indoor and Outdoor Container Storage Areas, Technical Area 54 West, Building 38; High Bay, Low Bay, Loading Dock, and Outdoor Container Storage Areas," [LANL, 1995a]).
- **TA-3-29, Wing 9 Basement, Room 9020: Container Storage Area** is included in LANL's CMR Part A permit application, which is being submitted with this permit modification request. This container storage area was originally identified in the "Hazardous Waste Permit Application—Part A—for Mixed Waste" (LANL, 1991), submitted January 25, 1991 to NMED. It was also included in Revision 1.0 (LANL, 1993a) and Revision 2.0 (LANL, 1994) of the Part A for mixed waste. The area is used to store containers of TRU mixed waste.

A container storage area in TA-3-29, Room 9030, was included in the "Hazardous Waste Permit Application—Part A—for Mixed Waste" (LANL, 1991) submitted January 25, 1991 to NMED. However, this unit will be closed under 20 NMAC 4.1, Subpart VI, (3-1-97), requirements. Consequently, permitted status is not requested for this unit.

In the CMR Part A and in this unit-specific permit modification request, a unit to be permitted may sometimes be referred to as a "facility" (e.g., the Drum Prep Facility). The term "facility," as it appears in this context, is used only to denote building names and does not imply the regulatory meaning of "facility" as defined in 20 NMAC 4.1, Subpart I, 260.10, (3-1-97). However, pursuant to 20 NMAC 4.1, Subpart I, 260.10, (3-1-97), the LANL facility as a whole does meet the regulatory definition of a facility.

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Table 1-2 provides a list of regulatory references and the corresponding location in this unit-specific permit modification request and/or in the LANL General Part B. Where applicable, regulatory citations in this unit-specific permit modification request and in the LANL General Part B reference 20 NMAC 4.1, which adopts, with a few limited exceptions, all of the Code of Federal Regulations, Title 40, Parts 260 to 266, Part 268, and Part 270.

**Table 1-1**  
**Summary of Changes to be Made to Permit Conditions**

<b>Permit Section</b>	<b>Requested Change</b>
Module I	Modify to include transuranic (TRU) mixed waste.
Module II	Modify to include TRU mixed waste.
Module III	Add new sections to Module III to address (1) TRU mixed waste container storage at Technical Area 3, Building 29 (TA-3-29); (2) the capacity of TRU mixed waste containers to be placed in storage at TA-3-29; and (3) the quantity of TRU mixed waste to be stored at TA-3-29.
Module IV	Not applicable; no changes needed.
Module V	Not applicable; no changes needed.
Module VI	Not applicable; no changes needed.
Module VII	Not applicable; no changes needed.
Module VIII	Not applicable; no changes needed.
Attachment A	Revise Attachment A by inserting the Waste Analysis Plan (Section 3.0 of this permit modification request and of the Los Alamos National Laboratory [LANL] General Part B <sup>a</sup> ) for TRU mixed waste.
Attachment B	Add new sections to Attachment B to address inspection requirements and additional information for TRU mixed waste container storage areas at TA-3-29.
Attachment C	Replace Attachment C with the most recent Personnel Training Plan (Section 8.0 of the LANL General Part B).
Attachment D	To reflect that this plan applies to both hazardous and mixed waste emergencies, replace Attachment D with the most recent Contingency Plan (Section 7.0 of this submittal and of the LANL General Part B).
Attachment E	Revise Attachment E by inserting the Closure Plan for the waste management units addressed in this permit modification request (Section 9.0 of this submittal and of the LANL General Part B).
Attachment F	Revise Attachment F and add a new section that addresses container management at the container storage units addressed in this permit modification request.
Attachment G	Revise Attachment G by inserting the appropriate pages (i.e., from pages 6 of 7) from the Technical Area 3, Building 29, Part A permit application <sup>b</sup> , included with this submittal as a separate document. These pages address authorized waste codes, waste quantities, and process codes for mixed waste.
Attachment H	Not applicable; no changes needed.
Attachment I	Not applicable; no changes needed.
Attachment J	Not applicable; no changes needed.

**Table 1-1 (Continued)**

**Summary of Changes to be Made to Permit Conditions**

<b>Permit Section</b>	<b>Requested Change</b>
Attachment K	Replace with the most recent version of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1.
Attachment L	Not applicable; no changes needed.

- <sup>a</sup> Los Alamos National Laboratory, 1996, "General Part B Permit Application Information for Los Alamos National Laboratory," Los Alamos National Laboratory, Los Alamos, New Mexico.
- <sup>b</sup> Los Alamos National Laboratory, 1997, "Part A Permit Application for Container Storage Areas at Technical Area 3, Building 29," Revision 0.0, Los Alamos National Laboratory, Los Alamos, New Mexico.

**Table 1-2**  
**Regulatory References and**  
**Corresponding Permit Modification Request Location**

Regulatory Reference <sup>a</sup>		Description of Requirement	Location in this Permit Modification Request	Location in General Part B Permit Application
20 NMAC 4.1, Subpart IX	20 NMAC 4.1, Subparts V and VI <sup>b</sup>			
270.10(a)	--	Permit application	Entire Document	Entire Document
270.10(g)(1)	--	Updating permit application	1.0	1.0
270.11(a)	--	Signatories	12.0	12.0
270.11(d)	--	Certification	12.0	12.0
270.13	--	Contents of Part A permit application	Part A <sup>c</sup>	NA <sup>d</sup>
270.13(a)	--	Activities conducted	Part A	NA
270.13(b)	--	Name, mailing address, and location	Part A	NA
270.13(c)	--	Principal standard industrial classification (SIC) codes	Part A	NA
270.13(d)	--	Operator information	Part A	NA
270.13(e)	--	Owner information	Part A	NA
270.13(f)	--	Whether located on Indian lands	Part A	NA
270.13(g)	--	New or existing facility	Part A	NA
270.13(h)	--	Scale drawing and photographs	Part A	NA
270.13(i)	--	Description of waste processes	Part A	NA
270.13(j)	--	Specification and quantity of hazardous waste	Part A	NA
270.13(k)	--	List of permits and construction approvals	Part A	NA
270.13(l)	--	Topographic maps	Part A	NA
270.13(m)	--	Description of nature of business	Part A	NA
270.13(n)	--	Hazardous debris	Part A	NA
270.14(b)(1)	--	General facility description	2.0	2.0
270.14(b)(2)	264.13(a)	Chemical and physical analyses	3.0	3.0
270.14(b)(3)	264.13(b)	Waste analysis plan	3.0	3.0
	264.13(b)(1)	Parameters and rationale	3.0	NA

**Table 1-2 (Continued)**  
**Regulatory References and**  
**Corresponding Permit Modification Request Location**

Regulatory Reference <sup>a</sup>		Description of Requirement	Location in this Permit Modification Request	Location in General Part B Permit Application
20 NMAC 4.1, Subpart IX	20 NMAC 4.1, Subparts V and VI <sup>b</sup>			
	264.13(b)(2)	Test methods	3.0	NA
	264.13(b)(3)	Sampling methods	3.0	NA
	264.13(b)(4)	Frequency of analyses	3.0	3.0
	264.13(b)(5)	Waste analysis for off-site facilities	3.0	NA
270.14(b)(4)	264.14	Security procedures and equipment	5.0	NA
270.14(b)(5)	264.15(b)	General inspection requirements	NA	6.0
	264.1088	Inspection and monitoring for units subject to Subpart CC requirements	6.0	NA
270.14(b)(7)	264 Subpart D	Contingency Plan	7.0	7.0
	264.51	Contingency plan design and implementation	NA	7.0
	264.52(a) & (c-f)	Contingency plan content	NA	7.0
	264.52(e) & (f)	Contingency plan content	7.0	NA
	264.53	Contingency plan copies	NA	7.1
	264.54	Contingency plan amendment	NA	7.13
	264.55	Emergency coordinator	NA	7.1.1
	264.56	Emergency procedures	NA	7.3 - 7.12
270.14(b)(8)	264 Subpart C	Preparedness and prevention	5.0	NA
	264.31	Design and operation of facility	4.0/5.0	5.0
	264.32	Required equipment	5.0	NA
	264.33	Testing and maintenance of equipment	5.0	NA
	264.34	Communications/alarm system	5.0	NA
	264.35	Required aisle space	5.0	NA
	264.37	Arrangements with local authorities	NA	5.0/7.0
270.14(b)(9)	264.17	Prevention of accidental ignition or reaction	4.0/5.0	NA

**Table 1-2 (Continued)**  
**Regulatory References and**  
**Corresponding Permit Modification Request Location**

Regulatory Reference <sup>a</sup>		Description of Requirement	Location in this Permit Modification Request	Location in General Part B Permit Application
20 NMAC 4.1, Subpart IX	20 NMAC 4.1, Subparts V and VI <sup>b</sup>			
270.14(b)(10)	--	Traffic pattern, volume, and controls	2.0	2.3
270.14(b)(11)(i) & (ii)	264.18(a)	Seismic standard	2.0	2.2.1
270.14(b)(11)(iii)	264.18(b)	Floodplain standard	2.0	2.2.2
270.14(b)(12)	264.16	Personnel training	NA	8.0
270.14(b)(13)	264 Subpart G	Closure and post-closure plans	9.0	9.0
	264.111	Closure performance standard	NA	9.1.1
	264.112(a) & (b)	Written content of closure plan	9.0	9.0
	264.112(c)	Amendment of closure plan	NA	9.1.4
	264.112(d)	Notification of partial and final closure	NA	9.1.2
	264.112(e)	Removal of wastes and decontamination/dismantling of equipment	9.0	NA
	264.113	Time allowed for closure	NA	9.1.3
	264.114	Disposal/decontamination	9.0	NA
	264.115	Certification of closure	NA	9.1.6
	264.116	Survey plat	NA	9.1.10
	264.117	Post-closure care and use of property	NA	9.1.10
	264.118	Post-closure plan; amendment of plan	NA	9.1.10
	264.119	Post-closure notices	NA	9.1.10
	264.120	Certification of post-closure	NA	9.1.10
270.14(b)(19)(i) (vi)(vii) & (x)	--	Topographic maps	Part A	2.1.2
270.14(b)(19)(ii)	264.18(b)	100-year floodplain	2.0	2.2.2
270.14(b)(19)(iii)	--	Surface waters	Part A	2.1.3
270.14(b)(19)(iv)	--	Land use	NA	2.1.5

**Table 1-2 (Continued)**  
**Regulatory References and**  
**Corresponding Permit Modification Request Location**

Regulatory Reference <sup>a</sup>		Description of Requirement	Location in this Permit Modification Request	Location in General Part B Permit Application
20 NMAC 4.1, Subpart IX	20 NMAC 4.1, Subparts V and VI <sup>b</sup>			
270.14(b)(19)(v)	--	Wind rose	NA	2.1.4
270.14(b)(19)(viii)	264.14(b)	Access control	5.0	NA
270.14(b)(19)(ix)	--	Wells	Part A	2.1.3
270.14(b)(19)(xi)	--	Drainage barriers	Part A	NA
270.14(b)(19)(xii)	--	Location of operational units	2.0	2.1
270.14(b)(20)	--	Other federal laws	NA	11.0
270.14(c)	264.90	Ground-water monitoring requirements	2.0	2.2.5.1
270.14(d)(1)	--	Requirements for solid waste management units (SWMU)	10.0	NA
270.14(d)(1)(i)	--	Location of SWMUs on topographic map	10.0	NA
270.14(d)(1)(ii)	--	Types of SWMUs	10.0	NA
270.14(d)(1)(iii)	--	Structural description of SWMUs	10.0	NA
270.14(d)(1)(iv)	--	Dates of operation	10.0	NA
270.14(d)(1)(v)	--	Waste types managed at SWMU	10.0	NA
270.14(d)(2)	--	Information on releases from SWMUs	10.0	NA
270.15	264 Subpart I	Containers	4.0	NA
	264.171	Condition of containers	4.0	NA
	264.172	Compatibility of waste with containers	4.0/5.0	NA
	264.173	Management of containers	4.0	NA
	264.174	Inspections	6.0	6.0
270.15(a)	264.175	Containment system	4.0	NA
270.15(b)	264.175(c)	No free liquids	4.0	NA
270.15(c)	264.176	Special requirements for ignitable or reactive waste	4.0/5.0	NA

**Table 1-2 (Continued)**  
**Regulatory References and**  
**Corresponding Permit Modification Request Location**

Regulatory Reference <sup>a</sup>		Description of Requirement	Location in this Permit Modification Request	Location in General Part B Permit Application
20 NMAC 4.1, Subpart IX	20 NMAC 4.1, Subparts V and VI <sup>b</sup>			
270.15(d)	264.177	Special requirements for incompatible wastes	4.0/5.0	NA
	264.178	Closure	9.0	NA
270.15(e)	264.179	Air emission control equipment	5.0	NA

<sup>a</sup> The New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20 NMAC 4.1), (3-1-97), adopts, with a few limited exceptions, Title 40 of the Code of Federal Regulations (40 CFR), Parts 260–266, Part 268, and Part 270 (1995). 20 NMAC 4.1, Subparts V, VI, and IX, (3-1-97), contain equivalent regulations to 40 CFR Parts 264, 265, and 270, respectively.

<sup>b</sup> Where there are no applicable 20 NMAC 4.1, Subpart V, (3-1-97), Part 264 standards, 20 NMAC 4.1, Subpart VI, (3-1-97), Part 265 standards are used, when appropriate.

<sup>c</sup> Part A = Los Alamos National Laboratory's (LANL) "Part A Permit Application for Container Storage Areas at Technical Area 3, Building 29," Revision 0.0 (LANL, 1997).

<sup>d</sup> NA = not applicable.

## 2.0 FACILITY DESCRIPTION

The information provided in this section is submitted in accordance with the applicable requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20 NMAC 4.1), (3-1-97). The following subject areas are addressed in this section:

- Operational unit location information and description [20 NMAC 4.1, Subpart IX, 270.14(b)(1), (3-1-97)];
- Site-specific location information for compliance with seismic and floodplain standard requirements [20 NMAC 4.1, Subpart IX, 270.14(b)(11)(i and ii), (3-1-97), and 20 NMAC 4.1, Subpart V, 264.18(a), (3-1-97)];
- Site-specific traffic patterns and control [20 NMAC 4.1, Subpart IX, 270.14(b)(10), (3-1-97)].

A Los Alamos National Laboratory (LANL)-wide facility description addressing additional regulatory requirements is provided in Section 2.0 of the "General Part B Permit Application Information for Los Alamos National Laboratory" (LANL, 1996a) (i.e., the LANL General Part B).

### 2.1. UNIT LOCATION/DESCRIPTION

The mixed waste management units addressed in this permit modification request include two container storage areas (CSA) at Technical Area (TA) 3, Building 29 (TA-3-29), the Chemistry and Metallurgy Research (CMR) Building. The CSAs are located in Rooms 9010 and 9020.

The following sections describe the mixed waste management units addressed in this permit modification request. The locations of these waste management units are shown on Map 2 and Figure 2 of the unit-specific Part A permit application (LANL, 1997) (i.e., the CMR Part A). Map 2 of the CMR Part A is a topographic map with a scale of 1 inch = 200 feet.

#### 2.1.1 TA-3-29, Container Storage Areas

TA-3 is situated on South Mesa between Los Alamos Canyon on the north and Two Mile Canyon on the south. In addition, Sandia and Mortandad Canyons head on the east margin of TA-3 forming steep cliffs at the top of the canyon walls. The elevation of TA-3 ranges from 7,100 to 7,500 feet above mean sea level. The CMR Building was established in 1952 as a research facility. The building is a three-story structure containing offices and laboratories. The locations

of the two CSAs addressed in this permit modification request are shown on Map 2 and Figure 2 of the CMR Part A. The CSAs are located in the basement floor of Wing 9 of the building and are used for storage of transuranic (TRU) mixed waste in containers of various sizes.

## 2.2 LOCATION INFORMATION

### 2.2.1 Seismic Standard [20 NMAC 4.1, Subpart IX, 270.14(b)(11)(i and ii) and 20 NMAC 4.1, Subpart V, 264.18(a)]

Consistent with the criteria provided in 20 NMAC 4.1, Subpart IX, 270.10(e), (3-1-97), and 20 NMAC 4.1, Subpart V, 264.18(a), (3-1-97), the TA-3-29 CSAs addressed herein existed prior to the effective date of mixed waste regulations; thus, seismic standards are not applicable.

### 2.2.2 Floodplain Standard [20 NMAC 4.1, Subpart IX, 270.14(b)(11)(iii) and 270.14(b)(19)(ii); 20 NMAC 4.1, Subpart V, 264.18(b)]

In accordance with 20 NMAC 4.1, Subpart IX, 270.14(b)(11)(iii), (3-1-97), the CSAs addressed in this permit modification request are not located within the 100-year floodplain boundary. Additional information regarding this documentation is provided in Section 2.0 of the LANL General Part B.

### 2.2.3 Soils

The soils in the vicinity of TA-3-29 are in the Carjo series. These soils are classified in the Unified Soil Classification System as sandy loam, clay, loam, and clay loam. The Carjo soils typically range from a grayish brown loam in the top 10 centimeters (cm), a brown clay loam from 10 to 30 cm, a reddish brown clay from 30 to 51 cm, and a light brown sandy loam from 51 to 64 cm in depth. Permeability rates range from 1.5 to 5 cm per hour (cm/hr) in the top layer to 0.15 to 5 cm/hr in the lower layers. The shrink-swell potential is low to moderate. Available water-holding capacity is 0.14 to 0.21 cm per cm, and the soil pH ranges from 6.3 to 7.8 (Nyhan et al., 1978). TA-3 is located in the Ponderosa Pine vegetation overstory zone. Native vegetation in undisturbed areas at TA-3 consists mainly of blue grama, mountain muhly, scattered gambel oak, and ponderosa pine (LANL, 1996b).

2.3 GROUNDWATER MONITORING [20 NMAC 4.1, Subpart IX, 270.14(c) and 20 NMAC 4.1, Subpart V, 264.90(a)]

Requirements for groundwater monitoring and protection specified in 20 NMAC 4.1, Subpart IX, 270.14(c), (3-1-97), and 20 NMAC 4.1, Subpart V, 264.90(a), (3-1-97), apply to owners and operators of the following "regulated units" only: surface impoundments, waste piles, land treatment units, and landfills. This document addresses CSAs, which are not regulated units subject to 20 NMAC 4.1, Subpart IX, 270.14(c), (3-1-97).

2.4 TRAFFIC PATTERNS AND CONTROL [20 NMAC 4.1, Subpart IX, 270.14(b)(10)]

The CSAs are used for storage of TRU mixed waste. These waste streams may be generated at the CMR Building or at various TAs at LANL and are subsequently stored in various mixed waste management units at TAs-50, 54, and 55.

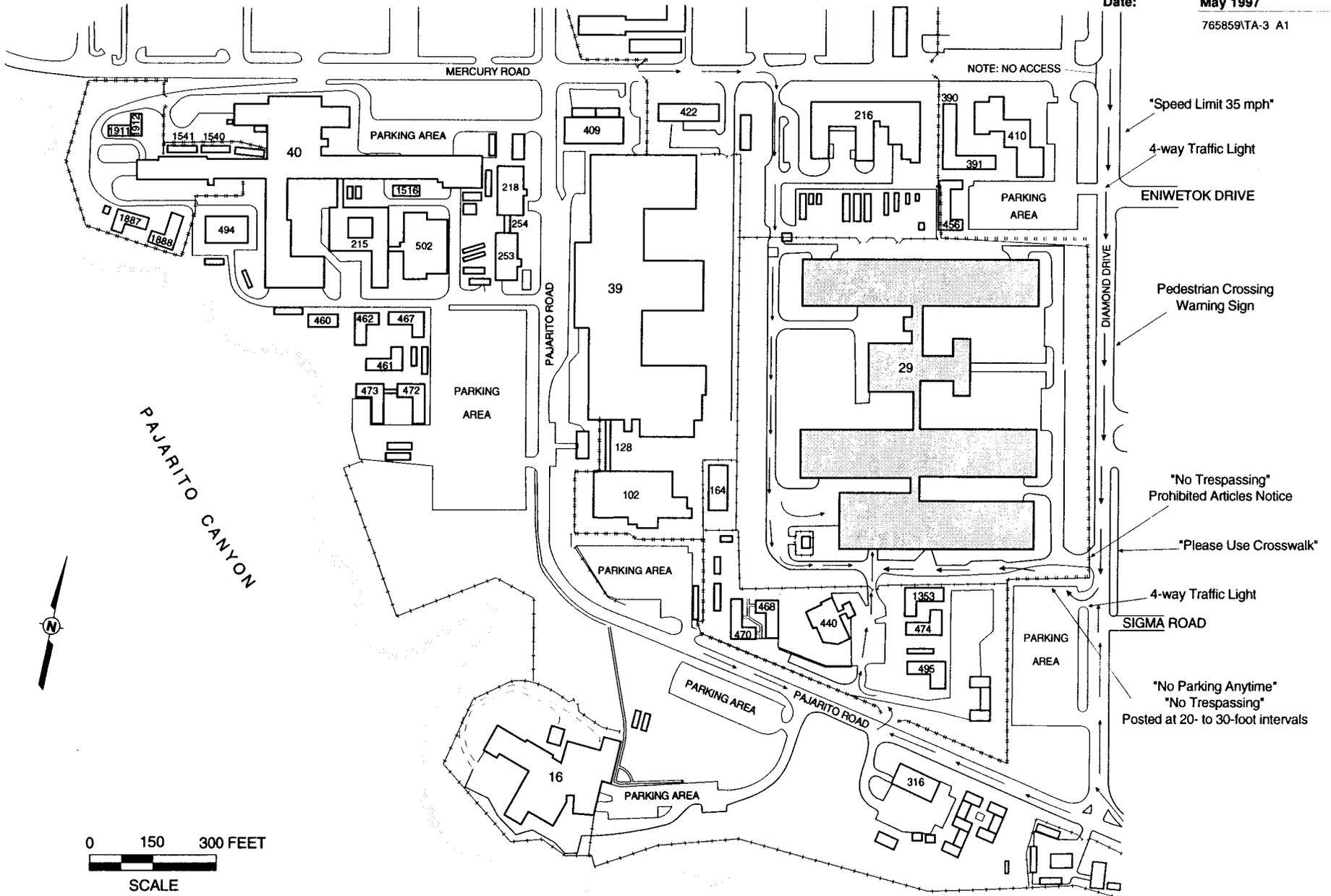
2.4.1 Routes of Travel

The CMR Building at TA-3 is located on Diamond Drive. The primary traffic routes that may be used to transport TRU mixed waste to the TA-3-29 CSAs include Pajarito Road, Pecos Drive, and Mesita del Buey Road; lesser-used traffic routes may include Diamond Drive and West Jemez Road (State Road 501) (see Figure 2-1 in this section and Figure 2-10 in the LANL General Part B).

2.4.2 Traffic Control Signals

Sitewide traffic flow at LANL is controlled by traffic lights, stop signs, and yield signs. Traffic lights are in place at all major intersections, including the intersections between Diamond Drive and Eniwetok Drive at the northeast boundary of TA-3-29, and Diamond Drive and Sigma Drive at the southeast boundary of TA-3-29. Traffic signs are used at "T" intersections throughout LANL, including the intersection of Pajarito Road and Diamond Drive south of TA-3-29. Access to TA-3-29 is controlled by security guards and is restricted to vehicles having special identification. Vehicles entering the fenced area through the vehicle entrances are subject to search by security personnel.

Traffic control signals within TA-3 include stop signs, posted speed limits, and other traffic and pedestrian control signs. The locations of existing signs in the vicinity of TA-3-29 are shown on Figure 2-1.



**Figure 2-1**  
 Location Map of Access Roads and Traffic Control Signs in the Vicinity of  
 Technical Area 3, Building 29

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### **3.0 WASTE ANALYSIS PLAN FOR TRANSURANIC MIXED WASTE**

Applicable waste analysis plan requirements for the transuranic mixed waste streams managed at Technical Area 3, Building 29, are included in the Los Alamos National Laboratory (LANL) Waste Analysis Plan for Transuranic Mixed Waste (MTRU WAP). The MTRU WAP was approved as Permit Attachment A.2 of the LANL "Proposed Hazardous Waste Facility Permit Modification—Technical Area 50, Building 1, Rooms 35, 36, and 38/38A Container Storage Areas; Building 69, Indoor and Outdoor Container Storage Areas; Technical Area 54 West, Building 38, High Bay, Low Bay, Loading Dock, and Outdoor Container Storage Areas" (LANL, 1995a), effective date February 28, 1997.

## 4.0 DESIGN, OPERATIONS, AND PROCESS INFORMATION

This section presents a brief description of each container storage area (CSA) addressed in this permit modification request as well as an overview of the general operations and process information that are applicable to each of the CSAs. The information provided in this section is submitted to address the applicable container storage requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20 NMAC 4.1), Subpart IX, 270.15, (3-1-97) and 20 NMAC 4.1, Subpart V, Part 264, Subpart I, (3-1-97).

### 4.1 CONTAINER STORAGE AREAS [20 NMAC 4.1, Subpart IX, 270.15; 20 NMAC 4.1, Subpart V, Part 264, Subpart I]

This section provides descriptions of and waste storage practices for the mixed waste CSAs at Technical Area (TA) 3, Building 29 (TA-3-29), the Chemistry and Metallurgy Research (CMR) Building at Los Alamos National Laboratory (LANL). The CSAs addressed in this permit modification request include Rooms 9010 and 9020. Two enclosures housing research experiments (see Section 4.1.2) to determine disposal applicability of transuranic (TRU) mixed waste for the Waste Isolation Pilot Plant (WIPP) are contained within Room 9010.

Each description includes the location, the physical parameters, the materials of construction, the basic design features, and the maximum storage capacity of each CSA. A discussion of the purpose for the experiments currently housed in the Room 9010 CSA and waste management practices is also presented. Plan drawings (Figures 4-1 and 4-2) are provided for each CSA included in this permit modification request.

#### 4.1.1 TA-3-29 Room 9010 Mixed Waste Container Storage Area

The TA-3-29 Room 9010 CSA is located in the basement floor of Wing 9 of the CMR Building. The Room 9010 CSA consists of the lower-level cleared floor portion of Room 9010. Room 9010 measures 21 feet, 8 inches wide by 106 feet, 9 inches long (Figure 4-1). The floor is concrete and painted with an epoxy sealant. There are currently two room enclosures containing various elements of the WIPP research experiments in Room 9010. These enclosures are further described in Section 4.1.2.

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The combined storage capacity for the Rooms 9010 and 9020 CSAs is 16,500 gallons, or approximately 300 55-gallon drums as identified in the "Hazardous Waste Permit Application—Part A—for Mixed Waste" (LANL, 1991). The specific portion of that storage capacity for Room 9010, as identified in this permit modification request is 11,200 gallons, or approximately 203 55-gallon drums. TRU mixed wastes are stored in the Room 9010 CSA. Candidate drums for storage may include wastes that consist of solid physical forms and wastes that are either suspected or known to contain free liquids. Further information on the wastes that may be stored in the Room 9010 CSA is provided in Attachment A.2 of LANL (1995a).

Waste containers stored in the Room 9010 CSA will primarily include drums of various sizes. Standard waste boxes (SWB), steel B25 boxes, and other various containers may also be stored in the Room 9010 CSA. Detailed information regarding the various container types used at LANL is provided in Section 4.3.1. To facilitate container movement, storage, and inspection, all drums holding wastes that do not contain free liquids (see below) will be stored either on pallets or individual self-contained, wheeled dollies. Containers holding suspect or known liquids will be stored on self-containment pallets. SWBs and steel B25 boxes are elevated by design. Pallets and elevated containers provide protection from potential contact with liquids that could be introduced through fire-suppression activities. Together, these waste management practices and design considerations satisfy the requirements of 20 NMAC 4.1, Subpart IX, 270.15(b)(2), (3-1-97), and 20 NMAC 4.1, Subpart V, 264.175(c), (3-1-97).

Pursuant to the requirements of 20 NMAC 4.1, Subpart IX, 270.15(b)(1), (3-1-97), information contained in LANL's waste databases will be used initially to verify the absence of free liquids in containers. In addition, some containers received at the Room 9010 CSA will have been characterized with real-time radiography (RTR) or other supplemental analysis, as described in Attachment A.2 of LANL (1995a), to verify the presence or absence of free liquids within the container.

Containers holding suspect or known free liquids will be stored on self-containment pallets. The self-containment pallets will be constructed of impervious, corrosion-resistant materials compatible with the wastes and will have the capacity to contain at least 10 percent of the total volume of the potential liquid-bearing containers or the volume of the largest potential liquid-bearing container, whichever is greater. Containers will be placed on elevated grates

within these pallets to prevent contact with potentially accumulated liquids. Because the Room 9010 CSA is fully contained within TA-3-29, run-on into the CSA from outdoors is not likely to occur. Positive surface drainage will direct potential run-on away from TA-3-29. Map 2 of the CMR Part A, submitted with this permit modification request as a separate document, shows the contours and surface drainage around TA-3-29. Together, the design and operation of the containment system will meet the requirements of 20 NMAC 4.1, Subpart V, 264.175(b), (3-1-97), and 20 NMAC 4.1, Subpart IX, 270.15(a)(1) through (a)(4), (3-1-97).

To meet the requirements of 20 NMAC 4.1, Subpart IX, 270.15(a)(5), (3-1-97), any liquids accumulated within the self-containment pallets will be removed in a timely manner to prevent overflow. Depending upon the volume of the accumulated liquid, a high-efficiency particulate air (HEPA) vacuum, a portable pump, universal sorbents, and/or other methods suitable for retrieval will be used to remove the liquid for subsequent sampling and analysis. The collected liquids and/or sorbents will be transferred to compatible containers and sampled for the constituents known to be present in the waste or for the appropriate parameters listed in Table 7-3 of the LANL General Part B (LANL, 1996a). These containers will be stored temporarily at TA-3-29 pending analytical results, which will dictate how the wastes will be managed.

If a sample represents a spill, the sample will be analyzed for the hazardous waste constituents known to be components of the source. In the unlikely event that a spill source cannot be identified, the sample will be analyzed for all of the hazardous waste constituents listed in Table 7-3 of the LANL General Part B. If the liquids in the self-containment pallets are not a result of a spill (e.g., water generated during fire-suppression activities), samples will be analyzed only for the potential constituents present in the waste.

All applicable requirements for the storage of ignitable, reactive, incompatible, and certain F-listed wastes will be met at the Room 9010 CSA as follows. If ignitable or reactive wastes are stored in the Room 9010 CSA, they will be located at least 50 feet from the facility's property line, as shown on Map 2 of the CMR Part A. Incompatible wastes, if stored, will be segregated during storage using self-containment pallets. Pursuant to the requirements of 20 NMAC 4.1, Subpart V, 264.177(a) and (b), (3-1-97), no incompatible wastes will be mixed, and no waste will be placed in a container that previously held an incompatible waste. No wastes carrying the U.S. Environmental Protection Agency (EPA) Hazardous Waste Numbers F020, F021, F022, F023,

F026, or F027 will be stored in the Room 9010 CSA. Therefore, the requirements of 20 NMAC 4.1, Subpart V, 264.175(d), (3-1-97), are not applicable.

#### 4.1.2 Actinide Source-Term Waste Test Program

LANL has been selected by the U.S. Department of Energy (DOE), Carlsbad Area Office, to conduct the Actinide Source-Term Waste Test Program (STTP). The STTP is a test program designed to measure time-dependent concentrations of actinide elements from TRU waste immersed in brines that are chemically similar to brines typically found in the underground formations of the WIPP. The STTP will provide quantitative data on concentrations of plutonium, thorium, uranium, neptunium, and americium in actual TRU wastes immersed in brines to simulate the chemistry that may occur in WIPP disposal rooms, potentially filled partially or completely filled with brine. The STTP will determine the effect of TRU waste matrices and brine chemistry on the concentrations of actinides under WIPP bounding conditions and variables to also test the predictive capability of the Actinide Source-Term Program Model for mobilization of actinides as required by the STTP Technical Requirements document. TRU waste types typical of DOE waste inventories have been characterized and loaded into specially designed test containers also filled with brine containing additives to enhance the action of each influencing variable.

A brief discussion of the research experiments occupying the Room 9010 CSA at TA-3-29 is presented here for informational purposes only. The experiments are being conducted to determine disposal effects on radionuclides in the TRU mixed wastes contained in the CSA and do not constitute a Resource Conservation and Recovery Act (RCRA)-regulated treatment process for the hazardous component of the mixed waste. However, siting the containers within a permitted CSA allows for safe and efficient processing of the experimental containers and will assure that during and after the research experiments, the containers will be stored and managed in a manner that is protective of human health and the environment.

The STTP is being conducted within portions of the Room 9010 CSA in two stand-alone enclosures. As shown on Figure 4-2, the northern enclosure is 10 feet, 6 inches wide by 24 feet, 4 inches long; the southern enclosure measures 16 feet, 8 inches wide by 53 feet, 7 inches long. The enclosures have ceilings, walls with windows, and doors for entry through airlocks, and are anchored to the floor of the CSA. The wall to floor joints are sealed with grout. Floors and the

lower six inches of the interior enclosure walls are coated with an epoxy sealer. The enclosures include emergency and communication equipment. Ventilation, fire sprinkler, water, and electrical support functions are connected to the main building systems. The enclosures are kept at negative pressure by exhaust fans ducted to the building's HEPA filters to provide radioactive material air-release protection. A plan view of the enclosures is provided on Figure 4-2.

The STTP involves experiments on two sizes of containers, liter scale and drum scale. The liter-scale experiments are conducted in the smaller enclosure in the northern portion of Room 9010. The 39 liter-scale containers are stainless steel and are mounted above containment stands. The drum-scale experiments are performed in the larger enclosure in the southern portion of Room 9010. The 15 55-gallon titanium drums are mounted on rotator stands with self-containment bases. The stands and containers are made of or lined with materials that will not react with the wastes stored. The containment systems have sufficient capacity to contain 10 percent of the volume of the containers or the volume of the largest container present in the containment system. Accumulated liquid in the containment systems can be removed in a timely manner to prevent system overflow through the use of sorbents, portable pumps, or HEPA vacuums. Subsequent management of spill residues will be conducted in accordance with the Room 9010 CSA practices discussed above.

#### 4.1.3 TA-3-29 Room 9020 Mixed Waste Container Storage Area

The TA-3-29 Room 9020 CSA is located in the basement floor of Wing 9 of the CMR Building. The Room 9020 CSA, which measures 19 feet wide and 25 feet long (Figure 4-1), consists of a cleared and marked area on the northeast side of Room 9020. The floor is concrete and painted with an epoxy sealer.

As noted above, the combined storage capacity for the Rooms 9010 and 9020 CSAs as identified in LANL (1991) is 16,500 gallons. The storage capacity for Room 9020 is 5,300 gallons, or approximately 96 55-gallon drums. TRU mixed wastes are stored in the Room 9020 CSA, and candidate drums for storage may include wastes that consist of solid physical forms and wastes that are either suspected or known to contain free liquids. Further information on the waste types that may be stored in the Room 9020 CSA is provided in Attachment A.2 of LANL (1995a).

Waste containers stored in the Room 9020 CSA primarily include drums of various sizes. SWBs, steel B25 boxes, and other various containers may also be stored in the Room 9020 CSA. Detailed information regarding the various container types used at LANL is provided in Section 4.3.1. To facilitate container movement, storage, and inspection, all drums holding wastes that do not contain free liquids will be stored either on pallets or dollies. Containers holding suspect or known liquids will be stored on self-containment pallets. SWBs and steel B25 boxes are elevated by design. Pallets and elevated containers provide protection from potential contact with liquids that could be introduced through fire-suppression activities. Together, these waste management practices and design considerations satisfy the requirements of 20 NMAC 4.1, Subpart IX, 270.15(b)(2), (3-1-97), and 20 NMAC 4.1, Subpart V, 264.175(c), (3-1-97).

Pursuant to the requirements of 20 NMAC 4.1, Subpart IX, 270.15(b)(1), (3-1-97), information contained in LANL's waste databases will be used initially to verify the absence of free liquids in containers. In addition, some containers received at the Room 9020 CSA will have been characterized with RTR or other supplemental analysis as described in Attachment A.2 of LANL (1995a) to verify the presence or absence of free liquids within the container.

Containers holding suspect or known free liquids will be stored on self-containment pallets. The self-containment pallets will be constructed of impervious, corrosion-resistant materials compatible with the wastes stored and will have the capacity to contain at least 10 percent of the total volume of the potential liquid-bearing containers or the volume of the largest potential liquid-bearing container, whichever is greater. Containers will be placed on elevated grates within these pallets to prevent contact with potentially accumulated liquids. Because the Room 9020 CSA is indoors, run-on into the CSA from outdoors is not likely to occur. Positive surface drainage will direct potential run-on away from TA-3-29. Map 2 of the CMR Part A, submitted with this permit modification request as a separate document, shows the contours and surface drainage around TA-3-29. Together, the design and operation of the containment system will meet the requirements of 20 NMAC 4.1, Subpart V, 264.175(b), (3-1-97), and 20 NMAC 4.1, Subpart IX, 270.15(a)(1)-(a)(4), (3-1-97).

To meet the requirements of 20 NMAC 4.1, Subpart IX, 270.15(a)(5), (3-1-97), any liquids accumulated within the self-containment pallets will be removed in a timely manner to prevent overflow. Depending upon the volume of the accumulated liquid, a HEPA vacuum, a portable

pump, universal sorbents, and/or other methods suitable for retrieval will be used to remove the liquid for subsequent sampling and analysis. The collected liquids and/or sorbents will be transferred to compatible containers and sampled for the constituents known to be present in the waste or for the appropriate parameters listed in Table 7-3 of the LANL General Part B. These containers will be stored temporarily at TA-3-29 pending analytical results, which will dictate how the wastes will be managed.

If a sample represents a spill, the sample will be analyzed for the hazardous waste constituents known to be components of the source. In the unlikely event that a spill source cannot be identified, the sample will be analyzed for all of the hazardous waste constituents listed in Table 7-3 of the LANL General Part B. If the liquids in the self-containment pallets are not a result of a spill (e.g., water generated during fire-suppression activities), samples will be analyzed only for the potential constituents present in the waste.

All applicable requirements for the storage of ignitable, reactive, incompatible, and certain F-listed wastes will be met at the Room 9020 CSA as follows. If ignitable or reactive wastes are stored in the Room 9020 CSA, they will be located at least 50 feet from the facility's property line, as shown on Map 2 of the CMR Part A. Incompatible wastes, if stored, will be segregated during storage using self-containment pallets. Pursuant to the requirements of 20 NMAC 4.1, Subpart V, 264.177(a) and (b), (3-1-97), no incompatible wastes will be mixed, and no waste will be placed in a container that previously held an incompatible waste. No wastes carrying the EPA Hazardous Waste Numbers F020, F021, F022, F023, F026, or F027 will be stored in the Room 9020 CSA. Therefore, the requirements of 20 NMAC 4.1, Subpart V, 264.175(d), (3-1-97), are not applicable.

#### 4.2 WASTE TYPES AND PACKAGING

The following sections describe the waste types and packaging for the mixed wastes managed and stored in Rooms 9010 and 9020 at TA-3-29. If any of the containers used in the packaging of the waste are overpacked in SWBs, no sealed liner bags are used in the SWBs. This information is from "TRUPACT-II Content Codes (TRUCON)," (DOE, 1989). The waste streams are also identified by LANL Item Description Codes (IDC), as described in Attachment A.2 of LANL (1995a).

#### 4.2.1 Concreted/Stabilized Aqueous Waste (IDCs 002 and 003)

Aqueous effluent from plutonium processing is treated by chemical precipitation and/or vacuum filtration. The resultant TRU sludge is mixed with cement. The final cemented waste monolith is produced by tumbling 55-gallon drums containing empirically determined quantities of sludge, cement, vermiculite, and sodium silicate.

The waste is placed into a 55-gallon drum. An open (not taped) 5-mil polyethylene sleeve is installed in the drum for contamination control while adding the sludge. After the drum is filled, the sleeve is folded over within the drum and the drum is then sealed.

#### 4.2.2 Solidified Inorganic/Organic Process Solids Waste (IDC 006)

The solidified process solids waste consists of aqueous effluent and leached solids from plutonium processing immobilized in cement. Solidified process solids include process residue from evaporator bottoms and other discardable solutions, process-leached solids, ash, filter cakes, salts, metal oxides, and process fines. These are immobilized in cement to form a noncorrosive solid matrix in 55-gallon drums or 1-gallon cans. The 1-gallon cans are packaged in 55-gallon drums. The packaging within the drum includes a 1/16-inch lead sheet, which serves as radioactivity shielding, a 5-mil polyethylene bag, and a 12-mil polyvinyl chloride (PVC) bag enclosing any cans. All bag closures are by the twist-and-tape method.

In the 55-gallon cement fixation process, the waste is mixed with a cement powder in a 1/8-inch-thick polyethylene mixing container to form a noncorrosive solid monolith. The packaging within the drum includes a 1/16-inch lead shielding sheet and two 12-mil PVC bags. The inner PVC bag contains the mixing container. One or more two-inch-thick styrofoam disks are placed on top of the 12-mil outer bag as bracing for the top lead disk. All bag closures are by the twist-and-tape method.

#### 4.2.3 Combustible Waste (IDC 004)

Combustible waste solids, including plastic and cellulose-based waste, are generated from radioactive material operations. The waste stream includes paper, rags, plastic, rubber tubing, gloves, and plastic vials. Waste is placed either directly in a 55-gallon drum or with a maximum of two layers of 5-mil polyethylene bags. All bag closures are by the twist-and-tape method.

#### 4.2.4 TRU Metal Waste (IDC 001 and 005[LM])

TRU metal waste is generated from plutonium processing and consists of material such as motors, pumps, tools, and process equipment. The waste may contain a small amount of combustible waste. The waste is packaged in a maximum of 4 layers of plastic bagging prior to placement into SWBs. A 12-mil PVC sleeve is used as a bag-out bag with one end sealed directly to the inside of the SWB body. All bag liners are sealed by taping along the folds.

#### 4.2.5 TRU Graphite Waste (IDC 005[P2G])

TRU graphite waste is generated from plutonium processing and consists primarily of discarded graphite mold and furnace equipment from plutonium-casting operations. Graphite waste is placed in tin or stainless-steel cans, which are placed in 2 to 3 layers of plastic bags in 55-gallon drums. The drum liner bags are 5-mil PVC. Each bag is sealed by the twist-and-tape method.

#### 4.2.6 TRU Glass Waste (IDC 005[LG])

TRU glass waste consists of discarded labware, windows, and bottles generated from plutonium processing. The waste is packaged in tin or stainless-steel cans and bagged-out in one layer of plastic prior to placement in 55-gallon drums. The drum is lined with two 5-mil polyethylene bags, and all bag closures are by the twist-and-tape method.

#### 4.2.7 TRU Pyrochemical Salt Waste (IDC 005[P2S])

TRU pyrochemical salt waste consists of used chloride salts from pyrochemical processes, such as electrorefining and molten salt extraction. The waste is packaged in tin or stainless-steel cans and bagged-out in one layer of plastic prior to placement in 55-gallon drums. The drum is lined with two 5-mil polyethylene bags, and all bag closures are by the twist-and-tape method.

### 4.3 WASTE MANAGEMENT PRACTICES [20 NMAC 4.1, Subpart V, Part 264, Subpart I]

The following sections provide an overview of the general operations and process information that are applicable to both of the CSAs addressed in this permit modification request. This overview includes a discussion of container types and labeling practices; storage configuration; handling and inspection procedures; and precautions taken when handling or storing incompatible, ignitable, or reactive wastes. This information is submitted to fulfill the requirements of 20 NMAC 4.1, Subpart V, Part 264, Subpart I, (3-1-97).

#### 4.3.1 Container Types and Labeling

Containers that may be used to store TRU mixed waste at the CSAs addressed in this permit modification request include 30-, 55-, 83-, 85-, and 110-gallon steel drums; steel SWBs; metal overpack boxes; steel B25 boxes; and various other small containers. Some mixed waste containers may be vented. The vented containers have carbon composite filters that allow gases (e.g., hydrogen), if any, to be released but that prevent the release of airborne particulates.

The most common drum used for storage is the 55-gallon drum. The standard drum in use is constructed of 16-gauge steel and has an inner diameter of approximately 22 inches and a usable inside height of approximately 33 inches. There are two different types of SWBs used for storage. One type is constructed of 14-gauge steel and has rounded ends. It measures 52 by 69 by 36 inches, has continuous welds on all four sides and on the bottom, and has a closed-cell neoprene lid gasket. After waste is placed into the container, the lid is bolted on. The second type of SWB is also constructed of 14-gauge steel but is rectangular in shape. Its dimensions are 56 by 72 by 37 inches. It has continuous welds on all four sides and on the bottom and has a lid that is clamped in place and then welded. The metal overpack boxes vary in size and have continuous welds both inside and outside on all four sides and on the bottom. The lid gasket is made of closed-cell neoprene and can be strapped closed or clipped down. The metal overpack boxes are elevated by design with risers for ease in handling. B25 boxes are constructed of 16-gauge welded carbon steel, are a standard size of 4 by 4 by 6 feet, and are elevated by design. All B25 boxes have a rubber gasket with a bolt-on, clip-pinned, or hinged lid.

Overpacks may be used when a container's integrity is suspect or if cracks or leaks are observed. Eighty-five-gallon drums are commonly used to overpack 55-gallon drums and 110-gallon drums may be used to overpack 85-gallon drums. The 85-gallon overpacks are constructed of 16-gauge steel, at a minimum. Universal sorbent is generally added to the interior of the overpack. The lid is secured to the overpack with a 12-gauge bolt ring complete with a 5/8-inch closure bolt. Rounded-end SWBs will be used to overpack drums of various sizes that contain TRU mixed waste.

All waste containers are labeled with an identification number in the form of a barcode that corresponds to a number in LANL's waste inventory database. This database is composed of

information supplied by the generator prior to storage and by waste management personnel after the waste has been received. This information includes the waste generator, the available waste characterization information, the packaging, the waste certification, the receiving site, and the storage location. In addition to an identification number all containers are labeled with a hazardous waste label, and the appropriate EPA Hazardous Waste Numbers. Containers holding mixed waste are also labeled with a radioactive material tag. All containers will be clearly marked to identify contents and the date each period of accumulation begins. Crates and boxes are labeled on a minimum of two sides. When waste containers are moved during storage, their waste package identification numbers (barcode), origin and destination, and package changes (e.g., overpack volume, overpack dimensions) will be documented. The waste inventory database will then be updated to reflect any new information.

#### 4.3.2 Storage Configuration

Storage configurations are dependent upon facility throughput, size constraints, and by the chemical and radiological characteristics of the waste in storage at any one time. The storage capacity requested for the CSAs addressed in this permit modification request reflects the volume necessary to support maximized storage of waste drums. The current STTP activities in Room 9010 are contained within the enclosures described in Section 4.1.2. Unauthorized personnel are not allowed to enter the enclosures. Adequate space is maintained around each test stand to allow for inspection of all containers. Incompatible waste streams are stored in separate containment systems or stands to ensure that commingling of wastes will not occur in the event the containers are breached.

Whenever waste is stored in the Room 9020 CSA, it will be positioned in an area that is removed from the location of any worker activity or traffic that is unrelated to the management of the waste. Security posts and a chain will be used to alert workers to the presence of waste containers in Room 9020. Adequate aisle space will be maintained around each pallet to allow for inspection of all containers. A minimum space of 28 inches will be maintained between rows of containers in the Room 9020 CSA. However, whenever incompatible wastes are stored, separate self-containment pallets will be used to keep the wastes segregated to ensure commingling of wastes will not occur in the event a container is breached. Stacking of containers will not exceed two levels in the Room 9020 CSA.

4.3.3 Handling and Inspection [20 NMAC 4.1, Subpart V, 264.171, 264.173, and 264.174]  
As required by 20 NMAC 4.1, Subpart V, 264.171, (3-1-97), any container that is not in good condition (e.g., severe rusting, apparent structural defects) is overpacked or the wastes are repackaged in containers that are in good condition prior to storage. All containers are kept closed during storage in accordance with 20 NMAC 4.1, Subpart V, 264.173(a), (3-1-97), except when waste is added to or removed from the container or when a container's contents need to be repackaged. Containers are handled and stored at all times in a manner that will not rupture a container nor cause it to leak, as required by 20 NMAC 4.1, Subpart V, 264.173(b), (3-1-97).

Inspections will be performed at each CSA according to the schedule in Section 6.0 of the LANL General Part B. The purpose of the inspections is to identify leaking containers, deterioration of containers, and loss of integrity of the containment system, as required by 20 NMAC 4.1, Subpart V, 264.174, (3-1-97). The inspections include checking the structural integrity of the steel drums and boxes (e.g., for bulging) and the crates (e.g., for warping). Refer to Section 6.0 of the LANL General Part B for more detailed information regarding inspection requirements and how they are met.

4.3.4 Ignitable, Reactive, and Incompatible Wastes [20 NMAC 4.1, Subpart V, 264.17(a), 264.176, and 264.177]

In accordance with the requirements of 20 NMAC 4.1, Subpart V, 264.176, (3-1-97), containers holding ignitable or reactive waste will be stored at least 50 feet from the facility's property line (refer to Map 2 of the CMR Part A). All ignitable and reactive wastes are also protected from sources of ignition or reaction, in accordance with 20 NMAC 4.1, Subpart V, 264.17(a), (3-1-97). No smoking is allowed. "No Smoking" signs are conspicuously placed wherever there is a potential hazard from ignitable or reactive waste, as required by 20 NMAC 4.1, Subpart V, 264.17(a), (3-1-97). In addition, most mechanical equipment operated within each CSA is grounded to minimize the potential for sparking and accidental ignition.

Incompatible wastes will be kept separated during storage at the CSAs. LANL has a system in place that assigns codes to TRU mixed waste streams based on the chemical and physical properties of the waste. Containers of TRU mixed wastes will be segregated according to their assigned waste code and generator location. No incompatible wastes will be mixed, and no wastes will be placed in containers that previously held incompatible wastes, as required by

20 NMAC 4.1, Subpart V, 264.177(a) and (b), (3-1-97), and 20 NMAC 4.1, Subpart IX, 270.15(d), (3-1-97). Pursuant to the requirements of 20 NMAC 4.1, Subpart V, 264.172, (3-1-97), only containers made of or lined with materials that will not react with and are otherwise compatible with the waste to be stored will be used for storage at these CSAs.

#### 4.4 RECORDKEEPING AND REPORTING REQUIREMENTS [20 NMAC 4.1, Subpart V, Part 264, Subpart E]

The various recordkeeping and reporting requirements applicable to all units at LANL and addressed in a Part B permit application or permit modification request are detailed in Section 4.0 of the LANL General Part B. In addition, Section 4.0 of the LANL General Part B presents information regarding the contents of the operating record for the facility and additional reports.

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**Figure 4-1**

Technical Area (TA) 3, Building 29, Rooms 9010 and 9020 Container Storage Areas

**[This figure has been provided to the New Mexico Environment Department under separate cover as Unclassified Controlled Nuclear Information (UCNI) defined by Section 148 of the Atomic Energy Act.]**

**Figure 4-2**

Technical Area (TA) 3, Building 29, Room 9010 STTP Enclosures-Plan View

**[This figure has been provided to the New Mexico Environment Department under separate cover as Unclassified Controlled Nuclear Information (UCNI) defined by Section 148 of the Atomic Energy Act.]**

## 5.0 PROCEDURES TO PREVENT HAZARDS

The information provided in this section is submitted in accordance with the applicable requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20 NMAC 4.1), Subpart IX, 270.14(b)(4), 270.14(b)(8), 270.14(b)(9), 270.14(b)(19)(viii), and 270.15, (3-1-97), and 20 NMAC 4.1, Subpart V, Subparts B, C, and I, (3-1-97). In accordance with 20 NMAC 4.1, Subpart V, 264.31, (3-1-97), the container storage areas (CSA) addressed in this permit modification request are designed and operated to minimize the possibility of fire, explosion, or unplanned releases of hazardous constituents to any environmental medium. The following subject areas are addressed in this section: security; preparedness and prevention requirements; preventive procedures, structures, and equipment; precautions for ignitable, reactive, or incompatible wastes; and organic air emission standards.

### 5.1 SECURITY [20 NMAC 4.1, Subpart IX, 270.14 (b)(4) and 270.14(b)(19)(viii); 20 NMAC 4.1, Subpart V, 264.14]

Security at Technical Area (TA) 3, Building 29 (TA-3-29), the Chemistry and Metallurgy Research (CMR) Building, is maintained with physical and administratively-controlled barriers. These barriers prevent the unknowing entry and minimize the possibility for unauthorized entry of persons or livestock into the areas and thus satisfy the requirements of 20 NMAC 4.1, Subpart V, 264.14(a) and 264.14(b)(2), (3-1-97).

Eight-foot-high chain-link security fences with barbed wire at the top surround the entire perimeter of TA-3-29. Pursuant to the requirements of 20 NMAC 4.1, Subpart V, 264.14(c), (3-1-97), bilingual (i.e., English and Spanish) warning signs are also posted at the entrances to each area managing mixed waste and can be seen from any approach to these areas. The legends on the signs indicate "Danger: Hazardous Waste Storage Area" and "Unauthorized Persons Keep Out." The signs are legible from a distance of 25 feet.

There are four entry gates through the security fence at TA-3-29. A fire access and shipping gate is located south of TA-3-29 and is routinely closed and locked. When the gate is opened for shipments of material or waste, personnel are present at the gate to limit egress by unauthorized persons. One combined pedestrian and vehicular entry gate manned by security personnel is located at the northwest corner of the building fence line. Another pedestrian gate

manned by security personnel is located at the southeast corner of the building fence line, which also controls access to a double vehicular gate from the parking area south of the building. Protection Technology Los Alamos (PTLA) security personnel are present at these gates during operational hours to limit egress by unauthorized persons.

Outside doors to the main wings of TA-3-29 are always locked. Access for visitors to the operational portion of the building is controlled through a manned security station in the east side lobby and another on the west side of the building. Roll-up doors to the building can only be opened from inside the building and are also locked; opening these doors must be coordinated with PTLA security personnel. The building site is patrolled by PTLA security personnel during nonoperational hours to ensure that the gates are locked and that unauthorized entry has not occurred. The security fence is also inspected weekly by on-site personnel and repairs are made as necessary. In accordance with 20 NMAC 4.1, Subpart IX, 270.14(b)(19)(viii), (3-1-97), the locations of the security fences, access gates, and guard and entry stations at TA-3-29 are shown on Figure 5-1.

## 5.2 PREPAREDNESS AND PREVENTION REQUIREMENTS [20 NMAC 4.1, Subpart V, Subpart C]

The following sections present how operations at the TA-3-29 CSAs comply with the preparedness and prevention requirements of 20 NMAC 4.1, Subpart V, Part 264, Subpart C, (3-1-97). Communication and alarm equipment available to any location at Los Alamos National Laboratory (LANL) is presented in Section 7.0 of the LANL General Part B (LANL, 1996a). A summary list of the emergency equipment available for use at the CSAs addressed herein is included as Attachment 7-1 of this permit modification request.

### 5.2.1 Required Equipment [20 NMAC 4.1, Subpart V, 264.32]

The CMR Building (TA-3-29) is equipped with an audible alarm system to alert personnel to evacuate the area. The alarm system may be activated by using fire alarm pull stations. The building also has a public address system for announcing fires or evacuations. Telephones with paging capabilities are located throughout TA-3-29. Paging telephones are used to page on-site personnel and may be used in the event of an emergency to communicate the location and nature of hazardous conditions to personnel in the area. The alarm system is interrupted when the paging telephone system is activated to allow personnel to hear the announcement.

Personnel working in Rooms 9010 and 9020 can also use these phones to summon assistance from local emergency response teams in case of emergency.

Room 9010, the Actinide Source-Term Waste Test Program (STTP) enclosures in Room 9010, and Room 9020 have wet-pipe sprinkler systems that are equipped with fusible-link heads that actuate at 212 degrees Fahrenheit. The sprinkler flows are monitored to automatically initiate a fire alarm. The building is also equipped with fire extinguishers and pull stations in Rooms 9010 and 9020. Depending on the size of a fire and the fuel source, fire extinguishers may be used by on-site personnel. However, LANL policy encourages immediate evacuation of the area and notification of appropriate emergency personnel. The fire alarm control panel continuously monitors all fire-suppression and detection systems and transmits signals to the Los Alamos County Fire Department through LANL's central alarm system (see Section 7.0 of the LANL General Part B).

Fire hydrants installed according to National Fire Protection Association standards are located around the outside of TA-3-29, as shown on Figure 5-2. Water is supplied to the fire hydrants by a municipal water system through 8-inch pipes at an adequate volume and pressure (i.e., 200 gallons per minute and 90 pounds per square inch static pressure) to supply a water hose in the event of a fire.

Spill centers are located at the south end of Room 9010 and in the STTP enclosures. They contain sorbent pillows, safety glasses, and gloves. Trained personnel may use this equipment to mitigate small containable spills when they are certain their actions will not put themselves or others at risk. Personnel decontamination equipment available includes safety showers and emergency eyewashes in the enclosures in Room 9010. Personnel working in Room 9020 have access to the eyewashes in the Room 9010 enclosures and a safety shower and emergency eyewash in Room 9030. The buddy system will always be employed when containers are actively managed in Rooms 9010 and 9020 to assure that the eyewash can be reached in an emergency. Material Safety Data Sheets provide useful exposure information and are available in Room 9010 and outside Room 9130 at TA-3-29.

5.2.2 Testing and Maintenance of Equipment [20 NMAC 4.1, Subpart V, 264.33]

All the communications and alarm systems and the fire protection, spill control, and decontamination equipment described above are tested and/or maintained according to the inspection schedule detailed in Section 6.0 of the LANL General Part B. The frequency of inspection is adequate to assure proper operation in the event of an emergency. Repair and replacement of emergency equipment are performed as required.

5.2.3 Access to Communications or Alarm System [20 NMAC 4.1, Subpart V, 264.34]

Whenever waste is being handled at the CSAs at TA-3-29, all personnel involved have immediate access to internal alarms or telephones in Rooms 9010 and 9020 either directly or through visual or voice contact with another individual. In the event of an emergency, this communication equipment allows personnel to contact the operating group management, the Emergency Management and Response Office, and/or the Central Alarm Station operator (refer to Section 7.2.2 of the LANL General Part B). In addition to the communications and alarm systems described in Section 5.2.1, on-site personnel may carry pagers, two-way radios, and/or cellular telephones so that they can contact or be contacted by on-site and LANL emergency support personnel at all times.

5.2.4 Aisle Space Requirements [20 NMAC 4.1, Subpart V, 264.35]

Where applicable, aisle space between waste containers at the TA-3-29 CSAs will be a minimum of 28 inches to provide access for inspection purposes and to allow the unobstructed movement of personnel and fire protection, spill control, and decontamination equipment in the event of an emergency. The specific waste storage method and configurations for the areas are described in Section 4.3.2 of this permit modification request.

5.2.5 Support Agreements with Outside Agencies [20 NMAC 4.1, Subpart V, 264.37(a)]

Information on support agreements with outside agencies, as required by 20 NMAC 4.1, Subpart V, 264.37(a), (3-1-97), is presented in Section 5.0 of the LANL General Part B.

5.3 PREVENTIVE PROCEDURES, STRUCTURES, AND EQUIPMENT [20 NMAC 4.1, Subpart IX, 270.14(b)(8)]

A description of the preventive procedures, structures, and equipment at the TA-3-29 waste management areas is presented below. This information is provided in accordance with the

requirements of 20 NMAC 4.1, Subpart IX, 270.14(b)(8), (3-1-97). Adherence to the procedures and proper use of the structures and equipment will help to prevent hazards and exposure to personnel and releases to the environment.

Trucks conforming to LANL specifications for Type B shipments requiring road closures are used to transport transuranic (TRU) mixed waste containers to TA-3-29 for storage and processing. The STTP waste drums are moved with individual multi-wheel dollies set into the bottom of the drums. STTP liter-scale test containers are moved with specialized fixtures referred to as "six-packs". The packaged wastes will be unloaded by hydraulic lift onto the ground and moved into the south entrance of Wing 9 of TA-3-29. An electric, riding lift truck equipped with a blunt-ended drum grapppler may be used to unload drums from the delivery truck one at a time. The drum grapplers will be equipped with blocks to prevent drums from being damaged. Metal standard waste boxes (SWB) and other large containers will be handled with a diesel forklift. Hand trucks or dollies will be used to move waste containers from the loading area to the CSAs. Should a spill occur during waste handling activities, management of the spill and/or residual material will be performed in accordance with the contingency plan (see Section 7.0 of the LANL General Part B).

The methods used to move drums at or in the CSAs will be selected based on the type of structure on which the drum is located. Drums on dollies will be moved manually. Drums located on secondary containment pallets will be moved using lift trucks equipped with drum grapplers. Drums containing liquids will only be set on dollies for placement at process equipment stations. The lift trucks will also be used to return drums from dollies to secondary containment pallets. A forklift will be used to move SWBs. The use of proper handling equipment, appropriate to a container's size and weight, helps to prevent hazards while moving containers within the CSAs. All damaged containers (e.g., severely corroded drums) are repaired or overpacked or the wastes are repackaged in new containers before being stored at any of the CSAs.

Runoff of mixed waste from the CSAs to other areas of the facility or to the environment will be prevented. Engineered secondary containment is present in the enclosures in Room 9010, and self-containment pallets will be used in Rooms 9010 and 9020 where potential liquid-bearing containers may be stored. All secondary containment systems will have sufficient capacity to

contain at least 10 percent of the volume of potential liquid-bearing containers or the volume of the largest container, whichever is greater, pursuant to the requirements of 20 NMAC 4.1, Subpart V, 264.175(b)(3), (3-1-97). Liquids resulting from leaks or spills that may accumulate in the secondary containment systems or in the self-containment pallets will be collected into a container using a high-efficiency particulate air vacuum, a pump, and/or sorbents, depending on the volume of accumulated liquid. Accumulated liquids will be removed in a timely manner to prevent overflow.

Run-on to the self-containment systems will be prevented because the CSAs at TA-3-29 are located inside the building. In addition, positive surface drainage will direct potential run-on away from the building. Pursuant to the requirements of 20 NMAC 4.1, Subpart IX, 270.14(b)(19)(xi), (3-1-97), Map 2 of the CMR Part A shows the contours and surface drainage around TA-3-29.

For several reasons, it is not anticipated that there will be any impact to groundwater or other water supplies as a result of waste-handling operations at TA-3-29. The CSAs are located inside the building and any material spilled during waste management activities will be remediated pursuant to the appropriate contingency plan as part of normal operations. In addition, potential liquid-bearing wastes will be stored in secondary containment systems or on self-containment pallets. All water supply lines are under pressure and are equipped with backflow prevention devices to prevent contamination of these lines during emergencies. The depth to the regional aquifer at TA-3 is approximately 1,100 feet (Purtymun, 1984). Geologic units underlying similar waste management units at TA-54 include layers of unsaturated volcanic tuff and ash, the moisture content of which ranges from 0.2 to 2.0 percent by weight (IT, 1987). This moisture content is insufficient for direct moisture migration through the Bandelier Tuff. Thus, no impact to groundwater is expected due to the release of the wastes managed at these units.

To prevent undue exposure of personnel to mixed waste, appropriate personal protective equipment (PPE) will be worn by personnel working at the TA-3-29 CSAs. Normal Wing 9 apparel consists of labcoats or coveralls and safety booties. While working with waste containers, coveralls, steel-toed shoes, and rubber gloves will be used, as appropriate. A Radiological Control Technician will provide guidance on additional PPE to be worn while working with mixed waste containers. Hard hats will be worn while heavy equipment is being operated.

Releases to the atmosphere are not anticipated at the CSAs at TA-3-29 because containers are kept closed during storage. The only exception to this practice is when, upon inspection, it is determined that containers currently in storage need to be overpacked or repackaged in new containers. Daily inspections are conducted to ensure the integrity of all stored containers. Continuous air monitors (CAM) will be located in the CSAs and, in the event of an unexpected release, all personnel located in the area would be notified to evacuate immediately.

Electrical power is supplied to TA-3-29 by a 13.8 kilovolt distribution line through an underground conduit to an on-site substation that provides distribution to the facility. Supplied power is used to operate CAMs and other electrical equipment in the building. In the event of a power failure, operations in the building would cease and personnel would exit the facility. Operations in CSAs would be discontinued temporarily if electrical power was not restored quickly or if container handling equipment failed. However, neither a power outage nor an equipment failure would affect containment at any of these CSAs.

5.4 PREVENTION OF ACCIDENTAL IGNITION OR REACTION OF IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE [20 NMAC 4.1, Subpart IX, 270.14(b)(9), 270.15(c) and (d); 20 NMAC 4.1, Subpart V, 264.17, 264.176, and 264.177]

This section provides a description of the precautions used to prevent accidental ignition or reaction of ignitable, reactive, or incompatible wastes at the TA-3-29 CSAs. If ignitable and/or reactive wastes (e.g., discarded materials contaminated with ignitable spent solvents, reactive metal debris) are stored in containers at any of the CSAs, the containers will be located at least 50 feet from the facility's property line at all times (refer to Map 2 of the CMR Part A) and will be protected from sources of ignition or reaction. Most mechanical equipment operated within the areas is grounded to minimize the potential for sparking by dissipating static charges. Smoking is not allowed within either of the CSAs. "No Smoking" signs are conspicuously placed wherever there is a potential hazard from ignitable or reactive waste, as required by 20 NMAC 4.1, Subpart V, 264.17(a), (3-1-97). Together, these measures meet the requirements of 20 NMAC 4.1, Subpart V, 264.17(a) and (b) and 264.176, (3-1-97).

Incompatible wastes, if any, will be kept segregated during storage, as described in Section 4.3.4. In addition, no incompatible wastes will be mixed, and no waste will be placed in a container that previously held an incompatible waste, as required by 20 NMAC 4.1,

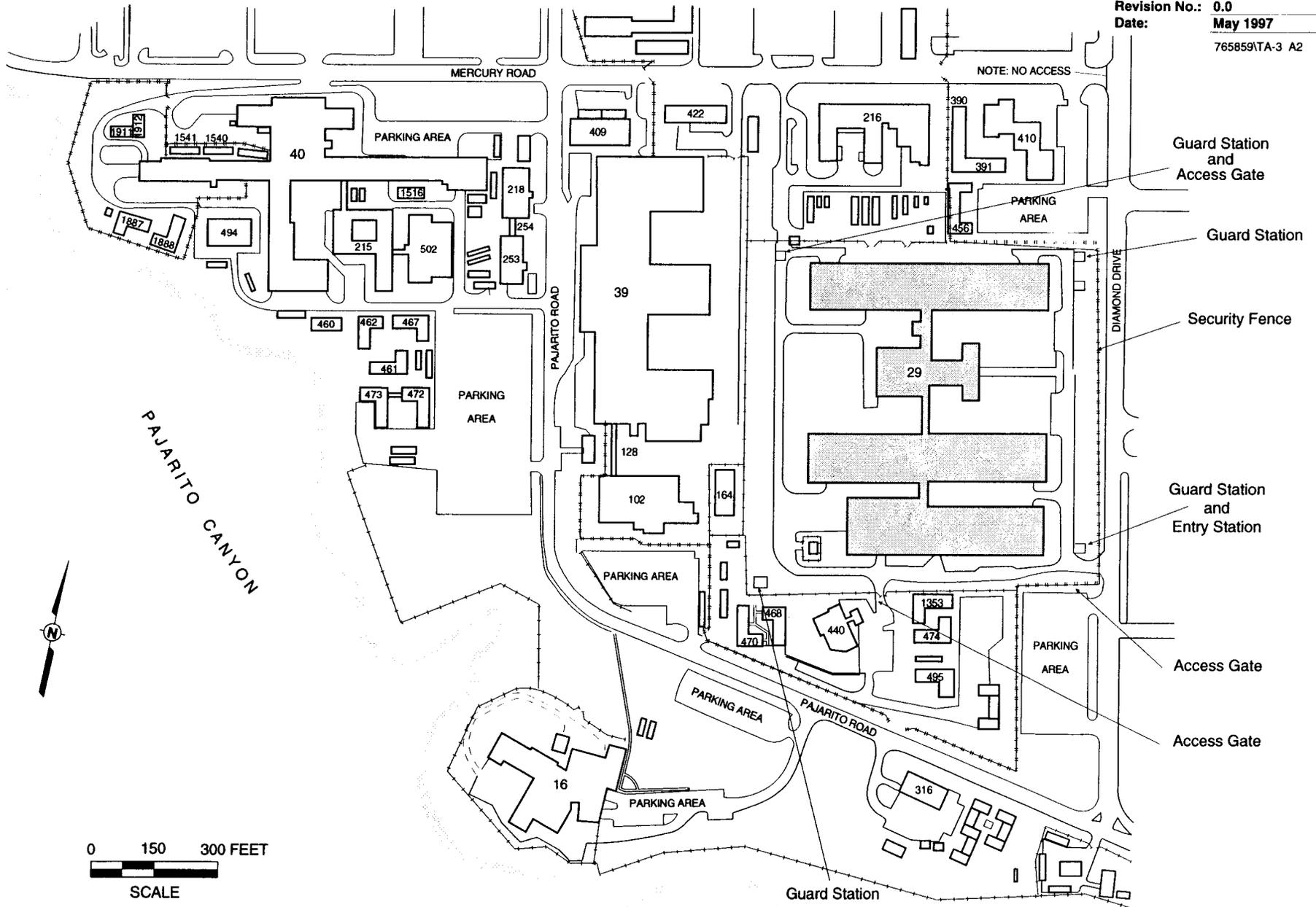
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Subpart V, 264.177(a) and (b), (3-1-97), and 20 NMAC 4.1, Subpart IX, 270.15(d), (3-1-97). Any incompatible liquid-bearing solid wastes (e.g., dewatered sludges) will be stored on self-containment pallets to meet the requirements of 20 NMAC 4.1, Subpart V, 264.177(c), (3-1-97). Only containers made of or lined with materials that will not react with and are otherwise compatible with the waste to be stored will be used for storage at the CSAs addressed in this permit modification request.

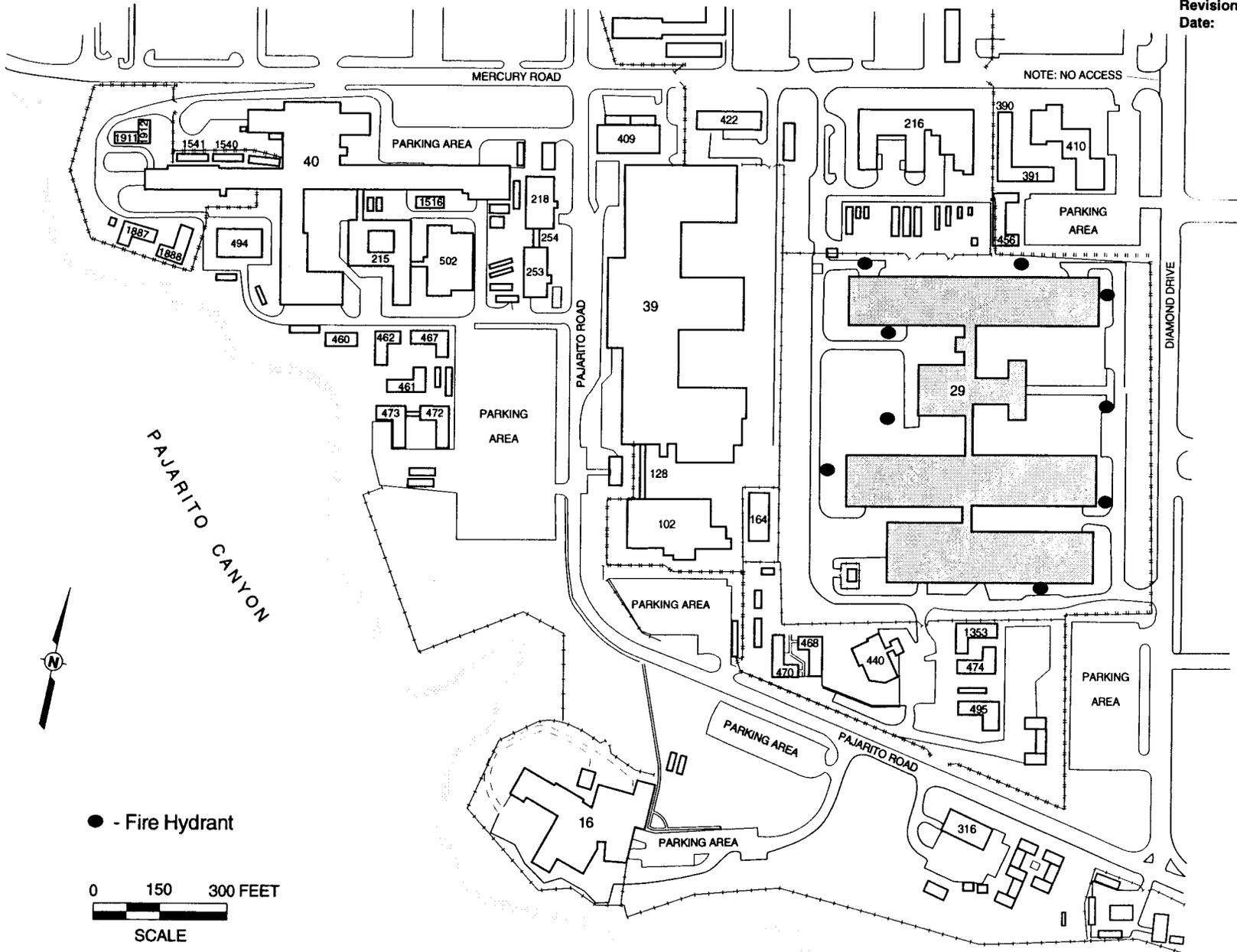
#### 5.5 ORGANIC AIR EMISSION STANDARDS

Hazardous wastes are potentially subject to the Code of Federal Regulations, Title 40 (40 CFR), Part 264, Subpart CC, standards for volatile organic emissions after December 6, 1996. Subpart CC standards for containers, as currently set forth by the U.S. Environmental Protection Agency (59 *Federal Register* 62896), require that containers be covered so that there are no detectable emissions.

The waste management units addressed in this permit modification request will be used to store TRU mixed wastes. Mixed wastes are currently exempt from the organic air emission standards. Therefore, the 40 CFR, Part 264, Subpart CC, standards are not applicable to the CSAs included in this permit modification request.



**Figure 5-1**  
Location Map Showing Security Fences, Access Gates, and Guard and Entry Stations in the Vicinity of  
Technical Area 3, Building 29



**Figure 5-2**  
Fire Hydrant Locations in the Vicinity of Technical Area 3, Building 29

## 6.0 INSPECTION PLAN

General inspection schedules and requirements applicable to the mixed waste container storage areas at Technical Area (TA) 3, Building 29, are addressed in Section 6.0 of the Los Alamos National Laboratory (LANL) General Part B (LANL, 1996a).

### 6.1 INSPECTION AND MONITORING FOR UNITS SUBJECT TO SUBPART CC REQUIREMENTS [20 NMAC 4.1, Subpart V, Part 264, Subpart CC, 264.1088]

Hazardous wastes are potentially subject to the Code of Federal Regulations, Title 40 (40 CFR), Part 264, Subpart CC, standards for volatile organic emissions after December 6, 1996. Subpart CC standards for containers, as currently set forth by the U.S. Environmental Protection Agency (59 *Federal Register* 62896), require that containers be covered so that there are no detectable emissions.

The waste management units addressed in this permit modification request will be used to store transuranic mixed wastes. Mixed wastes are currently exempt from the organic air emission standards. Therefore, the 40 CFR, Part 264, Subpart CC, standards are not currently applicable to the container storage areas included in this permit modification request.

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## 7.0 CONTINGENCY PLAN

In the event of an emergency at the container storage areas at Technical Area (TA) 3, Building 29 (TA-3-29), the Los Alamos National Laboratory (LANL)-wide contingency plan presented in Section 7.0 of the LANL General Part B (LANL, 1996a) will be implemented. Figure 7-1 depicts the evacuation routes for Rooms 9010 and 9020 at TA-3-29, and shows the muster area at the south end of TA-3-29. In addition, a listing of emergency equipment available for use in Rooms 9010 and 9020 at TA-3-29 is included as Attachment 7-1 of this document.

**Figure 7-1**  
Evacuation Routes and Muster Area for Rooms 9010 and 9020 at TA-3-29

**[This figure has been provided to the New Mexico Environment Department under separate cover as Unclassified Controlled Nuclear Information (UCNI) defined by Section 148 of the Atomic Energy Act.]**

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**ATTACHMENT 7-1**  
**Emergency Equipment**

## Attachment 7-1

### Emergency Equipment

**Emergency equipment available for use in Rooms 9010 and 9020 at Technical Area (TA) 3, Building 29 (TA-3-29):**

#### FIRE CONTROL EQUIPMENT:

Fire extinguishers

Locations:

- 1 ABC dry-chemical-type fire extinguisher in Room 9010
- 1 ABC dry-chemical-type fire extinguisher in Room 9020

Description of General Capabilities:

The fire extinguishers have a 10-pound minimum capacity and may be used by any employee in the event of a small fire.

Fire hydrants

Locations:

Nine fire hydrants are located around the outside perimeter of Building 29. The nearest fire hydrants to Rooms 9010 and 9020 are located on the south side of Wing 9 and west of Wing 5.

Description of General Capabilities:

The fire hydrants will supply water at adequate volume and pressure to satisfy the requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Part V, 264.32, (3-1-97).

Fire alarm pull boxes are located in Rooms 9010 and 9020.

Sprinkler systems are located in Room 9010 and 9020.

Automatic thermal alarm systems are located in Rooms 9010 and 9020.

Description of General Capabilities:

Manually operated fire alarms may be activated by any employee in the event of fire to notify the Central Alarm Station. Automatic sprinkler systems maximize fire suppression in the event of a fire.

#### SPILL CONTROL EQUIPMENT

Absorbent is kept in Room 9010.

Description of General Capabilities:

Absorbent is used in the event of a small spill.

## Attachment 7-1

### Emergency Equipment (Continued)

#### Emergency equipment available for use in Rooms 9010 and 9020 at TA-3-29 (Continued):

##### COMMUNICATION EQUIPMENT:

Telephones (Centrex and private lines) are located in the north Actinide Source-Term Waste Test Program (STTP) enclosure of Room 9010 and in Room 9020. Personnel also have access to two-way radios.

##### Alarms:

Evacuation alarm is a pulsating sound over the public address system.

Fire alarm is a double slow-whoop sound.

##### Description of General Capabilities:

Telephones are used for internal and external communication and have paging capabilities. Two-way radios allow personnel to maintain contact with various operations personnel and may be used to request emergency personnel and equipment, if necessary. The evacuation and fire alarms are used to alert personnel in the area.

##### DECONTAMINATION EQUIPMENT:

Safety showers and emergency eyewashes are available in the two enclosures in Room 9010 and in Room 9030.

Material Safety Data Sheets (MSDS) are available in Room 9010 and outside Room 9130.

##### Description of General Capabilities:

The safety showers and eyewashes may be used by personnel who receive a chemical splash to the skin or eyes. Specific MSDSs should be obtained prior to working with hazardous or mixed waste to determine if the application of water is indicated for decontamination.

##### PERSONAL PROTECTIVE EQUIPMENT:

Self-contained breathing apparatus are available in Room A130 (Administrative wing).

Room 9102 is a change room with protective clothing available.

Full-mask negative pressure respirators are located in the hallway outside of Room 9104; radioactive particulate filters are available.

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**Attachment 7-1**

**Emergency Equipment  
(Continued)**

**Emergency equipment available for use in Rooms 9010 and 9020 at TA-3-29 (Continued):**

**OTHER:**

See Attachment 7-1 of the LANL General Part B for equipment available in the Hazardous Materials Response Group vehicles and trailers.

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## 8.0 PERSONNEL TRAINING PLAN

Personnel working at the container storage areas at Technical Area (TA) 3, Building 29, will be trained appropriately, as discussed in Section 8.0 of the Los Alamos National Laboratory (LANL) General Part B (LANL, 1996a).

## 9.0 CLOSURE PLAN

This section describes the activities necessary to close the mixed waste container storage areas (CSA) at Technical Area (TA) 3, Building 29 (TA-3-29), addressed in this permit modification request. The activities detailed in this section are included to address the closure requirements specified in the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20 NMAC 4.1), Subpart IX, 270.14(b)(13), (3-1-97), and 20 NMAC 4.1, Subpart V, Part 264, Subpart G, (3-1-97). This closure plan addresses closure procedures specific to the CSAs. Closure will be conducted in accordance with the schedule presented in Table 9-1. One or more CSA may be closed at any given time.

General closure information applicable to all hazardous and mixed waste units at Los Alamos National Laboratory (LANL) and general sampling and analytical procedures to be used during closure activities are presented in Section 9.0 of the LANL General Part B (LANL, 1996a).

### 9.1 CLOSURE PROCEDURES FOR THE TA-3-29, ROOMS 9010 AND 9020, CONTAINER STORAGE AREAS [20 NMAC 4.1, Subpart V, 264.112, 264.114, and 264.178]

The TA-3-29, Rooms 9010 and 9020 mixed waste CSAs are located on the basement floor of Wing 9 of the Chemistry and Metallurgy Research (CMR) Building. These CSAs will be used to store drums, containers of various sizes, standard waste boxes (SWB), and steel B25 boxes containing transuranic (TRU) mixed waste. Figure 9-1 shows the location of TA-3-29 at LANL; the locations of the Rooms 9010 and 9020 CSAs within TA-3-29 are shown on Figure 9-2. Detailed information on these CSAs is presented in Section 4.1 of this permit modification request.

#### 9.1.1 Estimate of Maximum Waste in Storage

The maximum inventory of waste in storage at any time at the CSAs in TA-3-29, Rooms 9010 and 9020, is estimated at 11,200 gallons and 5,300 gallons, respectively.

#### 9.1.2 Description of Waste

TRU mixed waste to be stored in the TA-3-29, Rooms 9010 and 9020 CSAs is generated during research activities, processing and recovery operations, and decontamination and decommissioning operations primarily at TA-3, TA-21, TA-50, and TA-55. The wastes are

classified as mixed wastes because Resource Conservation and Recovery Act (RCRA)-characteristic and/or -listed wastes are or may be present in the waste along with a radioactive component.

#### 9.1.3 Removal of Waste

All wastes will be removed from the CSA to be closed prior to the initiation of closure activities. Containers will be removed from each storage area primarily with forklifts. Small containers may be handled manually or with dollies. All containers will be placed onto flatbed trucks or trailers for transport. All appropriate shipping papers will accompany the wastes during transport. Containers holding RCRA-regulated mixed wastes will be moved to an approved on-site facility or permitted off-site treatment and/or disposal facility.

#### 9.1.4 Closure Procedures and Decontamination

To the extent possible, all contaminated structures and equipment at the CSAs addressed in this closure plan will be decontaminated. Structures, equipment, and media that cannot be decontaminated will be containerized and managed in compliance with appropriate regulations. All sampling conducted during closure and decontamination will be done in accordance with quality assurance/quality control (QA/QC) procedures (see Section 9.1.8 of the LANL General Part B).

Before proceeding with any closure activities, the CSAs will be surveyed for radiological contamination. Personal protective equipment (PPE) and monitoring requirements will be determined by LANL's Health Physics Operations (ESH-1) and Industrial Hygiene and Safety (ESH-5) groups following a field inspection. Radiation and chemical monitoring will occur throughout closure activities. If any contamination is found, the contaminated materials, equipment, or structures will be decontaminated (if possible) or containerized and taken to an approved storage location at LANL appropriate for the waste type.

Personnel involved in closure activities will wear appropriate PPE, specified by ESH-1 and ESH-5, and will follow good hygiene practices to protect themselves from exposure to mixed waste. The level of PPE that will be required will depend upon the levels of radiological and/or chemical contamination that are detected, if any. If ESH-1 and ESH-5 surveys do not indicate detectable contamination levels, minimum PPE requirements will consist of coveralls, steel-toed

boots, and safety glasses or face shields. If an overhead danger is present, a hard hat will be worn. All workers involved in closure activities will be required to have training and medical monitoring. Contaminated PPE will either be decontaminated or managed in compliance with appropriate regulations.

Before decontamination activities begin, samples of the clean water and detergent (wash water) solution squeezed from mops and/or sponges prior to use will be collected for analysis of the parameters listed in Table 9-2. The analytical results from these samples will be used to provide a baseline for decontamination verification.

Prior to decontamination of the main surfaces of the CSA, any portable equipment to be removed from the area will be wiped down with wash water solution. This may include equipment such as self-containment pallets, wooden pallets, and miscellaneous equipment (e.g., the Room 9010 enclosures). Portable berms will be used, when necessary, to provide containment for the used wash water. After the washdown process, the used wash water will be collected, transferred to containers, sampled, and analyzed for the parameters in Table 9-2. If the used wash water is nonhazardous and nonradioactive, it will be managed appropriately in accordance with LANL policy. Otherwise the used wash water will be managed at an appropriate on-site facility. If sampling and analysis indicate that radioactive and/or hazardous constituents are present, the wash cycles and analyses will continue until the equipment has been decontaminated or the decision is made to manage it appropriately as contaminated waste. This material may be transported to and stored at other waste management facilities to facilitate the closure process.

The CSA will be inspected for any cracks or conditions that would potentially lead to the loss of liquid containment in the storage area. If any defects, deterioration, damage, or hazards affecting the containment system are discovered during inspection, appropriate remedial actions including repairs, maintenance or replacement will be completed prior to further decontamination activities. The walls, floors, and remaining equipment of the CSA will then be wiped down with wash water solution. Portable berms will be used to collect and provide containment for the used wash water, as necessary. The used wash water will be collected, sampled, and analyzed for the parameters in Table 9-2. If the used wash water is nonhazardous and nonradioactive, it will be managed appropriately in accordance with LANL policy. Otherwise, the used wash water will be managed at an appropriate on-site facility, depending on the regulated constituents

present. If sampling and analysis indicate that hazardous and/or radioactive constituents are present, the wash cycles and analyses will continue until the area has been decontaminated or the decision is made to segregate contaminated portions of the storage area for subsequent management as contaminated waste. Decontamination verification is discussed further in Section 9.1.6.

Under normal circumstances, the following soil sampling activities will not be applicable because the CSAs are located inside a building with an impervious floor. However, if soil sampling is deemed necessary based on analytical evidence and the operational history of the unit, sampling of the area will be performed to verify that no hazardous constituents remain upon closure as a result of container storage activities. A grid will be sited over the area to be sampled, boreholes drilled through the floor material, and soil samples taken and analyzed to determine horizontal and vertical extent of contamination.

#### 9.1.5 Decontamination Equipment

Prior to use, all decontamination equipment will be rinsed with distilled water. Decontamination equipment rinsate blanks will be collected and analyzed in accordance with QA/QC procedures (see Section 9.1.8 of the LANL General Part B). Reusable protective clothing, tools, and equipment used during closure activities will be cleaned with a wash water solution and scraped as necessary to remove any residue. Residue, disposable equipment, and reusable equipment that cannot be decontaminated will be containerized and managed appropriately at an approved on-site facility, depending on the regulated constituents present. Used wash water will be collected and analyzed for the parameters listed in Table 9-2. If the used wash water is nonhazardous and nonradioactive, the water will be managed appropriately in accordance with LANL policy. Otherwise, it will be managed at an appropriate on-site facility, depending on the regulated components present.

#### 9.1.6 Decontamination Verification

Sufficient sampling and analysis will be required to demonstrate that mixed waste residue is not present at the site after closure. Two samples of clean wash water solution squeezed from mops and/or sponges prior to use will be collected before initial washdown of the CSAs. The samples will be analyzed for parameters listed in Table 9-2 to provide baseline data for decontamination verification. Analytical procedures will conform to methods found in the most

current version of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (SW-846) (EPA, 1986). Used washdown solutions will also be analyzed for the parameters listed in Table 9-2. Washdown solutions will be considered contaminated if the used wash water solution shows a significant increase (i.e., determined using statistical methods defined in SW-846) in the analytical parameters over the clean wash water solution. If subsequent washdowns are deemed necessary, an additional sample of clean wash water solution squeezed from mops and/or sponges prior to use will be taken for each additional washdown event.

If available, background soil data for TA-3-29 may also be used to demonstrate that mixed waste residue resulting from storage activities is not present at the site after closure. A comparison of closure sampling data to available background soil data will be used to establish the source of any hazardous waste or constituents present in the soil. If the data comparison indicates that contamination is from container storage activities, additional contaminated-soil excavations will be performed until at least one of the decontamination criteria has been met successfully.

Successful decontamination meets one of the following criteria:

- No detectable hazardous waste or constituents from container storage activities are found in the final sample.
- Detectable hazardous waste or constituents from container storage activities in the final sample are removed to statistically significant levels based on baseline concentrations in the clean wash water or established background soil data.
- Detectable hazardous waste or constituents from container storage activities in the final sample are at or below levels agreed upon with the New Mexico Environment Department (NMED).
- Detectable hazardous waste or constituent concentrations from container storage activities do not significantly decrease after several washdowns. In such an event, hazardous constituents will be allowed to remain that pose an acceptable risk as mutually agreed upon with NMED.

**Table 9-1**  
**Closure Schedule for the Container Storage Areas**

Activity	Maximum Time Required <sup>a</sup>
Let contract request for proposals	-90 Days
Notify the New Mexico Environment Department (NMED)	-45 Days
Receive proposals	-30 Days
Select contractor and award contract	-10 Days
Collect background samples (if appropriate)	-5 Days
Final receipt of waste	Day 0
Begin closure activities (perform washdown of structures and/or equipment)	Day 10
Perform initial sampling of the waste management unit	Day 15
Analyze samples	Day 45
Perform additional washdown (if necessary)	Day 50
Perform additional sampling (if necessary)	Day 60
Analyze samples (if necessary)	Day 90
Perform final cleanup (e.g., removal of decontaminated equipment and decontamination wastes)	Day 120
Verify decontamination	Day 150
Submit final report to NMED	Day 180

<sup>a</sup> The schedule above indicates calendar days from the beginning by which activities will be completed. Some activities may be conducted simultaneously and/or may not require the maximum time listed. Extensions to this schedule may be requested, as needed.

**Table 9-2**

**Analytical Parameters and Test Methods<sup>a</sup> for Container Storage Areas**

Parameter	Test Method	Reference <sup>b</sup>
Ignitability	Pensky-Martens closed-cup method	(L) SW1010 (L) ASTM D93-80
Reactivity	Test method to determine hydrogen cyanide released from waste Test method to determine hydrogen sulfide released from waste	(L,S) SW, Section 7.3
Corrosivity	Electrometric (pH of aqueous solution)	(L) SW9040B
Toxicity characteristic	Toxicity characteristic leaching procedure (TCLP) extraction	(L, S) SW1311
Metals	Graphite furnace atomic absorption (AA) spectroscopy, gaseous hydride AA, or direct aspiration AA	
Arsenic		(L,S) SW7060A, SW7061A
Barium		(L,S) SW7080A, SW7081
Cadmium		(L,S) SW7130, SW7131A
Chromium		(L,S) SW7190, SW7191
Lead		(L,S) SW7420, SW7421
Selenium		(L,S) SW7740, SW7741A
Silver		(L,S) SW7760A, SW7761
Mercury	Manual cold-vapor technique	(L) SW7470A, (S) SW7471A
Volatile organics	Gas chromatography/mass spectrometry (GC/MS) GC/MS capillary column technique	(L,S) SW8240B (L,S) SW8260A
Semivolatile organics	GC/MS GC/MS capillary column technique	(L,S) SW8250A (L,S) SW8270B

**Table 9-2 (Continued)**

**Analytical Parameters and Test Methods<sup>a</sup> for Container Storage Areas**

Parameter	Test Method	Reference <sup>b</sup>
Organochlorine pesticides	GC	(L,S) SW8080A
Chlorinated herbicides		(L,S) SW8150B
Total metals <sup>c</sup>	Acid digestion Inductively coupled plasma emission spectroscopy	(L) SW3010A, (S) SW3050A (L,S) SW6010A
Arsenic		(L,S) SW6010A
Barium		(L,S) SW6010A
Beryllium		(L,S) SW6010A
Cadmium		(L,S) SW6010A
Chromium		(L,S) SW6010A
Lead		(L,S) SW6010A
Nickel		(L,S) SW6010A
Selenium		(L,S) SW6010A
Silver		(L,S) SW6010A
Thallium		(L,S) SW6010A
Zinc		(L,S) SW6010A
Mercury	Manual cold-vapor technique	(L) SW7470A, (S) SW7471A
Free liquids	Paint Filter Liquids Test	(S) SW9095

<sup>a</sup> At Los Alamos National Laboratory, current analytical capabilities include limited analyses of mixed waste samples. These analyses include gross alpha, beta, and gamma screening.

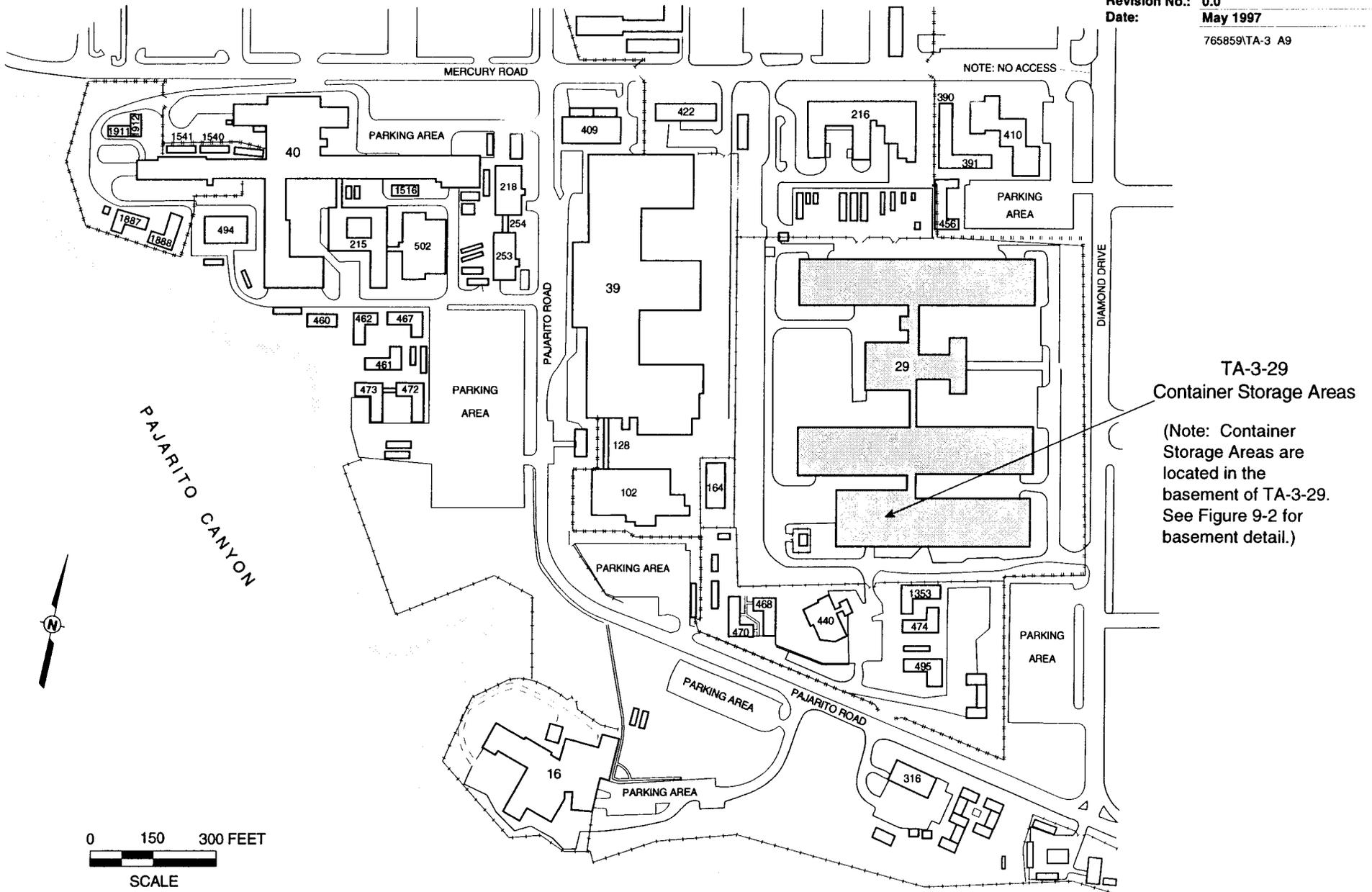
<sup>b</sup> "ASTM" refers to American Society for Testing and Materials standards.

"SW" refers to U.S. Environmental Protection Agency, 1986, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, Third Edition and all subsequent updates.

(L) refers to liquid waste.

(S) refers to solid waste.

<sup>c</sup> See also Atomic Absorption Methods listed under TCLP.



**Figure 9-1**  
Technical Area (TA) 3, Building 29 - Site Location Map

**Figure 9-2**  
Location Map Showing the Container Storage Areas at  
Technical Area (TA) 3, Building 29, Wing 9, Basement Rooms 9010 and 9020

**[This figure has been provided to the New Mexico Environment Department under separate cover as Unclassified Controlled Nuclear Information (UCNI) defined by Section 148 of the Atomic Energy Act.]**

## 10.0 CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS

This section describes the solid waste management units (SWMU) that have been identified in or near Technical Area (TA) 3, Building 29 (TA-3-29), the Chemistry and Metallurgy Research (CMR) Building at Los Alamos National Laboratory (LANL). The information in this section is being submitted in response to regulatory requirements in the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20 NMAC 4.1), Subpart IX, 270.14(d), (3-1-97).

LANL uses the definition of a SWMU presented in "Module VIII: Special Conditions Pursuant to the 1984 Hazardous and Solid Waste Amendments to RCRA for Los Alamos National Laboratory, EPA I.D. NM0890010515" (U.S. Environmental Protection Agency [EPA], 1994), referred to as Module VIII. This definition states that SWMUs are "any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at or around a facility at which solid wastes have been routinely and systematically released."

### 10.1 SWMU DESCRIPTIONS

Several types of SWMUs are present at TA-3-29. These SWMUs include: those identified for corrective actions in Module VIII, as modified following a Class III permit modification effective May 19, 1994; SWMUs that are active Resource Conservation and Recovery Act (RCRA) units; and SWMUs identified in Revision 1.0 of LANL's "Solid Waste Management Units Report," hereafter referred to as the 1990 SWMU Report (LANL, 1990a). The SWMUs at TA-3-29 are described below. These descriptions were compiled from the "RFI Work Plan for Operable Unit 1114" (LANL, 1993b), from the "RFI Work Plan Addendum 1 for Operable Unit 1114" (LANL, 1995b), and from the 1990 SWMU Report. Brief unit and waste descriptions are also provided in Table 10-1. Figure 10-1 is included solely to show the locations of the SWMUs in or near TA-3-29.

#### 10.1.1 Tanks and Waste Lines

SWMUs at TA-3-29 include various tanks and waste lines. SWMU No. 3-026(c) is identified in the "RFI Work Plan Addendum 1 for Operable Unit 1114" (LANL, 1995b) as aboveground holding tanks in the basement of TA-3-29 that are associated with chilled water systems in Wings 2, 3, 4, 5, and 7. The water chillers are on the first floor. Chilled water is piped to each laboratory

for circulation in equipment. Returning water is piped to the basement where it empties into an aboveground holding tank. There are five holding tanks in each wing and each tank measures approximately 16 feet (ft) long and 4 ft in diameter. Adjacent to each holding tank are two pumps that circulate the water to the chillers. There is a pipe from the tank to a floor drain connected to the industrial waste line. The tanks are designed to discharge to the industrial waste line via the floor drain if both recirculating pumps fail (LANL, 1993b).

SWMU No. 3-031 comprises the radioactive liquid waste system within TA-3-29, consisting of double-encased stainless steel vaults, tanks, sumps, and drain lines that discharge to the industrial waste line for treatment at TA-50. From 1953 to 1982, operations at TA-3-29 drained liquid radioactive waste through sumps and tanks. Floor drains, air duct washwater, and, in some cases, the perchloric acid scrubber, drained into two 800-gallon concrete tanks and associated sumps in the basement in each wing of the building. These tanks are adjacent to each other and made of 6-inch-thick concrete walls. The dimensions of the tanks are 10 ft long by 6 ft wide by 6 ft high. Although the tanks were designed as holding tanks, they were used more as a pass-through system. The valve at the bottom of each tank was always in the open position; therefore, all liquids drained directly to the radioactive liquid waste line. The tanks served as holding tanks if the inflow to the tank was at a greater rate than the outflow. Liquid waste from TA-3-29 was carried through the radioactive liquid waste line to pumping station TA-3-700 and then pumped to TA-50 (LANL, 1990a).

The present system has been in operation since 1982. Waste discharged to the sumps and tanks contains radioactive and potentially mixed waste constituents. The liquid is transferred directly to TA-50 via the radioactive liquid waste line. A computerized leak detection and valve control system at TA-50 monitors the line for leaks. No releases from the vaults were observed during visual inspections in 1987 or have been reported in the past (LANL, 1990a).

SWMU No. 3-014(w) is a drain line where photographic waste from darkroom operations in Wing 9 discharged directly to the sanitary sewer line (LANL, 1990a). SWMU No. 3-034(a) has been identified as Building TA-3-154 and the associated underground radioactive liquid waste storage tanks (two stainless-steel tanks and two concrete tanks) located partially beneath the building. TA-3-154 was constructed in 1961 to house the operating equipment of the four

storage tanks. The tanks were designed to receive radioactive waste from Wing 9 of TA-3-29. SWMU No. 3-034(a) is located approximately 75 ft west of Wing 9.

From 1961 to 1983, the tanks received radioactive liquid waste (fission products from destructive testing of reactor fuel rods) from the hot cell in Wing 9. The radioactive liquid was originally routed to the stainless-steel tanks and stored to allow decay of short-lived radionuclides. The liquid was processed through ion-exchange columns to lower the activity of the waste and was then stored in the concrete storage tanks. The two stainless-steel tanks are 7 ft high and 5 ft in diameter with an approximate capacity of 1,000 gallons. They are located beneath the north end of Building 154 in concrete vaults with acid-proof coatings. The concrete tanks are located and accessible beneath the southern end of Building 154. Each concrete tank is approximately 17 ft long by 9 ft wide by 6 ft high with a maximum capacity of 4,900 gallons. A single gravity outflow sump pit is located on the south side of the tanks and was used to drain liquid waste to the industrial waste line. The liquid waste was then pumped to TA-50.

After 1983, the storage tanks were no longer used and they were taken off line in 1985 when the former industrial waste line was removed. Radioactive liquid waste is monitored in one stainless-steel tank and one concrete tank (LANL, 1995b).

#### 10.1.2 Container Storage Areas

The following descriptions of SWMUs made up of container storage areas (CSA) have been adapted from the "RFI Work Plan Addendum 1 for Operable Unit 1114" (LANL, 1995b), unless otherwise cited. SWMU No. 3-001(y) consists of four RCRA hazardous and mixed waste satellite accumulation areas located in Wings 3, 5, and 7 and in the basement at TA-3-29. These areas are operated in conformance with 20 NMAC 4.1, Subpart III, "Standards Applicable to Generators of Hazardous Waste," (3-1-97) and are managed for releases under the "Spill Prevention Control and Countermeasure Plan for the Los Alamos National Laboratory, Los Alamos, New Mexico" (LANL, 1990b).

SWMU No. 3-004(a) is an inactive temporary storage area in a basement hallway of TA-3-29, Wing 2. Drums containing radioactively-contaminated paper and glass have been stored on a concrete pad at this location. There are no known releases from this storage area (LANL, 1990a). SWMU No. 3-004(b) is an inactive drum storage area on a concrete pad in Room 2005

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of Wing 2. Drums stored at this location contained solids, flammable materials, inorganics, and metal materials, including radioactively-contaminated paper and glass.

SWMU No. 3-004(c) is a dumpster area located at the main loading dock of TA-3-29. The SWMU is a level, asphalted area approximately 85 ft long by 50 ft wide, occupied by two dumpsters. The loading dock has been an active site since TA-3-29 opened in 1952. The dumpsters receive compactible and noncompactible radioactive waste from offices within all wings of TA-3-29. The waste material consists of gloves, paper products, glass, plastic, and metal. Run-off from this dumpster area drains to a storm drain inlet grate located approximately 50 ft southwest of the area. The storm drain discharges at National Pollutant Discharge Elimination System (NPDES) permit outfall number EPA 03A021 in upper Mortandad Canyon.

SWMU No. 3-004(d) is a level, gravel-covered area, approximately 75 ft long by 20 ft wide located south of the steps at the west end of Wing 9 of TA-3-29. One dumpster formerly occupied this area and was used to accumulate contact-handled waste from Wing 9 hot cell operations. The dumpster typically received rags, small hardware, paper, machine shop waste, cleaning materials, and hot cell items. All waste was bagged and boxed prior to being placed into the dumpster. Runoff from this area flows to a storm drain 100 ft west of the SWMU, discharging to NPDES outfall number EPA 03A021.

SWMU No. 3-004(e) is a 55-gallon storage drum in Wing 4 of TA-3-29. It is used for storage of enriched uranium processing operation wastes. Radioactive and potentially mixed glovebox wastes such as rags, paper, rubber gloves, and similar items are stored in the drum.

SWMU No. 3-004(f) is a calcium fluoride slag storage area in Room 4064 in the basement of TA-3-29. The slag is generated by uranium fluoride reducing operations resulting in cylinders of calcium fluoride, which are then stored in paint buckets within 55-gallon drums for secondary containment. There have been no recorded releases from this storage area.

SWMU No. 3-048 is a storage area for 55-gallon transuranic (TRU) waste canisters inside a remote-handled hot cell in Wing 9 of TA-3-29. The waste contains radioactive metal and plastic materials. The hot cells in Wing 9 are completely contained units with no pathway to the environment. There have been no releases of hazardous or radioactive materials.

SWMU No. 3-058 consists of TRU CSAs located in the utility corridors between the laboratories in Wings 2, 3, 5, and 7. The temporary accumulation areas store waste such as gloves, tissues, rags, laboratory plasticware, and broken laboratory equipment. Waste is placed into separate plastic bags inside each drum. There is no record of releases at these sites.

The Rooms 9010 and 9020 CSAs addressed in this permit modification request have storage capacities of 11,200 gallons and 5,300 gallons, respectively. These CSAs are used to store TRU mixed waste. They have not been assigned SWMU numbers.

The Room 9030 CSA was described in the "Hazardous Waste Permit Application—Part A—for Mixed Waste" (LANL, 1991), and has a storage capacity of 2,000 gallons. The area has been used for storage of radioactive materials contaminated with lead. It has not been assigned a SWMU number. There is no record of releases from this area. The CSA is currently anticipated to be closed in the near future under 20 NMAC 4.1, Subpart VI, (3-1-97), closure standards.

#### 10.1.3 Vacuum Pump Shed

SWMU 3-010(b) is the site of a vacuum pump and protective shed operated from the mid-1950s until 1982. The vacuum pump was on the north side of Wing 5 of TA-3-29. The pump, motor, and shed housing were mounted on a concrete foundation approximately 3 to 4 inches higher than the surrounding asphalt paving. When the pump was dismantled, some vacuum seal oil stains were found on the concrete in the shed. The pump used a pure, low vapor pressure, medium-weight, petroleum-based (30W) oil for the vacuum seal. No radioactive materials, polychlorinated biphenyls (PCB), or heavy metal residues were present in the gas stream entering the pump as indicated by an operations review at the time of dismantling. None of the staining extended beyond the shed. Therefore, there is only a low probability that a release of hazardous or radioactive constituents occurred at this site (LANL, 1993b).

#### 10.1.4 PCB Transformer Storage Area

SWMU 3-003(e) is an area of potential contamination from 10 transformers that were located in the basement of TA-3-29. The transformers were removed in 1989 and 1990 and contained PCB concentrations greater than 50 percent in the transformer fluid. Inspection revealed no oil stains on the concrete in the former locations of the transformers. Archival research indicates no record of releases (LANL, 1995b).

## 10.2 RELEASES

Some of the SWMUs listed in Table 10-1 have released, or are suspected to have released, hazardous waste or hazardous constituents. The following description is provided based upon information obtained from the "RFI Work Plan for Operable Unit 1114" (LANL, 1993b) and the "RFI Work Plan Addendum 1 for Operable Unit 1114" (LANL, 1995b). SWMUs not discussed in this section do not have any documented evidence of releases.

Runoff from the SWMU Nos. 3-004(c) and 3-004(d) eventually discharges at NPDES outfall EPA 03A021. Liquids may have been part of the waste streams disposed in the dumpsters at these sites. The primary constituents of concern are radionuclides, specifically plutonium, uranium, and cesium. Other constituents, including semivolatile organic compounds and metals, may have also been carried outside the dumpsters (LANL, 1995b).

SWMU No. 3-014(w) is a component of a SWMU aggregate including the entire sanitary treatment system for TA-3. Other components of this system include floor drains, lift stations, associated outfalls, and the waste water treatment plant. The waste water treatment plant was taken off-line when the LANL Sanitary Wastewater System Consolidation Plant became operational in 1992. The primary hazardous constituents of concern at SWMU No. 3-014(w) are the heavy metals associated with photographic wastes

SWMU No. 3-034(a) consists of Building 154 at TA-3 and the associated underground waste storage tanks west of TA-3-29. All four storage tanks are currently on standby status; it is not known whether they will be reconnected and used in the future. One stainless-steel tank and one concrete tank contain radioactive liquid waste. There is no evidence that the tanks have leaked in the past; therefore, the nature and extent of any contamination potentially present is not known.

### 10.2.1 Characterization of Releases

Potential releases from SWMUs, if any, are described in the 1990 SWMU Report and in the "RFI Work Plan for Operable Unit 1114" (LANL, 1993b). The descriptions include the material released and the nature of the release. However, because of the nature of the releases, the exact volume is not always known. The timing of the releases can only be estimated by the period of operation and sampling events.

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### 10.2.2 Corrective Actions

Pursuant to 20 NMAC 4.1, Subpart V, 264.101(a), (3-1-97), corrective actions are required for releases of hazardous waste or hazardous constituents. There have been some documented releases of hazardous waste or hazardous constituents from the TA-3-29 SWMUs listed in Table 10-1. However, because the TA-3-29 SWMUs are located in areas where waste has been historically and is currently managed, they will be investigated and remediated, as necessary and with EPA and New Mexico Environment Department approval, during LANL Environmental Restoration Project corrective action activities. Corrective action will follow the RCRA Facility Investigation/Corrective Measures Study process.

**Table 10-1**

**Technical Area (TA) 3, Building 29, Solid Waste Management Unit (SWMU) Descriptions<sup>a</sup>**

SWMU No.	Unit Type	Unit Description	Waste Description
3-001(y)	Satellite accumulation areas	4 RCRA <sup>b</sup> container storage areas	Hazardous and mixed waste
3-003(e)	PCB <sup>c</sup> transformer storage area	PCB-containing transformers removed under TSCA <sup>d</sup>	>500 ppm PCB containing transformer fluid
3-004(a)	Radioactive waste storage area	Temporary drum storage for radioactively-contaminated paper and glass in hallway outside Room 4041	Radioactive solid waste and potentially hazardous constituents
3-004(b)	Radioactive waste storage area	Inactive drum storage area in Room 2005, Wing 2, basement	Radioactive solid waste and potentially hazardous constituents
3-004(c)	Radioactive waste storage area	Radioactive material handling area waste and office waste stored in two dumpsters at the TA-3-29 main loading dock	Radioactive solid waste and potentially hazardous constituents
3-004(d)	Radioactive waste storage area	Former storage area for radioactive waste dumpster west of Wing 9	Radioactive solid waste and potentially hazardous constituents
3-004(e)	Satellite accumulation area	RCRA container storage area for uranium processing glovebox waste in Wing 4	Hazardous and mixed waste
3-004(f)	Satellite accumulation area	RCRA container storage area for calcium flouride slag in Room 4064	Hazardous and mixed waste
3-010(b)	Vacuum pump and shed	Former site of vacuum pump on north side of Wing 5	Pump oil and potentially hazardous constituents
3-014(w)	Drainline	Photographic wastes from former darkroom operations in Wing 9	Liquid waste and potentially hazardous constituents
3-026(c)	Aboveground holding tanks	Chilled-water-system holding tanks with provisions for discharge to industrial waste line	Liquid waste and potentially hazardous constituents
3-031	Radioactive liquid waste system	Liquid waste collection tanks, sumps, and drainlines	Radioactive liquid waste and potentially hazardous constituents

**Table 10-1 (Continued)**

**Technical Area (TA) 3, Building 29, Solid Waste Management Unit (SWMU) Descriptions<sup>a</sup>**

SWMU No.	Unit Type	Unit Description	Waste Description
3-034(a)	Radioactive waste storage tanks	Underground radioactive liquid waste storage tanks beneath Building TA-3-154 west of Wing 9	Liquid radioactive waste and potentially hazardous constituents
3-048	Radioactive waste storage area	Metal and plastic transuranic waste storage area in Wing 9 hotcell	Solid radioactive waste and potentially hazardous constituents
3-058	Radioactive waste storage area	Temporary transuranic laboratory waste storage areas in Wings 2, 3, 5, and 7 of TA-3-29	Solid radioactive waste and potentially hazardous constituents
TBD <sup>e</sup>	Container storage	Container storage located in Room 9010, Wing 9 basement	Mixed waste
TBD	Container storage	Container storage located in Room 9020, Wing 9 basement	Mixed waste
TBD	Container storage	Container storage located in Room 9030, Wing 9 basement	Mixed waste

<sup>a</sup> information compiled from "Solid Waste Management Units Report" (LANL, 1990); "Module VIII: Special Conditions Pursuant to the 1984 Hazardous and Solid Waste Amendments to RCRA for Los Alamos National Laboratory, EPA I.D. NM0890010515," effective date May 19, 1994 (EPA, 1994); "RFI Work Plan for Operable Unit 1114" (LANL, 1993); and "RFI Work Plan Addendum 1 for Operable Unit 1114" (LANL, 1995).

<sup>b</sup> RCRA = Resource Conservation and Recovery Act.

<sup>c</sup> PCB = polychlorinated biphenyl.

<sup>d</sup> TSCA = Toxic Substances Control Act.

<sup>e</sup> TBD = SWMU No. to be determined.

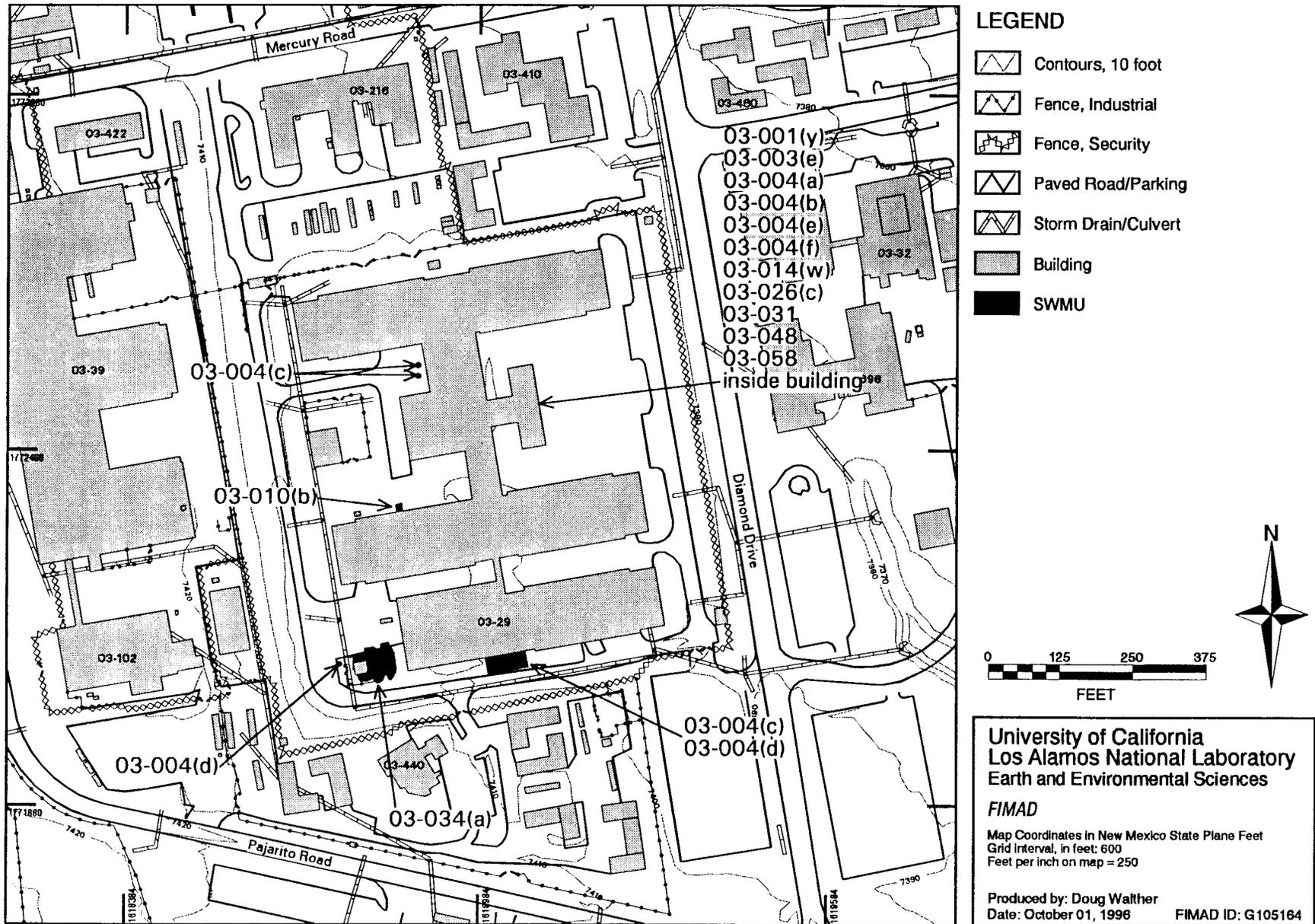


Figure 10-1. Site Location Map of TA-3-29 SWMUs

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## 11.0 OTHER FEDERAL LAWS

A discussion of federal laws, as required by the New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart IX, 270.3 and 270.14(b)(20), (3-1-97), is provided in Section 11.0 of the Los Alamos National Laboratory (LANL) General Part B (LANL, 1996a).

### 12.0 CERTIFICATION

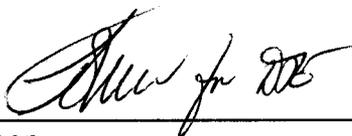
In accordance with the New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart IX, 270.11(d), (3-1-97), I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate 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 violations.



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Ross A. Lemons  
Division Director for Materials Science and  
Technology Division  
Los Alamos National Laboratory  
Operator

April 23, 1997

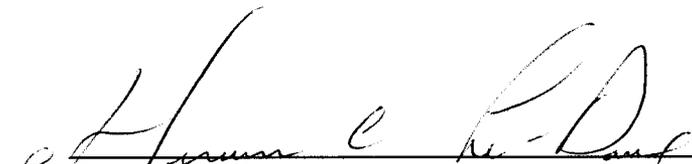
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Date Signed



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Dennis J. Erickson  
Division Director for Environment, Safety, and  
Health Division  
Los Alamos National Laboratory  
Operator

4/24/97

\_\_\_\_\_  
Date Signed



\_\_\_\_\_  
G. Thomas Todd  
Area Manager, Los Alamos Area Office  
U.S. Department of Energy  
Albuquerque Operations  
Owner/Operator

5/1/97

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Date Signed

### 13.0 LIST OF REFERENCES

DOE, see U.S. Department of Energy.

EPA, see U.S. Environmental Protection Agency.

IT Corporation (IT), 1987, "Hydrogeologic Assessment of Technical Area 54, Areas G and L, Los Alamos National Laboratory," Docket No. NMHWA 001007, IT Corporation, Albuquerque, New Mexico.

LANL, see Los Alamos National Laboratory.

Los Alamos National Laboratory (LANL), 1997, "Part A Permit Application for Container Storage Areas at Technical Area 3, Building 29," Revision 0.0, Los Alamos National Laboratory, Los Alamos, New Mexico.

Los Alamos National Laboratory (LANL), 1996a, "General Part B Permit Application Information for Los Alamos National Laboratory," Los Alamos National Laboratory, Los Alamos, New Mexico.

Los Alamos National Laboratory (LANL), 1996b, "Biological Evaluation for Environmental Restoration Program; Operable Unit 1114; Technical Areas 3, 30, 59, 60, 61, and 64," LA-UR-94-21, Los Alamos National Laboratory, Los Alamos, New Mexico.

Los Alamos National Laboratory (LANL), 1995a, "Proposed Hazardous Waste Facility Permit Modification—Technical Area 50, Building 1; Rooms 35, 36, and 38/38A Container Storage Areas, Building 69; Indoor and Outdoor Container Storage Areas, Technical Area 54 West, Building 38; High Bay, Low Bay, Loading Dock, and Outdoor Container Storage Areas," Los Alamos National Laboratory, Los Alamos, New Mexico.

Los Alamos National Laboratory (LANL), 1995b, "RFI Work Plan Addendum 1 for Operable Unit 1114," (Draft), Los Alamos National Laboratory, Los Alamos, New Mexico.

Los Alamos National Laboratory (LANL), 1994, "RCRA Part A Permit Application for Mixed Waste," Revision 2.0, Los Alamos National Laboratory, Los Alamos, New Mexico.

Los Alamos National Laboratory (LANL), 1993a, "RCRA Part A Permit Application for Mixed Waste," Revision 1.0, Los Alamos National Laboratory, Los Alamos, New Mexico.

Los Alamos National Laboratory (LANL), 1993b, "RFI Work Plan for Operable Unit 1114," Los Alamos National Laboratory, Los Alamos, New Mexico.

Los Alamos National Laboratory (LANL), 1991, "Hazardous Waste Permit Application—Part A—for Mixed Waste," Los Alamos National Laboratory, Los Alamos, New Mexico.

Los Alamos National Laboratory (LANL), 1990a, "Solid Waste Management Units Report," Revision 1.0, LAUR 90-3400, Los Alamos National Laboratory, Los Alamos, New Mexico.

Document: LANL TA-3-29 Permit Mod  
Revision No.: 0.0  
Date: May 1997

Los Alamos National Laboratory (LANL), 1990b, "Spill Prevention Control and Countermeasure Plan for the Los Alamos National Laboratory, Los Alamos, New Mexico," Los Alamos National Laboratory, Los Alamos, New Mexico.

New Mexico Environmental Improvement Board (NMEIB), 1994, "New Mexico Administrative Code," Title 20, Chapter 4, Part 1, as revised March 1, 1997, NMEIB, Santa Fe, New Mexico.

New Mexico Environmental Improvement Division (NMEID), 1989, "Hazardous Waste Facility Permit," Permit Number NM0890010515-1, NMEID, Santa Fe, New Mexico,

Nyhan, J. W., L. W. Hacker, T. E. Calhoun, and D. L. Young, 1978, "Soil Survey of Los Alamos County, New Mexico," LA-6779-MS, Los Alamos National Laboratory, Los Alamos, New Mexico.

Purtyman, 1984, "Hydrologic Characteristics of the Main Aquifer in the Los Alamos Area: Development of Ground Water Supplies," Los Alamos National Laboratory Report LA-9957-MS, Los Alamos, New Mexico.

U.S. Department of Energy (DOE), 1989, "TRUPACT-II Content Codes (TRUCON)," *DOE/WIPP 89-004*, Rev. 3, U.S. Department of Energy, Washington, D.C.

U.S. Environmental Protection Agency (EPA), 1994, "Module VIII: Special Conditions Pursuant to the 1984 Hazardous and Solid Waste Amendments to RCRA for Los Alamos National Laboratory, EPA I.D. NM0890010515," effective date May 19, 1994, U.S. Environmental Protection Agency, Region 6, Hazardous Waste Management Division, Dallas, Texas.

U.S. Environmental Protection Agency (EPA), 1986, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *EPA-SW-846*, Third Edition and all subsequent updates, Office of Solid Waste and Emergency Response, U.S. Government Printing Office, Washington, D.C.