



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

JAN 14 2000



VIA HAND DELIVERY

Mr. John Kieling, Manager  
 RCRA Permits Management Program  
 Hazardous and Radioactive Materials Bureau  
 2044 Galisteo Street, Building A  
 P. O. Box 26110  
 Santa Fe, NM 87505

Dear Mr. Kieling:

Subject: Transmittal of Replacement Sections for Inclusion in the Technical Area 50 (TA-50) Permit Renewal Application

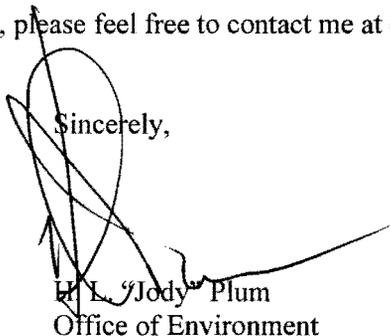
The purpose of this letter is to transmit to you the replacement sections for inclusion in the TA-50 Permit Renewal Application. The need for these changes was the subject of discussions during several monthly meetings. These replacement section are limited to the removal of Rooms 34B and 34C at TA-50-1.

The TA-50-1 Rooms 34B and 34C have no standing under RCRA. They were never included in a Part A, they don't have interim status nor were they in the original permit. They have not been used to store any hazardous waste materials. Because of this, no closure is required to remove them. It is merely an administrative activity.

This submittal consists of replacement sections which delete reference to TA-50-1, Rooms 34B and 34C. There is no red-line/strike-out version provided as agreed. We will hand deliver this document and make the substitution of sections if you provide the previously submitted copies of the TA-50 permit renewal application.

If you have questions concerning this matter, please feel free to contact me at (505) 665-5042 or Jack Ellvinger at (505) 667-0633.

Sincerely,



H.L. "Jody" Plum  
 Office of Environment

LAAME:6JP-173

Enclosure

TA-50/00  
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John Kieling

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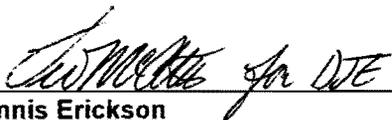
bcc w/o enclosure:

Jack Ellvinger, ESH-19, LANL, MS-K490

Rick Alexander, FWO-WFM, LANL, MS-E518

## 5.0 CERTIFICATION

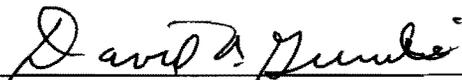
In accordance with the *New Mexico Administrative Code*, Title 20, Chapter 4, Part 1, Subpart IX, §270.11(d), revised January 1, 1997, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that 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.



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



Date Signed



**David Gurulé, P.E.**  
Area Manager, Los Alamos Area Office  
U.S. Department of Energy Albuquerque Operations  
Owner/Operator



Date Signed



**Los Alamos National Laboratory  
Technical Area 50  
Part B Permit Renewal Application**

**Revision 1.0**

**Prepared by:**

*Los Alamos National Laboratory  
Hazardous and Solid Waste Group (ESH-19)  
Los Alamos, New Mexico 87545  
For the Department of Energy - Los Alamos Area Office*

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## 2.0 UNIT DESIGNS, FACILITY OPERATIONS, AND PROCEDURES TO PREVENT HAZARDS

The information provided in this section is submitted in accordance with the requirements of the *New Mexico Administrative Code*, Title 20, Chapter 4, Part 1 (20 NMAC 4.1), Subpart V (revised January 1, 1997 [1-1-97]; 40 *Code of Federal Regulations* (CFR) 264, Subparts B, C, and I applicable to owners and operators of hazardous waste facilities; and 20 NMAC 4.1, Subpart IX, §§270.14(b)(8) and (9), and §270.15 [1-1-97].

This section describes general unit designs, descriptions, and process information applicable to the Resource Conservation and Recovery Act (RCRA) hazardous and mixed waste management units at Technical Area (TA) 50. Further information is provided in Attachments G and I to this TA-specific Part B Permit Application (hereinafter referred to as the TA-50 Part B).

Table 2-1 lists waste types to be managed and design capacity for each TA-50 container storage area (CSA) and treatment unit. Figures 2-1 through 2-4 depict the locations of the CSAs and treatment units.

### 2.1 CONTAINER STORAGE AREAS [20 NMAC 4.1, Subpart V, §264.175(b) and Subpart IX, §§270.15(a)(1) through (3)]

TA-50 CSAs are designed and operated to meet 20 NMAC 4.1, Subpart V, and 40 CFR 264, Subpart B, C, and I requirements. The following CSAs are addressed in this TA-50 Part B:

- TA-50-37 CSA (Figure 2-1)
- Radioactive Liquid Waste Treatment Facility (RLWTF) CSA in TA-50-1 (Figure 2-2)
- Decontamination Operations (Decon Ops) Facility and TA-50-114 CSAs (Figure 2-3)
- Waste Characterization, Reduction, and Repackaging Facility (WCRRF) Indoor CSA in TA-50-69 (Figure 2-4)
- WCRRF Outdoor CSA at TA-50-69 (Figure 2-4)

The CSAs at TA-50 will be used for storage or staging of mixed low-level and mixed transuranic (TRU) waste during waste management activities at TA-50-37, WCRRF, RLWTF, and Decon Ops Facility. The wastes characterized and stored at these facilities are generated at various TAs at

Los Alamos National Laboratory (LANL) and transported to TA-50. This section describes TA-50 CSAs.

#### TA-50-37 Container Storage Area

TA-50-37 is a two-story building that contains offices, laboratories, two process bays, an egress bay, a mechanical equipment area, and a CSA. The original building was constructed in 1975; the second process bay (Room 114) and offices were added in 1979; the egress bay (Room 116) was constructed in 1986; and Rooms 117 and 118 were added in 1990. Previously, TA-50-37 was the Treatment Development Facility, which housed the Controlled-Air Incinerator (CAI). LANL received a Toxic Substances Control Act incineration permit for the CAI in 1984, and a RCRA operating permit for hazardous waste in 1989. In 1995, it was determined that waste incineration would not be performed at the CAI. In 1996, closure of the CAI was initiated in accordance with an approved New Mexico Environment Department (NMED) closure plan. The CAI closure was approved by NMED in 1998. TA-50-37 will now be used for waste characterization and verification, waste treatment technology development and implementation, and other activities necessary to support LANL programs. The TA-50-37 CSA will also be used to support the waste characterization and verification activities and the planned electrochemical treatment operation in Room 117. The TA-50-37 CSA consists of Rooms 112, 115, 117, and 118, and is located on the first floor of the building encompassing areas in the west-central, south-central, and eastern portions of the building (Figure 2-1). Room 112 is located on the first floor in the west-central portion of TA-50-37 and measures approximately 41 ft wide and 75 ft long; Room 115 is located on the first floor of TA-50-37 between Rooms 112 and 114 and measures 10 ft wide and 21 ft long; Room 117 is located on the first floor in the eastern portion of TA-50-37 and measures 21 ft wide and 40 ft long; and Room 118 is located on the first floor in the eastern portion of TA-50-37, north of and adjacent to Room 117, and measures 31 ft wide and 40 ft long. The long dimension of each CSA room is oriented southwest-northeast.

#### TA-50-1 RLWTF Container Storage Area

The RLWTF, located in TA-50-1, was constructed in 1963. The main building is constructed of reinforced concrete columns and beams with pumice block walls and steel joists for roof support. The TA-50-1 RLWTF CSA consists of Room 59 (Figure 2-2) and features pre-engineered construction with steel framing and insulated metal roofing and siding. Room 59 is located on the

north side of the east wing of TA-50-1 and measures approximately 21 ft wide and 44 ft long. The long dimension is oriented east-west.

#### TA-50-1 Decon Ops Facility Container Storage Area

The Decon Ops Facility CSA is located in the basement of the southern portion of TA-50-1 and consists of Rooms 35, 36, and 38/38A (Figure 2-3). Room 35 is located in the southern portion of TA-50-1 and measures approximately 20 ft wide and 40 ft long. The long dimension is oriented north-south. Room 36 is located in the southern portion of TA-50-1 between Rooms 34C and 35 and adjacent to Room 38/38A. Room 36 measures approximately 20 ft wide and 32 ft long. The long dimension is oriented east-west. Room 38/38A is located in the southern portion of TA-50-1, adjacent to and south of Room 36. Room 38/38A consists of Rooms 38 and 38A, which together measure approximately 10 ft wide and 24 ft long. The long dimension is oriented east-west.

#### TA-50-114 Container Storage Area

The TA-50-114 CSA is a storage locker located south of the eastern wing of TA-50-1 and east of TA-50-1 Room 34B (Figure 2-3). The TA-50-114 CSA is used by both the RLWTF and the Decon Ops Facility. The locker is a metal prefabricated building approximately 9 ft by 23 ft by 9 ft high, has three doors, and is anchored to a concrete pad. The long dimension is oriented east-west. The CSA is separated into two separate lockers by a metal wall, and has a grated floor above a recessed area on which the waste containers are placed.

#### TA-50-69 WCRRF Indoor Container Storage Area

TA-50-69 is located in the southwest quadrant of TA-50. When constructed in 1979, the primary mission of the WCRRF (formerly the Size Reduction Facility) was to size reduce large metallic items (e.g., glove boxes and other process equipment) that were TRU-contaminated and repackage them into standard-sized containers amenable to disposal at the Waste Isolation Pilot Plant (WIPP). The facility was first used to size reduce mixed TRU waste in 1982. The original function of the WCRRF has been expanded to include other activities related to hazardous and mixed waste management (e.g., waste characterization and experimental process demonstration support).

TA-50-69 is a single-story building constructed in two phases. The original structure (45 ft by 52 ft) was built in 1979, to house the main process room (Room 102) and personnel change rooms. An

unloading area (Room 103) and a vehicle airlock entrance (Room 104) were added to the building in 1986. The dimensions of the 1986 addition are 20 ft by 36 ft. The longest dimension of the building is now 88 ft, and the building is oriented northwest-southeast. A mezzanine was also added in 1986 over the western third of the main process room. The exterior walls of TA-50-69 are load-bearing and constructed of structural steel framing with a plastic veneer finish on polystyrene insulation and gypsum wallboard. The interior walls are similarly constructed. The epoxy-painted floor of the building is a reinforced concrete slab on compacted fill. The TA-50-69 WCRRF Indoor CSA consists of Rooms 102 and 103 (Figure 2-4). Room 102, the main process room, measures approximately 45 ft wide and 52 ft long. The long dimension is oriented northwest-southeast. Room 103, the unloading area, measures approximately 18 ft wide and 19 ft long and is located adjacent to and southeast of Room 102. A 12-ft by 20-ft roll-up vehicle access door is located at the southernmost end of Room 103, separating the unloading area (Room 103) from the vehicle airlock entrance (Room 104). Room 104 is not part of the WCRRF Indoor CSA. This design allows for unobstructed transport of oversized fiberglass-reinforced plywood (FRP) boxes from outside the facility, through the vehicle airlock entrance, into the unloading area, and into the glove box cutting enclosure.

#### TA-50-69 WCRRF Outdoor Container Storage Area

The TA-50-69 WCRRF Outdoor CSA is located in the southwest corner of TA-50. The WCRRF Outdoor CSA (Figure 2-4) asphalt and concrete pad is not lined or coated, measures 24 ft wide and 90 ft long, with an additional strip 12 ft wide and 90 ft long added to the southeast end. The asphalt and concrete pad is approximately 4 in. thick. The long dimension of this CSA is oriented east-southeast. The pad slopes gently (approximately 1 to 5 percent) from west to east and up to 2.5 percent toward the centerline. TA-50-69 was constructed before 1980, and was first used to store mixed waste in 1982. Transportainers and other weather protective structures within the WCRRF Outdoor CSA provide optional weather protection for containers of various sizes. Appendix 2A of this section provides detailed information regarding standard transportainers. Four monuments have been surveyed, marking the four corners of the large portion of the WCRRF Outdoor CSA, and a rope barrier is used to visually delineate its boundary. Four additional monuments will be surveyed after the footprint of the CSA changes, marking the four corners of the smaller portion of the WCRRF Outdoor CSA. A tape barrier will be used to delineate its boundary.

### 2.1.1 Storage Containers

Containers that will be used to store wastes at the CSAs addressed in this TA-50 Part B include 5-, 30-, 55-, 83-, 85-, and 110-gal. steel and/or poly drums; standard FRP boxes; steel standard waste boxes (SWBs); metal overpack boxes; steel B25 boxes; various small containers; and oversized, irregularly-shaped FRP boxes. Table 2-2 lists container types for each CSA and treatment unit.

### 2.1.2 Storage Locations and Quantities

Table 2-1 identifies the following for each TA-50 hazardous and mixed waste management unit identified in this TA-50 Part B:

- RCRA unit type (i.e., S01, T04)
- Process design capacity identified in the *Los Alamos National Laboratory General Part A Permit Application* (LANL 1998a) (the maximum quantity that will be stored, staged, or treated)
- Types of waste to be stored, staged, or treated
- Total design capacity for each unit and each room in a CSA, where applicable (provided in gal. and drum equivalents)

### 2.1.3 Storage Configuration

Storage configuration to be used at each CSA is described in Attachment G to this TA-50 Part B.

### 2.1.4 Aisle Space [20 NMAC 4.1, Subpart V, §264.35]

Aisle space between waste containers in the TA-50 CSAs is adequate to provide access for inspection purposes and to allow the unobstructed movement of personnel and of fire protection and decontamination equipment in the event of an emergency. Attachment G to this TA-50 Part B describes the specific waste storage method and configurations for the CSAs.

### 2.1.5 Permitted and Prohibited Waste Identification

Wastes to be staged/stored in the TA-50 CSAs include RCRA-regulated mixed low-level waste, mixed TRU waste, and hazardous waste. Non-RCRA-regulated low-level and TRU wastes may also be stored in the TA-50 CSAs. At all TA-50 CSAs except the TA-50-1 RLWTF CSA and TA-50-1, Room 36, the wastes to be stored are solids and wastes that are either suspect or known to contain free liquids. At the TA-50-1 RLWTF CSA, Room 59, and TA-50-1, Room 36, only solid

wastes will be stored. Further information on the wastes to be stored and treated at TA-50 is provided in the waste analysis plan (WAP), Appendix B of the LANL General Part B. Table 2-1 provides additional information on the wastes to be stored in the TA-50 CSAs.

**2.1.6 Condition of Containers** [20 NMAC 4.1, Subpart V, §264.171, §264.173, and §264.174]  
As required by 20 NMAC 4.1, Subpart V, §264.171, any container that is not in good condition (e.g., severe rusting, apparent structural defects) will be overpacked, or the wastes will be transferred and repackaged in containers that are in good condition before being placed into storage. All containers will be kept closed during storage, in accordance with 20 NMAC 4.1, Subpart V, §264.173(a), except when waste is added to or removed from the container or when a container's contents need to be repackaged. Containers will be 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).

Any container of waste at any TA-50 CSA or treatment unit that shows signs of structural instability or leakage will be overpacked in a U.S. Department of Transportation (DOT)-approved container, or the waste will be transferred into a container that is in good condition, as required by 20 NMAC 4.1, Subpart V, §264.171. When specified by DOT, liners will be used inside the waste container.

**2.1.7 Compatibility of Waste with Containers**

The container materials and liners will be selected to ensure that the ability of the container to contain the waste is not impaired as required by 20 NMAC 4.1, Subpart V, §264.172. Based on manufacturer's tolerance specifications, container material and liners used will not react with, and will be compatible with, the waste.

**2.1.8 Management of Containers**

Waste containers will be closed during storage and staging, except when it is necessary to add or remove waste, as allowed by 20 NMAC 4.1, Subpart V, §264.173(a). Some mixed waste containers are vented and have carbon composite filters that allow gases (e.g., hydrogen), if any, to be released, but prevent the release of airborne particulates. Waste containers will be closed or vented, handled, staged, and stored to prevent rupture, leakage, or spillage, as required by 20 NMAC 4.1, Subpart V, §264.173(b). Containers will be managed at all TA-50 waste management

units, in accordance with written procedures established by the contractor to minimize the potential for damage to or spillage from waste containers. All waste handlers at TA-50 will be thoroughly trained in the safe use of waste container handling and transport equipment. Because the TA-50 yard area is graded and paved, jarring of containers during transport will be minimized. To protect the integrity of waste containers received at the TA-50 CSAs, only equipment designed for moving waste containers will be used. Small waste containers may be handled manually or with dollies. Each TA-50 waste management unit is equipped with structures and equipment to facilitate safe loading, unloading, and movement of waste containers, as described in Attachment G to this TA-50 Part B.

#### 2.1.9 Containment Systems

Secondary containment and other appropriate spill safeguards are incorporated in the design of the TA-50 CSAs and treatment units. Containment systems are described in Attachment G to this TA-50 Part B.

#### 2.1.10 Inspection Schedules and Procedures

Inspections will be performed at each CSA according to the schedule in the Inspection Plan, Appendix C of the LANL General Part B. The inspections will identify any leaking containers, deterioration of containers, and loss of integrity of a containment system, as required by 20 NMAC 4.1, Subpart V, §264.174. The inspections will include checking the structural integrity of the steel drums and boxes (e.g., for bulging or warping). The Inspection Plan, Appendix C of the LANL General Part B, contains more detailed information regarding inspection requirements and how they are met.

#### 2.1.11 Closure

RCRA-permitted CSAs and treatment units identified in this TA-50 Part B will be closed to meet the closure requirements of 20 NMAC 4.1, Subpart IX, §270.14(b)(13) and 20 NMAC 4.1, Subpart V, Part 264, Subpart G. General closure information applicable to all LANL hazardous and mixed waste management units is provided in the LANL General Part B, Appendix F. The closure plan specific to TA-50 CSAs and treatment units is provided in Attachment F to this TA-50 Part B.

#### 2.1.12 Support Agreements with Outside Agencies [20 NMAC 4.1, Subpart V, §264.37]

Information on support agreements with outside agencies, as required by 20 NMAC 4.1, Subpart V, §264.37, is provided in Section 2.0 of the LANL General Part B.

## 2.2 TREATMENT UNITS

TA-50 treatment units are designed and operated to meet 20 NMAC 4.1, Subpart V, and 40 CFR 264, Subpart B and C requirements. The following treatment units are addressed in this TA-50 Part B.

- RLWTF cementation treatment unit in TA-50-1, Room 60A (Figure 2-2)
- Planned electrochemical treatment unit (ETU) in TA-50-37, Room 117 (Figure 2-1)

The treatment units at the TA-50-1 RLWTF and TA-50-37 addressed in this TA-50 Part B will be used to treat mixed waste. The RLWTF cementation treatment unit is used for cementation of mixed TRU waste generated by RLWTF pretreatment operations. The planned ETU at TA-50-37, Room 117 will be used to treat aqueous mixed wastes containing metals, nitrates, sulfides, and low concentrations of organic constituents.

### 2.2.1 TA-50-1 RLWTF Cementation Treatment Unit

The cementation treatment unit is located on the north side of the east wing of TA-50-1 (Figure 2-2) in Room 60A and measures 19-ft 6-in. by 18-ft 6-in. The long dimension of the cementation treatment unit in Room 60A is oriented north-south. The RLWTF treatment unit is used for the cementation of mixed TRU waste generated by the RLWTF Pretreatment Plant operations. The cementation process is the portion of the Pretreatment Plant process that is subject to RCRA permitting. Attachment I to this TA-50 Part B details the cementation treatment unit and RCRA-regulated process. The location of TA-50-1, Room 60A, is identified in Figure 2-2. Following cementation, the drums of solidified mixed TRU waste are stored temporarily in the TA-50-1 RLWTF CSA, Room 59, and transported to RCRA-permitted units within LANL for storage.

### 2.2.2 TA-50-37 Electrochemical Treatment Unit

The planned electrochemical treatment process will be conducted in Room 117 of TA-50-37 (Figure 2-1). Room 117 is located on the first floor in the eastern portion of TA-50-37 and measures 21 ft wide and 40 ft long. Attachment I to this TA-50 Part B describes the

electrochemical treatment system components and their functions. Drums of waste to be treated in the ETU will be staged in the TA-50-37 CSA, Room 117.

### 2.3 TA-50 NON-RCRA ACTIVITIES

LANL personnel will conduct waste characterization, waste segregation, and decontamination at TA-50-37, WCRRF, and Decon Ops CSAs. These waste management activities do not require RCRA permitting. These characterization activities will support the December 10, 1993 Consent Agreement between the NMED, the U.S. Department of Energy, and the University of California. The Consent Agreement resolved the New Mexico Hazardous Waste Act Compliance Order 93-03 regarding a remedial action plan for placing mixed waste currently stored at LANL TA-54, Area G into storage complying with Compliance Order 93-03. The WAP of the LANL General Part B describes activities for obtaining sufficient waste characterization information for RCRA-compliant storage at the TA-50 CSAs.<sup>1</sup>

The TA-50-37, WCRRF, and Decon Ops CSAs addressed in this TA-50 Part B will be used to stage waste to support the waste management activities described above in a manner that continues to be protective of human health and the environment. The waste containers to be staged at these CSAs will be transported from other generator sites at LANL for characterization, waste segregation, or decontamination, and subsequently will be transported to RCRA-permitted units within LANL for storage.

Waste characterization activities at TA-50-37 and the WCRRF may be performed in glove boxes. Decon Ops Facility activities will decontaminate decommissioned, radioactively contaminated glove boxes and other waste items by removing external lead shielding. The waste characterization and decontamination activities to be performed are not regulated under 20 NMAC 4.1, Subpart V, Part 264. However, siting the processes within permitted CSAs will allow for efficient processing of waste and ensure that before, during, and after characterization or decontamination activities, candidate drums and glove boxes are managed in a manner that continues to be protective of human health and the environment.

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<sup>1</sup> Use of the term "RCRA-compliant storage" refers to the container storage requirements in 20 NMAC 4.1, Subpart V, Part 264, and 20 NMAC 4.1, Subpart IX, Part 270.

## 2.4 WASTES GENERATED

Newly generated RCRA-regulated wastes at TA-50 may accumulate from either maintenance, spill cleanup, or treatment activities. Hazardous and mixed wastes generated from these activities will be accumulated in satellite accumulation areas or less-than-90-day storage areas, and then packed in containers (e.g., drums or boxes) for transport to RCRA-permitted storage or treatment areas, in accordance with 20 NMAC 4.1, Subpart III, §262.34(c), and LANL procedures.

**Table 2-1. TA-50 RCRA Hazardous and Mixed Waste Management Units  
 Waste Types Managed and Design Capacity**

RCRA Hazardous Waste Management Unit	RCRA Unit Type	Part A Design Capacity <sup>a</sup>	Waste Types	Room	Total Design Capacity (gal.)	Drum Equivalents <sup>b</sup>
TA-50-37 (CSA)	S01	21,850 gal.	Mixed low-level, mixed TRU, and hazardous waste in solid form or containing free liquids <sup>c</sup>	112	2,330	42
				115	220	4
				117	3,630	66
				118	18,000	327
TOTAL					24,180	439
TA-50-1 (RLWTF CSA)	S01	3,695 gal. and 15 yd <sup>3</sup>	Solid mixed low-level, mixed TRU, and hazardous waste <sup>c</sup>	59	1,210	27
TA-50-1 (Decon Ops CSA)	S01		Mixed low-level, mixed TRU, and hazardous waste in solid form or containing free liquids <sup>c</sup>	35	250	4 <sup>d</sup>
				36 <sup>f</sup>	3,030	55 <sup>e</sup>
				38/38A	750	14
TOTAL					4,030	
TA-50-114 (Decon Ops/ RLWTF CSA)	S01		Mixed low-level, mixed TRU, and hazardous waste in solid form or containing free liquids <sup>c</sup>	NA	1,210	22
TA-50-69 (WCRRF Indoor CSA)	S01	31,500 gal.	Mixed low-level, mixed TRU, and hazardous waste in solid form or containing free liquids <sup>c</sup>	102	1,500	27
	103					
TA-50-69 (WCRRF Outdoor CSA)	S01		Mixed low-level, mixed TRU, and hazardous waste in solid form or containing free liquids	g	30,000	545
TA-50-1 (RLWTF Cementation Treatment Unit)	T04	660/day	Mixed low-level and mixed TRU waste in solid form or containing free liquids	60A	660/day	660/day
TA-50-37 (ETU)	T04	NA	Liquid mixed low-level, mixed TRU, and hazardous waste	117	600/day	NA

<sup>a</sup> Based on Los Alamos National Laboratory General Part A Permit Application, 1998a.

<sup>b</sup> Based on 55-gal. drum unless indicated otherwise.

<sup>c</sup> Non-RCRA-regulated TRU and low-level waste also is stored at CSA.

<sup>d</sup> Based on four 55-gal. and one 30-gal. drum equivalents.

<sup>e</sup> Based on the largest glovebox.

<sup>f</sup> Only solid waste in Room 36.

<sup>g</sup> Transportainers may be substituted or supplemented with other weather protective structures.

**Table 2-2. Waste Container Types Stored**

Waste Management Unit	5-gal.	30-gal.	55-gal.	83-gal.	85-gal.	110-gal.	FRPs	SWBs	B25 Boxes	Other
TA-50-37 CSA										
Rm 112	X	X	X	X	X			X		X <sup>a</sup>
Rm 115	X	X	X							X <sup>b</sup>
Rm 117	X	X	X	X	X	X				
Rm 118	X	X	X	X	X	X				
TA-50-1 (RLWTF CSA)										
Rm 59	X	X	X	X	X			X		X <sup>a, c-g</sup>
TA-50-1 (Decon CSA)										
Rm 35	X	X	X	X	X	X				
Rm 36	X	X	X	X	X	X	X			X <sup>d</sup>
Rm 38/38A	X	X	X					X		X <sup>e</sup>
TA-50-114 CSA	X	X	X	X	X					X <sup>b, e, f</sup>
TA-50-69 (Indoor CSA)	X	X	X	X	X	X	X	X	X	X <sup>g</sup>
TA-50-69 (Outdoor CSA)	X	X	X	X	X	X	X	X	X	X <sup>g</sup>
TA-50-1, Rm 60A (RLWTF Cementation Treatment Unit)	X	X	X	X	X					X
TA-50-37, Rm 117 (ETU)	X	X	X	X	X	X				X

- <sup>a</sup> Strong/tight container
- <sup>b</sup> Various small 5- to 15-gal. containers
- <sup>c</sup> Crates
- <sup>d</sup> Glove boxes
- <sup>e</sup> Fiber/cardboard boxes
- <sup>f</sup> Equipment in plastic bags
- <sup>g</sup> Irregular containers

**(For informational purposes only)**

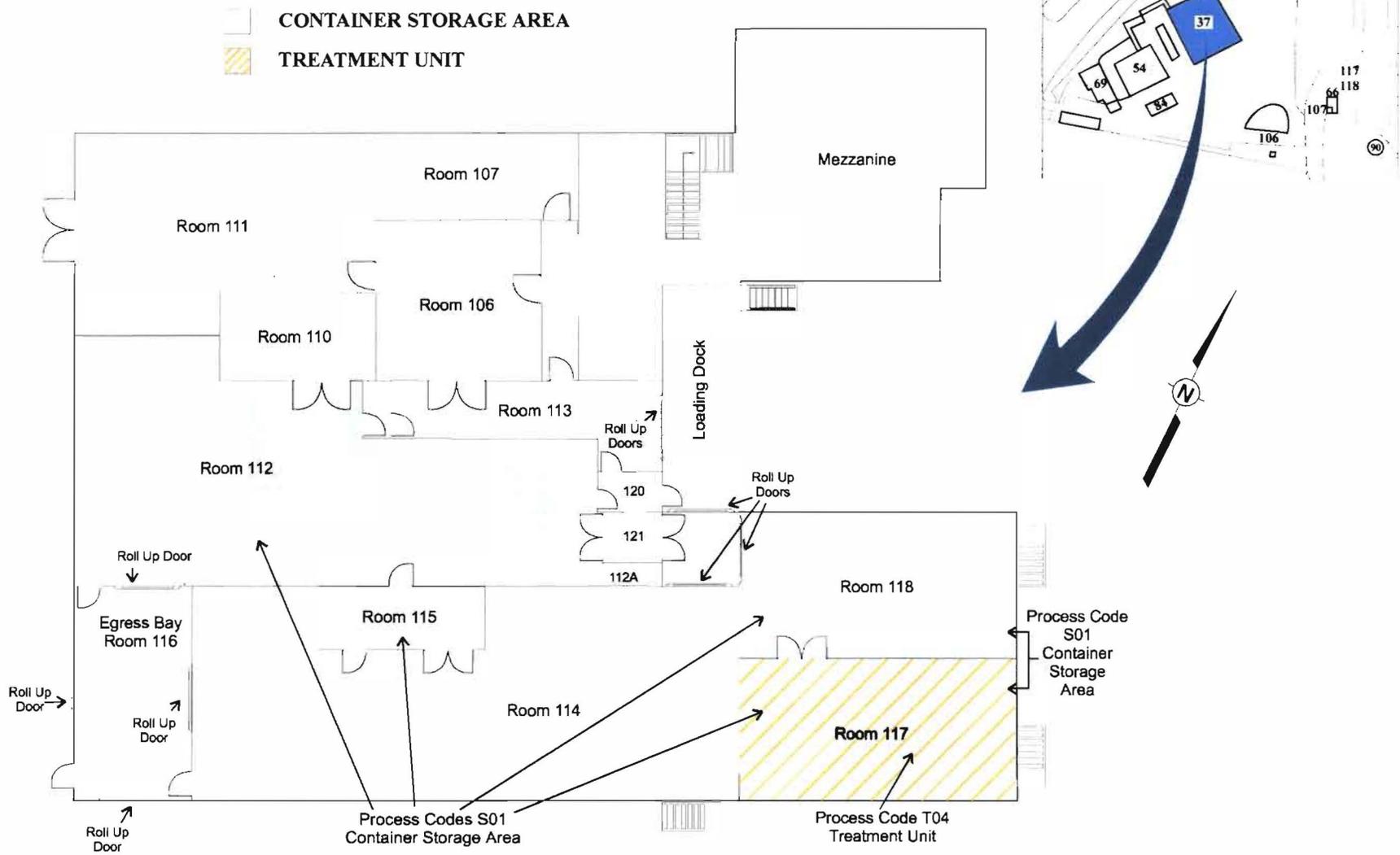


Figure 2-1. TA-50-37 Container Storage Area and Electrochemical Treatment Unit

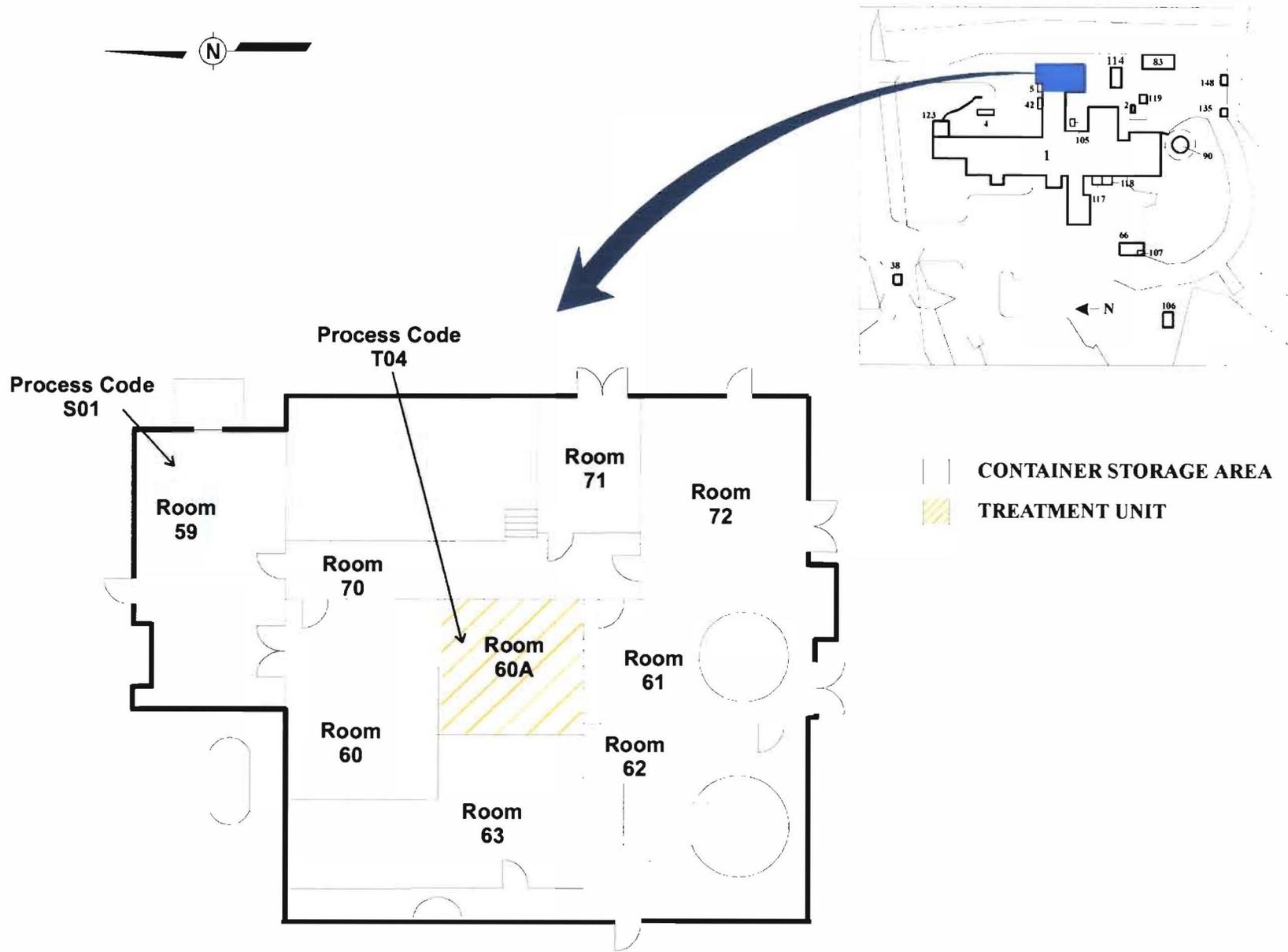


Figure 2-2. TA-50-1 RLWTF Container Storage Area and Cementation Treatment Unit

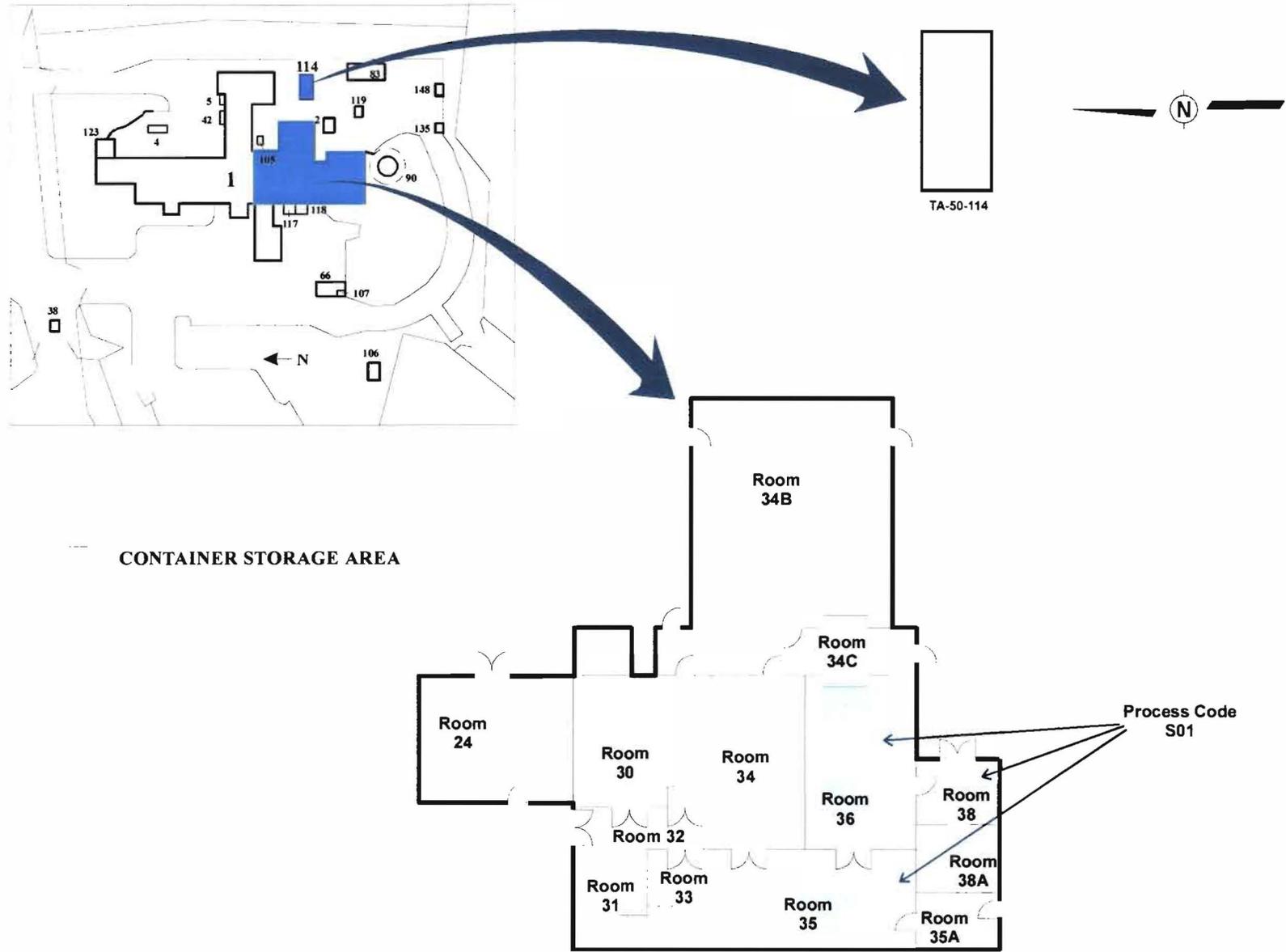
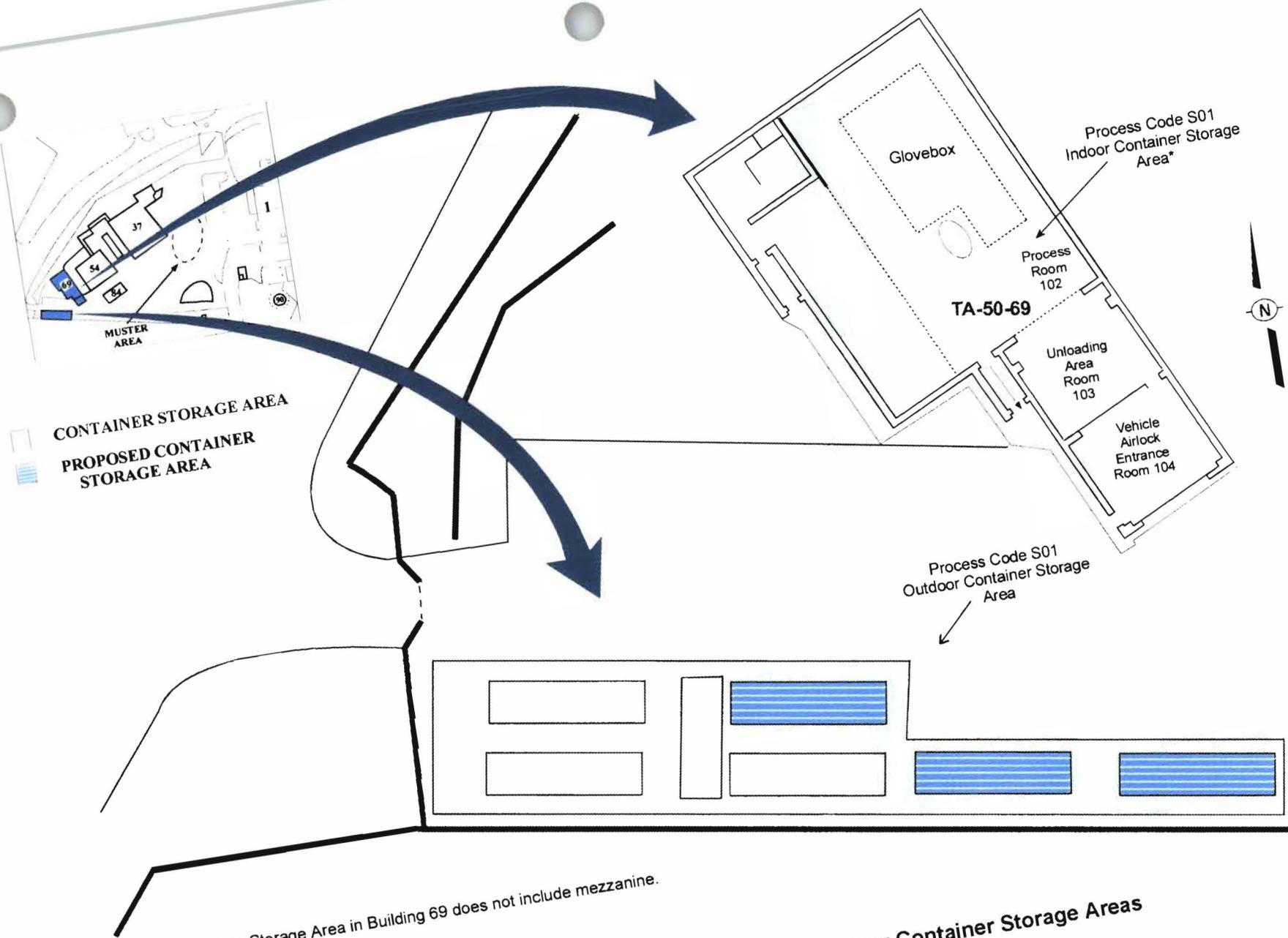


Figure 2-3. TA-50-1 Decontamination Operations Facility and TA-50-114 Container Storage Area



\*Note: Container Storage Area in Building 69 does not include mezzanine.

Figure 2-4. WCRRF TA-50-69, Indoor and Outdoor Container Storage Areas

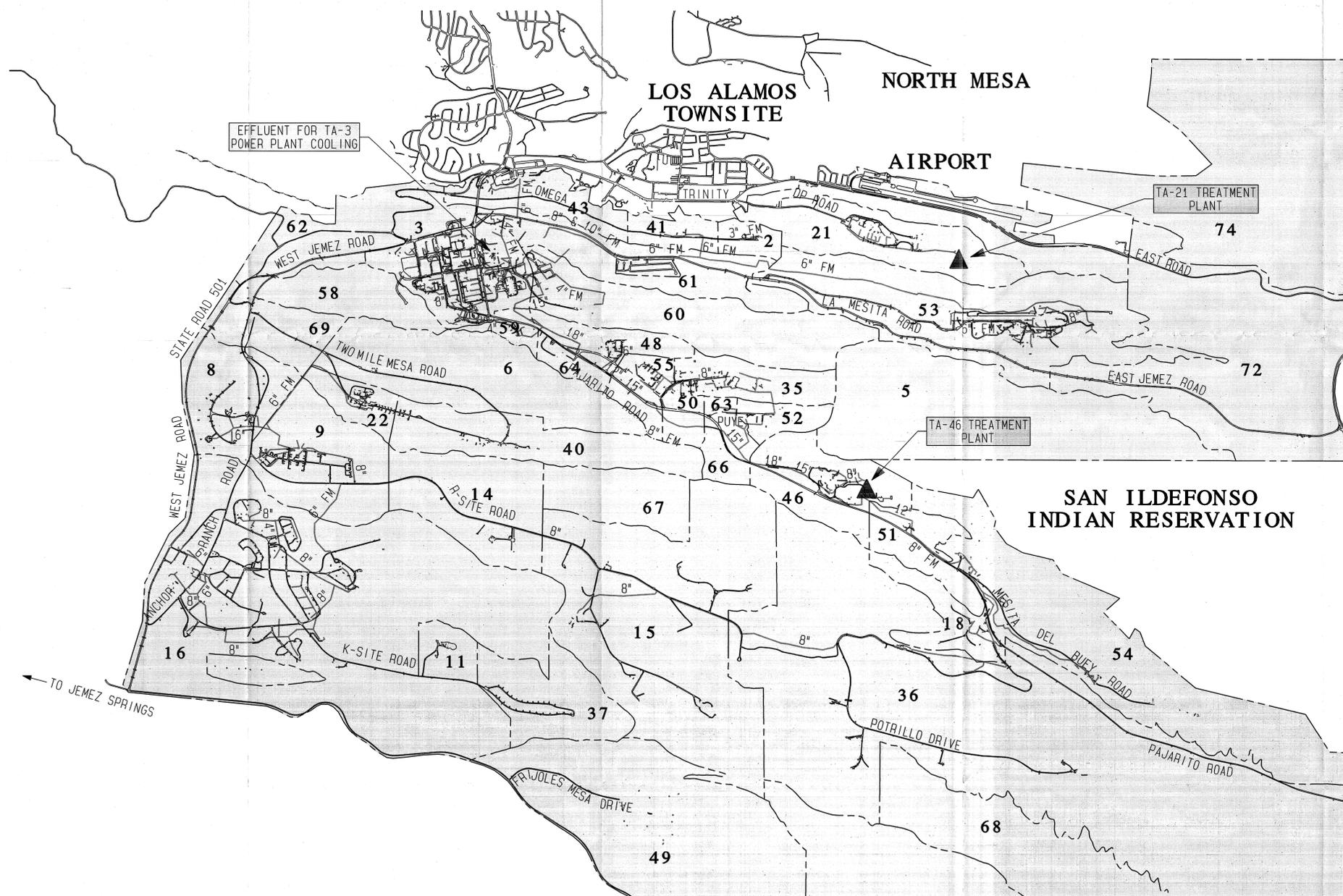
# UTILITY MAPPING SECTION

Combining advanced technology and well trained personnel to bring you high quality services for all your Mapping needs.

Note: The data shown on this map has not been checked for accuracy. Map should not be relied upon to establish legal claims or boundary lines.

Basemap Data Sources: Plan data shown is from the Los Alamos National Laboratory Engineering Division 1986 aerial survey, As-Built survey and field measurement updates. Utility data shown is from TGS Technology Computer Mapping Division.

# LOS ALAMOS NATIONAL LABORATORY SANITARY SEWER AND STORM DRAIN SYSTEMS



54 MILES OF  
SANITARY SEWER LINES

2 TREATMENT PLANTS

48 SEPTIC TANKS

22 MILES OF  
STORM DRAIN LINES

## LEGEND

- SANITARY SEWER SYSTEM
- TREATMENT PLANTS
- STORM DRAIN SYSTEM
- DOE PROPERTY

8894



Revised by: RAG

State Plane Coordinate System, New Mexico Central Zone,  
1927 North American Datum

Date: June 11, 1998

Phone: (505)665-0559

From  
LAW TA-50  
RCRA Part B Permit Application

# MAP A-1

**ATTACHMENT A**  
**FACILITY DESCRIPTION**

## TABLE OF CONTENTS

LIST OF FIGURES .....	ii
LIST OF MAPS .....	iii
LIST OF ABBREVIATIONS/ACRONYMS .....	iv
A.1 FACILITY DESCRIPTION [20 NMAC 4.1, Subpart IX, §270.14(b)(1) and §270.14(b)(19)(xi)] .....	A-1
A.1.1 Topographic Maps [20 NMAC 4.1, Subpart IX, §270.14(b)(19)] .....	A-3
A.1.2 TA-50-37 .....	A-4
A.1.3 TA-50-1 .....	A-4
A.1.3.1 RLWTF CSA and Cementation Treatment Unit .....	A-4
A.1.3.2 TA-50-1 Decon Ops Facility .....	A-4
A.1.4 TA-50-114 .....	A-5
A.1.5 WCRRF .....	A-5
A.1.6 Meteorology and Hydrology .....	A-5
A.1.6.1 Wells and Surface Waters [20 NMAC 4.1, Subpart IX, §270.14(b)(19)(iii) and (ix)] .....	A-5
A.1.7 Surrounding Land Use [20 NMAC 4.1, Subpart IX, §270.14(b)(19)(iv)] .....	A-6
A.2 LOCATION INFORMATION - ENVIRONMENTAL DESCRIPTION [20 NMAC 4.1, Subpart IX, §270.14(b)(11)] .....	A-6
A.2.1 Geology .....	A-6
A.2.1.1 Seismology [20 NMAC 4.1, Subpart IX, §§270.14(b)(11)(i) and (ii), and Subpart V, §264.18(a)] .....	A-7
A.2.1.2 Stratigraphy .....	A-7
A.2.1.3 Soils .....	A-7
A.2.1.4 Erosional Processes .....	A-8
A.2.2 Floodplain Standard [20 NMAC 4.1, Subpart IX, §270.14(b)(11)(iii) and §270.14(b)(19)(ii), and Subpart V, §264.18(b)] .....	A-8
A.3 GROUNDWATER MONITORING [20 NMAC 4.1, Subpart IX, §270.14(c), and Subpart V, §264.90(a)] .....	A-8
A.4 TRAFFIC PATTERNS AND CONTROL [20 NMAC 4.1, Subpart IX, §270.14(b)(10)] .....	A-9
A.4.1 Routes of Travel .....	A-9
A.4.2 Traffic Control Signals .....	A-9
A.5 SECURITY [20 NMAC 4.1, Subpart IX, §270.14 (b)(4) and §270.14(b)(19)(viii) and Subpart V, §264.14] .....	A-9
A.6 REFERENCES .....	A-10

## LIST OF FIGURES

<u>FIGURE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
A-1	Location of TA-50 in Relation to Other Laboratory TAs and Surrounding Landholdings	A-11
A-2	TA-50 Site Map	A-12
A-3	TA-50-37 Container Storage Area and Electrochemical Treatment Unit	A-13
A-4	TA-50-1 RLWTF Container Storage Area and Cementation Treatment Unit	A-14
A-5	TA-50-1 Decontamination Operations Facility and TA-50-114 Container Storage Area	A-15
A-6	WCRRF TA-50-69 Indoor and Outdoor Container Storage Areas	A-16
A-7	Regional Surface Faulting	A-17
A-8	Conceptual Block Diagram Schematic of the Stratigraphy of the TA-50 Site	A-18
A-9	Location of Access Road and Traffic Control Signals at Technical Area (TA) 50	A-19
A-10	TA-50 Security Fences and Entry Gates	A-20

### LIST OF MAPS

<u>MAP NO.</u>	<u>TITLE</u>	<u>PAGE</u>
A-1	Contour Map Showing the Locations of the Hazardous and Mixed Waste Units at Technical Area (TA) 50	A-21

## LIST OF ABBREVIATIONS/ACRONYMS

CAI	controlled air incinerator
CSA	container storage area
Decon Ops	Decontamination Operations
DOE	U.S. Department of Energy
ETU	Electrochemical Treatment Unit
LANL	Los Alamos National Laboratory
MDA	Material Disposal Area
NMAC	<i>New Mexico Administrative Code</i>
NPDES	National Pollutant Discharge Elimination System
RCRA	Resource Conservation and Recovery Act
RLWTF	Radioactive Liquid Waste Treatment Facility
TA	Technical Area
TRU	transuranic
WCRRF	Waste Characterization, Reduction, and Repackaging Facility

## ATTACHMENT A FACILITY DESCRIPTION

Attachment A provides information in accordance with the applicable requirements of the *New Mexico Administrative Code*, Title 20, Chapter 4, Part 1 (20 NMAC 4.1), revised January 1, 1997 [1-1-97]. The following requirements are addressed in this technical area (TA)-specific Part B Permit Application for TA-50 (hereinafter referred to as the TA-50 Part B):

- A general description of TA-50 [20 NMAC 4.1, Subpart IX, §270.14(b)(1)[1-1-97]]
- Site-specific location information for compliance with seismic and floodplain standard requirements [20 NMAC 4.1, Subpart IX, §§270.14(b)(11)(i) through (iii), §270.14(b)(19)(ii) [1-1-97], and 20 NMAC 4.1, Subpart V, §§264.18(a) and (b)[1-1-97]]
- Site-specific environmental information [20 NMAC 4.1, Subpart IX, §270.14(b)(1)[1-1-97]]
- Site-specific groundwater monitoring and protection information [20 NMAC 4.1, Subpart IX, §270.14(c) [1-1-97], and 20 NMAC 4.1, Subpart V, §264.90(a)[1-1-97]]
- Site-specific traffic patterns and control [20 NMAC 4.1, Subpart IX, §270.14(b)(10)[1-1-97]]
- Site-specific security [20 NMAC 4.1, Subpart IX, §270.14(b)(4)[1-1-97]]
- Topographic map requirements [20 NMAC 4.1, Subpart IX, §270.14(b)(19)[1-1-97]]

A general Los Alamos National Laboratory (LANL)-wide facility description addressing additional regulatory requirements is provided in Section 2.0 of the *Los Alamos National Laboratory General Part B Permit Application* (LANL 1998b), hereinafter referred to as the LANL General Part B.

A.1 FACILITY DESCRIPTION [20 NMAC 4.1, Subpart IX, §270.14(b)(1) and 270.14(b)(19)(xi)]  
TA-50 is situated on approximately 15 acres of U.S. Department of Energy (DOE)-controlled land south of the Los Alamos town site. TA-50 is located at the northeast corner of the intersection of Pajarito Drive and Pecos Road, on the finger mesa bounded by Mortandad Canyon to the north and Two-Mile Canyon to the south. Mesa-top elevations at TA-50 range from approximately 7,250 to 7,280 ft above mean sea level. Figure A-1 depicts the TA-50 location within the LANL site boundary, and its location relative to other TAs. Figure A-2 depicts facilities, structures, and hazardous and mixed waste units within the TA-50 boundary. Nearby facilities are described in Section A.1.7 of this attachment. The nearest point of unrestricted public access to TA-50 outside the LANL site boundary is the Royal Crest Trailer Park 1,500 meters (m) (3,770 ft) north of TA-50.

The residential areas of Los Alamos and White Rock are within a 17-kilometer (km) (10-mile) radius of TA-50 and together have a population of approximately 18,200.

This attachment describes site-specific information applicable to the following Resource Conservation and Recovery Act (RCRA) hazardous and mixed waste management units at TA-50:

- TA-50-37 container storage area (CSA) Rooms 112, 115, 117, and 118
- Radioactive Liquid Waste Treatment Facility (RLWTF) CSA in TA-50-1, Room 59
- RLWTF and Decontamination Operations (Decon Ops) CSA in TA-50-114
- Decon Ops Facility CSA in TA-50-1, Rooms 35, 36, 38, and 38A
- Waste Characterization, Reduction, and Repackaging Facility (WCRRF) Indoor CSA in TA-50-69, Rooms 102 and 103
- WCRRF Outdoor CSA
- RLWTF Cementation Treatment Unit at TA-50-1, Room 60A
- Electrochemical Treatment Unit (ETU) in TA-50-37, Room 117

TA-50 hazardous and/or mixed waste management units have been identified in previous Part A or Part B permit applications. These hazardous and/or mixed waste management units are currently in one of the following status categories:

- Hazardous and/or mixed waste unit currently permitted for storage and treatment or operating under interim status pursuant to 20 NMAC 4.1, Subparts V and VI [1-1-97]
- Hazardous waste unit closed pursuant to 20 NMAC 4.1, Subpart V, revised November 1, 1995 and 20 NMAC 4.1, Subpart V [1-1-97]
- Hazardous and/or mixed waste management unit identified in the Part A, but never constructed
- Non-RCRA-regulated unit associated with decontamination activities

The units previously identified in Part A or Part B permit applications are identified under the applicable status category below.

Units currently operating under either a hazardous waste permit or interim status requirements of 20 NMAC 4.1, Subparts V and VI [1-1-97], for hazardous and/or mixed waste storage and treatment:

- CSAs for hazardous and/or mixed waste
  - TA-50-114 Storage Shed
  - TA-50-1 Room 59
  - TA-50-1 Rooms 35, 36, 38/38A
  - TA-50-37 Rooms 115, 117, 118
  - TA-50-69 Outside CSA, Inside CSA
- TA-50-1 Room 60A mixed waste treatment unit (waste solidification/cementation)

These units are included in this TA-50 Part B and described further in Section 2.0 and Attachments G and I.

Unit closed pursuant to 20 NMAC 4.1, Subpart V [1-1-97]:

- The controlled air incinerator (CAI) and storage areas in TA-50-37.

Unit closed pursuant to 20 NMAC 4.1, Subpart V, revised November 1, 1995:

- The Batch Waste Treatment Unit at TA-50-1

Units identified as hazardous/mixed waste storage, but never constructed:

- Modular Storage Buildings 137 and 138
- TA-50-139 and storage pads
- TA-50-140 and storage pads

#### A.1.1 Topographic Maps [20 NMAC 4.1, Subpart IX, §270.14(b)(19)]

Maps and figures provided in this attachment and in the *Los Alamos National Laboratory General Part A Permit Application* (LANL 1998a), hereinafter referred to as the General Part A, meet the requirements of 20 NMAC 4.1, Subpart IX, §270.14(b)(19) [1-1-97]. The General Part A includes the LANL-wide 100-year floodplain map and the location map of water supply wells, monitoring wells, test wells, springs, and surface water sampling stations. Other maps and figures are introduced throughout and provided at the end of this attachment. A topographic map of TA-50 is provided as Map A-1. Contour lines are at intervals of 1 in. = 200 ft, which is sufficient to detail natural drainage in the vicinity of TA-50. The topographic map clearly shows a map scale, the date of preparation, a north arrow, the locations of the hazardous and mixed waste units, and surrounding topography at TA-50.

#### A.1.2 TA-50-37

The TA-50-37 CSA is located on the first floor of TA-50-37 and consists of Rooms 112, 115, 117, and 118, encompassing contiguous areas in the west-central, south-central, and eastern portions of the building (Figure A-3). The TA-50-37 CSA will be used to stage waste undergoing characterization and verification activities at TA-50-37. Detailed information about the TA-50-37 CSA is provided in Section 2.1 and Attachment G of the TA-50 Part B.

The TA-50-37 ETU will be located in TA-50-37, Room 117. Figure A-3 depicts the location of the ETU. After electrochemical treatment operations, drums of mixed transuranic (TRU) waste and mixed low-level waste will be stored temporarily in Room 117. The remaining rooms of the TA-50-37 CSA will also be used for container storage in support of the TA-50-37 waste characterization and electrochemical treatment activities. The ETU is further described in Section 2.2 and Attachment I of the TA-50 Part B.

#### A.1.3 TA-50-1

TA-50-1 houses the RLWTF CSA and cementation treatment unit and the Decon Ops Facility CSA. Figures A-4 and A-5 depict the location of these units.

##### A.1.3.1 RLWTF CSA and Cementation Treatment Unit

The cementation treatment unit is located in TA-50-1, Room 60A. After cementation treatment operations in Room 60A, drums of solidified mixed TRU waste will be stored temporarily in TA-50-1, Room 59, adjacent to Room 60 (Figure A-4). The RLWTF CSA and cementation treatment unit are further described in Sections 2.1, 2.2, and Attachments G and I of the TA-50 Part B.

##### A.1.3.2 TA-50-1 Decon Ops Facility

The Decon Ops Facility CSA is located in the basement of the southern portion of TA-50-1 and consists of Rooms 35, 36, and 38/38A (Figure A-5). The Decon Ops Facility CSA will be used to stage waste to facilitate the decontamination operations. The TA-50-1 Decon Ops Facility CSA is further described in Section 2.1 and Attachment G of the TA-50 Part B.

#### A.1.4 TA-50-114

The TA-50-114 CSA is a storage locker located south of the eastern wing of TA-50-1 and east of TA-50-1, Room 34 (Figure A-5). The locker contains an elevated grated floor above a divided recessed area on which the waste containers are placed. The TA-50-114 CSA will provide extra storage for both the RLWTF and the Decon Ops Facility. The TA-50-114 CSA is further described in Section 2.1 and Attachment G of the TA-50 Part B.

#### A.1.5 WCRRF

The WCRRF is located in TA-50-69 in the southwest quadrant of TA-50. The TA-50-69 WCRRF Indoor CSA consists of Rooms 102 and 103 in TA-50-69 (Figure A-6) and will be used to stage contaminated gloveboxes and other mixed TRU and mixed low-level wastes associated with WCRRF operations. The TA-50-69 WCRRF Indoor CSA is further described in Section 2.1 and Attachment G of the TA-50 Part B.

The TA-50-69 Outdoor CSA is located in the southwest corner of TA-50. Transportainers and other weather protective structures at the WCRRF Outdoor CSA (Figure A-6) will be used to store waste. The WCRRF Outdoor CSA is further described in Section 2.1 and Attachment G of the TA-50 Part B.

#### A.1.6 Meteorology and Hydrology

The climate and surface winds are described in the LANL General Part B.

##### A.1.6.1 Wells and Surface Waters [20 NMAC 4.1, Subpart IX, §270.14(b)(19)(iii) and (ix)]

A map showing the locations of supply wells, monitoring wells, test wells, springs, surface-water sampling stations, and National Pollutant Discharge Elimination System (NPDES)-outfalls is included in the General Part A.

The only hydrological characteristic specific to operations conducted at TA-50 is surface runoff in the small drainage off the mesa for brief periods during spring snowmelt and intense summer thunderstorms. Surface grading and other storm water controls prevent accumulation of storm water and snowmelt (see Map A-1, Appendix A, LANL General Part B). Summer storms on the Pajarito Plateau can generate high discharge rates and may reach a maximum discharge in less than two hours. High discharge rates can transport suspended and bed sediments down the

canyons. Snow, however, melts slowly in the spring and runs off over a period of several weeks to several months at a low discharge rate. Stream flow is ephemeral in Canada del Buey to the north and Pajarito Canyon to the south of Mesita del Buey, occurring primarily during snowmelt or thunderstorms. Situated on top of the mesa, TA-50 is not affected by stream flooding or runoff.

#### A.1.7 Surrounding Land Use [20 NMAC 4.1, Subpart IX, §270.14(b)(19)(iv)]

No industrial facilities, except for those within the LANL TAs, are near TA-50. The following buildings or facilities are located within the TA-50 boundary:

- RLWTF, TA-50-1
- TA-50-37
- Engineering Sciences and Applications Division, TA-50-54
- WCRRF, TA-50-69
- Portable office trailer, TA-50-84
- Portable office trailer, TA-50-196
- U.S. West relay facility, TA-50-184
- Material Disposal Area (MDA) C Landfill (inactive)

As depicted on Figure A-1, the TAs that border TA-50 include: TA-35, TA-40, TA-55, TA-63, and TA-66. TA-35, located northeast of TA-50, includes facilities that conduct nuclear safeguards research and development. TA-40, which is south and west of TA-50, is used in developing special detonators for the initiation of high-explosive systems. The facilities at TA-55, west of TA-50, conduct plutonium processing and metallurgy research. TA-63, located east of TA-50, is not developed. TA-66, southeast of TA-50, includes the Advanced Technology Assessment Center. The types of activities conducted, the separation distances, and administrative controls ensure that these nearby TAs do not affect the safety of operations conducted at TA-50.

## A.2 LOCATION INFORMATION - ENVIRONMENTAL DESCRIPTION [20 NMAC 4.1, Subpart IX, §270.14(b)(11)]

### A.2.1 Geology

Geologic aspects (Longmire 1996) of interest at TA-50 include the following:

- Detailed stratigraphy of the upper units of the Bandelier Tuff, including contacts between units that may form barriers to migration or create paths to divert liquid or vapor movement
- Joints in the Bandelier Tuff that may provide paths for liquid and vapor movement
- Mineralogy of the geologic strata that may be important in the retardation of contaminant movement

- Faulting that may provide zones of fracturing along which contaminant transport may be enhanced
- Surficial erosion that could potentially transport contaminants

A.2.1.1 Seismology [20 NMAC 4.1, Subpart IX, §§270.14(b)(11)(i) and (ii), and Subpart V, §264.18(a)]

TA-50 is located in Los Alamos, New Mexico; therefore, pursuant to 20 NMAC 4.1, Subpart IX, 270.14(b)(11)(i) and 20 NMAC 4.1, Subpart V, Appendix VI [1-1-97], the seismic standard of 20 NMAC 4.1, Subpart V, 264.18(a) [1-1-97], is applicable.

A geologic field investigation, which consisted of exploratory trenching, was conducted within 3,000 ft of TA-50 during the fall of 1992 and summer of 1993. Based on trench stratigraphy, no evidence of Holocene faulting was observed (Woodward-Clyde Federal Services 1995). Therefore, TA-50 is in compliance with the seismic standards of 20 NMAC 4.1, Subpart IX, §§270.14(b)(11)(i) and (ii), and Subpart V, §264.18(a)[1-1-97]. Figure A-7 details regional surface faulting.

A.2.1.2 Stratigraphy

TA-50 is located in the central part of the Pajarito Plateau. A simplified stratigraphy of the TA-50 site, as well as estimated thickness of rock units, is shown on Figure A-8.

A.2.1.3 Soils

The soils on Mesita del Buey were derived from Bandelier Tuff bedrock and formed under a semiarid climate. Soils on the mesa top are mainly thin, well-drained, sandy loams. The subsoil is a reddish-brown clay, gravelly clay, or clay loam with depth to tuff bedrock about 20 to 50 cm (8 to 20 in.). These soils are classified in the Unified Soil Classification System as sandy loam, sandy loam-sandy clay, loam, clay loam-loam, and clay loam.

TA-50 is a Hackroy-Rock outcrop complex and Carjo loam. The Hackroy-Rock outcrop complex consists primarily of rock outcrop and Hackroy soils. The Hackroy soils typically range from a brown, sandy loam in the top 8 cm to a reddish-brown clay from 8 to 30 cm in depth. Permeability rates range from 5 to 15 cm per hour (cm/hr) in the top layers down to 0.15 to 0.50 cm/hr in the lower layers. The shrink-swell potential is low. Available water-holding capacity is 0.11 to 0.21 cm per cm (cm/cm), and the soil pH is 6.6 to 7.8. The Carjo soils typically range from a grayish-brown

loam in the top 10 cm to a brown clay loam from 10 to 30 cm in depth. Permeability rates range from 1.5 to 5 cm/hr in the top layer, down 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/cm, and the soil pH is 6.3 to 7.8 (Nyhan et al. 1978).

The slopes between TA-50 mesa top and canyon bottoms consists of steep rock outcrops and patches of shallow, undeveloped colluvial soils. The south-facing canyon walls of Pajarito Canyon are steep and have little or no soil material or vegetation, whereas the north-facing walls of Canada del Buey have areas of thin dark-colored soils. Native vegetation at TA-50 is mainly brome grass, false tarragon, blue grama, wormwood, Colorado piñon, and one-seed juniper.

#### A.2.1.4 Erosional Processes

Erosion of material on Mesita del Buey occurs primarily by shallow runoff on the relatively flat pans of the mesa, by deeper runoff in channels, and by rockfall and colluvial transport on the canyon walls. Wind erosion of disturbed soils also occurs. Mesita del Buey cliff-forming units are eroded primarily by lateral cliff retreat and not vertical erosion.

#### A.2.2 Floodplain Standard [20 NMAC 4.1, Subpart IX, §270.14(b)(11)(iii) and §270.14(b)(19)(ii), and Subpart V, §264.18(b)]

The CSAs addressed in the TA-50 Part B are not located within the 100-year floodplain boundary. In accordance with 20 NMAC 4.1, Subpart IX, §270.14(b)(11)(iii), additional floodplain information is provided in the LANL General Part B, Appendix A.

#### A.3 GROUNDWATER MONITORING [20 NMAC 4.1, Subpart IX, §270.14(c), and Subpart V, §264.90(a)]

Requirements for groundwater monitoring and protection specified in 20 NMAC 4.1, Subpart IX, §270.14(c)[1-1-97], and Subpart V, §264.90(a)[1-1-97], apply to owners and operators of the following regulated units only: surface impoundments, waste piles, land treatment units, and landfills. This document addresses TA-50 CSAs and two treatment units—one for cementation and the other for electrochemical treatment. The CSAs and treatment units are not regulated units subject to 20 NMAC 4.1, Subpart IX, §270.14(c)[1-1-97].

#### A.4 TRAFFIC PATTERNS AND CONTROL [20 NMAC 4.1, Subpart IX, §270.14(b)(10)]

The only local access road to TA-50 is Pajarito Road. Approximately 8,000 automobiles traverse Pajarito Road daily as stated in *Environmental Surveillance at Los Alamos During 1990* (LANL 1992). The DOE controls all of the area within the Laboratory site boundary and has the authority to completely restrict access. LANL routinely closes Pajarito Road for activities such as the transport of hazardous waste to and from TA-50.

##### A.4.1 Routes of Travel

The primary traffic routes that may be used to transport hazardous and mixed waste to and from TA-50 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) (Figure A-9). After waste containers are received at TA-50, they may be moved minimal distances on road surfaces within the TA.

##### A.4.2 Traffic Control Signals

Traffic control signals within TA-50 include stop signs, posted speed limits, and other traffic and pedestrian control signs. The locations of existing signs at TA-50 are shown on Figure A-9.

#### A.5 SECURITY [20 NMAC 4.1, Subpart IX, §270.14 (b)(4) and §270.14(b)(19)(viii) and Subpart V, §264.14]

Security at TA-50 is predominantly maintained with artificial barriers. These barriers prevent the unknowing entry and minimize the possibility for unauthorized entry of persons or livestock into the area and, thus, satisfy the requirements of 20 NMAC 4.1, Subpart V, §§264.14(a) and (b)(2) [1-1-97].

Eight-ft-high chain-link security fences surround the entire perimeter of TA-50. Bilingual (i.e., English and Spanish) warning signs are posted on the fences at approximately 50- to 75-ft intervals. In accordance with the requirements of 20 NMAC 4.1, Subpart V, §264.14(c)[1-1-97], warning signs are also posted at the entrances to each area that will manage hazardous and mixed waste and will be visible from any approach to these areas. The legends on the posted signs indicate "Danger—Hazardous Waste Storage Area" and "Unauthorized Persons Keep Out." The signs are legible from a distance of 25 ft. Additionally, signs will be posted at the entrance to each hazardous and mixed waste management area to address requirements associated with entering and working in the area.

There are three entry gates to TA-50. Two entry gates are located north of TA-50-1. The third entry gate is located at TA-50-38 on Pecos Drive, northeast of TA-50-37. This gate may be used to secure entrance to TA-50 from Pecos Drive. It is closed and locked during nonoperational hours. Additionally, a fire access and shipping gate is located west of TA-50-69 and is routinely kept closed and locked. When this gate is opened for shipments of material or waste, facility personnel are present in the yard west of TA-50-69 to limit egress by unauthorized persons. TA-50 is patrolled by Protection Technology Los Alamos security personnel during nonoperational hours to ensure that unauthorized entry has not occurred. The security fences are 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)[1-1-97], the locations of the security fences and entry gates at TA-50 are shown on Figure A-10.

TA-50 Buildings 1, 37, and 69, Storage Locker TA-50-114, and TA-50-69 Outdoor CSA are always locked. Access to TA-50 (Buildings 1, 37, and 69) is gained via badge readers. Doors to the buildings, storage lockers, and transportainers are locked; keys to these doors are distributed to designated personnel only. Building access also limits access to individual CSAs and treatment units.

## A.6 REFERENCES

- LANL. 1992. *Environmental Surveillance at Los Alamos During 1990*. Los Alamos, New Mexico, Los Alamos National Laboratory.
- LANL. 1998a. *Los Alamos National Laboratory General Part A Permit Application*. Rev. 0.0, April 1998. Los Alamos, New Mexico, Los Alamos National Laboratory.
- LANL. 1998b. *Los Alamos National Laboratory General Part B Permit Application*. Los Alamos, New Mexico, Los Alamos National Laboratory.
- Longmire et. al. 1996. *Natural Background Geochemistry, Geomorphology, and Pedogenesis of Selected Soil Profiles and Bandelier Tuff*. Los Alamos National Laboratory Report LA-12913-MS, Los Alamos, New Mexico.
- Nyhan et al. (J. W. Nyhan, L. W. Hacker, T. E. Calhoun, and D. L. Young). 1978. *Soil Survey of Los Alamos County, New Mexico*. LANL Informal Report LA-6779-MS, Los Alamos, New Mexico, Los Alamos National Laboratory.
- Woodward-Clyde Federal Services. 1995. *Seismic Hazards Evaluation of the Los Alamos National Laboratory*, Los Alamos, New Mexico.

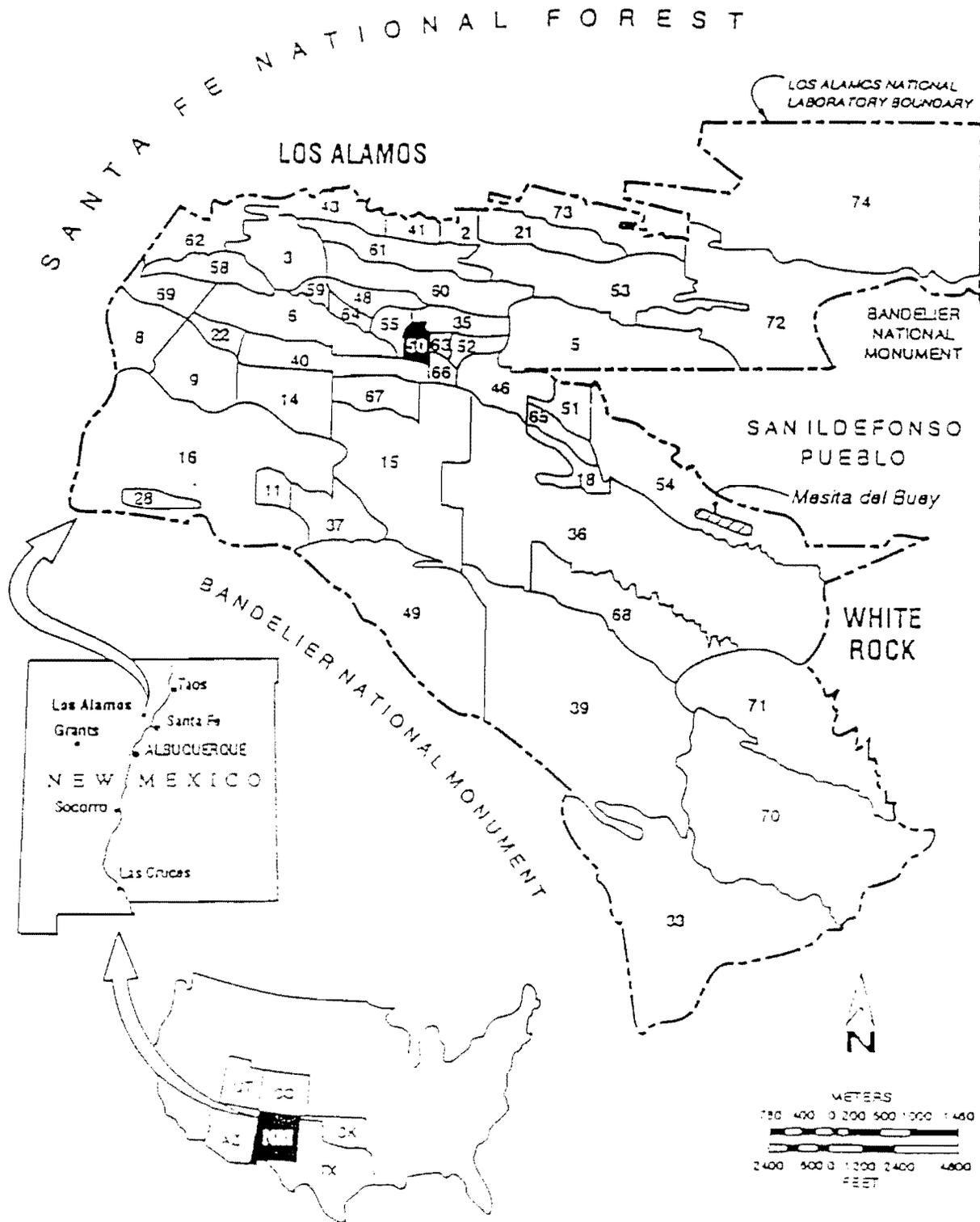


Figure A-1. Location of TA-50 in Relation to Other Laboratory TAs and Surrounding Landholdings

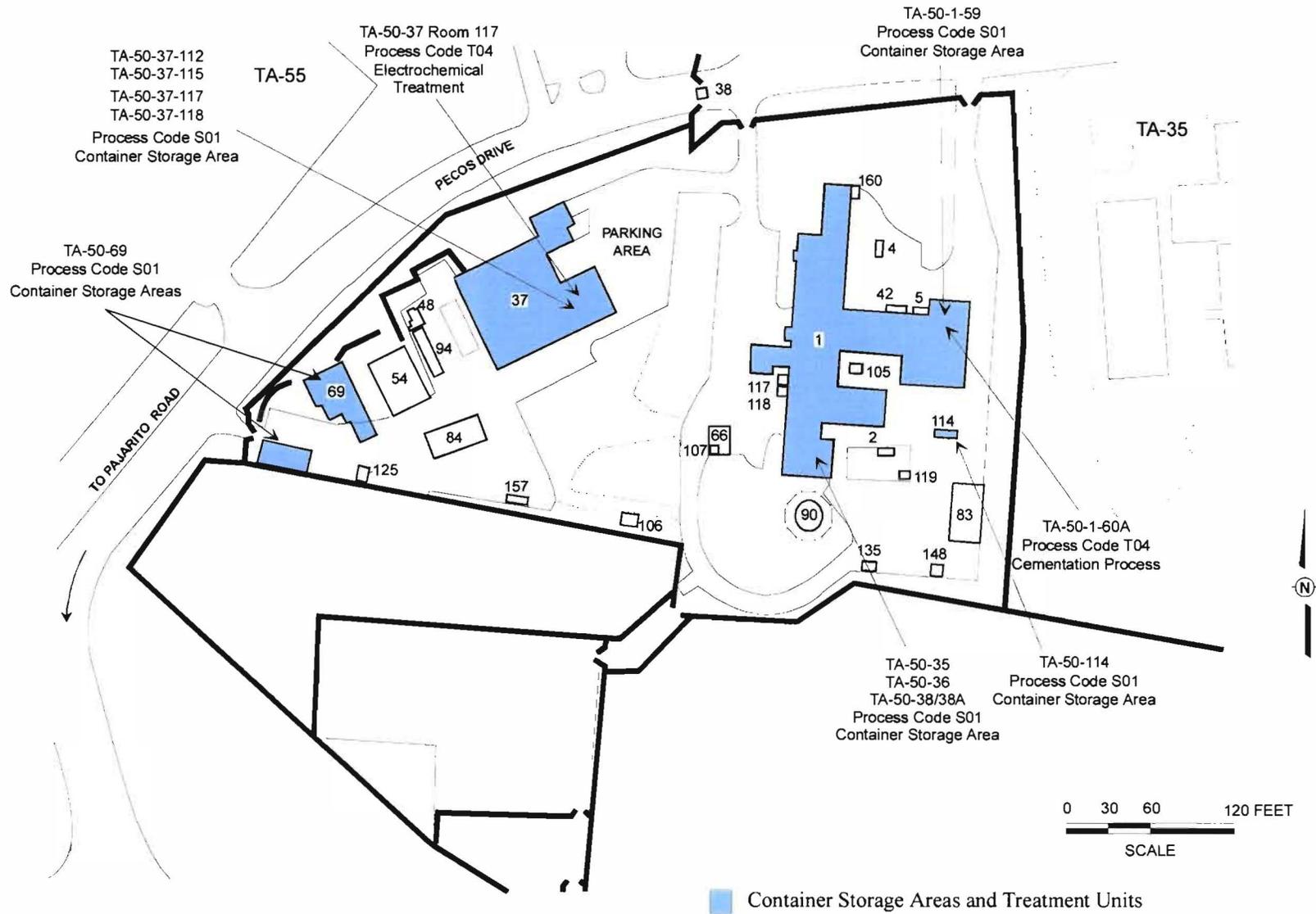


Figure A-2. TA-50 Site Map

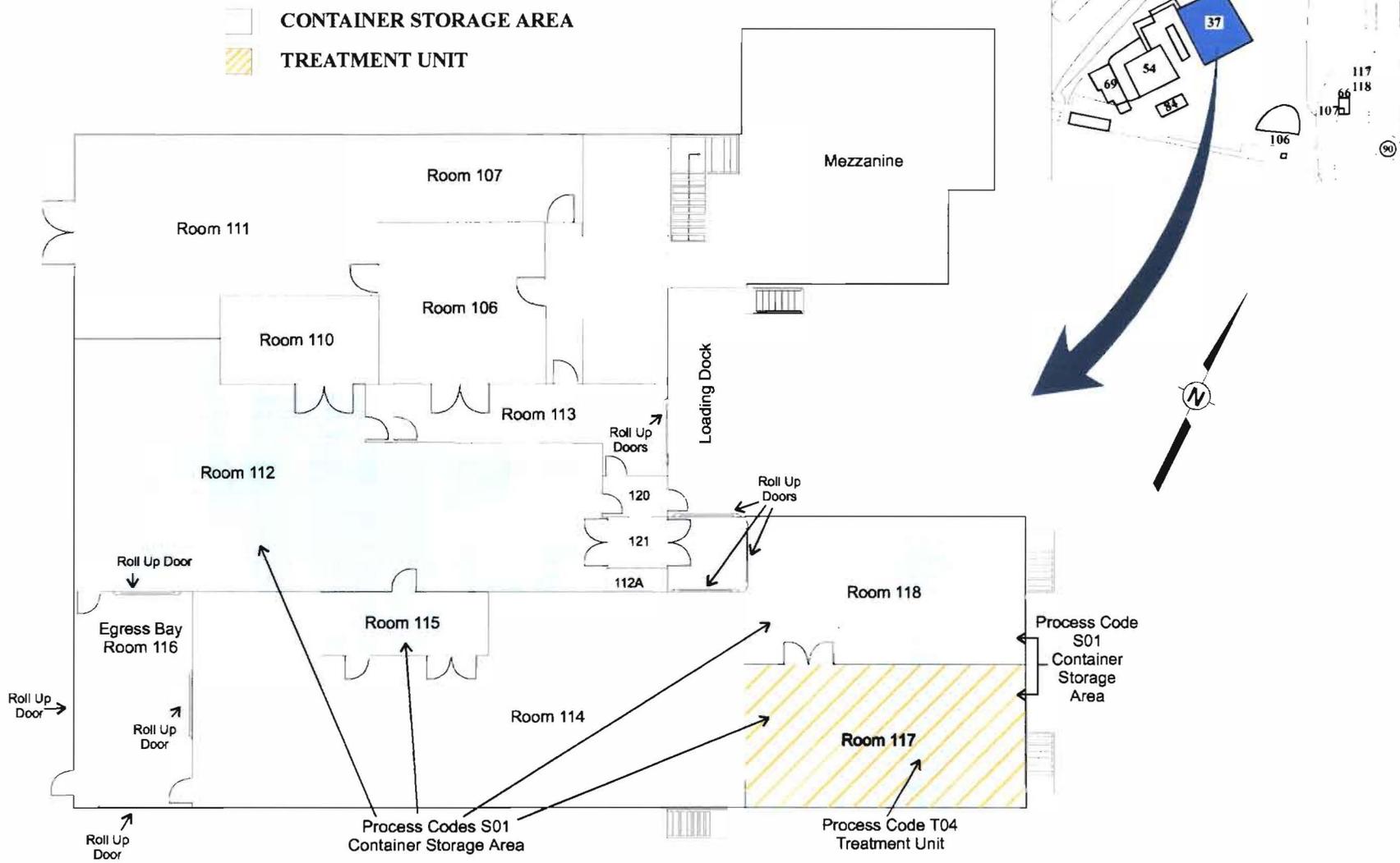


Figure A-3. TA-50-37 Container Storage Area and Electrochemical Treatment Unit

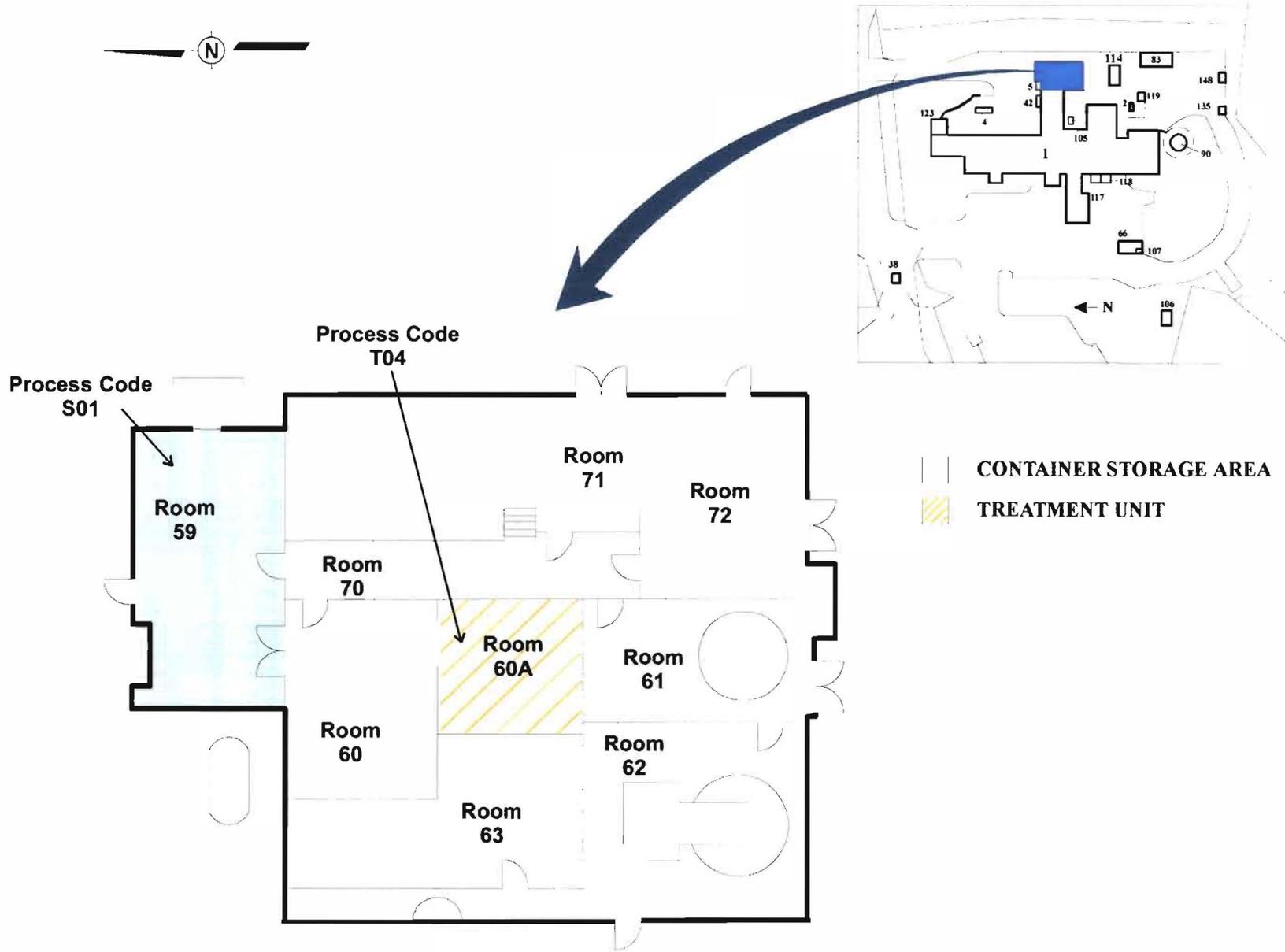


Figure A-4. TA-50-1 RLWTF Container Storage Area and Cementation Treatment Unit

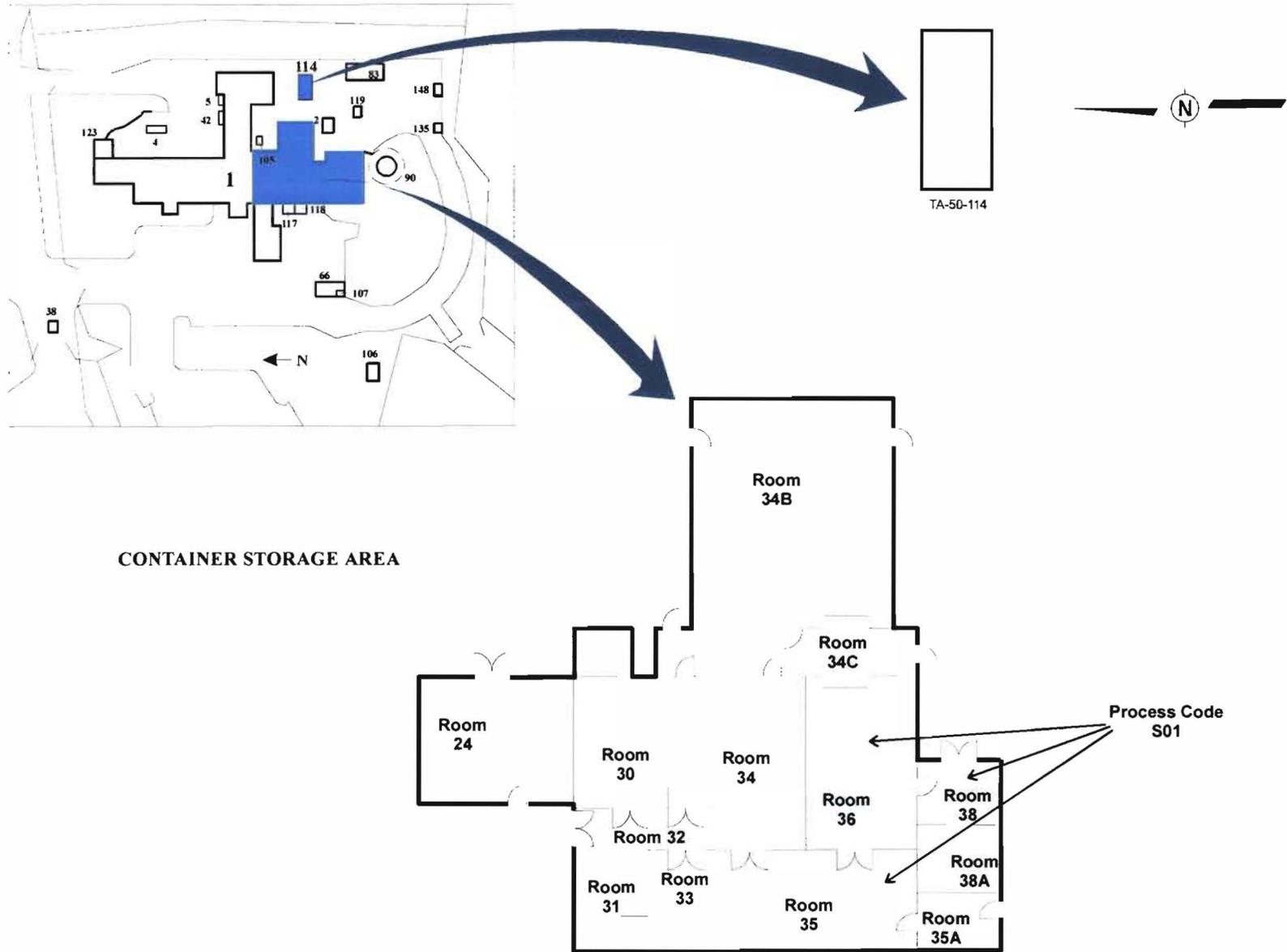
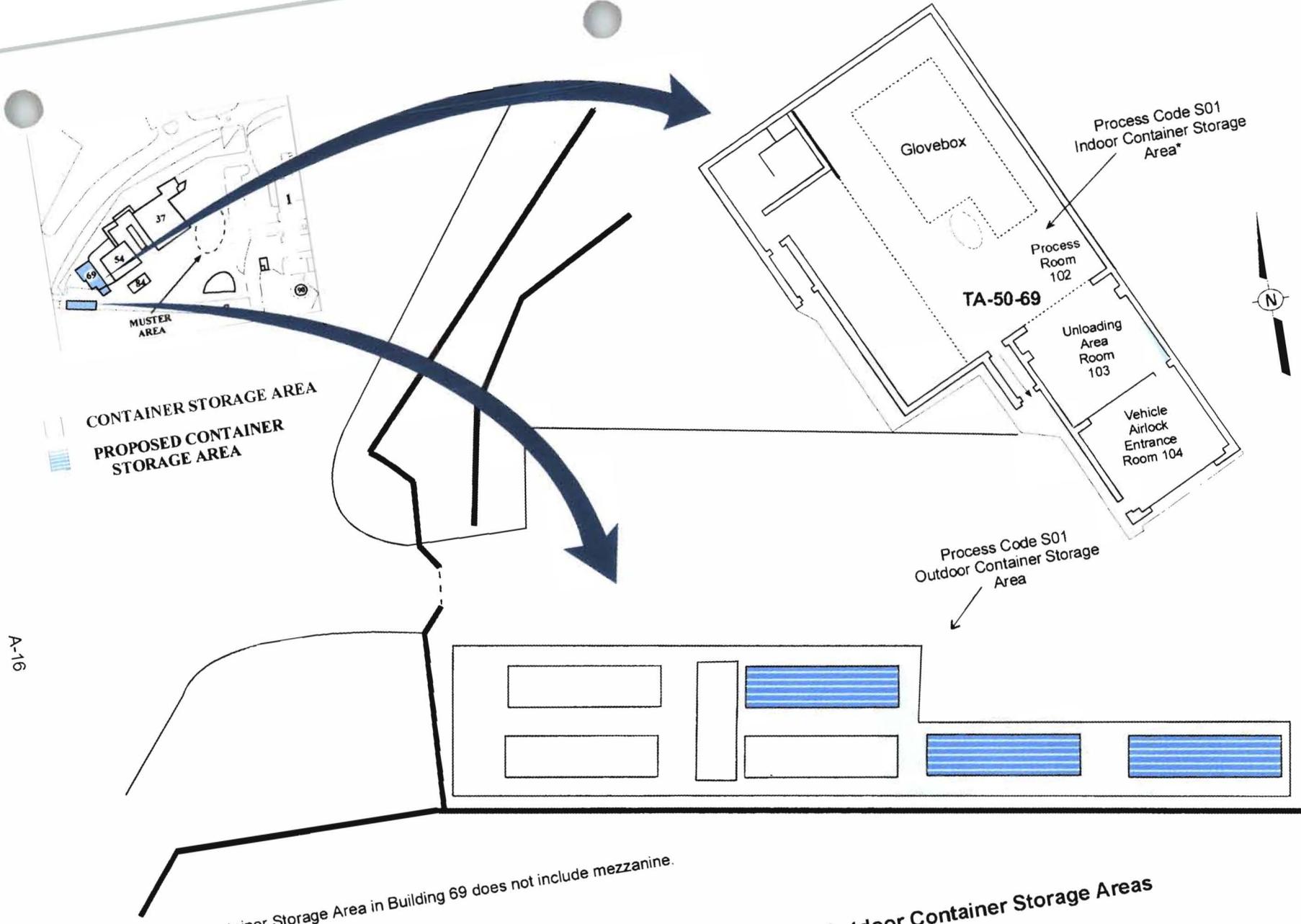


Figure A-5. TA-50-1 Decontamination Operations Facility and TA-50-114 Container Storage Area

LANL 8B20\*1

A-16



\*Note: Container Storage Area in Building 69 does not include mezzanine.

Figure A-6. WCRRF TA-50-69, Indoor and Outdoor Container Storage Areas

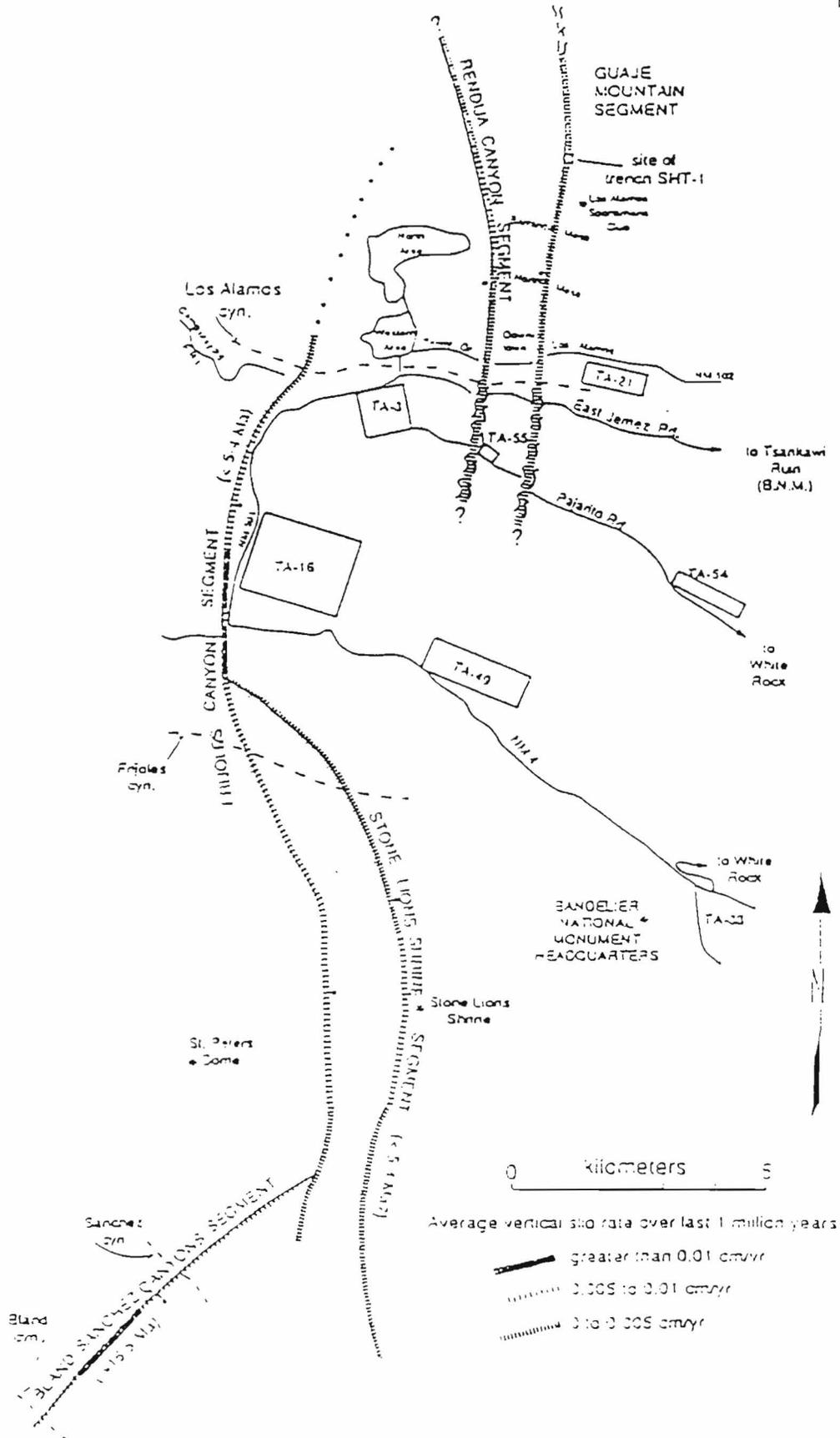


Figure A-7. Regional Surface Faulting





Figure A-9. Location of Access Road and Traffic Control Signs at Technical Area (TA) 50

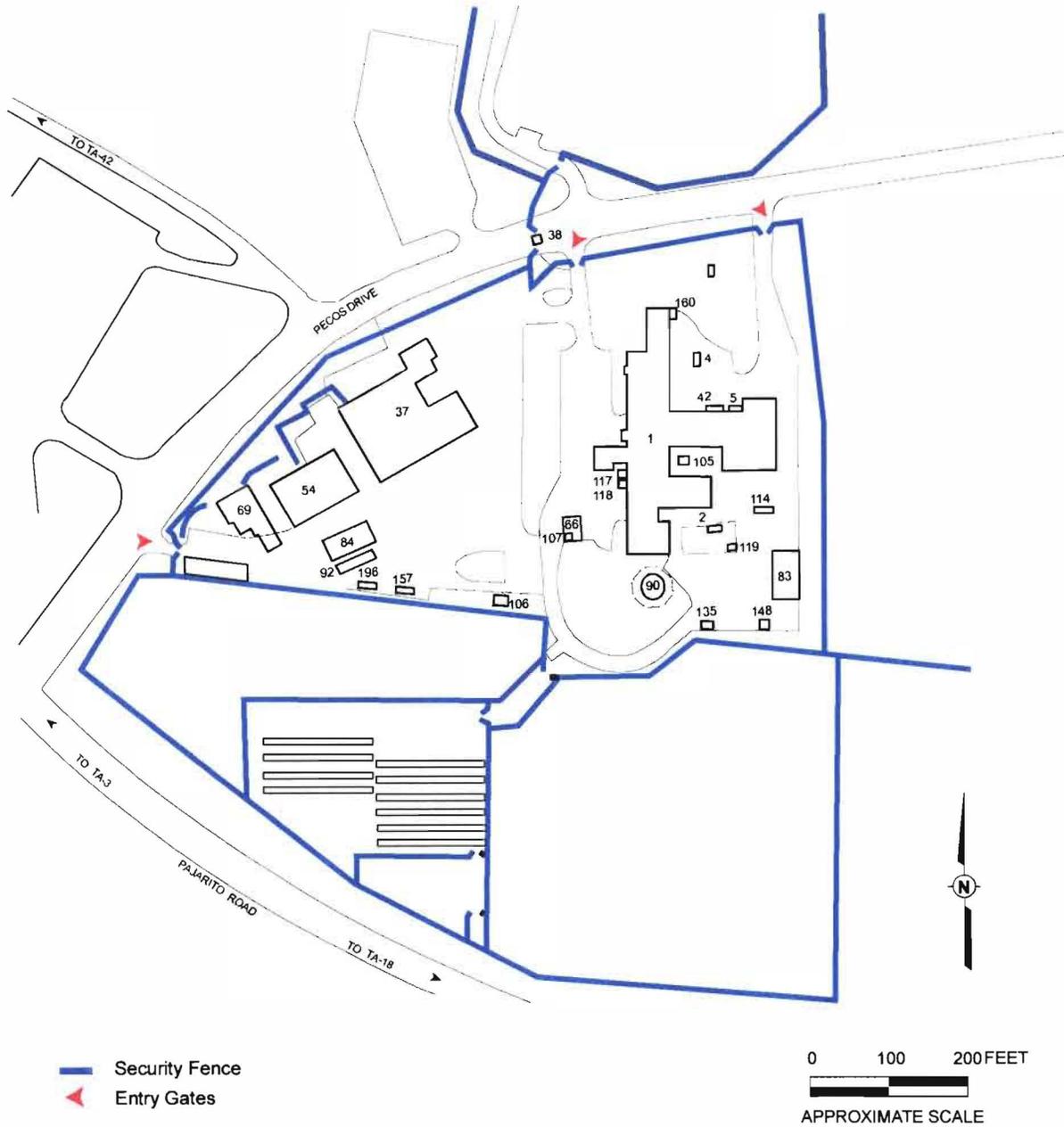


Figure A-10. TA-50 Security Fences and Entry Gates

**ATTACHMENT E**  
**CONTINGENCY PLAN**

## TABLE OF CONTENTS

LIST OF TABLES .....	ii
LIST OF FIGURES .....	iii
LIST OF ABBREVIATIONS/ACRONYMS .....	iv
E.1 EMERGENCY PROCESS SHUTDOWN PRIOR TO EVACUATION .....	E-1
E.2 REFERENCE .....	E-1
APPENDIX E1: List of TA-50 Emergency Equipment	

## LIST OF TABLES

<u>TABLE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
E-1	TA-50 Evacuation Route and Emergency Equipment Figures	E-2

## LIST OF FIGURES

<u>FIGURE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
E-1	TA-50-37 Container Storage Area and Treatment Unit Evacuation Route and Emergency Equipment	E-3
E-2	TA-50-1 RLWTF, Decontamination Operations Facility and TA-50-114 Evacuation Route	E-4
E-3	TA-50-1 RLWTF Container Storage Area and Treatment Unit Emergency Equipment	E-5
E-4	TA-50-1 Decontamination Operations Facility and TA-50-114 Container Storage Areas Emergency Equipment	E-6
E-5	TA-50-69 WCRRF Indoor Container Storage Area Emergency Equipment	E-7
E-6	WCRRF TA-50-69, Indoor and Outdoor Container Storage Areas Evacuation Route	E-8

## LIST OF ABBREVIATIONS/ACRONYMS

CAS	Central Alarm Station
CSA	container storage area
ERP	emergency response plan
ESH-1	Health Physics Operations Group
ESH-5	Industrial Hygiene and Safety Group
ESH-10	Hazardous Materials Response Group
HEPA	high-efficiency particulate air
LANL	Los Alamos National Laboratory
MSDS	material safety data sheet
PA	public address
PPE	personal protective equipment
RLWTF	Radioactive Liquid Waste Treatment Facility
TA	Technical Area
UV	ultraviolet
WCRRF	Waste Characterization, Reduction, and Repackaging Facility

## ATTACHMENT E CONTINGENCY PLAN

In the event of an emergency at a container storage area (CSA) or treatment unit at Technical Area (TA)-50, the Los Alamos National Laboratory (LANL)-wide contingency plan presented in Appendix E of the *Los Alamos National Laboratory General Part B Permit Application* (LANL 1998) (hereinafter referred to as the LANL General Part B) will be implemented. Personnel involved in waste handling and emergency response are trained in the TA-50-specific use of personal protective equipment (PPE) and emergency procedures, as described in more detail in the LANL General Part B, Appendices D and E. Whenever hazardous or mixed waste is being handled at TA-50, personnel involved in the operation will have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee. TA-specific evacuation routes and muster areas at TA-50 are depicted on the figures listed in Table 1-1. Emergency equipment available for use at TA-50 hazardous and mixed waste management units are listed in Appendix E1 and indicated in the figures listed in Table E-1.

### E.1 EMERGENCY PROCESS SHUTDOWN PRIOR TO EVACUATION

Unit-specific emergency response plans (ERPs) provide emergency shutdown procedures for unit-specific equipment. TA-50 personnel are familiar with the applicable ERP, receive emergency evacuation training, and participate in equipment shutdown exercises. Personnel are instructed to shut down equipment prior to evacuating a building unless an immediate building evacuation is announced or signaled. In the case of an immediate evacuation, a selected team may shut down designated equipment in an evacuated area. The team will be equipped with the proper equipment, clothing, and breathing apparatus. If they are on location, the Health Physics Operations Group (ESH-1), the Industrial Hygiene and Safety Group (ESH-5), and/or the Hazardous Materials Response Group (ESH-10) personnel (or their organizational equivalents) will provide advice and assistance.

### E.2 REFERENCE

LANL. 1998. *Los Alamos National Laboratory General Part B Permit Application*. Los Alamos, New Mexico, Los Alamos National Laboratory.

**Table E-1**  
**TA-50 Evacuation Route and Emergency Equipment Figures**

Waste Management Unit	Figure
TA-50-37 CSA and Treatment Unit Evacuation Route and Emergency Equipment	E-1
TA-50-1 Radioactive Liquid Waste Treatment Facility (RLWTF), Decontamination Operations Facility, and TA-50-114 Evacuation Route	E-2
TA-50-1 RLWTF CSA and Treatment Unit Emergency Equipment	E-3
TA-50-1 Decontamination Operations Facility and TA-50-114 CSAs Emergency Equipment	E-4
TA-50-69 Waste Characterization, Reduction, and Repackaging Facility (WCRRF) Indoor CSA Emergency Equipment	E-5
WCRRF TA-50-69 Indoor and Outdoor CSA Evacuation Route	E-6

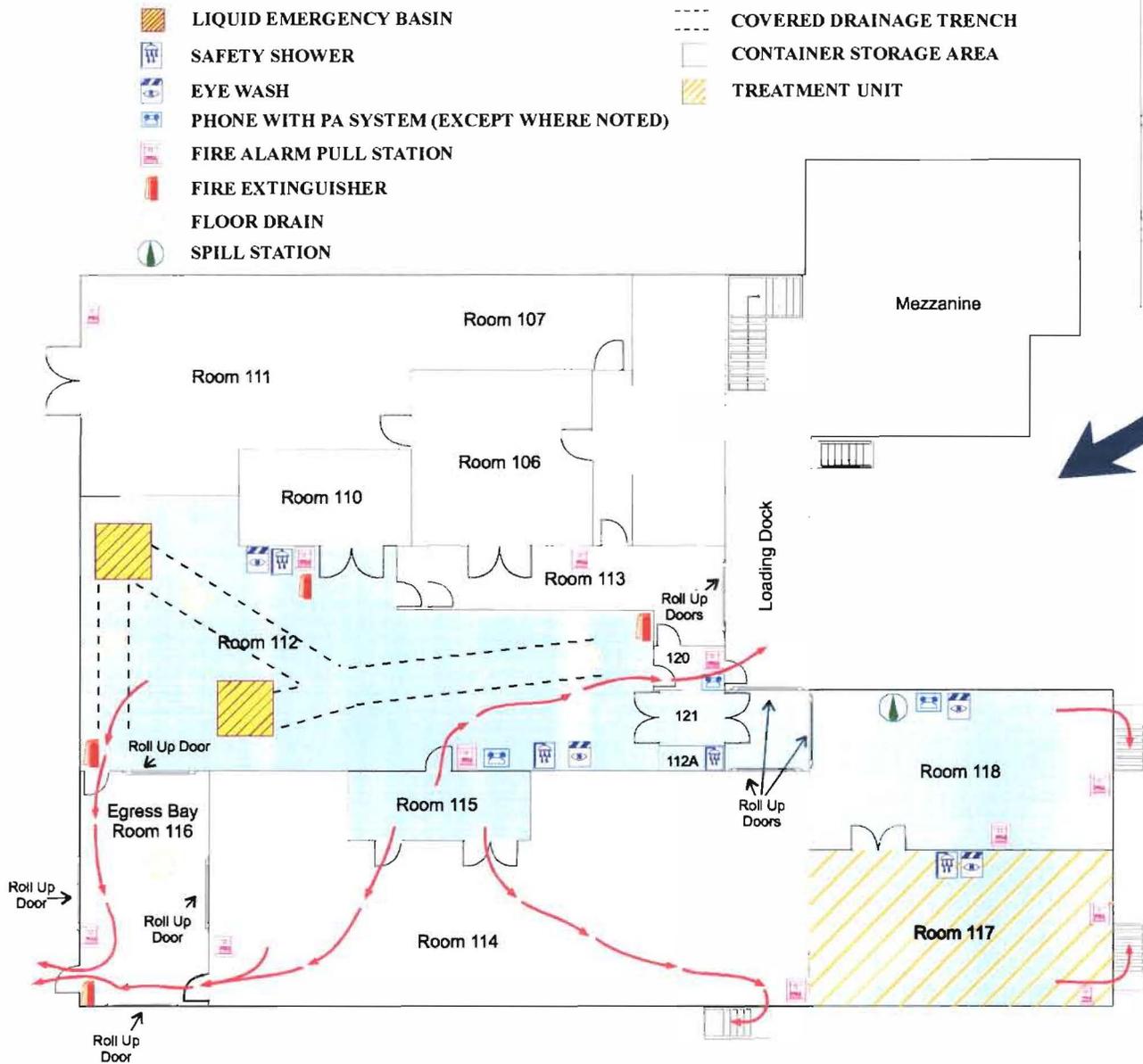
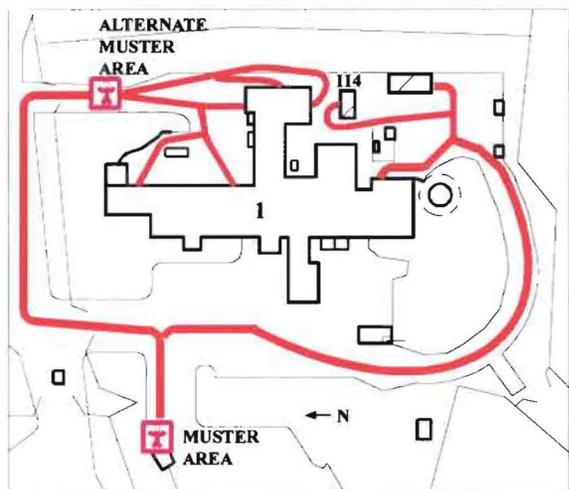


Figure E-1. TA-50-37 Container Storage Area and Treatment Unit Evacuation Route and Emergency Equipment

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EVACUATION ROUTE

- CONTAINER STORAGE AREA
- TREATMENT UNIT

E-4

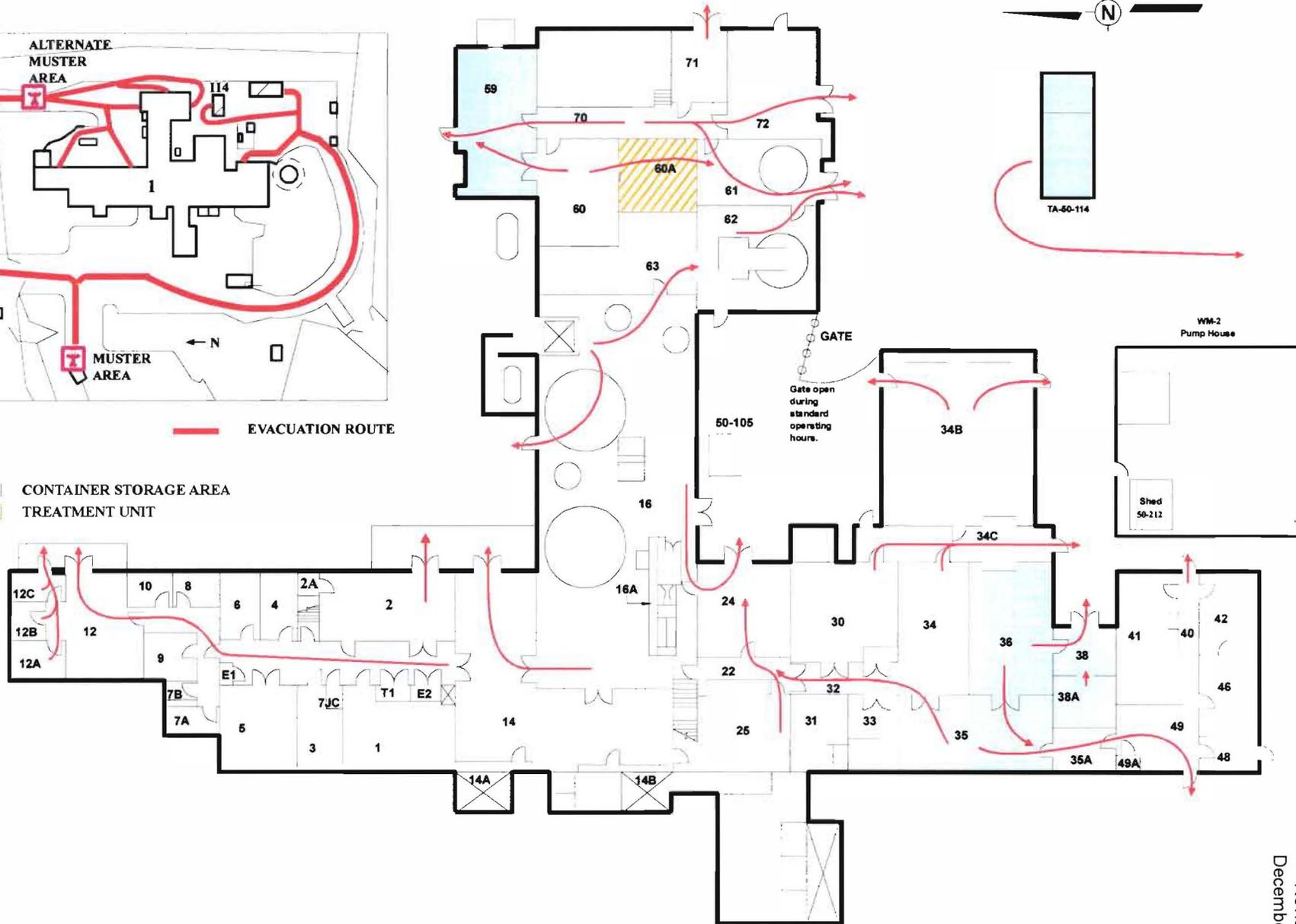


Figure E-2. TA-50-1 RLWTF, Decontamination Operations Facility and TA-50-114 Evacuation Route

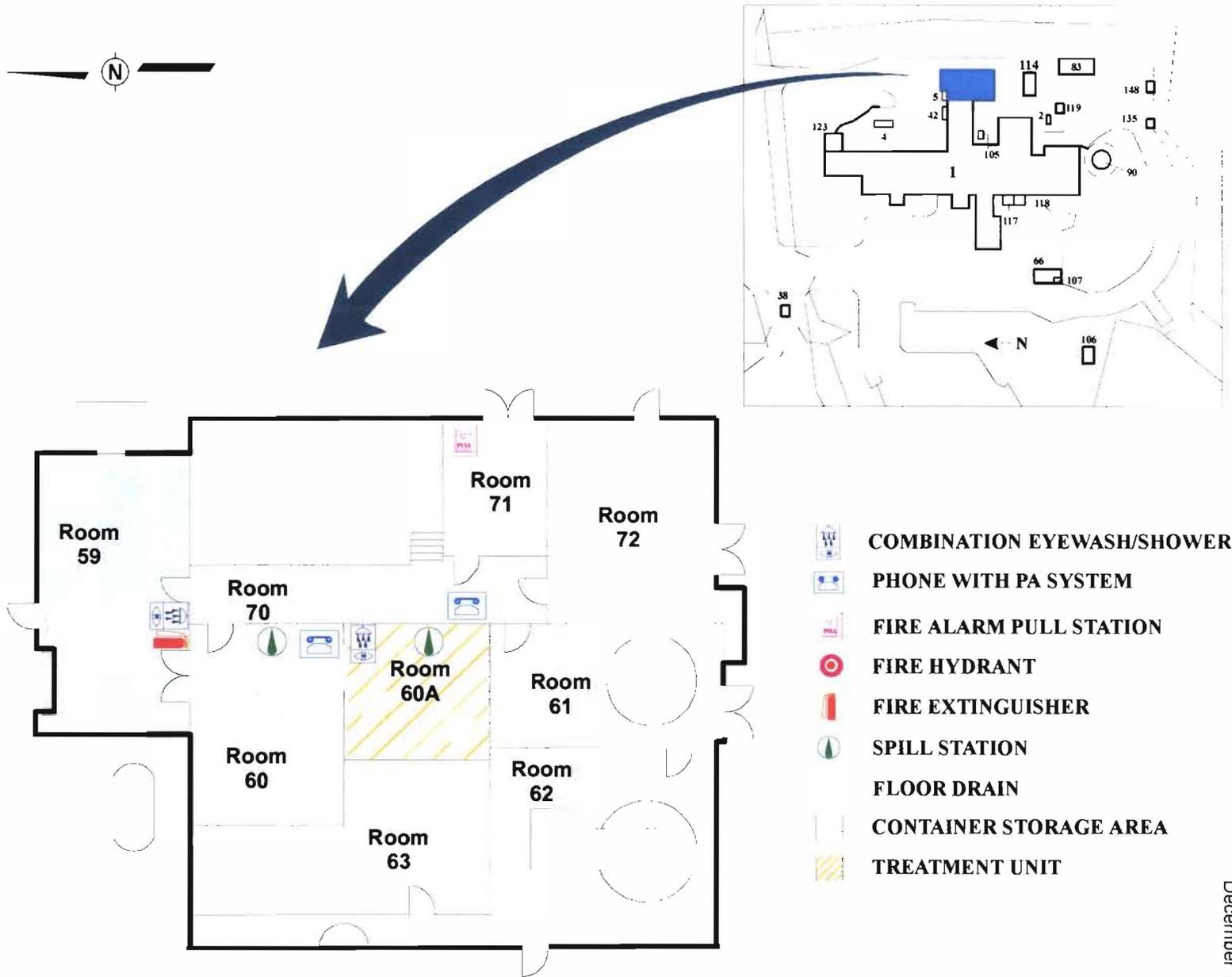
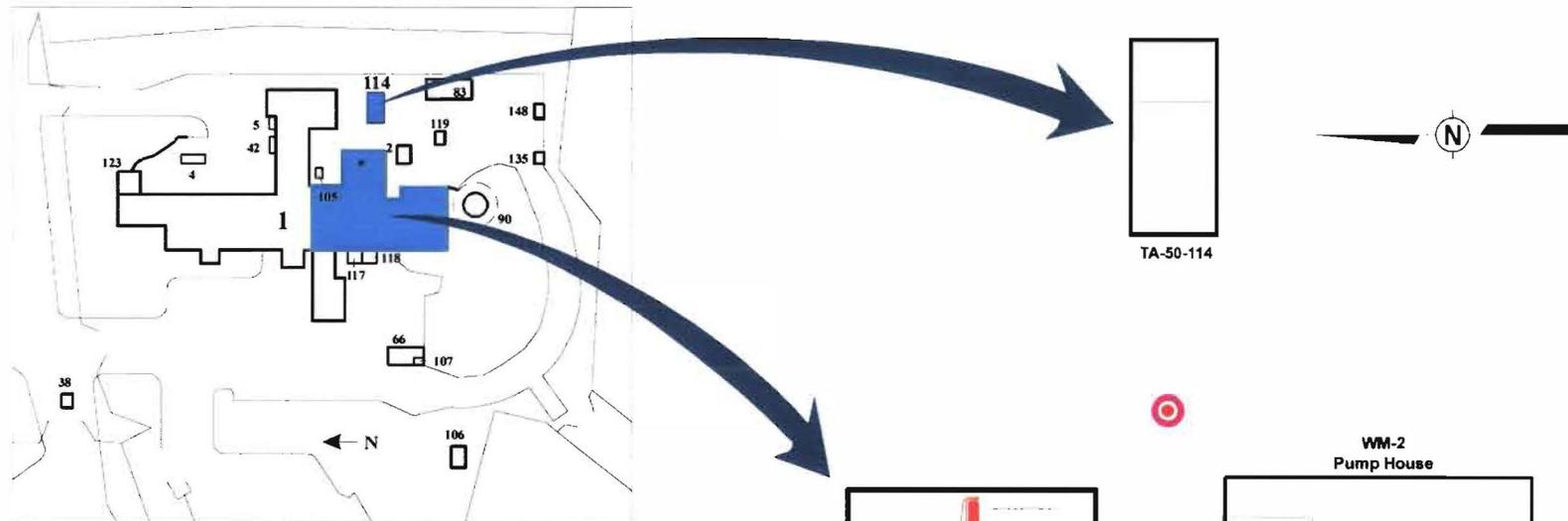


Figure E-3. TA-50-1 RLWTF Container Storage Area and Treatment Unit Emergency Equipment



-  EYE WASH
-  SAFETY SHOWER
-  COMBINATION EYEWASH/SHOWER
-  PHONE WITH PA SYSTEM
-  FIRE ALARM PULL STATION
-  FIRE HYDRANT
-  FIRE EXTINGUISHER
-  SPILL STATION
-  FLOOR DRAIN
-  CONTAINER STORAGE AREA

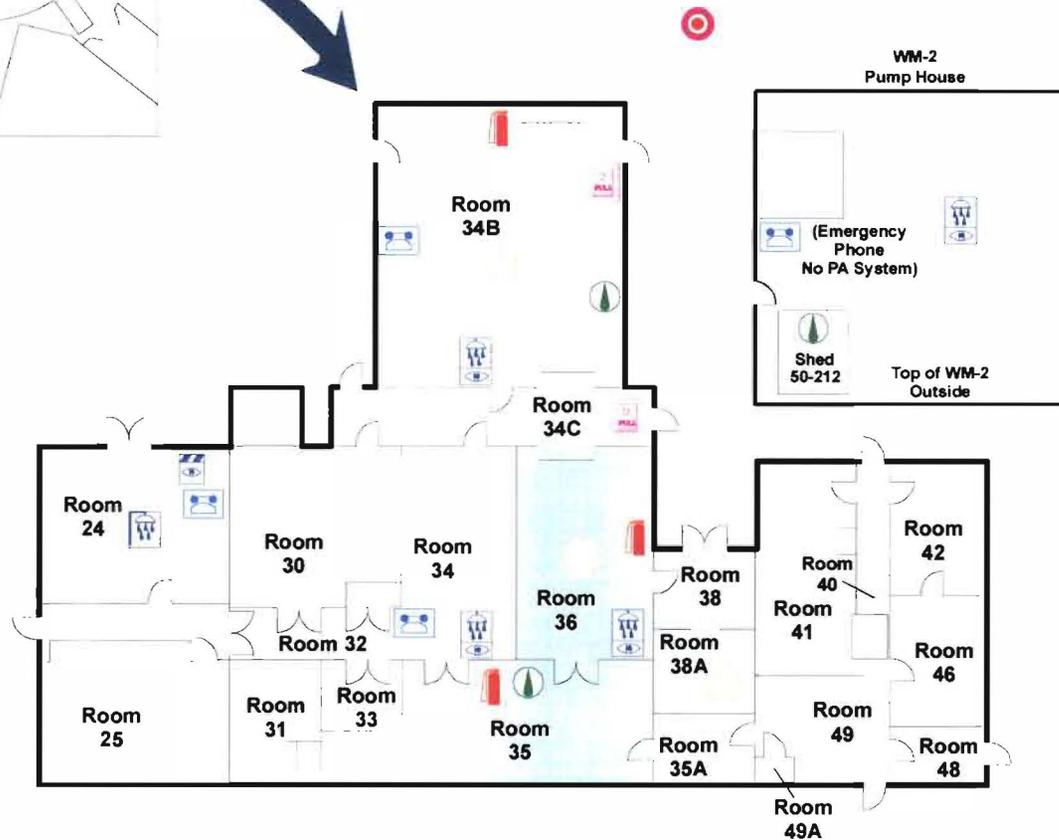
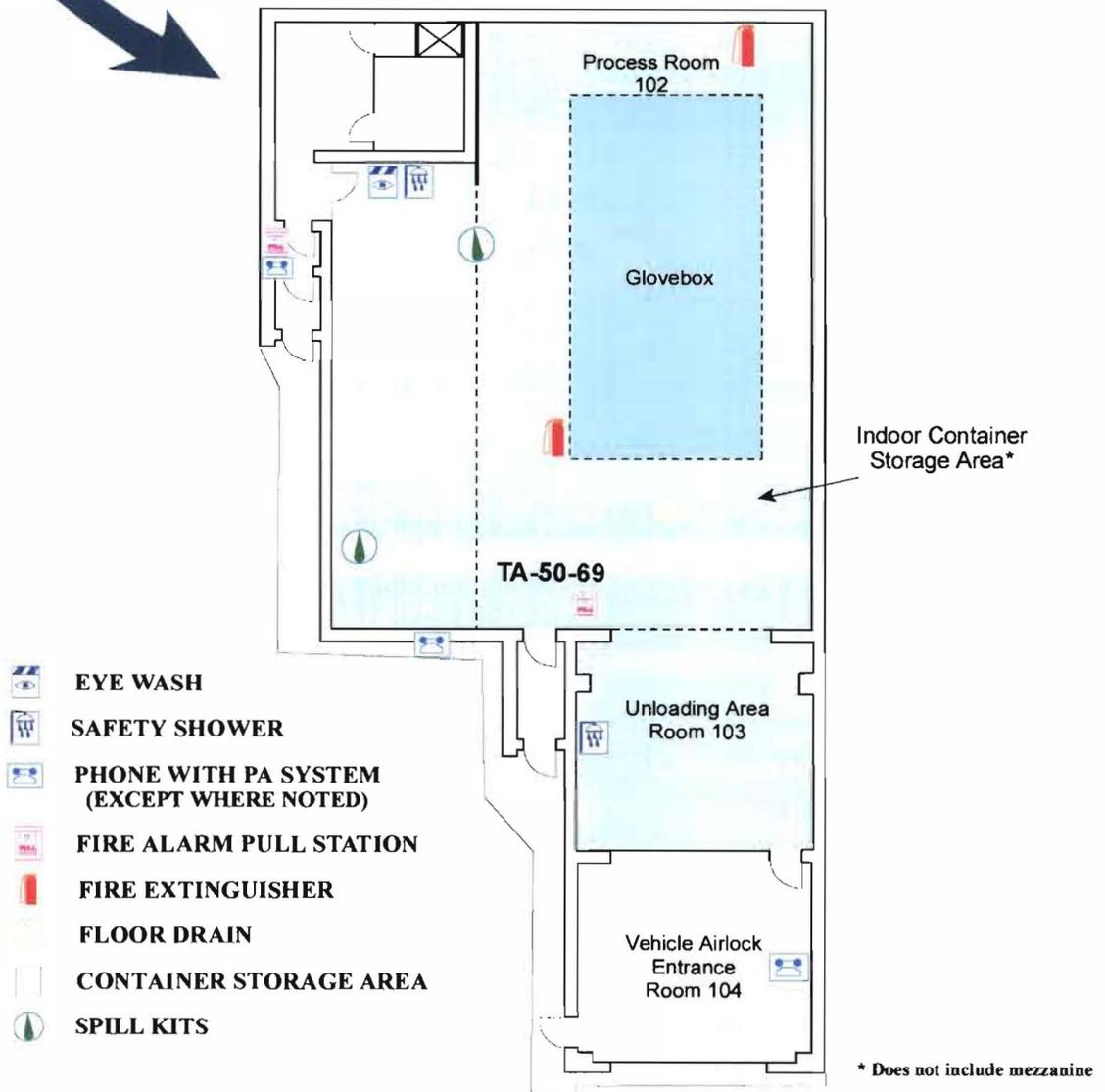
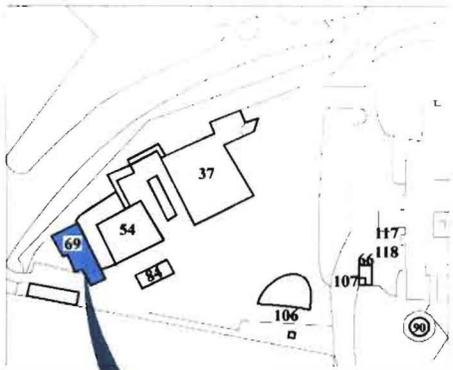


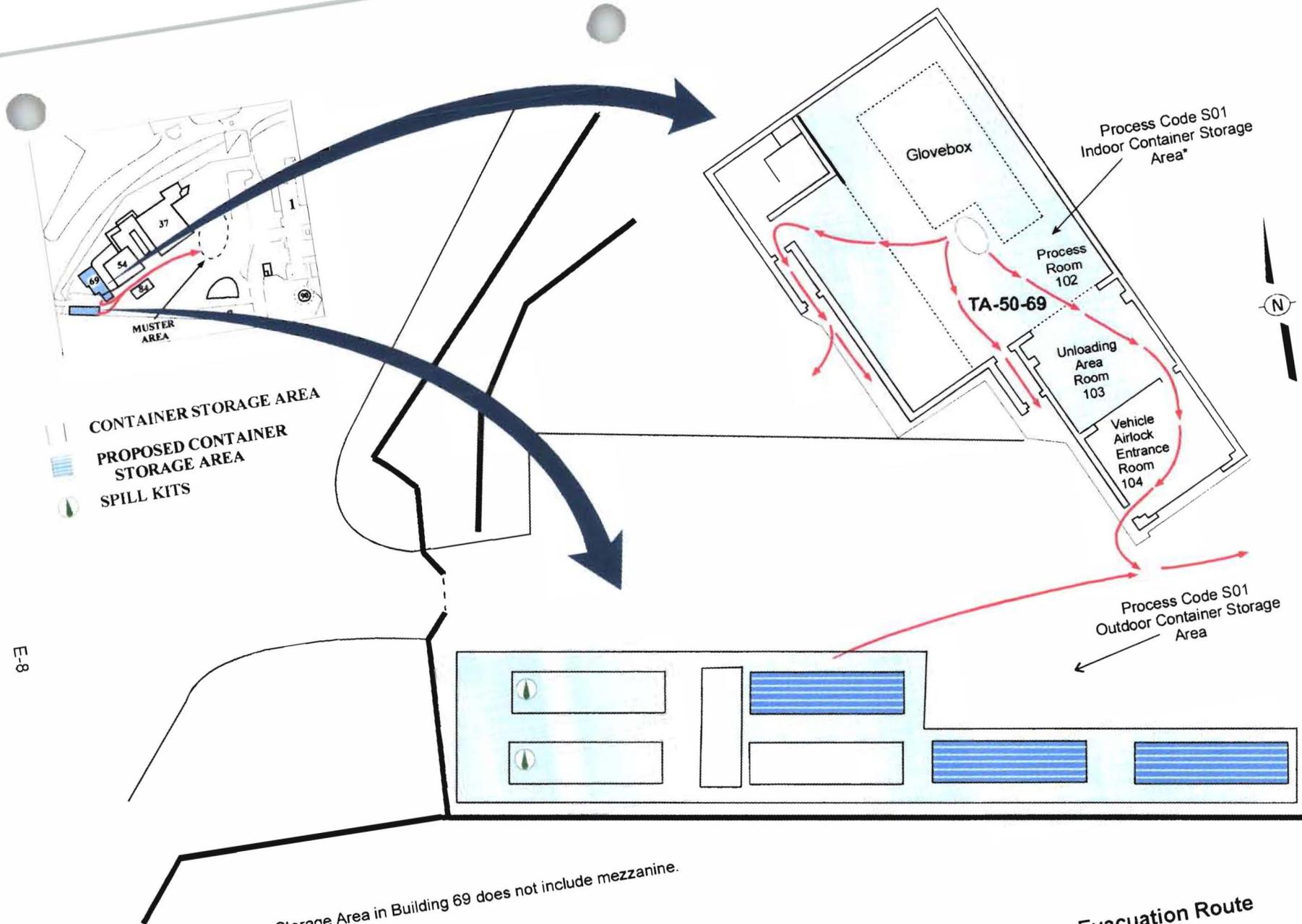
Figure E-4. TA-50-1 Decontamination Operations Facility and TA-50-114 Container Storage Areas Emergency Equipment



**Figure E-5. TA-50-69 WCRRF Indoor Container Storage Area  
 Emergency Equipment**

LANL 8B20\*1

E-8



\*Note: Container Storage Area in Building 69 does not include mezzanine.

Figure E-6. WCRF TA-50-69, Indoor and Outdoor Container Storage Areas Evacuation Route

LANL TA-50 Part B  
Attachment E  
Revision 1.0  
December 1999

## APPENDIX E1

## Appendix E1 List of TA-50 Emergency Equipment

### TA-50 Building 37, Container Storage Area and Electrochemical Treatment Unit

#### Fire Control Equipment

- FIRE EXTINGUISHERS

Description of General Capabilities

The fire extinguishers are portable Class B and C units. Fire extinguishers are accessible for use by any employee in the event of fire.

Fire Extinguisher Locations

3 High Bay Room 112  
1 Room 116

- EVACUATION ALARMS

Description of General Capabilities

The evacuation alarm may be activated by manual pull stations. Upon activation, fire alarm horns and strobes provide audible and visual signals for personnel notification. The fire alarm control panel continuously monitors all fire suppression and detection systems and transmits signals to the Central Alarm Station (CAS). The CAS is continually monitored.

Evacuation Alarm Manual Pull Locations

2 High Bay Room 112  
1 Room 113  
2 Room 114  
1 Room 116  
2 Room 117  
2 Room 118  
1 Room 120

- AUTOMATIC FIRE SUPPRESSION SYSTEM

Description of General Capabilities

There are several types of fire suppression systems in TA-50-37. The heated portions of the building, other than Rooms 115 and 117, are equipped with a wet-pipe sprinkler system. The loading dock and the Room 114 high-efficiency particulate air (HEPA)-filter plenum have an antifreeze-filled sprinkler system. The facility main HEPA-filter plenum is provided with a dry-pipe sprinkler system. These systems are equipped with fusible-link heads that activate at 100°C (212°F). The sprinkler flows are monitored to automatically initiate a fire alarm. Room 115 has two ultraviolet (UV) sensors, temperature sensors, and a smoke detector. Room 117 is protected by a deluge sprinkler system with thermal detectors that activate at 88°C (190°F). The fire alarm control panel continuously monitors all fire suppression and detection systems and transmits signals to the CAS.

## Appendix E1 List of TA-50 Emergency Equipment (Continued)

### TA-50 Building 37, Container Storage Area and Electrochemical Treatment Unit (Continued)

#### Fire Control Equipment (Continued)

- FIRE HYDRANTS

Description of General Capabilities

Two fire hydrants provide fire fighting water for TA-50-37. Both fire hydrants are located within a 46 m (150 ft) hose lay distance from TA-50-37. All fire hydrants are supplied by a 20-cm (8-in.) water line connected to the 12-inch water main on Pecos Drive. A separate 7-cm (3-in.) line supplies domestic and process water.

Location of Fire Hydrants

- 1 Northeast corner of Building 84
- 1 West of Building 69
- 1 Northeast of Building 37

#### Spill Control Equipment

- CURBING AND DRAINS

All rooms in the TA-50-37 CSA that handle radioactive and chemical waste have secondary containment provided by either berms, pits, trenches or floor drains. Containment is designed to handle all liquids stored.

- SPILL CENTERS

Description of General Capabilities

The spill centers contain absorbent pillows and "pigs."

Spill Center Location

A spill center is located in Room 118. Absorbent is used in the event of a small spill. The TA-50-37 spill coordinator must be notified when there is a spill that threatens human health or the environment.

#### Communication Equipment

- TELEPHONES AND BUILDING-WIDE PUBLIC ADDRESS SYSTEM

Description of General Capabilities

Telephones for internal communication at LANL and off-site communication with federal, state, county, and other agencies are available. Emergency call lists are posted at telephones in TA-50-37 and at muster stations. The telephone system is linked to the public address (PA) system and can be used to notify personnel throughout the building of an emergency.

## Appendix E1 List of TA-50 Emergency Equipment (Continued)

### TA-50 Building 37, Container Storage Area and Electrochemical Treatment Unit (Continued)

#### Communication Equipment (Continued)

##### Locations of Telephones

Telephones are located throughout TA-50-37. Cellular phones and personal pagers are available for use by TA-50-37 personnel. Personnel working in Rooms 115 and 117 will carry cellular phones to ensure immediate access to communication equipment or will have immediate access to communication equipment through visual or voice contact with another employee.

#### Decontamination Equipment

- SAFETY SHOWERS

##### Description of General Capabilities

Safety showers are available to personnel who receive a chemical splash to the skin. Specific material safety data sheets (MSDSs) for the chemicals are available to personnel working with the chemicals to determine if the application of water is indicated for decontamination.

##### Location of Safety Showers

- 1 Room 112A
- 2 Room 112
- 1 Room 117

- EMERGENCY EYE WASHES

##### Description of General Capabilities

Emergency eye washes are available to personnel who receive a chemical splash to the eye(s). Specific MSDSs for the chemicals are available to personnel working with the chemicals to determine if the application of water is indicated for decontamination.

##### Location of Eye Washes

- 2 Room 112
- 1 Room 117
- 1 Room 118

## Appendix E1 List of TA-50 Emergency Equipment (Continued)

TA-50, Building 1 Decontamination Operations Facility, Rooms 35, 36, and 38/38A and TA-50, Building 114 Container Storage Area

### Fire Control Equipment

- FIRE EXTINGUISHERS

Description of General Capabilities

The fire extinguishers are portable units of approximately 9 to 15 pounds capacity used in wet chemical laboratory applications. All fire extinguishers are Class B, C and are accessible for use by any worker in the event of fire.

Fire Extinguisher Locations

1 in Room 35

1 in Room 36 (Personnel in Rooms 38/38A have access to Room 36 fire extinguisher)

1 Outside Room 24 (Personnel working in TA-50-114 have access to this fire extinguisher)

- FIRE ALARM PULL BOXES CONNECTED TO THE CENTRAL ALARM STATION

Description of General Capabilities

The fire alarm may be activated by any employee using the fire alarm pull boxes in the event of fire. Upon activation, fire alarm horns and strobes provide audible and visual signals for personnel notification. A simultaneous alarm at the CAS is activated. The CAS is continually monitored.

Fire Alarm Pull Stations

There are fire alarm pull stations located in Rooms 34B and 34C. The fire alarm pull stations located in Room 34B and 34C are accessible to personnel working in Rooms 35, 36, and 38/38A.

Personnel working in TA-50-114 have access to the fire alarm pull station located outside Room 24.

- AUTOMATIC FIRE SUPPRESSION SYSTEM

Description of General Capabilities

TA-50-1, except for the computer room (Room 114), is protected by a single-zone sprinkler system equipped with sprinkler heads rated at 100°C (212°F). The computer room is equipped with a halon system activated by heat detectors rated at 60°C (140°F). Both systems provide an audible building alarm when activated. A simultaneous alarm is also activated at the CAS.

Fire Suppression Sprinkler Locations

A fire suppression sprinkler system is located throughout the facility except for Room 114.

## Appendix E1 List of TA-50 Emergency Equipment (Continued)

### TA-50, Building 1 Decontamination Operations Facility, Rooms 35, 36, and 38/38A and TA-50, Building 114 Container Storage Area (Continued)

#### Fire Control Equipment (Continued)

- FIRE HYDRANTS

##### Description of General Capabilities

Fire hydrants provide water for fire fighting. All fire hydrants are supplied by an 8-inch water line connected to the 12-inch water main on Pecos Drive.

##### Location of Fire Hydrants

A fire hydrant is located outdoors approximately 15 feet from the southeast corner of Room 34B, due west of TA-50-114.

#### Spill Control Equipment

- CURBING AND DRAINS

All TA-50-1 Decon Operations Facility rooms that handle radioactive and chemical waste are curbed and are equipped with floor drains that drain to the radioactive liquid waste storage tanks. The approximately 760,000 L (200,000 gal.) storage capacity plus curbed area storage would be adequate to contain water generated during fire fighting.

- SPILL CENTERS

##### Description of General Capabilities

The spill centers contain absorbent pillows and "pigs." The spill shed, TA-50-212, contains Neutrasorb and loose absorbents for all liquids. The shed also contains various absorbent socks and pillows, chemical sponges, chemical mops, acid-spill cleanup kits, and basic PPE.

##### Spill Center Location

Spill centers are located in Rooms 34B and 35. Personnel working in Rooms 36 and 38/38A have access to the spill center in Room 35. Personnel working in TA-50-114 have access to the spill shed, TA-50-212. The TA-50-1 spill coordinator must be notified when there is a spill that threatens human health or the environment.

## Appendix E1 List of TA-50 Emergency Equipment (Continued)

### TA-50, Building 1 Decontamination Operations Facility, Rooms 35, 36, and 38/38A and TA-50, Building 114 Container Storage Area (Continued)

#### Communication Equipment

- TELEPHONES AND BUILDING-WIDE PUBLIC ADDRESS SYSTEM

##### Description of General Capabilities

Telephones with PA capabilities for internal and external communication are available for use by any employee. Fires and evacuations are announced via the building PA system. Fire and evacuation alarms are activated in the event of a fire or in case an evacuation is required. The fire alarm is a double slow whoop sound. The evacuation alarm is a high-pitched wailing sound.

##### Locations of Telephones

Telephones with PA capabilities are located in Rooms 34 and 34B. Personnel working in Rooms 35, 36, and 38/38A have access to these phones to summon assistance in case of an emergency. Personnel working in TA-50-114 have access to the phone in Room 24 and the emergency phone located outside, on top of WM-2. When working in the hazardous and mixed waste management areas, personnel will have immediate access to emergency communication equipment either directly or through visual or voice contact with another employee.

#### Decontamination Equipment

- SAFETY SHOWERS

##### Description of General Capabilities

Safety showers are available to personnel who receive a chemical splash to the skin. Specific MSDSs for the chemicals are available to personnel working with hazardous and mixed waste to determine if the application of water is indicated for decontamination.

##### Location of Safety Showers

Safety showers are located in Rooms 34, 34B, and 36. Personnel working in Room 35 have immediate access to the showers in Rooms 34 and 36. Personnel working in Room 38/38A have immediate access to the shower in Room 36. Personnel working in TA-50-114 have access to the shower outside, on top of WM-2.

- EMERGENCY EYE WASHES

##### Description of General Capabilities

Emergency eye washes are available to personnel who receive a chemical splash to the eye(s). Specific MSDSs for the chemicals are available to personnel working with hazardous and mixed waste to determine if the application of water is indicated for decontamination.

**Appendix E1**  
**List of TA-50 Emergency Equipment (Continued)**

**TA-50, Building 1 Decontamination Operations Facility, Rooms 35, 36, and 38/38A and TA-50, Building 114 (Continued)**

**Decontamination Equipment (Continued)**

- EMERGENCY EYE WASHES (Continued)

Location of Eye Washes and Material Safety Data Sheets

Eye washes are located in Rooms 34, 34B, and 36. Personnel working in Room 38/38A have immediate access to the eyewash in Room 36. Personnel working in Room 35 have immediate access to the eyewashes in Rooms 34 and 36. Personnel working in TA-50-114 have access to the eyewash located outside, on top of WM-2. MSDSs are located in Rooms 34B and 49.

## Appendix E1 List of TA-50 Emergency Equipment (Continued)

### TA-50, Building 1 Radioactive Liquid Waste Treatment Facility, Rooms 59 and 60A

#### Fire Control Equipment

- FIRE EXTINGUISHERS

Description of General Capabilities

The fire extinguishers are portable units of approximately 9 to 15 pounds capacity. Fire extinguishers are accessible for use by any employee in the event of fire.

Fire Extinguisher Locations

1 in Room 59 — Type A, B, C (Halon)  
1 in Room 24 — Type B, C (CO<sub>2</sub>)  
1 in Breezeway outside Room 24 — Type B, C (CO<sub>2</sub>)

- FIRE ALARM PULL BOXES CONNECTED TO THE CENTRAL ALARM STATION

Description of General Capabilities

The fire alarm may be activated by any employee using the fire alarm pull boxes in the event of fire. Upon activation, fire alarm horns and strobes provide audible and visual signals for personnel notification. A simultaneous alarm at the CAS is activated. The CAS is continually monitored.

Fire Alarm Pull Box Locations

There is a fire alarm pull station located in Room 71 that is accessible to personnel working in Rooms 59, 60, and 60A.

- AUTOMATIC FIRE SUPPRESSION SYSTEM

Description of General Capabilities

TA-50-1 facility, except for the computer room (Room 114), is protected by a single-zone sprinkler system equipped with sprinkler heads rated at 100°C (212°F). The computer room is equipped with a halon system activated by heat detectors rated at 60°C (140°F). Both systems provide an audible building alarm when activated. A simultaneous alarm is also activated at the CAS.

Fire Suppression Sprinkler Locations

A fire suppression sprinkler system is located throughout the facility except for Room 114.

- FIRE HYDRANTS

Description of General Capabilities

Fire hydrants provide water for fire fighting. All fire hydrants are supplied by an 8-inch water line connected to the 12-inch water main on Pecos Drive.

**Appendix E1**  
**List of TA-50 Emergency Equipment (Continued)**

**TA-50, Building 1 Radioactive Liquid Waste Treatment Facility, Rooms 59 and 60A  
(Continued)**

**Fire Control Equipment (Continued)**

Location of Fire Hydrants

A fire hydrant is located outdoors, north of Room 59.

**Spill Control Equipment**

- CURBING AND DRAINS

All TA-50-1 areas that handle radioactive and chemical waste are curbed and are equipped with floor drains that drain to the radioactive liquid waste storage tanks. The storage capacity of approximately 760,000 L (200,000 gal.) plus curbed area storage would be adequate to contain water generated during fire fighting.

- SPILL CENTERS

Description of General Capabilities

The spill centers in Rooms 60 and 60A contain the following:

- Trash can with absorbent for all liquids
- Absorbent socks
- Absorbent padding
- Absorbent pillows

The spill center in the storage shed TA-50-212 contains the following:

- Acid neutralizer absorbent
- Absorbent(s) for all liquids
- Absorbent socks, padding, and pillows
- Chemical sponges
- Chemical mops
- Acid spill cleanup kit
- PPE — Tyvek suits, booties, gloves, face shields

Spill Center Locations

Spill centers are located in Rooms 60, 60A, and storage shed TA-50-212. Personnel working in Rooms 59, 60, and 60A have immediate access to the spill centers in Rooms 60 and 60A. All TA-50-1 personnel have access to the spill center in storage shed TA-50-212 located south of TA-50-1. The TA-50-1 spill coordinator must be notified when there is a spill that threatens human health or the environment.

## Appendix E1 List of TA-50 Emergency Equipment (Continued)

### TA-50, Building 1 Radioactive Liquid Waste Treatment Facility, Rooms 59 and 60A (Continued)

#### Communication Equipment

- TELEPHONES AND BUILDING-WIDE PUBLIC ADDRESS SYSTEM

##### Description of General Capabilities

Telephones with PA capabilities for internal and external communication are available for use by any employee. Fires and evacuations are announced via the building PA system. Fire and evacuation alarms are activated in the event of a fire or in case an evacuation is required. The fire alarm is a double slow whoop sound. The evacuation alarm is a high-pitched wailing sound.

##### Locations of Telephones

Telephones with PA capabilities are located in Rooms 60 and 70. These telephones are accessible to personnel working in Rooms 59, 60, and 60A to summon assistance in case of an emergency. When working in the hazardous and mixed waste management areas, personnel will have immediate access to emergency communication equipment either directly or through visual or voice contact with another employee.

#### Decontamination Equipment

- SAFETY SHOWERS

##### Description of General Capabilities

Safety showers are available to personnel who receive a chemical splash to the skin. Specific MSDSs for the chemicals are available to personnel working with hazardous and mixed waste to determine if the application of water is indicated for decontamination.

##### Location of Safety Showers

Safety showers are located in Rooms 59 and 60A.

- EMERGENCY EYE WASHES

##### Description of General Capabilities

Emergency eye washes are available to personnel who receive a chemical splash to the eye(s). Specific MSDSs for the chemicals are available to personnel working with hazardous and mixed waste to determine if the application of water is indicated for decontamination.

##### Location of Eye Washes

Eye washes are located in Rooms 59 and 60A. Personnel working in Room 60 have access to the eyewashes in Rooms 59 and 60A.

## Appendix E1 List of TA-50 Emergency Equipment (Continued)

### TA-50, Building 69 Waste Characterization, Reduction, and Repackaging Facility Indoor and Outdoor Container Storage Areas

#### Fire Control Equipment

- FIRE EXTINGUISHERS

Description of General Capabilities

The fire extinguishers are portable Class A, B, and C units of approximately 9 to 15 pounds capacity used in wet chemical laboratory applications. The fire extinguishers are accessible for use by any employee in the event of fire.

Fire Extinguisher Locations

2 fire extinguishers are located in TA-50-69, Room 102

1 fire extinguisher is located within 20 feet of the Waste Characterization, Reduction, and Repackaging Facility (WCRRF) outdoor CSA

- FIRE ALARM PULL BOXES CONNECTED TO THE CENTRAL ALARM STATION

Description of General Capabilities

The fire alarm may be activated by any employee using the fire alarm pull boxes in the event of a fire. Upon activation, fire alarm horns and strobes provide audible and visual signals for personnel notification. A simultaneous alarm at the CAS is activated. The CAS is continually monitored. The fire alarm is a pulsing sound. The evacuation alarm is a wailing sound that can be heard throughout TA-50-69 and at the WCRRF outdoor CSA.

Fire Alarm Pull Box Locations

Two fire alarm pull stations are located in the WCRRF. Personnel working at the WCRRF outdoor CSA may use the pull stations in the WCRRF in the event of a fire.

- AUTOMATIC FIRE SUPPRESSION SYSTEM

Description of General Capabilities

A wet-pipe automatic sprinkler system that is hydraulically designed for ordinary hazard Group II coverage is in place throughout TA-50-69. This system is activated at 100°C (212°F). The glovebox cutting and disassembly modules are equipped with an automatic water deluge sprinkler system. One sprinkler head is mounted on the west wall of the cutting module and one sprinkler head is mounted on the east wall of the disassembly module. Additionally, a manually operated CO<sub>2</sub> system is in place inside the cutting enclosure which allows an operator to apply CO<sub>2</sub> to minor flare-ups that can originate on the waste item being cut up with the plasma-torch. The CO<sub>2</sub> system cannot over pressurize the enclosure.

Fire Suppression Sprinkler Locations

Described above.

## Appendix E1 List of TA-50 Emergency Equipment (Continued)

### TA-50, Building 69 Waste Characterization, Reduction, and Repackaging Facility Indoor and Outdoor Container Storage Areas (Continued)

#### Fire Control Equipment (Continued)

- FIRE HYDRANT

##### Description of General Capabilities

Fire hydrants provide water for fire fighting. All fire hydrants are supplied by an 8-inch water line connected to the 12-inch water main on Pecos Drive.

##### Location of Fire Hydrants

A fire hydrant is located approximately 55 feet west of TA-50-69.

#### Spill Control Equipment

- CURBING AND DRAINS

The main process room (Room 102) and unloading area (Room 103) at TA-50-69 provide secondary containment by use of curbs or floor drains. The storage capacity plus curbed area storage would be adequate to contain water generated during fire fighting.

- SPILL CENTERS

##### Description of General Capabilities

The spill centers contain absorbent pillows and "pigs."

##### Spill Center Location

- 2 Room 102
- 2 Outdoor CSA

#### Communication Equipment

##### Description of General Capabilities

Telephones with PA capabilities for internal and external communication are available for use by any employee. Fire and evacuation alarms are activated in the event of a fire or in case an evacuation is required. The fire alarm is a double slow whoop sound. The evacuation alarm is a high-pitched wailing sound. The PA system can be heard at the TA-50-69 outdoor CSA. When working at the CSAs, personnel will have immediate access to emergency communication equipment either directly or through visual or voice contact with another employee.

##### Location of Communication Equipment

3 telephones with PA capabilities are located in TA-50-69. Personnel working at the TA-50-69 outdoor CSA will carry cellular phones or will have immediate access to communication equipment through visual or voice contact with another employee.

## Appendix E1 List of TA-50 Emergency Equipment (Continued)

### TA-50, Building 69 Waste Characterization, Reduction, and Repackaging Facility Indoor and Outdoor Container Storage Areas (Continued)

#### Decontamination Equipment

- SAFETY SHOWERS

##### Description of General Capabilities

Safety showers are available to personnel who receive a chemical splash to the skin. Specific MSDSs for the chemicals being managed are available to personnel working with hazardous or mixed waste to determine if the application of water is indicated for decontamination.

##### Location of Safety Showers

Safety showers are located in TA-50-69, Room 102, and Room 103. One standard shower is located adjacent to the change room in TA-50-69.

- EYEWASHES

##### Description of General Capabilities

Eyewashes are available to personnel who receive a chemical splash to the eye(s). Specific MSDSs for the chemicals being managed are available to personnel working with hazardous or mixed waste to determine if the application of water is indicated for decontamination.

##### Location of Eyewashes and Material Safety Data Sheets

An eyewash is located in TA-50-69, Room 102. The safety shower and eyewash in TA-50-69 are available to personnel working at the TA-50-69 outdoor CSA. MSDSs are located in TA-50-69.

**ATTACHMENT F**  
**CLOSURE PLAN**

TABLE OF CONTENTS

LIST OF TABLES ..... iii

LIST OF FIGURES ..... iv

LIST OF ABBREVIATIONS/ACRONYMS ..... v

F.1 GENERAL CLOSURE INFORMATION [20 NMAC 4.1, Subpart V, Subpart G] ..... F-2

    F.1.1 Closure Performance Standard [20 NMAC 4.1, Subpart V, §264.111] ..... F-2

    F.1.2 Partial and Final Closure Activities [20 NMAC 4.1, Subpart V, §§264.112(b) and (d)] ..... F-3

    F.1.3 Closure Schedule [20 NMAC 4.1, Subpart V, §264.112(b)(6) and §264.113] ..... F-3

    F.1.4 Amendment of the Closure Plan [20 NMAC 4.1, Subpart V, §264.112(c)] .. F-4

    F.1.5 Financial and Liability Requirements [20 NMAC 4.1, Subpart V, §264.140 (c)] ..... F-4

    F.1.6 Closure Certification [20 NMAC 4.1, Subpart V, §264.115] ..... F-4

    F.1.7 Security ..... F-4

    F.1.8 Closure Report ..... F-4

    F.1.9 Survey Plat and Post-Closure Requirements [20 NMAC 4.1, Subpart V, §264.116, §§264.117 through 264.120] ..... F-5

    F.1.10 Procedures for Decontamination and Closure of TA-50 CSAs and Treatment Units ..... F-5

    F.1.11 Sampling and Analytical Procedures [20 NMAC 4.1, Subpart V, §264.112(b)(4)] ..... F-7

    F.1.12 Equipment Decontamination ..... F-7

    F.1.13 Decontamination Verification ..... F-7

F.2 CLOSURE PROCEDURES FOR TA-50-37 CSA [20 NMAC 4.1, Subpart V, §264.112] ..... F-9

    F.2.1 Description of Waste and Estimate of Maximum Inventory of Hazardous Waste ..... F-9

    F.2.2 Decontamination and Closure of the TA-50-37 CSA ..... F-9

F.3 CLOSURE PROCEDURES FOR THE TA-50-1 RLWTF CSA [20 NMAC 4.1, Subpart V, §264.112] ..... F-10

    F.3.1 Description of Waste and Estimate of Maximum Inventory of Hazardous Waste ..... F-10

    F.3.2 Decontamination and Closure of the TA-50-1 RLWTF CSA ..... F-10

F.4 CLOSURE PROCEDURES FOR THE TA-50-1 DECON OPS CSA [20 NMAC 4.1, Subpart V, §264.112] ..... F-10

    F.4.1 Description of Waste and Estimate of Maximum Inventory of Hazardous Waste ..... F-11

    F.4.2 Decontamination and Closure of the Decon Ops CSA ..... F-11

F.5 CLOSURE PROCEDURES FOR THE TA-50-114 CSA [20 NMAC 4.1, Subpart V, §264.112] ..... F-11

    F.5.1 Description of Waste and Estimate of Maximum Inventory of Hazardous Waste ..... F-11

    F.5.2 Decontamination and Closure of the TA-50-114 CSA ..... F-12

**TABLE OF CONTENTS**  
**(Continued)**

F.6	CLOSURE PROCEDURES FOR THE TA-50-69 WCRRF INDOOR CSA [20 NMAC 4.1, Subpart V, §264.112] .....	F-12
F.6.1	Description of Waste and Estimate of Maximum Inventory of Hazardous Waste .....	F-12
F.6.2	Decontamination and Closure of the WCRRF Indoor CSA .....	F-13
F.7	CLOSURE PROCEDURES FOR THE TA-50-69 WCRRF OUTDOOR CSA [20 NMAC 4.1, Subpart V, §264.112] .....	F-13
F.7.1	Description of Waste and Estimate of Maximum Inventory of Hazardous Waste .....	F-13
F.7.2	Decontamination and Closure of the WCRRF Outdoor CSA .....	F-13
F.8	CLOSURE PROCEDURES FOR THE TA-50-1 ROOM 60A RLWTF CEMENTATION TREATMENT UNIT [20 NMAC 4.1, Subpart V, §264.112] .....	F-16
F.8.1	Description of Waste and Estimate of Maximum Inventory of Hazardous Waste .....	F-16
F.8.2	Decontamination and Closure of the RLWTF Cementation Treatment Unit .....	F-16
F.9	CLOSURE PROCEDURES FOR THE TA-50-37 ETU [20 NMAC 4.1, Subpart V, §264.112] .....	F-17
F.9.1	Description of Waste and Estimate of Maximum Inventory of Hazardous Waste .....	F-18
F.9.2	Decontamination and Closure of the TA-50-37 ETU .....	F-18
F.10	REFERENCES .....	F-19

## LIST OF TABLES

<u>TABLE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
F-1	Schedule for TA-50 Closure Activities	F-20

## LIST OF FIGURES

<u>FIGURE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
F-1	TA-50 at Los Alamos National Laboratory	F-21
F-2	TA-50 Container Storage Areas and Treatment Units	F-22

## LIST OF ABBREVIATIONS/ACRONYMS

20 NMAC 4.1	<i>New Mexico Administrative Code, Title 20, Chapter 4, Part 1</i>
ALARA	as low as reasonably achievable
CSA	container storage area
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
Decon Ops	Decontamination Operations
EPA	U.S. Environmental Protection Agency
ETU	Electrochemical Treatment Unit
FRP	fiberglass-reinforced plywood
LANL	Los Alamos National Laboratory
NMED	New Mexico Environment Department
QA/QC	quality assurance/quality control
RCRA	Resource Conservation and Recovery Act
RLWTF	Radioactive Liquid Waste Treatment Facility
SW-846	<i>Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (EPA 1997)</i>
SWB	standard waste box
TA	technical area
TRU	transuranic
WCRRF	Waste Characterization, Reduction, and Repackaging Facility

## ATTACHMENT F CLOSURE PLAN

This closure plan describes the activities necessary to close Resource Conservation and Recovery Act (RCRA)-permitted hazardous and mixed waste container storage areas (CSAs) and treatment units located at Technical Area (TA)-50 of the Los Alamos National Laboratory (LANL). The procedures described in this attachment supplement general closure procedures described in Appendix F, "Closure Plan," of the *Los Alamos National Laboratory General Part B Permit Application* (LANL 1998b), hereinafter referred to as the LANL General Part B.

This attachment describes the closure procedures for the TA-50 CSAs and treatment units. Figure F-1 shows the location of TA-50 at LANL. The locations of the CSAs and treatment units listed below are shown on Figure F-2, and details regarding their respective design, process, and operational procedures are discussed in Section 2.0 and Attachments G and I of the Part B Permit Application for TA-50 (hereinafter referred to as the TA-50 Part B). Unit-specific closure plans are included in this attachment for units at TA-50 in the following sequence:

- General closure information applicable to the CSAs and treatment units at TA-50
- TA-50-37 CSA
- TA-50-1 Radioactive Liquid Waste Treatment Facility (RLWTF) CSA
- TA-50-1 Decontamination Operations (Decon Ops) Facility CSA
- TA-50-114 CSA
- TA-50-69 Waste Characterization, Reduction, and Repackaging Facility (WCRRF) Indoor CSA
- TA-50-69 WCRRF Outdoor CSA
- TA-50-1 Room 60A RLWTF Cementation Treatment Unit
- TA-50-37 Room 117 Electrochemical Treatment Unit (ETU)

The activities described in this attachment meet the closure requirements of the *New Mexico Administrative Code*, Title 20, Chapter 4, Part 1 (20 NMAC 4.1), Subpart IX, §270.14(b)(13), and 20 NMAC 4.1, Subpart V, Part 264, Subpart G, revised January 1, 1997 [1-1-97]. General closure

information applicable to all hazardous and mixed waste management units at LANL and general sampling and analytical procedures to be used during closure activities are presented in the LANL General Part B, Appendix F, "Closure Plan."

Site-specific and unit-specific closure procedures for RCRA-permitted CSAs and treatment units at TA-50 are described in this attachment. Closure will include removal of waste from the unit to be closed and decontamination of structures and equipment contaminated by waste materials through normal RCRA-regulated container storage or treatment operations (see Section 2.0 and Attachments G and I of the TA-50 Part B). Radiological exposures during closure activities will be maintained as low as reasonably achievable (ALARA) to protect worker and public health and safety, as required by the Atomic Energy Act and LANL policy.

#### F.1 GENERAL CLOSURE INFORMATION [20 NMAC 4.1, Subpart V, Subpart G]

This attachment is prepared in accordance with the requirements of 20 NMAC 4.1, Subpart V, Part 264, Subpart G [1-1-97], and other subparts as applicable, and 20 NMAC 4.1, Subpart IX, §270.14(b)(13) [1-1-97]. The name and address of the primary facility contact person, a copy of LANL-wide, site-specific and unit-specific closure plans, and any approved closure plan revisions will be maintained at LANL, as described in the LANL General Part B, Appendix F, "General Closure Information."

##### F.1.1 Closure Performance Standard [20 NMAC 4.1, Subpart V, §264.111]

As described in the LANL General Part B, Appendix F, "Closure Performance Standard," RCRA-permitted hazardous waste CSAs and treatment units described in the TA-50 Part B will be closed to meet the following standards:

- Minimize the need for further maintenance
- Control, minimize, or eliminate, to the extent necessary to protect human health and the environment, the post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground or surface waters or atmosphere
- Comply with the container management requirements of 20 NMAC 4.1, Subpart V, §264.178 [1-1-97], and other applicable sections of 20 NMAC 4.1, Subpart V, Part 264 [1-1-97] for the closure of specific hazardous waste management units.

These standards will be met by removing waste and other equipment from the CSAs or treatment units as appropriate. Surfaces or areas that may have come into contact with RCRA-regulated wastes in the course of normal container storage or treatment operations will be decontaminated if operating records, surface samples, or visual inspection indicates contamination is present. Removable equipment that may have been contaminated by waste management operations may be decontaminated, reclaimed or recycled, or disposed of, as appropriate. Decontamination activities will be conducted to ensure the removal of waste residues from the waste storage and treatment units addressed in this permit application to meet closure performance standards. Closure will be considered complete when all equipment and structures associated with operation of the area(s) undergoing closure have been decontaminated, reclaimed, recycled, or disposed of; decontamination has been appropriately verified; and closure certification has been submitted to the Secretary of the New Mexico Environment Department (NMED) (see Section F.1.6).

#### F.1.2 Partial and Final Closure Activities [20 NMAC 4.1, Subpart V, §§264.112(b) and (d)]

This closure plan has been written for implementation of partial closures (hereinafter referred to as closures) at TA-50 (i.e., closure of a CSA or room within a CSA, or closure of a treatment unit in an area that contains other active waste management units) rather than final closure of the LANL facility. Closure will consist of closing one or more of the RCRA-regulated waste management units at TA-50, while leaving the other RCRA-regulated waste management units at LANL in service. In the event of a closure, the procedures described in the following sections will apply to the unit(s) to be closed. Closure will be complete when the unit and related equipment and structures have been decontaminated, disposed of, or recycled, as appropriate; decontamination has been verified (see Section F.1.13); and the NMED has approved the closure. Final closure will occur when LANL's remaining RCRA-regulated waste management units are closed (see LANL General Part B, Appendix F, "Partial and Final Closure Activities").

#### F.1.3 Closure Schedule [20 NMAC 4.1, Subpart V, §264.112(b)(6) and §264.113]

Closure will not begin until the final wastes have been removed from the unit scheduled for closure. Closure activities will occur in accordance with the approved LANL-wide closure plan contained in the LANL General Part B, Appendix F, "Closure Schedule," and the site-specific and unit-specific closure plans in this attachment. Closure will be conducted in accordance with the schedule in Table F-1.

F.1.4 Amendment of the Closure Plan [20 NMAC 4.1, Subpart V, §264.112(c)]

If it is necessary to amend the closure plan for any of the units at TA-50 addressed in this plan, LANL will submit, in accordance with 20 NMAC 4.1, Subpart V, §264.112 [1-1-97], a written notification of, or request for, a permit modification as described in the LANL General Part B, Appendix F, "Amendment of the Closure Plan."

F.1.5 Financial and Liability Requirements [20 NMAC 4.1, Subpart V, §264.140 (c)]

Financial and liability requirements are described in the LANL General Part B, Appendix F.

F.1.6 Closure Certification [20 NMAC 4.1, Subpart V, §264.115]

As described in the LANL General Part B, Appendix F, "Closure Certification," within 60 days after completion of closure activities for each of the CSAs, rooms within a CSA, or treatment units at TA-50, the U.S. Department of Energy (DOE) will submit to the Secretary of the NMED via certified mail a certification that the unit has been closed in accordance with the specifications of the approved closure plan. The certification will be attested to by a registered professional engineer and will be signed by the appropriate DOE official in accordance with 20 NMAC 4.1, Subpart V, §264.115 [1-1-97]. Documentation supporting the independent registered engineer's certification will be furnished to the Secretary of the NMED upon request, as specified at 20 NMAC 4.1, Subpart V, §264.115 [1-1-97]. A copy of the certification and supporting documentation will be maintained by both DOE/Los Alamos Area Office and LANL's Hazardous and Solid Waste Group or their organizational equivalents at the time of closure.

F.1.7 Security

As described in the LANL General Part B, Appendix F, "Security," the nature of operations at TA-50 requires that this site remain under the permanent care of DOE or another authorized federal agency. Consequently, fences and site security will be maintained for as long as necessary to prohibit public access and to meet DOE requirements for radiation protection.

F.1.8 Closure Report

Upon completion of the closure activities for each unit addressed in this permit application for TA-50, a closure report will be prepared and made available to the Secretary of the NMED. The report will document the closure and the information listed in the LANL General Part B, Appendix F, "Closure Report."

F.1.9 Survey Plat and Post-Closure Requirements [20 NMAC 4.1, Subpart V, §264.116, §§264.117 through 264.120]

As described in the LANL General Part B, Appendix F, "Survey Plat and Post-Closure Requirements," and the TA-50 Part B, LANL will, at the time of closure, remove RCRA-regulated hazardous wastes and constituents from permitted units, and will either decontaminate, recycle, or dispose of all structures and equipment. If decontamination to established cleanup levels is not achievable, LANL will amend this closure plan to address appropriate closure procedures or post-closure care requirements pursuant to 20 NMAC 4.1, Subpart V, §§264.117 through 264.120 [1-1-97]. Additional information regarding the applicability of post-closure requirements to LANL is contained in the LANL General Part B, Appendix F, "Survey Plat and Post-Closure Requirements."

F.1.10 Procedures for Decontamination and Closure of TA-50 CSAs and Treatment Units

Procedures that will be followed for decontamination and closure of a CSA, room within a CSA, or treatment unit may include one or more of the following, as appropriate:

1. Removal of all wastes from the room(s) or other structure(s) undergoing closure
2. Inspection and repair of wall and floor surfaces of the room(s) or other structure(s) to ensure effective wash water containment if washdown procedures are necessary
3. Decontamination, recycling, removal, and/or disposal of portable equipment from the room(s) or other structure(s)
4. Washdown of floors, walls, and remaining equipment that have come in contact with RCRA-regulated hazardous wastes to meet decontamination criteria if operational records, surface samples, or visual inspection confirms the necessity of decontamination
5. Washdown of recessed areas (i.e., sumps) as appropriate
6. Removal or (bio)remediation of contaminated soils from the unit (if applicable)

Wastes will be removed from the room(s) or unit(s) scheduled for closure prior to the start of closure activities. Containers will be removed using appropriate container handling equipment and will be transported to approved on-site facilities or RCRA permitted off-site treatment or disposal facilities in accordance with U.S. Department of Transportation (DOT) regulations, LANL policy, and other applicable regulations.

If washdown procedures are determined to be necessary because of contamination from waste management activities, wall and floor surfaces affected by the contamination in the room(s) or unit(s) scheduled for closure will be inspected to identify defects or other conditions (e.g. cracks) that could result in a failure to contain wash water generated by washdown activities. Appropriate steps will be taken to repair or replace surfaces or structures to preclude the possibility of containment failure during closure activities.

After all waste has been removed from the affected room(s) and before decontamination of the main floor and wall surfaces of the room(s), all portable equipment (e.g., secondary-containment pallets, wooden pallets, and miscellaneous equipment) will be removed from the room(s) or unit(s). This equipment will be reused, recycled, or disposed of, as appropriate. If necessary the equipment will be decontaminated prior to its reuse, recycling, or disposal.

Walls and floors of the room(s) undergoing closure that have come in contact with RCRA-regulated wastes will be wiped down with a solution of water and detergent (wash water). Decontamination verification will be performed as described in Section F.1.13. The walls, floors, and equipment in the room(s) undergoing closure that have come in contact with RCRA-regulated hazardous wastes will be pressure-washed or wiped down with mops or sponges using a minimum amount of wash water. Wash water that collects in sumps, recessed areas, or temporary bermed areas will be transferred into DOT-approved containers where it will be sampled and analyzed in accordance with procedures described in the LANL General Part B, Appendix F, "Sampling and Analytical Procedures." Used wash water that is nonhazardous and nonradioactive will be managed appropriately in accordance with LANL policy. Used wash water that is hazardous and radioactive will be managed at an on-site facility appropriate for the regulated constituents present.

For indoor units, soil contamination is not expected to be a concern. However, if soil sampling is deemed necessary based on analytical evidence or the operational history of the unit, soil samples will be collected from the area showing evidence of contamination by waste management operations to determine the rate and extent of any potential soil contamination following the sampling and analytical procedures described in the LANL General Part B, Appendix F, "Sampling and Analytical Procedures."

#### F.1.11 Sampling and Analytical Procedures [20 NMAC 4.1, Subpart V, §264.112(b)(4)]

Procedures and methods for sample collection, analysis, and sample documentation for soil, sediment, and liquid samples are detailed in the LANL General Part B, Appendix F, "Sampling and Analytical Procedures." Sampling and analysis associated with closure activities at TA-50 will be conducted in accordance with the procedures and methods described in the LANL General Part B, Appendix F, which correspond to applicable procedures contained in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (U.S. Environmental Protection Agency [EPA] 1997) (SW-846). Radiological sampling and analysis will be conducted in accordance with procedures established by LANL's Inorganic Trace Analysis Group or their organizational equivalent at the time of closure.

#### F.1.12 Equipment Decontamination

All sampling equipment used in closure activities at TA-50 will be clean and unused until removed from a factory-sealed wrapper immediately prior to use (see LANL General Part B, Appendix F, "Sampling and Analytical Procedures"). Equipment rinsate blanks will be collected and analyzed in accordance with LANL quality assurance/quality control (QA/QC) policies (see LANL General Part B, Appendix F, "Field and Laboratory QA/QC"). Reusable tools and equipment used during closure activities will be cleaned with a detergent and water solution and scrubbed as necessary to remove any residue. Residue, disposable equipment, and reusable equipment that cannot be decontaminated will be containerized and managed as hazardous or mixed waste at an approved on-site facility, depending on the regulated constituents present. The used wash water will be collected and analyzed for the parameters listed in the LANL General Part B, Table F-6. 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 constituents present.

#### F.1.13 Decontamination Verification

The need for decontamination and decontamination verification will be determined based on operational records, analytical evidence, or visual inspection of surfaces or equipment within regulated units. If there are no operational records, analytical evidence, or visual evidence of contamination, then decontamination will not be performed. For those regulated units or equipment requiring decontamination, decontamination verification will be conducted using sampling and analytical procedures identified in the LANL General Part B, Appendix F, "Sampling

and Analytical Procedures," and in accordance with the most current version of SW-846 (EPA 1997).

Wash water used in the decontamination process will be sampled to determine waste water handling requirements. Wash waters will be analyzed only for those constituents identified from waste management activities associated with the CSA or treatment unit. The item or structure cleaned will be considered contaminated if the used wash water shows a significant increase (i.e., determined using statistical methods defined in SW-846) in the listed analytical parameters over the clean wash water. If subsequent wash cycles are deemed necessary, additional clean wash water samples will be taken for each additional washing. For mixed waste, radioactive monitoring will also be performed to ensure that radioactivity levels are within established DOE and LANL limits.

If visual inspections or record reviews indicate that soil contamination could have occurred as a result of waste management activities at a site, a comparison of closure sampling data to existing background soil data from appropriate areas of TA-50 will be used to establish the source of any RCRA-regulated hazardous waste or hazardous constituents present in the soil. If the comparison of soil data indicates that contamination from container storage activities or treatment processes has occurred, the soil will be remediated in-place if an appropriate (bio)remediation technology is available, or will be removed and managed in accordance with applicable regulations. Additional contaminated soil remediation or excavations will be performed until subsequent soil samples confirm that the decontamination criteria listed below are met.

Successful decontamination of a room within a CSA, an entire CSA, or a treatment unit will be achieved by meeting one of the following criteria:

1. No detectable RCRA-regulated constituent residues from the management of authorized RCRA-regulated wastes are identified in samples collected during closure activities.
2. Detectable concentrations of RCRA-regulated constituents in samples collected during closure activities are at or below existing regulatory action-levels [EPA Region 9 Preliminary Remediation Goals] established by the NMED.
3. Analytical results of samples collected during closure activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data or above established background concentrations.

4. Detectable concentrations of RCRA-regulated constituents in samples collected during closure activities are at or below levels agreed upon with the NMED to be protective of human health and the environment based on the results of risk assessment methods.
5. Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable criteria as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

## F.2 CLOSURE PROCEDURES FOR TA-50-37 CSA [20 NMAC 4.1, Subpart V, §264.112]

The TA-50-37 CSA consists of Rooms 112, 115, 117, and 118, which are located on the first floor of TA-50-37 (Figure F-2). This CSA will be used to store drums of various sizes, standard waste boxes (SWBs), steel B25 boxes, and fiberglass-reinforced plywood (FRP) boxes before, during, and after waste characterization activities at TA-50-37. More detailed information on this CSA is provided in Section 2.1 and Attachment G of the TA-50 Part B.

### F.2.1 Description of Waste and Estimate of Maximum Inventory of Hazardous Waste

The waste stored at the TA-50-37 CSA will be generated from various research activities, material processing and recovery operations, and decontamination and decommissioning operations conducted at TA-3, TA-21, TA-50, and TA-55. Most of the wastes stored in this CSA will be RCRA-regulated, mixed low-level, mixed transuranic (TRU), and hazardous wastes. The *Los Alamos National Laboratory General Part A Permit Application* (LANL 1998a), hereinafter referred to as the LANL General Part A, provides additional information on wastes to be stored. The design capacities for each room in this CSA are as follows:

- Room 112 - 2,330 gal.
- Room 115 - 220 gal.
- Room 117 - 3,630 gal.
- Room 118 - 18,000 gal.

The total volume of RCRA-regulated waste stored at any time at the TA-50-37 CSA will not exceed 21,850 gal., which is the process design capacity specified in the LANL General Part A.

### F.2.2 Decontamination and Closure of the TA-50-37 CSA

To the extent possible, all contaminated equipment, structures, and surfaces of the TA-50-37 CSA, or from individual rooms within this CSA undergoing closure, that have come in contact with

RCRA-regulated hazardous wastes will be decontaminated, recycled, or disposed of to meet the closure performance standard.

### F.3 CLOSURE PROCEDURES FOR THE TA-50-1 RLWTF CSA [20 NMAC 4.1, Subpart V, §264.112]

The TA-50-1 RLWTF CSA consists of Room 59, located on the north side of the east wing of TA-50-1 (Figure F-2). More detailed information on this CSA is provided in Section 2.1 and Attachment G of the TA-50 Part B.

#### F.3.1 Description of Waste and Estimate of Maximum Inventory of Hazardous Waste

Wastes identified for storage at the TA-50-1 RLWTF CSA, Room 59, will include RCRA-regulated, mixed low-level, mixed TRU, and hazardous wastes. The LANL General Part A provides additional information on wastes to be stored. The design capacity of the TA-50-1 RLWTF CSA, Room 59, is 1,210 gal. The total volume of RCRA-regulated waste stored at any time at the TA-50-1 RLWTF and Decon Ops and TA-50-114 CSAs will not exceed 3,695 gal. plus 15 yd<sup>3</sup>, which is the process design capacity for TA-50-1 CSAs specified in the LANL General Part A.

#### F.3.2 Decontamination and Closure of the TA-50-1 RLWTF CSA

To the extent possible, all contaminated equipment, structures, and floor or wall surfaces of the TA-50-1 RLWTF CSA, Room 59, that have come in contact with RCRA-regulated hazardous wastes will be decontaminated, recycled, or disposed of to meet the closure performance standard.

### F.4 CLOSURE PROCEDURES FOR THE TA-50-1 DECON OPS CSA [20 NMAC 4.1, Subpart V, §264.112]

The TA-50-1 Decon Ops CSA consists of Rooms 35, 36, and 38/38A, which are located in the basement of the southern portion of TA-50-1 (Figure F-2). The Decon Ops CSA will be used to store drums, SWBs, FRP boxes, steel B25 boxes, and containers of various sizes on wooden pallets or secondary containment pallets. Room 36 of this CSA will be used for storage of decommissioned radioactively contaminated glove boxes before removal of external lead shielding, and to store lead wastes in drums, FRP boxes, or other containers. More detailed information on the Decon Ops CSA is provided in Section 2.1 and Attachment G of the TA-50 Part B.

#### F.4.1 Description of Waste and Estimate of Maximum Inventory of Hazardous Waste

Wastes that will be stored in the Decon Ops CSA will include RCRA-regulated, mixed low-level, mixed TRU wastes, and hazardous wastes. The LANL General Part A provides additional information on wastes to be stored. The wastes stored at this CSA will be generated by research activities, material processing and recovery operations, decontamination and decommissioning operations, and environmental remediation/restoration activities conducted at various TAs throughout LANL. The design capacities of each of the rooms in the Decon Ops CSA are as follows:

- Room 35 - 250 gal.
- Room 36 - 3,030 gal.
- Room 38/38A - 750 gal.

The total volume of RCRA-regulated waste stored at any time at the TA-50-1 RLWTF and Decon Ops and TA-50-114 CSAs will not exceed 3,695 gal. plus 15 yd<sup>3</sup>, which is the process design capacity for TA-50-1 CSAs specified in the LANL General Part A.

#### F.4.2 Decontamination and Closure of the Decon Ops CSA

To the extent possible, all contaminated equipment, structures, and floor or wall surfaces of the Decon Ops CSA, or of individual room(s) within this CSA undergoing closure, that have come in contact with RCRA-regulated hazardous wastes will be decontaminated, recycled, or disposed of to meet the closure performance standard.

#### F.5 CLOSURE PROCEDURES FOR THE TA-50-114 CSA [20 NMAC 4.1, Subpart V, §264.112]

The TA-50-114 CSA is a storage locker located south of the eastern wing of TA-50-1 and east of TA-50-1, Room 34B (Figure F-2). This storage locker is a prefabricated, metal building anchored to a concrete pad. Its recessed floor provides secondary containment for wastes stored in the locker. More detailed information on waste management activities at TA-50-114 is provided in Section 2.1 and Attachment G of the TA-50 Part B.

#### F.5.1 Description of Waste and Estimate of Maximum Inventory of Hazardous Waste

The TA-50-114 CSA will be used by both the RLWTF and the Decon Ops Facility for storage of RCRA-regulated, mixed low-level, mixed TRU waste, and hazardous waste. The LANL General Part A provides additional information on wastes to be stored. The wastes stored at this CSA will

be generated by research activities, material processing and recovery operations, decontamination and decommissioning operations, and environmental remediation/restoration activities conducted at various TAs throughout LANL. The design capacity of the TA-50-114 CSA is 1,210 gal., or approximately 22 55-gal. drums. The total volume of RCRA-regulated waste stored at any time at the TA-50-1 RLWTF and Decon Ops and TA-50-114 CSAs will not exceed 3,695 gal. plus 15 yd<sup>3</sup>, which is the process design capacity for TA-50-1 CSAs specified in the LANL General Part A.

#### F.5.2 Decontamination and Closure of the TA-50-114 CSA

To the extent possible, all contaminated equipment, structures, and floors and wall surfaces of the TA-50-114 CSA that have come in contact with RCRA-regulated hazardous wastes will be decontaminated, recycled, or disposed of to meet the closure performance standard.

#### F.6 CLOSURE PROCEDURES FOR THE TA-50-69 WCRRF INDOOR CSA [20 NMAC 4.1, Subpart V, §264.112]

The WCRRF Indoor CSA is located in Room 102/103 of TA-50-69 at the west end of TA-50 (Figure F-2). Wastes will be stored in drums of various sizes, FRP boxes, SWBs, and other miscellaneous containers. More detailed information on waste management activities conducted at this CSA is provided in Section 2.1 and Attachment G of the TA-50 Part B.

#### F.6.1 Description of Waste and Estimate of Maximum Inventory of Hazardous Waste

Wastes managed at the WCRRF Indoor CSA will include RCRA-regulated, mixed low-level wastes, mixed TRU wastes, and hazardous wastes. The LANL General Part A provides additional information on wastes to be stored. The wastes stored at this CSA will be generated through research activities, material processing and recovery operations, decontamination and decommissioning operations, and environmental remediation/restoration activities conducted at various TAs throughout LANL. The design capacity of the Indoor CSA is 1,500 gal. The total volume of RCRA-regulated waste in storage at any time at the WCRRF Indoor and Outdoor CSAs will not exceed 31,500 gal., which is the process design capacity specified in the LANL General Part A.

#### F.6.2 Decontamination and Closure of the WCRRF Indoor CSA

To the extent possible, all contaminated equipment, structures, and floor and wall surfaces in the WCRRF Indoor CSA that have come in contact with RCRA-regulated hazardous wastes will be decontaminated, recycled, or disposed of to meet the closure performance standard.

#### F.7 CLOSURE PROCEDURES FOR THE TA-50-69 WCRRF OUTDOOR CSA [20 NMAC 4.1, Subpart V, §264.112]

The WCRRF Outdoor CSA is located adjacent to TA-50-69 at the west end of TA-50 (Figure F-2). Wastes will be stored at this CSA on secondary containment pallets in transportainers or other structures designed to protect the waste from weather. The structures are located on an asphaltic concrete pad. The waste is stored in a structure before being moved into TA-50-69 for processing and storage. Wastes will be stored in drums of various sizes, FRP boxes, SWBs, and other miscellaneous containers. Additional information regarding the operation of this CSA is provided in Section 2.1 and Attachment G of the TA-50 Part B.

##### F.7.1 Description of Waste and Estimate of Maximum Inventory of Hazardous Waste

Wastes managed at the WCRRF Outdoor CSA will include RCRA-regulated, mixed low-level, mixed TRU, and hazardous wastes. The LANL General Part A provides additional information on wastes to be stored. The wastes stored at this CSA will be generated through research activities, material processing and recovery operations, decontamination and decommissioning operations, and environmental remediation/restoration activities conducted at various TAs throughout LANL. The design capacity of the WCRRF Outdoor CSA is 30,000 gal. The total volume of RCRA-regulated waste in storage at any time at the WCRRF Indoor and Outdoor CSAs will not exceed 31,500 gal., which is the process design capacity specified in the LANL General Part A.

##### F.7.2 Decontamination and Closure of the WCRRF Outdoor CSA

Closure of the WCRRF Outdoor CSA will require decontamination, recycling, or disposal of transportainers and other equipment used for waste storage and handling, decontamination or removal of contaminated portions of the asphaltic concrete pad underlying this CSA if shown to be contaminated, and sampling of surrounding soils showing evidence of contamination to determine their disposition. If decontamination is needed or selected as the method to meet the closure performance standard, samples of unused wash water solutions and used wash water will be collected and analyzed as described in the LANL General Part B, Appendix F, "Sampling and

Analytical Procedures," to establish contamination levels for the surfaces or materials being decontaminated, and to confirm that decontamination criteria have been achieved as described in Section F.1.13 of this attachment.

Secondary-containment pallets, transportainers, and other structures used to containerize and protect wastes at the WCRRF Outdoor CSA will be decontaminated, recycled, or disposed. Decontamination procedures will be similar for all portable equipment. If needed and selected as the method to meet the closure performance standard, secondary containment pallets and similar equipment will be washed and the used wash water collected in temporary bermed areas, sumps, or recesses. Collected wash water will be transferred into DOT-approved containers for sampling and analysis as described in the LANL General Part B, Appendix F, "Sampling and Analytical Procedures." After the results of sample analyses are received, the collected wash water will be disposed of in accordance with appropriate regulations and LANL policy. If regulated contaminants are present in collected wash water below established action levels, the wash water will be disposed of in LANL's industrial wastewater sewer system. Wash cycles will be repeated until the equipment is decontaminated in accordance with the decontamination verification criteria described in Section F.1.13 of this attachment.

Normal operations at the WCRRF Outdoor CSA will not expose outer surfaces of transportainers to waste contamination. Therefore, unless there is evidence of accidental outer surface contamination by spillage of regulated wastes either on the outside, or leakage from interior spills, the outer surfaces will only be sampled for radiological contamination. If outer surfaces of a transportainer(s) are found to be contaminated with RCRA-regulated constituents, those surfaces will be decontaminated following the procedures described for transportainer interior surfaces.

If necessary, the inside of the transportainers will be pressure washed or wiped down and rinsed with wash water. Portable berms will be used to provide containment for the wash water generated in this process. Collected wash water will be transferred into DOT-approved containers for sampling and analysis as described in the LANL General Part B, Appendix F, "Sampling and Analytical Procedures." If analyses indicate that the wash water is contaminated, the washdown procedure will be repeated and subsequent wash water samples will be collected and analyzed as before. Wash cycles and analyses will be repeated until the unit has been decontaminated to meet the closure performance standard. Used wash water that is nonhazardous and

nonradioactive will be disposed of in LANL's industrial wastewater sewer. Wash water that is found to be contaminated will be managed at an appropriate on-site facility.

Operational records (e.g., inspection findings, occurrence reports), visual inspection, and analytical data (if necessary) will be used to determine if the asphaltic concrete pad at the WCRRF Outdoor CSA was contaminated by RCRA-regulated hazardous waste management operations. Those areas suspected of being contaminated will either be removed from the pad, or washed with a wash water solution. Removal, containerization, and disposal of contaminated asphaltic concrete is likely to be the option of choice, however, if washdown procedures are selected as the management option, portable berms or other containment structures will be used to collect wash water from the pad locations being cleaned. The used wash water will be collected and transferred to DOT-approved containers, sampled, and analyzed in accordance with the procedures described in the LANL General Part B, Appendix F, "Sampling and Analytical Procedures." Used wash water that is nonhazardous and nonradioactive will be disposed of in the LANL industrial wastewater sewer. Wash water that is contaminated with regulated wastes will be managed at an appropriate on-site facility.

Used wash water from the WCRRF Outdoor CSA asphaltic concrete pad may exhibit anomalously high levels of organic compounds due to leaching of pad constituents by the washdown process. Record reviews (e.g., manufacturer's specifications, Material Safety Data Sheets) and additional analyses will be performed to determine whether leaching of organic constituents from the pad materials contributed to the concentration of organic compounds in the used wash water. If leaching from the asphaltic concrete material is determined to be the source of contamination, baseline concentrations of these constituents for unused wash water will be adjusted accordingly.

Record reviews and visual inspection of soils along the margins of the WCRRF Outdoor CSA will be used to identify areas where soil contamination from RCRA-regulated waste management activities could have occurred. Soil sampling will be conducted in any suspected contaminated areas and in those areas where the asphaltic concrete pad has been removed due to contamination with RCRA-regulated constituents. Before closure activities begin, soil samples will be collected from appropriate areas and analyzed in accordance with LANL General Part B, Appendix F, "Sampling and Analytical Procedures," to serve as background samples. A statistically representative number of soil samples will be collected from contaminated area(s) to a six-in.

depth. Samples will be equally spaced to ensure representative sampling of the contaminated area(s). If contamination resulting from container storage activities is discovered, the contaminated soils will be either (bio)remediated in place, or removed for proper disposal. The area will be resampled until the decontamination criteria described in Section F.1.13 of this attachment are achieved.

#### F.8 CLOSURE PROCEDURES FOR THE TA-50-1 ROOM 60A RLWTF CEMENTATION TREATMENT UNIT [20 NMAC 4.1, Subpart V, §264.112]

The TA-50-1 RLWTF cementation treatment unit is located in Room 60A of TA-50-1 (Figure F-2). This unit will be used to solidify, by cementation, RCRA-regulated, mixed low-level, and mixed TRU wastes generated by the RLWTF. The solidification process will be accomplished by mixing waste sludges with cement in a drum tumbler, as described in Section 2.2 and Attachment I of the TA-50 Part B.

##### F.8.1 Description of Waste and Estimate of Maximum Inventory of Hazardous Waste

Wastes that will be treated at the RLWTF cementation treatment unit will include RCRA-regulated, mixed low-level, and mixed TRU wastes generated by the RLWTF at TA-50. The wastes treated by this unit will consist of sludges that will be mixed with cement, other solids, and other liquids in drums where the mixture will solidify. The drum in which mixing and solidification of a waste occurs will also serve as the container in which that treated waste is disposed. The maximum inventory of RCRA-regulated waste stored at any time at the RLWTF cementation treatment unit will not exceed 660 gal.

##### F.8.2 Decontamination and Closure of the RLWTF Cementation Treatment Unit

All mixed wastes present at the RLWTF cementation treatment unit will be removed before closure activities begin. These wastes will be transported in compliance with applicable regulations and LANL policy to appropriate on- or off-site storage, treatment, or disposal areas.

Dismantling and decontamination, recycling, or disposal of the cementation treatment unit and adjacent areas will be accomplished by qualified personnel, as described in the LANL General Part B, Appendix F, "Closure Plan." All equipment associated with the cementation treatment unit that has come in direct contact with mixed waste will be disposed of as mixed waste, decontaminated and reused, or decontaminated and disposed of as solid or radioactive-only

waste. The treatment unit equipment components and plumbing that will be disposed of will be dismantled and placed in appropriate containers. Oversized pieces of equipment will be wrapped in plastic sheeting before removal.

If decontamination of the cementation treatment unit equipment is deemed necessary, this procedure will be performed in Room 60A of the RLWTF, which is equipped with appropriate containment capabilities to collect used wash water. Equipment components and plumbing may be decontaminated by rinsing with water and detergent, as described in the LANL General Part B, Appendix F, "Closure Plan." Decontamination will be performed by qualified and properly trained personnel in accordance with procedures described in the LANL General Part B, Appendix F, "Closure Plan."

Decontamination of equipment components will be demonstrated by analyzing samples of the final rinsate water in accordance with procedures described in the LANL General Part B, Appendix F, "Sampling and Analytical Procedures." If sampling indicates that the decontamination criteria described in Section F.1.13 of this attachment have not been achieved, washdown procedures will be repeated and additional samples will be collected. The process will be repeated until the decontamination criteria described in Section F.1.13 are achieved, or until alternative closure criteria meeting the closure performance standard are identified.

Wastes generated through the closure of the RLWTF cementation treatment unit will be sampled and analyzed in accordance with the procedures described in the LANL General Part B, Appendix F, "Sampling and Analytical Procedures." These wastes will be transported to appropriate on- or off-site facilities for treatment, storage, or disposal, in compliance with applicable regulations and LANL policy.

#### F.9 CLOSURE PROCEDURES FOR THE TA-50-37 ETU [20 NMAC 4.1, Subpart V, §264.112]

The ETU will be located in Room 117 of TA-50-37 (Figure F-2). As described in Section 2.2 of the TA-50 Part B, this treatment unit will consist of electrochemical cells and auxiliary equipment used to treat RCRA-regulated, mixed low-level, and mixed TRU wastes. The ETU will be located adjacent to the CSA in Room 117 of TA-50-37. Therefore, most of the wastes subject to the ETU operation will be stored in an area subject to closure, as described in Section 2.0 of the TA-50 Part B.

#### F.9.1 Description of Waste and Estimate of Maximum Inventory of Hazardous Waste

Wastes treated at the TA-50-37 Room 117 ETU will include RCRA-regulated, hazardous, mixed low-level, and mixed TRU wastes containing metals, cyanides, nitrates, sulfides, and low concentrations of organic constituents. These waste constituents will be removed from incoming untreated wastes by electrochemical extraction, decomposition, precipitation, and oxidation as a result of the treatment process, resulting in various treatment residues and a wastewater solution containing only low-level radioactivity. The maximum inventory of RCRA-regulated wastes located with the ETU at any time will not exceed 600 gal.

#### F.9.2 Decontamination and Closure of the TA-50-37 ETU

All RCRA-regulated wastes present at the ETU will be removed before closure activities begin. These wastes will be transported in compliance with applicable regulations and LANL policy to appropriate on-site treatment, storage, or disposal areas.

Dismantling and decontamination, recycling, or disposal of the ETU and adjacent areas will be accomplished by qualified personnel, as described in the LANL General Part B, Appendix F, "Closure Plan." All equipment associated with the ETU that has come in direct contact with mixed waste will be disposed of as mixed waste, decontaminated and reused, or decontaminated and disposed of as solid or radioactive-only waste. The ETU equipment components and plumbing that will be disposed of will be dismantled and placed in appropriate containers. Oversized pieces of equipment will be wrapped in plastic sheeting before removal.

If decontamination of ETU equipment is deemed necessary, this procedure will be performed in Room 117 of the TA-50-37, which is equipped with appropriate containment capabilities to collect used wash water. Equipment components and plumbing may be decontaminated by rinsing with water, rinsing with a dilute acid solution to dissolve any precipitated residuals, and final rinsing with water. Decontamination will be performed by qualified and properly trained personnel in accordance with procedures described in the LANL General Part B, Appendix F, "Closure Plan."

Decontamination of equipment components will be demonstrated by analyzing samples of the final rinsate water in accordance with procedures described in the LANL General Part B, Appendix F, "Sampling and Analytical Procedures." If sampling indicates that the decontamination criteria described in Section F.1.13 of this attachment have not been achieved, washdown procedures

will be repeated and additional samples will be collected. The process will be repeated until the decontamination criteria described in Section F.1.13 are achieved, or until alternative closure criteria meeting the closure performance standard are identified.

Wastes generated through the closure of the TA-50-37 ETU will be sampled and analyzed in accordance with the procedures described in the LANL General Part B, Appendix F, "Sampling and Analytical Procedures." These wastes will be transported to appropriate on- or off-site facilities for treatment, storage, or disposal, in accordance with applicable regulations and LANL policy.

#### F.10 REFERENCES

EPA. 1997 and all approved updates. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*. SW-846, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Washington, D.C.

LANL. 1998a. *Los Alamos National Laboratory General Part A Permit Application*. Los Alamos, New Mexico, Los Alamos National Laboratory.

LANL. 1998b. *Los Alamos National Laboratory General Part B Permit Application*. Los Alamos, New Mexico, Los Alamos National Laboratory.

Table F-1. Schedule for TA-50 Closure Activities

ACTIVITY	DAY					
	- 45	- 30	0	60	90	180
Final receipt of waste						X
Notify the NMED of intent to begin closure		X				
Remove or treat all wastes					X	
Begin and conduct final closure activities			X			X
Remove and decontaminate equipment						
Decontaminate structures						
Sample and analyze						
Verify decontamination of equipment, structures, and soils (if applicable)						
Submit final report to the NMED						X

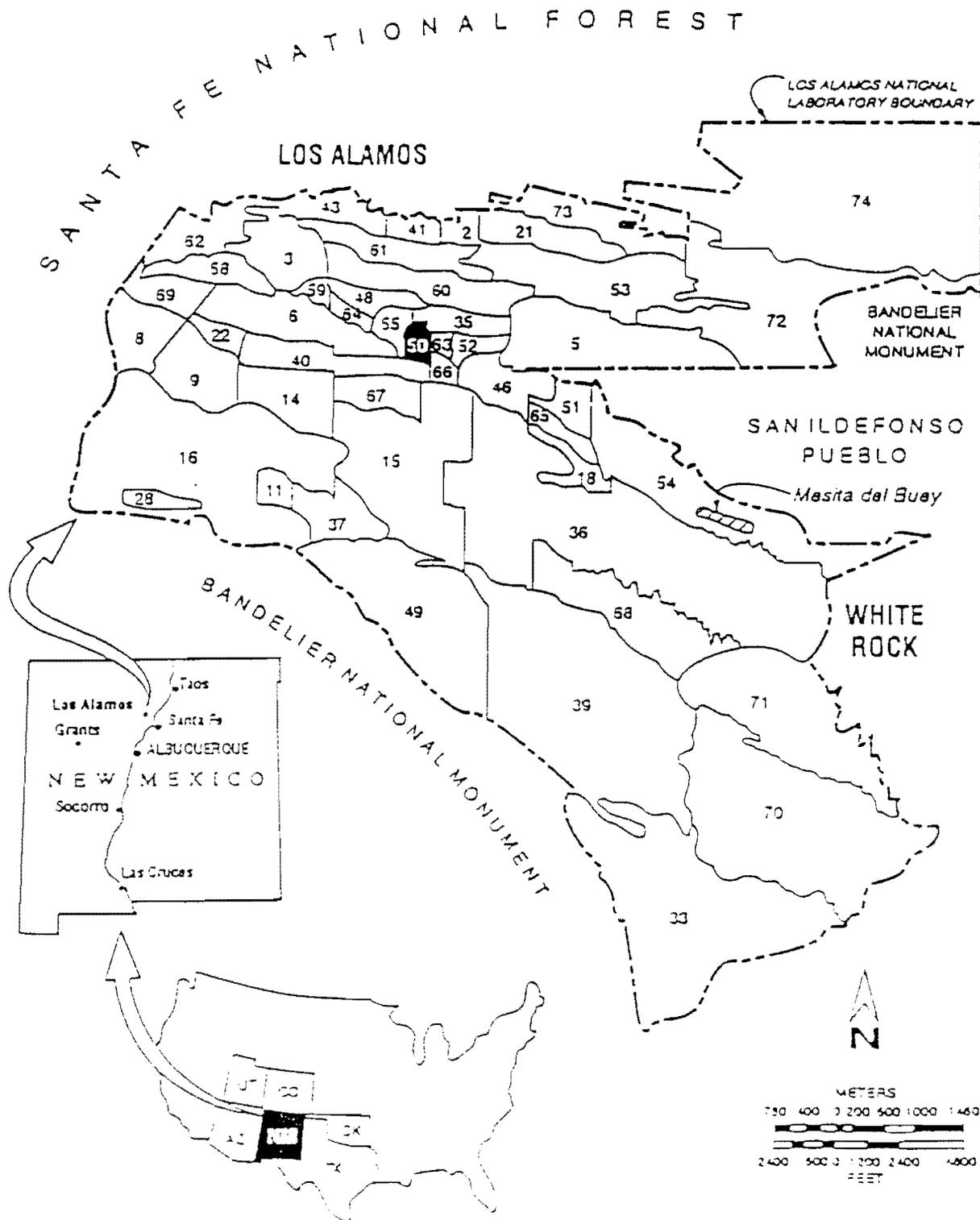


Figure F-1. TA-50 at Los Alamos National Laboratory

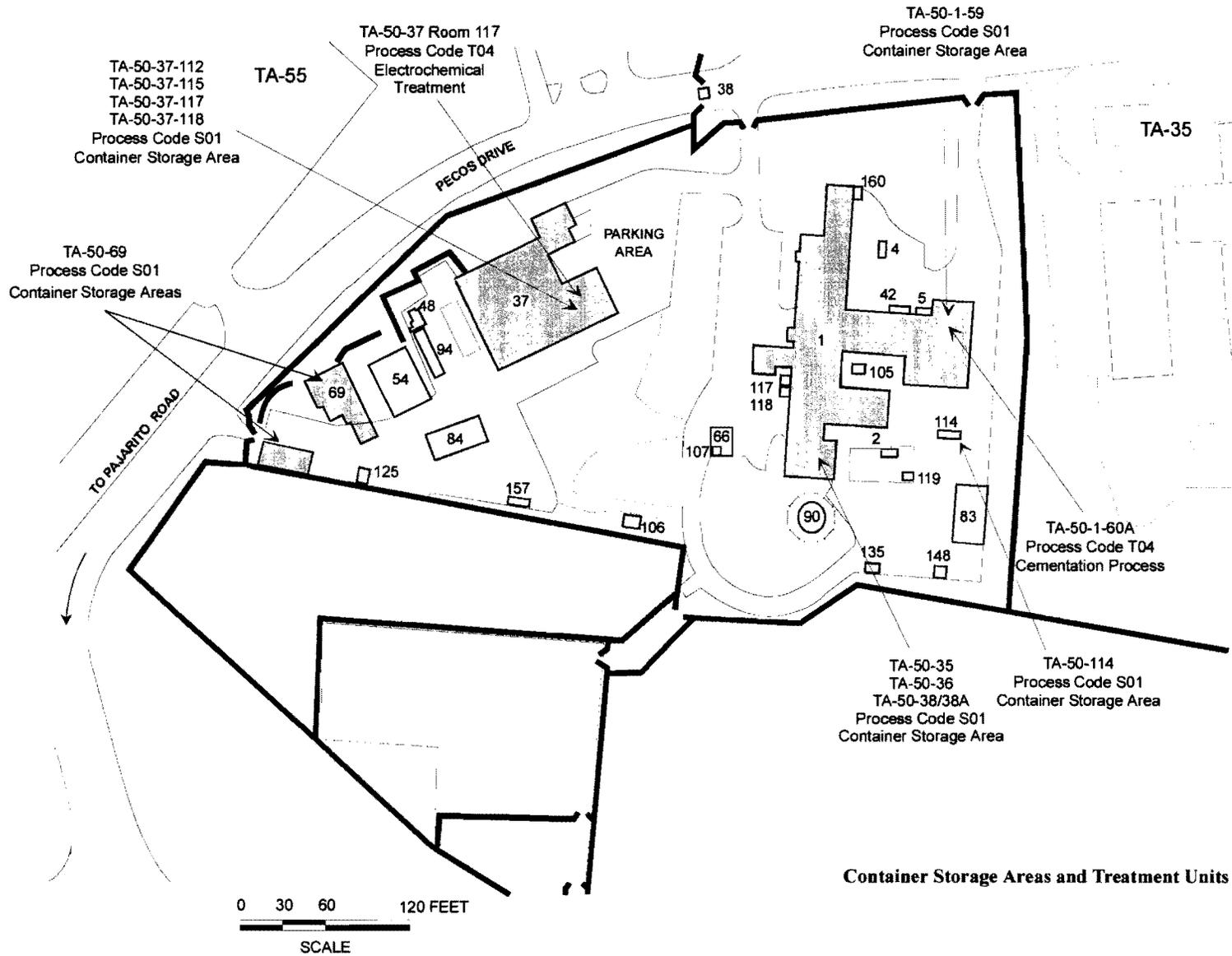


Figure F-2. TA-50 Container Storage Areas and Treatment Units

**ATTACHMENT G**  
**CONTAINER MANAGEMENT**

## TABLE OF CONTENTS

LIST OF FIGURES .....	iii
LIST OF ABBREVIATIONS/ACRONYMS .....	iv
<b>G.1 USE AND MANAGEMENT OF CONTAINERS .....</b>	<b>G-1</b>
G.1.1 Description of Containers .....	G-1
G.1.1.1 Standard 55-Gallon Drums .....	G-1
G.1.1.2 Fiberglass-Reinforced Plywood Boxes .....	G-1
G.1.1.3 Standard Waste Boxes .....	G-2
G.1.1.4 Overpacks .....	G-2
G.1.2 TA-50 Container Management Practices .....	G-2
G.1.2.1 Storage Configuration .....	G-2
G.1.2.2 Movement of Containers .....	G-3
G.1.2.3 Waste Container Labeling .....	G-3
G.1.3 Ignitable, Reactive, or Incompatible Waste [20 NMAC 4.1, Subpart IX, §270.14(b)(9) and §§270.15(c) and (d); and Subpart V, §264.17, §264.176, and §264.177] .....	G-4
G.1.4 Containment .....	G-5
<b>G.2 PROCEDURES TO PREVENT HAZARDS [20 NMAC 4.1, Subpart IX,  §270.14(b)(8), and Subpart V, Part 264 Subpart C] .....</b>	<b>G-6</b>
G.2.1 TA-50 - Runoff and Runon Controls [20 NMAC 4.1, Subpart V, §264.31 and §264.175(b); and Subpart IX, §§270.15(a)(4) and (5)] .....	G-6
G.2.1.1 Indoor CSAs .....	G-7
G.2.1.2 Outdoor CSAs .....	G-7
G.2.2 TA-50 - Impact to Groundwater [20 NMAC 4.1, Subpart V, §264.31] .....	G-8
G.2.3 TA-50 - Air Emission Standards [20 NMAC 4.1, Subpart V, §§264.31 and 264.179] .....	G-8
G.2.4 TA-50 - Power Failure [20 NMAC 4.1, Subpart IX, §270.14(b)(8)] .....	G-9
G.2.5 TA-50 - Required Equipment [20 NMAC 4.1, Subpart V, §264.32] .....	G-10
G.2.5.1 TA-50 - Audible Alarm Systems .....	G-10
G.2.5.2 TA-50 - Emergency Fire Equipment .....	G-10
G.2.5.3 TA-50 - Spill Control Equipment .....	G-11
G.2.5.4 TA-50 - Personal Protective Equipment [20 NMAC 4.1, Subpart V, §264.32] .....	G-12
G.2.5.5 TA-50 - Personnel Decontamination Equipment .....	G-12
G.2.5.6 TA-50 - Testing and Maintenance of Equipment [20 NMAC 4.1, Subpart V, §264.33] .....	G-12
<b>G.3 UNIT-SPECIFIC CONTAINER MANAGEMENT PRACTICES .....</b>	<b>G-12</b>
G.3.1 Unit-Specific Storage Configuration .....	G-12
G.3.1.1 TA-50-37 CSA .....	G-12
G.3.1.2 RLWTF Storage Configuration .....	G-13
G.3.1.3 Decontamination Operations Storage Configuration .....	G-13
G.3.1.4 TA-50-114 Storage Configuration .....	G-13
G.3.1.5 TA-50-69 Waste Characterization, Reduction, and Repackaging Facility Indoor CSA Storage Configuration .....	G-13
G.3.1.6 TA-50-69 WCRRF Outdoor CSA Storage Configuration .....	G-14

**TABLE OF CONTENTS**  
**(Continued)**

G.3.2	Unit-Specific Movement of Containers .....	G-14
G.3.2.1	TA-50-37 CSA .....	G-14
G.3.2.2	TA-50-1 RLWTF CSA .....	G-15
G.3.2.3	TA-50-1 Decon Ops Facility .....	G-15
G.3.2.4	TA-50-114 Container Storage Area .....	G-16
G.3.2.5	TA-50-69 WCRRF .....	G-16
G.4	UNIT-SPECIFIC CONTAINMENT AND OVERFLOW CONTROLS .....	G-16
G.4.1	TA-50-37 CSA .....	G-16
G.4.1.1	Room 112 .....	G-16
G.4.1.2	Room 115 .....	G-17
G.4.1.3	Room 117 .....	G-17
G.4.1.4	Room 118 .....	G-17
G.4.2	RLWTF CSA .....	G-18
G.4.3	Decon Ops Facility CSA .....	G-18
G.4.3.1	Room 35 .....	G-18
G.4.3.2	Room 36 .....	G-18
G.4.3.3	Room 38/38A .....	G-19
G.4.4	TA-50-114 CSA .....	G-20
G.4.5	TA-50-69 WCRRF Indoor CSA .....	G-20
G.4.5.1	Room 102 .....	G-20
G.4.5.2	Room 103 .....	G-21
G.4.6	TA-50-69 WCRRF Outdoor CSA .....	G-22
G.5	UNIT-SPECIFIC PROCEDURES TO PREVENT HAZARDS .....	G-22
G.5.1	Fire Protection Systems .....	G-22
G.5.2	Personal Protective Equipment .....	G-23
G.6	REFERENCES .....	G-24

## LIST OF FIGURES

<u>FIGURE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
G-1	TA-50-37 Container Storage Area and Treatment Unit Evacuation Route and Emergency Equipment	G-25
G-2	TA-50-1 RLWTF Container Storage Area and Treatment Unit Emergency Equipment	G-26
G-3	TA-50-1 Decontamination Operations Facility and TA-50-114 Container Storage Areas Emergency Equipment	G-27
G-4	WCRRF TA-50-69, Indoor and Outdoor Container Storage Areas and Emergency Equipment	G-28

## LIST OF ABBREVIATIONS/ACRONYMS

20 NMAC 4.1	<i>New Mexico Administrative Code</i> , Title 20, Chapter 4, Part 1
CAM	continuous air monitor
CSA	container storage area
Decon Ops	Decontamination Operations
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
FRP	fiberglass-reinforced plywood
HEPA	high-efficiency particulate air
LACFD	Los Alamos County Fire Department
LANL	Los Alamos National Laboratory
MDA	Material Disposal Area
MSDS	material safety data sheet
NFPA	National Fire Protection Association
NMED	New Mexico Environment Department
NPDES	National Pollutant Discharge Elimination System
PPE	personal protective equipment
RCRA	Resource Conservation and Recovery Act
RCT	radiological control technician
RLWTF	Radioactive Liquid Waste Treatment Facility
RTR	real-time radiography
SPCC	Spill Prevention Control and Countermeasure
SWB	standard waste box
TA	Technical Area
TRU	transuranic
WCRRF	Waste Characterization, Reduction, and Repackaging Facility

## ATTACHMENT G

### CONTAINER MANAGEMENT

#### G.1 USE AND MANAGEMENT OF CONTAINERS

This attachment specifies container management practices and procedures to prevent hazards for each TA-50 container storage area (CSA) and treatment unit and describes containers to be staged or stored at the Los Alamos National Laboratory (LANL) Technical Area (TA)-50 hazardous and waste management units. This information fulfills the requirements of the *New Mexico Administrative Code*, Title 20, Chapter 4, Part 1 (20 NMAC 4.1), Subpart V, Part 264, Subpart I (as revised January 1, 1997 [1-1-97]).

##### G.1.1 Description of Containers

Resource Conservation and Recovery Act (RCRA)-regulated mixed low-level and mixed transuranic (TRU) wastes, hazardous waste, and non-RCRA-regulated low-level and TRU wastes will be staged or stored at the CSAs addressed in the TA-specific Part B Permit Application for TA-50 (hereinafter referred to as the TA-50 Part B). Containers that will be used to store these wastes include 5-, 30-, 55-, 83-, 85-, and 110-gal. steel drums; standard fiberglass-reinforced plywood (FRP) boxes; steel standard waste boxes (SWBs); metal overpack boxes; steel B25 boxes; various small containers; and oversized, irregularly-shaped plain plywood and FRP boxes. Table 2-2 of Section 2.0 of the TA-50 Part B lists container types for each CSA and treatment unit. Some mixed waste containers are vented and have carbon composite filters that allow gases (e.g., hydrogen), if present, to be released, but prevent the release of airborne particulates.

##### G.1.1.1 Standard 55-Gallon Drums

The most common drum to be used for storage is the 55-gal. drum. The standard 55-gal. drum in use is constructed of 16-gauge steel, has an approximate 22-in. inner diameter, and a usable inside height of approximately 33 in. Standard 55-gal. drums meet the U.S. Department of Transportation (DOT) requirements.

##### G.1.1.2 Fiberglass-Reinforced Plywood Boxes

Standard-size FRP boxes used for storage measure 4 ft by 4 ft by 8 ft. The outer surface of the FRP boxes is coated with a 0.06- to 0.12-in.- (60- to 120-mil)-thick layer of epoxy-impregnated

fiberglass. At times, nonstandard-size FRP boxes are designed and constructed to contain odd-shaped or oversized waste.

#### G.1.1.3 Standard Waste Boxes

Two different types of SWBs will be used for storage. One type is constructed of 14-gauge steel and has rounded ends. It measures 52 in. by 69 in. by 36 in., has continuous welds on all four sides and on the bottom, and has a lid with a closed-cell neoprene gasket that is secured in place with bolts. The second type of SWB is also constructed of 14-gauge steel, but is rectangular in shape. Its dimensions are 56 in. by 72 in. by 37 in. It has continuous welds on all four sides and on the bottom and a lid that is clamped and welded in place.

#### G.1.1.4 Overpacks

The metal overpack containers vary in size and have continuous welds both inside and outside on all four sides and on the bottom. The lid has a gasket made of closed-cell neoprene and can be strapped closed or clipped down. The metal overpacks are elevated by design with risers for ease of handling. B25 overpacks are constructed of 16-gauge welded carbon steel, are a standard size of 4 ft by 4 ft by 6 ft, and are elevated by design. All B25 overpacks have a rubber gasket with either 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. The 85-gal. drums are commonly used to overpack 55-gal. drums, and 110-gal. drums are used to overpack 85-gal. drums. The 85-gal. 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-in. closure bolt. Rounded-end SWBs will be used to overpack drums of various sizes that contain mixed TRU waste. Metal boxes will be used as overpacks for FRP boxes.

### G.1.2 TA-50 Container Management Practices

#### G.1.2.1 Storage Configuration

Any waste stored will be positioned in an area of the room that is removed from the location of worker activity or traffic that is unrelated to the management of the waste itself. Security posts and a chain will be used to alert workers to the presence of waste containers. To facilitate container movement, storage, and inspection, all drums holding wastes that do not contain free liquids will

be stored on elevation devices. Storage configurations for each CSA are described in Section G.3.1.

#### G.1.2.2 Movement of Containers

All waste received at TA-50 waste management units (six CSAs and two treatment units) will be manifested and transported from LANL waste generator or storage locations in accordance with applicable DOT regulations. Wastes will be transported to TA-50 on Pajarito Road, Pecos Drive, and Mesita del Buey Road. Lesser-used traffic routes may include Diamond Drive and West Jemez Road (State Road 501). Waste containers will be moved minimal distances on road surfaces within TA-50. LANL procedures establish vehicle and operator qualifications and provide specifications for loading and transporting waste. Waste received at TA-50 meets site-specific waste acceptance criteria to ensure wastes and their containers are appropriate for use in the various CSAs and treatment units. The waste acceptance criteria is established to ensure wastes destined for TA-50 are identified as to form, packaged in DOT-approved containers appropriate for the waste, and markings and labels required by applicable U.S. Environmental Protection Agency (EPA) and DOT regulations are used. In addition, waste acceptance criteria require waste containers to be in good condition without signs of corrosion or structural defects.

TA-50 personnel will use proper handling equipment, appropriate to a container's size and weight, to help prevent hazards while moving containers within the CSAs and treatment units. Equipment used at each CSA and treatment unit for moving containers is described in Section G.3.2. All damaged containers (e.g., severely corroded drums) will be repaired or overpacked, or the wastes repackaged in new containers before being staged at the CSAs.

#### G.1.2.3 Waste Container Labeling

All waste containers will be marked with a bar code identification number that corresponds to a number in LANL's waste management database. This database is composed of information supplied by the waste generator before storage and by waste management personnel after the waste has been received. This information includes the name and location of the waste generator, waste characterization information, packaging, waste certification, receiving site, and storage location. All containers that hold a RCRA-regulated hazardous or mixed waste will be labeled with a hazardous waste label that lists the appropriate EPA hazardous waste number(s). Containers holding mixed waste will also be marked with a radioactive material tag. All containers will be

clearly marked to identify the contents and the date each period of accumulation begins. In the event that a container is repackaged, repackaging personnel will ensure the new container is properly labeled. When waste containers are moved during storage, their waste package identification numbers (bar codes), origin and destination, and package changes (e.g., overpack volume, overpack dimensions) will be documented. The waste management database will then be updated to reflect any new information.

G.1.3 Ignitable, Reactive, or Incompatible Waste [20 NMAC 4.1, Subpart IX, §270.14(b)(9) and §§270.15(c) and (d); and Subpart V, §264.17, §264.176, and §264.177]

To prevent accidental ignition or reaction of ignitable, reactive, or incompatible waste at the TA-50 CSAs and treatment units, TA-50 personnel will manage hazardous and mixed waste using the precautions described in this section.

If containerized ignitable and/or reactive wastes (e.g., discarded materials contaminated with ignitable spent solvents, reactive metal debris) are stored at any of the CSAs, the containers will be located at least 50 ft from the unit property line at all times (refer to Map 2 of the *Los Alamos National Laboratory General Part A Permit Application* [LANL 1998a]). All ignitable and reactive wastes will be protected from sources of ignition or reaction, in accordance with 20 NMAC 4.1, Subpart V §264.17(a)[1-1-97]. Policies and controls are in place at TA-50 that minimize the possibility of accidental ignition. Most mechanical equipment operated within the areas is grounded to minimize the potential for sparking by dissipating static charges. In addition, conduit boxes and other utilities in TA-50-37, Room 117 are explosion-proof. Smoking is not allowed in or near 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)[1-1-97]. Together, these measures meet the requirements of 20 NMAC 4.1, Subpart V, §§264.17(a) and (b), and §264.176 [1-1-97].

Incompatible wastes, if any, will be segregated during storage. In addition, incompatible wastes will not be mixed, and waste will not be placed in a container that previously held an incompatible waste, as required by 20 NMAC 4.1, Subpart V, §§264.177(a) and (b), and Subpart IX, §270.15(d)[1-1-97]. Incompatible liquid-bearing solid wastes (e.g., dewatered sludges) will be stored on secondary containment pallets or devices, or will be segregated by storage over separate secondary containment areas to meet the requirements of 20 NMAC 4.1, Subpart V,

§264.177(c)[1-1-97]. Pursuant to the requirements of 20 NMAC 4.1, Subpart V, §264.172 [1-1-97], only containers constructed 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 TA-50 Part B.

Waste management database information and results of waste characterization activities provide documentation of compliance with the requirements for ignitable, reactive, or incompatible wastes, pursuant to 20 NMAC 4.1, Subpart V, §264.17(c)[1-1-97]. Wastes carrying the EPA Hazardous Waste Numbers F020, F021, F022, F023, F026, or F027 will not be stored in TA-50 CSAs; therefore, the requirements of 20 NMAC 4.1, Subpart V, §264.175(d)[1-1-97] are not applicable.

#### G.1.4 Containment

To demonstrate compliance with 20 NMAC 4.1, Subpart IX, §270.15(b)(1)[1-1-97], information documented in LANL's waste management databases will be used to initially verify the absence of free liquids in containers. In addition, suspect containers received at the TA-50 CSAs will have been characterized with real-time radiography (RTR) to verify the presence or absence of free liquids within the container. The FRP boxes that hold glove boxes do not contain any free liquids. Any free liquids discovered during past inspections would have been removed from the FRP boxes at TA-54, Area G, or elsewhere, before any transport or continued storage. FRP boxes that have poor structural integrity are overpacked in metal containers to facilitate safe transport and storage.

Containers holding suspect or known liquids will be stored over secondary containment or on secondary containment pallets or devices. FRP boxes, SWBs, and steel B25 boxes are elevated by design. The secondary containment areas, pallets, or devices used in the TA-50 CSAs 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 or devices to prevent contact with potentially accumulated liquids.

Elevated containers, secondary containment pallets or devices, and the steel grate floor over the recessed secondary containment areas provide protection from potential contact with standing

liquids that could be introduced through fire suppression activities. Together, these waste management practices and design features satisfy the requirements of 20 NMAC 4.1, Subpart IX, §270.15(b)(2) and Subpart V, §264.175(c)[1-1-97]. For the CSAs that will store wastes that may contain free liquids, secondary containment systems are described in Section G.4.

## G.2 PROCEDURES TO PREVENT HAZARDS [20 NMAC 4.1, Subpart IX, §270.14(b)(8), and Subpart V, Part 264 Subpart C]

In accordance with 20 NMAC 4.1, Subpart V, Subpart C [1-1-97]; and Subpart IX, §270.14(b)(8)[1-1-97], the TA-50 CSAs and treatment units addressed in this TA-50 Part B are designed and operated to minimize the possibility of fire, explosion, or unplanned releases of hazardous constituents to any environmental medium. Sections G.2.1 through G.2.5 describe the general preventive procedures, structures, and equipment at the TA-50 hazardous and mixed waste management areas to meet these requirements. Any information specific to each CSA or treatment unit is provided in Section G.5. 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.

### G.2.1 TA-50 – Runoff and Runon Controls [20 NMAC 4.1, Subpart V, §264.31 and §264.175(b); and Subpart IX, §§270.15(a)(4) and (5)]

Runoff from the TA-50 hazardous and mixed waste management areas to other areas or to the environment will be prevented. Engineered secondary containment is present or secondary containment pallets or devices are provided in each area where potential liquid-bearing containers may be stored. All secondary containment systems are sufficient to contain at least 10 percent of the volume of potential liquid-bearing containers or the volume of the largest container, whichever is greater, in accordance with the requirements of 20 NMAC 4.1, Subpart V, §264.175(b)(3) [1-1-97].

As a practice at TA-50, runoff and erosion controls are designed to guide surface water away from waste management activities and into the natural drainages. Storm water runoff from TA-50 feed to Mortandad Canyon. Treated liquid effluent is also discharged to Mortandad Canyon from TA-50-1. The treated liquid is piped to tanks inside TA-50-2 prior to release to Mortandad Canyon. The effluent is subject to full chemical analysis. Should this analysis show that a violation of the CWAs NPDES discharge parameters, LANL personnel will notify the New Mexico Environment Department (NMED).

#### G.2.1.1 Indoor CSAs

For the indoor CSAs, runoff into the CSA from outdoors is not likely to occur. Positive surface drainage will direct potential runoff away from each CSA. Map 3 of the General Part A (LANL 1998a) shows the contours and surface drainage around TA-50. The northern and eastern portions of TA-50 drain mainly to an unlined channel on the boundary between TA-50 and TA-35 (east of TA-50), although some flow diverges into a shallow channel running southward between TA-50-37 and TA-50-1.

To meet the requirements of 20 NMAC 4.1, Subpart IX, §270.15(a)(5)[1-1-97], any liquids that may accumulate within the self-containment pallets or devices, trenches and pits, or glove box enclosure will be removed as soon as possible to prevent overflow. The accumulated liquid will be sampled and analyzed. Depending upon the volume of the accumulated liquid, a high-efficiency particulate air (HEPA) vacuum, portable pump, universal sorbents, and/or other methods suitable for retrieval will be used to remove the liquid. Accumulated liquids are removed as soon as possible. The collected liquids and/or sorbents will be transferred to compatible containers, which will be stored temporarily at the respective CSA pending sample analysis, which will dictate how the wastes will be managed. Should a spill occur during waste handling activities, the spill and/or residual material will be sampled and managed in accordance with the contingency plan (Appendix E of the LANL General Part B).

#### G.2.1.2 Outdoor CSAs

Runoff into the outdoor CSAs (i.e., TA-50-114 CSA and TA-50-69 Outdoor CSA) is prevented because both CSAs are elevated by design. The Waste Characterization, Reduction, and Repackaging Facility (WCRRF) Outdoor CSA is sloped sufficiently to prevent the accumulation of precipitation. In addition, drainage swales located in the vicinity of the WCRRF Outdoor CSA divert storm water away from the CSA. One drainage swale is located just south of the WCRRF Outdoor CSA, between the CSA and material disposal area (MDA)-C. A second drainage swale is located on the west side of the WCRRF Outdoor CSA between Pecos Drive and the TA-50 fence line. Inspections of TA-50 waste management facilities, areas that may be prone to soil erosion, and drainage control structures are conducted as described in the *Storm Water Pollution Prevention Plan for Technical Area 50 Waste Treatment Facilities* (LANL 1993). Together, the

containment design and operations meet the requirements of 20 NMAC 4.1, Subpart V, §264.175(b), and Subpart IX, §270.15(a)(4)[1-1-97].

Surface runoff (e.g., precipitation) at the WCRRF Outdoor CSA will be managed according to the Clean Water Act and National Pollutant Discharge Elimination System (NPDES) criteria. At the WCRRF Outdoor and Indoor CSAs, liquids that may accumulate in the self-containment pallets as a result of leaks or spills will be collected into a container using a portable pump and/or sorbents, depending on the volume of accumulated liquid. Accumulated liquids will be removed as soon as possible, sampled and analyzed in accordance with the LANL General Part B, Appendix E, Contingency Plan.

#### G.2.2 TA-50 – Impact to Groundwater [20 NMAC 4.1, Subpart V, §264.31]

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-50 CSAs. With the exception of the WCRRF Outdoor CSA and TA-50-114, all other CSAs are located inside buildings. Any material spilled during waste management activities will be remediated pursuant to the LANL General Part B, Appendix E, Contingency Plan, as part of normal operations. Any material spilled from waste management activities associated with the WCRRF Outdoor CSA will also be remediated pursuant to the LANL General Part B, Appendix E, Contingency Plan.

The depth to groundwater at TA-50 is approximately 1,000 ft (Purtymun and Johansen 1974). Geologic units underlying TA-54 (located 4 miles east of TA-50) include layers of unsaturated volcanic tuff and ash, the moisture content of which ranges from 0.2 to 2.0 percent by weight (IT Corporation 1987). Because the moisture content is insufficient for moisture migration through the Bandelier Tuff, no impact to groundwater is expected.

All water supply lines at TA-50 are under pressure and are equipped with backflow prevention devices to prevent contamination of these lines during emergencies. Therefore, no impact to water supplies is expected.

#### G.2.3 TA-50 – Air Emission Standards [20 NMAC 4.1, Subpart V, §§264.31 and 264.179]

Hazardous wastes treated, stored, or disposed of in tanks, surface impoundments, or containers are subject to the 20 NMAC 4.1, Subpart V, Part 264, Subpart CC standards for volatile organic

emissions after October 6, 1996. Subpart CC standards for containers require that containers be covered so that there are no detectable emissions. These standards are not applicable to containers of waste with less than 500 parts per million by weight (ppmw) average volatile organics concentration, containers of less than a 0.1-m<sup>3</sup> (approximately 26-gal.) capacity, and containers that have received waste before December 6, 1995. Currently, pursuant to §264.1080(b)(6), the requirements of Subpart CC do not apply to waste management units that are used solely for managing mixed waste.

The TA-50-1 Radioactive Liquid Waste Treatment Facility (RLWTF) CSA (Room 59) is used exclusively to store mixed low-level and mixed TRU waste; therefore, 20 NMAC 4.1, §264.1080 standards are not applicable. The CSAs at TA-50-1, TA-50-114, and TA-50-69 (Indoor and Outdoor CSAs) are used primarily to store mixed low-level wastes. They may also be used to store hazardous waste.

Containers of hazardous waste that are less than or equal to 0.45 m<sup>3</sup> (approximately 119-gal.) capacity and meet DOT specifications under 49 CFR Part 178 will be covered while they are in storage so that there are no detectable emissions. All other containers subject to Subpart CC requirements will be inspected and monitored, as required at 40 CFR §264.1088(b).

#### G.2.4 TA-50 – Power Failure [20 NMAC 4.1, Subpart IX, §270.14(b)(8)]

In the event of a power failure at a TA-50 hazardous and mixed waste management unit, operations would cease and personnel would exit the affected building. Operations at the affected TA-50 hazardous and mixed waste areas would be discontinued temporarily if electrical power was not restored quickly, or if container handling equipment failed. A power failure or equipment failure would not affect containment within the TA-50 CSAs or treatment units.

Electrical power is supplied to TA-50-37 and TA-50-69 by a 13.4-kV overhead distribution line through an underground conduit to an on-site substation that provides distribution to the building. Supplied power is used to operate continuous air monitors (CAMs) and other electrical equipment in the buildings. Additionally, an uninterruptable power source has been installed to operate the CAMs in the event of a power outage. Electrical power is supplied to TA-50-1 by a 13.2-kV aerial transmission line extending along Pecos Drive.

#### G.2.5 TA-50 – Required Equipment [20 NMAC 4.1, Subpart V, §264.32]

Subpart V, §264.32 of 20 NMAC 4.1 [1-1-97] requires specific equipment to be in place in hazardous waste facilities. This equipment includes an internal communications or alarm system; a telephone or two-way radios; portable fire extinguishers, fire control equipment, and water of sufficient volume and pressure for fire suppression; spill control equipment; and decontamination equipment. The Contingency Plan, Attachment E of this TA-50 Part B, provides a summary list of the emergency equipment available and locations at TA-50. Figures G-1 through G-4 of this section depict TA-50 emergency equipment locations.

##### G.2.5.1 TA-50 – Audible Alarm Systems

Whenever waste is to be handled at any of the hazardous and mixed waste management areas at TA-50, all personnel involved will have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another individual in accordance with 20 NMAC 4.1, Subpart V, §264.34 [1-1-97]. In the event of an emergency, this communication equipment will allow personnel to contact the operating group management, the Emergency Management and Response Office, and/or the Central Alarm Station operator (Contingency Plan, Appendix E of the LANL General Part B).

Each building at TA-50 described in this TA-50 Part B is equipped with an audible alarm system to alert personnel to evacuate the area. The alarm systems may be activated by using fire alarm pull stations. Each building also has a public address system for announcing fires or evacuations and telephones with paging capabilities located throughout the buildings. 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 can also use these phones to summon assistance from local emergency response teams in case of emergency. Personnel may carry pagers, two-way radios, and/or cellular telephones so they can contact or be contacted by on-site and LANL emergency support personnel at all times.

##### G.2.5.2 TA-50 – Emergency Fire Equipment

TA-50-1, TA-50-37, and TA-50-69 are equipped with fire extinguishers and fire suppression systems. 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 (LACFD) through LANL's central alarm system (Contingency Plan, Appendix E of the LANL General Part B). The TA-50 sprinkler systems are supplied by water at adequate volume and pressure to suppress a fire.

Fire hydrants installed according to National Fire Protection Association (NFPA) standards are located near the northeast and southeast corners of TA-50-37; outside TA-50-1, approximately 15 ft from the southeast corner of Room 34B, which is adjacent to Room 36; and approximately 55 ft west of TA-50-69. Water is supplied to the fire hydrants by a municipal water system through 8-in. pipes at an adequate volume and pressure (i.e., 200 gal. per minute and 90 lbs per in.<sup>2</sup> static pressure) to supply a water hose in the event of a fire.

#### G.2.5.3 TA-50 – Spill Control Equipment

Chemical spill centers are located in TA-50 buildings at the locations depicted on Figures G-1 through G-4, and are summarized in the Contingency Plan, Attachment E of this TA-50 Part B. The spill centers contain spill control equipment, personal protective equipment (PPE), and sorbents. Personnel working in any hazardous or mixed waste management area have immediate access to these spill centers. 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.

The possibility of spills or releases at TA-50 are minimized by best management practices and appropriate operational methods. Secondary containment and other appropriate spill safeguards are incorporated in the design of the TA-50 CSAs and treatment units, as described in Section G.4. However, it is possible that a release of waste or other potentially hazardous materials could occur during TA-50 operations. The LANL Spill Prevention Control and Countermeasure(s) (SPCC) Plan describes appropriate response measures for a spill or release of hazardous materials. The TA-50 site-specific SPCC Implementation Plan provides specific details of the TA-50 spill prevention program. Spill containment and cleanup supplies are maintained in operational areas in each TA-50 facility. Safety equipment for use at TA-50 is stored at TA-54, approximately three miles east of TA-50.

#### G.2.5.4 TA-50 – Personal Protective Equipment [20 NMAC 4.1, Subpart V, §264.32]

To prevent undue personnel exposure, appropriate PPE will be worn by personnel working at TA-50 hazardous and mixed waste facilities. A radiological control technician (RCT) 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.

#### G.2.5.5 TA-50 – Personnel Decontamination Equipment

Personnel decontamination equipment available includes safety showers, eye washes, and standard showers located adjacent to change rooms at locations depicted on Figures G-1 through G-4. Material safety data sheets (MSDSs) located at all operations areas provide useful exposure information.

#### G.2.5.6 TA-50 – Testing and Maintenance of Equipment [20 NMAC 4.1, Subpart V, §264.33]

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

### G.3 UNIT-SPECIFIC CONTAINER MANAGEMENT PRACTICES

#### G.3.1 Unit-Specific Storage Configuration

Section 2.0, Tables 2-1 and 2-2 of this TA-50 Part B identify waste types and container types to be staged and stored in each TA-50 CSA and treatment unit, respectively. This section describes the unit-specific storage configuration of the wastes to be staged and stored.

##### G.3.1.1 TA-50-37 CSA

For waste stored in Rooms 112, 117, and 118, adequate space will be maintained between rows of containers to allow for inspection of all containers and the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of container storage. Drums and various small containers may be stacked to a maximum of two high. Larger containers (e.g., FRPs and SWBs) will not be stacked.

The physical dimensions of Room 115 limit container storage to four drums. Therefore, minimum aisle space between the containers is not required. Containers will not be stacked in Room 115.

#### G.3.1.2 RLWTF Storage Configuration

In the RLWTF CSA in TA-50-1, Room 59 all the stored waste will be generated from the cementation process; therefore, no incompatible or liquid wastes will be stored in this CSA. Adequate space will be maintained between containers to allow for inspection of all containers and adequate aisle space will be maintained between rows of containers. Drums and various small containers will be placed directly on the concrete floor and may be stacked to a maximum of two high.

#### G.3.1.3 Decontamination Operations Storage Configuration

Containers will not be stacked in the Decontamination Operations (Decon Ops) Facility CSA. Any waste stored in rooms of this CSA where operations are taking place will be positioned in an area that is away from worker activity or traffic 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 either of these rooms. Adequate space will be maintained around each pallet of waste containers to allow for inspection of all containers.

#### G.3.1.4 TA-50-114 Storage Configuration

Containers will be stored in the TA-50-114 CSA in a row along each wall and two rows down the center of the west side locker, stacked to a maximum of two levels with smaller containers (i.e., 5-gal. and smaller) on top. Containers will be placed directly on the grating that is elevated above the floor of the storage locker. The containers will be positioned so that adequate space will be maintained between the rows to allow for inspection of all containers.

#### G.3.1.5 TA-50-69 Waste Characterization, Reduction, and Repackaging Facility Indoor CSA Storage Configuration

Waste to be stored in the TA-50-69 WCRRF Indoor CSA will be positioned in an area away from any worker activity or traffic that is unrelated to the management of the waste itself. Palletized drums will be banded together when stored to eliminate the potential for any waste container to be knocked over while moving equipment is operated. Adequate space will be maintained around each storage pallet to allow for inspection of all containers. The volume and placement of waste

managed in the WCRRF Indoor CSA will not require aisle spacing. Containers will not be stacked in the WCRRF Indoor CSA.

Non-liquid-bearing waste will be stored in containers connected to the packaging/bagout module of the glove box enclosure. The maximum storage in this area at any given time is the equivalent of one 55-gal. drum, one 30-gal. drum, and one SWB. Potential liquid-bearing wastes may be stored inside the glove box enclosure. Waste containers stored inside the glove box will not require aisle spacing. Incompatible wastes will not be stored inside the glove box enclosure.

#### G.3.1.6 TA-50-69 WCRRF Outdoor CSA Storage Configuration

At the WCRRF Outdoor CSA, drums containing only non-liquid-bearing waste will be stacked to a maximum of two high. Potential liquid-bearing wastes will be stored on secondary containment. SWBs and B25 boxes will be stacked to a maximum of two high. Other containers may be stacked to a maximum of two high. Adequate space will be maintained between rows of container types or containment pallets.

Container storage rows in transportainers are oriented north and south. The physical dimensions of the WCRRF Outdoor CSA and its alignment relative to TA-50-69 allow for waste to be loaded and unloaded along the north side of each transportainer. Waste will be stored inside each transportainer in one of two configurations. Non-liquid-bearing waste will be stored on dollies in rows along both walls of the transportainer, with a main aisle running down the center. Containers stored on dollies will be rotated during routine inspections so that the entire drum can be inspected. The physical dimensions of the pallets and transportainer width precludes a center aisle configuration. Pallets will be placed against one wall of the transportainer, with a main aisle running along the opposite wall. Adequate space is maintained between the pallets and between the pallets and the transportainer wall to allow for visual inspection. To facilitate container movement, storage, and inspection, all drums and irregular containers holding wastes that do not contain free liquids will be stored on either wooden pallets or dollies.

### G.3.2 Unit-Specific Movement of Containers

#### G.3.2.1 TA-50-37 CSA

Flatbed trucks or trailers will be used to transport containers to the TA-50-37 CSA for storage and processing. The packaged wastes will be unloaded onto the loading dock, onto the ground, or into

the egress bay. A lift truck equipped with a drum grappler will be used to unload drums from the delivery truck one at a time. The drum grapplers are equipped to prevent drums from being damaged. Metal SWBs and other large containers will be handled with a forklift. Once characterization activities are completed, the waste containers will be repackaged, if necessary, and loaded from staging areas onto trucks for shipment to other on-site waste management facilities.

The method used to move drums during TA-50-37 waste characterization operations will be based on the type of structure on which the drum is located. Drums on dollies will be moved manually. Drums located on elevation pallets or devices will be moved using pallet handlers or lift trucks equipped with drum grapplers. Drums containing liquids will be set on dollies only for placement at process equipment stations. Lift trucks will also be used to return drums from dollies to elevation pallets or devices. Forklifts will be used to move SWBs and FRP boxes in Room 112. The overhead crane may be used instead of lift trucks for moving heavy or large containers within Room 114. The use of proper handling equipment, appropriate to a container's size and weight, will help to prevent hazards while moving containers within the CSA. Damaged containers (e.g., severely corroded drums) will be repaired or overpacked, or the wastes repackaged in new containers before being stored in the CSA. Repackaging personnel will ensure that new containers are properly labeled.

#### G.3.2.2 TA-50-1 RLWTF CSA

After treatment operations in Room 60A, drums of solidified waste will be stored in TA-50-1, Room 59. The drums will be moved from Room 60A to Room 59 with an overhead crane and/or a drum dolly. Palletized drums in the Room 59 CSA will be handled with a forklift equipped with tines. Individual waste drums will be manipulated with a drum-grapple attachment on the forklift. Small containers may be handled manually or with a dolly. An overhead hoist may be used for moving heavy or large containers within Room 59.

#### G.3.2.3 TA-50-1 Decon Ops Facility

Flatbed trucks or trailers will be used to transport containers to TA-50-1 for staging and processing. Cranes and/or forklifts equipped with tines will be used to move FRP crates (containing gloveboxes) into Room 36. A bridge crane may be used to move waste containers within Room 36. A hoist may be used to move containers in Room 38/38A. Dollies or forklifts

equipped with a drum-grapple attachment will be used to move drums or other containers into, within, and out of Rooms 35, 36, and 38/38A. Small containers may be handled manually or with a dolly.

#### G.3.2.4 TA-50-114 Container Storage Area

Drum dollies or forklifts will be used to move drums or other containers out of the RLWTF and Decon Ops Facility to TA-50-114 for storage. Individual waste drums will be manipulated with a drum-grapple attachment on the forklift. Small containers may be handled manually or with a dolly.

#### G.3.2.5 TA-50-69 WCRRF

Flatbed trucks or trailers will be used to transport containers to TA-50-69 for storage and processing. A forklift will be used to move containers at the WCRRF Outdoor CSA, from outside the building into the WCRRF airlock, and then within the WCRRF Indoor CSA. FRP boxes and palletized drums will be handled with a forklift equipped with tines. Individual drums of waste will be manipulated with a drum-grapple attachment on the forklift. Small containers may be handled manually or with a dolly. Inside TA-50-69, two cranes are available to move heavy objects. Load limits are restricted to the rated capacity of these cranes for safe operation.

### G.4 UNIT-SPECIFIC CONTAINMENT AND OVERFLOW CONTROLS

#### G.4.1 TA-50-37 CSA

This section describes information related to containment systems specific to each room within the TA-50-37 CSA.

##### G.4.1.1 Room 112

The floor of Room 112 is concrete and painted with epoxy paint. There are floor trenches, drains, and recessed areas in Room 112. The trenches drain toward a recess in the northwest corner of the room. Additional smaller recesses, located next to the floor drains, allow access to the drains, which are connected to a tank located within the recess in the northwest corner of Room 112. Pumps are located in the two largest recessed areas in the room. Fire-suppression liquids would collect in the trenches, drains, and recessed areas. Liquids that may collect in the recessed areas will be pumped to the floor drains and then into the sump tank located in the recessed area in the northwest corner of the room. Collected liquids will be held in the tank until they are sampled and analyzed, in accordance with the LANL General Part B, Appendix E, Contingency Plan.

#### G.4.1.2 Room 115

The floor of Room 115 is concrete and painted with epoxy paint. Six-in.-high concrete berms are located at the doorways to Room 115 to provide secondary containment. Secondary containment is provided by the concrete berms in the room. The secondary containment capacity of the room is approximately 700 gal. Collected liquids will be held in DOT-approved containers until they are sampled and analyzed in accordance with the LANL General Part B, Appendix E, Contingency Plan.

#### G.4.1.3 Room 117

The epoxy-painted concrete floor of Room 117 is recessed approximately 3 ft below a steel grate surface. The recessed floor area, which provides secondary containment, is divided into two areas, one approximately twice the size of the other. In addition, each recessed floor area is sloped toward its own sump, which is approximately 336 gal. and further recessed. Each sump area contains a pump and piping that connects the sump to its own standpipe. The pumps and standpipes may be used to remove liquids that may accumulate in the sump areas. Collected liquids will be held in DOT-approved containers for subsequent sampling and analysis in accordance with the LANL General Part B, Appendix E, Contingency Plan. The secondary containment areas are constructed of epoxy-painted concrete. The epoxy paint is compatible with the wastes to be stored.

In Room 117, all containers holding suspected or known free liquids will be stored on the steel grate floor over recessed secondary containment.

#### G.4.1.4 Room 118

The concrete floor of Room 118 is epoxy-painted and slopes toward a sump which is approximately 400 gal. The sump, which is covered by a steel grate, is located in the center of the room. In the event of a spill, the steel grate will be removed to facilitate clean up. The sump contains a pump connected to a standpipe used to remove any liquids that may accumulate in the sump. Collected liquids will be held in DOT-approved containers until they are sampled and analyzed in accordance with the LANL General Part B, Appendix E, Contingency Plan.

#### G.4.2 RLWTF CSA

Because only solid waste will be stored in Room 59, secondary containment requirements are not applicable to the RLWTF CSA.

#### G.4.3 Decon Ops Facility CSA

This section describes information related to containment systems specific to each room within the Decon Ops Facility CSA.

##### G.4.3.1 Room 35

Because of the small volume and placement of waste in Room 35, aisle spacing requirements do not apply. Up to three containers of non-liquid-bearing waste may be stored in containers that are connected to the Characterization Glove Box. Up to three containers of either non-liquid-bearing or potential liquid-bearing waste may be stored in containers that are connected to the Drum Coring Glove Box. The walls of Room 35 are painted concrete block. There are no floor drains in Room 35 and there is no noticeable slope to the floor. The floor is concrete overlain with waxed linoleum tile. In the past, Room 35 has been used for routine decontamination of miscellaneous equipment. Therefore, permanent equipment and fixtures not associated with the CSA are located in the room and include laboratory hoods, cabinets, and a wire security cage.

##### G.4.3.2 Room 36

In Room 36, the lead removal process will occur in approximately the center of the room, but away from worker traffic, and only one glove box will be processed in the room at any one time. During glove box processing, no other container types will be stored in Room 36. When containers are stored in Room 36, adequate aisle space will be maintained around each pallet to allow for inspection of all containers.

The walls of Room 36 are painted concrete block and the concrete floor is epoxy painted. The floor slopes gently toward two recessed tanks designed for cadaver storage and a central floor drain, both of which are connected to the RLWTF. During glove box processing operations the two recessed tanks and central floor drain are plugged. The floor level of Room 36 is slightly higher than Rooms 35 and 38/38A, and there is a slight ramp up to the threshold of the door separating Room 36 from Rooms 38/38A. Room 36 was originally designed as a cadaver room to decontaminate casualties of nuclear criticality accidents. Therefore, permanent equipment and

fixtures not associated with waste storage are located in the room, and include two recessed cadaver tanks and an autopsy table. In 1990, a permanent glove box was installed for the decontamination of radioactively contaminated precious metals.

Room 36 is designated to store only lead (EPA Hazardous Waste Number D008) containerized in either drums or FRP boxes or in the form of lead-lined glove boxes of various sizes. Containers of non-RCRA-regulated, low-level waste will also be stored in this room. Before lead removal, the glove boxes may be stored in FRP boxes. Candidate glove boxes for storage may be mixed TRU, mixed low-level, or hazardous waste. Only nonliquid waste with the EPA Hazardous Waste Number D008 will be stored in Room 36; therefore, no provisions are necessary for storing incompatible wastes in this room.

#### G.4.3.3 Room 38/38A

For containers stored in Room 38/38A, adequate aisle space between rows of wooden pallets or secondary containment pallets will be maintained at all times. Room 38/38A will remain locked at all times, except times when waste is being added or removed. The floor level of Room 38/38A is slightly lower than Room 36, and there is a slight upward ramp to the threshold of the door separating the two rooms. The walls of Room 38/38A are cast-in-place concrete and painted. The concrete floor is epoxy painted. A blind sump measuring 33 in. by 39 in. is located roughly in the center of Room 38. The sump has been sealed, locked, and epoxy painted. There is no noticeable slope in Room 38/38A. Room 38/38A was originally designed as a hot cell to decontaminate highly contaminated equipment using manipulator arms. Equipment and other items were placed on a cart and isolated in Room 38A where the decontamination took place. Permanent structures and equipment located in Room 38/38A not associated with waste storage include iron rails used to transport the equipment cart, manipulator arms, an overhead crane, and permanent shelving.

Any moisture potentially conveyed into the room by the equipment cart rails will be contained within the blind sump and removed upon discovery when routine inspections are conducted. Collected liquids will be held in DOT-approved containers until they are sampled and analyzed in accordance with the LANL General Part B, Appendix E, Contingency Plan.

#### G.4.4 TA-50-114 CSA

In the TA-50-114 CSA, containers will be stored on an elevated grated floor above a divided secondary containment. The elevated grated floor provides secondary containment in case of spills and prevents contact between the containers and any standing liquids from spills. The secondary containment capacity is sufficient to contain 10% of the volume of containers or the volume of the largest container, whichever is greater. Collected liquids will be held in DOT-approved containers until they are sampled and analyzed in accordance with the LANL General Part B, Appendix E, Contingency Plan. Incompatible wastes will be segregated above different sections of the secondary containment, which will ensure that commingling would not occur in the event that a container is breached.

#### G.4.5 TA-50-69 WCRRF Indoor CSA

This section describes containment systems specific to each room within the TA-50-69 WCRRF Indoor CSA. Rooms 102 and 103 of TA-50-69 historically have been used to store contaminated glove boxes and other mixed wastes associated with WCRRF operations. There is no physical barrier between these two rooms. A steel mezzanine added to the western third of the main process room is used for storage of materials and equipment. The mezzanine is not part of the WCRRF Indoor CSA.

##### G.4.5.1 Room 102

A large glove box enclosure is inside the main process room for size reduction of radioactively contaminated metallic items. The glove box enclosure measures 15 ft wide, 30 ft long, and 10 ft high and is constructed of type 304 stainless steel with a high-polish finish. It was originally assembled in four separate modules: airlock, disassembly, cutting, and packaging/bagout. The modules are bolted together and seal welded. Although assembled as four modules, the structure is a single continuous volume, entirely self-contained, and meets all the requirements for containment of free liquids. The glove box enclosure was leak-tested before use. A floor drain is located near the glove box enclosure and is connected directly to the RLWTF. As a precaution, the floor drain grate will be replaced by a metal plate and rubber gasket whenever waste containers that are known or suspected to contain free liquids are managed at the WCRRF Indoor CSA. Drums holding suspect or known liquids will be stored on secondary containment pallets, or inside the glove box enclosure. The secondary containment pallets provide secondary containment in case of spills and prevents contact between the containers and any standing liquid. Collected liquids

will be held in DOT-approved containers until they are sampled and analyzed in accordance with the LANL General Part B, Appendix E, Contingency Plan. To facilitate container movement, storage, and inspection, all drums and irregular containers that do not contain free liquids will be stored on either wooden pallets or dollies.

Additional controls are in place in the glove box enclosure. The glove box enclosure is airtight and provides a containment system that meets the requirements of 20 NMAC 4.1, Subpart V, §264.175(b)[1-1-97]. The glove box enclosure is designed with sufficient secondary containment capacity to contain at least 10 percent of the volume of the potential liquid-bearing containers, or the volume of the largest potential liquid-bearing container, whichever is greater. Containers inside the glove box enclosure will be elevated to prevent contact with potentially accumulated liquid. Any accumulated liquid in the glove box enclosure will be removed as soon as possible after discovery to prevent overflow. Collected liquids will be held in DOT-approved containers until they are sampled and analyzed in accordance with the LANL General Part B, Appendix E, Contingency Plan. The design and operation of the secondary containment pallets and glove box enclosure meet the requirements of 20 NMAC 4.1, Subpart V, §264.175(b)[1-1-97], and Subpart IX, §§270.15(a)(1) through (4)[1-1-97].

#### G.4.5.2 Room 103

A floor drain is located in the eastern part of Room 103. The drain is plumbed directly to the RLWTF. As a precaution, the floor drain grate will be replaced by a metal plate and rubber gasket whenever waste containers that are known or suspected to contain free liquids are managed at the WCRRF Indoor CSA. In the event of a spill, the collected liquids will be held in DOT-approved containers until they are sampled and analyzed in accordance with the LANL General Part B, Appendix E, Contingency Plan. Equipment that is located inside Room 103, but not associated with the CSA, includes a chemical decontamination fume hood, continuous feed welding system, and Heliarc welding system.

#### G.4.6 TA-50-69 WCRRF Outdoor CSA

Whenever incompatible wastes are stored in the WCRRF Outdoor CSA, separate secondary containment pallets are used to keep the wastes segregated to ensure that commingling does not occur in the event that a container is breached.

## G.5 UNIT-SPECIFIC PROCEDURES TO PREVENT HAZARDS

### G.5.1 Fire Protection Systems

#### TA-50-37 CSA

TA-50-37, Rooms 112, 114, and 118 have wet-pipe sprinkler systems that are equipped with fusible-link heads that are heat activated at 100°C (212°F). The sprinkler flows are monitored to automatically initiate a fire alarm. TA-50-37, Room 115 has two ultraviolet fire detection sensors. Room 117 is protected by a dry-pipe, open-sprinkler-head, deluge fire suppression system.

#### TA-50-1 CSAs

TA-50-1 has a single-zone, heat-activated sprinkler system for the entire building (including the RLWTF and Decon Ops Facility), except for the computer room (Room 114). Room 114 is equipped with a halon system that is activated by heat detectors rated at 60°C (140°F). At all times, all manual pull stations and the heat-activated sprinkler system are connected to the LACFD through LANL's central alarm system (Contingency Plan, Attachment E of this TA-50 Part B).

#### TA-50-114 CSA

Although the TA-50-114 CSA storage locker is not equipped with an automatic sprinkler system, a fire extinguisher and fire alarm pull station are located within 50 ft of the CSA outside TA-50-1, Room 24. A fire hydrant is located within 20 ft of TA-50-114.

#### TA-50-69 WCRRF Indoor CSA

TA-50-69 has an automatic wet-pipe sprinkler system in the main building and in the large glove box enclosure. The sprinkler system is heat-activated at 100°C (212°F). Although the TA-50-69 Outdoor CSA transportainers and weather protective structures are not equipped with automatic sprinkler systems, one fire extinguisher is located within 20 ft of the CSA and personnel may use the fire alarm pull station in the WCRRF main building in the event of a fire.

### G.5.2 Personal Protective Equipment

Personnel working in TA-50 CSAs will wear the PPE described in this section. Attachment I describes the PPE to be worn by personnel working in the treatment units.

### TA-50-37 CSA

At the TA-50-37 CSA, workers will wear protective work uniforms, steel-toed shoes, gloves, and dosimeter badges when containers of waste are loaded or unloaded at the CSAs. Hardhats will be worn while heavy equipment is operated. Operators will wear anti-C coveralls, surgical gloves, booties, and respirators when unpackaging a waste item, cutting open a waste box, and during large bag-out efforts. Workers will wear surgical gloves, laboratory coats, booties, and dosimeter badges while working through the glove box enclosure gloves. All visitors will wear anti-C lab coats, dosimeter badges, safety glasses as described, and booties. At TA-50-37, PPE for daily use is located in the change room and near the personnel access door. Examples of PPE maintained are as follows: anti-C coveralls, lab coats, surgical gloves, face shields, booties, and socks.

### TA-50-1 CSAs

While working with waste containers in the TA-50-1 Room 59 CSA, coveralls, gloves, and steel-toed shoes will be worn. While working with waste containers in TA-50-1 Room 35, coveralls, gloves, and steel-toed shoes will be worn. Respirators may also be worn in Room 35 while activities are being conducted at the waste characterization glove box. While working with waste containers in TA-50-1 Room 36, coveralls, respirators, steel-toed shoes, gloves, and booties will be worn. Labcoats and steel-toed shoes are required while working in TA-50-1, Room 38/38A.

PPE for daily use is located at the Decon Ops Facility and the RLWTF. Additional PPE is maintained in the PPE shed TA-50-105 and in TA-50-1, Rooms 110 and 111. Examples of PPE maintained are as follows: Tyvek/Saranex, paper, and cotton coveralls; lab coats; various types of disposable gloves; face shields; booties and socks; skull caps; and tee shirts. Full face air purifying respirators and air purifying cartridges are maintained in Room 115.

### TA-50-114 CSA

While working in TA-50-114, lab coats and steel-toed shoes will be worn.

### TA-50-69 WCRRF CSAs

At TA-50-69 CSAs, workers will wear protective work uniforms, steel-toed shoes, gloves, and dosimeter badges when containers are loaded or unloaded at the CSAs. Hardhats will be worn while heavy equipment is operated. Operators will wear anti-C coveralls, surgical gloves, booties,

and respirators when unpackaging a waste item, cutting open a waste box, and during large bag-out efforts. Workers will wear surgical gloves, laboratory coats, booties, and dosimeter badges while working through the glove box enclosure gloves. Workers inside the glove box enclosure airlock will wear anti-C coveralls, surgical gloves, booties, dosimeter badges, and respirators. Workers inside the glove box cutting enclosure will wear at least two layers of anti-C coveralls, surgical gloves, booties, dosimeter badges, and air-purifying respirators with supplied breathing air. All visitors will wear anti-C lab coats, dosimeter badges, safety glasses, and booties.

## G.6 REFERENCES

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

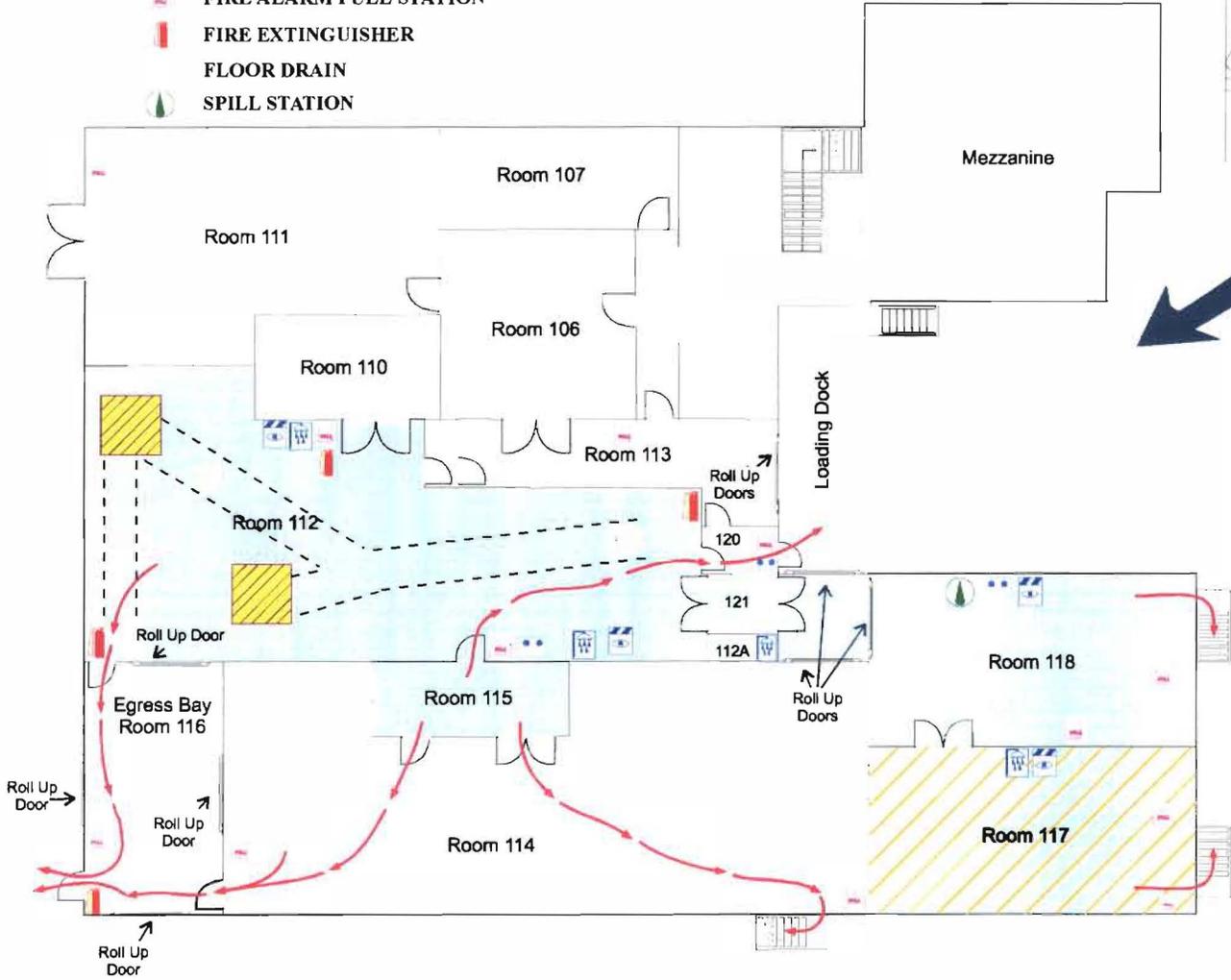
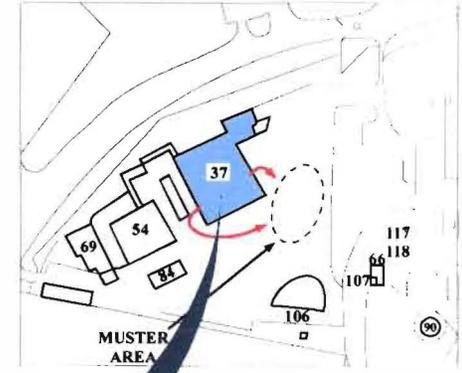
LANL. 1993. *Storm Water Pollution Prevention Plan for Technical Area 50 Waste Treatment Facilities*. Los Alamos, New Mexico, Los Alamos National Laboratory.

LANL. 1998a. *Los Alamos National Laboratory General Part A Permit Application*. Rev. 0.0, April 1998. Los Alamos, New Mexico, Los Alamos National Laboratory.

LANL. 1998b. *Los Alamos National Laboratory General Part B Permit Application*. Los Alamos, New Mexico, Los Alamos National Laboratory.

Purtymun and Johansen. 1974. "General Geohydrology of the Pajarito Plateau." New Mexico Geological Society Guidebook, 25<sup>th</sup> Field Conference, Central Northern New Mexico.

-  LIQUID EMERGENCY BASIN
-  SAFETY SHOWER
-  EYE WASH
-  PHONE WITH PA SYSTEM (EXCEPT WHERE NOTED)
-  FIRE ALARM PULL STATION
-  FIRE EXTINGUISHER
-  FLOOR DRAIN
-  SPILL STATION
-  COVERED DRAINAGE TRENCH
-  CONTAINER STORAGE AREA
-  TREATMENT UNIT



**Figure G-1. TA-50-37 Container Storage Area and Treatment Unit Evacuation Route and Emergency Equipment**

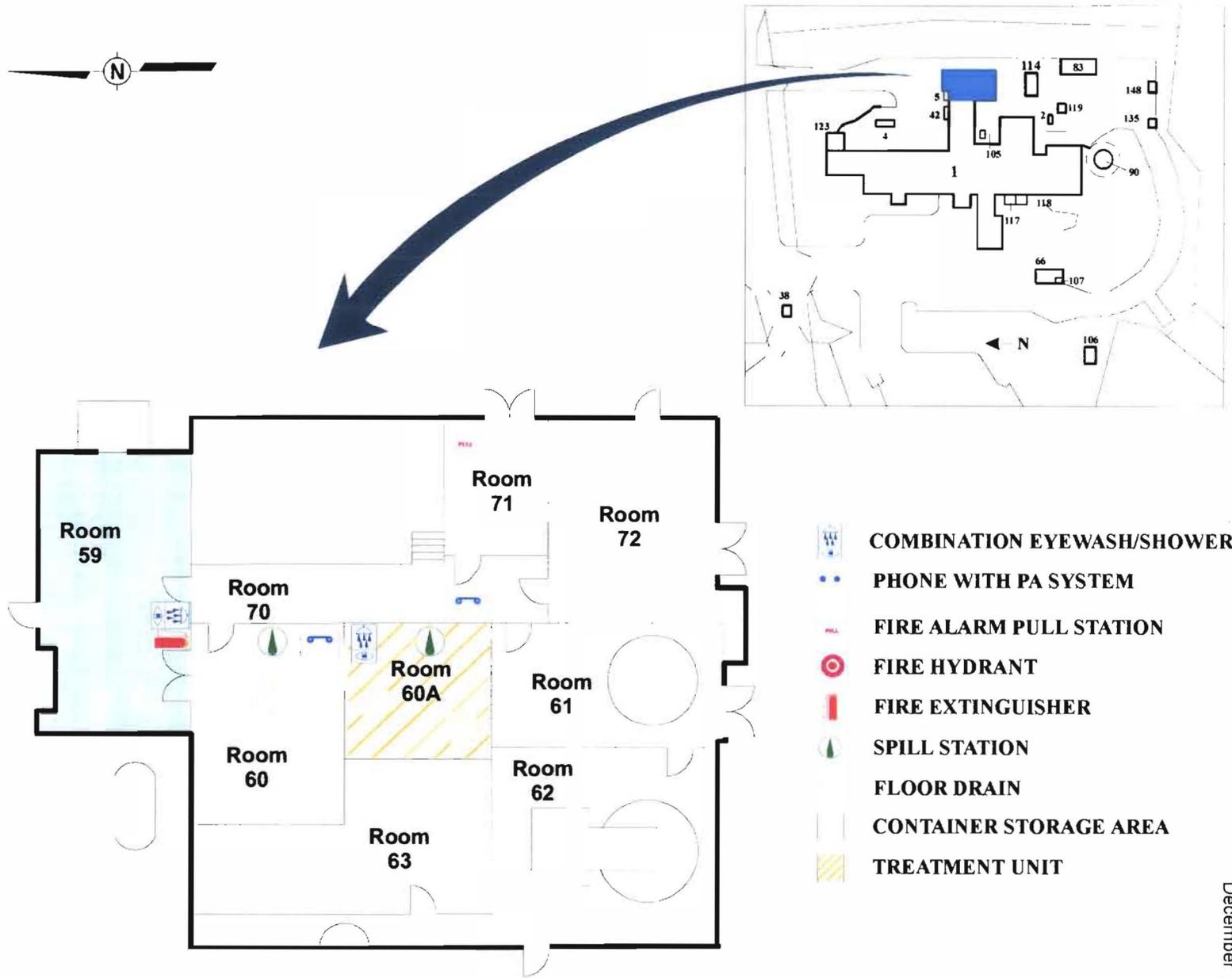
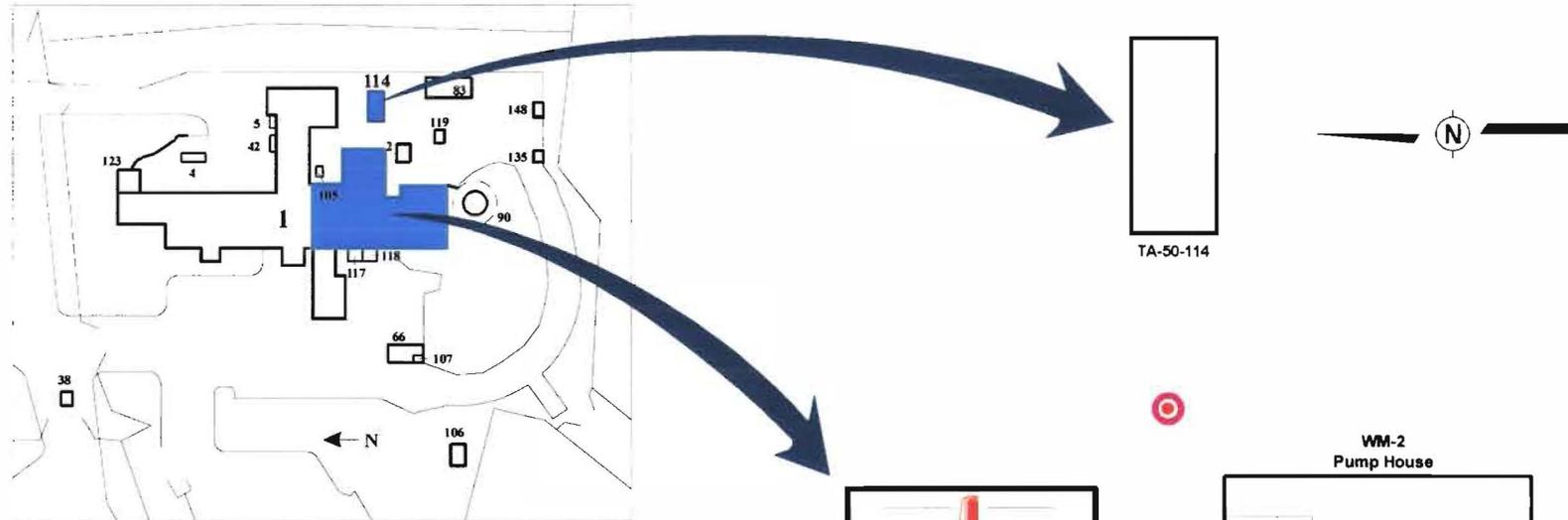
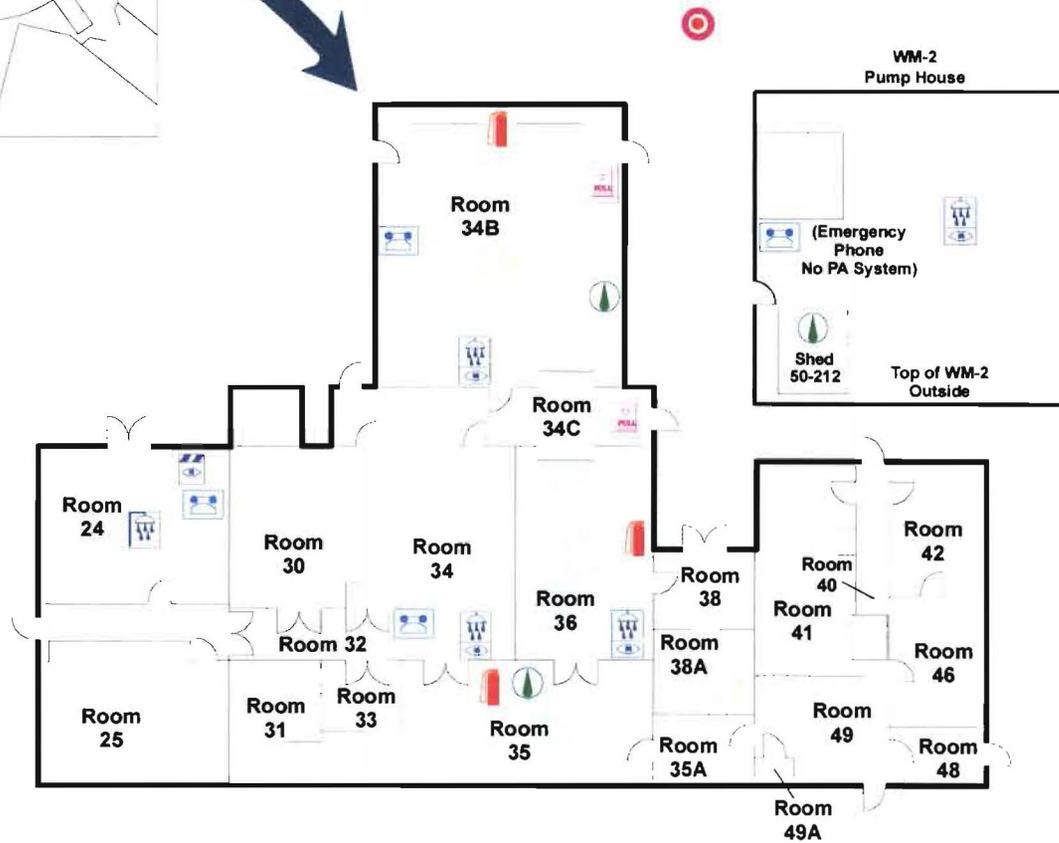


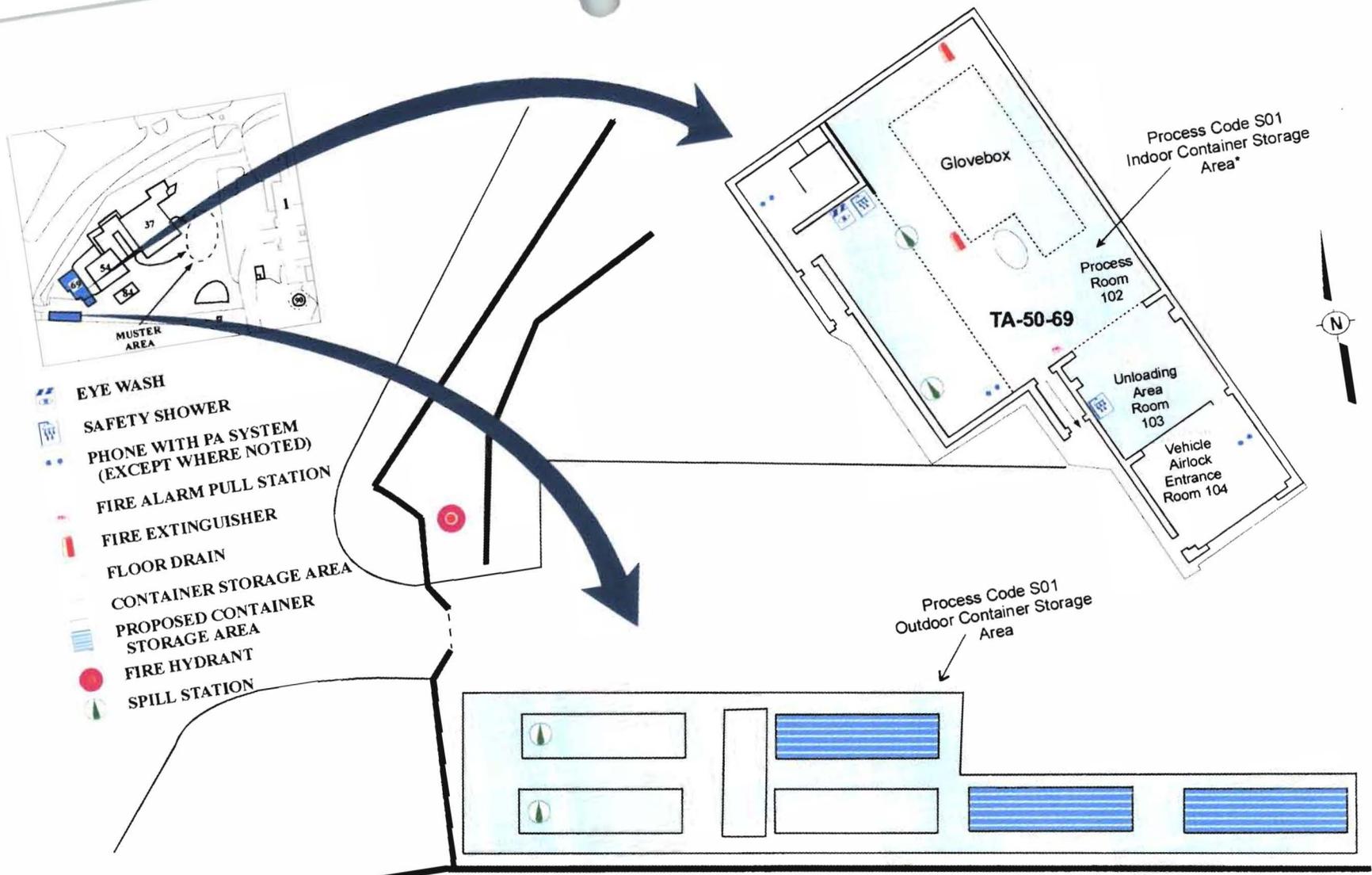
Figure G-2. TA-50-1 RLWTF Container Storage Area and Treatment Unit Emergency Equipment



-  EYE WASH
-  SAFETY SHOWER
-  COMBINATION EYEWASH/SHOWER
-  PHONE WITH PA SYSTEM
-  FIRE ALARM PULL STATION
-  FIRE HYDRANT
-  FIRE EXTINGUISHER
-  SPILL STATION
-  FLOOR DRAIN
-  CONTAINER STORAGE AREA



**Figure G-3. TA-50-1 Decontamination Operations Facility and TA-50-114 Container Storage Areas Emergency Equipment**



\*Note: Container Storage Area in Building 69 does not include mezzanine.

Figure G-4. WCCRF TA-50-69, Indoor and Outdoor Container Storage Areas and Emergency Equipment