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TA 50

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

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Mr. Carl Will, Permits Project Leader
RCRA Permits Management Program
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
2044-A Galisteo Street
P.O. Box 26110
Santa Fe, New Mexico 87502-6110

Dear Mr. Will:

Subject: Submission of the Revised TA-50 Part B Permit Application

The purpose of this letter is to submit to the Hazardous and Radioactive Materials Bureau (HRMB) Revision 2.0 of the Technical Area (TA) 50 Part B Permit Application. Please find enclosed the appropriate number of copies (3) of the revision along with a redline/strikeout version. The latter provides a trail of changes that took place in the application as a result of the December 2000 Permit Working Group meeting for TA-50. This approach was discussed at that time and will hopefully shorten the review time needed by HRMB to make a determination of completeness. That meeting focused on the questions posed by Steve Jetter of your staff resulting from his review of Revision 1 of this document.

The redline/strikeout version also documents the removal of the treatment unit proposed at TA-50-37 and the removal of the cementation process at TA-50-1. The former (a process that was never permitted nor had interim status) resulted from a change in mission. The latter was determined to be generator treatment not requiring a permit. The cementation process was transformed into a generator treatment operation and HRMB was notified via letter (November 28, 2000) of this change.

There were also a number of deletions of storage locations. These were removed as a result of changes in mission and funding. The locations were all located at TA-50-1. Rooms 34 B and C were removed from the application. These changes were transmitted to HRMB via a January 14, 2000 letter as replacement sections. These rooms were never permitted nor did they have interim status.

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Rooms 35, 36, 38 and 38 A will be withdrawn. These rooms were permitted but never used. A letter with the appropriate certifications (stating those rooms were never used for the storage of hazardous or mixed waste) is being prepared. This letter is in the form of a Class 1 permit modification request.

If you should have any questions or concerns regarding this submittal, please feel free to contact either Gene Turner of my staff at 667-5794 or Jack Ellvinger of LANL ESH-19 at 667-0633.

Sincerely,

David A. Gurulé, P.E.
Area Manager

LAAME:3GT-003

Enclosure

cc:
See page 3

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

Revision 2.0

LA-UR-01-691

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

December 2000

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A	Facility Description
B	Waste Analysis Plan
C	Inspection Plan
D	Personnel Training Plan
E	Contingency Plan
F	Closure Plan
G	Container Management
H	Authorized Waste

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LIST OF ABBREVIATIONS/ACRONYMS

BWTU	Batch Waste Treatment Unit
CAI	Controlled-Air Incinerator
CFR	*Code of Federal Regulations*
CSA	container storage area
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
FRP	fiberglass-reinforced plywood
LANL	Los Alamos National Laboratory
MDA	Material Disposal Area
NMAC	*New Mexico Administrative Code*, Title 20, Chapter 4, Part 1
NMED	New Mexico Environment Department
RAMROD	Radioactive Materials Research, Operations, and Demonstration
RCRA	Resource Conservation and Recovery Act
RLWTF	Radioactive Liquid Waste Treatment Facility
SWB	standard waste box
SWMU	solid waste management unit
TA	Technical Area
TRU	transuranic
UST	underground storage tank
WAP	waste analysis plan
WCRRF	Waste Characterization, Reduction, and Repackaging Facility
WIPP	Waste Isolation Pilot Plant

1.0 INTRODUCTION

This technical area (TA)-specific Part B Permit Application for TA-50, hereinafter referred to as the TA-50 Part B, has been prepared for submittal to the New Mexico Environment Department (NMED) to meet certain requirements of the New Mexico Hazardous Waste Act and implementing regulations, specifically the *New Mexico Administrative Code*, Title 20, Chapter 4, Part 1, revised June 14, 2000, incorporating the *Code of Federal Regulations*, Title 40 (40 CFR), hereinafter referred to as NMAC §§260 through 266, §268, and §270 [6-14-00].

This TA-50 Part B contains only the information specific to the waste management units at TA-50 at Los Alamos National Laboratory (LANL). General information applicable to all waste management units at LANL is provided in the *Los Alamos National Laboratory General Part B Permit Application* (LANL 1998b), hereinafter referred to as the LANL General Part B. The LANL General Part B is referenced in this TA-50 Part B, as necessary, to demonstrate that, together, all required elements are addressed.

This TA-50 Part B addresses container storage areas (CSAs) located at TA-50 that support waste management operations at the Waste Characterization, Reduction, and Repackaging Facility (WCRRF), the Radioactive Materials Research, Operations, and Demonstration (RAMROD) Facility at TA-50-37, and the Radioactive Liquid Waste Treatment Facility (RLWTF). These CSAs are included in the *Los Alamos National Laboratory General Part A Permit Application* (LANL 1998a), which addresses all LANL hazardous and mixed waste management operations. These waste management units are being designated for the storage and treatment of mixed low-level, mixed transuranic (TRU), low-level, TRU, and/or hazardous wastes.

This TA-50 Part B addresses the following hazardous and mixed waste management units at TA-50:

- TA-50-37 CSA
- TA-50-1, Room 59 RLWTF CSA
- TA-50-114 CSA
- TA-50-69 WCRRF Indoor CSA
- TA-50-69 WCRRF Outdoor CSA

In the context of this TA-50 Part B, the term *facility* is used only to denote names of operations and does not imply the regulatory meaning of *facility,* as defined in NMAC §260.10 [6-14-00]. However, the LANL facility as a whole does meet the regulatory definition of a facility. Any references to LANL personnel include University of California and/or subcontracted personnel.

Table 1-1 provides a list of regulatory references and the corresponding section locations in this TA-50 Part B and the LANL General Part B.

Table 1-1. Regulatory References and Corresponding Permit Application Location

NMAC Regulatory Reference	Description of Requirement	Location in this TA-50 Part B	Location in LANL General Part B
§270.10(a)	Permit Application	Entire Document	Entire Document
§270.10(g)(1)	Updating Permit Applications	1.0	NA[a]
§270.11(a)	Signatories	5.0	5.0
§270.11(d)	Certification	5.0	5.0
§270.13	Contents of Part A Permit Application	NA	Part A
§270.13(a)	Activities Conducted	NA	Part A
§270.13(b)	Name, Mailing Address, and Location	NA	Part A
§270.13(c)	Principal Standard Industrial Classification (SIC) Codes	NA	Part A
§270.13(d)	Operator Information	NA	Part A
§270.13(e)	Owner Information	NA	Part A
§270.13(f)	Whether Located on Indian Lands	NA	Part A
§270.13(g)	New or Existing Facility	NA	Part A
§270.13(h)	Scale Drawing and Photographs	NA	Part A
§270.13(i)	Description of Waste Processes	NA	Part A
§270.13(j)	Specification and Quantity of Hazardous Waste	NA	Part A
§270.13(k)	List of Permits and Construction Approvals	NA	Part A
§270.13(l)	Topographic Map	NA	Part A
§270.13(m)	Description of Nature of Business	NA	Part A
§270.13(n)	Hazardous Debris	NA	Part A
§270.14(b)(1)	General Facility Description	Attachment A	Appendix A
§264.13(a) §270.14(b)(2)	Chemical and Physical Analyses	Attachment B	Appendix B
§264.13 §270.14(b)(3)	Waste Analysis Plan	Attachment B	Appendix B
§§264.14(a)-(c) §270.14(b)(4)	Security Procedures and Equipment	Attachment A	NA
§§264.15(a)-(d) §270.14(b)(5)	General Inspection Requirements	Attachment C	Appendix C

Table 1-1. Regulatory References and Corresponding Permit Application Location (Continued)

NMAC Regulatory Reference	Description of Requirement	Location in this TA-50 Part B	Location in LANL General Part B
§264.1088	Inspection and Monitoring for Units Subject to Subpart CC Requirements	Attachments C, G	NA
§264, Subpart C §270.14(b)(6)	Request for Waiver from Preparedness and Prevention Requirements of Subpart C	NA	NA
§264, Subpart D §270.14(b)(7)	Contingency Plan	Attachment E	Appendix E
§264.51	Contingency Plan Design and Implementation	NA	Appendix E
§§264.52(a), (c)-(f)	Contingency Plan Content	NA	Appendix E
§§264.52(e), (f)	Contingency Plan Content	Attachment E	NA
§264.53	Contingency Plan Copies	Attachment E	Appendix E
§264.54	Contingency Plan Amendment	Attachment E	Appendix E
§264.55	Emergency Coordinator	Attachment E	Appendix E
§264.56	Emergency Procedures	Attachment E	Appendix E
§264, Subpart C §270.14(b)(8)	Preparedness and Prevention	Attachment G	2.0
§264.31	Design and Operation of Facility	Attachment G	2.0
§264.32	Required Equipment	Attachment G	2.0
§264.33	Testing and Maintenance of Equipment	Attachment G	2.0
§264.34	Communications/Alarm System	Attachment G	2.0
§264.35	Required Aisle Space	Attachment G	NA
§264.37	Arrangements with Local Authorities	NA	5.0/7.0
§§264.17(a)-(c) §270.14(b)(9)	Prevention of Accidental Ignition or Reaction	2.0/ Attachment G	2.0
§270.14(b)(10)	Traffic Pattern, Volume, and Controls	Attachment A	Appendix A
§264.18(a) §270.14(b)(11)	Facility Location Information	Attachment A	Appendix A
§264.18(a) §§270.14(b)(11)(i), (ii)	Seismic Standard	Attachment A	Appendix A
§264.18(b) §§270.14(b)(11)(iii)-(v)	Floodplain Standard	Attachment A	Appendix A
§264.18(c)	Other Location Standards	NA	NA
§§264.16(a)-(e) §270.14(b)(12)	Personnel Training	Attachment D	Appendix D
§264, Subpart G §270.14(b)(13)	Closure and Post-Closure Plans	Attachment F	Appendix F

Table 1-1. Regulatory References and Corresponding Permit Application Location (Continued)

NMAC Regulatory Reference	Description of Requirement	Location in this TA-50 Part B	Location in LANL General Part B
§264.111	Closure Performance Standard	Attachment F	Appendix F
§§264.112(a), (b)	Written Content of Closure Plan	Attachment F	Appendix F
§264.112(c)	Amendment of Closure Plan	Attachment F	Appendix F
§264.112(d)	Notification of Partial and Final Closure	Attachment F	Appendix F
§264.112(e)	Removal of Wastes and Decontamination/Dismantling of Equipment	Attachment F	Appendix F
§264.113	Time Allowed for Closure	Attachment F	Appendix F
§264.114	Disposal/Decontamination	Attachment F	NA
§264.115	Certification of Closure	NA	Appendix F
§264.116	Survey Plat	NA	Appendix F
§264.117	Post-Closure Care and Use of Property	NA	Appendix F
§264.118	Post-Closure Plan; Amendment of Plan	NA	Appendix F[b]
§264.119	Post-Closure Notices	Attachment F	Appendix F
§264.120	Certification of Post-Closure	Attachment F	Appendix F
§264.119 §270.14(b)(14)	Post-Closure Notices	Attachment F	Appendix F
§§264.142 & 143 §270.14(b)(15)	Closure Cost Estimate	Attachment F	Appendix F
§264.144 §270.14(b)(16)	Post-Closure Cost Estimate	Attachment F	Appendix F
§264.147 §270.14(b)(17)	Liability Insurance	Attachment F	Appendix F
§§264.149 & 150 §270.14(b)(18)	Proof of Financial Coverage	Attachment F	Appendix F
§§270.14(b)(19)(i), (vi), (vii), (x)	Topographic Maps	Attachment A	Appendix A[b]
§264.18(b) §270.14(b)(19)(ii)	100-Year Floodplain	Attachment A	Appendix A
§270.14(b)(19)(iii)	Surface Waters	Attachment A	Appendix A[b]
§270.14(b)(19)(iv)	Land Use	Attachment A	Appendix A
§270.14(b)(19)(v)	Wind Rose	Attachment A	Appendix A
§264.14(b) §270.14(b)(19)(viii)	Access Control	Attachment A	NA
§270.14(b)(19)(ix)	Wells	Attachment A	Appendix A[b]
§270.14(b)(19)(x)	Buildings, Fire Control Facilities	Attachments A, E	Appendix A[b]

Table 1-1. Regulatory References and Corresponding Permit Application Location (Continued)

NMAC Regulatory Reference	Description of Requirement	Location in this TA-50 Part B	Location in LANL General Part B
§270.14(b)(19)(xi)	Drainage Barriers	Attachment A	NA
§270.14(b)(19)(xii)	Location of Operational Units	2.0/ Attachment A	Appendix A
§270.14(b)(20)	Other Federal Laws	3.0	3.0
§§268.5 & 6 §270.14(b)(21)	Notice of Approval for Land Disposal Facility Extension	NA	NA
§264.90 §270.14(c)	Groundwater Monitoring Requirements	Attachment A	Appendix A
§270.14(d)(1)	Requirements for Solid Waste Management Units (SWMUs)	4.0	4.0
§270.14(d)(1)(i)	Location of SWMUs on Topographic Map	4.0	NA
§270.14(d)(1)(ii)	Types of SWMUs	4.0	NA
§270.14(d)(1)(iii)	Structural Description of SWMUs	4.0	NA
§270.14(d)(1)(iv)	Dates of Operation	4.0	NA
§270.14(d)(1)(v)	Waste Types Managed at SWMUs	4.0	NA
§270.14(d)(2)	Information on Releases from SWMUs	4.0	NA
§264, Subpart I §270.15	Containers	2.0/ Attachment G	NA
§264.178	Closure	Attachment F	NA
§264.179 §270.15(e)	Air Emission Control Equipment	2.0	NA
§264, Subpart J §270.16	Tank Systems	NA	NA
§264, Subpart K §270.17	Surface Impoundments	NA	NA
§264, Subpart D §270.19	Incinerators	NA	NA
§264, Subpart X §270.23	Miscellaneous Units	NA	NA
§264, Subpart BB §270.25	Air Emission Standards for Equipment Leaks	Attachments B, G	Appendix B
§264, Subpart CC §270.27	Air Emission Standards for Tanks, Surface Impoundments, and Containers	2.0/ Attachments B, G	Appendix B

[a] NA = not applicable

[b] Some of the topographic map requirements are addressed in the *Los Alamos National Laboratory's General Part A Permit Application*, Revision 0.0 (LANL 1998a) and in the *Los Alamos National Laboratory's Response to Request for Supplemental Information: General Part A Permit Application*, Revision 0.0. (LANL 1998b)

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, revised June 14, 2000, incorporating the *Code of Federal Regulations*, Title 40 (40 CFR), hereinafter referred to as NMAC §264, Subparts B, C, and I; §§270.14(b)(8) and (9); and §270.15 [6-14-00].

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 Attachment G to this TA-specific Part B Permit Application for TA-50 (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). Figures 2-1 through 2-4 depict the locations of the CSAs.

2.1 CONTAINER STORAGE AREAS [NMAC §264.175(b) and §§270.15(a)(1) through (3)]

TA-50 CSAs are designed and operated to meet NMAC §264, Subparts B, C, and I [6-14-00] requirements. The following CSAs are addressed in this TA-50 Part B:

- TA-50-37 CSA (Figure 2-1)
- TA-50-1, Room 59 Radioactive Liquid Waste Treatment Facility (RLWTF) CSA (Figure 2-2)
- TA-50-114 CSA (Figure 2-3)
- TA-50-69 Waste Characterization, Reduction, and Repackaging Facility (WCRRF) Indoor CSA (Figure 2-4)
- TA-50-69 WCRRF Outdoor CSA (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, the WCRRF, and the RLWTF. 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 characterization technology development and implementation, and other activities necessary to support LANL programs.

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, Room 59 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, Room 59 RLWTF CSA (Figure 2-2) 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-50-114 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 the RLWTF. 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 divided 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). 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 was constructed before 1980, and was first used to store mixed waste in 1982. It 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, and 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. 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. Painted lines are used to visually delineate the WCRRF Outdoor CSA boundary. After the footprint of the CSA changes, painted lines will be used to delineate the 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.

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)
- Process design capacity identified in the *Los Alamos National Laboratory General Part A Permit Application* (LANL 1998a) (the maximum quantity that will be stored or staged)
- Types of waste to be stored or staged
- 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 [NMAC §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, Room 59 RLWTF CSA, the wastes to be stored are solids, but may contain residual free liquids. At the TA-50-1, Room 59 RLWTF CSA and Room 118 within the TA-50-37 CSA, 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 [NMAC §264.171, §264.173, and §264.174]

As required by NMAC §264.171 [6-14-00], 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 NMAC §264.173(a) [6-14-00], 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 NMAC §264.173(b) [6-14-00].

Any container of waste at any TA-50 CSA 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 NMAC §264.171 [6-14-00]. 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 NMAC §264.172 [6-14-00]. 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 NMAC §264.173(a) [6-14-00]. 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 NMAC §264.173(b) [6-14-00]. Containers will be managed at all TA-50 waste management units in accordance with written facility-specific procedures approved 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 that may potentially store waste with free liquids. 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 NMAC §264.174 [6-14-00]. 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 identified in this TA-50 Part B will be closed to meet the closure requirements of NMAC §270.14(b)(13) and §264, Subpart G [6-14-00]. The closure plan specific to TA-50 CSAs is provided in Attachment F to this TA-50 Part B.

2.1.12 Support Agreements with Outside Agencies [NMAC §264.37]

Information on support agreements with outside agencies, as required by NMAC §264.37 [6-14-00], is provided in Section 2.0 of the LANL General Part B.

2.2 TA-50 NON-RCRA ACTIVITIES

LANL personnel will conduct waste characterization, waste segregation, and decontamination at TA-50-37 and the WCRRF. 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. [1]

The TA-50-37 and WCRRF 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. Activities in TA-50-69 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 NMAC §264 [6-14-00]. 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

[1] Use of the term "RCRA-compliant storage" refers to the container storage requirements in NMAC §264 and §270.

glove boxes are managed in a manner that continues to be protective of human health and the environment.

2.3 WASTES GENERATED

Newly generated RCRA-regulated wastes at TA-50 may accumulate from maintenance or spill cleanup 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 NMAC §262.34(c) [6-14-00], 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[a]	Waste Types	Room	Total Design Capacity (gal.)	Drum Equivalents[b]
TA-50-37 (CSA)	S01	21,850 gal.	Mixed low-level, mixed TRU, and hazardous waste in solid form or containing residual free liquids[c]	112 115 117 118	2,330 220 3,630 18,000	42 4 66 327
				TOTAL	24,180	439
TA-50-1, Room 59 (RLWTF CSA)	S01	3,695 gal. and 15 yd^3	Solid mixed low-level, mixed TRU, and hazardous waste[c]	59	1,210	22
TA-50-114 (RLWTF CSA)	S01		Mixed low-level, mixed TRU, and hazardous waste in solid form or containing residual free liquids[c]	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 residual free liquids[c]	102 103	1,500	27
TA-50-69 (WCRRF Outdoor CSA)	S01		Mixed low-level, mixed TRU, and hazardous waste in solid form or containing residual free liquids	[d]	30,000	545

[a] Based on *Los Alamos National Laboratory General Part A Permit Application*, 1998a.
[b] Based on 55-gal. drum unless indicated otherwise.
[c] Non-RCRA-regulated TRU and low-level waste also is stored at CSA.
[d] 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[a]
Rm 115	X	X	X							X[b]
Rm 117	X	X	X	X	X	X		X		
Rm 118	X	X	X	X	X	X		X		
TA-50-1 (RLWTF CSA)										
Rm 59	X	X	X	X	X			X		X[a, c–g]
TA-50-114 CSA	X	X	X	X	X					X[b, e, f]
TA-50-69 (Indoor CSA)	X	X	X	X	X	X	X	X	X	X[g]
TA-50-69 (Outdoor CSA)	X	X	X	X	X	X	X	X	X	X[g]

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

(For informational purposes only)

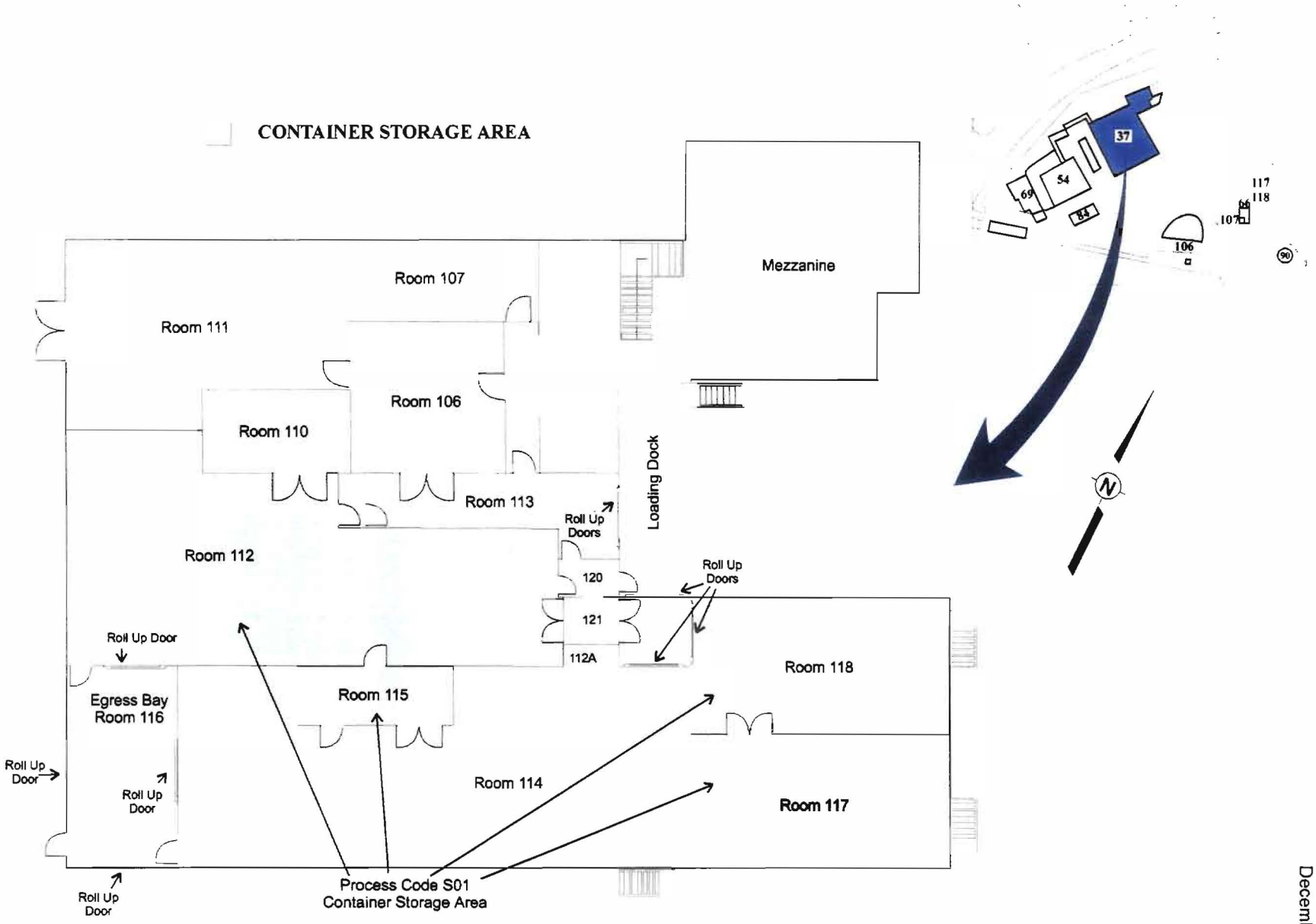


Figure 2-1. TA-50-37 Container Storage Area

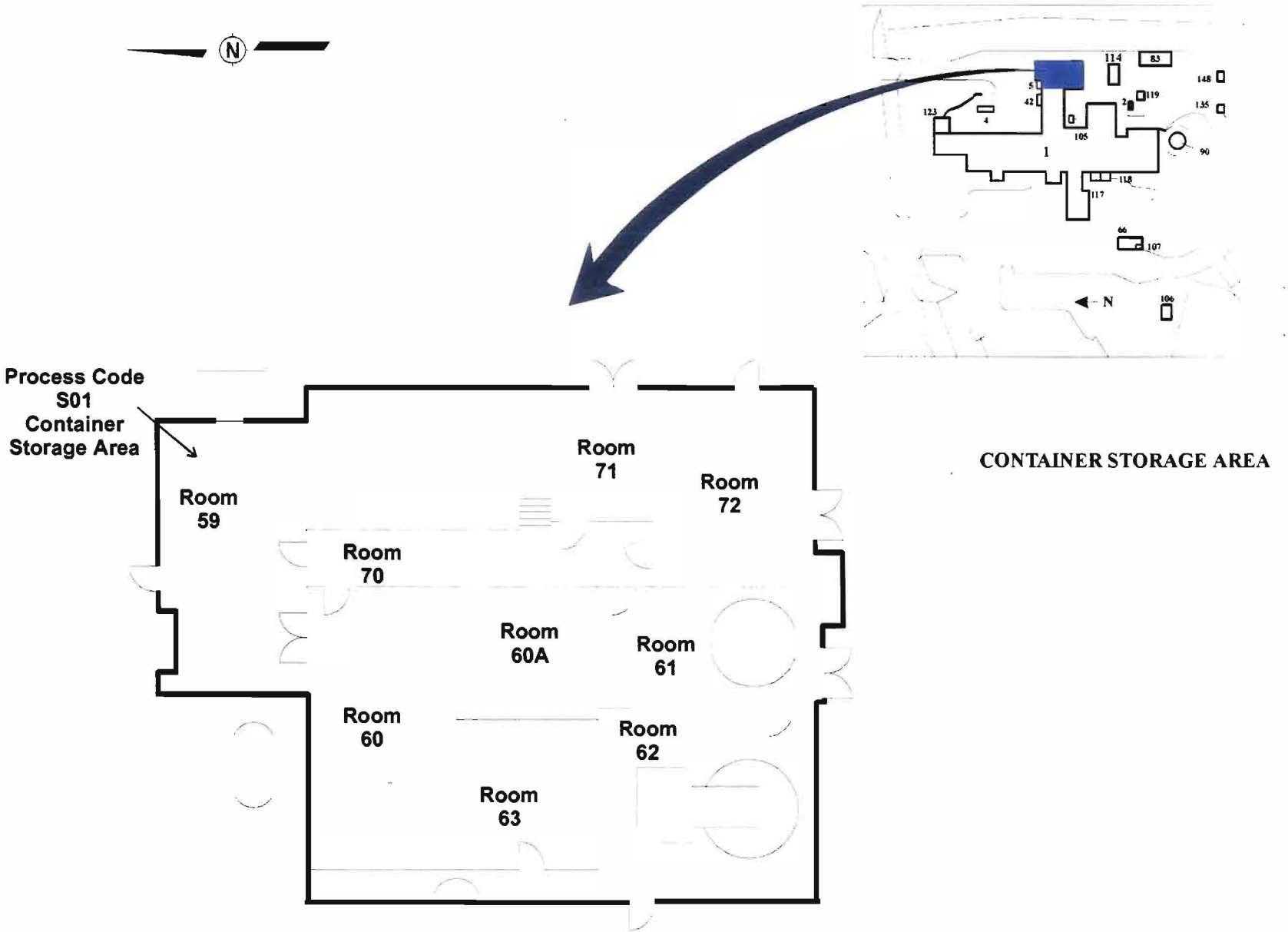
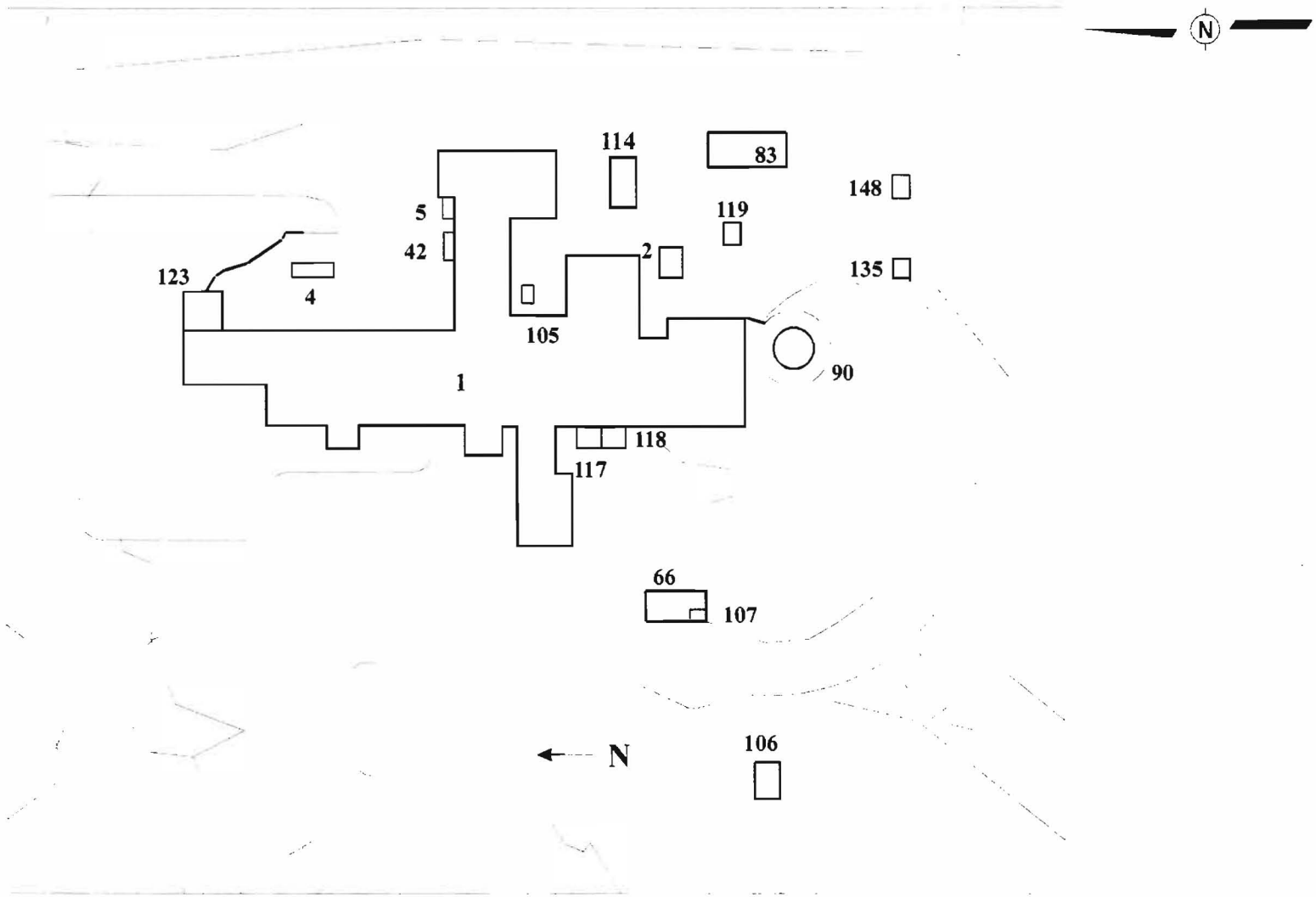
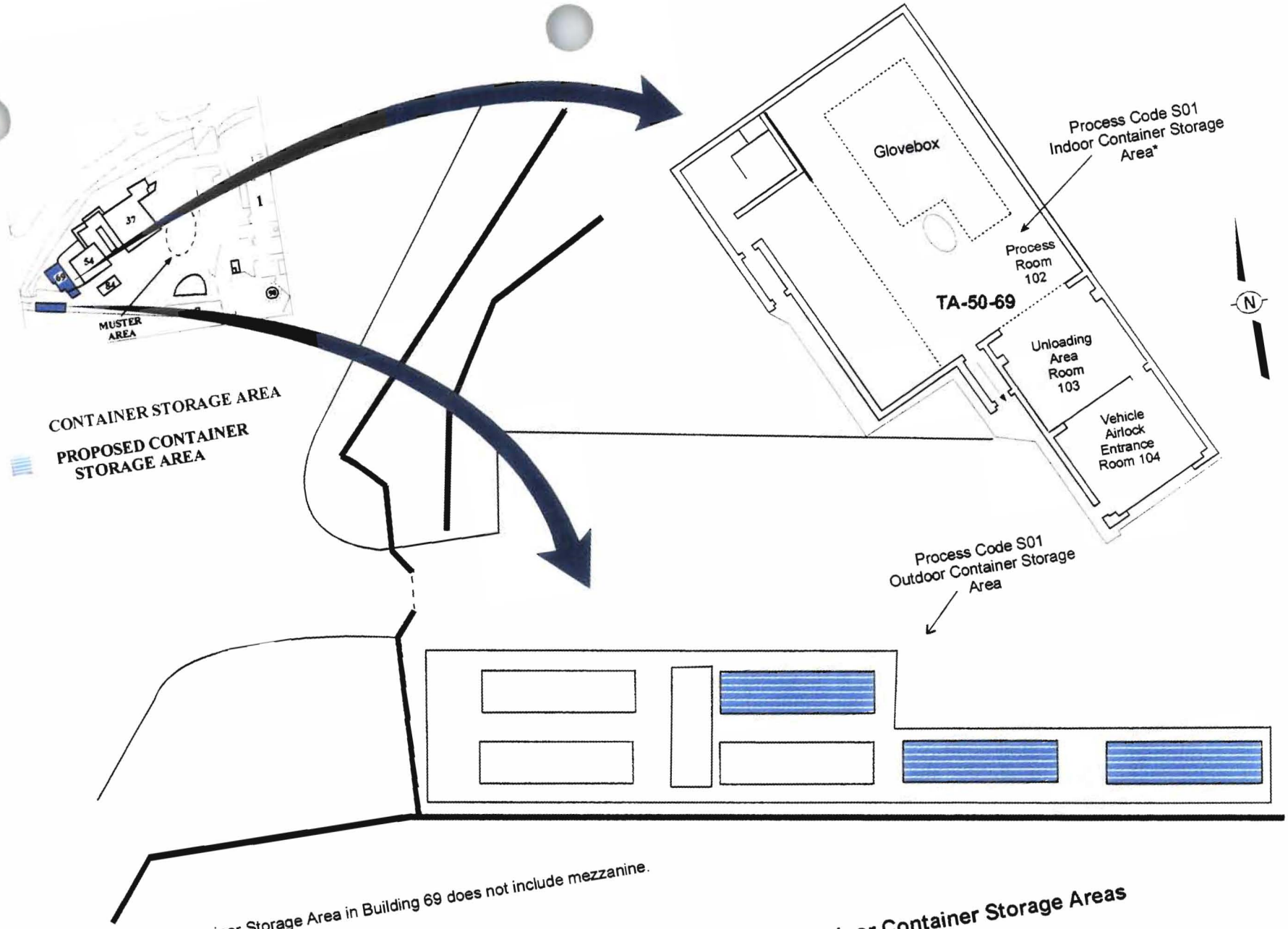


Figure 2-2. TA-50-1 RLWTF Container Storage Area



CONTAINER STORAGE AREA

Figure 2-3. TA-50-114 Container Storage Area



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

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

APPENDIX 2A

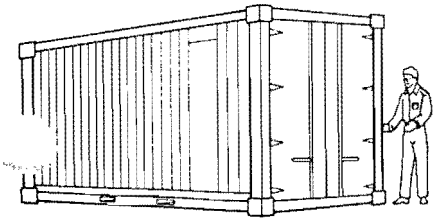
TRANSPORTAINERS

TRANSPORTAINER INFORMATION

Maritime freight containers (transportainers) are routinely used at LANL to provide security and weather protection for temporary storage. LANL procures this type of equipment from a variety of vendors specializing in the reconditioning of used transportainers. Stringent federal transportation criteria govern the design and acceptance of transportainers for the specified intended use. Transportainers that no longer meet these specifications are commonly sold to suppliers who recondition them for resale. The following guidelines reflect specifications typical of reconditioned maritime freight containers designed to transport containerized, non-perishable cargo.

The exterior dimensions of the transportainers are typically 8 ft wide, 8.5 ft tall, and either 20 or 40 ft long. The sidewalls and roof of the transportainers are constructed of 14-gauge corrugated steel. The sidewalls are welded to 5-in.-channel beam supports. All joints and seams are continuously welded. The transportainers are equipped with four corner castings and lifting eyes to allow the transportainers to be stacked or hooked together. The corner posts and lifting eyes are 0.25-in. steel welded to corner castings. The floor has 0.125-in. steel-channel cross members. The joists are spaced 12 to 14 in. on center. Either a 1.125-in. or 1.25-in. hardwood decking is screwed into the joists. The decking is applied such that there are no visible gaps between planks. The transportainer door panels are of double-seam construction with double-sealing (two-flap) gaskets. For added security, the hinge pins are constructed of stainless steel and the locking handles are made of hardened steel. The door hardware bolts are welded so that they cannot be unbolted. Each transportainer is equipped with one-way side vents to equalize ambient pressure differentials inside the transportainer.

The 8-ft by 40-ft transportainers are typically designed to ship 30 tons of cargo. Transportainer cargo load specifications stipulate a 5-to-1 safety margin. For additional information, see the attached transportainer vendor specifications and figures.



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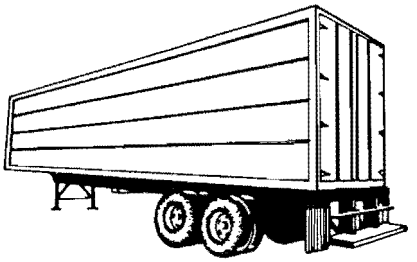
MOBILE STORAGE



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Freight Container Designation	Length (External)					S			P			K_1 Max.		K_2 Max.	
	ft	in	tol.	mm	tol.	ft	in	mm	ft	in	mm	in	mm	in	mm
1A	40	0	$^{+0}_{-3/8}$	12190	$^{+2}_{-8}$	39	4	11984	7	5	2258	¾	19	⅜	10
1B	29	11¼	$^{+0}_{-3/8}$	9125	$^{+0}_{-10}$	29	3¼	8918	7	5	2258	⅝	16	⅜	10
1C	19	10½	$^{+0}_{-1/4}$	6055	$^{+3}_{-2}$	19	2½	5852	7	5	2258	½	13	⅜	10
1D	9	9¾	$^{+0}_{-3/16}$	2990	$^{+1}_{-4}$	9	1¾	2786	7	5	2258	⅜	10	⅜	10

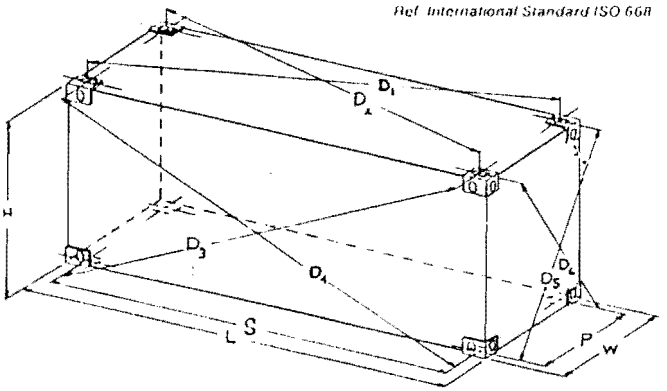
K_1 = Difference between D_1 and D_2 or between D_3 and D_4, i.e.
$K_1 = D_1 - D_2$ or $K_1 = D_2 - D_1$ or $K_1 = D_3 - D_4$ or $K_1 = D_4 - D_3$

K_2 = Difference between D_5 and D_6, i.e. $K_2 = D_5 - D_6$ or $D_6 - D_5$

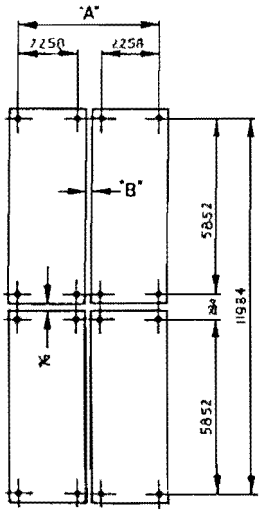
WIDTH (external) Containers 1A, 1B, 1C, 1D 8 ft $^{+0}_{-3/16}$ in 2435 $^{+3}_{-2}$ mm

HEIGHT (external) Containers 1A, 1B, 1C, 1D 8 ft $^{+0}_{-3/16}$ in 2435 $^{+3}_{-2}$ mm

Ref. International Standard ISO 668



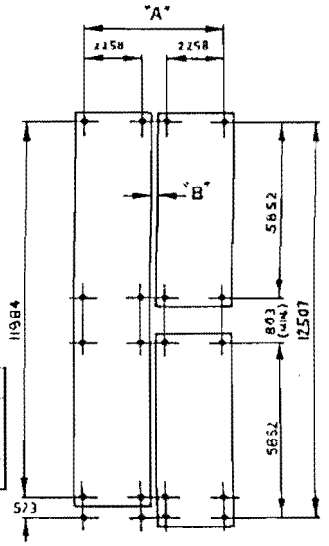
Typical corner casting location of two 20' containers in a 40' container space



SPACING	
"A"	"B"
4774	80
4719	25

NOTE Nominal measurements referring to the center of the corner castings

Typical corner casting location of two 20' containers lashed at the midpoint



SPACING	
"A"	"B"
4774	80
4719	25

NOTE Nominal measurements referring to the center of the corner castings

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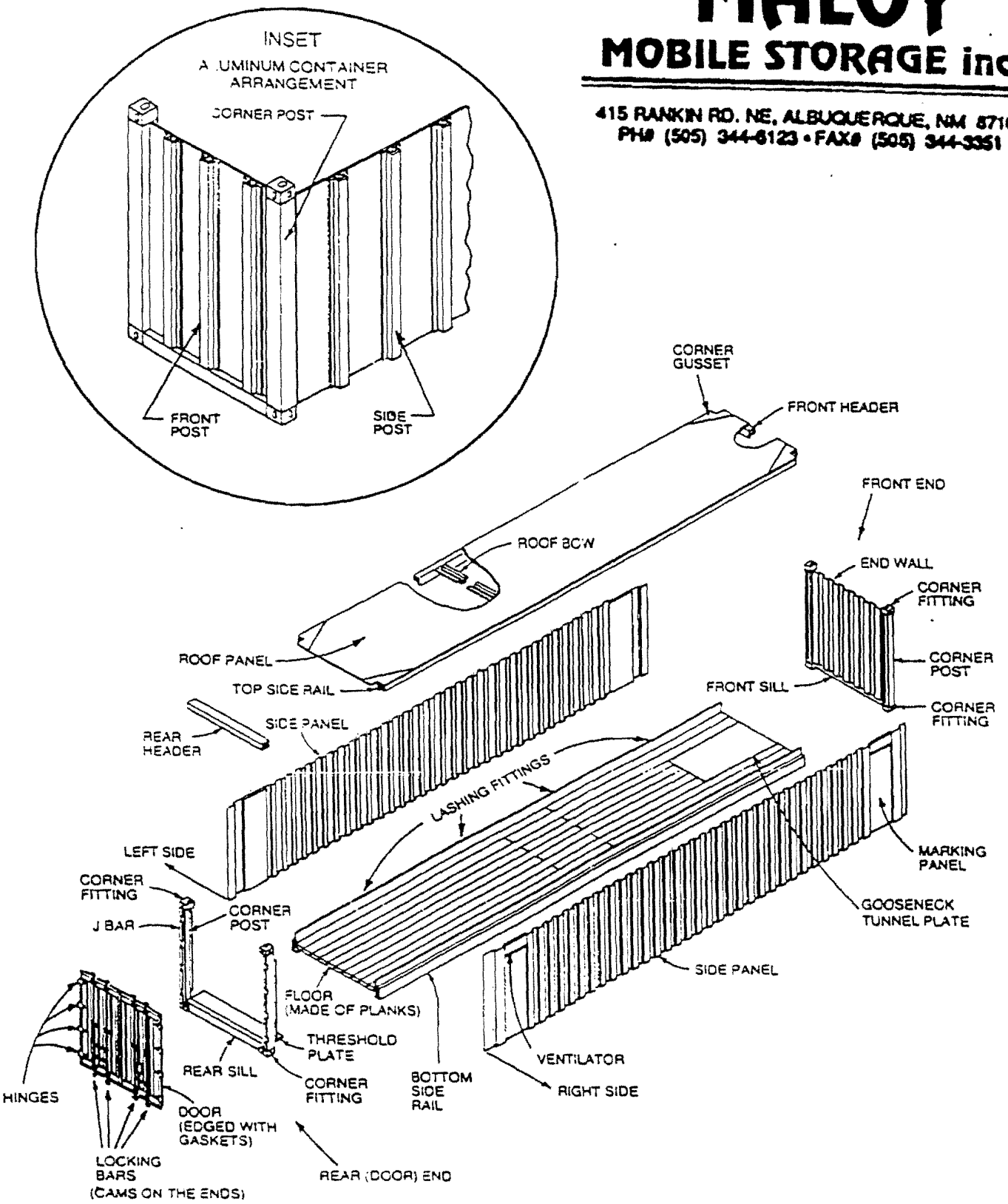

General arrangement of 40 foot container components

LOCK BOX

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RENTALS / SALES / MODIFICATIONS

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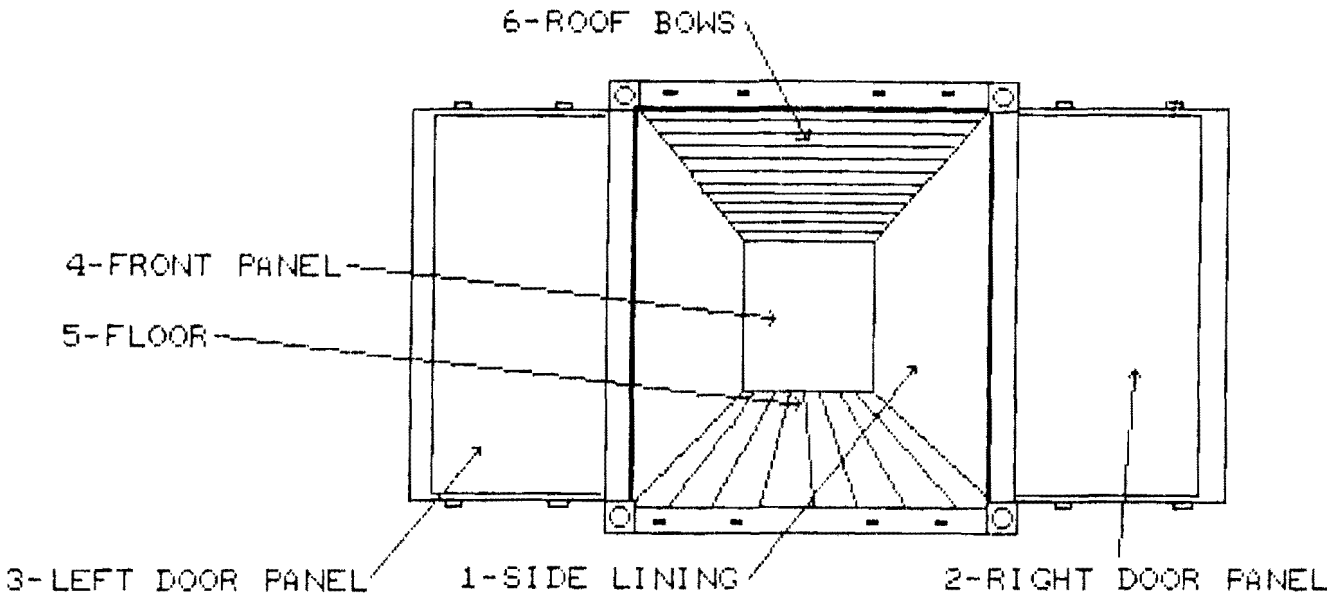


ALL CONTAINERS MADE OF 14 GAUGE STEEL
WITH HARDWOOD FLOORS ON 3in. STEEL I-BEAMS
(16in. CENTERS)

20ft.

OUTSIDE DIMENSIONS

8ft.6in. HIGH
8ft. WIDE
20ft. LONG

INSIDE DIMENSIONS

7ft.4in. HIGH
7ft.8in. WIDE
19ft.5in LONG

SQ.FT. = 160
CU.FT. = 1097
APROX. WT. = 5200 lbs.

40ft.

OUTSIDE DIMENSIONS

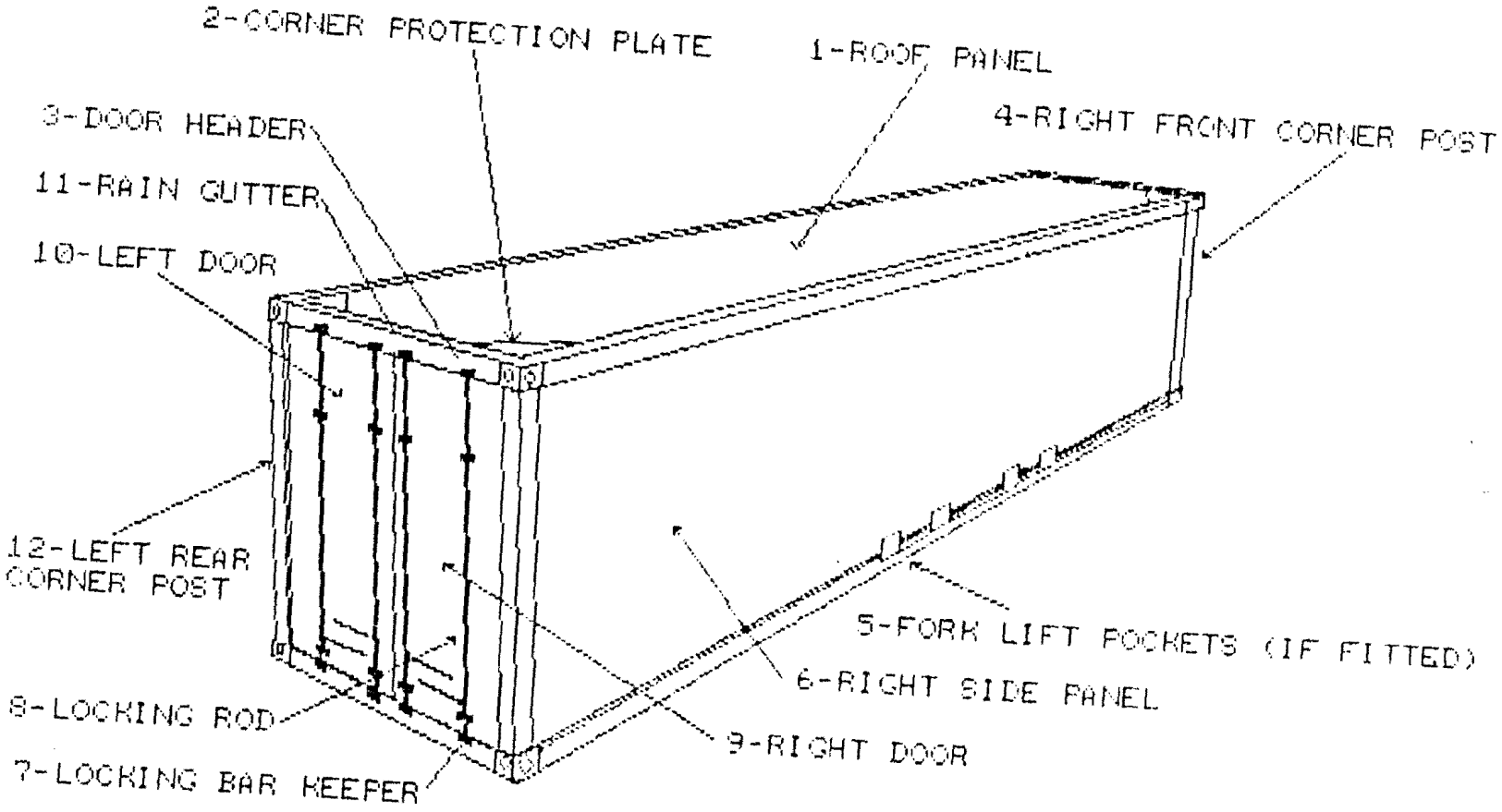
8ft.6in. HIGH
8ft. WIDE
40ft. LONG

INSIDE DIMENSIONS

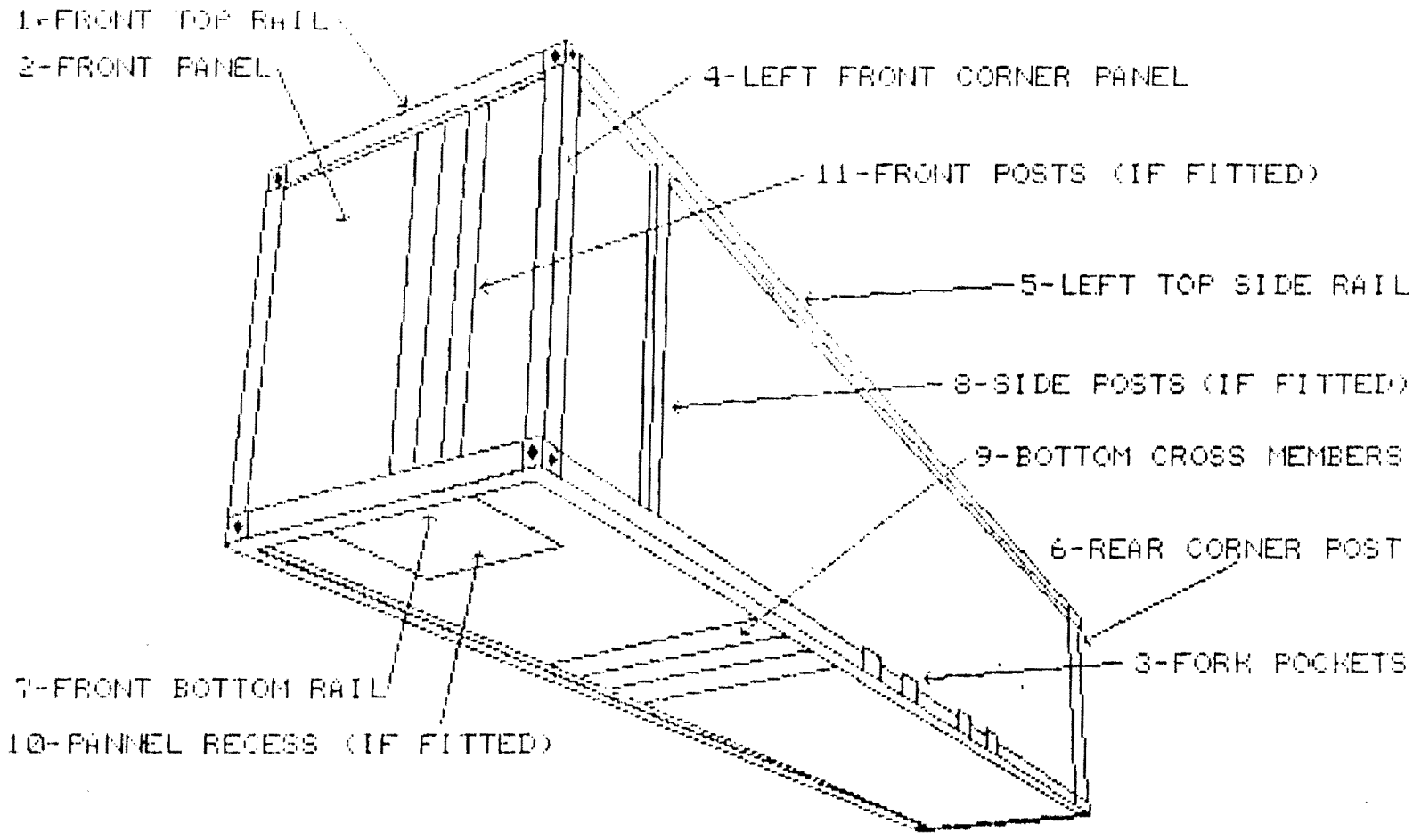
7ft.9in. HIGH
7ft.8in. WIDE
39ft.6in. LONG

SQ.FT. = 320
CU.FT. = 2265
APROX. WT. = (STEEL) 9000 lbs.
(ALUM.) 7800 lbs.

MALOY MOBILE STORAGE



MALOY MOBILE STORAGE



3.0 OTHER FEDERAL LAWS

A discussion of federal laws, as required by the *New Mexico Administrative Code*, Title 20, Chapter 4, Part 1, revised June 14, 2000, incorporating the *Code of Federal Regulations*, Title 40 (40 CFR), referred to as NMAC §270.3 and §270.14(b)(20) [6-14-00], is provided in Section 3.0 of the *Los Alamos National Laboratory General Part B Permit Application* (Los Alamos National Laboratory 1998b).

4.0 CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS

This section describes the solid waste management units (SWMUs) that have been identified in Technical Area (TA) 50 at Los Alamos National Laboratory (LANL). Appendix 4A contains SWMU characterization sheets in response to requirements in the *New Mexico Administrative Code*, Title 20, Chapter 4, Part 1, revised June 14, 2000, incorporating the *Code of Federal Regulations*, Title 40 (40 CFR), hereinafter referred to as NMAC §264.101(a) and §270.14(d) [6-14-00]. The source for the characterization sheets is Revision 1.0 of LANL's "Solid Waste Management Units Report," hereinafter referred to as the SWMU Report (LANL 1994). The characterization sheets include designation of unit type, structural descriptions, period of use, and wastes managed.

LANL uses the definition of a SWMU as presented in the U.S. Environmental Protection Agency (EPA) "Module VIII: Special Conditions Pursuant to the 1984 Hazardous and Solid Waste Amendments to Resource Conservation and Recovery Act (RCRA) for LANL, EPA I.D. NM0890010515" (EPA 1990, 1994), hereinafter referred to as Module VIII, which states that a SWMU is "any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at or around a facility at which solid wastes have been routinely and systematically released."

4.1 SWMU DESCRIPTIONS

Several types of SWMUs are present in TA-50. These SWMUs include those identified for corrective actions in Module VIII, as modified following a Class III permit modification effective May 19, 1994; SWMUs that are active RCRA units; and SWMUs identified in the SWMU Report. The descriptions in this section were compiled from the "RFI Work Plan for Operable Unit 1147" (LANL 1992a); the "RFI Work Plan for Operable Unit 1148" (LANL 1992b); and the SWMU Report. Brief unit and waste descriptions are also provided in Table 4-1. Map 4-1 shows the locations of the SWMUs in TA-50.

4.1.1 Radioactive Liquid Waste Treatment Facility

The Radioactive Liquid Waste Treatment Facility (RLWTF), located in TA-50-1, is used to treat radioactive liquid wastes received from other TAs. The 37,000-ft^2 TA-50-1 facility houses several treatment components that primarily remove transuranic (TRU) radionuclides from liquid wastes through processes of neutralization, flocculation/clarification, pH control, ion exchange, and filtration. The TRU-contaminated sludge from the RLWTF is solidified using a cementation process located

in Room 60A of TA-50-1. The RLWTF and cementation process are identified as SWMU No. 50-001(a) in Module VIII.

Waste lines and manholes comprise a system through which liquid waste is transferred to the RLWTF from many of the active TAs at LANL. The transfer system, identified as SWMU No. 50-001(b), is continuously monitored by a drip-tray and conductivity-probe leak monitoring system.

4.1.2 Tanks and Waste Lines

SWMUs at TA-50 include various tanks and waste lines. SWMU No. 50-002(a), identified in Module VIII, is a tank farm (TA-50-2) that includes six flow-through process tanks, the largest of which has a 75,000-gal. capacity. The tank farm is comprised of six underground storage tanks (USTs) that manage wastes associated with the RLWTF. Two of the USTs receive incoming waste, two store treated liquid wastes, one collects sludge, and one stores wastes generated during decontamination and decommissioning activities.

Two additional tanks (TA-50-67 and TA-50-68) are encased in an underground vault (TA-50-66) located approximately 30 ft west of the southwest corner of TA-50-1. Radioactive caustic liquid waste and radioactive acidic liquid waste received from the TA-55 Plutonium Facility are managed in tanks TA-50-67 and TA-50-68, respectively. These tanks are listed as SWMU Nos. 50-002(b) and 50-002(c) in Module VIII.

An aboveground storage tank, TA-50-5, is located adjacent to the north wall of Room 60D in TA-50-1. This 4,000-gal. tank was used to store nitric acid, which was intended to recharge an ion-exchange column. The tank, SWMU No. 50-002(d), stored nitric acid product only; it has not been used to store waste.

In addition to the active tanks and associated waste transfer lines, several other decommissioned tanks and lines are identified in Module VIII as SWMUs at TA-50. SWMU No. 50-004(a), comprised of a 520-ft section of 6-in.-diameter vitrified clay pipe, transported industrial waste to TA-50. This waste line was removed in 1975, because of radioactive contamination. A concrete vault and three stainless-steel-lined concrete storage tanks (formerly TA-50-3) comprise SWMU No. 50-004(b). The tanks, ranging in volume from 1,000 to 4,500 gal., managed waste from the Omega Reactor. The tanks and the vault were removed in 1989. SWMU No. 50-004(c) is comprised of 16 waste lines and

associated manholes at various locations within TA-50 that were removed between 1981 and 1989. These waste lines were used to transport radioactive industrial wastes.

The Batch Waste Treatment Unit (BWTU) was located in the basement of TA-50-1. The BWTU (SWMU No. 50-005) consisted of a 500-gal. pressure vessel, filtering system, condenser, vacuum transfer lines, transfer pump, and associated transfer lines. The unit was RCRA-permitted for hazardous waste treatment; it has undergone RCRA closure (Certification Report 1994).

4.1.3 Container Storage Areas

SWMU No. 50-003(a) is a mixed waste container storage area (CSA) located in TA-50-1, Room 59. This active RCRA mixed waste CSA is used to store containers of cemented mixed TRU sludge generated in Room 60A. A CSA located in TA-50-114 is identified as SWMU No. 50-003(d). This active RCRA CSA is permitted for hazardous waste storage and, additionally, operates under interim status for mixed waste container storage. Details regarding SWMU Nos. 50-003(a) and 50-003(d) are included in Section 2.1 and Attachment G of this TA-50 Part B.

A hazardous waste CSA located in TA-50-37, Room 117, is identified as SWMU No. 50-007. This CSA is permitted for hazardous and mixed waste storage. In addition, mixed waste CSAs in Rooms 115 and 118 of TA-50-37 are included as part of SWMU No. 50-007. The three active mixed waste CSAs currently operate under interim status. SWMU No. 50-007 is included in Section 2.1 and Attachment G of this TA-50 Part B.

A mixed waste CSA inside TA-50-69, the Waste Characterization, Reduction, and Repackaging Facility (WCRRF), is identified as SWMU No. 50-008. A mixed waste CSA located outside TA-50-69 has not yet been assigned a SWMU number. These two CSAs (the WCRRF Indoor CSA and Outdoor CSA) currently operate under interim status. Details regarding SWMU No. 50-008 are included in Section 2.1 and Attachment G of this TA-50 Part B.

Additional CSAs, TA-50-137, -138, -139, and -140, were previously identified as RCRA-permitted CSAs. These units were never constructed and were never used to manage hazardous waste.

4.1.4 Operational Releases/Outfalls

Operational releases and outfalls located in TA-50 comprise three SWMUs identified in Module VIII. A portion of Upper Ten Site Canyon received two accidental releases of radioactive wastes and chemicals as a result of a sump overflow in TA-50-2. This site is identified as SWMU No. 50-006(a).

Airborne releases via stack emissions from the RLWTF and other treatment facilities at TA-50 have contaminated some soil in the area. These airborne releases are identified as SWMU No. 50-006(c). The area where treated liquid effluent was discharged from the RLWTF to Mortandad Canyon is identified as SWMU No. 50-006(d) because previous analyses of the effluent indicated the presence of chemicals, radionuclides, and heavy metals.

4.1.5 Disposal Area

Material Disposal Area (MDA) C is an 11.8-acre disposal site that comprises approximately one-half of TA-50. MDA C, identified as SWMU No. 50-009 in Module VIII, consists of six pits that were used for the disposal of radioactive and hazardous waste (Pits 1 through 6), one unnumbered pit for disposal of chemical wastes, 107 disposal shafts, and one unnumbered shaft that was used for a single disposal of strontium-90. Pits 1 through 4 measure approximately 610 ft long, 40 ft wide, and 25 ft deep. Pit 5 is approximately 705 ft long, 110 ft wide, and 18 ft deep. Pit 6 is approximately 505 ft long, 100 ft wide, and 25 ft deep. The chemical pit measures approximately 180 ft long, 25 ft wide, and 12 ft deep. The disposal shafts vary in depth and diameter. Table 4-1 lists the various types of waste that were disposed of at MDA C. Waste disposal at MDA C ceased by 1969, and the MDA C was officially decommissioned in 1974.

4.1.6 Decontamination Area

A vehicle decontamination area at TA-50-1, Room 34B, is used to clean vehicles and radioactively contaminated large objects. This area has been in use since 1963; it was enclosed in 1983. Liquid wastes generated during decontamination are transferred to TA-50-2 via the floor drain and waste line. The vehicle decontamination area has operated under interim status for mixed waste container storage, but is now designated for closure under RCRA. The vehicle decontamination area is identified as SWMU No. 50-010.

4.1.7 Septic System

SWMU No. 50-011(a), identified in Module VIII, consists of a decommissioned septic system that was located near the south end of TA-50-1. This septic system was comprised of a septic tank (TA-50-10), a manhole (TA-50-9), a sanitary distribution box (TA-50-11), and a seepage pit. The septic system managed sanitary waste only. All components of the septic system were removed in 1983. A new septic system, installed in 1983, is identified as SWMU No. 50-011(b).

4.1.8 Incinerator Complex

An incinerator complex (SWMU No. 50-007) was housed in TA-50-37. The incinerator complex was comprised of the incinerator, various waste-feed components, and two waste-feed tanks. The incinerator was located in Room 112; the waste-feed system and tanks were located in Room 115. The unit was used to treat solid and liquid wastes containing chlorinated and fluorinated hydrocarbons, carcinogenic materials, and TRU wastes. The incinerator unit, a RCRA-permitted hazardous waste treatment unit, has undergone RCRA closure (Certification Report 1997).

4.2 ADDITIONAL SWMU INFORMATION

The SWMU characterization sheets (Appendix 4A) identify SWMUs at TA-50 by a unique number designation in the upper-left corner of each sheet. The individual units grouped within a SWMU are designated by a letter following the SWMU number. The SWMU characterization sheet includes the name, type, and period of operation for each unit. The unit description includes information on the unit, such as location, size, dates of operation for the individual units within a SWMU, materials of construction, waste descriptions, and release information (if any).

4.3 RELEASES

4.3.1 Description of Releases at TA-50

Some of the SWMUs listed in Table 4-1 have released, or are suspected to have released, hazardous waste or hazardous constituents. In 1990, LANL initiated drilling activities to test the integrity of the waste tanks comprising SWMU No. 50-002. Cuttings from the boreholes revealed that some of the soil appeared wet and, based on field screening, were found to be radioactively contaminated.

SWMU No. 50-004(a), a waste line in the vicinity of TA-50-37, has leaked. Radioactively contaminated soil discovered during waste line decommissioning activities was cleaned up to levels as low as reasonably achievable. Potential chemical contaminants were not analyzed at the time of decommissioning.

Accidental releases from the RLWTF have contaminated sections of Upper Ten Site Canyon [SWMU No. 50-006(a)] with radioactive and chemical wastes. Airborne contaminants released through stack emissions from the RLWTF, and other treatment facilities at TA-50 have contaminated soil at various locations within TA-50 [SWMU No. 50-006(c)]. Liquid effluent from the treatment plant, released prior to the issuance of a National Pollutant Discharge Elimination System permit, has

contaminated sections of Mortandad Canyon with a variety of chemical, radiological, and heavy metal wastes [SWMU No. 50-006(d)].

Several sampling efforts at MDA C (SWMU No. 50-009) have confirmed the presence of low-level radioactive contamination of soil in and near its perimeter. Soil at the north and east perimeter of the site contain tritium, uranium, and various isotopes of plutonium at levels above naturally occurring background levels. Soil along the west ends of disposal Pits 2, 4, 5, and 6 also contain above background levels of tritium and various plutonium isotopes.

4.3.2 Characterization of Releases

Potential releases from SWMUs, if any, are described on the SWMU characterization sheet (Appendix 4A); in the "RFI Work Plan for Operable Unit 1147" (LANL 1992a); and in the "RFI Work Plan for Operable Unit 1148" (LANL 1992b). Release descriptions in Appendix 4A include the material released and the nature of the release. However, because of the nature of the releases, the exact volume released is not always known. The timing of the releases can only be estimated by the period of operation and sampling events.

4.3.3 Corrective Actions

Pursuant to NMAC §264.101(a) [6-14-00], corrective actions are required for releases of hazardous waste or hazardous constituents. Table 4-1 lists some of the documented releases of RCRA-hazardous waste or hazardous constituents from the TA-50 SWMUs. However, because the TA-50 SWMUs are located in areas where waste historically has been and currently is managed, they will be investigated and remediated, as necessary and with EPA and New Mexico Environment Department approval, during LANL Environmental Restoration Project corrective action activities. Corrective action will follow the RCRA Facility Investigation/Corrective Measures Study process.

Table 4-1. TA-50 Solid Waste Management Unit Descriptions[a]

SWMU No.	Unit Type	Unit Description	Waste Description	Status
50-001(a)	RLWTF and cementation process	A 37,000-ft^2 facility and Room 60A located at TA-50-1 that house various components used to treat radioactive liquid waste and solidify sludge	Radioactive liquid waste and potentially hazardous constituents; solidified radioactive mixed waste sludge	Active
50-001(b)	Waste lines and manholes	Liquid waste transfer system	Radioactive liquid waste and potentially hazardous constituents	Active
50-002(a)	Tank farm	Six flow-through process tanks and associated waste transfer lines	Radioactive liquid waste and sludge and potentially hazardous constituents	Active
50-002(b)	Underground storage tank	One of two tanks (TA-50-67) contained in an underground vault located approximately 30 ft west of the southwest corner of TA-50-1	Radioactive liquid waste and potentially hazardous waste	Active
50-002(c)	Underground storage tank	One of two tanks (TA-50-68) contained in an underground vault located approximately 30 ft west of the southwest corner of TA-50-1	Radioactive liquid waste and potentially hazardous waste	Active
50-002(d)	Aboveground storage tank	4,000-gal. nitric acid storage tank	Unit stored product only; no waste stored	Active
50-003(a)	Container storage	Mixed waste container storage area located in TA-50-1, Room 59 used primarily to store drums of solidified, TRU-contaminated sludge	Potentially mixed waste	Interim status[b]
50-003(d)	Container storage	Container storage area located in TA-50-114	Hazardous and mixed waste	Interim status[b]
50-004(a)	Decommissioned waste line	520-ft section of 6-in.-diameter, vitrified clay pipe removed from the vicinity of TA-50-37	Radioactive liquid waste and potentially hazardous constituents	Decommissioned

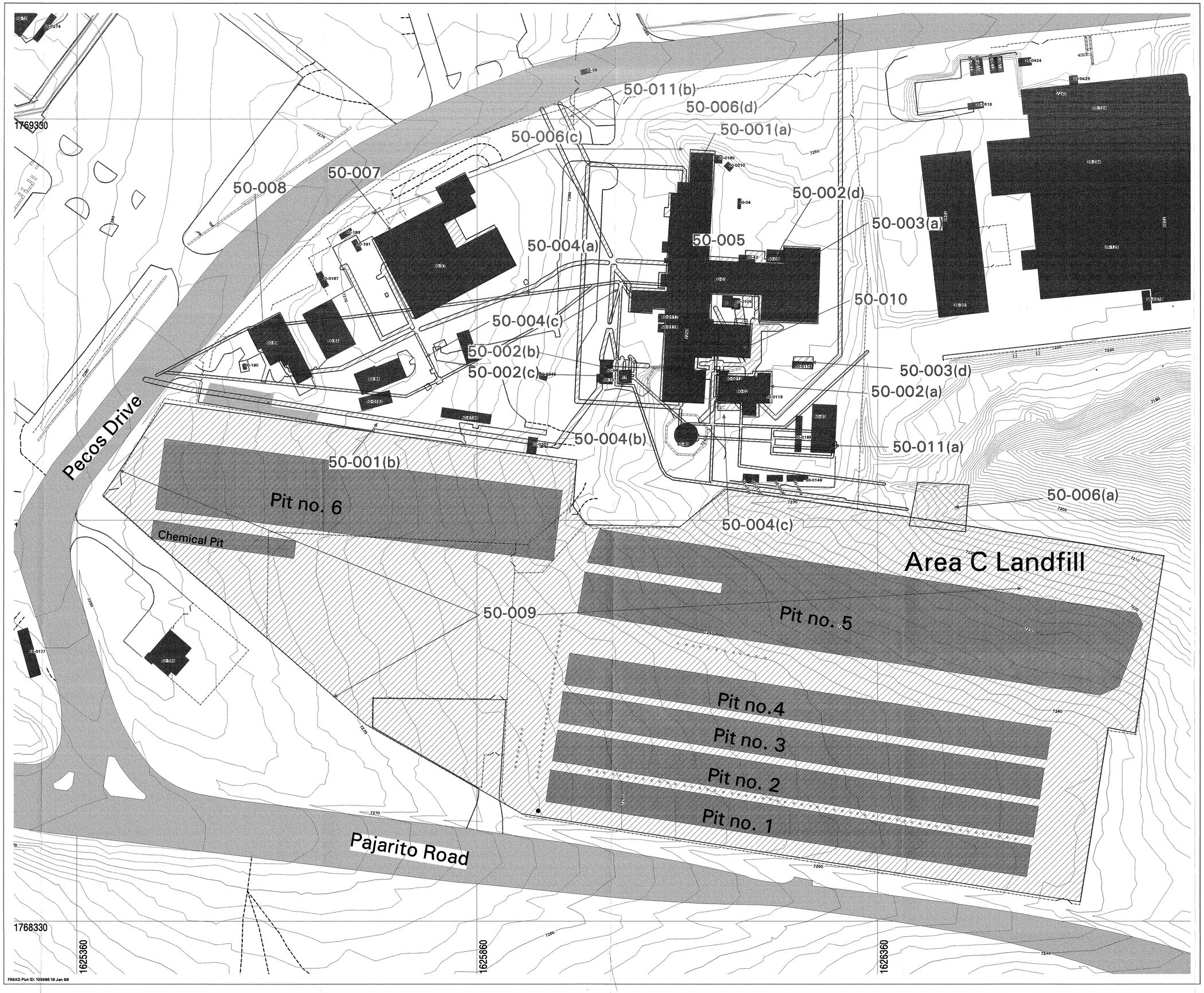
Table 4-1. TA-50 Solid Waste Management Unit Descriptions[a] (Continued)

SWMU No.	Unit Type	Unit Description	Waste Description	Status
50-004(b)	Decommissioned tank farm	An underground concrete vault and three stainless-steel-lined concrete storage tanks removed in 1989	Radioactive liquid waste and potentially hazardous constituents	Decommissioned
50-004(c)	Decommissioned waste lines and manholes	16 waste lines and associated manholes in TA-50 removed between 1981 and 1989	Radioactive liquid waste and potentially hazardous constituents	Decommissioned
50-005	Batch Waste Treatment Unit	500-gal. pressure vessel and associated waste-processing components located in TA-50-1	Hazardous waste	RCRA closure
50-006(a)	Operational releases/outfall	Section of Upper Ten Site Canyon contaminated as a result of a sump overflow	Radioactive liquid waste and hazardous chemicals	Active
50-006(c)	Operational releases/outfall	Contaminated soil caused by airborne releases from the RLWTF and other treatment facilities at TA-50	Soil contaminated with radioactive and chemical waste	Active
50-006(d)	Operational releases/outfall	Outfall of treated liquid effluent from the RLWTF to Mortandad Canyon	Soil contaminated with a variety of chemicals, radionuclides, and heavy metals	Active
50-007	Incinerator complex	An incinerator, various waste feed components, two waste feed tanks	Hazardous and mixed waste	RCRA closure
		Container storage area located in TA-50-37		Interim status[b]
50-008	Container storage	Container storage area located inside TA-50-69	Mixed waste	Interim status[b]
50-009	MDA C	11.8-acre disposal area (consisting of pits and shafts) located on the north side of Pajarito Road at TA-50	Radioactive, mixed, hazardous, and solid waste	Decommissioned

Table 4-1. TA-50 Solid Waste Management Unit Descriptions[a] (Continued)

SWMU No.	Unit Type	Unit Description	Waste Description	Status
50-010	Decontamination area	Vehicle decontamination area in TA-50-1	Radioactive waste and potentially hazardous waste	Interim status[c]
50-011(a)	Septic system	Decommissioned septic system that consisted of a septic tank, a manhole, a sanitary distribution system, and a seepage pit	Sanitary waste	Decommissioned
50-011(b)	Septic system	New septic system installed in 1983	Sanitary waste	Active
TBD[d]	Container storage	Container storage area located outside TA-50-69	Mixed waste	Interim status[b]
TBD[d]	Container storage	Container storage area located in TA-50-137	Hazardous waste	TBD[e]
TBD[d]	Container storage	Container storage area located in TA-50-138	Hazardous waste	TBD[e]
TBD[d]	Container storage	Container storage area located in TA-50-139	Hazardous waste	TBD[e]
TBD[d]	Container storage	Container storage area located in TA-50-140	Hazardous waste	TBD[e]

[a] Information compiled from SWMU Report (LANL 1994); Module VIII (EPA 1994); and "RFI Work Plan for Operable Unit 1147" (LANL 1992a).
[b] SWMU/Interim Status — submitted in this TA-50 Part B.
[c] SWMU/Interim Status – designated for closure.
[d] TBD = SWMU Number to be determined.
[e] TBD = SWMU status to be determined.



LEGEND

- Contours, 10 ft
- Contours, 2 ft
- Fence, Industrial
- Fence, Security
- Waste Lines
- Retaining Wall
- Road/Parking, Dirt
- Road/Parking, Paved
- Building or Structure
  - 50-1 = Radioactive Liquid Waste Treatment Plant
  - 50-37 = Radioactive Materials Research, Operations, and Demonstration Facility
  - 50-69 = Waste Characterization, Reduction, and Repackaging Facility
- Disposal Pit (location approximate)
- Solid Waste Management Units
- Paved Road
- Disposal Shaft (location approximate)
- Strontium-90 Disposal Shaft

8913-A

Map 4-1

Solid Waste Management Units at Technical Area (TA) 50

FACILITY for INFORMATION, MANAGEMENT, ANALYSIS and DISPLAY
EARTH & ENVIRONMENTAL SCIENCES DIVISION (EES-6)
LOS ALAMOS NATIONAL LABORATORY, Los Alamos, New Mexico

Produced by: Belinda Scheber
Date: January 19, 1999 FIMAD Plot ID: 103686

N

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

Grid provides NM State Plane coordinates in feet.
Grid interval, in feet: 500

0 15 30 45 60
METERS
0 50 100 150 200
FEET

Notice: The information on this map is provisional and the accuracy has not been confirmed. Feature locations are dependent on scale and symbology and should not be relied upon to establish legal claims. Basemap Sources: Boundary, structure, and utility data are from Los Alamos National Laboratory Engineering Division and Los Alamos County Utility and Engineering Departments. Contour data is from Los Alamos National Laboratory Environmental Restoration Program aerial survey, September 1991.

APPENDIX 4A

SOLID WASTE MANAGEMENT UNIT (SWMU) CHARACTERIZATION SHEETS FOR SWMUs AT TECHNICAL AREA (TA)-50

(From: Los Alamos National Laborary, 1994,
"Solid Waste Management Units Report,"
Revision 1, LAUR 90-3400,
Los Alamos National Laboratory,
Los Alamos, New Mexico.)

SUMMARY

LOCATION : TA-50
TYPE OF UNIT(s) : TREATMENT PLANT
UNIT USE : TREATMENT
OPERATIONAL STATUS : ACTIVE
PERIOD OF USE : 1963 - PRESENT
HAZARDOUS RELEASE : KNOWN
RADIOACTIVE RELEASE : KNOWN

MATERIALS MANAGED : RADIOACTIVE WASTE
HAZARDOUS WASTE
SUSPECTED MIXED WASTE

UNIT INFORMATION

The radioactive liquid waste treatment facility [50-001(a)] at TA-50 covers 37,000 square feet (60,000 square feet total floor space) and is designed primarily to remove transuranics. Its design capacity is 250 gpm. The facility provides neutralization, flocculation/clarification, pH control, ion exchange and filtration. The facility includes a wiped film evaporator (not yet operational), located in Room 71, Building 1; two clariflocculators, located in Room 116; a pH adjustment tank, located in Room 16; a horizontal evaporator storage tank, located in Room 70A; a decant storage tank (used as an auxiliary sludge storage tank), located in Room 61; a rotary drum vacuum filter, located in Room 116B; two gravity filtration devices, located in Room 116; a 100,000 gallon steel emergency holding tank, TA-50-90, added in 1982; and two waste mixers where chemicals are mixed with waste for treatment, located in Room 116. A drum-tumbler operation in Room 60A is used for cementation of TRU sludge prior to shipment to the Waste Isolation Pilot Plant. The facility has an outfall to Mortandad Canyon regulated under an NPDES permit (see "Operational Releases"). Liquid waste is transferred to the radioactive waste treatment facility from many of the active technical areas. Drainlines [50-001(b)] that transport liquid waste to the treatment facility are identified below.

FROM	STATUS	WASTES MANAGED
TA-55 to TA-50-66	Active	Acidic and caustic waste
Collector manhole TA-50-72 to grit chamber in TA-50-1	Active	LL radioactive industrial waste
TA-50-69 and TA-50-37	Active	LL radioactive industrial waste
TA-2, -3, -35, -43, -48 and -52, via manhole TA-50-72	Active	LL radioactive industrial waste
Manhole TA-50-7	Active	LL radioactive industrial waste
TA-55,via monitor pit TA-50-57 and manhole TA-50-72	Active	LL radioactive industrial waste

The majority of waste flows to TA-50 through double-encased polyethylene and stainless steel piping. There was a low-level radioactive industrial waste line from TA-50-3 until 1989, when the structure was removed.

LL : low-level

WASTE INFORMATION

The waste treated at this facility is radioactive waste. It is suspected that some waste streams entering the plant contain hazardous constituents.

RELEASE INFORMATION

Releases from the treatment facility are described in 50-006.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
50-001(a)	TA50-3-CA-A-RW	50.006-50.011 50.019 50.022-50.024		TA-50-1, -90
50-001(b)	TA50-1-UST-A-HW/RW		Tsk 5 : 11-17	TA-50-1, -2, -7, -35, -37, -43, -48, -52, -57, -66, -69, -72

SUMMARY

LOCATION : TA-50
TYPE OF UNIT(s) : UNDERGROUND TANK
UNIT USE : TREATMENT/STORAGE
OPERATIONAL STATUS : ACTIVE/INACTIVE
PERIOD OF USE : 1963 - PRESENT
HAZARDOUS RELEASE : UNKNOWN
RADIOACTIVE RELEASE : UNKNOWN

MATERIALS MANAGED : RADIOACTIVE WASTE
SUSEPCTED MIXED WASTE

UNIT INFORMATION

The Radioactive Waste Treatment Facility includes three sets of underground storage tanks. The first set of tanks is a tank farm known collectively as TA-50-2 [50-002(a)] and includes six flow-through process tanks, the largest having a volume of 75,000 gallons. Two of the tanks handle the incoming waste, one is for sludge, and the other two are for treated liquid waste storage. The sixth tank receives liquid from decontamination and decommissioning activities. The wastes are transported from TA-50-1 to TA-50-2 via a system of waste transfer lines. Six buried cast-iron lines transport liquid wastes and sludges from treatment and holding tanks in TA-50-1 to their associated tanks in TA-50-2. Four buried steel lines transport wastes from Room 61 in TA-50-1 to holding tanks in TA-50-2. Three additional cast-iron lines transport waste from drains in TA-50-1 to a tank in TA-50-2. In addition, two tanks TA-50-67 and TA-50-68 [50-002(b) and 50-002(c)] in an underground vault, TA-50-66, handle the caustic and acid liquid wastes respectively from two underground lines from the Plutonium Facility at TA-55. From TA-50-66 these wastes are transported via two double encased stainless steel lines to Room 60 in the TA-50-1 treatment plant. These liquids contain significant amounts of transuranics and are monitored carefully for criticality control before treatment. An outdoor, aboveground storage tank, TA-50-5 [50-002(d)], is located adjacent to the north wall of TA-50-1. The tank is used to store nitric acid and is associated with a concrete containment structure. TA-50-12 was used to hold limestone chips to neutralize nitric acid vapors. The limestone chips were removed when the containment wall was built around TA-50-5 in 1988. TA-50-5 does not handle waste but stores nitric acid for ion exchange column regeneration.

WASTE INFORMATION

The waste treated or stored as a part of the radioactive waste treatment facility is identified as radioactive. It is suspected that some waste streams contain hazardous constituents.

RELEASE INFORMATION

In July, 1990, the Laboratory initiated drilling activities to test the integrity of the waste tanks. Cuttings from some of the boreholes around the grit chamber were wet and, upon surveying, found to be radioactively contaminated. Results of further investigation suggest that the pipeline connecting to the grit chamber was the source of a leak. Samples of the wet soil were collected and submitted to the HSE-9 analytical laboratory for analysis. Analytical results are pending.

NOTES

Three stainless steel tanks that were formerly 50-002(b) have been decommissioned and are described as 50-004(b).

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
50-002(a)	TA50-1-UST-A-HW/RW TA50-3-CA-A-RW	50.029- 50.032	Tsk 5 : 3-5	TA-50-2
50-002(b)	TA50-3-CA-A-RW		Tsk 5 : 7 8	TA-50-67
50-002(c)	TA50-3-CA-A-RW	? 50.014	Tsk 5 : 7 8	TA-50-68
50-002(d)	TA50-3-CA-A-RW	? 50.014	Tsk 5 : 18 23	TA-50-5, -12

? Indicates uncertainty with RFA Unit correlation.

SUMMARY

LOCATION : TA-50
TYPE OF UNIT(s) : CONTAINER STORAGE AREA
UNIT USE : STORAGE
OPERATIONAL STATUS : ACTIVE
PERIOD OF USE : 1963 - PRESENT
HAZARDOUS RELEASE : NONE
RADIOACTIVE RELEASE : NONE

MATERIALS MANAGED : SUSPECTED MIXED WASTE
HAZARDOUS WASTE
RADIOACTIVE WASTE

UNIT INFORMATION

There are five drum storage areas in conjunction with the Radioactive Waste Treatment Facility. The primary storage area is located in Building 1, Room 60D [50-003(a)]. The source of the waste is the cementing unit in Room 60A. A second container storage area is located in Room 130 of building TA-50-1 [50-003(b)]. The area is a satellite storage area for the analytical laboratory. The waste stored is samples from the laboratory. There is a temporary storage (less than 90 days) area at TA-50-2 [50-003(c)] that has been active since 1985. It consists of polyethylene 200 or 300 gallon tanks and numerous 55 gallon drums. The drums are stored on asphalt. The source of the waste is the isotope processing unit and the waste goes either into the radioactive waste tank or the neutralization tank. The polyethylene "tuff" tanks are enclosed within a steel cage. Recently a modular shed [50-003(d)] has been constructed behind TA-50-1 in which acidic wastes picked up from the ICON facility (TA-46) are stored. There is also an inflatable berm in this area which is also used for storage. A November 1988 field survey found four barrels under a tarp near TA-50-125 [50-003(e)].

WASTE INFORMATION

The waste in Room 60D is transuranic. The waste in Room 130 and TA-50-2 is low level, transuranic, and/or hazardous. The waste in the shed and berm is acidic waste. The contents of the four barrels is unknown.

RELEASE INFORMATION

There are no known releases from these container storage areas.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
50-003(a)	**	50.025	Tsk 5 : 28	IN TA-50-1
50-003(b)	**		Tsk 5 : 29	IN TA-50-1
50-003(c)	**	50.033	Tsk 5 : 30	AT TA-50-2
50-003(d)	**		Tsk 5 : 31	BEHIND TA-50-1
50-003(e)	TA50-11-CA-A-HW/RW			NEAR TA-50-125

** No corresponding E. R. Program unit.

SUMMARY

LOCATION : TA-50
TYPE OF UNIT(s) : WASTE LINE
UNIT USE : TRANSPORT
OPERATIONAL STATUS : DECOMMISSIONED
PERIOD OF USE : 1963 - 1989
HAZARDOUS RELEASE : UNKNOWN
RADIOACTIVE RELEASE : KNOWN

MATERIALS MANAGED : SUSPECTED MIXED WASTE
RADIOACTIVE WASTE
HAZARDOUS WASTE

UNIT INFORMATION

In 1975, 520 feet of radioactive contaminated waste line [50-004(a)] was removed at TA-50 in the region where the incinerator is now located, TA-50-37. Contaminated soil and the vitrified clay pipe were taken to Area G and buried. In 1989, the underground concrete vault and three tanks that made up the TA-50-3 Tank Farm [50-004(b)] were removed. These were stainless steel underground storage tanks, ranging in volume from 1,000 to 4,500 gallons. The tanks were used to store waste from the Omega West reactor and could be used in an emergency for the storage of other wastes. The tank vault also received waste from undefined experiments in TA-50-1, via inactive waste line no. 50. Several other drainlines and associated manholes [50-004(c)] have been removed in TA-50.

STRUCTURE NO.	SIZE/MATERIAL	YEAR REMOVED	DESCRIPTION
Waste line no. 44	28', 6" dia, vitrified clay	1984	Connected waste line no. 45 to waste line no. 46 at manhole no. 6
Waste line no. 45	588', 5" dia, PVC	1984	Connected waste line no. 43 at Pecos Dr. to waste line no. 44 near manhole no. 6
Waste line no. 45a, manhole no. 55, manhole no. 56	67', 6" dia, PVC	1984	Drained from manhole no. 73 to manhole no. 56 via manhole no. 55. Manhole nos. 55 and no. 56 were also removed.
Waste line no. 46	41', 6" dia, cast iron	1984	Influent line connecting manhole no. 6 to TA-50-1
Waste line no. 47	14', 4" dia, cast iron	1984	Connected the soil lab in TA-50-1 to manhole no. 6.
Waste line no. 48	95', 6" dia, cast iron	1984	From tank TA-50-3 to manhole no. 6 via manhole no. 7.
Waste line no. 48a	44', 3" dia, cast iron	1984	Connected manhole no. 78 to manhole no. 6.
Waste line no. 49	305', 3" dia, cast iron	1981	Connected TA-35 with TA-50-3.
Waste line no. 54	65', 3" dia, cast iron	1981	Connected waste line no. 49 to overflow tank at TA-50-2.
Waste line no. 55	6" dia, 244' of cast iron, 165' of vitrified clay pipe	1981	Connected TA-50-1 and TA-50-2 to outfall in Ten Site Canyon
Waste line no. 56	29', 4" dia, cast iron	1983	Connected TA-50-1 to waste line no. 58
Waste line no. 65	3150', 3" dia, cast iron	1989	Connected TA-52 to a waste line junction at TA-50-3 Tank Farm.
Waste line no. 67	6" dia, 26' of cast iron, 250' of vitrified clay pipe	1981	Connected an emergency drain in TA-50-2 to an outfall in Ten Site Canyon
Waste line manhole no. 6		1984	Main collector manhole for influent waste lines 42, 44, 45, 46, 47, and 65.

WASTE INFORMATION

The waste consisted of constituents in an acidic matrix. It is suspected that some waste streams contained hazardous constituents.

RELEASE INFORMATION

The lines in the vicinity of TA-50-37 [50-004(a)] were known to have leaked occasionally. Generally, soil contamination by radionuclides, if discovered during waste line decommissioning activities [50-004(c)], was cleaned up to as low as reasonably achievable by removing affectad soil and pipe. Chemical constituents which may have been present were usually not sampled for at the time of decommissioning. During excavation of the TA-50-3 vault and tanks [50-004(b)], soil surrounding and beneath the vault were screened for both radioactive and chemical contamination. Levels of contamination were found to be below cleanup levels; the trench was backfilled with soil.

(continued)

NOTES

SWMU No. 50-004(b) was formerly SWMU No. 50-002(b).

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
50-004(a)	TA50-12-CA-I-HW/RW		Tsk 5 : 53	NEAR TA-50-37
50-004(b)	TA50-2-UST-I-HW/RW		Tsk 5 : 10 54	TA-50-3
50-004(c)	**		Tsk 5 : 49 51 52 55-57 59-65	TA-50-1, -2, -3; MANHOLES 6, 7, 55, 56, 73, 78

** No corresponding E. R. Program unit.

SUMMARY

LOCATION : TA-50
TYPE OF UNIT(s) : TREATMENT PLANT
UNIT USE : TREATMENT
OPERATIONAL STATUS : ACTIVE
PERIOD OF USE : 1983 - PRESENT
HAZARDOUS RELEASE : NONE
RADIOACTIVE RELEASE : NONE

MATERIALS MANAGED : HAZARDOUS WASTE

UNIT INFORMATION

A liquid waste batch treatment system is located in Building 1, Room 24, at TA-50. Wastes that have been treated include cyanide, chromate plating solutions and solutions of acids and bases, and heavy metals. The unit is underlain by concrete and includes a Kynar-lined tank and associated Kynar-lined and stainless steel pipeline. The tank is used to treat electroplating waste containing copper and lead. It was put into use in May 1988. The plant also has a Kynar-lined blowdown tank in Room 24. This tank had not been used at the time of the VSI. Mercury reclamation is done on an intermittent basis in Room 34. Mercury is washed in acid and/or solvents and double distilled. The capacity has been estimated at 35 pounds per day. The process is not operated regularly because of the current lack of personnel. The area is estimated to be 60 square feet.

WASTE INFORMATION

The wastes handled at the Room 24 unit are cyanide, chromate plating solutions, acids, bases, and heavy metals including lead. Mercury is handled by the unit in Room 34.

RELEASE INFORMATION

There is no evidence of release from this facility.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
50-005	TA50-7-CA-I/A-HW	50.026 50.027	Tsk 5 : 24 25	TA-50-1

SUMMARY

LOCATION : TA-50
TYPE OF UNIT(s) : OPERATIONAL RELEASE
UNIT USE : DISPOSAL
OPERATIONAL STATUS : ACTIVE
PERIOD OF USE : 1963 - PRESENT
HAZARDOUS RELEASE : SUSPECTED
RADIOACTIVE RELEASE : KNOWN

MATERIALS MANAGED : SUSPECTED MIXED WASTE
RADIOACTIVE WASTE
HAZARDOUS WASTE
SOLID WASTE

UNIT INFORMATION

There have been several releases of radioactive wastes and unknown chemicals at TA-50 over the years. Upper Ten Site Canyon is reported to have contamination [50-006(a)] from overflow of a sump. Stained, potentially contaminated soil [50-006(b)] is present directly beneath an active radiator that is part of the west wall of building TA-50-37. Routine airborne releases of plutonium from the radioactive liquid waste treatment plant have deposited on the surrounding soils [50-006(c)]. Treated liquid effluent from the treatment plant has discharged to Mortandad Canyon since 1963 [50-006(d)]; the discharge is now regulated under an NPDES permit. More recently, the liquid effluent from the TA-21 Treatment Plant has been piped to TA-50 for discharge to Mortandad Canyon as well. The area surrounding an aboveground tank for diesel fuel [50-006(e)] was contaminated by releases from the tank. It was located south of TA-50-37. Underground lines extended from the tank to TA-50-37. The tank and the lines were removed in May, 1990.

WASTE INFORMATION

The spill into upper Ten Site Canyon [50-006(a)] consisted of liquid from the TA-50 Waste Treatment Facility (see 50-001); it was primarily radioactive waste, but may have contained hazardous constituents. The stained soil beneath the radiator at TA-50-37 [50-006(b)] contains hydraulic oil. Airborne releases [50-006(c)] included plutonium; other constituents, if present, are unknown. Outfall of effluent from the treatment plant at TA-50 [50-006(d)] is currently monitored under the routine environmental surveillance program. Analysis of effluent in the early 1980s indicated the presence of radionuclides and metals. The area around the diesel tanks [50-006(e)] received diesel fuel.

RELEASE INFORMATION

Releases through the outfall have caused an inventory of chemicals, heavy metals, and radionuclides to be present in Mortandad Canyon. Sampling near the outfall will continue in response to the 1988 DOE Environmental Survey Report, which cited the stream channel as Environmental Problem 9. In addition, elevated plutonium is present in surface soil at TA-50 from airborne stack emissions. The hydraulic oil beneath the fan at TA-50-37 is unlikely to have caused hazardous releases. Contaminated soil from around the diesel tank was removed and landfarmed.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
50-006(a)	TA50-5-CA-I-HW/RW		Tsk 5 : 21	SOUTHEAST OF TA-50-1
50-006(b)	**		Tsk 5 : 20 22	WEST WALL OF TA-50-37
50-006(c)	TA50-6-CA-A-RW		Tsk 5 : 19	AROUND TA-50-1
50-006(d)	TA50-4-O/CA-A-HW/RW		Tsk 5 : 1 6	FROM TA-50-1
50-006(e)	TA50-3-CA-A-RW		Tsk 5 : 48	SOUTH OF TA-50-37

** No corresponding E. R. Program unit.

SUMMARY

LOCATION : TA-50
TYPE OF UNIT(s) : INCINERATOR
UNIT USE : TREATMENT/STORAGE
OPERATIONAL STATUS : ACTIVE
PERIOD OF USE : 1975 - PRESENT
HAZARDOUS RELEASE : NONE
RADIOACTIVE RELEASE : KNOWN

MATERIALS MANAGED : MIXED WASTE
HAZARDOUS WASTE

UNIT INFORMATION

The incinerator complex (TA-50-37) was designed and constructed to develop incineration methods for wastes containing transuranics. The design matrix feed rate of this facility is 50 kg/hr. Upgrades are under way to convert the unit from a research and development facility to a production facility. These changes should be on line by the end of 1991. The incinerator is located in Room 112 and the feed system is located in Room 115 of Building 37. The liquid feed system prep room is bermed and contains no floor drains. The inventory permitted in this room is 600 gallons and release containment is designed to hold 110 percent of the maximum inventory. Containers are opened and handled under a barrel hood with an exhaust blower capacity of about 1000 cfm. An off-gas treatment unit is associated with the incinerator complex. The exhaust air system from the room includes two HEPA filters. Room 115 of TA-50-37 is permitted to store radioactive waste for the indoor feed system for the incinerator. At one time, Room 115 was used to empty glass vials containing scintillation liquid. The liquid is stored at TA-54, Area L awaiting startup of the incinerator. The solids were disposed of at TA-54, MDA-G as empty containers. The waste comes from throughout the facility.

WASTE INFORMATION

The wastes incinerated include organic liquids; chlorinated, fluorinated hydrocarbons; carcinogenic materials; and transuranic waste from the plutonium processing facility. Liquid effluent generated by the off-gas aqueous scrub system is filtered for solids removal prior to transfer via a double contained instrumented pipeline to the TA-50 Building 1 Industrial Waste Treatment Facility. Ash will be immobilized in concrete prior to shipment to the Waste Isolation Pilot Plant.

RELEASE INFORMATION

The unit has many release controls associated with it.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
50-007	TA50-9-IN-A-HW/RW	50.035 50.036	Tsk 5 : 26	TA-50-37

SUMMARY

LOCATION : TA-50
TYPE OF UNIT(s) : VOLUME REDUCTION
UNIT USE : OTHER: VOLUME REDUCTION
OPERATIONAL STATUS : ACTIVE
PERIOD OF USE : 1983 - PRESENT
HAZARDOUS RELEASE : NONE
RADIOACTIVE RELEASE : NONE

MATERIALS MANAGED : MIXED WASTE

UNIT INFORMATION

The Size Reduction Facility in Building TA-50-69 is a prototype facility designed to reduce the volume of and repackage various types of metallic waste contaminated with transuranics. Operations were initiated in August of 1983. Through FY85, a total volume of 3,106 cubic feet of transuranic waste had been reduced by a factor of 3.7 to 1. This facility is moderately contaminated with transuranics and associated radionuclides.

WASTE INFORMATION

The waste consists of transuranic and metallic waste, including lead.

RELEASE INFORMATION

There is no evidence of release at this facility. There are no outfalls associated with this unit; all liquid wastes are processed at the radioactive waste treatment facility. Stack emissions also are monitored.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
50-008	TA50-8-CA-A-RW		Tsk 5 : 27	IN TA-50-69

SUMMARY

LOCATION	: TA-50	MATERIALS MANAGED	: MIXED WASTE
TYPE OF UNIT(s)	: MATERIAL DISPOSAL AREA		HAZARDOUS WASTE
UNIT USE	: DISPOSAL		SOLID WASTE
OPERATIONAL STATUS	: INACTIVE		
PERIOD OF USE	: 1948 - 1969		
HAZARDOUS RELEASE	: UNKNOWN		
RADIOACTIVE RELEASE	: KNOWN		

UNIT INFORMATION

MDA-C is located on the north side of Pajarito Rd adjacent to TA-50. There is approximately 3,650,000 cubic feet of waste at MDA-C within an area of 11.8 acres. MDA-C is composed of six radioactive pits, one chemical pit and 107 shafts. Pits 1 through 4 were approximately 185.9 m x 12.2 m in area. Pit 5 was approximately 214.9 m long x 33.5 m wide x 5.5 m deep. Pit 6 was approximately 153.9 m long x 30.5 m wide x 7.0 m deep. The chemical pit was approximately 54.9 m long x 7.6 m wide and may have been 3.7 m deep. The shafts vary in diameter and depth, and many are lined with corrugated metal pipe. Pit 1 was used from 1948-1951; Pit 2 was used from 1950-1951; Pit 3 was used from 1951-1953; Pit 4 was used from 1951-1955; Pit 5 was used from 1948-1951; and Pit 6 was used from 1956-1959. The chemical pit was active from 1960-1964. Pit disposal ended in 1964 and shaft disposal ended in 1969. Studies in the late 1970s indicated animal intrusion into the waste and other problems. The surface was improved in 1984 by adding soil cover at a depth greater or equal to six inches with an average cover of approximately two feet, recontouring, and seeding with native grasses. The new surface cover was applied to the eastern half and the extreme western end of the site and consisted of an additional 0.15 meter of topsoil over 0.5 meter of crushed tuff. The new cover was not applied to the extreme southwest corner of Area C because this area does not include any of the waste trenches.

WASTE INFORMATION

The types of radioactive waste buried in Area C include building debris from the demolition of TA-1 and TA-10, routine contaminated trash, sludge from waste treatment plants and depleted uranium chips. Plutonium-contaminated sodium loops from TA-35 were buried in shafts. Noncombustible waste was put in the west end of pit 5 in 1957. The chemical pit contained, according to reports, a variety of chemicals, pyrophoric metals, hydrides and powders, sealed vessels containing sodium potassium alloys or compressed gases, and equipment not suitable for salvage. No high explosives have ever been disposed of in the pit. Natural uranium contaminated objects were placed in the pit, according to reports. Before closing Area C, the safety office placed approximately 200 gas cylinders which were full or partially full and covered them with approximately ten feet of compact fill. The record indicates that warnings were made that some full nickel carbonyl cylinders may have been put into the chemical pit. Carboys of di- or triethylbenzene from the whole body counter at TA-43 were deposited on the ground where the solar panels were located (the solar panels have since been removed). Parts of the Clementine Reactor (see SWMU No. 2-003) are buried in MDA-C.

RELEASE INFORMATION

During the 1986 DOE Environmental Survey (Environmental Problem 22), above background levels of radioactivity were found adjacent to the site. The source of elevated radioactivity has not been determined.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
50-009	MDA-C	50.034	Tsk 5 : 32-42	MDA-C

SUMMARY

LOCATION : TA-50
TYPE OF UNIT(s) : DECONTAMINATION FACILITY
UNIT USE : TREATMENT
OPERATIONAL STATUS : ACTIVE
PERIOD OF USE : 1963 - PRESENT
HAZARDOUS RELEASE : NONE
RADIOACTIVE RELEASE : NONE

MATERIALS MANAGED : RADIOACTIVE WASTE

UNIT INFORMATION

A radioactive decontamination facility for the laboratory is located in the lower level at the south end of TA-50-1. The facility is used to clean radioactive contamination from vehicles and other objects. Liquid wastes produced during decontamination go to the tank farm at TA-50, via floor drain and drainline, and solid wastes go to TA-54 for storage (TRU) or burial (LL). The decontamination takes place at the facility in hoods, gloveboxes, and open areas.

WASTE INFORMATION

The wastes generated are generally radioactive.

RELEASE INFORMATION

There is no evidence of routine or systematic releases at this facility.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
50-010	TA50-10-CA-A-RW		Tsk 5 : 9	IN TA-50-1

SUMMARY

LOCATION : TA-50
TYPE OF UNIT(s) : SEPTIC SYSTEM
UNIT USE : TREATMENT/DISPOSAL
OPERATIONAL STATUS : INACTIVE/ACTIVE
PERIOD OF USE : 1963 - PRESENT
HAZARDOUS RELEASE : UNKNOWN
RADIOACTIVE RELEASE : UNKNOWN

MATERIALS MANAGED : SANITARY WASTE

UNIT INFORMATION

A decommissioned septic system [50-011(a)] included a septic tank, TA-50-10, a manhole, TA-50-9, and a sanitary distribution box, TA-50-11. In addition, Zia Company engineering drawing Z-4856 indicates that a seepage pit was installed on the east side of the sanitary distribution box in 1978. All components of the septic system were removed in 1983. An active sanitary waste system of drainlines [50-011(b)] was installed in 1983 to discharge sanitary sewage from TA-50 to the treatment lagoons at TA-35. The lines are 6-inch ductile iron pipe and were installed to replace the earlier septic tank system. The drainlines are operational and subject to monitoring.

WASTE INFORMATION

The septic systems managed sanitary waste only.

RELEASE INFORMATION

The septic system was removed in 1983; it is unknown if there were hazardous releases. No known releases have occurred from the active sanitary waste system.

NOTES

Former SWMU Nos. 50-011(b) and (c) were contiguous parts of the septic system and have been included within 50-011(a).

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
50-011(a)	**		Tsk 5 : 50	TA-50-10, -9, -11
50-011(b)	**		Tsk 5 : 2	
50-011(misc)			Tsk 5 : 58	

** No corresponding E. R. Program unit.

5.0 CERTIFICATION

In accordance with the *New Mexico Administrative Code*, Title 20, Chapter 4, Part 1, revised June 14, 2000, incorporating the *Code of Federal Regulations*, Title 40 (40 CFR), referred to as NMAC §270.11(d) [6-14-00], 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

02/05/01
Date Signed

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

2/5/01
Date Signed

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NMAC §265. "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities." Santa Fe, New Mexico, New Mexico Environmental Improvement Board.

NMAC §266. "Standards for Materials Being Recycled/Reused." Santa Fe, New Mexico, New Mexico Environmental Improvement Board.

NMAC §268. "Land Disposal Restrictions." Santa Fe, New Mexico, New Mexico Environmental Improvement Board.

NMAC §270. "The Hazardous Waste Permit Program." Santa Fe, New Mexico, New Mexico Environmental Improvement Board.

ATTACHMENT A

FACILITY DESCRIPTION

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LIST OF ABBREVIATIONS/ACRONYMS

CAI	controlled air incinerator
CSA	container storage area
DOE	U.S. Department of Energy
LANL	Los Alamos National Laboratory
MDA	Material Disposal Area
NMAC	*New Mexico Administrative Code*, Title 20, Chapter 4, Part 1
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, revised June 14, 2000, incorporating the *Code of Federal Regulations*, Title 40 (40 CFR), hereinafter referred to as NMAC §264, §265, and §270 [6-14-00]. 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 (NMAC §270.14(b)(1) [6-14-00])
- Site-specific location information for compliance with seismic and floodplain standard requirements (NMAC §§270.14(b)(11)(i) through (iii), §270.14(b)(19)(ii), and §§264.18(a) and (b) [6-14-00])
- Site-specific environmental information (NMAC §270.14(b)(1) [6-14-00])
- Site-specific groundwater monitoring and protection information (NMAC §270.14(c) and §264.90(a) [6-14-00])
- Site-specific traffic patterns and control (NMAC §270.14(b)(10) [6-14-00])
- Site-specific security (NMAC §270.14(b)(4) [6-14-00])
- Topographic map requirements (NMAC 4.1 §270.14(b)(19) [6-14-00])

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 [NMAC §270.14(b)(1) and §270.14(b)(19)]

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) in Rooms 112, 115, 117, and 118
- Radioactive Liquid Waste Treatment Facility (RLWTF) CSA in TA-50-1, Room 59
- RLWTF CSA in TA-50-114
- Waste Characterization, Reduction, and Repackaging Facility (WCRRF) Indoor CSA in TA-50-69, Rooms 102 and 103
- WCRRF Outdoor CSA

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 NMAC §264 and §265 [6-14-00]
- Hazardous waste unit closed pursuant to NMAC §264 [6-14-00]
- 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 NMAC §264 and §265 [6-14-00], 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-50-37 Rooms 112, 115, 117, 118
  - TA-50-69 Outdoor CSA, Indoor CSA

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

The CSA in TA-50-1 Rooms 35, 36, and 38/38A were operated under interim status, but are currently undergoing closure.

TA-50-1 Room 60A contained a mixed waste treatment unit (waste solidification/cementation) that operated under interim status, but has been changed to generator treatment in compliance with NMAC §264.1(g)(10) [6-14-00].

Unit closed pursuant to NMAC §264 [6-14-00]:

- The Controlled-Air Incinerator (CAI) and storage areas in TA-50-37 (Certification Report 1997)

Unit closed pursuant to NMAC §264 [6-14-00]:

- The Batch Waste Treatment Unit at TA-50-1 (Certification Report 1994)

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 [NMAC §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 NMAC §270.14(b)(19) [6-14-00]. 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 10 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. Wind rose and

100-year floodplain information for TA-50 are provided in the LANL General Part B, Sections A.3.2 and A.4.

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 this TA-50 Part B.

A.1.3 TA-50-1

TA-50-1, Room 59 houses the RLWTF CSA. Figure A-4 depicts the location of this unit. The RLWTF CSA is further described in Section 2.1 and Attachment G of this 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 the RLWTF. The TA-50-114 CSA is further described in Section 2.1 and Attachment G of this 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 this 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 this 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 [NMAC §§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 [NMAC §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 [NMAC §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 [NMAC §§270.14(b)(11)(i) and (ii), and §264.18(a)]

TA-50 is located in Los Alamos, New Mexico; therefore, pursuant to NMAC §270.14(b)(11)(i) [6-14-00], the seismic standard of NMAC §264.18(a) [6-14-00], 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 NMAC §§270.14(b)(11)(i) and (ii), and §264.18(a) [6-14-00]. 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 [NMAC §270.14(b)(11)(iii), §270.14(b)(19)(ii), and §264.18(b)]

The CSAs addressed in the TA-50 Part B are not located within the 100-year floodplain boundary. In accordance with NMAC §270.14(b)(11)(iii) [6-14-00], additional floodplain information is provided in the LANL General Part B, Appendix A.

A.3 GROUNDWATER MONITORING [NMAC §270.14(c) and §264.90(a)]

Requirements for groundwater monitoring and protection specified in NMAC §270.14(c) and §264.90(a) [6-14-00], 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, which are not regulated units subject to NMAC §270.14(c) [6-14-00].

A.4 TRAFFIC PATTERNS AND CONTROL [NMAC §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.

During the routine working hours of 7:00 a.m. to 5:00 p.m. Monday through Friday, the traffic pattern consists of personal and government-owned passenger vehicles entering the area through the open northern gate, going to a parking area, and parking. Throughout the workday, government-owned trucks may enter the gates that are kept locked except during loading/unloading activities and transport their loads to the loading/unloading areas. Throughout the workday, the average daily flow of traffic is approximately 160 vehicles per day. Authorized government vehicles only are permitted on the road leading around the southern end of TA-50-1 and in the area to the southeast of TA-50-1. Figure A-9 depicts the gates and areas discussed.

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 [NMAC §270.14 (b)(4), §270.14(b)(19)(viii), and §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 NMAC §§264.14(a) and (b)(2) [6-14-00].

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 NMAC §264.14(c) [6-14-00], warning signs are also posted at the entrances to each area that will manage hazardous and mixed waste and are 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 easternmost of these two gates is kept closed and locked to unauthorized personnel. The third entry gate is located at TA-50-38 on Pecos Drive, northeast of TA-50-37. This gate may be used to enter TA-50 from Pecos Drive. It is closed and locked unless authorized access is necessary. 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. In accordance with NMAC §270.14(b)(19)(viii) [6-14-00], 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, and Storage Locker TA-50-114 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. Access to the TA-50-69 Outdoor CSA is controlled by a chain around the CSA and a posted sign with the legend "Authorized Personnel Only."

A.6 REFERENCES

Certification Report. 1994. *Closure Certification Report. TA-50 Batch Waste Treatment Unit.* IT Corporation, Albuquerque, New Mexico.

Certification Report. 1997. *Los Alamos National Laboratory Controlled-Air Incinerator RCRA Closure Certification Report.* Benchmark Environmental Corporation, Albuquerque, New Mexico.

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.

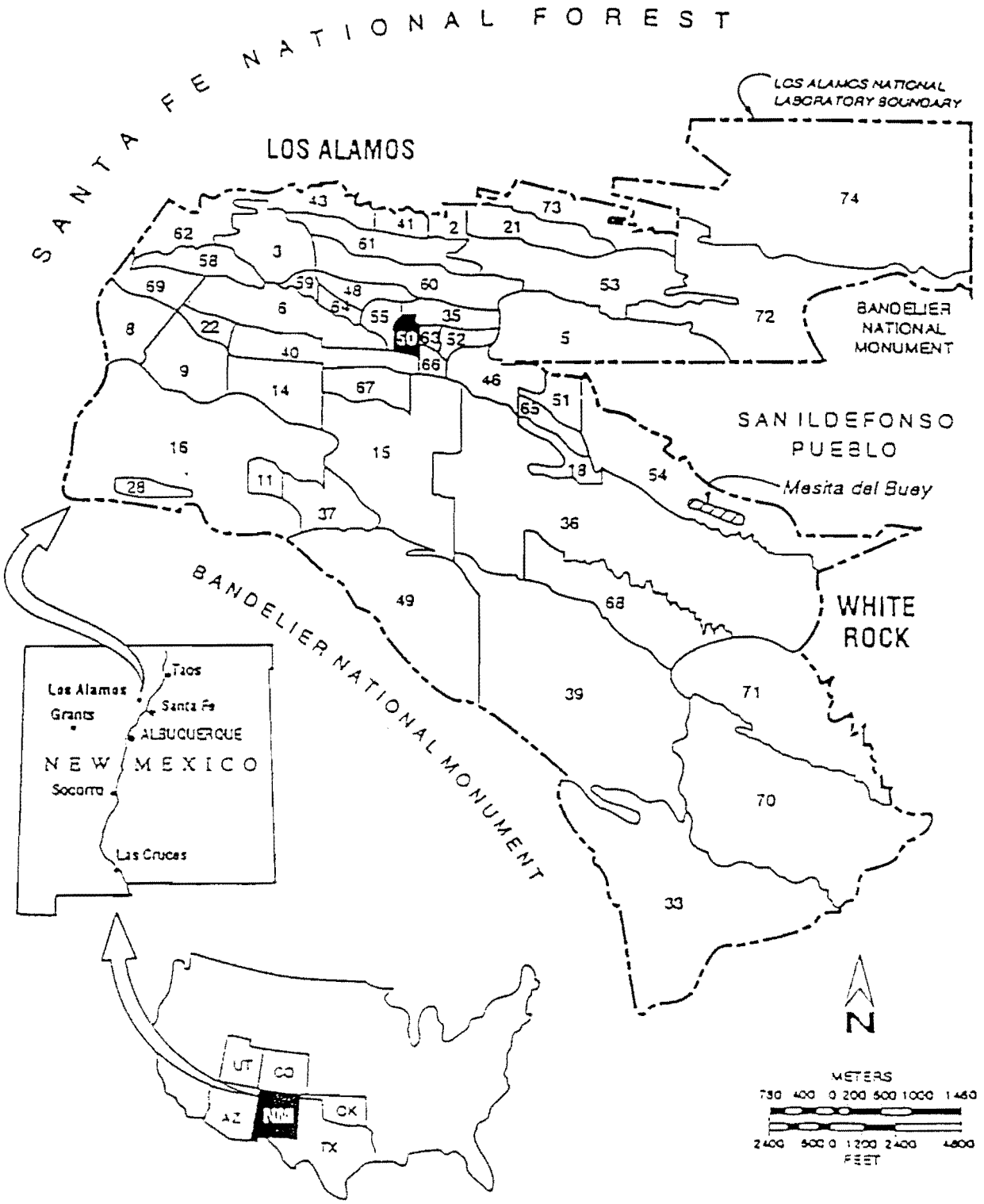
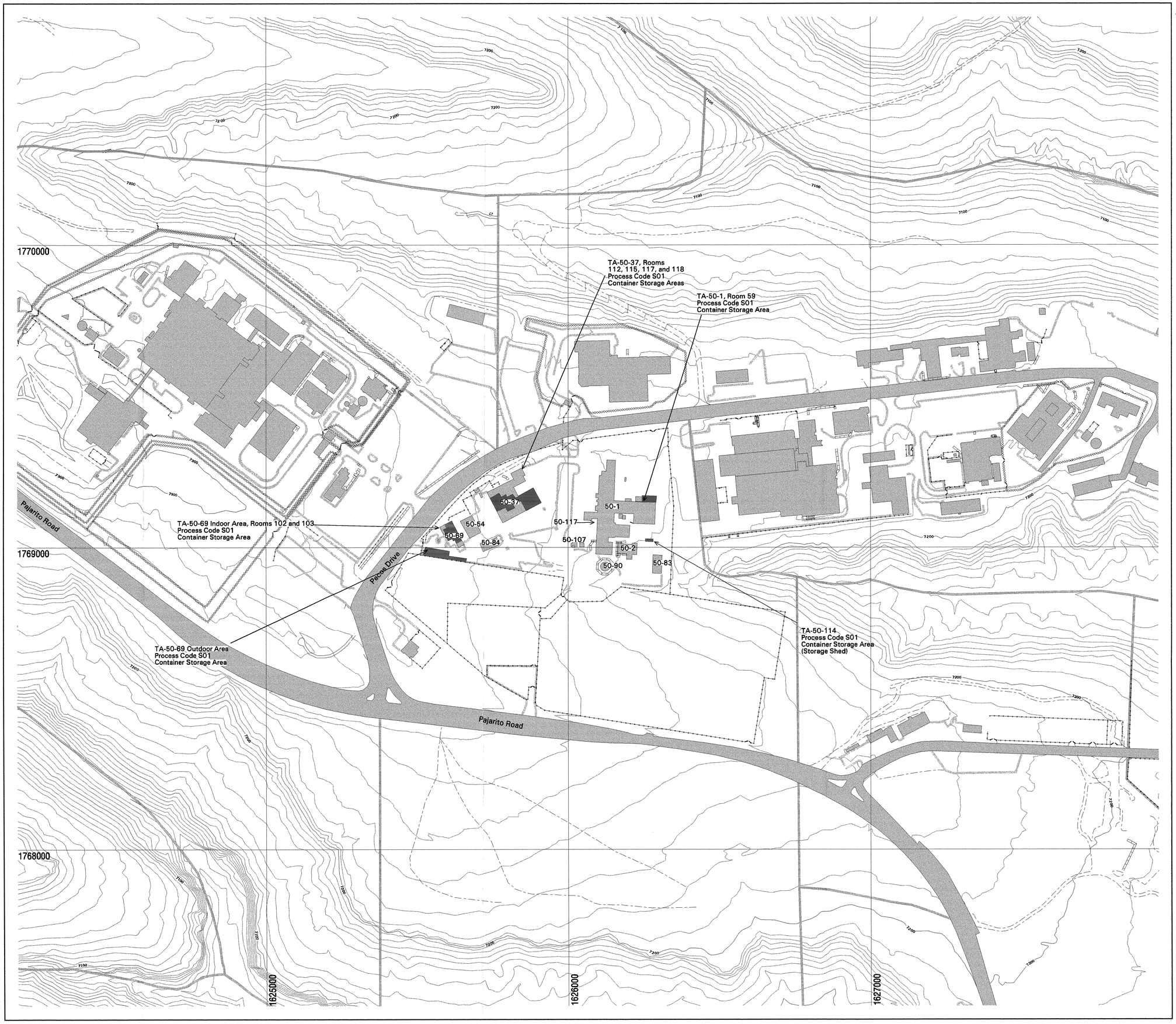


Figure A-1. Location of TA-50 in Relation to Other Laboratory TAs and Surrounding Landholdings



LEGEND

- Boundary, TA
- Contour, 10 foot
- Contour, 100 foot
- Fence, Industrial
- Fence, Security
- Retaining Wall
- Road, Paved
- Road, Dirt
- Structure
- Regulated Unit

8913-B

Map A-1

Contour Map Showing the Locations of the Hazardous and Mixed Waste Units at Technical Area (TA) 50

FACILITY for INFORMATION, MANAGEMENT, ANALYSIS and DISPLAY

EARTH & ENVIRONMENTAL SCIENCES DIVISION (EES-5)
LOS ALAMOS NATIONAL LABORATORY, Los Alamos, New Mexico

Produced by: Marcia Jones

Date: November 28, 2000 FIMAD Plot ID: G109358

N

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

Grid provides NM State Plane coordinates in feet.
Grid interval, in feet: 1000
Feet per inch on map = 150

SCALE 1:1800

0 46 92 138 184

METERS

0 150 300 450 600

FEET

Notice: The information on this map is provisional and the accuracy has not been confirmed. Feature locations are dependent on scale and symbology and should not be relied upon to establish legal claims. Basemap Sources: Boundary, structure, and utility data are from Los Alamos National Laboratory Engineering Division and Los Alamos County Utility and Engineering Departments. Contour data is from Los Alamos National Laboratory Environmental Restoration Program aerial survey, September 1991.

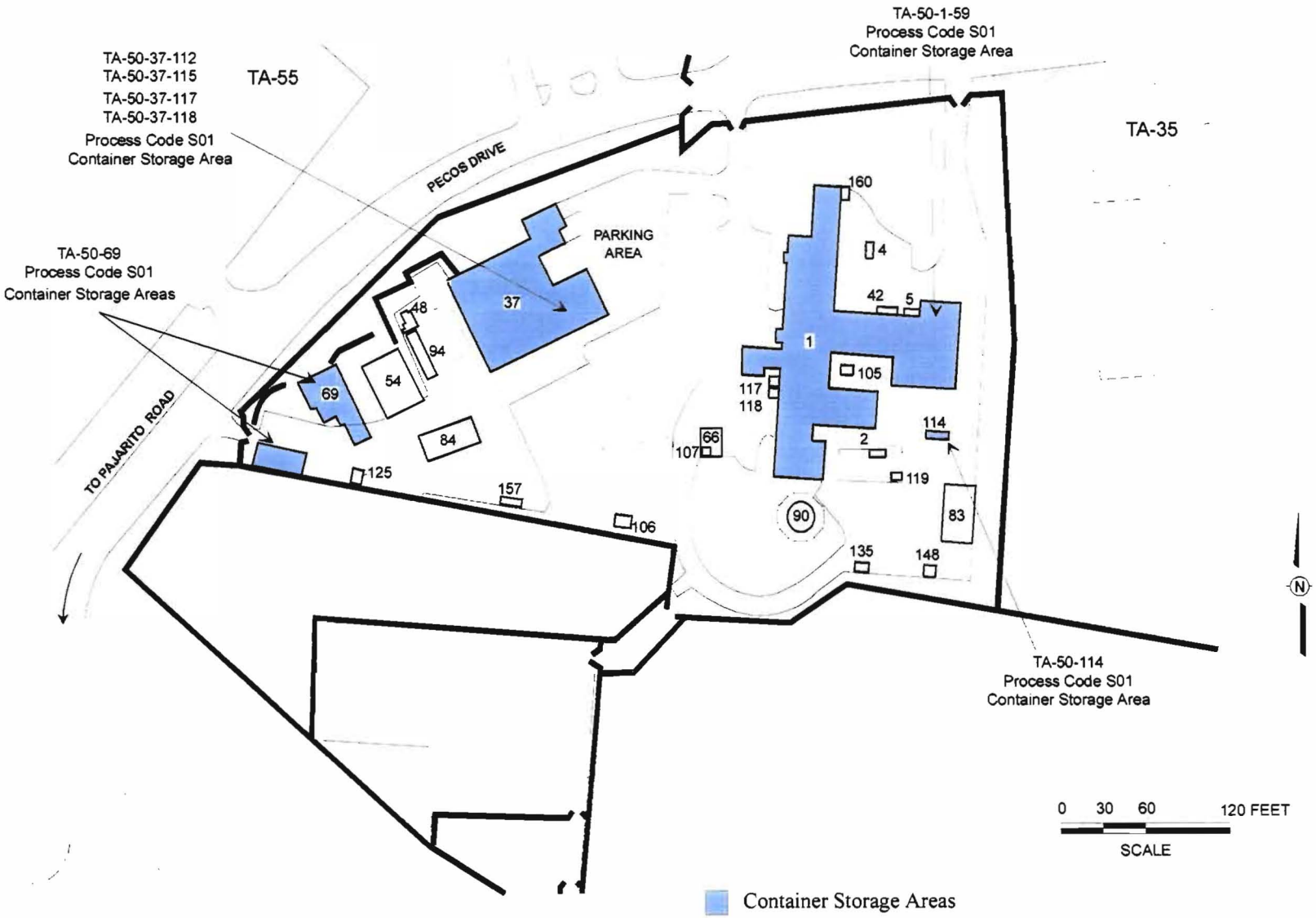


Figure A-2. TA-50 Site Map

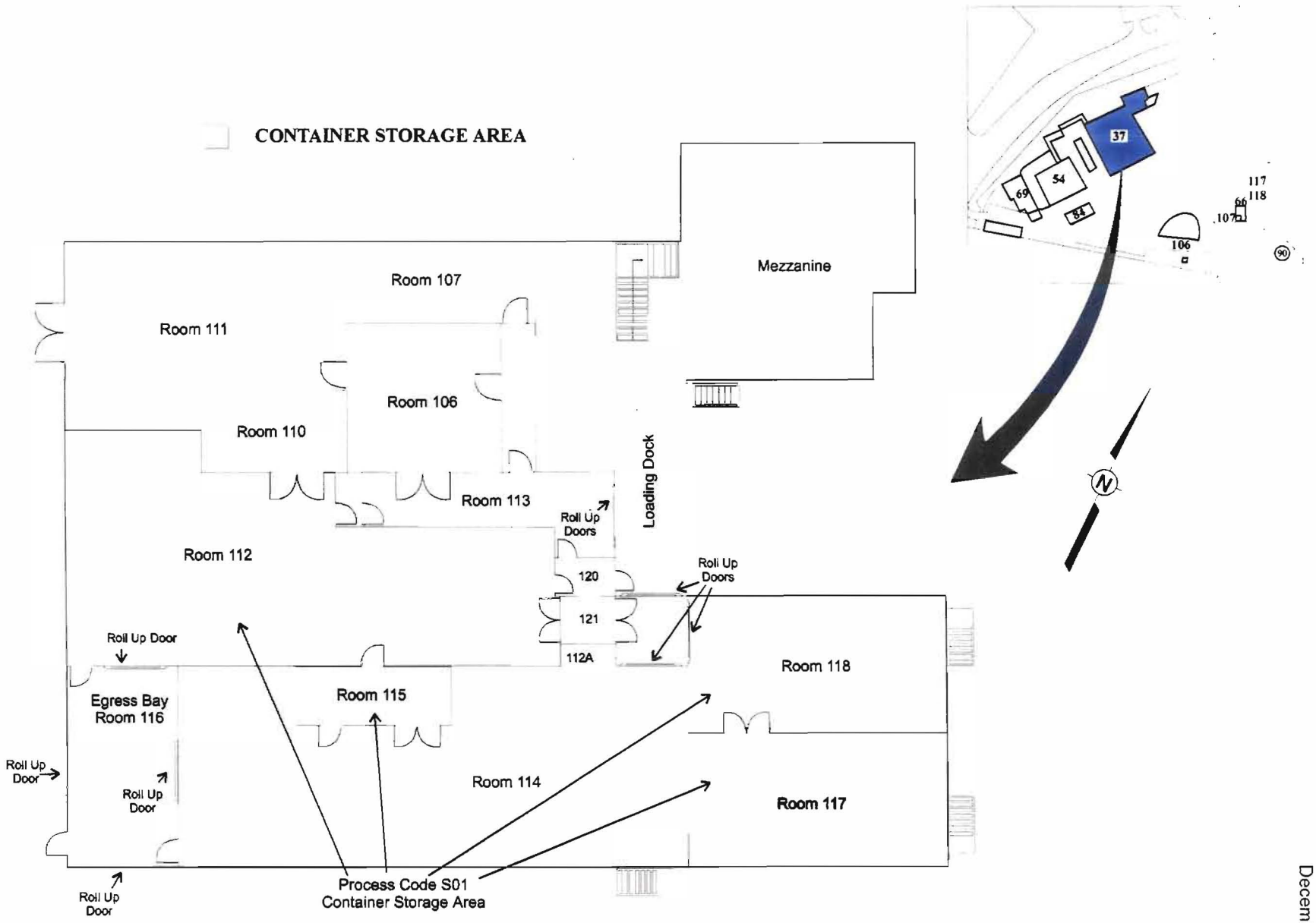


Figure A-3. TA-50-37 Container Storage Area

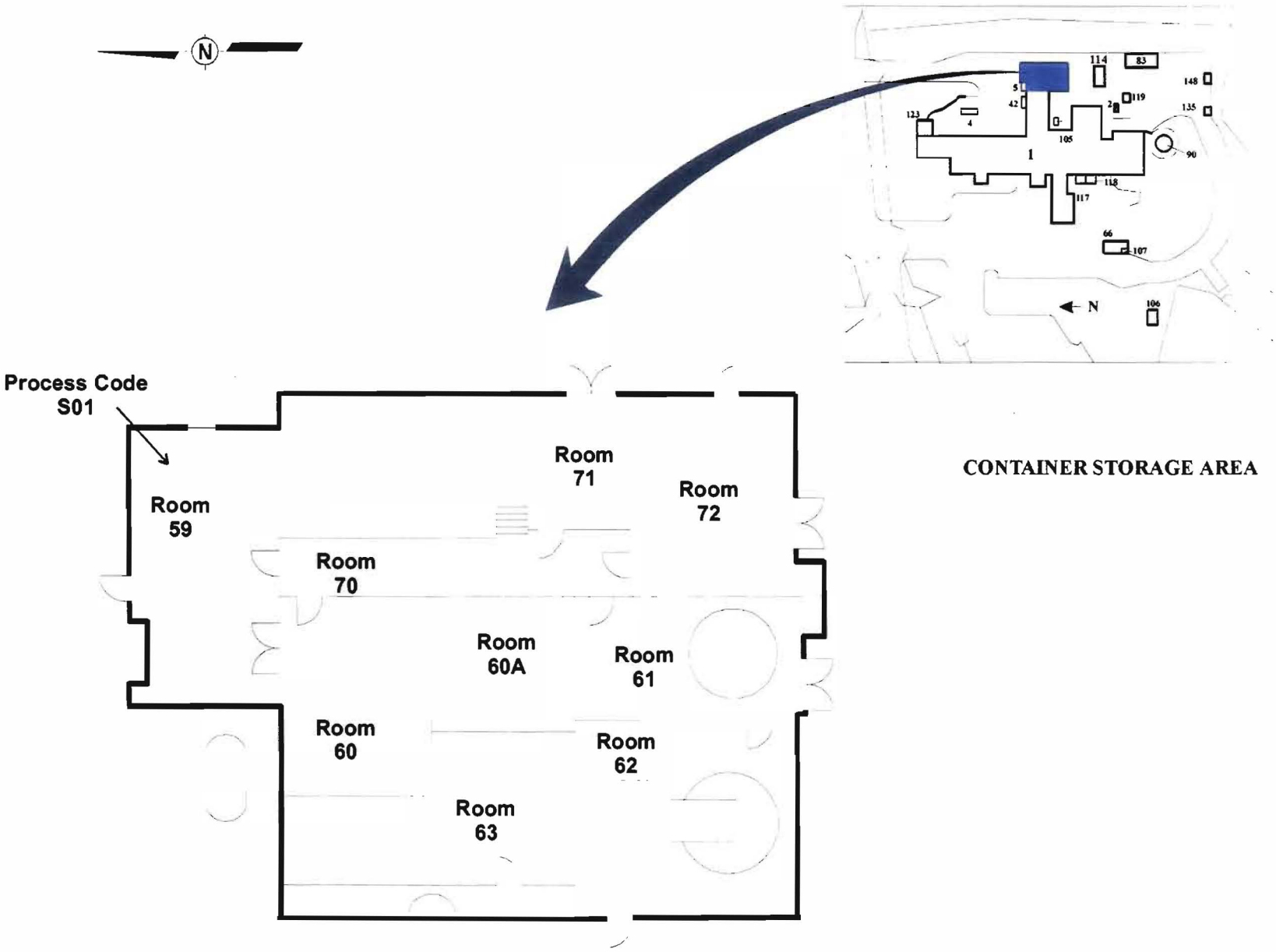


Figure A-4. TA-50-1 RLWTF Container Storage Area

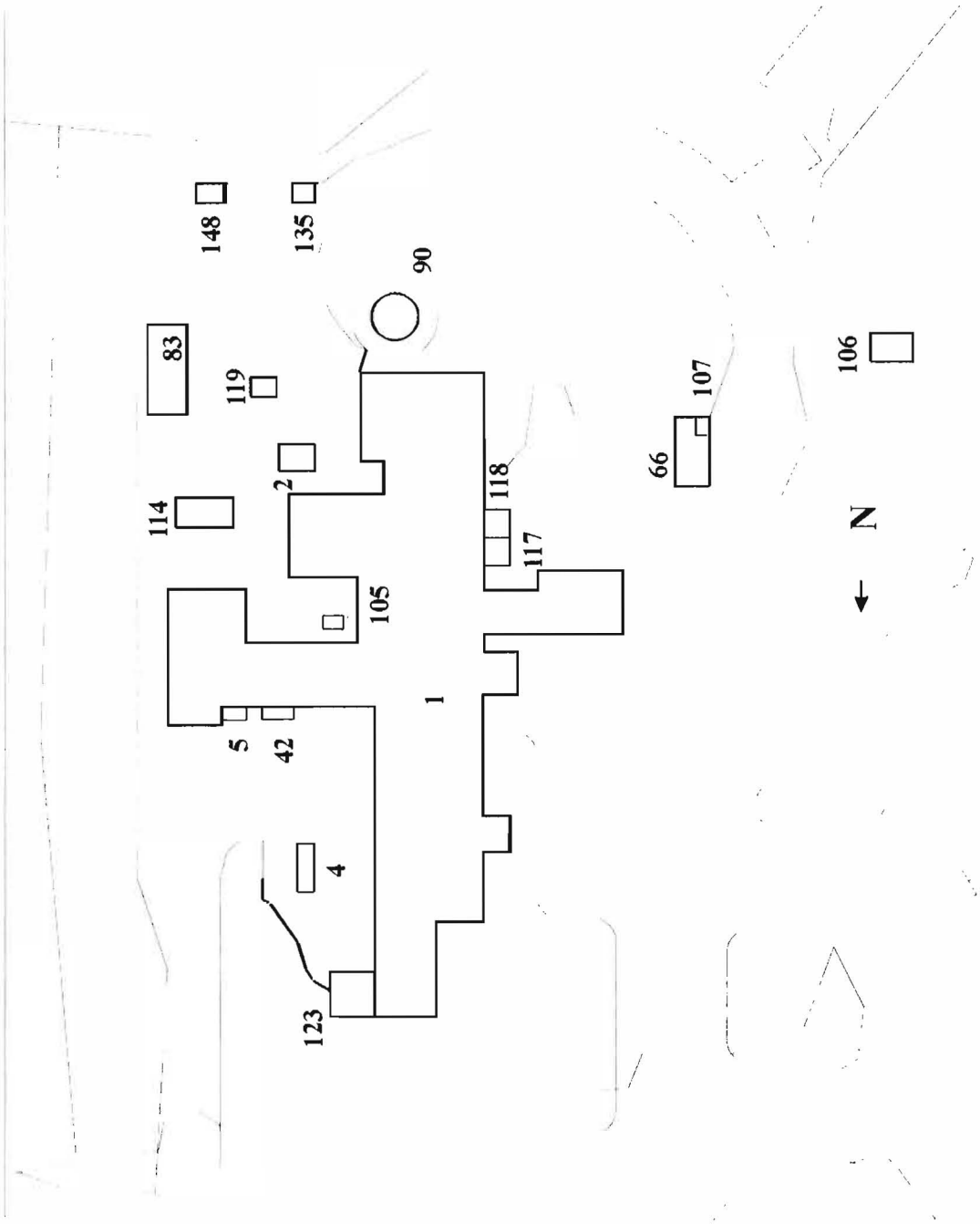
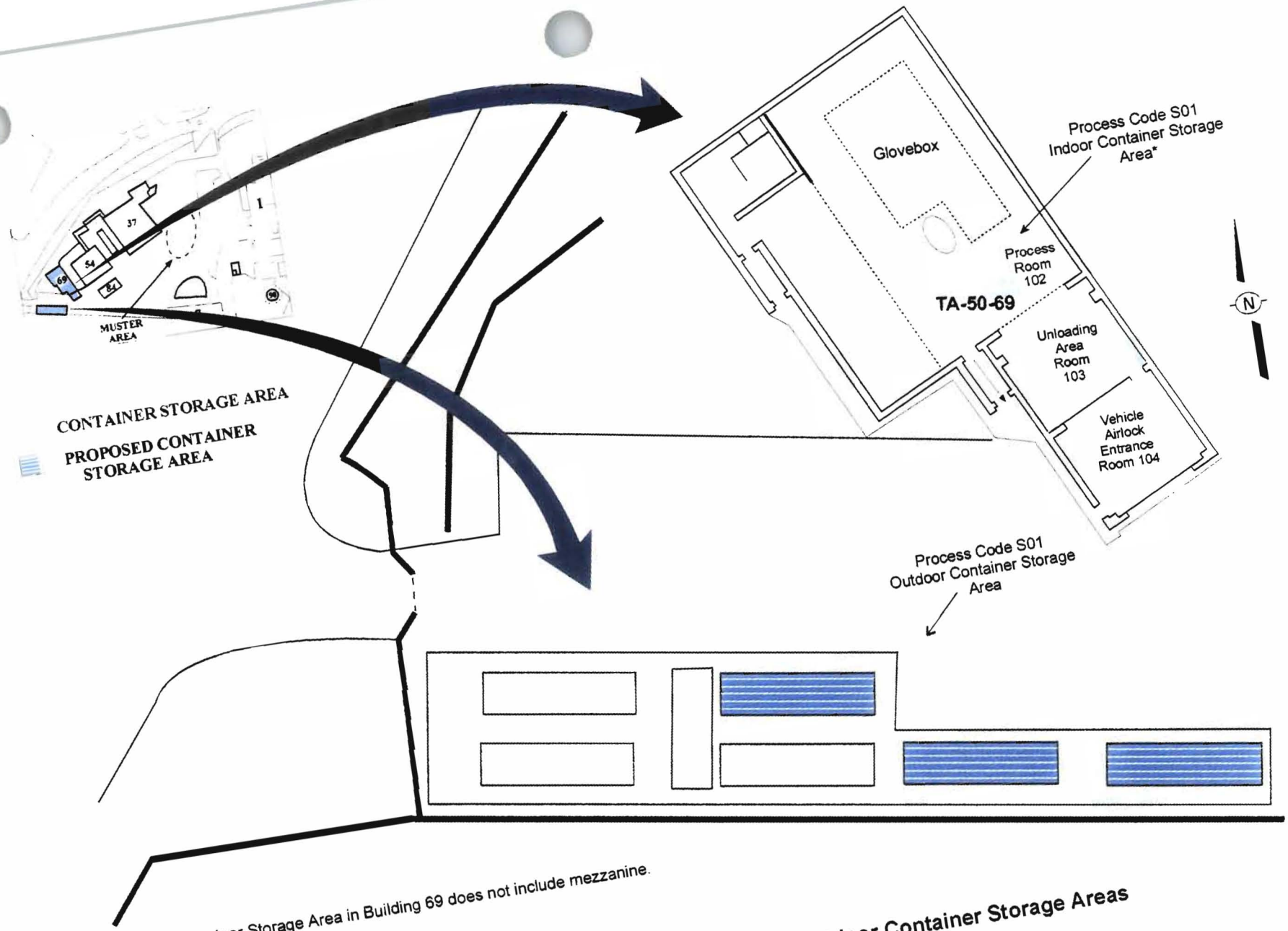


Figure A-5. TA-50-114 Container Storage Area



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

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

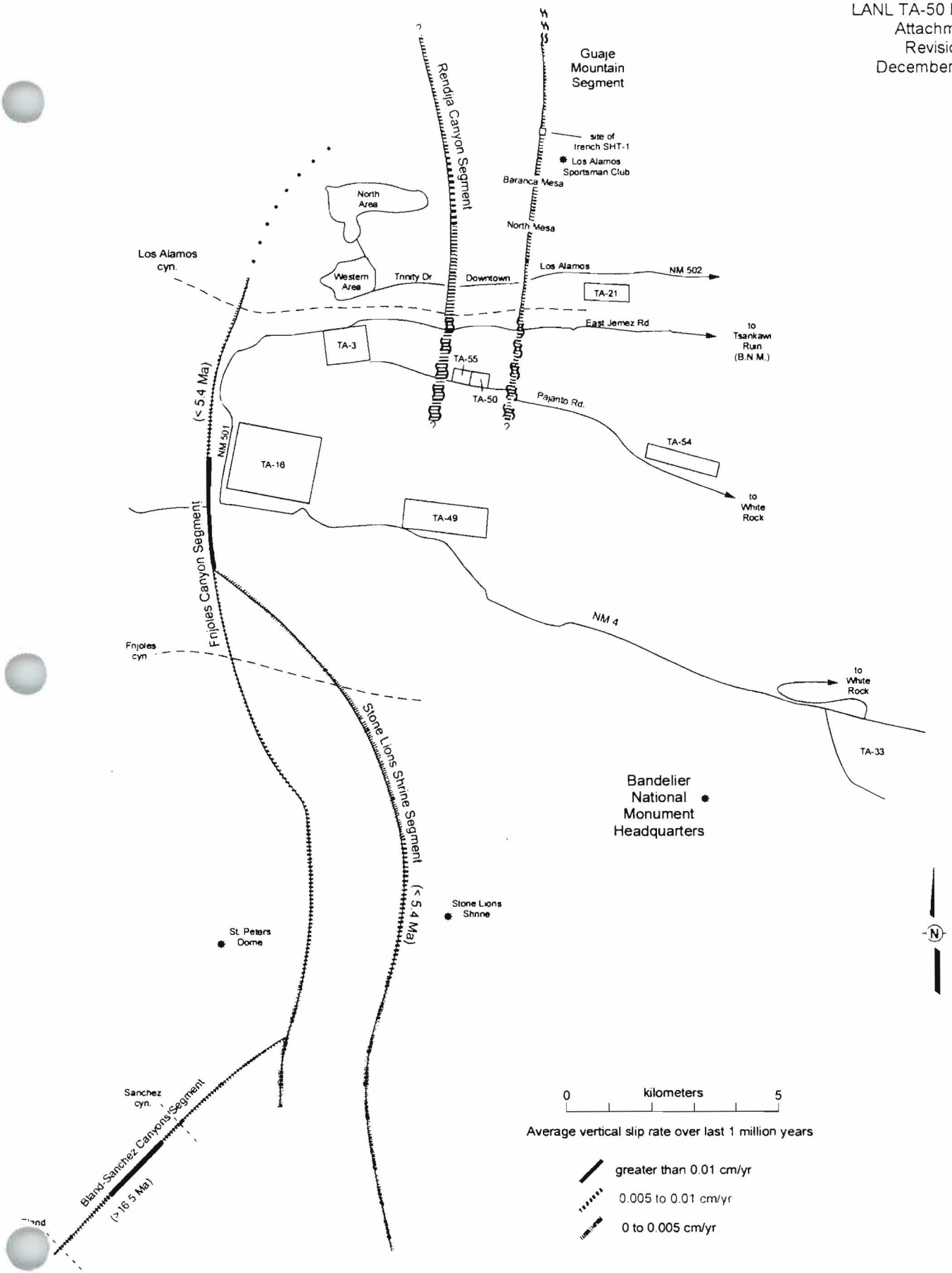


Figure A-7. Regional Surface Faulting

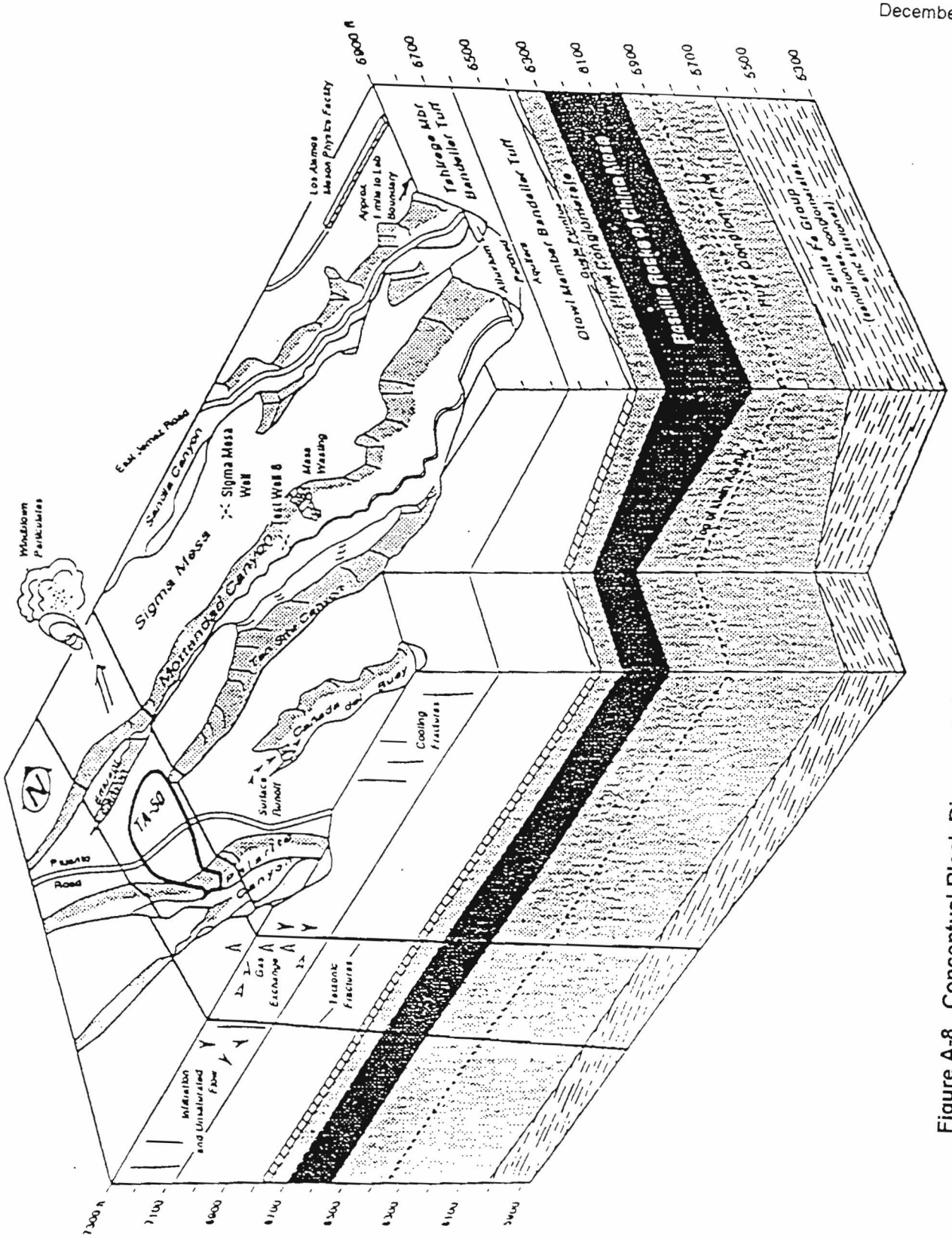


Figure A-8. Conceptual Block Diagram Schematic of the Stratigraphy of the TA-50 Site

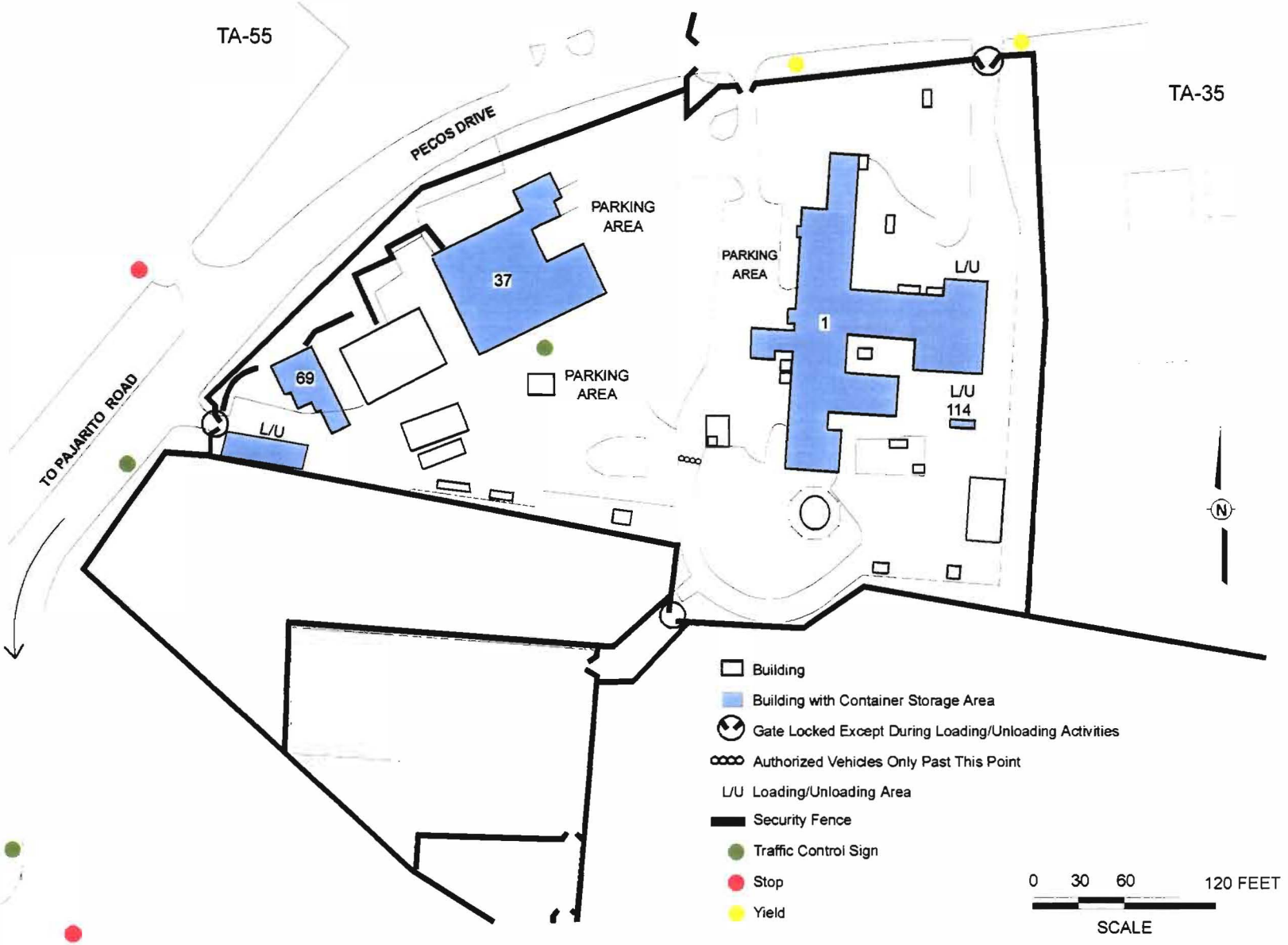


Figure A-9. Location of Access Road and Traffic Control Signs at Technical Area (TA) 50

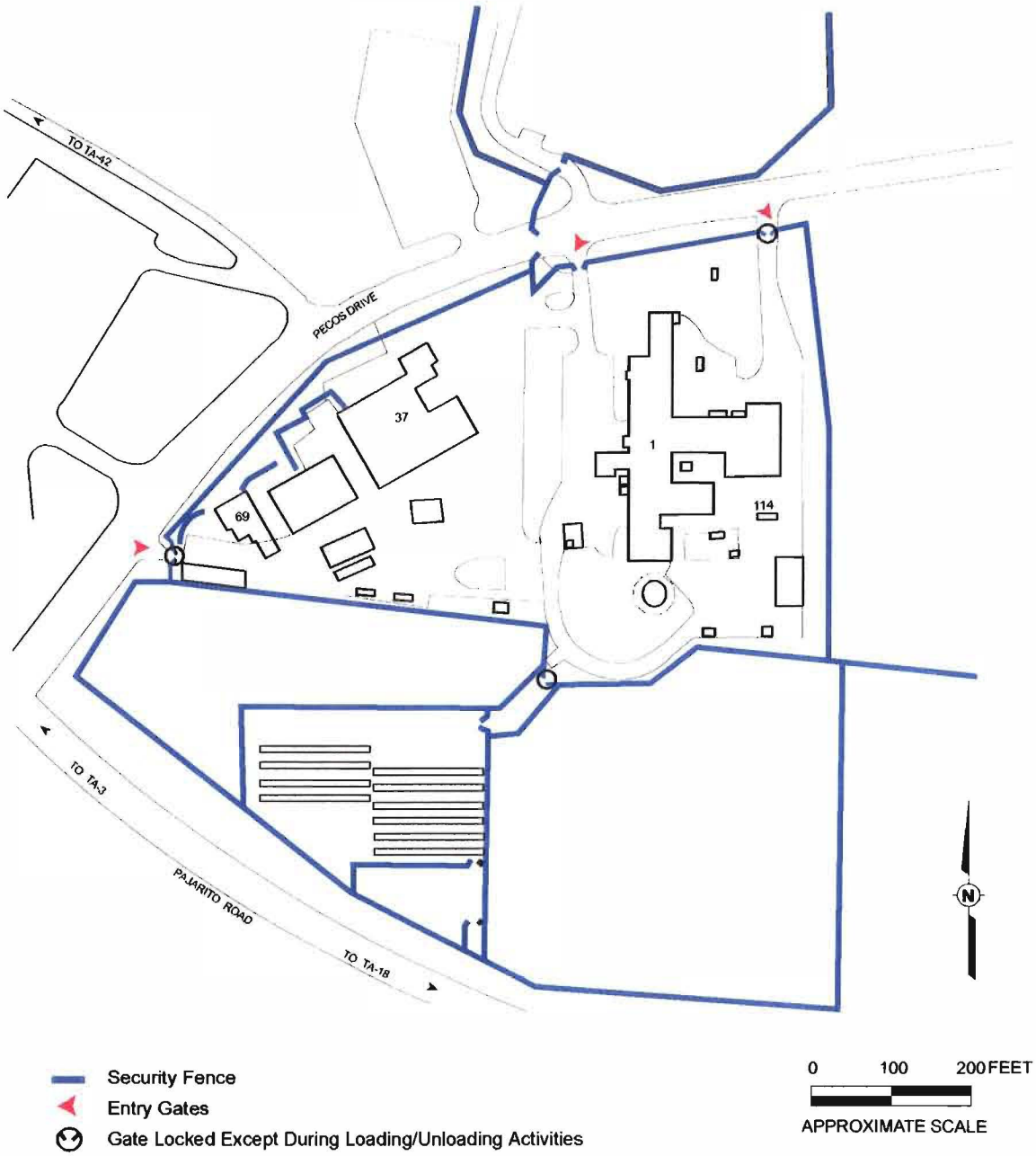


Figure A-10. TA-50 Security Fences and Entry Gates

ATTACHMENT B

WASTE ANALYSIS PLAN

ATTACHMENT B
WASTE ANALYSIS PLAN

Waste analysis requirements are specified in the *New Mexico Administrative Code*, Title 20, Chapter 4, Part 1, revised June 14, 2000, incorporating the *Code of Federal Regulations*, Title 40 (40 CFR), referred to as NMAC §270.14(b)(2), §264.13, and §268.7 [6-14-00]. The waste analysis plan applicable to operations at TA-50 is provided in Appendix B of the *Los Alamos National Laboratory General Part B Permit Application* (Los Alamos National Laboratory 1998).

B.1 REFERENCE

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

ATTACHMENT C

INSPECTION PLAN

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C.1 INSPECTION AND MONITORING FOR UNITS SUBJECT TO SUBPART CC REQUIREMENTS [NMAC §264, Subpart CC, and §264.1088] C-1

C.2 REFERENCES C-1

LIST OF ABBREVIATIONS/ACRONYMS

CFR	*Code of Federal Regulations*
CSA	container storage area
DOT	U. S. Department of Transportation
LANL	*Los Alamos National Laboratory*
NMAC	*New Mexico Administrative Code*, Title 20, Chapter 4, Part 1
TA	Technical Area
TRU	transuranic

ATTACHMENT C
INSPECTION PLAN

General inspection schedules and requirements applicable to the mixed low-level and mixed transuranic (TRU) waste and hazardous waste container storage areas (CSAs) located at Technical Area (TA)-50 are addressed in Appendix C of the *Los Alamos National Laboratory General Part B Permit Application* [Los Alamos National Laboratory (LANL) 1998], hereinafter referred to as the LANL General Part B.

C.1 INSPECTION AND MONITORING FOR UNITS SUBJECT TO SUBPART CC REQUIREMENTS [NMAC §264, Subpart CC, and §264.1088]

Hazardous wastes treated, stored, or disposed of in tanks, surface impoundments, or containers are subject to the *New Mexico Administrative Code*, Title 20, Chapter 4, Part 1, revised June 14, 2000, incorporating the *Code of Federal Regulations*, Title 40 (40 CFR), hereinafter referred to as NMAC §264, Subpart CC [6-14-00]. NMAC §264, Subpart CC [6-14-00] 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^3 (approximately 26-gal.) capacity, and containers that have received waste before December 6, 1995. Currently, pursuant to NMAC §264.1080(b)(6) [6-14-00], the requirements of NMAC §264, Subpart CC [6-14-00] do not apply to waste management units that are used solely for managing mixed waste.

Containers of hazardous waste that are less than or equal to 0.45 m^3 (approximately 119-gal.) capacity and meet U.S. Department of Transportation (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 NMAC §264, Subpart CC [6-14-00] requirements will be inspected and monitored, as required at NMAC §264.1088(b) [6-14-00].

C.2 REFERENCES

49 CFR Part 178. "Specifications for Packagings." *Code of Federal Regulations*, Washington, D.C., Office of the Federal Register, National Archives and Records Administration.

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

NMAC §264. "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities." Santa Fe, New Mexico, New Mexico Environmental Improvement Board.

ATTACHMENT D

PERSONNEL TRAINING PLAN

ATTACHMENT D
PERSONNEL TRAINING PLAN

Personnel working at the container storage areas located at Technical Area 50 will be trained appropriately, as discussed in Appendix D of the *Los Alamos National Laboratory General Part B Permit Application* (Los Alamos National Laboratory 1998).

D.1 REFERENCE

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

ATTACHMENT E

CONTINGENCY PLAN

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E-3	TA-50-1, Room 59 RLWTF Container Storage Area Emergency Equipment	E-5
E-4	TA-50-114 Container Storage Area Emergency Equipment	E-6
E-5	TA-50-69 WCRRF Indoor Container Storage Area Emergency Equipment	E-7
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LIST OF ABBREVIATIONS/ACRONYMS

CAS	Central Alarm Station
CSA	container storage area
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) 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 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 E-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 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 Container Storage Area Evacuation Routes and Emergency Equipment	E-1
TA-50-1 RLWTF and TA-50-114 Evacuation Routes	E-2
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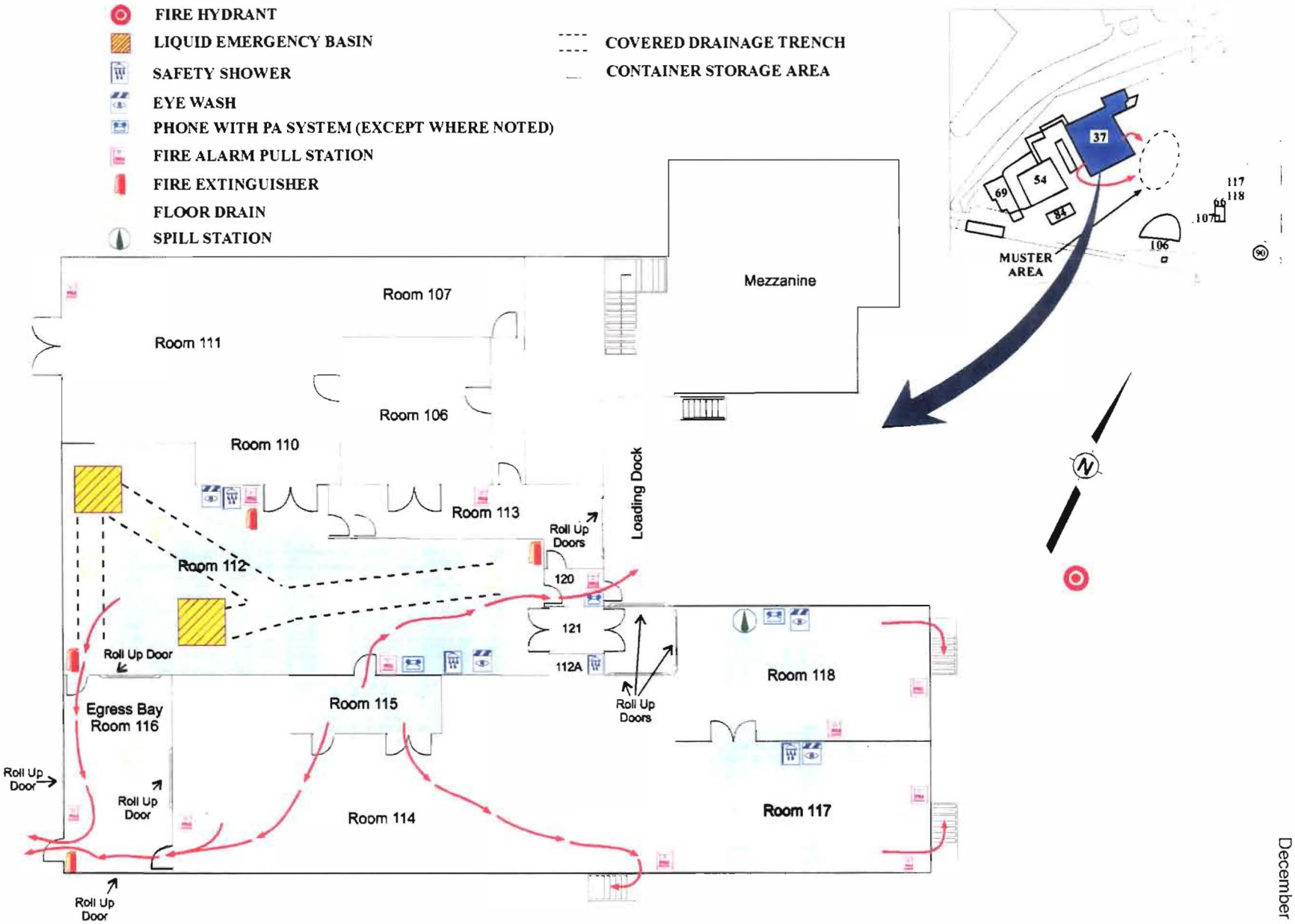


Figure E-1. TA-50-37 Container Storage Area Evacuation Routes and Emergency Equipment

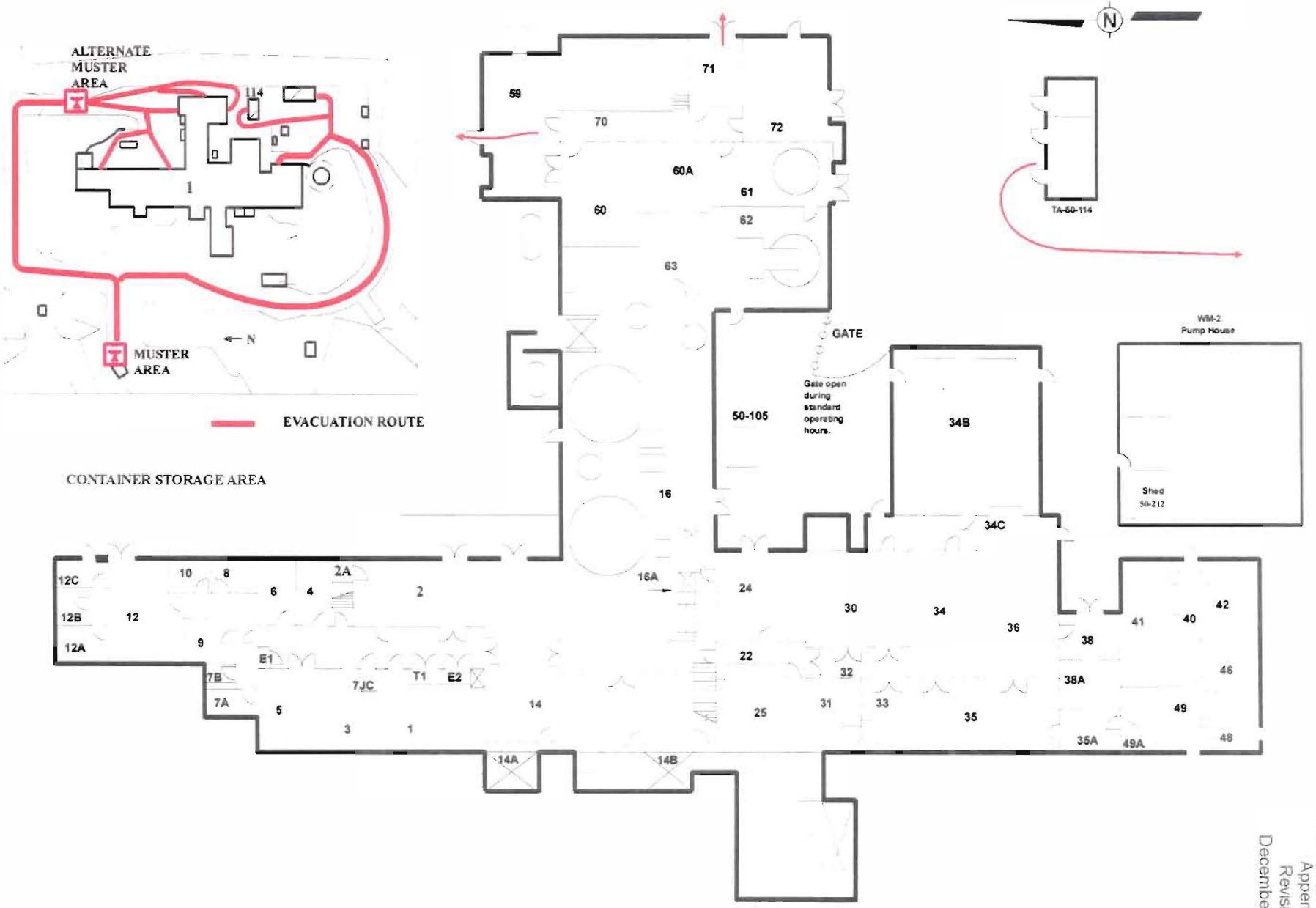


Figure E-2. TA-50-1 RLWTF and TA-50-114 Evacuation Routes

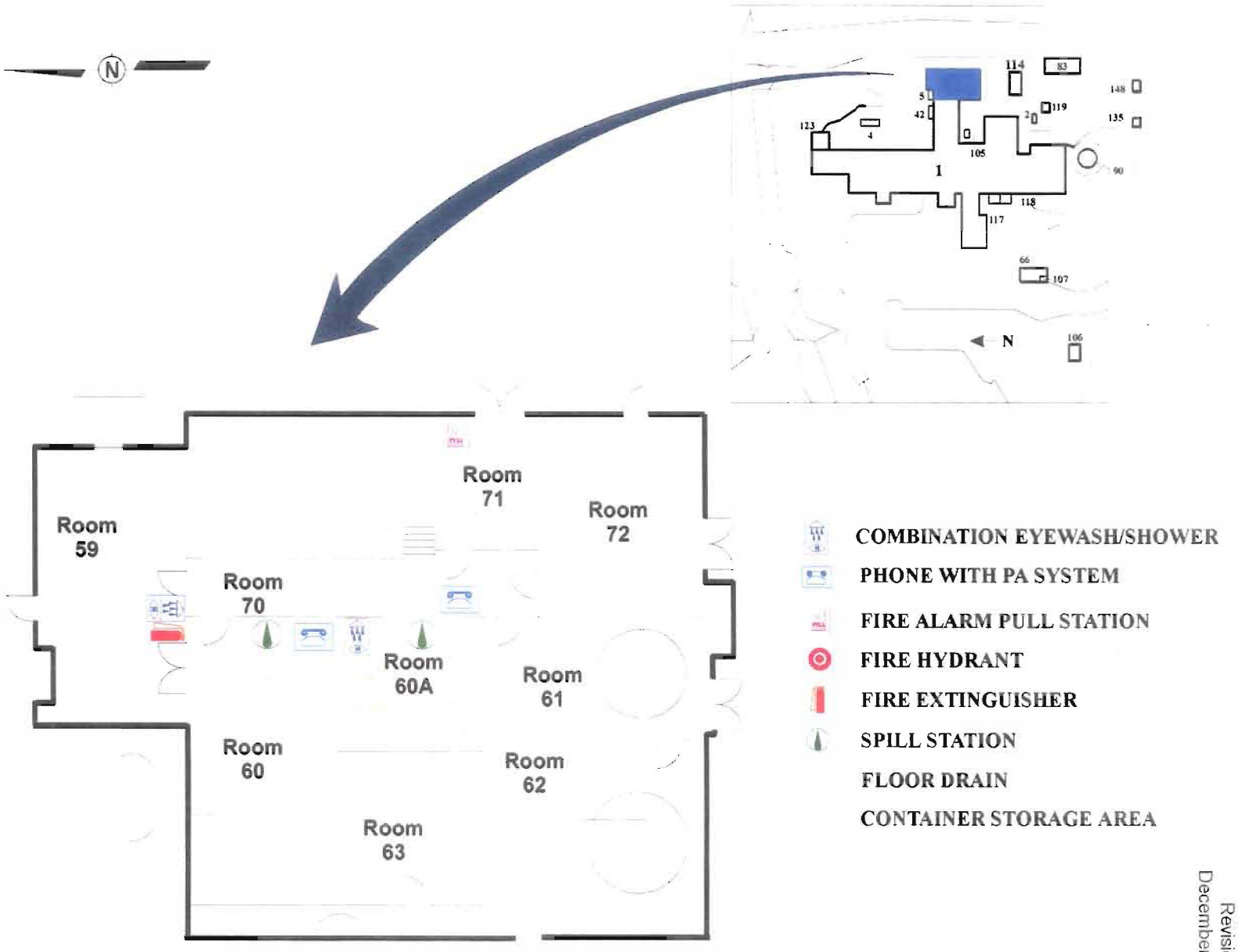


Figure E-3. TA-50-1, Room 59 RLWTF Container Storage Area Emergency Equipment

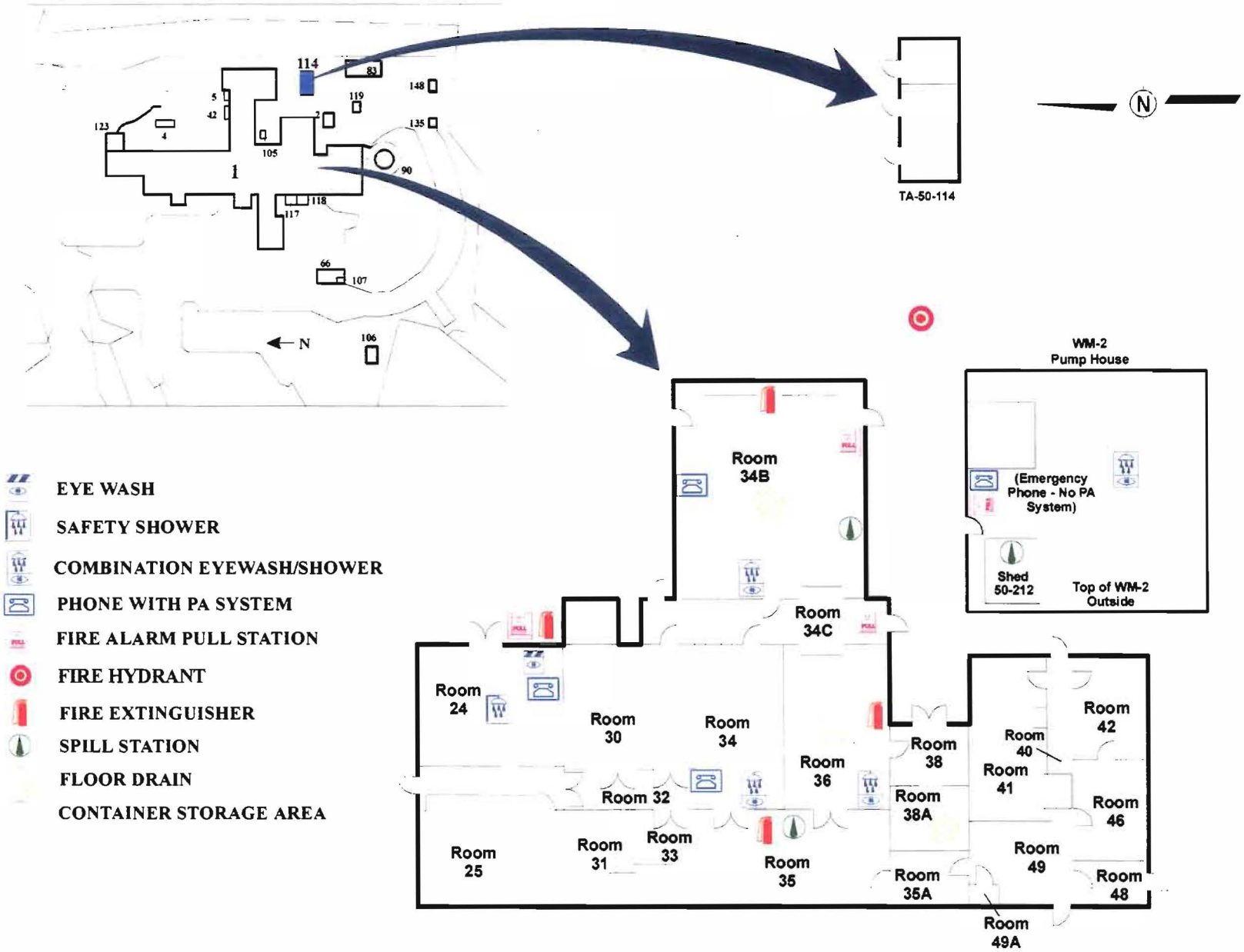


Figure E-4. TA-50-114 Container Storage Area Emergency Equipment

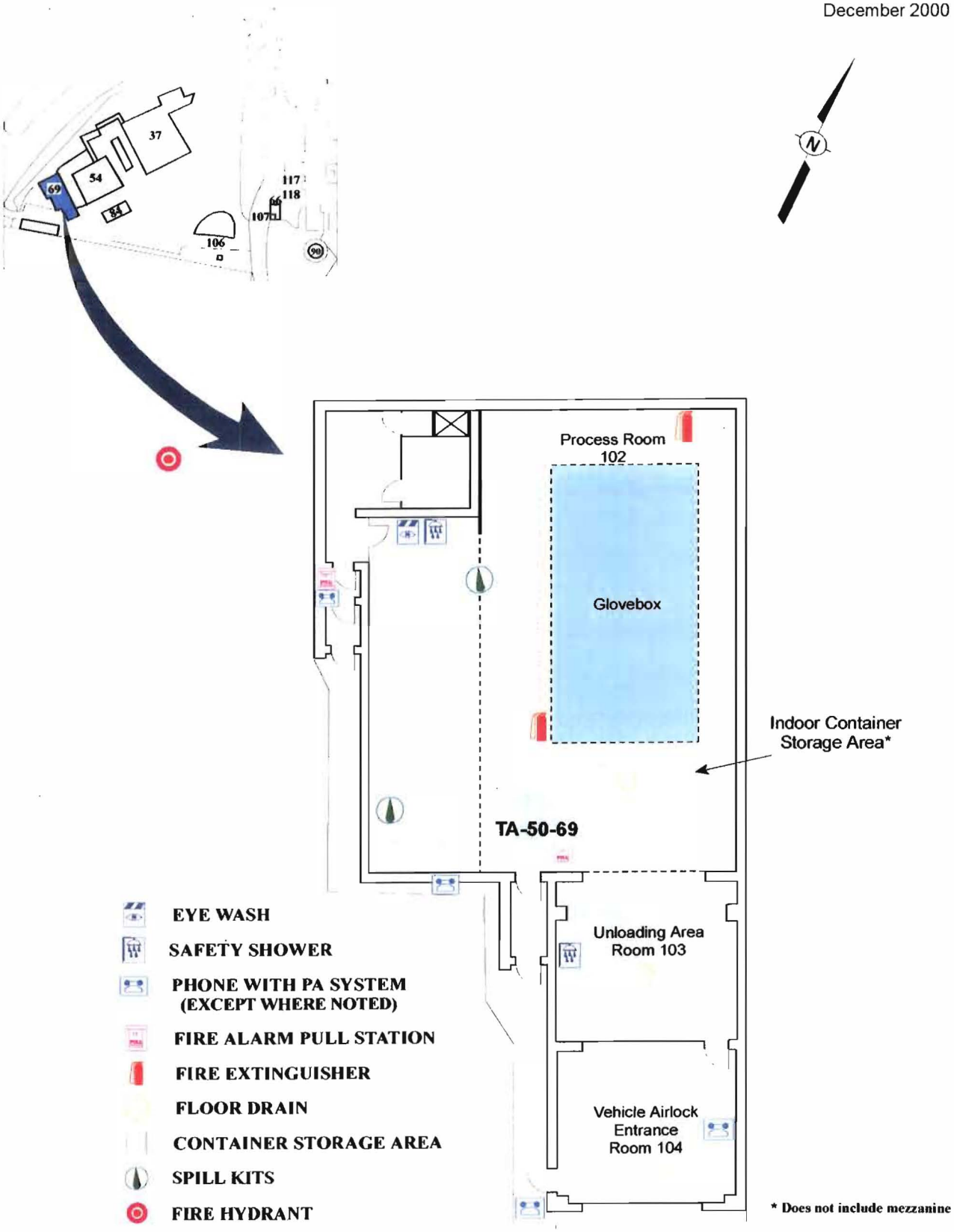
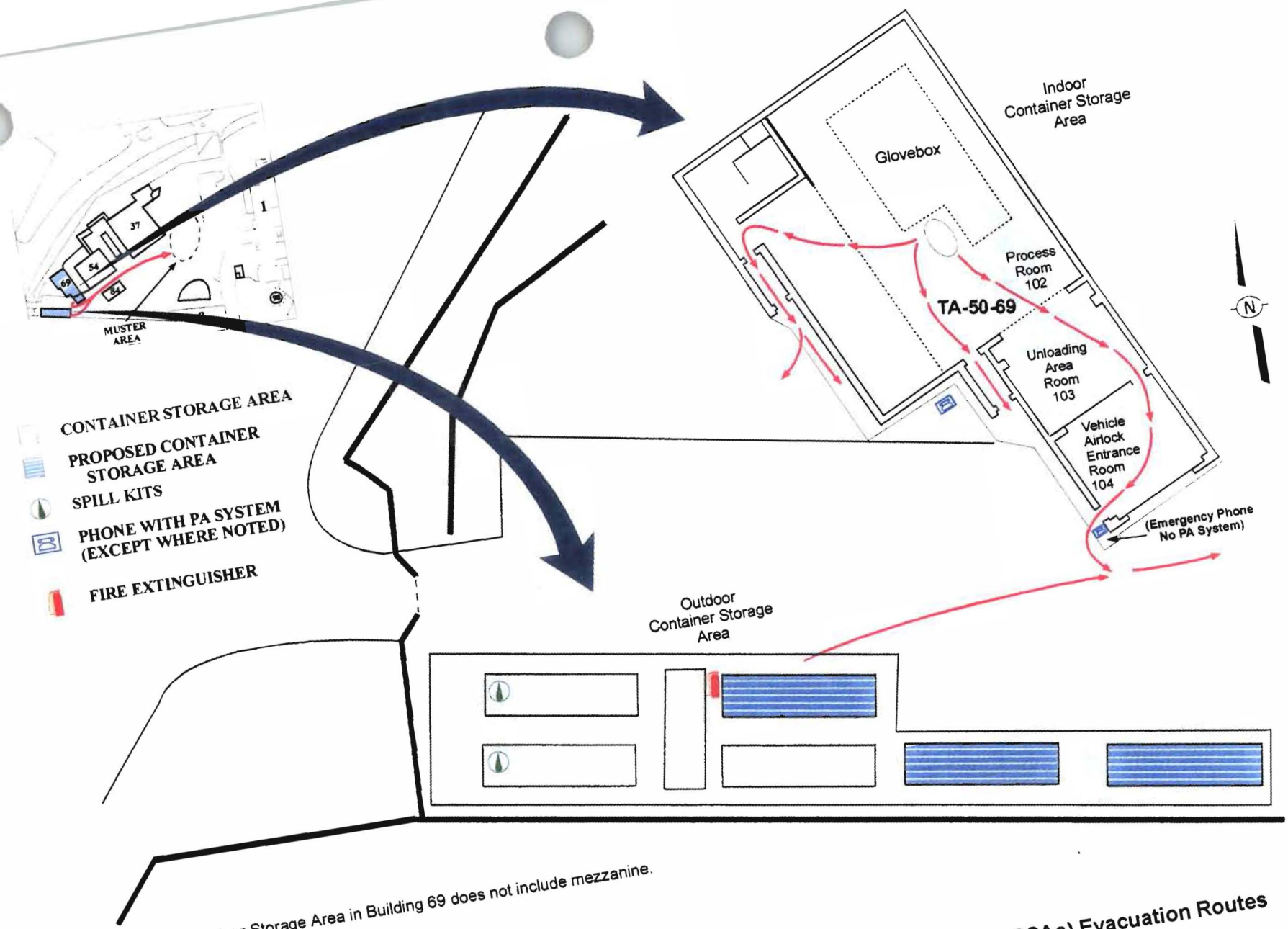


Figure E-5. TA-50-69 WCRRF Indoor Container Storage Area Emergency Equipment



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

Figure E-6. TA-50-69 WCRRF Indoor and Outdoor Container Storage Areas (CSAs) Evacuation Routes and TA-50-69 Outdoor CSA Safety Equipment

APPENDIX E1

Appendix E1
List of TA-50 Emergency Equipment

TA-50 Building 37, Container Storage Area

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 (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-in. 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.

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

TA-50 Building 37, Container Storage Area (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 114 Container Storage Area

Note: Personnel working in the TA-50-114 CSA rely on safety equipment housed in the south wing of TA-50, Building 1 and the WM-2 pump house.

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 34B
  1 in Room 36
  1 Outside Room 24

- 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 and outside Room 24 and WM-2.

- AUTOMATIC FIRE SUPPRESSION SYSTEM

  Description of General Capabilities
  Although TA-50-1 has an automatic fire suppression system, Building 114 is not equipped with such a system.

  Fire Suppression Sprinkler Locations
  TA-50-114 does not have an automatic fire supression sprinkler system.

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

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

- 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
  A spill center is located in Room 34B. 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.

Communication Equipment

- TELEPHONES AND BUILDING-WIDE PUBLIC ADDRESS SYSTEM

  Description of General Capabilities
  Telephones with public address (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.

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

TA-50, Building 114 Container Storage Area (Continued)

Communication Equipment (Continued)

Locations of Telephones
Telephones with PA capabilities are located in Rooms 24 and 34. 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 24, 34B, and 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. MSDSs are located in Rooms 34B and 49.

Location of Eye Washes
Eye washes are located in Rooms 24, 34B, and 36. Personnel working in TA-50-114 also have access to the eyewash located outside, on top of WM-2.

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

TA-50, Building 1, Room 59 Radioactive Liquid Waste Treatment Facility

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)

- 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 Room 59.

- 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, Room 59 Radioactive Liquid Waste Treatment Facility (Continued)

Fire Control Equipment (Continued)

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

Spill Control Equipment

- 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 Room 59 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, Room 59 Radioactive Liquid Waste Treatment Facility (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 Room 59 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.

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. One is just inside the south door of Room 102. The other is inside the door on the east side of TA-50-69. 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 CO2 system is in place inside the cutting enclosure which allows an operator to apply CO2 to minor flare-ups that can originate on the waste item being cut up with the plasma-torch. The CO2 system cannot over pressurize the enclosure.

  Fire Suppression Sprinkler Locations
  Throughout TA-50-69, as 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
Four telephones, three with PA capabilities, are located in TA-50-69. One is located outside Room 104 near the door. Personnel working at the TA-50-69 Outdoor CSA have access to the phone outside Room 104, 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

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LIST OF ABBREVIATIONS/ACRONYMS

ALARA	as low as reasonably achievable
COLIWASA	composite liquid waste sampler
CSA	container storage area
DOE	U.S. Department of Energy
DOE/LAAO	Department of Energy/Los Alamos Area Office
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
FRP	fiberglass-reinforced plywood
LANL	Los Alamos National Laboratory
NMAC	*New Mexico Administrative Code*, Title 20, Chapter 4, Part 1
NMED	New Mexico Environment Department
QA	quality assurance
QAPP	quality assurance program plan
QC	quality control
RCRA	Resource Conservation and Recovery Act
RLWTF	Radioactive Liquid Waste Treatment Facility
SW-846	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (EPA current revision)
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) located at Technical Area (TA)-50 of the Los Alamos National Laboratory (LANL).

This attachment describes the closure procedures for the TA-50 CSAs. Figure F-1 shows the location of TA-50 at LANL. The locations of the CSAs 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 Attachment G 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 at TA-50
- TA-50-37 CSA
- TA-50-1, Room 59 Radioactive Liquid Waste Treatment Facility (RLWTF) CSA
- TA-50-114 CSA
- TA-50-69 Waste Characterization, Reduction, and Repackaging Facility (WCRRF) Indoor CSA
- TA-50-69 WCRRF Outdoor CSA

The activities described in this attachment meet the closure requirements of the *New Mexico Administrative Code*, Title 20, Chapter 4, Part 1, revised June 14, 2000, incorporating the *Code of Federal Regulations*, Title 40 (40 CFR), hereinafter referred to as NMAC §264, Subpart G and §270.14(b)(13) [6-14-00].

Site-specific and unit-specific closure procedures for RCRA-permitted CSAs 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 operations (see Section 2.0 and Attachment G of this 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 [NMAC §264, Subpart G]

This attachment is prepared in accordance with the requirements of NMAC §264, Subpart G [6-14-00], and other subparts as applicable, and NMAC §270.14(b)(13) [6-14-00].

F.1.1 Closure Performance Standard [NMAC §264.111]

RCRA-permitted hazardous waste CSAs 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 (soil), surface waters, or atmosphere
- Comply with the container management requirements of NMAC §264.178 [6-14-00], and other applicable sections of NMAC §264 [6-14-00] for the closure of specific hazardous waste management units

These standards will be met by removing waste and other equipment from the CSAs as appropriate. Surfaces or areas that may have come into contact with RCRA-regulated wastes in the course of normal container storage operations will be decontaminated if operating records, surface samples, or visual inspection indicate 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 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 [NMAC §§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), 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 occurs only when all LANL RCRA-regulated waste management units are closed according to the specific closure plans described in their Part B permits.

F.1.3 Closure Schedule [NMAC §264.112(b)(6) and §264.113]

Closure will not begin until the final wastes have been removed from the unit scheduled for closure. Written notification will be provided to the NMED 45 days before the start of closure activities for the CSAs at TA-50. However, pursuant to NMAC §264.112(e) [6-14-00], removing hazardous wastes and decontaminating or dismantling equipment in accordance with an approved closure plan may be conducted at any time before or after notification of closure. Closure activities will begin according to the requirements of NMAC §264.112(d)(2) [6-14-00]. Treatment, removal, or disposal of hazardous wastes will begin in accordance with the approved closure plan, as required by NMAC §264.113(a) [6-14-00], within 90 days after final receipt of waste at the hazardous or mixed waste unit. This timeframe will be met as long as facilities are available for treatment or disposal of these wastes. In the event that closure activities cannot begin at a unit within 90 days, LANL will notify the Secretary of the NMED in accordance with the extension requirements in NMAC §264.113(a) [6-14-00]. Closure activities and reporting requirements will then be completed within 180 days of the receipt of the final volume of waste at the unit to be closed. Closure will be conducted in accordance with the schedule presented in Table F-1. In the event that closure of a CSA is prevented from proceeding according to schedule, LANL will notify the Secretary of the NMED in accordance with extension request requirements in NMAC §264.113(b) [6-14-00]. In addition, the demonstrations in NMAC §§264.113(a)(1) and (b)(1) [6-14-00] will be made in accordance with NMAC §264.113(c) [6-14-00].

F.1.4 Amendment of the Closure Plan [NMAC §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 NMAC §264.112 [6-14-00], a written notification of, or request for, a permit modification to authorize a change in the approved closure plan whenever:

- There are changes in operating plans or facility design that affect the closure plan
- There is a change in the expected year of closure
- Unexpected events occur during closure that require modification of the approved closure plan

The written notification or request will include a copy of the amended closure plan for approval by the NMED.

LANL will submit a written request for a permit modification with a copy of the amended closure plan at least 60 days prior to the proposed change in unit design or operation or no later than 60 days after an occurrence of an unexpected event that affects the closure plan. If the unexpected event occurs during closure, the permit modification will be requested within 30 days of the occurrence. If the Secretary of the NMED requests a modification of the closure plan, a plan modified in accordance with the request will be submitted within 60 days of notification or within 30 days of notification if a change in facility condition occurs during the closure process.

F.1.5 Financial and Liability Requirements [NMAC §264.140(c)]

In accordance with NMAC §264.140(c) [6-14-00], LANL, as a federal facility, is exempt from the requirements of NMAC §264, Subpart H [6-14-00], to provide a cost estimate, financial assurance mechanism, and liability insurance for closure actions.

F.1.6 Closure Certification [NMAC §264.115]

Within 60 days after completion of closure activities for each of the CSAs or rooms within a CSA 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 NMAC §264.115 [6-14-00]. Documentation supporting the independent registered engineer's certification will be furnished to the Secretary of the NMED upon request, as specified at NMAC §264.115 [6-14-00]. A copy of the

certification and supporting documentation will be maintained by both the Department of Energy/Los Alamos Area Office (DOE/LAAO) and the TA-50 operating group, or the organizational equivalents at the time of closure.

F.1.7 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 shall document the closure and contain, for example, the following:

- The certification described in Section F.1.6
- Any variance from the approved activities and the reason for the variance
- A summary of all sampling results, showing:
  - Sample identification
  - Sampling location
  - Datum reported
  - Detection limit for each datum
  - A measure of analytical precision (e.g., uncertainty, range, variance)
  - Identification of analytical procedure
  - Identification of analytical laboratory
- A quality assurance (QA)/quality control (QC) statement on analytical data validation and decontamination verification
- The location of the file of supporting documentation, including:
  - Field logbooks
  - Laboratory sample analysis reports
  - QA/QC documentation
  - Chain-of-custody forms
- Storage or disposal location of regulated hazardous/mixed waste resulting from closure activities
- A certification of accuracy of the report

F.1.9 Survey Plat and Post-Closure Requirements [NMAC §§264.116 through 264.120]

LANL will remove RCRA-regulated hazardous and mixed wastes and associated constituents from the TA-50 permitted CSAs and will decontaminate structures and equipment contained in the CSAs. If decontamination to the cleanup levels approved in permitted unit closure plans cannot be achieved, LANL will dispose of the contaminated structures and equipment (clean closure). If decontamination to these cleanup levels is not achievable, LANL may propose an alternate demonstration of decontamination as circumstances indicate.

If permitted units are not clean-closed or for units subject to NMAC §264.110(b) [6-14-00], a survey plat prepared in accordance with NMAC §264.116 [6-14-00] will be filed with the appropriate authorities as described in that regulation at certification of closure. Post-closure care requirements pursuant to NMAC §§264.117 through 264.120 [6-14-00], will begin after partial or final closure of the unit. These will include the preparation of a written post-closure care plan with provisions for amendment pursuant to NMAC §264.118 [6-14-00], and post-closure notices will be filed with appropriate authorities as described in NMAC §264.119 [6-14-00]. To meet that requirement, the DOE will file a "Land Use Restriction Notice" or equivalent document with the County of Los Alamos and other authorized agencies. Within 60 days after completion of the established post-closure care period for any of the above referenced type of waste management unit, LANL will submit to the Secretary of the NMED, via certified mail, a certification of completion of post-closure care in accordance with the requirements of NMAC §264.120 [6-14-00].

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

Procedures that will be followed for decontamination and closure of a CSA or room within a CSA 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 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 Section F.1.11. 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 Section F.1.11.

F.1.11 Sampling and Analytical Procedures [NMAC §264.112(b)(4)]

The following sections describe procedures and methods for sampling, analysis, and documentation applicable to closure activities. While the procedures and methods are specific, other applicable procedures or methods may be used if conditions or experience show the alternate method to be more appropriate. Sampling will be conducted in accordance with procedures given in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (U.S. Environmental Protection Agency [EPA] current revision) (SW-846), or other approved methods or procedures. Radiological sampling and analysis will be conducted in accordance with approved LANL procedures.

F.1.11.1 Soil and Sediment Sampling

When soil and/or sediment sampling is appropriate or required, the sampling procedures outlined below will be used to obtain samples to determine the amount (if any) of hazardous constituents in soil and/or sediment in the vicinity of the unit(s) undergoing closure.

F.1.11.2 Sampling Procedures

Soil samples will be collected from a depth of six inches; sediment samples will be collected from the surface or near surface. A trowel, scoop, or Veihmeyer sampler may be used to collect soil and sediment samples. Sampling procedures will be performed as follows:

- Trowel or Scoop
  - Take small, equal portions of sample from the surface or near the surface of the material to be sampled.
  - Combine the samples in a container appropriate for the required analysis.
  - Cap the container, attach a label and seal, and preserve as required (see Table F-2). Record in the field logbook, and complete the sample analysis request sheet and chain-of-custody form. Deliver the samples to CST-9 for radiological screening and to the laboratory for analysis.

- Veihmeyer Sampler
  - Assemble the sampler by screwing in the tip and the drive head on the sampling tube
  - Insert the tapered handle (drive guide) of the drive hammer through the drive head
  - Place the sampler in a perpendicular position on the soil to be sampled
  - Drive the sampler into the soil to the desired sampling depth by pounding the drive head with the drive hammer (do not drive the tube further than the tip of the hammer's drive guide)
  - Record the length of the tube that penetrated the material
  - Move the drive hammer onto the drive head (in this position, the hammer serves as a handle for the sampler)
  - Rotate the sampler at least two revolutions to shear off the sample at the bottom
  - Lower the sampler handle (hammer) until it just clears the two ear-like protrusions on the drive head and rotate about 90 degrees
  - Withdraw the sampler from the material by pulling the handle (hammer) upwards (when the sampler cannot be withdrawn by hand, as in deep soil sampling, use a puller jack and grip)
  - Dislodge the hammer from the sampler, turn the sampler tube upside down, tap the head gently against the hammer, and carefully recover the sample from the tube
  - Store the sample in an appropriate sample container (see Table F-2)
  - Label the sample, affix the seals, preserve as required (see Table F-2), record in the field logbook, complete the sample analysis request sheet and chain-of-custody form, and deliver the samples to the appropriate LANL group(s) for radiological screening and analysis

F.1.11.3 Cleaning of Soil or Sediment Samplers

To prevent cross contamination, it is important to clean the samplers after each sample is collected. An unused, disposable sampler may be presumed clean if still in a factory-sealed wrapper. Unsealed samplers will be cleaned prior to use; they will be washed with a detergent and water solution, rinsed several times with tap water, rinsed with distilled water, drained of excess water, and air-dried or wiped dry.

F.1.11.4 Liquid Sampling

In order to determine baseline parameters, a composite liquid waste sampler (COLIWASA) or similar device will be used to sample unused washwater solutions before decontamination begins. It will

also be used to sample the washwater used in cleaning structures and equipment. As an alternative to the COLIWASA, glass tubes may be used to sample liquids. The primary advantage in using a glass tube is that the tube will be disposed of appropriately after each sample is collected, thus eliminating the potential for cross contamination.

Liquid sampling with a COLIWASA will be performed as follows:

- Ensure that the COLIWASA is clean
- Assemble the COLIWASA
- Check that the sampler is functioning properly
- Wear necessary personal protective equipment, and observe required sampling precautions
- Slowly lower the COLIWASA into the liquid at a rate that permits the level of the liquid inside and outside the sampler tube to be about the same (if the level of the liquid in the sampler tube is lower than that outside the sampler, the sampling rate is too fast and will result in a nonrepresentative sample)
- When the sampler stopper reaches the bottom of the liquid container, close the sampler
- Lock the sampler in the closed position
- Slowly withdraw the sampler from the container with one hand, while wiping the sampler tube with a disposable cloth with the other hand
- Carefully discharge the sample into a sample container (see Table F-3)
- Preserve as required (see Table F-3), cap the container, attach a label and seal, place immediately in an insulated container with ice (if required), record in the field logbook, and complete the sample analysis request sheet and chain-of-custody form
- Clean the sampler on site and store used rags in plastic bags for subsequent disposal or store the contaminated parts of the sampler in a plastic storage tube or bag for subsequent cleaning.

F.1.11.5 Cleaning of Liquid Samplers

A sampler must be clean before use. An unused, disposable sampler may be presumed clean if still in a factory-sealed wrapper. Unsealed samplers will be cleaned prior to use; they will be washed with a detergent and water solution, rinsed several times with tap water, rinsed with distilled water, drained of excess water, and air-dried or wiped dry. A necessary piece of equipment for cleaning the tube of the COLIWASA is a bottle brush that fits tightly inside the diameter of the tube. The brush is

connected to a rod of sufficient length to reach the entire length of the sampler tube. To prevent cross contamination, it is important to clean the samplers after each sample is collected. Clean samplers should be stored in clean polyethylene plastic tubes or bags in a clean and protected area.

F.1.11.6 Sample Handling and Documentation

Samples will be analyzed either at LANL or at a commercial analytical laboratory. In either case, each sample will be labeled, sealed, and accompanied by chain-of-custody and sample analysis request forms. The chain-of-custody form is necessary to trace sample possession from the time of collection to the time of analysis and must accompany every sample. The original record accompanies shipment; the copy is retained by LANL. If samples are analyzed at LANL, the original will be maintained by LANL. The request for analysis form has two parts: a field portion and a laboratory portion. The field portion of this form must be completed by the sample collection personnel. The laboratory portion is intended to be completed by the analytical laboratory personnel when the sample is received. The analytical laboratory retains the original record and sends a copy to LANL.

Sample containers appropriate for the requested analyses will be used for all samples. Samples will be collected, placed in bottles, sealed, and tagged. Sample container surfaces will be screened for radiological contamination and decontaminated, if necessary. Sample containers will then be immediately placed in packaging material, and, if refrigeration is required, in an insulated container with ice. Recommended sample containers, preservation techniques, and holding times are presented in Tables F-2 and F-3.

The sample container must be sealed with a custody seal attached to the container in such a way that the seal must be broken in order to open the container. The seal and sample tag must be completed with a waterproof pen. A sample label is necessary to prevent misidentification of samples and should include, if applicable, the grid number referenced to positions staked on the site perimeter. The sample label should be completed to include the project name, sample number, collection date/time, collector's name, sample location, sample media description, preservative, and analysis requested. In the case of soil sampling, field information may include observations such as the soil texture and surface appearance, ambient temperature and cloud cover at time of sampling, and precipitation conditions 24 hours before sampling.

A field logbook will be kept and will contain all information pertinent to field surveys and sampling. The logbook shall have bound and consecutively numbered pages in 8½- by 11-inch format. Examples of entries include:

- Purpose of sample (routine sampling, special sampling)
- Location of sampling (coordinates referenced to staked field points, if soil sample)
- Name and business address of person making log entry
- Type of process producing waste
- Number and volume of sample
- Description of each sampling location, sampling methodology, equipment used
- Date and time of sample collection
- Sample destination and transporter's name (e.g., name of laboratory, United Parcel Service)
- Map or photograph of the sampling site, if any
- Field observations, if applicable (e.g., ambient temperature, sky conditions, past 24-hour precipitation)
- Field measurements, if applicable (e.g., pH, conductivity)
- Collector's sample identification number(s)
- Signature of person responsible for the log entry

Because sampling situations vary widely, no general rule can be given as to the extent of information that must be entered in the logbook. It is recommended, however, to record sufficient information so that someone can reconstruct the sampling situation without relying on the collector's memory.

F.1.11.7 Analytical Procedures

Sample analyses, including those for QA/QC, will be conducted using methods prescribed in SW-846 or other approved procedures or methods. Target detection limits, analytical methods, and instrumentation for metals and organics analyses are presented in Tables F-4 and F-5, respectively.

F.1.11.8 Field and Laboratory QA/QC

Field QC activities will include collection of the following QC samples: duplicate samples, trip blanks, field blanks, and equipment rinsate blanks. Field QC samples are summarized in Table F-6.

Duplicate samples are two or more samples collected simultaneously into separate containers from the same source under identical conditions. Acceptance limits for field duplicate analyses are 0 to 20 relative percent difference per analyte. Frequency of duplicate samples will be 1 in 20 samples, or 1 per day if less than 20 samples are collected. Blank samples will include trip blanks, field blanks, and equipment rinsate blanks. A trip blank is a sample container filled with organic-free deionized water. The filled container is taken to the sampling site, remains unopened, and then is shipped to the analytical laboratory along with the samples. A trip blank is submitted whenever samples are collected for volatile organic compounds analysis. A field blank is a sample collected to assess the ambient conditions at the sampling site. It consists of a sample of organic-free deionized water poured into a sample container under normal sampling conditions. An equipment rinsate blank is collected to assess the cleanliness of sampling equipment. The equipment is cleaned according to the procedures described in Sections F.1.11.3 and F.1.11.5, then organic-free deionized water is poured over the decontaminated equipment's sampling surface and collected in a sample container. Frequency of equipment rinsate blank samples will be 1 in 20 samples, or 1 per day if less than 20 samples are collected. Blank samples and duplicate samples of liquid, soil, and sediment will be analyzed for the same parameters as the closure samples. Samples will be provided with unique identification numbers that do not indicate to the laboratory that the samples are for QA/QC purposes.

Instrument calibration and maintenance are subject to QC procedures. Field equipment will be calibrated and maintained using the manufacturer's instructions or appropriate standard procedures.

Laboratories used for analysis shall operate under a quality assurance program plan (QAPP) that meets the requirements in SW-846. QC procedures in the analytical laboratory are guided by the laboratory's QAPP. In the laboratory, QC samples are required to establish the accuracy and precision of the analytical data in order to determine the quality of the data. Laboratory QC procedures are summarized in Table F-7.

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. Equipment rinsate blanks will be collected and analyzed in accordance with LANL QA/QC policies as described in Section F.1.11.8. 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 Tables F-4 and F-5. 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 Section F.1.11 and in accordance with the most current version of SW-846.

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. 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 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 has occurred, the soil will be remediated in-place if an appropriate 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 or an entire CSA 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 [NMAC §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), and steel 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 this 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 1998), 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 in accordance with the procedures outlined in Section F.1.10, recycled, or disposed of to meet the closure performance standard.

F.3 CLOSURE PROCEDURES FOR THE TA-50-1, ROOM 59 RLWTF CSA [NMAC §264.112]

The TA-50-1, Room 59 RLWTF CSA is 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 this 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, Room 59 RLWTF 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 design capacity of the TA-50-1, Room 59 RLWTF CSA is 1,210 gal. The total volume of RCRA-regulated waste stored at any time at the TA-50-1, Room 59 RLWTF and TA-50-114 CSAs will not exceed 3,695 gal. plus 15 yd^3, 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, Room 59 RLWTF CSA

To the extent possible, all contaminated equipment, structures, and floor or wall surfaces of the TA-50-1, Room 59 RLWTF 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.4 CLOSURE PROCEDURES FOR THE TA-50-114 CSA [NMAC §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 this TA-50 Part B.

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

The TA-50-114 CSA will be used by the RLWTF 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 TA-50-114 CSAs will not exceed 3,695 gal. plus 15 yd^3, 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 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.5 CLOSURE PROCEDURES FOR THE TA-50-69 WCRRF INDOOR CSA [NMAC §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, fiberglass-reinforced plywood (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 this TA-50 Part B.

F.5.1 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.5.2 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.6 CLOSURE PROCEDURES FOR THE TA-50-69 WCRRF OUTDOOR CSA [NMAC §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 this TA-50 Part B.

F.6.1 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.6.2 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 Section F.1.11, 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 Section F.1.11. 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 Section F.1.11. 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 Section F.1.11. 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 Section F.1.11, 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 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.7 REFERENCES

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

LANL. 1998. *Los Alamos National Laboratory General Part A 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

Table F-2. Sample Containers, Preservation Techniques, and Holding Times for Sediment/Soil/Sludge Samples

Analyte Group	Container	Preservative	Holding Time[a]
Target compound volatile organics[b]	125 milliliter (ml) WM[c]-G[d]	Cool to 4 degrees Celsius (°C)	14 days
Target compound semivolatile organics[b]	250 ml WM-G vial with Teflon-lined lid	Cool to 4°C	14 days from field collection to preparative extraction 40 days from preparative extraction to determinative analysis
Target analyte metals[b] (except mercury and hexavalent chromium)	200 gram (g) WM-P[e] or G	None	180 days
Mercury	200 g WM-P or G	Cool to 4°C	28 days
Hexavalent chromium	100 g WM-P or G	Cool to 4°C	One month to extraction 4 days from preparative extraction to determinative analysis

[a] Holding time information was taken from U.S. Environmental Protection Agency, 1986 and all approved updates, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846.

[b] Target compound volatile and semivolatile organics and target analyte metals are listed by respective test method numbers in U.S. Environmental Protection Agency, 1986 and all approved updates, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846.

[c] WM = wide-mouth

[d] G = glass

[e] P = polyethylene

Table F-3. Sample Containers, Preservation Techniques, and Holding Times for Liquid Samples

Analyte Group	Container	Preservative	Holding Time[a]
Target compound volatile organics[b]	2 x 40 milliliter (ml) G[c] vials with Teflon-lined septa	HCl[d], H_2SO_4[e], or solid $NaHSO_4$[f] to pH<2;cool to 4 degrees Celsius (°C)	14 days
Target compound semivolatile organics[b]	4 x 1 liter AG[g] with Teflon-lined lid	Cool to 4°C	7 days from field collection to preparative extraction 40 days from preparative extraction to determinative analysis
Target analyte metals[b] (except mercury and hexavalent chromium)	600 ml P[h] or G	HNO_3[i] to pH <2	180 days
Mercury	400 ml P or G	HNO_3 to pH <2	28 days
Hexavalent chromium	400 ml P or G	Cool to 4°C	24 hours

[a] Holding time information was taken from U.S. Environmental Protection Agency, 1986 and all approved updates, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846.

[b] Target compound volatile and semivolatile organics and target analyte metals are listed by respective test method numbers in U.S. Environmental Protection Agency, 1986 and all approved updates, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846.

[c] G = glass

[d] HCl = hydrochloric acid

[e] H_2SO_4 = sulfuric acid

[f] $NaHSO_4$ = sodium sulfate

[g] AG = amber glass

[h] P = polyethylene

[i] HNO_3 = nitric acid

Table F-4. Target Detection Limits, Analytical Methods, and Instrumentation for Metals Analysis

Analyte	Target Detection[a] Limit (µg/L)[b]	EPA SW-846[c] Analytical Method	Instrumentation[d]
Arsenic	10	6010A, 7060A[e], 7061A	ICP, GFAA
Barium	200	6010A, 7080A, 7081[e]	ICP, FLAA, GFAA
Beryllium	5	6010A, 7090[f], 7091[e]	ICP, FLAA, GFAA
Cadmium	2	6010A, 7130, 7131A[e]	ICP, FLAA, GFAA
Chromium	10	6010A, 7190, 7191[e]	ICP, FLAA, GFAA
Lead	5	6010A, 7420, 7421[e]	ICP, FLAA, GFAA
Mercury	0.2	7470A, 7471A[g]	CVAA
Nickel	40	6010A, 7520[f]	ICP, FLAA
Selenium	5	6010A, 7740[e], 7741A	ICP, GFAA, GHAA
Silver	10	6010A, 7760A, 7761[e]	ICP, FLAA, GFAA
Thallium	10	6010A, 7840[f], 7841[e]	ICP, FLAA, GFAA

[a] Detection limits listed are for clean water. Actual detection limits may be higher depending on sample composition and matrix type.
[b] µg/L = micrograms per liter
[c] U.S. Environmental Protection Agency, 1986 and all approved updates, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846.
[d] ICP = inductively coupled plasma emission spectroscopy
GFAA = graphite furnace atomic absorption spectroscopy
FLAA = flame atomic absorption spectroscopy
CVAA = cold-vapor atomic absorption spectroscopy
GHAA = gaseous hydride atomic absorption spectroscopy
[e] Method being integrated into Method 7000B, per the January 1998 SW-846 Draft Update IVA.
[f] Method being integrated into Method 7010, per the January 1998 SW-846 Draft Update IVA.
[g] Method being revised per the January 1998 SW-846 Draft Update IVA.

Table F-5. Target Detection Limits, Analytical Methods, and Instrumentation for Organics Analysis

Analyte (Group)	Target Detection Limits[a]	EPA SW-846[b] Analytical Method	Instrumentation[c]
Target compound list volatiles plus ten tentatively identified compounds (TIC)	10 mg/L[d] water 10–120 mg/kg[e] sediment	8260B	GC/MS
Target compound list semivolatiles plus 20 TICs	10 mg/L water 330–50,000 mg/kg sediment	8270C[f]	GC/MS

[a] Detection limits expressed as practical quantitation limits.
[b] U.S. Environmental Protection Agency, 1986 and all approved updates, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846.
[c] GC/MS = gas chromatography/mass spectrometry
[d] mg/L = milligrams per liter
[e] mg/kg = milligrams per kilogram
[f] Method being revised per the January 1998 SW-846 Draft Update IVA.

Table F-6. Summary of Field Quality Control Samples

Quality Control Sample Type	Sample Matrix	Applicable Analysis	Frequency	Purpose	Acceptance Criteria	Corrective[a] Action
Trip blank	Water	Volatile organic analytes (VOA)	One set per shipping cooler containing samples to be analyzed for VOAs	Monitor contamination or cross contamination during handling and transportation	[b]	Advisory--no action required
Field blank	Water	VOAs, semivolatile organic analytes (SVOA), metals, radionuclides	One sample daily per analysis	Monitor field sample contamination/air contamination	[b]	Advisory--no action required
Field duplicate	Soil/water	VOAs, SVOAs, metals, radionuclides	One sample per day per matrix type per 20 samples	Monitor sample variability	Analytical method criteria, if applicable	Advisory--no action required
Equipment rinsate blank	Water	VOAs, SVOAs, metals, radionuclides	One sample per day per 20 samples	Monitor decontamination effectiveness and sample cross contamination	[b]	Advisory--no action required

[a] U.S. Environmental Protection Agency Functional Guidelines for Data Validation may apply.

[b] For volatile and semivolatile analysis, if blank shows detectable levels of any common laboratory contaminant (e.g., methylene chloride, acetone, 2-butanone, toluene, and/or any phthalate ester), sample must exhibit that contaminant at a level 10 times the quantitation limit to be considered detectable. For all other contaminants, sample must exhibit the contaminant at a level 5 times the quantitation level to be considered detectable.

Table F-7. Summary of Laboratory Quality Control Procedures[a] by Analytical Method

Parameter	EPA SW-846[b] Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
Target compound volatile organics	8240B or 8260A	Instrument performance: mass calibration/ion abundance pattern	Every 12 hours of analysis time	Per method	Repeat until acceptance criteria satisfied
		Initial calibration: instrument sensitivity and linearity of response	Five concentration levels; after each instrument performance, check prior to sample analysis	Relative response factors (RRF) within method limits	Repeat calibration
		Continuing calibration	Every 12 hours of analysis time	Average RRFs <25% difference	Repeat calibration
		Internal standards	All calibration standards, samples, and blanks	Extracted ion current profile (EICP); percent difference (%D) -50 to +100%; Retention time shifts <0.50 minutes	Correct malfunction; reanalyze sample per method criteria
		Method blank	Every 12 hours of analysis time	<5 times quantitation limit for methylene chloride, acetone, 2-butanone; all other compounds ≤ quantitation limit	Determine source of contamination, and document corrective action; reextract and reanalyze samples
		System monitoring compounds	Every method blank, sample, matrix spike, matrix spike duplicate	Matrix-specific, per method limits	Check instrument and calculations; reanalyze per method criteria

Table F-7. Summary of Laboratory Quality Control Procedures[a] by Analytical Method (Continued)

Parameter	EPA SW-846[b] Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
Target compound semivolatile organics	8250A or 8270B[c]	Instrument performance: mass calibration/ion abundance pattern	Every 12 hours	Per method	Repeat until acceptance criteria satisfied
		Initial calibration: instrument sensitivity and linearity of response	Five concentration levels. After each performance, check prior to sample analysis	RRFs within method limits	Repeat calibration
		Continuing calibration	Every 12 hours	Average RRFs <25% difference	Repeat calibration
		Internal standards	All calibration standards, samples, and blanks	EICP; %D -50 to +100% Retention time shifts <0.50 minutes	Correct malfunction; reanalyze sample per method criteria
		Method blank	Each group of samples of similar matrix and concentration level (soils)	<5 times quantitation limit for phthalate esters; all other compounds ≤ quantitation limit	Determine source of contamination; document corrective action; reextract and reanalyze samples
		Surrogate compounds	Each sample, blank	Matrix-specific per method limits	Reextract and reanalyze per method criteria

Table F-7. Summary of Laboratory Quality Control Procedures[a] by Analytical Method (Continued)

Parameter	EPA SW-846[b] Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
Metals	6010A	Surrogate compounds Instrument calibration Initial/continuing calibration	Each sample and blank Daily, or each setup After instrument calibration, 10% or every 2 hours	60–150% recovery 5% of true value 10% of true value	Advisory only--no action Repeat calibration Correct problem, recalibrate and reanalyze previous ten samples
		Initial/continuing calibration blank	Every calibration, 10% or 2 hours	< contract-required detection limits	Correct problem; recalibrate and reanalyze all samples since last blank
		Preparation blank	Each batch of digested samples	< contract-required detection limits	Redigest and reanalyze all associated samples per method criteria
		Interference check sample (ICS)	Each run or twice per 8-hour shift	20% of true value	Correct problem; recalibrate and reanalyze all samples since last ICS
		Duplicate sample analysis	Once per field batch per matrix	0–20% relative percent difference when < five times detection limit; detection limit otherwise	Flag data
		Laboratory control sample (LCS)	Once per field batch or each digest group	80–120% percent recovery (except silver, antimony)	Correct problem; redigest and reanalyze all samples since last LCS

Table F-7. Summary of Laboratory Quality Control Procedures[a] by Analytical Method (Continued)

Parameter	EPA SW-846[b] Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
Metals (Continued)		Serial dilution analysis	Once per field batch per matrix	10% original determination	Flag data
		Instrument detection limit	Quarterly	As determined	Not applicable
		Interelement corrections	Annually	As determined	Not applicable
		Linear range analysis	Quarterly	5% of true value	Reanalyze

[a] Source: *U.S. Environmental Protection Agency Contract Laboratory Program Statement of Work for Inorganic and Organic Analysis* (EPA, 1990). Not all listed procedures may be applicable to SW-846 protocols.

[b] U.S. Environmental Protection Agency, 1986 and all approved updates, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846.

[c] Method being revised per the January 1998 SW-846 Draft Update IVA.

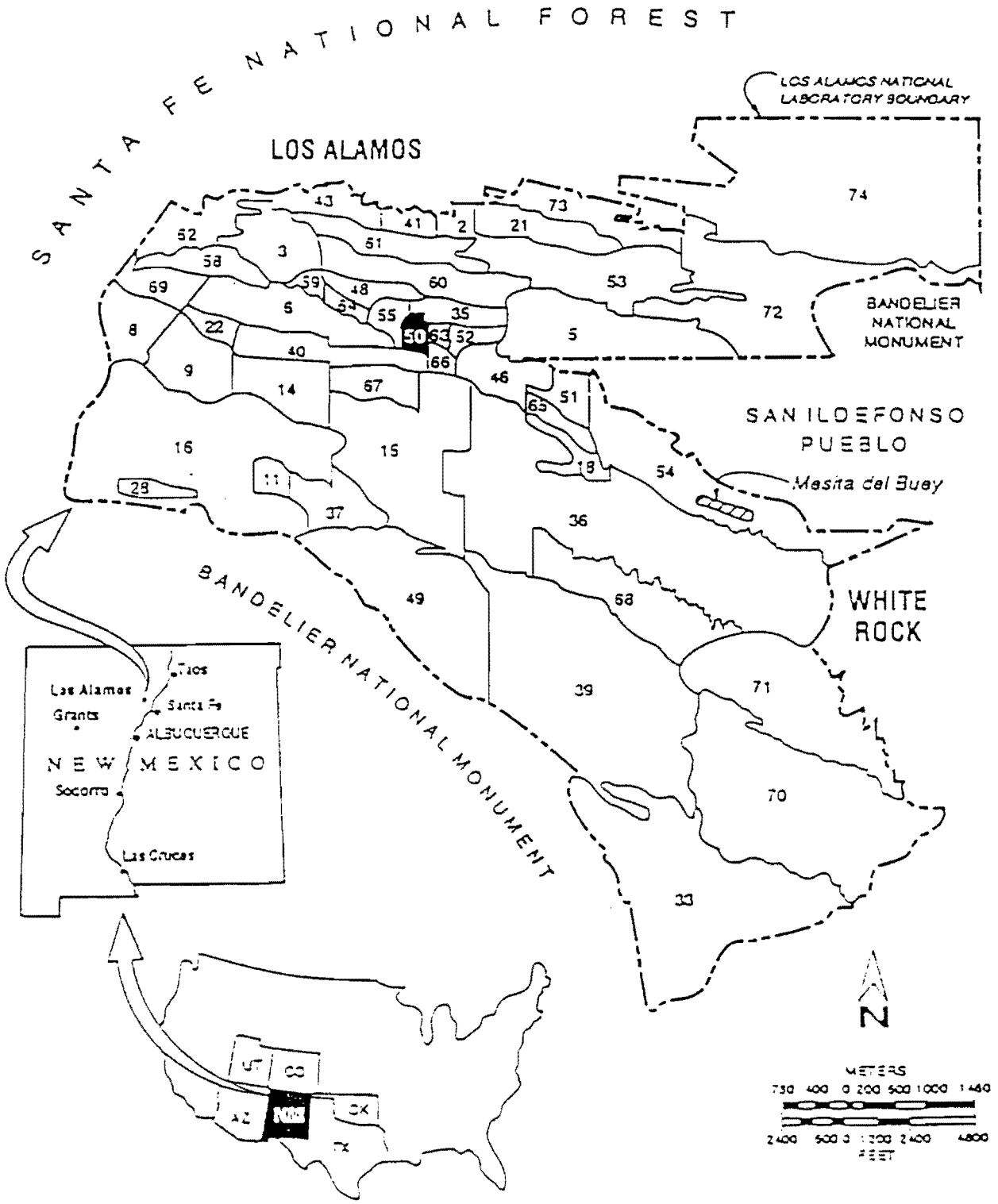

Figure F-1. TA-50 at Los Alamos National Laboratory

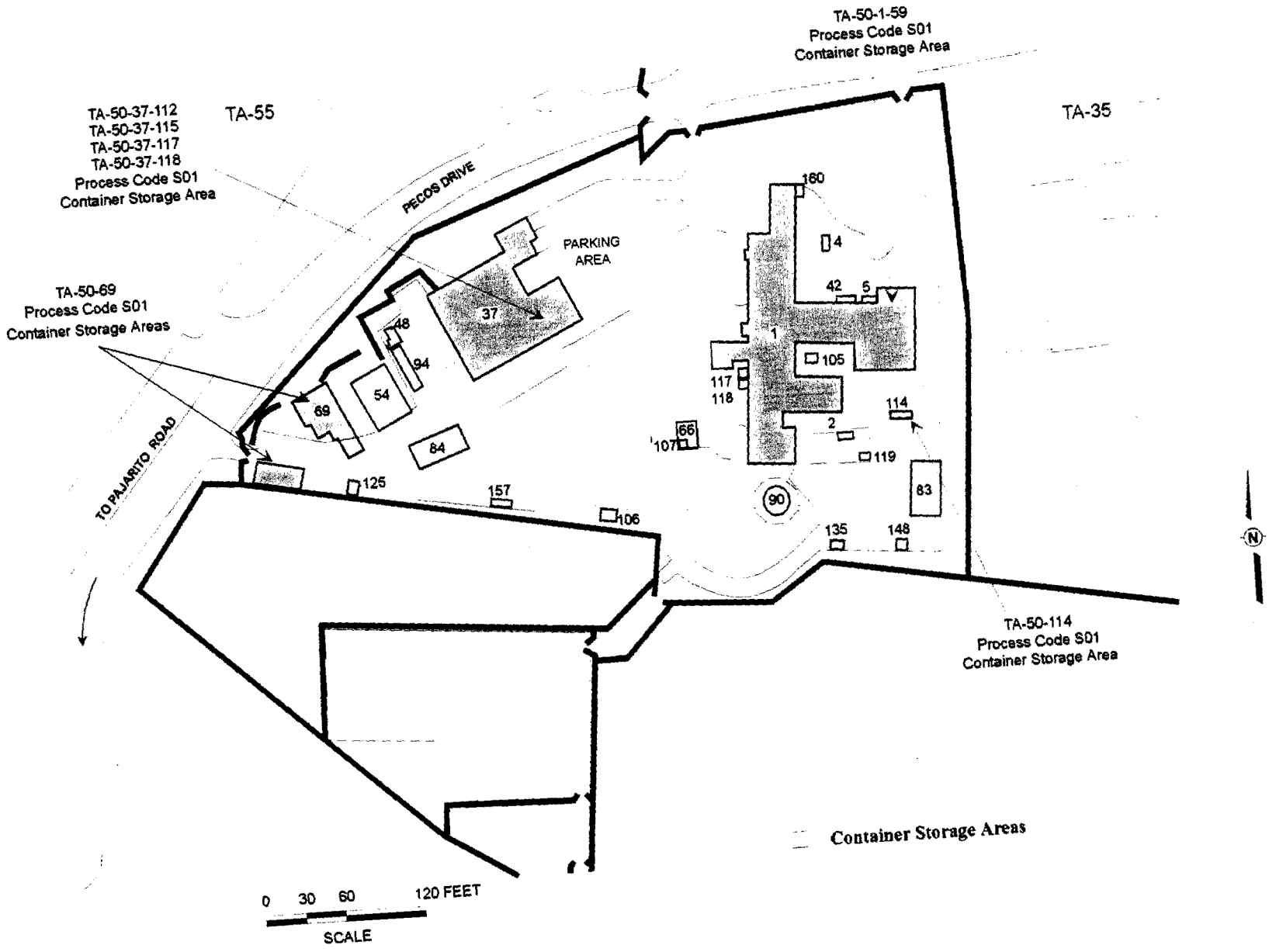

Figure F-2. TA-50 Container Storage Areas

ATTACHMENT G

CONTAINER MANAGEMENT

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LIST OF ABBREVIATIONS/ACRONYMS

CAM	continuous air monitor
CSA	container storage area
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
NMAC	*New Mexico Administrative Code*, Title 20, Chapter 4, Part 1
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 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, revised June 14, 2000, incorporating the *Code of Federal Regulations*, Title 40 (40 CFR), hereinafter referred to as NMAC §264, Subpart I and §270 [6-14-00].

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 this TA-50 Part B lists container types for each CSA. 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. 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 will be manifested and transported from LANL waste generator or storage locations in accordance with applicable DOT regulations. Waste 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. 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. Equipment used at each CSA 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 [NMAC §270.14(b)(9); §§270.15(c) and (d); §264.17; §264.176; and §264.177]

To prevent accidental ignition or reaction of ignitable, reactive, or incompatible waste at the TA-50 CSAs, 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], hereinafter referred to as the General Part A). All ignitable and reactive wastes will be protected from sources of ignition or reaction, in accordance with NMAC §264.17(a) [6-14-00]. 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 NMAC §264.17(a) [6-14-00]. Together, these measures meet the requirements of NMAC §§264.17(a) and (b), and §264.176 [6-14-00].

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 NMAC §§264.177(a) and (b), and §270.15(d) [6-14-00]. 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 NMAC §264.177(c) [6-14-00]. Pursuant to the requirements of NMAC §264.172 [6-14-00], 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 NMAC §264.17(c) [6-14-00]. 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 NMAC §264.175(d) [6-14-00] are not applicable.

G.1.4 Containment

To demonstrate compliance with NMAC §270.15(b)(1) [6-14-00], 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 NMAC §270.15(b)(2) and §264.175(c) [6-14-00]. 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 [NMAC §270.14(b)(8) and §264 Subpart C]

In accordance with NMAC §264 Subpart C and §270.14(b)(8) [6-14-00], the TA-50 CSAs 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 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 [NMAC §264.31, §264.175(b), and §§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 NMAC §264.175(b)(3) [6-14-00].

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 feeds to Mortandad Canyon.

G.2.1.1 Indoor CSAs

For the Indoor CSAs, runon into the CSA from outdoors is not likely to occur. Positive surface drainage will direct potential runon away from each CSA. Map 3 of the General Part A 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 NMAC §270.15(a)(5) [6-14-00], 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

Runon 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 NMAC §264.175(b) and §270.15(a)(4) [6-14-00].

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 [NMAC §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. Preliminary investigation data for MDA C (see Section 4.1.5 for a description of MDA C), based on 11 borings down to a maximum depth of 316 ft, indicate some moisture in the soil due to the asphalt cover, but no water was present in any of the borings. (Note: This information has not yet been documented in a published report.)

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 [NMAC §264.31 and §264.179]

Hazardous wastes treated, stored, or disposed of in tanks, surface impoundments, or containers are subject to the NMAC §264, Subpart CC [6-14-00]. NMAC §264 Subpart CC [6-14-00] 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^3 (approximately 26-gal.) capacity, and containers that have received waste before December 6, 1995. Currently, pursuant to NMAC §264.1080(b)(6) [6-14-00], the requirements of NMAC §264 Subpart CC [6-14-00] 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, NMAC §264.1080 [6-14-00] 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^3 (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 NMAC §264 Subpart CC [6-14-00] requirements will be inspected and monitored, as required at NMAC §264.1088(b) [6-14-00].

G.2.4 TA-50 – Power Failure [NMAC §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. A power failure or equipment failure would not affect containment within the TA-50 CSAs.

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 [NMAC §264.32]

NMAC §264.32, [6-14-00] 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 NMAC §264.34 [6-14-00]. 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.^{2} 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, 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.

G.2.5.4 TA-50 - Personal Protective Equipment [NMAC §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.

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 [NMAC §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, 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. Containers may be stacked to a maximum of two high.

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 TA-50-1 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 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.3.1.4 TA-50-69 WCRRF 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. 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.3.1.5 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 typically oriented north and south. 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 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 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, Room 59 RLWTF CSA

Drums of solidified waste are 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-50-114 Container Storage Area

Drum dollies or forklifts will be used to move drums or other containers out of the RLWTF 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.3.2.4 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 design capacity for Room 112 is 2,330 gal. This room is designated to store solid waste only. 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 design capacity for Room 115 is 220 gal. 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 design capacity for Room 117 is 3,630 gal. 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 design capacity for Room 118 is 18,000 gal. Only solid waste, with possible residual liquids, will be stored in 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

The design capacity for TA-50-1, Room 59 is 1,210 gal. Because only solid waste will be stored in Room 59, secondary containment requirements are not applicable to the RLWTF CSA.

G.4.3 TA-50-114 CSA

The design capacity for TA-50-114 is 1,210 gal. or approximately 22 55-gal. drums. 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 of the TA-50-114 CSA is 650 gal., which 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.4.4 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. The total design capacity for these two rooms is 1,500 gal. 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.4.4.1 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 sufficient secondary containment in case of spills and prevent 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 NMAC §264.175(b) [6-14-00]. 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 NMAC §264.175(b) and §§270.15(a)(1) through (4) [6-14-00].

G.4.4.2 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. These containers will be stored on secondary containment pallets that provide sufficient secondary containment and segregation of incompatible wastes in the event of a spill. 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.4.5 TA-50-69 WCRRF Outdoor CSA

The design capacity for the WCRRF Outdoor CSA is 30,000 gal. The waste to be stored in this CSA is expected to be solid waste; any liquids present would be residual liquids only. The WCRRF Outdoor CSA does not have permanent secondary containment built into it.

Whenever incompatible or liquid wastes are stored in the WCRRF Outdoor CSA, separate secondary containment pallets are used to provide sufficient secondary containment and to keep the wastes segregated 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.

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. 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. At TA-50-37, PPE for daily use is located in the change room and near the personnel access door.

TA-50-1, Room 59 RLWTF CSA

While working with waste containers in the TA-50-1, Room 59 RLWTF CSA, coveralls, gloves, and steel-toed shoes will be worn.

PPE for daily use is located in 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 the TA-50-69 WCRRF Indoor and Outdoor CSAs, workers will wear protective work uniforms, steel-toed shoes, gloves, and dosimeter badges when containers are loaded or unloaded at the CSAs. 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.

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, 25th Field Conference, Central Northern New Mexico.

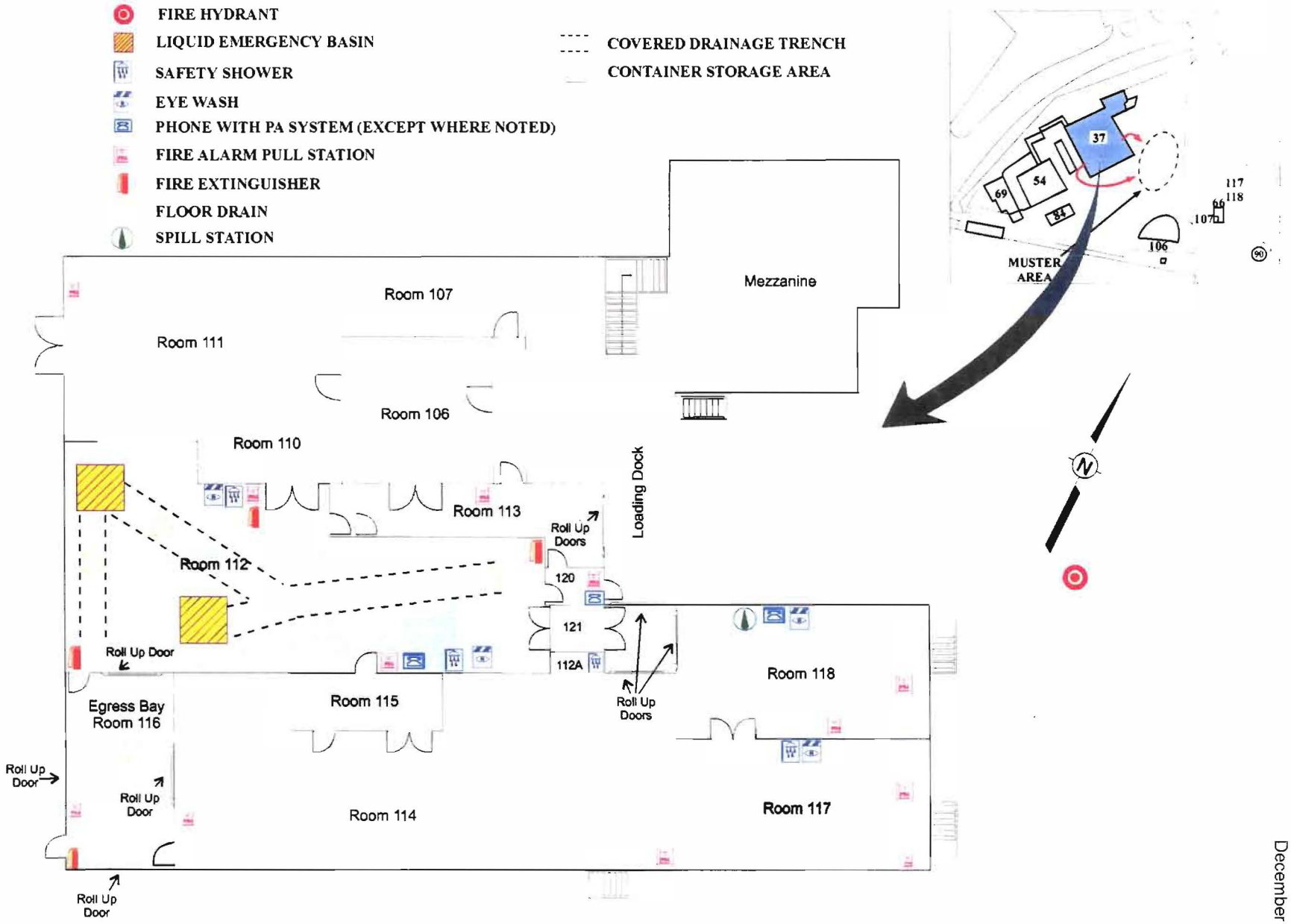

Figure G-1. TA-50-37 Container Storage Area Emergency Equipment

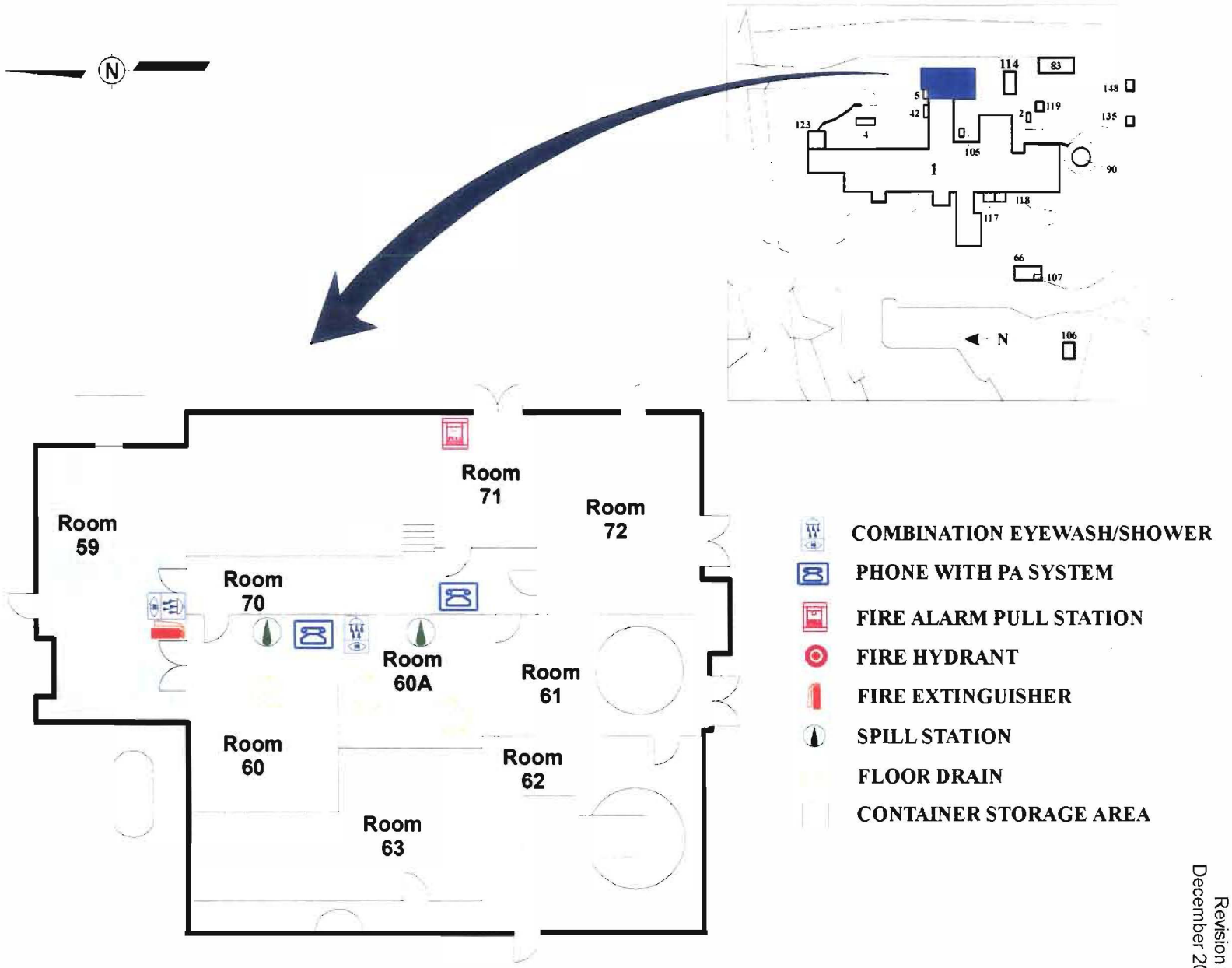

Figure G-2. TA-50-1 Room 59 RLWTF Container Storage Area Emergency Equipment

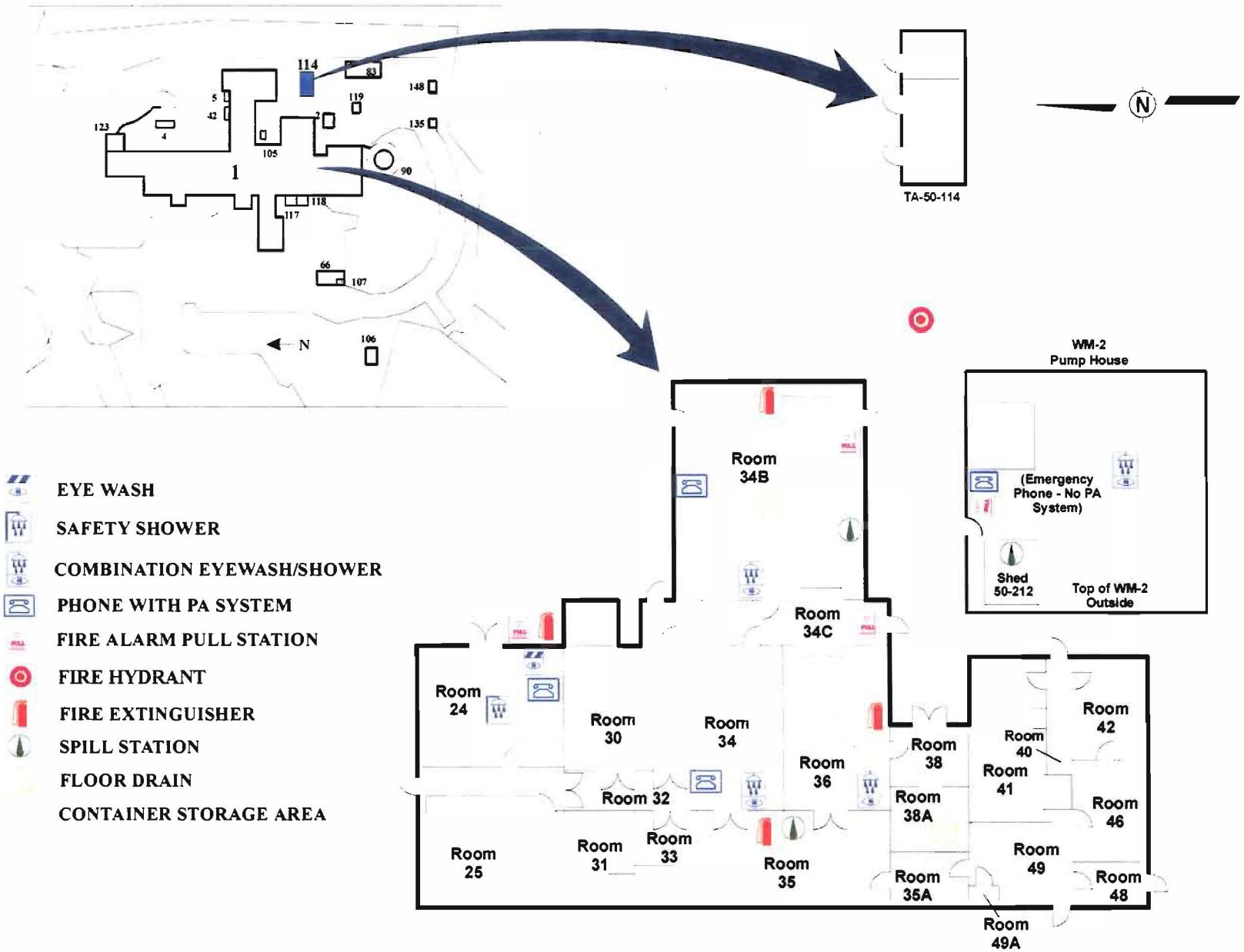

Figure G-3. TA-50-114 Container Storage Area Emergency Equipment

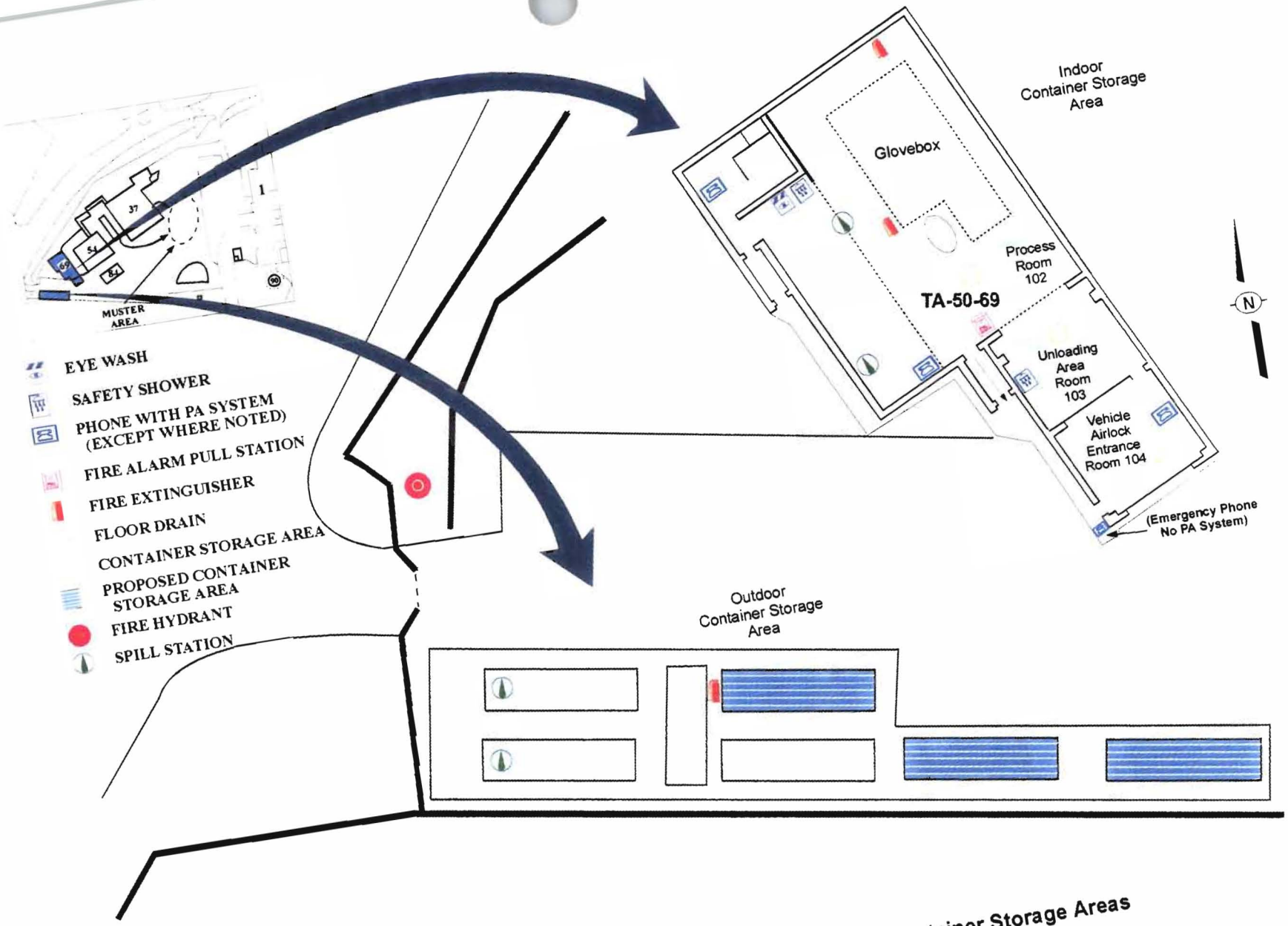

Figure G-4. TA-50-69 WCRRF Indoor and Outdoor Container Storage Areas Emergency Equipment

ATTACHMENT H

AUTHORIZED WASTE

ATTACHMENT H

AUTHORIZED WASTE

The attached excerpt from the *Los Alamos National Laboratory General Part A Permit Application* (April 1998) lists the wastes authorized for storage at Technical Area 50 container storage areas.

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved, OMB No. 2050-0034 Expires 10/31/99
GSA No. 0248-EPA-OT

For EPA Regional Use Only

Date Received
Month Day Year

EPA
United States Environmental Protection Agency
Washington, DC 20460

Hazardous Waste Permit Application Part A

(Read the Instructions before starting)

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

[ ] A. First Part A Submission

[X] B. Part A Amendment # LANL General Part A, Rev. 0.0

C. Installation's EPA ID Number: NM0890010515

D. Secondary ID Number *(If applicable)*:

II. Name of Facility

LOS ALAMOS NATIONAL LABORATORY

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

A. Street:

Street *(Continued)*:

City or Town: LOS ALAMOS

State: NM

Zip Code: 87545-

County Code *(If known)*: 028

County Name: LOS ALAMOS

B. Land Type *(Enter code)*: F

C. Geographic Location
LATITUDE *(Degrees, minutes, & seconds)*: 354951
LONGITUDE *(Degrees, minutes & seconds)*: 1061415

D. Facility Existence Date
Month Day Year: 01 01 1943

IV. Facility Mailing Address

Street or P.O. Box: PO BOX 1663

City or Town: LOS ALAMOS

State: NM

Zip Code: 87545-

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

Name *(Last)*: PRZYBYLEK

(First): TYLER

Job Title: ACTING AREA MANAGER

Phone Number *(Area Code and Number)*: 505-665-5027

VI. Facility Contact Address *(See Instructions)*

A. Contact Address
Location [ ] Mailing [X] Other [ ]

B. Street or P.O. Box: 528 35TH STREET

City or Town: LOS ALAMOS

State: NM

Zip Code: 87544-

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved, OMB No. 2050-0034 Expires 10/31/99
GSA No. 0248-EPA-OT

EPA I.D. Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
NM089001051 5	

VII. Operator Information *(See Instructions)*

Name of Operator			
UNIVERSITY OF CALIFORNIA			
Street or P.O. Box			
PO BOX 1663			
City or Town	**State**	**ZIP Code**	
LOS ALAMOS	NM	87545 —	
Phone Number *(Area Code and Number)*	**B. Operator Type**	**C. Change of Operator Indicator**	**Date Changed** Month Day Year
505 — 667 — 5061	F	Yes [ ] No [X]	

VIII. Facility Owner *(See Instructions)*

A. Name of Facility's Legal Owner			
US DEPARTMENT OF ENERGY			
Street or P.O. Box			
528 35TH STREET			
City or Town	**State**	**ZIP Code**	
LOS ALAMOS	NM	87544 —	
Phone Number *(Area Code and Number)*	**B. Owner Type**	**C. Change of Owner Indicator**	**Date Changed** Month Day Year
505 — 667 — 5061	F	Yes [ ] No [X]	

IX. SIC Codes *(4-digit, in order of significance)*

Primary		Secondary	
9711	*(Description)* NATIONAL SECURITY		*(Description)*
Secondary		**Secondary**	
	(Description)		*(Description)*

X. Other Environmental Permits *(See Instructions)*

A. Permit Type *(Enter code)*	B. Permit Number	C. Description
		NPDES STORM WATER GENERAL PERMIT:
N	NMR00A384	LANL Site University of California
N	NMR10A236	DARHT Facility Construction
N	NMR10A469	TA-9 and 16 Steam System Upgrade
N	NMR10A607	RLW X-Country Line Eros. Proj.
N	NMR10A622	Wildlands Fire Management Program
N	NMR10A746	Guaje Well Field Improvements
N	NMR10A946	Fire Protection Improvements
N	NM0028355	NPDES

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved, OMB No. 2050-0034 Expires 10/31/99
GSA No. 0248-EPA-OT

EPA I.D. Number *(Enter from page 1)*												Secondary ID Number *(Enter from page 1)*											
N	M	0	8	9	0	0	1	0	5	1	5												

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

LANL's central mission is the reduction of global nuclear danger supported by research that also contributes to conventional defense, civilian, and industrial needs. This includes programs in nuclear, medium energy, and space physics; hydrodynamics; conventional explosives; chemistry; metallurgy; radiochemistry; space nuclear systems; controlled thermonuclear fusion; laser research; environmental technology; geothermal, solar, and fossil energy research; nuclear safeguards; biomedicine; health and biotechnology; and industrial partnerships.

XII. Process Codes and Design Capacities

A. PROCESS CODE - *Enter the code from the list of process codes below that best describes each process to be used at the facility. Thirteen lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. For "other" processes (i.e., D99, S98, T04 and X99), describe the process (including its design capacity) in the space provided in Item XIII.*

B. PROCESS DESIGN CAPACITY - *For each code entered in column A, enter the capacity of the process.*
1. AMOUNT - *Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process.*
2. UNIT OF MEASURE - *For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.*

C. PROCESS TOTAL NUMBER OF UNITS - *Enter the total number of units used with the corresponding process code.*

PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
	Disposal:	
D79	Underground Injection	Gallons; Liters; Gallons Per Day; or Liters Per Day
D80	Landfill	Acre-feet or Hectare-meter
D81	Land Treatment	Acres or Hectares
D82	Ocean Disposal	Gallons Per Day or Liters Per Day
D83	Surface Impoundment	Gallons or Liters
D99	Other Storage	Any Unit of Measure Listed Below
	Storage:	
S01	Container (Barrel, Drum, Etc.)	Gallons or Liters
S02	Tank	Gallons or Liters
S03	Waste Pile	Cubic Yards or Cubic Meters
S04	Surface Impoundment	Gallons or Liters
S05	Drip Pad	Gallons or Liters
S06	Containment Building	Cubic Yards or Cubic Meters
S99	Other Disposal	Any Unit of Measure Listed Below
	Treatment:	
T01	Tank	Gallons Per Day or Liters Per Day
T02	Surface Impoundment	Gallons Per Day or Liters Per Day
T03	Incinerator	Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; or Btu's Per Hour
T04	Other Treatment	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
T80	Boiler	Gallons or Liters
T81	Cement Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
T82	Lime Kiln	
T83	Aggregate Kiln	
T84	Phosphate Kiln	
T85	Coke Oven	
T86	Blast Furnace	
T87	Smelting, Melting, Or Refining Furnace	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
T88	Titanium Dioxide Chloride Process Oxidation Reactor	
T89	Methane Reforming Furnace	
T90	Pulping Liquor Recovery Furnace	
T91	Combustion Device Used In The Recovery Of Sulfur Values From Spent Sulfuric Acid	
T92	Halogen Acid Furnaces	
T93	Other Industrial Furnaces Listed In 40 CFR §260.10	
T94	Containment Building	Cubic Yards or Cubic Meters
	Miscellaneous (Subpart X):	
X01	Open Burning/Open Detonation	Any Unit of Measure Listed Below
X02	Mechanical Processing	Short Tons Per Hour; Metric Tons Per Hour; Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; or Kilograms Per Hour
X03	Thermal Unit	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
X04	Geologic Repository	Cubic Yards or Cubic Meters
X99	Other Subpart X	Any Unit of Measure Listed Below

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

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

Secondary ID Number *(Enter from Page 1)*

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

***EXAMPLE FOR COMPLETING ITEM XII** (shown in line number X-1 below): A facility has a storage tank, which can hold 533.788 gallons.*

Line Number		A. Process Code (From list above)			B. PROCESS DESIGN CAPACITY 1. Amount (Specify)	B. 2. Unit Of Measure (Enter code)	C. Process Total Number Of Units	For Official Use Only					
X	1	S	0	2	5 3 3 . 7 8 8	G	0 0 1						
Technical Area 50, Buildings 1 and 114													
	1	S	0	1	3,695	G	0 0 4						
	2	S	0	1	15	Y	0 0 1						
	3												
	4												
	5												
	6												
	7												
	8												
	9												
1	0												
1	1												
1	2												
1	3												

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

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

Line Number (Enter # in w/XII)		A. Process Code (From list above)			B. PROCESS DESIGN CAPACITY 1. Amount (Specify)	B. 2. Unit Of Measure (Enter code)	C. Process Total Number Of Units	D. Description Of Process
X	1	T	0	4				In-situ Vitrification
	3	T	0	4	660	U	0 0 1	Solidification

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

Secondary ID Number *(Enter from Page 1)*

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

***EXAMPLE FOR COMPLETING ITEM XII** (shown in line number X-1 below): A facility has a storage tank, which can hold 533.788 gallons.*

Line Number		A. Process Code (From list above)			B. PROCESS DESIGN CAPACITY 1. Amount (Specify)	B. PROCESS DESIGN CAPACITY 2. Unit Of Measure (Enter code)	C. Process Total Number Of Units	For Official Use Only
X	1	S	0	2	5 3 3 . 7 8 8	G	0 0 1	
					Technical Area 50, Building 37			
	1	S	0	1	21,850	G	0 0 3	
	2	S	0	2	310	G	0 0 2 *	
	3	T	0	3	1.5×10^6	I	0 0 1 *	
	4				*Units are no longer receiving waste. They are currently undergoing closure in accordance with New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart VI (3-1-97), requirements.			
	5							
	6							
	7							
	8							
	9							
1	0							
1	1							
1	2							
1	3							

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

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

Line Number (Enter # in w/XII)		A. Process Code (From list above)			B. PROCESS DESIGN CAPACITY 1. Amount (Specify)	B. PROCESS DESIGN CAPACITY 2. Unit Of Measure (Enter code)	C. Process Total Number Of Units	D. Description Of Process
X	1	T	0	4				In-situ Vitrification

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

Secondary ID Number *(Enter from Page 1)*

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

***EXAMPLE FOR COMPLETING ITEM XII** (shown in line number X-1 below): A facility has a storage tank, which can hold 533.788 gallons.*

Line Number		A. Process Code (From list above)			B. PROCESS DESIGN CAPACITY 1. Amount (Specify)	B. 2. Unit Of Measure (Enter code)	C. Process Total Number Of Units	For Official Use Only					
X	1	S	0	2	5 3 3 . 7 8 8	G	0 0 1						
Technical Area 50, Building 69 and Associated Outdoor Storage Area													
	1	S	0	1	31,500	G	0 0 2						
	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9												
1	0												
1	1												
1	2												
1	3												

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

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

Line Number (Enter # in w/XII)		A. Process Code (From list above)			B. PROCESS DESIGN CAPACITY 1. Amount (Specify)	B. 2. Unit Of Measure (Enter code)	C. Process Total Number Of Units	D. Description Of Process
X	1	T	0	4				In-situ Vitrification

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

Secondary ID Number *(Enter from Page 1)*

XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			(2) PROCESS DESCRIPTION (If a code is not entered in D[1])
Technical Area 50, Buildings 1 and 114							
1	D001	1,020	K	S01			Hazardous Waste (HW)
2	D002	820	K	S01			HW
3	D003	50	K	S01			HW
4	D004	70	K	S01			HW
5	D005	80	K	S01			HW
6	D006	210	K	S01			HW
7	D007	380	K	S01			HW
8	D008	1,570	K	S01			HW
9	D009	660	K	S01			HW
10	D010	90	K	S01			HW
11	D011	470	K	S01			HW
12	D016	10	K	S01			HW
13	D017	10	K	S01			HW
14	D018	90	K	S01			HW
15	D019	10	K	S01			HW
16	D021	10	K	S01			HW
17	D022	60	K	S01			HW
18	D026	10	K	S01			HW
19	D027	10	K	S01			HW
20	D028	740	K	S01			HW
21	D029	740	K	S01			HW
22	D030	30	K	S01			HW
23	D031	10	K	S01			HW
24	D032	10	K	S01			HW
25	D033	10	K	S01			HW
26	D034	10	K	S01			HW
27	D035	30	K	S01			HW
28	D036	10	K	S01			HW
29	D037	10	K	S01			HW
30	D038	30	K	S01			HW
31	D039	10	K	S01			HW
32	D040	30	K	S01			HW
33	D041	10	K	S01			HW
34	D042	10	K	S01			HW
35	D043	10	K	S01			HW

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

Secondary ID Number *(Enter from Page 1)*

XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
Technical Area 50, Buildings 1 and 114 (Continued)							
36	F001	2,050	K	S01			HW
37	F002	1,850	K	S01			HW
38	F003	510	K	S01			HW
39	F004	30	K	S01			HW
40	F005	2,500	K	S01			HW
41	F009	10	K	S01			HW
42	F027	10	K	S01			HW
43	P003	10	K	S01			HW
44	P006	10	K	S01			HW
45	P011	10	K	S01			HW
46	P012	10	K	S01			HW
47	P015	10	K	S01			HW
48	P029	10	K	S01			HW
49	P030	10	K	S01			HW
50	P031	10	K	S01			HW
51	P033	10	K	S01			HW
52	P038	10	K	S01			HW
53	P043	10	K	S01			HW
54	P048	10	K	S01			HW
55	P056	50	K	S01			HW
56	P063	10	K	S01			HW
57	P068	10	K	S01			HW
58	P073	10	K	S01			HW
59	P076	10	K	S01			HW
60	P078	10	K	S01			HW
61	P092	10	K	S01			HW
62	P095	10	K	S01			HW
63	P096	10	K	S01			HW
64	P098	10	K	S01			HW
65	P104	10	K	S01			HW
66	P105	10	K	S01			HW
67	P106	10	K	S01			HW
68	P112	10	K	S01			HW
69	P113	10	K	S01			HW
70	P119	10	K	S01			HW

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

Secondary ID Number *(Enter from Page 1)*

XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
Technical Area 50, Buildings 1 and 114 (Continued)							
71	P120	10	K	S01			HW
72	U001	10	K	S01			HW
73	U002	10	K	S01			HW
74	U003	10	K	S01			HW
75	U007	10	K	S01			HW
76	U008	10	K	S01			HW
77	U009	10	K	S01			HW
78	U012	10	K	S01			HW
79	U018	10	K	S01			HW
80	U019	10	K	S01			HW
81	U022	10	K	S01			HW
82	U029	10	K	S01			HW
83	U031	10	K	S01			HW
84	U033	10	K	S01			HW
85	U037	10	K	S01			HW
86	U041	10	K	S01			HW
87	U044	10	K	S01			HW
88	U045	10	K	S01			HW
89	U052	10	K	S01			HW
90	U055	10	K	S01			HW
91	U056	10	K	S01			HW
92	U057	10	K	S01			HW
93	U067	10	K	S01			HW
94	U068	10	K	S01			HW
95	U070	10	K	S01			HW
96	U075	10	K	S01			HW
97	U077	10	K	S01			HW
98	U080	70	K	S01			HW
99	U085	10	K	S01			HW
100	U091	10	K	S01			HW
101	U092	10	K	S01			HW
102	U103	10	K	S01			HW
103	U108	10	K	S01			HW
104	U109	10	K	S01			HW
105	U112	10	K	S01			HW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
Technical Area 50, Buildings 1 and 114 (Continued)							
106	U115	10	K	S01			HW
107	U117	10	K	S01			HW
108	U121	10	K	S01			HW
109	U122	10	K	S01			HW
110	U123	10	K	S01			HW
111	U124	10	K	S01			HW
112	U131	10	K	S01			HW
113	U133	10	K	S01			HW
114	U134	10	K	S01			HW
115	U135	10	K	S01			HW
116	U136	10	K	S01			HW
117	U140	10	K	S01			HW
118	U144	10	K	S01			HW
119	U145	10	K	S01			HW
120	U151	10	K	S01			HW
121	U153	10	K	S01			HW
122	U154	10	K	S01			HW
123	U159	10	K	S01			HW
124	U160	10	K	S01			HW
125	U161	10	K	S01			HW
126	U162	10	K	S01			HW
127	U163	10	K	S01			HW
128	U165	10	K	S01			HW
129	U167	10	K	S01			HW
130	U168	10	K	S01			HW
131	U169	10	K	S01			HW
132	U170	10	K	S01			HW
133	U188	10	K	S01			HW
134	U190	10	K	S01			HW
135	U196	10	K	S01			HW
136	U204	10	K	S01			HW
137	U210	10	K	S01			HW
138	U211	10	K	S01			HW
139	U213	10	K	S01			HW
140	U216	10	K	S01			HW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
Technical Area 50, Buildings 1 and 114 (Continued)							
141	U218	10	K	S01			HW
142	U219	10	K	S01			HW
143	U220	10	K	S01			HW
144	U223	10	K	S01			HW
145	U225	10	K	S01			HW
146	U226	100	K	S01			HW
147	U227	10	K	S01			HW
148	U228	20	K	S01			HW
149	U239	10	K	S01			HW
150	U240	10	K	S01			HW
151	U246	10	K	S01			HW
152	D001	50	K	S01			Mixed Low-Level Waste (MLLW)
153	D002	30	K	S01	T04		MLLW
154	D003	10	K	S01			MLLW
155	D004	20	K	S01	T04		MLLW
156	D005	20	K	S01			MLLW
157	D006	2,300	K	S01	T04		MLLW
158	D007	2,390	K	S01	T04		MLLW
159	D008	5,410	K	S01	T04		MLLW
160	D009	170	K	S01	T04		MLLW
161	D010	20	K	S01			MLLW
162	D011	20	K	S01	T04		MLLW
163	D018	10	K	S01			MLLW
164	D019	20	K	S01			MLLW
165	D021	10	K	S01			MLLW
166	D022	10	K	S01			MLLW
167	D027	10	K	S01			MLLW
168	D028	730	K	S01			MLLW
169	D029	730	K	S01			MLLW
170	D030	20	K	S01			MLLW
171	D031	10	K	S01			MLLW
172	D032	10	K	S01			MLLW
173	D033	10	K	S01			MLLW
174	D034	10	K	S01			MLLW
175	D035	10	K	S01			MLLW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
Technical Area 50, Buildings 1 and 114 (Continued)							
176	D036	10	K	S01			MLLW
177	D037	20	K	S01			MLLW
178	D038	10	K	S01			MLLW
179	D039	10	K	S01			MLLW
180	D040	10	K	S01			MLLW
181	D041	10	K	S01			MLLW
182	D042	10	K	S01			MLLW
183	D043	10	K	S01			MLLW
184	F001	1,400	K	S01	T04		MLLW
185	F002	180	K	S01	T04		MLLW
186	F003	100	K	S01	T04		MLLW
187	F004	10	K	S01			MLLW
188	F005	820	K	S01	T04		MLLW
189	P003	10	K	S01			MLLW
190	P012	10	K	S01			MLLW
191	P015	10	K	S01			MLLW
192	P029	10	K	S01			MLLW
193	P030	10	K	S01			MLLW
194	P031	10	K	S01			MLLW
195	P038	10	K	S01			MLLW
196	P056	10	K	S01			MLLW
197	P063	10	K	S01			MLLW
198	P068	10	K	S01			MLLW
199	P073	10	K	S01			MLLW
200	P076	10	K	S01			MLLW
201	P078	10	K	S01			MLLW
202	P095	10	K	S01			MLLW
203	P096	10	K	S01			MLLW
204	P098	10	K	S01			MLLW
205	P106	10	K	S01			MLLW
206	P113	10	K	S01			MLLW
207	P120	10	K	S01			MLLW
208	U001	10	K	S01			MLLW
209	U002	10	K	S01			MLLW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
Technical Area 50, Buildings 1 and 114 (Continued)							
210	U003	10	K	S01			MLLW
211	U012	10	K	S01			MLLW
212	U019	10	K	S01			MLLW
213	U022	10	K	S01			MLLW
214	U029	10	K	S01			MLLW
215	U031	10	K	S01			MLLW
216	U037	10	K	S01			MLLW
217	U044	10	K	S01			MLLW
218	U045	10	K	S01			MLLW
219	U052	10	K	S01			MLLW
220	U056	10	K	S01			MLLW
221	U057	10	K	S01			MLLW
222	U075	10	K	S01			MLLW
223	U077	10	K	S01			MLLW
224	U080	10	K	S01			MLLW
225	U108	10	K	S01			MLLW
226	U112	10	K	S01			MLLW
227	U115	10	K	S01			MLLW
228	U117	10	K	S01			MLLW
229	U121	10	K	S01			MLLW
230	U122	10	K	S01			MLLW
231	U123	10	K	S01			MLLW
232	U131	10	K	S01			MLLW
233	U133	10	K	S01			MLLW
234	U134	10	K	S01			MLLW
235	U135	10	K	S01			MLLW
236	U140	10	K	S01			MLLW
237	U144	10	K	S01			MLLW
238	U145	10	K	S01			MLLW
239	U151	10	K	S01			MLLW
240	U154	10	K	S01			MLLW
241	U159	10	K	S01			MLLW
242	U160	10	K	S01			MLLW
243	U161	10	K	S01			MLLW
244	U165	10	K	S01			MLLW

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IV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
Technical Area 50, Buildings 1 and 114 (Continued)							
245	U169	10	K	S01			MLLW
246	U188	10	K	S01			MLLW
247	U190	10	K	S01			MLLW
248	U196	10	K	S01			MLLW
249	U204	10	K	S01			MLLW
250	U210	10	K	S01			MLLW
251	U211	10	K	S01			MLLW
252	U213	10	K	S01			MLLW
253	U216	10	K	S01			MLLW
254	U218	10	K	S01			MLLW
255	U219	10	K	S01			MLLW
256	U220	10	K	S01			MLLW
257	U225	10	K	S01			MLLW
258	U226	10	K	S01			MLLW
259	U227	10	K	S01			MLLW
260	U228	10	K	S01			MLLW
261	U239	10	K	S01			MLLW
262	U246	10	K	S01			MLLW
263	D001	50	K	S01			Mixed Transuranic Waste (MTRUW)
264	D002	30	K	S01	T04		MTRUW
265	D003	10	K	S01			MTRUW
266	D004	20	K	S01	T04		MTRUW
267	D005	20	K	S01			MTRUW
268	D006	2,300	K	S01	T04		MTRUW
269	D007	2,390	K	S01	T04		MTRUW
270	D008	5,410	K	S01	T04		MTRUW
271	D009	170	K	S01	T04		MTRUW
272	D010	20	K	S01			MTRUW
273	D011	20	K	S01	T04		MTRUW
274	D018	10	K	S01			MTRUW
275	D019	20	K	S01			MTRUW
276	D021	10	K	S01			MTRUW
277	D022	10	K	S01			MTRUW
278	D027	10	K	S01			MTRUW
279	D028	730	K	S01			MTRUW

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

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GSA No. 0248-EPA-OT

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

XV. Map

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

XVI. Facility Drawing

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

XVII. Photographs

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

XVIII. Certification(s)

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

Owner Signature: TS Przybylek	Date Signed: 4/30/98
Name and Official Title (Type or print): Tyler Przybylek, Acting Area Manager, DOE/LAAO	
Owner Signature	Date Signed
Name and Official Title (Type or print)	
Operator Signature: TS Przybylek	Date Signed: 4/30/98
Name and Official Title (Type or print): Tyler Przybylek, Acting Area Manager, DOE/LAAO	
Operator Signature: [illegible]	Date Signed: 4/[illegible]
Name and Official Title (Type or print): Dennis J. Erickson, Division Director, LANL ES&H Division	

XIX. Comments

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

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
Technical Area 50, Buildings 1 and 114 (Continued)							
280	D029	730	K	S01			MTRUW
281	D030	20	K	S01			MTRUW
282	D031	10	K	S01			MTRUW
283	D032	10	K	S01			MTRUW
284	D033	10	K	S01			MTRUW
285	D034	10	K	S01			MTRUW
286	D035	10	K	S01			MTRUW
287	D036	10	K	S01			MTRUW
288	D037	20	K	S01			MTRUW
289	D038	10	K	S01			MTRUW
290	D039	10	K	S01			MTRUW
291	D040	10	K	S01			MTRUW
292	D041	10	K	S01			MTRUW
293	D042	10	K	S01			MTRUW
294	D043	10	K	S01			MTRUW
295	F001	1,400	K	S01	T04		MTRUW
296	F002	180	K	S01	T04		MTRUW
297	F003	100	K	S01	T04		MTRUW
298	F004	10	K	S01			MTRUW
299	F005	820	K	S01	T04		MTRUW
300	P003	10	K	S01			MTRUW
301	P012	10	K	S01			MTRUW
302	P015	10	K	S01			MTRUW
303	P029	10	K	S01			MTRUW
304	P030	10	K	S01			MTRUW
305	P031	10	K	S01			MTRUW
306	P038	10	K	S01			MTRUW
307	P056	10	K	S01			MTRUW
308	P063	10	K	S01			MTRUW
309	P068	10	K	S01			MTRUW
310	P073	10	K	S01			MTRUW
311	P076	10	K	S01			MTRUW
312	P078	10	K	S01			MTRUW
313	P095	10	K	S01			MTRUW
314	P096	10	K	S01			MTRUW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D[1])
Technical Area 50, Buildings 1 and 114 (Continued)							
315	P098	10	K	S01			MTRUW
316	P106	10	K	S01			MTRUW
317	P113	10	K	S01			MTRUW
318	P120	10	K	S01			MTRUW
319	U001	10	K	S01			MTRUW
320	U002	10	K	S01			MTRUW
321	U003	10	K	S01			MTRUW
322	U012	10	K	S01			MTRUW
323	U019	10	K	S01			MTRUW
324	U022	10	K	S01			MTRUW
325	U029	10	K	S01			MTRUW
326	U031	10	K	S01			MTRUW
327	U037	10	K	S01			MTRUW
328	U044	10	K	S01			MTRUW
329	U045	10	K	S01			MTRUW
330	U052	10	K	S01			MTRUW
331	U056	10	K	S01			MTRUW
332	U057	10	K	S01			MTRUW
333	U075	10	K	S01			MTRUW
334	U077	10	K	S01			MTRUW
335	U080	10	K	S01			MTRUW
336	U108	10	K	S01			MTRUW
337	U112	10	K	S01			MTRUW
338	U115	10	K	S01			MTRUW
339	U117	10	K	S01			MTRUW
340	U121	10	K	S01			MTRUW
341	U122	10	K	S01			MTRUW
342	U123	10	K	S01			MTRUW
343	U131	10	K	S01			MTRUW
344	U133	10	K	S01			MTRUW
345	U134	10	K	S01			MTRUW
346	U135	10	K	S01			MTRUW
347	U140	10	K	S01			MTRUW
348	U144	10	K	S01			MTRUW
349	U145	10	K	S01			MTRUW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D[1])
Technical Area 50, Buildings 1 and 114 (Continued)							
350	U151	10	K	S01			MTRUW
351	U154	10	K	S01			MTRUW
352	U159	10	K	S01			MTRUW
353	U160	10	K	S01			MTRUW
354	U161	10	K	S01			MTRUW
355	U165	10	K	S01			MTRUW
356	U169	10	K	S01			MTRUW
357	U188	10	K	S01			MTRUW
358	U190	10	K	S01			MTRUW
359	U196	10	K	S01			MTRUW
360	U204	10	K	S01			MTRUW
361	U210	10	K	S01			MTRUW
362	U211	10	K	S01			MTRUW
363	U213	10	K	S01			MTRUW
364	U216	10	K	S01			MTRUW
365	U218	10	K	S01			MTRUW
366	U219	10	K	S01			MTRUW
367	U220	10	K	S01			MTRUW
368	U225	10	K	S01			MTRUW
369	U226	10	K	S01			MTRUW
370	U227	10	K	S01			MTRUW
371	U228	10	K	S01			MTRUW
372	U239	10	K	S01			MTRUW
373	U246	10	K	S01			MTRUW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. *(enter code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. Processes (1) PROCESS CODES *(Enter code)*			D. Processes (2) PROCESS DESCRIPTION *(If a code is not entered in D[1])*
Technical Area 50, Building 37							
1	D001	1,000	P	S01			Hazardous Waste (HW)
2	D002	100	P	S01			HW
3	D003	100	P	S01			HW
4	D004	100	P	S01			HW
5	D005	100	P	S01	S02	T01	HW
6	D006	10,000	P	S01			HW
7	D007	10,000	P	S01			HW
8	D008	100,000	P	S01			HW
9	D009	1,000	P	S01			HW
10	D010	100	P	S01			HW
11	D011	100	P	S01			HW
12	D018	100	P	S01			HW
13	D019	100	P	S01			HW
14	D020	100	P	S01			HW
15	D021	100	P	S01			HW
16	D022	100	P	S01			HW
17	D023	100	P	S01			HW
18	D024	100	P	S01			HW
19	D025	100	P	S01			HW
20	D026	100	P	S01			HW
21	D027	100	P	S01			HW
22	D028	10,000	P	S01			HW
23	D029	10,000	P	S01			HW
24	D030	100	P	S01			HW
25	D031	100	P	S01			HW
26	D032	100	P	S01			HW
27	D033	100	P	S01			HW
28	D034	100	P	S01			HW
29	D035	100	P	S01			HW
30	D036	100	P	S01			HW
31	D037	100	P	S01			HW
32	D038	100	P	S01			HW
33	D039	100	P	S01			HW
34	D040	100	P	S01			HW
35	D041	100	P	S01			HW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. *(enter code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. Processes (1) PROCESS CODES *(Enter code)*			D. Processes (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
Technical Area 50, Building 37 (Continued)							
36	D042	100	P	S01			HW
37	D043	100	P	S01			HW
38	F001	10,000	P	S01			HW
39	F002	1,000	P	S01			HW
40	F003	1,000	P	S01			HW
41	F004	100	P	S01			HW
42	F005	10,000	P	S01			HW
43	F006	100	P	S01			HW
44	F007	100	P	S01			HW
45	F008	100	P	S01			HW
46	F009	100	P	S01			HW
47	F027	100	P	S01			HW
48	F028	100	P	S01			HW
49	K044	100	P	S01			HW
50	K045	100	P	S01			HW
51	K047	100	P	S01			HW
52	P001	100	P	S01			HW
53	P002	100	P	S01			HW
54	P003	100	P	S01			HW
55	P004	100	P	S01			HW
56	P005	100	P	S01			HW
57	P006	100	P	S01			HW
58	P007	100	P	S01			HW
59	P008	100	P	S01			HW
60	P009	100	P	S01			HW
61	P010	100	P	S01			HW
62	P011	100	P	S01			HW
63	P012	100	P	S01			HW
64	P013	100	P	S01			HW
65	P014	100	P	S01			HW
66	P015	100	P	S01			HW
67	P016	100	P	S01			HW
68	P017	100	P	S01			HW
69	P018	100	P	S01			HW
70	P020	100	P	S01			HW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. *(enter code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. Processes (1) PROCESS CODES *(Enter code)*			D. Processes (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
Technical Area 50, Building 37 (Continued)							
71	P021	100	P	S01			HW
72	P022	100	P	S01			HW
73	P023	100	P	S01			HW
74	P024	100	P	S01			HW
75	P026	100	P	S01			HW
76	P027	100	P	S01			HW
77	P028	100	P	S01			HW
78	P029	100	P	S01			HW
79	P030	100	P	S01			HW
80	P031	100	P	S01			HW
81	P033	100	P	S01			HW
82	P034	100	P	S01			HW
83	P036	100	P	S01			HW
84	P037	100	P	S01			HW
85	P038	100	P	S01			HW
86	P039	100	P	S01			HW
87	P040	100	P	S01			HW
88	P041	100	P	S01			HW
89	P042	100	P	S01			HW
90	P043	100	P	S01			HW
91	P044	100	P	S01			HW
92	P045	100	P	S01			HW
93	P046	100	P	S01			HW
94	P047	100	P	S01			HW
95	P048	100	P	S01			HW
96	P049	100	P	S01			HW
97	P050	100	P	S01			HW
98	P051	100	P	S01			HW
99	P054	100	P	S01			HW
100	P056	100	P	S01			HW
101	P057	100	P	S01			HW
102	P058	100	P	S01			HW
103	P059	100	P	S01			HW
104	P060	100	P	S01			HW
105	P062	100	P	S01			HW

EPA I.D. Number *(Enter from Page 1)*
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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. *(enter code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. Processes (1) PROCESS CODES *(Enter code)*			D. Processes (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
Technical Area 50, Building 37 (Continued)							
106	P063	100	P	S01			HW
107	P064	100	P	S01			HW
108	P065	100	P	S01			HW
109	P066	100	P	S01			HW
110	P067	100	P	S01			HW
111	P068	100	P	S01			HW
112	P069	100	P	S01			HW
113	P070	100	P	S01			HW
114	P071	100	P	S01			HW
115	P072	100	P	S01			HW
116	P073	100	P	S01			HW
117	P074	100	P	S01			HW
118	P075	100	P	S01			HW
119	P076	100	P	S01			HW
120	P077	100	P	S01			HW
121	P078	100	P	S01			HW
122	P081	100	P	S01			HW
123	P082	100	P	S01			HW
124	P084	100	P	S01			HW
125	P085	100	P	S01			HW
126	P087	100	P	S01			HW
127	P088	100	P	S01			HW
128	P089	100	P	S01			HW
129	P092	100	P	S01			HW
130	P093	100	P	S01			HW
131	P094	100	P	S01			HW
132	P095	100	P	S01			HW
133	P096	100	P	S01			HW
134	P097	100	P	S01			HW
135	P098	100	P	S01			HW
136	P099	100	P	S01			HW
137	P101	100	P	S01			HW
138	P102	100	P	S01			HW
139	P103	100	P	S01			HW
140	P104	100	P	S01			HW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. *(enter code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. Processes (1) PROCESS CODES *(Enter code)*			D. Processes (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
Technical Area 50, Building 37 (Continued)							
141	P105	100	P	S01			HW
142	P106	100	P	S01			HW
143	P107	100	P	S01			HW
144	P108	100	P	S01			HW
145	P109	100	P	S01			HW
146	P110	100	P	S01			HW
147	P111	100	P	S01			HW
148	P112	100	P	S01			HW
149	P113	100	P	S01			HW
150	P114	100	P	S01			HW
151	P115	100	P	S01			HW
152	P116	100	P	S01			HW
153	P118	100	P	S01			HW
154	P119	100	P	S01			HW
155	P120	100	P	S01			HW
156	P121	100	P	S01			HW
157	P122	100	P	S01			HW
158	P123	100	P	S01			HW
159	U001	100	P	S01			HW
160	U002	100	P	S01			HW
161	U003	100	P	S01			HW
162	U004	100	P	S01			HW
163	U005	100	P	S01			HW
164	U006	100	P	S01			HW
165	U007	100	P	S01			HW
166	U008	100	P	S01			HW
167	U009	100	P	S01			HW
168	U010	100	P	S01			HW
169	U011	100	P	S01			HW
170	U012	100	P	S01			HW
171	U014	100	P	S01			HW
172	U015	100	P	S01			HW
173	U016	100	P	S01			HW
174	U017	100	P	S01			HW
175	U018	100	P	S01			HW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. *(enter code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. Processes (1) PROCESS CODES *(Enter code)*			D. Processes (2) PROCESS DESCRIPTION *(If a code is not entered in D[1])*
Technical Area 50, Building 37 (Continued)							
176	U019	100	P	S01			HW
177	U020	100	P	S01			HW
178	U021	100	P	S01			HW
179	U022	100	P	S01			HW
180	U023	100	P	S01			HW
181	U024	100	P	S01			HW
182	U025	100	P	S01			HW
183	U026	100	P	S01			HW
184	U027	100	P	S01			HW
185	U028	100	P	S01			HW
186	U029	100	P	S01			HW
187	U030	100	P	S01			HW
188	U031	100	P	S01			HW
189	U032	100	P	S01			HW
190	U033	100	P	S01			HW
191	U034	100	P	S01			HW
192	U035	100	P	S01			HW
193	U036	100	P	S01			HW
194	U037	100	P	S01			HW
195	U038	100	P	S01			HW
196	U039	100	P	S01			HW
197	U041	100	P	S01			HW
198	U042	100	P	S01			HW
199	U043	100	P	S01			HW
200	U044	100	P	S01			HW
201	U045	100	P	S01			HW
202	U046	100	P	S01			HW
203	U047	100	P	S01			HW
204	U048	100	P	S01			HW
205	U049	100	P	S01			HW
206	U050	100	P	S01			HW
207	U051	100	P	S01			HW
208	U052	100	P	S01			HW
209	U053	100	P	S01			HW
210	U055	100	P	S01			HW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. *(enter code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. Processes (1) PROCESS CODES *(Enter code)*			D. Processes (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
Technical Area 50, Building 37 (Continued)							
211	U056	100	P	S01			HW
212	U057	100	P	S01			HW
213	U058	100	P	S01			HW
214	U059	100	P	S01			HW
215	U060	100	P	S01			HW
216	U061	100	P	S01			HW
217	U062	100	P	S01			HW
218	U063	100	P	S01			HW
219	U064	100	P	S01			HW
220	U066	100	P	S01			HW
221	U067	100	P	S01			HW
222	U068	100	P	S01			HW
223	U069	100	P	S01			HW
224	U070	100	P	S01			HW
225	U071	100	P	S01			HW
226	U072	100	P	S01			HW
227	U073	100	P	S01			HW
228	U074	100	P	S01			HW
229	U075	100	P	S01			HW
230	U076	100	P	S01			HW
231	U077	100	P	S01			HW
232	U078	100	P	S01			HW
233	U079	100	P	S01			HW
234	U080	100	P	S01			HW
235	U081	100	P	S01			HW
236	U082	100	P	S01			HW
237	U083	100	P	S01			HW
238	U084	100	P	S01			HW
239	U085	100	P	S01			HW
240	U086	100	P	S01			HW
241	U087	100	P	S01			HW
242	U088	100	P	S01			HW
243	U089	100	P	S01			HW
244	U090	100	P	S01			HW
245	U091	100	P	S01			HW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. *(enter code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. Processes (1) PROCESS CODES *(Enter code)*			D. Processes (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
Technical Area 50, Building 37 (Continued)							
246	U092	100	P	S01			HW
247	U093	100	P	S01			HW
248	U094	100	P	S01			HW
249	U095	100	P	S01			HW
250	U096	100	P	S01			HW
251	U097	100	P	S01			HW
252	U098	100	P	S01			HW
253	U099	100	P	S01			HW
254	U101	100	P	S01			HW
255	U102	100	P	S01			HW
256	U103	100	P	S01			HW
257	U105	100	P	S01			HW
258	U106	100	P	S01			HW
259	U107	100	P	S01			HW
260	U108	100	P	S01			HW
261	U109	100	P	S01			HW
262	U110	100	P	S01			HW
263	U111	100	P	S01			HW
264	U112	100	P	S01			HW
265	U113	100	P	S01			HW
266	U114	100	P	S01			HW
267	U115	100	P	S01			HW
268	U116	100	P	S01			HW
269	U117	100	P	S01			HW
270	U118	100	P	S01			HW
271	U119	100	P	S01			HW
272	U120	100	P	S01			HW
273	U121	100	P	S01			HW
274	U122	100	P	S01			HW
275	U123	100	P	S01			HW
276	U124	100	P	S01			HW
277	U125	100	P	S01			HW
278	U126	100	P	S01			HW
279	U127	100	P	S01			HW
280	U128	100	P	S01			HW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. *(enter code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. Processes (1) PROCESS CODES *(Enter code)*			D. Processes (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
Technical Area 50, Building 37 (Continued)							
281	U129	100	P	S01			HW
282	U130	100	P	S01			HW
283	U131	100	P	S01			HW
284	U132	100	P	S01			HW
285	U133	100	P	S01			HW
286	U134	100	P	S01			HW
287	U135	100	P	S01			HW
288	U136	100	P	S01			HW
289	U137	100	P	S01			HW
290	U138	100	P	S01			HW
291	U139	100	P	S01			HW
292	U140	100	P	S01			HW
293	U141	100	P	S01			HW
294	U142	100	P	S01			HW
295	U143	100	P	S01			HW
296	U144	100	P	S01			HW
297	U145	100	P	S01			HW
298	U146	100	P	S01			HW
299	U147	100	P	S01			HW
300	U148	100	P	S01			HW
301	U149	100	P	S01			HW
302	U150	100	P	S01			HW
303	U151	100	P	S01			HW
304	U152	100	P	S01			HW
305	U153	100	P	S01			HW
306	U154	100	P	S01			HW
307	U155	100	P	S01			HW
308	U156	100	P	S01			HW
309	U157	100	P	S01			HW
310	U158	100	P	S01			HW
311	U159	100	P	S01			HW
312	U160	100	P	S01			HW
313	U161	100	P	S01			HW
314	U162	100	P	S01			HW
315	U163	100	P	S01			HW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. *(enter code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. Processes (1) PROCESS CODES *(Enter code)*			D. Processes (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
Technical Area 50, Building 37 (Continued)							
316	U164	100	P	S01			HW
317	U165	100	P	S01			HW
318	U166	100	P	S01			HW
319	U167	100	P	S01			HW
320	U168	100	P	S01			HW
321	U169	100	P	S01			HW
322	U170	100	P	S01			HW
323	U171	100	P	S01			HW
324	U172	100	P	S01			HW
325	U173	100	P	S01			HW
326	U174	100	P	S01			HW
327	U176	100	P	S01			HW
328	U177	100	P	S01			HW
329	U178	100	P	S01			HW
330	U179	100	P	S01			HW
331	U180	100	P	S01			HW
332	U181	100	P	S01			HW
333	U182	100	P	S01			HW
334	U183	100	P	S01			HW
335	U184	100	P	S01			HW
336	U185	100	P	S01			HW
337	U186	100	P	S01			HW
338	U187	100	P	S01			HW
339	U188	100	P	S01			HW
340	U189	100	P	S01			HW
341	U190	100	P	S01			HW
342	U191	100	P	S01			HW
343	U192	100	P	S01			HW
344	U193	100	P	S01			HW
345	U194	100	P	S01			HW
346	U196	100	P	S01			HW
347	U197	100	P	S01			HW
348	U200	100	P	S01			HW
349	U201	100	P	S01			HW
350	U202	100	P	S01			HW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. *(enter code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. Processes (1) PROCESS CODES *(Enter code)*			D. Processes (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
Technical Area 50, Building 37 (Continued)							
351	U203	100	P	S01			HW
352	U204	100	P	S01			HW
353	U205	100	P	S01			HW
354	U206	100	P	S01			HW
355	U207	100	P	S01			HW
356	U208	100	P	S01			HW
357	U209	100	P	S01			HW
358	U210	100	P	S01			HW
359	U211	100	P	S01			HW
360	U212	100	P	S01			HW
361	U213	100	P	S01			HW
362	U214	100	P	S01			HW
363	U215	100	P	S01			HW
364	U216	100	P	S01			HW
365	U217	100	P	S01			HW
366	U218	100	P	S01			HW
367	U219	100	P	S01			HW
368	U220	100	P	S01			HW
369	U221	100	P	S01			HW
370	U222	100	P	S01			HW
371	U223	100	P	S01			HW
372	U225	100	P	S01			HW
373	U226	100	P	S01			HW
374	U227	100	P	S01			HW
375	U228	100	P	S01			HW
376	U230	100	P	S01			HW
377	U231	100	P	S01			HW
378	U232	100	P	S01			HW
379	U233	100	P	S01			HW
380	U234	100	P	S01			HW
381	U235	100	P	S01			HW
382	U236	100	P	S01			HW
383	U237	100	P	S01			HW
384	U238	100	P	S01			HW
385	U239	100	P	S01			HW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. *(enter code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. Processes (1) PROCESS CODES *(Enter code)*			D. Processes (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
Technical Area 50, Building 37 (Continued)							
386	U240	100	P	S01			HW
387	U242	100	P	S01			HW
388	U243	100	P	S01			HW
389	U244	100	P	S01			HW
390	U246	100	P	S01			HW
391	U247	100	P	S01			HW
392	U248	100	P	S01			HW
393	U249	100	P	S01			HW
394	U326	100	P	S01			HW
395	U353	100	P	S01			HW
396	U359	100	P	S01			HW
397	D001	1,170	K	S01			Mixed Low-Level Waste (MLLW)
398	D002	610	K	S01			MLLW
399	D003	60	K	S01			MLLW
400	D004	390	K	S01			MLLW
401	D005	360	K	S01			MLLW
402	D006	57,130	K	S01			MLLW
403	D007	59,610	K	S01			MLLW
404	D008	135,280	K	S01			MLLW
405	D009	4,120	K	S01			MLLW
406	D010	430	K	S01			MLLW
407	D011	480	K	S01			MLLW
408	D018	20	K	S01			MLLW
409	D019	450	K	S01			MLLW
410	D021	170	K	S01			MLLW
411	D022	100	K	S01			MLLW
412	D027	70	K	S01			MLLW
413	D028	18,250	K	S01			MLLW
414	D029	18,160	K	S01			MLLW
415	D030	410	K	S01			MLLW
416	D031	10	K	S01			MLLW
417	D032	260	K	S01			MLLW
418	D033	180	K	S01			MLLW
419	D034	90	K	S01			MLLW
420	D035	10	K	S01			MLLW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. *(enter code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. Processes (1) PROCESS CODES *(Enter code)*			(2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
Technical Area 50, Building 37 (Continued)							
421	D036	30	K	S01			MLLW
422	D037	50	K	S01			MLLW
423	D038	10	K	S01			MLLW
424	D039	120	K	S01			MLLW
425	D040	280	K	S01			MLLW
426	D041	10	K	S01			MLLW
427	D042	90	K	S01			MLLW
428	D043	40	K	S01			MLLW
429	F001	35,050	K	S01			MLLW
430	F002	4,540	K	S01			MLLW
431	F003	2,300	K	S01			MLLW
432	F004	130	K	S01			MLLW
433	F005	20,430	K	S01			MLLW
434	P003	10	K	S01			MLLW
435	P012	10	K	S01			MLLW
436	P015	10	K	S01			MLLW
437	P029	10	K	S01			MLLW
438	P030	10	K	S01			MLLW
439	P031	10	K	S01			MLLW
440	P038	10	K	S01			MLLW
441	P056	20	K	S01			MLLW
442	P063	10	K	S01			MLLW
443	P068	10	K	S01			MLLW
444	P073	10	K	S01			MLLW
445	P076	10	K	S01			MLLW
446	P078	10	K	S01			MLLW
447	P095	10	K	S01			MLLW
448	P096	10	K	S01			MLLW
449	P098	10	K	S01			MLLW
450	P106	10	K	S01			MLLW
451	P113	10	K	S01			MLLW
452	P120	10	K	S01			MLLW
453	U001	10	K	S01			MLLW
454	U002	10	K	S01			MLLW
455	U003	10	K	S01			MLLW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. *(enter code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. Processes (1) PROCESS CODES *(Enter code)*			D. Processes (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
Technical Area 50, Building 37 (Continued)							
456	U012	10	K	S01			MLLW
457	U019	10	K	S01			MLLW
458	U022	10	K	S01			MLLW
459	U029	10	K	S01			MLLW
460	U031	10	K	S01			MLLW
461	U037	10	K	S01			MLLW
462	U044	10	K	S01			MLLW
463	U045	10	K	S01			MLLW
464	U052	10	K	S01			MLLW
465	U056	10	K	S01			MLLW
466	U057	10	K	S01			MLLW
467	U075	10	K	S01			MLLW
468	U077	10	K	S01			MLLW
469	U080	10	K	S01			MLLW
470	U108	10	K	S01			MLLW
471	U112	10	K	S01			MLLW
472	U115	10	K	S01			MLLW
473	U117	10	K	S01			MLLW
474	U121	10	K	S01			MLLW
475	U122	10	K	S01			MLLW
476	U123	10	K	S01			MLLW
477	U131	10	K	S01			MLLW
478	U133	10	K	S01			MLLW
479	U134	10	K	S01			MLLW
480	U135	10	K	S01			MLLW
481	U140	10	K	S01			MLLW
482	U144	10	K	S01			MLLW
483	U145	10	K	S01			MLLW
484	U151	20	K	S01			MLLW
485	U154	10	K	S01			MLLW
486	U159	10	K	S01			MLLW
487	U160	10	K	S01			MLLW
488	U161	10	K	S01			MLLW
489	U165	10	K	S01			MLLW
490	U169	10	K	S01			MLLW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. *(enter code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. Processes (1) PROCESS CODES *(Enter code)*			D. Processes (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
Technical Area 50, Building 37 (Continued)							
491	U188	10	K	S01			MLLW
492	U190	10	K	S01			MLLW
493	U196	10	K	S01			MLLW
494	U204	10	K	S01			MLLW
495	U210	10	K	S01			MLLW
496	U211	10	K	S01			MLLW
497	U213	10	K	S01			MLLW
498	U216	10	K	S01			MLLW
499	U218	10	K	S01			MLLW
500	U219	10	K	S01			MLLW
501	U220	10	K	S01			MLLW
502	U225	10	K	S01			MLLW
503	U226	70	K	S01			MLLW
504	U227	10	K	S01			MLLW
505	U228	10	K	S01			MLLW
506	U239	10	K	S01			MLLW
507	D001	1,170	K	S01			Mixed Transuranic Waste (MTRUW)
508	D002	610	K	S01			MTRUW
509	D003	60	K	S01			MTRUW
510	D004	390	K	S01			MTRUW
511	D005	360	K	S01			MTRUW
512	D006	57,130	K	S01			MTRUW
513	D007	59,610	K	S01			MTRUW
514	D008	135,280	K	S01			MTRUW
515	D009	4,120	K	S01			MTRUW
516	D010	430	K	S01			MTRUW
517	D011	480	K	S01			MTRUW
518	D018	20	K	S01			MTRUW
519	D019	450	K	S01			MTRUW
520	D021	170	K	S01			MTRUW
521	D022	100	K	S01			MTRUW
522	D027	70	K	S01			MTRUW
523	D028	18,250	K	S01			MTRUW
524	D029	18,160	K	S01			MTRUW
525	D030	410	K	S01			MTRUW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. *(enter code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. Processes (1) PROCESS CODES *(Enter code)*			D. Processes (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
Technical Area 50, Building 37 (Continued)							
526	D031	10	K	S01			MTRUW
527	D032	260	K	S01			MTRUW
528	D033	180	K	S01			MTRUW
529	D034	90	K	S01			MTRUW
530	D035	10	K	S01			MTRUW
531	D036	30	K	S01			MTRUW
532	D037	50	K	S01			MTRUW
533	D038	10	K	S01			MTRUW
534	D039	120	K	S01			MTRUW
535	D040	280	K	S01			MTRUW
536	D041	10	K	S01			MTRUW
537	D042	90	K	S01			MTRUW
538	D043	40	K	S01			MTRUW
539	F001	35,050	K	S01			MTRUW
540	F002	4,540	K	S01			MTRUW
541	F003	2,300	K	S01			MTRUW
542	F004	130	K	S01			MTRUW
543	F005	20,430	K	S01			MTRUW
544	P003	10	K	S01			MTRUW
545	P012	10	K	S01			MTRUW
546	P015	10	K	S01			MTRUW
547	P029	10	K	S01			MTRUW
548	P030	10	K	S01			MTRUW
549	P031	10	K	S01			MTRUW
550	P038	10	K	S01			MTRUW
551	P056	20	K	S01			MTRUW
552	P063	10	K	S01			MTRUW
553	P068	10	K	S01			MTRUW
554	P073	10	K	S01			MTRUW
555	P076	10	K	S01			MTRUW
556	P078	10	K	S01			MTRUW
557	P095	10	K	S01			MTRUW
558	P096	10	K	S01			MTRUW
559	P098	10	K	S01			MTRUW
560	P106	10	K	S01			MTRUW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. *(enter code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. Processes (1) PROCESS CODES *(Enter code)*			D. Processes (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
Technical Area 50, Building 37 (Continued)							
561	P113	10	K	S01			MTRUW
562	P120	10	K	S01			MTRUW
563	U001	10	K	S01			MTRUW
564	U002	10	K	S01			MTRUW
565	U003	10	K	S01			MTRUW
566	U012	10	K	S01			MTRUW
567	U019	10	K	S01			MTRUW
568	U022	10	K	S01			MTRUW
569	U029	10	K	S01			MTRUW
570	U031	10	K	S01			MTRUW
571	U037	10	K	S01			MTRUW
572	U044	10	K	S01			MTRUW
573	U045	10	K	S01			MTRUW
574	U052	10	K	S01			MTRUW
575	U056	10	K	S01			MTRUW
576	U057	10	K	S01			MTRUW
577	U075	10	K	S01			MTRUW
578	U077	10	K	S01			MTRUW
579	U080	10	K	S01			MTRUW
580	U108	10	K	S01			MTRUW
581	U112	10	K	S01			MTRUW
582	U115	10	K	S01			MTRUW
583	U117	10	K	S01			MTRUW
584	U121	10	K	S01			MTRUW
585	U122	10	K	S01			MTRUW
586	U123	10	K	S01			MTRUW
587	U131	10	K	S01			MTRUW
588	U133	10	K	S01			MTRUW
589	U134	10	K	S01			MTRUW
590	U135	10	K	S01			MTRUW
591	U140	10	K	S01			MTRUW
592	U144	10	K	S01			MTRUW
593	U145	10	K	S01			MTRUW
594	U151	20	K	S01			MTRUW
595	U154	10	K	S01			MTRUW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. *(enter code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. Processes (1) PROCESS CODES *(Enter code)*			D. Processes (2) PROCESS DESCRIPTION *(If a code is not entered in D[1])*
Technical Area 50, Building 37 (Continued)							
596	U159	10	K	S01			MTRUW
597	U160	10	K	S01			MTRUW
598	U161	10	K	S01			MTRUW
599	U165	10	K	S01			MTRUW
600	U169	10	K	S01			MTRUW
601	U188	10	K	S01			MTRUW
602	U190	10	K	S01			MTRUW
603	U196	10	K	S01			MTRUW
604	U204	10	K	S01			MTRUW
605	U210	10	K	S01			MTRUW
606	U211	10	K	S01			MTRUW
607	U213	10	K	S01			MTRUW
608	U216	10	K	S01			MTRUW
609	U218	10	K	S01			MTRUW
610	U219	10	K	S01			MTRUW
611	U220	10	K	S01			MTRUW
612	U225	10	K	S01			MTRUW
613	U226	70	K	S01			MTRUW
614	U227	10	K	S01			MTRUW
615	U228	10	K	S01			MTRUW
616	U239	10	K	S01			MTRUW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
Technical Area 50, Building 69							
1	D001	25,360	K	S01			Hazardous Waste (HW)
2	D002	20,550	K	S01			HW
3	D003	1,200	K	S01			HW
4	D004	1,700	K	S01			HW
5	D005	1,900	K	S01			HW
6	D006	5,250	K	S01			HW
7	D007	9,400	K	S01			HW
8	D008	39,200	K	S01			HW
9	D009	16,400	K	S01			HW
10	D010	2,150	K	S01			HW
11	D011	11,700	K	S01			HW
12	D016	10	K	S01			HW
13	D017	20	K	S01			HW
14	D018	2,270	K	S01			HW
15	D019	40	K	S01			HW
16	D021	110	K	S01			HW
17	D022	1,450	K	S01			HW
18	D026	180	K	S01			HW
19	D027	80	K	S01			HW
20	D028	18,400	K	S01			HW
21	D029	18,300	K	S01			HW
22	D030	730	K	S01			HW
23	D031	10	KQ	S01			HW
24	D032	300	K	S01			HW
25	D033	210	K	S01			HW
26	D034	120	K	S01			HW
27	D035	670	K	S01			HW
28	D036	50	K	S01			HW
29	D037	50	K	S01			HW
30	D038	580	K	S01			HW
31	D039	200	K	S01			HW
32	D040	570	K	S01			HW
33	D041	10	K	S01			HW
34	D042	100	K	S01			HW
35	D043	60	K	S01			HW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
Technical Area 50, Building 69 (Continued)							
36	F001	51,170	K	S01			HW
37	F002	46,030	K	S01			HW
38	F003	12,770	K	S01			HW
39	F004	660	K	S01			HW
40	F005	61,560	K	S01			HW
41	F009	20	K	S01			HW
42	F027	20	K	S01			HW
43	P003	10	K	S01			HW
44	P006	10	K	S01			HW
45	P011	10	K	S01			HW
46	P012	10	K	S01			HW
47	P015	10	K	S01			HW
48	P029	10	K	S01			HW
49	P030	10	K	S01			HW
50	P031	10	K	S01			HW
51	P033	10	K	S01			HW
52	P038	10	K	S01			HW
53	P043	10	K	S01			HW
54	P048	10	K	S01			HW
55	P056	1,030	K	S01			HW
56	P063	10	K	S01			HW
57	P068	10	K	S01			HW
58	P073	10	K	S01			HW
59	P076	60	K	S01			HW
60	P078	70	K	S01			HW
61	P092	10	K	S01			HW
62	P095	10	K	S01			HW
63	P096	10	K	S01			HW
64	P098	10	K	S01			HW
65	P104	10	K	S01			HW
66	P105	10	K	S01			HW
67	P106	10	K	S01			HW
68	P112	10	K	S01			HW
69	P113	10	K	S01			HW
70	P119	10	K	S01			HW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			(2) PROCESS DESCRIPTION (If a code is not entered in D[1])
Technical Area 50, Building 69 (Continued)							
71	P120	10	K	S01			HW
72	U001	10	K	S01			HW
73	U002	310	K	S01			HW
74	U003	10	K	S01			HW
75	U007	10	K	S01			HW
76	U008	10	K	S01			HW
77	U009	10	K	S01			HW
78	U012	10	K	S01			HW
79	U018	10	K	S01			HW
80	U019	90	K	S01			HW
81	U022	10	K	S01			HW
82	U029	10	K	S01			HW
83	U031	10	K	S01			HW
84	U033	10	K	S01			HW
85	U037	10	K	S01			HW
86	U041	10	K	S01			HW
87	U044	10	K	S01			HW
88	U045	10	K	S01			HW
89	U052	10	K	S01			HW
90	U055	10	K	S01			HW
91	U056	10	K	S01			HW
92	U057	10	K	S01			HW
93	U067	10	K	S01			HW
94	U068	10	K	S01			HW
95	U070	20	K	S01			HW
96	U075	50	K	S01			HW
97	U077	10	K	S01			HW
98	U080	1,690	K	S01			HW
99	U085	10	K	S01			HW
100	U091	180	K	S01			HW
101	U092	10	K	S01			HW
102	U103	10	K	S01			HW
103	U108	10	K	S01			HW
104	U109	10	K	S01			HW
105	U112	10	K	S01			HW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			(2) PROCESS DESCRIPTION (If a code is not entered in D[1])
Technical Area 50, Building 69 (Continued)							
106	U115	10	K	S01			HW
107	U117	10	K	S01			HW
108	U121	10	K	S01			HW
109	U122	230	K	S01			HW
110	U123	10	K	S01			HW
111	U124	10	K	S01			HW
112	U131	10	K	S01			HW
113	U133	10	K	S01			HW
114	U134	180	K	S01			HW
115	U135	80	K	S01			HW
116	U136	10	K	S01			HW
117	U140	10	K	S01			HW
118	U144	10	K	S01			HW
119	U145	10	K	S01			HW
120	U151	240	K	S01			HW
121	U153	10	K	S01			HW
122	U154	40	K	S01			HW
123	U159	20	K	S01			HW
124	U160	10	K	S01			HW
125	U161	90	K	S01			HW
126	U162	10	K	S01			HW
127	U163	10	K	S01			HW
128	U165	10	K	S01			HW
129	U167	10	K	S01			HW
130	U168	10	K	S01			HW
131	U169	10	K	S01			HW
132	U170	10	K	S01			HW
133	U188	10	K	S01			HW
134	U190	10	K	S01			HW
135	U196	10	K	S01			HW
136	U204	10	K	S01			HW
137	U210	100	K	S01			HW
138	U211	40	K	S01			HW
139	U213	10	K	S01			HW
140	U216	10	K	S01			HW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			(2) PROCESS DESCRIPTION (If a code is not entered in D[1])
Technical Area 50, Building 69 (Continued)							
141	U218	10	K	S01			HW
142	U219	10	K	S01			HW
143	U220	100	K	S01			HW
144	U223	10	K	S01			HW
145	U225	10	K	S01			HW
146	U226	2,540	K	S01			HW
147	U227	10	K	S01			HW
148	U228	420	K	S01			HW
149	U239	170	K	S01			HW
150	U240	10	K	S01			HW
151	U246	10	K	S01			HW
152	D001	1,170	K	S01			Mixed Low-Level Waste (MLLW)
153	D002	610	K	S01			MLLW
154	D003	60	K	S01			MLLW
155	D004	390	K	S01			MLLW
156	D005	360	K	S01			MLLW
157	D006	57,130	K	S01			MLLW
158	D007	59,610	K	S01			MLLW
159	D008	135,280	K	S01			MLLW
160	D009	4,120	K	S01			MLLW
161	D010	430	K	S01			MLLW
162	D011	480	K	S01			MLLW
163	D018	20	K	S01			MLLW
164	D019	450	K	S01			MLLW
165	D021	170	K	S01			MLLW
166	D022	100	K	S01			MLLW
167	D027	70	K	S01			MLLW
168	D028	18,250	K	S01			MLLW
169	D029	18,160	K	S01			MLLW
170	D030	410	K	S01			MLLW
171	D031	10	K	S01			MLLW
172	D032	260	K	S01			MLLW
173	D033	180	K	S01			MLLW
174	D034	90	K	S01			MLLW
175	D035	10	K	S01			MLLW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
Technical Area 50, Building 69 (Continued)							
176	D036	30	K	S01			MLLW
177	D037	50	K	S01			MLLW
178	D038	10	K	S01			MLLW
179	D039	120	K	S01			MLLW
180	D040	280	K	S01			MLLW
181	D041	10	K	S01			MLLW
182	D042	90	K	S01			MLLW
183	D043	40	K	S01			MLLW
184	F001	35,050	K	S01			MLLW
185	F002	4,540	K	S01			MLLW
186	F003	2,300	K	S01			MLLW
187	F004	130	K	S01			MLLW
188	F005	20,430	K	S01			MLLW
189	P003	10	K	S01			MLLW
190	P012	10	K	S01			MLLW
191	P015	10	K	S01			MLLW
192	P029	10	K	S01			MLLW
193	P030	10	K	S01			MLLW
194	P031	10	K	S01			MLLW
195	P038	10	K	S01			MLLW
196	P056	20	K	S01			MLLW
197	P063	10	K	S01			MLLW
198	P068	10	K	S01			MLLW
199	P073	10	K	S01			MLLW
200	P076	10	K	S01			MLLW
1	P078	10	K	S01			MLLW
202	P095	10	K	S01			MLLW
203	P096	10	K	S01			MLLW
204	P098	10	K	S01			MLLW
205	P106	10	K	S01			MLLW
206	P113	10	K	S01			MLLW
207	P120	10	K	S01			MLLW
208	U001	10	K	S01			MLLW
209	U002	10	K	S01			MLLW
210	U003	10	K	S01			MLLW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
Technical Area 50, Building 69 (Continued)							
211	U012	10	K	S01			MLLW
212	U019	10	K	S01			MLLW
213	U022	10	K	S01			MLLW
214	U029	10	K	S01			MLLW
215	U031	10	K	S01			MLLW
216	U037	10	K	S01			MLLW
217	U044	10	K	S01			MLLW
218	U045	10	K	S01			MLLW
219	U052	10	K	S01			MLLW
220	U056	10	K	S01			MLLW
221	U057	10	K	S01			MLLW
222	U075	10	K	S01			MLLW
223	U077	10	K	S01			MLLW
224	U080	10	K	S01			MLLW
225	U108	10	K	S01			MLLW
226	U112	10	K	S01			MLLW
227	U115	10	K	S01			MLLW
228	U117	10	K	S01			MLLW
229	U121	10	K	S01			MLLW
230	U122	10	K	S01			MLLW
231	U123	10	K	S01			MLLW
232	U131	10	K	S01			MLLW
233	U133	10	K	S01			MLLW
234	U134	10	K	S01			MLLW
235	U135	10	K	S01			MLLW
236	U140	10	K	S01			MLLW
237	U144	10	K	S01			MLLW
238	U145	10	K	S01			MLLW
239	U151	20	K	S01			MLLW
240	U154	10	K	S01			MLLW
241	U159	10	K	S01			MLLW
242	U160	10	K	S01			MLLW
243	U161	10	K	S01			MLLW
244	U165	10	K	S01			MLLW
245	U169	10	K	S01			MLLW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
Technical Area 50, Building 69 (Continued)							
246	U188	10	K	S01			MLLW
247	U190	10	K	S01			MLLW
248	U196	10	K	S01			MLLW
249	U204	10	K	S01			MLLW
250	U210	10	K	S01			MLLW
251	U211	10	K	S01			MLLW
252	U213	10	K	S01			MLLW
253	U216	10	K	S01			MLLW
254	U218	10	K	S01			MLLW
255	U219	10	K	S01			MLLW
256	U220	10	K	S01			MLLW
257	U225	10	K	S01			MLLW
258	U226	70	K	S01			MLLW
259	U227	10	K	S01			MLLW
260	U228	10	K	S01			MLLW
261	U239	10	K	S01			MLLW
262	U246	10	K	S01			MLLW
263	D001	1,170	K	S01			Mixed Transuranic Waste (MTRUW)
264	D002	610	K	S01			MTRUW
265	D003	60	K	S01			MTRUW
266	D004	390	K	S01			MTRUW
267	D005	360	K	S01			MTRUW
268	D006	57,130	K	S01			MTRUW
269	D007	59,610	K	S01			MTRUW
270	D008	135,280	K	S01			MTRUW
271	D009	4,120	K	S01			MTRUW
272	D010	430	K	S01			MTRUW
273	D011	480	K	S01			MTRUW
274	D018	20	K	S01			MTRUW
275	D019	450	K	S01			MTRUW
276	D021	170	K	S01			MTRUW
277	D022	100	K	S01			MTRUW
278	D027	70	K	S01			MTRUW
279	D028	18,250	K	S01			MTRUW
280	D029	18,160	K	S01			MTRUW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			(2) PROCESS DESCRIPTION (If a code is not entered in D[1])
Technical Area 50, Building 69 (Continued)							
281	D030	410	K	S01			MTRUW
282	D031	10	K	S01			MTRUW
283	D032	260	K	S01			MTRUW
284	D033	180	K	S01			MTRUW
285	D034	90	K	S01			MTRUW
286	D035	10	K	S01			MTRUW
287	D036	30	K	S01			MTRUW
288	D037	50	K	S01			MTRUW
289	D038	10	K	S01			MTRUW
290	D039	120	K	S01			MTRUW
291	D040	280	K	S01			MTRUW
292	D041	10	K	S01			MTRUW
293	D042	90	K	S01			MTRUW
294	D043	40	K	S01			MTRUW
295	F001	35,050	K	S01			MTRUW
296	F002	4,540	K	S01			MTRUW
297	F003	2,300	K	S01			MTRUW
298	F004	130	K	S01			MTRUW
299	F005	20,430	K	S01			MTRUW
300	P003	10	K	S01			MTRUW
301	P012	10	K	S01			MTRUW
302	P015	10	K	S01			MTRUW
303	P029	10	K	S01			MTRUW
304	P030	10	K	S01			MTRUW
305	P031	10	K	S01			MTRUW
306	P038	10	K	S01			MTRUW
307	P056	20	K	S01			MTRUW
308	P063	10	K	S01			MTRUW
309	P068	10	K	S01			MTRUW
310	P073	10	K	S01			MTRUW
311	P076	10	K	S01			MTRUW
312	P078	10	K	S01			MTRUW
313	P095	10	K	S01			MTRUW
314	P096	10	K	S01			MTRUW
315	P098	10	K	S01			MTRUW

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XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			(2) PROCESS DESCRIPTION (If a code is not entered in D[1])
Technical Area 50, Building 69 (Continued)							
316	P106	10	K	S01			MTRUW
317	P113	10	K	S01			MTRUW
318	P120	10	K	S01			MTRUW
319	U001	10	K	S01			MTRUW
320	U002	10	K	S01			MTRUW
321	U003	10	K	S01			MTRUW
322	U012	10	K	S01			MTRUW
323	U019	10	K	S01			MTRUW
324	U022	10	K	S01			MTRUW
325	U029	10	K	S01			MTRUW
326	U031	10	K	S01			MTRUW
327	U037	10	K	S01			MTRUW
328	U044	10	K	S01			MTRUW
329	U045	10	K	S01			MTRUW
330	U052	10	K	S01			MTRUW
331	U056	10	K	S01			MTRUW
332	U057	10	K	S01			MTRUW
333	U075	10	K	S01			MTRUW
334	U077	10	K	S01			TRUM
335	U080	10	K	S01			MTRUW
336	U108	10	K	S01			MTRUW
337	U112	10	K	S01			MTRUW
338	U115	10	K	S01			MTRUW
339	U117	10	K	S01			MTRUW
340	U121	10	K	S01			MTRUW
341	U122	10	K	S01			MTRUW
342	U123	10	K	S01			MTRUW
343	U131	10	K	S01			MTRUW
344	U133	10	K	S01			MTRUW
345	U134	10	K	S01			MTRUW
346	U135	10	K	S01			MTRUW
347	U140	10	K	S01			MTRUW
348	U144	10	K	S01			MTRUW
349	U145	10	K	S01			MTRUW
350	U151	20	K	S01			MTRUW

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Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
Technical Area 50, Building 69 (Continued)							
351	U154	10	K	S01			MTRUW
352	U159	10	K	S01			MTRUW
353	U160	10	K	S01			MTRUW
354	U161	10	K	S01			MTRUW
355	U165	10	K	S01			MTRUW
356	U169	10	K	S01			MTRUW
357	U188	10	K	S01			MTRUW
358	U190	10	K	S01			MTRUW
359	U196	10	K	S01			MTRUW
360	U204	10	K	S01			MTRUW
361	U210	10	K	S01			MTRUW
362	U211	10	K	S01			MTRUW
363	U213	10	K	S01			MTRUW
364	U216	10	K	S01			MTRUW
365	U218	10	K	S01			MTRUW
366	U219	10	K	S01			MTRUW
367	U220	10	K	S01			MTRUW
368	U225	10	K	S01			MTRUW
369	U226	70	K	S01			MTRUW
370	U227	10	K	S01			MTRUW
371	U228	10	K	S01			MTRUW
372	U239	10	K	S01			MTRUW
373	U246	10	K	S01			MTRUW