ATTACHMENT G.27
TECHNICAL AREA 63
TRANSURANIC WASTE FACILITY
CLOSURE PLAN

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1.0 INTRODUCTION

This closure plan describes the activities necessary to close the permitted mixed waste Transuranic Waste Facility (TWF) at Technical Area (TA)-63 at the Los Alamos National Laboratory (Facility) hereinafter referred to as the "Unit To Be Closed," or the "Permitted Unit." The information provided in this closure plan addresses the closure requirements specified in Permit Part 9 and the Code of Federal Regulations (CFR), Title 40, Part 264, Subparts G and I for waste management units operated at the Facility under the Resource Conservation and Recovery Act (RCRA) and the New Mexico Hazardous Waste Act.

The TWF unit will be closed by removal of all structures and equipment. Until closure is complete and has been certified in accordance with Permit Part 9.5 and 40 CFR §264.115, a copy of the approved closure plan or the hazardous waste facility permit containing the plan, any approved revisions to the plan, and closure activity documentation associated with the closure will be on file with hazardous waste compliance personnel at the Facility and at the U.S. Department of Energy (DOE) Los Alamos Site Office. Prior to closure of the unit, this closure plan may be amended in accordance with Permit Section 9.4.8 to provide updated sampling and analysis plans and to incorporate updated decontamination technologies. Amended closure plans shall be submitted to the New Mexico Environment Department (the Department) for approval prior to implementing closure activities.

2.0 DESCRIPTION OF UNIT TO BE CLOSED

The TWF is located at TA-63 at the junction of Pajarito Road and Puye Road, within the triangle formed by Building 63-111 to the east, Puye Road to the north, and Pajarito Road to the southwest. It was designed, constructed, and commissioned as a Hazard Category (HC)-2 nuclear facility and permitted as Resource Conservation and Recovery Act (RCRA) Storage Facility for TRU, mixed TRU and hazardous wastes. This site is shown on Permit Figure 55. Permit Attachment A.6, Technical Area (TA), Unit Descriptions contains additional site information and building numbers.

STRUCTURES THAT HAVE MANAGED HAZARDOUS WASTE TO BE REMOVED AT CLOSURE:

- Storage Buildings: 63-0149, 63-0150, 63-0151, 63-0152, and 63-0153
- Storage and Characterization Building: 63-0154
- Characterization Trailers: 63-0155, 63-0156, and 63-0156
- Concrete Storage Pad
- Retention Basin

Six buildings are designated for storage of TRU and Mixed TRU wastes in support of LANL programs and missions. One of the storage structures is used for both storage of larger-sized waste containers and for head space gas sampling and analysis. Certification of containers in accordance with Waste Isolation Pilot Plant (WIPP) Waste Acceptance Criteria (WAC) occurs at three characterization and testing trailers. A concrete pad underlies the storage and characterization buildings and trailers. The boundaries of the pad will be used to designate the RCRA-permitted portion of the TWF.

OTHER TWF STRUCTURES TO BE REMOVED AT CLOSURE:

- Calibration Source and Matrix Module (CSMM) Building: 63-0158

The CSMM Building and the Retention Basin are the only structures that will be closed within the boundary of the TWF permitted hazardous waste management unit that are not used to manage hazardous waste.

3.0 ESTIMATE OF MAXIMUM WASTE STORED

The TWF shall not store a volume greater than 105,875 gallons of waste at any time for the lifetime of the permitted facility.

4.0 GENERAL CLOSURE REQUIREMENTS

4.1 Closure Performance Standards

As required by Permit Section 9.2, the permitted unit will be closed to meet the following performance standards:

a. remove all hazardous waste residues and hazardous constituents; and

b. ensure contaminated media do not contain concentrations of hazardous constituents greater than the clean-up levels established in accordance with Permit Sections 11.4 and 11.5. The cleanup levels for soil shall be established based on residential land use. The Permittees must also demonstrate that there is no potential to for contaminants to affect surface water or groundwater.

Closure of the permitted unit will be deemed complete when:1) All surfaces and equipment have been decontaminated, or otherwise properly disposed of; 2) closure has been certified by an independent, professional engineer licensed in the State of New Mexico; and 3) closure certification has been submitted to, and approved by, the Department.

4.2 Closure Schedule

This closure plan is intended to address closure requirements for the permitted unit within the authorized timeframe of this Permit (see Permit Section 9.4.1). However, pursuant to 40 CFR §264.112(e), 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. Subject to the provisions of 40 CFR §264.113(a), such removal may only occur before the end of the allowed 90 day period to remove, treat or dispose of all hazardous waste after receipt of the final volume of waste. For the purposes of this closure plan, portable and temporary structures in this permitted unit such as characterization trailers are considered to be equipment by their design rather than structures.

Closure activities will proceed according to the schedule discussed below and Table 1 of this closure plan. Notification of closure will occur at least 45 days prior to the start of closure activities (see 40 CFR § 264.112(d)(1)). Closure activities will begin according to the requirements of 40 CFR § 264.112(d)(2) no later than 30 days after the date on which the unit receives the known final volume of waste. All hazardous wastes will be removed from the TWF within 90 days of the receipt of the known final volume of waste pursuant to Permit Section 9.4.1, Closure Schedule, Permit Section 9.4.2, Removal of Hazardous Waste, and 40 CFR §264.113(a). A records review of the operating history of the unit shall be completed within ten days of the removal or treatment of all waste from the permitted unit as required by Permit Section 9.4.6.1, Records Review. A structural assessment of the unit will occur within ten days of the completed removal or treatment of all waste from the permitted unit as required by Permit Section 9.4.6.2,

Structural Assessment. Notification of the structural assessment (assessment), as described in Section 5.2 of this closure plan, will occur in accordance with Permit Section 9.4.6.2.

After completion of the records review and structural assessment, the Permittees shall submit an amended closure plan, if necessary, to the NMED for review and approval as a permit modification request to incorporate changes to the sampling and analysis plan. Decontamination verification sampling activities, and soil sampling, shall be conducted in accordance with this closure plan to demonstrate the closure performance standards included in Permit Section 9.2.1 have been met.

All closure activities shall be completed within 150 days of the beginning of closure activities or 180 days after the receipt of the known final volume of waste in compliance with Permit Section 9.4.1.1. The final closure report and certification will be submitted to NMED for review and approval within 60 days of completion of closure in accordance with Permit Section 9.5. In the event that the activities required under the closure plan cannot be completed within the allotted timeframe, the Permittees may request a permit modification to modify the schedule pursuant to the requirements of Permit Section 9.4.8, Amendment of the Closure Plan. In the event that closure of the TWF cannot proceed according to schedule, the Permittees shall request a time extension to complete the closure in accordance with Permit Section 9.4.1.1.

5.0 CLOSURE PROCEDURES

The following sections describe the procedures to be used for closure of the permitted unit. The procedures shall proceed in the sequence described in this section (5).

5.1 Removal of Waste

In accordance with Permit Part 9.4.2, all stored hazardous waste shall be removed from the TWF for transport to WIPP in accordance with all DOE, US DOT, and WIPP shipping and transporting requirements.

5.2 Records Review and Structural Assessment

Before starting decontamination and sampling activities, the operating and inspection records for the TWF shall be reviewed and a structural assessment of the entire TWF shall be conducted to identify additional sampling locations.

5.2.1 Records Review

The Facility Operating and Inspection Records shall be reviewed in accordance with Permit Section 9.4.6.1. The goals of this review will be to:

a. ascertain the specific hazardous waste constituents of concern; and
b. determine additional sampling locations (e.g., locations of any spills or chronic conditions identified in the Operating Record).

5.2.2 Structural Assessment

A structural assessment (assessment) of the unit's physical condition shall be conducted in accordance with Permit Section 9.4.6.2 and all observations shall be documented including any necessary photographs and drawings. The TWF structural assessment shall include the concrete pad (as an outdoor pad defined in Section 9.1.3(1) of the Permit) and the retention basin. If the assessment reveals any

evidence of a release (e.g., stains) or damage (e.g., cracks, gaps, chips) to the flooring or building materials, the Permittees must incorporate these locations as additional sampling points in the updated sampling and analysis plan (see Section 7.0) and describe the applicable sampling methods and procedures in the plan. If evidence of a release or damage is present, a wipe sample or a representative sample of the media (e.g., concrete chip) will be collected according to the procedures in Section 7.2. If additional sampling locations are necessary, the Permittees shall request a permit modification to modify the sampling and analysis plan in accordance with Permit Section 9.4.6. The locations of any additional sampling locations shall be determined in accordance with Permit Section 11.10.2.5.

5.3 Decontamination and Removal of Structures and Related Equipment

In accordance with the procedures in Permit Section 9.4.3, all remaining hazardous waste residues and hazardous constituents shall be removed from the TWF. The unit's structures and related equipment shall be decontaminated and removed. All waste shall be managed and characterized as necessary for disposal as required by Permit Attachment C, Waste Analysis Plan, Permit Section 9.4.5, and the LANL waste management procedures.

5.3.1 Removal of Structures and Related Equipment

All structures and related equipment that are removed from the unit will require no further decontamination but shall be considered solid waste and potentially, hazardous waste, as defined by this Permit, at removal. The materials shall be disposed in accordance with Permit Section 9.4.5 and Section 5.3 of this closure plan. The concrete pad, the materials associated with the pad (curbing and ramps), and a minimum of six inches of the base course and soil underlying the concrete pad shall be removed. If the remaining soil surface shows evidence that the removal to this point has not included all contaminated soils and construction materials associated with the pad, additional soil shall be removed until the conditions of Permit Section 9.2 are met. The option of removing small areas of concrete at sampling locations where contamination is suspected (i.e., spill or staining sites) to allow sampling without disturbing the surrounding area prior to the general removal of the pad may be evaluated at the time of the structural assessment. If this option is used, the concrete removed at the sampling location and any concrete subsequently removed from the location during the general removal of the concrete pad to a radius to be determined during the structural assessment shall be segregated to prevent potential cross contamination during the closure process.

5.3.2 Decontamination of Structures and Related Equipment

All structures and related equipment that will be re-used by the Facility will be decontaminated in accordance with Permit Section 9.4.3.1. This may include the characterization trailers and any associated equipment removed at closure. The lists of equipment needing decontamination shall be reviewed during the pre-closure and structural assessment described in Part 9 of the Permit.

Water resistant equipment at the permitted unit will be decontaminated by steam cleaning using water or pressure washing with a solution consisting of a surfactant detergent (e.g., Alconox®) and water. Wipe-down washing with a solution consisting of a surfactant detergent (e.g., Alconox®) and water may be conducted on equipment within the unit if containment cannot be established for collection of the steam cleaning water or pressure wash solution or these methods will damage the equipment preventing further use or recycling. The quantity of the wash solution shall be minimized by dispensing from buckets, spray bottles, or other types of containers. Cheesecloth, rags, or other absorbent materials shall be used to wipe down the equipment after being wetted in the wash solution or after spraying solution onto the equipment. If necessary, portable berms or other devices (e.g., absorbent socks, plastic sheeting, wading pools, or

existing secondary containment) designed to collect and provide containment shall collect excess wash water and provide containment during the decontamination process. Wash solutions shall not be allowed to enter the fire suppression water drains.

5.4 Equipment Used During Decontamination Activities

Reusable protective clothing, tools, and equipment used during closure activities shall be cleaned with an Alconox® or other NMED approved wash water solution. The solution shall be characterized and managed as a hazardous waste unless characterization demonstrates that the solution is nonhazardous. Residue, disposable equipment, and equipment that cannot be decontaminated shall be containerized and managed as waste.

6.0 SAMPLING AND ANALYSIS PLAN

This sampling and analysis plan (SAP) describes the sampling and analytical methods as well as the quality assurance and quality control (QA/QC) procedures that shall be used to demonstrate that the permitted unit is closed in accordance with Permit Part 9 and all applicable closure requirements.

6.1 Soil Sampling Locations

Soils sampling shall be conducted at the permitted unit in order to verify that the removal of structures and soils, with other closure related activities meet the closure performance standards in Permit Section 9.2, Closure Performance Standards. All samples shall be collected and analyzed in accordance with the procedures in Sections 6.2, 6.3, and 6.4 of this closure plan. Soil samples shall be collected from beneath the concrete pad of the unit and in additional sampling locations specified to meet the conditions of Permit Section 9.4.7.1.ii.

In compliance with Permit Section 9.4.7.ii, this closure plan will ensure the collection of surface soil samples in the following locations:

a. a minimum of one sample at each loading/unloading point for a total of six samples (see Permit Section 9.4.7.1.ii(1));
b. a minimum of one sample every 900 square feet of the permitted unit for a total of 88 samples (see Permit Section 9.4.7.1.ii(2));
c. a minimum of one sample at the stormwater discharge drainage location (see Permit Section 9.4.7.1.ii(3));
d. a minimum of one sample, at 30 foot intervals, along the valley gutter for a total of 4 samples (see Permit Section 9.4.7.1.ii(8)); and
e. a minimum of three additional samples along the long axis of the retention basin (see Permit Section 9.4.7.ii(5).

The above referenced soil sample locations are illustrated in Figure F-1 of this closure plan.

6.2 Sample Collection Procedures

Samples shall be collected in accordance with Permit Sections 9.4.7.1 and 11.10 and the procedures described in this SAP. Additional surface and subsurface samples shall be collected if contamination is detected or if the records review or structural assessment identify the need for additional sample collection.

6.2.1 Liquid Sampling

Grab samples of any liquids present in the retention basin shall be collected to demonstrate that the drain system has not been contaminated. Liquid sampling shall be conducted using glass or plastic tubes, a composite liquid waste sampler, a bacon bomb sampler, or bailer. The samples shall be transferred directly from the sampler to the pre-cleaned laboratory prepared sample containers appropriate for each analytical method.

6.2.2 Wipe Sampling

If surface wipe samples are collected from structures or surfaces, the samples shall be collected in accordance with the National Institute of Occupational Safety and Health (NIOSH) Manual of Analytical Methods, Method 9100 (NIOSH, 1994), or other approved methodology. Wipe sample methods shall be appropriate for the type of surface being sampled, the type of contaminant, and the desired method detection limits, wiping a 100 square centimeter area at each discrete location in accordance with guidance and the requirements of the analytical laboratory.

6.2.3 Soil Sampling

Soil shall be sampled using a spade, trowel, or other equipment as specified in approved methods for the type of analyte (i.e., EPA 1996 or 2002). At minimum soil samples shall be collected at the frequency specified in the Permit, Section 9.4.7.1.ii. The soil samples shall be collected in accordance with Permit section 11.10.2.9.

6.2.4 Cleaning of Sampling Equipment

Reusable sampling equipment shall be decontaminated and rinsed prior to use. Sampling equipment rinsate blanks shall be collected and analyzed if reusable sampling equipment is used. Reusable equipment, tools and, sampling equipment shall be cleaned prior to each use in accordance with Permit Section 11.10.2.11. A disposable sampler is considered clean if still in a factory-sealed wrapper. Residue and decontamination equipment that cannot be decontaminated will be containerized as solid or hazardous waste as appropriate.

6.3 Sample Management Procedures

Samples shall be collected and transported using documented chain-of-custody and sample management procedures to ensure the integrity of the sample and provide an accurate and defensible written record of the possession and handling of a sample from the time of collection through laboratory analysis in accordance with Permit Section 11.10.2.9.

6.3.1 Sample Documentation

Sampling personnel shall document all sampling, logging and field screening activities. Sample documentation will include sample identification numbers, chain-of-custody forms, analysis requested, sample descriptions (e.g., soil classification) sample logbooks detailing sample collection activities, and shipping forms (if necessary).

6.3.1.1 Chain-of-Custody

Chain-of-custody procedures shall be followed until the samples are relinquished to the analytical laboratory in accordance with Permit Section 11.10.2.14.ii. The sample collector is responsible for the

integrity of the samples collected until transferred. The EPA considers a sample to be in a person's custody if it is:

a. in a person's physical possession;
b. in view of the person in possession; or
c. secured by that person in a restricted access area to prevent tampering.

The sample collector shall document all sample collection data. Individuals relinquishing or receiving custody of the samples shall sign, date, and note the time on the analysis request/chain-of-custody form. A chain-of-custody form must accompany all samples from collection through laboratory analysis. Copies of completed original chain-of-custody form shall be returned to the Permittees by the analytical laboratory and included with the associated laboratory report attached to the Closure Report.

6.3.1.2 Sample Labels and Custody Seals

A sample label shall be affixed to each sample container. The sample label will include the following information:

a. a unique sample identification number;
b. name of the sample collector;
c. date and time of collection;
d. type of preservatives used, if any; and
e. location from which the sample was collected.

A custody seal shall be placed on each sample container or shipping container containing multiple samples to detect unauthorized tampering with the samples. These labels must be initialed, dated, and affixed by the sample collector in such a manner that it is necessary to break the seal to open the container.

6.3.1.3 Sample Logbook

All pertinent information on the sampling effort must be recorded in a bound logbook. Information must be recorded in ink and any cross outs must be made with a single line and the change initialed and dated by the author. The sample logbook shall include the following information:

a. the sample location by GPS, or other NMED approved coordinates;
b. composition;
c. sample identification number;
d. volume/mass of sample taken;
e. purpose of sampling;
f. description of sample point and sampling methodology;
g. date and time of collection;
h. name of the sample collector;
i. sample destination and how it will be transported;
j. observations; and
k. names of personnel responsible for the observations.

6.3.2 Sample Handling, Preservation, and Storage

Samples shall be collected and containerized in appropriate pre-cleaned sample containers in accordance with the requirements specified in SW-846 (EPA, 1986 as updated) and Permit Section 11.10.2.9 for sample containers, preservation techniques, and holding times. Samples that require cooling to 4 degrees Celsius shall be placed in a cooler with ice or ice gel or in a refrigerator immediately upon collection.

6.3.3 Packaging and Transportation of Samples

All packaging and transportation activities shall meet U.S. DOT requirements for transport of solid, hazardous, and radioactive waste, as applicable, DOE Orders, and all other relevant local, state, and federal laws (including 10 CFR and 49 CFR).

Off-site transportation of samples shall occur via private, contract, or common motor carrier; air carrier; or freight.

6.4 Sample Analysis Requirements

Samples shall be analyzed for all hazardous constituents listed in Appendix VIII 40 CFR 261 and in Appendix IX of 40 CFR 264 that have been stored at the permitted unit during its operational history. Samples shall be analyzed by an independent laboratory using the analytical methods appropriate for the constituents identified in the operating record.

6.4.1 Analytical Laboratory Requirements

The analytical laboratory shall perform the detailed qualitative and quantitative chemical analyses specified in Section 6.4.2 and Permit Section 11.10.3.6. The analytical methods and quality control procedures shall be conducted in accordance with Permit Section 11.10.3 and specifically Section 11.10.3.1. This Closure Plan shall be updated to list the specific analytical methods used for sample analysis no less than 10 days prior to closure of the hazardous waste management unit.

6.4.2 Quality Assurance/Quality Control

Field sampling procedures and laboratory analyses shall be evaluated through the use of QA/QC samples to assess the overall quality of the data produced in accordance with Permit Sections 11.10.2.4.vii, 11.10.2.8.iv, and 11.10.3.1. QC samples evaluate precision, accuracy, and potential sample contaminations associated with the sampling/analysis process and are described in the following sections, along with information on calculations necessary to evaluate the QC results. Analysis will be conducted in accordance with the procedures described in SW-846 (EPA, 1986 as updated) and Permit Section 11.10.3.

6.4.2.1 Field Quality Control

The field QC samples that will be collected include trip blanks, field blanks, field duplicates, and equipment rinsate blanks as required by Permit Sections 9.4.7.1(8), 11.10.2.4.vii, and 11.10.2.9.iv. QC samples will be labeled with a unique sample identification number and submitted to the analytical laboratory as blind samples. QC samples will be identified on the applicable forms so that the results can be compared to the associated sample.

6.4.2.2 Analytical Laboratory QC Samples

QA/QC considerations are an integral part of analytical laboratory operations. Laboratory QA ensures that analytical methods generate data that are technically sound, statistically valid, and that can be documented. QC procedures are the tools employed to measure the degree to which these QA objectives are met.

6.4.3 Data Reduction, Verification, Validation, and Reporting

Analytical data generated by the activities described in this closure plan will be verified and validated. Data reduction is the conversion of raw data to reportable units; transfer of data between recording media; and computation of summary statistics, standard errors, confidence intervals, and statistical tests.

6.4.4 Data Reporting Requirements

Analytical results will include all pertinent information about the condition and appearance of the sample-as-received. Analytical reports shall include the data specified in Permit Section 11.10.3.1.iv. The level II laboratory analytical data package shall be included with the closure report for the HWMU.

The laboratory shall in include a case narrative in each laboratory report for the hazardous waste management unit that identifies data quality exception corrective action taken and the effect of the data quality exceptions on the acceptability of the data.

7.0 WASTE MANAGEMENT

All waste generated during closure shall be controlled, handled, characterized, and disposed of in accordance with Permit Section 9.4.5, Permit Attachment C (Waste Analysis Plan), and Facility waste management procedures. Closure activities may generate different types of waste materials, which are listed with potential disposal options in Table 6 of this closure plan. Subsequent disposition options for the decontaminated structures and equipment include reuse, recycling, or disposal.

Portable berms or other devices, if necessary, shall be used to collect excess wash water and provide containment during the decontamination activities to prevent releases. All wash water shall be collected, transferred to containers, sampled, and analyzed for the hazardous constituents as referenced in section 6.4 of this plan. Based on the results of the analysis, the wash water shall be managed as hazardous or non-hazardous wastewater. Reusable protective clothing, tools, and equipment used during decontamination shall be cleaned in accordance with section 6.2.4 of this plan. Disposable equipment and other small equipment that cannot be decontaminated shall be containerized and managed as waste.

8.0 CLOSURE CERTIFICATION REPORT

Upon completion of the closure activities at the TWF, a closure report shall be prepared and submitted to the Department. The report shall document that the unit has been closed in compliance with the specifications in this closure plan and will contain the following information in accordance with Section 9.5 of the Permit:

The closure report shall summarize all activities conducted during closure including, but not limited to, the following:

1) a summary of the site history including the waste managed at the unit and any records of spill or other incidents;
2) the results of all investigations that meets the reporting requirements set forth in Permit Section 11.12.3;
3) remediation waste management;
4) decontamination;
5) decontamination verification and soil sampling activities; and
6) results of all chemical analyses and other characterization activities;
7) a summary of all cleanup actions, including volumes of contaminated media removed and confirmation sampling results; and
8) a demonstration that the cleanup levels specified in Permit Section 11.4 and 11.5 have been achieved.

The closure report shall be submitted to the Department no later than 60 days after completion of closure of the TWF Permitted Unit. The certification must be signed by the Permittees and by an independent professional engineer registered in the State of New Mexico.

The report will document the permitted unit's closure and contain, at a minimum, the following information:

9) a copy of the certification pursuant to 40 CFR § 264.115;
10) any variance, and the reason for the variance, from the activities approved in this closure plan;
11) documentation of the structural assessment and records review conducted under this Permit Part 9;
12) a summary of all sampling results related to equipment decontamination, demolition and disposal that includes:
    a. sample identification;
    b. sampling location;
    c. data reported;
    d. detection limit for each analyte;
    e. a measure of analytical precision (e.g., uncertainty, range, variance);
    f. identification of analytical procedure; and
    g. identification of analytical laboratory;
13) a QA/QC statement on analytical data validation and decontamination verification;
14) storage or disposal locations for hazardous waste resulting from closure activities; and
15) a certification statement of the accuracy of the Closure Report.

9.0 DEPARTMENT CLOSURE ASSESSMENT

Upon submittal of the closure certification report described in Section 8.0 of this closure plan, the Facility shall arrange an on-site closure review with representatives of the Department to assess the completion of the closure activities of the permitted unit's closure activities.

10.0 REFERENCES

DOE, 1995. "DOE Methods for Evaluating Environmental and Waste Management Samples," DOE/EM-0089T, Rev. 2. Prepared for the U.S. Department of Energy by Pacific Northwest Laboratory, Richland, Washington.

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

EPA, 2002. "RCRA Waste Sampling Draft Technical Guidance Planning, Implementation, and Assessment," EPA530-D-02-002, August 2002, Office of Solid Waste, U.S. Environmental Protection Agency, Washington, DC.

NIOSH, 1994. The National Institute for Occupational Health and Safety (NIOSH) *Manual of Analytical Methods*, 4th ed. Issue 1. 1994.

Table G.27-1

Closure Schedule for the TA-63 TWF

Closure Activity	Schedule	Basis
Provide closure notification to NMED	-45	40 CFR §264.112(d)(1)
Receive known final volume of waste	-30	Permit Section 9.4.1, 40 CFR §264.112(d)(2)(i)
Begin closure activity – requirement to begin removal of hazardous waste from the permitted unit	0	Permit Section 9.4.1, 40 CFR §264.112(d)(2)(i)
Notification of structural assessment to NMED	40	Permit Section 9.4.6.2: notification to occur at least 30 days prior to the structural assessment.
Hazardous waste removed	60	Permit Section 9.4.1 and 9.4.2, 40 CFR §264.113(a): removal must be completed within 90 days of the receipt of known final volume of hazardous waste.
Completion of record review	70	Permit Section 9.4.6.1: record review will occur within 10 days of completed waste removal or treatment.
Completion of structural assessment	70	Permit Section 9.4.6.2: structural assessment will occur within 10 days of completed waste removal or treatment.
Completion of closure activities	150	Permit Section 9.4.1.1, 40 CFR §264.113(b): closure activities must be completed within 180 days of the receipt of known final volume of hazardous waste.
Submittal of closure report to NMED	210	Permit Section 9.5, 40 CFR §264.115: report submitted within 60 days of closure completion

Note: The schedule shown represents the maximum allowable time to complete the activity.

Table G.27-2

Potential Waste Materials, Waste Types, and Disposal Options

Potential Waste Materials	Waste Types	Disposal Options
Personal protective equipment (PPE)	Non-regulated solid waste	Subtitle D landfill
	Hazardous waste	The PPE will be treated to meet Land Disposal Restriction (LDR) treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Low-level radioactive solid waste	Either an authorized on-site radioactive waste disposal area that is not undergoing closure under RCRA, or an authorized off-site radioactive waste disposal facility. [a]
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or the WIPP, as appropriate.
Decontamination wash water	Non-regulated liquid waste	Sanitary sewer
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Radioactive liquid waste	Radioactive Liquid Waste Treatment Facility (RLWTF)
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or WIPP, as appropriate.
Verification water	Non-regulated liquid waste	Sanitary sewer
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Radioactive liquid waste	RLWTF
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or WIPP, as appropriate.
Metal	Non-regulated solid waste	Subtitle D landfill or recycled

Potential Waste Materials	Waste Types	Disposal Options
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Low-level radioactive solid waste	Either an authorized on-site radioactive waste disposal area that is not undergoing closure under RCRA, or an authorized off-site radioactive waste disposal facility. [a]
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill, or WIPP, as appropriate.
Discarded waste management equipment	Non-regulated solid waste	Subtitle D landfill
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Low-level radioactive solid waste	Either an authorized on-site radioactive waste disposal area that is not undergoing closure under RCRA, or an authorized off-site radioactive waste disposal facility. [a]
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or WIPP, as appropriate.
Sampling equipment	Non-regulated solid waste	Subtitle D landfill
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Low-level radioactive solid waste	Either an authorized on-site radioactive waste disposal area that is not undergoing closure under RCRA , or an authorized off-site radioactive waste disposal facility. [a]
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or WIPP, as appropriate.
Storage Structures	Non-regulated solid waste	Subtitle D landfill
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.

Potential Waste Materials	Waste Types	Disposal Options
	Low-level radioactive solid waste	Either an authorized on-site radioactive waste disposal area that is not undergoing closure under RCRA, or an authorized off-site radioactive waste disposal facility. [a]
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or WIPP, as appropriate.
Concrete Pad	Non-regulated solid waste	Subtitle D landfill or potentially, re-use/recycle
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Low-level radioactive solid waste	Either an authorized on-site radioactive waste disposal area that is not undergoing closure under RCRA, or an authorized off-site radioactive waste disposal facility.[a]
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or WIPP, as appropriate.

[a] This description of the disposal option for low level waste may be subject to revision pending the resolution of the LANL Appeal of the November 2010 LANL Hazardous Waste Facility Permit.

Table G.27-3

Hazardous Waste Constituents of Concern at the TWF[a]

Category	EPA Hazardous Waste Numbers	Specific Constituents
Toxic Contaminants	D004	Arsenic
	D005	Barium hydroxide
	D006	Cadmium
	D007	Chromium
	D008	Lead
	D009	Mercury
	D010	Selenium
	D011	Silver
	D018	Benzene
	D019	Carbon tetrachloride
	D021	Chlorobenzene
	D022	Chloroform
	D026	Cresol
	D027	1,4-Dichlorobenzene
	D028	1,2-Dichloroethane
	D029	1,1-Dichloroethylene
	D030	2,4-Dinitrotoluene
	D032	Hexachlorobenzene
	D033	Hexachlorobutadiene
	D034	Hexachloroethane
	D035	Methyl ethyl ketone
	D036	Nitrobenzene
	D037	Pentachlorophenol
	D038	Pyridine
	D039	Tetrachloroethylene
	D040	Trichloroethylene
	D041	2,4,5-Trichlorophenol
	D042	2,4,6-Trichlorophenol
	D043	Vinyl chloride
Volatile Organic Compounds	F001	Spent halogenated solvents, trichloroethylene
	F002	Spent halogenated solvents
	F003	Spent non-halogenated solvents, xylene, acetone
	F004	Spent non-halogenated solvents
	F005	Spent non-halogenated solvents
Toxic listed waste	U080	Methylene chloride

[a] This will be modified as needed, based on the unit operating record.

EPA = U.S. Environmental Protection Agency

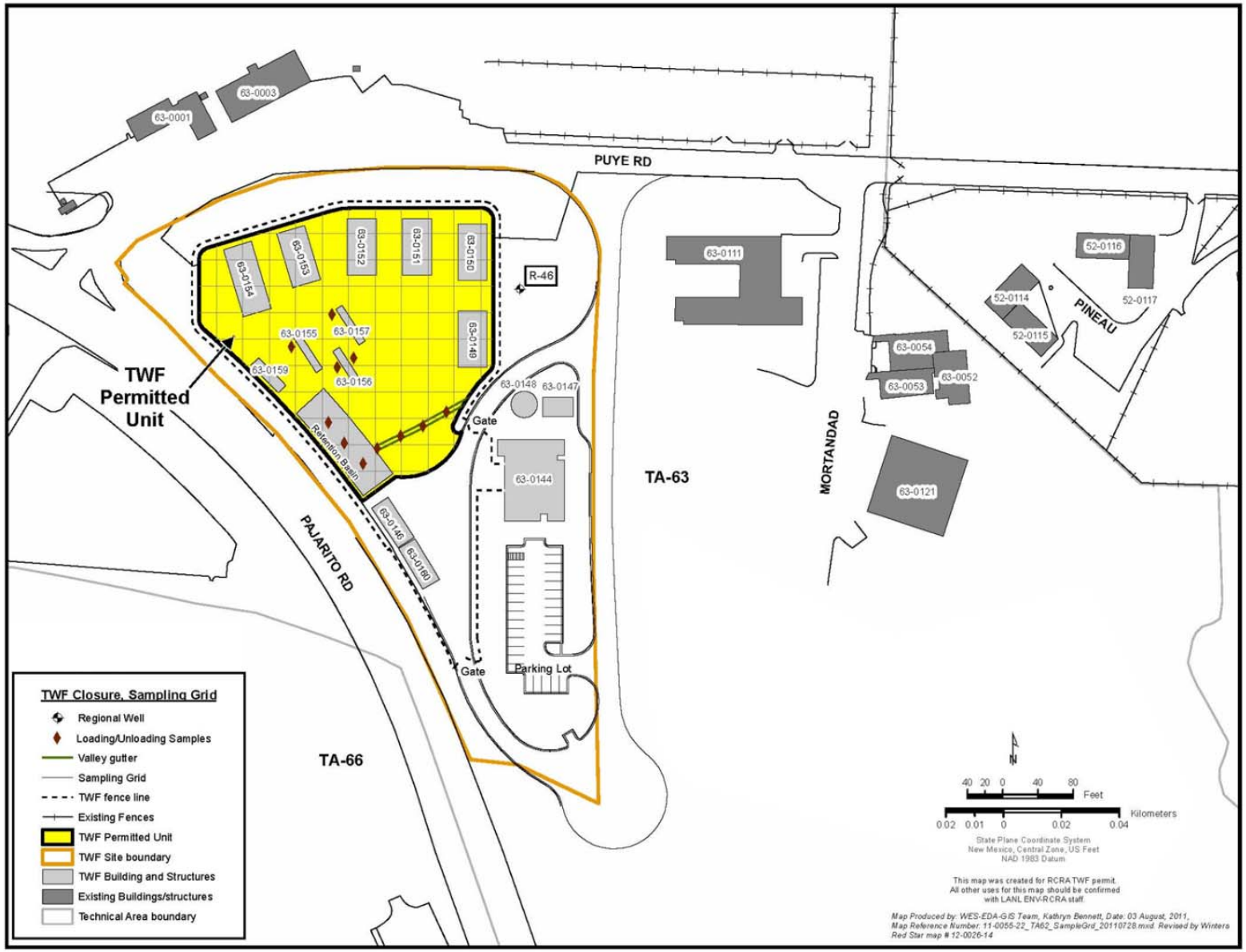

Figure G.27-1. Transuranic Waste Facility Soil Sampling Grid