Class 1 Permit Modification Request Requiring Prior Approval for Administrative Changes at Technical Area 54, Area G, Pads 10 and 11, of the Los Alamos National Laboratory Hazardous Waste Facility Permit, EPA ID No. NM0890010515





CERTIFICATION

NEWPORT NEWS NUCLEAR BWXT-LOS ALAMOS, LLC

Class 1 Permit Modification Request Requiring Prior Approval for Administrative Changes at Technical Area 54, Area G, Pads 10 and 11, of the Los Alamos National Laboratory Hazardous Waste Facility Permit, EPA ID No. NM0890010515

CERTIFICATION STATEMENT OF AUTHORIZATION

In accordance with the New Mexico Administrative Code Title 20, Chapter 4, Part 1 (incorporating the Code of Federal Regulations, Title 40 CFR § 270.11):

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to 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."

Robert Edwards III, Program Manager

Environment, Safety, Health and Quality

Newport News Nuclear BWXT-Los Alamos, LLC

October 1, 2024

Date

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Arturo Q. Duran, Compliance and Permitting Manager Office of Quality and Regulatory Compliance U.S. Department of Energy Environmental Management Los Alamos Field Office Date

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1.0 INTRODUCTION

This document requests a Class 1 permit modification with prior approval to the Los Alamos National Laboratory (LANL) Hazardous Waste Facility Permit (the Permit) issued to the U.S. Department of Energy (DOE); Triad National Security, LLC; and Newport News Nuclear BWXT-Los Alamos, LLC (N3B), collectively the Permittees.

The U.S. Environmental Protection Agency (EPA) ID number for this facility is NM0890010515. This Class 1 permit modification request has been prepared in accordance with 40 Code of Federal Regulations (CFR) 270.42(a)(1), Appendix I, Item A.1 and Permit Section 3.1(3). Item A.1 in 40 CFR 270.42(a)(1), Appendix I, allows for administrative and informational changes to be made to the Permit. The Permittees are making administrative changes (i.e., updates to figures and minor text changes) to add two new conex boxes at Technical Area 54 (TA-54), Area G, Pad 10 and remove the Universal Drum Assay and Segregation System (UDASS) and the real-time radiography (RTR) unit from TA-54, Area G, Pad 11 and Pad 10, respectively.

2.0 BACKGROUND

The Permittees are installing two conex boxes (54-0628 and 54-0629) at TA-54, Area G, Pad 10. The conex boxes (e.g., transportainers) will be heated and used for waste container storage and equilibration before characterization. Waste containers containing free liquids will be placed on secondary containment and meet the requirements of the Resource Conservation and Recovery Act Permit Part 3. The conex boxes are 20 ft long by 8 ft wide.

The Permittees would like to remove the UDASS currently located on Pad 11 at TA-54, Area G. The pilot test of the UDASS is complete and the unit is no longer needed for waste characterization activities. The Permittees would also like to remove the RTR unit (54-0609) currently located at Pad 10, TA-54, Area G. Although deemed necessary for waste characterization activities at the time, the unit was never actually used. Therefore, the Permittees would like it removed.

3.0 PERMIT MODIFICATION BASIS

This permit modification is required under 40 CFR 270.42(a)(1) and 40 CFR 270.42, Appendix I, "Classification of Permit Modification," item A.1., Administrative and Informational Changes, and in accordance with Permit Section 3.1(3). The Permittees are adding two conex boxes (54-0628 and 54-0629) to Pad 10, a permitted hazardous waste management unit in TA-54, Area G, for waste container storage and equilibration before characterization. The Permittees also propose removing the UDASS currently located on Pad 11 at TA-54, Area G and the RTR unit, 54-0609, currently located on Pad 10, TA-54, Area G.

As in previous Class 1 permit modifications (e.g., N3B-2022-0135, dated May 13, 2022) and in accordance with Permit Section 3.1(3), "[a]ny change to the location of a building or structure within which hazardous waste is managed shall be a Class 1 modification with prior approval of the Department (see 40 CFR § 270.42(a)(2))." The UDASS managed hazardous waste, but the RTR unit did not. The two conex boxes are new structures and have therefore not managed hazardous waste.

4.0 DESCRIPTION

This permit modification request proposes changes to the following permitted units at TA-54, Area G: Pad 10 and Pad 11. All proposed changes are shown in redline-strikeout format for proposed revisions to text in the following Permit section and attachments:

- Attachment A, Technical Area (TA) Unit Descriptions (changes shown in redline). Language was removed from Section A.4.2.4 showing removal of the TA-54-0609 RTR unit. Language added describing the two new conex boxes (54-0628 and 54-0629).
- Attachment A, Technical Area (TA) Unit Descriptions (changes shown in redline). Language was removed from Section A.4.2.9 showing removal of the UDASS.
- Attachment J, Language added to list the two new conex boxes (54-0628 and 54-0629).
- Attachment G.11, Technical Area 54, Area G, Pad 10, Outdoor Container Storage and Treatment Unit Closure Plan (changes shown in redline). This attachment also includes the revised Figure G.11-1.
- Attachment G.12, Technical Area 54, Area G, Pad 11, Outdoor Container Storage and Treatment Unit Closure Plan (changes shown in redline). The attachment also includes the revised Figure G.12-1.
- Revised Figures (Attachment N, Figures 27, 31, and 36 and Figures G.11-1 and G.12-1).
 Figure 27 was revised to remove the UDASS (Pad 11) and the RTR unit (54-0609)(Pad 10) and add the two conex boxes (54-0628 and 54-0629) at Pad 10. Figure 31 and G.11.1 were revised to remove the RTR unit (54-0609) and add the two conex boxes (54-0628 and 54-0629).
 Figure 36 and G.12-1 were revised to remove the UDASS at Pad 11.

Appendix A contains redline text changes to Attachments A, J, G.11, G.12, and J.

Appendix B contains the replacement figures. Microsoft Word files of the proposed permit revisions are included on CD as Appendix C.

No other revisions to the permit are necessary as a result of this permit modification request.

Appendix A

Redline Pages of Hazardous Waste Facility Permit, Attachments A, G.11, G.12, and J

ATTACHMENT A TECHNICAL AREA (TA) - UNIT DESCRIPTIONS

equipment to pass safely over the curb. The dome is anchored to Pad 3 with standard drift pins.

A.4.2.4 Pad 10 (former Pads 2 and 4)

Pad 10 is constructed at the location of former Pads 2 and 4. The asphalt pad measures approximately 350 feet long by 250 feet wide and is constructed of asphalt (*see* Figure 31 in Attachment N (*Figures*)). The transuranic waste characterization facilities and container storage area are located on this pad. The transuranic waste characterization facilities consist of mobile and modular units equipped with instruments and equipment for waste characterization and repackaging. The transuranic waste characterization facilities include the following: drum-loading or receiving unit(s); equilibration units(s); gas mobile characterization unit(s); and mobile repack units. External containment is provided by the trailers and transportainers because waste characterization activities take place inside the structures. Activities at Pad 10 include the following:

TA 54-0498, LANL HENC

The Canberra Facility High Efficiency Neutron Counter (HENC) is designed to provide a passive neutron and gamma measurement of transuranic waste drums in 55-gal containers. The trailer housing the HENC is Structure #498. The HENC supported the Facility's TWCP and Project 2010 and subsequently CCP operations beginning in 2004 to the present.

TA 54-0547, Super High Efficiency Neutron Coincidence (SuperHENC) counter

Trailer TA-0547 houses a high efficiency neutron counter designed to handle large waste containers. It is designed to provide a passive neutron and gamma measurement of large transuranic waste containers like standard waste boxes. The SuperHENC will support the Facility's TWCP and the CCP operations beginning in 2010.

TA 54-0545, Storage

Heated transportainer for transuranic and mixed transuranic waste storage prior to characterization

TA 54-0546, Storage

Heated transportainer for transuranic and mixed transuranic waste storage prior to characterization.

TA 54-0628, Storage

Heated conex box (e.g., transportainer) for transuranic and mixed transuranic waste storage prior to before characterization.

TA 54-0629, Storage

Heated conex box (e.g., transportainer) for transuranic and mixed transuranic waste storage prior to before characterization.

TA-54-0609, Real-Time Radiography Unit

The Real-Time Radiography (RTR) Unit is mounted on a flatbed trailer 52 feet in length by 9 feet wide. Radiography is a non-destructive examination (NDE) technique used to examine waste containers. The NDE equipment in the RTR unit is designed to provide X-ray examination of the contents of TRU waste containers, including drums and standard waste boxes, to verify the physical form of the waste, and to detect items prohibited for WIPP disposal (e.g., liquids greater than 1%). The RTR unit will support the Facility's waste management and CCP operations at Pad 10.

Pad 10 asphalt Asphalt

Pad 10 is primarily used for storage of feed stock and empty drums for the transuranic waste characterization activities. Additionally, storage of oversized mixed wastes in transportainers and metal boxes can occur on the pad.

A.4.2.5 Pad 5

This asphalt pad consists of former pads 5, 7, and 8, located on the south-central portion of Area G, has one dome and eight sheds (*see* Figure 32 in Attachment N (*Figures*)) associated with it. Former Pad 5 is approximately 500 feet long, 65 feet-wide, and 4 inches thick. It is sloped approximately 2% from north to south. Former Pad 8 is approximately 150 feet long, 95 feet-wide, and 3 inches thick. It is sloped approximately 1% from west to east. Former Pad 7 is approximately 200 feet long, 64 feet-wide, and 4 inches thick. It is sloped approximately 1% from west to east.

Dome 49

Storage dome 49, located on former Pad 5, is 440 feet long and 60 feet wide and has a peak height of approximately 26 feet (*see* Figure 32 in Attachment N (*Figures*)). The design and materials of construction for Dome 49 are the same as the other domes at TA-54. The dome is equipped with a double-panel rolling door at the north end of the dome and six personnel doors to allow for adequate access both by vehicles and by personnel. The interior perimeter of the dome is surrounded by a 6-inch-high, 8-inch-wide asphalt curb which helps prevent runon into and runoff from the dome. An asphalt ramp located at the vehicle entrance to Dome 49 allows vehicles and container handling equipment to pass safely over the curb. The dome is anchored to Pad 5 with standard drift pins.

A maintenance gate is located along the fence-line west of Dome 49. The gate is not used for general access to the area, but is used by authorized personnel to access areas outside of the Area G fence-line to clear vegetation necessary to minimize fire hazards. The gate is chain-

characterization prior to shipment for off-site disposal. This process is repeated for all 158 CMPs.

Dome 375 also contains four structures that serve as an office area, a control area, and rooms for donning and doffing anti-contamination clothing. These structures are support structures and will not be used to store hazardous waste.

Waste treatment, storage and repackaging are performed in the Perma-Con® within Dome 375. The Perma-Con® is equipped with a HEPA filtration system and a fire detection system. Additional emergency and safety equipment for Dome 375 can be found in Attachment D, Contingency Plan.

Mobile equipment such as gantry cranes, fume hoods, dedicated ventilation units, drum shakers and drum lifts are used in the treatment and repackaging processes. Containers holding hazardous or mixed waste with free liquids is stored on portable spill pallets or pans. Containers vary in size and determine the quantity of waste to be treated. These include 55- gallon drums, 85-gallon drums and SWBs.

Waste characterization data is used to determine whether waste is amenable to stabilization and whether pretreatment via neutralization is necessary. Neutralization may be performed as a pre-treatment option via pH adjustment to facilitate subsequent treatment via stabilization with zeolite.

When deemed necessary, neutralization is performed in containers within the Perma-Con® in TA-54-0375. The neutralization step consists of verifying pH and adding HCl or NaOH to bring the waste within a 3 to 10 pH range to ensure waste is amenable to stabilization with zeolite. The liquids are stabilized with zeolite in a minimum ratio of 3:1 (three-parts zeolite to one-part liquid waste). In cases where there is insufficient volume of liquid waste, the neutralization step of the treatment process is performed, and these minute quantities of liquids are stabilized with zeolite or a WIPP-approved absorbent.

Debris waste (i.e., waste containing no liquids) which do not require additional treatment are either be placed back into the parent container or placed directly into the daughter container with the treated waste.

A Universal Drum Assay and Segregation System (UDASS) is located on the southeast corner of Pad 11, housed in a standard size transportainer, 20' high, 8' wide and 9'6" long. The UDASS is an integrated drum inspection and assay system that more accurately characterizes waste drums, enabling sentencing of the drum at the lowest acceptable level and potentially resulting in fewer drums being classified as transuranic (TRU).

A hydraulic power supply (HPS) unit (i.e., diesel engine) is housed in a prefabricated steel shed on the southwest corner of Pad 11. The HPS will power the hydraulic shear used to cut the corrugated metal pipes (CMPs) in the PermaCon® in TA-54, Area G, Dome 54-0375.

covered by a metal awning. The loading dock is constructed of 6-inch cast-in-place concrete and is located approximately 4 inches above grade. The boundary of the storage pad is delineated by the fence surrounding the pad. The canopy located on the pad and approximate dimensions of the pad are shown on Figure 37. Storage sheds for supplies and equipment are also located on the pad at the outdoor permitted unit (*see* Figure 37 in Attachment N (*Figures*)).

The Permittees shall coordinate shipments with WIPP in an attempt to minimize the use of excess storage capacity at the outdoor pad. However, the Permittees may utilize excess storage capacity for up to 59 days as specified in Attachment J, Table J-1, when at least one of the following unexpected events occur that impacts the Permittees' ability to transport waste to WIPP:

- Unexpected delays or shutdowns at WIPP;
- Storm events;
- Security concerns; or
- Other transportation issues (e.g., <u>transuranic [TRU]</u> waste shipping containers unavailable)

The Permittees must notify the Secretary and those on the e-mail notification list (as specified in Permit Sections 1.13 and 3.12.1) upon using the excess storage capacity and provide justification for its use (see 40 CFR § 270.32(b)(2)).

A.4.4 Security and Access Control

The permitted units at TA-54 are provided security by both their locations on top of Mesita del Buey and by 8-foot industrial chain-link fences topped by razor wire or barbed wire. Additional security is provided by a system of facility access controls to ensure that only authorized personnel are granted access. These access controls also ensure that all facility personnel can be identified and located in an emergency. Depending on national security conditions a guard station will be manned west of the TA-54 timed vehicle-access control gate. Guard stations control public access on Pajarito Road east and west of TA-54; only properly identified Facility employees or individuals under their escort will have access to TA-54. During times of low national security, any access to the TA-54 administrative area for Areas L and G is limited by a timed vehicle-access control gate on the entrance road to TA-54. This gate is open during normal working hours from 6:00 a.m. to 6:30 p.m., Monday through Friday (except holidays). Gate hours are subject to change. Access to TA-54 West is by a manually operated gate on the west side of the facility. The gate is also open during normal working hours. Access to any part of TA-54 before or after normal working hours or on weekends requires approval of the appropriate Group Leader or Facility Manager at TA-54. TA-54 is patrolled by security personnel during non-operational hours to ensure that the gates are locked and that unauthorized entry has not occurred. Anyone entering the fenced Area L and Area G waste management areas from the TA-54 administrative area is "badged in" before proceeding. Badging in is the process of identifying the person, assessing his or her

ATTACHMENT G.11 TECHNICAL AREA 54, AREA G, PAD 10 OUTDOOR CONTAINER STORAGE UNIT CLOSURE PLAN

The SuperHENC will support the Facility's Transuranic Waste Characterization Project and Central Characterization Project operations beginning in 2010.

TA-54-0545 and -0546, Storage trailers - Heated transportainers used for waste container storage and equilibration prior to characterization.

The above structures are used for non-destructive assay (NDA) techniques associated with the radioactive characterization for the Waste Isolation Pilot Plant certification of waste containers or in support of those activities. The characterization provided by the NDA monitoring techniques does not involve opening the waste containers. The other trailers and structures provide: 1) shelter for the radioassay equipment, 2) enclosed areas to stabilize the waste containers being assayed; and 3) external containment for the waste within the structures.

The following structures are situated on the permitted unit as support structures and according to the Facility Operating Record have never stored hazardous waste:

TA-54-0365, Office Building, Formerly MTGS - TA54-0365 formerly housed the MTGS. The MTGS was a gamma assay system prototype developed by the Permittees. The instrument was salvaged in 2007 and the trailer was converted to office space.

TA-54-0483, Source Storage Trailer - TA54-0483 serves as a storage area for calibration sources needed by the NDA systems.

<u>TA-54-0628 and -0629, Storage Trailers - Heated conex boxes (i.e., transportainers) used for waste container storage and equilibration before to characterization.</u>

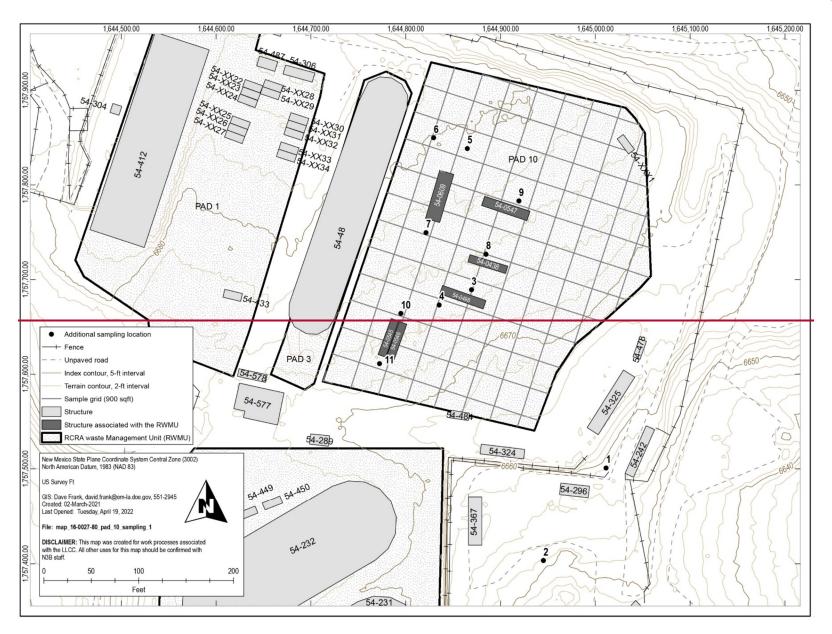
TA-54-0609, Real-Time Radiography Unit

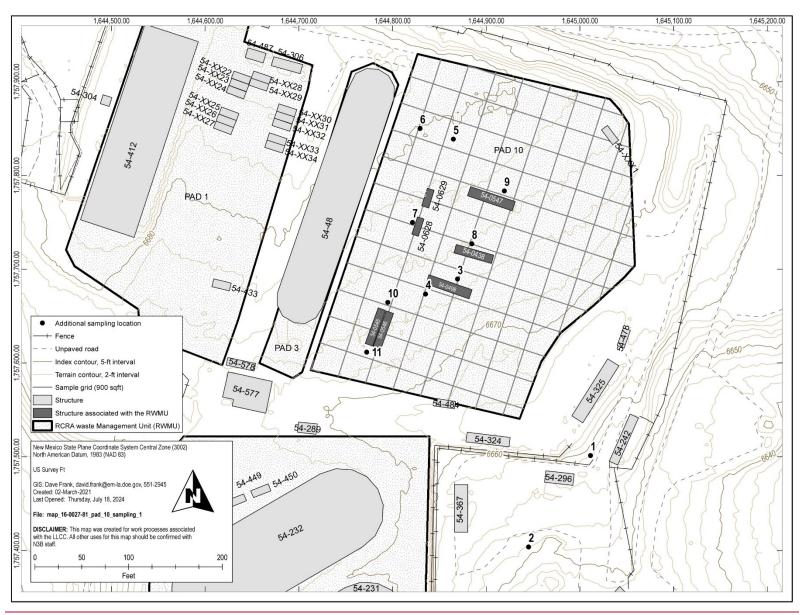
The Real-Time Radiography (RTR) Unit is mounted on a flatbed trailer 52 feet in length by 9 feet wide. Radiography is a non-destructive examination (NDE) technique used to examine waste containers. The NDE equipment in the RTR unit is designed to provide X-ray examination of the contents of TRU waste containers, including drums and standard waste boxes, to verify the physical form of the waste, and to detect items prohibited for WIPP disposal (e.g., liquids greater than 1%). The RTR unit will support the Facility's waste management and CCP operations at Pad-10.

Additional support structures, TA54-484 and two storage trailers, server as storage for supplies and equipment.

The permitted unit has been used for the storage of mixed waste in solid form with small quantities of liquid form waste since 2004. The hazardous waste stored at the permitted unit has been: solidified inorganic solids; leached process residues; salts and cement paste; ash; dewatered aqueous sludge; chemical treatment sludge; soils; combustible debris (*e.g.*, plastics, rubber, laboratory trash, building debris); and heterogeneous debris.

Permit Part 3 (Storage in Containers), Permit Attachment A (Technical Area Unit Descriptions), Permit Attachment B (Part A Application), and Permit Attachment C (Waste Analysis Plan) include additional information about waste management procedures and hazardous waste constituents stored at the permitted unit.





G.11-1: Technical Area 54, Area G, Pad 10 Outdoor Container Storage Unit Sampling Grid and Additional Sampling Locations

ATTACHMENT G.12 TECHNICAL AREA 54, AREA G, PAD 11 OUTDOOR CONTAINER STORAGE UNIT CLOSURE PLAN

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Dome 375 also contains four structures that serve as an office area, a control area, and rooms for donning and doffing anti-contamination clothing. These structures are support structures and will not be used to store hazardous waste. A single non-intrusive waste characterization structure, TA-54-0362, Real-Time Radiography (RTR) system #1 (RTR1), was removed from TA-54 Pad 11 in 2016.

The RTR1 design provided X-ray examination of waste drum contents without opening waste containers.

A Universal Drum Assay and Segregation System (UDASS) is located in the southeast corner of Pad 11. The UDASS is housed in a standard size transportainer, 20 ft high, 8 ft wide, and 9 ft 6 in. long. The UDASS is an integrated drum inspection and assay system that more accurately characterizes waste drums, enabling sentencing of the drum at the lowest acceptable level and potentially resulting in fewer drums being classified as transuranic (TRU). A hydraulic power supply (HPS) unit (i.e. diesel engine) is housed in a prefabricated steel shed on the southwest corner of Pad 11. The HPS will power the hydraulic shear used to cut the corrugated metal pipes (CMPs) in the Permacon® un the TA-54, Area G, Dome 0375.

Permit Part 3 (Storage in Containers), Permit Attachment A (Technical Area Unit Descriptions), Permit Attachment B (Part A Application), and Permit Attachment C (Waste Analysis Plan), include information about waste management procedures and hazardous waste constituents stored at the permitted unit.

3.0 ESTIMATE OF MAXIMUM WASTE STORED

To date, no hazardous waste has been stored at the permitted unit. The estimated volume for the maximum inventory of waste managed over the projected lifespan of the permitted unit is 1,501,000 gallons.

4.0 GENERAL CLOSURE REQUIREMENTS

4.1 Closure Performance Standard

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

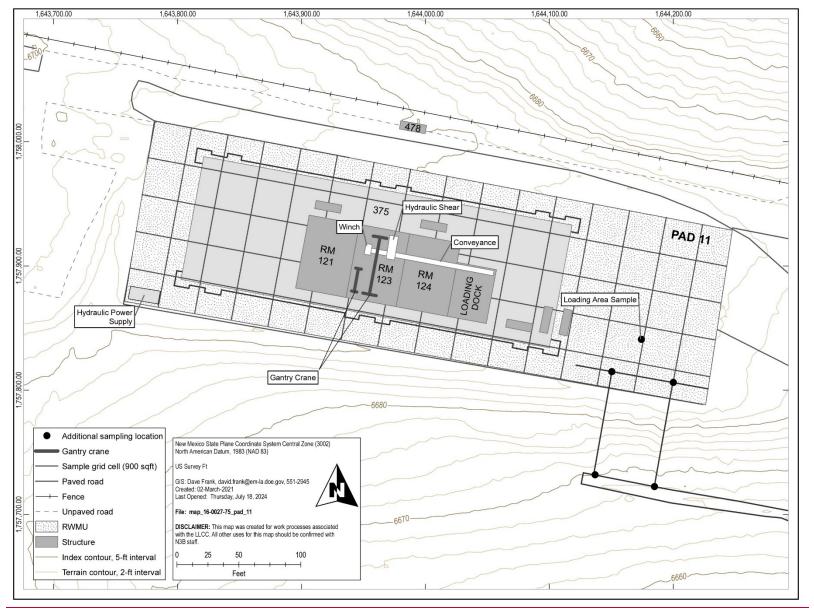
- a. remove all hazardous waste residues and hazardous constituents; and
- b. ensure contaminated media do not contain concentrations of hazardous constituents greater than the clean-up levels established in accordance with Permit Sections 11.4 and 11.5. For soils the cleanup levels shall be established based on residential use. The Permittees must also demonstrate that there is no potential to contaminate groundwater.

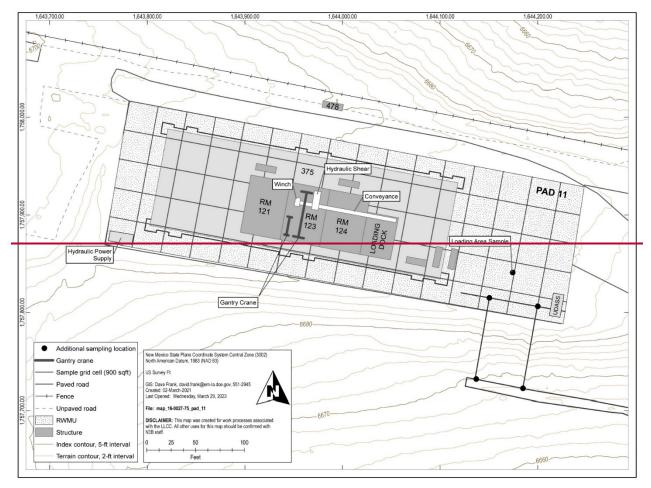
If the Permittees are unable to achieve either of the clean closure standards above, they must:

- c. control hazardous waste residues, hazardous constituents, and, as applicable, contaminated media such that they do not exceed a total excess cancer risk of 10⁻⁵ for carcinogenic substances and, for non-carcinogenic substances, a target Hazard Index of 1.0 for human receptors, and meet Ecological Screening Levels established under Permit Section 11.5;
- d. minimize the need for further maintenance;
- e. 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, groundwater, surface waters, or to the atmosphere; and

Table G.12-6
List of Equipment at the Technical Area 54, Area G, Pad 11 Outdoor Container Storage Unit

Equipment	Decontamination	Disposal
Waste-handling equipment (e.g., conveyance system, hydraulic shear, winch and gantry crane	X	X
Equipment and spill kit cabinets	X	X
Container pallets	X	X
Communication equipment	X	X
Access barriers and chains	X	X
Universal Drum Assay and Segregation System (UDASS)	X	
Hydraulic Power Supply		





-Figure G.12-1: Technical Area 54, Area G, Pad 11 Outdoor Container Storage Unit Grid Sampling and Additional Sampling Locations

ATTACHMENT J HAZARDOUS WASTE MANAGEMENT UNITS

Unit Identifier	Process Codes	Operating Capacity	General Information	Type of Unit
			Total square footage – 59,900	
TA-54 Area G Pad 6	S01 T04	597,300 gal 23,160 gal/day	Includes Storage Domes 153 and 283; and Transportainer 491. Includes treatment process for macroencapsulation Approximately 62,700 square feet	Outdoor (associated with an regulated unit)
TA-54 Area G Pad 9	S01 T04	1,446,720 gal 23,160 gal/day	Includes Storage Domes 229, 230, 231, and 232. Includes treatment process for macroencapsulation, stabilization (including absorption) and neutralization Total square footage – 158,000	Outdoor (associated with a regulated unit)
TA-54 Area G Pad 10	S01 T04	159,770 gal 23,160 gal/day	Includes Transuranic (TRU) Waste Characterization Facilities: TA-54-0547 (SuperHENC), TA-54-0498 (LANL HENC), TA-54-0545, and-546, 628, and 629 (Storage trailers), and 438. Pad 10 is a consolidation of former Pads 2 and 4. Includes treatment process for macroencapsulation Approximately 89,600 square feet	Outdoor (associated with a regulated unit)
TA-54 Area G Pad 11	S01 T04	682,440 gal 23,160 gal/day	Includes Storage Dome 375. Includes treatment process for macroencapsulation Includes treatment process for stabilization (including	Outdoor (associated with a regulated unit)

Appendix B

Replacement Figures for Hazardous Waste Facility Permit, Attachment G.11, Figure G.11-1, Attachment G.12, Figure G.12-1, and Attachment N, Figures 27, 31, and 36

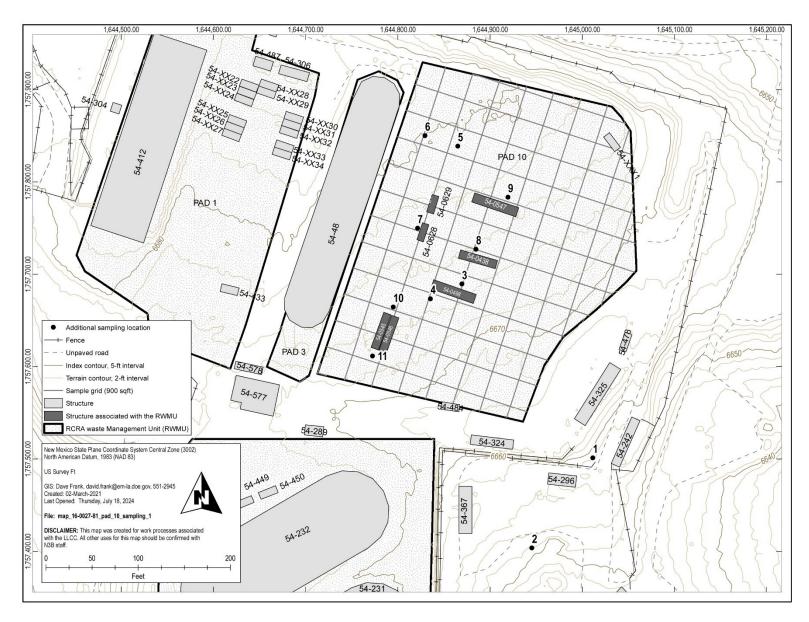


Figure G.11-1: Technical Area 54, Area G, Pad 10 Outdoor Container Storage Unit Sampling Grid and Additional Sampling Locations

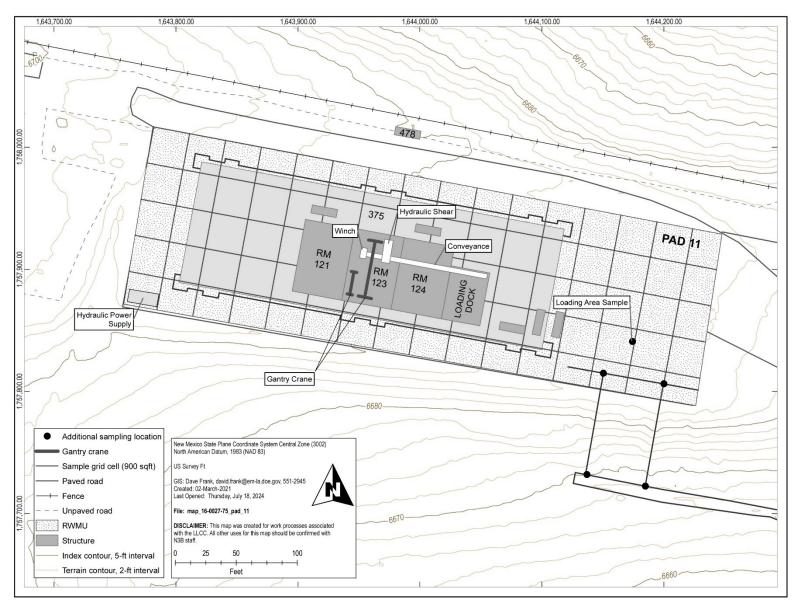


Figure G.12-1 Technical Area 54, Area G, Pad 11 Outdoor Container Storage Unit Grid Sampling and Additional Sampling Locations

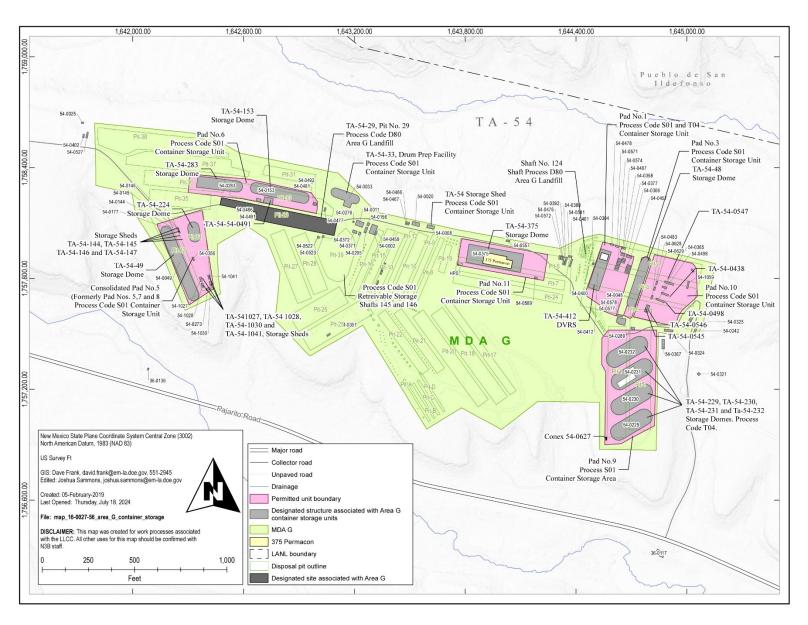


Figure 27: TA-54, Area G, Container Storage and Treatment Units

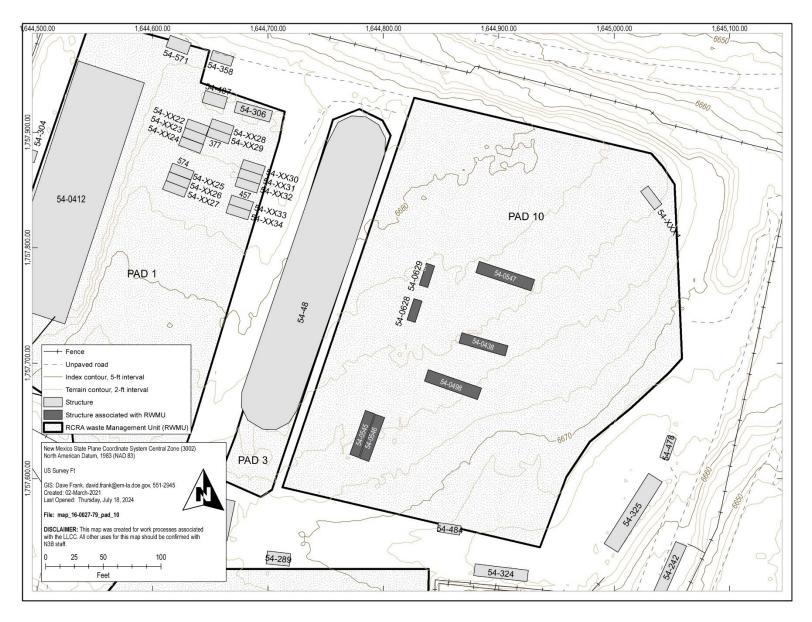


Figure 31: TA-54, Area G, Pad 10 Outdoor Container Storage Unit Sampling Grid and Additional Sampling Locations

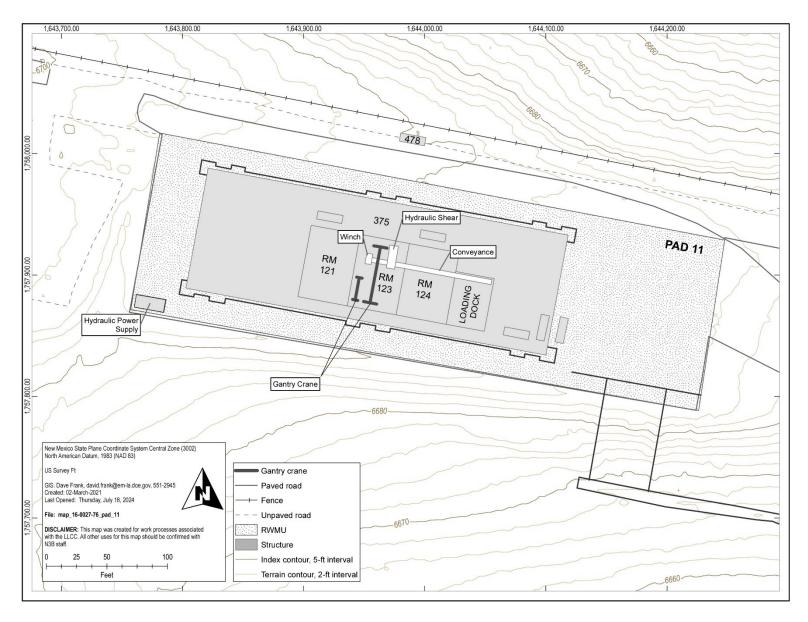


Figure 36: TA-54, Area G, Pad 11 Outdoor Container Storage Unit Grid Sampling and Additional Sampling Locations

Appendix C

Microsoft Word Files of Revised Hazardous Waste Facility Permit, Attachments A, G.11, G.12, and J (on CD included with this document)