



LONGENECKER & ASSOCIATES

Audit Report

Audited Organization(s)

Audit No. Triad WR12 T16 A

Performed 07/29/25 through 08/15/25

Revision 1

**Leader
Auditor:**

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Name

Signed by:

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8/20/2025

Signature & Date

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1.0 Executive Summary

The Area G Flanged Tritium Waste Containers (FTWCs) are stainless steel containers contained in 85-gallon USA 7A Type A stainless steel open-top drums. The FTWCs contain tritium contaminated waste materials generated at the Weapons Engineering Tritium Facility (WETF). The FTWCs are in storage at LANL's permitted waste management area, Technical Area 54, because they contain lead, a regulated constituent. The waste materials in each FTWC include AL-M1 containers with tritium on molecular sieve, molecular sieve in metal cans, and fired squib valves.

At WETF, tritium gas that becomes waste is processed by the Tritium Waste Treatment System (TWTS). Gaseous tritium waste is generated primarily after experiments and from leakage into gloveboxes. The product of the TWTS is dilute tritiated water (HTO and H₂O), which is stored on molecular sieve in containers called AL-M1s. Within the AL-M1s the tritium decays to helium, and the decay energy liberates hydrogen and oxygen gas from the water, by radiolysis.

Accumulated helium, hydrogen, and oxygen within different AL-M1s produces headspace pressure that is approximately proportional to the quantity of tritium. The waste stream identified in the Site Treatment Plan (STP) as part of LA-W934, High Activity Waste, consists of five containers. Four of these five containers (specifically the FTWCs) are owned by Triad and composed of molecular sieves and squib assemblies containing lead. These four (4) FTWCs were placed into above ground storage shed 1028 in TA-54 in 2007, where they remain today. These containers contain squib valves, that contain small amounts of lead, and were characterized as Resource Conservation and Recovery Act (RCRA) lead D008 mixed waste. While initially packaged in accordance with the Area G Waste Acceptance Criteria (WAC) as low-level waste, a routine internal compliance audit raised a question about the application of the mass-balance provisions. Conservatively, LANL recategorized these four containers as mixed waste and began managing them in accordance with RCRA requirements. Subsequent process improvements have incorporated the audit functions into the Waste Compliance and Tracking System process, effectively preventing recurrence. Due to tritium decay and radiolysis, these containers are believed to be pressurized, and pressure is assumed to be increasing over time. Weekly RCRA inspections include occupational monitoring for tritium from the FTWCs which has not been detected to date.

The valves containing the D008 lead were actuated prior to being declared waste; they serve no safety function and have no reactive material and pose no issue for offsite shipment and disposal.

The Longnecker and Associates independent audit team completed a comprehensive review of the FTWCs and their history including a review and regulatory analysis of the generation, characterization, storage, and management of the FTWCs and the associated communications and interactions with the NMED. The analysis included the regulatory context over the historical period from 2007 to present. The audit included a focused regulatory review of actions associated with the management of the FTWCs since generation.

The LANL hazardous waste program with respect to the FTWCS was deemed to be compliant with DOE and NMED requirements. It is fully implemented and effective. The audit revealed one finding and five observations, none of which materially impact the storage safety of the

FTWCs. There was one observation on the fire protection system in TA-54 Building 1028, which is inoperable, but sufficient compensatory measures are in place.

The review results indicate that the FTWCs have been managed in a safe and compliant manner consistent with New Mexico Hazardous Waste Act and its regulations codified at 20.4.1 of the New Mexico Administrative Code, since they were packaged. Furthermore, based on the compliance history and records of internal and external reviews, the review indicates that the overall LANL hazardous waste management program with respect to the FTWCs is robust and continues to protect the health and safety of the workers, public, and environment of Northern New Mexico.

2.0 Scope

Complete an independent compliance audit of the four flanged tritium waste containers (FTWCs) currently located at Los Alamos National Laboratory, Area G. The audit will comprise a comprehensive review of the FTWCs and their history.

Triad provided the existing FTWCs timeline and associated documentation including internal correspondence and correspondence with regulators. Triad facilitated interviews with staff as requested. Triad worked closely with the Longenecker team to ensure timely response to questions and requests for information.

3.0 Audit Personnel

Team Member	Roles
Pete Carson Audit Team Lead	Program Manager; SME LANL Waste; Reviewer; Author
Renee Echols	SME Waste Management; SME Regulatory Analysis; Reviewer; Author
John McCoy	SME Waste Management; SME Regulatory Analysis; Reviewer; Author
Brian McDaniel	SME on Squib Valves; Regulatory Analysis of Squib Valves; Reviewer; Author
Mark Senderling	SME Regulatory Analysis; Reviewer; Author
Ryan Hill	Technical Writer
Amanda Montoya	Administrative Support

4.0 Personnel Contacted

The following personnel were contacted during performance of the audit:

- Group Leader EPC-WMP, Triad
- Program Manager, EPC-WMP, Triad
- Team Leader EPC-CP, Triad

- Subcontract Technical Representative, Triad
- Deputy CH TRU Program Manager, N3B
- Operations Manager WFO-WETF, Triad
- Operations Center Manager, N3B
- Group Leader Waste Management Services, Triad

Personnel from DOE-NNSA, Triad, N3B, Longenecker & Associates, and Firewater were present during the entrance and exit meetings, which were conducted virtually/in person on July 29, 2025, and August 11, 2025, respectively.

5.0 Audit Details

The Longnecker and Associates independent audit team completed a comprehensive review of the FTWCs and their history including a review and regulatory analysis of the generation, characterization, storage, and management of the containers and the associated communications and interactions with the NMED consisting of over 300 documents and records.

The analysis included the regulatory context from 2007 to present including a focused regulatory review of actions associated with the management of the FTWCs since generation.

The specific lines of inquiry (LOIs) are presented in [Attachment 2: Audit Checklist](#). The LOIs are grouped into the following subject areas:

1. Waste Identification and Classification
2. Waste Generation and Accumulation
3. Personnel Training
4. Emergency Preparedness and Prevention
5. Recordkeeping and Reporting
6. Transportation and Disposal
7. Other Items, which include:
 - a. Any recent changes in processes or procedures that could affect hazardous waste management.
 - b. Effectiveness of internal audit programs and corrective actions taken for identified deficiencies.
 - c. Communication channels and procedures for hazardous waste-related matters.

The audit was conducted by reviewing documentation provided by TRIAD and N3B (see Attachment 1: Key Documents Reviewed, interviews with Triad and N3B personnel (see Section 4 above for a list of organizations contacted), and a site visit to the storage facility in TA-54, Building 1028 on August 5, 2025. A kickoff meeting was held on July 29, 2025, and daily meetings were held with Triad personnel to discuss progress, documents needed, interviews requested, progress, and to address any questions. Triad also provided technical briefings on the following subjects:

- FWTC History
- FWTC RCRA Regulatory Background
- FWTC NESHAPS Background

An exit meeting was held on August 11, 2025.

6.0 Findings and Observations

The LANL hazardous waste program with respect to FTWCS was deemed to be compliant with DOE and NMED requirements. It is fully implemented and effective.

The audit revealed one finding and five observations, none of which materially impact the storage safety of the FTWCs. There was one observation on the fire protection system in TA-54 Building 1028, which is inoperable, but sufficient compensatory measures are in place, so this was not graded as a finding.

Findings		
Finding No	Subject Area	Description
01	Transportation	Manifest 116588-R-EPA-540- The transport company is not identified, and EPA number not noted in block 6. The transporter is properly identified on Form 540. This is a violation of 40 CFR 262 Appendix, which is a violation of 20.4.1.300 NMAC, incorporating 40 CFR 262.21.
Observations		
01	Waste Identification and Classification	WCATS printout, 35717R0 .waste_stream_profile, has an expiration date of 10/01/2111, obvious typographical error.
02	Waste Identification and Classification	WCATS printout, 8607R0.waste_stream_profile, had a comment made on 10/22/10 about D009 (Mercury), but there is no other information indicating mercury is present in this waste stream.
03	Waste Generation and Accumulation	TA-54 Shed 1028 has had a fire protection impairment since March 31, 2022. This cannot be repaired due to concerns with the FTWCs as documented in a standing order and safety evaluations. On August 5, 2025, the Assessment Team conducted a visual inspection of Shed 1028 and the FTWC's in storage during the weekly RCRA inspection. N3B has taken mitigative actions regarding the fire suppression system since the system is

		directly over the FTWCs and cannot currently be serviced. During daily rounds, the shed is visually inspected, the area is surveyed for combustibles, and fire extinguishers are verified as in service and accessible. This is documented at the TA-54 Operations Center and WEFT is notified each working day. Daily inspections are performed and logged.
04	Waste Generation and Accumulation	The NMED labeling requirements changed in 2019 to add Hazardous Waste labels noting the characteristics of the waste as required by 40 CFR 262.17(a)(5) but due to the restrictions on disturbing the FTWCs unnecessarily, the new labels were not applied. NMED is aware of this condition and so no further action will be taken until the containers have the pressure relieved and are repackaged.
05	Transportation	Manifest 116546 R-EPA-540, transporter dated the manifest as 5/22/22 versus 5/22/25.

Noteworthy Practices

	Waste Generation and Accumulation	<p>Over the last five years, Triad updated P409 LANL Waste Management and it's associated Waste Acceptance Criteria (WACs).</p> <p>This comprehensive series of new documents provides the requirements necessary for responsible waste management personnel at LANL including planning, generation, determination and characterization, packaging, accumulation and storage, transportation, treatment, and disposal. The lower tiered procedures for onsite, offsite, and wastewater waste acceptance criteria provides the generators, waste handlers, shippers and compliance staff detailed resources to ensure compliance from cradle to grave.</p> <p>Specifically, these documents control the Laboratory's system for safely and compliantly characterizing, packaging, storing, treating, disposing, and transporting the various sanitary, hazardous, radioactive, and otherwise regulated wastes generated by LANL activities.</p>
	Waste Generation and Accumulation	LANL uses the Waste Characterization and Tracking System (WCATS) to maintain a single waste profile system and tracking system for the Laboratory permittees. There is a dedicated WCATS IT Team that maintains and upgrades the system based on new technologies such as hand-held devices and upgrades the system as part of their continuous improvement processes.
	Transportation	The site takes pictures of the container labels, seals, and shipment placarding before shipment. This provides assurance of compliance for the generator, transporter, and receiver throughout the transportation cycle.
	Record Keeping and Reporting	Triad has developed a procedure on official submittals and responses to and from the NMED. This procedure is a best management practice to consolidate the reporting requirements and provide step by step instructions to reduce the probability of non or late reporting.

Attachment 1: Key Documents Reviewed

Documents Number and Title	Original Issue Date
On-Site Waste Acceptance Criteria	
P409 LANL Waste Management	4/17/2025
P409-1 LANL Waste Acceptance Criteria R2 AC3	1/8/2024
P409-2 Waste Acceptance Criteria for Onsite RCRA Facilities	4/16/2025
P409-3 Waste Acceptance Criteria for Onsite Wastewater Treatment Facilities	4/16/2025
P409-4 Acceptance Requirements for Offsite Waste Treatment, Storage, and Disposal Facilities	4/9/2025
WAC exemptions FTWCs, Email on WAC Exception for FTWC Storage	8/1/2025
WEF 20-005, Profile 48024, Waste Exceptions for FTWCs Loaded With AL-M1s at WETF	3/5/2020
Characterization	
21905R0.waste_profile_form-1	2009
21905R0.waste_stream_profile	2010
35717R0.waste_stream_profile	2025
56074R0.waste_profile_form	2025
56074R0.waste_stream_profile	2025
8607R0.waste_profile_form	1998
8607R0.waste_stream_profile	2016
AK-56074 D0	Undated
Area G FTWC Ci Calc Sheet Working	Undated
C09203611.container_profile-1	2025
C09203611.waste_data_profile-2	2025
C09203612.container_profile-1	2025
C09203612.waste_data_profile-1	2025
C09203613.container_profile-1	2025
C09203613.waste_data_profile-1	2025
C09203614.container_profile-3	2025
C09203614.waste_data_profile-1	2025
Composition Calcs - 56074	2019
lead content, actuators254	2012
Molecular Sieve MSDS	2012
Transducer TCLP Results	2013
Valve assembly TCLP Results	2008
WEF 25-011 w-Attachment-approved 4-21-25-printed	2025
09292021 response to (NMED) on D001 and D003	9/29/2021
MLLW FTWCS D001 D003 FTWCs Hydrogen White Paper	12/5/2017

Pressurized Gas in Fired GTS Valves	1/9/2006
WETF-TM-335, 2007 Loading Procedure	2007
Q-7-19-0010U, Explosive Valve Assemblies to be Disposed at Nevada National Security Site	5/14/2019
Squib Information Email	8/5/2025
Compliance Information	
2014 NOV U1400793	1/31/2013
2013 NOV U1300864	3/20/2013
2013 SFO U1301547	5/2/2013
2013-05-13 SFO (Final) (HWB 13-03) (ID 251578)	5/13/2013
2014 NOV U1401430	5/9/2014
2014 NOV U1401447	5/12/2014
2015-07-14 Stipulated Final Order (HWB 15-21) (ID 58138)	7/14/2015
2016 NOV with proposed Penalties U1601352	6/1/2016
HWB 17-05, Stipulated Final Order (NOV June 2016)	1/12/2017
2017-01-18, Stipulated Final Order (HWB 17-05) (ID 251559)	1/18/2017
2017-11-07, SFO (Final version) (HWB 17-24) (ID 129542)	11/7/2017
2018-05-21 Stipulated Final Order (Signed) (HWB 18-10) (ID 216922)	5/16/2018
2019-04-03 Stipulated Final Order (Signed) (HWB 19-07) (ID 145635)	3/8/2019
HWB 19-06 SFO, Stipulated Final Order	3/8/2019
HWB 19-07 SFO, Stipulated Final Order (Notice of Violation, January 10, 2019)	3/8/2019
2019-04-02 Stipulated Final Order (Signed) (HWB 19-06) (ID 152996)	4/2/2019
2019 NOV U1900818	8/20/2019
HWB 19-57 SFO, Stipulated Final Order	12/23/2019
2019-12-24 Stipulated Final Order (Signed) (HWB 19-57) (ID 216691)	12/24/2019
NON-21, Notice of Violation and Resolution	7/19/2022
2023-05-31 SFO (Fully Executed) (HWB 23-01)	5/31/2023
2023-10-26, Resolution of Notice of Violation (N3B) (ID 264440)	10/26/2023
RPD HWB-LANL FY23 Notice of Violation and Penalties final	2/13/2024
Close out Inspection Related 2024-09-23 2390	9/23/2024
2024-10-07, Stipulated Final Order (HWB 14-18) (ID 277212)	10/7/2024
2025-04-21- HWB_LANL Final SFO for FY2022 Inspection	4/21/2025
SFO-2022, Resolution of Notice of Violation	5/30/2025
ERID-208370 - LANL HAZARDOUS WASTE FACILITY PERMIT INSTANCES OF NONCOMPLIANCE AND RELEASES FOR FISCAL YEAR 2011	11/30/2011
ERID-232286 - LANL HAZARDOUS WASTE FACILITY PERMIT INSTANCES OF NONCOMPLIANCE AND RELEASES FOR FISCAL YEAR 2012	11/29/2012
ERID-251534 - LANL HAZARDOUS WASTE FACILITY PERMIT INSTANCES OF NONCOMPLIANCE AND RELEASES FOR FISCAL YEAR 2013	11/27/2013
ERID-257845 - Addendum to the LANL Hazardous Waste Facility Permit Reporting on Instances of Noncompliance and Releases for Fiscal Years 2012 And 2013	7/1/2014

ERID-258666 - Notification of Anticipated Noncompliance with the LANL Hazardous Waste Facility Permit, EPA ID No. NM890010515	7/11/2014
ERID-262519 - Second Addendum, Reporting Additional Instances of Noncompliance with Hazardous Waste Facility Permit and Generator Requirements, LANL	10/21/2014
ERID-521616 - LOS ALAMOS NATIONAL LABORATORY HAZARDOUS WASTE FACILITY PERMIT INSTANCES OF NONCOMPLIANCE AND RELEASES FOR FISCAL YEAR 2012	11/29/2012
ESHID-600048 - Notification of Anticipated Noncompliance with the LANL Hazardous Waste Facility Permit, EPA ID No. NM890010515	11/26/2014
ESHID-600049 - LANL Hazardous Waste Facility Permit Instances of Noncompliance and Releases for Fiscal Year 2014	11/26/2014
ESHID-600898 - Self-Disclosure of Non-Compliances Resulting From the Extent of Condition Review, LANL Hazardous Waste Facility Permit No.~0890010515	8/31/2015
ESHID-601020 - APPROVAL EXTENSION REQUEST TO SUBMIT THE LANL HAZARDOUS WASTE FACILITY PERMIT INSTANCES OF NONCOMPLIANCE AND RELEASES FOR FY 2015 EPA ID #NM0890010515 HWB-LANL-MISC	11/30/2015
ESHID-601021 - Request for Extension to Submit the LANL Hazardous Waste Facility Permit Instances of Noncompliance and Releases for Fiscal Year 2015 EPA ID# NM0890010515	11/24/2015
ESHID-601071 - LANL Hazardous Waste Facility Permit Instances of Noncompliance and Releases for Fiscal Year 2015	12/21/2015
ESHID-601241 - Los Alamos National Laboratory Notification of Regulatory Noncompliance at T A-54, Area G, Pit 38	2/25/2016
ESHID-602018 - Los Alamos National Laboratory Hazardous Waste Facility Permit Instances of Noncompliance and Releases for Fiscal Year 2016 (NA-LA)	11/29/2016
ESHID-602701 - Notification of Anticipated Noncompliance with the LANL Hazardous Waste Facility Permit, EPA ID No. NM890010515	10/24/2017
ESHID-602740 - LANL Hazardous Waste Facility Permit Instances of Noncompliance and Releases for Fiscal Year 2017	11/28/2017
ESHID-602787 - Correction of Anticipated Noncompliance with the LANL Hazardous Waste Facility Permit, EPA ID No. NM890010515	12/19/2017
ESHID-602946 - Notification of Noncompliance with the LANL Hazardous Waste Facility Permit, EPA ID No. NM890010515	3/19/2018
ESHID-603033 - Delayed Notification of Waste Characterization Discrepancies and Addendum to the LANL Hazardous Waste Facility Permit Reporting Instances of Noncompliance and Releases/or Fiscal Year 2017	4/26/2018
ESHID-603309 - Transmittal of Fiscal Year 2018 Report of Releases and Instances of Noncompliance with the LANL Hazardous Waste Facility Permit	11/29/2018
ESHID-603310 - Notification of Anticipated Noncompliance with the LANL Hazardous Waste Facility Permit, EPA ID No. NM890010515	11/29/2018
ESHID-603367 - Clarification of Information Included with Anticipated Noncompliance Notification (EPC-DO: 18-433)	1/31/2019
ESHID-603539 - Transmittal of Fiscal Year 2019 Report of Releases and Instances of Noncompliance with the LANL Hazardous Waste Facility Permit EPA ID #NM0890010515	11/25/2019
ESHID-603608 - Fiscal Year 2020 Report of Releases and Instances of Noncompliance with the LANL Hazardous Waste Facility Permit, LANL, EPA ID #NM0890010515	11/30/2020

ESHID-603668 - Fiscal Year 2021 Reporting of Releases and Instances of Noncompliance with the LANL Hazardous Waste Facility Permit, LANL, EPA ID #NM0890010515	12/1/2021
ESHID-603730 - Fiscal Year 2021 Reporting of Releases and Instances of Noncompliance with the LANL Hazardous Waste Facility Permit, LANL, EPA ID #NM0890010515	12/1/2022
ESHID-603804 - Fiscal Year 2023 Reporting of Releases and Instances of Noncompliance with the LANL Hazardous Waste Facility Permit	11/30/2023
ESHID-603862-2 - Fiscal Year 2023 Reporting of Releases and Instances of Noncompliance with the LANL Hazardous Waste Facility Permit	11/26/2024
FTWC Storage	
1-6-2020 1-12-2020 FTWC Inspection	1/7/2020
1-13-2020 - 1-19-2020 FTWC Inspection	1/15/2020
1-20-2020 - 1-26-2020 FTWC Inspection	1/22/2020
1-27-2020 - 2-2-2020 FTWC Inspection	1/29/2020
2-10-2020 2-16-2020 FTWC Inspection	2/10/2020
2-17-20 2-23-2020 FTWC Inspection	2/19/2020
2-24-2020 3-1-2020 FTWC Inspection	2/24/2020
1-3-2022 - 1-9-2022 FTWC Inspection	1/4/2022
1-10-22 - 1-16-22 FTWC Inspection	1/11/2022
1-17-2022 - 1-23-2022 FTWC Inspection	1/18/2022
1-24-2022 - 1-30-2022 FTWC Inspection	1/25/2022
1-31-2022 - 2-6-2022 FTWC Inspection	2/1/2022
2-7-2022 - 2-13-2022 FTWC Inspection	2/8/2022
2-14-2022 - 2-20-2022 FTWC Inspection	2/15/2022
2-21-2022 - 2-27-2022 FTWC Inspection	2/22/2022
2-28-2022 - 3-6-2022 FTWC Inspection	3/1/2022
3-7-2022 - 3-13-2022 FTWC Inspection	3/8/2022
3-14-2022 - 3-20-2022 FTWC Inspection	3/15/2022
3-21-2022 - 3-27-2022 FTWC Inspection	3/22/2022
3-28-2022 - 4-3-2022 FTWC Inspection	3/29/2022
4-4-2022 - 4-10-2022 FTWC Inspection	4/5/2022
4-11-2022 - 4-17-2022 FTWC Inspection	4/13/2022
4-18-2022 - 4-24-2022 FTWC Inspection	4/19/2022
4-25-2022 - 5-1-2022 FTWC Inspection	4/26/2022
5-2-2022 - 5-8-2022 FTWC Inspection	5/3/2022
5-9-2022 - 5-15-2022 FTWC Inspection	5/9/2022
5-16-2022 - 5-22-2022 FTWC Inspection	5/16/2022
5-23-2022 - 5-29-2022 FTWC Inspection	5/24/2022
5-30-2022 - 6-5-2022 FTWC Inspection	5/31/2022

6-6-2022 - 6-12-2022 FTWC Inspection	6/7/2022
6-13-2022 - 6-19-2022 FTWC Inspection	6/14/2022
6-20-2022 - 6-26-2022 FTWC Inspection	6/21/2022
6-27-2022 - 7-3-2022 FTWC Inspection	6/28/2022
7-4-2022 - 7-10-2022 FTWC Inspection	7/5/2022
7-11-2022 - 7-17-2022 FTWC Inspection	7/12/2022
7-18-2022 - 7-24-2022 FTWC Inspection	7/19/2022
7-25-2022 - 7-31-2022 FTWC Inspection	7/26/2022
8-1-2022 - 8-7-2022 FTWC Inspection	8/2/2022
8-8-2022 - 8-14-2022 FTWC Inspection	8/9/2022
8-15-2022 - 8-21-2022 FTWC Inspection	8/16/2022
8-22-2022 - 8-28-2022 FTWC Inspection	8/23/2022
8-29-2022 - 9-4-2022 FTWC Inspection	8/30/2022
9-5-2022 - 9-11-2022 FTWC Inspection	9/6/2022
9-12-2022 - 9-18-2022 FTWC Inspection	9/13/2022
9-19-2022 - 9-25-2022 FTWC Inspection	9/20/2022
9-26-2022 - 10-2-2022 FTWC Inspection	9/27/2022
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11-7-2022 - 11-13-2022 FTWC Inspection	11/8/2022
11-14-2022 - 11-20-2022 FTWC Inspection	11/15/2022
11-21-2022 - 11-27-2022 FTWC Inspection	11/22/2022
11-28-2022 - 12-4-2022 FTWC Inspection	11/29/2022
12-5-2022 - 12-11-2022 FTWC Inspection	12/6/2022
12-12-2022 - 12-18-2022 FTWC Inspection	12/13/2022
12-19-2022 - 12-25-2022 FTWC Inspection	12/20/2022
12-26-2022 - 1-1-2022 FTWC Inspection	12/27/2022
01-02-23 - 01-08-23 FTWC Inspection	1/2/2023
01-08-24 - 1-14-24 FTWC Inspection	1/9/2023
01-09-23 - 01-15-23 FTWC Inspection	1/10/2023
01-16-23 - 01-22-23 FTWC Inspection	1/18/2023
01-23-23 - 01-29-23 FTWC Inspection	1/24/2023
02-06-23 - 02-12-23 FTWC Inspection	2/7/2023
02-13-23 - 02-19-23 FTWC Inspection	2/16/2023
02-20-23 - 02-26-23 FTWC Inspection	2/21/2023
02-27-23 - 03-05-23 FTWC Inspection	2/28/2023

03-06-23 - 03-12-23 FTWC Inspection	3/4/2023
03-13-23 - 03-19-23 FTWC Inspection	3/15/2023
03-20-23 - 03-26-23 FTWC Inspection	3/21/2023
03-27-23 - 04-02-23 FTWC Inspection	3/28/2023
04-03-23 - 04-09-23 FTWC Inspection	4/4/2023
04-10-23 - 04-16-23 FTWC Inspection	4/11/2023
04-17-23 - 04-23-23 FTWC Inspection	4/19/2023
04-24-23 - 04-30-23 FTWC Inspection	4/26/2023
05-01-23 - 05-07-23 FTWC Inspection	5/2/2023
05-08-23 - 05-14-23 FTWC Inspection	5/9/2023
05-15-23 - 05-21-23 FTWC Inspection	5/16/2023
05-22-23 - 05-28-23 FTWC Inspection	5/24/2023
05-29-23 - 06-04-23 FTWC Inspection	5/30/2023
06-05-23 - 06-11-23 FTWC Inspection	6/6/2023
06-12-23 - 06-18-23 FTWC Inspection	6/13/2023
06-19-23 - 06-25-23 FTWC Inspection	6/20/2023
06-26-23 - 07-02-23 FTWC Inspection	6/27/2023
7-3-2023 - 7-9-2023 FTWC Inspection	7/3/2023
7-10-2023 - 7-16-2023 FTWC Inspection	7/11/2023
7-17-2023 - 7-23-2023 FTWC Inspections	7/18/2023
7-24-2023 - 7-30-2023 FTWC Inspection	7/25/2023
7-31-2023 - 8-6-2023 FTWC Inspection	8/1/2023
8-7-2023 - 8-13-2023 FTWC Inspection	8/9/2023
8-14-2023 - 8-20-2023 FTWC Inspection	8/16/2023
8-21-2023 - 8-27-2023 FTWC Inspection	8/22/2023
8-28-2023 - 9-3-2023 FTWC Inspection	8/29/2023
9-4-2023 - 9-10-2023 FTWC Inspection	9/5/2023
9-11-2023 - 9-17-2023 FTWC Inspection	9/12/2023
9-18-2023 - 9-24-2023 FTWC Inspection	9/19/2023
9-25-2023 - 10-1-2023 FTWC Inspection	9/26/2023
10-2-2023 - 10-8-2023 FTWC Inspection	10/3/2023
10-9-2023 - 10-15-2023 FTWC Inspection	10/10/2023
10-16-2023 - 10-22-2023 FTWC Inspection	10/17/2023
10-23-2023 - 10-29-2023 FTWC Inspection	10/24/2023
10-30-2023 - 11-5-2023 FTWC Inspection	10/31/2023
11-6-2023 - 11-12-2023 FTWC Inspection	11/7/2023
11-13-2023 - 11-19-2023 FTWC Inspection	11/14/2023
11-20-2023 - 11-26-2023 FTWC Inspection	11/21/2023
11-27-2023 - 12-3-2023 FTWC Inspection	11/28/2023

12-4-2023 - 12-10-2023 FTWC Inspection	12/5/2023
12-11-2023 - 12-17-2023 FTWC Inspection	12/12/2023
12-18-2023 - 12-24-2023 FTWC Inspection	12/19/2023
12-25-2023 - 12-31-2023 FTWC Inspection	12/26/2023
01-01-24 - 01-07-24 FTWC Inspection	1/2/2024
01-15-24 - 01-21-24 FTWC Inspection	1/16/2024
01-22-24 - 01-28-24 FTWC Inspection	1/24/2024
01-29-24 - 02-04-24 FTWC Inspection	1/30/2024
02-05-24 - 02-11-24 FTWC Inspection	2/6/2024
02-12-24 - 02-02-18-24 FTWC Inspection	2/20/2024
02-19-24- 02-25-24 FTWC Inspection	2/28/2024
03-04-24 - 03-10-24 FTWC Inspection	3/5/2024
03-11-24 - 03-17-24 FTWC Inspection	3/12/2024
03-18-24 - 03-24-24 FTWC Inspection	3/19/2024
03-25-24 - 03-31-24 FTWC Inspection	3/26/2024
04-01-24 - 04-07-24 FTWC Inspection	4/2/2024
04-08-24 - 04-14-24 FTWC Inspection	4/9/2024
04-15-24 - 04-21-24 FTWC Inspection	4/16/2024
04-22-24 - 04-28-24 FTWC Inspection	4/23/2024
04-29-24 - 05-05-24 FTWC Inspection	4/30/2024
05-06-24 - 05-12-24 FTWC Inspection	5/7/2024
05-13-24 - 05-19-24 FTWC Inspection	5/14/2024
05-20-24 - 05-26-24 FTWC Inspection	5/22/2024
05-27-24 - 06-02-24 FTWC Inspection	5/28/2024
06-03-24 - 06-09-24 FTWC Inspection	6/4/2024
06-10-24 - 06-16-24 FTWC Inspection	6/11/2024
06-17-24 - 06-23-24 FTWC Inspection	6/18/2024
06-24-24 - 06-30-24 FTWC Inspection	6/25/2024
07-01-24 - 07-07-24 FTWC Inspection	7/2/2024
07-08-24 - 07-14-24 FTWC Inspection	7/9/2024
07-15-24 - 07-21-24 FTWC Inspection	7/16/2024
07-29-24 - 08-04-24 FTWC Inspection	7/30/2024
8-5-2024 8-11-2024 FTWC Inspection	8/6/2024
8-12-2024 8-18-2024 FTWC Inspection	8/13/2024
8-19-2024 8-25-2024 FTWC Inspection	8/22/2024
8-26-2024 9-1-2024 FTWC Inspection	8/27/2024
9-2-2024 9-8-2024 FTWC Inspection	9/4/2024
9-9-2024 9-15-2024 FTWC Inspection	9/12/2024
9-23-2024 9-29-2024 FTWC Inspection	9/24/2024

9-30-2024 - 10-6-2024 FTWC Inspection	10/1/2024
10-7-2024 - 10-13-2024 FTWC Inspection	10/8/2024
10-14-2024 - 10-20-2024 FTWC Inspection	10/15/2024
10-21-2024 - 10-27-2024 FTWC Inspection	10/22/2024
10-28-2024 - 11-03-2024 FTWC Inspection	10/29/2024
11-04-2024 - 11-10-2024 FTWC Inspection	11/5/2024
11-11-2024 - 11-17-2024 FTWC Inspection	11/12/2024
11-18-2024 - 11-24-2024 FTWC Inspection	11/19/2024
11-25-2024 - 12-01-2024 FTWC Inspection	11/26/2024
12-02-2024 - 12-08-2024 FTWC Inspection	12/3/2024
12-09-2024 - 12-15-2024 FTWC Inspection	12/12/2024
12-16-2024 - 12-22-2024 FTWC Inspection	12/17/2024
12-23-2024 - 12-29-2024 FTWC Inspection	12/23/2024
12-30-2024 - 01-05-2025 FTWC Inspection	12/31/2024
1-06-2025 - 1-12-2025 FTWC Inspection	1/7/2025
1-13-2025 - 1-19-2025 FTWC Inspection	1/14/2025
1-20-2025 - 1-26-2025 FTWC Inspection	1/22/2025
01-27-2025 - 02-02-2025 FTWC Inspection	1/28/2025
02-03-2025 - 2-09-25 FTWC Inspection	2/4/2025
02-10-2025 - 02-16-2025 FTWC Inspection	2/12/2025
02-17-2025 - 02-23-2025 FTWC Inspection	2/18/2025
02-24-2025 - 03-02-2025 FTWC Inspection	2/25/2025
3-3-2025 - 3-9-2025 FTWC Inspection	3/4/2025
3-10-2025 - 3-16-2025 FTWC Inspection	3/12/2025
3-17-2025 - 3-23-2025 FTWC Inspection	3/19/2025
3-24-2025 - 3-30-2025 FTWC Inspection	3/25/2025
3-31-2025 - 4-6-2025 FTWC Inspection	4/1/2025
4-7-2025 - 4-13-2025 FTWC Inspection	4/8/2025
4-7-2025 - 4-13-2025 FTWC Inspection	4/8/2025
4-14-2025 - 4-20-2025 FTWC Inspection	4/15/2025
4-21-2025 - 4-27-2025 FTWC Inspection	4/22/2025
05-05-2025- 05-11-2025 FTWC Inspection	5/6/2025
05-12-2025 - 05-18-2025 FTWC Inspection	5/13/2025
05-19-2025 - 05-25-2025 FTWC Inspection	5/20/2025
05-26-2025 - 06-1-2025 FTWC Inspection	5/27/2025
06-02-2025 - 06-08-2025 FTWC Inspection	6/3/2025
06-09-2025 - 06-15-2025 FTWC Inspection	6/10/2025
06-16-2025 - 06-22-2025 FTWC Inspection	6/17/2025
06-23-2025 - 06-29-2025 FTWC Inspection	6/24/2025

6-23-2025 - 6-29-2025 FTWC Inspection	6/24/2025
06-30-2025 - 07-6-2025 FTWC Inspection	7/2/2025
2016-11 Extension alternative inspections Area G ESHID-601954	11/8/2016
2017-04 Baseline Report alternative inspections Area G ESHID-602287	4/6/2017
2018-03 Final Quarterly Report Alternative Inspection ESHID-602939	3/8/2018
IMG_0727, Photo of Label on Container C09203613	Undated
IMG_0729, Photo of Label on Container C09203612	Undated
IMG_0730, Photo of Label on Container C09203614	Undated
IMG_0731, Photo of Label on Container C09203611	Undated
Current Hazardous Waste Label	8/8/2025
N3B-SO-TRU-4022-R3-Area-G-MLLW-FTWC-Venting-and-Handling-Emergency-Response-R2A2s-FINAL	3/6/2025
N3B-SO-TRU-4023-R4-Area-G-MLLW-FTWC-Venting-and-Handling-Operations-Support-Org-R2A2s-FINAL	4/21/2025
N3B-SO-TRU-4026-R1-Area-G-MLLW-FTWC-Venting-and-Handling_Fire-Protection-FINAL	4/4/2025
N3B-SO-TRU-4055, FTWC Access and Work Evaluation Requirements	11/3/2023
Training	
N3B printout of training	7/30/2025
Permit and Related Documents	
2003-06 TA-54 Part B Application LA-UR-03-3579	6/1/2003
2003-08 General Part B Application LA-UR-03-5923	8/1/2003
March 2010 Permit Full	3/17/2006
1994-03 Final FFCO 1684	3/22/1994
2010-11 RCRA Permit 34162	11/30/2010
LANL_Permit_Attachment_D_January_2024, Contingency Plan	1/1/2024
IMG_0522, Photo of contingency Plan Location	Undated
Pad 5 Map and Contingency Plan Location	Undated
2021 Biannual Report For LANL	2/28/2022
EPC-DO-24-024 Transmittal CY 2023 Hazardous Waste Biennial Report FINAL	2/26/2024
3-29-23_EMID-702648_N3B-2023-0093_FY22_STP_Annual_Update_Prop_Rev33_032923-1	3/29/2023
Approval STP Annual Update and Revision 34.0_6-17-2024-1.pdf cmt	6/17/2024
STP Annual Update and Revision 34.0 Submittal and Approval	6/17/2024
2009-03 FY 2008 STP 31439	3/30/2009
2009-04 Email discussion of resubmittal FY 2008 STP 31509	4/22/2009
2009-05 Resubmittal of FY 2008 STP with MA0W934 add 31553	5/20/2009
2009-09 NOD FY 2008 STP Rev 19 32013	9/16/2009
2009-10 Response to NOD FY 2008 32094	10/9/2009
2009-10 Response to NOD STP FY 2008 Rev 19 32094	10/9/2009
2010-02 NMED Annual Update for FY 2008 approval 33215	9/30/2009

2010-02 Published FY 2008 STP Rev 19 33025	2/5/2010
2010-03 Extension Request for STP FY 2009 Rev 20 33328	3/18/2010
2010-03 STP Update FY 2009 Rev 20 33356	3/31/2010
2010-04 Summary of Correspondence for LA-W934 33431	4/8/2010
2010-06 NOD STP 2009 Update Rev 20 33642	6/3/2010
2010-07 Response to NOD of the STP SY 2009 Rev 20 33765	6/30/2010
2010-11 NMED Rec 20 STP FY 2009 34103	11/8/2010
2011-03 STP FY 2010 Update and Proposed Rev 21 34440	3/31/2011
2011-06 Resubmittal of STP FY 2010 Update and Proposed Rev 21 34586	6/10/2011
2011-09 NOD DTP FY 2010 Update Rev 21 34766	10/21/2011
2011-10 Response to NOD STP FY 2010 Rev 21 34849	10/7/2011
2012-03 NMED Rev 21 Annual Update STP 35143	3/21/2012
2012-03 STP FY 2011 Update and Proposed Rev 22 35146	3/30/2012
2012-09 Disapproval of STP FY 2011 and Rev 22 35487	9/18/2012
2012-10 Response NOD STP FY 2011 Rev 22 35538	10/17/2012
2012-12 NMED Rev 22 Annual STP 35639	12/10/2012
2013-03 STP FY 2012 and Proposed Rev 23 35786	3/27/2013
2012 -12 NMED STP Rev 36122	9/4/2013
2013-12 Disapproval STP FY 2012 and Rev 23 36122	12/9/2013
2013-12 Request to Extend Compliance Date LA-W934 36098	12/20/2013
2014-01 Approval Extension STP FY 2011 36141	1/6/2014
2014-02 Response to NOD STP FY 2012 Rev 23 36242	2/10/2014
2014-06 STP SY 2013 and Proposed Rev 24 36337	6/9/2014
2015-03 STP FY 2014 and Proposed Rev 25 36976	3/31/2015
2015-08 Disapproval STP FY 2024 Rev 25 37251	8/26/2015
2015-09 Response NOD STP FY 2014 Rev 25 37293	9/24/2015
2016-03 STP FY 2015 and Proposed Rev 26 37516	3/31/2016
2016-05 disapproval STP FY 2015 Rev 26 37615	5/18/2016
2016-09 Response to NOD STP SY 2015 Rev 26 37696	9/29/2016
2017-01 NMED STP Rev 26 37869	1/30/2017
2017-03 Approval extension alternative inspections Area G ESHID-602231	3/8/2017
2017-03 Request for extension alternative inspections Area G ESHID-602223	3/8/2017
2017-03 STP FY 2016 and Proposed Rev 27 37960	3/30/2017
2017-04 Baseline Report alternative inspections Area G ESHID-602287	4/6/2017
2017-07 July 2017 Quarterly Report--Alternative Inspections ESHID-602497	7/6/2017
2017-09 NMED STP Approved Rev 27 38231	9/15/2017
2017-10 Quarterly Report--Alternative Inspections ESHID-602691	10/19/2017
2018-01 Quarterly Report--Alternative Inspections ESHID-602810	1/5/2018
2018-05 STP FY 2017 and Proposed Rev 28 38447 (2)	5/31/2018

2018-05 STP FY 2017 and Proposed Rev 28 38447	5/31/2018
2018-06 Approval Extension Compliance Date 38518	7/9/2018
2018-06 Extension of Compliance Date STP FY 2017 Rev 28 38511	6/28/2018
2018-08 Approval Request for Resubmittal FY 2017 STO Rev 28 38581	8/27/2018
2018-08 resubmittal request FY 2017 STP Rev 28 38576	8/23/2018
2018-10 Resubmittal STP FY 2017 and Proposed Rev 28 38613	10/30/2018
2018-12 Disapproval Resubmittal STP 2017 Annual Update Rev 28 38722	12/6/2018
2019-01 Response Disapproval STP FY 2017 Rev 28 38753	1/10/2019
2019-03 Resubmittal STO FY 2017 Rev 28 38826	3/7/2019
2019-04 Disapproval Resubmittal STP FY 2017 Annual Update Rev 28 38864	4/9/2019
2019-05 Response Disapproval SSTP FY 2017 rev 28 38906	5/9/2019
2019-06 Request for Temporary Authorization ESHID-603429	6/18/2019
2019-07 Fee Assessment Temporary Authorization ESHID-603455	7/11/2019
2019-08 NMED Approval STP FY 2017 Rev 28 39071	8/20/2019
2020-04 NMED Approval STP FY 2018 Rev 29 39350	4/9/2020
2020-06 Demand for Penalty FFCO LANL 39392	6/5/2020
2020-06 Submittal STP FY 2019 and Proposed 30 39412	6/22/2020
2020-09 Approval STP FY 2019 Annual Update and Rev 30 39495	9/22/2020
2021-03 STP FY 2020 and Proposed Rev 31 39647	3/29/2021
2021-07 Approval of STP FY 2020 Rev 31 39718	7/12/2021
2022-03 STP FY 2021 update and Proposed Rev 32 39942	3/24/2022
2022-08 Approval with Mods STP FY 2021 Rev 32 EMID-702245	8/4/2022
2023-03 STP FY 2022 Update and Proposed Rev 33 40347	3/29/2023
2023-06 Public Outreach FTWCs ESHID-603806	6/6/2023
2023-08 Approval STP FY 2022 Annual Update Rev 33 40485	8/9/2023
2024-03 STP FY 2023 Annual and Proposed Rev 34 40704	3/19/2024
2024-06 Approval STP FY 2023 Rev 34 40915	6/17/2024
2025-03 EMID-703770, N3B-2025-0002, FY24 STP Annual Update Prop Rev35 033135	3/31/2025
Transportation	
115995 R-EPA-540, Hazardous Waste Manifest	2/19/2025
116109 R-EPA-540, Hazardous Waste Manifest	3/24/2025
116141 R-EPA-540, Hazardous Waste Manifest	3/13/2025
116144 R-EPA-540, Hazardous Waste Manifest	3/13/2025
116286 R-EPA-540, Hazardous Waste Manifest	5/8/2025
116400 R-EPA-540, Hazardous Waste Manifest	4/29/2025
116500 R-EPA-540, Hazardous Waste Manifest	5/12/2025
116540 R-EPA-540, Hazardous Waste Manifest	5/22/2025
116546 R-EPA-540, Hazardous Waste Manifest	5/22/2025
116588-R-EPA-540, Hazardous Waste Manifest	6/12/2025

116663 R EPA-540_541, Hazardous Waste Manifest	6/23/2025
FSD-P409-0300 Waste Characterization and Compatibility Procedure	5/19/2021
MLLW FTWC NRC and DOT Evaluation 09.14.21	9/14/2021
TP-P409-0700 Onsite Waste Management Field Tasks Procedure	9/9/2024
TP-P409-0701 Preparing and Shipping Waste Material Offsite Procedure	2/25/2025



Attachment 2: Audit Checklist

Section	Verification Method/LOI	Assessment/Summary	Result
1.0 Waste Identification and Classification			
1.1	Review documentation provided by Triad. Assess how the FTWCs were determined to be hazardous and how they were assigned to waste streams.	<p><u>Documents Reviewed:</u> Documentation as noted in Attachment 1, Characterization.</p> <p><u>Personnel Contacted:</u> Document review only.</p> <p><u>Findings and Observations:</u> None</p> <p><u>Comments:</u></p> <ul style="list-style-type: none"> • D008 determination made by TCLP for the fired squib switches. • LANL provided justification for why D001 or D003 do not apply due to hydrogen being above the LFL or the container pressurization, this position was also provided to NMED 9/29/21. 	Hazardous waste determination is correct based on the information reviewed, and the waste is assigned a D008 code.
1.2	Review documentation provided by Triad. Assess how the FTWC waste stream is classified and assigned EPA hazardous waste numbers.	<p><u>Documents Reviewed:</u> Documentation as noted in Attachment 1, Characterization.</p> <p><u>Personnel Contacted:</u> Document review only.</p> <p><u>Findings and Observations:</u> No findings.</p> <p>Observation 01- WCATS Printout 35717R0.waste_stream_profile has an expiration date of 10/01/2111, obvious typographical error.</p> <p>Observation 02- WCATS Printout 8607R0.waste_stream_profile had a comment made on 10/22/10 about D009 (Mercury), but there is no other information indicating mercury is present in this waste stream.</p> <p><u>Comments:</u></p>	The final waste stream was properly assigned the D008 code.

Section	Verification Method/LOI	Assessment/Summary	Result
		<ul style="list-style-type: none"> D008 determination made by TCLP for the fired squib switches. Documentation provided included proof that the squibs were fired and do not contain other hazardous materials. Waste streams were assigned to the fired squib switches and the FTWCs separately. When the waste streams were combined a new waste stream was created and since this is not treatment for D008, the code carried to the final waste stream. 	
1.3	Review documentation provided by Triad. Assess how the records of waste analysis, process knowledge/ Acceptable Knowledge and related information are maintained and updated as needed.	<p><u>Documents Reviewed:</u> Documentation as noted in Attachment 1, Characterization.</p> <p><u>Personnel Contacted:</u> Document review only.</p> <p><u>Findings and Observations:</u> None</p> <p><u>Comments:</u></p> <ul style="list-style-type: none"> Pertinent documents are assigned document numbers and are in the LANL document control system. Characterization data is also in WCATS and printouts indicate running comment and editorial record. 	Document control processes appear adequate.
2.0 Waste Generation and Accumulation			
2.1	Review hazardous waste permit. Verify that LANL is a Large Quantity Site and has an EPA ID#.	<p><u>Documents Reviewed:</u> RCRA permit, see Attachment 1, Permit and Related Documents.</p> <p><u>Personnel Contacted:</u> Document review only.</p> <p><u>Findings and Observations:</u> None</p> <p><u>Comments:</u> None</p>	LANL is a Large Quantity Site and has an EPA ID#, NM0890010515

Section	Verification Method/LOI	Assessment/Summary	Result
2.2	<p>Review documentation provided by Triad, including historic documentation of self-assessment, external assessments, and NOVs.</p> <p>Conduct a visit to the storage area. Assess how the FTWC hazardous waste containers are stored and managed. This includes compatibility, closure, labeling, aisle spacing, condition, and inspections.</p>	<p><u>Documents Reviewed:</u> Self-assessments, external assessments, notices of violation (NOVs), and facility inspections as shown in Attachment 1, Compliance Information and FTWC Storage.</p> <p><u>Personnel Contacted:</u> None for document review.</p> <p>August 5, 2025 for on-site visit.</p> <p><u>Findings and Observations:</u> No findings</p> <p>Observations-</p> <ul style="list-style-type: none"> • Observation 03- TA-54 Shed 1028 has had a fire protection impairment since March 31, 2022. This cannot be repaired due to concerns with the FTWCs as documented in a standing order and safety evaluations. On August 5, 2025, the Assessment Team conducted a visual inspection of Shed 1028 and the FTWC's in storage during the weekly RCRA inspection. N3B has taken mitigative actions regarding the fire suppression system since the system is directly over the FTWCs and cannot currently be serviced. During daily rounds, the shed is visually inspected, the area is surveyed for combustibles, and the fire extinguisher is verified as in service and accessible. This is documented at the TA-54 Operations Center and WETF is notified each working day. Daily inspections are performed and logged. • Observation 04- The NMED labeling requirements changed in 2019 to add Hazardous Waste labels noting the characteristics of the waste as required by 40 CFR 262.17(a)(5) but due to the restrictions on disturbing the FTWCs unnecessarily, the new labels were not applied. NMED is aware of this condition and so no further action will be taken until the containers have the pressure relieved and are repackaged. Alternative RCRA inspections were in place between 2016 and 2022. Post additional, safety analysis standard RCRA inspection resumed. 	<p>The LANL hazardous waste management program is routinely assessed, and appropriate corrective actions are taken.</p>

Section	Verification Method/LOI	Assessment/Summary	Result
		<p><u>Comments:</u></p> <ul style="list-style-type: none"> Documents were reviewed spanning the period from 2007 to the present. Significant changes were made to the program after the 2014 WIPP incident and the number of self-identified and externally identified issues has fallen significantly since 2017 versus earlier periods. Multiple internal and external assessments have been conducted since 2014 to the present and corrective actions implemented. Trends and common factors were evaluated and findings and corrective actions from previous reports were reevaluated. During the COVID pandemic building inspections were truncated but emergency systems and monitoring continued to function. No upset conditions or facility issues were overlooked. 	
3.0 Personnel Training			
3.1	Review documentation provided by Triad and N3B. Assess training for personnel who handle and manage hazardous waste to ensure they receive initial and annual refresher training.	<p><u>Documents Reviewed:</u> Example training record as shown in Attachment 1, Training.</p> <p><u>Personnel Contacted:</u> Document review only.</p> <p><u>Findings and Observations:</u> None</p> <p><u>Comments:</u> Training appears appropriate for the position and nothing is past due.</p>	Training course list appears appropriate for position.
3.2	Review documentation provided by Triad and N3B. Assess maintenance and availability of training records.	<p><u>Documents Reviewed:</u> Example training record as shown in Attachment 1, Training.</p> <p><u>Personnel Contacted:</u> Document review only.</p> <p><u>Findings and Observations:</u> None</p>	N3B Training record is from an electronic system and easily accessible.

Section	Verification Method/LOI	Assessment/Summary	Result
		<p><u>Comments:</u> N3B electronic system, DevonWay© allows access to training records and details by employees and supervisory personnel. Triad uses a similar system, UTrain, which allows similar access.</p>	
4.0 Emergency Preparation and Prevention			
4.1	Review the contingency plan provided by Triad. Verify plan is current and reflects permit requirements.	<p><u>Documents Reviewed:</u> Contingency plan, see Attachment 1, Permit and Related Documents. Also available on NMED website.</p> <p><u>Personnel Contacted:</u> Document review only.</p> <p><u>Findings and Observations:</u> None</p> <p><u>Comments:</u> None</p>	The compliance plan is current, January 2024, and included in the permit.
4.2	Conduct a visit to the storage area. Assess the condition of emergency equipment including alarms, communication devices, fire extinguishers, eyewash stations, PPE, and spill control equipment.	<p><u>Documents Reviewed:</u> Weekly RCRA inspections, Operation Center daily logbook, WCATS waste profiles, laboratory results, TA-54 training records as shown in Attachment 1, Characterization, FTWC Storage,</p> <p><u>Personnel Contacted:</u> Program Director, EPC-WMP, Triad Team Leader ECP-CP, Triad Deputy CH TRU Program Manager, N3B Operations Center Manager, N3B</p>	FTWCs are compliantly stored per RCRA in the 1028 Storage Shed at TA-54

Section	Verification Method/LOI	Assessment/Summary	Result
		<p><u>Findings and Observations:</u> Discussed the fire suppression being out of service and mitigative actions including daily inspections on the trailer, area combustibles, and fire safety equipment.</p> <p><u>Comments:</u> Mitigations appear adequate.</p>	
4.3	Review documentation provided by Triad and N3B. Verify that personnel are trained in emergency response.	<p><u>Documents Reviewed:</u> Example training record, see Attachment 1, Training.</p> <p><u>Personnel Contacted:</u> Document review only.</p> <p><u>Findings and Observations:</u> None</p> <p><u>Comments:</u> None</p>	Training includes emergency response.
5.0 Recordkeeping and Reporting			
5.1	Review documentation provided by Triad and N3B. Verify that required records, such as manifests, inspection logs, training records, and waste analysis results, are maintained for the specified retention periods.	<p><u>Documents Reviewed:</u> Operating procedures and records management procedure for Triad as shown in Attachment 1.</p> <p><u>Personnel Contacted:</u> Document review only</p> <p><u>Findings and Observations:</u> None</p> <p><u>Comments:</u> Reviewed documentation and procedures. Procedures identify records generated and they are dispositioned in accordance with the records</p>	Records are stored for the required retention period.

Section	Verification Method/LOI	Assessment/Summary	Result
		management procedure. Records are kept in a central system Electronic Document & Records Management Service (EDRMS) and are retrievable.	
5.2	Review documentation provided by Triad and N3B. Verify that manifests are properly completed for off-site hazardous waste shipments	<p><u>Documents Reviewed:</u> Example manifests for shipment to WCS, see Attachment 1, Transportation</p> <p><u>Personnel Contacted:</u> Document review only.</p> <p><u>Findings and Observations:</u></p> <ul style="list-style-type: none"> Finding 01- manifest 116588-R-EPA-540, transport company not identified, and EPA number not noted in block 6. The transporter is properly identified on Form 540. This is a violation of 40 CFR 262 Appendix, which is a violation of 20.4.1.300 NMAC, incorporating 40 CFR 262.21. Observation 05- manifest 116546 R-EPA-540, transporter dated the manifest as 5/22/22 versus 5/22/25. <p><u>Comments:</u></p> <ul style="list-style-type: none"> Sample manifests were provided, and the generator, transporter and receiver EPA IDs were verified to be correct and current. One finding and one observation was noted. The site is transitioning to the eManifest system, once implemented, these errors will not occur as the pertinent information will be entered on the manifest automatically. The Triad off-site transportation function is undergoing an internal assessment from the Logistics, Packaging, and Transportation Group, the results of that assessment were not complete, but this practice is indicative of a robust assessment program supportive of identifying and correcting issues and supports continuous improvement. 	Manifests reviewed do communicate the required information to the transporter, the receiver, and emergency responders. Issues noted are administrative in nature.
5.3	Review documentation provided by Triad and N3B. Verify that exception reports are submitted when necessary.	<p><u>Documents Reviewed:</u> See Attachment 3</p> <p><u>Personnel Contacted:</u></p>	

Section	Verification Method/LOI	Assessment/Summary	Result
		<p>Program Manager, EPC-WMP, Triad Team Leader EPC-CP, Triad WM-DO, Triad Deputy CH TRU Program Manager, N3B Operations Manager, WFO-WETF, Triad Operations Center Manager, N3B</p> <p><u>Findings and Observations:</u> None</p> <p><u>Comments:</u> The only exceptions reviewed were those related to storage of the FTWCs in TA-54. These were properly reviewed and approved by procedure.</p>	
5.4	Review documentation provided by Triad and N3B. Verify Biennial Reports submitted in accordance with regulations.	<p><u>Documents Reviewed:</u> Biennial reports for 2021 and 2023 as shown in Attachment 1, Permit and Related Documents.</p> <p><u>Personnel Contacted:</u> Document review only.</p> <p><u>Findings and Observations:</u> None</p> <p><u>Comments:</u> Reports appear comprehensive and were submitted on time.</p>	Reports appear comprehensive and submitted in accordance with the permit.
5.5	Review documentation provided by Triad and N3B. Verify if other required notifications or reports submitted to regulatory agencies on time.	<p><u>Documents Reviewed:</u> Documents shown in Attachment 1, Permit and Related Documents.</p> <p><u>Personnel Contacted:</u> Document review only.</p> <p><u>Findings and Observations:</u> None</p>	Some instances of late or non-reporting in the data provided, but no instances identified since 2019.

Section	Verification Method/LOI	Assessment/Summary	Result
		<p><u>Comments:</u> Reviewed NOV and self-reporting history back to 2011 as provided by Triad. There are some instances of non-reporting, the latest being in 2019, a hazardous waste characterization discrepancy, but there is no indication of any trend in reporting issues.</p> <p>Also reviewed the Triad procedure on official submittals and responses to and from the NMED. This procedure is a best management practice to consolidate the reporting requirements and provide step by step instructions to reduce the probability of non or late reporting.</p>	
6.0 Transportation and Disposal			
6.1	Review documentation provided by Triad and N3B. Verify that hazardous waste shipments are handled by licensed and permitted transporters and facilities.	<p><u>Documents Reviewed:</u> Transportation related documents, see Attachment 1, Transportation.</p> <p><u>Personnel Contacted:</u> Group Leader Waste Management Services</p> <p><u>Findings and Observations:</u> None</p> <p><u>Comments:</u> Sample manifests were provided, and the generator, transporter and receiver EPA IDs were verified to be correct and current. There was one instance there the transporter was not identified (Finding 01) in Section 5.2.</p>	Shipments reviewed were transported by properly permitted transporters to a licensed and permitted TSDF.
6.2	Review documentation provided by Triad and N3B. Verify that proper packaging and labeling is used for hazardous waste during transport, in accordance with DOT and other regulations.	<p><u>Documents Reviewed:</u> Transportation related documents, see Attachment 1, Transportation.</p> <p><u>Personnel Contacted:</u> Group Leader Waste Management Services</p> <p><u>Findings and Observations:</u> None</p>	Packaging used is appropriate for the waste shipped and labeling is compliant.

Section	Verification Method/LOI	Assessment/Summary	Result
		<p><u>Comments:</u> Reviewed shipping procedures, manifests, and labeling. The site takes pictures of the container labels, seals, and shipment placarding before shipment. This is a noteworthy practice.</p>	
6.3	Review documentation provided by Triad and N3B. Verify Land Disposal Restrictions (LDR) documentation and compliance certifications in place and accurate.	<p><u>Documents Reviewed:</u> LDR forms and shipping procedures as shown in Attachment 1.</p> <p><u>Personnel Contacted:</u> Group Leader Waste Management Services, Triad</p> <p><u>Findings and Observations:</u> None</p> <p><u>Comments:</u> None</p>	LDR forms are properly completed
7.0 Other			
7.1	Review documentation provided by Triad and N3B. Verify if recent changes in processes or procedures could affect hazardous waste management.	<p><u>Documents Reviewed:</u> Documents as shown in Attachment 1.</p> <p><u>Personnel Contacted:</u> Document review only.</p> <p><u>Findings and Observations:</u> <u>None</u></p> <p><u>Comments:</u> Process and procedures currently in place do not have planned changes that will negatively impact hazardous waste management.</p>	
7.2	Review documentation provided by Triad and N3B. Assess effectiveness of internal audit programs and	<p><u>Documents Reviewed:</u> Procedures and audit and assessment results as noted in Appendix 1, Permit and Related Documents and Compliance Information</p>	Internal and external audit and assessment programs are in place effective.

Section	Verification Method/LOI	Assessment/Summary	Result
	corrective actions taken for identified deficiencies.	<p><u>Personnel Contacted:</u> Document review only.</p> <p><u>Findings and Observations:</u> <u>None</u></p> <p><u>Comments:</u> Documents reviewed indicate a comprehensive system of internal and external audits and assessments supportive of a process of continual improvement. Several assessments looked at the root causes of recurrence of issues and the incidence of recurrence has decreased, especially since 2017.</p>	
7.3	Review documentation provided by Triad and N3B. Assess communication channels and procedures for hazardous waste-related matters.	<p><u>Documents Reviewed:</u> Transportation procedures, contingency plan, hazardous waste permit, and communications procedure as shown in Attachment 1, also see item 5.5.</p> <p><u>Personnel Contacted:</u> Group Leader Waste Management Services</p> <p><u>Findings and Observations:</u> None</p> <p><u>Comments:</u> Communication requirements are identified in the reviewed documents. Previous assessments do not indicate communications issues. The site emergency management functions were not reviewed.</p>	Communications channels appear effective and reporting on hazardous waste related matters appears timely and effective.



Attachment 3: Audit Plan
Audit Plan
Audit No. Triad WR12 T16 A

Audited Organization(s)

Triad and N3B

Audit Scope and Activities to be Audited

This audit will assess the adequacy of the hazardous waste programs implemented by Triad and N3B specifically as they apply to the four (4) Flanged Tritium Waste Containers (FTWC) currently stored on Pad 5 at Technical Area-54. It will assess the cradle to grave management of this hazardous waste and include:

- Waste Identification and Classification
- Waste Generation and Accumulation
- Personnel Training
- Emergency Preparedness and Prevention
- Recordkeeping and Reporting
- Transportation and Disposal

Audit Schedule

FTWC Hazardous Waste Compliance Audit			
Item	Party	Start	End
Entrance Meeting	All	7/29/25	
First Day for New Documents to be provided	Triad	7/29/25	
Last Day for New Documents to be provided	Triad		8/5/25
Review Documents	L&A	7/29/25	8/11/25
Identify Desired Interviews	L&A	7/29/25	8/8/25
Conduct Desired Interviews	All	7/31/25	8/11/25
Prepare Draft Report	L&A	8/8/25	8/12/25
Factual Accuracy Review	Triad	8/12/25	8/13/25
Incorporate Comments	All	8/13/25	8/15/25
Final Report	L&A		8/15/25

Requirements and Applicable Documents

- Hazardous Waste Management Regulations, 20.4.1 NMAC
- Los Alamos National Laboratory Hazardous Waste Permit
- DOE Order 435.1, *Radioactive Waste Management*

Audit Personnel

Team Member	Roles
Pete Carson	Lead Auditor, Program Manager, SME LANL Waste, Reviewer, Author
Rene Echols	SME Waste Management, SME Regulatory Analysis, Reviewer, Author
John McCoy	SME Waste Management, SME Regulatory Analysis, Reviewer, Author
Brian McDaniel	SME on Squib Valves, Regulatory Analysis of Squib Valves, Reviewer, Author
Mark Senderling	SME Regulatory Analysis, Reviewer. Author
Ryan Hill	Technical Writer
Amanda Montoya	Administrative Support

Audit Lines of Inquiry

1. Waste Identification and Classification
 - a. How are waste streams identified and determined to be hazardous?
 - b. Are all hazardous waste streams properly categorized and assigned EPA hazardous waste codes?
 - c. Are records of waste analysis or process knowledge maintained and updated as needed?
2. Waste Generation and Accumulation
 - a. Is LANL a Large Quantity Site and does it have an EPA ID# ?
 - b. Are hazardous waste containers properly stored and managed?
 - c. Compatible with waste contents?

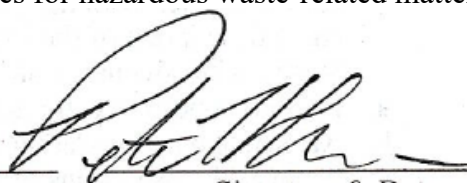
- d. Containers tightly closed and latched (unless actively adding or removing waste)?
 - e. Clearly labeled with the words "Hazardous Waste," the accumulation start date, and a description of the hazards in the container?
 - f. Stored with adequate aisle space and segregated from incompatible wastes?
 - g. In good condition without leaks, stains, or deterioration?
 - h. Are satellite accumulation area requirements met?
 - i. Are weekly inspections of hazardous waste storage areas conducted and documented?
- 3. Personnel Training
 - a. Do all employees who handle or manage hazardous waste receive initial and annual refresher training?
 - b. Are training records maintained and readily available for inspection?
- 4. Emergency Preparedness and Prevention
 - a. Is there a contingency plan in place and up to date?
 - b. Is emergency equipment, including alarms, communication devices, fire extinguishers, and spill control equipment, available and in good working condition?
 - c. Are personnel trained in emergency procedures and are emergency response procedures included in the training plan?
 - d. Are adequate eyewash stations and personal protective equipment (PPE) readily available where hazardous waste is handled?
- 5. Recordkeeping and Reporting
 - a. Are all required records, such as manifests, inspection logs, training records, and waste analysis results, maintained for the specified retention periods?
 - b. Are manifests properly completed for all off-site hazardous waste shipments?
 - c. Are exception reports submitted when necessary?
 - d. Are Biennial Reports submitted in accordance with regulations?
 - e. Are any other required notifications or reports submitted to regulatory agencies on time?
- 6. Transportation and Disposal
 - a. Are hazardous waste shipments handled by licensed and permitted transporters and facilities?
 - b. Are proper packaging and labeling used for hazardous waste during transport, in accordance with DOT and other regulations?
 - c. Are Land Disposal Restrictions (LDR) documentation and compliance certifications in place and accurate?
- 7. Other Items
 - a. Any recent changes in processes or procedures that could affect hazardous waste management?
 - b. Effectiveness of internal audit programs and corrective actions taken for identified deficiencies?

c. Communication channels and procedures for hazardous waste-related matters.

Leader Auditor:

Pete Carson

Name

 7/29/25

Signature & Date