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Los Alamos National Laboratory Federal Facility Compliance Order Annual Site Treatment Plan Update for Fiscal Year 2022, Revision 33.0

N3B Los Alamos

Los Alamos NATIONAL LABORATORY EST. 1943

DEPARTMENT OF ENERGY EM-LA ENVIRONMENTAL MANAGEMENT LOS ALAMOS

NNSA

CONTENTS

TABLES

ACRONYMS

40 CFR	Title 40 of the Code of Federal Regulations
AMWTP	Advanced Mixed Waste Treatment Plant
CCA	Compliance Certification Application
CMR	Chemistry and Metallurgy Research (Building)
CP	Compliance Plan
CVD	Confinement Vessel Disposition (Project)
DOE	U.S. Department of Energy
DOE EM	U.S. Department of Energy Environmental Management
DSA	documented safety analysis
EM	Environmental Management
EM-LA	Environmental Management Los Alamos Field Office (DOE)
EPA	U.S. Environmental Protection Agency
ER	Environmental Restoration
FFCA	Federal Facility Compliance Act
FFCO	Federal Facility Compliance Order
FTWC	flanged tritium waste container
FY	fiscal year
HWA	Hazardous Waste Act
HWB	Hazardous Waste Bureau
HWN	hazardous waste number
IPA	industrial isopropyl alcohol
INL	Idaho National Laboratory
LANL	Los Alamos National Laboratory
LANS	Los Alamos National Security, LLC
LDR	Land Disposal Restrictions (RCRA)
LLW	low-level waste
LWAA	Land Withdrawal Act Amendments
MLLW	mixed low-level waste
MTRU	mixed transuranic (waste)
MWIR	Mixed Waste Inventory Report

N3B	Newport News Nuclear BWXT-Los Alamos, LLC
NA-LA	National Nuclear Security Administration Los Alamos Field Office (DOE)
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NNSA	National Nuclear Security Administration (DOE)
PCB	polychlorinated biphenyl
RCRA	Resource Conservation and Recovery Act
STP	Site Treatment Plan
SWB	standard waste box
TA	Technical Area
TBD	to be determined
TBV	to be verified
Triad	Triad National Security, LLC
TRU	transuranic (waste)
TSCA	Toxic Substances Control Act
TWF	Transuranic Waste Facility
UC	University of California
WCRRF	Waste Characterization, Reduction, and Repacking Facility
WCATS	Waste Compliance and Tracking System
WCS	Waste Control Specialists, LLC
WETF	Weapons Engineering Tritium Facility
WIPP	Waste Isolation Pilot Plant

INTRODUCTION

On October 6, 1992, Congress passed the Federal Facility Compliance Act (FFCA) to address compliance by the U.S. Department of Energy (DOE) with the Land Disposal Restrictions (LDR) for the storage of mixed waste set forth in Section 3004(j) of the Resource Conservation and Recovery Act (RCRA). The FFCA requires DOE to submit a Site Treatment Plan (STP) for developing treatment capacities and technologies to treat all of the facility's mixed waste, regardless of the time generated, to the standards promulgated pursuant to Section 3004(m) of the RCRA. The FFCA provides that the appropriate regulatory authority, the New Mexico Environment Department (NMED), may approve, approve with modifications, or disapprove the submittal of the STP. Prior to making such a determination, the FFCA requires NMED to provide public notice, consider public comments, and consult with the U.S. Environmental Protection Agency (EPA) and any other state in which a facility affected by the STP is located.

On October 4, 1995, NMED issued a Federal Facility Compliance Order (FFCO) to DOE and the management and operating contractor, the University of California (UC) Regents. On June 1, 2006, Los Alamos National Security, LLC (LANS) replaced UC as operating contractor of Los Alamos National Laboratory (LANL). LANS then assumed responsibility for FFCO compliance. On April 30, 2018, Newport News Nuclear BWXT-Los Alamos, LLC (N3B) became the prime contractor for the DOE Environmental Management Los Alamos Field Office (EM-LA), and is responsible for LANL site-wide cleanup as well as waste management and shipping of legacy STP and remediation wastes at Technical Area 54 (TA-54), Areas G and L. Per the LANS/N3B Service Agreement/Work Authorizations signed April 30, 2018, N3B became the lead contractor for FFCO compliance. As of November 1, 2018, Triad National Security, LLC (Triad) became the new prime contractor for DOE National Nuclear Security Administration Los Alamos Field Office (NA-LA), replacing LANS. Triad is responsible for the mixed-waste management reporting in those areas managed by Triad.

At present, N3B is responsible for all quarterly and annual FFCO STP reporting requirements, working closely with Triad to fulfill FFCO requirements for all LANL STP requirements. N3B and Triad, as well as EM-LA and NA-LA, will collectively be referred to as "the Respondents."

The FFCO requires the Respondents to implement an STP for the treatment of mixed waste at LANL. The STP is intended to fulfill the FFCA requirements and establish an enforceable framework to allow the Respondents to achieve full compliance with LDR requirements under the New Mexico Hazardous Waste Act (HWA) and RCRA. The compliance dates set forth in the STP are enforceable time periods in which Respondents are required to treat or otherwise meet the requirements set forth for LDR under the HWA and RCRA.

On March 31, 1995, DOE submitted its proposed STP, which addressed treatment capacities and technologies to treat all of LANL's mixed waste, regardless of the time it was generated, to NMED. On April 17, 1995, the public was provided an opportunity to comment to NMED on DOE's draft STP. After considering public comment and otherwise complying with the FFCA, NMED approved the draft STP with modifications on October 4, 1995.

Section VII of the FFCO requires the Respondents to submit an Annual STP Update (Annual Update) to NMED each year on or before March 31. The FFCO requires that the Annual Update bring the information in both the Background and the Compliance Plan (CP) current to the end of the previous federal fiscal year (FY). Part I of this Annual Update constitutes the update to the Background. Part II contains the changes that have occurred since the last Annual Update and also identifies proposed revisions and amendments to the CP. Part III incorporates the changes in Part II into the proposed CP revision (Revision 33.0).

PART I BACKGROUND UPDATE

1.0 INTRODUCTION

The Background (Part I) provides the following information.

- The estimated volume of covered waste in storage at the end of the previous FY and anticipated to be placed in storage for the next five FYs.
- A progress report from the end of the previous federal FY describing treatment progress and treatment technology development for each treatment facility and activity scheduled in the STP.
- A description, if applicable, of current or anticipated alternative treatment technology that is being evaluated for use instead of treatment technologies or capacities identified in the STP.
- A description of DOE's funding for STP-related activities and any funding issues that may affect the schedule.
- The status of the "No-Migration Variance Petition" or any treatability variances.
- A progress report on characterization and/or treatment capabilities or plans for mixed transuranic (MTRU) waste related to the waste treatment standards, if any, for the DOE Waste Isolation Pilot Plant (WIPP) facility near Carlsbad, New Mexico.

The STP-covered waste inventory is verified during quality control activities. Inconsistencies in treatability group or volume between the original inventory and the current inventory may exist. These inconsistencies are reconciled within the Annual Update. In an effort to correct these inconsistencies and streamline the STP reporting process, the Respondents will work on incorporating the STP report data function utilizing the Waste Compliance and Tracking System (WCATS).

2.0 AMOUNT OF EACH COVERED WASTE STORED AT LANL

2.1 Mixed Low-Level Waste Inventory

During FY 2022 the STP-covered mixed low-level waste (MLLW) inventory decreased from 152.808 m^3 to 97.712 m^3. This decrease was due to off-site shipments of 67.624 m^3. There were also contributions from administrative adjustments of 6.382 m^3 and new covered waste of 6.146 m^3. Table 2.1-1 summarizes changes to the estimated FY 2022 STP-covered MLLW inventory.

The transuranic (TRU)/MTRU recharacterization process will continue to produce 10-100 nCi/g waste (LA-W935). The TRU/MTRU recharacterization process was due to a backlog of waste as a result of previous shipping pauses, limited shipments to WIPP, and past restrictions on-site at TA-54, Areas G and L. These restrictions delayed the final confirmation, characterization, certification, and shipment for off-site treatment and disposal of these containers.

Appendix A provides the detailed changes to the previous year's STP-covered MLLW inventory by treatability group, which includes the inventory for N3B in Appendix A, Table A-1, and the inventory for Triad in Table A-2. Appendix B, Table B-1, lists the current year's MLLW shipments. Administrative adjustments to the MLLW inventory are categorized in Appendix C, Table C-1, for the N3B-managed inventory and Table C-2 for the Triad-managed inventory. The MLLW inventory reported in the previous Annual Update is included as Appendix D, Table D-1, for N3B-managed inventory and Table D-2 for the Triad-managed inventory.

Table 2.1-1 STP-Covered MLLW Inventory Summary

Contribution	Volume (m^3)
N3B MLLW Inventory Reported in FY 2021	142.048
Triad MLLW Inventory Reported in FY 2021	10.760
Proposed Revision 33.0	
N3B New Covered Waste	5.938
Triad New Covered Waste	0.208
N3B Administrative Adjustments	3.886
Triad Administrative Adjustments	2.496
N3B Off-site Shipment	-54.368
Triad Off-site Shipment	-13.256
Off-site Treatment/Recycle	0
On-site Decontamination	0
Treatability Study Use	0
MLLW Inventory Reported in FY 2022 Annual Update	**97.712**

Note: Calculations have been rounded to three places after the decimal point.

2.2 Mixed Transuranic Inventory Summary

During FY 2022, STP-covered MTRU inventories decreased from 1501.474 m^3 to 1389.442 m^3. The decrease was due to shipments of 258.530 m^3 to WIPP. There were also contributions from administrative adjustment of 103.966 m^3 and new covered waste of 42.532 m^3.

Table 2.2-1 summarizes changes to the estimated FY 2022 MTRU STP-covered waste inventory. Appendix E contains additional detail for the MTRU inventory; Table E-1 covers the N3B inventory; Table E-2 covers the inventory for Triad; and Table E-3 covers the remaining original population of the Framework Agreement volume of STP-covered MTRU waste that is part of the "non-cemented above-ground Environmental Management (EM) Legacy TRU" (MTRU waste only). The Framework Agreement volume (discussed in Part 3, Section 4.0 of the CP) is now detailed in Table E-3; therefore, it is no longer summarized in Table E-1. Table E-3 is a subset of the data that was originally presented in Table E-1 as the volumes in Table E-3 do not contribute to the volumes in Table E-1. Separating the "Framework Agreement" volumes into individual tables allows a detailed representation in Table E-1 of the remaining MTRU volume on-site. Appendix F, Table F-1, provides a summary of MTRU shipments to WIPP. In Appendix G, Tables G-1, G-2, and G-3 describe the administrative adjustments that were made to resolve differences in the N3B inventory data, Triad inventory data, and Framework Agreement MTRU inventory data, respectively. More explanation of Table E-3 and Table G-3 is given in Part III, "Mixed Transuranic Waste," Section 4.0, Disposal.

Administrative adjustments typically represent the following types of activities:

- Respondents may correct database entries so that waste items not previously listed as STP waste are now identified and included as STP waste.
- Respondents may correct waste data, such as volume or EPA codes, through quality control activities. Under DOE Standards, waste that was formerly classified as MTRU because it had radioactivity greater than 10 nCi/g has been reclassified to MLLW (LA-W935) if its activity is less than 100 nCi/g.
- New analytical data may also require that waste streams previously managed as TRU waste should be reclassified and managed as MTRU waste.
- During repacking or other quality control activities, TRU waste may be recharacterized as MTRU waste when previously unidentified hazardous contents, such as lead, are determined to be present.
- During repacking, treatability groups are frequently reassigned to be consistent with current management and shipping criteria, to include intra-site transfer of containers between Triad and N3B.
- Containers of waste are occasionally determined not to belong to mixed waste streams and are reclassified as TRU waste; removal of WIPP-prohibited items, if they are the only hazardous constituent, will result in the remaining waste being classified as nonmixed.
- Addition or removal of 85-gallon overpacks changes the volume of waste in the inventory; rounding container volumes to three decimal places also changes the inventory volume.

Table 2.2-1 STP-Covered MTRU Inventory Summary

Contribution	Volume (m^3)
N3B MTRU Inventory Reported in FY 2021	1306.479
Triad MTRU Inventory Reported in FY 2021	194.995
Proposed Revision 33.0	
N3B New Covered MTRU Waste	2.918
Triad New Covered MTRU Waste	39.614
MTRU Waste Removed from Inventory (Shipped to WIPP)	-258.530
MTRU Inventory Volume Reported in FY 2021 at WCS (FY 2014 on Hold) is referenced in Appendix F, Table F-4.	NA
MTRU Waste Volume Shipped from WCS to WIPP in FY 2022 (FY 2014 on Hold) is referenced in Appendix F, Table F-2.	NA
MTRU Inventory Reported in FY 2022 at WCS (FY 2014 on Hold) is referenced in Appendix F, Table F-2 & F-4	NA
N3B Administrative Adjustments	122.080
Triad Administrative Adjustments	-18.114
MTRU Inventory Reported in FY 2022 Annual Update	**1389.442**

Note: Calculations have been rounded to three places after the decimal point.

Appendix G includes administrative adjustment changes to the MTRU waste inventory that resulted from repacking activities. MTRU waste volumes in the STP inventory reflect the volume of the container rather than the volume of the contents. When containers are repacked, the STP inventory volume of any given treatability group may either increase or decrease. When a container is repacked, the contents are sometimes split into two or more new containers to meet shipping and waste acceptance criteria or to meet characterization criteria (e.g., nondestructive analysis calibration limits). In addition, the new containers may be assigned to different treatability groups depending on the contents of each drum. Therefore, the volume of a single drum may increase into more volume than the original container. For example, repacking one container of *Cemented Sludge* (0.208 m^3) may result in one drum of *Combined Combustible-Noncombustible Waste* (0.208 m^3) and one drum of *Noncombustible Waste* (0.208 m^3). In addition, changes in the waste volume in the STP inventory occur when an 85-gallon overpack is removed from, or added to, a 55-gallon drum during repackaging. Removal of overpacks decreases the volume of waste in the STP inventory. Adding an overpack to a 55-gallon drum increases the volume of waste shown in the STP inventory.

3.0 TREATMENT PROGRESS

3.1 Off-site Treatment

During FY 2022, covered MLLW streams were shipped for treatment and/or disposal to the following off-site commercial treatment facilities: Perma-Fix Northwest Inc., Waste Control Specialists, LLC and Energy Solutions, LLC. See Appendix H, Table H-1 for commercial facilities contacted for waste treatment capabilities. Appendix B summarizes LANL's off-site shipments for treatment and/or disposal of covered MLLW.

3.2 Off-site Recycling

Respondents did not recycle any STP-covered waste off-site.

3.3 On-site Treatment and Recycling

Respondents did not treat or recycle any STP-covered waste on-site.

3.4 On-site Lead Decontamination

No LANL STP-covered waste was decontaminated on-site.

3.5 Treatability Studies

Respondents conducted no treatability studies.

3.6 Administrative Adjustments and Corrections

Administrative adjustments and corrections are due to discrepancies found during quality control activities related to preparing waste for treatment, inventory, and disposal or when preparing the Annual Update. A data quality review is conducted annually to compare shipment notifications and shipping manifests with database updates, and intra-site transfer of containers between Triad and N3B.

3.6.1 Adjustments to MLLW Inventory

Appendix C (Tables C-1 and C-2) details the administrative adjustments to the MLLW inventory. The principal adjustment reflects the transfer of MTRU waste to MLLW (LA-W935, *10-100 nCi/g*). A substantial volume of LANL's STP-covered MTRU waste has been determined to no longer meet the criteria for MTRU waste and has been reclassified as MLLW. If previously unidentified hazardous waste

constituents, such as lead, are revealed during repacking or other quality control activities, low-level waste (LLW) may be recharacterized as MLLW (Appendices C and G).

3.6.2 Adjustments to MTRU Inventory

During the preparation of the FY 2022 Annual Update, Respondents identified a number of adjustments to the MTRU inventory volume (Appendix G, Tables G-1, G-2, and G-3), including additions of newly identified STP-covered waste, recharacterization of waste, and reclassification of MTRU waste to MLLW. Other adjustments were needed to account for volume changes due to repacking of waste and transfers of waste from one treatability group to another, or intra-site transfer of containers between Triad and N3B, or to correct database entries.

4.0 TREATMENT TECHNOLOGY DEVELOPMENT

During FY 2022, the availability of commercial and federal facility off-site treatment and disposal capacity for MLLW remained stable. As a result of DOE's increasing reliance on commercial treatment and disposal for mixed wastes, nearly all funding for on-site technology development has been prioritized to support off-site treatment and disposal of mixed wastes. DOE treatment technology development initiatives are generally limited to specific technologies or technology adaptations in response to specific needs that cannot be addressed through commercial facilities.

4.1 Treatment Technologies Being Evaluated/Developed

Respondents continue to monitor the development of potential treatment technologies that may become available in the future. Some of these technologies are being developed at LANL and at other DOE sites. Respondents developed a treatment method to address the type of TRU waste associated with the February 14, 2014, release of radioactivity at WIPP. The treatment process was approved and was utilized to address remediated nitrate salt and above ground unremediated nitrate salt waste in 2017 and 2018, as required by the January 22, 2016, Settlement Agreement and Stipulated Final Order, 14-20 Consent Order between DOE/LANS and NMED's Hazardous Waste Bureau (HWB).

4.1.1 Off-site Commercial Treatment Facilities

Respondents continue to monitor the availability and capabilities of off-site commercial facilities for treatment technologies and permitting that are appropriate to LANL waste. These facilities are listed in Appendix H (Table H-1).

4.1.2 Off-site DOE Treatment Facilities

Respondents continue to monitor the availability and capabilities of off-site DOE facilities for treatment technologies and permitting that are appropriate to LANL waste.

5.0 DOE FUNDING FOR STP-RELATED ACTIVITIES

Funding to implement the LANL STP for mixed waste during FY 2022 was sufficient to meet all compliance dates as required by the CP of the STP. Should funding reductions occur that would affect STP compliance dates, DOE will notify NMED to address compliance schedules and activities.

6.0 TREATMENT VARIANCES

RCRA allows certain case-by-case variances from LDR standards. Variances that may be sought under RCRA relate to requests for substitution of an alternative treatment technology in place of the LDR-required treatment technology. This section discusses any potential treatment variances related to LANL's covered waste, as described below.

6.1 WIPP No-Migration Variance Petition/Land Withdrawal Act Amendments

WIPP, located near Carlsbad, New Mexico, is a DOE repository for TRU waste generated by the nation's defense-related activities. Some of the TRU waste contains hazardous waste constituents regulated under the RCRA.

The WIPP repository is a deep geologic repository rather than a shallow landfill. It is wholly sited 2,100 ft below the land surface in a salt bed. Because salt has the advantageous characteristic of slow plastic deformation, it is predicted that the salt will entomb the waste and seal it from the human environment, making potential release of hazardous constituents a low-probability event.

The WIPP Land Withdrawal Act Amendments of 1996 (LWAA) (Public Law 104-201, Section 3188) exempted waste designated by the Secretary of Energy for disposal at WIPP from RCRA's LDRs. Following passage of the LWAA, the EPA terminated its review of the No-Migration Variance Petition submitted by DOE to EPA in May 1995. EPA formalized its withdrawal by letter to George Dials, DOE/Carlsbad Area Office Manager, dated December 29, 1997.

On October 29, 1996, DOE submitted its Compliance Certification Application (CCA) to EPA. The CCA is intended to demonstrate to EPA that WIPP meets the requirements of Title 40 of the Code of Federal Regulations (40 CFR) Part 191 and 40 CFR Part 194. On October 23, 1997, EPA announced its proposed decision to issue a Certification of Compliance, subject to a number of specified conditions, and to a public comment period of 120 days. On May 18, 1998, EPA published in the Federal Register (63 FR 27354) its final rule certifying that WIPP will comply with the requirements of Subparts B and C of 40 CFR Part 191 and amending the WIPP compliance criteria in 40 CFR Part 194. The final rule became effective June 17, 1998. On March 25, 1999, WIPP received its first shipment of non-mixed (radioactive only) TRU waste from LANL. Other facilities have also shipped non-mixed TRU waste to WIPP. NMED issued a hazardous waste permit for WIPP on October 27, 1999, authorizing DOE to manage, store, and dispose of contact-handled MTRU waste at the facility.

6.2 Other Treatment Variance(s)

No treatment variances were requested or granted in FY 2022.

7.0 WIPP FACILITY CAPABILITIES

As discussed above, DOE is disposing of its defense TRU waste, both mixed and nonhazardous, in its deep geologic repository at the WIPP near Carlsbad, New Mexico. This facility is a receiving and disposal facility without the capability of routinely opening and repackaging waste. TRU waste will already be containerized when received at the WIPP. The WIPP is not a generator of TRU waste and, therefore, will receive all waste in shipments from off-site DOE facilities. In February 2014, NMED received notice of a release at the WIPP nuclear waste repository. A LANL container sent to WIPP experienced an energetic chemical reaction that ultimately led to the release of radioactive material. In light of these events, and the potential need to re-remediate all nitrate salt-bearing waste, NMED determined that the removal of MTRU from the STP be deferred until more information became available; NMED also determined that the remaining abovegrade waste stored at the Waste Control Specialists, LLC (WCS) facility and WIPP would not be returned to LANL until approval to relocate below grade waste was obtained. All shipments of MTRU covered waste inventory to WIPP were suspended between May 2014 and July 2018, due to the WIPP shutdown. WIPP resumed operations in July 2018.

7.1 Characterization Capabilities at WIPP

Wastes proposed for shipment to WIPP are characterized and certified at LANL by the Central Characterization Project, a contractor to DOE's Carlsbad Field Office.

7.2 MTRU Treatment Capabilities and Plans

WIPP is not required to treat MTRU waste to meet the LDR standards. As described above in Section 6.1, the LWAA exempted wastes designated by the Secretary of Energy for disposal at the WIPP from this requirement.

PART II COMPLIANCE PLAN UPDATE

1.0 INTRODUCTION

This update to the CP contains:

- Changes to the CP occurring since the previous Annual Update: :
  - correspondence, including notices of shipments; and
  - new covered and deleted waste;
- Proposed revisions and amendments, including:
  - compliance date changes;
  - description of waste deleted in accordance with the requirements in FFCO Section IX, *Deletion of Waste*; and
  - documentation of new covered waste in accordance with the requirements in FFCO Section VIII, *Addition of New Covered Waste*.

2.0 CHANGES AND REVISIONS TO THE CP OCCURRING SINCE THE PREVIOUS ANNUAL UPDATE

This section describes revisions, amendments, or other changes to the LANL CP.

2.1 Activities Completed During FY 2022

There were no CP activity milestones.

2.2 Expedited Shipment Letters

During FY 2022, there were no expedited shipment letters. (Appendix I, Table I-1)

2.3 Correspondence

Between October 1, 2021, and September 30, 2022, Respondents communicated with NMED on issues related to the following:

- FY 2022 waste shipment notifications

The correspondence is listed in Appendix I (Tables I-1, I-2, and I-3). Previously listed correspondence can be found in the previous FY Annual Updates.

3.0 DESCRIPTION OF DELETED WASTE

A proposal for deletion of STP waste items is included with this update as Proposed Revision 33.0 in accordance with FFCO Section IX, *Deletion of Waste*. These deletions are proposed because the wastes were shipped off-site for treatment, disposal, or recycling or were otherwise determined not to be mixed wastes. These covered wastes are included in Appendix B, Appendix C, Appendix F, and Appendix G.

4.0 DOCUMENTATION OF NEW COVERED WASTE

A proposal for addition of STP waste items is included with this update in accordance with FFCO Section VIII, *Addition of Waste*. These additions consist of wastes placed in storage during FY 2021 and were proposed to become covered wastes in FY 2022. These covered wastes are included in Appendices

A and E. Addition of new covered and newly characterized as MTRU waste to be added to the STP is identified in Section 6.1.

5.0 PROPOSED CHANGES TO THE COMPLIANCE PLAN SCHEDULE

Funding to implement the LANL STP for mixed waste during FY 2022 was sufficient to meet all compliance dates as required by the CP of the STP. Should funding reductions occur that would affect STP compliance dates, Respondents will notify NMED to address compliance schedules and activities.

In this FY 2022 Annual STP Update, Revision 33.0, submittal to NMED, DOE/N3B/Triad are proposing to revise the following milestones:

- **Activity Table 3.1.8-1 (A) and (B)** to "complete shipping of existing wastes to an off-site treatment facility or complete parallel options" and "provide documentation to NMED that waste was received at the off-site facility or provide notification of parallel option" of the LA-W917, Compressed Gases Requiring Scrubbing.
- **Activity Table 3.2-2 (A) and (B)** to "complete shipping of wastes to an off-site treatment facility, or submit documentation assigning waste items to applicable treatability groups or complete parallel option" and "provide documentation to NMED that waste was received at an off-site facility or provide notification of parallel option" of the LA-W928, Dewatered Treatment Sludge, and LA-W934, High Activity Waste, specifically the Flanged Tritium Waste Containers (FTWCs).

Disposal/Recovery/Treatment Process

(1) **Activity Table 3.1.8-1 (A) and (B):** The LA-W917, Compressed Gasses Requiring Scrubbing, consists of two containers composed of aerosols located at TA-54, Area G. These containers are in the process to be re-evaluated, and re-characterized before being shipped off-site to a treatment and disposal facility. A safety basis has placed this waste activity on hold for all affected containers including Compressed Gasses. No container movement activity was allowed without the permission of DOE. NMED will be notified in writing within 45 working days of the receipt of waste at the off-site facility or within 45 working days after the completion of parallel options per the compliance dates set in Activity Table 3.1.8-1 (A).

(2) **Activity Table 3.2-2 (A) and (B):** The LA-W928, Dewater Treatment Sludge, consists of six containers located at TA 54, Area G. These containers are in process to be re-evaluated, and re-characterized from M-TRU waste to Mixed Lowe Level (MLLW). Further action is needed to place these containers into the correct treatability group to align with the correct treatment process. A safety basis issue has placed this waste activity on hold for all affected containers including the Dewater Sludge. No container movement activity was allowed without the permission of DOE. NMED will be notified in writing within 45 working days of the receipt of waste at the off-site facility or within 45 working days after the completion of parallel options per the compliance dates set in Activity Table 3.2-2 (A).

(3) **Activity Table 3.2-2 (A) and (B):** The LA-W934, High Activity Waste, consists of five containers (four containers specifically the FTWCs that are composed of molecular sieves and squib assemblies containing lead with tritium) and the (fifth container composed of tritium traps with mercury contamination) are stored at TA-54, Area G. The FTWCs require treatment by venting, storage, sorting, segregation and repackaging before being shipped to an off-site disposal facility. These activities will be conducted at TA-54 and at the Weapons Engineering Tritium Facility (WETF) under the revised

Temporary Authorization (LA-UR-20-22103) submitted to NMED on March 9, 2020. These activities are currently in the planning, approval, and scheduling phases. Additionally, these activities require a rigorous process for safety implementation in the management of these containers. DOE and Triad are carefully assessing conditions that may impact the safe conduct of the operation, human health, and the environment. This activity follows Activity Table 3.2-2 (A) only when the approval through the "*Temporary Authorization Request Waste Treatment, Storage and Repackaging of Flanged Tritium Waste Containers*" has been granted to Triad from NMED to proceed. NMED will be notified in writing within 45 working days of the receipt of waste at the off-site facility or within 45 working days after the completion of parallel options per the compliance dates set in Activity Table 3.2-2 (A).

Justification for Milestone Extension

(1) Activity Table 3.1.8-2 (A) and (B): The LA-W917, Compressed Gasses Requiring Scrubbing.
These containers are in process to be re-evaluated, and re-characterized before being shipped off-site to a treatment and disposal facility. However, a safety basis action has placed this waste activity on hold for all affected containers including the Compressed Gasses waste stream. This safety bases action is currently being enforced, therefore, no container movement activity is allowed without permission from DOE.

Current compliance date: September 30, 2023

Proposed Revision 33.0 compliance date: September 29, 2024

(2) Activity Table 3.2-2 (A) and (B): The LA-928, Dewatered Treatment Sludge.
These containers are in process to be re-evaluated, and re-characterized from M-TRU waste to Mixed Lowe Level (MLLW). Further action is needed to place these containers into the correct treatability group to align with the correct treatment process. However, a safety basis action has placed this process on hold for all affected containers including Dewatered Treatment Sludge. This safety bases action is currently being enforced, therefore, no container movement activity is allowed without permission from DOE.

Current compliance date: September 29, 2023

Proposed Revision 33.0 compliance date: September 29, 2024

Activity Table 3.2-2 (A) and Activity Table 3.2-2 (B): LA-W934 High Activity Waste. Due to the dynamic nature of the LA-W934 treatability group (specifically FTWCs) and public concern, the Respondents have taken extra precautions to ensure that every aspect of the operations for the FTWCs has been adequately planned. The Respondents will not perform activities addressed in the temporary authorization request until after the Readiness and Authorization activities are complete and the NMED-HWB approval is received. The formality of the readiness program is an important part of the rigorous process to ensure safe operations. Once all required reviews are completed and approved, DOE/Triad will formally communicate the intent to begin the operation to NMED-HWB. Seasonal climate conditions also impact the safe conduct of the outdoor aspects of this project and can further delay the activities. Activities, such as the capture system being utilized for venting operations is affected by temperature, and the project goal is to perform the operation in a manner that maximizes capture effectiveness and keeps any potential release as low as reasonability achievable. Additionally, some activities will

require personnel in close proximity of these containers and during compromising weather, these activities will be suspended until weather conditions improve as a safeguard for working personnel. Due to the presence of elemental mercury, sorting and segregation is not appropriate for the fifth waste container. This container is also under the same compliance date of September 29, 2023, and will require further discussion and planning toward options for a path forward, which has not been acted on to date. Therefore, the Respondents are proposing an extension from September 29, 2023, to September 29, 2024, to accommodate the four containers without elemental mercury (specifically the FTWCs). The Respondents will provide more information to NMED in the subsequent extension request to address the fifth container that does contain elemental mercury but request that this container, for the time being, remain within the same compliance date and treatability group as the FTWCs.

Current compliance date: September 29, 2023

Proposed Revision 33.0 compliance date: September 29, 2024

No other changes to the schedule in the CP of the STP are proposed.

6.0 DETAILED DESCRIPTION OF THE PROPOSED REVISION

The purpose of this revision request is to reflect changes in the STP inventories in the LANL CP of the STP in accordance with FFCO Section X.C.2.a. The changes proposed by this revision to the CP will allow the added covered wastes to be treated or otherwise managed in accordance with the Activities and Compliance Dates pertaining to each treatability group, as adopted or revised herein. The CP text changes are indicated in the redlined version provided to NMED.

NMED has approved the FY 2021, Annual STP Update, Revision 32.0. DOE/N3B/Triad proposed to revise the following milestones: (1) **Activity Table 3.3.4-2 (A)** to "complete radiological characterization" of the LA-W935, 10–100 nCi/g waste, (2) **Activity Table 3.3.4-2 (B)** to "complete shipment of existing waste to off-site facility for treatment, or complete parallel options" of the LA-W935, 10–100 nCi/g waste, and (3) **Activity Table 4.0-1 (A)** to "complete transfer of existing waste to the WCRRF, a (TA-54) permitted facility, or WIPP.**Activity Table 3.3.4-2 (A)** LA-W935, 10–100 nCi/g waste stream to complete radiological characterization.

Current revision 32.0 compliance date: September 30, 2024

(1) Activity Table 3.3.4-2 (B) LA-W935, 10–100 nCi/g waste stream shipment to an off-site facility for treatment, or complete parallel options.

Current revision 32.0 compliance date: September 30, 2024

(2) Activity Table 4.0-1 (A) The remaining volume of the Framework Agreement, referenced in Appendix E, Table E-3 to complete transfer of existing waste to the WCRRF, a (TA-54) permitted facility, or WIPP.

Current revision 32.0 compliance date: November 30, 2024

6.1 Addition of New Covered Waste

Respondents are requesting that the following waste be added to the STP as covered waste.

6.1.1 MLLW Additions

The total volume of MLLW requested for addition as new covered is 6.146 m^3 (Table 6.1.1-1).

Table 6.1.1-1 Proposed Addition of New Covered MLLW

CP Section	MWIR * Waste ID	Treatability Group	Volume (m^3)
3.1.3	LA-W906	Aqueous Organic Liquids	0.114
3.3.4	LA-W935	10–100 nCi/g Waste	5.824
		Total N3B New Covered Waste	**5.938**
3.1.5	LA-W921	Activated or Inseparable Lead	0.208
		Total Triad New Covered Waste	**0.208**
		Total New Covered Waste	**6.146**

* MWIR is Mixed Waste Inventory Report.

6.1.2 MTRU Waste Additions

The volume of new covered MTRU waste requested for addition is 42.532 m^3 (Table 6.1.2-1). Table 6.1.2-2 identifies waste that is proposed for addition following activities that identified waste in the TRU inventory as MTRU either through review of waste characteristics or as a result of identifying potentially hazardous constituents during repacking TRU waste.

Table 6.1.2-1 Proposed Addition of New Covered MTRU Waste

CP Section	Treatability Group	Volume (m^3)
4.0	Cemented Sludge Waste	1.878
4.0	Combustible-Noncombustible Waste	1.040
	Total N3B New Covered Waste	**2.918**
4.0	Combustible-Noncombustible Waste	39.614
	Total Triad New Covered Waste	**39.614**
	Total New Covered Waste	**42.532**

Table 6.1.2-2 Proposed Addition of Waste Newly Characterized as MTRU

CP Section	Treatability Group	Volume (m^3)
4.0	*Combustible-Noncombustible Waste* (identification of potentially hazardous constituents based on investigation of characterization of TRU nitrate salt waste, debris containers with aerosol cans, and empty containers not meeting the RCRA empty criteria.)	0.000
4.0	*Solidified Inorganic and Organic Waste* (identification of potentially hazardous constituents based on investigation and characterization of TRU nitrate salt waste, cemented containers with free liquids, and empty containers not meeting the RCRA empty criteria.)	0.000
	Total Newly Characterized MTRU	**0.000**

6.2 Deletion of Covered Waste

MLLW is shipped off-site for treatment and/or disposal, recycling, or are otherwise proposed as deleted waste. MTRU is shipped to WIPP for disposal.

6.2.1 Deletion of MLLW

Respondents are requesting that the covered MLLW identified in Appendix B be deleted from the STP. These covered wastes were shipped off-site for treatment and disposal or recycling. The total volume of covered MLLW that is requested for deletion under this revision to the CP is 67.624 m^3 (Appendix B, Table B-1).

6.2.2 Other Deletions of MLLW

No waste was proposed for deletion due to recycling or on-site treatment. No waste was shipped off-site for treatability studies.

6.2.3 Deletion of MTRU Waste

Respondents are requesting that the covered MTRU waste identified in Appendix F be deleted from the STP. These covered wastes from N3B and Triad were shipped off-site to WIPP for disposal. The total volume of STP MTRU that is requested for deletion from inventory under this revision to the CP is 258.530 m^3 (Appendix F, Table F-1).

6.3 Adjustments to the Original (October 4, 1995) STP-Covered MLLW Inventory

Respondents are requesting adjustments to the original (October 4, 1995) STP-covered MLLW inventory as listed in Appendix C (Table C-1 and C-2). Most administrative adjustments are due to reclassification of MTRU waste to MLLW treatability groups and to quality control activities related to preparing waste for treatment and disposal. These adjustments may result in additions of newly identified covered waste or transfers of waste to other treatability groups.

6.4 Adjustments to MTRU Waste Inventory

Respondents are requesting adjustments (Appendix G, Tables G-1, G-2, and G-3) to the original (October 4, 1995) STP-covered MTRU waste inventory. Most administrative adjustments are due to reclassification of MTRU waste to MLLW treatability groups or to other MTRU treatability groups and reclassification of TRU to MTRU as a result of quality control activities related to preparing waste for treatment and disposal. These adjustments may result in additions of newly identified covered waste or transfers of waste to other treatability groups or intra-site transfer of containers between Triad and N3B.

6.5 Establishment of New Milestone Activity Dates

Respondents are requesting new compliance milestones.

6.6 Additional Revisions

No other revisions are requested.

7.0 RATIONALE FOR THE PROPOSED REVISION

This information is provided in accordance with FFCO Section X.C.2.a.

7.1 Establishment of New Proposed Milestone

The newly proposed compliance dates by which DOE, N3B, and Triad expects to complete the radiological characterization of the LA-W935, 10–100 nCi/g Waste [**Activity Table 3.3.4-2 (A)**] and to complete shipment of existing waste to an off-site facility for treatment, or complete parallel options of the LA-W935, 10–100 nCi/g Waste [**Activity Table 3.3.4-2 (B)**] by September 30, 2024. N3B expects to complete the complete transfer of existing waste to the WCRRF, a (TA-54) permitted facility, or WIPP [**Activity Table 4.0-1 (A)**] by November 30, 2024, ” (NMED letter HWB-LANL-22-023,

August 4, 2022, "Approval With Modifications, Site Treatment Plan, Fiscal Year 2021 Annual Update and Proposed Revision 32.0, Federal Facility Compliance Order, October 4, 1995, Los Alamos National Laboratory, EPA ID# NM0890010515)."

7.2 Addition of New Covered Waste

Waste that was newly generated in FY 2021, which was not treated within 12 months of generation, became new covered waste during FY 2022. In addition, TRU wastes, re-evaluated during repacking and quality control activities as having previously unidentified RCRA constituents, were also added to the STP inventory (Appendix G). Approval of these proposed additions to the STP inventory will allow the added covered wastes to be treated or otherwise managed in accordance with the activities and compliance dates pertaining to each treatability group, as adopted or revised herein.

7.3 Deletion of Covered Waste

Decreases in covered waste inventory reflect the treatment and disposal or recycling of covered waste at off-site commercial facilities during FY 2022. Deletion of this covered waste is proposed to more accurately reflect the LANL STP inventory as of the end of FY 2022.

7.4 Adjustments to the Original (October 4, 1995) STP-Covered Waste Inventory

Administrative adjustments result from quality control activities related to preparing waste for treatment and disposal. These adjustments result in additions of newly identified covered waste and transfers of waste to other treatability groups. The adjustments to the original (October 4, 1995) STP covered waste inventory are proposed to more accurately reflect the LANL STP inventory as of the end of FY 2022.

8.0 ANTICIPATED LENGTH OF ANY DELAY IN PERFORMANCE

In accordance with FFCO Section X.C.2.c, Respondents cannot confidently predict the anticipated delay in performance for shipping covered STP MTRU waste for which the only currently allowed deletion pathway is disposal at WIPP.

9.0 PLAN AND SCHEDULE FOR IMPLEMENTING ALL REASONABLE MEASURES

All other measures proposed could be implemented within the framework of the existing plan and schedule for the STP (FFCO Section X.C.2.d).

PART III COMPLIANCE PLAN – PROPOSED REVISION 33.0

1.0 PURPOSE AND SCOPE OF THE COMPLIANCE PLAN

1.1 Introduction

Part III of this document identifies changes that require NMED approval as a revision under Section X, *Revisions*, or an amendment under Section XI, *Other Amendments to the STP*.

The CP includes a schedule for off-site transportation for treatment, or completion of parallel options as defined in each Treatability Group Section, and the treatment of mixed wastes in full compliance with the HWA and the implementing regulations at 20 New Mexico Administrative Code (NMAC) 4.1, that incorporates by reference 40 CFR Parts 260 through 270. Part I, Background, contains progress reports as required in the FFCO. Respondents shall carry out the activities described in the STP, including the CP, in accordance with the schedules and requirements set forth in the STP and the FFCO.

1.2 STP Revisions and Amendments

The STP CP has been modified several times since it was originally issued, in accordance with the provisions of Section X, *Revisions,* and Section XI, *Other Amendments to the STP,* of the October 4, 1995, FFCO, as amended and revised. The history of revisions is provided in Appendix J.

2.0 COMPLIANCE SCHEDULES

The STP provides overall schedules for achieving compliance with LDR storage and treatment requirements for mixed waste at LANL. The schedules include those activities required to process backlogged and currently generated waste and include schedules required to establish an overall timeframe for achieving compliance with the LDR requirements under the HWA and 20 NMAC 4.1.

2.1 Categories of Activities for Compliance Dates

The categories of activities for which compliance dates will be provided for different types of treatment approaches in the STP are listed in the tables below. The categories of activities are based on Section 3021(b)(1)(B)(i), (ii), and (iii) of the RCRA, to the extent appropriate.

2.1.1 Plans Where Treatment Technology Exists

For most of the mixed waste, treatment technologies were identified and developed. For the waste that will be treated on-site, the categories of activities for compliance dates identified in Table 2.1.1-1 shall apply.

Table 2.1.1-1 Categories of Activities for Compliance for Mixed Waste with Existing Treatment Technologies

A.	Submit permit applications to NMED.
B.	Initiate construction as specified in the NMED permit.
C.	Complete system testing and commence operation.
D.	Begin treating mixed waste.
E.	Complete treatment of existing wastes to applicable regulatory standards.

2.1.2 Plans Where Technology Must Be Developed

For some mixed waste, no treatment technologies were identified and developed, or the treatment technology must be modified or adapted to apply to such waste. For the waste that will be treated on-site, the categories of activities for compliance dates are identified in Table 2.1.2-1 and shall apply.

Table 2.1.2-1 Categories of Activities for Compliance Dates for Mixed Waste Without Existing Treatment Technologies

A.	Identify and develop technology.
B.	Submit permit application to NMED; or
C.	Submit a Notification of Intent to perform treatability study to NMED a minimum of 45 working days prior to commencement of the study.
D.	Initiate construction as specified in the NMED permit.
E.	Commence systems testing.
F.	Begin treating mixed waste.
G.	Complete treatment of existing wastes to applicable regulatory standards.

2.2 Primary Preferred Treatment

Off-site treatment at a commercial or noncommercial mixed waste treatment facility is the primary preferred treatment option applicable to all mixed waste streams in the STP inventory unless otherwise indicated in the descriptions of individual waste treatability groups. DOE may also pursue parallel treatment options, such as recycling/re-use or radiological decontamination. Requirements for waste shipped off-site for recycling are discussed under Part III, Section 2.6. All activities and compliance dates related to the construction, permitting, and operation of on-site treatment skids were removed from this document. This change was due to the increased availability of off-site treatment and disposal capacity for mixed waste. Respondents will continue evaluating new commercial and DOE off-site treatment facilities as potential options for managing mixed waste, as they become available.

2.3 Plans for Mixed Waste to be Shipped Off-site for Treatment

Should Respondents decide to treat or recycle waste at a commercial off-site facility (Table 2.3-1), Respondents will notify the NMED STP Manager in writing as soon as possible and in any event within 45 working days of receipt of waste at the treatment/recycling facility.

Table 2.3-1 Activities for Off-site Shipment for Treatment or Recycling at a Commercial Facility

A.	Meet all regulatory requirements for shipment.
B.	Provide documentation to NMED that waste has been received at an off-site facility for treatment or recycling within 45 working days of receipt of waste at the treatment facility.

DOE shall notify the NMED STP Manager in writing as soon as possible if mixed waste is planned to be sent to a noncommercial facility. Notification should be made if possible when DOE is first considering such an option to allow NMED and the state to address any state issues or concerns with other states. The NMED STP Manager shall approve in writing the proposed off-site noncommercial treatment option proposed by DOE prior to any shipment by DOE. DOE will notify the NMED STP Manager in writing as soon as possible and in any event within 45 working days of receipt of waste at the treatment/recycling facility. Activities for mixed waste to be shipped off-site for treatment/recycling at a noncommercial facility are identified in Table 2.3-2.

Table 2.3-2 Activities for Shipment Off-site for Treatment or Recycling at a Noncommercial Facility

A.	Request necessary approval from NMED for shipment of waste by category before shipping.
B.	Meet all regulatory requirements for off-site shipment.
C.	Provide documentation to NMED of confirmation of shipment date within 14 working days prior to sending waste to an off-site facility for treatment, or recycling, or storage pending treatment, or recycling.
D.	Provide documentation to NMED that waste has been received at an off-site facility for treatment within 45 working days of receipt of waste at the off-site facility.
E.	Meet all regulatory requirements to include RCRA Permit modifications for residual or newly generated waste streams after treatment or recycling.
F.	Provide documentation to NMED within 30 working days after receipt of residual or newly generated waste streams upon return to LANL.

2.3.1 Specific Site Requirements for Noncommercial Treatment Facilities

Shipment to Idaho National Laboratory

Prior to shipment, Idaho National Laboratory (INL) and Idaho Division of Environmental Quality shall be notified of any pending shipments of waste should DOE ship MLLW to INL. Proper procedures including additional approvals (if necessary) and documentation shall be completed prior to the shipment of wastes to INL. Management of post-treatment waste residuals or newly generated waste streams will be in accordance with the requirements of DOE, the State of Idaho, and that state where they will be disposed. A modification to LANL's RCRA permit providing for the return of such wastes and/or residues to LANL must be approved by NMED prior to any such return of wastes and/or residuals to LANL. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within 30 working days after receipt of shipment of treatment residuals or newly generated waste streams from INL.

Shipments of MLLW to planned facilities (not yet existing) will occur only after treatment and schedules are approved by the DOE Idaho Field Office and the State of Idaho. Upon approval of the planned treatment facilities, the applicable protocol from the paragraph above will be implemented for mixed wastes to be treated at planned facilities.

Shipment to Oak Ridge Reservation

If Oak Ridge Reservation cannot dispose of mixed-waste residues or new waste streams generated from off-site treatment, and they cannot be sent to another facility for disposal, then the residues may return to LANL. Should residual or newly generated waste streams be returned to LANL, the proper permits for the State of New Mexico must exist. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within 30 working days after receipt of shipment of treatment residuals or newly generated waste streams from the Oak Ridge Reservation.

2.4 Requirements Pertaining to Radionuclide Separation

The FFCA sets additional requirements in cases where DOE intends to conduct radionuclide separation of mixed waste. Should DOE determine to do radionuclide separation of such mixed waste, DOE will schedule specific compliance dates based on category activities identified in Table 2.4-1. "Radionuclide separation" shall mean segregating the radioactive portion of the mixed waste from the hazardous portion of the mixed waste.

Table 2.4-1 Activities for Radionuclide Separation

A	Complete an estimate of the volume of waste generated by each case of radionuclide separation.
B.	Complete an estimate of the volume of waste that would exist or be generated without radionuclide separation.
C.	Complete an estimate of the costs of waste treatment and disposal if radionuclide separation is used compared with the estimated costs if it is not used.
D.	Provide the assumptions underlying such estimates of waste volumes and cost estimates.
E.	Provide characterization methodologies for determining waste type.
F.	Submit a plan for treating or managing hazardous waste residues, accompanied by an NMED permit application.

2.5 Plans Related to Other Mixed Waste Activities

Activities other than the types of activities specifically called for in the FFCA as requiring schedules are described in this STP. Some of these activities may be associated with schedules that may contain compliance dates related to treatment of DOE's mixed waste.

For mixed waste, which is not sufficiently characterized to allow identification of appropriate treatment, notification of the characterization of such waste shall be in accordance with the annual update process described in the FFCO. If such characterization results in the addition or deletion of a treatability group or an increase in volume in a treatability group, a revision would be required pursuant to Section X of the FFCO.

Respondents will notify NMED when off-site treatability studies are conducted on STP waste. Treatability studies are used to explore alternative treatment options that may be practical for any or all of the STP mixed waste streams. When preparing waste for shipment for an off-site treatability study, Respondents will evaluate the potential for incidental waste treatment or secondary waste generation, which are often associated with treatability studies.

2.6 Recycling/Re-Use

Respondents will pursue on-site or off-site recycling/re-use as a parallel preferred option.

Should DOE elect to use recycling facilities in lieu of (or in combination with) treatment, it will follow requirements as if the waste were shipped off-site for treatment. Any and all requirements by the recycling facility and all state, federal, or other regulatory requirements applicable at the recycling site shall be met by Respondents.

Respondents shall notify the NMED STP Manager in writing as soon as possible if mixed waste is planned to be sent to an off-site noncommercial recycling facility. Notification should be made if possible when DOE is first considering such an option to allow NMED and the state to address any state issues or concerns with other states. The NMED STP Manager shall approve in writing the proposed off-site noncommercial recycling option prior to any shipment by Respondents. Respondents will notify the NMED STP Manager in writing as soon as possible and in any event within 45 working days of receipt of waste at the recycling facility. Activities for mixed waste to be recycled are identified in Table 2.6-1.

Table 2.6-1 Requirements for Recycling

A.	Meet all regulatory requirements for recycling/re-use.
B.	Provide documentation to NMED that waste has been received within 45 working days of receipt of waste at the recycling facility.

Should DOE elect to use recycling/re-use facilities in lieu of (or in combination with) treatment, it will follow the requirements as if the waste were shipped off-site for treatment. Respondents will submit a notification letter to NMED within 45 working days, in place of documentation, that waste was received at a recycling facility.

2.7 On-site Radiological Decontamination

Respondents will pursue on-site radiological surface or external decontamination as a preferred option. No volumetric or internal decontamination processes will be considered or performed. Surface radiological decontamination includes activities such as sand blasting, hand-scrubbing, or electrolytic decontamination. These decontamination activities could result in reducing or removing the radiological contaminant from the waste such that the waste could be recycled in accordance with CP Section 2.6 *Recycling/Re-Use* or be proposed for deletion in accordance with Section IX *Deletion of Waste* of the FFCO.

Activities for mixed waste to be radiologically decontaminated are identified in Table 2.7-1.

Table 2.7-1 Activities for Radiological Decontamination

A.	Meet all DOE requirements for radiological decontamination.
B.	Provide documentation to NMED that waste has been received within 45 working days of receipt of waste at the recycling facility; or
C.	Propose waste for deletion in accordance with Section IX of the FFCO.

3.0 MIXED LOW-LEVEL WASTE STREAMS

This section presents the preferred options to treat MLLW at LANL. Options not described below must be approved by NMED in accordance with the revision process pursuant to the FFCO.

The original October 4, 1995, STP inventory in each MLLW treatability group was modified through the revision process in the FFCO. The tables in the STP Background (Part I) Appendices A–M of the FY 2009 Annual Update provide a comprehensive summary of changes to the CP covered waste inventories (additions, deletions, and shifts of waste between treatability groups) occurring as of the date of that revision. In Part III, the original STP inventory in each MLLW treatability group is denoted as subgroup 0 of that treatability group (e.g., the original volume of STP treatability group LA-W906 became LA-W906-0). Each revision that has since added volumes to individual treatability groups has resulted in creation of an additional subgroup, having the same number as the revision (e.g., LA-W906-4 was created in Revision 4.0, and LA-W906-5 was created in Revision 5.0).

In most subsections of this section, the subgroups of the treatability groups are not shown. In those cases, the Activities and Compliance Dates are applicable to the entire net volume of that treatability group. However, when subgroups of a treatability group were assigned Activities and Compliance Dates unique to that subgroup, those subgroups are detailed in the text. Activities and Compliance Dates that were met in previous years are not shown in this document.

3.1 Mixed Waste Streams

The following subsections summarize MLLW treatability groups.

3.1.1 Industrial Isopropyl Alcohol (IPA) Wastes and Scintillation Fluids

Table 3.1.1-1 Treatability Groups for IPA Wastes and Scintillation Fluids

Treatability Group	MWIR* Waste ID	RCRA Codes	Volume (m^3)
IPA Wastes	LA-W901	D001, D009, F002, F003, F005	0.000
Scintillation Fluids	LA-W902	D001, F003, F005	0.000
		Totals	**0.000**

*MWIR is Mixed Waste Inventory Report.

Treatment: The waste will be treated at an off-site facility that combusts organic liquid waste.

3.1.2 Lead Blankets, Soil with Heavy Metals, Environmental Restoration (ER) Soils

Table 3.1.2-1 Treatability Groups for Lead Blankets, Soil with Heavy Metals, ER Soils

Treatability Group	MWIR* Waste ID	RCRA Codes	Volume (m^3)
Lead Blankets	LA-W903	D007, D008	0.000
Soil With Heavy Metals	LA-W904 LA-W904-31 LA-W904-32 LA-W904-33	D004, D005, D006, D007, D008, D009, D010, D011	0.550
ER Soils	LA-W905	D028, D029, F001, F005 D010, D011	0.000
		Totals	**0.550**

*MWIR is Mixed Waste Inventory Report.

Treatment: The waste will be treated at an off-site facility that stabilizes or macroencapsulates wastes.

3.1.3 Aqueous Organic Liquids

Table 3.1.3-1 Treatability Groups for Aqueous Organic Liquids

Treatability Group	MWIR* Waste ID	RCRA Codes	Volume (m^3)
Aqueous Organic Liquids	LA-W906-0 LA-W906-4 LA-W906-5 LA-W906-6 LA-W906-9 LA-W906-10 LA-W906-15 LA-W906-31 LA-W906-32 LA-W906-33	D001, D002, D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D027, D028, D030, D032, D033, D034, D036, D037, D038, D039, D041, D042, D043, F001, F002, F003, F004, F005	3.812
		Totals	**3.812**

*MWIR is Mixed Waste Inventory Report.

3.1.4 Organic-Contaminated Combustible Solids

Table 3.1.4-1 Treatability Groups for Organic-Contaminated Combustible Solids

Treatability Group	MWIR* Waste ID	RCRA codes	Volume (m^3)
Organic-Contaminated Combustible Solids	LA-W911	D001, D004, D008, D009, F001, F002, F003, F005	0.000
		Totals	**0.000**

*MWIR is Mixed Waste Inventory Report.

Table 3.1.4-2 Treatability Groups for Organic-Contaminated Noncombustible Solids

Treatability Group	MWIR* Waste ID	RCRA Codes	Volume (m^3)
Organic-Contaminated Noncombustible Solids	LA-W919	D001, D003, D004, D005, D006, D007, D008, D009, D010, D011, D012, D015, D018, D019, D020, D022, D027, D028, D029, D030, D031, D032, D033, D034, D035, D036, D042, D043, F001, F002, F003, F004, F005	0.000
		Totals	**0.000**

*MWIR is Mixed Waste Inventory Report.

3.1.5 Combustible Debris, Activated or Inseparable Lead, Noncombustible Debris

Table 3.1.5-1 Treatability Groups for Combustible Lead, Activated or Inseparable Lead, and Noncombustible Debris

Treatability Group	MWIR* Waste ID	RCRA Codes	Volume (m^3)
Combustible Debris	LA-W912 LA-W912-31 LA-W912-32 LA-W912-33	D001, D002, D003, D005, D006, D007, D008, D009, D011, D035, F001, F002, F003, F005	0.208
Activated Or Inseparable Lead	LA-W921 LA-W921-33	D008	0.000
Noncombustible Debris	LA-W922 LA-W922-17 LA-W922-22 LA-W922-23 LA-W922-24 LA-W922-25 LA-W922-31 LA-W922-32 LA-W922-33	D001, D002, D004, D005, D006, D007, D008, D009, D010, D011	20.946
		Totals	**21.154**

*MWIR is Mixed Waste Inventory Report.

3.1.6 Aqueous Wastes with Heavy Metals, Corrosive Solutions, Aqueous Cyanides, Nitrates, Chromates, and Arsenates

Table 3.1.6-1 Treatability Groups for Aqueous Wastes with Heavy Metals, Corrosive Solutions, Aqueous Cyanides, Nitrates, Chromates, and Arsenates

Treatability Group	MWIR* Waste ID	RCRA Codes	Volume (m^3)
Aqueous Wastes With Heavy Metals	LA-W913	D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011	0.000
Corrosive Solutions	LA-W914	D001, D002	0.000
Aqueous Cyanides, Nitrates, Chromates, and Arsenates	LA-W915	D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, F007, P029, P098	0.000
		Totals	**0.000**

*MWIR is Mixed Waste Inventory Report.

3.1.7 Water-Reactive Metal

Table 3.1.7-1 Treatability Groups for Water-Reactive Metal

Treatability Group	MWIR* Waste ID	RCRA Codes	Volume (m^3)
Water-Reactive Metal	LA-W916	D001, D003, D004, D005, D007, D008, D010, D011	0.000
		Totals	**0.000**

*MWIR is Mixed Waste Inventory Report.

3.1.8 Compressed Gases Requiring Scrubbing

Table 3.1.8-1 Treatability Groups for Compressed Gases Requiring Scrubbing

Treatability Group	MWIR* Waste ID	RCRA Codes	Volume (m^3)
Compressed Gases Requiring Scrubbing	LA-W917 LA-W917-21 LA-W917-24 LA-W917-25 LA-W917-26 LA-W917-27 LA-W917-28 LA-W917-29	D001, D002, D003, D008, D009, P056	0.624
		Totals	**0.624**

*MWIR is Mixed Waste Inventory Report.

Table 3.1.8-2 Activities and Compliance Dates for Compressed Gases Requiring Scrubbing

Activity	Compliance Dates
A. Complete shipping of existing wastes to an off-site treatment facility or complete parallel option.	September 30, 2024
B. Provide documentation to NMED that waste was received at off-site facility or provide notification of parallel option.	Within 45 working days of receipt of waste at treatment facility or within 45 working days after completion of parallel option.

3.1.9 Compressed Gases Requiring Oxidation

Table 3.1.9-1 Treatability Groups for Compressed Gases Requiring Oxidation

Treatability Group	MWIR* Waste ID	RCRA Codes	Volume (m^3)
Compressed Gases Requiring Oxidation	LA-W918	D001, U226	0.000
		Totals	**0.000**

*MWIR is Mixed Waste Inventory Report.

3.1.10 Elemental Mercury

Table 3.1.10-1 Treatability Groups for Elemental Mercury

Treatability Group	MWIR* Waste ID	RCRA Codes	Volume (m^3)
Elemental Mercury	LA-W920 LA-W920-16	D006, D009, F005	0.000
		Totals	**0.000**

*MWIR is Mixed Waste Inventory Report.

3.1.11 Halogenated Organic Liquids, Nonhalogenated Organic Liquids, Bulk Oils, Polychlorinated Biphenyl (PCB) Wastes with RCRA Components, Liquid and Solid Oxidizers

Table 3.1.11-1 Treatability Groups for Halogenated Organic Liquids, Nonhalogenated Organic Liquids, Bulk Oils, PCB Wastes with RCRA Components

Treatability Group	MWIR* Waste ID	RCRA Codes	Volume (m^3)
Halogenated Organic Liquids	LA-W907	D001, D002, D003, D007, D009, D010, D011, D018, D019, D022, D028, D029, D035, D043, F001, F002, F003, F004, F005, U077, U080, U226, U227, U228, U236	0.000
Nonhalogenated Organic Liquids	LA-W908 LA-W908-18	D001, D002, D003, D004, D007, D008, D009, D011, D018, D038, D040, F002, F003, F004, F005, U002, U019, U154, U169, U188, U220, U246	0.000
Bulk Oils	LA-W909 LA-W909-15 LA-W909-16 LA-W909-17	D002, D004, D005, D006, D007, D008, D009, D010, D011, D021, D027, D039, F001, F002, F003, F005	0.000
PCB Wastes With RCRA Components	LA-W910 LA-W910-16	D004, D005, D006, D007, D008, D009, D010, D011, D012, D015, D019, D027, D028, D030, D031, D032, D033, D034, D036, D039, D042, D043, F002, F003, F004, F005	0.000
		Totals	**0.000**

*MWIR is Mixed Waste Inventory Report.

Table 3.1.11-2 Additional Treatability Groups

Treatability Group	MWIR* Waste ID	RCRA Codes	Volume (m^3)
Liquid And Solid Oxidizers	LA-W923	D001, D003, D005	0.000
		Totals	**0.000**

*MWIR is Mixed Waste Inventory Report.

3.2 Mixed Waste Requiring Further Characterization or for Which Technology Assessment Has Not Been Done

Table 3.2-1 Treatability Groups for Waste Requiring Characterization or Assessment

Treatability Group	MWIR* Waste ID	RCRA Codes	Volume (m^3)
Lead Wastes – to be determined (TBD)	LA-W924 LA-W924-15 LA-W924-16 LA-W924-17	D003, D008	0.000
Mercury Wastes - TBD	LA-W925 LA-W925-4 LA-W925-5 LA-W925-6 LA-W925-15 LA-W925-16 LA-W925-17 LA-W925-18	D007, D008, D009, F001	0.000
Compressed Gases - TBD	LA-W926	D001, D007, D009, D022, P056, U080, U226	0.000
Biochemical Laboratory Wastes	LA-W927	D001, D003	0.000
Dewatered Treatment Sludge	LA-W928 LA-W928-31	D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D028, D037, D038, D039, D040, F001, F002, F003, F004, F005, F006, F007, F009	1.476
Explosives	LA-W932	D003	0.000
Labpacks	LA-W933 LA-W933-17	D001, D002, D003, D004, D005, D006, D007, D008, D010, F003, F005, D011, P012, P029, P098, P106, P113, P120, U131, U144, U145, U188, U190, U204, U216, U219	0.000
High Activity Waste	LA-W934 LA-W934-16 LA-W934-19 LA-W934-20 LA-W934-24 LA-W934-27	D001, D003, D008, D009	1.477
		Totals	**2.953**

*MWIR is Mixed Waste Inventory Report.

Table 3.2-2 Activities and Compliance Dates for Wastes Requiring Characterization or Assessment

Activity	Compliance Dates
A. Complete shipping of wastes to an off-site treatment facility, or submit documentation assigning waste items to applicable treatability groups or complete parallel option.	September 29, 2024
B. Provide documentation to NMED that waste was received at off-site facility or provide notification of parallel option.	Within 45 working days of receipt of waste at off-site facility or within 45 working days after completion of parallel option.

LANL's inventory of *High Activity Waste, LA-W934* consists of five containers with a combined volume of 1.477 m^3.

Triad proposed an extension to the FTWCS and NMED approved the new compliance date on July 12, 2021 (NMED letter HWB-LANL-21-012, July 12, 2021, "Approval of the Site Treatment Plan, Fiscal Year 2020 Annual Update and Proposed Revision 31.0, Federal Facility Compliance Order, October 4, 1995, Los Alamos National Laboratory)."

The new proposed compliance date of September 29, 2024, includes the proposed activities for the four FTWCs that are described in the "Temporary Authorization Request Waste Treatment, Storage and Repackaging of Flanged Tritium Waste Containers," LA-UR-20-22103, submitted to NMED on March 9, 2020. One of the justifications for the extension of Activity Table 3.2-2 (A) and Activity Table 3.2-2 (B), specifically for the High Activity Waste treatability group, are the four FTWC containers that require treatment by venting, storage, sorting, segregation, and repackaging. These activities are currently in the final planning, approval, and scheduling phases. Additionally, seasonal climate conditions impact the outdoor safe operations aspects of this effort; therefore, scheduling of the outdoor activities must take these factors into consideration. (See Part II, Section 5.0).

The fifth container of mercury and tritium contaminated cryotraps, originating from experimental activities at the Ion Beam Facility, is presently situated at TA-54, Area G. Due to the presence of elemental mercury, sorting and segregation as described in the temporary authorization is not permitted within this technical area. As this waste is also under the same compliance date of September 29, 2024, this container will require further discussion and planning toward options for a path forward, which has not been acted on to-date. Currently, NMED has not approved the Temporary Authorization due to schedule delays associated with the COVID-19 pandemic, public concerns, and the rigorous process for safety implementation by the DOE as part of the readiness process.

DOE/Triad will continue to diligently pursue all possible options to ship the waste off-site prior to the milestone for the remaining five containers (tritium traps with mercury contamination and the molecular sieves and squib assemblies containing lead with very high tritium). The containers were planned originally for transport off-site to a commercial treatment facility using a 10-160B shipping cask, but this option has been determined not to be viable. Plans for shipment and disposal of the four FTWCs are underway. Options for shipment and disposal of the fifth container will be reassessed by a multidisciplinary team, with the first priority ensuring continued stable, safe, compliant storage on-site.

3.3 Plans for Other Types of Activities

The following subsection summarizes plans for other types of activities:

3.3.1 Lead Decontamination

Table 3.3.1-1 Treatability Groups for Lead Decontamination

Treatability Group	MWIR* Waste ID	First Category Volume (m^3)	Second Category Volume (m^3)	Total Volume (m^3)
Lead For Surface Decontamination	LA-W930-0 LA-W930-5 LA-W930-6	0.000	0.000	0.000
	Totals	**0.000**	**0.000**	**0.000**

*MWIR is Mixed Waste Inventory Report.

Treatment: Any lead not acceptable for on-site or off-site lead decontamination, and any lead unsuccessfully decontaminated, will be designated in the following two categories: (1) for treatment and disposal at an off-site facility or (2) for recycle through an off-site capability, such as metal melting to create shielding blocks or a DOE lead bank. Non-conforming items will be reassigned to appropriate treatability groups in accordance with the FFCO.

3.3.2 Sorting, Surveying, and Decontamination

Table 3.3.2-1 Treatability Groups for Sorting, Surveying, and Decontamination

Treatability Group	MWIR* Waste ID	To Be Surveyed Volume (m^3)	To Receive RCRA and Radiological Characterization Volume (m^3)	That Cannot or Should Not Be Sampled Volume (m^3)	Total Volume (m^3)
Nonradioactive or Suspect Waste Items	LA-W929 LA-W929-5	0.000	0.000	0.000	0.000
	Totals	**0.000**	**0.000**	**0.000**	**0.000**

*MWIR is Mixed Waste Inventory Report.

3.3.3 Lead Requiring Sorting

Table 3.3.3-1 Treatability Groups for Lead Requiring Sorting

Treatability Group	MWIR* Waste ID	RCRA Codes	Volume (m^3)
Lead Requiring Sorting	LA-W931	D008	0.000
		Totals	**0.000**

*MWIR is Mixed Waste Inventory Report.

Treatment: Wastes in this treatability group will require different treatment processes. Drums will be opened, the contents removed, and the waste repackaged based on appropriate treatment requirements. Wastes in this treatability group are primarily lead pieces, lead shot, and lead-contaminated soils that were packaged in the same drum.

The wastes will be reclassified as the applicable treatability group after physical separation and repackaging. The wastes will be treated by appropriate technology.

3.3.4 10–100 nCi/g Waste

Table 3.3.4-1 Treatability Groups for 10–100 nCi/g Waste

Treatability Group	MWIR* Waste ID	RCRA Codes	Volume (m^3)
10–100 nCi/g	LA-W935 LA-W935-19 LA-W935-20 LA-W935-21 LA-W935-22 LA-W935-23 LA-W935-24 LA-W935-25 LA-W935-26 LA-W935-27 LA-W935-28 LA-W935-29 LA-W935-30 LA-W935-31 LA-W935-32 LA-W935-33	D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D026, D027, D028, D029, D030, D035, D036, D037, D038, D039, D040, D043, F001, F002, F004, F005, F006, F007, F009	68.619
		Totals	**68.619**

*MWIR is Mixed Waste Inventory Report.

Treatment: Wastes in this treatability group consist of a population of legacy drums packaged and managed as MTRU (>100 nCi/g) but, after assay, were determined to be MLLW (<100 nCi/g). Once confirmed, these drums are segregated from other TRU waste and stored in a designated MLLW storage area. Waste Profiles are prepared to allow acceptance into the LLW population, and drums are relabeled appropriately and reclassified from TRU to MLLW in the database.

When a parent waste container is remediated, the waste contents are removed, WIPP waste acceptance criteria prohibited items are addressed, and the remaining waste is placed into one or more new containers. After this process is complete, the original parent waste container remains radiologically contaminated and usually can be managed as LLW. Empty containers are being managed as "RCRA empty" containers if they meet the "RCRA empty" criteria in 40 CFR 261.7. Empty containers that have lead liners must carry an EPA hazardous waste number (HWN) for lead (D008), and be managed as MLLW. If after real-time radiography assay, empty containers are found to still contain residual amounts of waste material that do not meet the "RCRA empty" criteria, the containers are to be labeled with the EPA HWN assigned to the original parent container, as indicated by the parent's waste stream profile (in addition to D008, if the D008 HWN is added to the empty parent only because of the presence of a lead liner).

The MLLW drums are prepared for treatment and disposal to an off-site facility using LANL generator acceptable knowledge documentation and real-time radiography and non-destructive assay data. Restrictions imposed in 2015 for movements of LA-W935 waste at TA-54, Area G, were lifted in FY 2018. Past issues with the Area G Safety Basis were analyzed and corrected.

Table 3.3.4-2 Activities and Compliance Dates for 10–100 nCi/g Waste

Activity	Compliance Dates
A. Complete radiological characterization.	September 30, 2024
B. Complete shipment of existing waste to off-site facility for treatment, or complete parallel options.	September 30, 2024
C. Provide documentation to NMED that waste was received at off-site facility or provide notification of parallel option.	Within 45 working days of receipt of waste at treatment facility or within 45 working days after completion of parallel option.

The estimated waste volumes will be subtracted from the MTRU STP inventory and added to the MLLW STP inventory as the waste is reclassified as MLLW. However, because of the repacking process, the apparent volume of waste will reflect the number of additional containers needed to repackage the waste into compliant configurations for transportation and disposal. Empty TRU containers, which includes a population of empty TRU parent containers that previously contained nitrate salts will also undergo recharacterization and may be reclassified as LLW or if determined to not meet the definition of RCRA-empty, reclassified as MLLW.

The recharacterization process resumed in FY 2016 for waste to be accepted at off-site treatment and disposal facilities, and will continue to produce 10-100 nCi/g Waste (LA-W935). In 2018, N3B took over the operational responsibility of TA-54. Operational start-up included purchasing and installing treatment equipment and repairing existing deficiencies.

3.4 Management of "Missing" Items

Table 3.4-1 Waste Category for "Missing Waste"

Category	MWIR* Waste ID	Container ID	Volume (m^3)
Missing/Nonexistent/To be verified (TBV)			0.000
		Totals	**0.000**

*MWIR is Mixed Waste Inventory Report.

Treatment: During visual inspections and sampling activities in support of STP waste work-off, occasionally an item cannot be found, or it is not located in the expected containers, according to the LANL data files for the waste item. In some instances, such items cannot be verified as having been received in storage at LANL, and follow-up investigations of the record files reveal that although the items were included in the original STP inventory, the waste items were never generated.

Some waste items were determined not to exist after visual inspection and document review. When Respondents determine that an STP-covered waste item does not exist, transfer of the item to the category called "Missing/nonexistent/TBV (to be verified)" is requested through this revision Annual Update.

If, at any time, any of these items is discovered in the inventory, NMED would be notified and approval would be requested for assignment of the rediscovered items to the appropriate treatability group. If necessary, discovered items would be assigned new Activities and Compliance Dates in accordance with the terms of the FFCO.

4.0 MIXED TRANSURANIC WASTE

Treatment Group(s): Assorted MTRU Waste

Off-site Disposal: MTRU waste at LANL will be shipped for disposal at WIPP, located in Carlsbad, New Mexico.

Disposal: Waste volumes listed in Appendix E, Table E-3, constitute the remaining original population of the Framework Agreement of "non-cemented above-ground EM Legacy TRU" and "above-ground cemented EM Legacy TRU" that is MTRU waste only. Volume adjustments noted in Appendix G, Table G-3, are due to corrections of database entries, treatability groups, EPA codes, overpacks removed/added, containers repacked and shipped/held for waste items identified as the non-cemented and cemented above-ground EM Legacy TRU for MTRU STP waste.

Table 4.0-1 Activities and Compliance Dates for N3B MTRU Inventory

Activity	Compliance Dates
A. Complete transfer of existing waste to WCRRF, a (TA-54) permitted facility, or WIPP.	November 30, 2024

Transfer of Covered MTRU Inventory: In the FY 2022 reported waste volume for STP-covered MTRU inventory is 1389.442 m^3 (Table 2.2-1 in Part 1).

Triad's MTRU covered waste will be either shipped directly from TA-55 or transported to the Radioassay and Nondestructive Testing (RANT) facility for shipment to WIPP.

The de-inventory of N3B's MTRU waste will take multiple years. The MTRU waste inventory will require management at either a LANL remediation facility or recharacterization as the waste acceptance criteria for WIPP has changed since the waste was generated. DOE EM-LA manages TA-54. DOE EM-LA stated that TA-54 will not receive any programmatic newly generated waste. The LANL Hazardous Waste Permit specifies that MTRU waste generated prior to April 21, 2011, cannot be stored at the TWF. In addition, WIPP is expected to receive a limited number of waste shipments per week. Respondents resumed shipment of MTRU waste in October 2018.

4.1 Management of "Missing" Items

Table 4.1-2 Waste Category for "Missing Waste"

Category	Treatability Groups	Volume (m^3)
Missing/Nonexistent/TBV	*Cemented Sludge*	0.000
	Combustible-Noncombustible Waste	0.000
	Combustible Waste	0.000
	Totals	**0.000**

Treatment: During visual inspections in support of STP waste work-off, occasionally an item cannot be found, or it is not located in the expected containers, according to WCATs. In some instances, such items cannot be verified as having been received in storage at LANL, and follow-up investigations within WCATs reveal that although the items were included in the original STP inventory, the waste items were never generated.

Some items were determined not to exist after visual inspection and document review. When Respondents determine that an STP-covered waste item does not exist, transfer of the item to the category called *"Missing/nonexistent/TBV*" is requested through this revision Annual Update.

If, at any time, any of these items is discovered in the inventory, NMED would be notified and approval requested for assignment of the rediscovered items to the appropriate treatability group.

APPENDICES

APPENDIX A CURRENT YEAR MLLW INVENTORY DETAIL

Table A-1 FY 2022 N3B MLLW Inventory Detailed Update by Treatability Group

CP [1] Section Part III	MWIR [1] Waste ID	Treatability Group/Category	FY 2021 Annual Update (m^3) [2]	Proposed Revision 33.0 (m^3) [2]	Comments	FY 2022 Annual Update (m^3) [2]	Projection FY 2023 - FY 2028 (m^3)
3.1.1	LA-W901	IPA Wastes	0	0		0	0
3.1.1	LA-W902	Scintillation Fluids	0	0		0	0
3.1.2	LA-W903	Lead Blankets	0	0		0	0
3.1.2	LA-W904	Soil with Heavy Metals	1.382	-0.832	Administrative adjustments	0.550	0
3.1.2	LA-W905	ER Soils	0	0		0	0
3.1.3	LA-W906	Aqueous Organic Liquids	3.812	0.114	New covered	3.812	0
				-0.114	Shipped off-site for treatment/disposal		
3.1.4	LA-W911	Organic-Contaminated Combustible Solids	0	0		0	0
3.1.4	LA-W919	Organic-Contaminated Noncombustible Solids	0	0		0	0
3.1.5	LA-W912	Combustible Debris	10.497	-10.289	Administrative adjustments	0.208	0
3.1.5	LA-W921	Activated or Inseparable Lead	0	0		0	0
3.1.5	LA-W922	Noncombustible Debris	31.736	-10.790	Administrative adjustments	20.946	0
				0	New covered		
				0	Shipped off-site for treatment/disposal		
3.1.6	LA-W913	Aqueous Wastes with Heavy Metals	0	0		0	0
3.1.6	LA-W914	Corrosive Solutions	0	0		0	0
3.1.6	LA-W915	Aqueous Cyanides, Nitrates, Chromates, and Arsenates	0	0		0	0
3.1.7	LA-W916	Water-Reactive Wastes	0	0		0	0
3.1.8	LA-W917	Compressed Gases Requiring Scrubbing	0.624	0	Administrative adjustments	0.624	0
				0	Shipped off-site for treatment/disposal		
3.1.9	LA-W918	Compressed Gases Requiring Oxidation	0	0		0	0
3.1.10	LA-W920	Elemental Mercury	0	0		0	0
3.1.11	LA-W907	Halogenated Organic Liquids	0	0		0	0
3.1.11	LA-W908	Nonhalogenated Organic Liquids	0	0		0	0
3.1.11	LA-W909	Bulk Oils	0	0		0	0

Table A-1 continued

CP [1] Section Part III	MWIR [1] Waste ID	Treatability Group/Category	FY 2021 Annual Update (m^3) [2]	Proposed Revision 33.0 (m^3) [2]	Comments	FY 2022 Annual Update (m^3) [2]	Projection FY 2023 - FY 2028 (m^3)
3.1.11	LA-W910	PCB Wastes with RCRA Components	0	0		0	0
3.1.11	LA-W923	Liquid and Solid Oxidizers	0	0		0	0
3.2	LA-W924	Lead Wastes – TBD	0	0		0	0
3.2	LA-W925	Mercury Wastes – TBD	0	0		0	0
3.2	LA-W926	Compressed Gases – TBD	0	0		0	0
3.2	LA-W927	Biochemical Laboratory Wastes	0	0		0	0
3.2	LA-W928	Dewatered Treatment Sludge	1.476	0	Administrative adjustments	1.476	0
3.2	LA-W932	Explosives	0	0		0	0
3.2	LA-W933	Labpacks	0	0		0	0
3.2	LA-W934	High Activity Waste [3]	1.477	0	Administrative adjustments	1.477	0
				0	Shipped off-site for treatment/disposal		
3.3.1	LA-W930	Lead for Surface Decontamination	0	0		0	0
3.3.2	LA-W929	Nonradioactive or Suspect Waste Items to be Surveyed	0	0		0	0
3.3.3	LA-W931	Lead Requiring Sorting	0	0		0	0
3.3.4	LA-W935	10–100 nCi/g Waste	91.044	25.797	Administrative adjustments	68.411	50
				5.824	New covered		
				-54.254	Shipped off-site for treatment/disposal		
Totals			**142.048**	**-44.544**		**97.504**	**50**

[1] CP is Compliance Plan; MWIR is Mixed Waste Inventory Report.

[2] Values were rounded to three significant figures after the decimal point.

[3] High activity waste (FTWCs and cryotraps) is located at TA-54 Area G but is managed by Triad.

Table A-2 FY 2022 Triad MLLW Inventory Detailed Update by Treatability Group

CP [1] Section Part III	MWIR [1] Waste ID	Treatability Group/Category	FY 2021 Annual Update (m^3) [2]	Proposed Revision 33.0 (m^3) [2]	Comments	FY 2022 Annual Update (m^3) [2]	Projection FY 2023 - FY 2028 (m^3)
3.1.1	LA-W901	IPA Wastes	0	0		0	0
3.1.1	LA-W902	Scintillation Fluids	0	0		0	0
3.1.2	LA-W903	Lead Blankets	0	0		0	0

Table A-2 continued

CP [1] Section Part III	MWIR [1] Waste ID	Treatability Group/Category	FY 2021 Annual Update (m^3) [2]	Proposed Revision 33.0 (m^3) [2]	Comments	FY 2022 Annual Update (m^3) [2]	Projection FY 2023 - FY 2028 (m^3)
3.1.2	LA-W904	Soil with Heavy Metals	0	0		0	0
3.1.2	LA-W905	ER Soils	0	0		0	0
3.1.3	LA-W906	Aqueous Organic Liquids	0	0		0	0
3.1.4	LA-W911	Organic-Contaminated Combustible Solids	0	0		0	0
3.1.4	LA-W919	Organic-Contaminated Noncombustible Solids	0	0		0	0
3.1.5	LA-W912	Combustible Debris	0	0		0	0
3.1.5	LA-W921	Activated or Inseparable Lead	0	0.208	New covered	0	0
				-0.208	Shipped off-site for treatment/disposal		
3.1.5	LA-W922	Noncombustible Debris	10.760	-10.760	Shipped off-site for treatment/disposal	0	0
3.1.6	LA-W913	Aqueous Wastes with Heavy Metals	0	0		0	0
3.1.6	LA-W914	Corrosive Solutions	0	0		0	0
3.1.6	LA-W915	Aqueous Cyanides, Nitrates, Chromates, and Arsenates	0	0		0	0
3.1.7	LA-W916	Water-Reactive Wastes	0	0		0	0
3.1.8	LA-W917	Compressed Gases Requiring Scrubbing	0	0		0	0
3.1.9	LA-W918	Compressed Gases Requiring Oxidation	0	0		0	0
3.1.10	LA-W920	Elemental Mercury	0	0		0	0
3.1.11	LA-W907	Halogenated Organic Liquids	0	0		0	0
3.1.11	LA-W908	Nonhalogenated Organic Liquids	0	0		0	0
3.1.11	LA-W909	Bulk Oils	0	0		0	0
3.1.11	LA-W910	PCB Wastes with RCRA Components	0	0		0	0
3.1.11	LA-W923	Liquid and Solid Oxidizers	0	0		0	0
3.2	LA-W924	Lead Wastes – TBD	0	0		0	0
3.2	LA-W925	Mercury Wastes – TBD	0	0		0	0
3.2	LA-W926	Compressed Gases – TBD	0	0		0	0
3.2	LA-W927	Biochemical Laboratory Wastes	0	0		0	0
3.2	LA-W928	Dewatered Treatment Sludge	0	0		0	0
3.2	LA-W932	Explosives	0	0		0	0

Table A-2 continued

CP [1] Section Part III	MWIR [1] Waste ID	Treatability Group/Category	FY 2021 Annual Update (m^3) [2]	Proposed Revision 33.0 (m^3) [2]	Comments	FY 2022 Annual Update (m^3) [2]	Projection FY 2023 - FY 2028 (m^3)
3.2	LA-W933	Labpacks	0	0		0	0
3.2	LA-W934	High Activity Waste	0	0		0	0
3.3.1	LA-W930	Lead for Surface Decontamination	0	0		0	0
3.3.2	LA-W929	Nonradioactive or Suspect Waste Items to be Surveyed	0	0		0	0
3.3.3	LA-W931	Lead Requiring Sorting	0	0		0	0
3.3.4	LA-W935	10–100 nCi/g Waste	0	0	New covered	0.208	50
				2.496	Administrative adjustments		
				-2.288	Shipped off-site for treatment/disposal		
Totals			**10.760**	**-10.552**		**0.208**	**50**

[1] CP is Compliance Plan; MWIR is Mixed Waste Inventory Report.

[2] Values were rounded to three significant figures after the decimal point.

APPENDIX B CURRENT YEAR MLLW SHIPMENT DETAIL

Table B-1 FY 2022 LANL MLLW Shipped Off-site for Treatment and Disposal

CP [1] Section Part III	MWIR [1] Waste ID	Treatability Group	Manifest Number	Destination	Date Shipped	Total Volume (m^3) [2]
3.1.3	LA-W906	Aqueous Organic Liquids	014573949FLE	Diversified Scientific Services	9/20/2022	0.114
3.3.4	LA-W935	10–100 nCi/g Waste	014573918FLE	EnergySolutions UT	6/8/2022	18.036
3.3.4	LA-W935	10–100nCi/g Waste	014573928FLE	EnergySolutions UT	6/22/2022	3.862
3.3.4	LA-W935	10–100 nCi/g Waste	014573934FLE	Perma-Fix WA	7/18/2022	7.814
3.3.4	LA-W935	10–100 nCi/g Waste	014573936FLE	Perma-Fix WA	7/18/2022	3.864
3.3.4	LA-W935	10–100 nCi/g Waste	014573947FLE	Perma-Fix FL	8/8/2022	6.118
3.3.4	LA-W935	10–100 nCi/g Waste	014573960FLE	Perma-Fix FL	9/26/2022	14.560
					N3B Shipped Off-site	**54.368**
3.1.5	LA-W921	Activated or Inseparable Lead	013908670FLE	Waste Control Specialists TX	7/18/2022	0.208
3.1.5	LA-W922	Noncombustible Debris	006648963FLE	Perma-Fix NW	10/11/2021	10.76
3.3.4	LA-W935	10–100 nCi/g Waste	013908639FLE	Waste Control Specialists TX	6/6/2022	1.872
3.3.4	LA-W935	10–100 nCi/g Waste	013904226FLE	Waste Control Specialists TX	8/22/2022	0.416
					Triad Shipped Off-site	**13.256**
					Total Shipped Off-site	**67.624**

[1] CP is Compliance Plan; MWIR is Mixed Waste Inventory Report.

[2] Values were rounded to three significant figures after the decimal point.

APPENDIX C CURRENT YEAR MLLW ADMINISTRATIVE ADJUSTMENTS

Table C-1 FY 2022 N3B MLLW Inventory Administrative Adjustments

CP [1] Section Part III	MWIR [1] Waste ID	Treatability Group	Administrative Adjustment	Volume (m^3) [2]
3.1.2	LA-W904	Soil With Heavy Metals	Recharacterized from LA-W935	-0.832
			Soil With Heavy Metals Adjustment	**-0.832**
3.1.5	LA-W912	Combustible Debris	EPA codes removed	-1.359
3.1.5	LA-W912	Combustible Debris	Recharacterized into LA-W935	-8.930
			Combustible Debris Adjustment	**-10.289**
3.1.5	LA-W922	Noncombustible Debris	Recharacterized from LA-W935	-10.884
3.1.5	LA-W922	Noncombustible Debris	Volume change from 0.322 m^3 to 0.416 m^3	0.094
			Noncombustible Debris Adjustment	**-10.790**
3.3.4	LA-W935	10–100 nCi/g Waste	EPA codes removed during recharacterization	-3.907
3.3.4	LA-W935	10–100 nCi/g Waste	Recharacterized from LA-W904	0.832
3.3.4	LA-W935	10–100 nCi/g Waste	Recharacterized from LA-W912	8.930
3.3.4	LA-W935	10–100 nCi/g Waste	Recharacterized from LA-W922	10.884
3.3.4	LA-W935	10–100 nCi/g Waste	Reclassified from Cemented Sludge Waste	1.912
3.3.4	LA-W935	10–100 nCi/g Waste	Reclassified from Combustible-Noncombustible Waste	5.462
3.3.4	LA-W935	10–100 nCi/g Waste	Reclassified from Solidified Inorganic Noncombustible Waste	1.570
3.3.4	LA-W935	10–100 nCi/g Waste	Volume change from 0.208 m^3 to 0.322 m^3	0.114
			10–100 nCi/g Waste Adjustment	**25.797**
			Total Adjustments	**3.886**

[1] CP is Compliance Plan; MWIR is Mixed Waste Inventory Report.

[2] Values were rounded to three significant figures after the decimal point.

Table C-2 FY 2022 Triad MLLW Inventory Administrative Adjustments

CP [1] Section Part III	MWIR [1] Waste ID	Treatability Group	Administrative Adjustment	Volume (m^3) [2]
3.3.4	LA-W935	10–100 nCi/g Waste	MTRU recharacterized to MLLW	2.496
			10–100 nCi/g Waste Adjustment	**2.496**
			Total Adjustments	**2.496**

[1] CP is Compliance Plan; MWIR is Mixed Waste Inventory Report.

[2] Values were rounded to three significant figures after the decimal point.

APPENDIX D PREVIOUS YEAR MLLW INVENTORY DETAIL

Table D-1 FY 2021 N3B MLLW Inventory Detailed Update by Treatability Group

CP [1] Section	MWIR [1] Waste ID	Treatability Group/Category	FY 2020 Annual Update (m^3) [2]	Proposed Revision 32.0 (m^3) [2]	Comments	FY 2021 Annual Update (m^3) [2]	Projection FY 2022 - FY 2027 (m^3)
3.1.1	LA-W901	IPA Wastes	0	0		0	0
3.1.1	LA-W902	Scintillation Fluids	0	0		0	0
3.1.2	LA-W903	Lead Blankets	0	0		0	0
3.1.2	LA-W904	Soil with Heavy Metals	0.550	0. 832	Administrative adjustments	1.382	0
3.1.2	LA-W905	ER Soils	0	0		0	0
3.1.3	LA-W906	Aqueous Organic Liquids	4.020	-0.208	Shipped off-site for treatment/disposal	3.812	0
3.1.4	LA-W911	Organic-Contaminated Combustible Solids	0	0		0	0
3.1.4	LA-W919	Organic-Contaminated Noncombustible Solids	0	0		0	0
3.1.5	LA-W912	Combustible Debris	0.416	10.081	Administrative adjustments	10.497	0
3.1.5	LA-W921	Activated or Inseparable Lead	0	0		0	0
3.1.5	LA-W922	Noncombustible Debris	23.456	8.072	Administrative adjustments	31.736	0
				0.208	New covered		
				0	Shipped off-site for treatment/disposal		
3.1.6	LA-W913	Aqueous Wastes with Heavy Metals	0	0		0	0
3.1.6	LA-W914	Corrosive Solutions	0	0		0	0
3.1.6	LA-W915	Aqueous Cyanides, Nitrates, Chromates, and Arsenates	0	0		0	0
3.1.7	LA-W916	Water-Reactive Wastes	0	0		0	0
3.1.8	LA-W917	Compressed Gases Requiring Scrubbing	0.624	0	Administrative adjustments	0.624	0
				0	Shipped off-site for treatment/disposal		
3.1.9	LA-W918	Compressed Gases Requiring Oxidation	0	0		0	0
3.1.10	LA-W920	Elemental Mercury	0	0		0	0
3.1.11	LA-W907	Halogenated Organic Liquids	0	0		0	0
3.1.11	LA-W908	Nonhalogenated Organic Liquids	0	0		0	0
3.1.11	LA-W909	Bulk Oils	0	0		0	0
3.1.11	LA-W910	PCB Wastes with RCRA Components	0	0		0	0

Table D-1 (continued)

CP [1] Section	MWIR [1] Waste ID	Treatability Group/Category	FY 2020 Annual Update (m^3) [2]	Proposed Revision 32.0 (m^3) [2]	Comments	FY 2021 Annual Update (m^3) [2]	Projection FY 2022 - FY 2027 (m^3)
3.1.11	LA-W923	Liquid and Solid Oxidizers	0	0		0	0
3.2	LA-W924	Lead Wastes – TBD	0	0		0	0
3.2	LA-W925	Mercury Wastes – TBD	0	0		0	0
3.2	LA-W926	Compressed Gases – TBD	0	0		0	0
3.2	LA-W927	Biochemical Laboratory Wastes	0	0		0	0
3.2	LA-W928	Dewatered Treatment Sludge	1.476	0	Administrative adjustments	1.476	0
3.2	LA-W932	Explosives	0	0		0	0
3.2	LA-W933	Labpacks	0	0		0	0
3.2	LA-W934	High Activity Waste [3]	1.477	0	Administrative adjustments	1.477	0
				0	Shipped off-site for treatment/disposal		
3.3.1	LA-W930	Lead for Surface Decontamination	0	0		0	0
3.3.2	LA-W929	Nonradioactive or Suspect Waste Items to be Surveyed	0	0		0	0
3.3.3	LA-W931	Lead Requiring Sorting	0	0		0	0
3.3.4	LA-W935	10–100 nCi/g Waste	159.092	21.726	Administrative adjustments	91.044	50
				0	New covered		
				-89.774	Shipped off-site for treatment/disposal		
		Totals	**191.111**	**-49.063**		**142.048**	**50**

[1] CP is Compliance Plan and MWIR is Mixed Waste Inventory Report.
[2] Values were rounded to three significant figures after the decimal point.
[3] High activity waste (FTWCs and cryotraps) is located at TA-54 Area G but is managed by Triad.

Table D-2 FY 2021 Triad MLLW Inventory Detailed Update by Treatability Group

CP [1] Section	MWIR [1] Waste ID	Treatability Group/Category	FY 2020 Annual Update (m^3) [2]	Proposed Revision 32.0 (m^3)	Comments	FY 2021 Annual Update (m^3) [2]	Projection FY 2022 - FY 2027 (m^3)
3.1.1	LA-W901	IPA Wastes	0	0		0	0
3.1.1	LA-W902	Scintillation Fluids	0	0		0	0
3.1.2	LA-W903	Lead Blankets	0	0		0	0
3.1.2	LA-W904	Soil with Heavy Metals	0	0		0	0
3.1.2	LA-W905	ER Soils	0	0		0	0

Table D-2 (continued)

CP [1] Section	MWIR [1] Waste ID	Treatability Group/Category	FY 2020 Annual Update (m^3) [2]	Proposed Revision 32.0 (m^3)	Comments	FY 2021 Annual Update (m^3) [2]	Projection FY 2022 - FY 2027 (m^3)
3.1.3	LA-W906	Aqueous Organic Liquids	0	0		0	0
3.1.4	LA-W911	Organic-Contaminated Combustible Solids	0	0		0	0
3.1.4	LA-W919	Organic-Contaminated Noncombustible Solids	0	0		0	0
3.1.5	LA-W912	Combustible Debris	0	0		0	0
3.1.5	LA-W921	Activated or Inseparable Lead	0	0		0	0
3.1.5	LA-W922	Noncombustible Debris	0	10.760	New covered	10.760	0
3.1.6	LA-W913	Aqueous Wastes with Heavy Metals	0	0		0	0
3.1.6	LA-W914	Corrosive Solutions	0	0		0	0
3.1.6	LA-W915	Aqueous Cyanides, Nitrates, Chromates, and Arsenates	0	0		0	0
3.1.7	LA-W916	Water-Reactive Wastes	0	0		0	0
3.1.8	LA-W917	Compressed Gases Requiring Scrubbing	0	0		0	0
3.1.9	LA-W918	Compressed Gases Requiring Oxidation	0	0		0	0
3.1.10	LA-W920	Elemental Mercury	0	0		0	0
3.1.11	LA-W907	Halogenated Organic Liquids	0	0		0	0
3.1.11	LA-W908	Nonhalogenated Organic Liquids	0	0		0	0
3.1.11	LA-W909	Bulk Oils	0	0		0	0
3.1.11	LA-W910	PCB Wastes with RCRA Components	0	0		0	0
3.1.11	LA-W923	Liquid and Solid Oxidizers	0	0		0	0
3.2	LA-W924	Lead Wastes – TBD	0	0		0	0
3.2	LA-W925	Mercury Wastes – TBD	0	0		0	0
3.2	LA-W926	Compressed Gases – TBD	0	0		0	0
3.2	LA-W927	Biochemical Laboratory Wastes	0	0		0	0
3.2	LA-W928	Dewatered Treatment Sludge	0	0		0	0
3.2	LA-W932	Explosives	0	0		0	0
3.2	LA-W933	Labpacks	0	0		0	0
3.2	LA-W934	High Activity Waste	0	0		0	0
3.3.1	LA-W930	Lead for Surface Decontamination	0	0		0	0

Table D-2 (continued)

CP [1] Section	MWIR [1] Waste ID	Treatability Group/Category	FY 2020 Annual Update (m^3) [2]	Proposed Revision 32.0 (m^3)	Comments	FY 2021 Annual Update (m^3) [2]	Projection FY 2022 - FY 2027 (m^3)
3.3.2	LA-W929	Nonradioactive or Suspect Waste Items to be Surveyed	0	0		0	0
3.3.3	LA-W931	Lead Requiring Sorting	0	0		0	0
3.3.4	LA-W935	10–100 nCi/g Waste	26.956	0.416	New covered	0	50
				-13.980	Administrative adjustments		
				-13.392	Shipped off-site for treatment/disposal		
		Totals	**26.956**	**-16.196**		**10.760**	**50**

[1] CP is Compliance Plan; MWIR is Mixed Waste Inventory Report.

[2] Values were rounded to three significant figures after the decimal point.

APPENDIX E CURRENT YEAR MTRU INVENTORY DETAIL

Table E-1 FY 2022 N3B MTRU Inventory by Treatability Group

Treatability Group	FY 2021 Annual Update (m^3) [1]	Proposed Revision 33.0 (m^3) [1]	Comments [2]	FY 2022 Annual Update (m^3) [1]	Projection FY 2023 – FY 2028 (m^3)
Cemented Sludge Waste	611.986	110.680	Administrative adjustments	573.070	0
		1.878	New covered		
		-151.474	Removed from inventory (shipped to WIPP)		
Combustible Waste	0	0	Administrative adjustments	0	0
		0	New covered		
		0	Removed from inventory (shipped to WIPP)		
Combustible-Noncombustible Waste	511.091	6.614	Administrative adjustments	468.917	100
		1.040	New covered		
		-49.828	Removed from inventory (shipped to WIPP)		
Glass Waste	0	0	Administrative adjustments	0	0
		0	New covered		
		0	Removed from inventory (shipped to WIPP)		
Leaded Glovebox Waste	0	0	Administrative adjustments	0	0
		0	New covered		
		0	Removed from inventory (shipped to WIPP)		
Metallic Waste	0.208	0	Administrative adjustments	0.208	0
		0	New covered		
		0	Removed from inventory (shipped to WIPP)		
Noncombustible Waste	2.402	-0.208	Administrative adjustments	2.194	0
		0	New covered		
		0	Removed from inventory (shipped to WIPP)		
Solidified Inorganic and Organic Waste	4.898	0.208	Administrative adjustments	3.858	0
		0	New covered		
		-1.248	Removed from inventory (shipped to WIPP)		
Solidified Inorganic Noncombustible Waste	87.574	5.014	Administrative adjustments	87.984	0
		0	New covered		
		-4.604	Removed from inventory (shipped to WIPP)		
Solidified Inorganic Particulate Waste	88.320	-0.228	Administrative adjustments	87.676	0
		0	New covered		
		-0.416	Removed from inventory (shipped to WIPP)		
Totals	**1306.479**	**-82.572**		**1223.907**	**100**

[1] Values were rounded to three significant figures after the decimal point.

[2] Shipping details are found in Appendix F and administrative adjustments are found in Appendix G.

Table E-2 FY 2022 Triad MTRU Inventory by Treatability Group

Treatability Group	FY 2021 Annual Update (m^3) [1]	Proposed Revision 33.0 (m^3) [1]	Comments [2]	FY 2022 Annual Update (m^3) [1]	Projection FY 2023 – FY 2028 (m^3)
Cemented Sludge Waste	0	0	Administrative adjustments	0	0
		0	New covered		
		0	Shipped to WIPP		
Combustible Waste	0	0	Administrative adjustments	0	0
		0	New covered		
		0	Shipped to WIPP		
Combustible-Noncombustible Waste	154.647	-17.282	Administrative adjustments	126.019	100
		39.614	New covered		
		-50.960	Shipped to WIPP		
Glass Waste	0	0	Administrative adjustments	0	0
		0	New covered		
		0	Shipped to WIPP		
Leaded Glovebox Waste	0	0	Administrative adjustments	0	0
		0	New covered		
		0	Shipped to WIPP		
Metallic Waste	0.416	-0.416	Administrative adjustments	0	0
		0	New covered		
		0	Shipped to WIPP		
Noncombustible Waste	39.932	-0.416	Administrative adjustments	39.516	0
		0	New covered		
		0	Shipped to WIPP		
Solidified Inorganic and Organic Waste	0	0	Administrative adjustments	0	0
		0	New covered		
		0	Shipped to WIPP		
Solidified Inorganic Noncombustible Waste	0	0	Administrative adjustments	0	0
		0	New covered		
		0	Shipped to WIPP		
Solidified Inorganic Particulate Waste	0	0	Administrative adjustments	0	0
		0	New covered		
		0	Shipped to WIPP		
Totals	**194.995**	**-29.460**		**165.535**	**100**

[1] Values were rounded to three significant figures after the decimal point.

[2] Shipping details are found in Appendix F and administrative adjustments are found in Appendix G.

Table E-3 FY 2022 3706 Aboveground EM Legacy MTRU Inventory by Treatability Group

Treatability Group	FY 2021 Annual Update (m^3) [1]	Proposed Revision 33.0 (m^3) [1]	Comments [2]	FY 2022 Annual Update (m^3) [1]	Projection FY 2023 – FY 2028 (m^3)
Cemented Sludge Waste	64.074	6.868	Administrative adjustments	64.898	0
		0	New covered		
		-6.044	Removed from inventory (shipped to WIPP)		
Combustible Waste	0	0	Administrative adjustments	0	0
		0	New covered		
		0	Removed from inventory (shipped to WIPP)		
Combustible-Noncombustible Waste	160.309	-2.160	Administrative adjustments	129.359	0
		0	New covered		
		-28.790	Removed from inventory (shipped to WIPP)		
Glass Waste	0	0	Administrative adjustments	0	0
		0	New covered		
		0	Removed from inventory (shipped to WIPP)		
Leaded Glovebox Waste	0	0	Administrative adjustments	0	0
		0	New covered		
		0	Removed from inventory (shipped to WIPP)		
Metallic Waste	0	0	Administrative adjustments	0	0
		0	New covered		
		0	Removed from inventory (shipped to WIPP)		
Noncombustible Waste	0.738	-0.208	Administrative adjustments	0.530	0
		0	New covered		
		0	Removed from inventory (shipped to WIPP)		
Solidified Inorganic and Organic Waste	2.288	0	Administrative adjustments	2.288	0
		0	New covered		
		0	Removed from inventory (shipped to WIPP)		
Solidified Inorganic Noncombustible Waste	14.816	-0.322	Administrative adjustments	10.098	0
		0	New covered		
		-4.396	Removed from inventory (shipped to WIPP)		
Solidified Inorganic Particulate Waste	81.618	0.208	Administrative adjustments	81.826	0
		0	New covered		
		0	Removed from inventory (shipped to WIPP)		
Totals	**323.843**	**-34.844**		**288.999**	**0**

[1] Values were rounded to three significant figures after the decimal point.

[2] Shipping details are found in Appendix F and administrative adjustments are found in Appendix G.

APPENDIX F CURRENT YEAR MTRU WASTE SHIPMENTS TO WIPP

Table F-1 FY 2022 MTRU Shipments to WIPP

Quarter	Treatability Group	Inventory Volume Shipped (m^3)	New Covered Volume (m^3)	Total Volume Removed from STP Inventory (m^3)	FY 2022 Total Volume Shipped (m^3)
Q1	Cemented Sludge Waste	4.992	0	4.992	4.992
	Combustible-Noncombustible Waste	34.168	0	34.168	34.168
	Solidified Inorganic and Organic Waste	0.624	0	0.624	0.624
	Solidified Inorganic Particulate Waste	0.208	0	0.208	0.208
Q2	Cemented Sludge Waste	2.704	0	2.704	2.704
	Combustible-Noncombustible Waste	18.108	0	18.108	18.152
	Solidified Inorganic Noncombustible Waste	0.208	0	0.208	0.208
	Solidified Inorganic Particulate Waste	0.208	0	0.208	0.208
Q3	Cemented Sludge Waste	6.662	0	6.662	6.684
	Combustible-Noncombustible Waste	26.024	0	26.024	26.112
	Solidified Inorganic and Organic Waste	0.624	0	0.624	0.624
	Solidified Inorganic Noncombustible Waste	4.396	0	4.396	4.396
Q4	Cemented Sludge Waste	137.116	0	137.116	138.700
	Combustible-Noncombustible Waste	20.616	1.872	22.488	22.576
	Solidified Inorganic and Organic Waste	0	0	0	0
	Solidified Inorganic Noncombustible Waste	0	0	0	0
Grand Total		**256.658**	**1.872**	**258.530**	**260.356**

Table F-2 FY 2014 MTRU Shipments to WCS

FY 2014 Quarter	Treatability Group	Existing FY 2014 Inventory Volume (m^3) [1]	New Covered Volume (m^3)	Inventory on Hold in FY 2021 (m^3)	Volume Removed from Inventory in FY 2022 (m^3)	Inventory Remaining on Hold in FY 2022 (m^3)
Q3 [2]	Cemented Sludge Waste	22.256	0	10.400	0	10.400
	Combustible-Noncombustible Waste	99.954	0	6.240	0	6.240
	Noncombustible Waste	0.832	0	0.208	0	0.208
	Solidified Inorganic Noncombustible Waste	9.380	0	4.274	0	4.274
	Solidified Inorganic Particulate Waste	23.296	0	23.296	0	23.296
Grand Total		**155.718**	**0**	**44.418**	**0**	**44.418**

[1] Volumes shipped in FY 2014 but not removed from the STP inventory.

[2] All shipment dates of MTRU containers to WCS were in FY 2014 Q3.

Table F-3 FY 2014 MTRU Shipments to AMWTP (INL)

FY 2014 Quarter	Treatability Group	Existing FY 2014 Inventory Volume (m^3) [1]	New Covered Volume (m^3)	Total Inventory on Hold (m^3)	Total Volume Shipped (m^3)	Total Disposed in FY 2022 (m^3)
Q1	Combustible-Noncombustible Waste Total	0	0	0	0	0
Q2	Combustible-Noncombustible Waste Total	0	0	0	0	0
Q3	Combustible-Noncombustible Waste Total	0	0	0	0	0
Q4	Combustible-Noncombustible Waste Total	0	0	0	0	0
(See Note) Grand Total		**0**	**0**	**0**	**0**	**0**

[1] Volumes shipped in FY 2014 but not removed from the STP inventory.

Table F-4 FY 2014 On-Hold MTRU Shipments to WCS and then to WIPP[1]

Treatability Group	FY 2014 on Hold Shipped to WCS in FY 2014 Q3 (m^3)	FY 2014 on Hold New Covered at WCS from FY 2015–FY 2022 (m^3)	FY 2014 on Hold Remaining at WCS in FY 2021 (m^3)	FY 2014 on Hold Removed from Inventory (Shipped from WCS to WIPP in FY 2022 by Quarter) (m^3)		FY 2014 on Hold Remaining at WCS in FY 2022 (m^3)
Cemented Sludge Waste	22.256	0	10.400	Q1	0	10.400
				Q2	0	
				Q3	0	
				Q4	0	
Combustible-Noncombustible Waste	99.954	0	6.240	Q1	0	6.240
				Q2	0	
				Q3	0	
				Q4	0	
Noncombustible Waste	0.832	0	0.208	Q1	0	0.208
				Q2	0	
				Q3	0	
				Q4	0	
Solidified Inorganic Noncombustible Waste	9.380	0	4.274	Q1	0	4.274
				Q2	0	
				Q3	0	
				Q4	0	
Solidified Inorganic Particulate Waste	23.296	0	23.296	Q1	0	23.296
				Q2	0	
				Q3	0	
				Q4	0	
Grand Total	**155.718**	**0**	**44.418**		**0**	**44.418**

[1] Volumes shipped in FY 2014 but not removed from the STP inventory.

APPENDIX G CURRENT YEAR MTRU INVENTORY ADMINISTRATIVE ADJUSTMENTS

Table G-1 FY 2022 N3B MTRU Inventory Administrative Adjustments

Treatability Group	Administrative Adjustment	Volume (m^3)
Cemented Sludge Waste	Container Overpacked	111.692
	Container Repackaged	2.294
	EPA codes removed during reclassification	-0.322
	Recharacterized into Combustible-Noncombustible Waste	-1.174
	Reclassified into MLLW MWIR LA-W935	-1.912
	Volume change from 0.314 m^3 to 0.416 m^3	0.102
	Cemented Sludge Waste Adjustment	**110.680**
Combustible Waste		0
	Combustible Waste Adjustment	**0**
Combustible-Noncombustible Waste	Container Denested	-0.456
	Container Overpacked	-1.818
	Container Repackaged	0.114
	EPA codes removed during reclassification	-1.610
	Recharacterized from Cemented Sludge Waste	1.174
	Recharacterized into Solidified Inorganic and Organic Waste	-0.208
	Recharacterized into Solidified Inorganic Noncombustible Waste	-0.322
	Reclassified into MLLW MWIR LA-W935	-5.462
	Transferred from Triad	15.202
	Combustible-Noncombustible Waste Adjustment	**6.614**
Glass Waste		0
	Glass Waste Adjustment	**0**
Leaded Glovebox Waste		0
	Leaded Glovebox Waste Adjustment	**0**
Metallic Waste		0
	Metallic Waste Adjustment	**0**
Noncombustible Waste	Recharacterized into Solidified Inorganic Particulate Waste	-0.208
	Noncombustible Waste Adjustment	**-0.208**
Solidified Inorganic and Organic Waste	Recharacterized from Combustible-Noncombustible Waste	0.208
	Solidified Inorganic and Organic Waste Adjustment	**0.208**
Solidified Inorganic Noncombustible Waste	Container Overpacked	-0.966
	Container Repackaged	7.644
	EPA codes removed during reclassification	-0.416
	Recharacterized from Combustible-Noncombustible Waste	0.322
	Reclassified into MLLW MWIR LA-W935	-1.570
	Solidified Inorganic Noncombustible Waste Adjustment	**5.014**

Table G-1 (continued)

Treatability Group	Administrative Adjustment	Volume (m^3)
Solidified Inorganic Particulate Waste	Container Denested	-0.114
	Container Overpacked	-0.322
	Recharacterized from Noncombustible Waste	0.208
	Solidified Inorganic Particulate Waste Adjustment	**-0.228**
	Total N3B Adjustments	**122.080**

Table G-2 FY 2022 Triad MTRU Inventory Administrative Adjustments

Treatability Group	Administrative Adjustment	Volume (m^3)
Cemented Sludge Waste		0
	Cemented Sludge Waste Adjustment	**0**
Combustible Waste		0
	Total Combustible Waste Adjustment	**0**
Combustible-Noncombustible Waste	Recharacterized into MLLW	-2.496
	Transferred to N3B in FY 2022	-14.786
	Transferred to N3B in FY 2021	-0.208
	Recharacterized from Metallic Waste	0.208
	Total Combustible-Noncombustible Waste Adjustment	**-17.282**
Glass Waste		0
	Glass Waste Adjustment	**0**
Leaded Glovebox Waste		0
	Leaded Glovebox Waste Adjustment	**0**
Metallic Waste	Recharacterized to Combustible-Noncombustible Waste	-0.208
	Transferred to N3B in FY 2022	-0.208
	Metallic Waste Adjustment	**-0.416**
Noncombustible Waste	Recharacterized to Combustible-Noncombustible Waste	-0.208
	Transferred to N3B in FY 2022	-0.208
	Noncombustible Waste Adjustment	**-0.416**
Solidified Inorganic and Organic Waste		0
	Solidified Inorganic and Organic Waste Adjustment	**0**
Solidified Inorganic Noncombustible Waste		0
	Solidified Inorganic Noncombustible Waste Adjustment	**0**
Solidified Inorganic Particulate Waste		0
	Solidified Inorganic Particulate Waste Adjustment	**0**
	Total Triad Adjustments	**-18.114**

Table G-3 FY 2022 3706 MTRU Inventory Administrative Adjustments

Treatability Group	Administrative Adjustments	Volume (m^3)
Cemented Sludge Waste	Container Overpacked	7.190
	Reclassified into MLLW MWIR LA-W935	-0.322
	Cemented Sludge Waste Adjustment	**6.868**
Combustible Waste		0
	Combustible Waste Adjustment	**0**
Combustible-Noncombustible Waste	Container Denested	-0.342
	Container Overpacked	-0.852
	EPA codes removed during reclassification	-0.644
	Reclassified into MLLW MWIR LA-W935	-0.322
	Combustible-Noncombustible Waste Adjustment	**-2.160**
Glass Waste		0
	Glass Waste Adjustment	**0**
Leaded Glovebox Waste		0
	Leaded Glovebox Waste Adjustment	**0**
Metallic Waste		0
	Metallic Waste Adjustment	**0**
Noncombustible Waste	Recharacterized into Solidified Inorganic Particulate Waste	-0.208
	Noncombustible Waste Adjustment	**-0.208**
Solidified Inorganic and Organic Waste		0
	Solidified Inorganic and Organic Waste Adjustment	**0**
Solidified Inorganic Noncombustible Waste	Reclassified into MLLW MWIR LA-W935	-0.322
	Solidified Inorganic Noncombustible Waste Adjustment	**-0.322**
Solidified Inorganic Particulate Waste	Recharacterized from Noncombustible Waste	0.208
	Solidified Inorganic Particulate Waste Net Adjustment	**0.208**
	Total 3706 Adjustments	**4.386**

APPENDIX H MLLW TREATMENT FACILITIES

Table H-1 Commercial Facilities Contacted for Waste Treatment Capabilities

Commercial Facility	Location
Perma-Fix (including Material & Energy Corporation in Tennessee; Diversified Scientific Services, Inc. in Tennessee; and Perma-Fix North West in Washington; and Perma-Fix Florida in Gainesville, Florida) Perma-Fix has permitted treatment facilities for the treatment of low-level radioactive and low-level mixed waste. The facilities can perform to include thermal treatment, compaction, macroencapsulation, neutralization, and stabilization. All are licensed within their respective State of location under the Nuclear Regulatory Commission regulations and permitted under the RCRA regulations	Florida, Washington and Tennessee
Waste Control Specialists (WCS) WCS, located in Andrews, Texas, is a permitted treatment facility for the treatment and disposal of LLW and MLLW. The site has regulatory authorization for industrial solid waste and hazardous waste storage, processing, and land disposal under RCRA permit # HW-50358 granted by the state of Texas. EPA has authorized the site for treatment, storage, and land disposal of Toxic Substances Control Act (TSCA) wastes (TXD988088464). The facility can process waste that requires compaction, microencapsulation, macroencapsulation, neutralization, deactivation, chemical oxidation, chemical reduction and stabilization**.**	Texas
Energy Solutions of Utah (including Bear Creek Operations in Tennessee) Energy Solutions, located in Clive, Utah, is a permitted treatment facility for the treatment and disposal of LLW and MLLW. The site houses both a low-level radioactive waste treatment facility and a low-level mixed waste treatment facility, which are licensed under state of Utah Department of Environmental Quality, License Number UT2300249 and by the EPA hazardous waste permit number UT0982598898.	Utah
Nuclear Fuel Services	Tennessee
Integrated Environmental Services	Tennessee
NSSI Houston- Nuclear Sources & Services, Inc.	Texas

APPENDIX I CORRESPONDENCE

Table I-1 FY 2022 Expedited Shipment Letters

Letter Date	Description	Letter Number	Revision Reference
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—	—	—	—
—	—	—	—

* — = not applicable

Table I-2 FY 2022 Correspondence from DOE/NNSA/Triad

Letter Date	Description	Letter Number	Revision Reference
10/27/2021	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory (LANL)	EPC-DO-21-335	33
11/11/2021	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory (LANL)	EPC-DO-21-348	33
12/6/2021	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-21-363	33
12/8/2021	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-21-389	33
1/3/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-21-406	33
1/5/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-003	33
2/10/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-046	33
2/28/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-064	33
3/7/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-073	33

Table I-2 (continued)

Letter Date	Description	Letter Number	Revision Reference
3/28/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-094	33
4/12/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-099	33
4/20/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-116	33
5/10/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-124	33
7/6/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-179	33
7/7/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-158	33
7/7/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-180	33
7/22/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-192	33
8/17/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-210	33
8/17/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-213	33
9/6//2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-235	33
9/9/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-244	33
9/9/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-245	33

Table I-2 (continued)

Letter Date	Description	Letter Number	Revision Reference
10/4/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-256	33
10/17/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-270	33
10/17/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-273	33
10/26/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-274	33
11/3/2022	Notice of Completion of Off-Site Waste Shipment for Final Disposal, per the Federal Facility Compliance Order, Compliance Plan (Part III), Site Treatment Plan, Los Alamos National Laboratory	EPC-DO-22-275	33

Table I-3 FY 2022 Correspondence from DOE EM-LA/N3B

Letter Date	Description	Letter/Document Number	Revision Reference
10/21/2021	Notice of Completion of Off-Site Waste Shipment Activity Required by the Federal Facilities Compliance Order, Site Treatment Plan, Compliance Plan, Section 4.0 (August 19, 2021, LA210034 and PF110734; and September 2, 2021, PF110832 and PF110833) (STP)(FFCO)	N3B-2021-0323	33
12/7/2021	Notice of Completion of Off-Site Waste Shipments for the Fourth Quarter of Fiscal Year 2021 for Los Alamos National Laboratory as Required by the Federal Facilities Compliance Order Site Treatment Plan Compliance Plan Section 4.0	N3B-2021-0389	33
12/7/2021	Notice of Completion of Off-Site Waste Shipment Activity Required by the Federal Facilities Compliance Order, Site Treatment Plan, Compliance Plan, Section 4.0 (September 30, 2021, LA210036 and LA210037; PF110897 and PF110918) (STP)(FFCO)	N3B-2021-0380	33
12/14/2021	Notice of Completion of Off-Site Waste Shipment Activity Required by the Federal Facilities Compliance Order, Site Treatment Plan, Compliance Plan, Section 4.0 (October 7, 2021, LA210038; October 19, 2021, LA210039; and October 21, 2021, LA210040 and LA210041) (STP)(FFCO)	N3B-2021-0420	33
1/18/2022	Notice of Completion of Off-Site Waste Shipment Activity Required by the Federal Facilities Compliance Order, Site Treatment Plan, Compliance Plan, Section 4.0 (November 9, 2021, LA210047 and LA210048; November 18, 2021, LA210050 and LA210051; and November 23, 2021, LA210052) (STP)(FFCO)	N3B-2021-0449	33

Table I-3 (continued)

Letter Date	Description	Letter/Document Number	Revision Reference
2/3/2022	Notice of Completion of Off-Site Waste Shipment Activity Required by the Federal Facilities Compliance Order, Site Treatment Plan, Compliance Plan, Section 4.0 (December 2, 2021, LA210053; December 9, 2021, LA210054; and December 16, 2021, LA210056) (STP)(FFCO)	N3B-2022-0002	33
3/4/2022	Notice of Completion of Off-Site Waste Shipments for the First Quarter of Fiscal Year 2022 for Los Alamos National Laboratory as Required by the Federal Facilities Compliance Order Site Treatment Plan Compliance Plan Section 4.0	N3B-2022-0023	33
3/11/2022	Notice of Completion of Off-Site Waste Shipment Activity Required by the Federal Facilities Compliance Order, Site Treatment Plan, Compliance Plan, Section 4.0 (January 6, 2022, LA220001 and LA220002; January 27, 2022, LA220003 and LA220004) (STP)(FFCO)	N3B-2022-0055	33
3/24/2022	Site Treatment Plan Fiscal Year 2021 Annual Update and Proposed Revision 32.0, Federal Facilities Compliance Order	N3B-2022-0013	33
4/19/2022	Notice of Completion of Off-Site Waste Shipment Activity Required by the Federal Facilities Compliance Order, Site Treatment Plan, Compliance Plan, Section 4.0 (February 18, 2022, LA220007 and LA220008; March 3, 2022, LA220010) (STP)(FFCO)	N3B-2022-0104	33
4/19/2022	Replacement Pages for the Site Treatment Plan Fiscal Year 2021 Annual Update and Proposed Revision 32.0, Federal Facilities Compliance Order	N3B-2022-0143	33
6/2/2022	Notice of Completion of Off-Site Waste Shipments for the Second Quarter of Fiscal Year 2022 for Los Alamos National Laboratory as Required by the Federal Facilities Compliance Order Site Treatment Plan Compliance Plan Section 4.0 and 3.3.4	N3B-2022-0169	33
6/10/2022	Notice of Completion of Off-Site Waste Shipment Activity Required by the Federal Facilities Compliance Order, Site Treatment Plan, Compliance Plan, Section 4.0 (April 7, 2022, LA220014 and LA220015; April 13, 2022, LA220016) (STP)(FFCO)	N3B-2022-0170	33
7/18/2022	Response to Public Comments on the Site Treatment Plan Fiscal Year 2021 Annual Update and Proposed Revision 32.0, Federal Facilities Compliance Order	EM2022-0557	33
7/22/2022	Notice of Completion of Off-Site Waste Shipment Activity Required by the Federal Facilities Compliance Order, Site Treatment Plan, Compliance Plan, Section 4.0 (May 24, 2022, LA220020; May 26, 2022, LA220021 and LA220022; June 2, 2022, LA220023; and June 8, 2022, ES111661) (STP)(FFCO)	N3B-2022-0234	33
8/22/2022	Notice of Completion of Off-Site Waste Shipment Activity Required by the Federal Facilities Compliance Order, Site Treatment Plan, Compliance Plan, Section 4.0 (June 21, 2022, LA220026; June 22, 2022, ES111838; June 30, 2022, LA220029; July 5, 2022, LA220030; and July 7, 2022, LA220030) (STP)(FFCO)	N3B-2022-0302	33

Table I-3 (continued)

Letter Date	Description	Letter/Document Number	Revision Reference
8/31/2022	Notice of Completion of Off-Site Waste Shipments for the Third Quarter of Fiscal Year 2022 for Los Alamos National Laboratory as Required by the Federal Facilities Compliance Order Site Treatment Plan Compliance Plan Activities 3.3.4 and 4.0	N3B-2022-0301	33
9/14/2022	Notice of Completion of Off-Site Waste Shipment Activity Required by the Federal Facilities Compliance Order, Site Treatment Plan, Compliance Plan, Activities 3.3.4 and 4.0 (July 12, 2022, LA220032; July 14, 2022, LA220033; July 19, 2022, LA220034; July 21, 2022, LA220035; July 26, 2022, LA220036; July 27, 2022, LA22-0037; and July 18, 2022, PF111852) (STP)(FFCO)	N3B-2022-0331	33
9/16/2022	Replacement Pages for the Notice of Completion of Off-Site Waste Shipments for the Third Quarter of Fiscal Year 2022 for Los Alamos National Laboratory as Required by the Federal Facilities Compliance Order Site Treatment Plan Compliance Plan Activities 3.3.4 and 4.0	N3B-2022-0374	33

APPENDIX J HISTORY OF CHANGES TO THE CP AND FFCO

As discussed in Part III (CP), Section 1.2, the STP CP has been modified several times since it was originally issued, in accordance with the provisions of Section X, *Revisions,* and Section XI, *Other Amendments to the STP,* of the October 4, 1995, FFCO, as amended and revised. This appendix provides a summary of these CP changes and of modifications to the FFCO since its issuance.

To date, there have been 32 revisions, revision 33.0 is pending NMED approval, and three amendments to the CP. In addition, the FFCO was amended once on May 20, 1997. Table J-1 provides a summary of these changes. More detailed descriptions can be found in the CP Update portion of each year's STP *Annual Update* and the original correspondence requesting each change.

Table J-1 Summary of Changes to the CP and the FFCO

Action	Document Modified	Effective Date	Effect on FFCO/STP
Rev. 1.0	STP/CP	6/12/1996	Added off-site treatment as a parallel preferred option for most MLLW treatability groups.
Rev. 2.0	STP/CP	12/9/1996	Reduced volume of LA-W928 by approving reclassification of sludge as LLW.
Amendment 1.0	STP/CP	10/30/1996	Divided original volume of LA-W929 into three subgroups, and added new Activities and Compliance Dates.
Rev. 3.0	STP/CP	1/27/1997	Divided original volume of LA-W929 into three subgroups, and added new Activities and Compliance Dates.
Amendment 1.0	FFCO	5/20/1997	Modified FFCO Sections IV, V, IX, and X to streamline waste transfers and deletions.
Amendment 2.0	STP/CP	9/4/1997	Extended CP Activity 3.1.2B Compliance Date to 12/29/97.
Rev. 4.0	STP/CP	12/29/1997	Transferred original volume of LA-W929 from three subgroups to other treatability groups, added treatability groups, and deleted treated items.
Rev. 5.0	STP/CP	12/29/1997	Added volumes reported in FY 1995 and FY 1996 *Annual Updates* (and certain other items) to several treatability groups, added Activities and Compliance Dates, added CP Appendices, and deleted treated items.
Rev. 6.0	STP/CP	7/31/1998	Added volumes reported in FY 1997 *Annual Update* to several treatability groups, added certain Activities and Compliance Dates, adjusted several original inventory volumes, transferred one LA-W929 item to a new treatability group, and deleted treated items.
Rev. 7.0	STP/CP	11/30/1998	Removed on-site treatment skids, added STP inventory items, added on-site recycling/re-use and radiological decontamination, added notification for off-site treatability studies.
Rev. 8.0	STP/CP	12/3/1998	Extended compliance dates for treatment of MTRU waste.
Rev. 9.0	STP/CP	6/7/2000	Added and deleted volumes reported in FY 1998 *Annual Update* to certain treatability groups.
Amendment 3.0	STP/CP	8/30/1999	Transferred three items to MTRU, transferred one item to subgroup within same treatability group.
Rev. 10.0	STP/CP	12/18/2000	Added and deleted volumes reported in FY 1999 *Annual Update* to certain treatability groups.
Rev. 11.0	STP/CP	4/18/2001	Added and deleted volumes reported in FY 2000 *Annual Update.*

Table J-1 (continued)

Action	Document Modified	Effective Date	Effect on FFCO/STP
Rev. 12.0	STP/CP	3/13/2002	Added and deleted volumes reported in FY 2001 *Annual Update.* Extended CP Activity 3.1.5A Compliance Date to 8/25/03. Extended CP Activity 3.1.11A to 2/01/04. Removed the requirement to develop treatment technologies and the associated compliance schedule in CP Activity 4.0 and added language specifying that MTRU waste would be shipped off-site to WIPP for disposal.
Rev 13.0	STP/CP	7/14/2003	Added and deleted volumes reported in FY 2002 *Annual Update.*
Rev 14.0	STP/CP	1/5/2005	Added and deleted volumes reported in FY 2003 *Annual Update.*
Rev 15.0	STP/CP	8/16/2005	Added and deleted volumes reported in FY 2004 *Annual Update.*
Rev 16.0	STP/CP	12/12/2006	Added and deleted volumes reported in FY 2005 *Annual Update.* Extended CP Activity 3.1.8(A) Compliance Date to 8/09/07. Extended CP Activity 3.1.9(A) Compliance Date to 8/09/07. Extended CP Activity 3.1.10(A) Compliance Date to 8/31/07. Extended CP Activity 3.1.11(A) Compliance Date to 12/31/07. Extended CP Activity 3.2(J) Compliance Date to 12/31/07. Reclassified 0.2082 m^3 of LA-W934 High Activity MLLW waste to MTRU waste.
Rev 17.0	STP/CP	6/26/2008	Added and deleted volumes reported in FY 2006 *Annual Update.* Extended CP Activity 3.1.5(A) Compliance Date to 12/31/08. Extended CPV Activity 3.1.8(A) Compliance Date to 8/28/08. Extended CP Activity 3.1.9(A) Compliance Date to 8/28/08. Extended CP Activity 3.2(J) Compliance Date to 12/31/08.
Rev 18.0	STP/CP	1/9/2009	Added and deleted volumes reported in FY 2007 *Annual Update.* Extended CP Activity 3.1.8(A) Compliance Date to 8/28/09. Extended CP Activity 3.1.9(A) Compliance Date to 8/28/09. Proposed a new Section 3.3.4 for Treatability Group, LA-W935 *10–100 nCi/g Waste* with new CP Activity 3.3.4 (A) Compliance Date 12/01/13 and CP Activity 3.3.4 (B) Compliance Date 12/31/13. Extended CP Activity 3.2(J) Compliance Date to 12/31/10.
Rev 19.0	STP/CP	2/5/2010	Added and deleted volumes reported in FY 2008 Annual Update. Extended compliance date for CP Activities 3.1.8(A) and 3.1.9(A) to 8/28/12. Proposed a new milestone of 12/31/2010 for 3.1.4(A) and a new milestone 3.3.4(C) for *10–100 nCi/g Waste.*
Rev 20.0	STP/CP	11/8/2010	Added and deleted volumes reported in FY 2009 Annual Update. Proposed an extended compliance date for CP Activity 3.2(J).
Rev 21.0	STP/CP	3/21/2012	Added and deleted volumes reported in FY 2010 Annual Update. Proposed new compliance date for CP Activity 3.1.8(A).
Rev 22.0	STP/CP	12/10/2012	Added and deleted volumes reported in FY 2011 Annual Update.
Rev 23.0	STP/CP	8/26/2015	Added and deleted volumes reported in FY 2012 Annual Update. Added Table 4.0-1 Treatability Groups for the Framework Agreement MTRU Waste.
Rev 24.0	STP/CP	8/26/2015	Added and deleted volumes reported in FY 2013 Annual Update. Proposed compliance date for CP Activity 3.1.5(A). Proposed compliance date for CP Activity 3.1.8(A). Extended CP Activity 3.2(J) Compliance Date to 6/30/2018. Proposed compliance date for CP Activity 3.3.4 (A and B).
Rev 25.0	STP/CP	TBD	Added and deleted volumes reported in FY 2014 Annual Update. On Hold volumes reported shipped in FY 2014 Annual Update. Proposed compliance date for CP Activity 3.1.8(A). Proposed compliance date for CP Activity 3.3.4 (A and B).
Rev 26.0	STP/CP	1/30/2017	Added and deleted volumes reported in FY 2015 Annual Update. On Hold volumes reported shipped in FY 2014 Annual Update. Proposed compliance date for CP Activity 4.0-2 (C).
Rev 27.0	STP/CP	3/21/2017	Added and deleted volumes reported in FY 2016 Annual Update. On Hold volumes reported shipped in FY 2014 Annual Update. Proposed compliance date for CP Activities 4.0-2(a), and 4.0-2(c).

Table J-1 (continued)

Action	Document Modified	Effective Date	Effect on FFCO/STP
Rev 28.0	STP/CP	5/9/2019	Added and deleted volumes reported in FY 2017 Annual Update. On Hold volumes reported shipped in FY 2014 Annual Update. Proposed compliance date for CP Activities 3.1.8-2(A), and 3.3.4-2 (A and B).
Rev 29.0	STP/CP	4/9/2020	Added and deleted volumes reported in FY 2018 Annual Update using volume information spreadsheets supplied from TA-55, CMR and TWF and other databases for volume information at TA-54. Updated Tables and Appendices throughout document. Updated Part III, Section 3.2, FTWCs compliance date extension request and NMED approval. Updated Part III, Section 4.0, "Transfer of Covered MTRU Inventory" for CVDs. Appendix A was split into two tables: A-1 for N3B and A-2 for LANS. Appendix E was split into two tables: E-1 for N3B and E-2 for LANS. Appendix G was split into two tables: G-1 for N3B and G-2 for LANS.
Rev 30.0	STP/CP	9/22/2020	Updated volumes reported in FY 2019 Annual Update using data from WCATS. Updated tables and appendices throughout document. Table 2.2-1: Revised lines involved with information for "FY 2014 on Hold" to reflect current up-to-date information and clarity. Table 4.0-1: Updated the title of each column for clarity. Updated information throughout the report, either to remove redundancies and /or add information to keep the report up-to-date and consistent. Split Appendix D into two tables: D-1 for N3B and D-2 for Triad. Reconstructed all tables in Appendix F for clarity and purpose. Table F-1: Removed column "Total FY 2014 Inventory (abovegrade on Hold [m^3])" as this information is captured in F-2 and F-4 tables. Table F-4: Reworded the title for clarity.
Rev. 31.0	STP/CP	7/12/2021	Updated volumes reported in FY 2019 Annual Update using data from WCATS. Updated information throughout the report, either to remove redundancies and/or add information to keep the report up-to-date and consistent. Updated tables and appendices throughout document. Changed title of Table 2.1-1 from "FY 2019 MLLW Inventory Summary" to "STP Covered MLLW Inventory Summary." Changed title of Table 2.2-1 from "Covered MTRU Inventory Summary" to "STP Covered MTRU Inventory Summary." Removed Table 4.0-1, "Treatability Groups for The Framework Agreement - 3706 MTRU Waste Campaign (remaining containers at TA-54 and WCS on hold)," and replaced with Appendix E-3 and Appendix G-3. Relabeled Table 4.0-2 to Table 4.0-1, "Activities and Compliance Dates for MTRU Inventory for TA-54 and TA-55." Changed title of Table A-2 from "FY 2019 MLLW Inventory at CMR, TA-55, and TWF, Detailed Update by Treatability Group" to "FY 2020 Triad MLLW Inventory Detailed Update by Treatability Group." Revised Table C-1 title, "Administrative Adjustments," to "FY 2020 MLLW Administrative Adjustments to TA-54 Inventory." Updated Table C-1 from a combined administrative adjustments table to a N3B-only administrative adjustments table. Updated title of Table C-2 to "FY 2020 Triad MLLW Inventory Administrative Adjustments." Updated Table C-2 from a detailed combined administrative adjustments table to a Triad-only administrative adjustments table. Revised title of Table E-1 from "TA-54 MTRU Covered Inventory (by Treatability Group)" to "TA-54 MTRU Inventory (by Treatability Group)." Updated Triad Table E-2 to be consistent with N3B Table E-1 in terms of treatability group and formatting. Changed title of E-2 from "Triad MTRU Inventory at TA-55, CMR, and TWF" to "FY 2020 Triad TA-55, CMR, and TWF MTRU Inventory Update by Treatability Group." Updated Appendix G, Table G-2, to be consistent with N3B Table G-1 in terms of treatability group and formatting. Changed title of Table G-2 from "FY 2019 MTRU Administrative Adjustments for TA-55, CMR Inventory" to "FY 2020 Triad TA-55, CMR, and TWF MTRU Inventory Administrative Adjustments." Alphabetized in the comments column in Appendices A and E.

Table J-1 (continued)

Action	Document Modified	Effective Date	Effect on FFCO/STP
Rev. 32.0	STP/CP	8/4/2022	Updated volumes reported in FY 2020 Annual Update using data from WCATS. Updated information throughout the report, either to remove redundancies and/or add information to keep the report up-to-date and consistent. Updated tables and appendices throughout document. Consolidated due to duplication "Table 3.2-1 Treatability Groups for Waste Requiring Characterization or Assessment" and "Table 3.2-2 Additional Wastes Requiring Characterization or Assessment" into single table and removed "Table 3.2-2 Additional Wastes Requiring Characterization or Assessment." Relabeled "Table 3.2-3 Activities and Compliance Dates for Wastes Requiring Characterization or Assessment" to "Table 3.2-2 Activities and Compliance Dates for Wastes Requiring Characterization or Assessment" Consolidated due to duplication "Table 3.3.1-1 Treatability Groups for Lead Decontamination" and "Table 3.3.1-2 Additional Wastes for Lead Decontamination" into single table and removed "Table 3.3.1-2 Additional Wastes for Lead Decontamination." Consolidated due to duplication “Table 3.3.2-1 Treatability Groups for Sorting, Surveying, and Decontamination" and "Table 3.3.2-2 Additional Wastes for Sorting, Surveying, and Decontamination" into single table and removed “Table 3.3.2-2 Additional Wastes for Sorting, Surveying, and Decontamination."
Rev. 33.0	STP/CP	TBD	-Updated volumes reported in FY 2021 Annual Update using data from WCATS. -Updated information throughout the report, either to remove redundancies and/or add information to keep the report up-to-date and consistent. -Updated tables and appendices throughout document.

REFERENCES

1. *Federal Facility Compliance Order (Los Alamos National Laboratory)*, New Mexico Environment Department (October 4, 1995).

2. Congress, 1996. Text of Public Law 104-201, Congressional Record dated September 23, 1996, Amendment to Public Law 102-579, 1992 *Waste Isolation Pilot Plant Land Withdrawal Act (106 Stat. 4777).*

3. 40 CFR Part 194, Criteria for the Certification of the Waste Isolation Pilot Plant's Compliance with the 40 CFR Part 191 Disposal Regulations: Certification Decision; Proposed Rule (Federal Register V.62, No. 210, Oct. 30, 1997, pp. 58792–58838).