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**Los Alamos National Laboratory
Federal Facility Compliance Order
Annual Site Treatment Plan Update
for Fiscal Year 20165**



Prepared by the Waste Management Division

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ACRONYMS

40 CFR	Title 40 of the Code of Federal Regulations
AMWTP	Advanced Mixed Waste Treatment Plant
CCA	Compliance Certification Application
CCP	Central Characterization Project
CMR	Chemistry and Metallurgy Research (Building)
CP	Compliance Plan
CVD	Confinement Vessel Disposition (project)
DOE	U.S. Department of Energy
<u>DOE EM</u>	<u>U.S. Department of Energy Environmental Programs</u>
EM	Environmental Management
EPA	U.S. Environmental Protection Agency
ER	Environmental Restoration
FFCA	Federal Facility Compliance Act
FFCO	Federal Facility Compliance Order
FY	fiscal year
HWA	Hazardous Waste Act
HWB	Hazardous Waste Bureau
<u>HWN</u>	<u>hazardous waste number</u>
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
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
PCB	polychlorinated biphenyl

~~PISA~~ Potential Inadequacy in the Safety Analysis

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

TRU transuranic

TWF Transuranic Waste Facility

UC University of California

WCRRF Waste Characterization, Reduction, and Repacking Facility

WCS Waste Control Specialists, LLC

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 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.

The FFCO required DOE/LANS 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 DOE and LANS (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.

Section VII of the FFCO requires DOE/LANS to submit an Annual STP 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 27~~6~~.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 annually with the STP update.

2.0 AMOUNT OF EACH COVERED WASTE STORED AT LANL

2.1 Mixed Low-Level Waste (MLLW) Inventory

During FY165, STP-covered MLLW inventories increased from approximately ~~3614~~ m³ to ~~6036~~ m³. The increase was mainly due to the recharacterization process of transuranic (TRU)/MTRU waste that resumed in FY16 for waste to be accepted at offsite treatment and disposal facilities. and The TRU/MTRU recharacterization process will continue to produce 10-100 nCi/g Waste (LA-W935). General movement of containers not related to safety or compliance remains restricted ~~movements of waste~~ onsite at Area G since early calendar year 2015 while inadequacies with Area G Safety Basis assumptions on combustible waste fraction are being analyzed and corrected. This restriction will delay the final confirmation, characterization, certification, and shipment for offsite treatment and disposal of these containers until the Safety Basis issues are resolved and the restrictions on moving this waste are lifted. Table 2.1-1 summarizes changes to the estimated FY165 STP-covered MLLW inventory.

Appendix A provides the detailed changes to the FY165 covered MLLW inventory by treatability group, including the inventory at Technical Area (TA) 55 and the Chemistry and Metallurgy Research (CMR) Building. Appendix B (Table B-1) lists the FY165 MLLW shipments. Table B-2 identifies other deleted waste. ~~If a~~Any administrative adjustments to the MLLW inventory are shown in Appendix C (Table C-1). Detailed information about the administrative adjustments in Table C-1 are shown in Table C-2. The MLLW inventory reported in the FY154 Annual Update is included as Appendix D.

Table 2.1-1 FY165 MLLW Inventory Summary

Contribution	Volume (m ³) ¹
Estimated MLLW Inventory Reported in the FY154 Annual Update	35.689 13.679
Proposed Revision 276.0	
New – Covered Waste	2.625 0.644
Administrative Adjustments ²	43.474 21.366
Offsite Treatment	-21.861 NA ³
Offsite Recycle	NA ³
Onsite Decontamination	NA ³
Treatability Study Use	NA ³
Estimated MLLW Inventory Reported in FY165 Annual Update	59.92735.689

¹ MLLW volumes are calculated using the conversion: 55-gallon container = 0.208 m³; 85-gallon container = 0.322

² Includes transfers of MTRU and other wastes into MLLW categories

³ NA = No Activity

2.2 Mixed Transuranic (MTRU) Inventory Summary

During FY165, STP-covered MTRU inventories increased from approximately ~~938916~~ m³ to ~~961938~~ m³.

Table 2.2-1 summarizes changes to the estimated FY165 MTRU covered waste inventory. The total volume of MTRU waste in Table 2.2-1 includes the CMR and TA-55 MTRU volumes, which are maintained in a separate inventory from the MTRU inventory at TA-54. Appendix E contains additional detail for the MTRU inventory; Table E-1 covers the TA-54 inventory and Table E-2 covers the inventory at CMR and TA-55. The volume of STP-covered MTRU waste that is part of the “non-cemented above-ground Environmental Management (EM) Legacy TRU” (MTRU waste only) has been summarized in Appendix E-1 and Section 4.0 of the CP. Appendix F (Table F-1) provides a summary of FY165 MTRU shipments to WIPP. In Appendix G, Tables G-1 and G-2 describe the administrative adjustments that were made to resolve differences in the TA-54 and the CMR/TA-55 MTRU inventory data, respectively. DOE/LANS anticipates STP-covered MTRU inventory increases because of the WIPP shutdown as of February 14, 2014.

Administrative adjustments typically represent the following types of activities:

- DOE/LANS may correct database entries so that waste items not previously listed as STP waste are now identified as STP waste.
- DOE/LANS 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 ~~transuranic~~ (TRU) waste should, as a prudent measure, 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.
- 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 Covered MTRU Inventory Summary

Description		Volume (m ³)
Covered MTRU Inventory Reported in FY154 (45,844.42 357 m ³ at CMR/TA-55 and 891,781 873.759 m ³ at TA-54)		937.625 916.116
New – Covered MTRU Waste at TA-54		2.818 6.038
New – Covered MTRU Waste at CMR/TA-55		30.209 41.058
Covered MTRU Waste Shipped to WIPP in FY165 below grade		0.0000
Covered MTRU Waste Shipped to WIPP in FY14 remaining above grade (on hold per NMED)	9.048 ^{1*}	
Covered MTRU Waste Shipped to Waste Control Specialists, LLC (WCS), Texas in FY14 (on hold per NMED)	155.718 ⁺ *	
Covered MTRU Waste Shipped to the Advanced Mixed Waste Treatment Plant (AMWTP), Idaho in FY14 (on hold per NMED)	22.892 ⁺	
Net Administrative Adjustments for TA-54 in FY164		-2.782 41.984
Net Administrative Adjustments for CMR/TA-55 in FY164		-6.606 -7.574
Covered MTRU Inventory at End of FY165		961.264 937.625

^{1*} Volume not to be subtracted from the STP inventory. Removal of this waste from STP inventory is on hold until NMED approval is received.

Appendix G includes 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 ‘multiply’ into more volume than the original container. For example, repacking one container of *Cemented Sludge* (0.208 m³) may result in one drum of *Combined Combustible-Noncombustible Waste* (0.208 m³) and one drum of *Noncombustible Waste* (0.208 m³). 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 Offsite Treatment

DOE/LANS did not ship any STP-covered MLLW offsite for treatment and/or disposal in FY15.

Appendix B summarizes LANL's offsite shipments for treatment and/or disposal of covered MLLW in FY1~~65~~.

3.2 Offsite Recycling

DOE/LANS did not recycle any STP-covered MLLW offsite in FY1~~65~~.

3.3 Onsite Treatment and Recycling

DOE/LANS did not treat or recycle any STP-covered MLLW onsite in FY1~~65~~.

3.4 Onsite Lead Decontamination

No LANL STP-covered MLLW was decontaminated onsite during FY1~~65~~.

3.5 Treatability Studies

DOE/LANS conducted no treatability studies in FY1~~65~~.

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 STP Annual Update. A data quality review is conducted annually to compare shipment notifications and shipping manifests with database updates.

3.6.1 Adjustments to MLLW Inventory

Appendix C (Table C-1) 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 TRU 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 may be recharacterized as MLLW. (Appendices C and G).

3.6.2 Adjustments to MTRU Inventory

During the preparation of the FY1~~65~~ STP Annual Update, DOE/LANS identified a number of adjustments to the MTRU inventory volume (Appendix G, Tables G-1 and G-2), 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 to correct database entries.

4.0 TREATMENT TECHNOLOGY DEVELOPMENT

During FY165, the availability of commercial and federal facility offsite treatment and disposal capacity for MLLW remained stable. As a result of DOE's increasing reliance on commercial treatment/disposal for mixed wastes, nearly all funding for onsite technology development has been prioritized to support offsite 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

DOE/LANS continues to monitor the development of other potential treatment technologies that may become available in the future. Some of these technologies are being developed at LANL and at other DOE sites. DOE/LANS is currently developing treatment technologies to address the type of TRU waste associated with the February 14, 2014, release of radioactivity at WIPP. The treatment process is specifically intended to address remaining remediated nitrate salt, unremediated nitrate salt, and dewatered liquids from cemented nitrate salt wastes remaining at LANL, as required by Settlement Agreement and Stipulated Final Order Hazardous Waste Bureau (HWB) 14-20.

DOE/LANS re-evaluated all nitrate salt-bearing TRU waste and determined the three types of waste located at LANL that will require treatment prior to acceptance at WIPP. Methods were developed for treatment of these wastes through the use of~~are currently under development by DOE/LANS. Methods will utilize~~ surrogates for the waste and both onsite and offsite testing facilities. The method were to evaluate for treatment effectiveness. After confirmation of the treatment process for these wastes, permitted onsite treatment will be~~was~~ requested from the NMED-HWB and was granted in July 2016. Commencement of treatment for remediated nitrate salt and unremediated nitrate salt wastes are~~is~~ scheduled in 2017.

4.1.1 Offsite Commercial Treatment Facilities

DOE/LANS continues to monitor the availability and capabilities of offsite 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 Offsite DOE Treatment Facilities

DOE/LANS continues to monitor the availability and capabilities of offsite DOE facilities for treatment technologies and permitting that are appropriate to LANL waste. In the past, DOE/LANS shipped nine corrugated metal boxes to the Idaho National Laboratory Advanced Mixed Waste Treatment Plant (AMWTP) for treatment. These nine boxes were successfully treated at the AMWTP and are stored at the Waste Control Specialists, LLC (WCS) facility until WIPP is re-opened to ready to accept waste.

5.0 DOE FUNDING FOR STP-RELATED ACTIVITIES

Funding to implement the LANL STP for mixed waste during FY165 was sufficient to meet all compliance dates as required by the CP of the STP. However, DOE/LANS shipments were on hold while DOE/LANS addressed safety basis concerns at WIPP and LANSLANL. FY176 funding is available to support all compliance dates established in the STP. Should funding reductions occur that would affect STP compliance dates, DOE and LANS 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 considered to be 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 FY165.

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 ~~facility~~. The WIPP ~~facility~~ is not a generator of TRU waste, and, therefore, will receive all of the waste in shipments from offsite. On February 2014, NMED received notice of a release at the WIPP nuclear waste repository. A LANL ~~SL~~ container sent to WIPP experienced an energetic chemical reaction that ultimately led to the release of radioactive material. In light of recent events, and the potential need to re-remediate all nitrate salt-bearing waste, NMED

determined that the removal of MTRU from the STP will be deferred until more information becomes available and it is determined that waste currently stored at the WCS facility and WIPP remaining above grade will not be returned to LANL. All shipments of MTRU covered waste inventory to WIPP were suspended in May 2014 due to the WIPP shutdown.

7.1 Characterization Capabilities at WIPP

Wastes proposed for shipment to WIPP are characterized and certified at LANL by the Central Characterization Project (~~CCP~~), 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, 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, including:
 - 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*;
 - documentation of new-covered waste in accordance with the requirements in Section VIII, *Addition of New Covered Waste*; and
 - proposed changes to the overall schedule in the CP.

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 FY165

During FY165, no CP Activity milestones were scheduled.

Table 2.1-1 FYXX FFCO and STP Milestones Compilation [Table omitted]

2.2 Expedited Shipment Letters

~~Expedited shipment letters are listed in Appendix I, Table I-1. There were no expedited shipment letters in FY15.~~

2.3 Correspondence

Between October 1, 20154 and September 30, 20165, DOE/LANS communicated with NMED on issues related to:

- ~~FY164 and FY15~~ waste shipment notifications;
- ~~FY16 expedited waste shipment notifications;~~
- 15-day notification, proposed deletion of waste;
- Revision 265.0 of the Annual STP Update; and
- Response to ~~May 18, 2016~~August 26, 2015, Notice of Disapproval.

This correspondence is listed in Appendix I (Table I-2). ~~Previously listed cCorrespondence can be found in the previously FY Annual Reports listed in Appendix I, Table I-2 of Revision 25.0 of the STP is so noted in the appendix.~~

3.0 DESCRIPTION OF DELETED WASTE

A proposal for deletion of STP waste items is included with this update as Proposed Revision 276.0 in accordance with FFCO Section IX, *Deletion of Waste*. These deletions are proposed because the wastes were shipped offsite for treatment, disposal, or recycling or were otherwise determined not to be mixed wastes. These covered wastes are included in Appendix B, 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 FY154 and were proposed to become covered wastes in FY165. These covered wastes are included in Appendix 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

DOE/LANS is proposing to revise ~~two~~the milestones: ~~for Activity 4.0-2(a) to “complete transfer of existing waste (excluding Metallic Waste) to TWF, WCRRF, or WIPP”; and Activity 4.0-2(c) to “complete transfer of Metallic Waste to CMR for material retrieval.”~~ to CMR for material retrieval.” These milestones addresses the MTRU ~~metallic~~ waste inventory at TA-55; and the material retrieval of MTRU covered metallic waste stored at TA-55. DOE/LANS expects to be able to complete transfer of the MTRU (excluding metallic) wastes at TA-55 by September 30, 2020 ~~November 30, 2018~~, and complete transfer of the metallic wastes for material retrieval by October 31, 2020.

I. Compliance Dates and Waste Description

Activity 4.0-2(a): The remainder of the STP covered MTRU ~~covered metallic~~ wastes at TA-55 consists primary of combustible-noncombustible waste. It has been projected that the transfer of the inventory of TA-55 MTRU waste will take multiple years, are associated with the Confinement Vessel Disposition (CVD) project. The project involves recovery of materials and wastes from confinement vessels stored at TA-55. The vessels contain important programmatic materials that can be recovered and used in current DOE National Security programs.

Current proposed compliance date: September 30, 2017.

Proposed Revision 276 compliance date: November 30, 202018.

Activity 4.0-2(c): MTRU covered metallic wastes are associated with the Confinement Vessel Disposition (CVD) project. The project involves recovery of materials and wastes from confinement vessels stored at TA-55. The vessels contain important programmatic materials that can be recovered and used in current DOE National Security programs.

Current proposed compliance date: November 30, 2018.

Proposed Revision 27 compliance date: October 31, 2020.

II. Disposal/Recovery/Treatment~~Recovery~~ Process

Activity 4.0-2(a): The preferred disposal process for MTRU waste from LANL is shipment offsite for disposal at the Waste Isolation Pilot Plant (WIPP) located near Carlsbad, New Mexico. WIPP is not required to treat MTRU waste to meet the LDR standards. The LWAA exempted wastes designated by the Secretary of Energy for disposal at the WIPP from this requirement.~~The CVD project is an onsite radiological decontamination project, as described in Part III (CP), Section 2.7 of this STP Update. As described therein, methods such as sand-blasting and hand-scrubbing are used to remove radiologically-contaminated materials and wastes from the interior surfaces of the confinement vessels. The project involves performing the following process steps on each vessel: 1) empty the vessel of its contents, 2) sort and segregate the programmatically-valuable material from the other material in the vessel, 3) decontaminate the vessel to low-level waste (LLW) levels if technically possible, and 4) disposition the removed waste and the emptied vessel in accordance with current radioactive and hazardous waste regulatory requirements. Programmatically-valuable material was packaged separately and supplied to a LANL research team performing national security work. Material was removed from two vessels, and a third was moved to the recovery facility for processing.~~

Activity 4.0-2(c): The Confinement Vessel Disposition (CVD) project is an onsite radiological decontamination project, as described in Part III (CP), Section 2.7 of this STP Update. As described therein, methods such as brushing and vacuuming are used to remove radiologically-contaminated materials and wastes from the interior surfaces of the confinement vessels. The project involves performing the following process steps on each vessel: 1) empty the vessel of its contents, 2) sort and segregate the programmatically-valuable material from the other material in the vessel, 3) decontaminate the vessel to low-level waste (LLW) levels if technically possible, and 4) disposition the removed waste and the emptied vessel in accordance with current radioactive and hazardous waste regulatory requirements. Programmatically-valuable material is being packaged separately and supplied to a LANL research team performing national security work. Material has successfully been removed from four vessels, and a fifth is currently being processed.

III. Availability of Noncommercial/Recovery/Commercial~~Recovery~~ Facility

Activity 4.0-2(a): In FY15, Area G Safety Basis issues were analyzed and corrected. This updating process has temporarily stopped or significantly reduced the receipt of LANL-generated TRU and MTRU waste at TA-54. Therefore, newly-generated MTRU waste from the CVD material retrieval process is primarily being stored at TA-55. All shipments of MTRU covered waste inventory to WIPP were suspended in May 2014 due to the WIPP shutdown.~~The project is being executed in Wing 9 of the CMR Building at LANL. DOE/LANS notifies NMED in writing at least 15 calendar days before each vessel is transferred to the recovery facility at the CMR building for material retrieval.~~

Activity 4.0-2(c): The project is being executed in Wing 9 of the CMR Building at LANL. DOE/LANS notifies NMED in writing at least 15 calendar days before each vessel is transferred to the recovery facility at the CMR Building for material retrieval.

IV. Justification for Milestone

Activity 4.0-2(a): WIPP is expected to receive a limited number of waste shipments per week. DOE/LANS is anticipated to be allowed one shipment per week starting September 2017. With LANL's current inventory and projected waste generation rate, at one shipment per week it will take years to deplete LANL's TRU and MTRU waste inventory. TA-54 Area G is now under the management of the

DOE Environmental Programs (DOE EM). Currently, DOE -EM has stated that TA-54 will not receive any programmatic newly-generated waste.

This is still a relatively new process that had never been attempted before the first vessel was processed. DOE/LANS is requesting the revised date because several challenges for meeting the project's original objective caused unexpected delays affecting the overall project schedule. The delays are as follows:

The Transuranic Waste Facility (TWF) at TA-63 has not yet to become operational. In addition, the LANL Hazardous Waste Permit specifies that mixed waste generated prior to December 31, 2015, cannot be stored at the TWF. This moratorium date currently prevents approximately 195 MTRU containers at TA-55 from being moved to TWF.

A subset of the covered MTRU waste inventory at TA-55 will require management be managed at the Waste Characterization, Reduction, and Repacking Facility (WCRRF) as since the waste acceptance criteria for WIPP has changed since the waste was generated. WCRRF will not receive waste until it has implemented corrective actions as directed by the DOE's Accident Investigation Board, including updating its Safety Basis documents.

Activity 4.0-2(c): The CVD project was proposed in September 2009 as a relatively new process that had never been attempted before. The project has been in operation for the past three years and has included the successful cleanout of four vessels with a fifth in progress. Experience from working on the first five vessels has contributed to process improvements and lessons learned by the team.

The remaining vessels have significantly (approximately 2,000 lbs) more debris than the first four vessels. The majority of the debris consists of metal plates. The metal plates are mostly mangled and are challenging to retrieve from the interior of the vessel. Once the contaminated plates are moved into the glovebox, they must be carefully cut up into sizes that will fit into the required containers. This process is extremely time consuming. Also, attempts to decontaminate the surface of other empty TRU waste vessels to meet LLW requirements have failed. In addition, an approved container for shipping the intact empty vessels currently does not exist. Thus, the most efficient and reliable method for disposing of the cleaned-out vessels is size -reduction and disposal as TRU waste.

The containers of debris waste generated from the CVD material recovery project will be stored at TA-55. TA-54 Area G is under the management of the DOE EM, who manages TA-54 Area G, indicated that TA-54 will not receive any programmatic newly-generated waste. The TWF at TA-63 is not yet operational and there is currently a moratorium date on the generation of mixed waste that cannot be stored there. Finally, these containers will need to meet the updated WIPP waste acceptance criteria. These containers will require management at the WCRRF, which is currently updating its safety basis documents to receive waste.

- 1) Difficulties with meeting the LLW vessel decontamination criterion of less than 100 nanocuries/gram. Some of the vessels encountered so far in this project have so much unexpected embedded material that they will require additional methods for decontamination that are not currently available at the CVD recovery facility. Additional decontamination methods are being investigated at TA-54; however, processes that would constitute physical or chemical treatment of waste would require Respondents to seek a permit before proceeding. If the LLW criterion cannot be met using the current decontamination process, a vessel may have to be size-reduced into four sections and each section will be discarded as TRU waste.

~~2) Unforeseen process deviations occurred with the first vessels being processed. Work was paused and placed in a safe configuration while the operating procedure was modified to address the deviation. In a nuclear facility such as CMR building, modifications must follow the Integrated Work Management Process, which includes management approvals and an Unreviewed Safety Questions Determination. Workers were trained to the changed procedure and the procedure was implemented in the field. For the cleanout of vessel 1, there were seven procedure changes resulting in a total of about a 14-week delay. As evidence of team learning and process improvement, vessel 2 required only three procedure changes resulting in a total of about a 4-week delay.~~

~~A change required in the CMR authorization basis due to a Potential Inadequacy in the Safety Analysis (PISA) was declared for the CVD project on February 12, 2015. The PISA was related to an undefined state for the second vessel being cleaned out where radionuclide quantities exceeded the dose equivalent threshold value for the authorization basis at that facility. The new safety analysis took 11 months to complete, which caused the longest work delay in 2015. While the CMR authorization basis was changed, some processing activities authorized by the current documented safety analysis continued on other vessels at the facility; but any significant progress on other vessels was precluded due to the configuration of the second vessel during the pause.~~

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.

DOE/LANS is proposing to revise the CP text to reflect the following change in STP-covered inventories:

- Increases and decreases in covered mixed waste inventories due to the addition of new ~~_-~~covered waste and offsite shipments during FY165 and other changes in the STP inventory.

The CP changes are proposed in accordance with the applicable requirements in the FFCO, as amended: Section VIII, *Addition of New Covered Waste*; Section X.B.4, *Revisions*; and Section XI, *Deletion of Waste*.

6.1 Addition of New Covered¹ Waste

DOE/LANS is requesting that the following waste be added to the STP as covered waste.

6.1.1 MLLW Additions

The volume of MLLW requested for addition is ~~2.6250.644~~ m³ of new ~~_-~~covered ~~Noncombustible Debris~~~~0-100 nCi/g Waste~~ (LA-W9~~2235~~) (Table 6.1.1-1).

¹ Waste generated during the previous FY that was not shipped offsite within one year is termed new ~~_-~~covered STP waste.

Table 6.1.1-1 Proposed Addition of New ~~-~~Covered MLLW Waste

CP Section	MWIR ¹ Waste ID	Treatability Group	Volume (m ³)
3.1.5 3.4	LA-W9 2235	Noncombustible Debris 10-100 nCi/g Waste	2.5490 .644 ²
3.1.5	LA-W922	Noncombustible Debris	0.076 ³
Total			2.6250 .644

¹MWIR is Mixed Waste Inventory Report.

²~~Real time radiography recharacterization of LLW~~Container shipped immediately after the restrictions on shipping MLLW were lifted in April 2016.

³Added as a result from reconciliation of discrepancies on sampling data form.

6.1.2 MTRU Waste Additions

The volume of new ~~-~~covered MTRU waste requested for addition is ~~33.0271~~17.096 m³ (Table 6.1.2-1). DOE/LANS also requests the addition of ~~5.8161~~.288 m³ of *Combustible-Noncombustible Waste*, previously managed in the TRU inventory (Appendix G, Table G-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 ~~-~~Covered¹ MTRU Waste

CP Section	Treatability Group	Volume (m ³)
4.0	<i>Combustible-Noncombustible Waste</i>	1.8726 .038
4.0	<i>Solidified Inorganic and Organic Waste</i>	0.946
Total TA-54 New-Covered Waste		2.8186 .038 ²
4.0	<i>Combustible-Noncombustible Waste at CMR</i>	1.8784 .188
4.0	<i>Combustible-Noncombustible Waste at TA-55</i>	26.0062 .912
4.0	<i>Combustible Waste at TA-55</i>	0.2083 .126
4.0	<i>Noncombustible Waste at TA-55</i>	2.1170 .832
Total CMR/TA-55 New Covered Waste		30.2091 1.058 ³
Total New Covered Waste		33.0271 17.096

¹New-covered waste in Table 6.1.2-1 refers to waste generated in the previous FY.

²Waste generated during the previous FY that was not shipped offsite within one year. All shipments of MTRU covered waste inventory to WIPP were suspended in May 2014 due to the WIPP shutdown.

³Due to updating its Safety Basis documents, TA-54 has temporarily stopped or significantly reduced the receipt of LANL-generated MTRU waste at TA-54.

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

CP Section	Treatability Group	Volume (m ³)
4.0	<i>Combustible-Noncombustible Waste</i> (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.)	2.9381 .288
4.0	<i>Solidified Inorganic and Organic Waste</i> (identification of potentially hazardous constituents based on investigation and characterization of TRU nitrate salt waste, cemented containers)	2.878

	<u>with free liquids, and empty containers not meeting the RCRA empty criteria.)</u>	
<i>Total Newly-Characterized MTRU</i>		<u>5.8161.288</u>

6.2 Deletion of Covered Waste

MLLW and MTRU wastes were shipped offsite for treatment and disposal or recycling or are otherwise proposed as deleted waste.

6.2.1 Deletion of MLLW

No waste was shipped offsite for treatment and disposal or recycling. No waste is proposed for deletion due to treatment and disposal or recycling in FY165.

6.2.2 Deletion of MTRU Waste

No waste was shipped offsite for disposal at WIPP. No waste is proposed for deletion in ~~FY20165~~ due to disposal at WIPP.

6.2.3 Other Deletions of FY15 Waste

No waste is proposed for deletion due to recycling or onsite treatment in FY165. No waste was shipped offsite for treatability studies.

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

DOE/LANS is requesting adjustments to the original (October 4, 1995) STP-covered MLLW inventory as listed in Appendix C (Table C-1). 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

DOE/LANS is requesting adjustments (Appendix G, Tables G-1 and G-2) 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 to 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.

6.5 Establishment of New Milestone Activity Dates

DOE/LANS is not requesting any 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

No new milestones are proposed.

7.2 Addition of New ~~W~~-Covered Waste

Waste that was newly generated in FY154, which was not treated within 12 months of generation, became new ~~w~~-covered waste during FY165 (see Appendix E). 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 offsite commercial facilities during FY16. Deletion of this covered waste is proposed to more accurately reflect the LANL STP inventory as of the end of FY16. There were no deletions of covered waste in FY15.

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 FY165.

8.0 ANTICIPATED LENGTH OF ANY DELAY IN PERFORMANCE

In accordance with FFCO Section X.C.2.c, DOE/LANS 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. All shipments of MTRU covered waste inventory offsite were suspended in May 2014 due to the WIPP shutdown. At this time, DOE/LANS cannot confidently predict when the TA-54 processing lines will come back online for further processing of MTRU and/or MLLW covered waste.

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 276.0

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 offsite 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 onsite, 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

- | |
|---|
| <ul style="list-style-type: none">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 onsite, 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 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

Offsite 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 offsite for recycling are discussed under Part III, Section 2.6. All activities and compliance dates related to the construction, permitting, and operation of onsite treatment skids were removed from this document. This change was due to the increased availability of offsite treatment and disposal capacity for mixed waste. Respondents will continue evaluating new commercial and DOE offsite treatment facilities as potential options for managing mixed waste, as they become available.

2.3 Plans for Mixed Waste to be Shipped Offsite for Treatment

Should DOE decide to treat or recycle waste at a commercial offsite facility (Table 2.3-1), DOE will notify the NMED Project 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 Offsite 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 offsite facility for treatment or recycling within 45 working days of receipt of waste at the treatment facility.

DOE shall notify the NMED Project 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 Project Manager shall approve in writing the proposed offsite noncommercial treatment option proposed by DOE prior to any shipment by DOE. DOE will notify the NMED Project 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 offsite for treatment/recycling at a noncommercial facility are identified in Table 2.3-2.

Table 2.3-2 Activities for Shipment Offsite 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 offsite shipment.
C.	Provide documentation to NMED of confirmation of shipment date within 14 working days prior to sending waste to an offsite facility for treatment, disposal, or recycling, or storage pending treatment, disposal, or recycling.
D.	Provide documentation to NMED that waste has been received at an offsite facility for treatment within 45 working days of receipt of waste at the offsite 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 residues 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 offsite 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.

DOE will notify NMED when offsite 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 offsite treatability study, DOE will evaluate the potential for incidental waste treatment or secondary waste generation, which are often associated with treatability studies.

2.6 Recycling/Re-Use

Respondent will pursue onsite or offsite 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 offsite 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.

DOE shall notify the NMED Project Manager in writing as soon as possible if mixed waste is planned to be sent to an offsite 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 Project Manager shall approve in writing the proposed offsite noncommercial recycling option prior to any shipment by DOE. DOE will notify the NMED Project 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

- | |
|---|
| <ul style="list-style-type: none">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 offsite for treatment. DOE will submit a notification letter to NMED within 45 days, in place of documentation, that waste was received at a recycling facility.

2.7 Onsite Radiological Decontamination

DOE will pursue onsite 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

- | |
|--|
| <ul style="list-style-type: none">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; orC. 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. All preferred 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 FY09 STP 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 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	Net Volume (m ³)
IPA Wastes	LA-W901	D001, D009, F002, F003, F005	0.00
Scintillation Fluids	LA-W902	D001, F003, F005	0.00
Totals			0.00

*MWIR is Mixed Waste Inventory Report

Treatment: The waste will be treated at an offsite 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	Net Volume (m ³)
Lead Blankets	LA-W903	D007, D008	0.00
Soil With Heavy Metals	LA-W904	D004, D005, D006, D007, D008, D009, D010, D011	0.00
ER Soils	LA-W905	D028, D029, F001, F005 D010, D011	0.00
Totals			0.00

*MWIR is Mixed Waste Inventory Report

Treatment: The waste will be treated at an offsite 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	Net Volume (m ³)
Aqueous Organic Liquids	LA-W906-0 LA-W906-4 LA-W906-5	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	0.00
Totals			0.00

*MWIR is Mixed Waste Inventory Report

Table 3.1.3-2 Additional Treatability Groups for Aqueous Organic Liquids

Treatability Group	MWIR* Waste ID	RCRA Codes	Net Volume (m ³)
Aqueous Organic Liquids	LA-W906-6 LA-W906-9 LA-W906-10 LA-W906-15	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	0.00
Totals			0.00

*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	Net Volume (m ³)
Organic-Contaminated Combustible Solids	LA-W911	D001, D004, D008, D009, F001, F002, F003, F005	0.00
Totals			0.00

*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	Net 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	0.00
Totals			0.00

*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	Net Volume (m ³)
Combustible Debris	LA-W912	D001, D002, D003, D005, D006, D007, D008, D009, D011, D035, F001, F002, F003, F005	0.00
Activated Or Inseparable Lead	LA-W921	D008	0.00
Noncombustible Debris	LA-W922 LA-W922-17 LA-W922-22 LA-W922-23 LA-W922-24 LA-W922-25	D001, D002, D004, D005, D006, D007, D008, D009, D010, D011	0.00
Totals			0.00

*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	Net Volume (m ³)
Aqueous Wastes With Heavy Metals	LA-W913	D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011	0.00
Corrosive Solutions	LA-W914	D001, D002	0.00
Aqueous Cyanides, Nitrates, Chromates, and Arsenates	LA-W915	D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, F007, P029, P098	0.00
Totals			0.00

*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	Net Volume (m ³)
Water-Reactive Metal	LA-W916	D001, D003, D004, D005, D007, D008, D010, D011	0.00
Totals			0.00

*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	Net Volume (m ³)
Compressed Gases Requiring Scrubbing	LA-W917 LA-W917-21 LA-W917-24 LA-W917-25 LA-W917-26 <u>LA-W917-27</u>	D001, D002, D003, D008, D009, P056	<u>1.0401-248</u>
Totals			<u>1.0401-248</u>

*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 offsite treatment facility or complete parallel option.	September 30, 2018
B. Provide documentation to NMED that waste was received at offsite facility or provide notification of parallel option.	Within 45 days of receipt of waste at treatment facility or within 45 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	Net Volume (m ³)
Compressed Gases Requiring Oxidation	LA-W918	D001, U226	0.00
Totals			0.00

*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	Net Volume (m ³)
Elemental Mercury	LA-W920 LA-W920-16	D006, D009, F005	0.00
Totals			0.00

*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	Net 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	0.00
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	0.00
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	0.00
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	0.00
Totals			0.00

*MWIR is Mixed Waste Inventory Report

Table 3.1.11-2 Additional Treatability Groups

Treatability Group	MWIR* Waste ID	RCRA Codes	Net Volume (m ³)
Liquid And Solid Oxidizers	LA-W923	D001, D003, D005	0.00
Totals			0.00

*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	Net Volume (m ³)
Lead Wastes – to be determined (TBD)	LA-W924	D003, D008	0.00
Mercury Wastes - TBD	LA-W925-0	D007, D008, D009, F001	0.00
Compressed Gases - TBD	LA-W926	D001, D007, D009, D022, P056, U080, U226	0.00
Biochemical Laboratory Wastes	LA-W927	D001, D003	0.00
Dewatered Treatment Sludge	LA-W928		0.00
Totals			0.00

*MWIR is Mixed Waste Inventory Report

Table 3.2-2 Additional Wastes Requiring Characterization or Assessment

Treatability Group	MWIR* Waste ID	RCRA Codes	Net Volume (m ³)
Lead Wastes - TBD	LA-W924-15	D003, D008	0.00
	LA-W924-16		0.00
	LA-W924-17		0.00
Mercury Wastes – TBD	LA-W925-4	D003, D007, D008, D009 F001, F002, F005	0.00
	LA-W925-5		
	LA-W925-6		
	LA-W925-15		
	LA-W925-16		
	LA-W925-17		
	LA-W925-18		
Explosives	LA-W932	D003	0.00
Labpacks	LA-W933	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	0.00
	LA-W933-17		
High Activity Waste	LA-W934	D001, D003, D008, D009	1.4771.301
	LA-W934-16		
	LA-W934-19		
	LA-W934-20		
	LA-W934-24		
	LA-W934-27		
Totals			1.4771.301

*MWIR is Mixed Waste Inventory Report

Table 3.2-3 Activities and Compliance Dates for Wastes Requiring Characterization or Assessment

Activity	Compliance Dates
A. Complete shipping of wastes to an offsite treatment facility, or submit documentation assigning waste items to applicable treatability groups or complete parallel option.	June 30, 2018
B. Provide documentation to NMED that waste was received at offsite facility or provide notification of parallel option.	Within 45 days of receipt of waste at offsite facility or within 45 days after completion of parallel option.

LANL’s inventory of *High Activity Waste* consists of five containers with a combined volume of 1.477301 m³. Assuming that shipping issues can be resolved, LANL expects to meet the June 30, 2018, milestone for the remaining *High Activity Waste*.

DOE/LANS continues to diligently pursue all possible options to ship the waste offsite 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 originally planned for transport offsite to a commercial treatment facility using a 10-160B shipping cask, but this option has been determined not to be viable. Options for shipment and disposal of these waste items are being reassessed by a multidisciplinary team, with the first priority being to ensure continued stable, safe storage onsite in the meantime. The contract DOE/LANS has in place with Perma-Fix will allow for LANL to ship the High Activity Waste offsite for treatment and disposal. Perma-Fix has completed the characterization (evaluation including calculations and certification statement identifying all hazardous and radioactive characteristics of the waste), the transportation plan that addresses all aspects of the Department of Transportation requirements to compliantly package and ship the waste, and the Nuclear Regulatory Commission permit with the State of Tennessee for a tritium project-specific license required to handle the curie content in the High Activity Waste. Perma-Fix is in the process of preparing Certificate of Compliance modifications for the selected 10-160B cask for transport to the commercial treatment facility. The Type B Cask (TRU-PAC II) became unavailable for use so the 10-160B cask is being pursued as the shipping method for this high activity waste.

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	Second Category	Totals
		Net Volume (m ³)	Net Volume (m ³)	Net Volume (m ³)
Lead For Surface Decontamination	LA-W930-0 LA-W930-5	0.00	0.00	0.00
Totals		0.00	0.00	0.00

*MWIR is Mixed Waste Inventory Report

Treatment: Any lead not acceptable for onsite or offsite lead decontamination, and any lead unsuccessfully decontaminated, will be designated in the following two categories: 1) for treatment and disposal at an offsite facility or 2) for recycle through an offsite 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.

Table 3.3.1-2 Additional Wastes for Lead Decontamination

Treatability Group	MWIR* Waste ID	First Category	Second Category	Totals
		Net Volume (m ³)	Net Volume (m ³)	Net Volume (m ³)
Lead For Surface Decontamination	LA-W930-6	0.00	0.00	0.00
Totals		0.00	0.00	0.00

*MWIR is Mixed Waste Inventory Report

3.3.2 Sorting, Surveying, and Decontamination

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

Treatability Group	MWIR* Waste ID	Net Volume (m ³)
Nonradioactive or Suspect Waste Items To Be Surveyed	LA-W929-0(1)	0.00
Nonradioactive or Suspect Waste Items To Receive RCRA and Radiological Characterization	LA-W929-0(2)	0.00
Nonradioactive or Suspect Waste Items That Cannot or Should Not Be Sampled	LA-W929-0(3)	0.00
Totals		0.00

*MWIR is Mixed Waste Inventory Report

Table 3.3.2-2 Additional Wastes for Sorting, Surveying, and Decontamination

Treatability Group	MWIR* Waste ID	Net Volume (m ³)
Nonradioactive or Suspect Waste Items	LA-W929-5	0.00
Totals		0.00

*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	Net Volume (m ³)
Lead Requiring Sorting	LA-W931	D008	0.00
Totals			0.00

*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	Net 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	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	57.410 33.140
Totals			57.410 33.140

*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 low-level waste population, and drums are relabeled appropriately. The drum is reclassified from TRU to MLLW in the database.

When a parent waste container is remediated, the waste contents are removed, WIPP-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). Movements of LA-W935 waste onsite at Area G have been restricted beginning early in calendar year 2015, and continuing beyond FY15, while issues with the Area G Safety Basis are analyzed and corrected. This restriction will delay the final confirmation, characterization, certification, and offsite shipment of these containers until the Safety Basis issues are resolved and the restrictions on moving and managing this waste are lifted. Although the restrictions on shipping the MLLW containers (~~that may be related to remediated TRU containers that contained nitrate salts~~) during the investigation into the cause of the drum event at WIPP were lifted in FY15, general movement of containers not related to safety or compliance remained restricted in FY16, therefore no treatment or processing was performed. ~~the Safety Basis issues that restrict moving and managing waste in Area G prevented all waste processing in FY15.~~

The MLLW drums are prepared for treatment and disposal to an offsite facility using LANL generator acceptable knowledge documentation and real-time radiography and non-destructive assay data.

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

Activity	Compliance Dates
A. Complete radiological characterization.	September 1, 2018
B. Complete shipment of existing waste to offsite facility for treatment, or complete parallel options.	September 30, 2018
C. Provide documentation to NMED that waste was received at offsite facility or provide notification of parallel option.	Within 45 days of receipt of waste at treatment facility or within 45 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 repack 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 ~~repackaging and~~ recharacterization process ~~will~~ resumed in FY16 for waste to be accepted at offsite treatment and disposal facilities, and will continue to produce 10-100 nCi/g Waste (LA-W935); therefore, DOE/LANS may seek updates to milestone(s) annually.

3.4 Management of “Missing” Items

Table 3.4-1 Waste Category for “Missing Waste”

Category	MWIR* Waste ID	Container ID	Net Volume (m ³)
Missing/Nonexistent/To be verified (TBV)	LA-W935 None	C07194641	0.2080.00
Totals			0.2080.00

*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 they ~~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 DOE/LANS determines 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 ~~the~~ this revision ~~process~~ ~~associated with the next~~ Annual Update.

~~DOE verified the absence of all “Missing/nonexistent/TBV” items container by container as each STP waste item was being sampled, repackaged, or otherwise prepared for onsite or offsite treatment. The final verification of all “Missing/nonexistent/TBV” items was completed by 2004. All missing or nonexistent items were deleted from the STP. All remaining MLLW items in the original STP inventory were treated and disposed of.~~

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

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

Disposal: Waste volumes listed in Table 4.0-1 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 below are due to corrections of database entries, treatability group, EPA codes, overpacks removed/added, containers repacked and shipped/hold for waste items identified as the non-cemented and cemented above-ground EM Legacy TRU for MTRU STP waste.

Table 4.0-1 Treatability Groups for The Framework Agreement MTRU Waste (remaining original containers)

Treatability Group	CP Section	FY14 Shipped (on hold) ¹	FY1 54 Volume (m ³)	FY1 65 Administrative Adjustments	FY1 65 Total Volume (m ³)
Cemented Sludge	4.0	0.000	0.000	0.000	0.000
Combustible – Noncombustible Waste	4.0	30.736	32.938 21.298	4.688 ² 11.640	68.362 63.674
Combustible Waste	4.0	0.000	0.208	0.000	0.208
Metallic Waste	4.0	0.208	0.000	0.000	0.208
Noncombustible Waste	4.0	1.040	0.208	0.000	1.248
Solidified Inorganic and Organic Waste	4.0	9.588	10.312	4.802 ² 0.000	24.702 19.900
Total					94.728 85.238

¹This waste was shipped offsite to WIPP or a WCS facility but has not yet been disposed. Therefore, the volume is not to be subtracted from the STP inventory. Removal of waste from the STP inventory is on hold until NMED approval is received. This waste is a subset of the STP MTRU inventory.

²MTRU volumes adjusted as a result of direct loaded standard waste boxes (SWBs). Volumes difference and treatability group changes are reflected in the Administrative Adjustments Table G-1. This waste is a subset of the STP MTRU inventory.

Table 4.0-2 Activities and Compliance Dates for MTRU Inventory at TA-55 and CMR from Table E-2

Activity	Compliance Dates
A. Complete transfer of existing waste (excluding Metallic Waste) to TA-54 facility TWF, WCRRF, or WIPP	September 30, 2020 2017
C. Complete transfer of Metallic Waste to CMR for material retrieval	October 31, 2020 November 30, 2018

Transfer of Covered MTRU Inventory: The FY165 reported waste volume for STP-covered MTRU inventory at TA-55 and CMR is 69.44745.844 m³. In FY165, approximately 1622 m³ of the 6036 m³ of STP waste at TA-55 is associated with the CVD Project (formerly referred to as the Bolas Grande Project), that started in the summer of FY14. A milestone extension request to October 31, 2020, November 30, 2018 milestone for the remaining five CVDs, is proposed as discussed in the CP Update Part II, Section 5.0.

The remainder 44 m³ of the covered MTRU waste inventory at TA-55; ~~44 m³~~ consists of heterogeneous combustible and noncombustible mixed waste. It has been projected that the de-inventory of TA-55's MTRU waste will take multiple years. A milestone extension request to September 30, 2020, is proposed as discussed in the CP Update Part II, Section 5.0. A subset of the covered MTRU waste inventory will require management radioactive free liquids, requiring management at the Waste Characterization, Reduction, and Repackaging Facility (WCRRF) as the waste acceptance criteria for WIPP has changed since the waste was generated. WCRRF is currently will not receiving waste until it has implemented corrective actions as directed by the DOE's Accident Investigation Board, including updating its Safety Basis documents. TA-54 is under the management of the DOE Environmental Programs (EM manages TA-54). Currently DOE -EM has stated that TA-54 will not receive any programmatic newly-generated waste. The LANL Hazardous Waste Permit specifies that MTRU waste generated prior to December 31, 2015, cannot be stored at the Transuranic Waste Facility (TWF). In addition, the Waste Isolation Pilot Plant (WIPP) is expected to receive limited number of waste shipments per week. DOE/LANS is anticipated to be allowed one shipment per week starting September 2017. updating its Safety Basis documents that govern Material at Risk and its Composite Source Term Limits (amount of combustible waste that can be stored at TA-54). This up-dating process has temporarily stopped or significantly reduced the receipt of LANL-generated TRU and MTRU waste at TA-54. Therefore, newly generated MTRU waste is primarily being stored at TA-55 until the TA-63 TRU Waste Facility becomes operational.

4.1 Management of “Missing” Items

Table 4.1-2 Waste Category for “Missing Waste”

Category	Treatability Groups	Net Volume (m ³)
Missing/Nonexistent/TBV	Cemented Sludge	0.00
	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 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 items were determined not to exist after visual inspection and document review. When LANS determines 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.

Table 4.1-2 Waste Category for “Missing Waste” – Detail [Table Omitted]

APPENDICES

APPENDIX A CURRENT YEAR MLLW INVENTORY DETAIL

Table A-1 FY165 MLLW Inventory Detailed Update by Treatability Group

CP ¹ Sec.	MWIR ¹ Waste ID and Treatability Group/Category	FY154 Annual Update (m ³) ²	Proposed Revision 276.0 (m ³)	Comments ³	FY165 Annual Update (m ³)	Projection FY176 – FY219 (m ³)
3.1.1	LA-W901 <i>IPA Wastes</i>	0	0		0	0
3.1.1	LA-W902 <i>Scintillation Fluids</i>	0	0		0	0
3.1.2	LA-W903 <i>Lead Blankets</i>	0	0		0	0
3.1.2	LA-W904 <i>Soil with Heavy Metals</i>	0	0		0	0
3.1.2	LA-W905 <i>ER Soils</i>	0	0		0	0
3.1.3	LA-W906 <i>Aqueous Organic Liquids</i>	0	0		0	0
3.1.4	LA-W911 <i>Organic-Contaminated Combustible Solids</i>	0	0		0	0
3.1.4	LA-W919 <i>Organic-Contaminated Noncombustible Solids</i>	0	0		0	0
3.1.5	LA-W912 <i>Combustible Debris</i>	0	0		0	0
3.1.5	LA-W921 <i>Activated or Inseparable Lead</i>	0	0		0	0
3.1.5	LA-W922 <i>Noncombustible Debris</i>	0	0	Administrative Adjustment	0	0
			-2.6250	Shipped offsite for treatment/disposal		
			<u>2.625</u>	<u>New covered</u>		
3.1.6	LA-W913 <i>Aqueous Wastes with Heavy Metals</i>	0	0		0	0
3.1.6	LA-W914 <i>Corrosive Solutions</i>	0	0		0	0
3.1.6	LA-W915 <i>Aqueous Cyanides, Nitrates, Chromates, and Arsenates</i>	0	0		0	0
3.1.7	LA-W916 <i>Water-Reactive Wastes</i>	0	0		0	0

CP ¹ Sec.	MWIR ¹ Waste ID and Treatability Group/Category	FY154 Annual Update (m ³) ²	Proposed Revision 276.0 (m ³)	Comments ³	FY165 Annual Update (m ³)	Projection FY176 – FY219 (m ³)
3.1.8	LA-W917 ⁴ <i>Compressed Gases Requiring Scrubbing</i>	1.2480-833	-0.2080-415	Administrative Adjustment	1.0401-248	0
				Shipped offsite for treatment/disposal		
3.1.9	LA-W918 <i>Compressed Gases Requiring Oxidation</i>	0	0		0	0
3.1.10	LA-W920 <i>Elemental Mercury</i>	0	0		0	0
3.1.11	LA-W907 <i>Halogenated Organic Liquids</i>	0	0		0	0
3.1.11	LA-W908 <i>Nonhalogenated Organic Liquids</i>	0	0		0	0
3.1.11	LA-W909 <i>Bulk Oils</i>	0	0		0	0
3.1.11	LA-W910 <i>PCB Wastes with RCRA Components</i>	0	0		0	0
3.1.11	LA-W923 <i>Liquid and Solid Oxidizers</i>	0	0		0	0
3.2	LA-W924 <i>Lead Wastes – TBD</i>	0	0		0	0
3.2	LA-W925 <i>Mercury Wastes – TBD</i>	0	0		0	0
3.2	LA-W926 <i>Compressed Gases – TBD</i>	0	0		0	0
3.2	LA-W927 <i>Biochemical Laboratory Wastes</i>	0	0		0	0
3.2	LA-W928 <i>Dewatered Treatment Sludge</i>	0	0		0	0
3.2	LA-W932 <i>Explosives</i>	0	0		0	0
3.2	LA-W933 <i>Labpacks</i>	0	0		0	0
3.2	LA-W934 <i>High Activity Waste</i>	1.301	0	Shipped offsite for treatment/disposal	1.4771-301	0
			0.176	Administrative Adjustment		
3.3.1	LA-W930 <i>Lead for Surface Decontamination</i>	0	0		0	0

CP ¹ Sec.	MWIR ¹ Waste ID and Treatability Group/Category	FY1 54 ⁴ Annual Update (m ³) ²	Proposed Revision 276.0 (m ³)	Comments ³	FY1 65 ⁴ Annual Update (m ³)	Projection FY1 76 ⁴ – FY2 10 ⁴ (m ³)
3.3.2	LA-W929 <i>Nonradioactive or Suspect Waste Items to be Surveyed</i>	0	0		0	0
3.3.3	LA-W931 <i>Lead Requiring Sorting</i>	0	0		0	0
3.3.4	LA-W935 <i>10–100 nCi/g Waste</i>	33.140 ⁴ 1.545	43.506 ⁴ 20.951	Administrative Adjustment	57.410 ⁴ 33.140	50
			0.644	New covered		
			-19.236 ⁴	Shipped offsite for treatment/disposal		
TOTALS		35.689 ⁴ 13.679			59.927 ⁴ 35.689	

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

² MLLW volumes are calculated using the conversion: 55-gallon container = 0.208 m³; 85-gallon container = 0.322 m³.

³ Shipment details are in Appendix B; Administrative adjustments are in Appendix C.

⁴ Items prohibited from shipment to WIPP are removed from MTRU STP containers and consolidated; some are MLLW and are included in Table A-1 as LA-W917 waste; others are MTRU waste and are considered *Combustible-Noncombustible Waste* in Table E-1.

APPENDIX B CURRENT YEAR MLLW SHIPMENT DETAIL

Table B-1 MLLW Shipped Offsite for Treatment and Disposal in FY16~~5~~[†]

CP Section	MWIR ^{‡1} No.	Treatability Group	Manifest Number	Destination	Date Shipped	Date NMED Notified	Volume (m ³)
3.1.8	LA-W917	Compressed Gases Requiring Scrubbing Waste	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
LA-W917 Total							0
3.1.5	LA-W922	Noncombustible Debris	<u>006648527FLE</u>	<u>Energy Solutions, Utah</u>	<u>01/14/2016</u>	<u>02/25/2016</u> <u>(WM-DO-16-002)</u>	<u>0.076</u>
<u>3.1.5</u>	<u>LA-W922</u>	<u>Noncombustible Debris</u>	<u>006648798FLE</u>	<u>Energy Solutions, Utah</u>	<u>05/10/2016</u>	<u>06/24/2016</u> <u>(WM-DO-16-023)</u>	<u>2.549</u>
LA-W922 Total							<u>2.6250</u>
3.3.4	LA-W935	10–100 nCi/g Waste	<u>006647265FLE</u>	<u>Material & Energy Corporation</u>	<u>06/20/2016</u>	<u>07/28/2016</u> <u>(WM-DO-16-024)</u>	<u>4.274</u>
<u>3.3.4</u>	<u>LA-W935</u>	<u>10-100 nCi/g Waste</u>	<u>006647268FLE</u>	<u>PermaFix NW</u>	<u>09/08/2016</u>	<u>10/18/2016</u> <u>(WM-DO-16-034)</u>	<u>7.300</u>
<u>3.3.4</u>	<u>LA-W935</u>	<u>10-100 nCi/g Waste</u>	<u>006647270FLE</u>	<u>PermaFix NW</u>	<u>09/08/2016</u>	<u>10/18/2016</u> <u>(WM-DO-16-034)</u>	<u>7.662</u>
LA-W935 Total							<u>19.2360</u>
Grand Total							<u>21.8610</u>

^{‡1} MWIR is Mixed Waste Inventory Report.

[†]DOE/LANS have not shipped MLLW STP covered waste during FY15.

APPENDIX C CURRENT YEAR MLLW ADMINISTRATIVE ADJUSTMENTS

Table C-1 Administrative Adjustments

CP Section	MWIR* Number	Administrative Adjustment	Volume (m ³)
<u>3.2</u>	<u>LA-W934</u>	<u>Volume change due to new/updated inventory report tracks container volume and not item volume</u>	<u>0.176</u>
Total Net Adjustments for LA-W934			<u>0.176</u>
3.3.4	LA-W935	<u>Missing item from the STP inventory. This container could not be located- (sSee section 3.4 for details). Transferred from LA-W935 to LA-W917 as a result of treatability group reassignment</u>	-0.208
		<u>Removed as a result of reconciliation of inconsistencies in the current inventory</u>	<u>-2.549</u>
		<u>Added into LA-W935 from (real time radiography) recharacterization process</u>	<u>19.414</u>
		<u>Transferred into LA-W935 from reclassification of TRU and MTRU STP covered waste</u>	<u>43.3924.294</u>
		<u>Transferred into LA-W935 from reclassification of MTRU STP covered waste. Due to an administrative recordkeeping error, this MLLW container was inadvertently disposed in Pit 38 at Area G. Notification was sent to the NMED (ADESH-16-21) on February 25, 2016. Future discussions with the NMED are pending.</u>	<u>0.322</u>
Total Net Adjustments for LA-W935			<u>43.50620.951</u>
3.1.8	LA-W917	<u>Transferred into Combustible-Noncombustible Waste from real time radiography and gamma spectroscopy from reclassification process of LA-W917-Transferred from LA-W935 to LA-W917 as a result of treatability group reassignment</u>	<u>-0.208</u>
		<u>Volume changes due to addition or removal of packaging MLLW waste</u>	<u>0.207</u>
Total Net Adjustments for LA-W917			<u>-0.2080.415</u>
Total Net Adjustments			<u>43.47421.366</u>

*MWIR is Mixed Waste Inventory Report

Table C-2 Administrative Adjustment – Detail

CP Section	MWIR*	Treatability Group	Type of Adjustment	Cumulative Volume Adjustment (m ³)	Item or Container Number	MLLW Container Volume (m ³)	Reason for Administrative Adjustment
3.3.4	LA-W935	10-100 nCi/g	Reassigned treatability group	-0.208			Transferred into LA-W917 for prohibited items
					W819835	-0.208	
<u>3.3.4</u>	<u>LA-W935</u>	10-100 nCi/g	Removed as a result of reconciliation of inconsistencies in the current inventory	-0.208 <u>2.549</u>			Removed as a result of reconciliation wall-to-wall inventory and database inventory
					<u>C07194641</u> W729563	-0.208 <u>2.549</u>	
		10-100 nCi/g	Reclassified/Repack aged MTRU STP and TRU inventory to MLLW STP inventory	<u>36.904</u> 19.41 4			Transferred into LA-W935 as a result of real-time radiography recharacterization process from TRU inventory
					W13499 W788184	0.208 <u>0.322</u>	
					W13620 W788255	0.208 <u>0.322</u>	
					W13645 W777004	0.208 <u>0.322</u>	
					W13804 W788228	0.208 <u>0.322</u>	
					W14401 W788533	0.208 <u>0.322</u>	
					W14823 W788584	0.208 <u>0.322</u>	
					W15015 W788907	0.208 <u>0.322</u>	
					<u>W747947</u> W788939	0.322	
					<u>W748198</u> W789169	0.208 <u>0.322</u>	
					<u>W749391</u> W789458	0.208 <u>0.322</u>	
					<u>W749582</u> W790811	0.208 <u>0.322</u>	
					<u>W750161</u> W790872	0.208 <u>0.322</u>	
					<u>W750294</u> W790905	0.208 <u>0.322</u>	
					<u>W750322</u> W790908	0.208 <u>0.322</u>	
					<u>W750333</u> W791681	0.322	
					<u>W750537</u> W801418	0.208 <u>0.322</u>	
					<u>W751706</u> W801477	0.208 <u>0.322</u>	

CP Section	MWIR*	Treatability Group	Type of Adjustment	Cumulative Volume Adjustment (m ³)	Item or Container Number	MLLW Container Volume (m ³)	Reason for Administrative Adjustment
					W752444 W801478	0.322	
					W752480 W801504	0.2080.322	
					W753156 W801522	0.2080.322	
					W753233 W801540	0.2080.322	
					W754688 W802047	0.2080.322	
					W755519 W802087	0.2080.322	
					W756356 W802120	0.2080.322	
					W756770 W91592	0.2080.322	
					W757002 W91817	0.2080.322	
					W757718 W91884	0.2080.322	
					W757825 W92518	0.2080.322	
					W758108 W92527	0.2080.322	
					W758341 W92537	0.322	
					W758461 W92539	0.2080.322	
					W758584 W92714	0.2080.322	
					W759040 W92757	0.2080.322	
					W759658 W92772	0.2080.322	
					W759668 W92808	0.2080.322	
					W760008 W93039	0.2080.322	
					W760086 W93070	0.2080.322	
					W760160 W93321	0.2080.322	
					W761516 W93514	0.322	
					W761522 W93522	0.322	
					W761568 W93744	0.2080.322	

CP Section	MWIR*	Treatability Group	Type of Adjustment	Cumulative Volume Adjustment (m ³)	Item or Container Number	MLLW Container Volume (m ³)	Reason for Administrative Adjustment
					W762387 W93768	0.2080.322	
					W762952 W93813	0.2080.322	
					W763328 W93818	0.2080.322	
					W763511 W93922	0.2080.322	
					W764155 W93964	0.2080.322	
					W764217 W94102	0.322	
					W764235 W94105	0.2080.322	
					W765096 W798033	0.322	
					W765907 W798112	0.322	
					W766078 W798153	0.322	
					W766770 W798642	0.2080.322	
					W767482 W799173	0.208	
					W767905 W799253	0.208	
					W767938 W802185	0.2080.322	
					W767939 W802487	0.2080.322	
					W768735 W802517	0.2080.322	
					W770206 W816860	0.2080.322	
					W771335 W816887	0.322	
					W771591 W819936	0.322	
					W771852 W91480	0.322	
					W774880	0.208	
					W777601	0.208	
					W784386	0.208	
					W788414	0.322	
					W788540	0.322	
					W788542	0.322	
					W788544	0.322	
					W788546	0.322	

CP Section	MWIR*	Treatability Group	Type of Adjustment	Cumulative Volume Adjustment (m ³)	Item or Container Number	MLLW Container Volume (m ³)	Reason for Administrative Adjustment
					W788548	0.322	
					W788550	0.322	
					W788552	0.322	
					W788784	0.322	
					W788789	0.322	
					W788791	0.322	
					W788793	0.322	
					W788840	0.322	
					W788842	0.322	
					W788844	0.322	
					W788848	0.322	
					W788851	0.322	
					W788853	0.322	
					W788892	0.322	
					W788894	0.322	
					W789006	0.322	
					W789299	0.322	
					W789302	0.322	
					W789761	0.322	
					W789763	0.322	
					W789765	0.322	
					W789767	0.322	
					W789779	0.322	
					W789781	0.322	
					W789784	0.322	
					W789850	0.322	
					W789882	0.322	
					W789884	0.322	
					W789886	0.322	
					W789892	0.322	
					W789954	0.322	
					W789956	0.322	
					W789993	0.322	
					W790001	0.322	
					W790003	0.322	
					W790005	0.322	
					W790007	0.322	
					W790009	0.322	
					W790011	0.322	
					W790073	0.322	
					W790075	0.322	

CP Section	MWIR*	Treatability Group	Type of Adjustment	Cumulative Volume Adjustment (m ³)	Item or Container Number	MLLW Container Volume (m ³)	Reason for Administrative Adjustment
					W790077	0.322	
					W791217	0.322	
					W791219	0.322	
					W791477	0.322	
					W791479	0.322	
					W791481	0.322	
					W791506	0.322	
					W791508	0.322	
					W791511	0.322	
					W791513	0.322	
					W791515	0.322	
					W793406	1.878	
					W793409	1.878	
		10–100 nCi/g	Reclassified/Repack aged MTRU STP and TRU inventory to MLLW STP inventory	4.616 + 1.872			Less than 100 nCi/g; derived from combustible-noncombustible MTRU inventory
					W11697 87386	0.208	Parent MTRU Container LA0000005945487386 , 0.208 m ³
					W12093 88664	0.208	Parent MTRU Container LA0000006486688664 , 0.208 m ³
					W12281 85506	0.208	Parent MTRU Container LA0000006509585506 , 0.208 m ³
					W12423 88610	0.208	Parent MTRU Container LA0000006428188610 , 0.208 m ³
					W12604 88939	0.208	Parent MTRU Container LA0000005974088939 , 0.208 m ³
					W12766	0.208	Parent MTRU Container LA00000063144 , 0.208 m ³
					W12923	0.208	Parent MTRU Container LA00000063626 , 0.208 m ³
					W12975	0.208	Parent MTRU Container LA00000063968 , 0.208 m ³
					W13051	0.208	Parent MTRU Container LA00000064857 , 0.208 m ³
					W13154	0.208	Parent MTRU Container LA00000063936 , 0.208 m ³
					W23835	0.208	Parent MTRU Container LA00000066372 , 0.208 m ³
					W755327	0.322	Parent MTRU Container S823147 , 0.322 m ³

CP Section	MWIR*	Treatability Group	Type of Adjustment	Cumulative Volume Adjustment (m ³)	Item or Container Number	MLLW Container Volume (m ³)	Reason for Administrative Adjustment
					W755566	0.322	Parent MTRU Container S861823, 0.322 m³
					W759349	0.322	Parent MTRU Container S832235, 0.322 m³
					W760705	0.208	Parent MTRU Container S818344, 0.208 m³
					W769809	0.322	Parent MTRU Container S851572, 0.322 m³
					W777987 W88959	0.208	Parent MTRU Container 8106088959 , 0.208 m ³
					W779501 W816064	0.208	Parent MTRU Container 811258816064 , 0.208 m ³
					W782248 W846515	0.208	Parent MTRU Container 861638846515 , 0.208 m ³
3.3.4	LA-W935				W783410 W850048	0.208	Parent MTRU Container 873918850048 , 0.208 m ³
				0.208			Less than 100 nCi/g; derived from combustible MTRU inventory
					W11369	0.208	Parent MTRU Container LA00000059468, 0.208 m³
				0.322			Less than 100 nCi/g; derived from combustible MTRU inventory
					W801560	0.322	Due to an administrative recordkeeping error, this MLLW container was inadvertently disposed in Pit 38 at Area G. Notification was sent to the NMED (ADESH-16-21) on February 25, 2016. Future discussions with the NMED are pending. Parent MTRU Container W737586, 0.322 m³.
				1.040			Less than 100 nCi/g; derived from metallic waste MTRU inventory
					W11398	0.208	Parent MTRU Container LA00000058377, 0.208 m³
					W13706	0.208	Parent MTRU Container LA00000056619, 0.208 m³
					W761724	0.208	Parent MTRU Container 54841, 0.208 m³
					W761852	0.208	Parent MTRU Container 55873, 0.208 m³
					W768770	0.208	Parent MTRU Container 56262, 0.208 m³
				0.6242-422			Less than 100 nCi/g; derived from Solidified Inorganic and Organic MTRU inventory

CP Section	MWIR*	Treatability Group	Type of Adjustment	Cumulative Volume Adjustment (m ³)	Item or Container Number	MLLW Container Volume (m ³)	Reason for Administrative Adjustment
					W754842 W834290	0.208 0.322	Parent MTRU Container S860362 S834290 , 0.208 0.322 m ³
					W760196 W841376	0.208	Parent MTRU Container S841585 S841376 , 0.208 m ³
					W760437 W841467	0.208	Parent MTRU Container S880981 S841467 , 0.208 m ³
					W850026	0.208	Parent MTRU Container S850026 , 0.208 m ³
					W850576	0.208	Parent MTRU Container S850576 , 0.208 m ³
					W860218	0.208	Parent MTRU Container S860218 , 0.208 m ³
					W880983	0.208	Parent MTRU Container S880983 , 0.208 m ³
					W881006	0.322	Parent MTRU Container S881006 , 0.322 m ³
					W881011	0.208	Parent MTRU Container S881011 , 0.208 m ³
					W893323	0.322	Parent MTRU Container S893323 , 0.322 m ³
3.1.8	LA-W917	Compressed Gases Requiring Scrubbing Waste	Reassigned treatability group Reclassification	-0.208			Transferred into <u>Combustible-Noncombustible Waste MTRU inventory</u> LA-W917 from LA-W935 for prohibited items
					W819835	-0.208	<u>MTRU Container</u> <u>LA00000070541</u>
				Repackaged MLLW STP inventory	0.207		Volume change due to repackaged item into 55 gallon container
3.2 1.8	LA-W9 34 17	<u>High Activity</u> <u>Waste</u>	<u>Volume correction</u>	<u>0.176</u>	W728258	<u>0.207</u>	<u>Volume change due to</u> <u>new/updated inventory reports</u>
					<u>C00130818</u>	<u>0.176</u>	
Subtotal MLLW Volume						<u>43.47421.366</u>	

*MWIR is Mixed Waste Inventory Report

APPENDIX D PREVIOUS YEAR MLLW INVENTORY DETAIL

Table D-1 FY15 MLLW Inventory~~+~~ Detailed Update by Treatability Group

<u>CP¹ Sec.</u>	<u>MWIR⁴² Waste ID and Treatability Group/Category</u>	<u>FY14 Annual Update (m³)²³</u>	<u>Proposed Revision 26.0 (m³)</u>	<u>Comments³⁴</u>	<u>FY15 Annual Update (m³)</u>	<u>Projection FY16 – FY20 (m³)</u>
3.1.1	LA-W901 <i>IPA Wastes</i>	0	0		0	0
3.1.1	LA-W902 <i>Scintillation Fluids</i>	0	0		0	0
3.1.2	LA-W903 <i>Lead Blankets</i>	0	0		0	0
3.1.2	LA-W904 <i>Soil with Heavy Metals</i>	0	0		0	0
3.1.2	LA-W905 <i>ER Soils</i>	0	0		0	0
3.1.3	LA-W906 <i>Aqueous Organic Liquids</i>	0	0		0	0
3.1.4	LA-W911 <i>Organic-Contaminated Combustible Solids</i>	0	0		0	0
3.1.4	LA-W919 <i>Organic-Contaminated Noncombustible Solids</i>	0	0		0	0
3.1.5	LA-W912 <i>Combustible Debris</i>	0	0		0	0
3.1.5	LA-W921 <i>Activated or Inseparable Lead</i>	0	0		0	0
3.1.5	LA-W922 <i>Noncombustible Debris</i>	0	0	Administrative Adjustment	0	0
			0	Shipped offsite for treatment/disposal		
3.1.6	LA-W913 <i>Aqueous Wastes with Heavy Metals</i>	0	0		0	0
3.1.6	LA-W914 <i>Corrosive Solutions</i>	0	0		0	0
3.1.6	LA-W915 <i>Aqueous Cyanides, Nitrates, Chromates, and Arsenates</i>	0	0		0	0
3.1.7	LA-W916 <i>Water-Reactive Wastes</i>	0	0		0	0

<u>CP1 Sec.</u>	<u>MWIR⁴² Waste ID and Treatability Group/Category</u>	<u>FY14 Annual Update (m³)²³</u>	<u>Proposed Revision 26.0 (m³)</u>	<u>Comments³⁴</u>	<u>FY15 Annual Update (m³)</u>	<u>Projection FY16 – FY20 (m³)</u>
3.1.8	LA-W917 ⁴⁵ <i>Compressed Gases Requiring Scrubbing</i>	0.833	0.415	Administrative Adjustment	1.248	0
			0	Shipped offsite for treatment/disposal		
3.1.9	LA-W918 <i>Compressed Gases Requiring Oxidation</i>	0	0		0	0
3.1.10	LA-W920 <i>Elemental Mercury</i>	0	0		0	0
3.1.11	LA-W907 <i>Halogenated Organic Liquids</i>	0	0		0	0
3.1.11	LA-W908 <i>Nonhalogenated Organic Liquids</i>	0	0		0	0
3.1.11	LA-W909 <i>Bulk Oils</i>	0	0		0	0
3.1.11	LA-W910 <i>PCB Wastes with RCRA Components</i>	0	0		0	0
3.1.11	LA-W923 <i>Liquid and Solid Oxidizers</i>	0	0		0	0
3.2	LA-W924 <i>Lead Wastes – TBD</i>	0	0		0	0
3.2	LA-W925 <i>Mercury Wastes – TBD</i>	0	0		0	0
3.2	LA-W926 <i>Compressed Gases – TBD</i>	0	0		0	0
3.2	LA-W927 <i>Biochemical Laboratory Wastes</i>	0	0		0	0
3.2	LA-W928 <i>Dewatered Treatment Sludge</i>	0	0		0	0
3.2	LA-W932 <i>Explosives</i>	0	0		0	0
3.2	LA-W933 <i>Labpacks</i>	0	0		0	0
3.2	LA-W934 <i>High Activity Waste</i>	1.301	0	Shipped offsite for treatment/disposal	1.301	0
			0	Administrative Adjustment		
3.3.1	LA-W930 <i>Lead for Surface Decontamination</i>	0	0		0	0

<u>CP¹ Sec.</u>	<u>MWIR¹² Waste ID and Treatability Group/Category</u>	<u>FY14 Annual Update (m³)²³</u>	<u>Proposed Revision 26.0 (m³)</u>	<u>Comments³⁴</u>	<u>FY15 Annual Update (m³)</u>	<u>Projection FY16 – FY20 (m³)</u>
3.3.2	LA-W929 <i>Nonradioactive or Suspect Waste Items to be Surveyed</i>	0	0		0	0
3.3.3	LA-W931 <i>Lead Requiring Sorting</i>	0	0		0	0
3.3.4	LA-W935 <i>10–100 nCi/g Waste</i>	11.545	20.951	Administrative Adjustment	33.140	50
			0.644	New covered		
			0	Shipped offsite for treatment/disposal		
3.4	<i>Missing/ nonexistent/ TBV category</i>	0	0		0	N/A
TOTALS		13.679			35.689	

¹ CP is Compliance Plan.

² MWIR is Mixed Waste Inventory Report.

²³ MLLW volumes are calculated using the conversion: 55-gallon container = 0.208 m³; 85-gallon container = 0.322 m³.

³⁴ Shipment details are in Appendix B; Administrative adjustments are in Appendix C.

⁴⁵ Items prohibited from shipment to WIPP are removed from MTRU STP containers and consolidated; some are MLLW and are included in Table A-1 as LA-W917 waste; others are MTRU waste and are considered *Combustible-Noncombustible Waste* in Table E-1.

Table D-1 — FY14 MLLW Inventory¹ Detailed Update by Treatability Group

<u>CP¹ Sec.</u>	<u>MWIR¹ Waste ID and Treatability Group/Category</u>	<u>FY13 Annual Update (m³)²</u>	<u>Proposed Revision 25.0 (m³)</u>	<u>Comments³</u>	<u>FY14 Annual Update (m³)</u>	<u>Projection FY15 – FY19 (m³)</u>
3-1.1	LA-W901 <i>IPA Wastes</i>	0	0	-	0	0
3-1.1	LA-W902 <i>Scintillation Fluids</i>	0	0	-	0	0
3-1.2	LA-W903 <i>Lead Blankets</i>	0	0	-	0	0
3-1.2	LA-W904 <i>Soil with Heavy Metals</i>	0	0	-	0	0
3-1.2	LA-W905 <i>ER Soils</i>	0	0	-	0	0
3-1.3	LA-W906 <i>Aqueous Organic Liquids</i>	0	0		0	0
3-1.4	LA-W911 <i>Organic Contaminated Combustible Solids</i>	0	0		0	0
3-1.4	LA-W919 <i>Organic Contaminated Noncombustible Solids</i>	0	0		0	0
3-1.5	LA-W912 <i>Combustible Debris</i>	0	0		0	0

CP ¹ Sec.	MWR ¹ Waste ID and Treatability Group/Category	FY13 Annual Update (m ³) ²	Proposed Revision 25.0 (m ³)	Comments ³	FY14 Annual Update (m ³)	Projection FY15 FY19 (m ³)
3-1.5	LA-W921 <i>Activated or Inseparable Lead</i>	0	0	-	0	0
3-1.5	LA-W922 <i>Noncombustible Debris</i>	0.624	29.375	Administrative Adjustment	0	0
			-29.999	Shipped offsite for treatment/disposal		
3-1.6	LA-W913 <i>Aqueous Wastes with Heavy Metals</i>	0	0		0	0
3-1.6	LA-W914 <i>Corrosive Solutions</i>	0	0		0	0
3-1.6	LA-W915 <i>Aqueous Cyanides, Nitrates, Chromates, and Arsenates</i>	0	0	-	0	0
3-1.7	LA-W916 <i>Water Reactive Wastes</i>	0	0		0	0
3-1.8	LA-W917 ⁴ <i>Compressed Gases Requiring Scrubbing</i>	1.456	0.624	Administrative Adjustment	0.833	0
			1.249	Administrative Adjustment		
			-1.872	Shipped offsite for treatment/disposal		
3-1.9	LA-W918 <i>Compressed Gases Requiring Oxidation</i>	0	0		0	0
3-1.10	LA-W920 <i>Elemental Mercury</i>	0	0		0	0
3-1.11	LA-W907 <i>Halogenated Organic Liquids</i>	0	0		0	0
3-1.11	LA-W908 <i>Nonhalogenated Organic Liquids</i>	0	0		0	0
3-1.11	LA-W909 <i>Bulk Oils</i>	0	0		0	0
3-1.11	LA-W910 <i>PCB Wastes with RCRA Components</i>	0	0		0	0
3-1.11	LA-W923 <i>Liquid and Solid Oxidizers</i>	0	0		0	0
3-2	LA-W924 <i>Lead Wastes—TBD</i>	0	0		0	0
3-2	LA-W925 <i>Mercury Wastes—TBD</i>	0	0		0	0

CP ¹ Sec.	MWIR ¹ Waste ID and Treatability Group/Category	FY13 Annual Update (m ³) ²	Proposed Revision 25.0 (m ³)	Comments ³	FY14 Annual Update (m ³)	Projection FY15–FY19 (m ³)
3-2	LA-W926 <i>Compressed Gases—TBD</i>	0	0		0	0
3-2	LA-W927 <i>Biochemical Laboratory Wastes</i>	0	0		0	0
3-2	LA-W928 <i>Dewatered Treatment Sludge</i>	0	0		0	0
3-2	LA-W932 <i>Explosives</i>	0	0		0	0
3-2	LA-W933 <i>Labpacks</i>	0	0		0	0
3-2	LA-W934 <i>High Activity Waste</i>	1,301	0	Shipped offsite for treatment/disposal	1,301	0
			0	Administrative Adjustment		
3-3.1	LA-W930 <i>Lead for Surface Decontamination</i>	0	0		0	0
3-3.2	LA-W929 <i>Nonradioactive or Suspect Waste Items to be Surveyed</i>	0	0		0	0
3-3.3	LA-W931 <i>Lead Requiring Sorting</i>	0	0		0	0
3-3.4	LA-W935 <i>10–100 nCi/g Waste</i>	97,000	591,305	Administrative Adjustment	11,545	50
			-676.76	Shipped offsite for treatment/disposal		
3-4	<i>Missing/nonexistent/TBV category</i>	0	0		0	N/A
TOTALS		100,381	-		13,679	

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

² MLLW volumes are calculated using the conversion: 55-gallon container = 0.208 m³; 85-gallon container = 0.322 m³; however, due to FY13 changes in the way that the MTRU are process (repackaged) into several different containers and are no longer equal to those added to the MLLW inventory of LA-W935.

³ Shipment details are in Appendix B; administrative adjustments are in Appendix C.

⁴ Items prohibited from shipment to WIPP are removed from MTRU STP containers and consolidated; some are MLLW and are included in Table A-1 as LA-W917 waste; others are MTRU waste and are considered *Combustible Noncombustible Waste* in Table E-1.

APPENDIX E CURRENT MTRU INVENTORY DETAIL

Table E-1 TA-54 MTRU Covered Inventory (by Treatability Group)

Treatability Group	FY154 Annual Update (m ³)	Proposed Revision 276.0 (m ³) ^{1,2}	Comments ³	FY165 Annual Update (m ³)	Projection FY176-FY210 (m ³)
<i>Cemented Sludge</i>	57.876				
		(0) ⁴	3706 Non-cemented Above-ground EM Legacy TRU (MTRU waste only)		
		0	New Covered		
		(0)	FY14 Shipped Offsite on Hold ⁵		
		0	Shipped to WIPP (placed below grade)		
		24.3740	Administrative Adjustments		
		FY165 Subtotal Cemented Sludge			82.25057.876
<i>Combustible – Noncombustible Waste</i>	395.566473.24 6				
		(68.36263-674) ⁴	3706 Non-cemented Above-ground EM Legacy TRU (MTRU waste only)		
		1.8726.038	New Covered		
		(-153.204)	FY14 Shipped Offsite on Hold ⁵		
		0	Shipped to WIPP (placed below grade)		
		-47.646-83.718	Administrative Adjustments		
		FY165 Subtotal Combustible-Noncombustible Waste			349.792395.566
<i>Combustible Waste</i>	4.468				
		(0.208) ⁴	3706 Non-cemented Above-ground EM Legacy TRU (MTRU waste only)		
		0	New Covered		
		(0)	FY14 Shipped Offsite on Hold ⁵		
		0	Shipped to WIPP (placed below grade)		
		-3.3140	Administrative Adjustments		
		FY165 Subtotal Combustible Waste			1.1544.468
<i>Glass Waste</i>	0				
		(0) ⁴	3706 Non-cemented Above-ground EM Legacy TRU (MTRU waste only)		
		0	New Covered		
		0	Shipped Offsite		
		0	Administrative Adjustments		
		FY165 Subtotal Glass Waste			0

Treatability Group	FY154 Annual Update (m ³)	Proposed Revision 276.0 (m ³) ^{1,2}	Comments ³	FY165 Annual Update (m ³)	Projection FY176-FY210 (m ³)
<i>Leaded Glovebox Waste</i>	0				
		(0) ⁴	3706 Non-cemented Above-ground EM Legacy TRU (MTRU waste only)		
		0	New Covered		
		0	Shipped Offsite		
		0	Administrative Adjustments		
		FY165 Subtotal Leaded Glovebox Waste			0
<i>Metallic Waste</i>	3.349				
		(0.208) ⁴	3706 Non-cemented Above-ground EM Legacy TRU (MTRU waste only)		
		0	New Covered		
		(-0.208)	FY14 Shipped Offsite on Hold ⁵		
		-1.040	Administrative Adjustments		
		FY165 Subtotal Metallic Waste			<u>2.3093.349</u>
<i>Noncombustible Waste</i>	35.46834.242				
		(1.248) ⁴	3706 Non-cemented Above-ground EM Legacy TRU (MTRU waste only)		
		0	New Covered		
		(-14.050)	FY14 Shipped Offsite on Hold ⁵		
		0	Shipped to WIPP (placed below grade)		
		-13.3601.226	Administrative Adjustments		
FY165 Subtotal Noncombustible Waste			<u>22.10835.468</u>	100	
<i>Solidified Inorganic and Organic Waste</i>	395.054300.578				
		(24.70219.900) ⁴	3706 Non-cemented Above-ground EM Legacy TRU (MTRU waste only)		
		<u>0.946</u>	New Covered		
		(-20.196)	FY14 Shipped Offsite on Hold ⁵		
		0	Shipped to WIPP (placed below grade)		
		38.20494.476	Administrative Adjustments		
FY165 Subtotal Solidified Inorganic and Organic Waste			<u>434.204395.054</u>	10	
TOTAL FY154:	<u>891.781873.759</u>		Total FY165 Inventory:	<u>891.817891.781</u>	210

¹ MTRU waste volumes are calculated using the conversion: 55-gallon container = 0.208 m³; 85-gallon container = 0.322 m³.

² Volumes are represented to three decimal places.

³ Shipping details are found in Appendix F₇ and Administrative Adjustments are found in Appendix G.

⁴ Amount already included in the MTRU STP covered inventory.

⁵ NMED has determined that the removal of MTRU from the STP will be deferred until more information becomes available and is the final disposition of the waste currently stored at the off-site facility is determined. Amount already included in the MTRU STP covered inventory.

Table E-2 MTRU Inventory at TA-55 and CMR

Location	FY154 MTRU Inventory (m ³) ¹	Treatability Group	Proposed Revision 276.0 (m ³)	Comments ¹	FY165 MTRU Inventory (m ³)
CMR	9.8005.700	Combustible-Noncombustible Waste	1.8784.188	New Covered	
			-2.080-0.088	Administrative Adjustment	
Total FY165 CMR Inventory					<u>9.5989.800</u>
TA-55	5.3193.031	Combustible-Noncombustible Waste	26.0062.912	New Covered	
			1.872-0.624	Administrative Adjustment	
FY165 TA-55 Combustible-Noncombustible Waste Inventory					<u>33.1975.319</u>
TA-55	5.0040.019	Combustible Waste	0.2083.126	New Covered	
			0.0001.859	Administrative Adjustment	
FY165 TA-55 Combustible Waste Inventory					<u>5.2125.004</u>
TA-55	22.39328.791	Metallic Waste	-6.398	Administrative Adjustment	
FY165 TA-55 Metallic Waste Inventory					<u>15.99522.393</u>
TA-55	3.1204.608	Noncombustible Waste	2.1170.832	New Covered	
			0.208-2.320	Administrative Adjustment	
FY165 TA-55 Noncombustible Waste Inventory					<u>5.4453.120</u>
TA-55	0.208	Solid Inorganic and Organic Waste	-0.208	<u>Administrative Adjustment</u>	
FY165 TA-55 Solidified Inorganic and Organic Waste Inventory					<u>0.0000.208</u>
Total FY165 TA-55 Inventory					<u>59.84936.044</u>
	45.84442.357	Total FY165 CMR/TA-55 Inventory			<u>69.44745.844</u>

¹ Shipping details are found in Appendix F and Administrative Adjustments are found in Appendix G. Since all waste is shipped from TA-54, there are no shipping data for CMR/TA-55, only transfers to TA-54, which are included in the Appendix G.

APPENDIX F FY165 MTRU WASTE SHIPMENTS TO WIPP

Table F-1 FY165 MTRU Shipments to WIPP

FY15 Quarter	Treatability Group	Existing FY15 Inventory Volume (m ³)	New Covered Volume (m ³)	Total Removed from Inventory (placed below grade) (m ³)	Total FY14 Inventory (above grade) on Hold (m ³)	Total Volume Shipped (m ³) ¹
Q1	Q1Total	0	0	0	0	0
Q2	Q2Total	0	0	0	0	0
Q3	Q3 Total	0	0	0	0	0
Q4	Q4 Total	0	0	0	0	0
Grand Total		0	0	0	0	0

¹ Volumes shipped may be lower than volumes removed from the STP inventory due to the removal of overpacks before shipping.

Table F-2 FY14 MTRU Shipments to WCS^{2,1}

FY14 Quarter	Treatability Group	Existing FY14 Inventory Volume (m ³)	New Covered Volume (m ³)	Total Inventory on Hold (m ³)	Total Volume Shipped (m ³) ^{1,2}
Q3	Combustible-Noncombustible Waste Total	120.848	0.416	121.264	121.264
	Metallic Waste Total	0.208	0	0.208	0.208
	Noncombustible Waste Total	14.050	0	14.050	13.936
	Solidified Inorganic and Organic Waste Total	20.196	0	20.196	19.968
Grand Total		155.302	0.416	155.718	155.376

¹ Volumes shipped in FY14 but not removed from the STP inventory.

² Volumes shipped may be lower than volumes removed from the STP inventory due to the removal of overpacks before shipping.

Table F-3 FY14 MTRU Shipments to AMWTP (INL)^{3,1}

FY14 Quarter	Treatability Group	Existing FY14 Inventory Volume (m ³)	New Covered Volume (m ³)	Total Inventory on Hold ² (m ³)	Total Volume Shipped (m ³) ^{3,1}
Q1	Combustible-Noncombustible Waste Total	5.049	0	5.049	5.049
Q2	Combustible-Noncombustible Waste Total	15.294	0	15.294	15.294
Q3	Combustible-Noncombustible Waste Total	2.549	0	2.549	2.549
Grand Total		22.892	0	22.892	22.892

¹ Volumes shipped in FY14 but not removed from the STP inventory.

² LANL waste treated at INL and stored at a WCS facility as of November 2014. Original containers and volume continue to be tracked since treated containers were not created at LANL.

³ Volumes shipped may be lower than volumes removed from the STP inventory due to the removal of overpacks before shipping.

Table F-4 FY14 MTRU Shipments to WIPP²¹

FY14 Quarter	Treatability Group	Existing FY14 Inventory Volume (m ³)	New Covered Volume (m ³)	Total Inventory on Hold (above grade) (m ³)	Total Volume Shipped (above grade) (m ³) ^{1,2}
Q2	Combustible-Noncombustible Waste Total	9.048	0	9.048	8.820
Grand Total		9.048	0	9.048	8.820

¹ Volumes shipped in FY 14 but not removed from the STP inventory.

² Volumes shipped may be lower than volumes removed from the STP inventory due to the removal of overpacks before shipping.

APPENDIX G CURRENT YEAR MTRU INVENTORY – ADMINISTRATIVE ADJUSTMENTS

Table G-1 FY165 MTRU Administrative Adjustments to TA-54 Inventory

Treatability Group	Administrative Adjustment	Volume (m ³)
<i>Cemented Sludge</i>	<u>Volume adjustment for Directed Loaded SWBs (One or more 55-gallon containers remediated inside a SWB container for removal of prohibited items)</u>	<u>36.268</u>
	<u>STP containers from Cemented Sludge treatability groups were reassigned to 26.292 m³ Solidified Inorganic and Organic Waste treatability groups consistent with current categorization of waste types for shipment to WIPP. Volume changes are also included.</u>	<u>-11.894</u>
	<i>Cemented Sludge Net Adjustment</i>	<u>24.3740</u>
<i>Combustible-Noncombustible Waste</i>	Reclassified as MLLW (LA-W935)	<u>-4.616-1.872</u>
	<u>Added as a result of new characterization of TRU nitrate salt waste, debris containers with aerosol cans and empty containers not meeting the RCRA empty criteria, from reconciliation of inconsistencies in the current inventory</u>	<u>2.9382-086</u>
	<u>Volume changes due to addition or removal of overpacks (85 gallon, 110 gallon, or standard waste box [SWB], or ten drum overpack)</u>	<u>-53.4408-256</u>
	<u>Volume adjustment for Directed Loaded SWBs (One or more 55-gallon containers remediated inside a SWB container for removal of prohibited items)</u>	<u>3.018</u>
	<u>Volume changes due to rounding corrections for SWB from 1 decimal to 3 decimal places for consistency throughout the report (1.9 to 1.878)</u>	<u>-1.694</u>
	<u>STP containers from Combustible-Noncombustible Waste treatability groups were reassigned to 1.878 m³ Cemented Sludge treatability group 96.200 m³ Solidified Inorganic and Organic Waste treatability groups consistent with current categorization of waste types for shipment to WIPP. Volume changes are also included in directed loaded SWBs.</u>	<u>-0.208-94.666</u>
	<u>STP containers from Combustible Waste treatability groups were reassigned to 2.784 m³ Combustible-Noncombustible Waste treatability groups consistent with current categorization of waste types for shipment to WIPP. Volume changes are also included.</u>	<u>2.784</u>
	<u>STP containers from Solidified Organic and Inorganic treatability groups were reassigned to 1.878 m³ Combustible-Noncombustible Waste treatability groups consistent with current categorization of waste types for shipment to WIPP. Volume changes are also included.</u>	<u>1.878</u>
	<u>Additional covered inventory transferred from TA-55 covered inventory</u>	<u>4.172</u>
<i>Combustible-Noncombustible Net Adjustment</i>		<u>-47.646-83.718</u>
<i>Combustible Waste</i>	<u>STP containers from Combustible Waste treatability groups were reassigned to 2.784 m³ Combustible-Noncombustible Waste treatability groups consistent with current categorization of waste types for shipment to WIPP. Volume changes are also included.</u>	<u>-2.784</u>
	Reclassified as MLLW (LA-W935)	<u>-0.530</u>
<i>Combustible Waste Net Adjustment</i>		<u>-3.3140</u>
<i>Metallic Waste</i>	Reclassified as MLLW (LA-W935)	<u>-1.040</u>
<i>Metallic Waste Net Adjustment</i>		<u>-1.0400</u>
<i>Noncombustible Waste</i>	<u>Volume changes due to addition or removal of overpacks (85 gallon, 110 gallon, or standard waste box [SWB]) Added as a result of potentially hazardous constituents identification based on investigation of characterization of TRU nitrate salts waste</u>	<u>-13.3601-288</u>
	<u>Volume changes due to addition or removal of overpacks (85 gallon, SWB, or ten drum overpack)</u>	<u>0.114</u>
	<u>Volume changes due to rounding corrections for SWB from 1 decimal to 3 decimal places for consistency throughout the report (1.9 to 1.878)</u>	<u>-0.176</u>

Treatability Group	Administrative Adjustment	Volume (m ³)
<i>Noncombustible Waste Net Adjustment</i>		-13.360 -13.226
<i>Solidified Inorganic and Organic Waste</i>	Reclassified as MLLW (LA-W935)	-0.624 -2.422
	Added as a result of <u>new characterization of TRU nitrate salt waste, cemented container with free liquids, and empty containers not meeting the RCRA empty criteria from reconciliation of inconsistencies in the current inventory</u>	<u>2.878</u> 0.208
	Volume changes due to addition or removal of overpacks (85 <u>gallon</u> , or 110 gallon, <u>or standard waste box (SWB)</u>)	<u>1.744</u> 0.490
	<u>Volume adjustment for Directed Loaded SWBs (One or more 55-gallon containers remediated inside a SWB container for removal of prohibited items)</u>	<u>8.122</u>
	STP containers from Solidified Organic and Inorganic Combustible-Nonecombustible Waste treatability groups were reassigned to <u>1.878</u> 96.200 m ³ <u>Combustible-Noncombustible Solidified Organic and Inorganic</u> Waste treatability groups consistent with current categorization of waste types for shipment to WIPP. Volume changes are also included.	-0.208 <u>96.200</u>
	<u>STP containers from Cemented Sludge treatability groups were reassigned to 26.292 m³ Solidified Inorganic and Organic Waste treatability groups consistent with current categorization of waste types for shipment to WIPP. Volume changes are also included.</u>	<u>26.292</u>
<i>Solidified Inorganic and Organic Waste Net Adjustment</i>		<u>38.204</u> 94.476
<i>Total Net TA-54 Adjustment</i>		-2.782 -1.984

Table G-2 FY165 MTRU Administrative Adjustments for CMR and TA-55 Inventory

Location	Treatability Group	Administrative Adjustment	Volume (m ³)
CMR	Combustible-Noncombustible Waste	Transferred from CMR to TA-55 for storage. Volume changes due to rounding corrections for SWB from 1 decimal to 3 decimal places for consistency throughout the report (1.9 to 1.878)	-2.080 -0.088
Net Adjustment CMR Inventory			-2.080-0.088
TA-55	Combustible-Noncombustible Waste	Transferred from CMR to TA-55 for storage. Volume changes due to addition or removal of overpacks (85 or 496 gallon)	2.080 1.254
		Removed as a result of container (LA00000066320) not being STP-covered waste. Container activities (reclassification and shipment task) was were inadvertently overlooked and not properly recorded in the database. Transferred to TA-54 and assigned to Combustible-Noncombustible Waste in the TA-54 inventory	-0.208 -1.878
Net Adjustment TA-55 Combustible-Noncombustible Waste			1.872-0.624
TA-55	Combustible Waste	Volume changes due to addition or removal of overpacks (85 or 496 gallon).	1.859
Net Adjustment TA-55 Combustible Waste			0.0001.859
TA-55	Metallic Waste	Transferred to CMR for Material Retrieval	-6.398
Net Adjustment TA-55 Metallic Waste			-6.398
TA-55	Noncombustible Waste	STP containers from Solidified Inorganic and Organic Waste treatability groups were reassigned to 0.208 m ³ Noncombustible Waste treatability groups consistent with current categorization of waste types for shipment to WIPP. Transferred to TA-54 and assigned to Combustible-Noncombustible Waste in the TA-54 inventory	0.208 -2.294
		Volume changes due to addition or removal of overpacks (85 or 496 gallon)	-0.004
		Volume changes due to rounding corrections for SWB from 1 decimal to 3 decimal places for consistency throughout the report (1.9 to 1.878)	-0.022
Net Adjustment TA-55 Noncombustible Waste			0.208
<u>TA-55</u>	<u>Solidified Inorganic and Organic Waste</u>	STP containers from Solidified Inorganic and Organic Waste treatability groups were reassigned to 0.208 m ³ Noncombustible Waste treatability groups consistent with current categorization of waste types for shipment to WIPP.	-0.208
Net Adjustment TA-55 Solidified Inorganic and Organic Noncombustible Waste			-0.208-2.320
Net Adjustment TA-55 Inventory			-4.526-7.483
Total Net TA-55/CMR Adjustment			-6.606-7.571

Table G-3 MTRU Administrative Adjustments – TA-54 Volume Adjustments [Table omitted]

Table G-4 MTRU Administrative Adjustments – TA-54 Containers Added [Table omitted]

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)	Florida
Waste Control Specialists	Texas
EnergySolutions of Utah (including Bear Creek Operations in Tennessee)	Utah
Nuclear Fuel Services	Tennessee
Integrated Environmental Services	Tennessee
NSSI	Texas

APPENDIX I CORRESPONDENCE

Table I-1 Expedited Shipment Letters ~~{Table omitted}~~

<u>Letter Date</u>	<u>Description</u>	<u>Letter Number</u>	<u>Revision Reference</u>
<u>02/25/2016</u>	<u>Notice of Completion of Expedited Off-Site Waste Shipment Activity 3.1.5</u>	<u>WM-DO-16-002</u>	<u>27</u>
<u>06/24/2016</u>	<u>Notice of Completion of Expedited Off-Site Waste Shipment Activity 3.1.5</u>	<u>WM-DO-16-023</u>	<u>27</u>

Table I-2 Correspondence

<u>Letter Date</u>	<u>Description</u>	<u>Letter Number</u>	<u>Revision Reference</u>
<u>11-12-2014</u>	<u>Notice of Completion of Off-Site Waste Shipment Activity 4.0, FY14 Q4</u>	<u>WM-DO-14-063</u>	<u>26</u>
<u>1-12-2015</u>	<u>15-Day Notification, Proposed Deletion of Waste</u>	<u>WM-DO-15-001</u>	<u>26</u>
<u>2-4-2015</u>	<u>Notice of Completion of Off-Site Waste Shipment Activity 4.0, FY15, Q1</u>	<u>WM-DO-15-002</u>	<u>26</u>
<u>3-24-2015</u>	<u>Corrections of Off-Site Waste Shipment Notification, FY14, Activity 3.3.4 and 3.1.5</u>	<u>WM-DO-15-007</u>	<u>26</u>
<u>3-24-2015</u>	<u>Corrections of Off-Site Waste Shipment Notifications, FY14, Activity 4.0</u>	<u>WM-DO-15-003</u>	<u>26</u>
<u>3-24-2015</u>	<u>Notice of Completion of Off-Site Waste Shipment Activity 3.1.8</u>	<u>WM-DO-15-006</u>	<u>26</u>
<u>3-30-2015</u>	<u>Submittal of FY14 Annual Update and Proposed 25.0</u>	<u>WM-DO-15-008</u>	<u>26</u>
<u>4-23-2015</u>	<u>Notice of Completion of Off-Site Waste Shipment Activity 4.0, FY15, Q2</u>	<u>WM-DO-15-014</u>	<u>25</u>
<u>7-9-2015</u>	<u>Notice of Completion of Off-Site Waste Shipment Activity 4.0, FY15, Q3</u>	<u>WM-DO-15-025</u>	<u>25</u>
<u>8-13-2015</u>	<u>15-Day Notification, Proposed Deletion of Waste</u>	<u>WM-DO-15-028</u>	<u>25</u>
<u>9-24-2015</u>	<u>Response to the August 26, 2015, Notice of Disapproval of the Los Alamos National Laboratory's Federal Facility Compliance Order Annual Site Treatment Plan Update for Fiscal Year 2014 Revision 25.0</u>	<u>WM-DO-15-032</u>	<u>25</u>
<u>02/11/2016</u>	<u>Notice of Completion of Off-Site Waste Shipment Activity 4.0, FY16, Q1</u>	<u>WM-DO-16-001</u>	<u>27</u>
<u>02/25/2016</u>	<u>Los Alamos National Laboratory Notification of Regulatory Noncompliance at TA-54, Area G, Pit 38</u>	<u>ADESH-16-021</u>	<u>27</u>
<u>03/31/2016</u>	<u>Submittal of FY15 Site Treatment Plan Annual Update and Proposed Revision 26.0</u>	<u>WM-DO-16-005</u>	<u>27</u>
<u>04/18/2016</u>	<u>Notice of Completion of Off-Site Waste Shipment Activity 4.0, FY16, Q2</u>	<u>WM-DO-16-008</u>	<u>27</u>
<u>05/10/2016</u>	<u>15-Day Notification, Proposed Deletion of Waste</u>	<u>WM-DO-16-011</u>	<u>27</u>
<u>07/28/2016</u>	<u>Notice of completion of Off-Site Waste Shipment Activity 3.3.4</u>	<u>WM-DO-16-024</u>	<u>27</u>
<u>07/28/2016</u>	<u>15-Day Notification, Proposed Deletion of Waste</u>	<u>WM-DO-16-025</u>	<u>27</u>
<u>07/28/2016</u>	<u>Notice of Completion of Off-Site Waste Shipment Activity 4.0, FY16, Q3</u>	<u>WM-DO-16-026</u>	<u>27</u>
<u>08/29/2016</u>	<u>Federal Facility Compliance Order – Notice of Change of Project Manager</u>	<u>NNSA/DOE</u>	<u>27</u>
<u>09/29/2016</u>	<u>Reponse to the May 18, 2016, Notice of Disapproval of the Los Alamos National Laboratory's Federal Facility Compliance Order Annual Site Treatment Plan Update for Fiscal Year 2015, Revision 26.0</u>	<u>WM-DO-16-030</u>	<u>27</u>

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 27~~5~~ revisions 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	6/12/96	Added offsite treatment as a parallel preferred option for most MLLW treatability groups.
Rev. 2.0	STP/CP	12/9/96	Reduced volume of LA-W928 by approving reclassification of sludges as LLW.
Amendment 1.0	STP/CP	10/30/96	Divided original volume of LA-W929 into three subgroups, and added new Activities and Compliance Dates.
Rev. 3.0	STP/CP	1/27/97	Divided original volume of LA-W929 into three subgroups, and added new Activities and Compliance Dates.
Amendment 1.0	FFCO	5/20/97	Modified FFCO Sections IV, V, IX, and X to streamline waste transfers and deletions.
Amendment 2.0	STP/CP	9/4/97	Extended CP Activity 3.1.2B Compliance Date to 12/29/97.
Rev. 4.0	STP/CP	12/29/97	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	12/29/97	Added volumes reported in FY95 and FY96 <i>Annual Updates</i> (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	7/31/98	Added volumes reported in FY97 <i>Annual Update</i> 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	11/30/98	Removed onsite treatment skids, added STP inventory items, added onsite recycling/re-use and radiological decontamination, added notification for offsite treatability studies.
Rev. 8.0	STP/CP	12/3/98	Extended compliance dates for treatment of MTRU waste.
Rev. 9.0	STP/CP	6/7/00	Added and deleted volumes reported in FY98 <i>Annual Update</i> to certain treatability groups.
Amendment 3.0	STP/CP	8/30/99	Transferred three items to MTRU, transferred one item to subgroup within same treatability group.
Rev. 10.0	STP/CP	12/18/00	Added and deleted volumes reported in FY99 <i>Annual Update</i> to certain treatability groups.
Rev. 11.0	STP/CP	4/18/01	Added and deleted volumes reported in FY00 <i>Annual Update</i> .

Action	Document Modified	Effective Date	Effect on FFCO/STP
Rev. 12.0	STP/CP	3/13/02	Added and deleted volumes reported in FY01 <i>Annual Update</i> . 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 offsite to WIPP for disposal.
Rev 13.0	STP/CP	7/14/03	Added and deleted volumes reported in FY02 <i>Annual Update</i> .
Rev 14.0	STP/CP	1/5/05	Added and deleted volumes reported in FY03 <i>Annual Update</i> .
Rev 15.0	STP/CP	8/16/05	Added and deleted volumes reported in FY04 <i>Annual Update</i> .
Rev 16.0	STP/CP	12/12/06	Added and deleted volumes reported in FY05 <i>Annual Update</i> . 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	6/26/08	Added and deleted volumes reported in FY06 <i>Annual Update</i> . 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	1/9/09	Added and deleted volumes reported in FY07 <i>Annual Update</i> . 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 ² 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	2/5/10	Added and deleted volumes reported in FY08 <i>Annual Update</i> . 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	11/8/10	Added and deleted volumes reported in FY09 <i>Annual Update</i> . Proposed an extended compliance date for CP Activity 3.2(J).
Rev 21.0	STP/CP	3/21/12	Added and deleted volumes reported in FY10 <i>Annual Update</i> . Proposed new compliance date for CP Activity 3.1.8(A).
Rev 22.0	STP/CP	12/10/12	Added and deleted volumes reported in FY11 <i>Annual Update</i> .
Rev 23.0	STP/CP	08-26-2015	Added and deleted volumes reported in FY12 <i>Annual Update</i> Added Table 4.0-1 Treatability Groups for the Framework Agreement MTRU Waste
Rev 24.0	STP/CP	08-26-2015	Added and deleted volumes reported in FY13 <i>Annual Update</i> 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)

Action	Document Modified	Effective Date	Effect on FFCO/STP
Rev 25.0	STP/CP	TBD	Added and deleted volumes reported in FY14 Annual Update On Hold volumes reported shipped in FY14 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	01-30-2017 TBD	Added and deleted volumes reported in FY15 Annual Update On Hold volumes reported shipped in FY14 Annual Update Proposed compliance date for CP Activity 4.0-2 (C)
<u>Rev 27.0</u>	<u>STP/CP</u>	<u>TBD</u>	<u>Added and deleted volumes reported in FY16 Annual Update</u> <u>On Hold volumes reported shipped in FY14 Annual Update</u> <u>Proposed compliance date for CP Activities 4.0-2(a), and 4.0-2(c).</u>

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).