



Department of Energy
Albuquerque Operations Office
Los Alamos Area Office
Los Alamos, New Mexico 87544

NOV 24 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Janice Archuleta
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
2044 Galisteo Street, Bldg. A
P. O. Box 26110
Santa Fe, New Mexico 87505

Dear Ms. Archuleta:

Subject: Proposed Compliance Plan Volume (CPV) Replacement Text for Revision No. 4.0 (Sort, Survey and Decontamination [SSD] Activities) and Revision No. 5.0 (CPV Covered Waste Inventory), Los Alamos National Laboratory (LANL) Federal Facility Compliance Order (FFCO), October 4, 1995

The purpose of this letter is to provide to the New Mexico Environment Department (NMED) the requested CPV replacement text for two LANL Site Treatment Plan (STP) revision requests (Rev. 4.0 and 5.0) that have been submitted by the Department of Energy (DOE) and the University of California (UC). DOE and UC initially submitted the Rev. 4.0 and 5.0 requests to NMED by letters dated February 28 and March 31, 1997, respectively, and presented a corrected version of the Rev. 4.0 request by letter dated September 29, 1997.

DOE and UC are seeking to revise the CPV language to incorporate specific changes in STP covered waste volumes (discussed in Revisions 4.0 and 5.0) into the CPV inventories, along with a few other selected changes that have become necessary since these revision requests were initially submitted to NMED. Therefore, the Enclosures to this letter replace both the February 28, 1997 and September 29, 1997 versions of Rev. 4.0, and the March 31, 1997 version of Rev. 5.0.

Summary of Requested Revisions

This consolidated revision request has been prepared in accordance with the requirements of Section X.C.2, "Revisions," of the FFCO. DOE and UC seek to revise the CPV language as described in Enclosures A and B to this letter. Specific text for both revision requests is proposed in Enclosures C and D to this letter.

Enclosed with this letter, DOE and UC are providing the following items:

1. Enclosure A, which addresses our Revision 4.0 request. This Enclosure corrects and replaces both the February 28, 1997 and September 29, 1997 versions of Rev. 4.0, Enclosure A. DOE and UC are proposing the following:
 - To transfer the referenced LA-W929 items to other Treatability Groups (TG) (which involves creation of two new TGs);



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- To transfer covered waste items in TG LA-W929 that have been determined to be missing or nonexistent to the new category called "Missing/Nonexistent/TBV"; and
 - To change the TG name for MWIR ID No. LA-W923.
2. Enclosure B, which addresses our Revision 5.0 request. This Enclosure corrects and replaces the March 31, 1997 version of Rev. 5.0, Enclosure A. DOE and UC are proposing to incorporate the following additions and deletions into the CPV covered waste inventories:
 - Changes in Mixed Low-Level Waste (MLLW) covered waste inventories (additions and deletions) that have been reported since the FFCO was issued in October 4, 1995, up through the end of FY 1995, as reported in the FY 1995 STP *Annual Update*; and
 - Changes in MLLW covered waste inventories (additions and deletions) during FY 1996, discussed in the FY 1996 STP *Annual Update*.
 3. Other Revision 5.0 changes, which have been incorporated into Enclosure B. These include the following:
 - Addition of several mixed waste items, that became covered waste under the FFCO since the end of FY 1996 (even though they would not normally be reported until publication of the *FY 1997 Update* and its corresponding revision), in order to expedite their shipment to off-site facilities for treatment. They are indicated by TG in the proposed new CPV Appendix B Summary Table (see Enclosures C and D);
 - Transfer of missing items from several TGs to the new category called "Missing/Nonexistent/TBV" in the proposed new CPV Section 3.5 (even though their nonexistence was verified after the end of FY 1996);
 - Modification of the existing Compliance Date for Activity 3.1.2B;
 - Addition of two informational appendices to the CPV; and
 - Addition of "(a) schedule for development of lead processing techniques and options" to Section 3.4.1 of the CPV (as well as clarifying language for CPV Section 2.1.4). DOE and UC were required to incorporate this schedule into Section 3.4.1 on page 15 of the CPV for those lead shapes and forms in the TG MWIR ID LA-W930 found to be "not amenable to processing using the lead decontamination trailer." The schedule was originally submitted to NMED prior to June 30, 1996, but NMED informed LANL on February 25, 1997 that the schedule must be added to the CPV as part of a formal revision.
 4. Proposed CPV text changes for NMED's approval corresponding to both the LANL Revision 4.0 and 5.0 requests, in redline/strikeout format (Enclosure D).
 5. Proposed CPV text changes for NMED's approval corresponding to both the LANL Revision 4.0 and 5.0 requests, in clean copy format (Enclosures C and D).
 6. An electronic version of the complete CPV text addressing these changes, in redline/strikeout and clean copy formats.

We believe that our submittal of the enclosed CPV language in both electronic and hard copy, along with its supporting documents, completes the Rev. 4.0 and 5.0 requests, such that if you find them acceptable, they can be provided to the public for review and comment without further delay.

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Please note our concern that this revision must be completed by December 29, 1997 if possible, to avoid noncompliance with CPV Activity 3.1.2B for the three LA-W904 items remaining to be addressed.

A Certification Statement is provided as Enclosure E. LANL's records and documents related to these requests are available to NMED staff upon request. We would be happy to discuss the information contained in this letter with you at your earliest possible opportunity, and we request that you inform us immediately, should you have any concerns regarding our ability to meet the upcoming December 29, 1997 FFCO Compliance Date.

Please contact me at (505) 665-5042 or Ken Hargis at (505) 667-2347 if you have any questions.

Sincerely,

H. L. "Jody" Plum
Office of Environment

LAAME:2JP-085

Enclosures

cc w/enclosures:

Mr. Benito Garcia, Chief

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Mr. Walter Medina

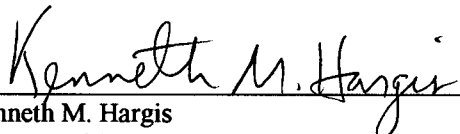
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ENCLOSURE E


**ENCLOSURE E
CERTIFICATION**

**SUBJECT: PROPOSED COMPLIANCE PLAN VOLUME (CPV) REPLACEMENT TEXT
FOR REVISION NO. 4.0 (SORT, SURVEY AND DECONTAMINATION (SSD) ACTIVITIES)
AND REVISION NO. 5.0 (CPV COVERED WASTE INVENTORY), LOS ALAMOS NATIONAL
LABORATORY (LANL) FEDERAL FACILITY COMPLIANCE ORDER (FFCO), OCTOBER 4,
1995**

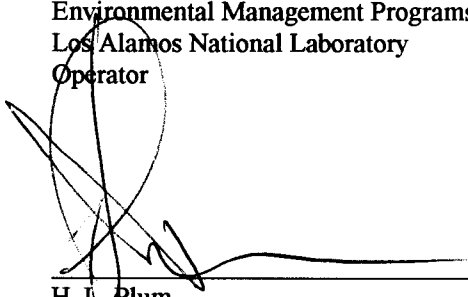
I certify that I am the project manager responsible for overseeing the implementation of the Site
Treatment Plan for the Los Alamos National Laboratory. To the best of my knowledge and belief, the
information in this document is true, accurate, and complete.



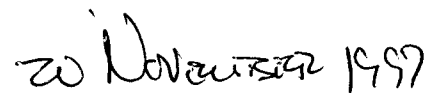
Kenneth M. Hargis
Manager of Operations
Waste Management Program
Environmental Management Programs
Los Alamos National Laboratory
Operator



Date Signed



H. L. Plum
Regulatory Permitting and Compliance Manager
Los Alamos Area Office
U.S. Department of Energy
Albuquerque Operations
Owner/Operator



Date Signed

ENCLOSURE A

LANL STP PROPOSED REVISION 4.0 SORT, SURVEY AND DECONTAMINATION (SSD) ACTIVITIES, LOS ALAMOS NATIONAL LABORATORY (LANL) FEDERAL FACILITY COMPLIANCE ORDER (FFCO)

The purpose of this revision is to document the transfer of STP covered wastes from treatability group LA-W929, "Nonradioactive or suspect items to be surveyed," to other treatability groups, and the deletion of some of these LA-W929 covered wastes. These proposed transfers and deletions are the result of Activities A-I currently listed in Section 3.4.2, *Sorting, Surveying and Decontamination*, in the Compliance Plan Volume (CPV) of the Site Treatment Plan (STP). As a result of this revision (and Revision 5.0), all 1,250 items in the original inventory of treatability group LA-W929 will be transferred to other treatability groups or deleted (see a summary of these proposed transfers and deletions in Table A-1).

The following portions of this enclosure follow the requirements of Section X.C.2, "Revisions," of the FFCO. Proposed STP text changes are provided in Enclosure C. The complete proposed CPV text is provided in hard copy form in Enclosure D and in the enclosed electronic copy.

Section X.C.2.a. Detailed description of the proposed revision. For the reasons given in the following paragraphs, in Revision 4.0, DOE and UC are proposing to revise the Compliance Plan Volume language as follows:

- To transfer the referenced LA-W929 items to other treatability groups (which involves creation of new treatability groups);
 - To transfer 41 covered waste items in treatability group LA-W929 that have been determined to be missing or nonexistent to the newly-created category called "Missing/nonexistent/TBV" (to be verified);
 - To document the deletion of 13 already-treated LA-W929 items (*NOTE: the deletions themselves will occur as part of Revision 5.0, and future revisions; see Enclosure B*) and
 - To change the treatability group name for MWIR ID no. LA-W923, as discussed below.
1. **Transfer of the referenced LA-W929 items to other treatability groups.** Most of the LA-W929 items are proposed to be transferred to other existing treatability groups (see Table A-1). DOE and UC propose that in most cases, SSD items being transferred to other existing treatability groups (TGs) will be treated according to the Compliance Dates already existing for those TGs (with a few exceptions as discussed below; DOE and UC propose to establish new Activities and Compliance Dates in those instances).

New treatability groups were found to be necessary to accommodate some of the LA-W929 waste items that could not reasonably be transferred to other existing TGs. The new TGs are proposed to be added to CPV Section 3.3, "Mixed Waste Requiring Further Characterization or for Which Technology Assessment Has Not Been Done." DOE and UC propose to establish Activities and Compliance Dates for the new treatability groups.

2. **Transfer of missing or nonexistent LA-W929 items.** During completion of SSD activities, 41 of the 1,250 covered waste items in TG LA-W929 were determined to be missing or nonexistent (see Table A-1). DOE and UC are proposing to revise the CPV language to transfer the missing or nonexistent LA-W929 items to a new category, called "Missing/nonexistent/TBV", which is herein proposed for addition to new CPV Section 3.5 (see proposed STP text provided in Enclosure C). LANL's management strategy for addressing missing or nonexistent items is also discussed in new Section 3.5. DOE and UC propose to establish Activities and Compliance Dates for the new category.
3. **Deletion of treated LA-W929 items.** During completion of SSD activities, it was found that 13 of the 1,250 LA-W929 items had already been treated. We are accounting for the deletion here, but the deletions themselves will occur as a part of Rev. 5.0 and future revisions (see Table A-1 and Enclosures B and C).

4. **Change of treatability group name for MWIR ID no. LA-W923.** During completion of SSD activities, DOE and UC identified that eleven of the 1,250 LA-W929 mixed waste items are liquid oxidizers (see Table A-1). It is requested that the treatability group name for MWIR ID no. LA-W923 be changed to "*Liquid and solid oxidizers*," as shown in Enclosure C, and that the eleven LA-W929 items be added to this treatability group.

Since all 1,250 items from the original SSD subgroups 1, 2, and 3 are herein being reassigned to other TGs (including the new TGs), or the new category, or deleted, the three subgroups of LA-W929 will no longer contain any of the original waste items under the approved revision. Please note, however, that one (1) LA-W929 item entered the covered waste inventory during FY95; it is being added to LA-W929 as part of Rev. 5.0 (see Enclosures B and C), and thus LA-W929 will require new Compliance Dates as part of Rev. 5.0 (see Enclosure C).

Background of the SSD Project. The SSD activity consisted originally of an on-site field operation to survey waste suspected of radioactive contamination to determine definitively whether it is radioactively contaminated, using equipment and staffing provided by another DOE site, namely the Grand Junction Project Office (GJPO). The October 4, 1995 STP required that DOE and UC "*complete [a] survey*" (of the 1250 "*nonradioactive or suspect waste items to be surveyed*") by 10/30/96. The Background Volume (BV), Section 3.4.1, page 43, provides a discussion of the basis and need for the SSD project, as well as a brief description of the process that was followed to 10/30/96.

Wastes undergoing the SSD process were expected to fall into one of two categories:

- If determined not to be radioactively contaminated, they are planned to be released for treatment to permitted commercial hazardous waste facilities;
- If confirmed to be mixed low-level wastes (MLLW), they would necessarily remain in the STP inventory.

Implicit but not stated in the October 4, 1995 STP language were two assumptions. The first assumption was that SSD wastes in the first category (items determined not to be radioactively contaminated) would be removed from the STP inventory using the process of Section V.B, "*Covered Matters*," in the FFCO, prior to treatment and/or disposal as nonradioactive hazardous waste (this survey was not intended to provide data applicable to determining whether any of these wastes may be nonhazardous low-level waste). The second assumption was that new treatment milestones must be proposed for SSD wastes in the second category (items that remained in the STP inventory), in accordance with the requirements of Section X.C.2, "*Revisions*," of the FFCO.

In either case, for many of these waste items, further activities were required to characterize the wastes sufficiently to verify appropriate treatment/disposal options. Often, further characterization was expected to be necessary to meet the waste acceptance criteria of a specific off-site treatment facility. However, neither the activities nor timetables for these activities were specified in the October 4, 1995 STP.

Wastes required to undergo SSD were placed in MWIR ID LA-W929, which originally consisted of 1250 items packaged in some 495 containers, having a total estimated volume of 14.24 m³. GJPO's field procedure involved visual inspection; radiological surveys using field survey instruments; repackaging of items into new outer containers if necessary; and the taking of confirmatory samples for radiological analysis off-site. These activities were conducted on approximately 1049 of the 1250 waste items (i.e., 84 percent of the SSD total) prior to October 30, 1996.

To facilitate the identification of appropriate treatment technologies, the assignment of waste items to applicable treatability groups, and/or the expeditious shipment of the items to appropriate MLLW treatment/disposal facilities, full sampling and characterization for RCRA and radiological constituents was conducted on the remaining items in SSD subgroup 2. The field survey activity included RCRA as well as radiological characterization of these items.

DOE and UC found that the unsampled waste items in SSD subgroup 3 (such as lead-acid batteries with potential internal radioactive contamination) were not amenable to sampling using currently approved field methods. DOE and UC conducted visual verification of all containers holding these items, to confirm the available information on those that cannot be sampled.

STP Amendment 1.0 provided for this field survey/sampling work to be performed on subgroups 2 and 3 of these SSD items. This work was completed for SSD subgroups 2 and 3 on January 28, 1997, as described in our February 11, 1997 notification letter to NMED. As further stated in that letter, three of the original SSD subgroup 3 items were moved to SSD subgroup 2 and sampled for RCRA characterization.

In verifying completion of the SSD subgroups 2 and 3 activities, however, it was discovered that between ten and fifteen percent of the 1,049 SSD subgroup 1 items had been incorrectly counted as completed prior to the October 30, 1996 due date for Activity A, as stated in our February 11, 1997 correction letter. Also, as stated in the February 11, 1997 notification letter, of the 162 items assigned originally to SSD subgroup 2, 82 were moved to SSD subgroup 3 and visually inspected. Assignments to new treatability groups in Table A-1 were completed for all these items by reviewing and verifying (to the extent possible) existing data.

Additional Treatability Groups. DOE and UC determined, during reviews of the data for the 1250 SSD waste items, that in a number of instances waste items did not fit appropriately into the existing treatability groups. DOE and UC therefore propose that two new treatability groups be added to address such items - "*Labpacks*," and "*Explosives*." (see Table A-1).

DOE and UC are also proposing to revise the CPV language to transfer 41 of the 1,250 LA-W929 items that were determined to be missing or nonexistent to a new category, called "*Missing/ nonexistent/TBV*", which is herein proposed for addition to CPV Section 3.5.

Section X.C.2.b. Rationale for the proposed revision. DOE and UC have the following reasons for requesting this revision. First, FFCO Section VIII requires that waste additions follow the revision requirements specified in Section X.B. Although some of the volume increases associated with the LA-W929 waste transfers would be exempt from the revision requirements of FFCO Section X (because individually they fall below the threshold established in FFCO Section X.B.4, as amended [i.e., an increase of less than 10% of the TG volume, or an increase of less than 1 cu. m.]), the total volume of wastes being transferred, and total number of transfers, are significant enough to require revision of the STP.

Second, at the time of development of the SSD project, commercial and non-commercial treatment capabilities for MLLW were lacking. It was believed that many of the STP wastes, if verified to be nonradioactive, could be treated cost-effectively using commercial hazardous waste treatment facilities, provided it could be clearly determined that they need not be managed as radioactive waste. This involves both approval by NMED via the FFCO Section V.B process, and a detailed internal evaluation by DOE, before a waste package is allowed to be released from the site for management as nonradioactive material. Since the SSD process was developed, however, commercial and non-commercial treatment capacity for MLLW has expanded significantly.

Third, regarding nonradioactive determinations using the FFCO Section V.B process, part of GJPO's field procedure involved the taking of confirmatory samples, which were sent off-site to be analyzed at GJPO's laboratories. DOE and UC are still in the process of receiving and reviewing these analytical reports for many of the waste items field surveyed by GJPO for radioactivity. This is a lengthy process involving the preparation, review, and approval of detailed analytical and quality assurance data. DOE and UC believe it is not cost-effective to complete this review process simply to declare some of these waste items non-radioactive, even if so indicated by the analytical results.

Our operational experience with the field survey activities has indicated that the treatment and disposal of this nonradioactive or suspect radioactive waste as MLLW is more conservative, efficient, and cost effective than performing field survey activities for the sole purpose of declaring waste as non-radioactive, and undergoing additional characterization and detailed analyses to verify the nonradioactive status of a waste item. Therefore, at this time, DOE and UC intend to pursue treatment and disposal of the 1250 SSD waste items as MLLW, even though analytical results might allow some of them to be shipped offsite as nonradioactive hazardous waste upon NMED approval.

As of this writing, this management approach includes items identified as "Empty" in our February 11, 1997 notification letter. In such cases, waste materials were not present, but the item's container may not yet be determined to meet the definition of "RCRA empty." They must be either so identified, or will be disposed as MLLW. Therefore, such items will be maintained in the applicable treatability groups at this time.

In summary, all of the 1250 items (except for the 13 treated items proposed for deletion in Rev. 5.0 and subsequent revisions) will continue to be managed as MLLW at this time, and are being assigned to other treatability groups (as indicated in Table A-1) based on existing data, records, and knowledge of process (for instance, the lead-acid batteries would be assigned to a treatability group for macroencapsulation). They will be sent off-site to appropriate treatment facilities, when the available waste characterization data for the items is sufficient for shipment to the treatment facility and for ensuring compliance with RCRA land disposal restrictions requirements. The management approach for missing items is discussed below.

Revision 3.0 to CPV Section 3.4.2 stated that SSD wastes may either be assigned to applicable treatability groups, sent to off-site facilities for appropriate treatment, or both. All LA-W929 items being transferred to other treatability groups or to the new category will continue to be managed as mixed low-level waste. DOE and UC believe the available information is sufficient to support the treatability assignments given in table A-1.

- **Rationale for the Additional Treatability Groups.**

Explosives (proposed ID no. LA-W932). DOE and UC identified one mixed waste item during the SSD sampling and visual inspections, a stable explosive waste, which did not fit appropriately into the existing treatability groups, and which does not currently have a treatment pathway identified in the STP. Typically, all explosive wastes generated at LANL are managed at its existing explosives research and development facilities. Explosive wastes may not be released from these facilities for transfer to other LANL sites, including TA-54, or off-site, until the explosive components have been deactivated in accordance with methods approved by DOE and NMED. DOE and UC therefore propose a new treatability group be added to CPV Section 3.3 to address such waste items, called "*Explosives*."

LANL's experience in managing similar non-radioactive hazardous wastes is that currently there are few commercial hazardous waste management facilities available to manage such wastes, and no known commercial capability for explosive-containing mixed waste. On-site methods and typical industry approaches would include incineration, other thermal treatment methods, or some type of chemical deactivation. Incineration or other thermal methods ensure appropriate treatment of any other regulated organic constituents that might be present in the material, even if present only in nonregulated trace amounts. New technologies are currently being investigated that may offer alternatives to incineration/thermal/chemical treatment. DOE and UC may elect to pursue an on-site treatment approach, if no off-site alternatives become available. It is thus recommended that a specific technology should not be assigned to this TG at this time.

Labpacks (proposed ID no. LA-W933). Typically the affected wastes are small-volume, solid waste items containing metals, often commercial laboratory chemicals such as cadmium chloride (D006), chromium oxide (D007), vanadium pentoxide (P120), or thallium chloride (U216). These chemicals are typically managed in labpacks, and did not meet the definition of debris. However, the only treatability groups for MLLW solids currently in the STP are "*Combustible Debris*" (MWIR LA-W912) and "*Non-Combustible Solids*" (MWIR LA-W922), which do not appropriately address such waste items. DOE and UC therefore propose a new treatability group, called "*Labpacks*" (proposed new MWIR LA-W933), be added to CPV Section 3.3 to address such non-debris solids, and certain other labpacked items not fitting clearly into other existing treatability groups.

LANL's experience in managing similar non-radioactive hazardous wastes is that current management practices in the commercial hazardous waste management industry frequently involve stabilization as the final treatment step to meet RCRA land disposal restriction requirements. However, the typical pretreatment is incineration of the full, unopened labpacks, because of the cost and safety issues that would be involved if the labpacks were to be opened, managed, and sorted prior to stabilization. In addition, incineration ensures appropriate treatment of any regulated organic constituents that might be present in the labpacked material, even if present in nonregulated trace amounts. LANL is aware that many new technologies are currently being investigated that offer alternatives to the incineration/stabilization treatment train, including vitrification, molten metal processes, and other methods. It is thus recommended that a specific technology should not be assigned to this TG at this time.

Compliance Dates. DOE and UC propose that these new TGs, "Labpacks" and "Explosives," be added to CPV Section 3.3, "Mixed Waste Requiring Further Characterization or for Which Technology Assessment Has Not Been Done" (MWIR Treatment ID LA-S701), and that the Activities and Compliance Dates applicable to "Labpacks" and "Explosives" would be existing Activities C, D, E, and F in CPV Section 3.3. (NOTE: New Compliance Dates for CPV Section 3.4.2 are required for the item newly being added to LA-W929 as part of Rev. 5.0. They are being proposed as part of Rev. 5.0 [see Enclosures B and C]).

- **Rationale for Deletion of Treated LA-W929 Items.**

During completion of SSD activities, it was found that 13 of the 1,250 LA-W929 items (see Table A-1) had already been treated. We are accounting for the deletion of the 13 LA-W929 items here, but the actual process of deletion of all covered waste items that have been treated since issuance of the original CPV inventory is being proposed as a part of Rev. 5.0 (for the items treated prior to the end of FY96), and in a subsequent revision (for the items treated since the end of FY96). Enclosures B and C describe Rev. 5.0 and provide new CPV text.

- **Rationale for "Missing" LA-W929 Items.**

During the visual inspections and sampling activities of the SSD field effort, forty-one (41) of the 1250 SSD items were not found, or were not located in the containers they were expected to be in according to the LANL data files for those waste items. DOE and UC, and their contractors, performed a thorough inspection of the SSD containers for LA-W929 subgroups 2 and 3; however, these investigations did not turn up the missing items.

A number of physical and administrative controls at LANL ensure that hazardous or mixed waste items stored at TA-54 could not have gone missing by removal from the facility through inadvertent or inappropriate means. First, access to the waste storage areas is controlled using alarms, gates and fences. All movements of personnel and vehicles in and out are monitored both electronically and by trained staff. Second, administrative procedures reinforce the physical controls. Detailed written procedures reinforce regulatory and permit requirements for proper storage and handling of wastes, including their movement into and out of storage areas, and regular inspections during storage. All personnel must be rigorously trained in site operating and emergency procedures, including proper management of waste items, before they are allowed access to waste storage areas. Access procedures for the radiological control areas (where the MLLW items are stored) stipulate that all personnel and items removed from such areas must be monitored for radiological contamination. Finally, the DOE Occurrence Reporting System would have been triggered by an event such as inadvertent or inappropriate removal of the missing waste items. No such events were reported for these items. Based on these safeguards, the possibility of inadvertent or inappropriate removal of the missing waste items was dismissed. It is believed that one or more of the following explanations applies to each of the 41 missing items.

- In some instances, the item could not be verified as having ever been received in storage at LANL. In these cases, it is believed that the generator had submitted paperwork to TA-54 requesting pick-up of certain waste items, in anticipation that they would be generated by the pickup date. For various reasons, they were never in fact generated. However, based on the submitted paperwork, the items still were included in the original STP inventory because of the timing of the original data call (i.e., the original STP data call included all MLLW items present [or expected to be present] in the TA-54 MLLW storage area on a certain date. Thus, some items awaiting pickup were included in the STP inventory data call because their pickup requests had already been entered into LANL's data system). Diligent searches of the paper records and discussions with the waste generator did not yield convincing evidence that these items, although referenced on paper, ever in fact existed.
- In some instances, the waste description in the LANL database disagreed with reality, particularly for some of the older containers received into storage at TA-54 before paperwork and database requirements were standardized. For example, some containers listed as containing a certain number of waste items may have in actuality contained more or fewer items than were specified (e.g., a drum listed as containing three SSD items only held two of the specified items. The third expected item was absent entirely, or the container might have held an entirely different third item that was not specified in the records).

- In some instances, when a drum (e.g., a labpack container) was opened for visual inspection, an expected SSD item was missing, but broken glass was discovered in the bottom of the drum, sometimes in the presence of discolored sorbent material. This indicated that the missing waste item may have been a glass bottle that broke inside the labpack container sometime during its life in storage, or during transportation to the storage facility. Either the wastes were still contained in the sorbent material, or in some cases, they may have escaped through volatilization over time and could not be retrieved by the survey team.

DOE and UC are hereby requesting the transfer of these 41 missing SSD items to a new category, called "*Missing/ nonexistent/TBV*", which is herein proposed for addition to new CPV Section 3.5 (see Table A-1; proposed STP text is provided in Enclosure C). Like CPV Section 3.4, "*Plans for Other Types of Activities*," which contains a variety of non-treatment activities that will reduce the MLLW inventory, but that are not considered to be treatment (e.g., the original SSD activity, which addressed the original LA-W929 inventory, this new category is not a grouping with an assigned treatment pathway, but rather it will serve as a placeholder for missing items, to ensure their appropriate management under the STP until each item's presence or absence is fully verified.

Like the labpacks and explosives TGs, this category was not included in the original MWIR. We believe the available information is sufficient to support the transfer of these 41 missing SSD items to the new category at this time. DOE and UC propose to establish Activities and Compliance Dates for the new category, as shown in Enclosures C and D.

LANL's management strategy for addressing missing or nonexistent items is discussed in new Section 3.5, as shown in Enclosures C and D. DOE and UC will re-verify the absence of the items in the "*Missing/ nonexistent TBV*" category as specified in Section 3.5. In the meantime, should additional items be determined to be missing or nonexistent, they will be transferred to this category as a placeholder, to ensure appropriate management of the items under the STP until each item's presence or absence is fully verified.

In order to minimize unnecessary exposure hazards to facility personnel, it is suggested that re-verification be done container-by-container, as each STP waste item is treated. Therefore, the final verification that all "*Missing/ nonexistent TBV*" items are in fact nonexistent will be completed by April 21, 2004, at which time all remaining MLLW items in the original STP inventory will have been treated. At that time, DOE and UC will request deletion of all "*Missing/ nonexistent TBV*" items from the STP.

At any time during the re-verification process, between now and April 21, 2004, should any of these "*Missing/ nonexistent TBV*" items be discovered to exist, NMED will be notified. The found items will be transferred to the appropriate TG with NMED approval, and if necessary, assigned new Activities and Compliance Dates, in accordance with the terms of the FFCO.

Section X.C.2.c. Anticipated length of any delay in performance. Sampling and/or field survey work corresponding to the SSD field survey requirements of Activities A, D, and G, and sufficient to support the treatability group assignments, has been completed. Expeditious review of this revision is requested, so that DOE and UC can commence shipment of some of these wastes to off-site treatment facilities as soon as possible.

Please note that establishment of the new "*Missing/ nonexistent/TBV*" category, in CPV Section 3.5, must be completed by December 29, 1997 if possible. Failure to create this category, and transfer items to this category by December 29, 1997 would constitute noncompliance with CPV Activity 3.1.2B (see discussion in Enclosure B).

Section X.C.2.d. Plan and schedule for implementing all reasonable measures. We request that NMED advise DOE and UC expeditiously if NMED will require any additional information regarding CPV Section 3.4.2, or these wastes, or if approval may be delayed beyond December 29, 1997 (see discussion in Enclosure B).

TABLE A-1
PROPOSED TREATABILITY GROUP ASSIGNMENTS FOR LA-W929 SSD ITEMS
New/modified treatability groups are shown in *italics*

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
aqueous organic liquids	LA-W906	D008 D010 D022 D027 D028 D030 D032 D033 D034 D037 D041 D042 D043 F001 F002 F003 F005 U002 U003 U154	27	0.36
halogenated organic liquids	LA-W907	D001 D002 D004 D007 D018 D019 D022 D039 F002 F003 F005 U022 U044 U045 U077 U080 U188 U210 U211 U225 U226 U227 U228	97	1.05
non-halogenated organic liquids	LA-W908	D001 D002 D003 D004 D005 D007 D008 D009 D011 D018 D030 D035 D043 F003 F005 U002 U003 U012 U019 U052 U056 U057 U080 U117 U122 U140 U154 U159 U213 U226 U239 U359	409	3.38
bulk oils	LA-W909	F001 D001	8	1.48
organic-contaminated combustible solids	LA-W911	D001 D003 D004 D018 D022 D038 F001 F002 F003 F005 U165	33	0.68
combustible debris	LA-W912	D001 D002 D003 D008 D011 F002	9	0.75
aqueous waste with heavy metals	LA-W913	D001 D002 D003 D004 D005 D006 D007 D008 D009 D010 D011 F001 F003 F005	25	0.40
corrosive solutions	LA-W914	D001 D002 D003 D005 D009 D010 D011 U133 U134	90	0.36
aqueous cyanides, nitrates, chromates, and arsenates	LA-W915	D001 D002 D003 D007 D009	3	0.002
water reactive wastes	LA-W916	D001 D003 D005 F002	26	0.31

TABLE A-1 (continued)
PROPOSED TREATABILITY GROUP ASSIGNMENTS FOR LA-W929 SSD ITEMS

New/modified treatability groups are shown in *italics*

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m³)
compressed gases requiring oxidation	LA-W918	D001 D003 D007 F002 F003 P056 U029 U075 U121 U226 U227 U228	168	1.23
organic-contaminated non-combustible solids	LA-W919	D001 F001 F002 F003 F005	9	0.38
elemental mercury	LA-W920	D009 U151	20	0.02
non-combustible debris	LA-W922	D002 D003 D004 D006 D007 D008 D009 D010 D011	53	2.83
mercury wastes - TBD	LA-W925	D001 D002 D003 D009 P030	37	0.42
<i>explosives</i>	<i>LA-W932</i>	<i>D003</i>	<i>1</i>	<i>0.000001</i>
<i>lab packs</i>	<i>LA-W933</i>	<i>D001 D002 D003 D004 D005 D006 D007 D008 D010 D011 P012 P029 P098 P106 P113 P120 U131 U144 U145 U188 U190 U204 U216 U219</i>	<i>114</i>	<i>0.17</i>
<i>liquid and solid oxidizers</i>	<i>LA-W923</i>	<i>D001 D003 D005 D007 D011 U160</i>	<i>67</i>	<i>0.145</i>
Subtotal, Items Being Transferred to Other TGs			1196	13.97
<i>Missing /Nonexistent/TBV</i>	<i>N/A</i>	<i>D001 D002 D003 D007 D008 D010 D035 U220 U226</i>	<i>41</i>	<i>0.26</i>
Subtotal, Items Being Transferred to “ <i>Missing / Nonexistent/TBV</i> ” Category			41	0.26
Treated LA-W929 Items	N/A <i>(Proposed for deletion)</i>	D001 D002 D004 D005 D006 D007 D008 D009 D010 D011 F003	2	0.00094 ^a
			9	0.00029 ^a
			2	0.0076 ^b
Subtotal, Items Not Being Transferred to Other TGs			13	0.01
TOTALS			1250	14.24

NOTES:

^a These items will be deleted in Rev. 5.0 (see Enclosure B, and proposed Appendix B table in Enclosures C and D).

^b These items will be deleted in a future revision associated with the FY 97 Annual Update (see Enclosure B); therefore they are still listed in the "Net Covered Waste Inventory" in the proposed Appendix B table.

ENCLOSURE B

LANL STP PROPOSED REVISION 5.0 COMPLIANCE PLAN VOLUME (CPV) COVERED WASTE INVENTORY, LOS ALAMOS NATIONAL LABORATORY (LANL) FEDERAL FACILITY COMPLIANCE ORDER (FFCO)

The purpose of this revision is to incorporate the following into the LANL STP Compliance Plan Volume: (1) increases and decreases (additions and deletions) in the covered waste inventory that occurred between the time when the original STP inventory was established (in the October 4, 1995 FFCO) and the end of FY95, as presented in the *FY95 Update*; (2) increases and decreases (additions and deletions) in the covered waste inventory occurring during FY96, as presented in the *FY96 Update*; and (3) several other changes not related to the two *Annual Updates*. These other changes, which include both additional wastes and additional CPV text, will be described below.

The primary consequence of this revision will be to make the mixed low-level waste (MLLW) covered waste inventories in the Compliance Plan Volume current as of the end of FY96 (except for the post-FY96 volume changes, as noted herein). The other changes DOE and UC are requesting include the following:

- Addition of several mixed waste items, that became covered waste under the FFCO since the end of FY96 (even though they would not normally be reported until publication of the *FY97 Annual Update* and its corresponding revision), in order to expedite their shipment to off-site facilities for treatment. They are indicated by treatability group (TG) in the proposed new CPV Appendix B Summary Table, as discussed below (see Enclosures C and D);
- Transfer of missing items from several treatability groups to the new category called "*Missing/nonexistent/TBV*" in the proposed new CPV Section 3.5 (even though their nonexistence was verified after the end of FY96);
- Modification of the existing Compliance Dates for Activities 3.1.2B and 3.3E;
- Addition of two informational appendices to the CPV; and
- Addition of "*(a) schedule for development of lead processing techniques and options*" to Section 3.4.1 of the CPV (as well as clarifying language for CPV Section 2.1.4; see discussion below).

The following portions of this enclosure follow the requirements of Section X.C.2, "*Revisions*," of the FFCO. Proposed STP text changes are provided in Enclosure C.

Section X.C.2.a. Detailed description of the proposed revision. For the reasons given in the following paragraphs, DOE and UC are proposing to revise the Compliance Plan Volume language to incorporate the following:

1. Changes in mixed low-level waste (MLLW) covered waste inventories (additions and deletions) that have been reported since the FFCO was issued in October 4, 1995, up through the end of FY95, as reported in the *FY95 STP Annual Update*;
2. Changes in MLLW covered waste inventories (additions and deletions) during FY96, discussed in the *FY96 STP Annual Update*;
3. Several additional changes to the CPV. These include:
 - Addition of a few mixed waste items that became covered waste under the FFCO since the end of FY96 (even though they would not normally be reported until publication of the *FY97 Update* and its corresponding revision), in order to expedite their shipment to off-site facilities for treatment;
 - Transfer of missing items from several treatability groups to the category called "*Missing/nonexistent/TBV*" (even though their nonexistence was verified after the end of FY96);

- Modification of the existing Compliance Dates for Activities 3.1.2B and 3.3E;
- Addition of two Appendices, which provide a history of CPV revisions and amendments (as Appendix A of the CPV), and a summary table of covered waste inventory changes (as Appendix B), respectively;
- Addition of "(A) *schedule for development of lead processing techniques and options.*" DOE and UC were required to incorporate this schedule into Section 3.4.1 on page 15 of the Compliance Plan Volume for those lead shapes and forms in the treatability group MWIR ID LA-W930 found to be "*not amenable to processing using the lead decontamination trailer.*" (The schedule was originally submitted to NMED on June 26, 1996, but NMED informed LANL on February 25, 1997 that the schedule must be added to the CPV as part of a formal revision); and
- Addition of minor clarifying language for CPV Section 2.1.4 regarding the use of off-site recycling facilities.

These changes will allow the additional 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 text changes are summarized in Enclosure C. The complete proposed CPV text is provided in hard copy form in Enclosure D and in the enclosed electronic copy.

Background

The CPV inventory presented in the original STP (October 4, 1995) was for MLLW in storage before October 1, 1994, regardless of its time of generation or its state of compliance with the Land Disposal Restrictions (LDRs) storage requirements. Some wastes reported as "additions" in the *FY95 Update* were in the LANL mixed waste inventory on October 4, 1995, but inadvertently had been omitted from the final STP inventory. Additional MLLW passed the 1-year mark in storage during FY95 and FY96. All such untreated waste now meets the definition of "covered waste" in the FFCO.

As stated above, this revision will make the mixed low-level waste covered waste inventories in the Compliance Plan Volume current as of the end of FY96 (except for certain post-FY96 volume changes, as noted herein). DOE and UC intend hereafter to update these inventories annually, by a revision request to be submitted simultaneously with our *Annual Update*.

Because other documents published by the DOE require different reporting parameters and periods, the volumes of covered waste reported in the *FY95 and FY96 Update* may not be the same as the volumes of LANL's mixed waste reported in other documents, such as the "*1995 Hazardous Waste Report for Los Alamos National Laboratory, Volumes I and II,*" (LANL's Biennial Report) and the "*DOE Transuranic Waste Baseline Inventory Report.*"

Proposed CPV Appendix A. The STP Compliance Plan Volume 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 Federal Facility Compliance Order (FFCO), as amended and revised. Heretofore, these revisions and amendments have not added covered wastes to the CPV inventory. DOE and UC propose adding a new CPV Section 1.3, and an Appendix A to the CPV, to provide a brief history of these CPV changes, and of modifications to the FFCO since its issuance.

Proposed CPV Appendix B. DOE and UC propose adding a summary table as Appendix B to the CPV, summarizing all changes being made to LANL's covered MLLW CPV inventory. The STP Inventory Update Summary Tables in the LANL FY95 and FY96 STP *Annual Updates* presented a summary of changes in volumes of LANL STP covered waste streams by treatability groups, for MLLW and mixed transuranic waste, respectively, up to the end of FY96.

Proposed CPV Appendix B (see Enclosures C and D) displays all changes to date in the individual MLLW treatability group volumes, due to increases or decreases as noted, that have been (or are being) incorporated into the CPV by revision. Separate columns in the table indicate volume changes associated with Rev. 2.0 (due to decreases in LA-W928); volume changes in Rev. 4.0 (due to transfers of LA-W929 waste; see Table A-1, Enclosure A to this letter); and volume changes due to all additions and deletions addressed in Rev. 5.0. The Rev 5.0 volume changes are further broken down into three sets of columns for easier readability:

- one set details the changes in the MLLW covered waste inventory occurring during or before FY95, as given in the FY95 STP *Annual Update*;
- one set details the changes during FY96, as given in the FY96 STP *Annual Update*, and
- one set details specific post-FY96 volume changes described herein.

The purpose of this Appendix is to provide a master list of MLLW inventory changes presented in the FY95 and FY96 *Annual Updates* (as amended herein), and future *Annual Update*. This master list will enable users of the STP to track all changes in the LANL MLLW covered waste inventory that occurred since the original STP inventory was established in the October 4, 1995 FFCO.

As stated previously, mixed waste that was generated in FY96 is not included in this Revision 5.0 request, because it was not a covered waste subject to the FFCO as of September 30, 1996. Likewise, mixed waste that became STP covered waste after September 30, 1996 is not reported (with certain exceptions, as noted herein). The comprehensive list of all FY97 MLLW covered waste inventory changes will be presented in the FY97 STP *Annual Update* and corresponding subsequent revision request.

In general, as discussed in the FY95 and FY96 *Annual Updates*, increases since the original STP inventory was established may be attributed to:

- addition of waste that became covered waste since preparing the *Mixed Waste Inventory Report* ([MWIR], which served as the basis for the covered waste inventories reported in the original STP);
- reassignment of covered waste from one existing treatability group to another existing treatability group (see Rev. 4.0 in Enclosure A), based on LANL's ongoing reevaluation of new or existing data;
- correction of inaccurate volume information;
- addition of waste in inventory before October 1, 1995, that was inadvertently omitted from the original STP inventory (including, for example, the new LA-W929-5 item not addressed in Rev. 4.0); or
- addition of waste that became covered waste during FY95 or FY96.

In general, as discussed in the FY95 and FY96 *Annual Updates*, decreases since the original STP inventory was established may be attributed to:

- shipment of waste to an off-site facility for treatment;
- treatment of waste in a treatability study;
- other compliant management activity, such as recycling;
- reassignment of covered waste to another existing treatability group, based on reevaluating the new or existing data (see Rev. 4.0, Enclosure A);
- correction of inaccurate volume information;
- transfer of covered waste that was verified to be missing or nonexistent to the "Missing/nonexistent/TBV" category (see discussion in Enclosure A and below);
- removal of waste from the inventory prior to the issuance of the FFCO, based on the reasons noted in the *Annual Update* tables; or
- reclassification of waste as either hazardous waste or LLW based on new or existing data (e.g., Rev. 2.0).

Section X.C.2.b. Rationale for the proposed revision. DOE and UC have the following reasons for requesting this revision. In the transmittal letter for the FY95 *Annual Update*, DOE and UC committed to submitting a revision for the CPV inventory corrections reported in the FY95 *Annual Update*; however, NMED then requested clarifications related to the FY95 *Annual Update* volume information, which are still being addressed as of this writing. Therefore, the corresponding revision had not heretofore been submitted for NMED's approval.

FFCO Section VIII requires that all additions of waste to the CPV inventory follow the revision requirements specified in FFCO Section X.B. Although, individually, some of the volume increases associated with the LA-W929 waste transfers in Rev. 4.0 would be exempt from the revision requirements of FFCO Section X (because individually they fall below the threshold established in FFCO Section X.B.4, as amended [i.e., an increase of less than 10% of the TG volume, or an increase of less than 1 cu. m.]), the entire group of waste transfers, additions, and deletions is being addressed here as a revision.

Waste additions were tentatively assigned to appropriate treatability groups in the FY95 and FY96 *Annual Updates*. In some instances, the wastes being added to some treatability groups bear additional EPA hazardous waste codes in addition to those given in the original CPV text; these will be noted where applicable in the proposed revision text.

Additionally, in this revision, DOE and UC are requesting to formally transfer one missing LA-W904 item and six LA-W930 items to the new "*Missing/ nonexistent/TBV*" category (even though their nonexistence was verified after the end of FY96) in the CPV, and to formally incorporate "*(a) schedule for development of lead processing techniques and options*" into Section 3.4.1 of the CPV. These changes, and several other specific text changes, are discussed in the following subsections.

- **Rationale for Changes to MLLW Inventory.**

As described above, the increases in covered waste inventory that have occurred between October 4, 1995 and the end of FY96 are attributable primarily to additions of waste to inventory before October 1, 1995, that were inadvertently omitted from the original STP inventory; or additions of waste that became covered waste during FY95 or FY96. The decreases reflect the treatment and disposal of covered waste inventory at off-site commercial and off-site DOE facilities during FY95 and FY96, and the treatment of covered wastes in on-site and off-site treatability studies during FY95 and FY96. In addition, a small volume of waste treated in an on-site treatability study during FY95 is reflected as a FY96 decrease, because it was inadvertently omitted from the FY95 *Annual Update*, but was reported in the FY96 *Annual Update*.

It should be noted that the definition of "covered waste" in the FFCO does not depend on listing of a waste item in the CPV inventory, and that there is no specified time period in the FFCO for submitting this revision to NMED, except that a revision must be submitted within two *Annual Update* cycles. DOE and UC are submitting this revision request to formally incorporate all covered waste volumes discussed in the FY95 and FY96 *Annual Updates* (i.e., all covered waste volumes identified from the date of issuance of the FFCO through the end of FY96), with a few modifications and additions as noted, into the CPV inventory.

Subgroups. To facilitate tracking of additions to and deletions from the inventory of each TG, it is proposed that for each treatability group having volume increases, the newly added covered waste volume will be listed as a separate subgroup of that TG, as shown in proposed Appendix B. Subgroups will be identified according to the Revision in which they were first authorized (e.g., LA-W901-0 will now designate the original STP inventory in LA-W901; LA-W901-5 contains the covered waste newly added to LA-W901 in Rev. 5; and so forth).

Proposed Appendix B shows all changes in the LANL covered waste inventory that occurred since the original STP inventory was established (i.e., all subgroups created within all TGs). This will enable users of the STP to track work-off of each TG and subgroup over time using this Appendix.

Note that not all TG subgroups will be listed in the CPV text, as follows:

- If the additional waste in a TG subgroup will be worked-off **according to the existing Compliance Dates** for that TG, no subgroups of that TG will be listed in the text of the CPV (for example, see CPV Section 3.1.4 in Appendix D). As noted above, all TG subgroups will be listed in Appendix B.
- However, **if additional Compliance Dates are being requested for work-off of the additional wastes** in a TG subgroup, then the TG subgroups corresponding to newly added wastes will be listed not only in Appendix B, but also in the CPV text, along with the additional Activities and Compliance Dates being requested (for example, see the schedule for LA-W929-5 wastes in CPV Section 3.4.2, in Appendix C and D).

Compliance Dates. Except where otherwise noted, DOE and UC propose to manage wastes being newly added to an existing TG in accordance with Activities and Compliance Dates already existing in the CPV for that TG. New Compliance Dates are being requested only in those cases where the additional covered wastes cannot be treated within the existing Compliance Dates specified for each treatability group (for example, see CPV Sections 3.1.1, 3.1.2, and 3.4.2 in Appendix C and D).

In all cases (other than for the two LA-W904 items in Section 3.1.2 and the items in Section 3.3), the new Compliance Dates are intended to apply **only to the newly added covered waste volume**, which is listed as a separate TG subgroup in the CPV text, as explained above. For example, new Compliance Dates being proposed for CPV Section 3.4.2 will apply only to the item newly being added to LA-W929 as part of Rev. 5.0 (the item is listed in TG subgroup LA-W929-5); all Activities have been completed and all Compliance Dates met for the 1,250 items originally belonging to LA-W929 (see Rev. 4.0 in Appendix A). Likewise, all Activities in Section 3.1.2 have been completed and all Compliance Dates met for the 59 items originally belonging to LA-W904, except for the two items containing special nuclear materials, and the one LA-W904 item being transferred to the "*Missing/nonexistent/TBV*" category.

A similar situation exists when a new TG is established and wastes are added to it. For example, new Activities and Compliance Dates were needed for the items being assigned to the two new TGs in Section 3.3 (that were established in Rev. 4.0).

- **Rationale for Including Additional Covered Waste Items.**

A few additional mixed waste items, that became covered waste under the FFCO since the end of FY96, are being included in this revision as part of the Rev. 5.0 "Other changes" in the Appendix B table. This is being done now, even though they would normally be reported in the March, 1998 *FY97 Update* and its corresponding revision, in order to expedite their shipment to off-site facilities for treatment. DOE and UC intend to ship these waste items off-site for treatment during FY98, which would not be possible if incorporation of these items into the CPV inventory was delayed until the next scheduled revision request, to be submitted in March, 1998. They are indicated by treatability group, in the columns marked "Rev. 5.0 Other changes," in the proposed new CPV Appendix B Summary Table (see Enclosures C and D).

- **Rationale for Transfer of "Missing" LA-W904 and LA-W930 Items.**

DOE and UC are requesting the transfer of one (1) missing or nonexistent LA-W904 item, and six (6) items in the original LA-W930 inventory to the new category, called "*Missing/ nonexistent/TBV*", which was proposed for addition to CPV Section 3.5 in Rev. 4.0. These transfers are requested as part of this revision, even though the "*Missing*" determination was made after the end of FY96. This is being done because transfer of the LA-W904 item must be completed prior to the December 29, 1997 amended Compliance Date for Activity 3.1.2B. We believe the available information is sufficient to support the transfers at this time.

During the visual inspections and sampling activities of the MLLW work-off effort (including the preparation of LA-W904 items for off-site shipment, and the segregation of the LA-W930 lead into decontamination groupings), these items were not found, or were not located in the containers they were expected to be in according to the LANL data files for the waste items. DOE and UC, and their contractors, performed a thorough inspection of the LA-W904 and LA-W930 containers; however, these investigations did not turn up the missing items. Enclosure A provides a discussion of the possible explanations pertaining to the missing items. Therefore, their transfer is requested.

LANL's management strategy for addressing missing or nonexistent items is discussed in new Section 3.5 (proposed for addition to the CPV in Rev. 4.0). DOE and UC will re-verify the absence of the items in the "*Missing/ nonexistent TBV*" category as specified in Section 3.5. In the meantime, should additional items be determined to be missing or nonexistent, they will be transferred to this category as a placeholder, to ensure their appropriate management under the STP until each item's presence or absence is fully verified.

- **Rationale for Modification of the Compliance Date for Activity 3.1.2B.**

This treatability group, "*soil with heavy metals*," MWIR waste ID no. LA-W904, consisting of 59 waste items, was originally required to be shipped off-site for treatment by September 30, 1997, per Activity 3.1.2B of the STP. DOE and UC have completed shipment of 46 of the 59 LA-W904 items to the Envirocare facility in Utah as mixed low-level waste. 50 of the 59 LA-W904 items originally were scheduled to be shipped for treatment in accordance with CPV Section 3.1.2. Just prior to LANL's August 5, 1997 shipment, however, four (4) of the 50 items were identified as containing special nuclear materials (SNM) at levels exceeding the 1 gram temporary limit imposed on Envirocare in a June, 1997 Confirmatory Order issued by the Nuclear Regulatory Commission (NRC). Therefore, these four drums were withheld from the shipment. Subsequently, LANL was able to ship two of the four items.

DOE and UC had already received Envirocare's preapproval to ship the two remaining LA-W904 items when the revised SNM possession limits requirements were imposed by the NRC. DOE and UC requested an amendment to extend the compliance date for Activity 3.1.2B, which required that all items in this TG be shipped off-site by September 30, 1997. On September 4, 1997, NMED issued an amendment to extend this compliance date, to address the fact that the NRC Confirmatory Order issues had not been fully resolved by Envirocare.

Since that time, however, despite numerous attempts by DOE and UC to arrange expedited acceptance for the remaining two shippable LA-W904 items, it has become clear that the two remaining items' radionuclide content prohibits Envirocare from accepting these items until sometime in mid-1998. Envirocare has made commitments to DOE and UC to make every effort to expedite work-off of other wastes stored at their facility, in order to accept these LA-W904 items as soon as possible; however, under no circumstances can shipment be completed by December 29, 1997.

Therefore, it has become necessary for DOE and UC to request that the Compliance Date for Activity 3.1.2B be replaced with a new Compliance Date of 12/30/98. DOE and UC are committed to work closely with Envirocare to make every effort to ship these two items as soon as possible; but it is hoped that this replacement Compliance Date can be accomplished without having again to approach NMED to request additional extensions for treatment of these problematic waste items. Please note, however, that DOE and UC intend that this new Compliance Date of 12/30/98 will also apply to the one new LA-W904 item reported in the FY96 *Annual Update*.

- **Rationale for Modification of the Compliance Date for Activity 3.3E.**

Activities required to date (3.3A and B) have been completed, and Compliance Dates met, for the items originally belonging to the TGs in CPV Section 3.3. However, DOE and UC have determined that a modification to existing Activity 3.3E is required to account for the fact that time is needed after determination of appropriate treatment options (Activity 3.3D), to allow for wastes to be shipped off-site, if appropriate, or transferred to other existing or new TGs if necessary. The possibility exists that, once characterization for purposes of determining treatability is completed, it may be found that treatment of some of these items requires development, demonstration, permitting, and construction of new treatment processes. Any of these options (other than off-site shipment) could require approval through the revision process before treatment could proceed. Therefore, DOE and UC propose that Activity 3.3E and its Compliance Date be revised accordingly. New Activities and Compliance Dates are proposed for the additional wastes (see proposed text in Enclosures C and D).

- **Rationale for Incorporation of Lead Processing Schedule.**

Development of this schedule, to be incorporated into CPV Section 3.4.1 (see Enclosures C and D), was required by STP Activity 3.4.1A. The schedule was originally submitted to NMED on June 26, 1996. This lead is mixed low-level waste contained in the treatability group "*lead for surface decontamination*," MWIR waste ID number LA-W930.

Section 3.4.1 of the LANL Site Treatment Plan discusses two categories of lead for decontamination in MWIR waste ID number LA-W930: lead in the original STP inventory that was amenable to decontamination in the on-site trailer, and lead that was not amenable to decontamination in the on-site trailer (subsequent additions to the LA-W930 inventory, listed in the proposed Appendix B table, would be included in this second category).

1. **Lead in the first category** is capable of being decontaminated in the on-site lead decontamination trailer, which was designed to decontaminate simple lead shapes, such as lead bricks, of certain physical dimensions. Prior to the issuance of the FFCO and Site Treatment Plan, this trailer was used to successfully decontaminate over 140,000 pounds of lead (which was part of the original LA-W930 inventory) in compliance with the Federal Facility Compliance Agreement milestone LD200. This effort included an extensive investigation of drum contents, with sorting as necessary, to locate lead bricks in legacy MLLW inventory. To the best of our knowledge, effectively all of the lead originally contained in this treatability group (MWIR waste ID number LA-W930) amenable to decontamination in the on-site lead decontamination trailer has been processed (see DOE's October 8, 1997 letter).
2. **Lead in the second category** was lead in the original STP inventory that was not amenable to decontamination in the on-site trailer (all subsequent additions to the LA-W930 inventory, listed in the proposed Appendix B table, would be included in this second category).. The new schedule offered in Enclosure C applies to the second category of lead only. This category consists of 36 items in the original LA-W930-0 inventory, plus the 115 items shown in LA-W930-5 in the Appendix B Summary Table. The new schedule replaces the second Activity/ Compliance Date table currently given in CPV Section 3.4.1, Rev. 1.0, 2.0, 3.0, as shown in Enclosures C and D.

The lead in the second category will be processed using other on-site decontamination processes, such as dry sandblasting or hand-scrubbing, or commercially available lead decontamination services. The schedule envisions a multi-step process to ensure as much of the lead as possible is recycled instead of treated and disposed. The lead waste was to be segregated and sorted into appropriate groupings (e.g., lead sheets, lead shot, lead shavings, lead pieces, lead pigs, etc.). This activity (proposed on June 26, 1996 as Activity 3.4.1A, and now renamed 3.4.1D) was in fact completed as of July 31, 1997.

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

Since this schedule was submitted to NMED on June 26, 1996, potential treatment and recycling options for lead in this TG have changed. Therefore, DOE and UC wish to modify the date for proposed Activity 3.4.1G from that originally submitted (see Enclosures C and D). This date takes into account the uncertainties regarding how successful various decontamination options may be for some of the more problematic or potentially more activated lead shapes and items in this TG. It may be necessary to try a variety of approaches on certain items. Lead that cannot be successfully decontaminated for recycle must be returned to MLLW storage, and staged or otherwise processed for treatment, or transfer to another TG. The modified Compliance Date allows for this possibility.

[PLEASE NOTE that DOE and UC regard the use of off-site commercial and non-commercial recycling facilities to be a fully compliant management activity for applicable STP covered wastes in all treatability groups. Activities for use of such facilities are those specified in CPV Section 2.1.4, "Plans for Mixed Waste to be Shipped Off-Site for Treatment," in accordance with STP Rev. 1.0. To avoid future confusion, as part of this Revision, DOE and UC have proposed minor language changes in CPV Section 2.1.4 clarifying this point; see Enclosures C and D.]

Section X.C.2.c. Anticipated length of any delay in performance. First, the transfer of the one missing LA-W904 item to the new "Missing/ nonexistent/TBV" category, CPV Section 3.5, must be completed by December 29, 1997 if possible. Failure to create this TG, and transfer this item by December 29, 1997 would constitute noncompliance with CPV Activity 3.1.2B.

Second, the revision of the compliance date for Activity 3.1.2B must be completed by December 29, 1997 if possible, to avoid noncompliance with CPV Activity 3.1.2B for the two shippable LA-W904 items with SNM issues.

Third, as discussed above, because of changing circumstances since the lead processing schedule was submitted to NMED on June 26, 1996, it has become necessary to modify the dates for proposed Activities in Section 3.4.1 from those originally submitted (see Enclosures C and D).

Finally, DOE and UC request expeditious consideration of this request, in order to have the opportunity during FY98 to complete treatment of some of the additional covered MLLW included here as "Rev. 5.0 Other changes."

Section X.C.2.d. Plan and schedule for implementing all reasonable measures... DOE and UC request that NMED inform us in writing immediately, should it be unable to approve this revision prior to the December 29, 1997 Compliance Date for Activity 3.1.2B. The transfer of the one missing LA-W904 item to the "Missing/ nonexistent/TBV" category, and the modification of this Compliance Date for the two shippable LA-W904 items with SNM issues, are part of this Rev. 5.0 request.

In order to avoid noncompliance with Activity 3.1.2B, DOE and UC would like the opportunity to further amend the Compliance Date for Activity 3.1.2B, if it becomes apparent that Rev. 5.0 approval may be delayed beyond December 29, 1997.

ENCLOSURE C
PROPOSED CPV REVISION TEXT
TEXT CHANGES IN CPV SECTIONS IN 1.0, 2.0, 3.0, AND APPENDICES A AND B
*(Clean copy format of major text changes only; all changes are shown in context in the
full CPV text in Enclosure D)*

1.3 STP Revisions and Amendments

The STP Compliance Plan Volume (CPV) 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 Federal Facility Compliance Order (FFCO), as amended and revised. Appendix A to the CPV provides a summary of these CPV changes, and of modifications to the FFCO since its issuance.

2.1.4 Plans for Mixed Waste to be Shipped Off-Site for Treatment

In lieu of plans to treat mixed-waste on-site, DOE may treat waste at an off-site facility (at a commercial or non-commercial mixed waste facility), or DOE may recycle waste at an off-site facility. Should DOE elect to use off-site recycling facilities in lieu of (or in combination with) treatment, it will follow the requirements prescribed in this Section in the same manner as if the waste were being shipped off-site for treatment. Any and all requirements imposed by the off-site treatment/recycling facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment/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 a non-commercial 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 off-site non-commercial treatment/recycling 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 forty-five (45) working days of receipt of waste at the treatment/recycling facility. Activities for mixed waste to be shipped off-site for treatment/recycling at a non-commercial facility are identified in Table V.

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

Table IV. Activities for Mixed Waste to be Shipped Off-Site for Treatment or Recycling at a Commercial facility

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

...

**Table V. Activities for Mixed Waste to be Shipped Off-Site for Treatment
or Recycling at a Non-commercial facility**

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

3.0 MIXED LOW-LEVEL WASTE STREAMS

This Chapter presents proposed schedules for treatment technologies and the preferred options to treat mixed low-level waste streams (MLLW or LLMW) at LANL. All preferred options not described below must be approved by NMED in accordance with the revision process pursuant to the Compliance Order.

The original October 4, 1995 STP inventory in each MLLW treatability group has been modified through the revision process in the FFCO. The table in CPV Appendix B provides a comprehensive summary of changes to the CPV covered waste inventories (additions, deletions, and shifts of waste between treatability groups) occurring as of the date of this revision. In Appendix B, 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 Sections of this chapter, 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 have been assigned Activities and Compliance Dates unique to that subgroup, those subgroups are detailed in the text. For a complete listing of volumes by subgroup for all treatability groups, please refer to Appendix B.

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3.1.2 Commercial Off-site Treatment by Stabilization or Macroencapsulation

Treatability Group(s):

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LLMW for Commercial Stabilization

Treatability Group	MWIR Waste ID	RCRA Codes	Number of items	Net volume (m ³)
Soil with Heavy Metals	LA-W904	D004, D005, D006, D007, D008, D009, D010, D011	59	10.44
Totals			59	10.44

...

Activity	Compliance Dates
A. Meet all regulatory requirements prior to shipping waste	05/30/97
B. Complete shipping of wastes to an off-site treatment facility	12/30/98
C. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at off-site facility

3.2.1 Hydrothermal Processing

Treatability Group(s):

LLMW for Hydrothermal Processing /Off-site Treatment (preferred option)

.....

Treatability group	MWIR waste ID	RCRA Codes	Number of items	Net volume (m3)
Liquid and solid oxidizers	LA-W923	D001, D003, D005	86	0.58
Totals			86	0.58

.....

3.3 Mixed Waste Requiring Further Characterization or for Which Technology Assessment Has Not Been Done (MWIR Treatment ID LA-S701)

Treatability Group(s):

Treatability group	MWIR waste ID	RCRA Codes	Number of items	Net volume (m3)
lead wastes-TBD	LA-W924	D003, D008	129	40.16
mercury wastes-TBD	LA-W925-0	D007, D008, D009, F001	63	18.30
compressed gases-TBD	LA-W926	D001, D007, D009, D022, P056, U080, U226	10	1.25
biochemical laboratory wastes	LA-W927	D001, D003	9	1.34
dewatered treatment sludge	LA-W928	see Subsection 3.3 in the Background Volume	61	12.71
Totals			272	73.76

...

Activities for wastes originally belonging to these treatability groups as listed above.

Activity	Compliance Dates
A. Complete generator interviews	10/30/95
B. Complete sampling and analysis plan	1/30/96
C. Complete sampling and analysis	9/30/98
D. Complete determination of treatment options	12/20/98
E. Complete shipping of wastes to an off-site treatment facility	12/20/00
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at off-site facility

Additional wastes and treatability groups:

The following additional wastes will require management in this category, according to the Activities and Compliance Dates listed below.

Treatability group	MWIR waste ID	RCRA Codes	Number of items	Net volume (m3)
mercury wastes-TBD	LA-W925-4	D007, D008, D009, F001	37	0.42
mercury wastes-TBD	LA-W925-5	D007, D008, D009, F001	14	1.52
explosives	LA-W932	D003	1	0.000001
labpacks	LA-W933	D001 D002 D003 D004 D005 D006 D007 D008 D010 D011 P012 P029 P098 P106 P113 P120 U131 U144 U145 U188 U190 U204 U216 U219	142	0.30
Totals			194	2.24

Activities for wastes belonging to these treatability groups and subgroups.

Activity	Compliance Dates
G. Complete sampling and analysis plan	1/30/99
H. Complete sampling and analysis	9/30/01
I. Complete determination of treatment options	12/20/01
J. Complete shipping of wastes to an off-site treatment facility or submit documentation assigning waste items to applicable treatability groups	12/20/03
K. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at off-site facility

3.4.1 Lead Decontamination (MWIR Treatment ID LA-S001)/On- or Off-site Treatment or Recycling (preferred option)

Treatability Group(s):

Treatability group	MWIR waste ID	First Category		Second Category		Total	
		No. Items	Net volume (m ³)	No. Items	Net volume (m ³)	No. Items	Net volume (m ³)
lead for surface de-contamination	LA-W930	89	21.02	62	36.16	151	57.18
Totals		89	21.02	62	36.16	151	57.18

Treatment Technology:

This treatability group contains two categories of lead for decontamination:

- The first category is lead in the original LA-W930-0 inventory that is amenable to decontamination in the on-site lead decontamination trailer, which was designed to decontaminate simple lead shapes, such as lead bricks, of certain physical dimensions. The trailer is on-site and has operated, but needs an upgrade for prolonged operation.
- The lead in the second category is lead in the original LA-W930-0 inventory that is not amenable to decontamination in the on-site lead decontamination trailer, plus subsequent additions to the original inventory shown in Appendix B. This lead will be processed using other on-site decontamination processes, such as dry sandblasting or hand-scrubbing, or sent to off-site lead decontamination services.

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

Should DOE decide to treat or recycle waste at an off-site non-commercial facility in lieu of plans to treat or recycle such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment/recycle option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment/recycling facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment/recycling site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment/recycling facility.

Lead shapes and forms in the first category.

Activity	Compliance Date
A. Complete lead decontamination	09/30/97

Lead shapes and forms in the second category.

Activity	Compliance Date
A. Provide schedule for development of lead processing techniques and options	06/30/96
D. Segregate lead waste into decontamination groupings	07/31/97
E. Complete shipment of waste to decontamination operations, or	12/02/98
F. Determine treatment/disposal or other recycle options for lead waste not acceptable for decontamination	12/02/98
G. Complete treatment and disposal operations or other recycle operations for lead waste not acceptable for decontamination	07/31/99
H. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at off-site facility

3.4.2 Sorting, Surveying, and Decontamination (MWIR Treatment ID GJ-S804)

Treatability Group(s):

Treatability group	MWIR waste ID	Number of items	Net volume (m ³)
1. nonradioactive or suspect waste items to be surveyed	LA-W929-0(1)	0	0
2. nonradioactive or suspect waste items to receive RCRA and radiological characterization	LA-W929-0(2)	2	0.0076
3. nonradioactive or suspect waste items that cannot or should not be sampled	LA-W929-0(3)	0	0
Totals		2	0.0076

Treatability group	MWIR waste ID	Number of items	Net volume (m ³)
Nonradioactive or suspect waste items	LA-W929-5	1	0.00002
Totals		1	0.00002

Activities for items added as subgroup 5 of this treatability group.

Activity	Compliance Dates
J. Submit documentation assigning waste items to applicable treatability groups or proposing off-site shipment dates	3/31/98
K. Propose additional Compliance Dates if necessary	3/31/98

3.5 Management of "Missing" Items.

Waste Category

Category	MWIR waste ID	Number of items	Net volume (m ³)
Missing/nonexistent/TBV	None	48	8.81
Totals		48	8.81

Treatment Technology:

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 containers in which it is expected to be, according to the LANL data files for the waste item. In some instances, such items could not be verified as having ever been received in storage at LANL, and further follow-up investigations of the record files revealed that for various reasons, the waste items were never in fact generated, although on paper they were included in the original STP inventory.

In these instances, DOE and UC, and their contractors, perform a thorough inspection of both the physical inventories and the data files. When DOE and UC determine that an STP covered waste item does not exist, transfer of the item to the category called "*Missing/ nonexistent/TBV* (to be verified)", is requested through the revision process associated with the next *Annual Update*.

DOE and UC will re-verify the absence of all "*Missing/ nonexistent/TBV*" items container-by-container, as each STP waste item is being sampled, repackaged, or otherwise prepared for on- or off-site treatment. The final verification that all "*Missing/ nonexistent/TBV*" items do not in fact exist will be completed by

DOE and UC will re-verify the absence of all "Missing/ nonexistent/TBV" items container-by-container, as each STP waste item is being sampled, repackaged, or otherwise prepared for on- or off-site treatment. The final verification that all "Missing/ nonexistent/TBV" items do not in fact exist will be completed by April 21, 2004, at which time all remaining MLLW items in the original STP inventory will have been treated. At that time, DOE and UC will request deletion of all items having been fully verified as missing or nonexistent.

At any time during the re-verification process, should any of these items be discovered to exist, NMED will be notified, and approval will be requested for assignment of the rediscovered items to the appropriate TG. If necessary, they will be assigned new Activities and Compliance Dates, in accordance with the terms of the FFCO.

The following steps will be taken to verify presence or absence of this waste:

Activity	Compliance Dates
A. Initiate re-verification process on a shipment-by shipment basis	01/03/98
B. Complete re-verification process	04/21/04
C. Re-assign any existing items to appropriate treatability groups	04/21/04
D. Complete treatment of existing wastes to applicable regulatory standards, or	10/30/04
E. Complete shipping of existing wastes to an off-site treatment facility.	10/30/04
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

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CPV APPENDIX A HISTORY OF STP REVISIONS AND AMENDMENTS

As discussed in CPV Section 1.3, the STP Compliance Plan Volume 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 Federal Facility Compliance Order, as amended and revised. This Appendix provides a summary of these CPV changes, and of modifications to the FFCO since its issuance.

To date, there have been five revisions and two amendments to the CPV. In addition, the FFCO was amended once, on May 20, 1997. The following table provides a summary of these changes. More detailed descriptions can be found in the CPV Update portion of each year's STP *Annual Update*, and the original correspondence requesting each change.

Action	Document Modified	Effective Date	Effect on FFCO/STP
Rev. 1.0	STP/CPV	6/12/96	Added off-site treatment as a parallel preferred option for most MLLW treatability groups
Rev. 2.0	STP/CPV	12/9/96	Reduced volume of LA-W928 by approving reclassification of sludges as LLW
Amendment 1.0	STP/CPV	10/30/96	Divided original volume of LA-W929 into three subgroups, and added new Activities and Compliance Dates
Rev. 3.0	STP/CPV	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/CPV	9/4/97	Extended CPV Activity 3.1.2B Compliance Date to 12/29/97
Rev. 4.0	STP/CPV	(to be added)	Transferred original volume of LA-W929 from three subgroups to other treatability groups, added treatability groups, and deleted treated items
Rev. 5.0	STP/CPV	(to be added)	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 CPV Appendices, and deleted treated items

CPV APPENDIX B SUMMARY OF CPV INVENTORY CHANGES

The following table provides a comprehensive summary of changes to the CPV covered waste inventories (additions, deletions, and shifts of waste between treatability groups) occurring as of the date of this revision. The volumes given in the table reflect changes to the individual MLLW treatability group volumes due to increases or decreases, as noted.

Key to Reading the Subgroups

The original STP inventory in each MLLW treatability group is now denoted as subgroup 0 of that treatability group (e.g., the original volume of STP treatability group LA-W906 became LA-W906-0). The original October 4, 1995 STP inventory in each MLLW treatability group has been modified through the revision process in the FFCO. The following revisions have affected volumes in individual treatability groups to date:

Revision	Effect on Volumes
Rev. 2.0	Reduced volume of LA-W928
Rev. 3.0	Divided original volume of LA-W929 into three subgroups
Rev. 4.0	Transferred original volume of LA-W929 from three subgroups to other treatability groups, added new treatability groups
Rev. 5.0	Added volumes to several treatability groups

Each revision that has added volumes to individual treatability groups has resulted in creation of an additional subgroup of that treatability group, 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).

Additions and Deletions to Date

To date, MLLW inventory increases and decreases have been incorporated into the covered waste inventories through Revisions 2.0, 4.0, and 5.0. Revision 2.0 incorporated decreases in treatability group LA-W928 due to deletion of covered waste items. Rev. 4.0 resulted in decreases to LA-W929 and increases in other TGs, primarily by transferring LA-W929 items to other TGs. Rev. 5.0 resulted in both additions to and deletions of covered waste volumes (i.e., increases and decreases) in a number of TGs. Therefore, the Appendix B table that follows shows that subgroups -4 and -5 exist for some treatability groups, but not for all.

This table provides a master list of MLLW inventory changes presented in the *Annual Updates*, to enable users of the STP to track all changes in the LANL MLLW covered waste inventory that occurred since the original STP inventory was established in the October 4, 1995 FFCO/CPV.

Changes (additions or deletions) to the CPV covered waste inventory have occurred since the end of FY96. However, only those reported as Rev. 5.0 "Other Changes" are included in this table. All others will be reported in the next *Annual Update* and associated revision request. Therefore, the "Net Covered Waste Inventory" may not fully reflect the actual CPV covered waste inventory as of the date of this revision, in some instances.

12/29/97

EXHIBIT A

**LOS ALAMOS NATIONAL
LABORATORY**

MIXED WASTE SITE TREATMENT PLAN

COMPLIANCE PLAN VOLUME (CPV)

BACKGROUND VOLUME

Revision 4.0 and 5.0

December 1997

(Rev. 4.0 and 5.0 12/97)

1.0 PURPOSE AND SCOPE OF THE COMPLIANCE PLAN VOLUME

1.1 Introduction

On October 6, 1992, Congress passed the Federal Facility Compliance Act (FFC Act) to address compliance by the United States Department of Energy (DOE) with the land disposal restrictions (LDR) for the storage of mixed waste set forth in Section 3004(j) of RCRA. The FFC Act requires the 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 RCRA. The FFC Act 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, NMED is required by FFC Act to provide public notice, consider public comments, consult with the Environmental Protection Agency (EPA) and any other state in which a facility affected by the STP is located.

On March 31, 1995, DOE submitted its proposed STP to NMED for the treatment of mixed waste at the Los Alamos National Laboratory (LANL). On April 17, 1995, the public was given notice of and an opportunity to comment to NMED on the draft STP submitted by DOE. After considering public comment and otherwise complying with the FFC Act, NMED determined to approve the draft STP with modifications as provided in this document.

The STP is intended to fulfill the requirements of the FFC Act and establish an enforceable framework to allow DOE and the Regents of the University of California (Respondents) to achieve full compliance with LDR requirements under the New Mexico Hazardous Waste Act (HWA) and RCRA. The compliance dates set forth herein are enforceable time periods in which Respondents are required to develop treatment capacities and technologies, and treat or otherwise meet the requirements set forth for LDR under the HWA and RCRA. The STP will be fully implemented by a Compliance Order issued by NMED on or before October 6, 1995.

1.2 Contents

The STP contains two volumes and is intended to bring Respondents into compliance with LDR storage prohibitions under the HWA and RCRA. The Compliance Plan Volume of the STP provides overall schedules, including compliance dates, for achieving compliance with LDR storage and treatment requirements for mixed waste at LANL. The Compliance Plan includes a schedule for the submittal of applications for permits, construction of treatment facilities, technology development, off-site transportation for treatment, and the treatment of mixed wastes in full compliance with the HWA and the implementing regulations at 20 NMAC 4.1, which

incorporates by reference 40 CFR Parts 260 through 270. The Background Volume of the STP contains progress reports as required in the Compliance Order. Respondents shall carry out the activities described in the STP, including the Compliance Plan Volume of the STP, in accordance with the schedules and requirements set forth in the STP and the Order.

1.3 STP Revisions and Amendments

The STP Compliance Plan Volume (CPV) 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 Federal Facility Compliance Order (FFCO), as amended and revised. Appendix A to the CPV provides a summary of these CPV changes, and of modifications to the FFCO since its issuance.

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 bring existing waste treatment technologies into operation, process backlogged and currently generated waste, include schedules required to develop new facilities and capacity for treatment and establish an overall time frame 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 have been identified and developed. For the waste that will be treated on-site, the categories of activities for compliance dates identified in Table I shall apply. Compliance dates for the activities identified in Table I may be found in Section 3.1.

Table I. Categories of Activities for Compliance for Mixed Waste with Existing Treatment Technologies.

- | | |
|----|---|
| A. | Submit permit applications to the 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 have been identified and developed, or the treatment technology must be modified or adapted to apply to such waste. For the waste that will be treated on-site, the categories of activities for compliance dates are identified in Table II and shall apply. Compliance dates for the activities identified in Table II may be found in Section 3.2.

Table II. 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. |
| E. | Commence systems testing. |
| F. | Begin treating mixed waste. |
| G. | Complete treatment of existing wastes to applicable regulatory standards. |

2.1.3 Requirements Pertaining to Radionuclide Separation

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

Table III. Categories of Activities for Compliance Dates for Radionuclide Separation of Mixed Waste

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 a NMED permit application.

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

In lieu of plans to treat mixed-waste on-site, DOE may treat waste at an off-site facility; (at a commercial or non-commercial mixed waste treatment facility), or DOE may recycle waste at an off-site facility. Should DOE elect to use off-site recycling facilities in lieu of (or in combination with) treatment, it will follow the requirements prescribed in this Section in the same manner as if the waste was being shipped off-site for treatment. Any and all requirements imposed by the off-site treatment/recycling facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment/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 a non-commercial 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 off-site non-commercial 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 forty-five (45) working days of receipt of waste at the treatment/recycling facility. Activities for mixed waste to be shipped off-site for treatment/recycling at a non-commercial facility are identified in Table V.

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

**Table IV. Activities for Mixed Waste to be Shipped Off-Site
for Treatment or Recycling at a Commercial facility**

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

2.1.4.1 Specific Site Requirements for Non-commercial Treatment Facilities

Shipment to Idaho National Engineering Laboratory

Prior to shipment, Idaho National Engineering Laboratory and Idaho Division of Environmental Quality shall be notified of any pending shipments of waste prior to shipment should DOE ship mixed low-level waste to INEL. Proper procedures including additional approvals (if necessary) and documentation shall be completed prior to the shipment of wastes to INEL. 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 thirty (30) working days after receipt of shipment of treatment residuals or newly generated waste streams from INEL.

Shipments of low-level mixed wastes to planned facilities (not yet existing) will occur only after that treatment and schedules are approved by DOE-ID 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

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

**Table V. Activities for Mixed Waste to be Shipped Off-Site for Treatment
or Recycling at a Non-commercial facility**

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

2.1.5 Plans Related to Other Mixed Waste Activities

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

3.0 LOW-LEVEL MIXED WASTE STREAMS

This sectionChapter presents proposed schedules for treatment technologies and the preferred options to treat low-level mixed waste streams (MLW or LLMW) at LANL. All preferred options not described below must be approved by NMED in accordance with the revision process pursuant to the Compliance Order.

3.1 Mixed Waste Streams for Which Technology Exists

The following subsections summarize LLMW original October 4, 1995 STP inventory in each MLLW treatability groups for which technology exists group has been modified through the revision process in the FFCO.

3.1.1 Commercial Off-site Treatment by Thermal Treatment

Treatability Group(s):

LLMW for Commercial Off-site Thermal Treatment (MWIR Treatment ID DS-S001)

The table in CPV Appendix B provides a comprehensive summary of changes to the CPV covered waste inventories (additions, deletions, and shifts of waste between treatability groups) occurring as of the date of this revision. In Appendix B, 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 Sections of this chapter, 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 have been assigned Activities and Compliance Dates unique to that subgroup, those subgroups are detailed in the text. For a complete listing of volumes by subgroup for all treatability groups, please refer to Appendix B.

3.1 Mixed Waste Streams for Which Technology Exists

The following subsections summarize LLMW treatability groups for which technology exists.

3.1.1 Off-site Treatment by Thermal Treatment

Treatability Group(s):

LLMW for Off-site Thermal Treatment (MWIR Treatment ID DS-S001)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
IPA wastes	LA-W901	D001, D009, F002, F003, F005	1047	15,890.02
scintillation fluids	LA-W902	D001, F003, F005	181	2,470.0038
Totals			1228	18,360.02

Treatment Technology:

The waste will be treated at an off-site ~~commercial~~ facility that combusts organic liquid waste. Should DOE decide to treat waste at an off-site non-commercial facility, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Activity	Compliance Dates
A. Meet all regulatory requirements prior to shipping waste	9/30/96
B. Complete shipping waste	12/30/96
C. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

Jan 9, 1997
Jan 21, 1997

3.1.2 Commercial-Off-site Treatment by Stabilization or Macroencapsulation**Treatability Group(s):****LLMW for Commercial Stabilization**

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (M ³)
lead blankets	LA-W903	D007, D008	40	0.740.00
soil with heavy metals	LA-W904	D004, D005, D006, D007, D008, D009, D010, D011	59	10.5310.44
ER soils	LA-W905	D028, D029, F001, F005 D010, D011	360	39.320.00
Totals			9999	50.5910.44

Treatment Technology:

The waste will be treated at an off-site facility that stabilizes or macroencapsulates wastes. Should DOE decide to treat waste at an off-site non-commercial facility, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Activity	Compliance Dates
A. Meet all regulatory requirements prior to shipping waste	05/30/97
B. Complete shipping waste	09/30/97 12/30/98
C. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

7/10/97
 8/7/97 (all 9/18/97)
 9/24/97 (all 11/9/97)

3.1.3 Evaporative Oxidation (MWIR Treatment ID GJ-S801C)

Treatability Group(s):

LLMW for Evaporative Oxidation/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
aqueous organic liquids	LA-W906	D001, D002, D005, D007, D008, D009, D010, D018, D019, D022, D027, D028, D030, D032, D033, D036, D037, D038, D039, D041, D042, D043, F001, F002, F003, F004, F005	45173	1.6510.89
Totals			45173	1.6510.89

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated off-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site treatment facility (commercial or non-commercial) and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	12/30/96
B. Initiate construction	As specified in the NMED permit.
C. Complete system test and commence operation and begin treating mixed waste	6/19/99
D. Complete treatment of existing wastes to applicable regulatory standards, or	2/09/00
E. Complete shipment of existing wastes for treatment to an off- site facility.	2/09/00
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.4 Thermal Desorption (MWIR Treatment ID GJ-S801B)

LLMW for Thermal Desorption/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
organic-contaminated combustible solids	LA-W911	D001, F001, F002, F003, F005	307378	28.3235.65
Totals			307378	28.3235.65

LLMW for Thermal Desorption

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
organic-contaminated noncombustible solids	LA-W919	D001, D003, D004, D005, D006, D007, D008, D009, D010, D011, D027, D030, D032, D033, D034, D042, D043, F001, F002, F004, F005	80177	7.8218.62
Totals			80177	7.8218.62

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated off-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	11/16/98
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operations and begin treating mixed waste	02/01/01
D. Complete treatment of existing wastes to applicable regulatory standards, or	02/14/02
E. Complete shipping of existing wastes to an off-site treatment facility.	02/14/02
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

7/30/97

3.1.5 Macroencapsulation (MWIR Treatment ID PX-S803)

Treatability Group(s):

LLMW for Macroencapsulation/Off-site treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
combustible debris	LA-W912	D001, D002, D003, D005, D006, D007, D008, D009, D011, D035, F001, F002, F003, F005	8397	13.8214.85
Totals			8397	13.8214.85

LLMW for Macroencapsulation

Treatability group		RCRA codes	Number of items	Net volume (m ³)
activated or inseparable lead	LA-W921	D008	7432	15.608.12
noncombustible debris	LA-W922	D001, D004, D005, D006, D007, D008, D009, D010, D011	41157	5.6230.74
Totals			115189	21.2238.86

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated off-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	01/04/98
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operation and begin treating mixed waste	02/01/00
D. Complete treatment of existing wastes to applicable regulatory standards, or	08/25/00
E. Complete shipping of existing wastes to an off-site treatment facility.	08/25/00
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

See 1997-1998 Shipments
01/20/1998 - letter

3.1.6 Chemical Plating Waste Treatment Skid (MWIR Treatment ID LA-S004)

Treatability Group(s):

LLMW for Chemical Plating Waste Skid/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
aqueous wastes with heavy metals	LA-W913	D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011	203119	1-852.05
corrosive solutions	LA-W914	D001, D002	162189	1-361.17
aqueous cyanides, nitrates, chromates, and arsenates	LA-W915	D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, F007, P029, P098	1523	0-130.17
Totals			360331	3-343.39

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated off-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Resubmit revised permit application to NMED	10/30/96
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operations and begin treating mixed waste	03/17/00
D. Complete treatment of existing wastes to applicable regulatory standards, or	05/08/01
E. Complete shipping of existing wastes to an off-site treatment facility.	05/08/01
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.7 Water-reactive Metals Treatment Skid (MWIR Treatment ID LA-S003)

Treatability Group(s):

LLMW for Water-Reactive Metals Skid/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
water-reactive wastes	LA-W916	D001, D003	78108	6.036.37
Totals			78108	6.036.37

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated on-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	06/30/01
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operations and begin treating mixed waste	09/09/03
D. Complete treatment of existing wastes to applicable regulatory standards, or	04/21/04
E. Complete shipping of existing wastes to an off-site treatment facility.	04/21/04
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.8 Gas-scrubbing Skid (MWIR Treatment ID LA-S801)

Treatability Group(s):

LLMW for Gas-Scrubbing Skid/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
compressed gases requiring scrubbing	LA-W917	D001, D002, P056	13	0.35
Totals			13	0.35

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated on-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	03/10/98
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operations and begin treating mixed waste	05/10/02
D. Complete treatment of existing wastes to applicable regulatory standards, or	08/28/03
E. Complete shipping of existing wastes to an off-site treatment facility.	08/28/03
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.9 Gas Oxidation Skid (MWIR Treatment ID LA-S801)

Treatability Group(s):

LLMW for Gas Oxidation Skid/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
compressed gases requiring oxidation	LA-W918	D001	6176	0.08132
Totals			6176	0.08132

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated on-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	03/10/98
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operations and begin treating mixed waste	05/10/02
D. Complete treatment of existing wastes to applicable regulatory standards, or	08/28/03
E. Complete shipping of existing wastes to an off-site treatment facility.	08/28/03
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.10 Mercury Amalgamation (MWIR Treatment ID PI-S801)

Treatability Group(s):

LLMW for Amalgamation/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
elemental mercury	LA-W920	D006, D009, F005	4574	0.50054
Totals			4574	0.50054

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated off-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	01/30/98
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operations and begin treating mixed waste	06/05/00
D. Complete treatment of existing waste to applicable regulatory standards, or	11/15/00
E. Complete shipping of existing wastes to an off-site treatment facility.	11/15/00
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.2 Mixed Waste Streams for Which Technology Requires Adaptation or for Which No Technology Exists

The following subsections summarize mixed waste streams for which technology requires adaptation or for which no technology exists.

3.2.1 Hydrothermal Processing

Treatability Group(s):

LLMW for Hydrothermal Processing/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
halogenated organic liquids	LA-W907	D001, D002, D003, D007, D009, D018, D019, D022, D028, D029, D035, D043, F001, F002, F003, F005, U077, U080, U226, U227, U228, U236	385512	16.5818.12
nonhalogenated organic liquids	LA-W908	D001, D002, D003, D004, D007, D008, D009, D011, D018, D038, D040, F002, F003, F004, F005, U002, U019, U169, U188, U220, U246	275814	14.3420.63
bulk oils	LA-W909	D002, D004, D005, D006, D007, D008, D009, D010, D011, D021, D027, D039, F001, F002, F003, F005	2864	3.757.51
PCB wastes with RCRA components	LA-W910	D008, D039, F002	4	0.74
Totals			6921394	35.4147.00

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
inorganic liquid and solid oxidizers	LA-W923	D001, D003, D005	5586	0.200.58
Totals			5586	0.200.58

Treatment Technology:

The preferred destruction treatment technology option for this treatability group is Hydrothermal Processing which is a technology that needs development for adaptation to treat radioactive and PCB-bearing waste. This treatment technology is being adapted at LANL and is expected to be developed into a mobile treatment unit. The GJPO schedule for deployment of the unit indicates

its possible availability to LANL after February 2002. Shipment off-site for treatment is a parallel preferred option. Respondents shall submit treatment or off-site shipment schedules and options for NMED's approval by November 30, 1998. Treatment or other options other than off-site shipment shall be carried out pursuant to the revision process. Off-site shipments must be completed by February 2002.

Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

3.3 Mixed Waste Requiring Further Characterization or for Which Technology Assessment Has Not Been Done (MWIR Treatment ID LA-S701)

Treatability Group(s):

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
lead wastes - TBD	LA-W924	D003, D008	186129	51.4440.16
mercury wastes - TBD	LA-W925 LA-W925-0	D007, D008, D009, F001	63	18.30
compressed gases - TBD	LA-W926	D001, D007, D009, D022, P056, U080, U226	10	1.25
biochemical laboratory wastes	LA-W927	D001, D003	9	1.34
dewatered treatment sludge	LA-W928	see Subsection 3.3 in the Background Volume	61	12.71
Totals			329272	85.0073.76

Treatment Technology:

The following steps will be taken to properly characterize this waste:

- Conduct additional generator interviews
- Prepare a sampling plan for waste not adequately characterized
- Conduct sampling and analysis
- Determine treatment options

Activities for wastes originally belonging to these treatability groups as listed above

Activity	Compliance Dates
A. Complete generator interviews	10/30/95
B. Complete sampling and analysis plan	1/30/96
C. Complete sampling and analysis	9/30/98
D. Complete determination of treatment options, or	12/20/98
E. Complete shipping of existing wastes to an off-site treatment facility, or submit documentation assigning waste items to applicable treatability groups.	12/20/98 12/20/00
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

Additional wastes and treatability groups:

The following additional wastes will require management in this category, according to the Activities and Compliance Dates listed below:

Treatability group	MWIR waste ID	RCRA Codes	Number of items	Net volume (m3)
mercury wastes-TBD	LA-W925-4	D007, D008, D009, F001	37	0.42
mercury wastes-TBD	LA-W925-5	D007, D008, D009, F001	14	1.52
explosives	LA-W932	D003	1	0.000001
labpacks	LA-W933	D001 D002 D003 D004 D005 D006 D007 D008 D010 D011 P012 P029 P098 P106 P113 P120 U131 U144 U145 U188 U190 U204 U216 U219	142	0.30
Totals			194	2.24

Activities for wastes belonging to these treatability groups and subgroups:

Activity	Compliance Dates
G. Complete sampling and analysis plan	1/30/99
H. Complete sampling and analysis	9/30/01
I. Complete determination of treatment options	12/20/01
J. Complete shipping of wastes to an off-site treatment facility, or submit documentation assigning waste items to applicable treatability groups	12/20/03
K. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at off-site facility

3.4 Plans for Other Types of Activities

The following subsection summarizes plans for other types of activities.

3.4.1 Lead Decontamination (MWIR Treatment ID LA-S001)/Off-site Treatment (preferred option)

Treatability Group(s):

Treatability group	MWIR waste ID	Net volume (m ³) First category		Preferred option Second category		Total	
		No. Items	Net volume (m ³)	No. Items	Net volume (m ³)	No. Items	Net volume (m ³)
lead for surface contamination	LA-W930	56-20 89	lead decontamination trailer 21.02	62	36.16	56-20 151	57.18
Totals		89	21.02	62	36.16	151	57.18

Treatment Technology:

This treatability group contains two categories of lead for decontamination:

The first category is lead in the original LA-W930-0 inventory that is amenable to decontamination in the on-site lead decontamination trailer, which was designed to decontaminate simple lead shapes, such as lead bricks, of certain physical dimensions. The trailer is on-site and has operated, but needs an upgrade for prolonged operation. Shipment off-site for treatment is a parallel preferred option

The lead in the second category is lead in the original LA-W930-0 inventory that is not amenable to decontamination in the on-site lead decontamination trailer, plus subsequent additions to the original inventory shown in Appendix B. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste This lead will be processed using other on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility decontamination processes, such as dry sandblasting or hand-scrubbing, or sent to off-site lead decontamination services.

The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to

Any lead not acceptable for on-site or off-site lead decontamination, plus any shipment by DOE lead unsuccessfully decontaminated, will be designated for treatment and disposal at an off-site facility, or for recycle through an off-site capability, such as metal melting to create shielding blocks or a DOE lead bank. -

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. Non-conforming items will be reassigned to appropriate treatability groups in accordance with the FFCO. -

DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of

Should DOE decide to treat or recycle waste at the treatment facility. _____

Lead shapes and forms processed using the decontamination trailer at an off-site non-commercial facility in lieu of plans to treat or recycle such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment/recycle option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment/recycling facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment/recycling site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment/recycling facility.

Lead shapes and forms in the first category.

Activity	Compliance Date
A. complete lead decontamination	09/30/97

09/30/97

BLead shapes and forms in the second category

Activity	Compliance Date
B. Complete shipping of existing wastes to an off-site treatment facility.	12/02/98
B. Segregate lead waste into decontamination groupings	07/31/97
C. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility
C. Complete shipment of wastes to decontamination operations, or	12/02/98
D. Determine treatment/disposal or other recycle options for lead waste not acceptable for decontamination	12/02/98
E. Complete treatment/disposal operations or other recycle operations for lead waste not acceptable for decontamination	07/31/99
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.4.2 Sorting, Surveying, and Decontamination (MWIR Treatment ID GJ-S804)

Treatability Group(s):

Treatability group	MWIR waste ID	Number of items	Net volume (m ³)
1. nonradioactive or suspect waste items to be surveyed	LA-W929 LA-W929-0(1)	10490	10.580.0
2. nonradioactive or suspect waste items to receive RCRA and radiological characterization	LA-W929 LA-W929-0(2)	1622	3.250.0076 See App A Table for details
3. nonradioactive or suspect waste items that cannot or should not be sampled	LA-W929 LA-W929-0(3)	390	0.410.0
Totals		12502	14.240.0076

Treatment Technology:

The waste items in part 1 of the original volume in this treatability group will be surveyed using a field operation that will survey waste suspect of radioactive contamination to determine whether it is radioactively contaminated. The work will be done on-site with equipment and staffing provided by LANL or another DOE site. Waste determined not to be radioactively contaminated will be treated using commercial facilities permitted to treat hazardous waste; waste determined to be radioactively contaminated will be assigned to applicable treatability groups and/or sent to offsite facilities for appropriate treatment.

Waste items in part 2 of this treatability group will be surveyed using complete RCRA and radiological sampling and characterization. Waste sampled under this alternative will be treated and disposed as low-level mixed waste; the waste will be assigned to applicable treatability groups and/or sent to off-site facilities for appropriate treatment based on the results of this characterization.

Sampling for this characterization alternative will be conducted in accordance with RCRA SW-846 methods. To ensure an adequate volume of waste material is available for sampling and to maximize the cost effectiveness of the sampling activities, some lab packed and other waste items may be bulked into larger volume containers; all RCRA waste codes will be transferred to the bulked wastes to ensure correct RCRA categorization is maintained. It may be found, when preparing a given drum for sampling, (for example, solid small volume waste items that cannot be sampled in accordance with EPA SW-846 methods) are in fact not amenable to sampling and should have been included in the item count for group 3. If visual inspection so indicates, these waste items will be transferred to Group 3 and assigned to applicable treatability groups based on existing knowledge.

Waste items in part 3 of this treatability group which are confirmed not amenable to sampling (e.g., lead-acid batteries, spray paint cans) will be assigned to applicable treatability groups based on existing knowledge. It may be found, when inspecting a given drum, that some items can in fact be sampled in accordance with EPA SW-846 methods and should have been included in the item count for Group 2. If visual inspection so indicates, these waste items will be transferred to Group 2 and sampled accordingly.

Additional compliance dates will be proposed for any waste items in this treatability group found not to have available treatment/disposal options following a complete review of all survey, analytical, or visual inspection data obtained through these processes.

For all waste items in this treatability group, shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met 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 facility.

Activities for waste items in part 1 of this treatability group.

Activity	Compliance Dates
A. complete field survey	10/30/96
B. submit documentation declaring waste items as nonradioactive, or submit documentation assigning waste items to applicable treatability groups	2/28/97
C. propose additional compliance dates if necessary	4/30/97

Activities for waste items in part 2 of this treatability group.

Activity	Compliance Dates
D. complete RCRA and radiological sampling	1/28/97
E. submit documentation assigning waste items to applicable treatability groups or proposing off-site shipment dates	2/28/97
F. propose additional compliance dates if necessary	4/30/97

Activities for waste items in part 3 of this treatability group.

Activity	Compliance Dates
G. Complete visual verification	1/28/97
H. Submit documentation assigning waste items to applicable treatability groups or proposing off-site shipment dates	6/30/97
I. Propose additional compliance dates if necessary	9/30/97

Additional wastes:

Treatability group	MWIR waste ID	Number of items	Net volume (m ³)
Nonradioactive or suspect waste items	LA-W929-5	1	0.00002
Totals		1	0.00002

Activities for items added as subgroup 5 of this treatability group.

Activity	Compliance Dates
J. Submit documentation assigning waste items to applicable treatability groups or proposing off-site shipment dates	3/31/98
K. Propose additional Compliance Dates if necessary	3/31/98

3.5 Management of "Missing" Items.

Waste Category:

Category	MWIR waste ID	No. Items	Net volume (m ³)
Missing/nonexistent/TBV	None	48	8.81
Totals		48	8.81

Treatment Technology:

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 containers in which it is expected to be, according to the LANL data files for the waste item. In some instances, such items could not be verified as having ever been received in storage at LANL, and further follow-up investigations of the record files revealed that for various reasons, the waste items were never in fact generated, although on paper they were included in the original STP inventory.

In these instances, DOE and UC, and their contractors, perform a thorough inspection of both the physical inventories and the data files. When DOE and UC determine that an STP covered waste item does not exist, transfer of the item to the category called *"Missing/ nonexistent/TBV (to be verified)"*, is requested through the revision process associated with the next *Annual Update*.

DOE and UC will re-verify the absence of all *"Missing/ nonexistent/TBV"* items container-by-container, as each STP waste item is being sampled, repackaged, or otherwise prepared for on- or off-site treatment. The final verification that all *"Missing/ nonexistent/TBV"* items do not in fact exist will be completed by April 21, 2004, at which time all remaining MLLW items in the original STP inventory will have been treated. At that time, DOE and UC will request deletion of all items having been fully verified as missing or nonexistent.

At any time during the re-verification process, should any of these items be discovered to exist, NMED will be notified, and approval will be requested for assignment of the rediscovered items to the appropriate TG. If necessary, they will be assigned new Activities and Compliance Dates, in accordance with the terms of the FFCO.

The following steps will be taken to verify presence or absence of this waste:

Activity	Compliance Dates
A. Initiate re-verification process on a shipment-by-shipment basis	01/03/98
B. Complete re-verification process	04/21/04
C. Re-assign any existing items to appropriate treatability groups	04/21/04
D. Complete treatment of existing wastes to applicable regulatory standards, or	10/30/04
E. Complete shipping of existing wastes to an off-site treatment facility	10/30/04
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

4.0 MIXED TRANSURANIC WASTE

Treatment Group(s):

Assorted Mixed Transuranic Waste

Treatment Technology

Respondents are required to develop treatment technologies and treat mixed transuranic (MTRU) waste at LANL according to the schedule set forth below:

Activity	Compliance Date
A. Development of treatment technologies	June 30, 1999
B. Submit permit application amendment or modification to NMED for treatment of MTRU	December 31, 1999
C. Begin treating MTRU	Six (6) months after NMED permit issuance
D. Complete treatment of existing MTRU to applicable regulatory standards	December 31, 2010

The above schedule is not based on the assumption that WIPP will be a disposal option or that DOE will receive a variance from treatment standards for land disposal of MTRU waste to be disposed at WIPP. All revisions to compliance dates shall be in accordance with the procedures set forth in the compliance order.

CPV APPENDIX A

HISTORY OF STP REVISIONS AND AMENDMENTS

As discussed in CPV Section 1.3, the STP Compliance Plan Volume 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 Federal Facility Compliance Order, as amended and revised. This Appendix provides a summary of these CPV changes, and of modifications to the FFCO since its issuance.

To date, there have been five revisions and two amendments to the CPV. In addition, the FFCO was amended once, on May 20, 1997. The following table provides a summary of these changes. More detailed descriptions can be found in the CPV Update portion of each year's STP *Annual Update*, and the original correspondence requesting each change.

Action	Document Modified	Effective Date	Effect on FFCO/STP
Rev. 1.0	STP/CPV	6/12/96	Added off-site treatment as a parallel preferred option for most MLLW treatability groups
Rev. 2.0	STP/CPV	12/9/96	Reduced volume of LA-W928 by approving reclassification of sludges as LLW
Amendment 1.0	STP/CPV	10/30/96	Divided original volume of LA-W929 into three subgroups, and added new Activities and Compliance Dates
Rev. 3.0	STP/CPV	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/CPV	9/4/97	Extended CPV Activity 3.1.2 B Compliance Date to 12/29/97
Rev. 4.0	STP/CPV	(to be added)	Transferred original volume of LA-W929 from three subgroups to other treatability groups, added treatability groups, and deleted treated items
Rev. 5.0	STP/CPV	(to be added)	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 CPV Appendices, and deleted treated items

CPV APPENDIX B SUMMARY OF CPV INVENTORY CHANGES

The following table provides a comprehensive summary of changes to the CPV covered waste inventories (additions, deletions, and shifts of waste between treatability groups) occurring as of the date of this revision. The volumes given in the table reflect changes to the individual MLLW treatability group volumes due to increases or decreases, as noted.

Key to Reading the Subgroups

The original STP inventory in each MLLW treatability group is now denoted as subgroup 0 of that treatability group (e.g., the original volume of STP treatability group LA-W906 became LA-W906-0). The original October 4, 1995 STP inventory in each MLLW treatability group has been modified through the revision process in the FFCO. The following revisions have affected volumes in individual treatability groups to date:

Revision	Effect on Volumes
Rev. 2.0	Reduced volume of LA-W928
Rev. 3.0	Divided original volume of LA-W929 into three subgroups
Rev. 4.0	Transferred original volume of LA-W929 from three subgroups to other treatability groups, added new treatability groups
Rev. 5.0	Added volumes to several treatability groups

Each revision that has added volumes to individual treatability groups has resulted in creation of an additional subgroup of that treatability group, 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).

Additions and Deletions to Date

To date, MLLW inventory increases and decreases have been incorporated into the covered waste inventories through Revisions 2.0, 4.0, and 5.0. Revision 2.0 incorporated decreases in treatability group LA-W928 due to deletion of covered waste items. Rev. 4.0 resulted in decreases to LA-W929 and increases in other TGs, primarily by transferring LA-W929 items to other TGs. Rev. 5.0 resulted in both additions to and deletions of covered waste volumes (i.e., increases and decreases) in a number of TGs. Therefore, the Appendix B table that follows shows that subgroups -4 and -5 exist for some treatability groups, but not for all.

This table provides a master list of MLLW inventory changes presented in the *Annual Updates*, to enable users of the STP to track all changes in the LANL MLLW covered waste inventory that occurred since the original STP inventory was established in the October 4, 1995 FFCO/CPV.

Changes (additions or deletions) to the CPV covered waste inventory have occurred since the end of FY96. However, only those reported as Rev. 5.0 "*Other Changes*" are included in this table. All others will be reported in the next *Annual Update* and associated revision request. Therefore, the "*Net Covered Waste Inventory*" may not fully reflect the actual CPV covered waste inventory as of the date of this revision, in some instances.

**APPENDIX B SUPPLEMENTARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)
3.1.1	IPA Wastes	LA-W901-0	104	15.89							Decrease 96	Decrease 15.87	Decrease 1	Decrease 0.0005 ^b	8	0.02	7	0.02
		LA-W901-5									Increase 0	Increase 4.11 ^c			0	0.00		
											Decrease 0	Decrease 4.11						
3.1.1	Scintillation Fluids	LA-W902-0	18	2.47					Decrease 15	Decrease 2.24	Decrease 2	Decrease 0.36			1	0.0038	1	0.0038
		LA-W902-5									Increase 0	Increase 0.13 ^c			0	0.00		
											Decrease 0	Decrease 0.13						
3.1.2	Lead Blankets	LA-W903-0	4	0.74							Decrease 4	Decrease 0.74			0	0.00	0	0.00

APPENDIX B SUPPLEMENTARY TABLE
STP/CPV MLLW INVENTORY CHANGES

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)
3.1.2	Soil with Heavy Metals	LA-W904-0	59	10.53									Decrease 1	Decrease 0.2082 ^d	58	10.33	59	10.44
		LA-W904-5									Increase 1	Increase 0.11			1	0.11		
3.1.2	ER Soils	LA-W905-0	36	39.32							Decrease 36	Decrease 39.32			0	0.00	0	0.00
3.1.3	Aqueous Organic Liquids	LA-W906-0	45	1.65											45	1.65	173	10.89
		LA-W906-4					Increase 27	Increase 0.36							27	0.36		
		LA-W906-5							Increase 3	Increase 0.43	Increase 73	Increase 3.62	Increase 1	Increase 0.0005 ^b	101	8.88		
													Increase 24	Increase 4.83 ^c				

**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)
3.1.4	Organic-Contaminated Combustible Solids	LA-W911-0	307	28.32					Decrease 1	Decrease 0.11	Decrease 1	Decrease 0.11			305	28.10	378	35.65
		LA-W911-4					Increase 33	Increase 0.68							33	0.68		
		LA-W911-5							Increase 2	Increase 0.17	Increase 31	Increase 5.24	Increase 7	Increase 1.46*	40	6.87		
3.1.4	Organic-Contaminated Noncombustible Solids	LA-W919-0	80	7.82					Decrease 1	Decrease 0.11					79	7.71	177	18.62
		LA-W919-4					Increase 9	Increase 0.38							9	0.38		
		LA-W919-5							Increase 9	Increase 0.001	Increase 74	Increase 9.58	Increase 6	Increase 0.95*	89	10.53		
3.1.5	Combustible Debris	LA-W912-0	83	13.82											83	13.82	97	14.85
		LA-W912-4					Increase 9	Increase 0.75							9	0.75		
		LA-W912-5									Increase 5	Increase 0.28			5	0.28		

**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)
3.1.5	Activated or Inseparable Lead	LA-W921-0	74	15.60					Decrease 37	Decrease 7.42	Decrease 23	Decrease 3.41			14	4.77	32	8.12
		LA-W921-5							Increase 51	Increase 10.11	Decrease 45	Decrease 9.05			18	3.35		
											Increase 12	Increase 2.29						
3.1.5	Non-combustible Debris	LA-W922-0	41	5.62					Decrease 4	Decrease .0002 ¹					41	5.62	157	30.74
		LA-W922-4					Increase 53	Increase 2.83							53	2.83		
		LA-W922-5							Increase 21	Increase 1.25	Increase 42	Increase 21.04			63	22.29		

**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)
3.1.6	Aqueous Wastes with Heavy Metals	LA-W913-0	203	1.85							Decrease 12	Decrease 0.030			83	1.50	119	2.05
											Decrease 108	Decrease 0.32						
		LA-W913-4					Increase 25	Increase 0.40							25	0.40		
		LA-W913-5									Increase 11	Increase 0.15			11	0.15		
3.1.6	Corrosive Solutions	LA-W914-0	162	1.36							Decrease 102	Decrease 0.67			60	0.69	189	1.17
		LA-W914-4					Increase 90	Increase 0.36							90	0.36		
		LA-W914-5							Increase 13	Increase 0.04	Increase 26	Increase 0.08			39	0.12		

**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)
3.1.6	Aqueous Cyanides, Nitrates, Chromates, and Arsenates	LA-W915-0	15	0.13					Decrease 1	Decrease 0.0003	Decrease 1	Decrease 0.0002			9	0.13	23	0.17
											Decrease 4	Decrease 0.0031						
		LA-W915-4					Increase 3	Increase 0.002							3	0.002		
		LA-W915-5							Increase 4	Increase 0.02	Increase 7	Increase 0.02			11	0.04		
3.1.7	Water-Reactive Wastes	LA-W916-0	78	6.03											78	6.03	108	6.37
		LA-W916-4					Increase 26	Increase 0.31							26	0.31		
		LA-W916-5							Increase 1	Increase 0.02	Increase 3	Increase 0.01			4	0.03		
3.1.8	Compressed Gases Requiring Scrubbing	LA-W917-0	13	0.35											13	0.35	13	0.35

**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)
3.1.9	Compressed Gases Requiring Oxidation	LA-W918-0	6	0.08											6	0.08	176	1.32
		LA-W918-4					Increase 168	Increase 1.23							168	1.23		
		LA-W918-5									Increase 2	Increase 0.01			2	0.01		
3.1.10	Elemental Mercury	LA-W920-0	45	0.50											45	0.50	74	0.54
		LA-W920-4					Increase 20	Increase 0.02							20	0.02		
		LA-W920-5									Increase 9	Increase 0.02			9	0.02		
3.2.1	Halogenated Organic Liquids	LA-W907-0	385	16.58							Decrease 1	Decrease 0.0025			384	16.58	512	18.12
		LA-W907-4					Increase 97	Increase 1.05							97	1.05		
		LA-W907-5							Increase 13	Increase 0.04	Increase 18	Increase 0.45			31	0.49		

**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)
3.2.1	Nonhalogenated Organic Liquids	LA-W908-0	275	14.34											275	14.34	814	20.63
		LA-W908-4					Increase 409	Increase 3.38							409	3.38		
		LA-W908-5							Increase 53	Increase 0.08	Increase 77	Increase 2.83			130	2.91		
3.2.1	Bulk Oils	LA-W909-0	28	3.75											28	3.75	64	7.51
		LA-W909-4					Increase 8	Increase 1.48							8	1.48		
		LA-W909-5									Increase 28	Increase 2.28			28	2.28		
3.2.1	PCB Wastes with RCRA Components	LA-W910-0	4	0.74											4	0.74	4	0.74
3.2.1	Liquid and Solid Oxidizers	LA-W923-0	55	0.20							Decrease 49	Decrease 0.0834			6	0.117	86	0.58
		LA-W923-4					Increase 67	Increase 0.145							67	0.145		
		LA-W923-5							Increase 24	Increase 0.32	Decrease 11	Decrease 0.0034			13	0.317		

**APPENDIX F SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)
3.3	Lead Waste - TBD	LA-W924-0	186	51.44					Decrease 57	Decrease 11.28					129	40.16	129	40.16
3.3	Mercury Wastes - TBD	LA-W925-0	63	18.30											63	18.30	114	20.24
		LA-W925-4					Increase 37	Increase 0.42							37	0.42		
		LA-W925-5									Increase 14	Increase 1.52			14	1.52		
3.3	Compressed Gases - TBD	LA-W926-0	10	1.25											10	1.25	10	1.25
3.3	Biochemical Laboratory Wastes	LA-W927-0	9	1.34											9	1.34	9	1.34
3.3	Dewatered Treatment Sludge	LA-W928-0	1288	268.17	Decrease 1227	Decrease 255.46									61	12.71	61	12.71

**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)
3.4.1	Lead for Surface Decontamination	LA-W930-0	125	56.20					Decrease 83	Decrease 14.43 ^f			Decrease 6	Decrease 8.34 ^d	36	33.43	151	57.18 ^a
		LA-W930-5						Increase 109	Increase 22.50	Increase 6	Increase 1.25			115	23.75			
3.4.2	Nonradioactive or Suspect Waste Items to be Surveyed	LA-W929-0	1250	14.24			Decrease 1196	Decrease 13.97	Decrease 4	Decrease 0.002 ^b	Decrease 2	Decrease 0.00094			2	0.0076 ^a	3	0.0076 ^a
											Decrease 9	Decrease 0.0029						
		LA-W929-5						Increase 1	Increase .00002					1	0.00002			
None	Lead Requiring Sorting	LA-W931-0	48	9.97					Decrease 22	Decrease 4.58	Decrease 3	Decrease 0.63			23	4.76	31	5.20
		LA-W931-5						Increase 28	Increase 5.73	Decrease 28	Decrease 5.73			8	0.44			
										Increase 8	Increase 0.44							

**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)
3.3 (proposed)	Explosives	LA-W932-0	0	0.00											0	0.00	1	0.000001
		LA-W932-4					Increase 1	Increase 0.000001							1	0.000001		
3.3 (proposed)	Lab Packs	LA-W933-0	0	0.00											0	0.00	142	0.30
		LA-W933-4					Increase 114	Increase 0.17							114	0.17		
		LA-W933-5									Increase 28	Increase 0.13			28	0.13		

**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Category	MWIR ID (by substream)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)
3.5 (proposed)	Missing/nonexistent/TBV	NONE											Increase 1 Increase 41 Increase 6	Increase 0.2082 ^d Increase 41 ^d Increase 8.34 ^d			48	8.81

NOTES:

- ^a Changes (additions or deletions) to the CPV covered waste inventory have occurred since the end of FY96; however, only those reported as Rev. 5.0 "Other Changes" are included in this table. All others will be reported in the March, 1998 FY97 Annual Update and associated revision request. Therefore, the "Net Covered Waste Inventory" may not fully reflect the ACTUAL CPV covered waste inventory as of the date of this revision, in some instances.
- ^b As reported in DOE's January 31, 1997 letter, the volume associated with the 104th LA-W901-0 item (0.0005 m³) was repackaged, and bulked with other LA-W906 wastes in 1991, prior to issuance of the original STP. Since this "missing" item has now been located, its volume is being formally transferred to LA-W906 and will be managed as such.
- ^c The 4.11 m³ volume shown for LA-W901, and the 0.13 m³ volume shown for LA-W902 are corrections, to reflect the actual volumes shipped in FY96. As reported in the March, 1997 FY96 Annual Update, the volume changes for LA-W901 and LA-W902 in FY96 were based on current data in LANL's waste database. They are consistent with the original documentation submitted by the waste generator, and they are representative of actual volumes of these wastes when shipped for treatment. The volumes used during the preparation of the original STP were erroneous, thereby resulting in more waste being shipped than reported in the original STP inventory. This volume inconsistency was discussed in DOE's January 31, 1997 letter.
- ^d These items from LA-W904, LA-W929, and LA-W930 have been determined to be missing or nonexistent. They are being transferred to the category "Missing/Nonexistent/TBV" until their presence or absence are fully and finally verified.
- ^e Although a number of changes (additions or deletions) to the CPV covered waste inventory have occurred since the end of FY96, only those reported here as Rev. 5.0 "Other Changes" are included in this table. These represent additional waste items that became covered waste after the end of FY96, for which opportunities exist for treatment during FY98. All other covered waste inventory changes since the end of FY96 will be reported in the March, 1998 FY97 Annual Update.
- ^f This represents a correction to the March, 1996 FY95 Annual Update for LA-W930, which had reported that 84 items (14.64 m³) had been removed from inventory. This was incorrect because one drum that had been returned to storage without the database being updated to reflect it was in storage instead of decontaminated.
- ^g Two items in the original STP inventory for LA-W929, Sort, Separate, and Decontamination, were shipped to DSSI for treatment on December 18, 1996. This change in the covered waste volume will be reflected in the March, 1998 FY97 Annual Update, and will be deleted from the CPV inventory in the associated revision. Therefore, these two items were reported as treated in the various submittals associated with Revision 4 of the STP, but were reported in the March, 1997 FY96 Annual Update (and are shown here) as having been in inventory as of September 30, 1996.
- ^h This represents a correction to the March, 1996 FY95 Annual Update. It was reported that one LA-W922 item (0.0002 m³) and 4 LA-W929 items (0.002 m³) had been removed from inventory. This was incorrect because these items had been repacked into different containers, and are still in inventory.

ENCLOSURE D

CPV Redline/Strikeout Version

11/24/97

LANL Draft

1.0 PURPOSE AND SCOPE OF THE COMPLIANCE PLAN VOLUME

1.1 Introduction

On October 6, 1992, Congress passed the Federal Facility Compliance Act (FFC Act) to address compliance by the United States Department of Energy (DOE) with the land disposal restrictions (LDR) for the storage of mixed waste set forth in Section 3004(j) of RCRA. The FFC Act requires the 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 RCRA. The FFC Act 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, NMED is required by FFC Act to provide public notice, consider public comments, consult with the Environmental Protection Agency (EPA) and any other state in which a facility affected by the STP is located.

On March 31, 1995, DOE submitted its proposed STP to NMED for the treatment of mixed waste at the Los Alamos National Laboratory (LANL). On April 17, 1995, the public was given notice of and an opportunity to comment to NMED on the draft STP submitted by DOE. After considering public comment and otherwise complying with the FFC Act, NMED determined to approve the draft STP with modifications as provided in this document.

The STP is intended to fulfill the requirements of the FFC Act and establish an enforceable framework to allow DOE and the Regents of the University of California (Respondents) to achieve full compliance with LDR requirements under the New Mexico Hazardous Waste Act (HWA) and RCRA. The compliance dates set forth herein are enforceable time periods in which Respondents are required to develop treatment capacities and technologies, and treat or otherwise meet the requirements set forth for LDR under the HWA and RCRA. The STP will be fully implemented by a Compliance Order issued by NMED on or before October 6, 1995.

1.2 Contents

The STP contains two volumes and is intended to bring Respondents into compliance with LDR storage prohibitions under the HWA and RCRA. The Compliance Plan Volume of the STP provides overall schedules, including compliance dates, for achieving compliance with LDR storage and treatment requirements for mixed waste at LANL. The Compliance Plan includes a schedule for the submittal of applications for permits, construction of treatment facilities, technology development, off-site transportation for treatment, and the treatment of mixed wastes

in full compliance with the HWA and the implementing regulations at 20 NMAC 4.1, which incorporates by reference 40 CFR Parts 260 through 270. The Background Volume of the STP contains progress reports as required in the Compliance Order. Respondents shall carry out the activities described in the STP, including the Compliance Plan Volume of the STP, in accordance with the schedules and requirements set forth in the STP and the Order.

1.3 STP Revisions and Amendments

The STP Compliance Plan Volume (CPV) 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 Federal Facility Compliance Order (FFCO), as amended and revised. Appendix A to the CPV provides a summary of these CPV changes, and of modifications to the FFCO since its issuance.

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 bring existing waste treatment technologies into operation, process backlogged and currently generated waste, include schedules required to develop new facilities and capacity for treatment and establish an overall time frame 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 have been identified and developed. For the waste that will be treated on-site, the categories of activities for compliance dates identified in Table I shall apply. Compliance dates for the activities identified in Table I may be found in Section 3.1.

Table I. Categories of Activities for Compliance for Mixed Waste with Existing Treatment Technologies.

- A. Submit permit applications to the 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 have been identified and developed, or the treatment technology must be modified or adapted to apply to such waste. For the waste that will be treated on-site, the categories of activities for compliance dates are identified in Table II and shall apply. Compliance dates for the activities identified in Table II may be found in Section 3.2.

Table II. 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.
- E. Commence systems testing.
- F. Begin treating mixed waste.
- G. Complete treatment of existing wastes to applicable regulatory standards.

2.1.3 Requirements Pertaining to Radionuclide Separation

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

Table III. Categories of Activities for Compliance Dates for Radionuclide Separation of Mixed Waste

- 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 a NMED permit application.

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

In lieu of plans to treat mixed-waste on-site, DOE may treat waste at an off-site facility; (at a commercial or non-commercial mixed waste treatment facility), or DOE may recycle waste at an off-site facility. Should DOE elect to use off-site recycling facilities in lieu of (or in combination with) treatment, it will follow the requirements prescribed in this Section in the same manner as if the waste was being shipped off-site for treatment. Any and all requirements imposed by the off-site ~~treatment~~treatment/recycling facility and state regulatory, federal regulatory or other regulatory requirements applicable at the ~~treatment~~treatment/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 a non-commercial 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 off-site non-commercial 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 forty-five (45) working days of receipt of waste at the ~~treatment~~treatment/recycling facility. Activities for mixed waste to be shipped off-site for ~~treatment~~treatment/recycling at a non-commercial facility are identified in Table V.

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

**Table IV. Activities for Mixed Waste to be Shipped Off-Site
for Treatment or Recycling at a Commercial facility**

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

2.1.4.1 Specific Site Requirements for Non-commercial Treatment Facilities

Shipment to Idaho National Engineering Laboratory

Prior to shipment, Idaho National Engineering Laboratory and Idaho Division of Environmental Quality shall be notified of any pending shipments of waste prior to shipment should DOE ship mixed low-level waste to INEL. Proper procedures including additional approvals (if necessary) and documentation shall be completed prior to the shipment of wastes to INEL. 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 thirty (30) working days after receipt of shipment of treatment residuals or newly generated waste streams from INEL.

Shipments of low-level mixed wastes to planned facilities (not yet existing) will occur only after that treatment and schedules are approved by DOE-ID 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

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

**Table V. Activities for Mixed Waste to be Shipped Off-Site for Treatment
-or Recycling at a Non-commercial facility**

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

2.1.5 Plans Related to Other Mixed Waste Activities

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

3.0 LOW-LEVEL MIXED WASTE STREAMS

This ~~section~~ Chapter presents proposed schedules for treatment technologies and the preferred options to treat low-level mixed waste streams (MLW or LLMW) at LANL. All preferred options not described below must be approved by NMED in accordance with the revision process pursuant to the Compliance Order.

~~3.1 Mixed Waste Streams for Which Technology Exists~~

The following subsections summarize LLMW original October 4, 1995 STP inventory in each MLLW treatability groups for which technology exists group has been modified through the revision process in the FFCO.

~~3.1.1 Commercial Off-site Treatment by Thermal Treatment~~

~~Treatability Group(s):~~

~~LLMW for Commercial Off-site Thermal Treatment (MWIR Treatment ID DS-S001)~~

The table in CPV Appendix B provides a comprehensive summary of changes to the CPV covered waste inventories (additions, deletions, and shifts of waste between treatability groups) occurring as of the date of this revision. In Appendix B, 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 Sections of this chapter, 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 have been assigned Activities and Compliance Dates unique to that subgroup, those subgroups are detailed in the text. For a complete listing of volumes by subgroup for all treatability groups, please refer to Appendix B.

3.1 Mixed Waste Streams for Which Technology Exists

The following subsections summarize LLMW treatability groups for which technology exists.

3.1.1 Off-site Treatment by Thermal Treatment

Treatability Group(s):

LLMW for Off-site Thermal Treatment (MWIR Treatment ID DS-S001)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
IPA wastes	LA-W901	D001, D009, F002, F003, F005	1647	15,890.02

scintillation fluids	LA-W902	D001, F003, F005	181	2,470.0038
Totals			1228	18,360.02

Treatment Technology:

The waste will be treated at an off-site ~~commercial~~ facility that combusts organic liquid waste. Should DOE decide to treat waste at an off-site non-commercial facility, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Activity	Compliance Dates
A. Meet all regulatory requirements prior to shipping waste	9/30/96
B. Complete shipping waste	12/30/96
C. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.2 ~~Commercial~~ Off-site Treatment by Stabilization or Macroencapsulation

Treatability Group(s):

LLMW for ~~Commercial~~ Stabilization

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (M ³)
lead blankets	LA-W903	D007, D008	40	0.740.00
soil with heavy metals	LA-W904	D004, D005, D006, D007, D008, D009, D010, D011	59	10.5310.44
ER soils	LA-W905	D028, D029, F001, F005 D010, D011	360	39.320.00
Totals			999	50.5910.44

Treatment Technology:

The waste will be treated at an off-site facility that stabilizes or macroencapsulates wastes. Should DOE decide to treat waste at an off-site non-commercial facility, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14)

working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Activity	Compliance Dates
A. Meet all regulatory requirements prior to shipping waste	05/30/97
B. Complete shipping waste	09/30/97 12/30/98
C. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.3 Evaporative Oxidation (MWIR Treatment ID GJ-S801C)

Treatability Group(s):

LLMW for Evaporative Oxidation/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
aqueous organic liquids	LA-W906	D001, D002, D005, D007, D008, D009, D010, D018, D019, D022, D027, D028, D030, D032, D033, D036, D037, D038, D039, D041, D042, D043, F001, F002, F003, F004, F005	45173	4.6510.89
Totals			45173	4.6510.89

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated off-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site treatment facility (commercial or non-

commercial) and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	12/30/96
B. Initiate construction	As specified in the NMED permit.
C. Complete system test and commence operation and begin treating mixed waste	6/19/99
D. Complete treatment of existing wastes to applicable regulatory standards, or	2/09/00
E. Complete shipment of existing wastes for treatment to an off-site facility.	2/09/00
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.4 Thermal Desorption (MWIR Treatment ID GJ-S801B)

LLMW for Thermal Desorption/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
organic-contaminated combustible solids	LA-W911	D001, F001, F002, F003, F005	307378	28.3235.65
Totals			307378	28.3235.65

LLMW for Thermal Desorption

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
organic-contaminated noncombustible solids	LA-W919	D001, D003, D004, D005, D006, D007, D008, D009, D010, D011, D027, D030, D032, D033, D034, D042, D043, F001, F002, F004, F005	80177	7.8218.62
Totals			80177	7.8218.62

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated off-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	11/16/98
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operations and begin treating mixed waste	02/01/01
D. Complete treatment of existing wastes to applicable regulatory standards, or	02/14/02
E. Complete shipping of existing wastes to an off-site treatment facility.	02/14/02
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.5 Macroencapsulation (MWIR Treatment ID PX-S803)

Treatability Group(s):

LLMW for Macroencapsulation/Off-site treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
combustible debris	LA-W912	D001, D002, D003, D005, D006, D007, D008, D009, D011, D035, F001, F002, F003, F005	8397	13.8214.85
Totals			8397	13.8214.85

LLMW for Macroencapsulation

Treatability group		RCRA codes	Number of items	Net volume (m ³)
activated or inseparable lead	LA-W921	D008	7432	15.608.12
noncombustible debris	LA-W922	D001, D004, D005, D006, D007, D008, D009, D010, D011	4157	5.6230.74
Totals			115189	21.2238.86

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated off-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	01/04/98
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operation and begin treating mixed waste	02/01/00
D. Complete treatment of existing wastes to applicable regulatory standards, or	08/25/00
E. Complete shipping of existing wastes to an off-site treatment facility.	08/25/00
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.6 Chemical Plating Waste Treatment Skid (MWIR Treatment ID LA-S004)

Treatability Group(s):

LLMW for Chemical Plating Waste Skid/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
aqueous wastes with heavy metals	LA-W913	D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011	203119	1.852.05
corrosive solutions	LA-W914	D001, D002	162189	1.361.17
aqueous cyanides, nitrates, chromates, and arsenates	LA-W915	D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, F007, P029, P098	1523	0.130.17
Totals			380331	3.343.39

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated off-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Resubmit revised permit application to NMED	10/30/96
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operations and begin treating mixed waste	03/17/00
D. Complete treatment of existing wastes to applicable regulatory standards, or	05/08/01
E. Complete shipping of existing wastes to an off-site treatment facility.	05/08/01
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.7 Water-reactive Metals Treatment Skid (MWIR Treatment ID LA-S003)

Treatability Group(s):

LLMW for Water-Reactive Metals Skid/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
water-reactive wastes	LA-W916	D001, D003	78108	6-036.37
Totals			78108	6-036.37

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated on-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	06/30/01
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operations and begin treating mixed waste	09/09/03
D. Complete treatment of existing wastes to applicable regulatory standards, or	04/21/04
E. Complete shipping of existing wastes to an off-site treatment facility.	04/21/04
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.8 Gas-scrubbing Skid (MWIR Treatment ID LA-S801)

Treatability Group(s):

LLMW for Gas-Scrubbing Skid/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
compressed gases requiring scrubbing	LA-W917	D001, D002, P056	13	0.35
Totals			13	0.35

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated on-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	03/10/98
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operations and begin treating mixed waste	05/10/02
D. Complete treatment of existing wastes to applicable regulatory standards, or	08/28/03
E. Complete shipping of existing wastes to an off- site treatment facility.	08/28/03
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.9 Gas Oxidation Skid (MWIR Treatment ID LA-S801)

Treatability Group(s):

LLMW for Gas Oxidation Skid/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
compressed gases requiring oxidation	LA-W918	D001	6176	0.081.32
Totals			6176	0.081.32

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated on-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	03/10/98
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operations and begin treating mixed waste	05/10/02
D. Complete treatment of existing wastes to applicable regulatory standards, or	08/28/03
E. Complete shipping of existing wastes to an off-site treatment facility.	08/28/03
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.10 Mercury Amalgamation (MWIR Treatment ID PI-S801)

Treatability Group(s):

LLMW for Amalgamation/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
elemental mercury	LA-W920	D006, D009, F005	4574	0.500.54
Totals			4574	0.500.54

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated off-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	01/30/98
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operations and begin treating mixed waste	06/05/00
D. Complete treatment of existing waste to applicable regulatory standards, or	11/15/00
E. Complete shipping of existing wastes to an off-site treatment facility.	11/15/00
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.2 Mixed Waste Streams for Which Technology Requires Adaptation or for Which No Technology Exists

The following subsections summarize mixed waste streams for which technology requires adaptation or for which no technology exists.

3.2.1 Hydrothermal Processing

Treatability Group(s):

LLMW for Hydrothermal Processing/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
halogenated organic liquids	LA-W907	D001, D002, D003, D007, D009, D018, D019, D022, D028, D029, D035, D043, F001, F002, F003, F005, U077, U080, U226, U227, U228, U236	385512	16.5818.12
nonhalogenated organic liquids	LA-W908	D001, D002, D003, D004, D007, D008, D009, D011, D018, D038, D040, F002, F003, F004, F005, U002, U019, U169, U188, U220, U246	275814	14.3420.63
bulk oils	LA-W909	D002, D004, D005, D006, D007, D008, D009, D010, D011, D021, D027, D039, F001, F002, F003, F005	2864	3.757.51
PCB wastes with RCRA components	LA-W910	D008, D039, F002	4	0.74
Totals			6921394	35.4147.00

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
inorganic liquid and solid oxidizers	LA-W923	D001, D003, D005	5586	0.200.58
Totals			5586	0.200.58

Treatment Technology:

The preferred destruction treatment technology option for this treatability group is Hydrothermal Processing which is a technology that needs development for adaptation to treat radioactive and PCB-bearing waste. This treatment technology is being adapted at LANL and is expected to be

developed into a mobile treatment unit. The GJPO schedule for deployment of the unit indicates its possible availability to LANL after February 2002. Shipment off-site for treatment is a parallel preferred option. Respondents shall submit treatment or off-site shipment schedules and options for NMED's approval by November 30, 1998. Treatment or other options other than off-site shipment shall be carried out pursuant to the revision process. Off-site shipments must be completed by February 2002.

Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

3.3 Mixed Waste Requiring Further Characterization or for Which Technology Assessment Has Not Been Done (MWIR Treatment ID LA-S701)

Treatability Group(s):

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
lead wastes - TBD	LA-W924	D003, D008	186129	51.4440.16
mercury wastes - TBD	LA-W925 LA-W925-0	D007, D008, D009, F001	63	18.30
compressed gases - TBD	LA-W926	D001, D007, D009, D022, P056, U080, U226	10	1.25
biochemical laboratory wastes	LA-W927	D001, D003	9	1.34
dewatered treatment sludge	LA-W928	see Subsection 3.3 in the Background Volume	61	12.71
Totals			329272	85.0073.76

Treatment Technology:

The following steps will be taken to properly characterize this waste:

- Conduct additional generator interviews
- Prepare a sampling plan for waste not adequately characterized
- Conduct sampling and analysis
- Determine treatment options

Activities for wastes originally belonging to these treatability groups as listed above.

Activity	Compliance Dates
A. Complete generator interviews	10/30/95
B. Complete sampling and analysis plan	1/30/96
C. Complete sampling and analysis	9/30/98
D. Complete determination of treatment options, or	12/20/98
E. Complete shipping of existing wastes to an off-site treatment facility, or submit documentation assigning waste items to applicable treatability groups.	12/20/98 12/20/00
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

Additional wastes and treatability groups:

The following additional wastes will require management in this category, according to the Activities and Compliance Dates listed below.

Treatability group	MWIR waste ID	RCRA Codes	Number of items	Net volume (m3)
mercury wastes-TBD	LA-W925-4	D007, D008, D009, F001	37	0.42
mercury wastes-TBD	LA-W925-5	D007, D008, D009, F001	14	1.52
explosives	LA-W932	D003	1	0.000001
labpacks	LA-W933	D001 D002 D003 D004 D005 D006 D007 D008 D010 D011 P012 P029 P098 P106 P113 P120 U131 U144 U145 U188 U190 U204 U216 U219	142	0.30
Totals			194	2.24

Activities for wastes belonging to these treatability groups and subgroups.

Activity	Compliance Dates
G. Complete sampling and analysis plan	1/30/99
H. Complete sampling and analysis	9/30/01
I. Complete determination of treatment options	12/20/01
J. Complete shipping of wastes to an off-site treatment facility, or submit documentation assigning waste items to applicable treatability groups	12/20/03
K. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at off-site facility

3.4 Plans for Other Types of Activities

The following subsection summarizes plans for other types of activities.

3.4.1 Lead Decontamination (MWIR Treatment ID LA-S001)/Off-site Treatment (preferred option)

Treatability Group(s):

Treatability group	MWIR waste ID	Net volume (m ³) First category		Preferred option Second category		Total	
		No. Items	Net volume (m ³)	No. Items	Net volume (m ³)	No. Items	Net volume (m ³)
lead for surface contamination	LA-W930	56.20 89	lead decontamination trailer 21.02	62	36.16	56.20 151	57.18
Totals		89	21.02	62	36.16	151	57.18

Treatment Technology:

This treatability group contains two categories of lead for decontamination:

- The first category is lead in the original LA-W930-0 inventory that is amenable to decontamination in the on-site lead decontamination trailer, which was designed to decontaminate simple lead shapes, such as lead bricks, of certain physical dimensions. The trailer is on-site and has operated, but needs an upgrade for prolonged operation. ~~Shipment off-site for treatment is a parallel preferred option~~
- The lead in the second category is lead in the original LA-W930-0 inventory that is not amenable to decontamination in the on-site lead decontamination trailer, plus subsequent additions to the original inventory shown in Appendix B. ~~Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste~~ This lead will be processed using other on-site, ~~the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility~~ decontamination processes, such as dry sandblasting or hand-scrubbing, or sent to off-site lead decontamination services.

~~The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to~~

Any lead not acceptable for on-site or off-site lead decontamination, plus any ~~shipment by DOE~~ lead unsuccessfully decontaminated, will be designated for treatment and disposal at an off-site facility, or for recycle through an off-site capability, such as metal melting to create shielding blocks or a DOE lead bank.-

~~Any and all requirements imposed by the off-site (commercial or non-commercial) treatment~~

~~facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall~~Non-conforming items will be met by DOE reassigned to appropriate treatability groups in accordance with the FFCO.-

~~DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of~~

Should DOE decide to treat or recycle waste at the treatment facility. _____

~~Lead shapes and forms processed using the decontamination trailer~~an off-site non-commercial facility in lieu of plans to treat or recycle such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment/recycle option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment/recycling facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment/recycling site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment/recycling facility.

Lead shapes and forms in the first category.

Activity	Compliance Date
A. complete lead decontamination	09/30/97

BLead shapes and forms in the second category.

~~Complete shipping of existing wastes to an off-site treatment facility~~

~~12/2/98~~

Activity	Compliance Date
A. Provide schedule for development of lead processing techniques and options	06/30/96
B. Complete shipping of existing wastes to an off-site treatment facility.	12/02/98
D. Segregate lead waste into decontamination groupings	07/31/97
C. Provide documentation to NMED that waste was received at off-site facility —E. Complete shipment of wastes to decontamination operations, or	Within 45 days of receipt of waste at treatment facility 12/02/98
F. Determine treatment/disposal or other recycle options for lead waste not acceptable for decontamination	12/02/98
G. Complete treatment/disposal operations or other recycle operations for lead waste not acceptable for decontamination	07/31/99
H. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.4.2 Sorting, Surveying, and Decontamination (MWIR Treatment ID GJ-S804)

Treatability Group(s):

Treatability group	MWIR waste ID	Number of items	Net volume (m ³)
1. nonradioactive or suspect waste items to be surveyed	LA-W929 LA-W929-0(1)	10490	10.580.0
2. nonradioactive or suspect waste items to receive RCRA and radiological characterization	LA-W929 LA-W929-0(2)	1622	3.250.0076
3. nonradioactive or suspect waste items that cannot or should not be sampled	LA-W929 LA-W929-0(3)	390	0.410.0
Totals		12502	14.240.0076

Treatment Technology:

The waste items in part 1 of the original volume in this treatability group will be surveyed using a field operation that will survey waste suspect of radioactive contamination to determine whether it is radioactively contaminated. The work will be done on-site with equipment and staffing provided by LANL or another DOE site. Waste determined not to be radioactively contaminated will be treated using commercial facilities permitted to treat hazardous waste; waste determined to be radioactively contaminated will be assigned to applicable treatability groups and/or sent to offsite facilities for appropriate treatment.

Waste items in part 2 of this treatability group will be surveyed using complete RCRA and radiological sampling and characterization. Waste sampled under this alternative will be treated and disposed as low-level mixed waste; the waste will be assigned to applicable treatability groups and/or sent to off-site facilities for appropriate treatment based on the results of this characterization.

Sampling for this characterization alternative will be conducted in accordance with RCRA SW-846 methods. To ensure an adequate volume of waste material is available for sampling and to maximize the cost effectiveness of the sampling activities, some lab packed and other waste items may be bulked into larger volume containers; all RCRA waste codes will be transferred to the bulked wastes to ensure correct RCRA categorization is maintained. It may be found, when preparing a given drum for sampling, (for example, solid small volume waste items that cannot be sampled in accordance with EPA SW-846 methods) are in fact not amenable to sampling and should have been included in the item count for group 3. If visual inspection so indicates, these waste items will be transferred to Group 3 and assigned to applicable treatability groups based on existing knowledge.

Waste items in part 3 of this treatability group which are confirmed not amenable to sampling (e.g., lead-acid batteries, spray paint cans) will be assigned to applicable treatability groups based on existing knowledge. It may be found, when inspecting a given drum, that some items can in fact be sampled in accordance with EPA SW-846 methods and should have been included in the item count for Group 2. If visual inspection so indicates, these waste items will be transferred to Group 2 and sampled accordingly.

Additional compliance dates will be proposed for any waste items in this treatability group found not to have available treatment/disposal options following a complete review of all survey, analytical, or visual inspection data obtained through these processes.

For all waste items in this treatability group, shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met 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 facility.

Activities for waste items in part 1 of this treatability group.

Activity	Compliance Dates
A. complete field survey	10/30/96
B. submit documentation declaring waste items as nonradioactive, or submit documentation assigning waste items to applicable treatability groups	2/28/97
C. propose additional compliance dates if necessary	4/30/97

Activities for waste items in part 2 of this treatability group.

Activity	Compliance Dates
D. complete RCRA and radiological sampling	1/28/97
E. submit documentation assigning waste items to applicable treatability groups or proposing off-site shipment dates	2/28/97
F. propose additional compliance dates if necessary	4/30/97

Activities for waste items in part 3 of this treatability group.

Activity	Compliance Dates
G. complete visual verification	1/28/97
H. submit documentation assigning waste items to applicable treatability groups or proposing off-site shipment dates	6/30/97
I. propose additional compliance dates if necessary	9/30/97

Additional wastes:

Treatability group	MWIR waste ID	Number of items	Net volume (m ³)
Nonradioactive or suspect waste items	LA-W929-5	1	0.00002
Totals		1	0.00002

Activities for items added as subgroup 5 of this treatability group.

Activity	Compliance Dates
J. Submit documentation assigning waste items to applicable treatability groups or proposing off-site shipment dates	3/31/98
K. Propose additional Compliance Dates if necessary	3/31/98

3.5 Management of "Missing" Items.

Waste Category:

Category	MWIR waste ID	No. Items	Net volume (m ³)
Missing/nonexistent/TBV	None	48	8.81
Totals		48	8.81

Treatment Technology:

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 containers in which it is expected to be, according to the LANL data files for the waste item. In some instances, such items could not be verified as having ever been received in storage at LANL, and further follow-up investigations of the record files revealed that for various reasons, the waste items were never in fact generated, although on paper they were included in the original STP inventory.

In these instances, DOE and UC, and their contractors, perform a thorough inspection of both the physical inventories and the data files. When DOE and UC determine that an STP covered waste item does not exist, transfer of the item to the category called "*Missing/ nonexistent/TBV* (to be verified)", is requested through the revision process associated with the next *Annual Update*.

DOE and UC will re-verify the absence of all "*Missing/ nonexistent/TBV*" items container-by-container, as each STP waste item is being sampled, repackaged, or otherwise prepared for on- or off-site treatment. The final verification that all "*Missing/ nonexistent/TBV*" items do not in fact exist will be completed by April 21, 2004, at which time all remaining MLLW items in the original STP inventory will have been treated. At that time, DOE and UC will request deletion of all items having been fully verified as missing or nonexistent.

At any time during the re-verification process, should any of these items be discovered to exist, NMED will be notified, and approval will be requested for assignment of the rediscovered items to the appropriate TG. If necessary, they will be assigned new Activities and Compliance Dates, in accordance with the terms of the FFCO.

The following steps will be taken to verify presence or absence of this waste:

Activity	Compliance Dates
A. Initiate re-verification process on a shipment-by-shipment basis	01/03/98
B. Complete re-verification process	04/21/04
C. Re-assign any existing items to appropriate treatability groups	04/21/04
D..Complete treatment of existing wastes to applicable regulatory standards, or	10/30/04
E. Complete shipping of existing wastes to an off-site treatment facility	10/30/04
F. Provide documentation to NMED that waste was received at off-site facility _____	Within 45 days of receipt of waste at treatment facility _____

4.0 MIXED TRANSURANIC WASTE

Treatment Group(s):

Assorted Mixed Transuranic Waste

Treatment Technology

Respondents are required to develop treatment technologies and treat mixed transuranic (MTRU) waste at LANL according to the schedule set forth below:

Activity	Compliance Date
A. Development of treatment technologies	June 30, 1999
B. Submit permit application amendment or modification to NMED for treatment of MTRU	December 31, 1999
C. Begin treating MTRU	Six (6) months after NMED permit issuance
D. Complete treatment of existing MTRU to applicable regulatory standards	December 31, 2010

The above schedule is not based on the assumption that WIPP will be a disposal option or that DOE will receive a variance from treatment standards for land disposal of MTRU waste to be disposed at WIPP. All revisions to compliance dates shall be in accordance with the procedures set forth in the compliance order.

CPV APPENDIX A HISTORY OF STP REVISIONS AND AMENDMENTS

As discussed in CPV Section 1.3, the STP Compliance Plan Volume 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 Federal Facility Compliance Order, as amended and revised. This Appendix provides a summary of these CPV changes, and of modifications to the FFCO since its issuance.

To date, there have been five revisions and two amendments to the CPV. In addition, the FFCO was amended once, on May 20, 1997. The following table provides a summary of these changes. More detailed descriptions can be found in the CPV Update portion of each year's STP *Annual Update*, and the original correspondence requesting each change.

Action	Document Modified	Effective Date	Effect on FFCO/STP
Rev. 1.0	STP/CPV	6/12/96	Added off-site treatment as a parallel preferred option for most MLLW treatability groups
Rev. 2.0	STP/CPV	12/9/96	Reduced volume of LA-W928 by approving reclassification of sludges as LLW
Amendment 1.0	STP/CPV	10/30/96	Divided original volume of LA-W929 into three subgroups, and added new Activities and Compliance Dates
Rev. 3.0	STP/CPV	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/CPV	9/4/97	Extended CPV Activity 3.1.2B Compliance Date to 12/29/97
Rev. 4.0	STP/CPV	(to be added)	Transferred original volume of LA-W929 from three subgroups to other treatability groups, added treatability groups, and deleted treated items
Rev. 5.0	STP/CPV	(to be added)	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 CPV Appendices, and deleted treated items

CPV APPENDIX B SUMMARY OF CPV INVENTORY CHANGES

The following table provides a comprehensive summary of changes to the CPV covered waste inventories (additions, deletions, and shifts of waste between treatability groups) occurring as of the date of this revision. The volumes given in the table reflect changes to the individual MLLW treatability group volumes due to increases or decreases, as noted.

Key to Reading the Subgroups

The original STP inventory in each MLLW treatability group is now denoted as subgroup 0 of that treatability group (e.g., the original volume of STP treatability group LA-W906 became LA-W906-0). The original October 4, 1995 STP inventory in each MLLW treatability group has been modified through the revision process in the FFCO. The following revisions have affected volumes in individual treatability groups to date:

Revision	Effect on Volumes
Rev. 2.0	Reduced volume of LA-W928
Rev. 3.0	Divided original volume of LA-W929 into three subgroups
Rev. 4.0	Transferred original volume of LA-W929 from three subgroups to other treatability groups, added new treatability groups
Rev. 5.0	Added volumes to several treatability groups

Each revision that has added volumes to individual treatability groups has resulted in creation of an additional subgroup of that treatability group, 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).

Additions and Deletions to Date

To date, MLLW inventory increases and decreases have been incorporated into the covered waste inventories through Revisions 2.0, 4.0, and 5.0. Revision 2.0 incorporated decreases in treatability group LA-W928 due to deletion of covered waste items. Rev. 4.0 resulted in decreases to LA-W929 and increases in other TGs, primarily by transferring LA-W929 items to other TGs. Rev. 5.0 resulted in both additions to and deletions of covered waste volumes (i.e., increases and decreases) in a number of TGs. Therefore, the Appendix B table that follows shows that subgroups -4 and -5 exist for some treatability groups, but not for all.

This table provides a master list of MLLW inventory changes presented in the *Annual Updates*, to enable users of the STP to track all changes in the LANL MLLW covered waste inventory that occurred since the original STP inventory was established in the October 4, 1995 FFCO/CPV.

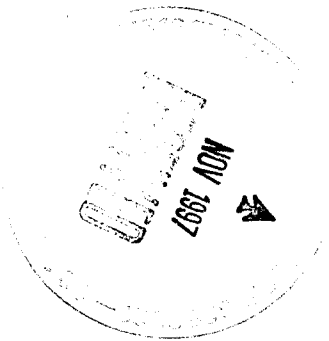
Changes (additions or deletions) to the CPV covered waste inventory have occurred since the end of FY96. However, only those reported as Rev. 5.0 "*Other Changes*" are included in this table. All others will be reported in the next *Annual Update* and associated revision request. Therefore, the "*Net Covered Waste Inventory*" may not fully reflect the actual CPV covered waste inventory as of the date of this revision, in some instances.

ENCLOSURE D

CPV Clean Copy Version

11/24/97

LANL Draft



1.0 PURPOSE AND SCOPE OF THE COMPLIANCE PLAN VOLUME

1.1 Introduction

On October 6, 1992, Congress passed the Federal Facility Compliance Act (FFC Act) to address compliance by the United States Department of Energy (DOE) with the land disposal restrictions (LDR) for the storage of mixed waste set forth in Section 3004(j) of RCRA. The FFC Act requires the 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 RCRA. The FFC Act 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, NMED is required by FFC Act to provide public notice, consider public comments, consult with the Environmental Protection Agency (EPA) and any other state in which a facility affected by the STP is located.

On March 31, 1995, DOE submitted its proposed STP to NMED for the treatment of mixed waste at the Los Alamos National Laboratory (LANL). On April 17, 1995, the public was given notice of and an opportunity to comment to NMED on the draft STP submitted by DOE. After considering public comment and otherwise complying with the FFC Act, NMED determined to approve the draft STP with modifications as provided in this document.

The STP is intended to fulfill the requirements of the FFC Act and establish an enforceable framework to allow DOE and the Regents of the University of California (Respondents) to achieve full compliance with LDR requirements under the New Mexico Hazardous Waste Act (HWA) and RCRA. The compliance dates set forth herein are enforceable time periods in which Respondents are required to develop treatment capacities and technologies, and treat or otherwise meet the requirements set forth for LDR under the HWA and RCRA. The STP will be fully implemented by a Compliance Order issued by NMED on or before October 6, 1995.

1.2 Contents

The STP contains two volumes and is intended to bring Respondents into compliance with LDR storage prohibitions under the HWA and RCRA. The Compliance Plan Volume of the STP provides overall schedules, including compliance dates, for achieving compliance with LDR storage and treatment requirements for mixed waste at LANL. The Compliance Plan includes a schedule for the submittal of applications for permits, construction of treatment facilities, technology development, off-site transportation for treatment, and the treatment of mixed wastes

in full compliance with the HWA and the implementing regulations at 20 NMAC 4.1, which incorporates by reference 40 CFR Parts 260 through 270. The Background Volume of the STP contains progress reports as required in the Compliance Order. Respondents shall carry out the activities described in the STP, including the Compliance Plan Volume of the STP, in accordance with the schedules and requirements set forth in the STP and the Order.

1.3 STP Revisions and Amendments

The STP Compliance Plan Volume (CPV) 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 Federal Facility Compliance Order (FFCO), as amended and revised. Appendix A to the CPV provides a summary of these CPV changes, and of modifications to the FFCO since its issuance.

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 bring existing waste treatment technologies into operation, process backlogged and currently generated waste, include schedules required to develop new facilities and capacity for treatment and establish an overall time frame 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 have been identified and developed. For the waste that will be treated on-site, the categories of activities for compliance dates identified in Table I shall apply. Compliance dates for the activities identified in Table I may be found in Section 3.1.

Table I. Categories of Activities for Compliance for Mixed Waste with Existing Treatment Technologies.

- A. Submit permit applications to the 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 have been identified and developed, or the treatment technology must be modified or adapted to apply to such waste. For the waste that will be treated on-site, the categories of activities for compliance dates are identified in Table II and shall apply. Compliance dates for the activities identified in Table II may be found in Section 3.2.

Table II. 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.
- E. Commence systems testing.
- F. Begin treating mixed waste.
- G. Complete treatment of existing wastes to applicable regulatory standards.

2.1.3 Requirements Pertaining to Radionuclide Separation

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

Table III. Categories of Activities for Compliance Dates for Radionuclide Separation of Mixed Waste

- 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 a NMED permit application.

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

In lieu of plans to treat mixed-waste on-site, DOE may treat waste at an off-site facility (at a commercial or non-commercial mixed waste treatment facility), or DOE may recycle waste at an off-site facility. Should DOE elect to use off-site recycling facilities in lieu of (or in combination with) treatment, it will follow the requirements prescribed in this Section in the same manner as if the waste was being shipped off-site for treatment. Any and all requirements imposed by the off-site treatment/recycling facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment/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 a non-commercial 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 off-site non-commercial 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 forty-five (45) working days of receipt of waste at the treatment/recycling facility. Activities for mixed waste to be shipped off-site for treatment/recycling at a non-commercial facility are identified in Table V.

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

**Table IV. Activities for Mixed Waste to be Shipped Off-Site
for Treatment or Recycling at a Commercial facility**

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

2.1.4.1 Specific Site Requirements for Non-commercial Treatment Facilities

Shipment to Idaho National Engineering Laboratory

Prior to shipment, Idaho National Engineering Laboratory and Idaho Division of Environmental Quality shall be notified of any pending shipments of waste prior to shipment should DOE ship mixed low-level waste to INEL. Proper procedures including additional approvals (if necessary) and documentation shall be completed prior to the shipment of wastes to INEL. 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 thirty (30) working days after receipt of shipment of treatment residuals or newly generated waste streams from INEL.

Shipments of low-level mixed wastes to planned facilities (not yet existing) will occur only after that treatment and schedules are approved by DOE-ID 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

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

Table V. Activities for Mixed Waste to be Shipped Off-Site for Treatment or Recycling at a Non-commercial facility

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

2.1.5 Plans Related to Other Mixed Waste Activities

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

3.0 LOW-LEVEL MIXED WASTE STREAMS

This Chapter presents proposed schedules for treatment technologies and the preferred options to treat low-level mixed waste streams (MLW or LLMW) at LANL. All preferred options not described below must be approved by NMED in accordance with the revision process pursuant to the Compliance Order.

The original October 4, 1995 STP inventory in each MLLW treatability group has been modified through the revision process in the FFCO. The table in CPV Appendix B provides a comprehensive summary of changes to the CPV covered waste inventories (additions, deletions, and shifts of waste between treatability groups) occurring as of the date of this revision. In Appendix B, 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 Sections of this chapter, 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 have been assigned Activities and Compliance Dates unique to that subgroup, those subgroups are detailed in the text. For a complete listing of volumes by subgroup for all treatability groups, please refer to Appendix B.

3.1 Mixed Waste Streams for Which Technology Exists

The following subsections summarize LLMW treatability groups for which technology exists.

3.1.1 Off-site Treatment by Thermal Treatment

Treatability Group(s):

LLMW for ~~Off-site~~ Thermal Treatment (MWIR Treatment ID DS-S001)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
IPA wastes	LA-W901	D001, D009, F002, F003, F005	7	0.02
scintillation fluids	LA-W902	D001, F003, F005	1	0.0038
Totals			8	0.02

Treatment Technology:

The waste will be treated at an off-site facility that combusts organic liquid waste. Should DOE decide to treat waste at an off-site non-commercial facility, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Activity	Compliance Dates
A. Meet all regulatory requirements prior to shipping waste	9/30/96
B. Complete shipping waste	12/30/96
C. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.2 Off-site Treatment by Stabilization or Macroencapsulation

Treatability Group(s):

LLMW for Stabilization

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (M ³)
lead blankets	LA-W903	D007, D008	0	0.00
soil with heavy metals	LA-W904	D004, D005, D006, D007, D008, D009, D010, D011	59	10.44
ER soils	LA-W905	D028, D029, F001, F005 D010, D011	0	0.00
Totals			59	10.44

Treatment Technology:

The waste will be treated at an off-site facility that stabilizes or macroencapsulates wastes. Should DOE decide to treat waste at an off-site non-commercial facility, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Activity	Compliance Dates
A. Meet all regulatory requirements prior to shipping waste	05/30/97
B. Complete shipping waste	12/30/98
C. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.3 Evaporative Oxidation (MWIR Treatment ID GJ-S801C)

Treatability Group(s):

LLMW for Evaporative Oxidation/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
aqueous organic liquids	LA-W906	D001, D002, D005, D007, D008, D009, D010, D018, D019, D022, D027, D028, D030, D032, D033, D036, D037, D038, D039, D041, D042, D043, F001, F002, F003, F004, F005	173	10.89
Totals			173	10.89

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated off-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site treatment facility (commercial or non-commercial) and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	12/30/96
B. Initiate construction	As specified in the NMED permit.
C. Complete system test and commence operation and begin treating mixed waste	6/19/99
D. Complete treatment of existing wastes to applicable regulatory standards, or	2/09/00
E. Complete shipment of existing wastes for treatment to an off-site facility.	2/09/00
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.4 Thermal Desorption (MWIR Treatment ID GJ-S801B)

LLMW for Thermal Desorption/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
organic-contaminated combustible solids	LA-W911	D001, F001, F002, F003, F005	378	35.65
Totals			378	35.65

LLMW for Thermal Desorption

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
organic-contaminated noncombustible solids	LA-W919	D001, D003, D004, D005, D006, D007, D008, D009, D010, D011, D027, D030, D032, D033, D034, D042, D043, F001, F002, F004, F005	177	18.62
Totals			177	18.62

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated off-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	11/16/98
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operations and begin treating mixed waste	02/01/01
D. Complete treatment of existing wastes to applicable regulatory standards, or	02/14/02
E. Complete shipping of existing wastes to an off-site treatment facility.	02/14/02
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.5 Macroencapsulation (MWIR Treatment ID PX-S803)

Treatability Group(s):

LLMW for Macroencapsulation/Off-site treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
combustible debris	LA-W912	D001, D002, D003, D005, D006, D007, D008, D009, D011, D035, F001, F002, F003, F005	97	14.85
Totals			97	14.85

LLMW for Macroencapsulation

Treatability group		RCRA codes	Number of items	Net volume (m ³)
activated or inseparable lead	LA-W921	D008	32	8.12
noncombustible debris	LA-W922	D001, D004, D005, D006, D007, D008, D009, D010, D011	157	30.74
Totals			189	38.86

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated off-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	01/04/98
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operation and begin treating mixed waste	02/01/00
D. Complete treatment of existing wastes to applicable regulatory standards, or	08/25/00
E. Complete shipping of existing wastes to an off-site treatment facility.	08/25/00
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.6 Chemical Plating Waste Treatment Skid (MWIR Treatment ID LA-S004)

Treatability Group(s):

LLMW for Chemical Plating Waste Skid/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
aqueous wastes with heavy metals	LA-W913	D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011	119	2.05
corrosive solutions	LA-W914	D001, D002	189	1.17
aqueous cyanides, nitrates, chromates, and arsenates	LA-W915	D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, F007, P029, P098	23	0.17
Totals			331	3.39

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated off-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Resubmit revised permit application to NMED	10/30/96
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operations and begin treating mixed waste	03/17/00
D. Complete treatment of existing wastes to applicable regulatory standards, or	05/08/01
E. Complete shipping of existing wastes to an off-site treatment facility.	05/08/01
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.7 Water-reactive Metals Treatment Skid (MWIR Treatment ID LA-S003)

Treatability Group(s):

LLMW for Water-Reactive Metals Skid/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
water-reactive wastes	LA-W916	D001, D003	108	6.37
Totals			108	6.37

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated on-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	06/30/01
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operations and begin treating mixed waste	09/09/03
D. Complete treatment of existing wastes to applicable regulatory standards, or	04/21/04
E. Complete shipping of existing wastes to an off-site treatment facility.	04/21/04
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.8 Gas-scrubbing Skid (MWIR Treatment ID LA-S801)

Treatability Group(s):

LLMW for Gas-Scrubbing Skid/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
compressed gases requiring scrubbing	LA-W917	D001, D002, P056	13	0.35
Totals			13	0.35

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated on-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	03/10/98
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operations and begin treating mixed waste	05/10/02
D. Complete treatment of existing wastes to applicable regulatory standards, or	08/28/03
E. Complete shipping of existing wastes to an off- site treatment facility.	08/28/03
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.9 Gas Oxidation Skid (MWIR Treatment ID LA-S801)

Treatability Group(s):

LLMW for Gas Oxidation Skid/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
compressed gases requiring oxidation	LA-W918	D001	176	1.32
Totals			176	1.32

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated on-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	03/10/98
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operations and begin treating mixed waste	05/10/02
D. Complete treatment of existing wastes to applicable regulatory standards, or	08/28/03
E. Complete shipping of existing wastes to an off-site treatment facility.	08/28/03
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.1.10 Mercury Amalgamation (MWIR Treatment ID PI-S801)

Treatability Group(s):

LLMW for Amalgamation/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
elemental mercury	LA-W920	D006, D009, F005	74	0.54
Totals			74	0.54

Treatment Technology

The waste will be treated in a mobile treatment unit that will be fabricated off-site and operated on-site. Shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

Activity	Compliance Dates
A. Submit permit application, amendment or modification to NMED	01/30/98
B. Initiate construction	As specified in the NMED permit
C. Complete system testing and commence operations and begin treating mixed waste	06/05/00
D. Complete treatment of existing waste to applicable regulatory standards, or	11/15/00
E. Complete shipping of existing wastes to an off-site treatment facility.	11/15/00
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.2 Mixed Waste Streams for Which Technology Requires Adaptation or for Which No Technology Exists

The following subsections summarize mixed waste streams for which technology requires adaptation or for which no technology exists.

3.2.1 Hydrothermal Processing

Treatability Group(s):

LLMW for Hydrothermal Processing/Off-site Treatment (preferred option)

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
halogenated organic liquids	LA-W907	D001, D002, D003, D007, D009, D018, D019, D022, D028, D029, D035, D043, F001, F002, F003, F005, U077, U080, U226, U227, U228, U236	512	18.12
nonhalogenated organic liquids	LA-W908	D001, D002, D003, D004, D007, D008, D009, D011, D018, D038, D040, F002, F003, F004, F005, U002, U019, U169, U188, U220, U246	814	20.63
bulk oils	LA-W909	D002, D004, D005, D006, D007, D008, D009, D010, D011, D021, D027, D039, F001, F002, F003, F005	64	7.51
PCB wastes with RCRA components	LA-W910	D008, D039, F002	4	0.74
Totals			1394	47.00

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
Liquid and solid oxidizers	LA-W923	D001, D003, D005	86	0.58
Totals			86	0.58

Treatment Technology:

The preferred destruction treatment technology option for this treatability group is Hydrothermal Processing which is a technology that needs development for adaptation to treat radioactive and PCB-bearing waste. This treatment technology is being adapted at LANL and is expected to be

developed into a mobile treatment unit. The GJPO schedule for deployment of the unit indicates its possible availability to LANL after February 2002. Shipment off-site for treatment is a parallel preferred option. Respondents shall submit treatment or off-site shipment schedules and options for NMED's approval by November 30, 1998. Treatment or other options other than off-site shipment shall be carried out pursuant to the revision process. Off-site shipments must be completed by February 2002.

Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment facility.

3.3 Mixed Waste Requiring Further Characterization or for Which Technology Assessment Has Not Been Done (MWIR Treatment ID LA-S701)

Treatability Group(s):

Treatability group	MWIR waste ID	RCRA codes	Number of items	Net volume (m ³)
lead wastes - TBD	LA-W924	D003, D008	129	40.16
mercury wastes - TBD	LA-W925-0	D007, D008, D009, F001	63	18.30
compressed gases - TBD	LA-W926	D001, D007, D009, D022, P056, U080, U226	10	1.25
biochemical laboratory wastes	LA-W927	D001, D003	9	1.34
dewatered treatment sludge	LA-W928	see Subsection 3.3 in the Background Volume	61	12.71
Totals			272	73.76

Treatment Technology:

The following steps will be taken to properly characterize this waste:

- Conduct additional generator interviews
- Prepare a sampling plan for waste not adequately characterized
- Conduct sampling and analysis
- Determine treatment options

Activities for wastes originally belonging to these treatability groups as listed above.

Activity	Compliance Dates
A. Complete generator interviews	10/30/95
B. Complete sampling and analysis plan	1/30/96
C. Complete sampling and analysis	9/30/98
D. Complete determination of treatment options	12/20/98
E. Complete shipping of existing wastes to an off-site treatment facility, or submit documentation assigning waste items to applicable treatability groups.	12/20/00
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

Additional wastes and treatability groups:

The following additional wastes will require management in this category, according to the Activities and Compliance Dates listed below.

Treatability group	MWIR waste ID	RCRA Codes	Number of items	Net volume (m3)
mercury wastes-TBD	LA-W925-4	D007, D008, D009, F001	37	0.42
mercury wastes-TBD	LA-W925-5	D007, D008, D009, F001	14	1.52
explosives	LA-W932	D003	1	0.000001
labpacks	LA-W933	D001 D002 D003 D004 D005 D006 D007 D008 D010 D011 P012 P029 P098 P106 P113 P120 U131 U144 U145 U188 U190 U204 U216 U219	142	0.30
Totals			194	2.24

Activities for wastes belonging to these treatability groups and subgroups.

Activity	Compliance Dates
G. Complete sampling and analysis plan	1/30/99
H. Complete sampling and analysis	9/30/01
I. Complete determination of treatment options	12/20/01
J. Complete shipping of wastes to an off-site treatment facility, or submit documentation assigning waste items to applicable treatability groups	12/20/03
K. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at off-site facility

3.4 Plans for Other Types of Activities

The following subsection summarizes plans for other types of activities.

3.4.1 Lead Decontamination (MWIR Treatment ID LA-S001)/Off-site Treatment (preferred option)

Treatability Group(s):

Treatability group	MWIR waste ID	First category		Second category		Total	
		No. Items	Net volume (m ³)	No. Items	Net volume (m ³)	No. Items	Net volume (m ³)
lead for surface contamination	LA-W930	89	21.02	62	36.16	151	57.18
Totals		89	21.02	62	36.16	151	57.18

Treatment Technology:

This treatability group contains two categories of lead for decontamination:

- The first category is lead in the original LA-W930-0 inventory that is amenable to decontamination in the on-site lead decontamination trailer, which was designed to decontaminate simple lead shapes, such as lead bricks, of certain physical dimensions. The trailer is on-site and has operated, but needs an upgrade for prolonged operation.
- The lead in the second category is lead in the original LA-W930-0 inventory that is not amenable to decontamination in the on-site lead decontamination trailer, plus subsequent additions to the original inventory shown in Appendix B. This lead will be processed using other on-site decontamination processes, such as dry sandblasting or hand-scrubbing, or sent to off-site lead decontamination services.

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

Should DOE decide to treat or recycle waste at an off-site non-commercial facility in lieu of plans to treat or recycle such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment/recycle option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment/recycling facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment/recycling site shall be met by DOE. DOE will notify the NMED Project Manager in writing as soon as possible and in any event within forty-five (45) working days of receipt of waste at the treatment/recycling facility.

Lead shapes and forms in the first category.

Activity	Compliance Date
A. complete lead decontamination	09/30/97

Lead shapes and forms in the second category.

Activity	Compliance Date
A. provide schedule for development of lead processing techniques and options	06/30/96
D. Segregate lead waste into decontamination groupings	07/31/97
E. Complete shipment of wastes to decontamination operations, or	12/02/98
F. Determine treatment/disposal or other recycle options for lead waste not acceptable for decontamination	12/02/98
G. Complete treatment/disposal operations or other recycle operations for lead waste not acceptable for decontamination	07/31/99
H. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

3.4.2 Sorting, Surveying, and Decontamination (MWIR Treatment ID GJ-S804)

Treatability Group(s):

Treatability group	MWIR waste ID	Number of items	Net volume (m ³)
1. nonradioactive or suspect waste items to be surveyed	LA-W929-0(1)	0	0.0
2. nonradioactive or suspect waste items to receive RCRA and radiological characterization	LA-W929-0(2)	2	0.0076
3. nonradioactive or suspect waste items that cannot or should not be sampled	LA-W929-0(3)	0	0.0
Totals		2	0.0076

Treatment Technology:

The waste items in part 1 of the original volume in this treatability group will be surveyed using a field operation that will survey waste suspect of radioactive contamination to determine whether it is radioactively contaminated. The work will be done on-site with equipment and staffing provided by LANL or another DOE site. Waste determined not to be radioactively contaminated will be treated using commercial facilities permitted to treat hazardous waste; waste determined to be radioactively contaminated will be assigned to applicable treatability groups and/or sent to offsite facilities for appropriate treatment.

Waste items in part 2 of this treatability group will be surveyed using complete RCRA and radiological sampling and characterization. Waste sampled under this alternative will be treated and disposed as low-level mixed waste; the waste will be assigned to applicable treatability groups and/or sent to off-site facilities for appropriate treatment based on the results of this characterization.

Sampling for this characterization alternative will be conducted in accordance with RCRA SW-846 methods. To ensure an adequate volume of waste material is available for sampling and to

maximize the cost effectiveness of the sampling activities, some lab packed and other waste items may be bulked into larger volume containers; all RCRA waste codes will be transferred to the bulked wastes to ensure correct RCRA categorization is maintained. It may be found, when preparing a given drum for sampling, (for example, solid small volume waste items that cannot be sampled in accordance with EPA SW-846 methods) are in fact not amenable to sampling and should have been included in the item count for group 3 . If visual inspection so indicates, these waste items will be transferred to Group 3 and assigned to applicable treatability groups based on existing knowledge.

Waste items in part 3 of this treatability group which are confirmed not amenable to sampling (e.g., lead-acid batteries, spray paint cans) will be assigned to applicable treatability groups based on existing knowledge. It may be found, when inspecting a given drum, that some items can in fact be sampled in accordance with EPA SW-846 methods and should have been included in the item count for Group 2. If visual inspection so indicates, these waste items will be transferred to Group 2 and sampled accordingly.

Additional compliance dates will be proposed for any waste items in this treatability group found not to have available treatment/disposal options following a complete review of all survey, analytical, or visual inspection data obtained through these processes.

For all waste items in this treatability group, shipment off-site for treatment is a parallel preferred option. Should DOE decide to treat waste at an off-site non-commercial facility in lieu of plans to treat such waste on-site, the DOE shall notify the NMED Project Manager in writing as soon as possible and in any event within fourteen (14) working days after confirmation of a shipment date with the affected off-site facility. The NMED Project Manager shall approve in writing the off-site non-commercial treatment option proposed by DOE prior to any shipment by DOE.

Any and all requirements imposed by the off-site (commercial or non-commercial) treatment facility and state regulatory, federal regulatory or other regulatory requirements applicable at the treatment site shall be met 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 facility.

Activities for waste items in part 1 of this treatability group.

Activity	Compliance Dates
A. complete field survey	10/30/96
B. submit documentation declaring waste items as nonradioactive, or submit documentation assigning waste items to applicable treatability groups	2/28/97
C. propose additional compliance dates if necessary	4/30/97

Activities for waste items in part 2 of this treatability group.

Activity	Compliance Dates
D. complete RCRA and radiological sampling	1/28/97
E. submit documentation assigning waste items to applicable treatability groups or proposing off-site shipment dates	2/28/97
F. propose additional compliance dates if necessary	4/30/97

Activities for waste items in part 3 of this treatability group.

Activity	Compliance Dates
G. complete visual verification	1/28/97
H. submit documentation assigning waste items to applicable treatability groups or proposing off-site shipment dates	6/30/97
I. propose additional compliance dates if necessary	9/30/97

Additional wastes:

Treatability group	MWIR waste ID	Number of items	Net volume (m ³)
Nonradioactive or suspect waste items	LA-W929-5	1	0.00002
Totals		1	0.00002

Activities for items added as subgroup 5 of this treatability group.

Activity	Compliance Dates
J. Submit documentation assigning waste items to applicable treatability groups or proposing off-site shipment dates	3/31/98
K. Propose additional Compliance Dates if necessary	3/31/98

3.5 Management of "Missing" Items.

Waste Category:

Category	MWIR waste ID	No. Items	Net volume (m ³)
Missing/nonexistent/TBV	None	48	8.81
Totals		48	8.81

Treatment Technology:

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 containers in which it is expected to be, according to the LANL data files for the waste item. In some instances, such items could not be verified as having ever been received in storage at LANL, and further follow-up investigations of the record files revealed that for various reasons, the waste items were never in fact generated, although on paper they were included in the original STP inventory.

In these instances, DOE and UC, and their contractors, perform a thorough inspection of both the physical inventories and the data files. When DOE and UC determine that an STP covered waste item does not exist, transfer of the item to the category called "*Missing/ nonexistent/TBV* (to be verified)", is requested through the revision process associated with the next *Annual Update*.

DOE and UC will re-verify the absence of all "*Missing/ nonexistent/TBV*" items container-by-container, as each STP waste item is being sampled, repackaged, or otherwise prepared for on- or off-site treatment. The final verification that all "*Missing/ nonexistent/TBV*" items do not in fact exist will be completed by April 21, 2004, at which time all remaining MLLW items in the original STP inventory will have been treated. At that time, DOE and UC will request deletion of all items having been fully verified as missing or nonexistent.

At any time during the re-verification process, should any of these items be discovered to exist, NMED will be notified, and approval will be requested for assignment of the rediscovered items to the appropriate TG. If necessary, they will be assigned new Activities and Compliance Dates, in accordance with the terms of the FFCO.

The following steps will be taken to verify presence or absence of this waste:

Activity	Compliance Dates
A. Initiate re-verification process on a shipment-by-shipment basis	01/03/98
B. Complete re-verification process	04/21/04
C. Re-assign any existing items to appropriate treatability groups	04/21/04
D. Complete treatment of existing wastes to applicable regulatory standards, or	10/30/04
E. Complete shipping of existing wastes to an off-site treatment facility	10/30/04
F. Provide documentation to NMED that waste was received at off-site facility	Within 45 days of receipt of waste at treatment facility

4.0 MIXED TRANSURANIC WASTE

Treatment Group(s):

Assorted Mixed Transuranic Waste

Treatment Technology

Respondents are required to develop treatment technologies and treat mixed transuranic (MTRU) waste at LANL according to the schedule set forth below:

Activity	Compliance Date
A. Development of treatment technologies	June 30, 1999
B. Submit permit application amendment or modification to NMED for treatment of MTRU	December 31, 1999
C. Begin treating MTRU	Six (6) months after NMED permit issuance
D. Complete treatment of existing MTRU to applicable regulatory standards	December 31, 2010

The above schedule is not based on the assumption that WIPP will be a disposal option or that DOE will receive a variance from treatment standards for land disposal of MTRU waste to be disposed at WIPP. All revisions to compliance dates shall be in accordance with the procedures set forth in the compliance order.

CPV APPENDIX A HISTORY OF STP REVISIONS AND AMENDMENTS

As discussed in CPV Section 1.3, the STP Compliance Plan Volume 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 Federal Facility Compliance Order, as amended and revised. This Appendix provides a summary of these CPV changes, and of modifications to the FFCO since its issuance.

To date, there have been five revisions and two amendments to the CPV. In addition, the FFCO was amended once, on May 20, 1997. The following table provides a summary of these changes. More detailed descriptions can be found in the CPV Update portion of each year's STP Annual Update, and the original correspondence requesting each change.

Action	Document Modified	Effective Date	Effect on FFCO/STP
Rev. 1.0	STP/CPV	6/12/96	Added off-site treatment as a parallel preferred option for most MLLW treatability groups
Rev. 2.0	STP/CPV	12/9/96	Reduced volume of LA-W928 by approving reclassification of sludges as LLW
Amendment 1.0	STP/CPV	10/30/96	Divided original volume of LA-W929 into three subgroups, and added new Activities and Compliance Dates
Rev. 3.0	STP/CPV	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/CPV	9/4/97	Extended CPV Activity 3.1.2B Compliance Date to 12/29/97
Rev. 4.0	STP/CPV	(to be added)	Transferred original volume of LA-W929 from three subgroups to other treatability groups, added treatability groups, and deleted treated items
Rev. 5.0	STP/CPV	(to be added)	Added volumes reported in FY95 and FY96 Annual Updates (and certain other items) to several treatability groups, added Activities and Compliance Dates, added CPV Appendices, and deleted treated items

CPV APPENDIX B SUMMARY OF CPV INVENTORY CHANGES

The following table provides a comprehensive summary of changes to the CPV covered waste inventories (additions, deletions, and shifts of waste between treatability groups) occurring as of the date of this revision. The volumes given in the table reflect changes to the individual MLLW treatability group volumes due to increases or decreases, as noted.

Key to Reading the Subgroups

The original STP inventory in each MLLW treatability group is now denoted as subgroup 0 of that treatability group (e.g., the original volume of STP treatability group LA-W906 became LA-W906-0). The original October 4, 1995 STP inventory in each MLLW treatability group has been modified through the revision process in the FFCO. The following revisions have affected volumes in individual treatability groups to date:

Revision	Effect on Volumes
Rev. 2.0	Reduced volume of LA-W928
Rev. 3.0	Divided original volume of LA-W929 into three subgroups
Rev. 4.0	Transferred original volume of LA-W929 from three subgroups to other treatability groups, added new treatability groups
Rev. 5.0	Added volumes to several treatability groups

Each revision that has added volumes to individual treatability groups has resulted in creation of an additional subgroup of that treatability group, 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).

Additions and Deletions to Date

To date, MLLW inventory increases and decreases have been incorporated into the covered waste inventories through Revisions 2.0, 4.0, and 5.0. Revision 2.0 incorporated decreases in treatability group LA-W928 due to deletion of covered waste items. Rev. 4.0 resulted in decreases to LA-W929 and increases in other TGs, primarily by transferring LA-W929 items to other TGs. Rev. 5.0 resulted in both additions to and deletions of covered waste volumes (i.e., increases and decreases) in a number of TGs. Therefore, the Appendix B table that follows shows that subgroups -4 and -5 exist for some treatability groups, but not for all.

This table provides a master list of MLLW inventory changes presented in the *Annual Updates*, to enable users of the STP to track all changes in the LANL MLLW covered waste inventory that occurred since the original STP inventory was established in the October 4, 1995 FFCO/CPV.

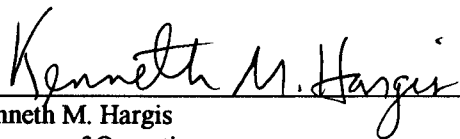
Changes (additions or deletions) to the CPV covered waste inventory have occurred since the end of FY96. However, only those reported as Rev. 5.0 "*Other Changes*" are included in this table. All others will be reported in the next *Annual Update* and associated revision request. Therefore, the "*Net Covered Waste Inventory*" may not fully reflect the actual CPV covered waste inventory as of the date of this revision, in some instances.

Nov 4 1997

**ENCLOSURE E
CERTIFICATION**


**SUBJECT: PROPOSED COMPLIANCE PLAN VOLUME (CPV) REPLACEMENT TEXT
FOR REVISION NO. 4.0 (SORT, SURVEY AND DECONTAMINATION (SSD) ACTIVITIES)
AND REVISION NO. 5.0 (CPV COVERED WASTE INVENTORY), LOS ALAMOS NATIONAL
LABORATORY (LANL) FEDERAL FACILITY COMPLIANCE ORDER (FFCO), OCTOBER 4,
1995**

I certify that I am the project manager responsible for overseeing the implementation of the Site
Treatment Plan for the Los Alamos National Laboratory. To the best of my knowledge and belief, the
information in this document is true, accurate, and complete.



Kenneth M. Hargis
Manager of Operations
Waste Management Program
Environmental Management Programs
Los Alamos National Laboratory
Operator

20 November 1997
Date Signed



H. L. Plum
Regulatory Permitting and Compliance Manager
Los Alamos Area Office
U.S. Department of Energy
Albuquerque Operations
Owner/Operator

20 November 1997
Date Signed

**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Vol- ume (m³)	Items	Vol- ume (m³)	Items	Vol- ume (m³)	Items	Vol- ume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)
3.1.1	IPA Wastes	LA-W901-0	104	15.89							De- crease 96	Decrease 15.87	De- crease 1	De- crease 0.0005 ^b	8	0.02	7	0.02
		LA-W901-5									In- crease 0	Increase 4.11 ^c			0	0.00		
											De- crease 0	Decrease 4.11						
3.1.1	Scintillation Fluids	LA-W902-0	18	2.47					De- crease 15	De- crease 2.24	De- crease 2	Decrease 0.36			1	0.0038	1	0.0038
		LA-W902-5									In- crease 0	Increase 0.13 ^c			0	0.00		
											De- crease 0	Decrease 0.13						
3.1.2	Lead Blankets	LA-W903-0	4	0.74							De- crease 4	Decrease 0.74			0	0.00	0	0.00

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**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)
3.1.2	Soil with Heavy Metals	LA-W904-0	59	10.53									Decrease 1	Decrease 0.2082 ^d	58	10.33	59	10.44
		LA-W904-5									Increase 1	Increase 0.11			1	0.11		
3.1.2	ER Soils	LA-W905-0	36	39.32							Decrease 36	Decrease 39.32			0	0.00	0	0.00
3.1.3	Aqueous Organic Liquids	LA-W906-0	45	1.65											45	1.65	173	10.89
		LA-W906-4					Increase 27	Increase 0.36							27	0.36		
		LA-W906-5							Increase 3	Increase 0.43	Increase 73	Increase 3.62	Increase 1	Increase 0.0005 ^b	101	8.88		
													Increase 24	Increase 4.83 ^e				

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**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)
3.1.4	Organic-Contaminated Combustible Solids	LA-W911-0	307	28.32					Decrease 1	Decrease 0.11	Decrease 1	Decrease 0.11			305	28.10	378	35.65
		LA-W911-4					Increase 33	Increase 0.68							33	0.68		
		LA-W911-5							Increase 2	Increase 0.17	Increase 31	Increase 5.24	Increase 7	Increase 1.46 °	40	6.87		
3.1.4	Organic-Contaminated Noncombustible Solids	LA-W919-0	80	7.82					Decrease 1	Decrease 0.11					79	7.71	177	18.62
		LA-W919-4					Increase 9	Increase 0.38							9	0.38		
		LA-W919-5							Increase 9	Increase 0.001	Increase 74	Increase 9.58	Increase 6	Increase 0.95 °	89	10.53		
3.1.5	Combustible Debris	LA-W912-0	83	13.82											83	13.82	97	14.85
		LA-W912-4					Increase 9	Increase 0.75							9	0.75		
		LA-W912-5									Increase 5	Increase 0.28			5	0.28		

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**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)
3.1.5	Activated or Inseparable Lead	LA-W921-0	74	15.60					Decrease 37	Decrease 7.42	Decrease 23	Decrease 3.41			14	4.77	32	8.12
		LA-W921-5							Increase 51	Increase 10.11	Decrease 45	Decrease 9.05						
											Increase 12	Increase 2.29			18	3.35		
3.1.5	Non-combustible Debris	LA-W922-0	41	5.62					Decrease 1	Decrease .0002 ^h					41	5.62	157	30.74
		LA-W922-4					Increase 53	Increase 2.83							53	2.83		
		LA-W922-5							Increase 21	Increase 1.25	Increase 42	Increase 21.04			63	22.29		

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**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)
3.1.6	Aqueous Wastes with Heavy Metals	LA-W913-0	203	1.85							Decrease 12	Decrease 0.030 ✓			83	1.50	119	2.05
											Decrease 108	Decrease 0.32 ✓						
		LA-W913-4					Increase 25	Increase 0.40							25	0.40		
		LA-W913-5									Increase 11	Increase 0.15 ✓			11	0.15		
3.1.6	Corrosive Solutions	LA-W914-0	162	1.36							Decrease 102	Decrease 0.67 ✓			60	0.69	189	1.17
		LA-W914-4					Increase 90	Increase 0.36							90	0.36		
		LA-W914-5							Increase 13	Increase 0.04 ✓	Increase 26	Increase 0.08 ✓			39	0.12		

**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory ^a (including Rev. 4/5 changes)	
			Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)
3.1.6	Aqueous Cyanides, Nitrates, Chromates, and Arsenates	LA-W915-0	15	0.13					Decrease 1	Decrease 0.0003	Decrease 1	Decrease 0.0002			9	0.13	23	0.17
											Decrease 4	Decrease 0.0031						
		LA-W915-4					Increase 3	Increase 0.002							3	0.002		
		LA-W915-5							Increase 4	Increase 0.02	Increase 7	Increase 0.02			11	0.04		
3.1.7	Water-Reactive Wastes	LA-W916-0	78	6.03											78	6.03	108	6.37
		LA-W916-4					Increase 26	Increase 0.31							26	0.31		
		LA-W916-5							Increase 1	Increase 0.02	Increase 3	Increase 0.01			4	0.03		
3.1.8	Compressed Gases Requiring Scrubbing	LA-W917-0	13	0.35											13	0.35	13	0.35

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**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory ^a (including Rev. 4/5 changes)	
			Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)
3.1.9	Compressed Gases Requiring Oxidation	LA-W918-0	6	0.08											6	0.08	176	1.32
		LA-W918-4					Increase 168	Increase 1.23							168	1.23		
		LA-W918-5									Increase 2	Increase 0.01			2	0.01		
3.1.10	Elemental Mercury	LA-W920-0	45	0.50											45	0.50	74	0.54
		LA-W920-4					Increase 20	Increase 0.02							20	0.02		
		LA-W920-5									Increase 9	Increase 0.02			9	0.02		
3.2.1	Halogenated Organic Liquids	LA-W907-0	385	16.58							Decrease 1	Decrease 0.0025			384	16.58	512	18.12
		LA-W907-4					Increase 97	Increase 1.05							97	1.05		
		LA-W907-5							Increase 13	Increase 0.04	Increase 18	Increase 0.45			31	0.49		

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**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory ^a (including Rev. 4/5 changes)	
			Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)
3.2.1	Nonhalogenated Organic Liquids	LA-W908-0	275	14.34											275	14.34	814	20.63
		LA-W908-4					Increase 409	Increase 3.38							409	3.38		
		LA-W908-5							Increase 53	Increase 0.08	Increase 77	Increase 2.83			130	2.91		
3.2.1	Bulk Oils	LA-W909-0	28	3.75											28	3.75	64	7.51
		LA-W909-4					Increase 8	Increase 1.48							8	1.48		
		LA-W909-5									Increase 28	Increase 2.28			28	2.28		
3.2.1	PCB Wastes with RCRA Components	LA-W910-0	4	0.74											4	0.74	4	0.74
3.2.1	Liquid and Solid Oxidizers	LA-W923-0	55	0.20							Decrease 49	Decrease 0.0834			6	0.117	86	0.58
		LA-W923-4					Increase 67	Increase 0.145							67	0.145		
		LA-W923-5							Increase 24	Increase 0.32	Decrease 11	Decrease 0.0034			13	0.317		

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**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Vol- ume (m³)	Items	Vol- ume (m³)	Items	Vol- ume (m³)	Items	Vol- ume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)
3.3	Lead Waste - TBD	LA-W924-0	186	51.44					De- crease 57	De- crease 11.28					129	40.16	129	40.16
3.3	Mercury Wastes - TBD	LA-W925-0	63	18.30											63	18.30	114	20.24
		LA-W925-4					In- crease 37	In- crease 0.42							37	0.42		
		LA-W925-5								In- crease 14	Increase 1.52				14	1.52		
3.3	Compressed Gases - TBD	LA-W926-0	10	1.25											10	1.25	10	1.25
3.3	Biochemical Laboratory Wastes	LA-W927-0	9	1.34											9	1.34	9	1.34
3.3	Dewatered Treatment Sludge	LA-W928-0	1288	268.17	De- crease 1227	De- crease 255.46									61	12.71	61	12.71

**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory ^a (including Rev. 4/5 changes)	
			Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)
3.4.1	Lead for Surface Decontamination	LA-W930-0	125	56.20					Decrease 83	Decrease 14.43 ^f			Decrease 6	Decrease 8.34 ^d	36	33.43	151	57.18 ^a
		LA-W930-5							Increase 109	Increase 22.50	Increase 6	Increase 1.25			115	23.75		
3.4.2	Nonradioactive or Suspect Waste Items to be Surveyed	LA-W929-0	1250	14.24			Decrease 1196	Decrease 13.97	Decrease 4	Decrease 0.002 ^h	Decrease 2	Decrease 0.00094			2	0.0076 ^g	3	0.0076 ^g
											Decrease 9	Decrease 0.0029						
		LA-W929-5							Increase 1	Increase 0.00002					1	0.00002		
None	Lead Requiring Sorting	LA-W931-0	48	9.97					Decrease 22	Decrease 4.58	Decrease 3	Decrease 0.63			23	4.76	31	5.20
									Increase 28	Increase 5.73	Decrease 28	Decrease 5.73						
		LA-W931-5									Increase 8	Increase 0.44			8	0.44		

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APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES

CPV Section	Treatability Group	MWIR ID (by subgroup)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory* (including Rev. 4/5 changes)	
			Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)	Items	Volume (m³)
3.3 (proposed)	Explosives	LA-W932-0	0	0.00											0	0.00	1	0.000001
		LA-W932-4					Increase 1	Increase 0.000001							1	0.000001		
3.3 (proposed)	Lab Packs	LA-W933-0	0	0.00											0	0.00	142	0.30
		LA-W933-4					Increase 114	Increase 0.17							114	0.17		
		LA-W933-5									Increase 28	Increase 0.13			28	0.13		

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**APPENDIX B SUMMARY TABLE
STP/CPV MLLW INVENTORY CHANGES**

CPV Section	Category	MWIR ID (by substream)	October, 1995 CPV Inventory		Revision 2 Inventory Changes		Revision 4 Inventory Changes		Revision 5 (3/96 FY95 Update Changes)		Revision 5 (3/97 FY96 Update Changes)		Revision 5 (Other Changes)		Subtotal (by substream)		Net Covered Waste Inventory ^a (including Rev. 4/5 changes)	
			Items	Vol- ume (m ³)	Items	Vol- ume (m ³)	Items	Vol- ume (m ³)	Items	Vol- ume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)	Items	Volume (m ³)
3.5 (pro- posed)	Missing/ nonexistent/ TBV	NONE											In- crease 1	In- crease 0.2082 ^d			48	8.81
													In- crease 41	In- crease 41 ^d				
													In- crease 6	In- crease 8.34 ^d				

NOTES:

- ^a Changes (additions or deletions) to the CPV covered waste inventory have occurred since the end of FY96; however, only those reported as Rev. 5.0 "Other Changes" are included in this table. All others will be reported in the March, 1998 FY97 *Annual Update* and associated revision request. Therefore, the "Net Covered Waste Inventory" may not fully reflect the ACTUAL CPV covered waste inventory as of the date of this revision, in some instances.
- ^b As reported in DOE's January 31, 1997 letter, the volume associated with the 104th LA-W901-0 item (0.0005 m³) was repackaged, and bulked with other LA-W906 wastes in 1991, prior to issuance of the original STP. Since this "missing" item has now been located, its volume is being formally transferred to LA-W906 and will be managed as such.
- ^c The 4.11 m³ volume shown for LA-W901, and the 0.13m³ volume shown for LA-W902 are corrections, to reflect the actual volumes shipped in FY96. As reported in the March, 1997 FY96 *Annual Update*, the volume changes for LA-W901 and LA-W902 in FY96 were based on current data in LANL's waste database. They are consistent with the original documentation submitted by the waste generator, and they are representative of actual volumes of these wastes when shipped for treatment. The volumes used during the preparation of the original STP were erroneous, thereby resulting in more waste being shipped than reported in the original STP inventory. This volume inconsistency was discussed in DOE's January 31, 1997 letter.
- ^d These items from LA-W904, LA-W929, and LA-W930 have been determined to be missing or nonexistent. They are being transferred to the category "Missing/Nonexistent/TBV" until their presence or absence are fully and finally verified.
- ^e Although a number of changes (additions or deletions) to the CPV covered waste inventory have occurred since the end of FY96, only those reported here as Rev. 5.0 "Other Changes" are included in this table. These represent additional waste items that became covered waste after the end of FY96, for which opportunities exist for treatment during FY98. All other covered waste inventory changes since the end of FY96 will be reported in the March, 1998 FY97 *Annual Update*.
- ^f This represents a correction to the March, 1996 FY95 *Annual Update* for LA-W930, which had reported that 84 items (14.64 m³) had been removed from inventory. This was incorrect because one drum that had been returned to storage without the database being updated to reflect it was in storage instead of decontaminated.
- ^g Two items in the original STP inventory for LA-W929, *Sort, Survey, and Decontamination*, were shipped to DSSI for treatment on December 18, 1996. This change in the covered waste volume will be reflected in the March, 1998 FY97 *Annual Update*, and will be deleted from the CPV inventory in the associated revision. Therefore, these two items were reported as treated in the various submittals associated with Revision 4 of the STP, but were reported in the March, 1997 FY96 *Annual Update* (and are shown here) as having been in inventory as of September 30, 1996.
- ^h This represents a correction to the March, 1996 FY95 *Annual Update*. It was reported that one LA-W922 item (0.0002 m³) and 4 LA-W929 items (0.002 m³) had been removed from inventory. This was incorrect because these items had been repacked into different containers, and are still in inventory.