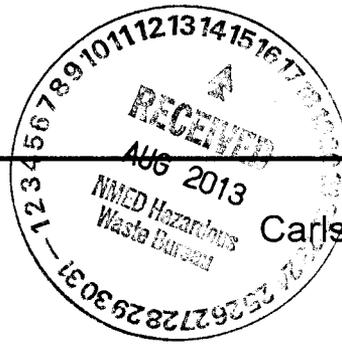


United States Government

ENTERED
Department of Energy

memorandum



Carlsbad Field Office
Carlsbad, New Mexico 88221

DATE: August 15, 2013
REPLY TO
ATTN OF: CBFO:OQA:DSM:MAG:13-2008:UFC 2300.00
SUBJECT: Transmittal of the Interim Audit Report for Recertification Audit A-13-23 of the LANL/CCP TRU Waste Characterization and Certification
TO: M. Lee Bishop, LASO

The Carlsbad Field Office (CBFO) conducted Annual Recertification Audit A-13-23, Los Alamos National Laboratory Central Characterization Program (LANL/CCP) Transuranic (TRU) Waste Characterization and Certification, on July 23-25, 2013. The Interim Audit Report is attached.

The audit team concluded that, overall, the LANL/CCP programs evaluated are adequate relative to the flow-down of requirements, and the technical activities evaluated are satisfactorily implemented and effective in all areas, with one exception as documented in the attached interim report.

As a result of the audit, one CBFO Corrective Action Report was issued under separate cover. Additionally, the audit team identified one condition adverse to quality, which was corrected during the audit, and offered two Recommendations to LANL/CCP management for consideration.

If you have any questions, please contact me at (575) 234-7491.

Dennis S. Miehl
Senior Quality Assurance Specialist

Attachment

cc: w/attachment

- J. Franco, CBFO * ED
- O. Vincent, CBFO ED
- M. Navarrete, CBFO ED
- J. R. Stroble, CBFO ED
- T. Morgan, CBFO ED
- N. Castaneda, CBFO ED
- F. Sharif, NWP ED
- T. Reynolds, NWP/CCP ED
- D. Gulbransen, NWP/CCP ED
- V. Cannon, NWP/CCP ED
- W. Ledford, NWP/CCP ED
- A. J. Fisher, NWP/CCP ED
- M. Walker, NWP/CCP ED
- J. Carter, NWP/CCP ED
- J. Hoff, NWP/QA ED
- B. Allen, NWP/QA ED
- S. Punchios, NWP/QA ED
- T. Peake, EPA
- L. Bender, EPA
- E. Feltcorn, EPA

- R. Joglekar, EPA ED
- S. Ghose, EPA ED
- R. Lee, EPA ED
- J. Kieling, NMED ED
- T. Kliphuis, NMED ED
- S. Holmes, NMED ED
- R. Maestas, NMED ED
- C. Smith, NMED ED
- D. Winters, DNFSB ED
- J. Harvill, CTAC ED
- R. Allen, CTAC ED
- B. Pace, CTAC ED
- D. Harvill, CTAC ED
- G. White, CTAC ED
- Site Documents ED
- WWIS Database Administrators ED
- WIPP Operating Record ED
- CBFO QA File
- CBFO M&RC

*ED denotes electronic distribution



**U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE**

INTERIM AUDIT REPORT

OF THE

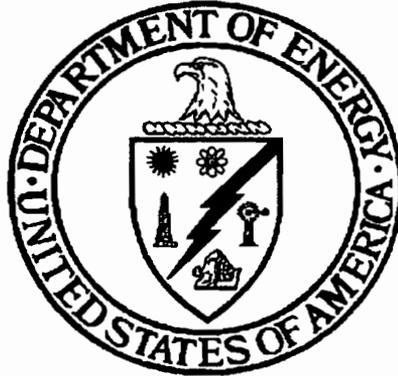
**LOS ALAMOS NATIONAL LABORATORY
CENTRAL CHARACTERIZATION PROGRAM**

LOS ALAMOS, NEW MEXICO

AUDIT NUMBER A-13-23

July 23 – 25, 2013

TRU WASTE CHARACTERIZATION AND CERTIFICATION



Prepared by:

Berry D. Pace
Berry D. Pace, CTAC
Audit Team Leader

Date:

8/15/13

Approved by:

Martin Vincent
Oba Vincent, CBFO
Acting Quality Assurance Director

Date:

8-15-13

1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Recertification Audit A-13-23 was conducted to evaluate the continued adequacy and effectiveness of established programs for transuranic (TRU) waste characterization and transportation activities performed for the Los Alamos National Laboratory (LANL) by the Nuclear Waste Partnership, LLC (NWP) Central Characterization Program (CCP). The audit team evaluated the programs, procedures, and processes for characterizing and transporting contact-handled (CH) Summary Category Group (SCG) S3000 homogeneous solids, SCG S4000 soils/gravel, and SCG S5000 debris wastes. The audit was conducted relative to the requirements of the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP), the *CBFO Quality Assurance Program Document (QAPD)*, the *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant (WAC)*, and the *Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC)*.

Audit activities were conducted at LANL facilities in Los Alamos, New Mexico, and at the Skeen-Whitlock Building in Carlsbad, New Mexico, July 23-25, 2013. Overall, the audit team concluded that the LANL/CCP technical and quality assurance (QA) programs evaluated were adequately established for compliance with applicable upper-tier requirements, effectively implemented, and successful in achieving the desired results.

The audit team identified four concerns during the audit. One concern dealt with a departure from a requirement in the real-time radiography (RTR) procedure, which resulted in the issuance of CBFO Corrective Action Report (CAR) 13-051 (see section 6.1). The remaining concerns were in the area of Acceptable Knowledge (AK) and resulted in one minor isolated deficiency that was corrected during the audit (CDA) (see section 6.2), and two Recommendations submitted to management (see section 6.4).

2.0 SCOPE AND PURPOSE

2.1 Scope

The audit team evaluated the following LANL/CCP programs and processes for transuranic (TRU) waste characterization, certification and transportation.

General

- Results of Previous Audits
- Changes in Programs or Operations
- New Programs or Activities Being Implemented
- Changes in Key Personnel

Quality Assurance

- Personnel Qualification and Training
- Nonconformance Reporting
- Records
- Software (version installation)
- Measuring and Test Equipment

Technical

- Acceptable Knowledge (AK)
- Headspace Gas (HSG) Sampling
- Solids Sampling & Analysis (as applicable)
- Real-time Radiography (RTR)
- Visual Examination (VE), including the Off-site Source Recovery Program (OSRP)
- Nondestructive Assay (NDA), including the Performance Demonstration Program (PDP)
- Project Level Data Validation and Verification
- TRUPACT-II Operations/Transportation/Waste Certification/Container Management
- WIPP Waste Information System (WWIS)/Waste Data System (WDS)
- Load Management (Although approved, LANL is not currently conducting load management activities.)

TRUPACT-II Operations/Waste Certification/Transportation

- Container Management
- Packaging Operations
- Waste Certification
- Payload Assembly and Loading
- Load Management
- Leak Testing
- Flammable Gas Analysis
- Shipping Documentation
- Shipping

The evaluation of TRU waste characterization and transportation activities was based on current versions of the following documents.

- Waste Isolation Pilot Plant Hazardous Waste Facility Permit NM4890139088-TSDF
- *CBFO Quality Assurance Program Document*, DOE/CBFO-94-1012
- *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant (WAC)*, DOE/WIPP-02-3122
- *Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC)*
- *CCP Transuranic Waste Characterization Quality Assurance Project Plan (QAPjP)*, CCP-PO-001
- *CCP Transuranic Waste Certification Plan*, CCP-PO-002
- *CCP Transuranic Authorized Methods for Payload Control (CCP CH TRAMPAC)*, CCP-PO-003
- *CCP/LANL Interface Document*, CCP-PO-012
- Related technical and QA implementing procedures

For the purpose of reporting results of this audit, in an agreement reached with the New Mexico Environment Department (NMED) (reference CBFO memorandum CBFO:OQA:DSM:MAG:13-1431 dated May 30, 2013), the audit team used C6 checklists dated May 8, 2012, and March 13, 2013, to ensure that the requirements and activities associated with chemical sampling and analysis were appropriately evaluated, since those activities had been conducted at LANL between the dates of the last recertification audit (A-12-12) and the elimination of chemical sampling and analysis in the Permit modification issued March 13, 2013. That is, the C6 checklists dated May 8, 2012, were used to evaluate chemical sampling and analysis activities performed subsequent to the last recertification audit (A-12-12) through March 13, 2013, and the C6 checklists dated March 13, 2013, were used to evaluate activities not associated with chemical sampling and analysis. To ensure clarity, this report identifies where the May 8, 2012, version of the C6 checklist was used.

2.2 Purpose

Audit A-13-23 was conducted to evaluate the degree of sustained adequacy and effective implementation of program requirements for the characterization, certification and transportation of CH TRU SCG S3000 homogeneous solids, SCG S4000 soils/gravel, and SCG S5000 debris waste for compliance with applicable upper-tier requirements.

3.0 AUDIT TEAM AND OBSERVERS

AUDITORS/TECHNICAL SPECIALISTS

Dennis S. Miehls	Management Representative, CBFO Office of Quality Assurance
Berry Pace	Audit Team Leader, CBFO Technical Assistance Contractor (CTAC)
Rick Castillo	Auditor, CTAC
Cindi Castillo	Auditor, CTAC
Earl Bradford	Auditor, CTAC
Katie Martin	Auditor, CTAC
Tammy Bowden	Auditor, CTAC
Priscilla Martinez	Auditor, CTAC
Kirk Kirkes	Technical Specialist, CTAC
Porf Martinez	Technical Specialist, CTAC
Dick Blauvelt	Technical Specialist, CTAC
B.J. Verret	Technical Specialist, CTAC
Rhett Bradford	Technical Specialist, CTAC
Paul Gomez	Technical Specialist, CTAC
James Oliver	Technical Specialist, CTAC
Joe Willis	Technical Specialist, NWP

OBSERVERS

Jose Franco	CBFO Office of General Manager
Tom Morgan	CBFO Office of the National TRU Program
Norma Castaneda	CBFO Office of the National TRU Program
Court Fesmire	CBFO Office of the National TRU Program
Trais Kliphuis	NMED
Ricardo Maestas	NMED
Steve Holmes	NMED
Siona Briley	NMED
Tim Hall	NMED
Joe Harvill	CTAC
Randall Allen	CTAC

4.0 AUDIT PARTICIPANTS

The LANL/CCP individuals involved in the audit process are identified in Attachment 1. A pre-audit meeting was held on July 23, 2013, in the Universal Research Services (URS) corporate offices in Los Alamos, New Mexico, and at the Skeen-Whitlock Building in Carlsbad, New Mexico. Audit team central work space was provided by LANL/CCP at the URS offices. Daily management briefings were held with LANL/CCP management and staff to discuss audit progress and any concerns that arose. A post-audit meeting was held on July 25, 2013, at the URS offices and in the Skeen-Whitlock Building.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy, Implementation, and Effectiveness

The audit team concluded that the LANL/CCP TRU waste characterization, certification, and transportation programs evaluated are adequately established for compliance with upper-tier requirements, effectively implemented, and satisfactory in achieving the desired results. The specific program elements and areas evaluated are described below. Attachment 2 summarizes the audit results. Attachment 3 lists the program documents examined during the audit. Attachment 4 lists the processes and equipment evaluated.

5.2 General Activities

5.2.1 Results of Previous Audits

The audit team determined that the actions to address the concerns identified during CBFO Audit A-12-12 were effective in precluding recurrence. No similar instances were observed during this audit.

5.2.2 Changes in Programs or Operations

No significant changes in the CCP programs or operations have occurred at LANL since CBFO Audit A-12-12.

5.2.3 New Programs or Activities Being Implemented

The Mobile In-Situ Object Counting System (ISOCS) Large Container Counter (MILCC) for assaying CH 55- gallon drums, standard waste boxes (SWBs), and corrugated metal boxes (CMBs) was added to the program since CBFO Audit A-12-12. This process was evaluated during CBFO Surveillance S-13-29 on June 12, 2013 and determined to be adequate and effective. The evaluation of the MILCC during this audit determined that the process and associated equipment remain adequate and effective.

5.2.3 Changes in Key Personnel

There were no significant changes made in key personnel at LANL since CBFO Audit A-12-12.

5.3 Quality Assurance Activities

The audit team evaluated the QA program elements for personnel qualification and training, nonconformance reporting, and QA records for compliance with applicable upper-tier requirements and the effectiveness of implementation. The evaluation results for each area audited are described below.

Personnel Qualification and Training

The audit team conducted interviews with responsible personnel and reviewed implementing procedure CCP-QP-002, Rev. 35, *CCP Training and Qualification Plan*, to determine the degree to which the procedure adequately addresses upper-tier requirements. Results of the review indicate that the procedure adequately addresses upper-tier requirements. Personnel training records associated with VE (including OSRP), RTR, NDA, HSG sampling, flammable gas analysis (FGA), AK, site project managers (SPMs), and transportation were examined to verify adherence to and implementation of associated requirements and to verify that personnel were appropriately trained/qualified. Record reviews included qualification cards and other pertinent qualification documentation, including attendance sheets/briefings on newly revised AK summaries for RTR and VE operators, capability demonstration tests and training container documentation, eye exams, and other items.

The procedure reviewed and objective evidence assembled provided evidence to confirm that the applicable requirements for Personnel Qualification and Training are adequately established for compliance with upper-tier requirements, effectively implemented, and satisfactory in achieving the desired results. No concerns were identified.

Nonconformance Reporting

The audit team reviewed implementing procedure CCP-QP-005, Rev. 23, *CCP TRU Nonconforming Item Reporting and Control*, to determine the degree to which the procedure adequately addresses upper-tier requirements. Results of the review indicate that the procedure adequately addresses upper-tier requirements.

The audit team interviewed the CCP/Carlsbad project office quality assurance engineer and randomly selected the following nonconformance reports (NCRs) for review.

NCR-LANL-1008-12, R0	NCR-LANL-1030-12, R0	NCR-LANL-1035-12, R0
NCR-LANL-1036-12, R0	NCR-LANL-1534-12, R0	NCR-LANL-1548-12, R0
NCR-LANL-0184-13, R0	NCR-LANL-0192-13, R0	NCR-LANL-0193-13, R0
NCR-LANL-0197-13, R0	NCR-LANL-0589-13, R0	NCR-LANL-1231-12, R0
NCR-LANL-1233-12, R0	NCR-LANL-1328-12, R1	NCR-LANL-1532-12, R0
NCR-LANL-1608-12, R0	NCR-LANL-1611-12, R0	NCR-LANL-1620-12, R0
NCR-LANL-1624-12, R1	NCR-LANL-1626-12, R0	NCR-LANL-1852-12, R0
NCR-LANL-1856-12, R0	NCR-LANL-1857-12, R0	NCR-LANL-1859-12, R0
NCR-LANL-1905-12, R1	NCR-LANL-1969-12, R1	NCR-LANL-1971-12, R0
NCR-LANL-0012-13, R0	NCR-LANL-0037-13, R0	NCR-LANL-0038-13, R0
NCR-LANL-0548-13, R0		

The team concluded that deficiencies are being appropriately documented and tracked through resolution as required. Five of the NCRs selected (NCR-LANL-1010-12, R0; NCR-LANL-1026-12, R0; NCR-LANL-1535-12, R0; NCR-LANL-1538-12, R0; and NCR-LANL-1790-12, R0) documented nonadministrative deficiencies first identified at the SPM level. As required, these NCRs were verified as having been reported to the Permittees within seven days, as required by the Permit. All the NCRs examined were verified to have been entered, managed and tracked in both the CCP data center and the NCR 2012 and 2013 Logs, and through the required reconciliation reporting mechanism.

The procedures reviewed and objective evidence assembled provided evidence to confirm that the applicable requirements for Nonconformance Reporting are adequately established for compliance with upper-tier requirements, effectively implemented, and satisfactory in achieving the desired results. No concerns were identified.

Records

The audit team conducted interviews and reviewed implementing procedures relative to the control and administration of QA records to determine the degree to which the procedures adequately address upper-tier requirements. The audit team reviewed procedures CCP-QP-008, Rev. 21, *CCP Records Management*, and CCP-QP-028, Rev. 15, *CCP Records Filing, Inventorying, Scheduling, and Dispositioning*. Results of the review indicate that the procedures adequately address upper-tier requirements. Control of QA records was verified through review of the CH Records Inventory and Disposition Schedule (RIDS) dated August 2, 2012.

The procedures reviewed and objective evidence assembled provided evidence that the applicable requirements for Records are adequately established for compliance with upper-tier requirements, effectively implemented, and satisfactory in achieving the desired results. No concerns were identified.

5.4 Technical Activities

5.4.1 Acceptable Knowledge

As noted in section 2.0, AK activities were evaluated using WAP checklists C6-1 and C6-3, dated May 8, 2012, since chemical sampling was performed at LANL between the dates of the last recertification audit (A-12-12) and March 13, 2013.

The audit team reviewed the following CCP documents/procedures as they relate to AK to determine the degree to which they adequately address applicable upper-tier requirements.

- CCP-PO-001, Rev. 20 & 21, *CCP Transuranic Waste Characterization Quality Assurance Plan*
- CCP-QP-005, Rev. 22, *CCP TRU Nonconforming Item Reporting and Control*
- CCP-QP-021, Rev. 8, *CCP Surveillance Program*
- CCP-TP-001, Rev. 20, *CCP Project Level Data Validation and Verification*
- CCP-TP-002, Rev. 25, *CCP Reconciliation of DQOs and Reporting Characterization Data*
- CCP-TP-003, Rev. 19, *CCP Data Analysis for S3000, S4000, and S5000 Characterization*
- CCP-TP-005, Rev. 24, *CCP Acceptable Knowledge Documentation*
- CCP-TP-120, Rev. 15 & 16, *CCP Container Management*
- WP 13-QA.03 R22, *Quality Assurance Independent Assessment Program*

Results of the review indicate that the procedures adequately address upper-tier requirements.

The audit team examined AK Summary Reports and approved waste stream profile forms (WSPFs) for waste streams LA-MHD10.001, S5000 debris associated with activities in Technical Area (TA)-39; LA-MIN04-S.001, S3000 homogeneous solids associated with activities in TA-55; and LA-MSG04.001, S4000 soils/gravel associated with activities in TA-21.

The audit team also examined the following completed attachments for each stream as required by CCP procedure CCP-TP-005: Attachment 1, *AK Documentation Checklist*; Attachment 4, *AK Information List*; Attachment 5, *Hazardous Constituents List*; Attachment 6, *Waste Form, Waste Material Parameters, Prohibited Items and Packaging*, along with the justification for waste material parameter weight estimates; and Attachment 8, *Waste Container List*, with memos supporting the addition of containers to the waste stream as applicable.

The team examined numerous AK Source Documents and Source Document Summaries supporting the information in the associated AK Summary Reports, including examples of discrepancies identified between the AK record, characterization activities, and resultant AK reevaluations.

The audit team also reviewed NCRs initiated to address prohibited items identified during RTR of waste drums. These included NCRs to address excess liquids, sealed containers greater than 4 liters, and the presence of impenetrable objects. The WAP-required traceability exercise was conducted for six containers in total from the three streams, including containers from HSG sampling for the debris stream and solids sampling from solids and soil streams. In addition to specific batch data reports (BDRs) for the drums and boxes selected, the team also examined HSG and Solids Sampling Random Container Selection memos, HSG Summary Reports, Solids Summary Reports, container input forms, historical and current database records, AK Accuracy Reports, independent assessment results, and waste stream characterization checklists used to reconcile characterization results with the AK record for waste containers placed in a shipping lot.

In addition to the WAP requirements, the AK audit team examined the AK record to verify compliance with the requirements of the WIPP CH WAC associated with the ten tracked radionuclides and identification of the two most prevalent radionuclides. AK/NDA memos were reviewed for all streams as applicable.

The team identified three AK-related concerns. The first concern resulted in a Recommendation (see section 6.4, Recommendation 1) regarding needed clarification in the language for three AK Summary Reports. These changes were incorporated by CCP into freeze files and will be addressed in the next revisions to the applicable AK Summary Reports.

The second concern involved inconsistencies between the prohibited items listed in the completed Attachment 6 and language in AK Summary Report CCP-AK-LANL-006 for the solids waste stream LA-MIN04.001. This concern was determined to represent a minor/isolated condition adverse to quality (CAQ) that was addressed and corrected during the audit (see section 6.2, CDA 1).

The third concern resulted in a Recommendation (see section 6.4, Recommendation 2) that the AK Expert review the most recent available Draft *Final Report of the Los Alamos Historical Document Retrieval and Assessment Project* and other related documents regarding the presence of beryllium in the subsurface disposal area in TA-21, enter the review and assessment as an AK Source Document into the AK record for waste stream LA-MSG04.001 and update the AK Summary to address potential beryllium contamination.

With the exception of the concerns noted above, the procedures reviewed and objective evidence assembled provided evidence that overall, the applicable requirements for Acceptable Knowledge activities are adequately established for compliance with upper-tier requirements, effectively implemented, and satisfactory in achieving the desired results.

5.4.2 Project-level Data Validation and Verification

As mentioned in section 2.0, project-level data validation and verification activities were evaluated using WAP checklists C6-1, C6-2, C6-3, and C6-4, dated May 8, 2012, since chemical sampling was performed at LANL between the dates of the last recertification audit (A-12-12) and March 13, 2013. Checklist C6-3, dated March 13, 2013, was used for the evaluation of project-level data validation and verification requirements associated with RTR.

The audit team reviewed the following CCP procedures to determine the degree to which they adequately address project-level data validation and verification upper-tier requirements:

- CCP-PO-001, Rev. 20 & 21, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-TP-001, Rev. 20, *CCP Project Level Data Validation and Verification*
- CCP-TP-002, Rev. 25, *CCP Reconciliation of DQOs and Reporting Characterization Data*
- CCP-TP-003, Rev. 19, *CCP Data Analysis for S3000, S4000, and S5000 Characterization*
- CCP-TP-005, Rev. 24, *CCP Acceptable Knowledge Documentation*
- CCP-TP-093, Rev. 17, *CCP Sampling of TRU Waste Containers*
- CCP-TP-162, Rev. 2, *CCP Random Selection of Containers for Solids and Headspace Gas Sampling and Analysis*
- CCP-TP-180, Rev. 3, *CCP Analytical Sample Management*

Results of the review indicate that the procedure adequately addresses upper-tier requirements.

The random selection of containers for waste streams LA-MHD10.001 and LA-MSG04.001 was reviewed, along with the quarterly repeat of data-generation level reviews. Both were determined to be compliant with project-level requirements. Training records for SPMs identified in selected WSPFs and BDRs were reviewed to verify required qualifications and training.

The following WSPF/Characterization Information Summaries and associated BDRs were reviewed:

WSPF LA-MHD.10.001 and CIS lots 1 through 6
WSPF LA-MSG04.001 and CIS Lot 1
WSPF LA-MIN04.001 and CIS lots 1 through 7

Visual Examination

LAVE550081 LAVE550100 LA12-OSR-VE-045 LA13-OSR-VE-003

Headspace Gas

LAHSG1207 LAHSG1208 LAHSG1301
ECL12039M ECL12048M ECL13003M

RTR

LA-HERTR-12-0066 LA-HERTR-12-0096 LA-HERTR-12-0111
LA-HERTR-12-0116

Solid/Soils Sampling and Analysis

SSG12-00006 ALD12028V ALD12028S ALD12028N ALD12028M

BDRs 3LANDA0079, 3LANDA0095, 2LANDA1148 and 2LANDA1156 were examined to verify compliance with project-level data validation and verification for NDA.

The procedures reviewed and objective evidence assembled provided evidence that the applicable requirements for Project Level Data Validation and Verification activities are adequately established for compliance with upper-tier requirements, effectively implemented, and satisfactory in achieving the desired results. No concerns were identified.

5.4.3 Headspace Gas Sampling

As discussed in section 2.0, HSG sampling activities were evaluated using WAP checklists C6-1, C6-3, and C6-4, dated May 8, 2012, since chemical sampling was performed at LANL between the dates of the last recertification audit (A-12-12) and March 13, 2013.

The audit team reviewed the following CCP procedures to determine their adequacy in addressing upper-tier requirements.

- CCP-TP-056, Rev. 5, *CCP HSG Performance Demonstration Plan*
- CCP-TP-082, Rev. 8, *CCP Preparing and Handling Waste Containers for Headspace Gas Sampling*
- CCP-TP-093, Rev. 15, *CCP Sampling of TRU Waste Containers*
- CCP-TP-098, Rev. 3, *CCP Installation of the NucFil HSG Sample Port*
- CCP-TP-106, Rev. 7, *CCP Headspace Gas Sampling Batch Data Report Preparation*
- CCP-TP-162, Rev. 1, *CCP Random Selection of Containers for Solids and Headspace Gas Sampling and Analysis*

Results of the review indicate that the procedures adequately address upper-tier requirements.

HSG sampling and analysis were performed at the Idaho National Laboratory (INL) until the Permit modification of March 13, 2013. Certification audits of INL analytical programs and processes were performed annually.

The audit team interviewed responsible personnel and examined the following HSG BDRs.

LAHSG1204	LAHSG1205	LAHSG1206	LAHSG1207
LAHSG1208	LAHSG1301	LAHSG1302	

The data in the BDRs supported four debris waste streams and were determined to be complete, accurate and compliant with requirements.

Two NCRs generated as a result of HSG sampling were examined to verify that deficiencies were appropriately documented, reported, and resolved in accordance with requirements. Both NCRs dealt with an unanswered question in the Independent Technical Review (ITR) checklist regarding drum age criteria (DAC). In both instances, the deficiencies were verified to be appropriately documented and resolved in accordance with nonconformance reporting requirements. The repetitive nature of the NCRs was evaluated by CCP QA as required and was determined not to constitute a significant condition adverse to quality.

Training records for personnel identified in the BDRs were reviewed and the audit team determined that personnel were appropriately trained/qualified. Completed BDRs were verified for compliance with QA and quality control sampling and reporting requirements. Accuracy and completion of chain of custody forms, sample tags, needle blank results, container data, and temperature equilibration information were verified for each BDR.

Equipment cleanliness documentation was examined and verified to be complete and compliant as required. Proper DAC reporting for containers in each BDR was evaluated. The audit team identified one container that did not meet the DAC. This condition was documented in NCR-LANL-1532-12, associated with BDR LAHSG1204. The container was resampled after the DAC was achieved and results were documented in BDR LAHSG1301. Documentation regarding a field reference standard results report issued in 2007 was also examined and verified to be correct.

The procedures reviewed and objective evidence assembled provided evidence that the applicable requirements for Headspace Gas Sampling activities are adequately established for compliance with upper-tier requirements, effectively implemented, and satisfactory in achieving the desired results. No concerns were identified.

5.4.4 Solids Sampling and Analysis

Solids sampling is not performed at LANL. Containers requiring sampling were transported to the INL for sampling and analysis. The Permit modification approved on March 13, 2013, eliminated the requirement for solids sampling.

5.4.5 Real-time Radiography

The audit team reviewed the following implementing procedures to determine the degree to which they adequately address upper-tier requirements.

- CCP-QP-002, Rev. 35, *CCP Training and Qualification Plan*
- CCP-TP-028, Rev. 8, *CCP Radiographic Test and Training Drum Requirements*
- CCP-TP-053, Rev. 13, *CCP Standard Real-Time Radiography (RTR) Inspection Procedure*
- CCP-TP-198, Rev. 7, *CCP HE-RTR Operating Procedure*

Results of the review indicate that the procedures adequately address upper-tier requirements.

The audit team examined personnel training and qualification documentation including RTR Operator/ITR qualification cards, test drum and training container documentation, and the associated List of Qualified Individuals (LOQI) dated July 22, 2013. The audit team also verified RTR operators received waste stream-specific AK Summary briefings. The audit team evaluated RTR operator-required test and training drum audio/video media for six RTR operators and determined that all RTR operators were properly trained and qualified to perform their assigned tasks.

The audit team evaluated RTR operations performed on two RTR systems used in TA-54. The audit team observed RTR operations on the RTR2 unit in TA-54, building 54-497, including the RTR characterization scan for CH SCG S5000 debris waste container 93617. The audit team also observed RTR operations on the High-Energy RTR system in TA-54, building 54-578, including the RTR characterization scan for CH SCG S3000 solids waste container 93999. The audit team verified the use of current RTR operating procedures and AK summaries. Both RTR units contained the required hardware to effectively characterize CH SCGs S3000 solids, S4000 soils/gravel, and S5000 debris wastes. The audit team interviewed RTR operators and examined RTR operational logbooks LANL-NDE-RTR2-1010 and LANL-NDE-HERTR02-003 to verify that logbook entries were correct and were reviewed by the vendor project manager as required.

The audit team examined the following CH RTR BDRs.

High Energy RTR

LA-HERTR-12-0073 LA-HERTR-12-0109 LA-HERTR-13-0019
LA-HERTR-13-0048

RTR2

LA-RTR2-12-0088 LA-RTR2-12-0091 LA-RTR2-12-0126
LA-RTR2-12-0136

In addition, audio/video media of selected containers were reviewed to verify the accuracy of data recorded on RTR data sheets.

During the review of RTR BDRs, the audit team identified one concern. RTR BDR LA-HERTR-13-0048 (waste stream LA-MHD10.001) noted the presence of batteries, which were not expected to be present based on the associated AK Summary Report (CCP-AK-LANL-014). The cognizant RTR operator did not determine the batteries to represent a concern. Consequently, no NCR was initiated for evaluation by the AK Expert. The presence of batteries, depending on the type, could necessitate the assignment of hazardous waste numbers. This condition suggests that the RTR operator did not possess sufficient knowledge to determine if an identified item was a hazardous waste requiring initiation of an NCR (see section 6.1, CAR 13-051).

With the exception of the concern described above, the audit team determined the procedures reviewed and objective evidence assembled provided evidence that the applicable requirements for Real-time Radiography activities are adequately established for compliance with upper-tier requirements, effectively implemented, and satisfactory in achieving the desired results.

5.4.6 Visual Examination

The audit team reviewed the following CCP VE procedures to determine the degree to which they adequately address upper-tier requirements:

- CCP-PO-001, Rev. 21, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-QP-002, Rev. 35, *CCP Training and Qualification Plan*
- CCP-TP-069, Rev. 6, *CCP Sealed Source Visual Examination and Packaging*
- CCP-TP-113, Rev. 17, *CCP Standard Contact Handled Waste Visual Examination*

Results of the review indicate that the procedure adequately addresses upper-tier requirements.

The audit team conducted interviews with responsible personnel and examined records documenting VE of debris waste, including the OSRP.

The team examined the following VE BDRs.

LAVE500503	LAVE550076	LAVE550080	LAVE550090
LAVE550101	LAVE550113	LAVE4120014	
LA12-OSR-VE-044	LA12-OSR-VE-050	LA13-OSR-VE-001	
LA13-OSR-VE-010			

No visual examination activities were being conducted at the time of the audit. The audit team toured VE facilities in TA-54 building 412 and the Waste Characterization Remediation and Repackaging Facility (WCRRF) to interview operators, verify procedure accessibility, and evaluate the use of logbooks. Method 2 is used by CCP at LANL for conducting VE, i.e., two qualified operators visually examine and process waste. Records of VE operator training were examined, which confirmed that personnel are appropriately trained and qualified. The audit team also verified the appointment letters for VE Experts as required.

The procedures reviewed and objective evidence assembled provided evidence that the applicable requirements for Visual Examination activities are adequately established for compliance with upper-tier requirements, effectively implemented, and satisfactory in achieving the desired results. No concerns were identified.

5.4.7 Nondestructive Assay

The audit team reviewed the following CCP NDA procedures to determine the degree to which they adequately address upper-tier requirements.

- DOE/WIPP-02-3122, Rev. 7.4, *Waste Acceptance Criteria for the Waste Isolation Pilot Plant*
- CCP-QP-002, Rev. 32, *CCP Training and Qualification Plan*
- CCP-TP-001, Rev. 21, *CCP Project Level Data Validation and Verification*
- CCP-TP-058, Rev. 4, *CCP NDA Performance Demonstration Plan*
- CCP-TP-059, Rev. 1, *CCP Operating the Super High Efficiency Neutron Counter Using NDA 2000*
- CCP-TP-063, Rev. 14, *CCP Operating the High Efficiency Neutron Counter Using NDA 2000*
- CCP-TP-064, Rev. 6, *CCP Calibrating the High Efficiency Neutron Counter and the Super High Efficiency Neutron Counter Using NDA 2000*
- CCP-TP-076, Rev. 0, *Operating the Mobile ISOCS Large Container Counter Using NDA 2000*
- CCP-TP-077, Rev. 0, *CCP Calibrating the Mobile ISOCS Large Container Counter Using NDA*
- CCP-TP-103, Rev. 11, *CCP Data Reviewing, Validating & Reporting Procedure for the NDA Counters at LANL Using NDA 2000*

Results of the review indicate that the procedures adequately address upper-tier requirements.

The audit team evaluated the two High Efficiency Neutron Counters (HENCs), designated HENC#1 and HENC#2, and the SuperHENC located on Pad 10 in TA-54 Area G. The team also evaluated the MILCC located in Dome 283 in TA-54 Area G, which was evaluated during CBFO Surveillance S-13-29 in June 2013.

The two HENC units are passive neutron counters with an integral high purity germanium (HPGe) gamma-ray spectrometer and a ^{252}Cf Add-A-Source to correct for waste matrix moderation properties. While the HENC units assay drummed waste, the SuperHENC is capable of assaying waste in SWBs. The SuperHENC is similar to the HENC units in that it detects passive neutrons from spontaneous fissions. It has two separate gamma spectrometers. The SuperHENC can either use efficiency curves to account for variations in waste matrix properties in the gamma mode or “add-a-source” correction. The CBFO previously evaluated the two HENC units and the SuperHENC during CBFO Audit A-12-12, July 24 – 26, 2012.

The MILCC consists of two gamma spectrometers that acquire spectra for direct quantification of gamma-emitting radionuclides and provide isotopic ratios for plutonium isotopes analyzed through Multi-Group Analysis or Fixed-energy Response Function Analysis with multiple efficiencies software. The gamma spectrometers use a multi-curve efficiency calibration to compensate for variations in waste matrix density. Both gamma spectrometers use a tin-copper “filter” and can be operated from either a near-field location (42-inch) or far-field location (72-inch for drums and 144-inch for SWBs). The MILCC is capable of assaying SCG S3000 (solids), S4000 (soils/gravels) and S5000 (debris) wastes contained in 55-gallon drums, SWBs and CMBs.

Based on a review of the current revisions of LANL/CCP procedures provided prior to the audit, checklists were prepared and used to evaluate the following:

- System stability as evidenced by the implementation and effectiveness of quality control measurements, calibration verifications, and weekly interfering matrix checks
- Applicability of each system's calibration and operational range to the matrix, geometry, and radionuclide content of waste assayed since the last audit
- Successful participation in the CBFO-sponsored NDA PDP
- Completed BDRs to ensure data are reported and reviewed as required
- Data storage and retrievability
- Personnel qualification and training
- Continued operability and capability of the two HENC units, the SuperHENC since Audit A-12-12, and the MILCC since Surveillance S-13-29

The audit team interviewed responsible NDA personnel, observed equipment and practices, and examined electronic and paper copies of reports and records.

Both the HENC#1 and HENC#2 units participated in PDP Cycle 20A. Sample matrices included glass and combustibles. Both units successfully passed PDP criteria for all tested matrices.

During PDP Cycle 14A in 2008, the HENC#2 did not meet the precision criteria when measuring greater than 2 Ci in transuranic (TRU) alpha activity of heat source material in a non-interfering waste matrix. Because of the limited failure described above, CBFO chose to issue and LANL/CCP chose to accept a conditional approval for performing WIPP-certified NDA of drummed wastes without pursuing corrective action for the failure. This conditional approval on the HENC#2 is based on:

- Demonstrated proficiency for all other matrices for both bias and precision over the two NDA PDP cycles prior to this limited failure;
- Met the NDA PDP scoring criterion for result bias in the measurements of heat source material contained in a previous cycle's non-interfering sample; and
- Met the precision criterion for NDA PDP matrix samples of higher densities (considered interfering matrix drums) for the six replicate data set for this sample.

The restriction placed upon the HENC#2 is for low-density drums (less than 100 lbs per drum), with simultaneously high activity (greater than 2 Ci total TRU alpha activity) consisting of TRU waste drums containing weapons grade plutonium at all certified activity levels, heat source plutonium at levels below 2 Ci total TRU alpha activity for all waste densities within the calibrated ranges, and heat source plutonium at levels greater than 2 Ci total alpha activity in drums weighing greater than 100 lbs and within the system's calibrated ranges. Reviews of randomly selected BDRs confirmed that the HENC#2 has performed WIPP assays only on wastes that are not precluded as a result of the conditional approval described above. Because the HENC#1 unit passed all PDP criteria, there are no limitations on the waste that this system can assay within the documented calibration range.

The SuperHENC participated in CBFO-sponsored PDP Cycle B12A, which consisted of two test matrices, combustibles and metals. The SuperHENC successfully met all PDP criteria.

The MILCC participated in CBFO-sponsored PDP Cycle B12C, which consisted of two test matrices, combustibles and metals. The MILCC successfully met all PDP criteria.

The procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for Nondestructive Assay are adequately established for compliance with upper-tier requirements, effectively implemented, and satisfactory in achieving the desired results. No concerns were identified.

5.4.8 WIPP Waste Information System (WWIS)/Waste Data System (WDS)

The audit team reviewed CCP procedure CCP-TP-030, Rev. 32, *CH TRU Waste Certification and WWIS/WDS Data Entry*, to determine the degree to which it adequately addresses upper-tier requirements. Results of the review indicate that the procedure adequately addresses upper-tier requirements.

The audit team interviewed responsible personnel, examined related data and observed entry of information into the WWIS/WDS by a Waste Certification Assistant and Waste Certification Official. Record reviews included container information summaries, pages from selected BDRs reflecting analyses values, WWIS/WDS Container Data Reports, and submittals for WWIS review and approval.

The audit team reviewed the following complete WWIS/WDS waste certification packages for CH waste.

LA00000093130	LA00000093160	LA00000093224 (SCG S3000)
LA00000089982	LA00000089985	LA00000089986 (SCG S4000)
LA00000057049	LA00000092725	LAS855309 (SCG S5000)

The procedure reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for data entry using the WIPP Waste Information System/ Waste Data System are adequately established for compliance with upper-tier requirements, effectively implemented, and satisfactory in achieving the desired results. No concerns were identified.

5.4.9 TRUPACT-II Operations/Transportation/Waste Certification/Container Management

The audit team reviewed the following procedures to determine the degree to which they adequately address upper-tier requirements.

- CCP-PO-003, Rev. 12, *CCP Transuranic Authorized Methods for Payload Control*
- CCP-QP-030, Rev. 8, *CCP Written Practice for the Qualification of CCP Helium Leak Detection Personnel*
- CCP-TP-033, Rev. 19, *CCP Shipping of CH TRU Waste*
- CCP-TP-086, Rev. 17, *CCP CH Packaging Payload Assembly*
- CCP-TP-055, Rev. 5, *CCP Varian Porta-Test Leak Detector Operations*
- CCP-TP-120, Rev. 16, *CCP Container Management*
- WP 08-PT.01, Rev. 8, *Standard Waste Box Handling and Operations Manual*
- WP 08-PT.02, Rev. 9, *Ten-Drum Overpack Handling and Operations Manual*
- WP 08-PT.04, Rev. 7, *CH Packaging Trailer O&M Manual*

Results of the review indicate that the procedures adequately address upper-tier requirements.

LANL/CCP transportation activities are conducted using CCP procedure CCP-PO-003, Rev. 12, *CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)*, in conjunction with DOE documents DOE/WIPP-02-3183, Rev. 8, *CH Packaging Program Guidance*; DOE/WIPP-02-3184, Rev. 13, *CH Packaging Operations Manual*; and DOE/WIPP-02-3220, Rev. 13, *CH Packaging Operations for High-Wattage Waste*. As is the case at other TRU waste generator sites, LANL/CCP has elected to use the DOE/WIPP procedures to ensure applicable upper-tier requirements are met.

CH TRUPACT-II receipt, maintenance, container integrity checks, payload preparation operations, and loading were evaluated for shipments LA130098 and LA130099. Payloads were observed being placed into TRUPACT-II Units 136, 172, 167, 142, 180 and 181. Interviews were conducted with responsible transportation operators and Transportation Certification Officials (TCOs). The audit team verified that CH shipments and high-wattage CH shipments were compliant with upper-tier documents. The team also verified that transportation operators and TCOs had appropriate access to the current revisions of all procedures/documents as required. Each of the three stations on the transportation docks had binders for all required procedures/documents.

Measuring and test equipment calibration was verified for a random selection of thermometers, helium leak gauges, load cell, adjustable center of gravity lift fixture crane, and torque wrenches. Personnel training and qualification cards were reviewed and verified to be current. Helium leak testing of inner and outer containment vessels was observed. The maintenance logs were examined and the records were determined to be in compliance with procedure requirements. Spare parts and storage arrangement for parts were examined and determined to be compliant with procedure requirements. NCR-LANL-0609-13, Rev. 0, initiated on June 4, 2013, was reviewed and verified to be closed on June 5, 2013. The nonconforming issue was related to the O-rings used on the TRUPACT-II containers. The audit team also reviewed and verified entries in logbook MLU-LANL-009, LANL Operations, associated with transportation activities from January 2013 to the present.

The audit team accompanied the LANL/CCP container management specialist to observe a demonstration of how containers are moved, managed, and segregated. Evidence was provided to demonstrate that containers scheduled for shipment to WIPP are segregated from containers that are not eligible for shipment. Noncompliant containers were observed to be tagged, controlled and returned to the host site when necessary for resolution.

The procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for TRUPACT-II Operations/Transportation/Waste Certification/Container Management activities are adequately established for compliance with upper-tier requirements, effectively implemented, and satisfactory in achieving the desired results. No concerns were identified.

5.4.10 Flammable Gas Sampling and Analysis

Flammable gas sampling and analysis are performed in accordance with DOE/WIPP 06-3345, Rev. 5, *Waste Isolation Pilot Plant Flammable Gas Analysis*, which was confirmed to be used by LANL/CCP personnel for flammable gas testing. The audit team observed flammable gas sampling and analysis of eight 55-gallon drums on July 24, 2012, to verify required sampling techniques and use of appropriate equipment. Data packages LA13FG13098 and LA13FB13099 were examined and confirmed to contain all required information, as well as evidence of required reviews. Initial calibration data package LA13FG2075_ICAL was examined to ensure that initial calibration requirements of compound levels, number of analyses and the required compounds were analyzed. Data package LA10FG0290_MDL provided evidence to confirm LANL has performed minimum detection limit studies as required. All calibration gases were verified to be within the acceptable usage timeframes.

The objective evidence assembled provided evidence that the applicable requirements and activities related to Flammable Gas Sampling and Analysis activities and prescribed by DOE/WIPP 06-3345 are adequately established for compliance with upper-tier requirements, effectively implemented, and satisfactory in achieving the desired results. No concerns were identified.

5.4.11 Load Management

The audit team reviewed CCP procedure CCP-PO-003, Rev. 12, *CCP Transuranic Authorized Methods for Payload Control*, to determine the degree to which it adequately addresses applicable upper-tier requirements. Results of the review indicate that the procedure adequately addresses upper-tier requirements.

Load management is not currently performed at LANL. The audit team concluded that provisions remain adequately established to control future load management activities as necessary.

5.4.12 Gas Generation Testing

Gas generation testing is not currently being conducted at LANL.

CORRECTIVE ACTIONS, OBSERVATIONS, AND RECOMMENDATIONS

6.1 Corrective Action Reports

During the audit, the audit team may identify conditions adverse to quality (CAQ) and document such conditions on corrective action reports (CARs).

Condition Adverse to Quality (CAQ) – An all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, defective items, nonconformances, and technical inadequacies.

Significant Condition Adverse to Quality – A condition which, if uncorrected, could have a serious effect on safety, operability, waste confinement, TRU waste site certification, regulatory compliance demonstration, or the effective implementation of the QA program.

The following CAR was issued as a result of this audit.

CAR 13-051

Condition:

RTR BDR LA-HERTR-13-0048 for waste stream LA-MHD10.001 noted the presence of batteries, which were not expected to be present based on the associated AK Summary Report CCP-AK-LANL-014. The cognizant RTR operator did not determine the batteries to represent a concern. Consequently, no NCR was initiated for evaluation by the AK Expert. The presence of batteries, depending on the type, could necessitate the assignment of hazardous waste numbers. This condition suggests that the RTR operator did not possess sufficient knowledge to determine if the item identified was a hazardous waste requiring the initiation of an NCR.

Requirements:

DOE/CBFO QAPD, Rev. 11, section 2.1.1 states, *Line managers will ensure that personnel working under their supervision are qualified and are provided the necessary training, resources, and administrative controls to accomplish assigned tasks. Criteria describing acceptable work performance shall be defined for the worker.*

CCP-TP-053, Rev. 13, *CCP Standard Real-Time Radiography (RTR) Inspection Procedure*, section 4.4.2 [H.1] states, *IF any hazardous waste(s) NOT identified in the AK Summary Report(s) for the waste stream being characterized OR any nonconforming/prohibited items are noted during the RTR examination, THEN perform the following: (a) Initiate an NCR in accordance with CCP-QP-005 AND record the NCR number in Section 1 and in the comments block of Attachment 2.*

6.2 Deficiencies Corrected During the Audit

During the audit, the audit team may identify conditions adverse to quality (CAQs). The Audit Team Leader (ATL) and audit team members evaluate the CAQs to determine if they are significant. Once a determination is made that the CAQ is not significant, the audit team member, in conjunction with the ATL, determines if the CAQ is an isolated case requiring only remedial action and therefore can be corrected during the audit (CDA). Deficiencies that can be classified as CDA are those isolated deficiencies that do not require a root cause determination or actions to preclude recurrence, and those for which correction of the deficiency can be verified prior to the end of the audit. Examples include one or two minor changes required to correct a procedure (isolated),

one or two forms not signed or not dated (isolated), or one or two individuals who have not completed a reading assignment.

Upon determination that the CAQ is isolated, the audit team member, in conjunction with the ATL, evaluates/verifies any objective evidence/actions submitted or taken by the audited organization and determines if the condition was corrected in an acceptable manner. Once it has been determined that the CAQ has been corrected, the ATL categorizes the condition as a CDA.

One CAQ was identified, which was corrected during the audit (see CDA-1).

CDA-1

Condition:

Inconsistencies were noted between the prohibited items listed on the completed Attachment 6 in CCP procedure CCP-TP-005 and the associated AK Summary Report CCP-AK-LANL-006.

Requirement:

CCP-TP-005, Rev. 24, CCP Acceptable Knowledge Documentation, section 4.4.28 states, Complete the following forms as appropriate...[A] See Attachment 6, Waste Form, Waste Material Parameters, Prohibited Items, and Packaging – Example Form for an example. Include the Waste Material Parameter Evaluation Memorandum described in step 4.4.27 as an addendum to Waste Form Waste Material Parameters, Prohibited Items, and Packaging, Section 4.4.34; Review the waste stream-specific AK Documentation specified on the Acceptable Knowledge Documentation Checklist and information developed in steps 4.4.11 through 4.4.33, AND describe the waste stream in the AK Summary Report, including the following... [K]; Provide justification for determining that each prohibited item is not present in the waste stream or describe the potential for prohibited items and how they will be identified and remediated. Identify process controls associated with the management of prohibited items, physical form, and hazardous waste content and Attachment 12, Example Form and Content Guide for AK Summary Reports, Section 5.4.5; Prohibited Items.

Resolution:

Upon identification, responsible AK personnel corrected the inconsistencies and provided the audit team with a corrected copy of Attachment 6, which was verified prior to the conclusion of the audit.

6.3 Observations

During the audit, the audit team may identify potential problems that should be communicated to the audited organization. The audit team members, in conjunction with the ATL, evaluate these conditions and classify them as Observations using the following definition.

Observation – A condition that, if not controlled, could result in a CAQ.

Once a determination is made, the audit team member, in conjunction with the ATL, categorizes the condition appropriately.

No Observations were identified during this audit.

6.4 Recommendations

During the audit, the audit team may identify suggestions for improvement that should be communicated to the audited organization. The audit team members, in conjunction with the ATL, evaluate these conditions and classify them as Recommendations using the following definition.

Recommendations – Suggestions that are directed toward identifying opportunities for improvement and enhancing methods of implementing requirements.

Once a determination is made, the audit team member, in conjunction with the ATL, categorizes the condition appropriately.

The audit team identified the following two Recommendations during this audit.

Recommendation 1

The audit team recommended the following changes for the “freeze files” for the following AK Summary Reports

CCP-AK-LANL-014, Rev. 1

1. Section 5.1: Indicate that the area of generation is TA-39 and the building of generation is building 69.
2. Section 5.4.1.2, page 27: Add the word “calculated” to line 2 after “then” to clarify the meaning of the sentence.
3. Table 2, page 27: Add a note to the table to indicate that the cellulose percentage will be higher since the plywood from the original packaging was added to the final SWB waste containers.

CCP-AK-LANL-010, Rev. 6

1. Section 6.4.3.4: Based upon a review of the Draft Final *Report of the Los Alamos Historical Document Retrieval and Assessment Project* and other related documents, update this section, if necessary, to address potential beryllium contamination.

2. Section 6.5: Replace the reference to the "AK Containers List" with "AK Tracking Spreadsheet."

CCP-AK-LANL-006, Rev. 12

Section 2.4: Update the fourth paragraph to match the prohibited items identified in section 8.4.4.

Recommendation 2

The audit team recommend the AK Expert to review the Draft Final *Report of the Los Alamos Historical Document Retrieval and Assessment Project* and other related documents regarding the potential presence of beryllium in the TA-21 subsurface disposal area and enter the review and assessment as an AK Source Document into the AK record for waste stream LA-MSG04.001 and update the AK Summary, if necessary, to address potential beryllium contamination.

7.0 LIST OF ATTACHMENTS

- Attachment 1: Personnel Contacted During Audit
- Attachment 2: Summary Table of Audit Results
- Attachment 3: Listing of Audited Documents
- Attachment 4: Processes and Equipment Reviewed

PERSONNEL CONTACTED DURING AUDIT A-13-23				
NAME	TITLE/ORG	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Acosta, F.	Transportation Certification Official/LANL/MLU		X	
Anaya, E.	Transportation Operator/LANL/MLU		X	
Aragon, I.	NDA/NWP/CCP		X	
Archuleta, D.	NDA/NWP/CCP		X	
Baca, R.	Records Coordinator/NWP/CCP	X	X	X
Barton, T.	NDA/NWP/CCP/MCS	X	X	
Bauman, C.	Expert Analyst, Subject Matter Expert (NDA)/NWP/CCP/Canberra	X	X	X
Branaman, J.	Transportation Operator/LANL/MLU		X	
Cameron, W.	Container Management Specialist/CCP/LANL		X	
Chavarria, A.	QA Engineer/NWP/QA	X		
Dickes, N.	NDA/NWP/CCP		X	
Elliot, A.	RTR Operator/NWP/CCP	X	X	X
Fisher, A. J.	Technical Advisor/NWP/CCP	X		
Francis, J.	Expert Analyst/NWP/CCP/Canberra	X	X	
Gammon, E.	OSRP/LANL	X	X	
Groover, T.	Site Project Manager/NWP/CCP	X	X	X
Heath, J.	NDA/NWP/CCP		X	
Hemsing, D.	VE Lead/NWP/CCP		X	
Houdashelt, B.	Transportation Certification Official, Operator, HLD Level III/LANL/MLU		X	
Jagielski, R.	Operator/CCP/LANL		X	
Krueger, M.	Transportation Operator/LANL/MLU		X	
Ledford, W.	QA Specialist/NWP/QA			X
Loechell, E.	Operator/CCP/LANL		X	
Mathews, D.	Transportation Operator/LANL/MLU		X	

PERSONNEL CONTACTED DURING AUDIT A-13-23				
NAME	TITLE/ORG	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
McTaggart, K.	Transportation Certification Official/LANL/MLU		X	
Mueller, T.	QA Analyst/NWP/QA	X		
Papp, M.	Acceptable Knowledge Expert/NWP/CCP/Tech Spec	X	X	
Pearcy, S.	Records Manager/NWP/CCP	X	X	X
Ramirez, M.	Waste Certification Official/NWP/CCP	X		
Romero, G.	Operator/CCP/LANL		X	
Schoen, J.	Acceptable Knowledge Expert/NWP/CCP/Tech Spec	X		
Sensibaugh, M.	Project Manager/NWP/CCP	X	X	
Simmons, C.	Site Project Manager/NWP/CCP	X	X	X
Simpson, K.	RTR Subject Matter Expert/NWP/CCP/VJT	X	X	X
Stallings, A.	NDE Cognizant Engineer/NWP/CCP	X	X	
Stepzinski, J.	Vendor Project Manager/NWP/CCP	X	X	X
Thompson, J.	VEE/NWP/CCP		X	
Wachter, J.	Technical Director/NWP/CCP/MCS	X	X	
Waldram, V.	Site Project Manager/NWP/CCP	X		X
Weyerman, W.	Transportation Field Operations Manager/LANL/MLU	X	X	
Witkowski, I.	OSRP/LANL	X	X	

**Audit A-13-23
Summary Table of Audit Results**

Program Element	Concern Classification				QA Evaluation		Technical
	CARs	CDAs	Obs.	Rec.	Adequacy	Implementation	Effectiveness
Activity							
Program Status					A	S	E
Personnel Qualification & Training					A	S	E
Nonconformance Reporting					A	S	E
Records					A	S	E
Project Level V&V					A	S	E
Acceptable Knowledge (AK)		X		X,X	A	S	E
Visual Examination (VE)					A	S	E
Real-time Radiography (RTR)	X (13-051)				A	S	E
Nondestructive Assay (NDA)					A	S	E
Headspace Gas Sampling (HSGS)					A	S	E
Performance Demonstration Program					A	S	E
WIPP Waste Information System					A	S	E
Flammable Gas Analysis					A	S	E
TRUPACT-II Operations/Waste Certification/Transportation					A	S	E
TOTALS	1	1		2	A	S	E

Definitions

E = Effective
S = Satisfactory
I = Indeterminate

CAR = Corrective Action Report
CDA = Corrected During the Audit
NE = Not Effective
Obs. = Observation

Rec. = Recommendation
A = Adequate
NA = Not Adequate

Audit A-13-23
LISTING OF AUDITED DOCUMENTS

	Document No.	Rev.	Document Title
1.	CCP-AK-LANL-014	1	CCP AK Summary Report for LANL TA-39 Two-Stage Gas Gun Facility, Waste Stream LA-MHD10.001
2.	CCP-AK-LANL-006	12	CCP AK Summary Report for LANL TA-55 Mixed TRU Waste Stream LA-MIN04-S.001
3.	CCP-AK-LANL-010	5	CCP AK Summary Report for LANL TA-21 DP West Facility Waste Stream LA-MSG04.001
4.	CCP-PO-001*	20	CCP Transuranic Waste Characterization Quality Assurance Project Plan
5.	CCP-PO-001	21	CCP Transuranic Waste Characterization Quality Assurance Project Plan
6.	CCP-PO-002	26	CCP Transuranic Waste Certification Plan
7.	CCP-PO-003	12	CCP Transuranic Authorized Methods for Payload Control
8.	CCP-PO-012	13	CCP/LANL Interface Document
9.	CCP-QP-002	35	CCP Training and Qualification Plan
10.	CCP-QP-005*	22	CCP TRU Nonconforming Item Reporting and Control
11.	CCP-QP-005	23	CCP TRU Nonconforming Item Reporting and Control
12.	CCP-QP-008	21	CCP Records Management
13.	CCP-QP-021	8	CCP Surveillance Program
14.	CCP-QP-028	15	CCP Records Filing, Inventorying, Scheduling, and Dispositioning
15.	CCP-QP-030	8	CCP Written Practice for the Qualification of CCP Helium Leak Detection Personnel
16.	CCP-TP-001	20	CCP Project Level Data Validation and Verification
17.	CCP-TP-002	25	CCP Reconciliation of DQOs and Reporting Characterization Data
18.	CCP-TP-003	19	CCP Data Analysis for S3000, S4000, and S5000 Characterization
19.	CCP-TP-005	24	CCP Acceptable Knowledge Documentation
20.	CCP-TP-028	6	CCP Radiographic Test and Training Drum Requirements
21.	CCP-TP-030	32	CCP CH TRU Waste Characterization and WWIS Data Entry
22.	CCP-TP-033	19	CCP Shipping of CH TRU Waste
23.	CCP-TP-053	13	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
24.	CCP-TP-055	5	CCP Varian Porta-Test Leak Detector Operations
25.	CCP-TP-056	5	CCP HSG Performance Demonstration Plan
26.	CCP-TP-058	4	CCP NDA Performance Demonstration Plan
27.	CCP-TP-059	1	CCP SuperHENC Operating Procedure
28.	CCP-TP-063	14	CCP Operating the High Efficiency Neutron Counter Using NDA 2000
29.	CCP-TP-064	6	CCP Calibrating the High Efficiency Neutron Counter Using NDA 2000
30.	CCP-TP-076	0	CCP Operating the Mobile ISOCS Large Container Counter Using NDA 2000
31.	CCP-TP-077	0	CCP Calibrating the Mobile ISOCS Large Container Counter Using NDA 2000
32.	CCP-TP-069	6	CCP Sealed Source Visual Examination and Packing
33.	CCP-TP-082	8	CCP Preparing and Handling Waste Containers for Headspace Gas Sampling

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LISTING OF AUDITED DOCUMENTS

	Document No.	Rev.	Document Title
34.	CCP-TP-086	17	CCP CH Packaging Payload Assembly
35.	CCP-TP-093*	15	CCP Sampling of TRU Waste Containers
36.	CCP-TP-093	17	CCP Sampling of TRU Waste Containers
37.	CCP-TP-098	3	CCP Installation of the NucFil HSG Sample Port
38.	CCP-TP-101	6	CCP Off-Site Source Recovery Project Sealed Source Radiological Characterization
39.	CCP-TP-103	11	CCP Data Reviewing, Validating & Reporting Procedure for the NDA Counters at LANL Using NDA 2000
40.	CCP-TP-106	7	CCP Headspace Gas Sampling Batch Data Report Preparation
41.	CCP-TP-113	17	CCP Contact-Handled Standard Waste Visual Examination
42.	CCP-TP-120*	15	CCP Container Management
43.	CCP-TP-120	16	CCP Container Management
44.	CCP-TP-162*	1	CCP Random Selection of Containers for Solids and Headspace Gas Sampling and Analysis
45.	CCP-TP-162	2	CCP Random Selection of Containers for Solids and Headspace Gas Sampling and Analysis
46.	CCP-TP-180	3	CCP Analytical Sample Management
47.	CCP-TP-198	7	CCP HE-RTR Operating Procedure
48.	DOE/CBFO 94-1012	11	CBFO Quality Assurance Program Document (QAPD)
49.	DOE/WIPP 02-3122	7.4	Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant
50.	DOE/WIPP 02-3183	8	CH Packaging Program Guidance
51.	DOE/WIPP 02-3184	13	CH Packaging Operations Manual
52.	DOE/WIPP 02-3220	13	CH Packaging Operations for High-Wattage Waste
53.	DOE/WIPP 06-3345	5	Waste Isolation Pilot Plant Flammable Gas Analysis
54.	WP 08-PT.01	8	Standard Waste Box Handling and Operations Manual
55.	WP 08-PT.02	9	Ten-Drum Overpack Handling and Operations Manual
56.	WP 08-PT.04	7	CH Packaging Trailer O&M Manual
57.	WP 13-QA.03	22	Quality Assurance Independent Assessment Program

*Procedure used in evaluating work or data generated during the applicable time-frame, i.e, work/data produced prior to the Permit modification on March 13, 2013.

Processes and Equipment Reviewed During Audit A-13-23 of the LANL/CCP

WIPP #	Process/Equipment Description	Applicable to the Following Waste Streams/Groups of Waste Streams	Currently Approved by NMED	Currently Approved by EPA
PROCESSES OR EQUIPMENT FOR INITIAL APPROVAL				
TBD	Non-Destructive Assay In Situ Object Counting System (ISOCS) Procedure(s) – CCP-TP-076, CCP-TP-077 and CCP-TP-103	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	N/A	NO
PREVIOUSLY APPROVED PROCESSES OR EQUIPMENT				
N/A	Headspace Gas Sampling Procedure – CCP -TP-093 Description – Headspace Gas Sampling Note: Headspace gas sampling is no longer required by the Permit at of March 13, 2013.	Debris (S5000)	YES	N/A
11RR2	Real-Time Radiography (RTR) Procedure(s) – CCP-TP-053 and CCP-TP-028 Description – Real-Time Radiography Mobile Characterization System RTR [built by VJ Technologies] – 55-gallon drums	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	YES	YES
11HERTR3	High Energy Real Time Radiography (HERTR) Procedures CCP-TP-053 and CCP-TP-028 Description – High Energy Real-Time Radiography (RTR) [built by VJ Technologies] 55-gallon drums and SWBs	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	YES	YES
11VE1	CH Visual Examination Procedure – CCP-TP-113 Description – CH Characterization Performed Utilizing Visual Examination and Acceptable Knowledge	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	YES	YES
11VE2	Off-Site Source Recovery Program Procedure(s) – CCP-TP-069 and CCP-TP-101 Description – Characterization Performed Utilizing Visual Examination and Acceptable Knowledge	Debris (S5000)	YES	YES
N/A	Acceptable Knowledge Procedure – CCP-TP-005 Description – Acceptable Knowledge	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	YES	YES

Processes and Equipment Reviewed During Audit A-13-23 of the LANL/CCP

WIPP #	Process/Equipment Description	Applicable to the Following Waste Streams/Groups of Waste Streams	Currently Approved by NMED	Currently Approved by EPA
N/A	Data Verification and Validation Procedure(s) – CCP-TP-001, CCP-TP-002, CCP-TP-003, CCP-TP-103, CCP-TP-162	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	YES	YES
11HC1	Nondestructive Assay Procedure – CCP-TP-063 Description – Canberra Industries High Efficiency Neutron Counter (HENC) mounted in a transportation container	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	N/A	YES
11HC2	Nondestructive Assay Procedure – CCP-TP-063 Description – Canberra Industries High Efficiency Neutron Counter (HENC) mounted in a trailer	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	N/A	YES
11SHC1	Nondestructive Assay Procedure – CCP-TP-059 and CCP-TP-103 Description – Super High-Efficiency Neutron Counter mounted in a trailer, SWBs	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	N/A	YES
N/A	WWIS/WDS Procedure – CCP-TP-030 Description – CH TRU Waste Characterization and WWIS Data Entry	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	YES	YES
N/A	Transportation Procedure(s) – CCP-TP-054, CCP-TP-055, CCP-TP-086, DOE/WIPP-02-3184, DOE/WIPP-02-3220, DOE/WIPP-02-3183	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	N/A	N/A
11HG2	Flammable Gas Analysis Procedure – DOE/WIPP-06-3345 Description – Flammable Gas Analysis	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	N/A	N/A
N/A	Quality Assurance Program	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	N/A	YES