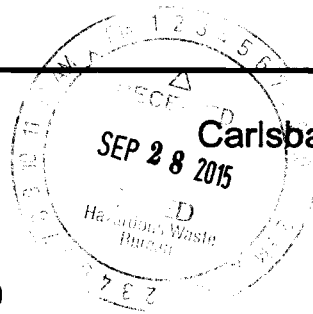


United States Government

Department of Energy

# memorandum

Carlsbad Field Office  
Carlsbad, New Mexico 88221



DATE: **SEP 28 2015**  
REPLY TO  
ATTN OF: CBFO:OQA:DSM:BA:15-0901:UFC 2300.00

SUBJECT: Interim Audit Report A-15-21, LANL/CCP TRU Waste Characterization and Recertification

to: Mr. David Nickless, LAFO

The Carlsbad Field Office (CBFO) conducted annual Recertification Audit A-15-21, Los Alamos National Laboratory Central Characterization Program (LANL/CCP) Transuranic (TRU) Waste Characterization and Recertification, September 1 – 3, 2015. 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.

The audit team identified three concerns during the audit. One concern was identified as a condition adverse to quality and documented in Corrective Action Report 15-063, transmitted under separate cover. The remaining two concerns were corrected during the audit, as described in the report.

If you have any questions or comments concerning the interim audit report, please contact me at (575) 234-7491.

Dennis S. Miehl  
Senior Quality Assurance Specialist

Attachment



Mr. David Nickless

-2-

cc: w/attachment

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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-15-21

September 1 – 3, 2015

TRU WASTE CHARACTERIZATION AND RECERTIFICATION



Prepared by: *R. Castillo for*  
Berry Pace, CTAC  
Audit Team Leader

Date: 9/23/15

Approved by: *Michael R. Brown*  
Michael R. Brown, Director  
CBFO Office of Quality Assurance

Date: 9/25/15

## 1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Recertification Audit A-15-21 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 contact-handled (CH) Summary Category Group (SCG) S4000 soils/gravel and SCG S5000 debris wastes, excluding wastes processed through the Waste Characterization, Reduction, and Repackaging Facility (WCRRF). Waste characterization processes for SCG S3000 waste at the WCRRF have been suspended since the previous audit; therefore, no waste characterization data have been generated. Furthermore, no TRU waste shipments have been performed since the previous audit (reference memorandum CBFO:NTP:JRS:MAG:14-1947, dated July 16, 2014). 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 in Los Alamos, New Mexico, and Carlsbad, New Mexico, September 1 – 3, 2015. 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 and were satisfactorily implemented.

The audit team identified three concerns during the audit. One concern was identified as a condition adverse to quality (CAQ) and documented on a corrective action report (CAR) in the area of acceptable knowledge (AK) (see section 6.1). The remaining two concerns were identified as CAQs in the areas of AK and Project-level Data Validation and Verification (PL V&V), and were corrected during the audit (CDA) (see section 6.2).

## 2.0 SCOPE AND PURPOSE

### 2.1 Scope

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

#### 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

- Quality Improvement/Nonconformances
- Records

### **Technical**

- Acceptable Knowledge (AK)
- Real-time Radiography (RTR)
- Visual Examination (VE), including the Off-site Source Recovery Program (OSRP)
- Nondestructive Assay (NDA), including the Performance Demonstration Program (PDP)
- Generation and Project-level Data Validation and Verification (PL V&V)
- Container Management
- WIPP Waste Information System (WWIS)/Waste Data System (WDS)
- Waste Certification (e.g., Waste Stream Profile Form)

### **Transportation**

- Container Management
- Flammable Gas Sampling and Analysis
- Shipping Documentation

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
- *Nuclear Waste Partnership LLC Quality Assurance Program Description*, WP 13-1
- *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

## **2.2 Purpose**

Audit A-15-21 was conducted to evaluate the degree of sustained adequacy and effective implementation of program requirements for the characterization, certification,

and associated transportation activities of CH TRU SCG S4000 soils/gravel and SCG S5000 debris wastes 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
Martin P. Navarrete	QA Representative, CBFO
Berry Pace	Audit Team Leader, CBFO Technical Assistance Contractor (CTAC)
Cindi Castillo	Auditor, CTAC (NDA)
Katie Martin	Auditor, CTAC (RTR)
Priscilla Martinez	Auditor, CTAC (C6 QA)
Jim Schuetz	Auditor, CTAC (C6 QA)
Tammy Ackman	Auditor, CTAC (VE/OSRP)
Judith Stewart	Auditor, CTAC (AK)
Wayne Ledford	Auditor, CTAC (Program Status/Interface)
Porf Martinez	Technical Specialist, CTAC (RTR/Container Management)
Dick Blauvelt	Technical Specialist, CTAC (AK)
B.J. Verret	Technical Specialist, CTAC (FGA)
Jim Oliver	Technical Specialist, CTAC (NDA)
Rhett Bradford	Technical Specialist, CTAC (VE/OSRP)
Paul Gomez	Technical Specialist, CTAC (PL V&V)

#### **OBSERVERS**

J.R. Stroble	CBFO TRU Sites and Transportation Division
Dale Bignell	CTAC
Ricardo Maestas	New Mexico Environment Department (NMED)
Steve Holmes	NMED
Coleman Smith	NMED
Ines Triay	NMED
Lindsey Bender	U.S. Environmental Protection Agency/Radiation Protection Division (EPA/RPD)

### **4.0 AUDIT PARTICIPANTS**

The LANL/CCP individuals involved in the audit process are identified in Attachment 1. A pre-audit meeting was held September 1, 2015, in Los Alamos, New Mexico, and in Carlsbad, New Mexico. Daily management briefings were held with LANL/CCP management and staff to discuss audit progress and concerns identified. A post-audit meeting was held September 3, 2015, in Los Alamos, New Mexico, and in Carlsbad, New Mexico.

## **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 contains a summary table of the audit results, Attachment 3 lists the program documents examined during the audit, and 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 taken to address the concerns identified during CBFO Audit A-14-19 were effective in precluding recurrence. No similar instances were observed during this audit.

#### **5.2.2 Changes in Programs or Operations**

The audit team determined through interviews with the LANL/CCP Project Manager that significant changes in the programs or operations since the previous recertification audit were the addition of the NDA High Energy Neutron Counter unit 3 (HENC #3) at Technical Area (TA)-55, and the demobilization of HENC #1 and RTR-2 units. Activities involving the HENC #3 were reviewed during this audit; however, this unit is not currently certified by CBFO.

#### **5.2.3 New Programs or Activities Being Implemented**

No new programs or activities have been implemented at LANL since CBFO Audit A-14-19.

#### **5.2.4 Changes in Key Personnel**

No significant changes were made in key personnel at LANL since CBFO Audit A-14-19.

#### **5.2.5 LANL/CCP Program Interface**

The audit team reviewed implementation of CCP-PO-012, Rev. 15, *CCP/LANL Interface Document*, and found that the activities prescribed in the document were effectively implemented. The interface document includes some outdated information (e.g., the LANL organization described is not current). LANL/CCP is reviewing a revision to the interface document that will update outdated information and make the required changes to implement the AK process revisions described in CCP-TP-005, Rev. 27,

*CCP Acceptable Knowledge Documentation*, which became effective on August 26, 2015.

Requirements and implementation for the following elements were examined:

- CCP management assessments
- LANL site-specific training
- AK summary report provisions
- QA semi-annual trend reporting
- Program document review coordination
- Host-site performed QA assessments
- Measuring and test equipment (M&TE) recall notifications
- Site-provided bioassay participation
- CCP QA surveillances

As a result of personnel interviews and reviews of objective evidence, the requirements specified in the interface documents were determined to be adequately established, effectively implemented, and satisfactory in achieving the desired results.

### **5.3 Quality Assurance Activities**

The audit team evaluated 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 are described below.

#### **5.3.1 Personnel Qualification and Training**

The audit team conducted interviews with responsible personnel and reviewed implementing procedure CCP-QP-002, Rev. 39, *CCP Training and Qualification Plan*, regarding the degree to which it addresses upper-tier requirements. The team determined that the procedure adequately addresses upper-tier requirements. Personnel training records associated with VE (including OSRP) Operator/Independent Technical Reviewer (ITR), AK Expert (AKE), Site Project Manager (SPM), Vendor Project Manager (VPM), RTR Operator/ITR, and Flammable Gas Analysis (FGA) Operator/ITR 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, etc.

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.

### **5.3.2 Nonconformance Reporting**

The audit team reviewed implementing procedure CCP-QP-005, Rev. 25, *CCP TRU Nonconforming Item Reporting and Control*, regarding the degree to which the procedure 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-0023-15 Revs. 0 through 3  
NCR-LANL-0025-15  
NCR-LANL-0029-15 Revs. 0 and 1  
NCR-LANL-0034-15  
NCR-LANL-0539-14  
NCR-LANL-0540-14 Revs. 0 and 1  
NCR-LANL-0611-14 Revs. 0 and 1  
NCR-LANL-0612-14

The team concluded that deficiencies are appropriately documented and tracked through resolution as required. One of the NCRs selected (NCR-LANL-0025-15) documented a non-administrative deficiency first identified at the SPM level. As required, this NCR was verified as having been reported to the Permittee within seven days, as required by the Permit. All the NCRs examined were verified to have been entered, managed, and tracked in the CCP Integrated Data Center/Nonconformance Report Log, 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.

### **5.3.3 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. 24, *CCP Records Management*, and CCP-QP-028, Rev. 16, *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 July 30, 2015. A request for concurrence to dispose of records was reviewed per letter CP:15:01172, to Mr. Michael Fox, Technical Specialist, WIPP Records Management Services, TFE, Inc., from D. E. Gulbransen, Manager, Central Characterization Program, dated August 31, 2015. The records series were CCP Needle Blank Documentation, designated as Non-Permanent Records for ten years from the date of record generation, then dispositioned per the approved RIDS.

The procedures reviewed and objective evidence assembled provided evidence to confirm 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**

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. 21, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-QP-005, Rev. 25, *CCP TRU Nonconforming Item Reporting and Control*
- CCP-QP-021, Rev. 10, *CCP Surveillance Program*
- CCP-TP-001, Rev. 21, *CCP Project Level Data Validation and Verification*
- CCP-TP-002, Rev. 26, *CCP Reconciliation of DQOs and Reporting Characterization Data*
- CCP-TP-005, Rev. 26 and Rev. 27, *CCP Acceptable Knowledge Documentation*
- CCP-TP-101, Rev. 7, *CCP Off-Site Source Recovery Project Sealed Source Radiological Characterization*
- CCP-TP-120, Rev. 16, *CCP Container Management*
- WP 13-QA.03, Rev. 24, *Quality Assurance Independent Assessment Program*

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

The audit team examined the AK record for S5000 debris stream LA-MHD01.001 from the TA-55 operations described in AK Summary Report CCP-AK-LANL-006, Rev. 13, and the S4000 soils stream LA-MSG04.001 from the area associated with activities in TA-21 described in AK Summary Report CCP-AK-LANL-010, Rev. 6. In addition, the team examined the AK record for the S5000 OSRP sealed source waste stream LA-OS-00-01.001 described in CCP-AK-LANL-008, Rev. 9.

The AK portion of this recertification audit was based on the requirements contained in the WIPP HWFP Waste Analysis Plan (WAP) as well as the requirements of the WIPP WAC. The audit team examined AK documentation to verify compliance with applicable AK requirements by completing WAP C6-1 and C6-2 checklists, and applicable WAC checklists.

In addition to the AK summary reports for the three waste streams referenced above, the audit team examined approved waste stream profile forms (WSPFs) and attachments, including change notices. The following AK attachments in CCP-TP-005 were reviewed for each stream: the AK Documentation Checklist, Attachment 1; the AK Information List, Attachment 4; the AK Hazardous Constituents List, Attachment 5; the AK Waste Form, Waste Material Parameters, Prohibited Items and Packaging, Attachment 6, along with attached memos providing the justification for waste material parameter weight estimates; and the AK Container List, Attachment 8, with memos supporting the addition of containers to the waste streams as applicable. The auditors also examined numerous AK source documents and source document summaries for the three streams for verification of support of the information in the AK summary reports.

NCRs written addressing prohibited items identified during RTR of waste drums were also reviewed dealing with prohibited liquids, sealed containers greater than 4 liters, pressurized containers, and the presence of impenetrable objects in the waste. The AK audit team reviewed examples of discrepancies in the AK record and also examined discrepancies between the AK record and characterization activities and resultant AK re-evaluations, with several examples of movement of waste containers between SCGs S4000 and S5000 as a result of RTR examination.

The WAP-required traceability exercise was conducted for five containers from the three waste streams. In addition to specific VE, RTR, and NDA batch data reports (BDRs) for the drums selected, the audit team also examined container input forms, including current and historical database records as available, and Integrated Data Center (IDC) screenshots. With regard to the traceability of an OSRP waste container and its sealed sources, the BDRs examined are based solely upon AK, such as manufacturer's drawings and fabrication dates, U.S. Department of Transportation Special Form documentation, and information from the Nuclear Regulatory Commission Registry of Radioactive Sealed Sources and Device Registry.

AK accuracy reports were also reviewed as applicable and available. All elements of the C6-1 and C6-2 checklists were reviewed during the audit to assure that sufficient and relevant objective evidence had been compiled to demonstrate compliance. In keeping with previous audit recommendations, there was discussion regarding use of absorbents with the waste streams examined and a confirmation that the appropriate material safety data sheets were included in the AK records.

In addition to the WAP requirements, the AK audit team also examined the AK record for objective evidence to demonstrate compliance with the requirements of the WIPP

CH WAC, including information on the ten tracked radionuclides and identification of the two most prevalent radionuclides. AK/NDA memos were reviewed for all waste streams as applicable.

The audit team reviewed various QA program elements imposed on LANL/CCP AK processes, including assembly and maintenance of AK documentation in accordance with controlled implementing procedures and verification that the records generated in development of AK documentation are identified in the records section of each procedure and located in records if required. The audit team also verified that record copies of the BDRs selected for verification of the traceability exercise were legible, accurate, complete, and properly numbered and that corrections to the selected BDRs and associated forms were accomplished in accordance with procedures.

The audit team examined training records for seven AKEs, one characterization subject matter expert, and four SPMs and determined that all training and qualification requirements were adequate and current. The team also reviewed BDRs, discrepancy reports, and NCRs and verified that nonconforming data and discrepancies between AK documentation and characterization results are appropriately identified, reported, and documented on NCRs. The NCRs indicate the affected waste containers associated with the discrepant conditions are tagged and controlled until resolution of the deficient conditions is completed.

The audit team examined the most recent QA audit report relevant to AK. The NWP QA Audit I15-01 – CCP QA Program report dated January 15, 2015, and performed October 20 – 23 and November 24 – December 8, 2014, included activities at LANL/CCP.

The audit team identified two concerns. The first concern deals with Discrepancy Resolution DR048 for waste stream LA-MHD01.001 regarding the range of reported weight percentages for U-232. This was documented in AK Summary Report CCP-AK-LANL-006, Rev. 11, and AK Attachment 7; Radionuclides, with a number based on generator input of 1.29%, in contrast to the value of 54.69%, which was based upon an NDA result for a drum characterized from Lot 323. The resolution was to revise the AK Summary Report and AK Attachment 7 to reflect the value from NDA, which is identified in Rev. 12 of the AK Summary Report. However, when Rev. 13 of the AK Summary Report and AK Attachment 7 were generated, the tables reflect the values presented in Rev. 11 (see section 6.1, CAR 15-063).

The second concern deals with the number of containers in waste stream LA-MSG04.001 as identified in AK Attachment 8, which was not in agreement with the number in AK Summary Report CCP-AK-LANL-010, Rev. 6, and the current AK Tracking Spreadsheet. This concern was determined to be isolated in nature and corrected during the audit (see section 6.2, CDA-2).

With the exception of the concerns noted above, the procedures reviewed and objective evidence assembled provided evidence that the applicable requirements for AK

activities are adequately established for compliance with upper-tier requirements and satisfactorily implemented.

#### 5.4.2 Project-level Data Validation and Verification

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

- CCP-PO-001, Rev. 21, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-TP-001, Rev. 21, *CCP Project Level Data Validation and Verification*
- CCP-TP-002, Rev. 26, *CCP Reconciliation of DQOs and Reporting Characterization Data*
- CCP-TP-005, Rev. 26, *CCP Acceptable Knowledge Documentation*

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

The random selection of containers for SCG S5000 waste from waste streams LA-OS-00-01.001, LA-MSG04.001 and LA-MHD01.001 was reviewed, along with the quarterly repeat of data-generation level reviews. All quarterly reports were provided to CCP Records as demonstrated in the 2<sup>nd</sup> quarter 2014 requests and results through the 2<sup>nd</sup> quarter 2015 requests and results. The records confirmed no operations supporting RTR during the 4<sup>th</sup> quarter 2014 and the 1<sup>st</sup> quarter 2015 are documented. WSPFs for the associated waste streams were determined to be compliant with project-level requirements and supported by the associated characterization information summary (CIS). Training records for SPMs identified in selected WSPFs and BDRs were reviewed to verify required qualifications and training. The following WSPFs and CISs were reviewed:

- WSPF LA-OS-00-01.001 with CIS Lot 85
- WSPF LA-MSG04.001 with CIS Lot 3
- WSPF LA-MHD01.001 with CIS Lots 446 through 451

The following BDRs were examined to verify compliance with the PL V&V requirements contained in CCP-TP-001:

RTR

LA-HERTR-14-0056      LA-RTR2-14-0043      LA-RTR2-15-0001

VE

LA14-OSR-VE-011      LA15-OSR-VE-001      LAVE550142      LAVE550164

NDA

1LANDA1943      2LANDA1288      3LANDA0279      5LANDA0002

LA14-OSR-CH-011 LA15-OSR-CH-001

All BDRs were found to be complete and accurate, with the exception of LA14-OSR-VE-011, in which the revision number for CCP-TP-069 was not recorded where required on Attachment 7 (VE ITR Checklist). This concern was determined to be isolated in nature and was corrected during the audit (see section 6.2, CDA-1).

With the exception of the concern identified above, the procedures reviewed and objective evidence assembled provided evidence that the applicable requirements for PL V&V activities are adequately established for compliance with upper-tier requirements and are satisfactorily implemented.

### **5.4.3 Real-time Radiography**

The audit team evaluated the adequacy, implementation, and effectiveness of LANL/CCP activities for characterization and certification of CH SCG S4000 soils/gravel and SCG S5000 debris wastes using the RTR characterization process. The audit team reviewed the following implementing procedures to determine the degree to which they adequately address upper-tier requirements.

- CCP-QP-002, Rev. 39, *CCP Training and Qualification Plan*
- CCP-TP-028, Rev. 9, *CCP Radiographic Test and Training Drum Requirements*
- CCP-TP-053, Rev. 15, *CCP Standard Real-Time Radiography (RTR) Inspection Procedure*
- CCP-TP-122, Rev. 5, *CCP RTR #2 Operating Procedure*
- CCP-TP-198, Rev. 8, *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, and test drum and training container documentation. 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 four RTR operators and determined that all four were properly trained and qualified to perform their assigned tasks.

The audit team evaluated RTR operations on the High-Energy (HE) RTR system in TA-54, building 54-578, which consisted of observing an RTR operator perform a scan on test container number NDE-TEST-29 for demonstration purposes only. LANL/CCP was not characterizing any waste during the audit. The audit team verified the use of current RTR operating procedures and verified AK summaries were available for reference. The HE-RTR unit contains the required hardware to effectively characterize CH SCG S4000 soils/gravel and S5000 debris wastes. The audit team interviewed RTR operators and examined RTR operational logbooks LANL-NDE-RTR2-012 and LANL-

NDE-HERTR2-005 for verification that logbook entries were correctly logged and reviewed weekly by the VPM, as required. The results of the interviews and review of the operational logbooks indicate that RTR operations are being performed in compliance with established operating procedures.

LANL/CCP started demobilizing RTR unit 2 on August 17, 2015. Since then, no waste characterization activities have been performed using this unit.

The audit team examined the following CH RTR BDRs:

HE RTR  
LA-HERTR-14-0056

RTR-2  
LA-RTR2-14-0043      LA-RTR2-15-0001

Audio/video media of selected containers were reviewed to verify the accuracy of data recorded on RTR data sheets.

The procedures reviewed and objective evidence assembled provided evidence that the applicable requirements for RTR 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 Visual Examination**

The audit team evaluated the adequacy, implementation, and effectiveness of LANL/CCP activities to characterize and certify CH SCG S5000 debris waste using the VE characterization process, including support of the OSRP. The audit team reviewed the following CCP VE procedures to determine the degree to which they adequately address upper-tier requirements:

- CCP-QP-002, Rev. 39, *CCP Training and Qualification Plan*
- CCP-TP-069, Rev. 6, *CCP Sealed Source Visual Examination and Packaging*
- CCP-TP-113, Rev. 19, *CCP Standard Contact-Handled Waste Visual Examination*

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

The audit team conducted interviews with responsible personnel and examined records documenting VE of debris waste, including the OSRP. The audit team examined training records for three VE Operators/ITRs and confirmed the appointment of one LANL/CCP VE Expert (VEE), three OSRP VE Operators/ITRs, and one OSRP VEE. The audit team verified that these personnel were appropriately trained and qualified as required.

During the audit, the team toured TA-55 and observed the VE of drum #70699. The team also toured the Chemical Metallurgy Research (CMR) facility, however, VE activities were not being performed on the date of the tour. LANL/CCP uses the two-operator method (Method 2) when performing VE characterization.

The audit team verified torque wrenches and container scales were calibrated. Logbooks were reviewed and verified to be in compliance with CCP-PO-005, Rev. 26, *CCP Conduct of Operations*.

The team examined the following BDRs:

LAVE550140	LAVE030008	LA14-OSR-VE-014
LAVE550149	LA14-OSR-VE-007	LA15-OSR-VE-001
LAVE550185	LA14-OSR-VE-011	LA15-OSR-VE-005
LAVE550220	LA14-OSR-VE-012	

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

#### **5.4.5 Nondestructive Assay**

The audit team conducted interviews with responsible NDA personnel and reviewed the following implementing procedures to determine the degree to which the procedures adequately address WIPP WAC requirements:

- CCP-TP-058, Rev. 6, *CCP NDA Performance Demonstration Plan*
- CCP-TP-059, Rev. 4, *CCP Operating the Super High Efficiency Neutron Counter (SHENC) Using NDA 2000*
- CCP-TP-063, Rev. 17, *CCP Operating the High Efficiency Neutron Counter Using NDA 2000*
- CCP-TP-064, Rev. 8, *CCP Calibrating the High Efficiency Neutron Counter and the Super High Efficiency Neutron Counter Using NDA 2000*
- CCP-TP-076, Rev. 1, *CCP Operating the Mobile ISOCS Large Container Counter Using NDA 2000*
- CCP-TP-077, Rev. 1, *CCP Calibrating the Mobile ISOCS Large Container Counter Using NDA 2000*
- CCP-TP-103, Rev. 12, *CCP Data Reviewing, Validating, and Reporting Procedure for the NDA Counters at LANL Using NDA 2000*
- CCP-TP-107, Rev. 14, *CCP Operating the High Efficiency Neutron Counter #3 (HENC #3) Using NDA 2000*



- CCP-TP-108, Rev. 7, *CCP Calibrating the High Efficiency Neutron Counter #3 (HENC #3) Using NDA 2000*

The results of the review confirmed that the procedures adequately address WIPP WAC requirements.

The audit team evaluated HENC #1 and HENC #2 and the SuperHENC located on Pad 10 in TA-54 Area G and the Mobile ISOCS (In-Situ Object Counting System) Large Container Counter (MILCC) located in Dome 54-283 in TA-54 Area G. The audit team also evaluated HENC #3 located in TA-55 building 407. These systems, with the exception of the HENC #3, were last evaluated by CBFO in August 2014 during Surveillance S-14-44.

The three HENC units are passive neutron counters with an integral high-purity germanium (HPGe) gamma-ray spectrometer. HENC #1 and HENC #2 use a  $^{252}\text{Cf}$  Add-A-Source (AAS) to correct for waste matrix moderation properties, while HENC #3 uses an efficiency calibration based on the bulk density of the waste. While the three HENC units assay drummed waste, the SuperHENC can assay waste in standard waste boxes (SWBs). The SuperHENC is similar to HENC units 1, 2, and 3 in that it detects passive neutrons from spontaneous fissions and has an integrated gamma spectrometer; however, the SuperHENC uses efficiency curves to account for variations in waste matrix properties.

The MILCC system consists of two gamma spectrometers that acquire spectra for direct quantification of gamma-emitting radionuclides, as well as providing isotopic ratios for plutonium isotopes analyzed through Multi-Group Analysis (MGA) or Fixed-energy Response Function Analysis with Multiple efficiencies (FRAM) 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 (42-inch) or far field (72 inch for drums and 144 inch for SWBs) location. The MILCC system can assay SCGs S3000 (solids), S4000 (soils/gravels), and S5000 (debris) wastes contained in 55-gallon drums, SWBs and corrugated metal boxes.

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 for operators, SPMs, and NDA Expert Analysts
- Continued operability and condition of the two HENC units at TA-54, the SuperHENC, and the MILCC since CBFO Surveillance S-14-44
- Operational logbooks and current software versions for all systems

The operations process and associated procedures were evaluated for the five NDA systems. The audit team witnessed characterization activities for the HENC #3 unit and the SuperHENC; however, no characterization activities for the HENC #1, HENC #2, and MILCC systems were available for observation during the audit.

### **HENC #1**

CCP is in the process of demobilizing the HENC #1 unit. A single BDR (1LANDA1943) was generated from assays performed on the HENC #1 since the last CBFO assessment (Surveillance S-14-44) in late August 2014. The HENC #1 did participate in the CBFO-sponsored PDP Cycle 22A and passed the test criteria. The audit team reviewed objective evidence that Weekly Interfering Matrix checks were performed through 3-31-15.

The audit team determined that the procedures applied to the HENC #1 and the reports documenting its calibration range, operating parameters, and measurement uncertainty are technically adequate and reflect proper flow-down of upper-tier requirements. However, because the HENC #1 is in the process of demobilization by CCP, satisfactory and effective implementation of the operating procedures and controlling technical reports could not be evaluated.

### **HENC #2**

The HENC #2 had a damaged roll-up door that precludes operation of the system. HENC #2 did not participate in PDP Cycle 22A nor was it able to complete its most recent series of weekly interfering matrix runs. The HENC #2 unit did perform assays that resulted in the generation of BDR 2LANDA1288 in September 2014. NCR-LANL-0542-14 was issued upon completion of the BDR because of a system quality check (QC) failure (poor spectral quality).

The audit team determined that the procedures applied to the HENC #2 and the reports documenting its calibration range, operating parameters, and measurement uncertainty are technically adequate and reflect proper flow-down of upper-tier requirements. However, because the HENC #2 is currently inoperable, has not participated in the current CBFO-sponsored PDP cycle, and has not performed required QC measurements, the satisfactory and effective implementation of the operating procedures and controlling technical reports could not be evaluated. CCP personnel

indicated that a supplemental door has been installed that would allow the unit to operate. Prior to resuming assay operations, CCP personnel indicated that the HENC#2 will undergo some equipment maintenance and parts replacement, as well as participating in a supplemental PDP cycle and performance of calibration verification.

### **SuperHENC**

The SuperHENC assayed containers resulting in BDR 3LANDA0279. The two containers (#68156 and #68166) within the BDR resulted in NCR-LANL-0543-14 and NCR-LANL-0544-14, respectively. In both cases, the containers did not meet the WAC requirement that payload containers contain a minimum TRU Alpha activity concentration of 100 nCi/g.

The SuperHENC successfully participated in CBFO-sponsored PDP Cycle B14A. Additionally, the unit has maintained required QC measurement controls since the last review by CBFO (Surveillance S-14-44.) The audit team was able to observe measurement operations and interview operations personnel to determine that the operating procedures and governing technical reports are adequate, satisfactorily implemented and effective.

### **MILCC**

The MILCC successfully participated in PDP Cycle 14A. No waste assays have been performed since the last review by CBFO (Surveillance S-14-44.) The MILCC has undergone a system upgrade that involves the replacement of analog signal processing equipment with digital signal processing units. CCP documented analyses of this upgrade in two calibration verification reports (2015-01-27 and 2015-02-02). Subsequent QC measurements taken over time on the MILCC resulted in the performance of a third calibration verification (2015-08-31). The calibration verification adequately documents how issues associated with the full-width half-max (FWHM) at 1408 keV was traced to system noise associated with long data cables.

The audit team was able to observe measurement operations and interview operations personnel to determine that the operating procedures and governing technical reports are adequate, satisfactorily implemented, and effective.

### **HENC #3**

The HENC #3 had not been examined previously by CBFO for compliance with and certification to WIPP requirements. The audit team reviewed the calibration documents for the HENC #3:

- *Neutron Multiplicity Counter Characterization Report – High Efficiency Neutron Counter (HENC) – Waste Isolation Pilot Plant - July 2001, August 5, 2001*
- *CCP HENC Calibration and Validation Plan and Report, CCP-LLNL-NDA-001, May 3, 2004*

- *LANL HENC #3 Multi curve Efficiency Calibration Report, Rev. 2, March 10, 2014*
- *Calibration Report for the HENC 3 at Los Alamos National Laboratory TA-55 Facility, Rev. 2, June 16, 2015*

The audit team also reviewed the total measurement uncertainty document for the HENC #3:

- *Total Measurement Uncertainty for the HENC #3 with Integrated Gamma Spectrometer, LANL-HENC3-TMU-101, Rev. 0, April 16, 2014.*

Three BDRs have been produced from assays of waste containers on the HENC #3, 5LANDA0001, 5LANDA0002, and 5LANDA0003, each including three containers.

During the performance of the audit, the team observed the assay of container #67618 while interviewing operations personnel.

The audit team confirmed that the operating procedures and the technical reports governing the operation of the HENC #3 were technically adequate. The HENC #3 successfully participated in PDP Cycle 22A. The HENC #3 was determined to have adequate controls and technical documentation that were satisfactorily implemented and effective.

Through review of training records, the audit team confirmed that NDA personnel were appropriately trained and qualified and that software versions installed and being used to perform NDA were appropriately identified and consistent with the versions identified in the CCP software inventory list. A review of associated operational logbooks confirmed that they are appropriately completed and reviewed as procedurally required.

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

#### **5.4.6 WIPP Waste Information System (WWIS)/Waste Data System (WDS)**

The audit team reviewed CCP procedure CCP-TP-030, Rev. 34, *CCP 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 (WCA) and Waste Certification Official (WCO). WCOs and WCAs were determined to be qualified to perform these activities for LANL waste. 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 discussed the status of waste certification operations at the CCP host site location with the Waste Certification Manager and determined that all waste certification activities for LANL waste containers are currently suspended. No data entry packages documenting WWIS/WDS data entry and waste container certification activities for CH waste have been generated within the last 12 months. During interviews with the Waste Certification Manager and WCO personnel, the audit team determined that there are no unique or different aspects of the WWIS/WDS data entry and waste certification processes for LANL waste when compared to the process implemented for waste certification at other CCP host site locations.

The audit team determined that there are no new WSPFs in process of approval for CH waste streams at the LANL host site location. The team found no recent evidence of assembling LANL containers into shipment packages. There has been no recent identification of CH waste lots. Waste characterization activities continue at the LANL host site location, but data entry and certification activities are currently suspended. Once waste certification activities resume, evidence indicates that WCOs will continue to implement procedure steps that include WWIS/WDS data entry and certification features using the IDC electronic data management system.

The procedure reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for data entry using the WWIS/WDS 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 Transportation/Container Management**

The audit team conducted interviews with responsible personnel and reviewed the following procedures to determine the degree to which they adequately address upper-tier requirements.

- CCP-PO-003, Rev. 13, *CCP Transuranic Authorized Methods for Payload Control*
- CCP-QP-030, Rev. 9, *CCP Written Practice for the Qualification of CCP Helium Leak Detection Personnel*
- CCP-QP-032, Rev. 2, *CCP Written Practice for the Qualification of CCP Pressure Change Leak Detection Personnel*
- CCP-TP-033, Rev. 22, *CCP Shipping of CH TRU Waste*
- CCP-TP-055, Rev. 5, *CCP Varian Porta-Test Leak Detector Operations*
- CCP-TP-086, Rev. 19, *CCP CH Packaging Payload Assembly*
- CCP-TP-120, Rev. 16, *CCP Container Management*
- WP 08-PT.01, Rev. 9, *Standard Waste Box Handling and Operations Manual*
- WP 08-PT.02, Rev. 10, *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.

Shipping activities at LANL have been suspended since February 2014. LANL/CCP has not made any TRU waste shipments to WIPP since the previous audit; therefore no shipping documentation was generated.

The audit team observed container management activities in TA-54 building 232. Verification activities included confirmation that administrative control tags, NCR hold tags and travelers, describing their characterization status, were affixed to waste containers as required. The audit team also verified that the scale used to weigh containers was appropriately calibrated.

The procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for transportation/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.

#### **5.4.8 Flammable Gas Sampling and Analysis**

Flammable gas sampling and analysis are performed in accordance with DOE/WIPP 06-3345, Rev. 9, *Waste Isolation Pilot Plant Flammable Gas Analysis*, which was confirmed to be used by LANL/CCP personnel. LANL/CCP uses two Hewlett-Packard gas chromatography/mass spectrometry systems that are equipped with thermal conductivity detectors, mass spectral detectors, and a sample splitter that delivers samples to both detectors. All equipment and standards were verified to be current and within expiration dates. Initial Calibration Report LA14FG12041\_ICAL was examined. The audit team verified that initial calibration was performed compliantly and referenced in each FGA BDR. The Minimum Detection Limit (MDL) spreadsheet from the most recent MDL study, LA13FG12110\_MDL, was examined. Results were correctly calculated and the spreadsheets were referenced in the FGA BDR. Analytical BDR LA14FG12054 was examined and determined to be complete and acceptable. Review of the BDR had been performed by the ITR as required by procedure. Transmittal of the reports to CCP records was verified.

Calibration Certificate of Accuracy (COA) for Continuing Calibration Verification (CCV) Standard ALM 060093 and the COA for Internal Standards (ISTDs) and bromofluorobenzene (BFB) CC309960 were all found to be within expiration time frames and acceptable. All records reviewed were prepared, reviewed, approved, and maintained through the RIDS. Personnel training records and Lists of Qualified Individuals (LOQIs) were verified to be current.

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

## **CORRECTIVE ACTIONS, OBSERVATIONS, AND RECOMMENDATIONS**

### **6.1 Corrective Action Reports**

During the audit, the audit team may identify conditions adverse to quality (CAQs), as defined below, 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.

Audit A-15-21 resulted in the issuance of CAR 15-063, as described below.

#### **CAR 15-063**

Condition:

Discrepancy Resolution DR048 for waste stream LA-MHD01.001 identified a discrepancy regarding the range of reported weight percentages for U-232 as documented in the AK Summary Report, Rev. 11, and the AK Attachment 7, Radionuclides, with a number based on generator input of 1.29%, in contrast to the value of 54.69% based upon a NDA result for a drum characterized from lot 323. The resolution was to revise the AK Summary Report and AK Attachment 7 to reflect the value from NDA, which is identified in Rev. 12 of the AK Summary Report. However, when Rev. 13 of the AK Summary Report and AK Attachment 7 were generated, the tables reflected the values presented in Rev. 11.

Requirement:

CCP-TP-005, Rev. 26, *CCP Acceptable Knowledge Documentation*, Section 4.4.23 states: "For contact-handled (CH) waste streams and RH waste streams characterized using NDA techniques, review all source documents to determine the two most prevalent radionuclides for the waste stream, and estimated isotopic ratios for the following 10 WIPP-required radionuclides: Sr-90; Cs-137; U-233; U-234; U-238; Pu-238; Pu-239; Pu-240; Pu-242; and Am-241."

Section 4.4.27[B]: "See Attachment 7, Radionuclides - Example Form (CH only), for an example. Include the NDA Memorandum (signed by the AKE and NDA EA) described in step 4.4.24 as an addendum to Radionuclides."

Section 4.9.1: "Document the nature of the discrepancy **AND** identify the documents involved for the particular waste stream or waste container on the Acceptable Knowledge Source Document Discrepancy Resolution or in the appropriate section of the AK Summary Report."

Section 4.9.11: "Assign or revise the identified radionuclides present, as necessary, **AND** document the change and the assumptions made on the Acceptable Knowledge Source Document Discrepancy Resolution."

Section 4.9.23: "Revise the AK Summary Report as needed."

## **6.2 Deficiencies Corrected During the Audit**

During the audit, the audit team may identify 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.

The audit team identified two CDAs during Audit A-15-21, as described below.

### **CDA-1**

Condition:

The identification of the revision number for CCP-TP-069 was not recorded where required on Attachment 7 (VE ITR Checklist) in BDR LA14-OSR-VE-011.

Requirement:

CCP-TP-069, Rev. 6, Section 4.3.1 states: "Complete the review checklist, by checking the appropriate box Yes, No, or N/A, for each item on Attachment 7, and print name, sign, and date Attachment 7 for the VE BDR."



During the audit, the auditor was provided with objective evidence that included NCR-LANL-0036-15, generated on 9/1/2015. The reviewer then entered the correct revision of the operating procedure in question one of the ITR checklist, where the ITR and SPM re-reviewed the BDR. The NCR was provided to CCP Records, and a copy of the BDR with the associated revisions was provided to the audit team prior to audit closure. The concern was determined to be isolated in nature and evidence confirming the correction was presented to the audit team and verified prior to the conclusion of the audit.

## **CDA-2**

Condition:

The number of containers in waste stream LA-MSG04.001 as identified in AK Attachment 8 is not in agreement with the number in the AK Summary Report and the AK Tracking Spreadsheet. AK Attachment 8 should be revised and the supporting AK Source Document C037, the Waste Container Evaluation Memorandum should be modified to provide additional information regarding the discrepancy.

Requirement:

CCP-TP-005 R26 Section 4.4.27 (C) states: "See Attachment 8, Waste Containers List – Example Form, (or an equivalent form, e.g., spreadsheet). Prepare or update the Container Tracking Spreadsheet as described in Section 4.11 for the containers identified in Waste Containers List and corresponding Waste Stream Container Evaluation Memorandum prepared in steps 4.10.3 and 4.10.4."

During the audit, the audit team was provided with objective evidence that AK Attachment 8 was revised to reflect the correct container count and AK Source Document C037 was revised to supplement the record. Both documents were submitted to the AK Record. The concern was determined to be isolated in nature and evidence confirming the correction was presented to the audit team and 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 the 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.

No Recommendations were identified during the audit.

#### **7.0 LIST OF ATTACHMENTS**

Attachment 1: Personnel Contacted During Audit A-15-21  
Attachment 2: Summary Table of Audit Results  
Attachment 3: List of Audited Documents  
Attachment 4: Processes and Equipment Reviewed

<b>PERSONNEL CONTACTED DURING AUDIT A-15-21</b>				
<b>NAME</b>	<b>TITLE/ORG</b>	<b>PRE-AUDIT MEETING</b>	<b>CONTACTED DURING AUDIT</b>	<b>POST-AUDIT MEETING</b>
Allen, B.	NWP QA/NWP			X
Aragon, I.	NDA Operator/Canberra		X	
Archuleta, L.	TRU Waste Tech/NPI-7		X	
Armijo, C.	Training Records Analyst/CCP/TFE		X	
Auckland, S.	Acceptable Knowledge Expert/LANL-Carlsbad	X	X	
Baca, R.	CCP Records Analyst/NWP/CCP	X		X
Barton, T.	NDA Lead/MCS/Canberra	X	X	X
Bender, L.	Observer/U.S. EPA	X	X	
Bignell, D.	Observer/DOE/CBFO/CTAC	X	X	X
Billett, M.	Training Coordinator/CCP/TFE		X	
Brachter, S.	NWP Tech./NWP			X
Cannon, V.	QA Director/NWP			X
Chambers, S.	EA/Canberra	X	X	
Chavarria, A.	QA Engineer/NWP	X		
Elliot, A.	RTR Operator/CCP/VJT	X	X	X
Escarcega, M.	NDA Operator/CCP/Canberra	X	X	
Feldman, A.	OSRP/SME/NEN-3/LANL		X	
Fisher, A.J.	CCP Support Services Mgr/NWP/CCP	X	X	X
Frederici, D.	Waste Disposition Division Group Leader/LANS		X	
Gallegos, A.	System Operator/MCS/PSC		X	
Gelston, D.	First Line Mgr/NPI-7		X	
Geyer, R.	TRU Waste Tech/NPI-7		X	
Green, L.	R & D Mgr/C-IIAC		X	
Groover, T.	Site Project Manager/NWP/CCP	X	X	
Harvill, J.	NDA Tech. Advisor/NWP/CCP	X	X	
Hasselstrom, T.	RTR Operator/NWP/CCP/VJT		X	
Holmes, S.	Observer/NMED	X	X	X
Jagielski, R.	FGA Lead Operator/CCP/LANL	X		

<b>PERSONNEL CONTACTED DURING AUDIT A-15-21</b>				
<b>NAME</b>	<b>TITLE/ORG</b>	<b>PRE-AUDIT MEETING</b>	<b>CONTACTED DURING AUDIT</b>	<b>POST-AUDIT MEETING</b>
Jones, L.	QA Engineer/NWP/QA	X	X	X
Kais, Ted	NA-LAQAS/QAS			X
Maestas, R.	Observer/NMED	X	X	
Martinez, S.	Cognizant Engineer – NDE/NWP/CCP	X	X	X
Mojica, T.	VEE/NWP/CCP		X	
Montoya, J.	AKE/LANL	X	X	
Morales, B.	EA/Canberra	X	X	
Nance, S.	AKE/CCP	X	X	X
Papp, Michael	AKE/CCP/Tech. Specs		X	
Pearcy, S.	Records Manager/NWP/CCP	X	X	X
Petru, E.	Lead/LANL QPA			X
Punchios, S.	NWP Tech/NWP/CCP			X
Ramirez, M.	Waste Cert. Manager/NWP/CCP	X	X	X
Rascon, M.	CCP Records/CCP/TFE	X		
Reeves, R.	CCP Operations Mgr/NWP/CCP	X		
Robida, P.	VEO/CCP		X	
Sager, D.	Operator/MCS		X	
Schoen, J.	AKE/CCP/Tech. Specs	X	X	
Sexton, C.	QA Engineer/NWP		X	
Sharif, F.	NTP Manager/NWP/NTP	X		
Simmons, C.	VPM/NWP/CCP		X	X
Simpson, K.	RTR Subject Matter Expert/NWP/CCP/VJT	X	X	X
Smith, C.	Observer/NMED	X	X	X
Soaterna, C.	Site Project Manager/NWP/CCP	X	X	
Stenkel, S.	System Operator/MCS/PSC		X	
Stroble, J.	TSTD Director/DOE/CBFO	X		X
Thompson, J.	VEE/NWP/CCP		X	
Triay, I.	Observer/FIU Contractor to NMED	X	X	X

<b>PERSONNEL CONTACTED DURING AUDIT A-15-21</b>				
<b>NAME</b>	<b>TITLE/ORG</b>	<b>PRE-AUDIT MEETING</b>	<b>CONTACTED DURING AUDIT</b>	<b>POST-AUDIT MEETING</b>
Wachter, J.	NDA/CCP/Canberra	X		X
Waldram, V.	NWP QA Tech/NWP			X
Witkowski, I.	OSRP/CH-SME/NEN-3/LANL	X	X	
Ytturalde, J.	CCP Records/CCP/TFE	X		

**Audit A-15-21  
Summary Table of Audit Results**

QA / Technical Elements	Concern Classification				QA Evaluation		Technical Evaluation
	CARs	CDAs	Obs	Rec	Adequacy	Implementation	Effectiveness
Acceptable Knowledge	1	1			A	S	E
Reconciliation of DQOs WSPFs					A	S	E
Project Level Data V&V		1			A	S	E
Real-time Radiography					A	S	E
Visual Examination					A	S	E
Nondestructive Assay					A	S	E
Container Mgmt/FGA					A	S	E
QA General C6-1 Training					A	S	E
QA General C6-1 NCRs/Records/Doc Control					A	S	E
QA General C6-1 WWIS/WDS					A	S	E
<b>TOTALS</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>A</b>	<b>S</b>	<b>E</b>

**Definitions**

E = Effective

S = Satisfactory

I = Indeterminate

M = Marginal

U = Unsatisfactory

CAR = Corrective Action Report

CDA = Corrected During Audit

NE = Not Effective

Obs – Observation

Rec = Recommendation

A = Adequate

NA = Not Adequate

**Audit A-15-21**  
**LIST OF AUDITED DOCUMENTS**

	<b>Document No.</b>	<b>Rev.</b>	<b>Document Title</b>
1.	CCP-PO-001	21	CCP Transuranic Waste Characterization Quality Assurance Project Plan
2.	CCP-PO-002	27	CCP Transuranic Waste Certification Plan
3.	CCP-PO-003	13	CCP Transuranic Authorized Methods for Payload Control
4.	CCP-PO-005	26	CCP Conduct of Operations
5.	CCP-PO-012	15	CCP/LANL Interface Document
6.	CCP-QP-002	39	CCP Training and Qualification Plan
7.	CCP-QP-005	25	CCP TRU Nonconforming Item Reporting and Control
8.	CCP-QP-008	24	CCP Records Management
9.	CCP-QP-016	21	CCP Control of Measuring & Testing Equipment
10.	CCP-QP-017	4	CCP Identification and Control of Items
11.	CCP-QP-021	10	CCP Surveillance Program
12.	CCP-QP-028	16	CCP Records Filing, Inventorying, Scheduling, and Dispositioning
13.	CCP-QP-030	9	CCP Written Practice for the Qualification of CCP Helium Leak Detection Personnel
14.	CCP-QP-032	2	CCP Written Practice for the Qualification of CCP Pressure Change Leak Testing Personnel
15.	CCP-TP-001	21	CCP Project Level Data Validation and Verification
16.	CCP-TP-002	26	CCP Reconciliation of DQOs and Reporting Characterization Data
17.	CCP-TP-005	26	CCP Acceptable Knowledge Documentation
18.	CCP-TP-005	27	CCP Acceptable Knowledge Documentation
19.	CCP-TP-028	9	CCP Radiographic Test Drum and Training Container Construction
20.	CCP-TP-030	34	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
21.	CCP-TP-033	22	CCP Shipping of CH TRU Waste
22.	CCP-TP-053	15	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
23.	CCP-TP-055	5	CCP Varian Porta-Test Leak Detector Operations
24.	CCP-TP-058	6	CCP NDA Performance Demonstration Program
25.	CCP-TP-059	4	CCP Operating the SuperHENC Using NDA 2000
26.	CCP-TP-063	17	CCP Operating the High Efficiency Neutron Counter Using NDA 2000
27.	CCP-TP-064	8	CCP Calibrating the High Efficiency Neutron Counter and the SuperHENC Using NDA 2000
28.	CCP-TP-069	6	CCP Sealed Source Visual Examination and Packaging
29.	CCP-TP-076	1	CCP Operating the Mobile ISOCS Large Container Counter Using NDA 2000
30.	CCP-TP-077	1	CCP Calibrating the Mobile ISOCS Large Container Counter Using NDA 2000
31.	CCP-TP-086	19	CCP CH Packaging Payload Assembly
32.	CCP-TP-101	7	CCP Off-Site Source Recovery Project Sealed Source Radiological Characterization
33.	CCP-TP-103	12	CCP Data Reviewing, Validating & Reporting Procedure for the NDA Counters at LANL Using NDA 2000
34.	CCP-TP-107	14	CCP Calibrating the High Efficiency Neutron Counter #3 (HENC #3) Using NDA 2000

35.	CCP-TP-108	7	CCP Operating the High Efficiency Neutron Counter #3 (HENC #3) Using NDA 2000
36.	CCP-TP-113	19	CCP Standard Contact-Handled Waste Visual Examination
37.	CCP-TP-120	16	CCP Container Management
38.	CCP-TP-122	5	CCP RTR #2 Operating Procedure
39.	CCP-TP-138	2	CCP Execution of Long-Term Objectives for the Unified Flammable Gas Test Procedure
40.	CCP-TP-198	8	CCP HE-RTR Operating Procedure
41.	DOE/CBFO 94-1012	12	CBFO Quality Assurance Program Document (QAPD)
42.	DOE/WIPP 02-3122	7.4	Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant
43.	DOE/WIPP 06-3345	9	Waste Isolation Pilot Plant Flammable Gas Analysis
44.	WP 08-PT.01	9	Standard Waste Box Handling and Operations Manual
45.	WP 08-PT.02	10	Ten-Drum Overpack Handling and Operations Manual
46.	WP 08-PT.04	7	TRUPACT-II/HalfPACT Trailer O&M Manual
47.	WP 13-QA.03	24	Quality Assurance Independent Assessment Program
48.	WP 13-1	35	Nuclear Waste Partnership LLC Quality Assurance Program Description



**Processes and Equipment Reviewed During Audit A-15-21 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
<b>NEW PROCESSES OR EQUIPMENT</b>				
11HC3	Nondestructive Assay Procedure – CCP-TP-103, CCP-TP-107, CCP-TP-108 Description – Canberra Industries High-Efficiency Neutron Counter (HENC) mounted in a trailer.	Soils/Gravel (S4000) Debris (S5000)	N/A	YES
<b>PREVIOUSLY APPROVED PROCESSES OR EQUIPMENT</b>				
11MILCC1	Nondestructive Assay Mobile In-Situ Object Counting System (ISOCS) Large Container Counter (MILCC) Procedure(s) – CCP-TP-076, CCP-TP-077 and CCP-TP-103	Soils/Gravel (S4000)	N/A	YES
11RR2	Real-Time Radiography (RTR) Procedures – CCP-TP-053 and CCP-TP-028 Description – Real-Time Radiography (RTR) Mobile Characterization System [built by VJ Technologies] 55-gallon drums	Soils/Gravel (S4000) Debris (S5000)	YES	YES
11HERTR3	High Energy Real-Time Radiography (HERTR) Procedures CCP-TP-053 and CCP-TP-198 Description – High Energy Real-Time Radiography (RTR) [built by VJ Technologies] 55-gallon drums and SWBs	Soils/Gravel (S4000) Debris (S5000)	YES	YES

**Processes and Equipment Reviewed During Audit A-15-21 of the LANL/CCP**

<b>WIPP #</b>	<b>Process/Equipment Description</b>	<b>Applicable to the Following Waste Streams/Groups of Waste Streams</b>	<b>Currently Approved by NMED</b>	<b>Currently Approved by EPA</b>
11VE1	CH Visual Examination Procedure – CCP-TP-113 Description – CH Characterization performed utilizing Visual Examination (VE) and Acceptable Knowledge (AK)	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 (VE) and Acceptable Knowledge (AK)	Debris (S5000)	YES	YES
N/A	Acceptable Knowledge Procedure – CCP-TP-005 Description – Acceptable Knowledge (AK)	Soils/Gravel (S4000) Debris (S5000)	YES	YES
N/A	Data Verification and Validation Procedure(s) – CCP-TP-001, CCP-TP-002, CCP-TP-003, CCP-TP-103, CCP-TP-162	Soils/Gravel (S4000) Debris (S5000)	YES	YES
11HC1	Nondestructive Assay Procedure – CCP-TP-063, CCP-TP-064, CCP-TP-103 Description – Canberra Industries High-Efficiency Neutron Counter (HENC) mounted in a transportation container	Soils/Gravel (S4000) Debris (S5000)	N/A	YES

**Processes and Equipment Reviewed During Audit A-15-21 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
11HC2	Nondestructive Assay Procedure – CCP-TP-063, CCP-TP-064, CCP-TP-103 Description – Canberra Industries High-Efficiency Neutron Counter (HENC) mounted in a trailer	Soils/Gravel (S4000) Debris (S5000)	N/A	YES
11SHC1	Nondestructive Assay* Procedure – CCP-TP-059, CCP-TP-064, CCP-TP-103 Description – Super High-Efficiency Neutron Counter mounted in a trailer, SWBs	Soils/Gravel (S4000) Debris (S5000)	N/A	YES
N/A	WIPP Waste Information System/Waste Data System (WWIS/WDS) Procedure – CCP-TP-030 Description – CH TRU Waste Certification and WWIS/WDS Data Entry	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	Soils/Gravel (S4000) Debris (S5000)	N/A	N/A
N/A	Quality Assurance Program	Soils/Gravel (S4000) Debris (S5000)	N/A	YES