Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

DEC - 3 2012

Mr. John E. Kieling, Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Bldg. 1
Santa Fe, NM 87505-6303

Subject: Transmittal of the Final Audit Report for the Los Alamos National Laboratory Central Characterization Project Recertification Audit A-12-12

Dear Mr. Kieling:

This letter transmits the Final Audit Report for the Carlsbad Field Office (CBFO) Audit A-12-12 of the Los Alamos National Laboratory Central Characterization Project performing characterization and certification activities as required by Part 2, Section 2.3.2.3 of the Waste Isolation Pilot Plant Hazardous Waste Facility Permit. The audit was conducted July 24 – 26, 2012. The report contains the results of the audit performed for recertification of contact-handled Summary Category Groups S3000 homogeneous solids waste and S5000 debris waste, and the initial certification of S4000 soils/gravel waste.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Please contact the CBFO Quality Assurance Director, Randy Unger, at (575) 234-7065, should you have any questions concerning this audit report.

Sincerely,

for Jose R. Franco

Jose R. Franco, Manager
Carlsbad Field Office

Enclosure

CBFO:OQA:CF:CC:12-1556:UFC 2300.00

cc: w/Report Narrative

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WIPP Operating Record	
CBFO M&RC	
CTAC File	

*ED denotes electronic distribution

U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE

FINAL AUDIT REPORT

OF THE

LOS ALAMOS NATIONAL LABORATORY
CENTRAL CHARACTERIZATION PROJECT

FOR

WASTE CHARACTERIZATION ACTIVITIES IN ACCORDANCE WITH THE HAZARDOUS WASTE FACILITY PERMIT

LOS ALAMOS, NEW MEXICO

AUDIT NUMBER A-12-12

July 24 – 26, 2012

Prepared by: _____ **Date:** 10 OCT 2012
Greg Knox, CTAC
Audit Team Leader

Approved by: Courtland Fesmire for **Date:** 27 NOV 2012
Randy Unger, CBFO
Director, Office of Quality Assurance

1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Audit A-12-12 was conducted to evaluate the adequacy, implementation, and effectiveness of Los Alamos National Laboratory (LANL) transuranic (TRU) waste characterization activities performed for LANL by the Washington TRU Solutions, LLC (WTS) Central Characterization Project (CCP). The audit was conducted relative to the requirements detailed in 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).

The audit team evaluated the continuing characterization processes for contact-handled (CH) Summary Category Group (SCG) S3000 homogeneous solids and SCG S5000 debris wastes. The Office of the National TRU Program (NTP) requested that the audit team also evaluate the characterization process for CH SCG S4000 soils/gravel waste for initial certification. As part of the audit, the NTP requested a review of the extension of the calibration for the High-Efficiency Neutron Counter #1 (HENC #1) to include a population of lead-lined 55-gallon drums containing solidified materials, as well as a calibration extension of the high-resolution gamma spectrometry to 2.5 grams per cubic centimeter (g/cc) for the SuperHENC. The specific elements evaluated during this audit are listed in section 2.1.

The audit was conducted at the LANL facilities in Los Alamos, NM, and at the Skeen-Whitlock Building in Carlsbad, NM, July 24 – 26, 2012. 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. The audit team verified that the LANL/CCP technical and QA programs, including the NTP requested extensions, used for characterization and certification of CH SCG S3000 homogeneous solids and SCG S5000 debris waste were satisfactorily implemented and effective.

The audit team was unable to determine the adequacy, implementation and effectiveness of the characterization of CH SCG S4000 soils/gravel waste because the team was not provided with any completed S4000 characterization packages. The team reviewed the preliminary Acceptable Knowledge (AK) documentation, reviewed the real-time radiography (RTR) and nondestructive assay (NDA) characterization of S4000 soils/gravel waste, and reviewed a random selection memo for LANL S4000 waste. All were deemed to be adequate.

No completed sampling batch data reports (BDRs) for LANL S4000 waste were provided to the team for evaluation, and therefore the audit team concluded that characterization activities of LANL/CCP for CH SCG S4000 soils/gravel waste were indeterminate. When additional documentation is available for review, it will be evaluated by surveillance.

The audit team identified 12 concerns during the audit. Four concerns were determined to have similar causes and were combined and incorporated into CBFO Corrective Action Report (CAR) 12-033. One other concern related to project-level data validation and verification (V&V) of visual examination (VE) BDRs resulted in CBFO CAR 12-034. After

the audit, it was discovered by the CBFO Office of Quality Assurance that one concern was similar to a nonconformance report (NCR) written in July 2012 at the Savannah River Site (SRS), and was not an isolated incident. This concern was documented in CBFO CAR 12-035. Of the six remaining concerns, one in the area of AK was offered to LANL/CCP management as a Recommendation and the rest were grouped into three Observations. These are discussed in the narrative of this report and in sections 6.3 and 6.4.

2.0 SCOPE AND PURPOSE

2.1 Scope

The audit team evaluated the adequacy, implementation, and effectiveness of the LANL/CCP TRU waste characterization and certification activities for SCG S3000 homogeneous solids, S4000 soils/gravel, and SCG S5000 debris wastes. The following elements were evaluated.

Quality Assurance

Personnel Qualification and Training
Nonconformance Reporting
Records

Technical

Project-level Data Validation and Verification (V&V)
Acceptable Knowledge (AK)
Headspace Gas (HSG) Sampling
Real-time Radiography (RTR)
Visual Examination (VE), including the Off-site Source Recovery Program (OSRP)
Nondestructive Assay (NDA), including the Performance Demonstration Program (PDP)
Flammable Gas Analysis (FGA)
WIPP Waste Information System/Waste Data System (WWIS/WDS)
Load Management
Solids Sampling and Analysis

TRUPACT-II Operations/Waste Certification/Transportation

Container Management
Packaging Operations
Waste Certification
Payload Assembly and Loading
Leak Testing

The evaluation of LANL/CCP TRU waste characterization 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

Related technical and QA implementing procedures

2.2 Purpose

Audit A-12-12 was conducted to assess sustained compliance with requirements applicable to waste characterization and certification activities for CH TRU SCG S3000 homogeneous solids and SCG S5000 debris waste, and to evaluate waste characterization and certification activities of SCG S4000 soils/gravel waste for initial certification.

3.0 AUDIT TEAM AND OBSERVERS

AUDITORS/TECHNICAL SPECIALISTS

Courtland G. Fesmire, P.E.	Audit Team Management Representative, CBFO
Greg Knox	Audit Team Leader, CBFO Technical Assistance Contractor (CTAC)
Rick Castillo	Auditor, CTAC
Cindi Castillo	Auditor, CTAC
Earl Bradford	Auditor, CTAC
Tommy Putnam	Auditor, CTAC
Katie Martin	Auditor, CTAC
Berry Pace	Auditor, CTAC
Tammy Bowden	Auditor, 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
Mavis Lin	Technical Specialist, CTAC

Jim Oliver	Technical Specialist, CTAC
Joe Willis	Technical Specialist, WTS

OBSERVERS

Tom Morgan	CBFO NTP
Trais Kliphuis	New Mexico Environment Department (NMED)
Ricardo Maestas	NMED
Connie Walker	NMED

4.0 AUDIT PARTICIPANTS

LANL/CCP individuals involved in the audit process are identified in Attachment 1. Attachment 2 identifies the LANL/CCP personnel contacted during the audit by area. A pre-audit meeting was held in the URS corporate offices in Los Alamos, NM, and at the Skeen-Whitlock Building in Carlsbad, NM, on July 24, 2012. Team space was provided by LANL/CCP at the URS corporate offices. Daily briefings were held with LANL/CCP management and staff to discuss issues, potential deficiencies, and audit progress. On July 26, 2012, the final management/post-audit meeting was held at the URS corporate 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 and certification activities evaluated, as related to CH-TRU waste and described in the associated implementing procedures, were adequate, satisfactorily implemented, and effective. Audited activities are described below. There has been a complete reorganization of the LANL/CCP management team since the previous audit (A-11-11); however, the new management group has experience at LANL and in the CCP characterization process and there does not appear to be any significant impact to the LANL/CCP program. Attachment 3 contains the objective evidence reviewed by the audit team. Attachment 4 contains a list of documents that were evaluated during the audit. Attachment 5 contains a list of the processes and equipment evaluated. Attachment 6 contains the revision to the implementing procedures since Audit A-11-11.

5.2 Quality Assurance Activities

The audit team evaluated the QA elements for personnel qualification and training, control of nonconformances, and quality assurance records for compliance with applicable upper-tier requirements. 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. 32, *CCP Training and Qualification Plan,* to determine the degree to which the procedure adequately addresses upper-tier

requirements. Personnel training records associated with VE (including OSRP), RTR, NDA, HSG sampling, flammable gas analysis, AK, and site project management were examined to verify implementation of associated requirements and to verify that personnel performing characterization activities are appropriately qualified. Records reviewed 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, training container documentation, eye exams, etc.

Two concerns resulted from this portion of the audit. The first concern (item 1 in CBFO CAR 12-033) involved issuance of qualification cards for multiple disciplines. No objective evidence was provided during the audit that the site project manager (SPM) who signed the qualification cards (thereby approving the employee to perform the required duties) and appointed the VE Expert (VEE) for OSRP was the designated Lead or Alternate SPM. This appears to be an administrative issue concerning the qualification form revision letter, and does not impact qualification of personnel (see section 6.1).

The second concern (item 2 in CBFO CAR 12-033) involved VE qualification cards. The audit team identified that the SPM signature approving the employee to perform the required duties is dated prior to the verification performed by CCP Training of completion of briefings and the comprehensive exam. This also appears to be an administrative issue concerning the qualification form revision letter, and does not impact qualification of personnel (see section 6.1).

The procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for Personnel Qualification and Training are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

Nonconformance Reporting

The audit team reviewed implementing procedure CCP-QP-005, Rev. 21, *CCP TRU Nonconforming Item Reporting and Control,* to determine the degree to which the procedure adequately addresses upper-tier requirements.

The audit team interviewed the CCP Carlsbad Project Office QA engineer and then randomly selected a population of NCRs to confirm that deficiencies are appropriately documented and tracked through resolution as required (NCR-LANL-2811-11, NCR-LANL-3739-11, NCR-LANL-0093-12, NCR-LANL-2592-11, NCR-LANL-2623-11, NCR-LANL-3612-11, NCR-LANL-0449-12 and NCR-LANL-0790-12). Three NCRs (NCR-LANL-2810-11, NCR-LANL-2822-11, and NCR-LANL-3737-11) documented nonadministrative deficiencies first identified at the SPM level, which must be reported to the Permittee within seven days. The audit team verified that the requirement was met. All NCRs were verified as being managed and tracked in the CCP data center, in the CCP NCR 2011 and 2012 logs, and through the required reconciliation reporting mechanism.

Two concerns were identified during the review of NCRs. The first concern involved completion of Blocks 19b and 19c on the form for NCR-LANL-1004-12. These blocks

were not completed, as required, prior to Final Disposition Approval being signed. This concern was documented as item 3 in CBFO CAR 12-033 (see section 6.1).

The second concern involved a BDR that was reworked to resolve a nonconforming item prior to the NCR being written. Specifically, data generation-level personnel made changes to the documentation of the packaging configuration, and the independent technical reviewer (ITR) re-reviewed the BDR (LAHSG1202) prior to NCR-LANL-1010-12 being written. These actions are part of the instructions for completion associated with the final disposition of the NCR. This was documented as item 4 in CBFO CAR 12-033 (see section 6.1).

Overall, Nonconformance Reporting activities were determined to be adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

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 procedures review included CCP-QP-008, Rev. 19, *CCP Records Management*, and CCP-QP-028, Rev. 14, *CCP Records Filing, Inventorying, Scheduling, and Dispositioning*. Control of QA records was verified through review of the CH Records Inventory and Disposition Schedule (RIDS) dated 8/15/11. No concerns were identified.

The procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for Records activities are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.3 Technical Activities

5.3.1 Project-level Data Validation and Verification

The audit team evaluated the ability of the LANL/CCP to characterize SCG S5000 debris and SCG S3000 solids wastes. The project-level review of SCG S4000 soils/gravel waste resulted in a finding of indeterminate. The audit team was provided a random selection memo for S4000 soils/gravel waste, but LANL/CCP provided no completed BDRs for coring/analysis or characterization documentation for S4000 soils/gravel waste during the audit.

Objective evidence was collected for SCGs S3000 and S5000 as part of this evaluation and utilized in the completion of Waste Analysis Plan (WAP) Table C6 checklists. The objective evidence included BDRs completed through the CCP SPM review for RTR, VE, HSG sampling and analysis, and solids sampling and analysis. The NDA objective evidence was documented on a separate CBFO checklist. In addition, procedures and objective evidence were reviewed to ensure that LANL/CCP adequately performs data reconciliation and properly prepares a Waste Stream Profile Form (WSPF).

Compliance with the characterization requirements of the WAP was demonstrated through documentation and characterization demonstrations. To evaluate project-level data V&V, the audit team reviewed the following BDRs.

Radiography

LA-HERTR-12-0007	LA-HERTR-12-0042	LA-HERTR-12-0044
LA-RTR2-11-0116	LA-RTR2-12-0066	

Visual Examination

LA11-OSR-VE-010	LA12-OSR-VE-001	LAVE4120013
LAVE500482	LAVE550055	

Headspace Gas Sampling and Analysis

LAHSG1104	ECL11032M	LAHSG1201
ECL12008M	LAHSG1202	ECL12011M

Solids Sampling and Analysis

SSG11-00005	ALD11025V	ALD11025S
ALD11025N	ALD11025M	SSG12-00002
ALD12014V	ALD12014S	ALD12014N
ALD12014M		

Objective evidence was reviewed to ensure project-level activities were adequately performed to support waste characterization. The quarterly repeat of data generation-level re-reviews for RTR, HSG sampling, and VE were requested. LANL/CCP provided all quarterly data requested.

A review was performed of the WSPF Characterization Information Summary (CIS) for S5000 waste streams. The WSPF included all correct and appropriate documentation for LA-MHD05-ITRI.001, LA-MHD09.001, LA-MHD02-PTX.001, and draft WSPF LA-OS-00-04. The WSPF for LA-MHD05-ITRI.001 was reviewed as it had been generated since the last audit and had not been previously presented for audit review.

The random selection of containers for the LANL/CCP waste streams of concern was properly completed for solids waste, including S4000 soils/gravel waste stream LA-MSG04.001 and a subsequent third lot of randomly selected solids samples from waste stream LA-CIN01.001. The random selection of containers for the LANL/CCP waste streams was properly completed for debris waste, including containers for subsequent HSG sampling of S5000 heterogeneous debris waste streams LA-MHD01.001 and LA-MHD05-ITRI.001. The audit team noted one concern: four sample selection container replacement memoranda incorrectly identified "SOLIDS" instead of headspace gas in the subject line. This concern is documented as Observation 2 (see section 6.3).

LANL/CCP performs HSG sampling using SUMMA® canisters provided by the Idaho National Laboratory (INL). Sampling BDRs LAHSGS1104, LAHSG1201, and LAHSG1202 for S5000 debris waste were examined. Drum age criteria (DAC), sample chain-of-custody (COC), and shipment to the analytical laboratory were reviewed and determined to be compliant with project-level requirements. The audit team cited DAC issues in

LAHSG1202 (see section 5.3.4). COC forms were reviewed, and continuing and sustaining corrective actions taken in response to CBFO CAR 10-027 were verified. The HSG analysis of the SUMMA® samples was reviewed by the team, as well as the training and qualification of V&V personnel.

The analysis and reporting of the field reference standard was accurately completed. The audit team concluded that the LANL/CCP V&V processes for HSG sampling and analysis are adequate, satisfactorily implemented, and effective.

LANL/CCP RTR project-level processes were evaluated to determine the effectiveness of RTR as a characterization method. BDRs LA-HERTR-12-0007, LA-HERTR-12-0042, LA-HERTR-12-0044, LA-RTR2-11-0116 and LA-RTR2-12-0066 were reviewed and the audit team found the V&V processes for RTR to be adequate, satisfactorily implemented, and effective.

LANL/CCP project-level VE processes were evaluated to determine the effectiveness of VE as a characterization method. BDRs LAVE500468, LAVE500502, LAVE500482, LAVE550055, LAVE4120013, LA11-OSR-VE-010, and LA12-OSR-VE-001 were assessed by the team.

The VE audit team identified one concern during its evaluation of the random selection of VE BDRs selected for the VE portion of the audit. Two VE BDRs, LAVE500468 and LAVE500502, had at least one container with a liner lid, but the audit team noted that the SPM indicated on the checklist that no containers had a rigid liner lid, answering the question N/A with a comment, "No Liner Lid." This occurred in over half of the randomly chosen BDRs for this audit and requires further investigation. This concern was documented as CBFO CAR 12-034 (see section 6.1).

The audit team concluded that the LANL/CCP Project-level Data Validation and Verification of VE processes are adequate, satisfactorily implemented, and effective.

NDA project-level data V&V was evaluated by the audit team using characterization reports 1LANDA1470, 1LANDA1511, 2LANDA0832, 2LANDA0888, 2LANDA0999, 3LANDA0060, 3LANDA0063, LA11-OSR-CH-010 and LA-12-OSR-CH-001. The audit team identified one concern: in the project-level checklist, question 19 was answered with "N/A," but no justification was recorded in the comments section, contrary to CCP-TP-001 procedure requirements. This concern is documented in Observation 2 (see section 6.3).

The audit team concluded that the LANL/CCP Project-level Data Validation and Verification of NDA processes are adequate, satisfactorily implemented, and effective.

Overall, Project-level Data Validation and Verification activities were found to be adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.3.2 Acceptable Knowledge

The audit team conducted a review of CCP Certification Program activities for SCGs S3000 solids and S5000 debris wastes. In addition, audit team members were asked to review available documentation for an S4000 soils/gravel waste stream for which sampling and analysis was still pending. The audit team therefore examined the AK record for two S5000 debris waste streams, LA-MHD03.001 from the Chemistry and Metallurgy Research (CMR) Facility, and LA-OS-00-04, a sealed source waste stream from the OSRP. In addition, the team reviewed documentation for an S3000 solids waste stream, LA-MIN03-NC.001 from Bldg. TA-50, and the previously noted S4000 soils/gravel stream LA-MSG04.001 from an area associated with activities in TA-21.

In addition to the AK summary reports for the four waste streams referenced above and approved on draft WSPFs, the audit team reviewed the following AK attachments 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 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 stream as applicable.

The audit team also examined numerous AK source documents and source document summaries for the four waste streams for verification of support of the information in the AK summary reports, reviewed examples of discrepancies in the AK record, and examined discrepancies between the AK record and characterization activities and resultant AK re-evaluations.

NCRs addressing prohibited items identified during RTR of waste drums were also reviewed, including excess liquids, sealed containers greater than four liters, and the presence of sealed aerosol cans. The WAP-required traceability exercise was conducted for six containers in total from the four streams, including containers from HSG sampling for the debris stream and solids sampling from the TA-50 solidified liquids stream.

In addition to specific BDRs for the drums selected, the audit 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, and waste stream characterization checklists used to reconcile characterization results with the AK record for those drums placed in a shipping lot. AK accuracy reports were also reviewed. Finally, training records for AK Expert (AKE) and SPM personnel were examined by the audit team, along with an example of a recent AK internal surveillance. All applicable elements of the C6-1 and C6-3 checklists were reviewed during the audit to assure that sufficient and relevant objective evidence had been compiled to demonstrate compliance.

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 10 tracked radionuclides and identification of the two

most prevalent radionuclides. AK and NDA memos were reviewed for all streams, as applicable.

The auditors also performed a QA program overview of various QA program elements imposed upon the LANL/CCP AK processes, including the following areas not previously addressed.

AK-related Nonconformances (other than prohibited items)

The audit team verified that nonconforming data and discrepancies between AK documentation and characterization results are being appropriately identified, documented on NCRs and reported, and that the affected data and the waste containers associated with the discrepant conditions are tagged and held until resolution of the deficient conditions.

AK Procedures and Control

The audit team verified that AK documentation is developed and maintained in accordance with controlled implementing procedures. In addition, the audit team verified that implementing procedures and revision status can be accessed by AK personnel on the electronic database as needed. The audit team verified that the procedure status identified on the electronic database was consistent with the procedures provided to the audit team for evaluation.

AK Records Identification and Control

The audit team verified that the records generated while developing AK documentation are identified in the records section of each procedure. The team toured the AK records storage facility and verified that the records copies of selected AK source documents associated with the AK summaries evaluated during the audit were being maintained and were readily retrievable in the records storage facility. The audit team verified that records copies of the BDRs selected by the audit team for verification of the traceability exercise were legible, accurate, complete, and properly numbered. The audit team verified that corrections to the selected BDRs and associated forms were properly made.

The team drafted one Recommendation that dealt with the inadvertent omission of the chemical constituent 1,4-dichlorobenzene, along with the Hazardous Waste Number (HWN) assignment D027, in the chemical table for waste stream LA-MHD03.001 in AK Summary Report CCP-AK-LANL-009, Rev. 7. This HWN assignment is appropriate and is included in the summary listing of HWNs for this waste stream. The previous revision of the AK summary has the chemical listed in the table. It will be added back to the chemical table at the next revision of the AK summary (see section 6.4).

The LANL CCP AKE programs for both S3000 solids and S5000 debris wastes were determined to be adequate in compliance with requirements, satisfactorily implemented, and effective in achieving the required results. With respect to the review of S4000 soils/gravel documentation, the audit team determined that all of the available AK was adequate, satisfactory, and effective. However, since solids sampling and analysis

characterization activities had not been completed, the AK record could not be fully reconciled nor the DQOs met. Therefore, the audit team deemed the AK portion of the S4000 waste stream to be indeterminate.

5.3.3 Headspace Gas Sampling

The audit team examined sampling BDRs LAHSGS1104, LAHSG1201, and LAHSG1202. DAC, operational logbook, sample COC, and transfer to the analytical laboratory were reviewed and found to be compliant. Material and testing equipment (M&TE) certifications were audited and found to be acceptable. Training and qualification of sampling personnel were confirmed to be acceptable to the CCP program. Interviews were conducted with sampling personnel. No TRU waste sampling activities were performed during the audit. Demonstration of sampling on a mock drum was observed and found to be satisfactory.

During the audit, one HSG concern was identified. The Packaging Configuration Group assignment was incorrectly determined in one of the selected sampling BDRs. This led to the Permit-required equilibrium time being incorrectly assigned. An internal NCR, NCR-LANL-1010-12, was issued the day before the audit. The containers in question still met the revised WIPP DAC required by the corrected Packaging Configuration Group. This concern is similar to a NCR condition that was identified at the Savannah River Site in July 2012. For that reason, the concern was determined not to be an isolated incident, resulting in the issuance of CBFO CAR 12-035 (see section 6.1).

Overall, the LANL/CCP HSG sampling procedures and processes evaluated were found to be adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.3.4 Real-time Radiography

The audit team evaluated the adequacy, implementation and effectiveness of LANL/CCP activities for characterizion and certification of CH SCG S3000 solids, S4000 soils/gravel, and S5000 debris wastes using the RTR characterization process.

The audit team reviewed implementing procedures CCP-QP-002, Rev. 32, *CCP Training and Qualification Plan;* CCP-TP-028, Rev. 6, *CCP Radiographic Test and Training Drum Requirements;* and CCP-TP-053, Rev. 11, *CCP Standard Real-Time Radiography (RTR) Inspection Procedure,* relative to RTR activities. The team determined that the procedures adequately address upper-tier requirements.

The audit team examined personnel training and qualification documentation including RTR Operator/ITR qualification cards, test and training drum documentation, and the associated List of Qualified Individuals (LOQI) sheets for the dates that RTR operations were performed at LANL/CCP. The team evaluated RTR operator-required test and training drum audio/video media for three RTR operators and determined that all personnel were properly trained and qualified to perform their assigned tasks.

The audit team evaluated RTR operations performed on two RTR systems used in Technical Area 54 (TA-54). The team observed RTR operations on the RTR2 unit in

TA-54, building 54-497. The RTR characterization scan was performed for SCG S5000 debris waste container 87444. The audit team also observed RTR operations on the High-Energy RTR system in TA-54, building 54-578. The RTR characterization scan was performed for SCG S3000 solids waste container S865301. The 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-RTR2-12-0083 and LANL-NDE-HERTR2-002 for verification that logbook entries were correctly logged and reviewed by the vendor project manager (VPM).

The audit team examined the following CH RTR BDRs:

LA-RTR2-11-0116	LA-RTR2-11-0140	LA-RTR2-12-0021
LA-RTR2-12-0024	LA-RTR2-12-0066	LA-HERTR-12-0009
LA-HERTR-12-0031	LA-HERTR-12-0035	LA-HERTR-12-0042

In addition, audio/video media of selected containers were reviewed for comparison to accuracy of data recorded on RTR data sheets. During the review of RTR BDRs, the audit team identified two concerns. On BDR LA-RTR2-12-0066 for container S802940, an incorrect NCR number was recorded on the RTR data sheet (NCR-LANL-0972 rather than NCR-LANL-0972-12). The error was corrected on the RTR data sheet, the ITR re-reviewed the corrections, and the corrected RTR data sheet was submitted to CCP Records. The audit team verified the corrections were completed prior to the end of the audit. This concern is documented as Observation 2 (see section 6.3).

The second concern was identified during the review of BDR LA-RTR2-12-0140. The RTR data sheet for container 66460 listed an item that appeared to be a battery as part of the container contents. The item (a battery) was not identified as waste in the applicable AK summary waste description. This concern is documented as Observation 3 (see section 6.3).

The procedure reviews, field observations, and BDR and audio/video reviews provided evidence that the applicable requirements for characterizing CH S3000 solids waste, S4000 soils/gravel waste, and S5000 debris waste using the High Energy RTR unit and the RTR2 unit, are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.3.5 Visual Examination

The audit team evaluated the continued adequacy, implementation, and effectiveness of LANL/CCP activities to characterize and certify CH SCG S5000 debris waste using VE, including support of the OSRP. No BDRs were provided for characterization of CH SCG S3000 or CH SCG S4000 waste.

The audit team evaluated the following BDRs:

LAVE500502	LAVE550065	LAVE500471
LAVE550055	LAVE500495	LAVE550044
LAVE500490	LAVE500468	LAVE4120012
LA11-OSR-VE-004	LA11-OSR-VE-010	

The audit team evaluated the following procedures: CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*; CCP-QP-002, *CCP Training and Qualification Plan*; CCP-TP-113, *CCP Standard Contact Handled Waste Visual Examination*; CCP-TP-069, *CCP Sealed Source Visual Examination and Packaging*; and CCP-PO-012, *CCP/Los Alamos National Laboratory (LANL) Interface Document.*

The audit team conducted interviews with VE operators and reviewed training files. Additionally, the audit team verified the required appointments for VE Experts. As a result, the team determined that VE personnel were appropriately trained and qualified.

On July 24, 2012, the audit team toured building 412 in TA-54, and the Waste Characterization Remediation and Repackaging Facility (WCRRF). VE activities were not being performed in building 412, and although VE activities were being performed at the WCRRF, the associated radiation work permit (RWP) required that LANL-specific Radiation Worker I training be completed; therefore the team was unable to tour the WCRRF. LANL/CCP uses the two-operator method (Method 2) when performing VE characterization, i.e., two qualified operators visually examine the waste and place it into certified shipping containers.

Based on interviews, document/record reviews, and objective evidence assembled and evaluated, the audit team determined that at LANL, the applicable requirements for characterizing CH SCG S5000 using VE are adequate, satisfactorily implemented, and effective.

VE Off-site Source Recovery Program

Evaluation of the LANL OSRP included interviews with LANL VE personnel and review of OSRP VE BDRs, training records, and VE Expert appointment memoranda. Additionally, the team visited the OSRP building TSL-186 in TA-35, and POD-568 in TA-46, where sealed-source shipping components are stored.

No concerns related to LANL/CCP VE activities were identified. Based upon interviews, document/record reviews, and objective evidence assembled and evaluated, the audit team determined that the applicable requirements for the management of recovered off-site sealed sources using VE are adequate, satisfactorily implemented, and effective.

Overall, the Visual Examination activities evaluated, including OSRP, were determined to be adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.3.6 Nondestructive Assay

The audit team assessed the adequacy, implementation, and effectiveness of the NDA systems used at LANL/CCP to characterize waste from the SCG S3000, S4000, and S5000 waste streams. The audit team evaluated HENC #1 and HENC #2, and the SuperHENC located on Pad 10 in TA-54 Area G. 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 can assay waste in standard waste boxes (SWBs). The SuperHENC is similar to the HENC units 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, versus the Add-A-Source in the HENC units. CBFO previously evaluated the two HENC units and the SuperHENC May 16 – 19, 2011 (Audit A-11-11).

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

- System stability as demonstrated 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; and
- Continued operability and condition of the two HENC units and the SuperHENC since Audit A-11-11.

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

LANL/CCP presented an additional calibration document (MCS-HENC#1-NDA-1005 Lead-Lined, Rev. 0, 5/17/12) for HENC #1 to document the ability to assay lead-lined 55-gallon drums. The audit team reviewed the document and interviewed LANL/CCP staff. The audit team found that this calibration was performed in accordance with CCP-TP-064, *CCP Calibrating the High Efficiency Neutron Counter and the Super High Efficiency Neutron Counter Using NDA 2000.* The calibration document was found to be technically adequate, and the necessary performance parameters for assaying lead-lined 55-gallon drums were within the existing capability of the HENC #1. The HENC #1 may therefore assay lead-lined drums for disposal at the WIPP. This determination applies only to the HENC #1, not the HENC #2.

LANL/CCP intends to assay SCG S4000 soils/gravel waste for disposal at the WIPP. The audit team reviewed system limits based on waste density, gamma attenuation, neutron moderation, and the various methods for compensating for or correcting these variations in waste characteristics. LANL/CCP can adequately measure S4000 waste that falls within the existing (and expanded, as documented below) limits of calibration for disposal at the WIPP.

LANL/CCP presented an extension of the existing calibration for the SuperHENC to allow for the assay of waste with a density as high as 2.5 g/cc. This calibration extension applies only to the use of the gamma spectrometer portion of the instrument and is documented in LANL-SHENC3-NDA-1004, Revs. 3 and 4, dated 5/15/12 and 6/15/12, respectively. This calibration extension was performed in accordance with the requirements in CCP-TP-064, *CCP Calibrating the High Efficiency Neutron Counter and the Super High Efficiency Neutron Counter Using NDA 2000*. The calibration extension was performed using a hybrid methodology that relied on a standard efficiency calibration at the lower end of the extended range, augmented by extensive modeling performed by the equipment manufacturer at the upper end of the extended range. The extension of the calibration range to 2.5 g/cc was found to be technically adequate and in compliance with requirements contained in the WAC. The SuperHENC may therefore be used to assay WIPP waste with an upper density limit of 2.5 g/cc.

Both the HENC #1 and HENC #2 participated in PDP Cycle 18A. Sample matrices included sludge and glass. Both the HENC #1 and HENC #2 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 curies (Ci) in TRU alpha activity of heat source material in a non-interfering waste matrix. Because of the limited failure described above, CBFO issued a conditional approval for performing WIPP-certified NDA of drummed wastes. This conditional approval of the HENC #2 is based on the following:

- Demonstrated proficiency for all other matrices for both bias and precision over the last two NDA PDP cycles;
- 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 on 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).

The LANL/CCP HENC #2 has been conditionally approved for nondestructive assay 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 calibrated ranges of the system. LANL/CCP has accepted the limitation of the system and has elected not to pursue a corrective action.

During the audit, review of a sample of BDRs confirmed that the HENC #2 has performed WIPP assays only on waste that is not precluded as a result of the conditional approval described above.

Because the HENC #1 system passed all PDP criteria, there are no limitations on the waste that this system can assay within the documented calibration range.

Overall, Nondestructive Assay activities were determined to be adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results

5.3.7 Flammable Gas Analysis

Flammable Gas Analysis (FGA) equipment was examined, personnel were interviewed, and FGA BDRs were audited. The audit team examined a randomly selected group of FGA BDRs and found them to be satisfactory. Initial calibration and minimum detection limit studies were examined and found to be acceptable.

Training and qualification of individuals performing FGA activities were confirmed to be acceptable. A demonstration of sampling and analysis was conducted for the audit team on June 24, 2012. No issues were identified during the demonstration. Gas certificates of accuracy (COAs) were examined during the audit for:

- Volatile organic compound (VOC) gas standard (which includes hydrogen and methane);
- Separate continuing calibration verification (CCV) VOC and hydrogen/methane standards;
- Internal standards (ISTDS); and
- Bromofluorobenzene (BFB).

All gases were traceable to National Institute of Science and Technology (NIST) standards and were used within their expiration dates. Equipment was examined and found to be compliant.

LANL/CCP procedures for Flammable Gas Analysis were found to be adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.3.8 WIPP Waste Information System/Waste Data System

The audit team evaluated implementation of CCP-TP-030, Rev. 30, *CH TRU Waste Certification and WWIS/WDS Data Entry,* for use with the WWIS/WDS data entry spreadsheet. The evaluation included data population of the spreadsheet, review of data entry by a Waste Certification Assistant (WCA), and waste certification by the Waste Certification Official (WCO). Records reviewed included container information summaries, pages from BDRs showing analyses values, WWIS/WDS container data reports, and submittals for WWIS/WDS review/approval.

The audit team reviewed six complete WWIS/WDS waste certification packages for CH waste:

LA00000055114	LAS833672	LAS833690
LA00000056512	LA00000056516	LA00000084854

The audit team identified a concern during the review of the data entry spreadsheet (WDS Master Template.xls) and the WWIS/WDS container data report. The container type and shipping category data in the WWIS/WDS Master Template.xls did not correlate with the data in the container data report. Also, the data were not updated in the CCP records package for those containers (see Observation 1, section 6.3).

The procedures 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 data entry spreadsheet are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.3.9 Load Management

Although load management is not currently performed at LANL, which has no waste streams currently approved for load management, the audit team reviewed the LANL/CCP procedure for load management.

The audit team concluded that the requirements related to Load Management were adequately addressed in the procedure and provisions were satisfactorily established for implementation should load management activities resume.

5.3.10 Solids Sampling and Analysis

Solids sampling is not performed at LANL. All drums requiring sampling are transported to INL for processing.

5.4 TRUPACT-II Operations/Transportation/Waste Certification

Container management activities were evaluated by a walkthrough of LANL/CCP container storage areas, following the path of containers through the characterization process, and an interview with the container management specialist. Tracking of

containers is performed by obtaining container numbers in the field for stored containers, then looking up the containers in the LANL tracking database. Movement of containers is monitored using bar codes on each container, which are scanned each time a container is moved. Segregation of containers with NCRs from containers without NCRs was verified. Storage of containers ready for shipment was verified to be satisfactory to preclude non-eligible containers from being shipped to WIPP.

CH TRUPACT-II receipt, maintenance, container integrity, payload preparation operations, and loading were audited for shipment LA120117, containing CH payloads LA 2699, LA2700, and LA2701. Payloads were observed being loaded into TRUPACT-II 199, TRUPACT-II 135, and TRUPACT-II 148. High-wattage shipment LA120112 was reviewed and found to be compliant. Use of the current revisions of all procedures was verified.

Personnel were interviewed, and receipt and maintenance of empty transport vessels were observed. Payload preparation and container integrity were audited. Loading of TRUPACT-II shipping vessels was observed. Shipping documentation was examined. M&TE calibrations were verified. Personnel training and qualification were audited. WCO and Transportation Certification Official activities were audited. Helium leak testing of inner and outer containment vessels was observed. The maintenance log was examined and the records were found to be compliant and complete. Spare parts were examined and found to be compliant.

The audit team requested and received a complete copy of the shipping manifest for shipment LA120113. The manifest was reviewed and found to be compliant with transportation requirements.

The LANL/CCP procedures used for transportation/shipping of CH waste were found to be adequate. Implementation of the procedures was found to be satisfactory and effective.

Overall, the procedures used for TRUPACT-II Operations/Transportation/Waste Certification at LANL/CCP were found to be adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

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 CARs were issued as a result of Audit A-12-12.

CBFO CAR 12-033

The audit identified multiple documentation errors and deviations from procedure that indicate a condition of overall CCP management inattention to detail and failure to follow procedures. Examples are listed below.

Item 1 (Personnel Qualification and Training concern 1)

> During the review of qualification cards for multiple disciplines, the audit team noted that the SPM signature approving the employee to perform the duties related to the qualification card was not the signature of the designated Lead or Alternate SPM. The Lead and Alternate SPM identified in the most current correspondence from the CCP Manager provided to the audit team are no longer assigned to LANL/CCP.

Item 2 (Personnel Qualification and Training concern 2)

> During the review of VE qualification cards, the audit team noted that the SPM signature approving the employee to perform the duties related to the qualification card is dated prior to the verification performed by CCP Training of completion of briefings and the comprehensive exam.

Item 3 (Nonconformance Reporting concern 1)

> During the review of NCRs, the audit team noted that Instructions for Completion (Block 19b) for NCR-LANL-1004-12, Rev. 0, had not been completed prior to Final Disposition Approval.
>
> The team also noted that in NCR-LANL-1010-12, Rev. 0, Corrective Actions (Block 19c) was marked N/A, but is required to be completed for Rework.

Item 4 (Nonconformance Reporting concern 2)

> During the review of NCR-LANL-1010-12, Rev. 0, the audit team noted that the BDR was reworked to resolve a nonconforming item prior to the NCR being written. Specifically, data generation-level personnel made changes to the documentation of the packaging configuration and the ITR re-reviewed the BDR (LAHSG1202). These actions are part of the instructions for completion associated with the final disposition of the NCR.

CBFO CAR 12-034

In VE BDRs LAVE500468 and LAVE500502, the audit team noted that question 24 on Attachment 1 to CCP-TP-001 (SPM Checklist) asks: "Is the size of the rigid liner vent hole recorded to determine the appropriate DAC? N/A if no liner lid." In both BDRs, the

question was answered "N/A" and a comment was included noting "No Liner Lid." However, the VE Data Forms for containers 89320 (LAVE500468) and 91720 (LAVE500502) were annotated: "Yes," and "Rigid Liner Lid Was Present." The audit team asked for four additional BDRs, two each bracketing each of the identified discrepant BDRs. Of those four additional BDRs, two were found to be discrepant.

CBFO CAR 12-035

During the CCP review of the completed BDR LAHSG1202, discrepancies were noted. In the Packaging Configuration Group Number field of Attachment 2, Sample Container Data Form, the package configuration was recorded incorrectly. This led to the Permit-required equilibrium time also being recorded incorrectly. However, the containers still met requirements after the DACs and package configuration were corrected. The original closure date of the BDR was April 26, 2012. An internal NCR (NCR-LANL-1010-12) was issued on July 23, 2012, after the containers had been shipped to WIPP for disposal.

The CBFO Office of Quality Assurance has determined that this issue is similar to the issue documented in NCR-SRS-0823-12, which was identified on July 2, 2012. In NCR-SRS-0823-12, SWBs were assigned packaging configuration group 3, which is a group for 55-gallon drums, instead of the required packaging configuration group 5 or 6 applicable to SWBs.

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.

No CAQs were identified or corrected during Audit A-12-12.

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.

The audit team identified three Observations during Audit A-12-12.

Observation 1

During the review of WWIS/WDS data packages LAS833690, LAS833672, and LA00000055114, it was identified that some of the data (container type and shipping category) on the WDS Master Template.xls were different from the data on the WDS container data report. The data were changed in the WWIS/WDS database, but were not updated in the records package or on the WDS Master Template.xls.

Observation 2

This Observation consists of three similar instances involving LANL/CCP management inattention to detail and failure to follow established procedures as described below.

1. NCR-LANL-0972 was incorrectly recorded on the RTR data sheet for Container S803940 in BDR LA-RTR2-12-0066.

2. Four sample selection container replacement memoranda were written incorrectly (CP:11:1802, CP:11:1803, CP:11:1804 and CP:11:1805). The memoranda stated that the random selections were for solids when they were actually for headspace gas.

3. In BDRs 2LANDA0832 and 3LANDA0063, question 19 of the CCP SPM Nondestructive Assay Project Level Validation Checklist and Summary was answered "N/A." However, no justification was recorded in the comments/qualifier section as required.

These instances reflect similar management issues identified during the recertification audit recently performed at the INL/CCP (Audit A-12-13) June 11 – 14, 2012. The conditions identified during Audit A-12-13 were documented in CBFO CARs 12-026 and 12-027. Because the response, extent-of-condition evaluation, and corrective actions to address and correct these CARs are being developed by CCP management, the conditions identified during this audit are being classified as an Observation. The evaluation of the corrective action plans to address CARs 12-026 and 12-027 will be

evaluated to ensure that they include an adequate extent-of-condition evaluation for CCP management at each host site location.

Observation 3

During the RTR scan of container 66460, the RTR operator identified an item that appeared to be a battery as part of the container contents. The item (battery) was not identified as waste in the AK summary waste description.

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 one Recommendation during Audit A-12-12.

Recommendation 1

AK Summary CCP-AK-LANL-009, Rev. 7, for waste stream LA-MHD03.001 inadvertently omitted the entry in the chemical identification and use table for 1,4-dichlorobenzene, along with the HWN assignment D027. This HWN assignment is appropriate and is included in the summary listing of HWNs for this waste stream. The previous revision of the AK summary has the chemical listed in the table.

7.0 LIST OF ATTACHMENTS

Attachment 1: Personnel Contacted During the Audit
Attachment 2: Personnel Contacted During the Audit by Area
Attachment 3: Objective Evidence
Attachment 4: Table of Audited Documents
Attachment 5: List of Processes and Equipment Reviewed
Attachment 6: Procedure Revision Matrix

PERSONNEL CONTACTED DURING AUDIT A-12-12				
NAME	**TITLE/ORG**	**PREAUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST AUDIT MEETING**
Acosta, F.	TCO MLU/LANL		X	
Allen, R.	QA Manager/CTAC	X		
Apodaca, P.	Operator MLU/LANL		X	
Aragon, I.	NDA Operator/CCP		X	
Auckland, S.	AKE/CCP		X	
Baca, R.	Records/CCP	X		
Barton, T.	NDA Lead/CCP		X	
Baumann, C.	NDA SME/CCP	X		X
Billett, M.	Training Cord./CCP		X	
Branaman, J.	Operator MLU/LANL		X	
Cannon, V.	QA Manager/WTS/CCP	X		
Channcellor, C.	AKE/CCP	X	X	
Chavarria, A.	QA Engineer/CCP	X	X	
Dickes, N.	NDA Support/CCP		X	X
Elliott, A.	RTR Operator/CCP		X	
Fisher, A.J.	Sr. Tech Advisor/CCP			X
Fitzgerald, R.	AKE Tech Specialist/CCP	X	X	
Francis, J.	NDA EA/CCP		X	
Garcia, J.	VE Lead/CCP	X	X	
Greenwood, T.	AKE/CCP		X	
Griffin, J.	VE SME VEE/CCP		X	
Groover, T.	LANL SPM/CCP		X	
Gutierrez, G.	VEO/CCP		X	
Hamm, R.	NDA Operator/CCP		X	
Holly, A.	Operator MLU/LANL		X	
Jones, L.	QAE/CCP QA	X	X	X
Kantrowitz, R.	RCT SPM/CCP		X	
Kirkes, C.	AK/CCP		X	

PERSONNEL CONTACTED DURING AUDIT A-12-12				
NAME	**TITLE/ORG**	**PREAUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST AUDIT MEETING**
Kliphuis, T.	WIPP Staff Manager/NMED	X		
Loechell, E.	FGA Lead/CCP	X	X	
Lyles, E.	RTR Operator/CCP		X	
Maestas, R.	Observer/NMED	X		
Matzke, J.	VE SME VEE/CCP		X	
McTaggart, K.	TCO MLU/LANL		X	
Morgan, T.	Observer/CBFO/NTP	X		
Papp, M	AKE Tech Specialist/CCP	X	X	
Pearcy, M.	SPM/CCP			X
Pearcy, S.	Records Manager/CCP	X		X
Punchios, S.	Records Analysis/CCP		X	
Reeves, R.	Projects/CCP		X	X
Schoen, J.	AKE Tech Specialist/CCP	X	X	
Sensibaugh, M.	CCP Manager/WTS/CCP	X		X
Simmons, C.	PM/CCP	X	X	X
Simpson, K.	RT SME/CCP	X	X	X
Sinclair, W.	LANL/DOE	X		X
Soaterna, C	SPM/CCP		X	
Stallings, A.	RTR Cog Eng/CCP	X	X	X
Wachter, J.	NDA/CCP	X	X	
Waldram, V.	SPM/CCP	X	X	X
Walker, C.	AK Observer/NMED	X		
Watson, L.	AKE/LANL	X	X	
Witkoswaski, I.	VE SME ORSP/LANL	X	X	
York, R.	Operator MLU/LANL		X	
Zaicar, J.	AKE/CCP		X	
Zarling, J.	VE ORSP Manager/LANL		X	

PERSONNEL CONTACTED DURING THE AUDIT BY AREA

Nonconformances	Chavarria, A. Jones, L.
Training	Billett, M.
Records	Pearcy, S. Punchios, S.
Acceptable Knowledge	Auckland, S. Channcellor, C Fitzgerald, R. Greenwood, T. Groover, T Kirkes, C. Papp, M. Schoen, J. Waldram, V. Watson, L Zaicar, J.
Headspace Gas Sampling	Loechell, E. Simmons, C.
Real-time Radiography	Elliott, A. Lyles, E. Simpson, K. Stallings, A.
Visual Examination	Fitzgerald, R. Garcia, J. Griffin, J. Gutierrez, G. Matzke, J. Simmons, C. Witkowski, I. Zarling, J.
WIPP Waste Information System (WWIS Data Entry)	Kirkes, C.
Waste Certification/Project Level Validation & Verification	Kantrowitz, R. Quintana, I. Soaterna, C Waldram, V

Nondestructive Assay	Aragon, I. Barton, T. Dickes, N. Francis, J. Hamm, R. Reeves, R. Simmons, C. Wachter, J.
Transportation	Acosta, F. Apodaca, P. Branaman, J. Holly, A. McTaggart, K. York, R.
Flammable Gas Analysis	Loechell, E.

Objective Evidence Reviewed During the Audit

The objective evidence supporting Audit A-12-12 is included in the box(es) submitted with this report. Included in the box(es) is a "Content Map" describing the location (using color coding) and identity of all required objective evidence supporting the performance of the audit.

Audit A-12-12
LISTING OF AUDITED DOCUMENTS

	Document No.	Rev.	Document Title
1.	CCP-PO-001	21	CCP Transuranic Waste Characterization Quality Assurance Project Plan
2.	CCP-PO-002	26	CCP Transuranic Waste Certification Plan
3.	CCP-PO-003	12	CCP Transuranic Authorized Methods for Payload Control
4.	CCP-PO-005	22	CCP Conduct of Operations
5.	CCP-PO-008	9	QA Interface with WTS QA Program
6.	CCP-PO-012	10	CCP/LANL Interface Document
7.	CCP-QP-002	32	CCP Training and Qualification Plan
8.	CCP-QP-005	21	CCP TRU Nonconforming Item Reporting and Control
9.	CCP-QP-008	19	CCP Records Management
10.	CCP-QP-016	16	CCP Control of Measuring, Testing and Data Collection Equipment (Labeling/Current)
11.	CCP-QP-017	3	CCP Identification and Control of Items
12.	CCP-QP-021	7	CCP Surveillance Program
13.	CCP-QP-022	12	CCP Software Quality Assurance Plan (Version Installation Verification)
14.	CCP-QP-028	14	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	19	CCP Project Level Data Validation and Verification
17.	CCP-TP-002	24	CCP Reconciliation of DQOs and Reporting Characterization Data
18.	CCP-TP-003	18	CCP Data Analysis for S3000, S4000, and S5000 Characterization
19.	CCP-TP-005	24	CCP Acceptable Knowledge Documentation
20.	CCP-TP-008	9	CCP Solids Sampling Procedure
21.	CCP-TP-028	6	CCP Radiographic Test and Training Drum Requirements
22.	CCP-TP-030	30	CCP CH TRU Waste Characterization and WWIS Data Entry
23.	CCP-TP-033	19	CCP Shipping of CH TRU Waste
24.	CCP-TP-053	11	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
25.	CCP-TP-054	2	CCP Adjustable Center of Gravity Lift Fixture Preoperational Checks and Shutdown
26.	CCP-TP-055	4	CCP Varian Porta-Test Leak Detector Operations
27.	CCP-TP-056	5	CCP HSG Performance Demonstration Plan
28.	CCP-TP-058	4	CCP NDA Performance Demonstration Plan
29.	CCP-TP-059	1	CCP SuperHENC Operating Procedure
30.	CCP-TP-063	13	CCP Operating the High Efficiency Neutron Counter Using NDA 2000
31.	CCP-TP-064	6	CCP Calibrating the High Efficiency Neutron Counter Using NDA 2000
32.	CCP-TP-069	5	CCP Sealed Source Visual Examination and Packing
33.	CCP-TP-082	8	CCP Preparing and Handling Waste Containers for Headspace Gas Sampling
34.	CCP-TP-086	17	CCP CH Packaging Payload Assembly
35.	CCP-TP-093	16	CCP Sampling of TRU Waste Containers
36.	CCP-TP-098	3	CCP Installation of the NucFil HSG Sample Port

Audit A-12-12
LISTING OF AUDITED DOCUMENTS

	Document No.	Rev.	Document Title
37.	CCP-TP-101	4	CCP Off-Site Source Recovery Project Sealed Source Radiological Characterization
38.	CCP-TP-103	10	CCP Data Reviewing, Validating and Reporting Procedure for the High Efficiency Neutron Counter Using NDA 2000
39.	CCP-TP-106	7	CCP Headspace Gas Sampling Batch Data Report Preparation
40.	CCP-TP-113	16	CCP Contact-Handled Standard Waste Visual Examination
41.	CCP-TP-120	14	CCP Container Management
42.	CCP-TP-162	1	CCP Random Selection of Containers for Solids and Headspace Gas Sampling and Analysis
43.	CCP-TP-180	2	CCP Analytical Sample Management
44.	CCP-TP-198	5	CCP HE-RTR Operating Procedure
45.	DOE/CBFO 94-1012	11	CBFO Quality Assurance Program Document (QAPD)
46.	WP 08-PT.01	7	Standard Waste Box Handling and Operations Manual
47.	WP 08-PT.02	8	Ten-Drum Overpack Handling and Operations Manual
48.	WP 08-PT.04	6	CH Packaging Trailer O&M Manual
49.	WP 13-QA.03	19	Quality Assurance Independent Assessment Program

Processes and Equipment Reviewed During Audit A-12-12 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
Process or equipment evaluated for initial approval				
11RR1	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	Soils/Gravel (S4000	NO	NO
11RR2	Real-Time Radiography (RTR) Procedure(s) – 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)	NO	NO
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	Soils/Gravel (S4000)	NO	NO
11HC1	Nondestructive Assay Procedure – CCP-TP-064 Description – Canberra Industries High-Efficiency Neutron Counter (HENC) mounted in a transportation container	Soils/Gravel (S4000)	N/A	NO
11HC2	Nondestructive Assay Procedure – CCP-TP-064 Description – Canberra Industries High-Efficiency Neutron Counter (HENC) mounted in a trailer	Soils/Gravel (S4000)	N/A	NO
11SHC1	Nondestructive Assay Procedure – CCP-TP-059 and CCP-TP-103 Description – Super High-Efficiency Neutron Counter mounted in a trailer, SWBs	Soils/Gravel (S4000)	N/A	NO
N/A	WWIS/WDS Procedure – CCP-TP-030 Description – CH TRU Waste Characterization and WWIS Data Entry	Soils/Gravel (S4000)	NO	NO

Processes and Equipment Reviewed During Audit A-12-12 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	Quality Assurance Program	Soils/Gravel (S4000)	N/A	NO
PREVIOUSLY APPROVED PROCESSES OR EQUIPMENT				
N/A	Headspace Gas Sampling Procedure – CCP -TP-093 Description – Headspace Gas Sampling	Debris (S5000)	YES	N/A
11RR1	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) Debris (S5000)	YES	YES
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) 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) Debris (S5000)	NO	YES
11VE1	CH Visual Examination Procedure – CCP-TP-113 Description – CH Characterization Performed Utilizing Visual Examination and Acceptable Knowledge	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

Processes and Equipment Reviewed During Audit A-12-12 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	Acceptable Knowledge Procedure – CCP-TP-005 Description – Acceptable Knowledge	Solids (S3000) 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	Solids (S3000) 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) 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) 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) Debris (S5000)	N/A	YES
N/A	WWIS/WDS Procedure – CCP-TP-030 Description – CH TRU Waste Characterization and WWIS Data Entry	Solids (S3000) Debris (S5000)	YES	YES

Processes and Equipment Reviewed During Audit A-12-12 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	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) Debris (S5000)	N/A	N/A
11HG2	Flammable Gas Analysis Procedure – DOE/WIPP-06-3345 Description – Flammable Gas Analysis	Solids (S3000) Debris (S5000)	N/A	N/A
N/A	Quality Assurance Program	Solids (S3000) Debris (S5000)	N/A	YES

PROCEDURE REVISION MATRIX

LANL/CCP Annual Audit A-12-12 Previous LANL/CCP Annual Audit A-11-11

No.	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
1	CCP-PO-001	CCP Transuranic Waste Characterization Quality Assurance Project Plan	19	21	R20: Revised to incorporate Class 2 Permit Modification (Transuranic Package Transporter Model III and Standard Large Box 2). R21: Revised to clarify hierarchy of documents, adding Washington TRU Solutions (WTS) 13-1, *Quality Assurance Program Description*; and made other administrative changes as needed.
2	CCP-PO-002	CCP Transuranic Waste Certification Plan	25	26	Revised to incorporate revision 7.1 and 7.2 of DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*, minor editorial changes, and delete Appendix 11.
3	CCP-PO-003	CCP Transuranic Authorized Methods for Payload Control	12	12	
4	CCP-PO-005	CCP Conduct of Operations	21	22	Revised to add detail to Section 6.0 and Section 7.0, and make minor editorial corrections throughout.
5	CCP-PO-008	QA Interface with WTS QA Program	9	9	
6	CCP-PO-012	CCP/LANL Interface Document	8	10	R9: Revised to incorporate box line operating procedures, CCP-TP-059, *CCP SuperHENC Using NDA 2000,* and CCP-TP-198, *CCP HE-RTR Operating Procedure,* and make any editorial changes necessary.

PROCEDURE REVISION MATRIX

LANL/CCP Annual Audit A-12-12 Previous LANL/CCP Annual Audit A-11-11

					R10: Procedure is being revised to correctly describe the process for receiving CPP supplied commodities at LANL.
7	CCP-QP-002	CCP Training and Qualification Plan	31	32	Revised to simplify the process for tracking waste stream Summary Training in Section 4.2. Added full requalification as an option in Section 4.1.2 [I]. Added the Training Module in IDC as a source of Training information to the note in Section 4.1. Incorporated Standing Orders CCP-SO-051 in Section 4.4.1[C], CCP-SO-069 in Section 4.2, and CCP-SO-078 in Section 4.1.2[F]. Expanded Section 4.1.1 to add a documented analysis of positions requiring qualification, in response to CBFO CAR 12-010.
8	CCP-QP-005	CCP TRU Nonconforming Item Reporting and Control	20	21	Revised to incorporate clarification of K-trend code designee's signature authority and other editorial changes and freeze file items.
9	CCP-QP-008	CCP Records Management	18	19	Revised to change the number of the form in the definition of retention period. Change to Section 4.8 for clarification.
10	CCP-QP-016	CCP Control of Measuring, Testing and Data Collection Equipment (Labeling/Current)	15	16	Revised to clarify the scope of CCP's M&TE program and the responsibilities associated with Host site provided M&TE.
11	CCP-QP-017	CCP Identification and Control of Items	3	3	
12	CCP-QP-021	CCP Surveillance Program	7	7	
13	CCP-QP-022	CCP Software Quality Assurance Plan (Version Installation Verification)	12	12	

PROCEDURE REVISION MATRIX

LANL/CCP Annual Audit A-12-12 | Previous LANL/CCP Annual Audit A-11-11

14	CCP-QP-028	CCP Records Filing, Inventorying, Scheduling, and Dispositioning	12	14	R13: Revised to correct reference section of the procedure and remove a reference that is no longer active. R14: Revised to bring into line with the WIPP Inventory Worksheets and general editing of the procedure.
15	CCP-QP-030	CCP Written Practice for the Qualification of CCP Helium Leak Detection Personnel	8	8	
16	CCP-TP-001	CCP Project Level Data Validation and Verification	19	19	
17	CCP-TP-002	CCP Reconciliation of DQOs and Reporting Characterization Data	23	24	Revised to make editorial changes. Replacing WSPF change notice with revision to WSPF. Revising instructions for completing WSPF package.
18	CCP-TP-003	CCP Data Analysis for S3000, S4000, and S5000 Characterization	18	18	
19	CCP-TP-005	CCP Acceptable Knowledge Documentation	22	24	R23: Revised to clarify what constitutes a record as part of the resolution to resolve CBFO CAR 11-043. R24: Revised to address comments from inspectors during EPA Baseline Inspection EPA-SNL-CCP-RH-06.11-8 (June 6/8, 2011). Also revised to incorporated lessons learned from CBFO records surveillance.
20	CCP-TP-008	CCP Solids Sampling Procedure	9	9	
21	CCP-TP-028	CCP Radiographic Test and Training Drum Requirements	6	6	

PROCEDURE REVISION MATRIX

LANL/CCP Annual Audit A-12-12 | Previous LANL/CCP Annual Audit A-11-11

22	CCP-TP-030	CCP CH TRU Waste Characterization and WWIS Data Entry	28	30	R29: Revised Attachment 2, WCO Waste Certification Requirements, to include SLB2 WCO Waste Certification Requirements. Also revised Sections 3.1.6, 4.2.6, and Attachment 1 of the Data Sources for the WDS Master Template. R30: Revise Table 1, Data Sources for the WDS Master Template, to include the AK Tracking SS for another source for Layers of Confinement; added the reference for the TRUPACT-III; added new records section for WDS FGA Certification.
23	CCP-TP-033	CCP Shipping of CH TRU Waste	18	19	Revised to incorporate TRUPACT-III Shipping Certification.
24	CCP-TP-053	CCP Standard Real-Time Radiography (RTR) Inspection Procedure	10	11	Revised to add checklist question based on agreement with NMED.
25	CCP-TP-054	CCP Adjustable Center of Gravity Lift Fixture Preoperational Checks and Shutdown	2	2	
26	CCP-TP-055	CCP Varian Porta-Test Leak Detector Operations	4	4	
27	CCP-TP-056	CCP HSG Performance Demonstration Plan	4	5	Revised to eliminate the Facility Records Custodian, ITR, and VPM position since they do not use this procedure. Deleted non-permit requirements and made other editorial corrections needed.
28	CCP-TP-058	CCP NDA Performance Demonstration Plan	3	4	Revised to correspond with the recent revisions of the CBFO PDP plans.
29	CCP-TP-059	CCP SuperHENC Operating Procedure	N/A	1	Revised to address comments made by the EPA.

PROCEDURE REVISION MATRIX

LANL/CCP Annual Audit A-12-12 | Previous LANL/CCP Annual Audit A-11-11

30	CCP-TP-063	CCP Operating the High Efficiency Neutron Counter Using NDA 2000	13	13	
31	CCP-TP-064	CCP Calibrating the High Efficiency Neutron Counter Using NDA 2000	6	6	
32	CCP-TP-069	CCP Sealed Source Visual Examination and Packing	5	5	
33	CCP-TP-082	CCP Preparing and Handling Waste Containers for Headspace Gas Sampling	8	8	
34	CCP-TP-086	CCP CH Packaging Payload Assembly	15	17	R16: Revised for clarification of filter requirements for drums to be overpacked. R17: Revised with comments from AMWTP.
35	CCP-TP-093	CCP Sampling of TRU Waste Containers	15	16	Deleted incorrect URL for approved filters and add SLB2 information to Packaging Configuration Table and DAC table, and other editorial changes.
36	CCP-TP-098	CCP Installation of the NucFil HSG Sample Port	3	3	
37	CCP-TP-101	CCP Off-Site Source Recovery Project Sealed Source Radiological Characterization	4	4	
38	CCP-TP-103	CCP Data Reviewing, Validating and Reporting Procedure for the High Efficiency Neutron Counter Using NDA 2000	9	10	Revised in response to CAR-RL-0003-11 to direct the EA to check the Software Inventory List.
39	CCP-TP-106	CCP Headspace Gas Sampling Batch Data Report Preparation	7	7	

PROCEDURE REVISION MATRIX

LANL/CCP Annual Audit A-12-12 | Previous LANL/CCP Annual Audit A-11-11

40	CCP-TP-113	CCP Contact-Handled Standard Waste Visual Examination	16	16	
41	CCP-TP-120	CCP Container Management	14	14	
42	CCP-TP-162	CCP Random Selection of Containers for Solids and Headspace Gas Sampling and Analysis	1	1	
43	CCP-TP-180	CCP Analytical Sample Management	2	2	
44	CCP-TP-198	CCP HE-RTR Operating Procedure	2	5	R3: TP-198 is being revised to clarify how to verify the LINAC is de-energized and to include a requirement to check the coolant level on a daily basis. R4: CCP-TP-198 is being revised to incorporate changes identified during LANL start up activities. R5: Revised section 4.1.3.
45	DOE/CBFO 94-1012	CBFO Quality Assurance Program Document (QAPD)	11	11	
46	WP 08-PT.01	Standard Waste Box Handling and Operations Manual	6	7	Multiple changes (no revision history available, sidebars used).
47	WP 08-PT.02	Ten-Drum Overpack Handling and Operations Manual	7	8	Multiple changes (no revision history available, sidebars used).
48	WP 08-PT.04	CH Packaging Trailer O&M Manual	5	6	Multiple changes (no revision history available, sidebars used).
49	WP 13-QA.03	Quality Assurance Independent Assessment Program	17	19	R18: Added allowance for the Assurance Programs manager to extend the time limit for issuance of an audit report (6.0).

PROCEDURE REVISION MATRIX

LANL/CCP Annual Audit A-12-12

Previous LANL/CCP Annual Audit A-11-11

					R19: Added discussion of effectiveness reviews (Introduction). Added clarification for developing criteria for (4.3) and performing (5.0) effectiveness reviews. Deleted reference to EFCOG Contractor Guide For Performance of Effectiveness Reviews (4.3, 5.0).