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Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221
October 8, 2002



Mr. Steve Zappe, Project Leader
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Bldg. 1
Santa Fe, New Mexico 87505-6303

Dear Mr. Zappe:

This letter transmits the Los Alamos National Laboratory Audit Report for the processes performed to characterize and certify waste as required by Section II.C.2.c of the WIPP Hazardous Waste Facility Permit. The report contains the results of the audit performed for the characterization and certification programs, including the following activities: visual examination, real-time radiography and visual examination technique, of Summary Category Group S5000 retrievably stored and newly generated CH-TRU debris waste. The audit was conducted August 26-30, 2002.

I certify under penalty of law that this document and all enclosures 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 Manager, Ava L. Holland, at (505) 234-7423 should you have any questions concerning this audit report.

Sincerely,

Chuan Fu Wu for
Dr. Ines R. Triay
Manager

Enclosure



Mr. Steve Zappe

-2-

October 8, 2002

cc: w/o enclosure

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

FINAL AUDIT REPORT

OF THE

LOS ALAMOS NATIONAL LABORATORY (LANL)

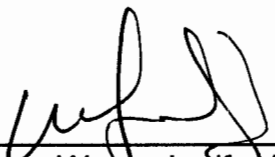
LOS ALAMOS, NEW MEXICO

AUDIT NUMBER A-02-30

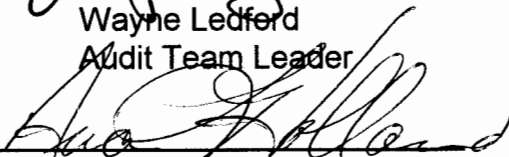
August 26 – 30, 2002

**FINAL AUDIT REPORT OF WASTE CHARACTERIZATION IN
ACCORDANCE WITH THE HAZARDOUS WASTE FACILITY PERMIT**



Prepared By: 
Wayne Ledford
Audit Team Leader

Date: 10/4/02

Approved By: 
Ava L. Holland
CBFO QA Manager

Date: 10/8/02

1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Audit A-02-30 was conducted to evaluate the continued adequacy, implementation, and effectiveness of the Los Alamos National Laboratory (LANL) Transuranic Waste Characterization Program (TWCP), including quality assurance (QA) and Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP) activities. The audit was conducted to evaluate Summary Category Group S5000 retrievably stored, contact-handled, and newly generated heterogeneous debris waste.

The audit was conducted at the LANL facility in Los Alamos, New Mexico, on August 26-30, 2002. The audit team concluded that, overall, the LANL technical and QA procedures continue to be adequate relative to the flow down of requirements from the CBFO Quality Assurance Program Document (QAPD) and the HWFP. The audit team also concluded that overall, LANL technical processes were satisfactorily implemented and effective. The LANL process for manual headspace gas sampling was concluded to be indeterminate, due to a limited operational time and lack of analytical batch data reports. The LANL on-line gas system has not been used since October, 2001. LANL failed to pass their last headspace gas performance demonstration program cycle using this machine. LANL has no plans to use this system in the future and recertification of this system is not recommended.

The audit team identified conditions adverse to quality that resulted in the issuance of two corrective action reports (CARs) in the areas of control of prohibited items and visual examination. The audit team identified eight isolated deficiencies requiring only remedial corrective actions that were corrected during the audit (CDA). One observation was identified and four recommendations were offered for management consideration.

2.0 SCOPE

The scope of the audit was to evaluate the continued adequacy, implementation, and effectiveness of the technical activities and associated QA program activities related to LANL transuranic (TRU) waste characterization and certification programs for Summary Category Group S5000 retrievably stored, contact-handled, and newly generated heterogeneous debris waste. The audit team evaluated compliance with the HWFP. Audit scope included the results of previous audits, changes in programs and operations, new programs and activities implemented in the last year, and changes in key personnel.

The following QA elements were evaluated in accordance with the CBFO QAPD and the HWFP:

- Personnel Qualification and Training
- Documents and Records
- Control of Nonconforming Items
- Corrective Action

The following characterization technical elements were evaluated during the audit:

- Headspace Gas Sampling and Analysis
- Real-Time Radiography (RTR)
- Visual Examination (VE)
- Visual Examination Technique (VET)
- Generation-level Data Verification and Validation
- Project-level Data Verification and Validation
- Acceptable Knowledge (AK)
- Waste Stream Profile Forms
- WIPP Waste Information System (WWIS)

The evaluation of LANL TWCP documents was based on the current revisions of the following documents:

Waste Isolation Pilot Plant Hazardous Waste Facility Permit, October 27, 1999

CBFO Quality Assurance Program Document, CBFO-94-1012, Rev. 3, November 1999

Los Alamos National Laboratory Transuranic Waste Quality Assurance Project Plan (QAPjP), TWCP-PLAN-0.2.3-001

Los Alamos National Laboratory Transuranic Waste Certification Plan, TWCP-PLAN-0.2.4-001

Related LANL technical and QA implementing procedures

3.0 AUDIT TEAM AND OBSERVERS

AUDITORS/TECHNICAL SPECIALISTS

Wayne Ledford	Audit Team Leader, CTAC
Lea Chism	CBFO QA Management Representative
Steve Calvert	Auditor, CTAC
Amy Arceo	Auditor, CTAC
Annabelle Axinn	Auditor, CTAC
Tommy Putnam	Auditor, CTAC
Porf Martinez	Auditor, CTAC
Steve Davis	Auditor, CTAC
Norman Frank	Auditor, CTAC
Dee Scott	Auditor, CTAC
Dick Blauvelt	Technical Specialist, CTAC
Dorothy Gill	Technical Specialist, CTAC
Karen Gaydosh	Technical Specialist, CTAC
Patrick Kelly	Technical Specialist, CTAC
Joe Willis	Technical Specialist, WTS
Todd Sellmer	Technical Specialist (in-training) WTS

OBSERVERS

Steve Holmes	NMED
Will Fetner	NMED
Kevin Krause	NMED
Steve Phillips	NMED Contractor
Scott Webb	EEG

4.0 AUDIT PARTICIPANTS

LANL personnel participating in the audit process are identified in Attachment 1. A pre-audit meeting was held in TA-21 Building 210, Room 142, on August 26, 2002. A daily meeting was held with LANL management and staff to discuss issues and potential deficiencies. The audit was concluded with a post-audit meeting held in TA-21 Building 210, Room 142, on August 30, 2001.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy, Implementation, and Effectiveness

The audit team concluded that LANL technical and QA procedures continue to adequately reflect the requirements of the CBFO QAPD and the WIPP Waste Analysis Plan (WAP). The audit team concluded that the defined QA program is still being satisfactorily implemented in accordance with the LANL QAPjP and implementing procedures (except in the specific areas noted in CARs 02-081 and 02-084). Based on closure of the WAP-related CARs issued during this audit, the LANL technical processes evaluated by the audit team were determined to be satisfactorily implemented and the processes remain effective (corrective action information for CARs 02-081 and 02-084 is contained in Attachment 2). The audit team found the LANL manual headspace gas sampling process to be indeterminate due to limited implementation and the lack of analytical batch data reports.

The audit team concluded that the defined LANL program continues to be adequate and satisfactorily implemented in accordance with the LANL Quality Assurance Management Plan (QAMP), the LANL QAPjP, and LANL implementing procedures for the areas evaluated. The LANL QA program was also determined to be effective. For details of CARs, CDAs, observations, and recommendations, see Section 6.

5.2 Technical Activities

Each technical area audited is discussed in detail in the following sections. The method used to select objective evidence is discussed, the objective evidence used to assess compliance with the WAP is cited and contained in Attachment 3, and the results of the assessments are provided.

If a question could not be satisfactorily answered, an audit concern was identified. Deficiencies that were corrected during the audit are discussed in Section 6.2. A CAR

was prepared to document those items not adequately addressed during the audit. A CAR allows CBFO to track LANL's efforts to remediate the deficiency identified in the CAR. CARs are addressed in Section 6.1. All CARs were satisfactorily closed during subsequent corrective action verification activities.

5.2.1 Table B6-1 WAP Checklist

The B6-1 WAP checklist addresses program requirements from an overall management perspective. It documents the verification that the waste characterization strategy, as defined in the WAP, is implemented by using controlled procedures. This audit was performed to assess LANL's ability to characterize S5000 contact-handled, retrievably stored, and newly generated heterogeneous debris waste. Objective evidence to evaluate the implementation of the associated characterization activities was selected and reviewed. Batch data reports, sampling records, and training documentation for TRU Waste Characterization Program (TWCP) personnel were included in the evaluation. The audit included direct observation of actual waste characterization activities (VE, RTR, and WWIS data entry). Each characterization process involves:

- Collecting raw data
- Collecting quality assurance/quality control (QA/QC) information
- Reducing the data to a useable format, including a standard report
- Review of the report by the data generation facility and the site project office
- Comparing the data against program data quality objectives (DQOs)
- Reporting the final waste characterization information to WIPP

The flow of data, from the point of generation to inclusion in the waste stream profile form (WSPF), was reviewed for each characterization technique to ensure that all applicable requirements were captured in the site operating procedures. The material in this section is also addressed in more detail in following sections, which provide the specific procedures audited and the objective evidence reviewed.

During the audit, LANL demonstrated compliance with the characterization requirements of the WAP through documentation and by performing the characterization activities. LANL provided documentation to support compliance to the WAP. Copies of the documentation reviewed are provided in Attachment 3. Examples of the documentation reviewed include the following:

- VE batch reports LA02-VE-005, LA02-VE-015, LA02-VE-017, LA02-VE-020, LA02-VE-029, and LA02-VE-031
- VE technique batch reports LA01-55-VE-006, LA01-55-VE-007, LA02-55-VE-133, LA02-55-VE-134, LA01-OSR-VE-004, LA02-OSR-VE-001, LA02-OSR-VE-005 and LA02-OSR-VE-006.
- RTR batch reports LA02-RTR-003, LA02-RTR-012, LA02-RTR-014, LA02-RTR-035 and LA02-RTR-052

- Headspace gas batch report LA02-HGAS-036 and LA02-HGAS-039 (data review of sampling and gas analytical batch information)

The batch reports reviewed and the processes observed were found to be acceptable.

AK documentation and the auditable AK record were reviewed in detail for S5000 contact-handled, retrievably stored, and newly generated debris waste streams. The AK record was reviewed to demonstrate that the required information was present and correctly interpreted. The batch reports cited above were used to demonstrate confirmation of AK, reconcile DQOs, prepare draft WSPFs, and transmit data to WIPP using the WWIS.

WSPFs and the related summarized characterization information were reviewed to establish the objective evidence for reporting waste characterization information to WIPP. The forms were completed using information from current characterization processes.

5.2.2 Table B6-2 Solids and Soils/Gravel Sampling Checklist

LANL is currently not certified to characterize homogeneous solid or soil/gravel waste streams. This area was not audited during A-02-30.

5.2.3 Table B6-3 Acceptable Knowledge Checklist

This audit was performed to assess LANL's ability to characterize S5000 contact-handled, retrievably stored, and newly generated heterogeneous debris waste. Items on the AK checklist are intended to ensure that LANL has an AK process in place to:

- Train personnel in data collection requirements
- Assemble collected data into a coherent narrative detailing waste generation and constituents
- Segregate the waste into like waste streams
- Provide Resource Conservation and Recovery Act (RCRA) characterization for those waste streams
- Confirm those characterizations using sampling and analysis
- Provide an auditable set of records to support the characterization

The following procedures relating to the AK process were evaluated:

- DTP-1.2-064, *Waste Characterization Data Reconciliation with Acceptable Knowledge*
- QP-1.1-021, *Acceptable Knowledge Documentation*
- QP-1.1-024, *Reporting Summarized Characterization Data and Waste Stream Summaries to CAO*

- NMT7-AP-20, *Documenting Acceptable Knowledge for Legacy Waste Items*

The AK summary documentation contained in the auditable record and container-specific information were reviewed. The audit documentation reviewed during the audit related to waste from S5000 contact-handled, retrievably stored, and newly generated heterogeneous debris waste. Traceability of the AK documentation was accomplished by selecting a random sample of reference documents. The summary document and supporting documentation identify the waste stream and point of generation for the containers. Several of the references are selected to ensure they are available in the auditable record and to ascertain if the source documents support the characterization determination. These sources include such items as published reports, process flow diagrams and interviews with site personnel concerning use of hazardous materials, and reports of previous waste characterization sampling and analysis efforts.

The audit team examined several individual AK source document summaries that were used to compile the AK record and assign the required WAP information for legacy and newly generated TA-55 debris waste streams and WIPP eligible off-site recovery sealed sources. The audit team reviewed the AK summary documents for these waste streams to determine if the required programmatic and waste-stream-specific information was identified. The audit team also examined the contents of the process AK summary reports for various operations within TA-55 that feed information into the AK record and portions of the LANL AK Information Summaries. Additional documentation supporting the AK summary documents and AK source document review summaries are contained in Attachment 3 to support the entries in Table B6-3.

The AK process includes provisions to identify information that conflicts with what is expected in a waste stream (confirmation processes) and a method by which these conflicts can be resolved. The discrepancy resolution procedure is DTP-1.2-064, *Waste Characterization Data Reconciliation with Acceptable Knowledge*.

LANL WSPFs and related information were reviewed to establish the objective evidence for reporting characterization information to WIPP. The audit team also evaluated Procedure QP-1.1-024, *Reporting Summarized Characterization Data and Waste Stream Summaries to CAO*.

The procedures cited above, which are used by the site to assemble, evaluate, document, and reconcile sampling and analysis results, were reviewed for adequacy and their implementation was assessed during the audit. The AK requirements include procedure content and specific requirements for retrievably stored waste and ensure that the AK summary includes all mandatory information required by the WAP.

Reports and records used to document the basis of LANL AK were evaluated (Attachment 3 includes copies of objective evidence). The reports were satisfactory and the records properly maintained as QA records. The list of AK documentation reviewed is included in Attachment 3.

LANL was found to be satisfactorily using sampling, analysis, and testing data to confirm the waste designations, resolve discrepancies, and document changes. Waste characterization designations were confirmed by reviewing the batch data reports documenting the characterization activities. If the characterization results do not support the AK waste stream description, a nonconformance report (NCR) is prepared.

This audit verified that LANL continues to satisfactorily implement the AK process to delineate, characterize, and confirm the characterization of waste for disposal in accordance with WIPP WAP requirements.

5.2.4 Table B6-4 Headspace Gas Checklist

The audit team witnessed manual sampling of headspace gas using Summa[®] canisters. LANL plans to ship canisters to the Idaho National Engineering and Environmental Laboratory (INEEL) for analysis. At the time of the audit, no analytical results had been received from INEEL. Due to the limited implementation of this process, and the areas that LANL had self-identified as requiring correction before successful implementation, this area was judged to be indeterminate and will be reviewed during a future audit.

The previously certified on-line headspace gas system at LANL has not been used for headspace gas sampling and analysis since the last recertification audit in October 2001. LANL failed to pass their last headspace gas performance demonstration program cycle using this machine. Data packages produced using this system were reviewed during the audit to further verify that the corrective actions required by CAR 02-009, which was issued during Audit A-02-04, had been completed. It was determined that the data gathered by LANL using this online system through October 2001 were compliant with the HWFP. LANL has no plans to use this system in the future and recertification of this system is not recommended.

5.2.5 B6-5 Radiography Checklist

This audit was performed to assess LANL's ability to characterize S5000 contact-handled, retrievably stored, and newly generated heterogeneous debris waste. LANL radiography operations are performed using a RTR system located at the TA-54 facility. LANL has controls to allow the operator to enhance the image quality of the radiograph, annotate the videotape with text, provide narration with video, rotate the drum as it is imaged, enlarge the image, and pan up and down the container. These systems allow site personnel to view drums while recording the examination on audio/video tape.

The table B6-5 radiography checklist was completed by assessing operating procedures TWCP-DTP-1.2-008, *Performing Nondestructive Testing Using the Mobile Real-Time Radiography System*. RTR operations were observed, videotapes of operations were reviewed, and the documentation resulting from these activities was evaluated. Batch data reports LA02-RTR-003, LA02-RTR-012, LA02-RTR-014, LA02-

RTR-035 and LA02-RTR-052 are included in Attachment 3. Training course materials and the RTR test drums were reviewed for adequacy.

Objective evidence was evaluated for RTR equipment and operations. The RTR process was observed during operation of the mobile RTR system at the TA-54 facility. Batch data reports and RTR videotapes were selected to evaluate the documentation of the RTR process.

Radiography equipment maintenance and daily checks were evaluated against the WAP requirements as implemented in the RTR procedures and were found to be satisfactory. Radiography results are properly reported on standard forms and are adequately reviewed, as required by the WAP. Copies of the forms are included in the batch data reports listed in Attachment 3.

One CAR (02-081) was issued as a result of this audit in the area of control of prohibited items. This CAR are described in Section 6.1. Objective evidence documenting closure of this CAR is contained in Attachment 2.

The audit concluded that LANL satisfactorily implements the WIPP WAP radiography requirements, the procedures are adequate, and the process is effective.

5.2.6 B6-6 VE Checklist

This audit was performed to assess LANL's ability to characterize S5000 contact-handled, retrievably stored, and newly generated heterogeneous debris waste. Visual examination (VE) includes both the QC check performed on radiography results and observations made during initial waste packaging. LANL was audited to determine the effectiveness of VE as the QC check on RTR. VE to support radiography is recorded on audio/video tape and documented on standard forms.

LANL VE activities were evaluated by reviewing audio/videotapes and evaluating VE batch reports. Operations were not observed during this audit. The batch data reports reviewed were LA02-VE-005, LA02-VE-015, LA02-VE-017, LA02-VE-020, LA02-VE-029, and LA02-VE-031 (included in Attachment 3).

The VE procedures are TWCP-DTP-1.2-001, *Waste Visual Examination and Packaging*, and TWCP-DTP-1.2-002, *WCRRF Procedure for Video System Operations for TWCP*. The procedures were found to be adequate in meeting the WAP requirements.

The random selection procedures audited were TWCP-DTP-1.2-015, *Calculation for Determining the Number of Containers for Visual Examination*, and TWCP-DTP-1.2-014, *Random Selection of Containers and Sampling Locations for TRU Waste Characterization Activities*, which are used to select drums to confirm radiography results. Procedure TWCP-DTP-1.2-015, *Calculation for Determining the Number of Containers for Visual Examination*, also used to determine the miscertification rate for the site, was assessed during the audit.

The training course content for operators and VE experts was reviewed to verify that all WAP requirements are captured in the course. Course materials are included in Attachment 3. No deficiencies were noted in this area. One deficiency was identified regarding transmittal of VE results to the RTR facility. This deficiency was documented in CAR 02-084, which is described in Section 6.1. Objective evidence documenting closure of this CAR is contained in Attachment 2.

The audit team concluded that LANL is satisfactorily implementing the WIPP WAP VE requirements.

The VE technique operations at TA-55 and as part of the Off-site Source Recovery program, were also examined during the audit. The batch data reports reviewed for TA-55 were LA01-55-VE-006, LA01-55-VE-007, LA02-55-VE-133 and LA02-55-VE-134. The Off-site Source Recovery batch data reports reviewed were LA01-OSR-VE-004, LA02-OSR-VE-001, LA02-OSR-VE-005 and LA02-OSR-VE-006.

Training files for the visual examiners and verifiers were reviewed to determine compliance with WAP training requirements. No concerns were identified. The procedures were found to be adequate, and the program was satisfactorily implemented and effective.

6.0 CORRECTIVE ACTION REPORTS (CARs), CORRECTED DURING THE AUDIT (CDAs), OBSERVATIONS AND RECOMMENDATIONS

During the audit, the audit team may identify conditions adverse to quality (CAQs) and document such condition(s) 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, compliance demonstration, or the effective implementation of the QA program.

6.1 Corrective Action Reports (CARs)

Two WAP-related CARs, briefly described below, were initiated as a result of Audit A-02-30, and were transmitted under separate cover.

6.1.1 CAR 02-081

LANL has eliminated the use of the Prohibited Waste Report for control of prohibited items. The administrative controls used by LANL to ensure that prohibited items are documented and managed are not specified in LANL implementing procedures for the database system presently used for this purpose, as required by the HWFP, Section B4-3b.

6.1.2 CAR 02-084

VE comparison summaries and comparison tables had not been transmitted to the radiography facility as required by QP-1.1-028, Rev. 7, Section 6.4, and the HWFP, Section B1-3b (3).

6.2 Corrected During the Audit

During the audit, the audit team may identify conditions adverse to quality (CAQ). The audit team members and the audit team leader (ATL) evaluate the CAQs to determine if they require a CAR. Once a determination is made that the CAQ does not require a CAR, the audit team members, in conjunction with the ATL, determine if the CAQ is an isolated case requiring only remedial action and, therefore, can be corrected during the audit (CDA). Upon determination that the CAQ is isolated, the audit team members, in conjunction with the ATL, evaluate/verify any objective evidence/actions submitted or taken by the audited organization and determine if the condition was corrected in an acceptable manner. Once it has been determined that the CAQ has been acceptably corrected, the ATL categorizes the condition as CDA.

Condition Adverse to Quality (CAQ) – Term used in reference to failures, malfunctions, deficiencies, defective items, and nonconformances.

Corrected During the Audit (CDA) – Isolated deficiencies that do not require a root cause determination or actions to preclude recurrence, and for which correction of the deficiency can be verified prior to the end of the audit. (Examples: one or two minor changes required to correct a procedure (isolated); one or two forms not signed or not dated (isolated); one or two individuals that have not completed a reading assignment.)

Eight WAP-related isolated deficiencies, requiring remedial action only, were identified during the audit. All were corrected and verified before the completion of the audit. These are identified on the completed audit checklists and documented on the Corrected During the Audit forms. The completed checklists are maintained as CBFO QA records. Descriptions of these items and their resolutions are given below.

6.2.1 CDA 1

Waste material parameter codes are assigned by the AK investigator based on waste stream descriptions and the process summaries, and are included in Table 2 of the AK report. In the new consolidated AK report for TA-55, this table was omitted. The table was added to the AK report during the audit.

6.2.2 CDA 2

The draft AK report for newly generated debris waste for TA-55 contained no information regarding current or projected generation rates. This information was added to the draft report during the audit.

6.2.3 CDA 3

Attachment 10 of the AK report for TA-55 debris waste provides a crosswalk between P/S codes and sections in the report which should describe the codes. The referenced sections do not describe the P/S codes. This information is found in the AK process summary reports. The reference was corrected during the audit.

6.2.4 CDA 4

Scale 207089, used for weighing waste items during VE technique in TA-55, was not in the TWCP measuring and test equipment (M&TE) database. There is no evidence that this equipment had been exempted from calibration. This scale, in fact, does not require calibration because it is used as an aid for weight estimation during VE. LANL documented the calibration exemption for glovebox line scales in TA-55 during the audit.

6.2.5 CDA 5

In RTR batch data report LA02-RTR-052, container #834628, total volume percent of waste in the container was estimated at 80%. The data sheet indicated total volume percent of 45%. The data entry was corrected during the audit and a review of additional data packages indicated that this was an isolated problem.

6.2.6 CDA 6

The person performing independent technical reviews of RTR has not been running test drums every 6 months. This individual was the RTR Level III operator, who prepares the test drums and grades the test drum examination of the RTR operators. This was documented in his training files during the audit. The individual is qualified to have performed the original work, as required by the HWFP.

6.2.7 CDA 7

In Procedure NMT-W13-HCP-TA55-013, R3.1, *Packing TRU Waste Containers*, paragraphs 8.3.1, 8.3.3, and 8.4.17 referred to an appendix; however, this appendix was not in the procedure. The appendix was added to the procedure during the audit.

6.2.8 CDA 8

RTR database (RTRV1.03) for drum S841508 listed PWR 02-475 as applicable. The RTR logbook (02-TBL-007) showed that the number had been corrected to PWR 02-562; however, the database had not been updated. The database was updated during the audit

6.3 Observations

The following four observations were identified by the audit team as areas of concern that were not yet actual deficient conditions, but which raise the probability of future deficiencies if not corrected.

6.3.1 Observation

Five items required by Table B-8 of the HWFP are actually on the manifest and are not included in the WWIS Characterization Module Data Fields. This observation, directed at CBFO, identifies the need for a modification to the HWFP. LANL is inputting data to WWIS as required.

6.4 Recommendations

The following WAP-related recommendations are provided for LANL management consideration.

6.4.1 Recommendation 1

The LANL AK procedures discuss the assignment of waste matrix codes. The procedural language is inconsistent in that it directs the assignment of the “most detailed” and “least detailed “ waste matrix code. Recommend that this discussion be clarified.

6.4.2 Recommendation 2

LANL has implemented a procedure to reconcile discrepant information in the AK record. The procedure is documented in TWCP-QP-1.1-021, R6, S 6.2.4, and includes the use of a form (Attachment 6 of 021). It is recommended that the form be completely filled out and the rational for resolution be clearly stated. Additional instructions in completing the form are also recommended.

6.4.3 Recommendation 3

Changes to the AK report based on confirmatory tests or new AK information are documented by submitting an interim change. It is recommended that the revision history provide additional detail to clearly identify the interim changes.

6.4.4 Recommendation 4

An RTR operator (BDR LA02-RTR-052) could not be clearly heard on the audio/videotape. The audio portion of the videotape was difficult to hear for certain drum examinations. Recommend that RTR operators be reminded of the importance of clear audio commentary on RTR videotapes.

7.0 LIST OF ATTACHMENTS

- Attachment 1: Personnel Contacted During the Audit
- Attachment 2: Corrective Action Supporting Documentation
- Attachment 3: Objective Evidence
- Attachment 4: Audited LANL Implementing Procedures

PERSONNEL CONTACTED DURING AUDIT A-02-30

NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Abeyta, Cristy	RRES/OSR/Env Scientist		X	
Adams, Andrew	LANL/VE	X	X	X
Allen, Garry	RRES/Project Leader	X		X
Ankrom, James	RRES/NOC		X	X
Baker, Michael	RRES/NDA Section Leader	X	X	X
Baker, Shannan	RRES/Records Management	X	X	X
Balkey, James	NMT-70/Deputy Div. Leader		X	
Bayhurst, Greg	RRES/WCO	X	X	
Betts, Stephen	LANL/NDA Staff		X	X
Clark, Vicky	RRES/SQA	X	X	X
Cowart, John	RRES/Computer Technician		X	
Cox, Linda	RRES/Document Production		X	
Del Signore, JC	RRES/Chief of Staff			X
Derr, Edward	NMT-7/DGL		X	
Dole, Vonda	NMT-7/Technician		X	
Enter, Janie	LANL/TSM		X	
Fernandez, Ruby Ann	RRES/Training Specialist	X	X	X
Ferran, Louis	NMT-7/Technician		X	
Gallegos, Michael	NMT-7/Lead Technician		X	
Garcia, Mary Ann	RRES/Training Generalist	X	X	

NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Gavett, Marji	RRES/SPQAO	X	X	X
Gibson, Yvonne	RRES/QA Specialist	X	X	X
Goyal, Kapil	NMT-7/Technical Supervisor		X	
Hardesty, Bill	RRES/Chemist		X	
Harper, Johnny	RRES/Group Leader			X
Hartwell, Ware	RRES	X		X
Herrera, Jennifer	TWCP/Records Management	X		
Hubmer, Steven	LANL/Technician		X	
Huchton, Roger	NMT/Program Coordinator	X	X	X
Hunter-Gilbert, Todd	TRW-LANL/Manager Software Development	X		X
Keeney, Christina	TWCP/RMDC		X	
Lacy, Keith	LANL/LT Level III		X	
Lamsa, Larry	NMT-7/QA Specialist		X	
Leonard, Patricia	LANL/QA	X	X	X
Lin, Mavis	RRES/SPM	X	X	X
Lindahl, Peter	RRES/SPM	X	X	X
Lopez, Josh	TWCP/Technician		X	
Lucero, Fabiola	LANL/Records Management		X	
Lugo, Geri	RRES/Technician		X	
Maestas, Antonio	LANL/RCT		X	
Martin, Beverly	RRES/Program Manager			X

NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Martinez, Flavio	LANL/Technician		X	
Martinez, Leon	RRES/Technician		X	
Martinez, Randy	NMT-7/Technician		X	
McAlpin, Jerry	OSR/TWCP Interface	X	X	
Miko, David	RRES/NDA		X	
Miller, Jeff	RRES/AK Expert	X	X	
Montague, Charlene	NMT-7/Technician		X	
Montoya, Andrew	NMT-7/Cert Team Lead-TA-55		X	X
Mullen, Richard	LANL/Technician		X	
Newell, Dorothy	NNSA-OLASO-OPLWM Program Liaison	X	X	X
Newell, Lisa	RRES/SQA		X	X
Ortega, Laura	LANL/HGAS	X	X	X
Palomares, Jose	E-ET/Technician		X	
Patton, Patricia	LANL/Document Control		X	
Pearson, Mike	OSR/Team Leader	X	X	
Pickrell, Mark	RRES/Group Leader	X		X
Polley, Mark	RRES/TCO	X	X	
Pothes, Harold	LANL/TSM		X	
Ramsey, Beverly	RRES/Acting Division Leader	X		
Rogers, Pam	RRES/SPM	X	X	
Romero, Kenneth	RRES/Technician		X	

NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Salazar, Kenneth	NMT-7/Technician		X	
Salazar, Ron	LANL/Technician		X	
Salazar, Willie	RRES/Technician		X	
Sanchez, Judy	NMT-7/Technician		X	
Sanchez, Lonnie	NMT-7/QA Specialist		X	
Sanchez, Margaret	LANL/Transportation Leader	X	X	X
Saunders, Lori	RRES/QAO	X	X	X
Smith, Catherine	RRES/SPM Team		X	X
Souza, Larry	RRES/QA	X	X	X
Tallarico, Antonia	RRES/VE		X	X
Taylor, Marc	RRES/SPM	X		X
Trujillo, Barbara	RRES/Certification Staff	X	X	
Veilleux, John	RRES/TSM		X	
Velarde-Lashley, Karen	RRES/TSM		X	
Vigil, Jack	RRES/Nuclear Operations		X	
Vigil, Robert	NMT-7/Technician		X	
Wander, Sandy	E-ET/WCO		X	
Wieneke, Ron	NMT-7/Group Leader		X	
Wulff, Dennis	NMT-7/TRU Functional		X	
Zoltai, John	RRES/Staff Manager		X	

ATTACHMENT 1
PERSONNEL CONTACTED DURING THE AUDIT BY AREA

Nonconformance/Corrective Action	L. Saunders M. Gavett L. Souza Y. Gibson
Personnel Qualification and Training	R-A. Fernandez M.A. Gracia
Documents and Records	S. Baker P. Patton F. Lucero J. Herrera
Acceptable Knowledge	P. Lindahl M. Lin G. Bayhurst P. Rogers L. Saunders
Headspace Gas Sampling and Analysis	L. Ortega L. Souza P. Leonard J. Lopez M. Lin
Real-Time Radiography	L. Martinez K. Romero L. Saunders Y. Gibson J. Vigil
Visual Examination	J. Valdez A. Tallarico P. Rogers M. Lin
Verification and Validation	L. Saunders M. Lin

PROCEDURES AUDITED DURING A-02-30

NUMBER	PROCEDURE NUMBER	TITLE
1.	DTP-1.2-001	Waste Visual Examination and Packaging
2.	DTP-1.2-002	WCRRF Video System Operations
3.	DTP-1.2-006	Calculation of UCL90 Values
4.	DTP-1.2-008	Performing NDT Using the Mobile RTR System
5.	DTP-1.2-014	Random Selection of Containers and Sampling Locations for TRU Waste Characterization Activities
6.	DTP-1.2-015	Calculation for Determining the Number of Containers for VE
7.	DTP-1.2-038	HGAS Filter Removal and Replacement
8.	DTP-1.2-053	Assignment of Waste Matrix Codes
9.	DTP-1.2-063	Preparing and Handling Waste Containers
10.	DTP-1.2-064	Waste Characterization Data Reconciliation with Acceptable Knowledge
11.	NMT7-AP-20	Documenting Acceptable Knowledge for Legacy Waste Items
12.	NMT7-AP-21	Data Review, Validation, Verification for TRU Waste
13.	NMT7-WI2- HCP-TA55- 013	Performing Visual Examination of TRU Waste
14.	NMT7-WI3- HCP-TA55- 013	Packing TRU Waste Containers
15.	NMT7-WI4- HCP-TA55- 013	Sealing TRU Waste Containers
16.	NMT-AP-005	TRU Waste Documents Development and Control
17.	NMT-AP-012	Waste Records Management
18.	NMT-AP-022	Nonconformances
19.	NMT-HCP- TA55-013	Inspecting, Packaging, Rejecting, and Remediating Transuranic Waste for WIPP and TA-54 Safe Storage
20.	OSR-OP-120	Visual Examination and Packaging of OSR Sealed Sources
21.	QP-1.1-002	Document Control
22.	QP-1.1-003	TWCP Training
23.	QP-1.1-004	Records Management
24.	QP-1.1-007	Nonconformance Reporting and Tracking
25.	QP-1.1-008	Corrective Action Reporting and Tracking
26.	QP-1.1-010	Project Level Data Validation and Verification
27.	QP-1.1-012	Laboratory Notebooks and Logbooks
28.	QP-1.1-017	Chain of Custody
29.	QP-1.1-020	Root Cause Analysis
30.	QP-1.1-021	Acceptable Knowledge Documentation
31.	QP-1.1-022	PDP Blind Audit Sample Management, Analysis, and Reporting
32.	QP-1.1-024	Reporting Summarized Characterization Data & Waste Stream Summaries to CAO
33.	QP-1.1-028	Reconciliation of VE and Radiography Information
34.	QP-1.1-034	WWIS Data Entry
35.	QP-1.1-035	Written Practice for the Qualification of TWCP NDE Personnel
36.	QP-1.1-039	Conversion of Waste Volumes to Weights