



Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221
JUN 27 2016

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JUN 30 2016

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

NMED
Hazardous Waste Bureau

Subject: Interim and Final Audit Report for Hanford Site Central Characterization Program
Recertification Audit A-16-11

Dear Mr. Kieling:

In accordance with your letter dated March 2, 2012, instructing that the Department of Energy must continue to perform annual audits of Hanford Central Characterization Program (CCP) waste characterization activities, this letter transmits the Interim and Final Audit Report for Carlsbad Field Office (CBFO) Audit A-16-11 of the Hanford CCP in accordance with the Waste Isolation Pilot Plant Hazardous Waste Facility Permit. The report contains the results of the audit, which was conducted May 31 – June 1, 2016.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to 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 Mr. Michael R. Brown, Director, CBFO Office of Quality Assurance, at (575) 234-7476, should you have any questions concerning this audit report.

Sincerely,



Todd Shrader, Manager
Carlsbad Field Office

Enclosure

160623



cc: w/enclosure

| | | | |
|----------------------|-----|------------------------|----|
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| D.C. Gadbury, CBFO | ED | T. Peake, EPA | ED |
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| P. Briedenbach, NWP | ED | D. Harvill, CTAC | ED |
| J. Blankenhorn, NWP | ED | G. White, CTAC | ED |
| J. Britain, NWP | ED | Site Documents | ED |
| F. Sharif, NWP | ED | WWIS Database Admin | ED |
| D.E. Gulbransen, NWP | ED | R. Chavez, RES | ED |
| R. Reeves, NWP | ED | W. Most, RES | ED |
| I. Joo, NWP | ED | J. Haschets, RES | ED |
| B. Pace, NWP | ED | B. Carlsen, RES | ED |
| V. Cannon, NWP | ED | A. Urquidez, RES | ED |
| A.J. Fisher, NWP | ED | RCRA Chronology Record | ED |
| M. Ramirez, NWP | ED | WIPP Operating Record | ED |
| J. Carter, NWP | ED | CBFO QA File | |
| B. Allen, NWP | ED | CBFO M&RC | |

*ED denotes electronic distribution

U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE

INTERIM AND FINAL AUDIT REPORT

OF THE

HANFORD SITE
CENTRAL CHARACTERIZATION PROGRAM

FOR

WASTE CHARACTERIZATION ACTIVITIES IN ACCORDANCE WITH
THE WASTE ISOLATION PILOT PLANT HAZARDOUS WASTE
FACILITY PERMIT

CARLSBAD, NEW MEXICO

AUDIT NUMBER A-16-11

May 31 – June 1, 2016



Prepared by: James R. Schuetz
James R. Schuetz, CTAC
Audit Team Leader

Date: 6/9/16

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

Date: 6/10/2016

1.0 EXECUTIVE SUMMARY

U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO) Recertification Audit A-16-11 was performed to evaluate the adequacy, implementation, and effectiveness of transuranic (TRU) waste characterization activities performed by the Nuclear Waste Partnership LLC (NWP) Central Characterization Program (CCP) for contact-handled (CH) Summary Category Group (SCG) S3000 homogeneous solids and SCG S5000 debris waste at the Hanford host site location. The audit was based on requirements relative to the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP) and the CBFO *Quality Assurance Program Document* (QAPD). The audit was performed in the Skeen-Whitlock Building in Carlsbad, NM, May 31 – June 1, 2016.

Hanford/CCP TRU waste characterization activities have been suspended, and no characterization activities have occurred since the previous recertification Audit A-15-19, conducted June 23 – 25, 2015. The results of Audit A-16-11 confirmed that Hanford/CCP operations continue to be in a state of suspension.

The HWFP issued to the WIPP by the New Mexico Environment Department (NMED) requires that the DOE conduct audits of each generator/storage site prior to certifying that the site meets the waste characterization requirements for shipment of waste to the WIPP. In accordance with Attachment C6 of the HWFP, audits must be performed at least annually after the initial audit to determine continued compliance with the HWFP Waste Analysis Plan (WAP). In a letter dated March 2, 2012, from John E. Kieling, Acting Chief, NMED Hazardous Waste Bureau, to Jose Franco, Manager, Carlsbad Field Office, NMED clarified that DOE must continue to perform annual audits of the Hanford/CCP activities, and further directed: "If DOE cannot determine that the Hanford/CCP meets the requirements in Section 2.3.2.1 of the Permit, the Permittees shall not manage, store, or dispose waste from Hanford at WIPP, as required by section 2.3.2 of the Permit. Further, once CCP waste characterization operations resume at the Hanford host site location, DOE must conduct a full site-specific audit of Hanford/CCP before waste shipments can be sent from the Hanford host site location to WIPP."

Since Hanford/CCP suspended waste characterization activities, the audit team was unable to determine the adequacy of program plans and procedures, the implementation of plans and procedures, or the effectiveness of characterization activities. Therefore, the adequacy, implementation, and effectiveness of all aspects of the Hanford/CCP waste characterization activities continue to be indeterminate.

Once waste characterization activities resume at the Hanford host site location, CBFO will conduct a recertification audit as a basis for reinstating authority to perform waste characterization activities and continue waste shipments from the Hanford host site location to the WIPP.

2.0 SCOPE AND PURPOSE

2.1 Scope

The audit team evaluated documentation to verify adequacy, implementation, and effectiveness of the Hanford/CCP TRU waste characterization activities for CH SCGs S3000 homogeneous solids and S5000 debris waste. The following elements were evaluated:

General

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

Quality Assurance

Nonconformances
Personnel Qualification and Training
Records

Technical

Generation and Project-Level Data Validation and Verification
Acceptable Knowledge
Real-time Radiography
Visual Examination
Nondestructive Assay
Waste Certification (e.g., Waste Stream Profile Forms)
WIPP Waste Information System/Waste Data System

The evaluation of the adequacy of Hanford/CCP documents was based on current revisions of the following documents:

- Waste Isolation Pilot Plant Hazardous Waste Facility Permit NM4890139088-TSDF
- CBFO *Quality Assurance Program Document*, DOE/CBFO-94-1012

Programmatic and technical checklists were developed from the current revisions of the following documents:

- *CCP Transuranic Waste Characterization Quality Assurance Project Plan*, CCP-PO-001
- *CCP Transuranic Waste Certification Plan*, CCP-PO-002
- Related technical and quality assurance (QA) implementing procedures

2.2 Purpose

This annual recertification audit was conducted to assess the Hanford/CCP level of compliance to the requirements of the WIPP HWFP and the CBFO QAPD in performing waste characterization and certification activities for CH SCGs S3000 homogeneous solids and S5000 debris waste.

3.0 AUDIT TEAM

| | |
|---------------------|--|
| Martin P. Navarrete | Management Representative, CBFO Office of Quality Assurance |
| James R. Schuetz | Audit Team Leader, CBFO Technical Assistance Contractor (CTAC) |

4.0 AUDIT PARTICIPANTS

The individuals contacted during the audit are identified in Attachment 1. A pre-audit meeting was held in room T-224 at the Skeen-Whitlock Building in Carlsbad, NM, on May 31, 2016. The audit was concluded with a post-audit meeting held in room T-224 at the Skeen-Whitlock Building in Carlsbad, NM, on June 1, 2016.

Attachment 2 provides the current status of the Hanford/CCP waste characterization processes and equipment list. Audit activities are described below.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy, Implementation, and Effectiveness

This audit was performed to assess the ability of Hanford/CCP to characterize CH SCGs S3000 homogeneous solids and S5000 debris waste to the requirements specified in the WIPP HWFP WAP and the CBFO QAPD. The scope of the audit included the evaluation of the following waste characterization methods: acceptable knowledge (including data quality objective reconciliation and the preparation of Waste Stream Profile Forms), real-time radiography, visual examination, and nondestructive assay. Other areas evaluated were generation- and project-level data validation and verification and WIPP Waste Information System/Waste Data System (WWIS/WDS) data entry.

The audit team concluded that no waste characterization activities for CH SCGs S3000 homogeneous solids or S5000 debris waste have been performed by Hanford/CCP during the past year; thus, all waste characterization activities have been deemed indeterminate.

5.2 General

5.2.1 Results of Previous Audits

The results of the previous CBFO Recertification Audit, A-15-19, of Hanford/CCP were examined. The audit team verified that no waste characterization activities have been performed by Hanford/CCP since the previous audit. Therefore, the adequacy, implementation, and effectiveness of all waste characterization activities at the Hanford host site location remain indeterminate.

5.2.2 Changes in Programs or Operations

No waste characterization activities have been performed by Hanford/CCP since the previous audit; therefore, there have been no changes in programs or operations.

5.2.3 New Programs or Activities Being Implemented

No waste characterization activities have been performed by Hanford/CCP since the previous audit; therefore, there have been no new programs or activities implemented.

5.2.4 Changes in Key Personnel

No waste characterization activities have been performed by Hanford/CCP since the previous audit; therefore, there have been no changes in key personnel.

5.3 WAP-Related Quality Assurance Activities

The scope of the audit included the evaluation of QA elements for personnel qualification and training, QA records, and control of nonconformances to requirements applicable to the WIPP HWFP WAP and the CBFO QAPD. The evaluation results for each area audited are described below.

5.3.1 Nonconformances

The audit team conducted interviews with responsible personnel and verified the status of management of existing nonconformance reports through review of nonconformance documentation and issues management logs. Data and information on existing Hanford/CCP nonconformance reports has been migrated into the Integrated Data Center (IDC) database management program. The IDC is currently used by CCP for managing and processing nonconformances at other CCP host site locations. The IDC will be used to manage and process nonconformance reports when certification activities resume at the Hanford host site location. There have been no nonconformances reported and no waste characterization activities have been performed by CCP at the Hanford host site location since the previous audit. Accordingly, the applicable requirements for nonconformances were deemed indeterminate and will require a full evaluation as part of a Hanford/CCP recertification audit before waste characterization and certification activities resume.

5.3.2 Personnel Qualification and Training

The audit team conducted interviews with responsible personnel and verified no waste characterization activities have been performed by Hanford/CCP since the previous audit. Accordingly, the applicable requirements for personnel training and qualification were deemed indeterminate and will require a full evaluation as part of a Hanford/CCP recertification audit before waste characterization and certification activities resume.

5.3.3 Records

The audit team conducted interviews with responsible personnel and verified no waste characterization activities have been performed by Hanford/CCP since the previous audit. Accordingly, the applicable requirements for records were deemed indeterminate and will require a full evaluation as part of a Hanford/CCP recertification audit before waste characterization and certification activities.

5.4 Technical Activities

The scope of the audit included the evaluation of technical elements for characterizing CH SCGs S3000 homogeneous solids and S5000 debris waste in accordance with applicable requirements in the WIPP HWFP WAP and the CBFO QAPD. The evaluation results for each area audited are described below.

5.4.1 Generation and Project-Level Data Validation and Verification

The audit team conducted interviews with responsible personnel and verified no waste characterization activities have been performed by Hanford/CCP since the previous audit. Accordingly, the applicable requirements for generation and project-level data validation and verification were deemed indeterminate and will require a full evaluation as part of a Hanford/CCP recertification audit before waste characterization and certification activities resume.

5.4.2 Acceptable Knowledge

The audit team conducted interviews with responsible personnel and verified no waste characterization activities have been performed by Hanford/CCP since the previous audit. Accordingly, the applicable requirements for acceptable knowledge were deemed indeterminate and will require a full evaluation as part of a Hanford/CCP recertification audit before waste characterization and certification activities resume.

5.4.3 Real-time Radiography

The audit team conducted interviews with responsible personnel and verified no waste characterization activities have been performed by Hanford/CCP since the previous audit. Accordingly, the applicable requirements for real-time radiography were deemed indeterminate and will require a full evaluation as part of a Hanford/CCP recertification audit before waste characterization and certification activities resume.

5.4.4 Visual Examination

The audit team conducted interviews with responsible personnel and verified no waste characterization activities have been performed by Hanford/CCP since the previous audit. Accordingly, the applicable requirements for visual examination were deemed indeterminate and will require a full evaluation as part of a Hanford/CCP recertification audit before waste characterization and certification activities resume.

5.4.5 Nondestructive Assay

The audit team conducted interviews with responsible personnel and verified no waste characterization activities have been performed by Hanford/CCP since the previous audit. Accordingly, the applicable requirements for nondestructive assay were deemed indeterminate and will require a full evaluation as part of a Hanford/CCP recertification audit before waste characterization and certification activities resume.

5.4.6 WIPP Waste Information System/Waste Data System

The audit team conducted interviews with responsible personnel and verified status of existing container data in the WWIS/WDS through electronic access of a sample of container data. Data and information on existing Hanford/CCP batch data reports has been migrated into the IDC database management program. The IDC is currently used by CCP for waste certification activities where batch data reports are referenced as part of the waste certification process. The IDC will be used for certification of waste containers and transmittal of data to the WWIS/WDS when activities resume at the Hanford host site location. There has been no WWIS/WDS data entry, and no waste characterization activities have been performed by Hanford/CCP since the previous audit. Accordingly, the applicable requirements for WIPP Waste Information System/Waste Data System data entry were deemed indeterminate and will require a full evaluation as part of a Hanford/CCP recertification audit before waste characterization and certification activities resume.

6.0 CORRECTIVE ACTIONS, OBSERVATIONS, AND RECOMMENDATIONS

6.1 Corrective Action Reports

During the audit, the audit team may identify conditions adverse to quality (CAQs), as defined below, and document such conditions on a corrective action report (CAR).

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

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 quality assurance program.

No CARs were initiated during the audit.

6.2 Deficiencies Corrected During the Audit

During the audit, the audit team may identify CAQs. The audit team members and the Audit Team Leader (ATL) 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. 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 corrected during the audit (CDA) according to the definition below.

Corrected During the Audit – Refers to correction of an isolated deficiency that does not require a root cause determination or actions to preclude recurrence. 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), and one or two individuals that have not completed a reading assignment.

No CDAs were identified during the audit.

6.3 Observations

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

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

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

No Observations were identified during the audit.

6.4 Recommendations

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

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

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

No Recommendations were provided to management during the audit.

7.0 LIST OF ATTACHMENTS

Attachment 1: Personnel Contacted During Audit A-16-11

Attachment 2: List of Processes and Equipment Reviewed

HWFP Checklist Cover Pages – PERMIT ATTACHMENT C6

- **Table C6-1 Waste Analysis Plan (WAP) Checklist**
- **Table C6-2 Acceptable Knowledge (AK) Checklist**
- **Table C6-3 Radiography Checklist**
- **Table C6-4 Visual Examination (VE) Checklist**

| PERSONNEL CONTACTED DURING AUDIT A-16-11 | | | | |
|---|--|--------------------------|-------------------------------|---------------------------|
| NAME | ORG/TITLE | PRE-AUDIT MEETING | CONTACTED DURING AUDIT | POST-AUDIT MEETING |
| Dan Arrenholz | Hanford Project Manager | X | | |
| Porf Martinez | CBFO/CTAC/Regulatory Assurance Manager | X | | |
| Carolina Soaterna | CCP/SPM | X | X | |
| Ron Reeves | CCP Ops Manager | X | | |
| Gary Birge | TRU Waste Certification Manager, DOE-CBFO-TSTD | X | | |
| A.J. Fisher | CCP/CCP Support Services Manager | | X | |
| Martin Navarrete | DOE/CBFO/Senior Quality Assurance Specialist | X | | |
| Veronica Waldram | Project Integration Manager | X | | |

List of Processes and Equipment Reviewed

| WIPP # | Process/Equipment Description | Applicable to the Following Waste Streams/Groups of Waste Streams | Currently Approved by NMED | Currently Approved by EPA |
|---|---|---|----------------------------|---------------------------|
| PREVIOUSLY APPROVED PROCESSES OR EQUIPMENT | | | | |
| 18GEAA | Radiological Characterization by NDA – Hanford Gamma Energy Assay System Unit A – 55-gallon drums Procedure – CCP-TP-071 | Debris(S5000) Solids(S3000) | N/A | Suspended |
| 18GEAB | Radiological Characterization by NDA – Hanford Gamma Energy Assay System Unit B – 55-gallon drums Procedure – CCP-TP-071 | Debris(S5000) Solids(S3000) | N/A | Suspended |
| 18SHENC | Super High Efficiency Neutron Counter “A” Platform (SHENC) Procedure – CCP-TP-137 | Debris(S5000) Solids(S3000) | N/A | Suspended |
| 18RTRA | Real-Time Radiography System – 55-gallon drums Procedure – CCP-TP-053 | Debris(S5000) Solids(S3000) | Suspended | Suspended |
| 18RTRB | Real-Time Radiography System – 55-gallon drums Procedure – CCP-TP-053 | Debris(S5000) Solids(S3000) | Suspended | Suspended |
| 18HERTR | High-Energy Real-Time Radiography System – 55-/85- gallon drums and SWBs Procedure – CCP-TP-053 | Debris(S5000) Solids(S3000) | Suspended | Suspended |

List of Processes and Equipment Reviewed

| WIPP # | Process/Equipment Description | Applicable to the Following Waste Streams/Groups of Waste Streams | Currently Approved by NMED | Currently Approved by EPA |
|--|---|--|-----------------------------------|----------------------------------|
| 18RLVE | Visual Examination Process – SWB and 55-gallon drums Procedure – CCP-TP-113 | Debris(S5000) | Suspended | Suspended |
| N/A | Acceptable Knowledge Procedure – CCP-TP-002 and CCP-TP-005 | Debris(S5000) Solids(S3000) | Suspended | Suspended |
| N/A | Data Generation and Project Level Validation & Verification (V&V) Procedure – CCP-TP-001 | Debris(S5000) Solids(S3000) | Suspended | Suspended |
| N/A | WIPP Waste Information System (WWIS)/Waste Data System (WDS) Procedure – CCP-TP-030 | Debris(S5000) Solids(S3000) | Suspended | Suspended |
| N/A | Quality Assurance | Debris(S5000) Solids(S3000) | N/A | YES |
| NEW PROCESSES OR EQUIPMENT | | | | |
| Characterization activities are currently suspended, therefore no new processes or equipment have been introduced. | | | | |
| DEACTIVATED PROCESSES OR EQUIPMENT | | | | |
| Characterization activities are currently suspended. | | | | |

**Table C6-1 Waste Analysis Plan (WAP) Checklist
Hanford/CCP Recertification Audit A-16-11
May 31 – June 1, 2016**

**No waste characterization activities have been performed by Hanford/CCP since the previous
CBFO recertification audit (A-15-19)**

**Table C6-2 Acceptable Knowledge (AK) Checklist
Hanford/CCP Recertification Audit A-16-11
May 31 – June 1, 2016**

**No waste characterization activities have been performed by Hanford/CCP since the previous
CBFO recertification audit (A-15-19)**

**Table C6-3 Radiography Checklist
Hanford/CCP Recertification Audit A-16-11
May 31 – June 1, 2016**

**No waste characterization activities have been performed by Hanford/CCP since the previous
CBFO recertification audit (A-15-19)**

**Table C6-4 Visual Examination (VE) Checklist
Hanford/CCP Recertification Audit A-16-11
May 31 – June 1, 2016**

**No waste characterization activities have been performed by Hanford/CCP since the previous
CBFO recertification audit (A-15-19)**