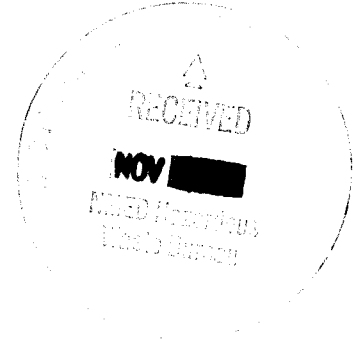




Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

NOV 25 2002

ENTERED



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

Re: Transmittal of the Certification Audit Report for the Nevada Test Site,
Central Characterization Project (A-02-15)

Dear Mr. Zappe:

This letter transmits the Nevada Test Site, Central Characterization Project (CCP) Certification Audit Report for the processes being performed to characterize and certify contact handled debris waste (summary category group S5000) as required by Section II.C.2.c of the WIPP Hazardous Waste Facility Permit. The report contains the results of the certification audit performed for the processes for the characterization and certification of retrievably stored debris waste. The audit was conducted September 23-27, 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,

Dr. Inés R. Triay
Manager

Enclosure



Mr. Steve Zappe

2

cc w/o enclosure:

| | |
|-----------------------|-----|
| K. Watson, CBFO | *ED |
| R. Knerr, CBFO | *ED |
| A. Holland, CBFO | *ED |
| D. Miehs, CBFO | *ED |
| J. Kieling, NMED | *ED |
| J. Bearzi, NMED | *ED |
| A. Colarusso, NNSA/NV | *ED |
| D. Haar, WTS | *ED |
| F. Sharif, WTS | *ED |
| D. Reber, WTS | *ED |
| A. Fisher, WTS | *ED |

cc: w/enclosure

C. Walker, Techlaw
P. Roush, WTS
CBFO QA File
CBFO M&RC

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

**FINAL AUDIT REPORT
OF THE
NEVADA TEST SITE
UTILIZING THE
CENTRAL CHARACTERIZATION PROJECT**

Las Vegas, Nevada

AUDIT NUMBER A-02-15

September 23-27, 2002

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



Prepared by: A. Earl Bradford
A. Earl Bradford
Audit Team Leader

Date: November 19, 2002

Approved by: Ava L. Holland
Ava L. Holland
Quality Assurance Manager

Date: 11/21/02

1.0 EXECUTIVE SUMMARY

The Central Characterization Project (CCP) was developed by Westinghouse TRU Solutions (WTS) to provide transuranic (TRU) waste characterization, certification, and transportation services, including the management and administrative functions necessary to ensure the acceptability of these processes in accordance with regulatory requirements. The CCP provides these services under contract to those waste generator sites that request support or lack the expertise, program infrastructure, or equipment to characterize TRU waste for shipment to and disposal at the Waste Isolation Pilot Plant (WIPP). Bechtel Nevada has elected to use the characterization services of the CCP at the Nevada Test Site (NTS), including overall management of the characterization processes.

Carlsbad Field Office (CBFO) Audit A-02-15 was conducted at the NTS, September 23-27, 2002, to evaluate the NTS/CCP characterization and certification activities. This audit was conducted to evaluate the adequacy, implementation, and effectiveness of the NTS/CCP TRU waste characterization and certification activities related to Summary Category Group S5000 (debris waste). The audit team assessed the adequacy, implementation, and effectiveness of both technical and quality assurance (QA) activities.

The audit scope included an assessment of the CCP programmatic interfaces established with Bechtel Nevada, the CCP administrative controls needed to manage the characterization activities, and the physical characterization processes and activities being conducted at the NTS. The activities evaluated included characterization with mobile real-time radiography (RTR) equipment, mobile single sample manifold headspace gas (HSG) sampling and analysis equipment, and the NTS visual examination (VE), segregation, and repackaging operations conducted in the NTS Waste Examination Facility (WEF). In addition, the process for developing the acceptable knowledge (AK) documentation was evaluated. The audit team concluded that the NTS/CCP technical and QA programs, as applicable to the audited activities, met the requirements contained in the Hazardous Waste Facility Permit (HWFP). The deficiency identified in the corrective action report (CAR) discussed below has been corrected. The audit team also concluded that the defined QA and technical processes for the audited activities were adequate and were being implemented in accordance with the *CCP Transuranic Waste Quality Assurance Characterization Project Plan* (QAPjP) and the associated implementing procedures. The audited processes were also found to be effective.

The audit team identified one HWFP related condition adverse to quality (CAQ) resulting in the issuance of a CBFO CAR. The CAR identified an adverse condition concerning the measurements recorded by the photo ionization detector used to verify cleanliness of the HSG system. Two isolated deficiencies requiring only remedial corrective actions were corrected during the audit (CDA).

Eight Observations and seven Recommendations were documented and are being offered for management consideration. The CAR, CDAs, Observations, and Recommendations are described in Sections 6 and 7.

2.0 SCOPE AND PURPOSE

2.1 Scope

The audit team evaluated the adequacy, implementation, and effectiveness of the NTS/CCP TRU waste characterization program and processes used to characterize retrievably stored debris waste in accordance with the requirements contained in the WIPP HWFP, Attachments B through B6. Compliance was demonstrated and documented by completing the Attachment B6 checklist for the applicable NTS/CCP activities.

The following NTS/CCP program elements were evaluated in accordance with the HWFP:

Quality

Nonconformance/Corrective Action
Personnel Qualification and Training
Documents and Records
Sample Control

Technical

AK
HSG Sampling and Analysis
RTR
VE
Generation-Level Data Verification and Validation
Project-Level Data Verification and Validation
WIPP Waste Information System (WWIS) Data Entry

The evaluation of the NTS/CCP management and waste characterization and certification activities and documents was based on current revisions of the following documents:

- *Waste Isolation Pilot Plant Hazardous Waste Facility Permit*
- *Quality Assurance Program Document (QAPD), CAO-94-1012*
- *CCP Transuranic Waste Quality Assurance Characterization Project Plan (QAPjP), CCP-PO-001*

- *CCP Transuranic Waste Certification Plan, CCP-PO-002*
- Related NTS/CCP QA and technical implementing procedures (see Attachment 4)

2.2 PURPOSE

Audit A-02-15 was conducted to assess whether the NTS/CCP retrievably stored waste characterization activities complied with the WIPP HWFP requirements.

3.0 AUDIT TEAM AND OBSERVERS

AUDITORS/TECHNICAL SPECIALISTS

| | |
|----------------|----------------------------|
| Steve Calvert | QA Manager, CTAC |
| Earl Bradford | Audit Team Leader, CTAC |
| Jack Walsh | Auditor, CTAC |
| Steve Davis | Auditor, CTAC |
| Anabelle Axinn | Auditor, CTAC |
| Pete Rodriguez | Auditor, CTAC |
| Porf Martinez | Auditor, CTAC |
| Jim Schuetz | Auditor, CTAC |
| Chester Wright | Auditor, CTAC |
| Tom Putnam | Auditor, CTAC |
| Dick Blauvelt | Technical Specialist, CTAC |
| Patrick Kelly | Technical Specialist, CTAC |
| Dorothy Gill | Technical Specialist, CTAC |
| Karen Gaydosh | Technical Specialist, CTAC |
| Melissa Rojo | Clerical, CTAC |

OBSERVERS

| | |
|-----------------|---------------|
| Steve Zappe | NMED Observer |
| Steve Holmes | NMED Observer |
| Kevin Krause | NMED Observer |
| June Dreith | NMED Observer |
| Scott Webb | EEG Observer |
| Beth Bennington | CBFO Observer |

4.0 AUDIT PARTICIPANTS

A pre-audit conference was held in the auditorium of Bechtel Building C-1 in North Las Vegas on September 23, 2002. Daily management briefings were held at the NTS in Mercury, Nevada in Building 111, Room 174, with CCP and NTS management to discuss the progress of the audit and potential deficiencies. The audit was concluded with a post-audit conference held in the auditorium of Bechtel Building C-1 on September 27, 2002. CCP and NTS personnel contacted during the audit are identified in Attachment 1.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy and Implementation

This audit was performed to assess the ability of the NTS/CCP to characterize waste from Summary Category Group S5000 to the requirements specified in the WIPP Waste Analysis Plan (WAP). Waste streams from Summary Category Groups S3000 and S4000 will require additional audits, since the requirements specific to these areas were not included in this audit scope.

The characterization methods assessed were single manifold HSG sampling and analysis, AK, RTR, and the NTS visual examination (VE), segregation, and repackaging operations conducted in the NTS WEF. In addition, data review and validation were assessed, as well as the use of those data to: 1) perform data quality objective (DQO) reconciliation, 2) prepare a Waste Stream Profile Form (WSPF), and 3) perform data entry to the WWIS.

The audit team concluded that the applicable NTS/CCP activities, as described in the associated implementing procedures, satisfactorily meet the requirements contained in the HWFP. The deficiency identified in Section 6.1 has been corrected. Details of audit activities, including specific objective evidence reviewed, are described below and in the attached B6 checklist. The B6 checklist identifies the NTS/CCP program documents and procedures in which the requirements of the WAP have been met. Attachment 3 contains the objective evidence that was reviewed during the audit.

A list of NTS/CCP procedures evaluated during the audit is provided in Attachment 4.

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 that was used to assess compliance with the WAP is cited briefly (and in detail on the checklist), and the result of the assessment is provided.

If a requirement was not met, an audit deficiency was identified. Deficiencies that were corrected during the audit are discussed in Section 6.2. A CAR was prepared to document those items that were not adequately addressed during the audit. A CAR allows CBFO to track NTS/CCP efforts to remediate the identified deficiency. The CAR is discussed in Section 6.1. The CAR has been satisfactorily closed. Each deficiency corrected during the audit (CDA) and each CAR is identified on the B6 checklist tables under the corresponding item number.

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 the ability of the NTS/CCP to characterize Summary Category Group S5000 debris waste streams. In particular, a retrievably stored debris waste stream was evaluated. Objective evidence to evaluate the implementation of the associated characterization activities was selected and reviewed. Batch data reports, sampling records, and training documentation for CCP personnel were included in the evaluation. The audit included direct observation of waste characterization activities (such as HSG sampling and analysis, RTR, and WWIS data entry). Each characterization process involves:

- Collecting raw data
- Collecting quality assurance/quality control (QA/QC) samples or 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 DQOs
- Reporting the final waste characterization information to WIPP

The flow of data from point of generation to incorporation on the WSPF for each characterization technique was reviewed to ensure that all applicable requirements were included in the operating procedures.

The NTS/CCP demonstrated compliance with the characterization requirements of the WAP through documentation and by demonstrating the characterization activities. The following batch data reports were reviewed as objective evidence of completion of characterization activities:

- HSG batch data reports NT082202A and NT092302A
- Radiography batch data reports NTRTR0026, NTRTR0002, NTRTR0004 and NTRTR0017
- VE batch data reports NT-02-002, NT-VE-00003 and NT-VE-00005

The batch data reports for all characterization activities were determined to be acceptable as were the analysis data. The sampling process observed by the audit team was also determined to be acceptable.

The project-level data verification and validation process was evaluated by reviewing HSG batch data report NT0042402A , RTR batch data report NTRTR0001, and VE batch data report NT-02-001.

Copies of these batch data reports are included in Attachment 3.

The AK process and the AK auditable record were reviewed in detail for a Summary Category Group S5000 retrievably stored debris waste stream. The AK record was reviewed to demonstrate that the required information was present and correctly interpreted. The batch data reports cited above were also used to demonstrate the confirmation of AK, the reconciliation of DQOs, the preparation of a WSPF, and the transmittal of data to WIPP (using the WWIS).

WSPF NTLLNL-S5400-332.01A AK-34 and the summarized characterization information related to it were reviewed to evaluate the objective evidence for reporting waste characterization information to WIPP. The form was completed using information from the various characterization processes. The WSPF will be submitted to CBFO prior to any shipments. The form will be reviewed and approved by the CBFO when the waste stream has been fully characterized and the site is approved to ship waste to WIPP.

The audit team concluded that these areas were adequate, satisfactorily implemented, and effective. The audit team documented two conditions (Observations) that, if left uncorrected, could result in future conditions adverse to quality. One condition was related to verification of DQOs and one was related to project level data verification and validation. In addition, the audit team offered two recommendations for improvement of the WWIS data entry process. These conditions are addressed in Sections 7.1 and 7.2.

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

Solids and soils/gravel waste streams were not included in the audit scope; therefore, no Summary Category Group S3000 or S4000 waste will be characterized for disposal at WIPP until NTS/CCP procedures and processes have been audited and accepted by CBFO and a final audit report for those processes has been approved by the New Mexico Environmental Department (NMED).

5.2.3 Table B6-3 Acceptable Knowledge Checklist

This audit was performed to assess the ability of NTS/CCP to characterize Summary Category Group S5000 retrievably stored debris waste streams. Items on the AK checklist are intended to ensure that the NTS/CCP has an AK process in place to:

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

The following procedures relating to the AK process were evaluated:

CCP-TP-005, *CCP Acceptable Knowledge Documentation*
CCP-TP-002, *CCP Reconciliation of DQOs and Reporting Characterization Data*
CCP-TP-030, *CCP TRU Waste Certification and WWIS Data Entry*

The AK summary documentation contained in the auditable record and container-specific information were reviewed. The audit was limited to a single debris waste stream. The traceability of the AK documentation was verified by selecting a random sample of reference documents. The AK summary document and the supporting documentation identify the waste stream and the point of generation for the containers. Several of the references were selected to ensure that they were available in the auditable record and to ascertain if the source documents supported the characterization determination. These sources included such items as published reports, container data bases, interviews with site personnel concerning the use of hazardous materials, and the reports of previous waste characterization efforts.

The AK process was evaluated by reviewing the CCP AK Summary Report, CCP-AK-NTS-001. The auditable record was searched to ensure that the cited references were available and that the reviewer could come to the same hazardous waste determination as presented in the AK summary. Information from the debris waste stream was selected and the AK information was traced from the summary report through the AK source document reviews to the original records. The information for five containers, NT980172, NT021078, NT021077, NT280061, and NT284007 was traced to verify the characterization as determined by the AK. The information was available in the record files and supported the AK determination.

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 audit team reviewed several

examples of the resolution of discrepancies identified in the AK record and examined the process for dealing with prohibited items. The discrepancy resolution procedure is CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*.

Additional documentation supporting the AK summary documents and AK source document review summaries are contained in Attachment 3 to support the entries in the B6-3 checklist.

CCP WSPF NTLLNL-S5400-332.01A AK-34 and the information related to it were reviewed to establish the objective evidence for reporting characterization information to WIPP.

The procedures used by the NTS/CCP to assemble, evaluate, document, and reconcile sampling and analysis results were reviewed for adequacy and implementation during the audit. The specific AK requirements evaluated included AK procedure content, the specific requirements relative to retrievably stored waste, and evaluation of the AK summary to ensure inclusion of all mandatory information required by the WAP.

Reports and records used to document the NTS/CCP AK basis were evaluated. Copies of objective evidence evaluated are in Attachment 3. The reports were satisfactory and the records were being properly maintained as QA records. The list of AK documentation reviewed is included in Attachment 3.

The NTS/CCP process of using sampling and analysis data to confirm the waste characterization designations made using AK was determined to be satisfactorily implemented. The NTS/CCP process used to resolve discrepancies and document changes was determined to be satisfactory. Waste characterization designations were confirmed by reviewing the batch reports that provide documentation of the characterization activities.

The audit team concluded that NTS/CCP is satisfactorily implementing the AK process to delineate, characterize, and confirm the characterization of waste for disposal in accordance with WIPP WAP requirements.

The audit team identified one condition adverse to quality that was corrected during the audit, and documented three conditions (Observations) that, if left uncorrected, could result in future conditions adverse to quality. In addition, the audit team offered one Recommendation for improvement of the AK process. These conditions are addressed in Sections 6.2, 7.1 and 7.2.

5.2.4 Table B6-4 Headspace Gas Checklist

This audit was performed to assess the ability of the NTS/CCP to characterize Summary Category Group S5000 retrievably stored debris waste streams.

The CCP HSG sampling at the NTS is being accomplished using a single sample manifold system. The system automatically penetrates the drum using a specially designed, self-drilling, self-tapping hollow core filter vent. The filter or plug is installed into a socket inside the glovebox power head prior to drum processing. Samples are collected when the power head assembly bores through the drum lid and lowers the filter to sample depth. At sample depth a flow path is created from inside the plastic drum liner and the annular space, through a hollow, fluted filter vent stem, and into the seal housing inlet port of the sample manifold. The system uses a photo-ionization detector (PID) (to determine cleanliness), purge gas (pure nitrogen), and calibrated pressure/vacuum gauges. Proper sample collection is verified by collecting QC samples and evaluating the data against specific quality assurance objectives (QAOs). Sampling QAOs are assessed after the QC samples have been analyzed, and are documented in the analytical batch data reports.

The NTS/CCP procedures governing on-line sampling and analysis activities and data review and validation included:

- CCP-TP-007, *CCP Single Sample Manifold Headspace Gas Sampling and Analysis Procedure*
- CCP-TP-009, *CCP Single Sample Manifold Data Handling Procedure*
- CCP-TP-029, *CCP Single-Sample Manifold Headspace Gas Sampling and Analysis Methods and Equipment Calibration*
- CCP-TP-032, *CCP Single Sample Manifold Data Validation Procedure*
- CCP-TP-056, *CCP HSG Performance Demonstration Plan*

HSG sampling and analysis activities were evaluated by reviewing the sampling equipment, observing sampling and analysis activities, and reviewing available HSG batch data reports. Batch data reports were reviewed to evaluate sampling and analysis results against WAP requirements (batch data reports NT082202A and NT092302A). Documentation specific to these activities (e.g., calibration records, maintenance logbooks, and instrument logbooks) were reviewed to ensure that the mobile operations met requirements, as specified in the WAP. Copies of the applicable documentation reviewed are included in the batch reports.

The audit team completed the B6-4 checklist while assessing implementation of the applicable procedures.

A review of the batch data reports verified compliance with the WIPP WAP requirements and that the CCP plans and procedures successfully implement requirements in both the technical and QA areas. Pages from the batch data reports that serve as objective evidence for implementation of activities required by the B6-4 checklist are included in Attachment 3.

Overall, the audit team concluded that the HSG sampling and analysis operations were adequate, satisfactorily implemented, and effective.

The audit team identified one deficiency that resulted in the issuance of CAR 02-096. The audit team identified one concern that was corrected during the audit and documented one condition (Observation) that, if left uncorrected, could result in a future condition adverse to quality. In addition, the audit team offered two recommendations for improvement of the HSG analysis process. These conditions are addressed in Sections 6.1, 6.2, 7.1 and 7.2 and are noted on the B6-4 checklist.

5.2.5 Table B6-5 Radiography Checklist

This audit was performed to assess the ability of NTS/CCP to characterize Summary Category Group S5000 retrievably stored debris waste streams. The CCP procedures governing RTR operations include:

- CCP-TP-045, *CCP RTR #5 Radiographic Inspection Operating Procedure*
- CCP-TP-028, *CCP Radiographic Test and Training Drum Requirements*

The NTS/CCP radiography operations are performed using a real-time system located in a mobile RTR trailer located at Area 5 at the NTS. The NTS/CCP RTR process 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. The system allows NTS/CCP personnel to view drums while recording the examination on an audio/videotape.

The Table B6-5 radiography checklist was completed by assessing operating procedures CCP-TP-045, *CCP RTR #5 Radiographic Inspection Operating Procedure*, and CCP-TP-028, *CCP Radiographic Test and Training Drum Requirements*. The audit team reviewed RTR batch data reports, videotapes of the operations, and the resulting documentation. RTR testing batch data reports NTRTR0026, NTRTR0002, NTRTR0004 and NTRTR0017 are included in Attachment 3. Training course material and the RTR test drum evaluations were reviewed for adequacy and acceptability.

The RTR process was witnessed and batch data reports and RTR videotapes were selected and evaluated.

Radiography equipment maintenance and daily check activities were evaluated in accordance with the WAP requirements and as described in the RTR procedure. The procedure was determined to be acceptable. Radiography results were being properly reported on standard forms and were being adequately reviewed, as required by the WAP. Copies of the forms are included in the batch data reports listed in Attachment 3.

The audit team concluded that the NTS/CCP RTR procedures and processes were adequate, satisfactorily implemented, and effective.

The audit team identified one condition that, if left uncorrected, could lead to a future condition adverse to quality. In addition, the audit team offered one recommendation for improvement of the RTR process. These conditions are addressed in Sections 7.1 and 7.2 and are noted on the B6-5 checklist.

5.2.6 Table B6-6 VE Checklist

This audit was performed to assess the NTS VE process and the CCP ability to characterize Summary Category Group S5000 retrievably stored debris waste streams. The audit team observed the NTS VE operations. The NTS VE process was evaluated to determine the effectiveness of VE as a confirmation of the RTR process and as a characterization method that can be used in lieu of RTR. VE performed as a confirmation of RTR or in lieu of RTR is recorded on audio/videotape and the results are documented on standard forms in accordance with procedure CCP-TP-003, *CCP Sampling Design and Data Analysis for RCRA Characterization*.

The NTS/CCP VE activities were evaluated by observing operations, reviewing videotapes, and evaluating the VE batch data reports. The visual examination of drum number NT021085 was observed by the audit team. The audit team reviewed testing batch data reports NT-02-002 and NT-VE-00005 (included in Attachment 3).

VE operations at the NTS Waste Examination Facility (WEF) were observed in accordance with CCP-TP-062, *CCP TRU Waste Examination, Segregation and Re-packaging at the NTS WEF*. Data generated from the VE activities were compiled and reviewed in accordance with CCP-TP-003. The batch data reports were reviewed to ensure that the information collected using the VE procedure met the WAP requirements. In addition, the batch data reports were reviewed to verify that the independent technical review, the technical specialist review, and the QA Officer review were conducted as defined in procedure CCP-TP-003. Procedures and processes were concluded to be adequate, satisfactorily implemented, and effective.

The training course content for operators and VE experts was reviewed to verify that all WAP requirements were included. NTS/CCP VE training requirements were contained in CCP-QP-002. Training files were reviewed for VE experts and operators to verify that individuals responsible for performing the visual examination of drums had been properly trained and qualified.

Additional information regarding the evaluation of the VE operations at NTS is contained in the B6-6 checklist in Attachment 3. The audit team concluded that

the NTS/CCP VE process was adequate, satisfactorily implemented, and effective.

The audit team identified one condition that, if left uncorrected, could lead to a future condition adverse to quality. In addition, the audit team offered one Recommendation for improvement of the NTS VE process. These conditions are addressed in Sections 7.1 and 7.2 and noted on the B6-6 checklist.

6.0 SUMMARY OF DEFICIENCIES

6.1 Corrective Action Reports

The following CAR, initiated as a result of Audit A-02-15, has been transmitted to NTS/CCP Management under separate cover. A brief description of the CAR is provided below.

6.1.1 CBFO CAR 02-096

HSG Sampling and Analysis implementation:

The PID instrument readout is truncated so that only whole numbers are displayed. The acceptance criteria for PID verification is plus or minus 1 parts per million (ppm) using a 10 ppm standard. It is possible that a reading of 11ppm could be between 11-11.9, and therefore be out of compliance.

6.2 Deficiencies Corrected During the Audit (CDAs)

The audit team identified two WAP-related conditions adverse to quality that were considered isolated deficiencies and were corrected during the audit.

CDA 1

The bromofluorobenzene (BFB) tuning solution is being stored in a freezer, but the temperature of the freezer is not monitored to show compliance with the SW-846 requirement to store liquid standards below -10 degrees C. The CCP obtained and installed monitoring equipment and corrected the procedure to address verification that the required temperature had been maintained. The audit team verified the corrective action for this item.

CDA 2

CCP-TP-005, Rev. 8, contained editorial and adequacy concerns that needed to be corrected. These concerns were as follows:

- Section 4.3.2, Note dealing with Attachments 2 and 3 was incorrect.

- The word "Sign" was missing from Section 4.5.L.
- The intent of Section 4.4.20 on the compilation of the AK radionuclide information needed clarification.
- Add a step in 4.5.1(D) concerning reconciliation of an isotopic ratio comparison that exceeds 50%.
- Add a step in Section 4.6 to include radionuclide accuracy in the accuracy report.

The CCP revised the procedure and addressed the adequacy issues and the audit team verified that the revised procedure adequately addressed all the issues.

7.0 SUMMARY OF OBSERVATIONS AND RECOMMENDATIONS

7.1 Observations

An Observation documents marginally acceptable conditions that, if not controlled, might later escalate into a deficiency. The following are the eight WAP-related Observations identified during the audit:

Observation 1

The AK confirmation checklist was demonstrated but was incomplete. Specifically, the source of the waste characterization information was not cited in the comments section. In addition, not all prohibited items were listed and the AK radiological information provided in Attachment 2 was incomplete.

Observation 2

The NTS AK summary report should be revised to address the following issues:

- The maps included are not legible.
- Stable radionuclides are listed on the AK list.
- Relevant radionuclide isotopic information was deleted during revision of the document (Rev. 3).
- Tables 5.2 and 6.2 should list total population.

Observation 3

Attachment 4 of the AK procedure (CCP-TP-005) is not the same as the version in use. The proper version should be incorporated into the procedure. Note: The attachment being used was from an earlier version of the procedure and contained the appropriate information.

Observation 4

The narrative supporting the WSPF, NTLLNL-S5400-332.01A, is not consistent with the AK summary report. Different "D" code assignments are noted and the rationale for not assigning D001 and D002 are not the same between the narrative and the AK summary. Note: The information differences were basically editorial in nature and the documents were in process and being revised.

Observation 5

The RTR operators were using a weight look-up table from a SRS RTR procedure. The table is not included in the procedure used at NTS. Note: The RTR equipment is the same at both sites and the operators were using the table from the other site as a guide only. There is no impact upon the data being produced.

Observation 6

HSG sampling and analysis procedure CCP-TP-029, Rev. 8, has some inconsistencies that are considered editorial in nature and should be addressed. Note: The process was being performed properly and inconsistencies in the procedure did not affect the data that was generated. These inconsistencies are as follows:

- Hydrogen methane analysis is being performed. Section 2.2.16, "Performance of Hydrogen Methane Analysis," does not include a step to use a CCV gas standard; however, the standard is being used.
- Section 4.4.4[D] provides acceptance criteria for flame ionization detectors and thermal conductivity detectors. This criteria is for

Volatile Organic Compound (VOC) target compounds and should be deleted.

- Section 4.9.1 requires verification of relative retention times for qualitative analysis; however, relative retention time is not used per this procedure.

Observation 7

The VE Independent Technical Reviewer (ITR) does not perform a comparison of logbook data with the data in TRU data sheets to assure the absence of transcription errors. There were no apparent errors noted.

Observation 8

While reviewing batch data reports, the audit team noted the following discrepancies:

Batch Data Report NT-VE-0003:

- Inconsistent identification of the batch data report.
- Page 6 of the package inventory report had a discrepancy on the presence of a 90-mil liner.
- EPA codes were listed incorrectly.
- There was no entry for packaging for the VE column of the RTR/VE comparison.

Batch Data Report NT-RTR-0004:

- All nonconformance reports (NCRs) are not listed on the Site Quality Assurance Officer (SQA) Checklist.
- Inconsistency of procedure revisions used between checklists

Batch Data Report NT-02-001:

- Two designations of videotape.

Note: A total of 13 batch data reports were reviewed during the audit and the above listed deficiencies were identified. This indicates a lack of attention to detail when preparing batch data reports.

7.2 Recommendations

The following are the seven WAP-related Recommendations provided to NTS/CCP management during the audit:

Recommendation 1

Procedure CCP-TP-032, Rev. 7, does not require review of quantitative identification for VOCs, hydrogen, and methane. The audit team recommends that this review be added to the procedure.

Recommendation 2

CCP should consider a more formal method of documentation of completion of training for WWIS data entry personnel. The audit team recommends a signature of completion/satisfactory status on the on-the-job training (OJT) form and/or sending notification of satisfactory completion to the individual personnel.

Recommendation 3

The audit team recommends the use of pull-down menu items for the appropriate WWIS data spreadsheet cells as an enhancement to expedite data entry and increase consistency and accuracy for applicable WWIS spreadsheet cells.

Recommendation 4

The working solution of BFB is stored in a screw-capped bottle, fitted with a septum. Current practice is to remove the cap from the bottle while withdrawing the required amount of standard solution. The audit team recommends that the standard solution be withdrawn through the septum, without removal of the cap.

Recommendation 5

The audit team recommends that the NTS AK Container Inventory Database be added to the AK record.

Recommendation 6

While recording the narrative for the VE inspection, the narrator states that each bag removed from the drum is sealed if it has a "horsetail." The narrator also uses the terms "sealed" and "greater than 4 liters" if the bag is larger than 4 liters. The audit team recommends that the VE operators not use these terms unless addressing prohibited items.

Recommendation 7

Radiographic procedure CCP-TP-045 does not include steps for the RTR operator to identify potential physical hazards for the VE operators. The audit team recommends that the procedure be revised to require the RTR operators to identify potential physical hazards and record them distinctly on RTR data forms. In addition, it is recommended that the VE personnel be notified of such hazards.

8.0 LIST OF ATTACHMENTS

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

| PERSONNEL CONTACTED DURING THE AUDIT | | | | |
|---|-----------------------------|--------------------------|-------------------------------|---------------------------|
| NAME | TITLE/ORG | PRE AUDIT MEETING | CONTACTED DURING AUDIT | POST AUDIT MEETING |
| Anderson, Jonathan | CCP Documents | X | X | |
| Barnett, Jack | Observer, EPA Region 5 | X | | X |
| Becker, David | CCP AK | X | | |
| Bernardi, Richard | CCP Technical Specialist | | X | X |
| Bickerstaff, Sheila | CCP Record Custodian | X | X | X |
| Billet, R. A. | CCP Site Opp Mgr. | | X | |
| Brown, Beverly | Facility Records Custodian | | X | |
| Burns, Tim | LANL CCP Manager | | X | |
| Chapman, Carl | BN VE Operator | | X | |
| Colarusso, Angela | NNSA/NV TRU Project Manager | X | | X |
| Colby, Charles T. | CCP HSG Operator | | X | |
| Crawford, Beverly | CCP SPM | | X | |
| DiSansa, E. Frank | NNSA/NV WMD Director | X | | |
| Djordjevic, Sinisa | CCP SQA | | X | |
| Elle, Don | NDEP Supervisor | X | | X |
| Erdmann, Nancy | Records | X | X | |
| Ewing, Steve | CCP NDE | X | X | |
| Fesmire, Courtland | CCP SPM | X | X | X |
| Fisher, A. J. | CCP QA Manager | X | X | X |
| Florez, Patsy | AK Administration | | X | |

| PERSONNEL CONTACTED DURING THE AUDIT | | | | |
|---|-------------------------------|--------------------------|-------------------------------|---------------------------|
| NAME | TITLE/ORG | PRE AUDIT MEETING | CONTACTED DURING AUDIT | POST AUDIT MEETING |
| Foster, Bruce | BN Interface | X | X | X |
| Franco, Joe | CCP Project Manager | X | X | X |
| Freeze, Deborah | CCP Training Specialist | X | X | |
| Greenbaum, Paul | BN HP | X | | |
| Gregory, Louis | BN VEE | | X | X |
| Griswold, Lincoln W. | CCP Engineer | X | | X |
| Guerin, David | CCP AK Expert | | X | X |
| Kirkes, Creta | CCP WWIS Data Entry | X | X | |
| Haar, Dave | CCP Deputy Manager | X | X | X |
| Lahoud, Russel | BN Program Manager TRS | | | X |
| Lee, Yun Ko | BN AK | X | | |
| Little, Bonnie | AK Expert | | X | |
| Melton, Jessie L. | CCP HSG Support | | X | |
| Mooney, Dean | CCP SPQAO | | X | |
| Norton, Joni | NNSA/NV TRU Task Manager | X | | X |
| Paradis, Leonil | BN VE Operator | | X | |
| Parson-DePry, Shannon | BN VE Technical Supervisor | | X | |
| Pennala, Eric | MCS General Manager | X | X | |
| Peterson, Michael | HSG Support | | X | |
| Pooler, Fred | MCS RTR Operator | | X | |

| PERSONNEL CONTACTED DURING THE AUDIT | | | | |
|---|--------------------------|--------------------------|-------------------------------|---------------------------|
| NAME | TITLE/ORG | PRE AUDIT MEETING | CONTACTED DURING AUDIT | POST AUDIT MEETING |
| Quintana, Doris | CCP SPQAO | X | X | |
| Shokes, Tamara | Project Manager | | X | |
| Smith, E. Lee | MCS RTR ITR | X | X | |
| Stroble, J. R. | CCP WCO/NCT | X | | |
| Tilman, Paul | NNSA/NV TRU Task Manager | X | | |
| Uytioco, Elise | HSG Operator | | X | |
| VanMeigham, Jeff | CCP-VPM | X | X | X |
| Whitworth, Julia | AK Expert | | X | |
| Wong, John | NDEP | X | | X |

| AUDITED CCP IMPLEMENTING DOCUMENTS/PROCEDURES | | |
|--|--|--|
| Number of Documents | Procedure Number/Rev. No. | DOCUMENT TITLE |
| 1 | CCP-PO-002 | CCP Transuranic Waste Certification Plan |
| 2 | CCP-PO-009 | CCP/NTS Interface Document |
| 3 | Bechtel Nevada/WTS Contract/ Statement of Work | Bechtel Nevada, NTS Statement of Work for Characterization of NTS TRU Waste |
| 4 | CCP-QP-002 | CCP Training and Qualification Plan |
| 5 | CCP-QP-004 | CCP Corrective Action Management |
| 6 | CCP-QP-005 | CCP TRU Nonconforming Item Reporting and Control |
| 7 | CCP-QP-006 | CCP Corrective Action Reporting and Control |
| 8 | CCP-QP-008 | CCP Records Management |
| 9 | CCP-QP-010 | CCP Document Preparation and Approval |
| 10 | CCP-QP-011 | CCP Notebooks & Logbooks |
| 11 | CCP-QP-028 | CCP Records Filing, Inventorying, Scheduling, and Dispositioning |
| 12 | CCP-TP-001 | CCP Project Level Data Validation and Verification |
| 13 | CCP-TP-002 | CCP Reconciliation of DQOs and Reporting Characterization Data |
| 14 | CCP-TP-003 | CCP Sampling Design and Data Analysis for RCRA Characterization |
| 15 | CCP-TP-005 | CCP Acceptable Knowledge Documentation |
| 16 | CCP-TP-007 | CCP Single Sample Manifold Headspace Gas Sampling and Analysis Procedure |
| 17 | CCP-TP-009 | CCP Single Sample Manifold Data Handling Procedure |
| 18 | CCP-TP-028 | CCP Radiographic Test and Training Drum Requirements |
| 19 | CCP-TP-029 | CCP Single-Sample Manifold Headspace Gas Sampling and Analysis Methods and Equipment Calibration |
| 20 | CCP-TP-030 | CCP WWIS Data Entry and TRU Waste Certification |
| 21 | CCP-TP-032 | CCP Single Sample Manifold Data Validation Procedure |
| 22 | CCP-TP-045 | CCP RTR #5 Radiography Inspection Operating Procedure |
| 23 | CCP-TP-056 | CCP HSG Performance Demonstration Plan |
| 24 | CCP-TP-061 | CCP TRU Waste Container Inspection and Control at NTS |
| 25 | CCP-TP-062 | CCP TRU Waste Examination, Segregation, and Repacking at the NTS WEF |