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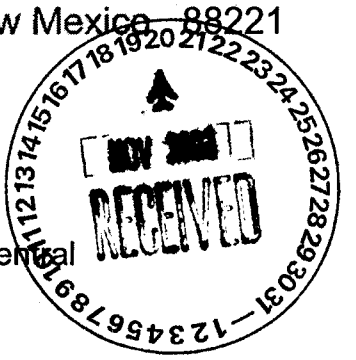
United States Government **Department of Energy**

memorandum

Carlsbad Field Office
Carlsbad, New Mexico 88221



DATE: November 20, 2003

REPLY TO ATTN OF: CBFO:QA:DSM:GS:03-2950:UFC 2300.00

SUBJECT: Interim Report of the Hanford Site, Washington TRU Solutions LLC, Central Characterization Project Services, Audit A-04-07

TO: Mark French, DOE-RL

The Carlsbad Field Office (CBFO) conducted an audit of the CCP single-sample manifold headspace gas sampling and analysis system using the contracted services of the WTS CCP on November 11-13, 2003. Attached is the audit report for CBFO Audit A-04-07 for your convenience. The audit team concluded that the applicable CCP technical and associated quality assurance elements and processes are adequate, satisfactorily implemented, and effective.

As a result of the audit, the audit team identified four concerns. Two of which were determined to be isolated deficiencies requiring remedial corrective actions only, and were corrected and verified during the audit (CDA). The audit resulted in one observation and the audit team is offering one recommendation for management action and consideration.

If you have any questions or comments concerning this report, please contact me at (505) 234-7491.

D. S. Miehls

Dennis S. Miehls
Quality Assurance Specialist

Attachment

cc: w/attachment
A. Holland, CBFO *ED
K. Watson, CBFO *ED
D. Wintes, DNFSB *ED
S. Zappe, NMED *ED
S. Holmes, NMED *ED
R. Joglekar, EPA *ED
E. Feltcorn, EPA *ED
M. Eagle, EPA *ED
B. Walker, EEG *ED
D. Haar, WTS *ED
A. Fisher, WTS *ED
F. Shariff, WTS *ED
C. Wright, CTAC *ED
M. Rojo, CTAC *ED
L. Greene, WRES *ED
K. Dunbar, WRES
CBFO QA File
CBFO M&RC

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U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE

INTERIM AUDIT REPORT
OF THE
HANFORD SITE, WASHINGTON TRU SOLUTIONS LLC (WTS),
CENTRAL CHARACTERIZATION (CCP) PROJECT SERVICES

RICHLAND, WASHINGTON

AUDIT NUMBER A-04-07

NOVEMBER 11-13, 2003

SINGLE SAMPLE MANIFOLD HEADSPACE GAS (HSG) SAMPLING AND ANALYSIS SYSTEM

Prepared by: _____ **Date:** 11-19-03
Chet Wright, CTAC
Audit Team Leader

Approved by: _____ FOR MLH **Date:** 11-20-03
Ava L. Holland, CBFO
Quality Assurance Manager

1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Audit A-04-07 was conducted to evaluate the adequacy, implementation, and effectiveness of the Single-Sample Manifold Headspace Gas (HSG) Sampling and Analysis and Headspace Gas (HSG) Performance Demonstration Program (PDP) performed by Washington TRU Solutions LLC (WTS) Central Characterization Project (CCP) for characterization and certification of retrievably stored debris waste (S5000), relative to the requirements detailed in the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP), the CBFO Quality Assurance Program Document (QAPD), the Contact-Handled Transuranic Waste Acceptance Criteria (WAC) for the WIPP project and the CCP/Fluor Hanford Interface Document .

The audit was conducted at the Hanford facility in Hanford, Washington, November 11-13, 2003. The audit team concluded that the overall adequacy of the CCP technical and quality assurance (QA) programs, as applicable to the activities audited, are satisfactory in meeting specified requirements. The audit team also concluded that the defined QA and technical programs are satisfactorily implemented in accordance with the CCP Transuranic Waste Certification Plan, the CCP Transuranic Waste Quality Assurance Characterization Project Plan (QAPJP), and its applicable procedures, and the processes are adequate, implemented, and effective. Implementation of the CCP quality program elements was verified in-depth during the initial CBFO Certification Audit (A-03-25) of CCP at the Hanford Site, September 8-12, 2003.

The audit team identified four concerns, two of which were determined to be isolated deficiencies, requiring remedial corrective actions only, resulting in corrective action being implemented by CCP during the audit (CDA). One Observation was issued as a result of the audit, and one Recommendation was provided for CCP management consideration. The CDAs, Observation, and Recommendation are described in Section 6.0.

2.0 SCOPE

CBFO Audit A-04-07 was conducted to evaluate the adequacy, implementation, and effectiveness of the CCP program and technical processes used to perform transuranic (TRU) waste characterization activities for retrievably stored debris waste (S5000), located or generated at the Hanford site. In addition, the audit team witnessed the operation of the CCP trailer-mounted Single-Sample Manifold HSG Sampling and Analysis System equipment used to characterize the debris waste in accordance with applicable CCP implementing documents.

The following elements were evaluated:

Quality Assurance

Personnel Qualification and Training
Documents and Records
Quality Improvement

Technical

Project Level Data Validation and Verification (V&V)
Single-Sample Manifold Data Handling
Single-Sample Manifold HSG Sampling and Analysis Methods and Equipment Calibration
Single-Sample Manifold Data Validation
HSG Performance Demonstration Program
Single-Sample HSG Sampling and Analysis

The evaluation of Hanford/CCP TRU waste activities and documents was based on current revisions of the following documents:

Waste Isolation Pilot Plant Hazardous Waste Facility Permit

Quality Assurance Program Document, DOE/CBFO-94-1012

Contact-Handled Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant Project, DOE/WIPP-02-3122

CCP Transuranic Waste Quality Assurance Characterization Project Plan (QAPjP), CCP-PO-001

CCP/Fluor Hanford and WTS Statement of Work (SOW)

CCP Transuranic Waste Certification Plan, CCP-PO-002

CCP/Fluor Hanford Interface Document, CCP-PO-017

Related CCP technical and quality assurance implementing procedures

3.0 AUDIT TEAM, INSPECTORS AND OBSERVERS

CBFO AUDIT TEAM

Chet Wright	Audit Team Leader, CTAC
Dorothy Gill	Technical Specialist, CTAC

OBSERVER/INSPECTORS

None

4.0 AUDIT PARTICIPANTS

A pre-audit conference was held in Room 153 at 2420 Stevens Center Drive, Richland, Washington, on November 11, 2003. Daily management briefings were held at the Hanford site to discuss the progress of the audit and potential deficiencies. The audit was concluded with a post-audit conference held in Room 308 at 2420 Stevens Center Drive, Richland, Washington, on November 13, 2003. CCP and Fluor Hanford personnel contacted during the course of the audit are identified in Attachment 1.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Audit Activities

Details of the audit activities, along with the specific objective evidence reviewed and the results of those reviews, are documented within the audit checklists.

The audit team concluded that the CCP technical and QA procedures adequately reflect the appropriate requirements of the HWFP WIPP, EPA No. NM4890139088 (TSDF), and the WAC. The audit team concluded that the technical elements as defined are being satisfactorily implemented in accordance with the CCP QAPjP and the applicable CCP implementing procedures. The audit team determined that the CCP single-sample manifold HSG sampling and analysis activities, as described in the associated CCP implementing procedures, are adequate, satisfactorily implemented, and effective.

5.1.1 Quality Assurance Program Audit Activities

The audit team evaluated the implementation of selected elements (indoctrination/training of personnel, reporting of nonconforming conditions and control of records) as described in the CCP QA program. Details of audit activities, including the specific objective evidence reviewed, are contained in the audit checklists.

While evaluating the QA program elements of the CCP HSG sampling and analysis operations at Hanford, the audit team identified one concern. As a result, a Recommendation was provided to CCP management, to ensure operators have knowledge of CCP procedural requirements and enhance operator technique and confidence in the process of HSG sampling and analysis. It was recommended that CCP initiate continued on-the-job training (OJT) for all HSG operators recently qualified. In addition, periodic surveillance activities of this area should be considered by QA (Recommendation 1).

The audit team determined that overall, the CCP QA Program elements and implementing procedures were adequate, satisfactorily implemented, and effective.

5.1.2 Headspace Gas Sampling and Analysis

CCP HSG sampling and analysis operations at Hanford were audited on November 11-13, 2003. CCP utilizes an integrated sampling and analysis manifold that drills through the drum lid and then draws the HSG sample directly from under the lid. The audit included observation of drilling through the drum, drum sampling operations, and the gas chromatography/mass spectrometry (GC/MS) analytical procedures. Review of a calibration batch, an minimum

detection limit (MDL) batch, and four batch data reports comprised the data review portion of the audit. Additionally, the audit team evaluated areas related to indoctrination/training of CCP personnel (HSG operators), and documents and records (including PDP data), and also reviewed standard, reagent, and measuring and test equipment (M&TE) certificates during the on-site visit.

Although operations had only recently commenced, all areas inspected were well organized, and the technicians had completed the required training to support their qualification as instrument operators. Because of time constraints, the operators had only been able to acquire very little practical experience related to equipment and operational processes. However, the lead chemist, who had accompanied the equipment from the Nevada Test Site (NTS), is competent, well organized and motivated, and in an excellent position to ensure that the operators receive the necessary OJT. The operational systems implemented by the HSG team are technically sound, suitable for use, and well documented. The procedures used to execute the operations audited (CCP-TP-007, CCP-TP-009, CCP-TP-029, and CCP-TP-032) adequately described the operations and provided sufficient detail for successful implementation.

No CARs were generated during the audit of these activities. The two concerns identified were corrected during the audit (CDA). One concern was associated with storage of liquid bromofluorbenzene (BFB) standards (CDA 1) and the second was concerned with review of relative retention time (RRT) data (CDA 2).

5.1.3 Performance Demonstration Program (PDP)

The audit team examined PDP documentation and interviewed CCP personnel. One concern was initiated with regard to the PDP program, resulting in Observation 1. The sampling and analysis equipment had been transferred from NTS and personnel were unable to participate in Cycle 17A of the PDP program. Although the site is currently in the process of completing supplemental Cycle 17A samples, Observation 1 was written to document the use of data generated before this PDP cycle is successfully completed.

6.0 CORRECTIVE ACTIONS REPORTS, OBSERVATIONS, RECOMMENDATIONS, AND CORRECTED DURING THE AUDIT

6.1 Corrective Action Reports (CARs)

No CARs were initiated as a result of CBFO Audit A-04-07.

6.2 Observations Initiated as a Result of CBFO Audit A-04-07

The audit team identified one condition that, if left uncorrected, could lead to future conditions adverse to quality. This condition is reported as an Observation, and is being provided to CCP management for consideration.
Observation #1:

Observation #1:

It was determined that the last PDP cycle successfully completed by the evaluated CCP HSG equipment was Cycle 16A, performed at NTS. Although CCP is currently in the process of completing Cycle 17A at Hanford, the data produced to date is not supported by successful completion of the PDP as required by CCP PDP Procedure CCP-TP-056, R/11, Section 4.1.2, and is therefore at risk pending successful completion of the PDP Cycle 17A.

6.3 Recommendation

Recommendation 1:

To ensure knowledge of CCP procedural requirements and enhance operator technique confidence in the process of HSG sampling and analysis, it is recommended that CCP initiate continued OJT for all HSG operators recently qualified. In addition, periodic surveillance activities of this area should be considered by QA.

6.1 Deficiencies Corrected During the Audit (CDA)

CDA 1:

BFB stock standards purchased as certified standards in Class "A" glassware are not being stored at a temperature between -10 and -20 degrees centigrade as required by CCP Procedure CCP-TP-029, R/12, Section 4.1.1.

Resolution:

A new freezer was purchased by CCP and installed in the HSG sampling and analysis area. In addition, CCP NCR-HANF-0407-03 was written by the HSG subject matter expert (SME)/operator to address the fact that BFB standards were stored at a temperature above the specified limits, whereby, initiating an evaluation to determine impact and future use of the standards in question. This action was verified accomplished and therefore considered to be corrected during the audit (CDA).

CDA 2

The RRT units are not verified as being within the specified ± 0.06 RRT, as required by CCP Procedure CCP-TP-029, R/12, Section 4.9.1.A.5.

Resolution:

CCP Procedure CCP-TP-029, R/13, Section 4.9.1 was revised to add clarification and a note that states the following:

"Retention time windows are conservatively set at a maximum of ± 0.40 minutes. This parameter coupled with retention times of the internal standards, being >10 minutes, ensures that the maximum difference in RRT of 0.04, as compared to the initial calibration also ensures that a ± RRT criteria is obtained." This action was verified accomplished and therefore considered to be corrected during the audit (CDA).

7.0 ATTACHMENTS

Attachment 1: Personnel Contacted During the Audit
Attachment 2: Procedures Reviewed During the Audit
Attachment 3: Summary Table of Audit Results

PERSONNEL CONTACTED DURING THE AUDIT

PERSONNEL CONTACTED				
NAME	**TITLE/ORG**	**PRE AUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST AUDIT MEETING**
Franco, Joe	Project Manager WTS/CCP	X	X	X
Melton, Jessie	HSG SME/CCP	X	X	X
Uytioco, Elise	HSG/CCP	X	X	X
Nance, Sherie	SPQAO/CCP	X	X	X
Edwards, Jeffrey	HSG Chemist/CCP	X	X	X
Smith, Daniel	HSG Chemist/CCP	X		X
Smith, Richard	HSG Technician/CCP	X		X
Kergil, Tommy	HSG Chemist/CCP	X		X
Worden, Jason	HSG Chemist/CCP	X		X
Roberts, Kay	Executive Sectary/CCP	X		X
McDonald, Kent	WMP/STR/Fluor Hanford	X		X
Schrader, Todd	DOE Representative/Fluor Hanford	X		X
Dunn, Rick	SPM/Fluor Hanford	X		X
Maupin, Jim	SPQAO/CCP			X
Doherty, Mark	SPM/CCP	X	X	X
Klover, Steve	SPQAO/CCP		X	X

CCP PROCEDURES AUDITED IN A-04-07		
NUMBER	**PROCEDURE NUMBER/REVISION**	**TITLE**
1.	CCP-TP-007, R/18	CCP Single Sample Manifold Headspace Gas Sampling and Analysis
2.	CCP-TP-009, R/13	CCP Single Sample Manifold Data Handling
3.	CCP-TP-029, R/12	CCP Single Sample Manifold Headspace Gas Sampling and Analysis Methods and Equipment Calibration
4.	CCP-TP-032, R/10	CCP Single Sample Manifold Data Validation
5.	CCP-TP-056, R/1	CCP HSG Performance Demonstration Plan

Evaluation Area	Concern Classification					QA Evaluation		
	EP	CARs	CDAs	Obs	Rec	Adequacy	Implementation	Effectiveness
Headspace Gas Sampling & Analysis			2		1	A	S	E
Single Sample Manifold Data Handling						A	S	E
Single-Sample Manifold HSG Sampling and Analysis Methods and Equipment Calibration						A	E	
Single Sample Manifold Data Validation						A	S	E
Headspace Gas Performance Demonstration				1		A	S	E
TOTALS			2	1	1	A	S	**E**

Definitions

E = Effective
S = Satisfactory
U = Unsatisfactory
I = Indeterminate
A = Adequate
M = Marginal

CDA = Corrected During Audit
CAR = Corrective Action Report
Obs = Observation
Rec = Recommendation
EP = Exemplary Practice