



**Department of Energy**

Carlsbad Field Office  
P. O. Box 3090  
Carlsbad, New Mexico 88221  
October 30, 2002

 ENTERED

NOV 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

Re: Transmittal of the Certification Audit Report for the Rocky Flats Environmental  
Technology Site (A-03-04)

Dear Mr. Zappe:

This letter transmits the Rocky Flats Environmental Technology Site 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 of a new visual examination (VE) facility to confirm the real-time radiography, polychlorinated biphenyl (PCB) analysis, and solid sampling of tank sludge waste. The audit was conducted October 1-2, 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-

October 30, 2002

cc w/o enclosure:

T. Harms, DOE-HQ	*ED
K. Watson, CBFO	*ED
A. Holland, CBFO	*ED
D. Miehs, CBFO	*ED
R. Knerr, CBFO	*ED
J. Schneider, RFFO	*ED
J. Kieling, NMED	*ED
J. Bearzi, NMED	*ED
L. Allen, EEG	*ED
J. Lee, WTS	*ED
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L. Xuan, RFFO	*ED
R. Ballenger, RFETS	*ED
C. Ferrera, RFETS	*ED
G. O'Leary, RFETS	*ED

cc: w/enclosure

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CBFO QA File  
CBFO M&RC

U.S. DEPARTMENT OF ENERGY  
CARLSBAD FIELD OFFICE

FINAL AUDIT REPORT

OF THE

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

GOLDEN, COLORADO

AUDIT NUMBER A-03-04

October 1-2, 2002

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

New Visual Examination to Confirm Real-Time Radiography Facility  
and Sludge Sampling



Prepared By: Charles L. Riggs  
Charles L. Riggs  
Audit Team Leader, CTAC

Date: 10/29/02

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

Date: 10/30/02

## **1.0 EXECUTIVE SUMMARY**

Carlsbad Field Office (CBFO) Audit A-03-04 was conducted to evaluate the adequacy, implementation, and effectiveness of Rocky Flats Environmental Technology Site (RFETS) transuranic (TRU) waste characterization activities for Summary Category Groups S5000 debris waste and S3000 solid waste, relative to the requirements of the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP) and the CBFO *Quality Assurance Program Document* (QAPD). A set of B6 checklists used for assessing compliance of HWFP-related activities is included in Attachment 4.

The audit scope included Summary Category Group S5000 and S3000 wastes. The audit also evaluated a new visual examination (VE) facility (in Building 440) to confirm real-time radiography (RTR), polychlorinated biphenyl (PCB) analysis, and solid sampling of tank sludge waste. The new VE facility will be used to characterize retrievably stored S5000 debris and S3000 homogeneous solid waste.

The audit was conducted at RFETS October 1-2, 2002. The audit team concluded that the overall adequacy of the RFETS technical and quality assurance (QA) programs, as applicable to audited activities, was satisfactory in meeting requirements. The audit team also concluded that the defined QA and technical programs for these activities (except PCB analysis) were being implemented in accordance with the RFETS Quality Assurance Project Plan (QAPjP) and the applicable implementing procedures, and that the processes were effective. The audit team found that the adequacy, implementation, and effectiveness of the PCB analysis activities were indeterminate. These activities will be included in the scope of a future audit.

The audit team did not identify any conditions adverse to quality resulting in the issuance of a CBFO corrective action report (CAR). No deficiencies requiring remedial corrective actions were found during the course of the audit. No observations or recommendations were presented to RFETS.

## **2.0 SCOPE AND PURPOSE**

### **2.1 Scope**

The audit team evaluated the adequacy, implementation, and effectiveness of the RFETS TRU waste characterization processes for a new VE facility in Building 440 to confirm RTR and perform PCB analysis and solid sampling of tank sludge waste. The new VE facility will be used to characterize retrievably stored S5000 debris and S3000 homogeneous solid waste.

The RFETS waste characterization processes were evaluated relative to the requirements contained in the HWFP Waste Analysis Plan (WAP), Attachments B through B6, as applicable. Compliance was documented by completing the HWFP Attachment B6 checklists for the applicable RFETS activities.

The following RFETS program elements were evaluated in accordance with the HWFP.

### Quality

The following quality assurance elements were only evaluated to the extent necessary to support the technical elements listed below.

- Control of nonconforming items
- Personnel qualification and training
- Documents and records

### Technical

- Building 440 Visual Examination to Confirm Radiography (VE)
- Project-Level Verification and Validation (V&V)
- Sludge Sampling
- PCB Analysis

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

*Waste Isolation Pilot Plant Hazardous Waste Facility Permit*, July 1, 2002

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

*Rocky Flats Environmental Technology Site TRU Waste Characterization Program Quality Assurance Project Plan*, 95-QAPjP-0050, Rev. 6, March 11, 2002

*RFETS Transuranic (TRU) Waste Management Manual*, 1-MAN-008-WM-001, Rev. 5, April 19, 2002

Related RFETS technical and quality assurance implementing procedures

## **2.2 Purpose**

Audit A-03-04 was conducted to assess the level of compliance of RFETS waste characterization activities associated with the new VE facility, PCB analysis, and the sampling of tank sludge waste.

## **3.0 AUDIT TEAM AND OBSERVERS**

### **AUDITORS/TECHNICAL SPECIALISTS**

Charlie Riggs	Audit Team Leader, CTAC
Annabelle Axinn	Auditor, CTAC
Wayne Ledford	Auditor/Technical Specialist, CTAC
William (BJ) Verret	Technical Specialist, CTAC

## **OBSERVERS**

Steve Holmes	New Mexico Environment Department (NMED)
Bob Thielke	NMED Contractor
Larry Allen	Environmental Evaluation Group (EEG)

## **4.0 AUDIT PARTICIPANTS**

RFETS individuals contacted during the audit are identified in Attachments 1 and 2. A pre-audit meeting was held at RFETS Building 460 on October 1, 2002. A daily meeting was held with RFETS management and staff to discuss the issues and potential deficiencies of the previous day. The audit concluded with a post-audit meeting held at RFETS Building 460 on October 2, 2002.

## **5.0 SUMMARY OF AUDIT RESULTS**

### **5.1 Program Adequacy and Implementation**

The audit team concluded that the applicable RFETS TRU waste characterization activities for the new VE facility and the sampling of tank sludge waste, as described in the associated RFETS implementing procedures, satisfactorily meet the requirements contained in the HWFP. The audit team found that the adequacy, implementation, and effectiveness of the PCB analysis activities were indeterminate. These activities will be included in the scope of a future audit. Details of audit activities, including specific objective evidence reviewed for those activities approved by CBFO as a result of this audit, are described below and in the attached supplemental B6 checklists. The B6 checklists identify the RFETS program documents and procedures where WAP requirements are met and list the objective evidence used to evaluate the implementation. Enclosure 2 contains examples of the objective evidence reviewed during the audit.

### **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 briefly (and in detail on the checklist), and the results of the assessments are provided.

The audit team did not identify any conditions adverse to quality resulting in the issuance of a CBFO corrective action report (CAR). No deficiencies requiring remedial corrective actions were found during the course of the audit. No observations or recommendations were presented to RFETS.

### 5.2.1 Table B6-1 WAP Checklist

This audit was performed to assess RFETS' ability to characterize S5000 debris waste and S3000 solid wastes in a new VE facility (in Building 440) to confirm RTR, project-level V&V, sludge sampling, and PCB analysis. RFETS has not changed the project-level data V&V, acceptable knowledge, or headspace gas processes since Audit A-02-07, the last recertification audit. RFETS has not changed the RTR processes since Audit A-02-19. Therefore, there is no supplemental information to add to the B6-1 checklist. RFETS continues to satisfactorily meet the requirements for project-level data V&V, acceptable knowledge, headspace gas and real-time radiography.

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

The audit team reviewed the strategy (Aqueous Sludge Removal and Characterization Plan) RFETS has developed for obtaining randomly selected containers of tank sludge for sampling. RFETS has used a stratified random selection process for preselecting areas in the tanks from which to fill containers of waste for future sampling in Building 371. RFETS plans to use the same process and procedure for obtaining samples of tank sludge from the preselected waste containers as was used for obtaining samples of repackaged residue salts.

The documentation supporting the removal of waste from preselected areas in the tanks was reviewed and provided objective evidence that the waste was removed from the areas identified in the sampling plan.

Overall, the sludge sampling activities were determined to be adequate, satisfactorily implemented, and effective.

The audit team determined that RFETS has been unable to obtain a successful Performance Demonstration Program (PDP) score for PCBs. No final batch data package has been prepared. PCB analysis will be included in the scope of a future audit.

The adequacy, implementation, and effectiveness of the PCB Analysis activities were deemed to be indeterminate.

### 5.2.3 Table B6-3 Acceptable Knowledge Checklist

This audit was performed to assess RFETS' ability to characterize S5000 debris waste and S3000 solid wastes within a new VE facility (in Building 440) to confirm RTR, project-level V&V, sludge sampling, and PCB analysis. RFETS has not changed the project-level data V&V, acceptable knowledge, or headspace gas processes since Audit A-02-07, the last recertification audit. RFETS has not changed the RTR processes since Audit A-02-19. Therefore, there is no supplemental information to add to the

B6-1 checklist. RFETS continues to satisfactorily meet the project-level data V&V, acceptable knowledge, headspace gas and RTR requirements.

#### 5.2.4 Table B6-4 Headspace Gas Checklist

This audit was performed to assess RFETS' ability to characterize S5000 debris waste and S3000 solid wastes within a new VE facility (in Building 440) to confirm RTR, project-level V&V, sludge sampling and PCB analysis. RFETS has not changed the project-level data V&V, acceptable knowledge, or headspace gas processes since Audit A-02-07, the last recertification audit. RFETS has not changed the RTR processes since Audit A-02-19. Therefore, there is no supplemental information to add to the B6-1 checklist. RFETS continues to satisfactorily meet the project-level data V&V, acceptable knowledge, headspace gas and RTR requirements.

#### 5.2.5 B6-5 Radiography Checklist

This audit was performed to assess RFETS' ability to characterize S5000 debris waste and S3000 solid wastes within a new VE facility (in Building 440) to confirm RTR, project-level V&V, sludge sampling and PCB analysis. RFETS has not changed the project-level data V&V, acceptable knowledge, or headspace gas processes since Audit A-02-07, the last recertification audit. RFETS has not changed the RTR processes since Audit A-02-19. Therefore, there is no supplemental information to add to the B6-1 checklist. RFETS continues to satisfactorily meet the project-level data V&V, acceptable knowledge, headspace gas and RTR requirements.

#### 5.2.6 B6-6 Visual Examination (VE) Checklist

The audit team reviewed the batch data report and associated videotape for batch VE-2003-001. This batch was for container number DB4848, the only container processed to date in the new VE facility in Building 440. There were no concerns identified during the review of the batch data report and associated videotape.

The new VE facility was reviewed during a walkthrough by the audit team; no issues or concerns were identified.

Training records for the closure personnel (VE operators), a VE expert, and an independent technical reviewer were examined during the audit. The training was in compliance with the HWFP requirements for VE.

Overall, the visual examination processes were determined to be adequate, satisfactorily implemented, and effective.



## **6.0 SUMMARY OF DEFICIENCIES**

### **6.1 Corrective Action Reports**

During the audit, the audit team may identify conditions adverse to quality (CAQ) and document them on CARs.

Condition Adverse to Quality (CAQ) – An all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, defective items, nonconformances, and technical inadequacies.

Significant Condition Adverse to Quality – A condition which, if uncorrected, could have a serious effect on safety, operability, waste confinement, TRU waste site certification, regulatory compliance demonstration, or the effective implementation of the QA program.

No WAP-related CARs were issued as a result of 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, using the following definitions. Once a determination is made that a CAQ is not significant, the audit team member, in conjunction with the ATL, determines if the CAQ is an isolated case requiring only remedial action and, therefore, can be corrected during the audit (CDA). Upon determination that the CAQ is isolated, the audit team member, in conjunction with the ATL, evaluates/verifies any objective evidence/actions submitted or taken by the audited organization and determines if the condition was corrected in an acceptable manner. Once it has been determined that the CAQ has been corrected, the ATL categorizes the condition as a CDA.

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. A significant condition adverse to quality is one which, if uncorrected, could have a serious effect on safety, operability, waste isolation, TRU waste site certification, regulatory compliance demonstration, or effective implementation of the QA program.

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 include one or two minor changes required to correct a procedure (isolated), one or two forms not signed or not dated (isolated), or one or two individuals who have not completed a reading assignment.

No WAP-related conditions adverse to quality were identified, therefore no CDAs resulted from the audit.

## **7.0 SUMMARY OF OBSERVATIONS AND RECOMMENDATIONS**

### **7.1 Observations**

Observations document marginally acceptable conditions that, if not controlled, might later escalate into deficiencies.

No WAP-related observations were presented as a result of the audit.

### **7.2 Recommendations**

No WAP-related recommendations were provided to RFETS management during the audit.

## **8.0 LIST OF ATTACHMENTS**

Attachment 1: Personnel Contacted During the Audit

Attachment 2: Personnel Contacted During the Audit by Area

Attachment 3: Table of Audited RFETS Implementing Procedures

Attachment 4: WIPP Hazardous Waste Facility Permit B6 Checklist

## **9.0 LIST OF ENCLOSURES**

Enclosure 1: RFETS Audited Implementing Procedures

Enclosure 2: Objective Evidence and Content Map

## PERSONNEL CONTACTED DURING THE AUDIT

RFETS PERSONNEL CONTACTED DURING AUDIT (A-03-04)				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Armour, Faith	Records; Trg Programs	X		
Atencio, Leonard	GGT Waste Team, Supervisor		X	
Ballenger, R. J.	KH; TRU Program	X	X	X
Blanchard, C. M.	KH; 559 Labs, Lab Tech		X	
Brugh, Mark	NSS-B559; Manager, Labs	X	X	
Carson, Pete	TRU Programs; Engineer	X	X	
Casella, Frank	KH; QA Manager	X		X
D'Amico, Eric	KH; SPM (designee)	X		
Edmiston, Douglas	LATA; GGT Manager	X	X	X
Ferrera, Carol	KH TWCP QAO	X	X	X
Garcia, Earl	MS; VEE Trainee		X	X
Gilbreath, Chris	KH; 774 Env. Manager		X	
Gillespie, R. DoyLe	KH; Quality Program Rep	X		X
Grady, Frank	RMRS/TRU Waste Projects; TRU Project Engineer	X	X	X
Guthrie, David E.	QA-B559; LPQAO	X	X	X
Leifer, John	TRU Projects; Scientist	X	X	X
Long, J.	MS; Deputy Project Manager			X
Miranda, Sue	MS; Technical Support		X	
O'Leary, Jerry	KH/TRU Waste Project Manager	X		X
Pigeon, Paul	Material Stewardship; TWCP Training Officer	X	X	
Sisk, Susan	MSQA; QA	X		X

<b>RFETS PERSONNEL CONTACTED DURING AUDIT (A-03-04)</b>				
<b>NAME</b>	<b>ORG/TITLE</b>	<b>PREAUDIT MEETING</b>	<b>CONTACTED DURING AUDIT</b>	<b>POST-AUDIT MEETING</b>
Speers, Mark	KH; VP MS			X
Timbers, Peter J.	LATA GGT; Chemist/GGT SME	X	X	
Tressell, John	MSQA; Alt. PQA0	X		X
Wiemelt, Karen	KH RISS: Project Manager		X	
Winkler, Paul	TSC; Chemist	X	X	
Wolfe, Mike	SOM; Waste Records /PDCO	X		
Wolfe, Philip	D&D HRT; Waste Team		X	
Xuan, Lam	DOE/RFFO/ERWM; WIPP Coordinator	X	X	X

### Personnel Contacted During Audit A-03-04 by Area

Verification and Validation	Faith Armour Chris Gilbreath Carol Ferrera
Visual Verification	Frank Grady Carol Ferrera Sue Miranda Roger Ballenger Lam Xuan Earl Garcia Paul Pigeon
Sludge Sampling	Roger Ballenger Peter Carson Chris Gilbreath Karen Wiemelt

Table of Audited RFETS Documents

<b>RFETS DOCUMENTS AUDITED FOR A-03-04</b>		
<b>No.</b>	<b>Procedure Number</b>	<b>Title</b>
1.	PRO-1358-VERP, R1	VERP, Glovebox and C-Cell Waste Operations
2.	PRO-940-WIPP-010, R14	WIPP TRU Waste Characterization Project Level Data Review and Reporting
3.	95-QAPjP-0050, R6	TRU Waste Characterization Program Quality Assurance Project Plan (TWCP QAPjP)
4.	1-MAN-008-WM-001, R5	Transuranic (TRU) Waste Management Manual (TWMM)
5.	PRO-1265-SS-001, R0	Building 774 Aqueous Sludge Removal and Characterization Plan
6.	PRO-1266-SS-002, R0	Tank Sludge Removal from Pre-Selected Areas, B774
7.	PRO-1628-A2-001, R0	Tank Sludge Removal from Pre-Selected Areas, Tank T207
8.	PRO-945-WIPP-009, R6	RCRA Characterization of TRU Waste to be Disposed of at WIPP
9.	RS-012-004, R3	Grid Method – Solid Sampling and Analysis Plan
10.	PRO-860-RS-0156, R1	Solid Sampling, Building 371
11.	PRO-543-ASD-002, R2	Initiation, Preparation, and Implementation of Chain of Custody Forms