ENCLOSED

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

MAR 15 2012

MAR 2012

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

Subject: Review of Savannah River Site Central Characterization Project Waste Stream Profile Form Number SR-W026-221F-HOM

Dear Mr. Kieling:

The Department of Energy, Carlsbad Field Office has approved the Waste Stream Profile Form (WSPF) Number SR-W026-221F-HOM, *Homogeneous Waste from F-Canyon and FB-Line Facilities*, for the Central Characterization Project at the Savannah River Site.

Enclosed is a copy of the WSPF as required by Section C-5a of the Waste Isolation Pilot Plant, Hazardous Waste Facility Permit, No. NM4890139088-TSDF.

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 fine and imprisonment for knowing violations.

If you have questions, please contact Mr. J. R. Stroble, Director of the Office of the National TRU Program, at (575) 234-7313.

Sincerely,

Jose R. Franco, Manager
Carlsbad Field Office

Enclosure

cc: w/enclosure

J. R. Stroble, CBFO	* ED
N. Castaneda, CBFO	ED
B. Mackie, CBFO	ED
T. Morgan, CBFO	ED
M. Pinzel, CBFO	ED
T. Hall, NMED	ED
S. Holmes, NMED	ED
T. Kliphuis, NMED	ED
CBFO M&RC	

*ED denotes electronic distribution

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CBFO:NTP:JRS:GL:12-0442:UFC 5822.00

Attachment 2 – CCP Waste Stream Profile Form

(1) Waste Stream Profile Number: SR-W026-221F-HOM						
(2) Generator site name: Savannah River Site					(3) Generator site EPA ID: SC1890008989	
(4) Technical contact: Beverly Schrock					(5) Technical contact phone number: 575-234-7444	
(6) Date of audit report approval by New Mexico Environment Department (NMED): March 3, 2011						
(7) Title, version number, and date of documents used for WIPP-WAP Certification: CCP-PO-001, CCP Transuranic Waste Characterization Quality Assurance Project Plan, Revision 20, June 16, 2011; CCP-PO-002, CCP Transuranic Waste Certification Plan, Revision 26, July 14, 2011; CCP-PO-004 and CCP/SRS Interface Document, Revision 30, October 17, 2011						
(8) Did your facility generate this waste?	YES	X	NO			
(9) If no, provide the name and EPA ID of the original generator: NA						
Waste Stream Information						
(10) WIPP ID: SR-W026-221F-HOM					(11) Summary Category Group: S3000 – Homogeneous Solids	
(12) Waste Matrix Code Group: Solidified Inorganics					(13) Waste Stream Name: Homogeneous waste from F-Canyon and FB-Line Facilities	
(14) Description from the ATWIR: Absorbed oil, neutralized acids / bases and water.						
(15) Defense TRU Waste:	YES	X	NO			
(16) Check One:	CH	X	RH			
(17) Number of SWBs: NA (17a) Number of SLB2: NA	(18) Number of Drums: 60 55-gallon drums				(19) Number of Canisters: NA	
(20) Batch Data Report numbers supporting this waste stream characterization: See Container Information Summary (CIS) Correlation of Container Identification Numbers to Batch Data Report Numbers.						
(21) List applicable EPA Hazardous Waste Numbers[1]: D005, D006, D007, D008, D009, D011, D019, D022, D028, D029, D043, F002, F004, F005, U151						
(22) Applicable TRUCON Content Numbers: SR 127 / 227						
(23)**Acceptable Knowledge Information**						
(For the following, enter the supporting documentation used [i.e., references and dates])						
Required Program Information						
(23A) Map of site: CCP-AK-SRS-3, Revision 10, January 18, 2012, Appendices 1, 2 and 3						
(23B) Facility mission description: CCP-AK-SRS-3, Revision 10, January 18, 2012, Section 4.1						
(23C) Description of operations that generate waste: CCP-AK-SRS-3, Revision 10, January 18, 2012, Section 4.3						
(23D) Waste identification/categorization schemes: CP-AK-SRS-3, Revision 10, January 18, 2012, Section 4.4						
(23E) Types and quantities of waste generated: CP-AK-SRS-3, Revision 10, January 18, 2012, Section 4.2.1						
(23F) Correlation of waste streams generated from the same building and process, as applicable: CP-AK-SRS-3, Revision 10, January 18, 2012, Section 4.2.2						
(24) Waste certification procedures: CCP-TP-030, Revision 29, April 26, 2011						
(25)Required Waste Stream Information						

(25A) Area(s) and building(s) from which the waste stream was generated: CP-AK-SRS-3, Revision 10, January 18, 2012, Section 6.1			
(25B) Waste stream volume and time period of generation: CP-AK-SRS-3, Revision 10, January 18, 2012, Section 6.2			
(25C) Waste generating process description for each building: CP-AK-SRS-3, Revision 10, January 18, 2012, Section 6.3			
(25D) Waste Process flow diagrams: CP-AK-SRS-3, Revision 10, January 18, 2012, Figures 4-1, 4-2, 4-3 and 4-4			
(25E) Material inputs or other information identifying chemical/radionuclide content and physical waste form: CP-AK-SRS-3, Revision 10, January 18, 2012, Section 6.4			
(25F) Waste Material Parameter Weight Estimates per unit of waste: See Table "Waste Stream SR-W026-221F-HOM Waste Material Parameters" in the Summation of Aspects of AK Summary Report: SR-W026-221F-HOM.			
(26) Which Defense Activity generated the waste:			
	Weapons activities including defense inertial confinement fusion		Naval Reactors development
	Verification and control technology		Defense research and development
	Defense nuclear waste and material by products management	X	Defense nuclear material production
	Defense nuclear waste and materials security and safeguards and security investigations		
(27)Supplemental Documentation:			
(27A) Process design documents: NA			
(27B) Standard operating procedures: See P1, P10, P11, P12, P13, P14, P15, P16, P19, P2, P20, P21, P22, P23, P25, P3, P32, P34, P38, P39, P4, P41, P43, P44, P45, P46, P5, P6, P7 and P9 in Summation of Aspects of AK Summary Report: SR-W026-221F-HOM, Source Documents			
(27C) Safety Analysis Reports: See D2, D34 and D35 in Summation of Aspects of AK Summary Report: SR-W026-221F-HOM, Source Documents			
(27D) Waste packaging logs: See DR001, DR002, DR012, M6 and M7 in Summation of Aspects of AK Summary Report: SR-W026-221F-HOM, Source Documents			
(27E) Test plans/research project reports: See D12 in Summation of Aspects of AK Summary Report: SR-W026-221F-HOM, Source Documents			
(27F) Site databases: See M1 and M22 in Summation of Aspects of AK Summary Report: SR-W026-221F-HOM, Source Documents			
(27G) Information from site personnel: See C13, C16, C19, C2, C20, C26, C27, C29, C5, C6, C7, C70 and C9 in Summation of Aspects of AK Summary Report: SR-W026-221F-HOM, Source Documents			
(27H) Standard industry documents: See M2, P27 and P28 in Summation of Aspects of AK Summary Report: SR-W026-221F-HOM, Source Documents			
(27I) Previous analytical data: See D8, DR008, DR013, M24, M46 and M64 in Summation of Aspects of AK Summary Report: SR-W026-221F-HOM, Source Documents			
(27J) Material safety data sheets: See M11, M40 and M45 in Summation of Aspects of AK Summary Report: SR-W026-221F-HOM, Source Documents			
(27K) Sampling and analysis data from comparable/surrogate Waste: NA			
(27L) Laboratory notebooks: NA			
Confirmation Information			
For the following, when applicable, enter procedure title(s), number(s) and date(s)			
(28)	Radiography: CCP-TP-053, Revision 11, July 20, 2011		
	Visual Examination: NA		

(29) Comments: For a list of the waste characterization procedures used and date of respective procedures see the list of procedures on the attached CIS.

Reviewed by AK Expert: YES [X] Date: 1/26/2012

Reviewed by STR (if necessary): YES [X] N/A [ ] Date: 1/26/2012

Waste Stream Profile Form Certification:

I hereby certify that I have reviewed the information in this Waste Stream Profile Form, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Beverly S. Schrock	Beverly Schrock BSSchrock	1/26/12
Signature of Site Project Manager	Printed Name	Date

NOTE: (1) If, radiography, visual examination were used to confirm EPA Hazardous Waste Numbers, attach signed Characterization Information Summary documenting this determination.

CHARACTERIZATION INFORMATION SUMMARY

WSPF # SR-W026-221F-HOM

Lot 1

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CCP Characterization Information Summary Cover Page

Waste Stream # SR-W026-221F-HOM Lot #: 1

AK Expert Review: N/A Date: N/A

SPM Review: Richard Kantrowitz Date: 3/9/2012

SPM signature certifies that through Acceptable Knowledge testing and/or analysis that the waste identified in this summary is not corrosive, ignitable, reactive, or incompatible with the TSDF.

A summary of the Acceptable Knowledge regarding this waste stream containing specific information about the corrosivity, reactivity, and ignitability of the waste stream is included as an attachment to the Waste Stream Profile Form. By reference, that information is included in this lot.

List of procedures used:

Radiography (RTR/NDE):

CCP-TP-053	Rev. 11	07/20/11	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-053	Rev. 10	03/04/11	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-053	Rev. 9	09/30/10	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-053	Rev. 8	06/30/10	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-053	Rev. 7	10/21/09	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-053	Rev. 6	03/04/08	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-053	Rev. 5	11/16/06	CCP Standard Real-Time Radiography (RTR) Inspection Procedure

Visual Exam (VE):

CCP-TP-113	Rev. 15	12/29/10	CCP Standard Contact-Handled Waste Visual Examination
CCP-TP-113	Rev. 16	04/25/11	CCP Standard Contact-Handled Waste Visual Examination

Non Destructive Assay (NDA):

CCP-TP-048	Rev. 11	02/19/08	CCP Mobile IQ3 System Data Reviewing, Validating, and Reporting Procedure
CCP-TP-048	Rev. 10	11/16/06	CCP Mobile IQ3 System Data Reviewing, Validating, and Reporting Procedure
CCP-TP-193	Rev. 3	08/08/11	CCP Data Reviewing, Validating, and Reporting Procedure for the Nondestructive Assay Box Counters
CCP-TP-193	Rev. 2	01/31/11	CCP Data Reviewing, Validating, and Reporting Procedure for the Nondestructive Assay Box Counters
CCP-TP-193	Rev. 1	08/21/08	CCP Data Reviewing, Validating, and Reporting Procedure for the Nondestructive Assay Box Counters

Solids Sampling:

INST-OI-73	Rev. 4	04/07/09	Manual Drum Coring Operations
INST-OI-16	Rev. 30	04/07/09	Drum Coring Operations

Solids Analysis:

CCP-TP-160	Rev. 2	12/29/10	CCP Analytical Sample Management
CCP-TP-161	Rev. 0	05/02/07	CCP Determination of Mercury by CVAA for TRU Waste Characterization
CCP-TP-182	Rev. 1	01/26/09	CCP Determination of Metals by ICP-AES for TRU Waste Characterization
CCP-TP-183	Rev. 0	05/02/07	CCP Microwave Assisted Digestion of Homogeneous Solids and Soil/Gravel
CCP-TP-184	Rev. 0	05/02/07	CCP Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry
CCP-TP-185	Rev. 1	11/18/08	CCP Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry
CCP-TP-186	Rev. 1	08/22/07	CCP Determination of Nonhalogenated Volatile Organic Compunds by Gas Chromatography
CCP-TP-187	Rev. 1	11/18/08	CCP Sample Preparation for Semivolatile Organic Compounds
CCP-TP-188	Rev. 2	12/29/10	CCP Analytical Data Recording, Review, and Reporting

Project Level Data Validation / DQO Reconciliation:

CCP-TP-001	Rev. 19	12/29/10	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 18	08/09/10	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 17	09/24/07	CCP Project Level Data Validation and Verification
CCP-TP-002	Rev. 24	12/28/11	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 23	12/29/10	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 22	06/30/10	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 21	08/04/09	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 20	08/18/08	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 19	12/22/06	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-003	Rev. 18	12/29/10	CCP Data Analysis for S3000, S4000, and S5000 Characterization
CCP-TP-003	Rev. 17	11/09/09	CCP Data Analysis for S3000, S4000, and S5000 Characterization
CCP-TP-003	Rev. 16	10/02/07	CCP Data Analysis for S3000, S4000, and S5000 Characterization
CCP-TP-005	Rev. 24	11/28/11	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 23	06/30/11	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 22	04/21/11	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 21	12/29/10	CCP Acceptable Knowledge Documentation

CCP-TP-005	Rev. 20	11/01/10	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 19	07/06/10	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 18	11/16/06	CCP Acceptable Knowledge Documentation
CCP-TP-030	Rev. 29	04/26/11	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
CCP-TP-030	Rev. 28	05/12/10	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
CCP-TP-030	Rev. 27	12/14/09	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
CCP-TP-030	Rev. 26	05/27/09	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 25	01/22/09	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 24	08/20/08	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 23	03/12/08	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 22	07/24/07	CCP CH TRU Waste Certification and WWIS Data Entry

WAP Certification:

CCP-PO-001	Rev. 20	06/16/11	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 19	12/29/10	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 18	06/30/10	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 17	06/23/09	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 16	10/31/07	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-002	Rev. 26	07/14/11	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 25	12/29/10	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 24	06/30/10	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 23	04/07/10	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 22	01/12/10	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 21	01/26/09	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 20	11/02/07	CCP Transuranic Waste Certification Plan
CCP-PO-004	Rev. 30	10/17/11	CCP/SRS Interface Document
CCP-PO-004	Rev. 29	07/05/11	CCP/SRS Interface Document
CCP-PO-004	Rev. 28	12/29/10	CCP/SRS Interface Document
CCP-PO-004	Rev. 27	05/22/09	CCP/SRS Interface Document

CCR Correlation of Container Identification Numbers to Batch Data Report Numbers

Waste Stream: # SR-W026-221F-HOM Lot # 1

Container ID Number	NDA BDR	RTR BDR	VE BDR	Solids Sampling BDR	Solids Analytical BDRs	Load Management/ Overpack Yes
FBL01063	SRNDA1705	SRSRTR0336	NA	SSC11-00003	ALD11022F ALD11022H ALD11022M ALD11022N ALD11022S ALD11022V	
FBL06051	SRNDA1692	SRSRTR0329	NA	N/A	N/A	
SR130627	SRNDA1704	SRSRTR0334	NA	SSG11-00004	ALD11022F ALD11022H ALD11022M ALD11022N ALD11022S ALD11022V	
SR548239	SRSGS287	SR4RTR0011	NA	SSC11-00003	ALD11022F ALD11022H ALD11022M ALD11022N ALD11022S ALD11022V	
SR611165	SRNDA1685	SRSRTR0323	NA	SSC11-00003	ALD11022F ALD11022H ALD11022M ALD11022N ALD11022S ALD11022V	
** This container was randomly selected for solids sampling and analysis and is included for verification of hazardous waste number assignment for the waste stream. The NDA and RTR BDRs listed are for information only.						
FBL02095**	SRLBC0130	SR4RTR0011	NA	SSC11-00003	ALD11022F ALD11022H ALD11022M ALD11022N ALD11022S ALD11022V	

Signature of Site Project Manager

Richard Kantrowitz
Printed Name

3/9/2012
Date

CCP Solids Analysis VOC UCL_{90} Evaluation Form

WSPF #: SR-W026-221F-HOM **Waste Stream Lot Number** 1 through 1

ANALYTE	Transform Data Used (No, Data-Log, SQRT, other)	# Samples above MDL (1)	# Samples	Maximum (ppmv)	Mean (ppmv)	SD (ppmv)	UCL90 (ppmv)	PRQL (ppmv)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA Code
Benzene	Log	3	5	2.40	0.07	1.84	1.34	10	2.30		
Bromoform	Log	0	5	-1.63	-1.71	0.06	-1.67	10	2.30		
Carbon Disulfide	Log	0	5	-1.63	-1.71	0.06	-1.67	10	2.30		
Carbon Tetrachloride	Log	0	5	-1.63	-1.71	0.06	-1.67	10	2.30		
Chlorobenzene	Log	0	5	-1.63	-1.71	0.06	-1.67	10	2.30		
Chloroform	Log	0	5	-1.63	-1.71	0.06	-1.67	10	2.30		
1,1-Dichloroethylene	Log	0	5	-1.63	-1.71	0.06	-1.67	10	2.30		
1,2-Dichloroethane	Log	0	5	-1.63	-1.71	0.06	-1.67	10	2.30		
Ethyl benzene	SQRT	3	5	2.00	1.07	0.70	1.55	10	3.16		
Methylene chloride	Log	0	5	-1.24	-1.31	0.05	-1.27	10	2.30		
m,p-Xylene[d]	Log	3	5	1.39	0.08	1.12	0.85	10	2.30		
o-Xylene	Log	3	5	1.10	-0.59	1.22	0.25	10	2.30		
1,1,2,2-Tetrachloroethane	Log	0	5	-1.63	-1.71	0.06	-1.67	10	2.30		
Tetrachloroethylene	Log	0	5	-1.63	-1.71	0.06	-1.67	10	2.30		
Toluene	Log	4	5	3.14	0.76	2.03	2.15	10	2.30		
trans-1,2-Dichloroethylene	Log	0	5	-1.63	-1.71	0.06	-1.67	10	2.30		
1,1,1-Trichloroethane	Log	1	5	-1.05	-1.57	0.29	-1.37	10	2.30		
Trichloroethylene	Log	0	5	-1.63	-1.71	0.06	-1.67	10	2.30		
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	Log	0	5	-1.63	-1.71	0.06	-1.67	10	2.30		
1,1,2-Trichloroethane	Log	0	5	-1.63	-1.71	0.06	-1.67	10	2.30		
Trichlorofluoromethane	Log	0	5	-1.24	-1.31	0.05	-1.27	10	2.30		
Vinyl chloride	Log	0	5	-1.63	-1.71	0.06	-1.67	4	1.39		
Acetone	No	1	5 [(2)]	15.50	8.49	6.08	13.47	100	N/A		
Butanol	Log	0	5	3.91	1.25	1.94	2.58	100	4.61		
Methanol	Log	0	5	3.91	1.25	1.94	2.58	100	4.61		
Methyl ethyl ketone	Log	0	5	3.91	1.25	1.94	2.58	100	4.61		

CIS005

CCP Solids Analysis VOC UCL_{90} Evaluation Form

WSPF #: SR-W026-221F-HOM **Waste Stream Lot Number** 1 through 1

ANALYTE	Transform Data Used (No, Data-Log, SQRT, other)	# Samples above MDL (1)	# Samples	Maximum (ppmv)	Mean (ppmv)	SD (ppmv)	UCL90 (ppmv)	PRQL (ppmv)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA Code
Ethyl ether	Log	0	5 (3)	1.61	0.11	1.30	1.52	10	2.30		
Isobutanol	No	0	5 (2)	15.50	7.03	7.19	12.92	100	N/A		
Pyridine	Log	0	5	3.91	1.25	1.94	2.58	100	4.61		
Formaldehyde[a]	Log	1	5	0.47	-0.48	0.53	-0.12	100	4.61		
Hydrazine[b]	No	3	5	7.40	4.90	3.15	7.06	100	N/A		
1,2-Dichlorobenzene[c]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
1,4-Dichlorobenzene[c]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

[a] Required only for homogenous solids and soil/gravel waste from the Savannah River Site.

[b] Required only for homogenous solids and soil/gravel waste generated at Oak Ridge National Laboratory and Savannah River Site.

[c] Can also be analyzed as an SVOC. If analyzed as an SVOC, the QAO's of CCP-TP-001, Table C3-6 apply.

[d] These xylene isomers cannot be resolved by the analytical methods employed in the program. m-Xylene and p-Xylene will be reported as "Total m-p-Xylene."

Comments:

(1) For analytes where there were no samples measured above the MDL value, 1/2 of the MDL value was used. (Per section C4 of the WAP, 1/2 of the MDL value is used in calculating the mean concentration.)

(2) As a result of dilution requirements for 1 of the 5 samples, Acetone and Isobutanol were reported as non-detected with an MDL value in excess of the PRQL. In accordance with the Waste Analysis Plan, Section C4-3e such observations with elevated MDL values due to dilution were not used in calculating the mean concentration. Consequently, the subject analytes were statistically evaluated with 4, rather than 5, usable observations.

(3) As a result of dilution requirements for 2 of the 5 samples, Ethyl ether was reported as non-detected with an MDL value in excess of the PRQL. In accordance with the Waste Analysis Plan, Section C4-3e such observations with elevated MDL values due to dilution were not used in calculating the mean concentration. Consequently, the subject analytes were statistically evaluated with 3, rather than 5, usable observations.

CTS006

Signature of Site Project Manager

Richard Kantrowitz
Printed Name

3/9/2012
Date

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CCP Solids Analysis SVOC UCL_{90} Evaluation Form

WSPF #: SR-W026-221F-HOM **Waste Stream Lot Number** 1 through 1

ANALYTE	Transform Data Used (No, Data-Log, SQRT, other)	# Samples above MDL (1)	# Samples	Maximum (ppmv)	Mean (ppmv)	SD (ppmv)	UCL90 (ppmv)	PRQL (ppmv)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA Code
1,2-Dichlorobenzene [a]	No	0	5 (4)	20.00	10.03	8.12	16.68	40	N/A		
1,4-Dichlorobenzene [a]	No	0	5 (4)	20.00	10.03	8.12	16.68	40	N/A		
2,4-Dinitrophenol	No	0	5 (4)	20.00	10.03	8.12	16.68	40	N/A		
2,4-Dinitrotoluene	No	0	5 (5)	0.10	0.10	0.00	(2)	2.6	N/A		
Hexachlorobenzene	No	0	5 (5)	0.10	0.10	0.00	(2)	2.6	N/A		
Hexachloroethane	No	0	5 (4)	20.00	10.03	8.12	16.68	40	N/A		
2-Methylphenol (cresols)	No	0	5 (4)	20.00	10.03	8.12	16.68	40	N/A		
3&4 -Methylphenol (cresols)	SQRT	3	5	13.42	7.42	5.35	11.09	40	6.32	Yes	F004(3)
Nitrobenzene	No	0	5 (4)	20.00	10.03	8.12	16.68	40	N/A		
Pentachlorophenol	No	0	5 (4)	20.00	10.03	8.12	16.68	40	N/A		
Pyridine[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

[a] Can also be analyzed as a VOC. If analyzed as a VOC, the QAO's of CCP-TP-001, Table C3-4 apply.

Comments:

(1) For analytes where there were no samples measured above the MDL value, 1/2 of the MDL value was used. (Per C4 of the WAP, 1/2 of the MDL value is used in calculating the mean concentration.)

(2) Because the noted analyte had < 2 different observations, no meaningful covariance exists and the UCL90 value could not be calculated. Therefore, the PRQL was compared to the maximum result for the purpose of confirming HWNs.

(3) F004 is applied because 3&4-Methylphenol (cresols) exceeded the transformed PRQL and is listed in 40CFR261.31.

(4) As a result of dilution requirements for 1 of the 5 samples, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dinitrophenol, Hexachloroethane, 2-Methylphenol, Nitrobenzene, and Pentachlorophenol were reported as non-detected with an MDL value in excess of the PRQL. In accordance with the Waste Analysis Plan, Section C4-3e such observations with elevated MDL values due to dilution were not used in calculating the mean concentration. Consequently, the subject analytes were statistically evaluated with 4, rather than 5, usable observations.

CT5007

(5) As a result of dilution requirements for 4 of the 5 samples, Ethyl ether was reported as non-detected with an MDL value in excess of the PRQL. In accordance with the Waste Analysis Plan, Section C4-3e such observations with elevated MDL values due to dilution were not used in calculating the mean concentration. Consequently, the subject analytes were statistically evaluated with 1, rather than 5, usable observations.

Signature of Site Project Manager

Richard Kantrowitz
Printed Name

3/9/2012
Date

CCP Solids Analysis Metals UCL_{90} Evaluation Form

WSPF #: SR-W026-221F-HOM **Waste Stream Lot Number** 1 through 1

ANALYTE	Transform Data Used (No, Data-Log, SQRT, other)	# Samples above MDL (1)	# Samples	Maximum (ppmv)	Mean (ppmv)	SD (ppmv)	UCL90 (ppmv)	PRQL (ppmv)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA Code
Antimony	Log	1	5	0.18	-0.81	0.55	-0.43	100	4.61		
Arsenic	No	3	5	1.50	0.93	0.58	1.33	100	N/A		
Barium	Log	4	5	5.44	3.19	1.66	4.32	2000	7.60		
Beryllium	Log	4	5	1.57	-0.45	1.64	0.68	100	4.61		
Cadmium	SQRT	5	5	1.26	1.01	0.25	1.18	20	4.47		
Chromium	No	5	5	59.00	41.07	23.42	57.13	100	N/A		
Lead	Log	5	5	3.40	2.30	0.76	2.82	100	4.61		
Mercury	Log	1	5	-3.86	-5.02	0.64	-4.57	4	1.39		
Nickel	SQRT	5	5	5.10	2.97	1.62	4.08	100	10.00		
Selenium	Log	5	5	1.72	0.76	0.57	1.15	20	3.00		
Silver	No	0	5	0.05	0.05	0.00	0.05	100	N/A		
Thallium	No	0	5	0.40	0.40	0.00	0.40	100	N/A		
Vanadium	No	5	5	66.00	33.67	25.74	51.32	100	N/A		
Zinc	Log	5	5	8.07	5.12	1.73	6.31	100	4.61	Yes	(2)

CTS008

Comments:

(1) For analytes where there were no samples measured above the MDL value, 1/2 of the MDL value was used. (Per section C4 of the WAP, 1/2 of the MDL value is used in calculating the mean concentration.)

(2) Zinc is not listed under 40CFR 261.30 or as a toxicity characteristic compound per 40CFR 261.20.

Signature of Site Project Manager

Richard Kantrowitz
Printed Name

3/9/2012
Date

TCP Solid VOCs Summary Data

Waste Stream Number SR-W026-221F-HOM Waste Stream Lot Number 1

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (mg/kg)	# Samples Containing TIC	% Detected
None	NA	NA	NA

Data Supports EPA Hazardous Waste Numbers Assigned by AK? Yes ☑ No ☐

If no, describe the basis for assigning the EPA Hazardous Waste Codes:

SPM Signature _____ Date 3/9/2012

CI5009

C Solid SVOCs Summary Da

Waste Stream Number SR-W026-221F-HOM Waste Stream Lot Number 1

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (mg/kg)	# Samples Containing TIC	% Detected
Phenol	5200.00	5	100.00%
Di-n-octyl phthalate	2.30	1	20.00%
Bis(7-methyloctyl) phthalate	0.49	1	20.00%
Didecyl phthalate	0.83	1	20.00%

Data Supports EPA Hazardous Waste Numbers Assigned by AK? Yes ☐ No ☑

If no, describe the basis for assigning the EPA Hazardous Waste Codes:

Based on the sample results for 3&4 Methlyphenols (cresols), EPA HWN F004 has been added to the AK.

Comment:

Phenol is not listed under 40CFR261.24, no EPA HWN was applied.

SPM Signature _____ Date 3/9/2012

CCP RTR/VE Summary of Prohibited Items and AK Confirmation

Waste Stream Number: SR-W026-221F-HOM Lot #: 1

Container Number	RTR Prohibited Items [a,b]	Visual Examination Prohibited Items [a,b]
See correlation of container ID numbers for list of remaining drum numbers in this Lot.	None of the containers in this lot had prohibited items identified during RTR.	VE was not used to certify any containers in this Lot.

a. See Batch Data Reports

b. If AK has assigned U134 to this waste stream, then any liquids in these containers are prohibited items (not acceptable by the TSDF).

Justification for the selection of RTR and/or VE: Containers in this Lot were characterized using RTR. RTR was selected as the characterization method for the containers because the waste was previously packaged and RTR meets all the Data Quality Objectives for NDE for waste stream SR-W026-221F-HOM.

Site Project Manager Signature | Richard Kantrowitz Printed Name | 3/9/2012 Date

CI5011

CCP Reconciliation with Data Quality Objectives

WSPF# SR-W026-221F-HOM Lot # 1

Sampling Completeness

RTR:

Number of Valid Samples: 5 Number of Total Samples Analyzed: 5

Percent Complete: 100 (QAO is 100%)

NDA

Number of Valid Samples: 5 Number of Total Samples Analyzed: 5

Percent Complete: 100 (QAO is 100%)

HSG

Number of Valid Samples: NA Number of Total Samples Collected: NA

Percent Complete: NA (QAO is ≥90%)

Number of Valid Samples: NA Number of Total Samples Analyzed: NA

Percent Complete: NA (QAO is ≥90%)

Total VOC

Number of Valid Samples: 5 Number of Total Samples Collected: 5

Percent Complete: 100 (QAO is ≥90%)

Number of Valid Samples: 5 Number of Total Samples Analyzed: 5

Percent Complete: 100 (QAO is ≥90%)

Total SVOC

Number of Valid Samples: 5 Number of Total Samples Collected: 5

Percent Complete: 100 (QAO is ≥90%)

Number of Valid Samples: 5 Number of Total Samples Analyzed: 5

Percent Complete: 100 (QAO is ≥90%)

Total Metals

Number of Valid Samples: 5 Number of Total Samples Collected: 5

Percent Complete: 100 (QAO is ≥90%)

Number of Valid Samples: 5 Number of Total Samples Analyzed: 5

Percent Complete: 100 (QAO is ≥90%)

CCP Reconciliation with Data Quality Objectives

WSPF# SR-W026-221F-HOM Lot # 1

	Y/N/NA	Reconciliation Parameter
1	Y	Waste Matrix Code.
2	Y	Waste Material Parameter Weights.
3	Y	The waste matrix code identified is consistent with the type of sampling and analysis used to characterize the waste.
4	Y	The TRU activity reported in the BDRs for each container demonstrates with a 95% probability that the container of waste contains TRU radioactive waste.
5	N	AK Sufficiency. Is there an approved AK Sufficiency Determination for this waste stream?
6	NA	Mean concentrations, UCL_{90} values for the mean concentration, standard deviations, and the number of samples collected for each VOC in the HSG of each container were calculated and compared with the program required quantitation limits, as reported in CCP-TP-003 Attachment 3, and additional U.S. Environmental Protection Agency (EPA) Hazardous Waste Numbers were assigned as required. Samples were randomly collected (when appropriate).
7a	Y	Mean concentrations, UCL_{90} values for the mean concentration, standard deviations, and the number of samples collected for solids VOCs were calculated and compared with the program required quantitation limits and regulatory thresholds, as reported in the Characterization Information Summary, CCP-TP-003 Attachment 4, and additional EPA HWNs were assigned as required. Samples were randomly collected.
7b	Y	Mean concentrations, (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for solids SVOCs were calculated and compared with the program required quantitation limits and regulatory thresholds, as reported in the Characterization Information Summary, CCP-TP-003 Attachment 5, and additional EPA HWNs were assigned as required. Samples were randomly collected.
7c	Y	Mean concentrations, (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for total metals were calculated and compared with the program required quantitation limits and regulatory thresholds, as reported in the Characterization Information Summary, CCP-TP-003 Attachment 6, and additional EPA HWNs were assigned as required. Samples were randomly collected.

CCP Reconciliation with Data Quality Objectives

WSPF# SR-W026-221F-HOM Lot # 1

8	Y	The data demonstrates whether the waste stream exhibits a toxicity characteristic under Title 40 Code of Federal Regulations (CFR), Part 261, Identification and Listing of Hazardous Waste, Subpart C, Characteristics of Hazardous Waste.
9	Y	Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D, Lists of Hazardous Wastes.
10	Y	Waste stream can be classified as hazardous or nonhazardous at the 90-percent confidence level.
11	NA	Appropriate packaging configuration and Drum Age Criteria (DAC) is applied and documented in the headspace gas sampling documentation, and the drum age met prior to sampling.
12	Y	TICs were appropriately identified and reported in accordance with the requirements of Section C3-1 of the QAPjP.
13	NA	The PRQLs for headspace gas VOCs were met for all analyses as evidenced by the analytical batch data reports.
14		The overall completeness, comparability, and representativeness QAOs were met for each of the analytical and testing procedures as specified in the WAP Sections C3-2 through C3-9 prior to submittal of a waste stream profile form for a waste steam or waste stream lot.

	Completeness	Comparability	Representativeness
Radiography	Y	Y	Y
VE	NA	NA	NA
Headspace Gas Analysis	NA	NA	NA
Solids Sampling	Y	Y	Y
Solids VOCs	Y	Y	Y
Solids SVOCs	Y	Y	Y
Solids Metals	Y	Y	Y

Comments:
None

Signature of Site Project Manager	Richard Kantrowitz	3/9/2012
	Printed Name	Date

SUMMATION OF ASPECTS OF AK SUMMARY REPORT: SR-W026-221F-HOM

Overview:

The SR-W026-221F-HOM waste stream consists of mixed Contact Handled (CH) transuranic (TRU) homogeneous waste generated and managed by the Savannah River Site (SRS) in Building 221-F. The Building 221-F (F-Canyon and FB-Line) had two functions: 1) to convert dilute plutonium solution into highly purified plutonium metal; and 2) to recover weapons-grade plutonium from scrap materials produced during FB-Line operation and from scrap material shipped to the SRS from other off-site facilities. The mission was expanded to include material characterization which included characterization and repackaging of scrap containing plutonium and uranium oxides from FB-Line, the F-Area Material Storage (FAMS) facility, and off-site facilities. Recently, the plutonium production mission was suspended and the deactivation of limited areas of the FB-Line was completed. All radioactive solid waste produced at SRS is stored or disposed of at the E-Area Radioactive Waste Burial Ground (RWBG) and Solid Waste Management Facility (SWMF).

This waste stream consists of TRU mixed homogenous waste generated in Building 221-F (F-Canyon and FB-Line). Building 221-F was a Department of Energy (DOE) defense nuclear materials production facility where fission products were separated from plutonium solutions in F-Canyon and then the dilute plutonium solutions were concentrated and purified into weapons-grade plutonium metal in FB-Line for weapons use throughout the time period of waste generation.

This summation of the Acceptable Knowledge (AK) Summary Report includes information to support Waste Stream Profile Form (WSPF) number SR-W026-221F-HOM for mixed homogenous waste from SRS. The primary source of information for this summation is CCP-AK-SRS-3, *Central Characterization Project Acceptable Knowledge Summary Report For Savannah River Site, Waste Streams: SR-W026-221F-HET, SR-W026-221F-HOM, SR-W026-221F-HEPA, SR-W026-221F-HET-A*, Revision 10, January 18, 2012.

Waste Stream Identification Summary:

Waste Stream Name:	Homogeneous waste from F-Canyon and FB-Line Facilities
Waste Stream Number:	SR-W026-221F-HOM
Dates of Waste Generation:	April 1974 to August 2011
Waste Stream Volume – Current:	60 55-gallon drums
Waste Stream Volume – Projected:	None
Summary Category Group:	S3000 – Homogeneous Solids
Waste Matrix Code Group:	Solidified Inorganics

Waste Matrix Code: S3110

TRUCON Content Numbers: SR 127/227

Annual Transuranic Waste Inventory Report (ATWIR) Identification Number: SR-W026-221F-HOM

Waste Stream Description and Physical Form:

Waste stream SR-W026-221F-HOM primarily consists of inorganic particulate waste (i.e., absorbents) used to absorb process liquids (e.g., hydraulic fluid, aqueous liquid, and sludge waste). Typically Oil-Dri was used to absorb hydraulic oil and soda ash was used to absorb aqueous wastes (e.g., hydrofluoric, nitric, sulfuric, sulfamic, and ascorbic acids). Soda ash is white powder and Oil-Dri and Petroset are tan to buff granular material. Some drums contain both Oil-Dri and soda ash. The waste stream also includes debris waste items. The debris items may include plastic (e.g., bags, bottles, containers, tape, sheeting, pigtails, suits, shoe covers, hose, fittings), absorbent pads, rubber o-rings, bungee cord, rubber and leather gloves, lead-lined gloves, cotton glove liners, coveralls, cloth towels, rags, paper, wipes, cardboard, mop handles, filters, metal tubing, pipe flanges, ductwork, hardware (e.g., nuts, bolts, washers), filter vents, drill bits, power tools (e.g., drill), and hand tools (e.g., hack saw, hammer, razor knife, scissors, screwdriver, wrench).

The waste stream meets the definition of waste materials that have common physical form, that contain similar hazardous constituents, and that are generated from a single process or activity. This waste stream was generated during the absorption of Building 221-F (F-Canyon and FB-Line) process liquids from plutonium production and associated material characterization, maintenance, and suspension and deactivation operations.

Point of Generation:

Location

Waste stream SR-W026-221F-HOM was generated at SRS in Aiken, South Carolina. The waste is currently stored at the SRS RWBG and SWMF.

Area and/or Buildings of Generation

Waste stream SR-W026-221F-HOM was generated at Building 221-F (F-Canyon and FB-Line) which is located in the 200-F Separations Area.

Generating Processes:

Description of Waste Generating Processes

This waste stream was generated during the absorption of Building 221-F (F-Canyon and FB-Line) process liquids from plutonium production and associated material characterization,

maintenance, and suspension and deactivation operations. TRU waste was generated primarily from an operation that dissolved plutonium scrap and concentrated and refined dilute plutonium solutions into solid metal plutonium for use in weapons production (References D2, D3, D12, and P20). Waste was also generated from material characterization, maintenance, and suspension and deactivation operations (References C13, C60, D26, and D29).

Primary Operations

Plutonium isotopes were separated from uranium, fission products (primarily cesium-137, strontium-90, zirconium-95, niobium-95, ruthenium-103, and ruthenium-106) and chemical impurities (primarily iron, aluminum, sodium, sulfate and sometimes fluoride ions) in the Building 221-F operations. Purified plutonium isotopes contained in a dilute nitric acid and hydroxylamine nitrate solution were transferred the FB-Line, where solutions were converted to either plutonium metal or plutonium oxide form. The initial unit operations (i.e., concentration of plutonium nitrate by cation exchange, precipitation of plutonium as a trifluoride, filtration, and washing) are best described as hydrometallurgical operations. The remaining unit operations (i.e., warm air drying, oxidation, and reduction with calcium metal to purified plutonium metal form) are pyrometallurgical operations. The operations are divided into the process steps listed below (Reference D12):

- Cation Exchange
- Precipitation and Filtering
- Drying and Conversion
- Reduction
- Plutonium Metal Finishing
- Recovery (includes Solid Scrap Dissolution, Solution Recycle, and Solution Collection)
- Special Recovery.

Maintenance, Decontamination and Removal (D&R), and Housekeeping Operations

Maintenance and D&R operations conducted on FB-Line generally included the following (References C16, C20, D3, D12, and P19):

- Lead-lined glove replacements (periodically and as needed)
- Repair of leaks on a weekly or more frequent basis
- Filter change-outs (including changing plastic frits on precipitation filters)
- Changing panels on cabinets and huts
- Equipment repair (valve replacements, etc.)
- Inspection and cleaning of exhaust ducts to remove any plutonium accumulation (during January 1990 shutdown)
- Change-out of cation and anion exchange resins
- Removal and replacement of contaminated equipment, such as the M-12 cabinet.

Routine housekeeping operations conducted on the FB-Line include the following (References C9, C16, D2, D19, P5, P9, P13, P14, P15, P19, and P33):

- Sump clean out
- Floor sweeping, including separation of plutonium and calcium residues
- Calcium disposal
- Absorption of liquids
- Construction, breakdown, and disposal of huts adjacent to cabinets
- Bagging trash out of gloveboxes and cabinets
- Decontamination using non-hazardous Basic-H and Stripcoat TLC products.

Absorption of Hydraulic Fluid

Absorption of hydraulic fluid was conducted in accordance with procedure. The procedure calls for the use of 1-L or 4-L polyethylene bottles, a 5-gallon plastic bag, or a drum liner. To package in bottles: Oil-Dri is added (¾ of the volume of the bottle) followed by no more than ¼ bottle volume of hydraulic fluid. The bottle is then capped, tilted and allowed to fully absorb liquid, and subsequently opened and allowed to off-gas. Once complete, the cap is replaced on the bottle and taped to the bottle, placed into a plastic bag, and the plastic bag is taped closed. The bag is surveyed to determine if it is contaminated and, if so, the package is placed in additional bags until the outer plastic bag is no longer contaminated. Then, the plastic bag containing one bottle is placed into a red waste pail (References C7, M45, and P9).

To package in drum liners, hydraulic fluid is pumped into the drum liner to a mark 6 inches above the bottom of a drum liner. Three 50-pound bags of Oil-Dri are slowly added to the liquid and the drum liner is tilted, to ensure thorough absorption. Upon completion, the inner bag and drum are closed (Reference P9).

To package 5-gallon plastic bags, remaining hydraulic fluid from the discharge lines, soaked Kimwipes, trash, gloves, and other sump debris are placed into the bag. Sufficient Oil-Dri is added to absorb any free liquids. Upon completion, the bag is taped closed. The plastic bag is surveyed and double-bagged until the outer bag is no longer contaminated. The plastic bag(s) is then placed into a red pail (Reference P9).

In 2005, a similar procedure was used to absorb hydraulic fluid in drum liners, except the absorbent material was changed from Oil-Dri to Petroset (References M45 and P9).

Absorption of Aqueous Waste

Cleaning wet cabinet sumps or pipe duct sumps includes removing wet waste from sumps and packaging the material in 1-L wide mouth plastic bottles or bags. A quarter of the empty bottle or bag was filled with soda ash. Tongs were used to remove solid waste from sumps, and piping inside cabinets and sump interiors were cleaned using Kimwipes. The wipes and sump solids were placed in the bottle or bag, leaving the top quarter empty for additional soda ash (References C7, M45, and P10).

Liquids were also absorbed and packaged with Celite (diatomaceous earth), and NOCHAR may be used to absorb liquids during container remediation (References C7, C9, P1, P3, P4, P5, P6, P10, and P11).

Material Characterization

The material characterization program unpackaged samples and repackaged fissile material from the FB-Line oxide and scrap inventory, the FAMS facility, and off-site DOE sources, including both plutonium and uranium oxides for which a final disposition must be determined. Some of the incoming material had been stored for many years, which is another reason for sampling material prior to storage (References C5, C13, C20, D15, D19, and D34).

Waste generating operations conducted for material characterization included pellet size reduction, sample sieving, consolidation of oxide material into fewer storage cans, collection of plutonium metal pieces and casting of such scrap into ingots, scraping and collection of plutonium oxide from plutonium metal, and sampling. Fissile product containers were opened in the cabinets and the product was inspected, sieved, mixed, and sampled. The plutonium or uranium product was then sized in a mechanical crusher (rod-mill type or equivalent) and samples of metal were collected using a drill bit under an argon gas atmosphere. Samples were used to verify plutonium and/or uranium isotopic distributions. Actual sample analysis was performed in the F/H Area Laboratory, including isotope dilution mass spectrometry and/or alpha pulse height analysis for plutonium and uranium (References C20, D15, and D21).

Suspension and Deactivation

SRS was directed by the U.S. Department of Energy to suspend operations in F-Canyon and FB-Line and deactivate these facilities. Suspension occurred in four distinct phases: 1) product stabilization, 2) de-inventory, 3) facility stabilization and equipment shutdown/isolation, and 4) surveillance & maintenance (S&M) and material management. Phase 1 involved the production of the last plutonium button from F-Canyon solution and disposition of the sand, slag, and crucible produced from remaining FB-Line button production. In Phase 2, plutonium bearing vessels were emptied and the solution discarded to the canyon. Equipment was flushed and/or shutdown in Phase 3. Chemicals used for flushing included process water, sodium hydroxide, nitric acid, and aluminum nitrate nano-hydrate. Phase 4 S&M involved continued operation of certain FB-Line equipment necessary to maintain a safe and environmentally sound configuration (References D31, D32, and D34).

Deactivation is the process of placing a facility in a safe, stable, and known condition by elimination or reduction of residual hazards. Transferable contamination was controlled by confinement, isolation, removal, or fixing techniques. Wastes were also generated from the removal of piping and equipment, although much of the equipment was left in place, including process filters in cabinets. Unattached combustible materials were usually removed, but in certain instances, cabinet gloves and other combustibles, and small amounts of liquid and material hold-up, were left in place (References D32 and D33).

Waste Stream Material and Chemical Inputs

The following table identifies the Resource Conservation and Recovery Act (RCRA) toxicity characteristic and listed Environment Protection Agency (EPA) hazardous waste numbers identified in this waste stream.

Toxicity Characteristic and Listed Constituents in Waste Stream SR-W026-221F-HOM

Chemical	EPA Hazardous Waste Numbers
Barium	D005
Cadmium	D006
Chromium	D007
Lead	D008
Mercury	D009
Silver	D011
Carbon tetrachloride	D019
Chloroform	D022
1,2-Dichloroethane	D028
1,1-Dichlorethylene	D029
Vinyl chloride	D043
Chlorobenzene	F002
Freon 11 (trichlorofluoromethane)	F002
Freon 113 (1,1,2-trichloro-1,2,2-trifluoroethane)	F002
Methylene chloride	F002
Tetrachloroethylene	F002
1,1,1-Trichloroethane	F002
Trichloroethylene	F002
Cresols	F004
Benzene	F005
Carbon disulfide	F005
Isobutanol	F005
Methyl ethyl ketone	F005
Toluene	F005
Mercury	U151

RCRA Determinations

Historical Waste Management

Waste stream SR-W026-221F-HOM has been historically managed in accordance with the generator site requirements and in compliance with the requirements of the South Carolina Department of Health and Environmental Control. Based on historical waste management, a site specific waste stream was not created for FB-Line and F-Canyon homogeneous wastes. Instead, containers in this waste stream were managed individually as non-hazardous and hazardous. However, this waste stream was generated from the same areas as debris waste streams SR-W027-221F-HET-A, SR-W027-FB-Pre86-C, SR-W026-221F-HET, SR-W026-221F-HEPA, and SR-W026-221F-HET-A. Many drums in waste stream SR-W026-221F-HOM contain a combination of absorbed wastes and debris materials, and the waste was not sampled and analyzed at the time of generation. Therefore, the EPA hazardous waste numbers assigned to SR-W026-221F-HOM include all the EPA hazardous waste numbers assigned to these five waste streams with the exceptions noted in the Hazardous Waste Determinations sections (Reference DR002).

Hazardous Waste Determinations

Ignitability, Corrosivity, Reactivity

The waste material in waste stream SR-W026-221F-HOM does not meet the definition of ignitability as defined in 40 CFR 261.21. Fyrquel (which contains butylated triphenyl phosphate ester) and #253 hydraulic oils have been identified in the waste stream but are not ignitable. The waste is not an oxidizer, does not contain ignitable compressed gases, and it is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. The material is not liquid and real-time radiograph (RTR) and/or visual examination (VE) is performed to ensure the absence of prohibited liquids. Therefore, the waste number for ignitability (D001) does not apply to this waste stream (References C66, M28, M44, M45, M46, M47, M59, P9, and P10).

The waste material in waste stream SR-W026-221F-HOM is not liquid and does not contain unreactive corrosive chemicals; therefore, it does not meet the definition of corrosivity as defined in 40 CFR 261.22. Nitric acid was the most common acid used in FB-Line, but others may include hydrofluoric, sulfuric, sulfamic, and ascorbic acids. Acids are corrosive; however, soda ash absorbent was used to neutralize acids. In addition, RTR and/or VE are performed to ensure the absence of prohibited liquids. Therefore, the waste number for corrosivity (D002) does not apply to this waste stream (References C66, M28, M44, M45, M46, M47, M59, P9, and P10).

The waste material in waste stream SR-W026-221F-HOM does not meet the definition of reactivity as defined in 40 CFR 261.23. The materials are stable and will not undergo violent chemical change without detonating. The materials will not react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The waste does not contain reactive cyanide or sulfide compounds. There is no indication that the waste contains explosive materials, and it is not capable of detonation or explosive reaction. In addition, RTR and/or VE are performed to ensure the absence of prohibited items. Therefore, the waste number for reactivity (D003) does not apply to this waste stream (References C66, M28, M44, M47, M59, P9, and P10).

The containers in the waste stream will be evaluated in accordance with the WIPP-WAP using radiography prior to shipment to ensure the waste is not ignitable, reactive, or corrosive.

Toxicity Characteristic

Waste stream SR-W026-221F-HOM exhibits the characteristic of toxicity for metals as defined in 40 CFR 261.24. The wastes may contain toxicity characteristic metals based on the following identified sources/uses (References D2, D10, P2, P3, and P15).

- D005 – SRS historically assigned D005 to FB-Line waste.
- D006 – Cadmium was used as cation exchange column shielding, served as a corrosion inhibitor and neutron absorber on various pieces of old equipment, and is present in nickel-cadmium batteries and electronic equipment.

- D007 – Chromium was present in a corrosion inhibitor used in the building air conditioning system water and may be present as a corrosion product of stainless-steel.

- D008 – Lead was contained in lead-lined gloves, shielding, and solder.

- D009 – Mercuric nitrate was a process chemical used in FB-Line. Mercury may also be found in thermometers, manometers, and gauges.

- D011 – Silver was used as a precipitant for chloride solutions, and silver solder is a component of electrical equipment.

Therefore, EPA hazardous waste numbers D005, D006, D007, D008, D009, and D011 are assigned to this waste stream.

Waste stream SR-W026-221F-HOM exhibits the characteristic of toxicity for organic compounds as defined in 40 CFR 261.24. The wastes may contain the following toxicity characteristic organic compounds.

- D019 – Carbon tetrachloride
- D022 – Chloroform
- D028 – 1,2-Dichloroethane
- D029 – 1,1-Dichlorethylene
- D043 – Vinyl chloride

All but vinyl chloride have been detected in headspace gas samples from the corresponding Building 221-F debris waste streams. D043 for vinyl chloride was historically applied by SRS to FB-Line waste. Therefore, EPA hazardous waste numbers D019, D022, D028, D029, and D043 are assigned to this waste stream (Reference waste streams SR-W027-221F-HET-A and SR-W027-FB-Pre86-C).

One of the FB-Line debris waste streams was also assigned EPA hazardous waste numbers D018 (benzene), D039 (tetracholorethylene), D040 (trichloroethylene). However, since the F-listed EPA hazardous waste number associated with these constituents has been assigned to this waste stream, EPA hazardous waste numbers D018, D039, and D040 are not assigned (Reference waste streams SR-W027-221F-HET-A and SR-W027-FB-Pre86-C).

Listed Waste

F-Listed Waste

This waste stream may contain or be mixed with F-listed hazardous wastes from non-specific sources as listed in 40 CFR 261.31. This waste stream is assigned EPA hazardous waste numbers F002, F004, and F005 based on the following identified solvent uses and solid sampling.

- F002 – Trichloroethylene and Freon 11 (trichlorofluoromethane), and Freon 113 (1,1,2-trichloro-1,2,2-trifluoroethane) were used as decontamination and cleaning solvents. Chlorobenzene, trichloroethylene, Freon 11, Freon 113, methylene chloride,

1,1,1-trichloroethane and tetrachloroethylene were all detected in headspace gas samples from the corresponding Building 221-F debris waste streams. F002 has been assigned to Building 221-F debris waste for these constituents even though a solvent use has not been identified in each case. F002 is assigned to the homogeneous waste stream SR-W026-221F-HOM for these constituents (References M11 and P26).

- F004 - Meta- and para-cresols were identified during CCP certified solid sampling and analysis of homogeneous waste stream SR-W026-221F-HOM. The UCL_{90} exceeded the transformed program required quantitation limit for cresols in the first sampling lot. No potential source of cresols has been found in the AK record. Therefore, as required by the WIPP-WAP, hazardous waste number F004 is assigned to waste stream SR-W026-221F-HOM because a potential non-solvent source of cresols has not been identified (Reference DR013).

- F005 – Benzene, toluene, and isobutanol were used as decontamination and cleaning solvents. Benzene, toluene, isobutanol, methyl ethyl ketone, and carbon disulfide were all detected in headspace gas samples from the corresponding Building 221-F debris waste streams. F005 has been assigned to Building 221-F debris waste for these constituents even though a solvent use has not been identified in each case. F005 is assigned to the homogeneous waste stream SR-W026-221F-HOM for these constituents (Reference P26).

Several F001-listed solvents were used for their solvent properties, and F001 is assigned to the debris waste streams. However, EPA has provided a regulatory clarification that the F001-listing is only appropriate when the listed solvents are used in a large-scale degreasing operation, such as cold cleaning or vapor degreasing on an industrial scale. This waste was not generated from large-scale degreasing operations and, therefore, EPA hazardous waste number F001 is not assigned to waste stream SR-W026-221F-HOM.

The F003-listed solvents acetone, cyclohexanone, ethyl acetate, ethyl benzene, ethyl ether, methanol, methyl isobutyl ketone, n-butyl alcohol, and xylene may be present in this waste, and F003 was assigned to two of the debris waste streams. However, F003-listed solvents are listed solely for ignitability, and this waste stream does not exhibit the characteristic of ignitability because the solvents are not in liquid form. Therefore, EPA hazardous waste number F003 is not assigned to waste stream SR-W026-221F-HOM.

K-Listed Waste

This waste stream does not include any of the manufacturing process wastes from the specific industries or sources listed in 40 CFR 261.32.

P- and U-listed Wastes

This waste stream was not mixed with a discarded commercial chemical product, an off-specification commercial chemical product, or a container residue or spill residue thereof as defined in 40 CFR 261.33. Hydrofluoric acid was used in the FB-Line, although it would be present in the waste stream only as a spent chemical. Therefore, the SR-W026-221F-HOM waste stream is not assigned EPA hazardous waste number U134. However, SRS concluded

that it is possible that pure mercury was used in FB-Line and is present in spill cleanup materials. For this reason, EPA hazardous waste number U151 is applied to this waste stream (Reference D12).

SRS also could not rule out the possibility that pure acetone might have been used in FB-Line. However, acetone is listed solely for ignitability, and this waste stream does not exhibit the characteristic of ignitability. Therefore, EPA hazardous waste number U002 will not be assigned to waste stream SR-W026-221F-HOM (Reference waste stream SR-W027-FB-Pre86-C).

The Material Characterization program processed materials that contained beryllium. The beryllium was not in the form of unused beryllium powder and, therefore, is not a P015-listed waste. Typical job control waste contaminated with beryllium was generated, but the beryllium material itself was not discarded as waste (Reference D19).

Polychlorinated Biphenyls (PCBs)

PCBs are not expected to be present in this waste. The hydraulic fluids used by FB-Line included Fyrquel, which contains butylated triphenyl phosphate ester, and #253 Hydraulic Oil, which is a petroleum-based oil base stock. Neither of these contained PCBs. Acidic aqueous liquids would not contain PCBs. Therefore, this waste stream is not regulated as a Toxic Substance Control Act waste under 40 CFR 761 (References C66, M28, M44, M45, M46, M47, and M59).

Prohibited Items

Based on waste generating procedures, all liquids in these containers would have been absorbed. However, RTR has identified liquids in a few drums. Sealed containers greater than 4-L have also been identified by RTR in some drums. Prohibited items identified using RTR or VE will be removed from the containers or remediated (References M46, P9, P10, P34, P38, P43, and P44).

Method for Determining Waste Material Parameters (WMPs) Weights per Unit of Waste

There were WMP weight estimates from VE for 36 drums and RTR for five drums. There were also 13 drums that did not have RTR or VE, but the 29-90 forms include WMP weight estimates from the generator. An evaluation of the data for these 54 drums was performed; the results are presented in table below, Waste Stream SR-W026-221F-HOM Waste Material Parameters.

The RTR and VE data sheets categorized the absorbed waste as "other inorganic material." However, since absorbed waste is considered a homogeneous solid, "inorganic matrix" and "organic matrix" are more appropriate. For the WMP estimate, absorbed aqueous waste was assigned to "inorganic matrix" and absorbed hydraulic fluid was assigned to "organic matrix." During the VE process, some drums contained residual liquids which were absorbed with an organic polymer absorbent. For the drums containing absorbed aqueous waste, the organic polymer was assigned to "organic matrix" based on the VE data sheet. Although the waste

matrix code group assigned to this waste stream is solidified inorganics which is based on volume, the predominant WMP for this waste stream is estimated based on weight percent and is "organic matrix."

Waste Stream SR-W026-221F-HOM Waste Material Parameters

Waste Material Parameter	Weight Percent	Weight Percent Range
Iron-based Metals/Alloys	0.4%	0 – 10.0%
Aluminum-based Metals/Alloys	<0.1%	0 – 0.3%
Other Metals	0.0%	0 – 0.0%
Other Inorganic Materials	0.0%	0 – 0.0%
Cellulosics	1.9%	0 – 10.5%
Rubber	0.6%	0 – 5.8%
Plastics (waste materials)	6.0%	0 – 27.3%
Organic Matrix	66.5%	0 – 100.0%
Inorganic Matrix	24.6%	0 – 99.3%
Soils/Gravel	0.0%	0.0 – 0.0%

List of AK Sufficiency Determinations Requested for the Waste Stream

There are no AK sufficiency determination requests for this waste stream.

Transportation

This waste stream and its chemical constituents have been reviewed for consistency with listed TRUCON codes and they are consistent.

Beryllium

Beryllium will not be present in amounts greater than 1% by weight of the waste in each payload container.

Radionuclide Information

Radioassay data were recorded on Burial Ground Record and 29-90 forms (References C66, M28, M44, M47, and M59). To determine isotopic ratios for waste stream SR-W026-221F-HOM as a whole, the data from these forms has been evaluated and summarized in the table below. Based on this evaluation, Pu-239 and Pu-240 are the two most predominant radionuclides by mass.

Radiological Distribution for Waste Stream SR-W026-221F-HOM

Radionuclide	Total Radionuclide Wt%[1]	Radionuclide Wt% Range for Individual Containers[2,5]	Total Radionuclide Ci%[1]	Radionuclide Ci% Range for Individual Containers[2,5]	Suspected Present (Yes/No)
WIPP-Required Radionuclides					
Am-241	Trace[3]	0.00% – 0.11%	0.06%	0.00% – 2.35%	Yes
Pu-238	0.19%	0.00% – 0.20%	4.66%	0.00% – 5.84%	Yes
Pu-239	**93.32%**	92.68% – 95.08%	8.64%	7.90% – 24.18%	Yes
Pu-240	**5.86%**	4.74% – 6.02%	1.98%	1.86% – 4.42%	Yes
Pu-242	0.06%	0.00% – 0.06%	Trace	0.00% – Trace	Yes
U-233	Trace	0.00% – Trace	Trace	0.00% – Trace	Yes
U-234	Trace	0.00% – Trace	Trace	0.00% – Trace	Yes
U-238	Trace	0.00% – 0.01%	Trace	0.00% – Trace	Yes
Sr-90	Trace	0.00% – Trace	Trace	0.00% – Trace	Yes[4]
Cs-137	Trace	0.00% – Trace	Trace	0.00% – Trace	Yes[4]
Additional Radionuclides					
H-3	Trace	0.00% – Trace	Trace	0.00% – Trace	Yes
C-14	Trace	0.00% – Trace	Trace	0.00% – Trace	Yes
Tc-99	Trace	0.00% – Trace	Trace	0.00% – Trace	Yes
I-129	Trace	0.00% – Trace	Trace	0.00% – Trace	Yes
U-235	Trace	0.00% – 0.02%	Trace	0.00% – Trace	Yes
U-236	Trace	0.00% – Trace	Trace	0.00% – Trace	Yes
Np-237	Trace	0.00% – Trace	Trace	0.00% – Trace	Yes
Pu-241	0.56%	0.17% – 2.44%	84.66%	70.14% – 85.51%	Yes

[1] Indicates the total weight percent of each radionuclide over all drums in the waste stream.
[2] Range of each radionuclide on a drum-by-drum basis.
[3] "Trace" indicates <0.01 % for that radionuclide.
[4] Not reported by assay but expected present.
[5] A zero value for a lower range indicates that assay did not report this nuclide in some drums.

Payload management will not be utilized for this waste stream.

Source Documents

Source Document Tracking Number	Title
C1	Miscellaneous Correspondence on Solvent Contaminated Waste
C2	PCB Committee: Meeting No. 1
C3	Polychlorinated Biphenyls (PCBs) Used In Electrical Equipment
C4	PCB Inventory Changes During Calendar Year 1984
C5	Interview of R.E. Lynn, J.B. Schaade: Radiological Characterization of Post-90 FB-Line Waste
C6	Interview of M. B. Reuis: FB-Line Practice Relating to Number of Layers of Confinement
C7	Interview of M. B. Reuis: Absorption and Neutralization of Free Liquids
C8	Electronic Mail Message to P. Fulghum: "Squib" Igniters Used In "Halex" Fire Suppression
C9	Interview of E.R. Hackney: Decontamination Agents Used in the FB-Line
C11	Memo to J.S. Bellamy: Impact of Proposed Change in Plutonium Isotopics on FB-Line Low-Level Waste Radioisotopic Characterization
C12	Memo: Specifications for Plutonium Shipped to the Rocky Flats Plant
C13	Telecon Record: Call to P.J. Spitzer - Starting Date for Operations Inside Refurbished Special Recovery Cabinets 6-8
C15	Memo to H.W. Fincher, J.W. McClard: FB-Line TRU Waste Characterization Data
C16	Interview of FB-Line Personnel: FB-Line Operations from Approximately 1986 to 1990
C17	Letter: Waste Matrix Code Assignment for Transuranic Waste Stream SR-T001-221F-HET/Drums
C19	Interview of J.W. McClard: (trans)-1,2-Dichloroethylene and Formaldehyde use in the FB-Line
C20	Interview of D. Gracy: Material Characterization Cabinets in FB-Line
C21	R.S. Thomason to C.J. Ward; Mass and Activity Values for FB-Line and HB-Line TRU Waste(U)
C22	A. Gibbs to S.J. Mentrup; Plutonium Isotopic Content of Waste Streams
C23	Inter-Memorandum: Corrected Values for FB-Line TRU Waste Drums Sent to the Solid Waste Disposal Facility From 1985 to 1992 (U)
C25	Memorandum to K.D. Stegg re: FB-Line Mixed Waste Certification Assessment Status (U)
C26	Record of Communication - Interview with Steve Bellamy, Nuclear Materials Production Division re: Mixed waste at FB-Line, 1990 to present
C27	Telephone conversation with Carol Allgood, NMMD re: Blue Dot program at FB-Line and HB-Line
C28	Memorandum re: Information on TRU Waste Characterization in Support of the WIPP No-Migration Variance Petition
C29	Record of Communication with G.F. Lunsford re: Isotopics for Requested Off-Site Account

Source Document Tracking Number	Title
C58	Memo to CCP Central Records: Beryllium Evaluation for AK Summary Report CCP-AK-SRS-3
C59	Email correspondence regarding the addition of drums to the SRS-3 HET waste stream
C60	Interview with Dennis Gracy, Systems Engineer for Material Characterization Cabinet: Deactivation Activities
C61	Memo to K.J. Collins, Hazardous Determination for FB-Line Materials
C62	Defense Nuclear Safety Board Memo for J. Kent Fortenberry
C63	E-mail Correspondence from Linda Ledbetter re: SEVEMR0072
C64	E-mail Correspondence from Jennifer Biedscheid re: TRAMPAC Question
C65	Letter to AK Record from James Schoen re: Evaluation of Volume, Period Generation, and Calculation of Individual and Total Radionuclide Masses and Activities for Waste Stream SR-W026-221F-HET
C66	Letter to AK Record from James M. Schoen re: Evaluation of Volume, Period Generation, and Calculation of Individual and Total Radionuclide Masses and Activities for Waste Stream SR-W026-221F-HOM
C67	Memo from R. C. Hochel re: TRU Boxed Waste Measurement Task Team Meeting Minutes 6/23/89
C69	Memorandum from James Schoen to CCP Records re: Reconciliation of Waste Containers List for Waste Streams SR-W026-221F-HEPA, SR-W026-221F-HET, SR-W026-221F-HET-A, and SR-W026-221F-HOM
C70	Future TRU Waste Generation for CCP-AK-SRS-3 TRU / MTRU Waste Streams
C71	Addition of 1 Container to Waste Stream SR-W026-221 F-HET
D1	Savannah River Site Atlas
D2	Safety Analysis--200 Area Savannah River Plant FB-Line Operations
D3	FB-Line Basis for Interim Operation (U)
D4	Savannah River Site Waste Acceptance Criteria Manual-1S, E-Area TRU Pads-Transuranic Waste Acceptance Criteria
D5	SRS Data Preparation for the 1995 WIPP TRU Waste Baseline Inventory Report, Mixed Waste Inventory Report, and Integrated Database (U)
D6	Radioisotope Characterization of FB-Line Low-Level Waste
D7	Memo to L. Rykken: FB-Line Low-Level Waste Smear Analysis Results Evaluation
D8	FB-Line Facility Radioisotopic Sampling Plan
D9	Technical Basis for the Container Examination and Evaluation Program (U)
D10	Separations FB-Line Facility Transuranic (TRU) Waste Certification Program
D11	Transmittal of SRS Audit Report of September 1989 to M.G. O'Rear
D12	The FB-Line Facility: A Training Aid Document
D13	Transmittal Memo to M.G. O'Rear: Waste Acceptance Criteria Certification Committee Audit of Savannah River Certification Activities

Source Document Tracking Number	Title
D15	Nuclear Criticality Safety Supplement Building 221-F, FB-Line: Material Characterization in Cabinets 6-8
D16	Savannah River Certification Plan for Newly Generated, Contact-Handled Transuranic Waste
D19	FB-Line TRU Waste Characterization Plan
D21	Material Control and Accountability Measurements for FB-Line Processes
D22	FB-Line NDA Lab Operator Aid for Analytical Laboratory Technicians - Isotopic Distribution
D24	Westinghouse Savannah River Company Annual Report 2003
D25	Westinghouse Savannah River Company Annual Report 2004
D26	Washington Savannah River Company Annual Report 2005
D27	F-Canyon Suspension and Deactivation Safety Analysis Report
D28	Material Control & Accountability Activities Associated with the FB-Line Deactivation and Downgrade to an Inactive Category IV Material Balance Area.
D29	Stabilizing And Packaging Pu Materials per 3013 At SRS
D30	SRS Waste Acceptance Criteria Manual, Manual number 1S, Transuranic Waste Container Characterization Form OSR 29-30 Instructions Appendix A 23
D31	F-Canyon/FB-Line Facilities PUREX Operations Suspension Plan
D32	F-Canyon Complex Deactivation Project Plan, Building 221-F F-Canyon/FB-Line Facilities
D33	F-Canyon Complex, Post Deactivation Surveillance and Maintenance Plan & Implementation Manual
D34	Safety Analysis Report, Savannah River Site, FB-Line
D35	Safety Analysis Report, Savannah River Site, F-Canyon, FA-Line and Outside Facilities
DR001	Acceptable Knowledge Source Document Discrepancy Resolution, Waste Stream SR-W026-221F-HOM Physical Waste Form
DR002	Acceptable Knowledge Source Document Discrepancy Resolution, Waste Stream SR-W026-221F-HOM EPA Hazardous Waste Numbers
DR003	Acceptable Knowledge Source Document Discrepancy Resolution, Wooden-Framed HEPA Filters
DR008	Acceptable Knowledge Source Document Discrepancy Resolution, Calcium Reactivity
DR010	Acceptable Knowledge Source Document Discrepancy Resolution, Waste Stream SR-W026-221F-HET-A EPA Hazardous Waste Numbers
DR011	Acceptable Knowledge Source Document Discrepancy Resolution, Waste Stream SR-W026-221F-HOM Physical Waste Form
DR012	Acceptable Knowledge Source Document Discrepancy Resolution, SR171857, SR503013, SR503013A
DR013	Acceptable Knowledge Source Document Discrepancy Resolution, Cresol and Phenol in Solid Sampling and Analysis of Waste Stream SR-W026-221F-HOM
M1	AK Tracking Spreadsheet

Source Document Tracking Number	Title
M2	Specification for Procurement of TRU Waste Storage Drums
M3	Procurement Specification for 90 Mil Polyethylene Drum Liner/Lid
M4	Procurement Specification for 55 Gallon Painted Steel Drum
M5	Procurement Specification for 3/4 Inch Diameter Drum Filter Vents (U)
M6	TRU Waste Container Paperwork (e.g., Radioactive Solid Waste Burial Ground Records, TRU Waste Container Characterization Forms)
M7	TRU Waste Container Paperwork (e.g., Radioactive Solid Waste Burial Ground Records, TRU Waste Container Characterization Forms)
M8	Unreviewed Safety Question Process USQ Screening - Part A: Rev. 17 of SOP 221-FB-2504-NS
M9	USQD Summary Sheet for Referencing Previous USQD: Rev.1 to SOP 221-FB-2505-A-NS; "Packaging TRU Material Characterization Waste into a TRU Drumliner (U)."
M10	Unreviewed Safety Question Process: Revise Procedures for Transporting and Assaying Red Pail Waste
M11	Material Safety Data Sheets
M12	FACTSHEET: Lighting Waste Management
M13	Unreviewed Safety Question Process Form - Approval of IPC #98-0301-FBL to SOP 221-FB-2502-A-NS, Packaging General and Cabinet Waste Into a Red Pail (U)
M14	Unreviewed Safety Question Process: Implementing Procedures for Packaging Material Characterization Waste Directly Into a Drum Liner
M15	Unreviewed Safety Question Process Form: Approval of IPCs to Support Q2 Operations (U)
M17	USQD Summary Sheet for Referencing Previous USQD
M19	USQD Summary Sheet for Referencing Previous USQD
M20	USQD Summary Sheet for Referencing Previous USQD
M21	USQD Summary Sheet for Referencing Previous USQD
M22	Uncontrolled SRS Database for Post-1990 FB-Line Waste
M24	Headspace Gas Data from the SRS Project
M26	Request/Approval for Deviation to SRS Waste Acceptance Criteria Manual
M27	Waste Characterization for FB Line Drums Contaminated with Beryllium
M28	Evaluation of Additional Containers for SRS-3 Waste Streams SR-W026-221F-HET and SR-W026-221F-HOM (FB-Line)
M29	Evaluation of 52 Additional Containers for SRS-3 Waste Stream SR-W026-221F-HET (FB-Line)
M30	TRU Waste Container Paperwork (e.g., Radioactive Solid Waste Burial Ground Records, TRU Waste Container Characterization Forms) for drum additions
M31	Acceptable Knowledge Payload Management Calculations for CCP-SRS AK Reports 1 through 7
M32	Acceptable Knowledge Beryllium Assessment for CCP-SRS AK Reports 1 through 7
M33	Evaluation of 79 Additional Containers for SRS-3 Waste Stream SR-W026-221F-HET (FB-Line)

Source Document Tracking Number	Title
M34	TRU Waste Container Paperwork (e.g., Radioactive Solid Waste Burial Ground Records, TRU Waste Container Characterization Forms) for drums added 6/1/05
M35	Email from Jeff Lunsford dated 8/31/2005. SRS Inventory Update
M36	TRU Waste Container Paperwork (e.g., Radioactive Solid Waste Burial Ground Records, TRU Waste Container Characterization Forms) for Drums Added May 15, 2006
M37	Evaluation of Additional Containers for SRS-3 Waste Stream SR-W026-221F-HET (FB-Line), May 15, 2006
M38	Evaluation of Additional Containers for SRS-3 Waste Stream SR-W026-221F-HET (FB-Line)
M39	TRU Waste Container Paperwork (e.g., Radioactive Solid Waste Burial Ground Records, TRU Waste Container Characterization Forms) for Drums Added July 19, 2006
M40	Material Safety Data Sheets
M41	Characterization Data on various Drums from the FB-Line
M42	Evaluation of Additional Containers for SRS-3 Waste Stream SR-W026-221F-HET (FB-Line) dated August 18, 2008; Container Paperwork for additional drums (29-90s): FBL05127 and FBL06035; and RTR Quick Screens for both drums
M43	TRU Waste Container Paperwork (e.g., Radioactive Solid Waste Burial Ground Records, TRU Waste Container Characterization Forms) for 8/18/07 Drum Additions to SR-W026-221F-HET.
M44	TRU Waste Container Paperwork (e.g., Radioactive Solid Waste Burial Ground Records, TRU Waste Container Characterization Forms) for Waste Stream SR-W026-221F-HOM
M45	Material Safety Data Sheets Applicable to Waste Stream SR-W026-221F-HOM
M46	RTR Quick Screen Data Sheets for Waste Stream SR-W026-221F-HOM
M47	Evaluation of Additional Containers for SRS-3 Waste Stream SR-W026-221F-HOM (FB-Line)
M48	TRU Waste Container Paperwork (e.g., Radioactive Solid Waste Burial Ground Records, TRU Waste Container Characterization Forms) for FB Line Containers
M49	Evaluation of Additional Containers for SRS-3 Waste Stream SR-W026-221F-HEPA (FB-Line)
M50	Evaluation of Additional Containers for SRS-3 Waste Stream SR-W026-221F-HEPA
M51	Evaluation of Additional Containers for SRS-3 Waste Stream SR-W026-221F-HEPA (FB-Line)
M53	Evaluation of Additional Containers for SRS-3 Waste Stream SR-W026-221F-HEPA (FB-Line)
M54	Evaluation of Additional Containers for SRS-3 Waste Stream Sr-W026-221F-HEPA (FB-Line)
M55	Evaluation of Additional Containers for SRS-3 Waste Stream SR-W026-221F-HEPA (FB-Line)

Source Document Tracking Number	Title
M57	Evaluation of Additional Containers for SRS-3 Waste Stream SR-W026-221F-HEPA (FB-Line)
M58	Evaluation of Additional Containers for SRS-3 Waste Stream SR-W026-221F-HEPA (FB-Line)
M59	Evaluation of Additional Containers for SRS-3 Waste Stream SR-W026-221F-HET and SR-W026-221F-HOM
M60	Evaluation of Additional Containers for SRS-3 Waste Stream SR-W026-221F-HEPA
M61	Evaluation of Additional Containers for SRS-3 Waste Stream SR-W026-221F-HEPA
M62	Evaluation of Additional Containers for SRS-3 Waste Stream SR-W026-221F-HEPA
M63	Request for Deviation to SRS Waste Acceptance Criteria Manual - Berl Saddles
M64	TRU Waste Container Paperwork (e.g., Radioactive Solid Waste Burial Ground Records, TRU Waste Container Characterization Forms) for F-Canyon Facility and FB-Line
M65	Physical Form and Radiological Evaluation Spreadsheets
M68	Add Container Memo for Containers SR514741, SR514741A, and SR123429B
P1	Packaging General and Cabinet Waste Into Red Pails (U)
P2	Drumming Red-Pail Waste for Shipment To Solid Waste Disposal Facility (U)
P3	Packaging TRU (Process Cabinet or Fissile TRU) Waste Into A TRU Drum Liner
P4	Packaging TRU (Excluding Process Cabinet Waste) Into a TRU Drum Liner
P5	Packaging TRU Hut Waste (Excluding Process Cabinet Waste) Into a TRU Drum Liner
P6	Packaging TRU Hut Waste (Excluding Process Cabinet Waste) and TRU Decontamination Waste Into A TRU Drum Liner
P7	Controlled Procurement and Handling of Chemical and Blue Dot (Hazardous) Products
P8	Item 7.02, Chemical Control Program in FB Line Facilities
P9	Removing Oil from Mechanical Line Hydraulic Sumps Removing Hydraulic Fluid From Mechanical Line Hydraulic Sumps (U)
P10	Cleaning Wet Cabinet Sumps and Neutralizing Sump Waste (U) Cleaning Wet Cabinet Sumps or Pipe Duct Sumps and Neutralizing Sump Waste (U)
P11	Cold Chemical Cleanup (U)
P12	Handling Mechanical Line Cabinet Sweepings Sweeping Mechanical - Line Cabinets (U) Sweeping or Vacuuming Mechanical Line Cabinets (U)
P13	Handling and Weighing of Calcium
P14	Constructing a Plastic Hut
P15	Introducing or Removing Material Through Bag Ports
P16	Packaging Material Characterization Cabinet Waste Into a Drumliner

Source Document Tracking Number	Title
P17	Packaging and Handling HEPA Filter Waste
P18	Plutonium Packaging, Storage and Transfer Record
P19	Decontamination and Decontamination Waste Handling Activities
P20	Separations FB-Line Facility Low Level/Mixed Waste Certification and Minimization Plan
P21	Measuring 55-Gallon Waste Drums on the Drum Counter (U)
P22	TRU Drum Assembly (U)
P23	Transporting, Assaying, and Storing Red-Pail Waste (U)
P25	TRU Waste Data Package Requirements
P26	NMPT Lesson Plan, FB-Line Low Level Waste Handling, RCRA Compliance, Waste Minimization and Hazardous Material Transportation
P27	High-Efficiency Particulate Air (HEPA) Filter, Fire-Resistant (250 degree min), Cylindrical Specification 3
P28	High-Efficiency Particulate Air (HEPA) Filter, Fire-Resistant Specification 2
P29	Facility Disposition Manual 1C, Facility Disposition Program Overview
P30	Packaging General and Cabinet Waste into a Red Pail
P31	Packaging TRU Material Characterization Waste from Red Pails into a TRU Drumliner
P32	Packaging TRU Material Characterization Waste From Red Pails Into A TRU Drumliner
P33	Packaging Special Cabinet Waste into a Red Pail
P34	Absorbing Containerized Liquids
P35	TRU Drum Remediation Process
P36	TVEF Operations
P37	MRS Operations
P38	TRU Drum Repackaging
P39	Shipment Preparation for TRU Containers to SWMF
P41	Black Box Repackaging
P43	Absorbing Containerized Liquids
P44	Transuranic (TRU) Waste Repackaging in H-Canyon
P45	SWMF Blackbox Repackaging
P46	F Canyon Container transfer
P47	TRUPACT-II Loading and Shipping Project Work Scoping Document