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

FEB - 8 2011

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

Subject: Review of Central Characterization Project – Idaho National Laboratory Waste Stream Profile Form Number, ID-LL-T004-S3141, Salt Waste from LLNL R&D

Dear Mr. Bearzi:

The Department of Energy Carlsbad Field Office (CBFO) has approved the Waste Stream Profile Form, ID-LL-T004-S3141, Salt Waste from LLNL R&D.

Enclosed is a copy of the form as required by Section C-5a of the WIPP Hazardous Waste Facility Permit No. NM4890139088-TSDF.

If you have questions on this matter, please contact Court Fesmire at (575) 234-7548.

Sincerely,

(for)
Edward Ziemianski
Acting Manager

Enclosure

cc: w/enclosure
S. Zappe, NMED *ED

cc: w/o enclosure
J. Kieling, NMED ED
J. R. Stroble, CBFO ED
N. Castaneda, CBFO ED
C. Fesmire, CBFO ED
C. Gadbury, CBFO ED
G. Basabilvazo, CBFO ED
S. McCauslin, CBFO ED
K. Watson, CBFO ED
D. Toft, CTAC ED
C. Walker, TechLaw ED
CBFO M&RC
*ED denotes electronic distribution

CBFO:NTP:CF:GS:11-0144:UFC 5900.00

110209

Attachment 2 – CCP Waste Stream Profile Form

(1) Waste Stream Profile Number: ID-LL-T004-S3141[4]						
(2) Generator site name: Idaho National Laboratory					(4)Technical contact: Jim Vernon	
(3) Generator site EPA ID: ID4890008952					(6) Technical contact phone number: 575-234-7141	
(5) Date of audit report approval by New Mexico Environment Department (NMED): September 19, 2005, June 29, 2006; August 6, 2007, September 22, 2008, September 11, 2009, October 20, 2010						
(7) Title, version number, and date of documents used for WAP Certification: CCP-PO-001, CCP Transuranic Waste Characterization Quality Assurance Project Plan, Revision 19 December 29, 2010 CCP-PO-002, CCP Transuranic Waste Certification Plan, Revision 25 December 29, 2010 CCP-PO-024, CCP/INL Interface Document, Revision 10 December 29, 2010						
(8) Did your facility generate this waste? YES			NO	X		
(9) If no, provide the name and EPA ID of the original generator: Lawrence Livermore National Laboratory CA2890012584						
Waste Stream Information[1]						
(10) WIPP ID: LL-T004[3]					(11) Summary Category Group: S3000	
(12) Waste Matrix Code Group: Salt Waste					(13) Waste Stream Name: Salt Waste from LLNL R&D	
(14) Description from the TWBIR: The waste consists primarily of used chloride and fluoride salts from pyrochemical processes such as electrorefining, molten salt extraction, and direct oxide reduction. There may also be up to 20% heterogeneous organic glovebox bagout waste packaged with the salt waste.						
(15) Defense TRU Waste:	YES	X	NO			
(16) Check One:	CH	X	RH			
(17) Number of SWBs NA	(18) Number of Drums 6				(19) Number of Canisters NA	
(20) Batch Data Report numbers supporting this waste stream characterization: See Characterization Information Summary for correlation of containers identification numbers to batch data report numbers						
(21) List applicable EPA Hazardous Waste Numbers: F005						
(22) Applicable TRUCON Content Numbers: LL 124/224						
(23)**Acceptable Knowledge Information**[1]						
(For the following, enter the supporting documentation used [i.e., references and dates])						
Required Program Information						
(23A) Map of site: CCP-AK-INL-018, Revision 0, June 30, 2010 Figures 1-4						
(23B) Facility mission description: CCP-AK-INL-018, Revision 0, June 30, 2010 Section 4.2						
(23C) Description of operations that generate waste: CCP-AK-INL-018, Revision 0, June 30, 2010 Section 4.4						
(23D) Waste identification/categorization schemes: CCP-AK-INL-018, Revision 0, June 30, 2010 Section 4.5.2						
(23E) Types and quantities of waste generated: CCP-AK-INL-018, Revision 0, June 30, 2010 Sections 4.5.1, 7.2 and 7.4						
(23F) Correlation of waste streams generated from the same building and process, as applicable: CCP-AK-INL-018, Revision 0, June 30, 2010 Section 4.5.3						
(24) Waste certification procedures: CCP-TP-030, Revision 28, May 12,2010						
(25)Required Waste Stream Information						
(25A) Area(s) and building(s) from which the waste stream was generated: CCP-AK-INL-018, Revision 0, June 30, 2010 Section 7.1						
(25B) Waste stream volume and time period of generation: CCP-AK-INL-018, Revision 0, June 30, 2010 Section 7.2						

(25C) Waste generating process description for each building: CCP-AK-INL-018, Revision 0, June 30, 2010 Section 4.4			
(25D) Waste Process flow diagrams: CCP-AK-INL-018, Revision 0, June 30, 2010 Figure 10			
(25E) Material inputs or other information identifying chemical/radionuclide content and physical waste form: CCP-AK-INL-018, Revision 0, June 30, 2010 Section 7.4			
(25F) Waste Material Parameter Weight Estimates per unit of waste: See Table 2 of the Summation of Aspects of AK Summary Report: ID-LL-T004-S3141			
(26) Which Defense Activity generated the waste[5]: (check one)			
X	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		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 S2 AK#s on Attachment 1 to Summation of Aspects of AK			
(27C) Safety Analysis Reports: See S3 AK#s on Attachment 1 to Summation of Aspects of AK			
(27D) Waste packaging logs: See S4 AK#s on Attachment 1 to Summation of Aspects of AK			
(27E) Test plans/research project reports: See S5 AK#s on Attachment 1 to Summation of Aspects of AK			
(27F) Site databases: See S6 AK#s on Attachment 1 to Summation of Aspects of AK			
(27G) Information from site personnel: See S7 AK#s on Attachment 1 to Summation of Aspects of AK			
(27H) Standard industry documents: See S8 AK#s on Attachment 1 to Summation of Aspects of AK			
(27I) Previous analytical data: See S9 AK#s on Attachment 1 to Summation of Aspects of AK			
(27J) Material safety data sheets: See S10 AK#s on Attachment 1 to Summation of Aspects of AK			
(27K) Sampling and analysis data from comparable/surrogate Waste: See S12 AK#s on Attachment 1 to Summation of Aspects of AK			
(27L) Laboratory notebooks: NA			
Confirmation Information[2]			
For the following, when applicable, enter procedure title(s), number(s) and date(s)			
(28)	Radiography: See procedures listed on the attached CIS, CCP-TP-053, Revision 8, June 30, 2010		
(29)	Visual Examination: NA		

(30) Comments: For a list of the waste characterization procedures used and dates of the respective procedures see the list of procedures on the attached CIS

Reviewed by AK Expert:	**YES** [X]		**Date: 1-25-2011**
Reviewed by STR (if necessary):	**YES** [X]	**N/A** [ ]	**Date: 1-25-2011**

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.

(31)	(32) Jim Vernon	(33) 2-3-2011
Signature of Site Project Manager	Printed Name	Date

NOTE: (1) Use back of sheet or continuation sheets, if required.
(2) If, radiography, visual examination were used to confirm EPA Hazardous Waste Numbers, attach signed Characterization Information Summary documenting this determination.
(3) This waste does not currently have an INL specific Annual Transuranic Waste Inventory Report identification number. The ATWIR number listed corresponds to the LLNL waste stream identified in DOE/TRU-10-3425, Annual Transuranic Waste Inventory Report-2010.
(4) AK summary report CCP-AK-INL-018 has a freeze file in place to change the ID site designator on the waste stream. Reference: INL-018 Source Document C135
(5) This waste was also generated by the following defense activities: defense nuclear material production, defense nuclear waste and material by-products management, and defense research and development.

CHARACTERIZATION INFORMATION SUMMARY

WSPF # ID-LL-T004-S3141

Lot 1

TABLE OF CONTENTS

CCP Characterization Information Summary Cover Page

Waste Stream # ID-LL-T004-S3141 Lot #: 1

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

SPM Review: Jim Vernon Date: 2/3/2011

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:

Real-Time Radiography (RTR):

CCP-TP-053	Rev. 8	06/30/10	CCP Standard Real-Time Radiography (RTR) Inspection Procedure

Non Destructive Assay (NDA):

CCP-TP-109	Rev. 6	03/16/09	CCP Data Reviewing, Validating, and Reporting Procedure
CCP-TP-109	Rev. 5	11/16/06	CCP Data Reviewing, Validating, and Reporting Procedure
CCP-TP-115	Rev. 4	06/24/08	CCP SWEPP Gamma-Ray Spectrometer (SGRS) Operating Procedure
CCP-TP-019	Rev. 5	09/16/09	CCP Waste Assay Gamma Spectrometer (WAGS) Operating Procedure

Solids Sampling:

INST-OI-73	Rev. 4	04/07/09	Manual Drum Coring Operations
INST-OI-73	Rev. 3	07/24/08	Manual Drum Coring Operations
INST-OI-16	Rev. 30	04/07/09	Drum Coring Operations
INST-OI-16	Rev. 29	07/03/08	Drum Coring Operations

Solids Analysis:

CCP-TP-181	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 Organics by Gas Chromatography
CCP-TP-187	Rev. 1	11/18/08	CCP Sample Preparation for Semivolatile Organic Compounds

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-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-003	Rev. 16	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. 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. 28	05/12/10	CCP CH TRU Waste Certification and WWIS/WDS Data Entry

WAP Certification:

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-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 Correlation of Container Identification Numbers to Batch Data Report Numbers

Waste Stream: # ID-LL-T004-S3141 Lot # 1

Container ID Number	AMWTP Container ID	NDA BDR	RTR BDR	VE BDR	Solids Sampling BDR	Solids Analytical BDR	Load Management/ Overpack Yes	Headspace Gas BDR			
								Sample	Analysis		
LL85100679TRU	10369816	INNDAS100129	INRTR5100032	N/A	SSG10-00003	ALD10058M ALD10058N ALD10058S ALD10058V	N/A	N/A	N/A	N/A	N/A
LL85000750TRU	10369818	INNDAS100128	INRTR5100031	N/A	SSG10-00003	ALD10058M ALD10058N ALD10058S ALD10058V	N/A	N/A	N/A	N/A	N/A
LL85201174TRU	10369820	INNDAS100128	INRTR5100031	N/A	SSG10-00003	ALD10058M ALD10058N ALD10058S ALD10058V	N/A	N/A	N/A	N/A	N/A
LL85300715TRU	10369809	INNDAS100128	INRTR5100031	N/A	SSG10-00003	ALD10058M ALD10058N ALD10058S ALD10058V	N/A	N/A	N/A	N/A	N/A
LL85600484TRU	10373418	INNDAS100129	INRTR5100032	N/A	SSG10-00003	ALD10058M ALD10058N ALD10058S ALD10058V	N/A	N/A	N/A	N/A	N/A

Signature of Site Project Manager

Jim Vernon
Printed Name

2/3/2011
Date

CBS-003

CCP Solids Analysis VOC UCL_{90} Evaluation Form

WSPF #: ID-LL-T004-S3141 **Solids Summary Waste Stream Lot Number** 1 through 1

ANALYTE	Transform Data Used (No, Data-Log, SQRT, other)	# Samples above MDL [1]	# Samples	Maximum (mg/kg)	Mean (mg/kg)	SD (ppmv)	UCL_{90} (mg/kg)	PRQL (mg/kg)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA HWN
Benzene	No	0	5	0.1800	0.1750	0.0050	0.1784	10	N/A		
Bromoform	No	0	5	0.1800	0.1750	0.0050	0.1784	10	N/A		
Carbon disulfide	No	0	5	0.1800	0.1750	0.0050	0.1784	10	N/A		
Carbon tetrachloride	No	0	5	0.0900	0.0880	0.0027	0.0899	10	N/A		
Chlorobenzene	No	0	5	0.1800	0.1750	0.0050	0.1784	10	N/A		
Chloroform	Log	1	5	0.1823	-1.3639	0.8647	-0.7710	10	2.30		
1,1-Dichloroethylene	No	0	5	0.0900	0.0880	0.0027	0.0899	10	N/A		
1,2-Dichloroethane	No	0	5	0.1800	0.1750	0.0050	0.1784	10	N/A		
Ethyl benzene	No	0	5	0.1800	0.1750	0.0050	0.1784	10	N/A		
Methylene chloride	No	0	5	0.1800	0.1750	0.0050	0.1784	10	N/A		
m/p-Xylene[a]	No	0	5	0.2700	0.2640	0.0065	0.2685	10	N/A		
o-Xylene	No	0	5	0.0900	0.0880	0.0027	0.0899	10	N/A		
1,1,2,2-Tetrachloroethane	No	0	5	0.1800	0.1750	0.0050	0.1784	10	N/A		
Tetrachloroethylene	No	0	5	0.1800	0.1750	0.0050	0.1784	10	N/A		
Toluene	No	0	5	0.0900	0.0880	0.0027	0.0899	10	N/A		
trans 1,2-Dichloroethylene	No	0	5	0.1800	0.1750	0.0050	0.1784	10	N/A		
1,1,1,-Trichloroethane	No	0	5	0.1800	0.1750	0.0050	0.1784	10	N/A		
Trichloroethylene	No	0	5	0.1800	0.1750	0.0050	0.1784	10	N/A		
1,1,2-Trichloro-1,2,2-trifluoroethane	No	0	5	0.0900	0.0880	0.0027	0.0899	10	N/A		
1,1,2-Trichloroethane	No	0	5	0.1800	0.1750	0.0050	0.1784	10	N/A		
Trichlorofluoromethane	No	0	5	0.1800	0.1750	0.0050	0.1784	10	N/A		
Vinyl chloride	No	0	5	0.1800	0.1750	0.0050	0.1784	4	N/A		
Acetone	Log	1	5[3]	3.6763	2.5781	0.9640	3.6275	100	4.61		
Butanol [2]	SQRT	1	5[3]	14.1421	7.0672	6.7180	14.3809	100	10.00	Yes	NA
Methanol	Log	0	5[3]	3.6763	1.6791	2.1002	3.9655	100	4.61		
Methyl ethyl ketone	Log	1	5[3]	3.6763	2.6487	0.9280	3.6590	100	4.61		

CCP Solids Analysis VOC UCL_{90} Evaluation Form

WSPF #: ID-LL-T004-S3141 **Solids Summary Waste Stream Lot Number** 1 through 1

ANALYTE	Transform Data Used (No, Data-Log, SQRT, other)	# Samples above MDL [1]	# Samples	Maximum (mg/kg)	Mean (mg/kg)	SD (ppmv)	UCL_{90} (mg/kg)	PRQL (mg/kg)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA HWN
Ethyl ether	No	0	5	13.0000	7.1000	8.3439	[4]	100	N/A		
Isobutanol	Log	0	5[3]	3.6763	1.6791	2.1002	3.9655	100	4.61		
Pyridine[5]	SQRT	1	5[3]	12.6491	6.5695	5.9424	13.0388	100	10.00	Yes	F005
Formaldehyde[b]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Hydrazine[c]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

[a] 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."

b Required only for homogenous solids and soil/gravel waste from Savannah River Site.

c Required only for homogenous solids and soil/gravel waste from Oak Ridge National Laboratory and Savannah River Site.

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) Butanol UCL_{90} exceed the PRQL, and is listed under 40CFR 261.30 as F003; however, F003 listed solvents are listed solely for ignitability, and this waste stream does not exhibit the characteristic of ignitibility because the solvent is not in liquid form. Therefore, EPA hazardous waste number F003 will not be applied to waste stream ID-LL-T004-S3141.

(3) As a result of dilution requirements for 2 of the 5 samples, Acetone, Butanol, Methanol, Methyl ethyl ketone, Isobutanol and Pyridine 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 3, rather than 5, usable observations.

(4) Because the noted analyte had < 3 different observations, no meaningful covariance exists and the UCL_{90} value could not be calculated. Therefore, the PRQL was compared to the maximum for the purpose of confirming HWNs.

(5) During Solid Sampling and Analysis Pyridine was determined to be present and the UCL_{90} value exceeded the PRQL. As a result, the Hazardous Waste Number F005 will be applied based on solid sampling. ID-LL-T004-S3141 was considered non-hazardous, but based on the solid sampling, the waste stream will be considered hazardous.

Signature of Site Project Manager

Jim Vernon
Printed Name

2/3/2011
Date

CES-005

CCP Solids Analysis SVOC UCL_{90} Evaluation Form

WSPF #: ID-LL-T004-S3141 **Solids Summary Waste Stream Lot Number** 1 through 1

ANALYTE	Transform Data Used (No, Data-Log, SQRT, other)	# Samples above MDL [1]	# Samples	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg) [2]	UCL_{90} (mg/kg)	PRQL (mg/kg)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA HWN
1,2-Dichlorobenzene	No	0	5	0.2000	0.2000	0.0000	[3]	40	N/A		
1,4-Dichlorobenzene	No	0	5	0.2000	0.2000	0.0000	[3]	40	N/A		
2,4-Dinitrophenol	No	0	5	0.1000	0.1000	0.0000	[3]	40	N/A		
2,4-Dinitrotoluene	No	0	5	0.1500	0.1500	0.0000	[3]	2.6	N/A		
Hexachlorobenzene	No	0	5	0.1500	0.1500	0.0000	[3]	2.6	N/A		
Hexachloroethane	No	0	5	0.2000	0.2000	0.0000	[3]	40	N/A		
2-Methylphenol (cresols)	No	0	5	0.2000	0.2000	0.0000	[3]	40	N/A		
3&4-Methylphenol (cresols)	No	0	5	0.2000	0.2000	0.0000	[3]	40	N/A		
Nitrobenzene	No	0	5	0.2000	0.2000	0.0000	[3]	40	N/A		
Pentachlorophenol	No	0	5	0.1000	0.1000	0.0000	[3]	40	N/A		
Bis(2-ethylhexyl)phthalate[4]	No	2	5	4.4000	2.4500	2.7577	8.4515	28	N/A		

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) For analytes where there is no standard deviation, there is inadequate data to perform the statistical analysis.

(3) Because the noted analyte had < 3 different observations, no meaningful covariance exists and the UCL_{90} value could not be calculated. Therefore, the PRQL was compared to the maximum for the purpose of confirming HWN.

(4) Bis(2-ethylhexyl)phthalate was detetected in 2 of 5 samples and is a TIC reported in greater than 25% of the sampled containers, is listed in Appendix VIII of 40 CFR 261 and is added to the target analyte list.

Signature of Site Project Manager

Jim Vernon
Printed Name

2/3/2011
Date

GTS-005

CCP Solids Analysis Metals UCL_{90} Evaluation Form

WSPF #: ID-LL-T004-S3141 **Solids Summary Waste Stream Lot Number** 1 through 1

ANALYTE	Transform Data Used (No, Data-Log, SQRT, other)	# Samples above MDL [1]	# Samples	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	PRQL (mg/kg)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA HWN
Antimony	No	0	5	0.3450	0.3150	0.0212	0.3295	100	N/A		
Arsenic	No	3	5	2.8000	1.3600	1.1036	2.1167	100	N/A		
Barium	Log	5	5	2.3979	1.9882	0.3218	2.2088	2000	7.60		
Beryllium	No	0	5	0.0550	0.0520	0.0027	0.0539	100	N/A		
Cadmium	Log	1	5	-0.9416	-2.5468	0.8986	-1.9307	20	3.00		
Chromium	No	4	5	7.1000	3.2150	3.4442	5.5766	100	N/A		
Lead	Log	1	5	0.3365	-1.4063	0.9759	-0.7372	100	4.61		
Mercury	No	0	5	0.0050	0.0050	0.0000	0.0050	4	N/A		
Nickel	Log	3	5	1.4351	-1.1277	2.1730	0.3622	100	4.61		
Selenium	Log	3	5	1.6094	0.5878	0.7332	1.0905	20	3.00		
Silver	No	4	5	0.5900	0.4300	0.2004	0.5674	100	N/A		
Thallium	SQRT	3	5	1.2649	0.9075	0.3110	1.1208	100	10.00		
Vanadium	Log	2	5	1.3083	-1.2654	1.5604	-0.1955	100	4.61		
Zinc	Log	5	5	3.7136	1.9240	1.0923	2.6730	100	4.61		

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.)

Signature of Site Project Manager

Jim Vernon
Printed Name

2/3/2011
Date

CES-007

CCP Solid VOCs Summary Data

Waste Stream Number: ID-LL-T004-S3141

Solids Summary Waste Stream Lot Number: 1

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	% Detected
NONE	N/A	N/A	N/A

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

If no, describe the basis for assigning the EPA Hazardous Waste Codes: During Solid Sampling and Analysis Pyridine was determined to be present and the UCL90 value exceeded the PRQL. As a result, the Hazardous Waste Code F005 will be applied based on solid sampling. ID-LL-T004-S3141 was considered non-hazardous, but based on the solid sampling, the waste stream will be considered hazardous.

SPM Signature _____ Date 2/3/2011

CIS-008

CCP Solid SVOCs Summary Data

Waste Stream Number: ID-LL-T004-S3141 | Solids Summary Waste Stream Lot Number: 1

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	% Detected
Bis(2-ethylhexyl)phthalate	4.40	2	40.00%

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

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

Note: Bis(2-ethylhexyl)phthalate is listed in Appendix VIII to 40CFR Part 261 and is present as a TIC in greater than 25% of the samples in the waste stream. This analyte has been added to the target analyte list for ID-LL-T004-S3141. Bis(2-ethylhexyl)phthalate was detected in two samples; however, the Hazardous Waste Code for Bis(2-ethylhexyl)phthalate U028 will not be applied to ID-LL-T004-S3141. Waste stream ID-LL-T004-S3141 does not contain wastes that were mixed commercial chemical product Bis(2-ethylhexyl)phthalate, an off-specification chemical product or a container residue or a spill residue thereof.

SPM Signature  Date 2/3/2011

CJS-009

CCP RTR/VE Summary of Prohibited Items and AK Confirmation

Waste Stream Number: ID-LL-T004-S3141 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: RTR was selected as the characterization method for this lot because the waste containers were previously packaged and RTR is an acceptable characterization method to meet all the Data Quality Objectives for NDE of waste stream ID-LL-T004-S3141.

Site Project Manager Signature	Jim Vernon Printed Name	2/3/2011 Date

CCP Reconciliation with Data Quality Objectives

WSPF# ID-LL-T004-S3141 Lot # 1

Sampling Completeness

RTR/VE

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%)

CIS-011

CCP Reconciliation with Data Quality Objectives

WSPF# ID-LL-T004-S3141 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 Environmental Protection Agency (EPA) Hazardous Waste Numbers were assigned as required. Samples were randomly collected (when appropriate).
7a	Y (1)	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 Hazardous Waste Numbers were assigned as required. Samples were randomly collected.
7b	Y (1)	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 Hazardous Waste Numbers were assigned as required. Samples were randomly collected.
7c	Y (1)	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 Hazardous Waste Numbers were assigned as required. Samples were randomly collected.

CCP Reconciliation with Data Quality Objectives

WSPF# ID-LL-T004-S3141 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 (2)	Y	Y
Solids SVOCs	Y (2)	Y	Y
Solids Metals	Y	Y	Y

Comments:

1. As a result of dilution requirements, several analytes were reported as non-detected with MDL values in excess of the PRQL. In accordance with Section C4-3e of the WIPP-WAP, such "U" flagged observations with elevated MDL values due to dilution were not used in calculating mean concentration. Consequently, the subject analytes were statistically evaluated using only the useable observations. For analytes with no useable data, there is no corresponding data to report on the UCL90 evaluation form. AK was used to assign Hazardous Waste Numbers for these analytes.

2. Although 5 valid samples were collected and analyzed, due to dilution requirements not all data could be used for statistical analysis.

Signature of Site Project Manager	Jim Vernon	2/3/2011
	Printed Name	Date

SUMMATION OF ASPECTS OF AK SUMMARY REPORT: ID-LL-T004-S3141

Overview:

Waste stream ID-LL-T004-S3141 is contact-handled (CH) mixed transuranic (TRU) salt waste generated from plutonium and uranium Research and Development (R&D) activities in the Building 332 Plutonium Facility at the Lawrence Livermore National Laboratory (LLNL) between 1989 and 1995. Pyrochemical processing of plutonium, including molten salt extraction (MSE) and direct oxide reduction (DOR), was performed both as R&D for processes performed at other Weapons Complex facilities, and also to allow the reuse of the plutonium in other defense-related R&D operations in Building 332. The waste was shipped to the Advanced Mixed Waste Treatment Project (AMWTP) and is currently stored at the Transuranic Storage Area (TSA) in the Radioactive Waste Management Complex (RWMC) at the Idaho National Laboratory (INL).

Based on the review of AK, TRU waste generated from LLNL operations are contaminated with materials from the following atomic energy defense activities conducted in Building 332:

- Weapons activities, including defense inertial confinement fusion
- Defense nuclear materials production
- Defense nuclear waste and materials by-products management
- Defense research and development

The original primary mission of Building 332 was to conduct R&D on nuclear weapons fabrication. Since then, other major defense research programs have been added, including laser fusion and laser isotope separation, weapons research and tracer studies for the Department of Defense. Plutonium materials handled in Building 332 were associated almost entirely with weapons activities.

Waste stream ID-LL-T004-S3141 is, therefore, defense related waste.

This Summation of the AK Summary Report includes information to support Waste Stream Profile Form (WSPF) number ID-LL-T004-S3141 for CH TRU homogeneous solids from the LLNL. The primary source of information for this report is CCP-AK-INL-018, *Central Characterization Project Acceptable Knowledge Summary Report For Idaho National Laboratory Lawrence Livermore National Laboratory Waste Streams: ID-LL-M001-S5400, ID-LL-W019-S3900, ID-LL-T004-S3141*, Revision 0, June 30, 2010. CCP-AK-INL-018 includes information obtained from numerous sources, including facility safety basis documentation, historical document archives, generator and storage facility waste records and documents including databases, and interviews with operational and waste management personnel.

Waste Stream Identification Summary:

Waste Stream Name:	Salt Waste from LLNL R&D
Waste Stream Number:	ID-LL-T004-S3141
Site Where TRU Waste Was Generated:	Lawrence Livermore National Laboratory
Facility Where TRU Waste Was Generated:	Building 332
Site Where TRU Waste Is Currently Stored:	Idaho National Laboratory, Radioactive Waste Management Complex
Waste Stream Volume – Current	6 55-Gallon Drums
Waste Stream Volume – Projected	None
Dates of Waste Generation:	1989 to 1995
TRUCON Content Numbers:	LL 124, LL 224
Summary Category Group:	S3000
Waste Matrix Code:	S3141
Waste Matrix Code Group	Salt Waste
Annual Transuranic Waste Inventory Report (ATWIR) Identification:	LL-T004[1]
RCRA Environmental Protection Agency (EPA) Hazardous Waste Numbers (HWNs):	F005

[1]This waste does not currently have an INL specific ATWIR identification number. The ATWIR number listed corresponds to the LLNL waste stream identified in DOE/TRU-10-3425, Annual Transuranic Waste Inventory Report-2010.

Waste Stream Description and Physical Form:

Waste stream ID-LL-T004-S3141 consists of homogeneous solids from plutonium and uranium R&D. These waste salt cakes/blocks are composed of calcium chloride, calcium fluoride, or potassium chloride and contain entrained calcium, zinc and magnesium metals, and oxides. Waste stream ID-LL-T004-S3141 consists of drums identified as containing only salt waste and materials associated with packaging such as plastic bags, containers, tape, and metal cans generated in the Material Processing Lab (Room 1010) of Building 332. Waste parcels containing salts were historically segregated into separate containers from other types of waste.

Waste stream ID-LL-T004-S3141 consists of drums with 50 percent or greater by volume salt waste; therefore, this waste stream is assigned Waste Matrix Code S3141, Salt Waste. The homogeneous solids that comprise this waste steam have a common physical form, contain similar hazardous constituents, and were generated from a single process (pyrochemical processing) or activity and are, therefore, a single waste stream.

Point of Generation

Location

Waste stream ID-LL-T004-S3141 was generated at LLNL which is located in Livermore, California.

Area and/or Building of Generation

Waste stream ID-LL-T004-S3141 was generated in the Material Processing Lab in Building 332 at the Livermore Main Site during plutonium R&D processes.

Generating Process

Description of Waste Generating Process

Building 332, Room 1010 Operations

Review of the Waste Parcel Cards included in the container documentation for each container included in waste stream ID-LL-T004-S3141 indicates that salt waste in each parcel was generated from the processes located in Building 332, Room 1010.

Processes located in Room 1010 include Furnace and Disassembly Boxline, Material Processing Lab, Hydriding and Dehydriding of Plutonium and Plutonium Bearing Substrates, and Laser Welding and Pyrochemical Operations. R&D pyrochemical operations performed in Room 1010 include plutonium refining, oxidation, casting and storage of plutonium, as well as destructive testing of plutonium samples. Plutonium

oxidation consists of heat and pressure cycle calcination. Destructive testing includes drill sampling and compression testing. Plutonium refining consists of pyrochemical processing including hydriding/dehydriding, DOR, MSE, and electrorefining. These pyrochemical processes are used to produce and purify plutonium from impure sources. The basic processes (metal production, metal purification, and residue treatment) involve controlling oxidation and reduction reactions between plutonium and its compounds in molten salts. The Building 332 chemical inventory indicates no hazardous chemicals are used in Room 1010. Descriptions of the processes performed in Room 1010 include:

Furnace and Disassembly Boxline - Operations consist of calcining plutonium to plutonium oxide in an air furnace, compressing samples in a hydraulic press, weapons unit pit bisection, processed plutonium metal product drill sampling, milling, turning, sawing, measurement, and inspection, size reduction of plutonium metal parts for sampling and further processing, and vacuum storage of Special Nuclear Material (SNM).

Material Processing Lab - Operations consist of MSE, DOR/chloride reduction, immobilization of plutonium in glass, destructive testing of plutonium parts with a hydraulic press, plutonium melting and sampling, vacuum casting, vacuum storage of SNM, electrorefining, electrowinning, pressure cycle calcination, drill sampling, salt cleanup/passivation, pressure cycle calcination, vacuum sampling, part declassification, residue cleanup, neutron measurements and storage associated with weapons unit pit bisection, calibration and operation of the atmosphere monitoring station, and manipulation of SNM.

Hydriding and Dehydriding of Plutonium and Plutonium Bearing Substrates – Operations consist of the nondestructive recovery of plutonium from various substrates using hydrogen, forming plutonium hydride. The plutonium hydride is calcined to the oxide when hydriding was completed (dehydriding).

Laser Welding and Pyrochemical Operations - Operations consist of cutting and laser welding storage cans for nuclear materials, MSE, salt cleanup/passivation, DOR/chloride reduction, electrorefining, electrowinning, drill sampling, calcinations, and vacuum sampling.

Waste stream ID-LL-T004-S3141 consists of waste salt cakes/blocks composed of calcium chloride, calcium fluoride, or potassium chloride produced from MSE, DOR/chloride reduction, and salt cleanup/passivation generated in Building 332, Room 1010 in the Material Processing Lab and in Pyrochemical Operations. The salts contain entrained calcium, zinc and magnesium metals, and oxides. Any excess visible metal that appears with the salt was removed prior to packaging. Parcels of salts are included with other debris waste (waste stream ID-LL-M001-S5400); however, waste stream ID-LL-T004-S3141 consists of drums identified as containing only salt waste and materials associated with packaging the salt waste.

RCRA Determinations - Hazardous Waste Determinations

Historical Waste Management

The subject waste has historically been managed in accordance with the generator site requirements and in compliance with the requirements of the California Health and Safety Code as non-hazardous waste while stored at LLNL and when shipped to the INL. Based on historical waste management practices and a review of the AK for this waste stream, no hazardous waste numbers were assigned while the waste was generated and stored at LLNL or when it was shipped to the INL. However, solids sampling of Lot 1 of this waste stream indicates the UCL_{90} for the mean concentration of pyridine is above the PRQL. Therefore, the waste stream will be managed as hazardous waste at the INL and for shipment to the WIPP and EPA hazardous waste number F005 has been assigned.

Table 1 identifies the RCRA toxicity characteristic (TC) and listed chemicals in waste stream ID-LL-T004-S3141.

Table 1 – TC and Listed Constituents in Waste Stream ID-LL-T004-S3141

Chemical	CAS Number	EPA Hazardous Waste Number (HWN)
Pyridine	110-86-1	F005

Ignitability, Corrosivity, Reactivity

Waste generated in this waste stream does not qualify for any of the exclusions outlined in 40 CFR 260 or 261. Real Time Radiography (RTR) is used to verify that the waste stream is not a liquid waste and does not contain explosives, non-radioactive pyrophoric materials, compressed gases or reactive waste. Therefore, this waste stream does not exhibit the characteristic for ignitability (D001), corrosivity (D002), or reactivity (D003).

Ignitability

This waste does not exhibit the characteristic of ignitability as defined in 40 CFR 261.21. The waste is not a liquid, an ignitable compressed gas, or an oxidizer, and is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change.

The addition of liquids, compressed gases, and pyrophoric materials to containers was prohibited by LLNL procedure (References C026, P009, P010, P013, P021, P067, and P068). In addition, these materials were not identified on the Waste Parcel Cards which were reviewed (References U002 and U009). Visible metals (e.g., calcium, zinc and magnesium metals, and oxides) were removed from the salt prior to packaging and, therefore, only residual amounts of metals contaminate the waste (Reference P010). Pyrophoric metals were used in the waste generating building, but were not identified in

the generating process (References P007, P031, U002, and U005). In addition, because waste was packaged in air atmosphere gloveboxes, any reaction of pyrophoric metals would have occurred before the waste was bagged out (References C005, C015, C026, C030, C037, C038, C042, C071, C072, C087, C089, P013, P067, and P068). Oxidizers (e.g., nitrates, perchlorates, chromic acid) were used in the waste generating building, but were not identified in the generating process (References P007, P031, U002, and U005). Several acids were used in the waste generating building but were not identified in the waste generating process (References C021, C027, C045, C071, P002, P007, P031, and U005). Chemicals and contaminated wipes were kept to a minimum in all gloveboxes. Wipes were dried before removal from the glovebox and disposed in separate drums as debris waste (ID-LL-M001-S5400) (References C017, C041, C045, C055, C068, C070, P005, and P044). Numerous products containing ignitable constituents were used in the waste generating building but were not identified in the waste generating process. In addition, liquids were solidified prior to disposal and the solidified waste was placed in separate drums with debris waste and/or solidified liquids and sludges waste (References C015, C020, P002, P034, P035, and U004).

To ensure the waste does not exhibit the characteristic of ignitability, liquid in excess of TSDF-WAC limits will be removed or immobilized, and compressed gases (e.g., aerosol cans) will be removed or vented prior to WIPP disposal. Therefore, this waste does not exhibit the characteristic of ignitability (D001) (References C005, C015, C026, C030, C037, C038, C042, C071, C072, C087, C089, P013, P067, and P068).

Corrosivity

The waste does not exhibit the characteristic of corrosivity as defined in 40 CFR 261.22.

The addition of liquids to containers was prohibited by LLNL procedure (References C026, P009, P010, P013, P021, P067, and P068). In addition, these materials were not identified on the Waste Parcel Cards reviewed (References U002 and U009). Acids and bases were used in the waste generating building, but were not identified in the generating process. In addition, these materials were neutralized and liquids were solidified before disposal in debris waste (ID-LL-M001-S5400) and/or solidified liquids and sludges waste (ID-LL-W019-S3900) (References P004, P017, P034, P035, U005, U006, and U018). Acid-contaminated wipes were sprinkled with a base for neutralization and disposed in debris waste (ID-LL-M001-S5400) (References C029 and C045).

To ensure the waste does not exhibit the characteristic of corrosivity, liquid in excess of TSDF-WAC limits will be removed or immobilized prior to WIPP disposal. Therefore, this waste does not exhibit the characteristic of corrosivity (D002) (References C005, C015, C026, C030, C037, C038, C042, C071, C072, C087, C089, P013, P067, and P068).

Reactivity

This waste stream 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. 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 cyanides or sulfides and is not capable of detonation or explosive reaction

Any excess visible metals that appeared in the salt were removed prior to packaging (Reference P010). Other reactive metals were used in the generating building, but were not identified in the generating process. These reactive metals were calcined or solidified before being discarded in the debris waste (ID-LL-M001-S5400) (References C005, C024, C030, C037, C038, C042, C071, C072, C087, C089, C090, and P067). Cyanide compounds were not used in the waste generating building. Sulfide compounds were used in the waste generating building but not in the waste generating process (References C030, C060, and C091). The addition of explosives and other reactive materials to containers was prohibited by procedure (References P009, P010, P013, P021, P067, and P068). In addition, these materials were not identified on the Waste Parcel Cards reviewed (References U002 and U009). Liquids were solidified prior to disposal as either debris waste (ID-LL-M001-S5400) or solidified sludges and liquids waste (ID-LL-W019-S3900) (References C015, C020, P002, P034, P035, and U004). Waste with incompatible chemical properties that could react with each other (e.g., oxidizers and organic solvents), were not combined (References P014, P023, P034, P036, P039, P044, P052, and P054).

To ensure the waste does not exhibit the characteristic of reactivity, liquid in excess of TSDF-WAC limits will be removed or immobilized, and compressed gases (e.g., aerosol cans) will be removed or vented prior to WIPP disposal. Therefore, this waste stream does not exhibit the characteristics of reactivity (D003) (References C005, C015, C026, C030, C037, C038, C042, C071, C072, C087, C089, P013, P067, and P068).

Toxicity Characteristic

This waste stream does not exhibit the characteristic of toxicity per 40 CFR 261.24.

Since the more specific F-listed EPA HWN has been assigned for pyridine, the corresponding toxicity characteristic EPA HWN D038 is not applied (Reference D023).

Listed Waste

F-Listed Waste

Waste stream ID-LL-T004-S3141 was mixed with or derived from F-listed hazardous wastes from non-specific sources as listed in 40 CFR 261.31. F003 and F005 listed solvents were used in Building 332 but were not used in the generating process for

waste stream ID-LL-T004-S3141; however, solids sampling data from Lot 1 of this waste stream indicates that the UCL_{90} for the mean concentration of butanol and pyridine is above the PRQL for each (References D022 and D023).

No F001-listed solvents were identified in the AK records; therefore, EPA HWN F001 is not assigned to this waste stream.

An F003 constituent, butanol, was used in Building 332, but not in the waste generating process. Butanol is a constituent in DAG 154, a solid film lubricant used as an equipment lubricant in Building 332, Room 1313 (analytical x-ray facility and differential scanning calorimeter facility) and Room 1322 (metallographic sample and recovery and the metallography laboratory) (References P034, U005, and U007). However, the containers in this waste stream do not contain waste from these rooms or the areas where these processes were performed. This solvent is listed solely as ignitable in the liquid form. The waste stream does not exhibit the characteristic of ignitability because it is not liquid; therefore, F003 is not assigned (Reference D022).

An F005 constituent, pyridine, was listed in a 1968 chemical inventory for Building 332 (Reference C136). The drums in this waste stream contain pyrochemical salts and are not from areas in the building where processes using this type of solvent (e.g., laboratory operations, metallurgical operations, solvent extractions) were performed (Reference U005). Although a specific use for pyridine has not been determined as it relates to the salt, the debris waste stream (ID-LL-M001-S5400) from Building 332 was assigned F005 for several solvents including pyridine. Therefore, for consistency with the Building 332 debris waste stream, EPA hazardous waste number F005 will also be applied to waste stream ID-LL-T004-S3141 (References D022 and D023).

The following F-listed constituent contaminates the waste and is applied:

(F005)
Pyridine

U, K, and P-Listed Chemicals

Waste stream ID-LL-T004-S3141 was not mixed with a discarded commercial chemical product, an off-specification commercial chemical product, or a container residue or spill residue thereof (40 CFR 261.33).

Beryllium and beryllium compounds do not contaminate this waste steam. Beryllium metal was used in Building 332, but not in the waste generating process (References C033, C067, C071, C072, C110, U002, and U005). Based on the AK documentation reviewed, the form of beryllium used does not meet the definition of commercial chemical product beryllium powder (40 CFR 261.33). Therefore, the waste stream does not meet the definition of P015 waste (References C110, U002, and U005)

The review of the AK source documentation did not identify the disposal of unused hydrofluoric acid (U134) or disposal of materials contaminated with spills of this acid; therefore, the EPA HWN U134 is not assigned to waste stream ID-LL-T004-S3141 (References C036, C038, U002, U003, U005, U007, and U011).

Waste stream ID-LL-T004-S3141 does not include any of the manufacturing process wastes from the specific industries or sources listed in 40 CFR 261.32.

Waste stream ID-LL-T004-S3141 is not assigned any U-, K-, or P-Listed EPA HWNs.

Solids Sampling/Analysis Information

Solids sampling and analysis was completed on five randomly selected containers in Lot 1 of this waste stream.

Solids sampling of Lot 1 of this waste stream indicates the UCL_{90} for the mean concentration of butanol and pyridine is above the PRQL. Waste stream ID-LL-T004-S3141 was originally managed as non-hazardous; an AK re-evaluation was performed as required, and EPA hazardous waste number F005 was assigned to this waste stream.

One TIC, (bis(2-ethylhexyl) phthalate), was observed in 40% of the containers in this lot. This constituent is a plasticizer used in the manufacture of plastics, including plastic bags, which are a constituent of this waste stream. Therefore, waste stream ID-LL-T004-S3141 is not assigned EPA hazardous waste number U028.

The specifics of this information are included in the attached Characterization Information Summary report.

Other Waste Streams Generated From the Same Buildings and Processes

Heterogeneous debris waste stream ID-LL-M001-S5400 is a similar waste stream to ID-LL-T004-S3141 in that, if containers of waste stream ID-LL-T004-S3141 are found to be greater than 50 percent debris during RTR, the containers are moved from this waste stream to waste stream ID-LL-M001-S5400. Both waste streams are assigned the EPA hazardous waste number F005 for pyridine.

Waste stream ID-LL-M001-S5400 was generated in Buildings 151, 235, 251, 332, 419, and 695; waste stream ID-LL-T004-S3141 was generated solely in Building 332 and specifically in Room 1010. Debris waste generated in Room 1010 was packaged as waste stream ID-LL-M001-S5400. Salt waste may be packaged in containers of ID-LL-M001-S5400 waste; however, the only debris material packaged in containers of ID-LL-T004-S3141 waste was material associated with packaging the salt waste.

Conclusion

The EPA hazardous waste number that applies to this waste stream is F005 for pyridine.

Polychlorinated Biphenyls (PCBs)

No sources of PCBs have been identified in this waste stream. PCB waste not authorized under an EPA PCB waste disposal authorization is not in this TRU waste stream.

Prohibited Items

The absence of prohibited items is determined and documented through acceptable knowledge and characterization activities. Radiography was performed on each container to verify the absence of prohibited items. The following items have been determined as not present in the waste:

- Liquid waste
- Non-radioactive pyrophoric materials
- Hazardous waste not occurring as co-contaminants with TRU mixed wastes (non-mixed hazardous waste)
- Waste incompatible with backfill, seal and panel closure materials, container and packaging materials, or other wastes
- Explosives or compressed gases
- Waste with PCBs not authorized under an EPA PCB waste disposal authorization
- Waste exhibiting the characteristics of ignitability, corrosivity, or reactivity
- Waste that has ever been managed as high-level waste and waste from tanks specified in Table C-8 of the WIPP HWFP, unless specifically approved through a Class 3 permit modification

Each container of waste is certified and shipped only after RTR either:

- Did not identify any prohibited items in the waste container, or
- All prohibited items found in a waste container by radiography were identified and corrected (i.e., eliminated or removed) through the site non-conformance reporting system.

Justification for the Selection of RTR

RTR was selected as the characterization method for this lot because the waste containers were previously packaged and RTR is an acceptable characterization method to meet all the Data Quality Objectives for NDE of waste stream ID-LL-T004-S3141.

Method for Determining Waste Material Parameters Weights Per Unit of Waste

Since none of the containers in waste stream ID-LL-T004-S3141 have waste material parameter (WMP) information on the parcel cards, estimates had to be made based on other container paperwork such as historical RTR results (References C103, C113, U002, and U003). If WMP estimates were not documented in the container records, estimates were made based on the waste description in the inventory lists provided by LLNL (Reference U033). A statistical analysis of the data was performed to estimate the waste material parameters. The WMP weight percentage estimates are documented in a memorandum (as required by CCP-TP-005, Acceptable Knowledge Documentation).

The WMPs, average weight percent and weight percent range are presented in Table 2.

Table 2. Waste Stream ID-LL-T004-S3141 Waste Material Parameters

Waste Material Parameter	Weight Percent	Weight Percent Range		
Iron-based Metals/Alloys	5.0%	0.0%	-	14.0%
Aluminum-based Metals/Alloys	1.0%	0.0%	-	5.0%
Other Metals	1.0%	0.0%	-	5.0%
Other Inorganic Materials	81.0%	50.0%	-	100.0%
Cellulosics	2.0%	0.0%	-	10.0%
Rubber	2.0%	0.0%	-	10.0%
Plastics (waste materials)	8.0%	0.0%	-	33.0%
Organic Matrix	0.0%	0.0%	-	0.0%
Inorganic Matrix	0.0%	0.0%	-	0.0%
Soils/Gravel	0.0%	0.0%	-	0.0%

List of AK Sufficiency Determinations

No AK Sufficiency Determinations were requested for this waste stream.

Transportation

This waste stream and its chemical constituents have been reviewed for consistency with the 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 container.

Radionuclide Information

The two most prevalent radionuclides in this waste stream, by weight, based on the un-decayed data reported in AK are Pu-239 and Pu-240. The isotopes expected to be present in this waste stream are listed in Table 3.

The 10 WIPP tracked radionuclides are present in Table 3 in addition to other radionuclides that are expected to be present in the waste stream.

Table 3 – Radionuclides in Waste Stream ID-LL-T004-S3141

WIPP Tracked Radionuclides	Other Radionuclides
Am-241	Cm-244
Pu-238	Np-237
Pu-239	Pu-241
Pu-240	
Pu-242	
U-233	
U-234	
U-238	
Cs-137	
Sr-90	

Payload management will not be applied to this waste stream.

Attachment 1, AK Source Documents – Supplemental Documentation

Source Document Number	AK #	Title	Document Number	Rev.	Date
C002	S7	TRU Waste Generator Interview Sheet No. 91-4-8-1. Interview of Sharon Schumacher and Dave Parks conducted by Kem Hainebach, Dan Hoyt, and Bob Fischer.	NA	NA	4/8/1991
C003	S7	TRU Waste Generator Interview Sheet No. 91-3-29-1. Interview of Kenton Moody conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	3/29/1991
C004	S7	Telecon between Jeff Harrison and Bob Fischer, LLNL. Three Drums of TRU Sealed Sources from Building 331.	NA	NA	9/29/2000
C005	S7	Acceptable Knowledge Interview Notes of Terry Ludlow, LLNL, by Jeff Harrison.	NA	NA	2/26/1998
C006	S7	Telecon between Jeff Harrison and Doug McAvoy, LLNL. Building 332 Materials Process Lab (MPL) Operations.	NA	NA	2/27/1998
C007	S7	Acceptable Knowledge Interview Notes of Frank Beckett and Dick Dickinson, LLNL, by Jeff Harrison.	NA	NA	2/25/1998
C008	S7	Electronic mail from Tim Andrews, Deputy Facilities Manager, Building 331, to Tom Coburn, LLNL. B331 AK Input.	NA	NA	9/1/2000
C010	S7	Miscellaneous Correspondence prepared by Jeff Harrison, WASTREN, Inc.; Scott Smith, WASTREN, Inc.; Mike Griffin, Bechtel Nevada; Bruce Foster, Bechtel Nevada; Marlin Horsman, Consultant; Richard Blauvelt, Carlsbad; Al Celoni, LLNL.	NA	NA	11/19/1999
C011	S7	Miscellaneous Correspondence regarding remedial actions at LLNL following Shipment of Mixed Waste to NTS in 1990	NA	NA	6/28/2000
C012	S7	Telecon between Jeff Harrison and Ted Midtaune, LLNL. Radioactive Sources.	NA	NA	10/12/1998
C013	S7	Telecon between Jeff Harrison and Doug McAvoy, LLNL. Hydriding/Dehydriding Operations.	NA	NA	4/15/1998
C014	S7	Telephone Interview between Jeff Harrison and Kem Hainebach, LLNL. General Discussion of TRU Wastes Generated at LLNL and Stored at NTS.	NA	NA	11/19/1997
C015	S7	Acceptable Knowledge Interview Notes of Jerry Landrum, LLNL, by Jeff Harrison.	NA	NA	2/26/1998
C017	S7	Telecon between Jeff Harrison and Jerry Landrum, LLNL. Chemical Usage in Building 251.	NA	NA	3/26/1998
C018	S7	Telecon between Jeff Harrison and Wes Hayes, LLNL. General Discussion of Operations in Building 251 at LLNL.	NA	NA	11/23/1997
C019	S7	Telecon between Jeff Harrison and Jerry Landrum, LLNL. Building 251 Process Information.	NA	NA	10/13/1998
C020	S7	TRU Waste Generator Interview Sheet No. 91-3-14-1. Interview of Robert Wikkerink and Jerry Landrum conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	5/14/1991

Source Document Number	AK #	Title	Document Number	Rev.	Date
C021	S7	TRU Waste Generator Interview Sheet No. 91-3-29-3. Interview of Austin Prindle conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	3/29/1991
C022	NA	TRU Waste Generator Interview Sheet No. 91-4-5-4. Interview of Jerry Landrum conducted by Kem Hainebach, LLNL	NA	NA	04/05/1991
C024	S7	Telecon between Jeff Harrison and Jerry Landrum, LLNL. Follow-up to March 26, 1998 Conversation with Mr. Landrum (see C017).	NA	NA	4/3/1998
C025	S7	Internal correspondence from D. L. Kidd to A. A. Church. Status of TCLP Analysis on Leaded Gloves and Leaded Glovebox Windows.	NA	NA	3/13/1991
C026	NA	Letter from Kem Hainebach, LLNL to Bruce Foster, NTS. Pyrophoric materials shipped to NTS by LLNL 1974-1990.	NA	NA	05/23/1997
C027	S7	Internal correspondence from Kem Hainebach to Susi Jackson. Confirmation of TRU Waste Characterization.	NA	NA	7/17/1996
C028	S7	Memorandum from James T. Davis, DOE Oakland Operations Office, to Jill E. Lytle, DOE Headquarters. Designation of Ann Arbor ICF Facility Waste as Defense Waste for Disposal at the Nevada Test Site."	94-W 052/5482.a.3	NA	3/29/1994
C029	S7	Interview between Jeff Harrison and Joe Schmitz, Dan Hanson, Jim Harter, and Joseph Magana, LLNL. Discussion of TRU Operations and Waste Generated in Building 332.	NA	NA	11/20/1997
C030	S7	Acceptable Knowledge Interview Notes of Joe Magana, LLNL, by Jeff Harrison.	NA	NA	2/27/1998
C031	S7	Memorandum from Joseph Magana to Gary Tompkins, LLNL. "Preparation of Pu-239 Chloride and Nitrate Stock Solutions for Soil/Plant Uptake Studies."	NA	NA	11/7/1974
C032	S9	Memorandum from Jeff Harrison to CCP Central Records. Evaluation of Headspace Gas Supplemental Acceptable Knowledge for Post-October 1993 Generated TRU Waste	JLH-002-2003	NA	10/28/2003
C033	NA	TRU Waste Generator Interview Sheet No. 91-4-3-5. Interview of Willis Haugen conducted by Kem Hainebach and Dan Hoyt, LLNL	NA	NA	04/03/1991
C034	S7	Electronic mail from Doug McAvoy, Building 332, to Tom Coburn, LLNL. MPL Workstations.	NA	NA	8/7/2000
C036	S7	TRU Waste Generator Interview Sheet No. 91-3-28-2. Interview of Tom Crawford conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	3/28/1991
C037	S7	TRU Waste Generator Interview Sheet No. 91-3-29-4. Interview of Terry Ludlow conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	9/29/1991
C038	S7	TRU Waste Generator Interview Sheet No. 91-4-5-3. Interview of Doug McAvoy conducted by Kem Hainebach, LLNL.	NA	NA	4/5/1991
C039	S7,	TRU Waste Generator Interview Sheet No. 91-3-27-1. Interview of Dennis Barrett conducted by Kem	NA	NA	3/27/1991

Source Document Number	AK #	Title	Document Number	Rev.	Date
	S8	Hainebach and Dan Hoyt, LLNL.			
C040	S7	TRU Waste Generator Interview Sheet No. 91-4-3-2. Interview of Susan Lombard conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	4/3/1991
C041	S7	TRU Waste Generator Interview Sheet No. 91-4-3-6. Interview of Bill Morris conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	4/3/1991
C042	S7	TRU Waste Generator Interview Sheet No. 91-4-4-6. Interview of Gerald Roberts conducted by Kem Hainebach, LLNL.	NA	NA	4/4/1991
C043	S7	TRU Waste Generator Interview Sheet of 91-4-3-3. Interview of Mark Thoet conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	4/3/1991
C044	S7	TRU Waste Generator Interview Sheet No. 91-4-4-3. Interview of Bobby Vallier conducted by Kem Hainebach, LLNL.	NA	NA	4/4/1991
C045	S7	TRU Waste Generator Interview Sheet No. 91-3-22-1. Interview of Joe Magana conducted by Kem Hainebach, LLNL.	NA	NA	3/22/1991
C046	S7	TRU Waste Generator Interview Sheet No. 91-4-3-1. Interview of Joe Magana conducted by Kem Hainebach, LLNL.	NA	NA	4/3/1991
C048	S7	TRU Waste Generator Interview Sheet No. 91-3-18-3. Interview of Charles M. Peters conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	3/18/1991
C050	S7	TRU Waste Generator Interview Sheet No. 91-4-4-4. Interview of Jim Harter conducted by Kem Hainebach, LLNL.	NA	NA	4/4/1991
C051	S7	TRU Waste Generator Interview Sheet No. 91-4-2-5. Interview of Ted Midtaune conducted by Kem Hainebach, LLNL.	NA	NA	4/2/1991
C052	S7	TRU Waste Generator Interview Sheet No. 91-3-28-1. Interview of Guy Armantrout conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	3/28/1991
C053	S7, S8	TRU Waste Generator Interview Sheet No. 91-3-20-1. Interview of Walter Wien conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	3/20/1991
C054	S7	TRU Waste Generator Interview Sheet No. 91-3-28-3. Interview of Dave Fix conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	3/28/1991
C055	S7	TRU Waste Generator Interview Sheet No. 91-4-2-2. Interview of Jim Furr conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	4/2/1991
C056	S7	TRU Waste Generator Interview Sheet No. 91-4-16-2. Interview of Ted Midtaune conducted by Kem Hainebach, LLNL.	NA	NA	4/16/1991
C057	S7	Acceptable Knowledge Interview Notes of Rich Burns, LLNL, by Jeff Harrison.	NA	NA	2/24/1998
C058	S7	Acceptable Knowledge Interview Notes of Ted Midtaune, LLNL, by Jeff Harrison.	NA	NA	2/25/1998
C059	S7	Acceptable Knowledge Interview Notes of Charles M. (Skip) Peters, LLNL, by Jeff Harrison.	NA	NA	2/25/1998

Source Document Number	AK #	Title	Document Number	Rev.	Date
C060	S7	Acceptable Knowledge Interview Notes of Jim Harter and Bob Gomez, LLNL, by Jeff Harrison.	NA	NA	2/26/1998
C062	S7	TRU Waste Generator Interview Sheet No. 91-4-1-5. Interview of W. E. Dickinson conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	4/1/1991
C063	S7	TRU Waste Generator Interview Sheet No. 91-4-2-4. Interview of Trung Le conducted Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	4/2/1991
C064	S7	TRU Waste Generator Interview Sheet No. 91-4-2-1. Interview of Jon Cunningham conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	4/2/1991
C065	S7	TRU Waste Generator Interview Sheet No. 91-4-1-2. Interview of Tony Echeverria conducted by Kem Hainebach, LLNL.	NA	NA	4/1/1991
C066	S7	TRU Waste Generator Interview Sheet No. 91-4-2-3. Interview of Walter Wien conducted by Kem Hainebach, LLNL.	NA	NA	4/2/1991
C067	S7	TRU Waste Generator Interview Sheet No. 91-3-26-1. Interview of Domenico Del Giudice conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	3/26/1991
C068	S7	TRU Waste Generator Interview Sheet No. 91-3-22-2. Interview of Alice Conover conducted by Kem Hainebach, LLNL.	NA	NA	3/22/1991
C069	S7	TRU Waste Generator Interview Sheet No. 91-3-15-1. Interview of Jean Lindsey conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	3/15/1991
C070	S7	TRU Waste Generator Interview Sheet No. 91-3-14-2. Interview of Richard Burns conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	3/14/1991
C071	S7	TRU Waste Generator Interview Sheet No. 91-3-15-2. Interview of Harold Clark conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	3/15/1991
C072	S7	TRU Waste Generator Interview Sheet No. 91-3-28-4. Interview of Bobby Vallier conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	3/28/1991
C073	S7	TRU Waste Generator Interview Sheet No. 91-4-1-1. Interview of Tony Echeverria conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	4/1/1991
C074	S7	TRU Waste Generator Interview Sheet 9 No. 1-4-18-1. Interview of Bill Poulos conducted by Kem Hainebach, LLNL.	NA	NA	4/18/1991
C075	S7	TRU Waste Generator Interview Sheet No. 91-3-22-3. Interview of Bill Poulos conducted by Kem Hainebach, LLNL.	NA	NA	3/22/1991
C076	S7	TRU Waste Generator Interview Sheet No. 91-4-1-4. Interview of Sam Torres conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	4/1/1991
C077	S7	TRU Waste Generator Interview Sheet No. 91-4-5-1. Interview of W. D. Barrowman conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	4/5/1991
C078	S7	TRU Waste Generator Interview Sheet No. 91-3-29-	NA	NA	3/29/1991

Source Document Number	AK #	Title	Document Number	Rev.	Date
		2. Interview of R. Gus Grogan conducted by Kem Hainebach, LLNL.			
C079	S7	TRU Waste Generator Interview Sheet No. 91-4-1-3. Interview of Jim Lewis conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	4/1/1991
C080	S7	TRU Waste Generator Interview Sheet No. 91-4-4-1. Interview of Bill Kuhl conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	4/4/1991
C081	S7	TRU Waste Generator Interview Sheet No. 91-3-18-2. Interview of Peter Biltoft conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	3/18/1991
C082	S7	TRU Waste Generator Interview Sheet No. 91-4-1-6. Interview of Bob Gomez conducted by Kem Hainebach, LLNL.	NA	NA	4/1/1991
C083	S7	TRU Waste Generator Interview Sheet No. 91-3-18-1. Interview of Bob Gomez conducted by Kem Hainebach and Bob Fischer, LLNL.	NA	NA	3/18/1991
C084	S7	TRU Waste Generator Interview Sheet No. 91-4-8-4. Interview of Roger Krueger by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	4/8/1991
C085	S7	Internal correspondence to Dennis K. Fisher from Richard C. Ragaini, EPD. TRU Drums.	NA	NA	4/17/1990
C086	S7	Acceptable Knowledge Interview Notes of Bill Poulos, LLNL, by Jeff Harrison.	NA	NA	2/25/1998
C087	S7	TRU Waste Generator Interview Sheet No. 91-4-16-1. Interview of Irene Meisel conducted by Kem Hainebach, LLNL.	NA	NA	4/16/1991
C088	S7, S10	TRU Waste Generator Interview Sheet No. 91-4-16-1. Interview of Irene Meisel conducted by Kem Hainebach, LLNL.	NA	NA	4/16/1991
C089	S7	TRU Waste Generator Interview Sheet No. 91-4-8-5. Interview of Allen Lingenfelter conducted by Kem Hainebach, LLNL.	NA	NA	4/8/1991
C090	S7	TRU Waste Generator Interview Sheet No. 91-4-10-1. Interview of Mel Coops conducted by Kem Hainebach, LLNL.	NA	NA	4/10/1991
C091	S7	Acceptable Knowledge Interview Notes of Jean Lindsey, LLNL, by Jeff Harrison.	NA	NA	2/24/2998
C092	S7	Telecon between Jeff Harrison and Tom Schroeder, LLNL. Building 332 Process Information.	NA	NA	10/13/1998
C093	S7	Acceptable Knowledge Interview Notes. Interview of Joe Magana, LLNL, conducted by Mike Griffin, Bechtel Nevada.	NA	NA	5/26/1999
C094	S7	TRU Waste Generator Interview Sheet No. 91-4-4-2. Interview of Tom Schroeder conducted by Kem Hainebach, LLNL.	NA	NA	4/4/1991
C095	S7	Telecon between Jeff Harrison and Lyle Kerns, LLNL. TRU Operations in Buildings 419 and 612 at LLNL.	NA	NA	12/5/1997
C097	S7	TRU Waste Generator Interview Sheet No. 91-3-20-2. Interview of Vic Elliott conducted by Kem Hainebach and Dan Hoyt, LLNL.	NA	NA	3/20/1991
C098	S7	TRU Waste Generator Interview Sheet No. 91-4-8-3. Interview of Vic Elliot conducted by Kem	NA	NA	4/8/1991

Source Document Number	AK #	Title	Document Number	Rev.	Date
		Hainebach, LLNL.			
C099	S7	TRU Waste Generator Interview Sheet No. 91-4-5-2. Interview of Chris Carlson conducted by Kem Hainebach, LLNL.	NA	NA	4/5/1991
C100	S7	Interview of Howard Hall by Jeff Harrison and Scott Smith, WASTREN, Inc. Overview of Building 151 Mission and Operations Relative to TRU Waste.	NA	NA	10/16/2002
C101	S7	Interview of Kenton Moody by Jeff Harrison and Scott Smith, WASTREN, Inc. Building 151 TRU Waste Generating Operations.	NA	NA	10/16/2002
C102	S7	Interview of Mark Wall by Jeff Harrison and Scott Smith, WASTREN, Inc. Building 235 TRU Waste Generating Operations.	NA	NA	10/17/2003
C103	S9, S10	Memorandum to file from Jeff Harrison. Waste Matrix Code and Waste Material Parameter Determination for Lawrence Livermore National Laboratory Transuranic Waste.	JLH-001-2003	NA	10/27/2003
C105	S7	Acceptable Knowledge Interview Notes of Joe Schmitz, LLNL, by Jeff Harrison.	NA	NA	2/26/2998
C106	S7	TRU Waste Generator Interview Sheet No. 91-4-3-4. Interview of Richard Sands conducted by Kem Hainebach, LLNL.	NA	NA	4/3/1991
C107	S8, S10	Possible Bisonite Paint Constituents	WCP03-144	NA	11/17/2003
C108	S8	Faxback 11220. Correspondence from Matthew A. Straus, Chief Waste Characterization Branch.	9441.1987(09)	NA	2/19/1987
C110	NA	Memorandum from Jeff Harrison to CCP Central Records. Review of Parcel Cards for Beryllium Metal	JLH-004-2003	NA	12/08/2003
C112	NA	Evaluation of Additional Containers for CCP-AK-LLNL-001	JLH-007-2004	NA	05/12/2004
C113	NA	Evaluation of Waste Material Parameter Data and Radioassay Data for Revision 1 to CCP-AK-LLNL-001	JLH-010-2004	NA	05/27/2004
C116	NA	Evaluation of Drums Containing Soldered Electrical Components	JLH-014-2004	NA	07/06/2004
C117	S12	Memorandum form Jeff Harrison to Kirk Kirkes, Evaluation of Drums Containing Friction-Lid Cans with Soldered Seams	JLH--15-2004	NA	7/8/2004
C118	NA	Memorandum from Jeff Harrison to Kirk Kirkes. Evaluation of Additional Containers to CCP-AK-LLNL-001 Revision 1	JLH-016-2004	NA	07/14/2004
C119	S12	Calculation of U-234 Ingrowth in Heat-Grade Plutonium	JLH-017-2004	NA	7/15/2004
C125	S7	Email from Chris Steffani to Jeff Harrison re: Building 231 OSP	NA	NA	07/30/2004
C126	S7	Email from Diane Spencer to Jeff Harrison. Re: Waste with TCE but No Hazardous Waste Codes	NA	NA	04/28/2004
C127	S4, S7	Memo from Jeff Harrison to CCP Records re: Identification of Drums Containing Greater than One Weight Percent Organic Solvents	JLH-019-2004	NA	09/03/2004
C128	S6	Memorandum to Larry Porter re: Final Evaluation of AK Radioassay Data for CCP-AK-LLNL-001, Rev. 2	JLH-022-2004	NA	11/29/2004
C136	NA	Facsimile Transmission to Jeff Harrison, WASTREN, Inc.	NA	NA	03/10/1998
D022	NA	Acceptable Knowledge Source Document Discrepancy Resolution – EPA Hazardous Waste Number F005 Assignment	NA	NA	01/21/2011
D023	NA	Discrepancy Resolution - Building 332 F-Listed	NA	NA	07/21/2002

Source Document Number	AK #	Title	Document Number	Rev.	Date
		Chemicals			
P002	S3	Safety Analysis Report for the Heavy Element Facility (Building 251).	UCRL-AR-113377	NA	9/30/1994
P003	S2, S3	Safety Analysis Report for building 332.	UCRL-51590	NA	6/20/1974
P004	S2	Bldg. 419 TRU Waste Processing.	HWM Procedure 212	NA	12/17/1987
P005	S2	Operational Safety Procedure for Analytical Laboratory Room 1321, 1321A; Workstations #2101, #2105 and #2106.	Operational Safety Procedure 332.39	NA	11/1/1996
P006	S7	Part B Permit Application for Hazardous Waste Treatment and Storage Facilities Livermore Site.	UCAR-10275-96 DR	NA	6/28/1996
P007	S5	Molten Salt Extraction Salt Cleanup.	UCRL-LR-107105	NA	4/1/1991
P008	NA	LLNL Radioactive Waste Management Plan as per DOE Order 5820.2	UCID-20276	NA	12/10/1984
P009	NA	Quality Assurance Manual. LLNL TRU Waste Certification Program: TRU Waste Certification Plan	M-078	Rev. 1	02/01/1987
P010	NA	TRU Waste Program Certification and Quality Assurance Plan	M-078-121	NA	12/01/1991
P011	S2	Central Vault and Material Balance Area Buildings 231, 232 Fenced Compound, 233, and 234.	Operational Safety Procedure 231.1	NA	10/27/1982
P012	S3	Facility Training Program Heavy Element Facility, Building 251. Nuclear Chemistry Division.	M-158.	NA	3/1/1985
P013	NA	Heavy Element Facility (Building 251) Handbook. Nuclear Chemistry Division	M-158	Rev. 1	03/01/1986
P014	S2, S7	Facility Safety Procedure, Plutonium Facility – Building 332.	FSP-332.	Rev. 3	6/1/1989
P015	S2	Plutonium Waste Recovery and Packaging, Room 1378.	Operational Safety Procedure 332.5	NA	12/1/1981
P017	S2	Bldg. 419 TRU Waste Processing Operating Procedure.	HWM Procedure 212	NA	10/14/1986
P021	NA	TRU Waste Data Collection	Procedure 6	Rev. 1	10/08/1991
P022	S2	Process Knowledge Evaluations	WCP-14; DCR 04-006	Rev. 4; Rev. 6	7/17/2001; 06/28/2004
P023	NA	Waste Acceptance Criteria	URCL-MA-115877	NA	03/01/1995
P024	S2	Management of TRU Waste by TRU Waste Generators WCP-20	LLNL-TM-415118; WCP-20	Rev. 2; Rev. 4; Rev. 7	3/8/2002; 06/24/2005; 07/28/2009
P025	S2	Certification of Transuranic Waste Packages, WCP-21	WCP-21; LLNL-TM-415117	Rev. 5; Rev. 6; Rev. 8	12/23/2002; 06/24/2005; 07/28/2009
P026	S2	Procedure for TRU Waste Solidification.	MM-03.	NA	11/2/1986

Source Document Number	AK #	Title	Document Number	Rev.	Date
P027	S2	Procedure for TRU Waste Solidification.	MM-03.	NA	2/19/1987
P028	S6	Hazardous Materials Business Plan for Alameda County.	N/A	NA	2/28/1990
P029	S5	Formation of Pu Amorphous Alloys or Metastable Structures in Pu-Fe, Pu-Ta, and Pu-Si Alloys.	UCRL-92693.	NA	8/20/1985
P030	S5	Loss of Ga in Sputtered Deposits made from a Pu at.% Alloy.	URCL-92692.	NA	11/15/1985
P031	S5	Technology Review Report, Pyrochemical Processing of Plutonium.	UCRL-88116.	NA	9/8/1982
P032	S5	Glovebox Enclosed D. C. Plasma Source for the Determination of Metals in Plutonium.	UCRL-93272.	NA	1/15/1986
P034	S10	Material Safety Data Sheets (MSDSs) and Technical Data.	NA	NA	Various
P035	S2	Heavy Element Facility (Building 251) Handbook Appendix F, Procedure 5.1, Liquid Waste Solidification.	M-158.	Rev. 1	12/9/1986
P036	S2	Facility Safety Procedure, Heavy Element Facility Building 251.	FSP-251.	NA	7/1/1997
P037	S2	Facility for Processing of Hazardous Wastes.	Facility Safety Procedure 612	NA	7/18/1983
P038	S2	Heavy Element Facility (Building 251) Handbook Appendix F, Procedures 1.0 and 1.1, Air Transfers of Radioactive Materials.	M-158.	Rev. 1.1	6/5/1987
P039	S2	Operational Safety Procedures. Plutonium Metallurgy and Engineering Facility, Building 332.	Operational Safety Procedure 332	NA	6/30/1980
P040	S3	Final Safety Analysis Report (FSAR) for Building 332, Increment III.	UCID-17565	NA	8/31/1977
P042	S7	Uptake of Plutonium and Americium by Barley from Two Contaminated Nevada Test Site Soils.	UCB-34P211-2	NA	6/16/1975
P043	S2	Metallography Laboratory, Rooms 1322, 1322A & 1322B; Workstations #2201 and #2202.	Operational Safety Procedure 332.17	NA	6/1/1993
P044	S2	Analytical Chemistry Operations, Room 1329.	Operational Safety Procedure 332.11	NA	10/1/1981
P045	S9	TRU Waste from the Superblock.	UCRL-ID-127458	NA	5/27/1997
P046	S5	Tensile Testing at High Temperatures in a Glovebox.	UCRL-ID-104929	NA	10/1/1990
P047	S2	Bldg. 419 TRU Waste Verification Operating Procedure.	HWM Procedure 216	NA	12/10/1986
P048	S2	TRU Container Procurement Operating Procedure.	HWM Procedure 201	NA	6/25/1986
P051	S3	Hazards Analysis Report (HAR) B151 Complex Chemistry and Materials Science (CMS).	UCRL-AR-140406	Rev. 0	9/8/2000
P052	S3	Facility 151 Complex Facility Safety Plan.	CMS Doc. No. B4151	Rev. 1	9/1/2003
P053	S3	Hazards Analysis Report for Building 235	UCRL-AR-	NA	4/1/2001

Source Document Number	AK #	Title	Document Number	Rev.	Date
		Laboratories, Offices, and Yard Chemistry and Materials Science (CMS) Directorate.	143858		
P054	S3	Facility Safety Plan 235/241 Complex.	CMS Doc. No. B4235.	Rev. 1	9/1/2003
P055	S3	Facility Safey Plan Building 231 Vault General Operations.	FSP-231V.	NA	5/1/2000
P056	S3	Defense and Nuclear Technologies Directorate Plutonium Facility - Building 332 Facility Safety Plan.	FSP-332-00.	Rev. 1a	3/1/2002
P057	S2	Laser Spectroscopy.	Operational Safety Procedure 151.35	NA	1/1/1998
P058	S2	Forensic Radiochemistry of Plutonium.	Operational Safety Procedure 151.39	NA	4/1/2000
P059	S2	Transmission Electron Microscopy (TEM) and Sample Preparation for Irradiation Studies of Plutonium and Plutonium Alloys.	Operational Safety Procedure 235.29	NA	4/1/1999
P060	S2	Pu and Pu Alloy Proton and Alpha Particle Irradiation at Liquid Helium Temperature Followed by Iso-Chronal Annealing and Related Experiments.	Operational Safety Procedure 235.30	NA	7/2/2003
P061	S2	X-Ray Diffraction Characterization of Materials.	Operational Safety Procedure 235.31	NA	9/2/2003
P062	S2	Differential Scanning Calorimetry Experiments with Pu and Pu Alloys.	Operational Safety Procedure 235.37	NA	3/2/2002
P063	S2	Pu Spectroscopy at the Advanced Light Source.	Operational Safety Procedure O-237	NA	1/2/2003
P064	S2	Operations Using Actinides at Stanford Synchrotron Radiation Laboratory (SSRL), at the Advanced Proton Source (APS), Argonne and at the European Synchrotron Radiation Facility (ESRF), Grenoble, France for X-ray Diffraction, Thermal Diffuse Scattering and	Operational Safety Procedure O-267	NA	6/2/2003
P065	S2	TRU Waste Inventory Assessment.	FWC-016.	NA	2/28/1991
P066	NA	Central Characterization Project Acceptable Knowledge Summary Report for Nevada Test Site Lawrence Livermore Laboratory Waste	CCP-AK-NTS-001	NA	01/06/2003
P067	S2	Waste Acceptance Criteria (WAC) Procedures. Technical Implementing Procedure.	TIP-HEF-008.	NA	7/28/1993
P068	S2	Transuranic Waste Handling and Packaging Procedures	TRU-99-01	NA	Undated
P069	S2	Gamma Ray Spectrometry of Waste Parcels Procedure. Technical Implementing Procedure.	TIP-HEF-010.	NA	6/8/1993
P070	S2	Gamma Ray Spectrometry of Waste Parcels Procedure. Technical Implementing Procedure.	TIP-HEF-024.	NA	6/5/1995
P073	S2	Expert Review of SGS Data WIC 132, Rev. 3	WCP-41; WIC-132; LLNL-TM-	Rev. 1; Rev. 3	3/13/2001; 07/28/2009

Source Document Number	AK #	Title	Document Number	Rev.	Date
			415120		
P074	S2	Processing IGSs for Waste with a Radioactive Component WIC 142	LLNL-TM-415122; WIC-142	Rev. 2; Rev. 4	06/28/2005; 07/28/2009
P075	S2	Waste Disposal Requisition Comlpletion; WIC 116	WIC 116	Rev. 6	06/28/2005
P076	S3	Documented Safety Analysis for the B695 Segment	LLNL-TR-407067	NA	09/17/2008
P107	S1	LLNL Training Video DVD and LLNL RTR Data Sheets	NA	NA	9/22/2009 - 10/30/2009
P108	S2	NDA Procedures: Review, Validation & Reporting Gamma Spectrometry Data and Results); Operating the Canberra Gamma Assay System Using NDA 2000; Segmented Gamma Scanner (SGS) Operation; Calibrating the Canberra Q2 Gamma System Using NDA 2000	NDA-023; NDA-021; LLNL-TM-421045; NDA-022	Revs. C, D, C	9/22/09; 12/14/09; NA
U001	S5, S6	Total Waste Management System (TWMS) Database Information. TRU Container Inventory Query in Excel Spreadsheets.	NA	NA	8/1999 and 6/2003
U002	S4	LLNL TRU Container Data Packages	NA	NA	8/19/1986 - 4/21/2009
U003	NA	Real-Time Radiography	NA	NA	Various
U004	S3	Safety Analysis Report for The Heavy Element Facility (Building 251), Lawrence Livermore National Laboratory.	UCID-19579.	NA	10/11/1982
U005	NA	Process Knowledge Evaluation	NA	NA	Various
U006	S2	Bldg. 332 TRU Waste Solidification Procedure.	MM-03.	NA	4/8/1992
U007	S6	ChemTrac Database. Building 251, 332, 419 Chemical Inventory Queries Output to Excel Spreadsheets.	NA	NA	8/31/1999
U008	S2	Building 251 Documentation Notes.	UCRL-MI-138020.	NA	6/1/1980
U009	S4	LLW-TRU Waste Disposal Requisitions.	NA	NA	7/19/1985
U010	S5	Waste Characterization Summaries of Heavy Element Facility Experiment Request Forms, 1974-1990.	UCRL-MI-136581	NA	12/27/1999
U011	NA	Room Logbook Spreadsheets	NA	NA	07/29/1981
U016	S7	Draft KMS Fusion Energy Project.	NA	NA	Undated
U018	S2	Instructions for Solidification of Hydrocarbons, Oil and Plutonium Mixed, and Solidification of Acid.	NA	NA	Undated
U019	S2	Building 419 and 612 Documentation Notes.	UCRL-MI-138022.	NA	9/1/1979 - 3/25/1997
U020	S2	Bldg. 419 TRU Waste Packaging Procedure.	HWM Procedure 213	NA	10/20/1986
U021	S4	Room Logbooks.	NA	NA	7/29/1981 - 10/24/1993
U022	S5	TRU Waste Generation, B151 Radioanalytical Assay Process, Room 1034B	NA	NA	12/27/1999
U023	S6	NTS Inventory Assessment Database/Spreadsheets and Supporting Documentation.	NA	NA	4/17/1991
U024	S6	TRU90 Spreadsheet and Supporting Documentation.	NA	NA	4/19/1991
U025	S6	Databases used for the Inventory Assessments of the TRU Drums Stored at DOE's Nevada Test Site (1974 - 1990).	NA	NA	3/13/1991
U026	S2	Building 332 Documentation Notes.	UCRL-MI-138566.	NA	1/25/2000

Source Document Number	AK #	Title	Document Number	Rev.	Date
U027	S6	HazTrack Database Query transmitted by email from Diane Spencer	NA	NA	02/20/2004
U029	NA	Information Gathering Document	NA	NA	Various
U030	S6	HazTrack Database Query	NA	NA	09/06/2005
U033	S6	Collection of Database Queries Provided by LLNL	NA	NA	2009
U035	S9	Corrections made to LLNL NDA Data and NDA Batches	NA	NA	2004-2010

Alphanumeric Designations

C Correspondence
P Published Documents
U Unpublished Documents

AK Numbers

S1 Process Design Documents
S2 Standard Operating Procedures
S3 Safety Analysis Reports
S4 Waste Packaging Records
S5 Test plans/research project reports
S6 Site databases
S7 Information from site personnel
S8 Standard industry documents
S9 Previous analytical data
S10 Material safety data sheets
S11 Laboratory Notebooks
S12 Comparable or surrogate sampling and analysis data