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

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NMED Hazardous Waste Bureau

SEP 19 2012

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

Subject: Review of Los Alamos National Laboratory - Central Characterization Project Waste Stream Profile Form Number LA-MHD10.001

Dear Mr. Kieling:

The Department of Energy, Carlsbad Field Office has approved the Waste Stream Profile Form (WSPF) Number LA-MHD10.001, *TA-39 Two-Stage Gas Gun Facility*, for the Central Characterization Project at the Los Alamos National Laboratory.

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

S. Holmes, NMED	* ED
T. Kliphuis, NMED	ED
RCRA Chronology Record	ED
WIPP Operating Record	ED
CBFO M&RC	

*ED denotes electronic distribution

120944

CBFO:NTP:NC:GL:12-0622:UFC 5900.00

Attachment 2 – CCP Waste Stream Profile Form

(1) Waste Stream Profile Number: LA-MHD10.001					
(2) Generator site name: Los Alamos National Laboratory			(3) Generator site EPA ID: NM0890010515		
(4) Technical contact: Terri-Anne Groover			(5) Technical contact phone number: 505-606-2344		
(6) Date of audit report approval by New Mexico Environment Department (NMED): September 23, 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-012, CCP/Los Alamos National Laboratory (LANL) Interface Document, Revision 10, July 9, 2012					
(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: LA-TA-00-01[1]			(11) Summary Category Group: S5000 – Debris Waste		
(12) Waste Matrix Code Group: Heterogeneous Debris Waste			(13) Waste Stream Name: TA-39 Two-Stage Gas Gun Facility		
(14) Description from the ATWIR: Waste stream LA-MHD10.001 consists primarily of steel from impact chamber assemblies which were the primary containment mechanism for the two-stage gas gun projectiles and plutonium target assemblies.					
(15) Defense TRU Waste:	YES	X	NO		
(16) Check One:	CH	X	RH		
(17) Number of SWBs[2]: 18 (17a) Number of SLB2: NA	(18) Number of Drums: NA			(19) Number of Canisters: NA	
(20) Batch Data Report numbers supporting this waste stream characterization: See Characterization Information Summary (CIS) Correlation of Container Identification Numbers to Batch Data Report Numbers.					
(21) List applicable EPA Hazardous Waste Numbers:[3] D008 and F002					
(22) Applicable TRUCON Content Numbers: LA 154, LA 215, LA 216, LA 217, LA 218, LA 219, LA 220, LA 223, LA 225 and SQ 154					
(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-LANL-014, Revision 0, June 15, 2012, Figures 1, 2 and 3					
(23B) Facility mission description: CCP-AK-LANL-014, Revision 0, June 15, 2012, Section 4.3					
(23C) Description of operations that generate waste: CCP-AK-LANL-014, Revision 0, June 15, 2012, Section 4.7					
(23D) Waste identification/categorization schemes: CCP-AK-LANL-014, Revision 0, June 15, 2012, Section 4.6.1					
(23E) Types and quantities of waste generated: CCP-AK-LANL-014, Revision 0, June 15, 2012, Section 4.6.5					

(23F) Correlation of waste streams generated from the same building and process, as applicable: CCP- CCP-AK-LANL-014, Revision 0, June 15, 2012, Section 4.6.6			
(24) Waste certification procedures: CCP CH TRU Waste Certification and WWIS/WDS Data Entry, CCP-TP-030, Revision 30, May 21, 2012			
(25)Required Waste Stream Information			
(25A) Area(s) and building(s) from which the waste stream was generated: CCP-AK-LANL-014, Revision 0, June 15, 2012, Section 5.1			
(25B) Waste stream volume and time period of generation: CCP-AK-LANL-014, Revision 0, June 15, 2012, Section 5.2			
(25C) Waste generating process description for each building: CCP-AK-LANL-014, Revision 0, June 15, 2012, Section 5.3			
(25D) Waste Process flow diagrams: CCP-AK-LANL-014, Revision 0, June 15, 2012, Figure 6			
(25E) Material inputs or other information identifying chemical/radionuclide content and physical waste form: CCP-AK-LANL-014, Revision 0, June 15, 2012, Section 5.4			
(25F) Waste Material Parameter Weight Estimates per unit of waste: See table entitled "Waste Stream LA-MHD10.001 Waste Material Parameters" in Summation of Aspects of AK Summary Report: Waste Stream LA-MHD10.001			
(26) Which Defense Activity generated the waste:			
	Weapons activities including defense inertial confinement fusion		Naval Reactors development
	Verification and control technology	X	Defense research and development
	Defense nuclear waste and material by products management		Defense nuclear material production
X	Defense nuclear waste and materials security and safeguards and security investigations		
(27)Supplemental Documentation			
(27A) Process design documents: NA			
(27B) Standard operating procedures: See D002, D012, D014, M009, M013, P010 and P013 in the Summation of Aspects of AK Summary Report: Waste Stream LA-MHD10.001, Source Documents			
(27C) Safety Analysis Reports: See D004 and P009 in the Summation of Aspects of AK Summary Report: Waste Stream LA-MHD10.001, Source Documents			
(27D) Waste packaging logs: See M010 and M013 in the Summation of Aspects of AK Summary Report: Waste Stream LA-MHD10.001, Source Documents			
(27E) Test plans/research project reports: See M004 in the Summation of Aspects of AK Summary Report: Waste Stream LA-MHD10.001, Source Documents			
(27F) Site databases: See C009 and M012 in the Summation of Aspects of AK Summary Report: Waste Stream LA-MHD10.001, Source Documents			
(27G) Information from site personnel: See C001 in the Summation of Aspects of AK Summary Report: Waste Stream LA-MHD10.001, Source Documents			
(27H) Standard industry documents: NA			
(27J) Material safety data sheets: See M006 in the Summation of Aspects of AK Summary Report: Waste Stream LA-MHD10.001, 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 Standard Real-Time Radiography (RTR) Inspection Procedure, CCP-TP-053, Revision 12, August 22, 2012		
	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: 9/7/2012

Reviewed by STR (if necessary): YES [X] N/A [ ] Date: 9/7/2012

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.

Richard Kantrowitz for	Richard Kantrowitz Veronica Waldram	9/14/12
Signature of Site Project Manager	Printed Name	Date

NOTE:
(1) This waste does not currently have an ATWIR identification number; however, it was originally identified under LA-TA-00-01.
(2) This volume consists of 21 wooden crates that will be repackaged into approximately 18 SWBs.
(3) If radiography or visual examination were used to confirm EPA Hazardous Waste Numbers, attach signed Characterization Information Summary documenting this determination.

CHARACTERIZATION INFORMATION SUMMARY

WSPF # LA-MHD10.001

Lot 1

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CIS 001

CCP Characterization Information Summary Cover Page

Waste Stream #	LA-MHD10.001	Lot #:	1
AK Expert Review:	N/A	Date:	N/A
SPM Review:	Veronica Waldram Veronica Waldram	Date:	9/17/2012

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. 12	08/22/12	CCP Standard Real-Time Radiography (RTR) Inspection Procedure

Non Destructive Assay (NDA):

CCP-TP-063	Rev. 13	04/11/11	CCP Operating the High Efficiency Neutron Counter Using NDA2000
CCP-TP-063	Rev. 14	08/01/12	CCP Operating the High Efficiency Neutron Counter Using NDA2000
CCP-TP-103	Rev. 10	08/30/11	CCP Data Reviewing, Validating and Reporting Procedure for the High Efficiency Neutron Counter Using NDA2000

Headspace Gas Sampling and Analysis (HSG):

CCP-TP-175	Rev. 3	08/02/11	CCP Analysis of Gas Samples for VOCs by GC/MS

Project Level Data Validation / DQO Reconciliation:

CCP-TP-001	Rev. 19	12/29/10	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-003	Rev. 18	12/29/10	CCP Data Analysis for S3000, S4000, and S5000 Characterization
CCP-TP-005	Rev. 24	11/28/11	CCP Acceptable Knowledge Documentation
CCP-TP-030	Rev. 30	05/21/12	CCP CH TRU Waste Certification and WWIS/WDS Data Entry

WAP Certification:

CCP-PO-001	Rev. 20	06/16/11	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-002	Rev. 26	07/14/11	CCP Transuranic Waste Certification Plan
CCP-PO-012	Rev.8	12/29/10	CCP/Los Alamos National Laboratory (LANL) Interface Document
CCP-PO-012	Rev.9	01/04/12	CCP/Los Alamos National Laboratory (LANL) Interface Document
CCP-PO-012	Rev. 10	07/09/12	CCP/Los Alamos National Laboratory (LANL) Interface Document

CIS 002

CCP Correlation of Container Identification Numbers to Batch Data Report Numbers

Waste Stream: # LA-MHD10.001 Lot # 1

Container ID Number	Historical Container ID	NDA BDR	RTR BDR	VE BDR	Solids Sampling BDR	Solids Analytical BDR	Load Management/ Overpack Yes	Transportation Headspace Gas BDR			
								Sample	Analysis		
91773	LA00000091773	3LANDA0079	LA-HERTR-12-0063	N/A	N/A	N/A	N/A	LAHSG1205	ECL12033M	N/A	N/A
91774	LA00000091774	3LANDA0078	LA-HERTR-12-0063	N/A	N/A	N/A	N/A	LAHSG1205	ECL12033M	N/A	N/A
91775	LA00000091775	3LANDA0079	LA-HERTR-12-0063	N/A	N/A	N/A	N/A	LAHSG1205	ECL12033M	N/A	N/A
91776	LA00000091776	3LANDA0080	LA-HERTR-12-0066	N/A	N/A	N/A	N/A	LAHSG1205	ECL12033M	N/A	N/A
91777	LA00000091777	3LANDA0080	LA-HERTR-12-0066	N/A	N/A	N/A	N/A	LAHSG1205	ECL12033M	N/A	N/A
91778	LA00000091778	3LANDA0080	LA-HERTR-12-0066	N/A	N/A	N/A	N/A	LAHSG1205	ECL12033M	N/A	N/A
91779	LA00000091779	3LANDA0084	LA-HERTR-12-0070	N/A	N/A	N/A	N/A	LAHSG1205	ECL12033M	N/A	N/A
91780	LA00000091780	3LANDA0085	LA-HERTR-12-0070	N/A	N/A	N/A	N/A	LAHSG1205	ECL12033M	N/A	N/A
91810	LA00000091810	3LANDA0085	LA-HERTR-12-0073	N/A	N/A	N/A	N/A	LAHSG1205	ECL12033M	N/A	N/A
91811	LA00000091811	3LANDA0085	LA-HERTR-12-0073	N/A	N/A	N/A	N/A	LAHSG1205	ECL12033M	N/A	N/A

Veronica Waldram
Signature of Site Project Manager

Veronica Waldram
Printed Name

9/17/2012
Date

CTS 003

CCP Headspace Gas UCL90 Evaluation Form

WSPF #: LA-MHD10.001 **Waste Stream Lot Number** 1 through 1

ANALYTE	Transform Data Used (No, Data-Log, SQRT, other)	# Samples above MDL (1)	# Samples (2)	Maximum (ppmv)	Mean (ppmv)	SD (ppmv)	UCL_{90} (ppmv)	PRQL (ppmv)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA Code
Acetone	SQRT	10	10	3.32	1.67	1.09	2.14	100	10.00		
Benzene	Log	0	10	-2.00	-2.86	0.43	-2.67	10	2.30		
Bromoform	Log	0	10	-3.37	-4.20	0.42	-4.02	10	2.30		
Butanol	Log	1	10	-1.39	-2.47	0.57	-2.23	100	4.61		
Carbon Disulfide *	Log	5	10	1.06	-1.77	1.29	-1.20	10	2.30		
Carbon tetrachloride	Log	0	10	-2.73	-3.57	0.42	-3.38	10	2.30		
Chlorobenzene	Log	0	10	-2.41	-3.23	0.42	-3.04	10	2.30		
Chloroform	Log	0	10	-2.47	-3.28	0.42	-3.10	10	2.30		
Chloromethane *	Log	6	10	0.26	-1.34	1.17	-0.83	10	2.30		
Cyclohexane *	Log	0	10	-2.08	-2.92	0.42	-2.73	10	2.30		
1,1-Dichloroethane	Log	0	10	-2.16	-3.00	0.42	-2.82	10	2.30		
1,2-Dichloroethane	Log	0	10	-2.16	-2.99	0.42	-2.81	10	2.30		
1,1-Dichloroethylene	Log	0	10	-2.08	-2.93	0.42	-2.74	10	2.30		
cis-1,2-Dichloroethylene *	Log	0	10	-2.00	-2.86	0.42	-2.67	10	2.30		
trans-1,2-Dichloroethylene	Log	0	10	-2.08	-2.92	0.42	-2.73	10	2.30		
1,2-Dichloropropane *	Log	0	10	-2.30	-3.16	0.42	-2.98	10	2.30		
Ethyl benzene	Log	0	10	-2.41	-3.27	0.43	-3.08	10	2.30		
Ethyl ether	Log	0	10	-1.90	-2.74	0.42	-2.56	10	2.30		
Methanol	SQRT	10	10	7.62	4.40	2.09	5.31	100	10.00		
Methyl ethyl ketone	SQRT	6	10	1.97	0.76	0.61	1.03	100	10.00		
Methyl isobutyl ketone	Log	0	10	-2.21	-3.06	0.43	-2.87	100	4.61		
Methylene chloride	SQRT	8	10	1.64	0.84	0.50	1.06	10	3.16		
1,1,2,2-Tetrachloroethane	Log	0	10	-2.73	-3.58	0.42	-3.39	10	2.30		
Tetrachloroethylene	Log	0	10	-2.53	-3.36	0.42	-3.18	10	2.30		
Toluene	Log	8	10	-0.25	-1.74	1.12	-1.25	10	2.30		
1,1,1-Trichloroethane	Log	0	10	-2.66	-3.49	0.42	-3.30	10	2.30		
Trichloroethylene	Log	0	10	-2.47	-3.33	0.42	-3.14	10	2.30		
Trichlorofluoromethane *	Log	0	10	-2.53	-3.36	0.42	-3.18	10	2.30		

CIS 004

CCP Headspace Gas UCL90 Evaluation Form

WSPF #: LA-MHD10.001 **Waste Stream Lot Number** 1 through 1

ANALYTE	Transform Data Used (No, Data-Log, SQRT, other)	# Samples above MDL (1)	# Samples (2)	Maximum (ppmv)	Mean (ppmv)	SD (ppmv)	UCL_{90} (ppmv)	PRQL (ppmv)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA Code
1,1,2-Trichloro-1,2,2-trifluoroethane	Log	0	10	-2.81	-3.65	0.43	-3.47	10	2.30		
1,3,5-Trimethylbenzene[a]	Log	0	10	-2.53	-3.38	0.43	-3.19	10	2.30		
1,2,4-Trimethylbenzene[a]	Log	0	10	-2.47	-3.32	0.43	-3.13	10	2.30		
m,p-Xylene[b]	Log	0	10	-2.47	-3.28	0.42	-3.10	10	2.30		
o-Xylene	Log	0	10	-2.47	-3.30	0.42	-3.12	10	2.30		
Formaldehyde[c]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hydrazine[d]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[a] These compounds are from CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC) and are flammable VOCs that do not appear in the CCP-PO-001. These are not part of the target analyte list, but samples may be analyzed for these compounds.
[b] These xylene isomers cannot be resolved by the analytical methods employed in the CCP. M-xylene and p-xylene will be reported as "Total m-p-Xylene."
[c] Required only for homogenous solids and soil/gravel waste from Savannah River Site.
[d] Required only for homogenous solids and soil/gravel waste from Oak Ridge National Laboratory and Savannah River Site.
[e] The noted analytes are not included in the target analyte list Table C3-2 of HWFP Attachment C3. The analytes are reported in the analysis Batch Data Report provided by the Idaho lab and included on the UCL_{90} for completeness.

CTS 005

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.)

Veronica Waldram
Signature of Site Project Manager

Veronica Waldram
Printed Name

9/17/2012
Date

CCP Headspace Gas Summary Data

Waste Stream Number LA-MHD10.001 Lot Number (s) 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:

SPM Signature Veronica Whitham Date 9/17/2012

CTS 006

CCP RTR/VE Summary of Prohibited Items and AK Confirmation

Waste Stream Number: LA-MHD10.001 Lot(s)#: 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: Due to ALARA concerns, RTR was selected as the characterization method for the containers because the waste would have to be unwrapped and workers exposed to higher levels of contamination for adequate VE characterization and RTR meets all the Data Quality Objectives for NDE for this waste stream.

Veronica Waldram — Site Project Manager Signature
Veronica Waldram — Printed Name
9/17/2012 — Date

CTS 007

CCP Reconciliation with Data Quality Objectives

WSF# LA-MHD10.001 Lot # 1

Sampling Completeness

RTR/VE:

Number of Valid Samples: 10 Number of Total Samples Analyzed: 10
Percent Complete: 100 (QAO is 100%)

NDA

Number of Valid Samples: 10 Number of Total Samples Analyzed: 10
Percent Complete: 100 (QAO is 100%)

HSG

Number of Valid Samples: 10 Number of Total Samples Collected: 10
Percent Complete: 100 (QAO is ≥90%)
Number of Valid Samples: 10 Number of Total Samples Analyzed: 10
Percent Complete: 100 (QAO is ≥90%)

Total VOC

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 SVOC

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 Metals

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%)

CTS 008

CCP Reconciliation with Data Quality Objectives

WSF# LA-MHD10.001 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	NA	AK Sufficiency. Is there an approved AK sufficiency Determination for this waste stream?
6	Y	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	NA	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	NA	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	NA	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.

CTS 009

CCP Reconciliation with Data Quality Objectives

WSF# LA-MHD10.001 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	Y	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	Y	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	Y	Y	Y
Solids Sampling	NA	NA	NA
Solids VOCs	NA	NA	NA
Solids SVOCs	NA	NA	NA
Solids Metals	NA	NA	NA

Comments: None

Veronica Waldram
Signature of Site Project Manager

Veronica Waldram
Printed Name

9/17/2012
Date

CIS010

Summation of Aspects of AK Summary Report: Waste Stream LA-MHD10.001

Overview

Waste Stream LA-MHD10.001 consists of contact handled (CH) Transuranic (TRU) heterogeneous debris waste generated at Technical Area (TA)-39, Building 69 at the Los Alamos National Laboratory (LANL). LANL's current central mission is to enhance global security by ensuring the safety and reliability of the U.S. nuclear stockpile, developing technologies to reduce threats from weapons of mass destruction, and solving problems related to energy, environment, infrastructure, health and national security concerns. This waste stream was generated from experimental shots at plutonium targets and associated cleaning and maintenance operations in the Two-Stage Gas Gun Facility. Data from the experiments are used to determine material equations of state, which express the relationship between pressure, density, and temperature. Knowledge of these properties is required to assess, without nuclear testing, the performance, safety, and reliability of nuclear weapons.

This waste stream consists of heterogeneous debris waste generated during or contaminated by the Two-Stage Gas Gun Facility experiments that were conducted to better understand plutonium shock-wave physics and to develop equation of state models to improve weapon design and help safeguard nuclear weapon storage. Therefore, the Department of Energy (DOE) defense that activities that generated this waste were defense research and development and defense nuclear materials safeguards and security investigations.

This summation of the Acceptable Knowledge (AK) Summary Report includes information to support Waste Stream Profile Form (WSPF) number LA-MHD10.001 for heterogeneous debris waste generated at LANL. The primary source of information for this Summation is CCP-AK-LANL-014, *Central Characterization Project Acceptable Knowledge Summary Report For Los Alamos National Laboratory TA-39 Two-Stage Gas Gun Facility, Waste Stream: LA-MHD10.001,* Revision 0, June 15, 2012.

Waste Stream Identification Summary

Wastes Stream Name:	TA-39 Two-Stage Gas Gun Facility
Waste Stream Number:	LA-MHD10.001
Dates of Waste Generation:	1981 to 1986
Waste Stream Volume – Current:	18 standard waste boxes (SWBs)[1]
Waste Stream Volume – Projected:	None
Summary Category Group:	S5000 – Debris Waste
Waste Matrix Code Group:	Heterogeneous Debris Waste
Waste Matrix Code:	S5400, Heterogeneous Debris

1. This volume consists of 21 wooden crates that will be repackaged into approximately 18 SWBs.

TRUPACT-II Content Codes: LA 154, LA 215, LA 216, LA 217, LA 218, LA 219, LA 220, LA 223, LA 225, and SQ 154

Annual Transuranic Waste Inventory Report (ATWIR) Identification Number: LA-TA-00-01*

*This waste does not currently have an ATWIR identification number; however, it was originally identified under LA-TA-00-01, which is a general waste stream for all containers not currently assigned to a specific waste stream.

Waste Stream Description and Physical Form

Waste stream LA-MHD10.001 consists primarily of steel from impact chamber assemblies which were the primary containment mechanism for the two-stage gas gun projectiles and plutonium target assemblies. Examples of waste items include a blower, confinement tank, equipment and hardware, high-efficiency particulate air (HEPA) filters, latex or nitrile gloves, metals (e.g., aluminum, brass, steel, tin), plastics, rags and wipes, secondary containment vessel, and Tyveks. Some secondary waste generated during remediation/repackaging operations may be added to the waste containers, including but not limited to: absorbent (e.g., Waste Lock 770), Fantastik bottles used during decontamination, miscellaneous hand tools, paper/plastic tags and labels, plastic/metal wire ties, personal protective equipment (PPE), plastic sheeting used for contamination control, rags and wipes (Kimwipes), and original packaging material (e.g., plastic bags, plywood sheathing).

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 from experimental shots at plutonium targets and associated cleaning and maintenance operations in the Two-Stage Gas Gun Facility.

Point of Generation

Location

Waste stream LA-MHD10.001 was generated at LANL in Los Alamos, New Mexico. The waste is currently stored at TA-54, Area G.

Area and/or Buildings of Generation

Waste stream LA-MHD10.001 was generated in the TA-39, Building 69 Two-Stage Gas Gun Facility.

Generating Processes

Description of Waste Generation Processes

Waste stream LA-MHD10.001 consists of hazardous debris generated during Two-Stage Gas Gun experimental shots at plutonium targets. Waste was also generated during associated Two-Stage Gas Gun Facility cleaning and maintenance operations; however, the presence of maintenance-related waste is expected to be minimal.

TA-39, Building 69 – Two-Stage Gas Gun Facility Description

Many of the structures in TA-39 were constructed in the early 1950's. Additional structures have been built since then. The area was established for the study of high-energy-density properties in experiments using explosives-driven power. This research continues today (References C001 and P009).

In general, a two-stage gas gun consists of a first-stage breech containing gunpowder (first stage propellant) and a pump tube filled with hydrogen gas (second stage propellant); and a second-stage evacuated barrel for guiding the high-velocity projectile to a target containing radioactive material. Hot gases from the burning gunpowder drive a piston down the pump tube, compressing the hydrogen gas in the pump tube. At sufficiently high pressures, the compressed gas breaks a rupture valve, enters the narrow barrel and propels a projectile toward the target. Each time the gun is fired, the first and second stage propellants, the primer/igniter, and the projectile must be replaced, as well as the piston (References C001, D022, and P009).

When the projectile hits the target, it produces a high-pressure shock wave that passes through the target. Electrical pins/electrodes on the target measure the velocity of the shock front as it passes through the target material. Diagnostic equipment, triggered by the initial shock wave, measures the properties of the shocked materials inside the target during this extremely brief period. The target is disintegrated by the impact of the projectile and contained within the primary confinement chamber (i.e., impact chamber assembly). A secondary confinement vessel protects workers as an additional safety precaution in the event that the primary confinement chamber fails (References C001, M004, and P009).

The impact chamber assembly is discarded after every shot and are packaged in eighteen (18) of the twenty-one (21) crates in Waste Stream LA-MHD10.001. Two (2) of the other three (3) crates contain a primary containment vessel weighing 6,000 pounds each, and the remaining crate contains a HEPA filter and vacuum pump (References M005, M011, and M013).

Impact Chamber Assembly

The primary component of this waste stream is the actual impact chamber assembly, which was disposed of after each experimental shot. As discussed above, the target is disintegrated by the impact of the projectile and contained within the primary confinement chamber (i.e., impact chamber assembly). The speeding projectile enters the impact chamber assembly, which houses the plutonium target. When the projectile impacts the target, the impact causes a trigger pulse which is used to fire the explosive valve detonators, which close the explosive valve. This explosive valve effectively traps radioactive debris within the impact chamber assembly following the projectile's impact on the destroyed plutonium target. The impact chamber assembly is designed to ensure that plutonium dust or fragments are not released into the Two-Stage Gas Gun Facility or the environment (References C001 and M004).

Within the steel, impact vessel assembly, any remaining fragments of the projectile and the target will remain inside of the impact vessel assembly. The projectile/impactor is made of plastic with a flat, metal plate embedded in its face to directly impact the plutonium target. Depending on the desired shock pressure, the metal plate is made of various metals or alloys including aluminum, copper, iron, lead, platinum, stainless steel, or tantalum. The mass of the projectile ranges from 17 to 60 grams depending on the experimental requirements and the desired velocity. The targets consist of machined disks (e.g., thickness of 1E-6 meters) of

plutonium of various densities. In addition, the plutonium target hardware include electrodes and trigger pins, containing aluminum, lead solder, epoxy, and silicone (References C001 and D001).

Explosive Valve Failure

In 1986 during experimental shots using plutonium targets in the Two-Stage Gas Gun Facility, a seal on the explosive valve failed resulting in at least one accidental radioactive release. As designed, the steel, secondary confinement vessel which covers the impact chamber assembly was in place and contained the radioactive release. As a result two confinement vessels were contaminated and disposed as part of this waste stream, along with contaminated equipment and materials (i.e., HEPA filters and blower) (References C001 and M005).

Cleaning and Maintenance of the Two-Stage Gas Gun

Regular cleaning of carbon from the barrels of the two-stage gas gun was performed by first cleaning with wipes/rags soaked with Fantastik, and then a final cleaning using ethyl alcohol. The current LANL WPF for TA-39, Building 69 also lists the presence of M-Pro 7 (diethylene glycol monobutyl ether compound), which is a military grade gun cleaner. In addition, 1,1,1-trichloroethane and WD-40 were used as a solvent to clean hand tools and other gun components. It is believed these same materials may have been used during the cleanup of the explosive valve failure discussed above (References C001 and M013).

Waste Repackaging and Prohibited Item Disposition

Waste repackaging and prohibited item disposition is performed in four facilities. Waste containers that fail to meet WIPP criteria are sent to the TA-50 Waste Characterization, Reduction, and Repackaging (WCRR) Facility; the TA-54 Building 412 facility formerly known as the Decontamination and Volume Reduction System (DVRS) facility; the TA-54 Dome 231 Permacon; or TA-54 Dome 375 TRU Oversized Waste Processing Capability Project, also referred to as the Box Line Process, to be safely remediated. These four facilities are used to perform visual examination (VE), repackaging, and prohibited item dispositioning of TRU waste. Some secondary waste generated during remediation/repackaging operations may be added to the waste containers, including but not limited to: absorbent (e.g., Waste Lock 770), Fantastik bottles used during decontamination, miscellaneous hand tools, paper/plastic tags and labels, plastic/metal wire ties, PPE, plastic sheeting used for contamination control, rags and wipes (Kimwipes), and original packaging material (e.g., plastic bags, plywood sheathing, rigid liner lids cut into pieces). Although these operations are performed outside of TA-39, there is no cross contamination with waste from other LANL facilities (References C005, P001, P002, P004, P005, P006, and P010).

Waste Stream Material and Chemical Inputs

The following table identifies the Resource Conservation and Recovery Act (RCRA) toxicity and listed characteristic constituents identified in this waste stream.

Toxicity and Listed Characteristic Constituents in Waste Stream LA-MHD10.001

Chemical/Product	Use/Source	Document Source(s)	EPA HWNs
1,1,1-Trichloroethane	Used during cleaning and maintenance.	C001, DR001	F002
Lead	Component of brass, solder used in the target assembles, and the impactor plate in the impact chamber assembly. Contaminant identified by the waste generator.	C001, DR001, M005, M006, M013	D008

RCRA Determinations

Historical Waste Management

Waste Stream LA-MHD10.001 has historically been managed in accordance with the generator site requirements and in compliance with the requirements of the New Mexico Environmental Department. Based on historical waste management, a site specific waste stream was not created for debris waste from the TA-39 Two-Stage Gas Gun Facility operations. Instead the containers were managed individually as nonhazardous waste or hazardous for the presence of lead. A review of available AK documentation was performed and it was determined that this waste is hazardous for lead and the waste is also contaminated with 1,1,1-trichloroethane (References C001, DR001, and M005).

Hazardous Waste Determinations

Ignitability, Corrosivity, Reactivity

Ignitability

The materials in this waste stream do not meet the definition of ignitability as defined in 40 Code of Federal Regulations (CFR) 261.21. Ignitable liquids including ethyl alcohol and WD-40 were used during cleaning and decontamination activities. However, the material is not a flammable liquid, an ignitable compressed gas, or an oxidizer, and is not capable of causing fire through friction, moisture absorption, or spontaneous chemical changes. Based on an evaluation of the Two-Stage Gas Gun Facility operations and waste management practices, ignitable materials were not identified as being present in this waste stream. LANL waste management practices prohibit liquids in any container of solid waste materials (References C001, D008, D009, D010, D012, D013, D016, M005, and M013). In addition, the absence of prohibited items will be verified during repackaging (References P001, P002, P004, P005, P006, and P010). The materials in this waste stream are, therefore, not ignitable D001 wastes.

Corrosivity

The materials in this waste stream are not liquid and do not contain unreactive corrosive chemicals; therefore, it does not meet the definition of corrosivity as defined in 40 CFR 261.22. Based on an evaluation of the Two-Stage Gas Gun Facility operations and waste management practices, corrosive materials were not identified as being used or present in this waste stream. LANL waste management practices prohibit liquids in any container of solid waste materials (References C001, D008, D009, D010, D012, D013, D016, and M005). In addition, the

absence of prohibited items will be verified during repackaging (References P001, P002, P004, P005, P006, and P010). The materials in this waste stream are, therefore, not corrosive D002 wastes.

Reactivity

The materials in this waste stream do 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. LANL waste management policies did not allow the disposal of potentially reactive solids (e.g., sodium). 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. Gun powders were used in the impact chamber assembly; however, they were ignited during the firing experiments and rendered non-reactive. Based on an evaluation of the Two-Stage Gas Gun Facility operations and waste management practices, reactive materials (e.g., non-radionuclide pyrophorics) were not identified as being used or present in this waste stream (References C001, D009, D010, D012, D013, and M005). In addition, the absence of prohibited items will be verified during repackaging (References P001, P002, P004, P005, P006, and P010). The materials in this waste stream are, therefore, not reactive D003 wastes.

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

Toxicity Characteristic

Based on review of AK relative to chemicals used or present in Two-Stage Gas Gun Facility operations, waste stream LA-MHD10.001 may be contaminated with toxicity characteristic compounds as defined in 40 CFR 261.24.

The waste stream contains or is contaminated with toxicity characteristic metals. Based on review of AK documentation, lead is present as a component of brass, solder used in the target assembles, and the impactor plate in the impact chamber assembly. Lead was also identified as a contaminant by the waste generator. Therefore, waste stream LA-MHD10.001 is assigned EPA HWN D008 for the presence of lead (References C001, DR001, M005, and M006).

The waste stream does not exhibit the characteristic of toxicity for organic compounds as defined in 40 CFR 261.24. Based on review of AK documentation, toxic organic compounds were not identified as being used or present in the Two-Stage Gas Gun Facility operations. Therefore, waste stream LA-MHD10.001 is not assigned characteristic HWNs for toxic organic compounds (References C001, DR001, and M005).

Listed Waste

F-Listed Waste

Based on review of AK relative to chemicals used or present in the Two-Stage Gas Gun Facility operations, waste stream LA-MHD10.001 may contain or be mixed with F-listed hazardous wastes from non-specific sources listed in 40 CFR 261.31. Although 1,1,1-trichloroethane is also an F001-listed solvent, EPA has provided a regulatory clarification that the F001 listing is

only appropriate when the listed solvent is used in a large-scale degreasing operation such as cold cleaning or vapor degreasing on an industrial scale. Based on a review of the AK documentation, this waste was not generated from large-scale degreasing operations and these operations were not present in the Two-Stage Gas Gun Facility. Therefore, F001 is not assigned to this waste stream. Waste stream LA-MHD10.001 is assigned F-listed EPA HWN F002 for the presence of 1,1,1-trichloroethane used during cleaning and maintenance operations (References C001 and DR001).

K-Listed Waste

The material in this waste stream is not a hazardous waste from any of the specific sources listed in 40 CFR 261.32 (Reference DR001).

P- and U-Listed Waste

Waste stream LA-MHD10.001 does not contain 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. Based on the AK documentation reviewed, there is no evidence that unused commercial products were disposed of in TRU waste (Reference D012). No P- or U-listed chemicals were identified in the container-specific documentation and no record of a significant spill of listed chemicals was located (e.g., incident report, waste profile form) (References M005 and M013). Beryllium powder (P015-listed waste) and hydrofluoric acid (U134-listed waste) were not identified as being used or present in the Two-Stage Gas Gun Facility operations that generated this waste. Therefore, waste stream LA-MHD10.001 is not assigned P- or U-listed EPA HWNs (References C001, DR001, and M005).

Polychlorinated Biphenyls

No sources for polychlorinated biphenyls (PCBs) in waste stream LA-MHD10.001 were identified in the AK sources. However, characterization activities of other LANL debris waste streams have identified the presence of PCB items (e.g., light ballasts). Therefore, containers with PCB waste, identified during RTR or VE, will be managed as a Toxic Substances Control Act waste under 40 CFR 761, *Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and use Prohibitions* (References C008, D012, M005, and M013).

Prohibited Items

This waste stream could contain sealed containers greater than four liters (e.g., impact chamber assembly, primary containment vessel). In addition, historical procedures allowed containers greater than four liters, sealed with tape, to be used for waste packaging until WIPP certification procedures were implemented. In addition, other LANL debris waste streams have identified free liquids (both containerized and uncontainerized) and unpunctured aerosol cans have also been observed. Lead shielding is often used to increase handling safety, and thick shielding can obscure RTR observations (Reference D012).

Prohibited items are detected by RTR or VE and reported with the characterization results. Waste containers with prohibited items are segregated then dispositioned appropriately and/or repackaged into new containers (e.g., 55-gallon drums, SWBs), during which time liquids are absorbed, sealed containers greater than four liters are opened, and other items removed and segregated if necessary prior to certification and shipment (References C005, D012, P001, P002, P004, P005, P006, and P010).

Method for Determining Waste Material Parameter Weights per Unit of Waste

To estimate the waste material parameters (WMPs) for waste stream LA-MHD10.001, the Radioactive Solid Waste Disposal (RSWD) Codes for each container was obtained from the RSWD form. The WMP data were then derived by assigning WMPs to each container based on the description of RSWD Code and any other waste description included on the RSWD form. Each of the containers WMPs were "weighted" by the gross weight listed on RSWD forms (References M005). Although not reported, the cellulosics WMP was identified as one percent because it is expected to be present.

Waste Stream LA-MHD10.001 Waste Material Parameters

Waste Material Parameter	Average Weight Percent (Wt%)	Wt% Range
Iron-based Metals/Alloys	50.9%	0.0% - 100.0%
Aluminum-based Metals/Alloys	9.1%	0.0% - 33.3%
Other Metals	9.1%	0.0% - 33.3%
Other Inorganic Materials	28.1%	0.0% - 100.0%
Cellulosics	1.0%	0.0% - 5.0%
Rubber	0.9%	0.0% - 20.0%
Plastic (waste materials)	0.9%	0.0% - 20.0%
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 Any 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

The radiological distribution for waste stream LA-MHD10.001 is listed in the Waste Stream LA-MHD10.001 Radiological Characterization table. The distribution represents existing generator-reported radionuclide data for each container in the waste stream. The "Total Radionuclide Weight%" values are the gram value for each radionuclide over the entire waste stream divided by the total radiological mass in the waste stream. The same calculation produced the values for the "Total Radionuclide Curie%" using the sum of activity values for each radionuclide over the entire waste stream (References C010, M005, and M011).

The "Radionuclide Weight% Range for Individual Containers" illustrates the reported ranges of radionuclides in individual containers by identifying the maximum and minimum values for each radionuclide on a container-by-container basis over the entire waste stream. The radionuclide wt% of individual radionuclides varies greatly on a container-by-container basis. Because of this variability, some containers will not include the waste stream predominant radionuclides but may include other radionuclides expected in this waste stream (References C010, M005, and M011).

The two predominant radionuclides by weight percent are Pu-239 and Pu-240, while 95 percent of the activity over the entire waste stream is from Pu-241 and Pu-239 (References C010, M005, M0011, and M012).

Waste Stream LA-MHD10.001 Radiological Characterization

Radio-nuclide	Number of Containers with Reported Radionuclide	Total Radionuclide wt%[1]	Total Radionuclide Curie%[2,5]	Radionuclide wt% Range for Individual Containers[3,5]	Radionuclide Curie% Range for Individual Containers[4,5]	Expected Present
WIPP-Required Radionuclides						
Am-241	Not Reported					Yes
Pu-238	16	0.01%	0.56%	0% - Trace	0% - 0.61%	Yes
Pu-239	21	**95.72%**	**28.15%**	0% - 100.00%	0% - 100.00%	Yes
Pu-240	16	**4.12%**	4.43%	0% - 6.00%	0% - 4.88%	Yes
Pu-242	16	0.01%	Trace	0% - 0.02%	0% - Trace	Yes
U-233	Not Reported					Yes
U-234	Not Reported					Yes
U-238	Not Reported					Yes
Sr-90	Not Reported					Yes
Cs-137	Not Reported					Yes
Additional Radionuclides						
Pu-241	16	0.14%	**66.86%**	0% - 0.20%	0% - 73.64%	Yes

1. This listing indicates the total wt% of each radionuclide over the entire waste stream.
2. This listing indicates the total activity (curie) percent of each radionuclide over the entire waste stream.
3. This listing is the wt% range of each radionuclide on a container-by-container basis.
4. This listing is the curie percent range of each radionuclide on a container-by-container basis.
5. "Trace" indicates <0.01 weight or activity (curie) percent for that radionuclide.

Payload management will not be utilized for this waste stream.

Source Documents

Source Document Tracking Number	Title
C001	Correspondence and Interviews regarding LANL Two-Stage Gas Gun
C002	Decontamination and Volume Reduction System (DVRS)
C003	Memorandum regarding U234 and Sr90 Calculations for NDA Reporting
C004	Assay of U-234
C005	Secondary Waste Discussions
C006	Fiberboard Drum Liner use at Los Alamos National Laboratory
C007	Memo with Attachments to K. Dziewinska re: Material Type Isotopic Compositions
C008	Prohibition on PCB Waste Lifted from LANL
C009	AK Isotopic Files for Input to NDA Radioassay Spreadsheets
C010	Evaluation of Volume, Period Generation, and Calculation of Individual and Total Radionuclide Masses and Activities for Waste Stream LA-MHD10.001
C011	Methodology for Assigning DVRS Waste Stream
D001	Los Alamos Two-Stage Light Gas Gun
D002	Waste Analysis Plan of the Hazardous Waste Permit
D003	Los Alamos TRU Waste Certification Plan for Newly Generated TRU Waste
D004	Los Alamos Scientific Laboratory Health and Safety Manual
D005	Los Alamos National Laboratory Transuranic Waste Characterization Sampling Plan
D006	Institutional Plan FY2002-FY2007
D008	Waste Management Site Plan 1979
D009	Waste Management Site Plan 1984
D010	Waste Management Site Plan 1985
D011	Los Alamos National Laboratory Transuranic Waste Characterization Acceptable Knowledge Information Summary
D012	Acceptable Knowledge Information Summary for LANL Transuranic Waste Streams
D013	LANL Waste Acceptance Criteria
D014	Review and Completion of the TWSR
D015	Processing Waste Acceptance Criteria Exception Forms
D016	Waste Management Site Plan
D017	Upgrade and Performance Testing for the LINC Systems at TA-54 Area G
D018	Guidelines for the Interim Storage of AEC-Generated Solid Transuranic Wastes
D019	Transuranic Waste Inspectable Project (TWISP) Final Report – Waste Retrieval from Pads 1, 2, and 4 at TA-54, Area G Los Alamos National Laboratory
D020	Environmental Protection: Managing Waste; Air Quality; Ecological and Cultural Resources
D022	Inside Livermore's Gas Gun
DR001	Acceptable Knowledge Source Document Discrepancy Resolution – EPA Hazardous Waste Number Discrepancy Resolution for Waste Stream LA-MHD10.001
M001	Map of TA-39, Ancho Canyon, Building 69 Two-Stage Gas Gun Facility Area
M002	Two-Stage Gas Gun Facility, TA-39, Building 69 Two-Stage Gas Gun and Impact Chamber Assembly
M003	Typical Two-Stage Gas Gun Diagram

Source Document Tracking Number	Title
M004	Shocking Plutonium to Reveal Its Secrets
M005	LANL Radioactive Solid Waste Disposal Records for Waste Stream LA-MHD10.001
M006	Material Safety Data Sheets (MSDS)
M007	Hazardous and Mixed Waste
M008	Managing Radioactive Waste
M009	General Waste Management Requirements
M010	Waste Generator Guidance for Completing the TRU Waste Storage Record (TWSR)
M011	TA-39 Waste Excerpt from CONCERT Database
M012	Acceptable Knowledge Isotopic Ratios (AKIR) database, Versions 2.0 and 2.1
M013	TA-39 Waste Profile Form
M014	Hazardous and Mixed Waste Requirements
M015	General Waste Management Requirements
P001	TA-54-231 Permacon Upgrades
P002	Sort, Segregate, Size Reduction, and Repackaging Activity
P004	TA-54 Area G TRU Crate SSSR Activities
P005	WCRRF Waste Characterization Glovebox Operations
P006	TA-54-375 TRU Oversized Box Processing Capability Project
P008	Shock Wave Physics Group (M-6)
P009	Weapons Facilities Operations Facility Safety Plan
P010	Prohibited Item Dispositioning in Dome 231 Permacon
P013	Drum Handling Instructions for WIPP TRU Waste
P015	Acceptable Knowledge Documentation