



Department of Energy
 Carlsbad Field Office
 P. O. Box 3090
 Carlsbad, New Mexico 88221
 SEP 24 2010



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

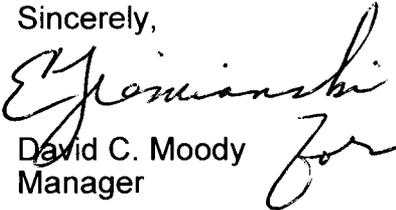
Subject: Review of CCP-INL Waste Stream Profile Form, ID-INTEC-RH, Remote-Handled Transuranic Debris from the Idaho Nuclear Technology and Engineering Center at the Idaho National Laboratory

Dear Mr. Bearzi:

The Department of Energy Carlsbad Field Office (CBFO) has approved the Waste Stream Profile Form (WSPF), ID-INTEC-RH, Remote-Handled Transuranic Debris Waste from the Idaho Nuclear Technology and Engineering Center at the Idaho National Laboratory.

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

If you have questions on this matter, please contact me at (575) 234-7300.

Sincerely,

 David C. Moody
 Manager

Enclosure

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

cc: w/o enclosure
 J. Kieling, NMED ED
 G. Basabilvazo, CBFO ED
 N. Castaneda, CBFO ED
 C. Fesmire, CBFO ED
 C. Gadbury, CBFO ED
 S. McCauslin, CBFO ED
 J. R. Stroble, CBFO ED
 K. Watson, CBFO ED
 P. Martinez, CTAC ED
 P. Gilbert, LANL ED
 G. Lyshik, LANL ED
 C. Walker, TechLaw ED
 CBFO, M&RC

*ED denotes electronic distribution



CCP-TP-002, Rev. 22
CCP Reconciliation of DQOs and
Reporting Characterization Data

Effective Date: 06/30/2010

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Attachment 2 –CCP Waste Stream Profile Form

(1) Waste Stream Profile Number: ID-INTEC-RH			
(2) Generator site name: Idaho National Laboratory		(4) Technical contact: Irene Quintana	
(3) Generator site EPA ID: ID4890008952		(6) Technical contact phone number: (720) 982-7174	
(5) Date of audit report approval by New Mexico Environment Department (NMED): December 20, 2006, August 6, 2007, September 22, 2008, and September 11, 2009.			
(7) Title, version number, and date of documents used for WAP Certification: CCP-PO-001, CCP Transuranic Waste Characterization Quality Assurance Project Plan, Rev. 18, June 30, 2010 CCP-PO-002, CCP Transuranic Waste Certification Plan, Rev. 24, June 30, 2010 CCP-PO-024, CCP/INL Interface Document, Rev. 9, March 16, 2009			
(8) Did your facility generate this waste? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>			
(9) If no, provide the name and EPA ID of the original generator: NA			
Waste Stream Information¹			
(10) WIPP ID: IN-INTEC-SFS-01		(11) Summary Category Group: S5000	
(12) Waste Matrix Code Group: Heterogeneous Debris Waste		(13) Waste Stream Name: Remote Handled Transuranic Debris from the Idaho Nuclear Technology and Engineering Center	
(14) Description from the TWBIR: This waste stream was generated at the Idaho Chemical Processing Plant at the INEEL, and may include both combustibles and noncombustibles. The waste includes solidified sludge of acid-dissolved fuel, absorbed into diatomaceous earth. The waste is contained in two 30-gallon lead-lined drums. The sludge is contained in glass bottles and sealed inside metal cans. Other materials may include glass containers, plastics, metal, scraps, lead shielding, and miscellaneous laboratory equipment.			
(15) Defense TRU Waste: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>			
(16) Check One: CH <input type="checkbox"/> RH <input checked="" type="checkbox"/>			
(17) Number of SWBs 0	(18) Number of Drums 0	(19) Number of Canisters 1	
(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: ² D008, D018, F005			
(22) Applicable TRUCON Content Numbers: ID 321 and ID 325			
(23) Acceptable Knowledge Information¹			
[For the following, enter the supporting documentation used (i.e., references and dates)]			
Required Program Information			
(23A) Map of site: CCP-AK-INL-550, Rev. 1, March 22, 2010, Attachments 1 & 2			
(23B) Facility mission description: : CCP-AK-INL-550, Rev. 1, March 22, 2010, Section 4.1.3			
(23C) Description of operations that generate waste: CCP-AK-INL-550, Rev. 1, March 22, 2010, Section 4.2			
(23D) Waste identification/categorization schemes: CCP-AK-INL-550, Rev. 1, March 22, 2010, Section 4.2.2			
(23E) Types and quantities of waste generated: CCP-AK-INL-550, Rev. 1, March 22, 2010, Sections 4.2.2, 5.3 and 5.4			
(23F) Correlation of waste streams generated from the same building and process, as applicable: NA			
(24) Waste certification procedures: CCP-TP-530, CCP RH TRU Waste Certification and WWIS/WDS Data Entry, Revision 9, December 11, 2009			

CCP-TP-002, Rev. 22
CCP Reconciliation of DQOs and
Reporting Characterization Data

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(25) Required Waste Stream Information	
(25A) Area(s) and building(s) from which the waste stream was generated: CCP-AK-INL-550, Rev. 1, March 22, 2010, Section 5.1	
(25B) Waste stream volume and time period of generation: CCP-AK-INL-550, Rev. 1, March 22, 2010, Section 5.2 & 5.3	
(25C) Waste generating process description for each building: CCP-AK-INL-550, Rev. 1, March 22, 2010, Sections 4.2 and 5.4	
(25D) Waste Process flow diagrams: See CCP-AK-INL-550, Rev. 1, March 22, 2010, Attachment 3	
(25E) Material inputs or other information identifying chemical/radionuclide content and physical waste form: CCP-AK-INL-550, Rev. 1, March 22, 2010, Section 5.4	
(25F) Waste Material Parameter Weight Estimates per unit of waste: See Table 2 of the Summation of Aspects of AK Summary Report: ID-INTEC-RH	
(26) Which Defense Activity generated the waste: (check one)³	
Weapons activities including defense inertial confinement fusion	<input type="checkbox"/> Naval Reactors development
Verification and control technology	<input type="checkbox"/> Defense research and development
Defense nuclear waste and material by products management	<input checked="" type="checkbox"/> Defense nuclear material production
Defense nuclear waste and materials security and safeguards and security investigations	
(27) Supplemental Documentation	
(27A) Process design documents: See S1 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report	
(27B) Standard operating procedures: See S2 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report	
(27C) Safety Analysis Reports: See S3 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report	
(27D) Waste packaging logs: See S4 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report	
(28E) Test plans/research project reports: See S5 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report	
(27F) Site databases: See S6 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report	
(27G) Information from site personnel: NA	
(27H) Standard industry documents: See S8 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report	
(27I) Previous analytical data: See S9 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report	
(27J) Material safety data sheets: See S10 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report	
(27K) Sampling and analysis data from comparable/surrogate Waste: NA	
(27L) Laboratory notebooks: See S11 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report	
Confirmation Information²	
<i>For the following, when applicable, enter procedure title(s), number(s) and date(s)</i>	
(28)	Radiography: NA
(29)	Visual Examination: CCP-TP-500, Rev. 8, July 24, 2008

(30)Comments:

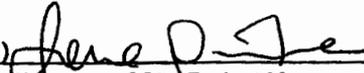
For a list of the waste characterization procedures used and date of the respective procedures see the list of procedures on the attached CIS.

Reviewed by AK Expert: YES Date: 8/23/10

Reviewed by STR (if necessary): YES NA Date: 8/24/10

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) Irene Quintana (33) 8/29/10
Signature of Site Project Manager Printed Name Date

- NOTE:**
- (1) Use back of sheet or continuation sheets, if required.
 - (2) If radiography, visual examination, headspace gas analysis, and/or homogeneous solids/soils/gravel sample analysis were used to determine EPA Hazardous Waste Numbers, attach signed Characterization Information Summary documenting this determination.
 - (3) The defense activities that generated this waste also include naval reactors development, defense nuclear waste and material by products management, and defense research and development activities.

CHARACTERIZATION INFORMATION SUMMARY

WSPF # ID-INTEC-RH

Lot 1

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CCP Characterization Information Summary Cover Page

Waste Stream # ID-INTEC-RH Lot # 1
 AK Expert Review: Scott Smith *[Signature]* Date 9/16/2010
 SPM Review: Irene Quintana *[Signature]* Date 9/16/2010

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:

Headspace Gas Sampling and Analysis (HSG):

CCP-TP-093	Rev 13	03/19/07	CCP Sampling of TRU Waste Containers
CCP-TP-106	Rev 6	07/12/07	CCP Headspace Gas Sampling Batch Data Report Preparation
CCP-TP-173	Rev 0	05/03/07	CCP Analysis of Gas Samples for VOCs by GC/FID
CCP-TP-173	Rev 1	09/30/09	CCP Analysis of Gas Samples for VOCs by GC/FID
CCP-TP-175	Rev 0	05/02/07	CCP Analysis of Gas Samples for VOCs by GC/MS
CCP-TP-175	Rev 1	03/29/10	CCP Analysis of Gas Samples for VOCs by GC/MS

Visual Examination (VE):

CCP-TP-500	Rev 6	07/24/08	CCP Remote-Handled Waste Visual Examination
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Project Level Data Validation / DQO Reconciliation:

CCP-TP-001	Rev 17	09/24/07	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 20	08/18/08	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev 21	08/04/09	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev 22	05/30/10	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-003	Rev 16	10/02/07	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-005	Rev 18	11/16/08	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev 19	07/06/10	CCP Acceptable Knowledge Documentation
CCP-TP-530	Rev 9	12/11/09	CCP RH TRU Waste Certification and WWS Data Entry

WAP Certification:

CCP-PO-001	Rev 17	06/23/08	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-501	Rev. 4	04/30/10	CCP/INL RH TRU Waste Interface Document

WAC Certification:

CCP-PO-002	Rev 24	6/30/2010	CCP Transuranic Waste Certification Plan
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CCP Correlation of Container Identification Numbers to Batch Data Report Numbers

Waste Stream: # ID-INTEC-RH

Lot # 1

Container ID Number	Historical Container ID	NDA BDR or Radiological Characterization BDR (CH only)	RTR BDR	VE BDR	Solids Sampling BDR	Solids Analytical BDR	Load Management/Overpack Yes	Permit Required Headspace Gas BDR		
								Sample	Analysis	
IDIC000000427	NA	INLRHDT010002	NA	RHINLVE090001	NA	NA		INHSGS090006	ECL09012M	ECL09012G
IDIC000000460	NA	INLRHDT090004	NA	RHINLVE090001	NA	NA		INHSGS090006	ECL09012M	ECL09012G



 Signature of Site Project Manager

Irene Quintana

Printed Name

8/29/2010

Date

CCP Headspace Gas UCL₉₀ Evaluation Form

WSPF #:

ID-INTEC-RH

Waste Stream Lot Number

1 through 1

ANALYTE	Transform Data Used (No, Data-Log, SQRT, other)	# Samples above MDL (1)	# Samples	Maximum (ppmv)	Mean (ppmv)	SD (ppmv)	UCL ₉₀ (ppmv)	PRQL (ppmv)	Transformed PRQL (N/A or Value)	UCL ₉₀ > PRQL Yes	EPA Hazardous Waste Number
Benzene	No	0	2	0.90	0.75	0.21	1.21	10	N/A		
Bromoform	No	0	2	0.27	0.22	0.06	0.36	10	N/A		
Carbon tetrachloride	No	0	2	0.60	0.51	0.13	0.80	10	N/A		
Chlorobenzene	No	0	2	0.75	0.63	0.18	1.01	10	N/A		
Chloroform	No	0	2	0.95	0.80	0.21	1.26	10	N/A		
Cyclohexane ^a	No	0	2	1.05	0.88	0.25	1.41	10	N/A		
1,1-Dichloroethane	No	0	2	1.60	1.33	0.39	2.17	10	N/A		
1,2-Dichloroethane	No	0	2	0.95	0.80	0.21	1.26	10	N/A		
1,1-Dichloroethylene	No	0	2	1.05	0.88	0.25	1.41	10	N/A		
cis-1,2-Dichloroethylene	No	0	2	0.65	0.54	0.16	0.88	10	N/A		
trans-1,2-Dichloroethylene	No	0	2	0.70	0.58	0.17	0.95	10	N/A		
Ethyl benzene	No	0	2	0.75	0.63	0.18	1.01	10	N/A		
Ethyl ether	No	0	2	1.30	1.10	0.28	1.72	10	N/A		
Methylene chloride	No	0	2	1.05	0.88	0.25	1.41	10	N/A		
1,1,2,2-Tetrachloroethane	No	0	2	0.55	0.47	0.12	0.72	10	N/A		
Tetrachloroethylene	No	0	2	0.60	0.50	0.14	0.81	10	N/A		
Toluene	No	2	2	14.00	13.50	0.71	15.04	10	N/A	Yes	F005
1,1,1-Trichloroethane	No	0	2	0.48	0.40	0.11	0.64	10	N/A		
Trichloroethylene	No	0	2	0.50	0.43	0.11	0.66	10	N/A		
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	No	0	2	0.55	0.47	0.12	0.73	10	N/A		
1,2,4-Trimethylbenzene ^a	No	0	2	0.70	0.59	0.16	0.94	10	N/A		
1,3,5-Trimethylbenzene ^a	No	0	2	0.70	0.59	0.16	0.93	10	N/A		
m-Xylene ^b	No	0	2	0.85	0.54	0.15	0.87	10	N/A		
p-Xylene ^b	No	0	2	0.65	0.54	0.15	0.87	10	N/A		
o-Xylene	No	0	2	0.85	0.73	0.18	1.11	10	N/A		
Acetone	No	2	2	350.00	345.00	7.07	360.39	100	N/A	Yes	d
Butanol	No	2	2	150.00	112.00	53.74	228.95	100	N/A	Yes	d
Methanol	No	0	2	8.00	8.00	0.00	0.00	100	N/A		
Methyl ethyl ketone	No	2	2	54.00	41.00	18.38	81.01	100	N/A		

CCP Headspace Gas UCL₉₀ Evaluation Form

WSPF #:

ID-INTEC-RH

Waste Stream Lot Number

1 through 1

ANALYTE	Transform Data Used (No, Data-Log, SQRT, other)	# Samples above MDL (1)	# Samples	Maximum (ppmv)	Mean (ppmv)	SD (ppmv)	UCL ₉₀ (ppmv)	PRQL (ppmv)	Transformed PRQL (N/A or Value)	UCL ₉₀ > PRQL Yes	EPA Hazardous Waste Number
Methyl isobutyl ketone	No	2	2	15.00	14.00	1.41	17.08	100	N/A		
Chloromethane ^a	No	0	2	1.25	1.05	0.28	1.62	100	N/A		
Carbon Disulfide ^a	No	0	2	1.00	0.85	0.21	1.31	10	N/A		
1,2-Dichloropropane ^a	No	0	2	0.38	0.32	0.09	0.51	10	N/A		
Trichlorofluoromethane ^c	No	0	2	0.80	0.68	0.18	1.06	100	N/A		

^a These compounds are from the TRAMPAC and or CH TRUCON Appendix B and are flammable VOCs that do not appear in the QAPJP or the WIPP WAP. 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 program. m-Xylene and p-Xylene will be reported as "Total m-p-Xylene."

^c Noted analytes are not required but are reported by the Environmental Chemistry Laboratory at Idaho and are included on the UCL90 for completeness.

^d EPA Hazardous Waste Number F003 is not assigned to this waste stream as it is not liquid.

Comments:

(1) For analytes where there were no samples measured above the MDL value, 1/2 of the MDL value was used. (Per section B4 of the WAP, 1/2 of the MDL value is used in calculating the mean concentration.)



 Signature of Site Project Manager

Irene Quintana

 Printed Name

8/29/2010

 Date

CCP Headspace Gas Summary Data

Waste Stream Number

ID-INTEC-RH

Lot Number (s)

1

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	% Detected
None	0.00	0	0.00%
Data Supports EPA Hazardous Waste Numbers Assigned by AK? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
If no, describe the basis for assigning the EPA Hazardous Waste Codes:			

SPM Signature

[Handwritten Signature]

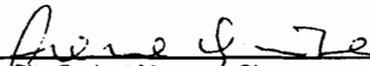
Date 8/29/2010

CCP RTR/VE Summary of Prohibited Items and AK Confirmation

Waste Stream Number: ID-INTEC-RH

Lot(s)#: 1

Container Number	RTR Prohibited Items ^a	Visual Examination Prohibited Items ^a
See correlation of container ID numbers for list of remaining drum numbers in this Lot.	RTR was not used to certify any containers in this lot.	None of the containers in this Lot had prohibited items identified during Visual Examination technique.
<p>a. See Batch Data Reports</p> <p>b. If AK has assigned U134 to this waste stream, then any liquids in these containers are prohibited items (not acceptable by the TSDF).</p>		
<p>Justification for the selection of RTR and/or VE: VE was selected as the characterization method for this lot because the containers were newly generated and met all the Data Quality Objectives for NDE for the waste.</p>		


 Site Project Manager Signature

Irene Quintana
 Printed Name

8/29/2010
 Date

CCP Reconciliation with Data Quality Objectives

WSF# ID-INTEC-RH

Lot # 1

Sampling Completeness

VE

Number of Valid Samples: 2
Percent Complete: 100 (QAO is 100%)

Number of Total Samples Analyzed: 2

RTR

Number of Valid Samples: NA
Percent Complete: NA (QAO is 100%)

Number of Total Samples Analyzed: NA

HSG

Number of Valid Samples: 2
Percent Complete: 100 (QAO is $\geq 90\%$)

Number of Total Samples collected: 2

Total VOC

Number of Valid Samples: NA
Percent Complete: NA (QAO is $\geq 90\%$)
Number of Valid Samples: NA
Percent Complete: NA (QAO is $\geq 90\%$)

Number of Total Samples collected: NA

Number of Total Samples analyzed: NA

Total SVOC

Number of Valid Samples: NA
Percent Complete: NA (QAO is $\geq 90\%$)
Number of Valid Samples: NA
Percent Complete: NA (QAO is $\geq 90\%$)

Number of Total Samples collected: NA

Number of Total Samples analyzed: NA

Total Metals

Number of Valid Samples: NA
Percent Complete: NA (QAO is $\geq 90\%$)
Number of Valid Samples: NA
Percent Complete: NA (QAO is $\geq 90\%$)

Number of Total Samples collected: NA

Number of Total Samples analyzed: NA

CCP Reconciliation with Data Quality Objectives

WSF# ID-INTEC-RH

Lot # 1

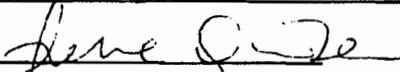
	Y/N/NA	Reconciliation Parameter
1	Y	Waste Matrix Code.
2	Y	Waste Material Parameter Weights.
3	Y	The waste matrix code identified is consistent with the type of sampling and analysis used to characterize the waste.
4	Y	The TRU activity reported in the BDRs for each container demonstrates with a 95% probability 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, UCL90 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	NA	Mean concentrations, UCL90 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	NA	Mean concentrations, UCL90 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	NA	Mean concentrations, (UCL90) 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

WSF# ID-INTEC-RH

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 B3-1 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 CCP-PO-001 Sections B3-2 through B3-9 prior to submittal of a waste stream profile form for a waste stream or waste stream lot.		
		Completeness	Comparability	Representativeness
	Radiography	NA	NA	NA
	VE	Y	Y	Y
	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: N/A				


Signature of Site Project Manager

Irene Quintana
Printed Name

8/29/2010
Date

SUMMATION OF ASPECTS OF AK SUMMARY REPORT: ID-INTEC-RH**Overview:**

Waste stream ID-INTEC-RH consists of remote-handled (RH) heterogeneous debris waste generated by the Idaho Nuclear Technology and Engineering Center (INTEC), which is part of the Idaho National Laboratory (INL). The waste was generated in the Remote Analytical Facility (RAF) in Building CPP-627 and stored and characterized at INTEC. Waste stream ID-INTEC-RH was packaged from the Building CPP-627 A-Line in October 1978. The waste is visually examined and repackaged in Building CPP-659's New Waste Calcining Facility (NWCF), the remote decontamination cell.

Waste stream ID-INTEC-RH was generated by INTEC operations that are contaminated with materials from atomic energy defense activities associated with naval reactors development, defense nuclear materials productions, defense nuclear waste and materials by-products management, and defense research and development (R&D) activities. Waste stream ID-INTEC-RH is therefore defense related waste.

This Summation of the Acceptable Knowledge Summary Report includes information to support Waste Stream Profile Form (WSPF) ID-INTEC-RH for stored RH heterogeneous debris from INTEC. The primary source of information for this report was CCP-AK-INL-550, *Central Characterization Project Acceptable Knowledge Summary Report For Stored Remote-Handled Transuranic Debris from the Idaho Nuclear Technology and Engineering Center at the Idaho National Laboratory: Waste Stream ID-INTEC-RH*, Revision 1, dated March 22, 2010. CCP-AK-INL-550 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:	Remote Handled Transuranic Debris from the Idaho Nuclear Technology and Engineering Center
Waste Stream Number:	ID-INTEC-RH
Site Where TRU Waste Was Generated:	Idaho National Laboratory
Facility Where TRU Waste Was Generated:	Remote Analytical Facility in Building CPP-627
Waste Stream Volume - Current:	2 55-gallon drums ¹
Waste Stream Volume - Projected:	0 55-gallon drums
Dates of Waste Generation:	1978
TRUCON Content Number (TRUCON):	ID 321 and ID 325

¹ The two 55-gallon drums are packaged into 1 RH canister.

Summary Category Group: S5000
Waste Matrix Code Group: Heterogeneous Debris Waste
Waste Matrix Code: S5400
Waste Stream TWBIR Identification: IN-INTEC-SFS-01
EPA Hazardous Waste Numbers: D008, D018, F005

Waste Stream Description and Physical Form:

Waste stream ID-INTEC-RH consists of RH TRU heterogeneous debris generated from an experimental actinide partitioning study conducted in the A-Line of the RAF and packaged in October 1978. Examples of organic and inorganic debris include: cloth rags or towels, paper bags, plastic items consisting of bags, bottles/beakers, tubing, and 30-gallon drum rigid liners, rubber tubing and sample bottle lids, empty glass sample bottles, stainless steel sample bottle lids and 30-gallon drums, lead bricks and sheeting, homogeneous solids, and diatomaceous earth.

Waste Matrix Code S5400, Heterogeneous Debris, is assigned to waste stream ID-INTEC-RH. The waste stream is comprised of greater than 50 percent heterogeneous organic and inorganic debris; no drum will contain greater than 50 percent homogeneous solids. The waste that comprises waste stream ID-INTEC-RH was generated from a single process or from an activity (analytical laboratory operations) that is similar in material, physical form, and hazardous constituents and is therefore a single waste stream.

Point of Generation - Area and Building of Generation

This waste stream was generated in the RAF in Building CPP-627 in the INTEC at the INL. The waste was stored at INTEC until it was repackaged, visually examined, and stored in interim storage locations at the Building-659 NWCF.

Generating Process

The RAF provided support to spent nuclear fuel (SNF) reprocessing activities, including experimentation, sampling and analysis, and fuel assay to ensure that reprocessing was efficient. During the late 1970s, a small scale research program was conducted in the RAF. The program's purpose was to develop an actinide partitioning scheme for radioactive liquid waste to meet higher recovery levels of plutonium, neptunium, americium, curium, and uranium. The study was conducted utilizing H. B. Robinson fuel obtained from Test Area North (TAN). The fuel was dissolved using nitric acid and the resulting solution was extracted using the Plutonium-Uranium Extraction (PUREX) process. The aqueous PUREX raffinate fraction was transferred to the RTC for separations testing. The organic fraction was solidified with diatomaceous earth and packaged with the associated contaminated laboratory equipment as waste stream ID-INTEC-RH.

In addition, waste stream IN-INTEC-RH is commingled with other defense waste. No decontamination operations were conducted in the RAF cell prior to conducting the study.

Therefore, incidental cross contamination has occurred. Preliminary examination of the waste identified several empty sample bottles. These bottles were from RAF laboratory operations conducted in support of Fuel Reprocessing Complex (FRC) fuel reprocessing operations.

Experimental Actinide Partitioning Study Process

Approximately half of H. B. Robinson fuel rod E-14 was sectioned and transferred from TAN to an A-line cell for this study. The sections of fuel were first dissolved from the cladding using nitric acid. Undissolved cladding was removed from the solution after the dissolution, and rinsed over the dissolution vessel with nitric acid. Primaflor C-3 (a non-regulated cationic flocculent) was then added to the resulting acid solution to flocculate the suspended solids, and the solution was subsequently filtered. The filtered undissolved solids were reserved and transferred to the Reactor Technology Complex (RTC) for further analysis. The solution was then extracted with tributyl phosphate in kerosene (the PUREX process) to remove the majority of uranium and plutonium. The aqueous raffinate fraction from the process was transferred to the RTC for further separations testing.

The organic solution from the process, which contained the uranium and plutonium from the dissolved fuel, was solidified for disposal as waste and is included in this waste stream. The organic fraction from the PUREX separation was solidified with diatomaceous earth in 4-liter plastic bottles. The fuel cladding material was placed in a plastic bag, and packaged into a 46-ounce juice can. Laboratory glassware and equipment were packaged into plastic. Cans and waste materials were then campaigned out of the cell and packaged in boxes (low-level waste) or lead-lined 30-gallon drums (TRU waste).

Table 1 lists the Toxicity Characteristic (TC) and F-listed contaminants identified in this waste.

Table 1 – TC and F-Listed Contaminants for Waste Stream ID-INTEC-RH

Constituent	CAS Number	EPA Hazardous Waste Number
Lead	7439-92-1	D008
Benzene	71-43-2	D018
Toluene	108-88-3	F005

RCRA Determinations - Hazardous Waste Determinations

Ignitability, Corrosivity, Reactivity

Waste stream ID-INTEC-RH does not qualify for any of the exclusions outlined in 40 CFR 260 or 261. Visual examination 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 of ignitability (D001), corrosivity (D002), or reactivity (D003).

Ignitability

The waste does not meet the definition of ignitability as defined in 40 CFR 261.21. The waste is not a liquid, compressed gas, or an oxidizer, and is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. Kerosene, an ignitable liquid, was used in the actinide partitioning study. However, the materials are not liquid and visual examination (VE) is performed to ensure the absence of prohibited items.

Therefore, this waste stream does not exhibit the characteristic of ignitability (D001). (References C001, C012, U024, U031, U032, U033, and U035).

Corrosivity

The waste does not meet the definition of corrosivity as defined in 40 CFR 261.22. Nitric acid, a corrosive liquid, was used in the actinide partitioning study. However, the materials are not liquid and VE is performed to ensure the absence of prohibited items.

Therefore, this waste stream does not exhibit the characteristic of corrosivity (D002) (References C001, C012, U024, U031, U032, U033, and U035).

Reactivity

The waste 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 materials do not contain cyanides or sulfides, and are not capable of detonation or explosive reaction. The materials are not liquid and VE is performed to ensure the absence of prohibited items. The materials in this waste stream are therefore not reactive wastes. Therefore, this waste does not exhibit the characteristic of reactivity (D003) (References C001, C012, U024, U031, U032, U033, and U035).

Toxicity Characteristic

Waste stream ID-INTEC-RH exhibits the characteristic of toxicity per 40 CFR 261.24. The toxicity characteristic contaminants fall into two categories; metals and organics. This waste stream exhibits the characteristic of toxicity for metals and organics per 40 CFR 261.24. Where a constituent has been identified and there is insufficient quantitative data to demonstrate that the concentration of a constituent is below the regulatory threshold, the applicable EPA HWN is conservatively assigned to the waste stream.

Waste stream ID-INTEC-RH contains or is contaminated with toxicity characteristic metals. No RCRA toxic metals were used in the actinide partitioning study. However, during the packaging of this waste, lead sheet shielding and lead bricks were used to reduce the radioactive dose rate and may contaminate the waste. Therefore, waste stream ID-INTEC-RH is conservatively assigned EPA HWN D008 for lead (References C001, C012, DR001, P019, P063, U006, U024, U031, U032, and U033).

The AK sources identified the use of the organic toxicity characteristic compound benzene (D018). Benzene is a contaminant in kerosene which was used as an extractant in the actinide partitioning. Although the concentration of benzene in kerosene is less than 1 percent as indicated in the kerosene MSDS, the concentration of benzene present in the waste is unknown.

Therefore EPA HWN D018 (benzene) is conservatively assigned to waste stream IN-INTEC-RH (References C001, C012, DR001, P062, and U024).

Listed Waste

F-Listed Waste

Waste stream ID-INTEC-RH contains or is mixed with F-listed hazardous wastes from nonspecific sources listed in 40 CFR 261.31. Kerosene was used as a solvent and contaminates this waste stream. According to the MSDS, benzene and toluene may be present in kerosene at less than 10 percent and as such, would not be considered an F005-listed waste. However, toluene was detected in concentrations greater than the program required quantitation limit (PRQL) in headspace gas samples (HSGS) conducted by CCP. Toluene may also have been used as a cleaning agent or in solvent extractions in the RAF line. Therefore, waste stream ID-INTEC-RH is assigned EPA HWN F005 for toluene (References C001, C010, C013, C017, DR001, DR002, U024, U031, U032, and U035).

HSGS samples also detected acetone and butanol in concentrations above their respective PRQLs. Re-evaluation of AK indicated that acetone was used in the RAF cells for general cleaning. Butanol is a common laboratory agent and may have been used in the RAF cells. However, F003-listed solvents are listed solely for ignitability, and this waste stream does not exhibit the characteristic of ignitability because the waste is not liquid. Therefore, this waste stream is not an F003-listed hazardous waste (References C017 and DR002).

U, K, and P-Listed Chemicals

Waste stream ID-INTEC-RH does not contain and is 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). None of the AK documentation reviewed indicates that pure product or unused chemicals were placed into TRU waste. This waste stream is therefore not a P- or U-listed hazardous waste as defined in 40 CFR 261, Subpart D.

Beryllium is commonly utilized in fuel materials and may contaminate this waste stream; however, beryllium powder (P015) is not identified in the AK record as a component of the fuel used for the actinide partitioning study. Waste stream ID-INTEC-RH is therefore not assigned EAP HWN P015 (beryllium powder).

Hydrofluoric acid (U134) was not identified as a chemical used in the partitioning studies that generated this waste stream. Therefore, U134 (hydrofluoric acid) is not applied.

The material in this waste stream is not a hazardous waste from any of the sources specified in 40 CFR 261.32. Waste stream ID-INTEC-RH is therefore not assigned a K-listed HWN (References C001, C012, DR001, P039, U024, U031, U032, U033, and U035).

Headspace Gas/Volatile Organic Compound Information

Headspace gas sampling was performed on both containers in the waste stream. Three target analytes UCL₉₀ values (toluene, acetone and butanol) exceeded their respective PRQLs for headspace gas analysis. Toluene (F005) has been assigned to this waste stream based on AK. Acetone and butanol are F003 listed constituents. However, EPA HWN F003 is not assigned to this waste stream for acetone and butanol because this waste is not liquid and is

therefore not ignitable. No TICs were identified in this lot. Data for other analytes are consistent with AK.

Based on the analytical results, no new HWNs were assigned. The specifics of this information are included in the attached Characterization Information Summary report.

Conclusion

The following EPA HWNs are assigned to this waste stream: D008 (lead), D018 (benzene) and F005 (toluene).

Polychlorinated Biphenyls

No sources of PCBs were identified as inputs into the experimental actinide partitioning study that generated this waste stream. The only source of PCBs identified in the AK record is as a plasticizer in some types of paint used in the FRC. Paint scrapings are not included in the waste. Therefore, waste stream ID-INTEC-RH is not regulated as a Toxic Substances Control Act (TSCA) waste under 40 CFR 761 (References C012, P046, U031, U032, U033, and U035).

Prohibited Items

The absence of prohibited items is determined and documented through acceptable knowledge and confirmation activities. VE is performed on each container in this waste stream. The following items have been determined as not present in the waste:

- Liquid waste
- Non-radioactive pyrophoric materials
- Hazardous wastes 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
- Non-mixed hazardous wastes
- Waste that has ever been managed as high-level waste and waste from tanks specified in Table B-8 of the WIPP HWFP, unless specifically approved through a Class 3 permit modification
- Any waste container from a waste stream (or waste stream lot) which has not undergone either radiographic or visual examination if a statistically representative subpopulation of the waste stream in each shipment, as described in WIPP HWFP Attachment B7.

Each container of waste is certified and shipped only after VE:

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

Justification for the Selection of Radiography or VE

Containers in Lot 1 of this waste stream were characterized using VE. Visual Examination is an acceptable characterization method for S5000 waste. Visual Examination meets all of the Data Quality Objectives for NDE of S5000 waste.

Method for Determining Waste Material Parameter Weights per Unit of Waste

The Waste Material Parameter (WMP) weights for waste stream ID-INTEC-RH were based on the evaluation of the materials contained in this waste stream. Volumes for waste items in each drum were estimated. These estimates were summed by WMP category and conversion factors were utilized to estimate waste material parameter weights. Minimum, maximum, and waste stream WMP weight percentages were then calculated for each drum and the waste stream (References U005, U031, U032, U033, and U035). This WMP evaluation is documented in a memorandum as required by CCP-TP-005, *CCP Acceptable Knowledge Documentation*.

Table 2. Waste Stream ID-INTEC-RH Waste Material Parameter Estimates

Waste Material Parameter	Weight Percent	Weight Percentage Range
Iron-based Metals/Alloys	10.2%	9.1% - 11.3%
Aluminum-based Metals/Alloys	<1.0%	0.0% - <1.0%
Other Metals/Alloys	83.5%	82.2% - 84.8%
Other Inorganic Materials	1.5%	0.0% - 3.1%
Cellulosics	1.1%	0.0% - 2.2%
Rubber	<1.0%	0.0% - <1.0%
Plastics (waste materials)	2.1%	1.9% - 2.28%
Inorganic Matrix	<1.0%	0.0% - <1.0%
Organic Matrix	1.5%	1.4% - 1.5%
Soils/Gravel	<1.0%	0.0% - <1.0%

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

The level of beryllium contamination in individual drums is expected to be less than one weight percent.

Radionuclide Information

Containers in this waste stream have surface dose rates exceeding 200 mrem/h, but less than 1000 rem/h, and contain more than 100 nanocuries per gram (nCi/g) of waste alpha-emitting TRU isotopes with half lives greater than 20 years. The waste is contaminated primarily by mass with U-238 and U-235. Previous data were evaluated to determine the radionuclide distribution in the waste stream. The result of this evaluation identified the isotopes listed in Table 3.

Table 3 – Radionuclides in Waste Stream ID-INTEC-RH

WIPP Tracked	Other Radionuclides
Am-241 (Not reported)	U-235
Cs-137	Pu-241
Pu-238	Am-243 (Not reported)
Pu-239	Ce-144 (Not reported)
Pu-240	Cm-242 (Not reported)
Pu-242	Cm-244 (Not reported)
Sr-90 (Not Reported)	Cs-134 (Not reported)
U-234 (Not Reported)	Eu-154 (Not reported)
U-238	Eu-155 (Not reported)
	Np-237 (Not reported)
	Ru-106 (Not reported)
	Sb-125 (Not reported)
	U-236 (Not reported)

Payload management will not be applied to this waste stream.

Attachment 1, AK Source Documents – Supplemental Documentation

Source Document Tracking Number	AK Element #	Title	Document Number	Date
C001	NA	"Emails to John D. Baker and John H. Meikrantz, re: INTEC RH TRU Waste Information"	NA	8/18/2005
C010	S4	"Email to Lea Ann Allen, re: Fast Scan Report"	NA	07/18/2007
C012	S7	INTEC Interview	NA	04/17/2008
C013	S7	INTEC Follow-up Interview	NA	9/2/2008
C017	S7	Interview of Dave Meikrantz and Keith Farmer, re: Solvents Detected in Headspace Gas Samples of INTEC RH Drums.	NA	12/12/2009
DR001	NA	Waste Stream ID-INTEC-RH, Historical and Current RCRA Characterization and Assignment of EPA Hazardous Waste Numbers	NA	10/13/2009
DR002	NA	Waste Stream ID-INTEC-RH, Assignment of EPA Hazardous Waste Numbers from Headspace Gas Sample Results	NA	3/1/10
P001	S13	"Carolina Power & Light Co.; (H.B. Robinson team Electric Plant, Unit No. 2); Exemption Amendment"	L-S Document 485327, 59 FR 12993	03/18/1994
P015	S5	Characterization of Transuranic Solid Waste from a Plutonium Processing Facility	LA-5993-MS	06/1975
P018	S6	ILTSF Drum Retrieval Completion Report	ICP/EXT-05-00886	01/2006
P019	S5, S8, S9	Waste Characterization for INEL Remote-Handled/Special-Case Stored Transuranic Waste	WM-PD-85-014	11/1985
P020	S6	"Engineering Design File, Radiological Properties of Remote Handled Transuranic Waste Inventory"	EDF-4687	04/26/2004 05/20/2005
P022	S9	Applied Nuclear Data Research and Development	LA-9647-PR	04/1983
P039	S5	Characteristics of Commercial Nuclear Materials Stored in the TAN Pool	INEL/INT-98-00767	09/1998
P043	S5, S9	Study of Bidentate Compounds for Separation of Actinides from Commercial LWR Reprocessing Waste	ICP-1180	05/1979
P046	NA	Process Description and Operating History for the CPP-601/-640/-627 Fuel Reprocessing Complex at the Idaho National Engineering and Environmental Laboratory	INEEL/EXT-99-00400	06/1999
P048	S9	"Characteristics of Nuclear Materials Stored in the MTR Canal, Volume I"	INEEL/INT-98-00768	10/1998
P049	S9	"Characteristics of Nuclear Materials Stored in the MTR Canal, Volume II"	INEEL/INT-98-00768	10/1998
P051	S4, S8	Characterization and Shipping Records for Remote Handled (RH) Transuranic (TRU) Waste Stored at the Radioactive Waste Management Complex (RWMC)	3460-94-084	9/1994
P057	S3	"Engineering Design File, CPP-1617 Fire Area Evaluation"	EDF-4684	4/26/2004
P058	S2	"Technical Procedure, CPP-1617 Waste Handling and Operations"	TPR-7318	02/01/2007
P060	S3	Safety Analysis Report for the INTEC Waste	SAR-103	12/20/2006

Source Document Tracking Number	AK Element #	Title	Document Number	Date
		Management Facility (IWMF)	Addendum A	
P061	S2	Decontamination Cell Operation	TPR-7298	06/04/2008
P062	S10	Packet of Material Safety Data Sheets	NA	Various
P063	NA	Engineering Design File, Baseline Estimate of the Volume of Remote Handled Transuranic Waste Stored at the Radioactive Waste Management Complex	EDF-4379, Rev. 0	03/29/2004
P076	S1	Remote and Service Analysis Group Operating Manual	PTR-729	11/1964
P110	S13	Implementation Guide for Use With DOE M 435.1-1	DOE G 435.1-1	07/09/1999
P111	S13	WIR Citation Determination Checklist for INTEC CPP-627	File Number IDIC000000427 & IDIC0000000460	10/31/2008
U005	NA	Pictures of CPP Fluorinel Equipment Used in Experiments with H.B. Robinson Waste	NA	NA
U006	NA	RH TRU RTR Prescreen for Repackaging/AK Worksheet for IDIC000000427 and IDIC000000460	NA	08/14/2007
U024	S5, S9	"Abstract, Executive Summary, and Table of a Draft Report on Acceptable Knowledge on INTEC RH TRU Drums (Lead-Lined)"	NA	NA
U029	S11	INTEC Health Physics Log Sheet	NA	06/21/1978
U031	NA	Videos of Visual Inspection of Drum IDIC000000427-DVD #1 (4 files) and DVD #2 (1 file)	NA	07/31/2008
U032	NA	Videos of Visual Inspection of Drum IDIC000000460-DVD #1 (1 file) and DVD #2 (1 file)	NA	07/30/2008
U033	NA	RH TRU Drum Repackaging Datasheet Form 880 on IDIC000000427 and IDIC000000460	FRM-880	07/29/2008
U035	NA	RH TRU Inventory on Drums IDIC000000427 and IDIC000000460	NA	07/30/2008

Alphanumeric Designations

C Correspondence
DR Discrepancy Resolution
P Published Sources
U Unpublished Documents

AK Numbers

S1 Process Design Documents
S2 Standard Operating Procedure
S3 Safety Analysis Reports
S4 Waste Packaging Logs
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
- S13 Other
- NA Not a supplemental source document, but cited in the AK Summation