Integrated Waste Tracking System Material Profile

Information Only

Material Profile Define 7123Q.R1

Material Profile No.: 7123Q.R1

Profile Date: 4/24/2013 9:22:59 AM

Name of Waste or Material: U233 Solidified Grinding Sludge and Debris

Site Treatment Plan ID: ID-BTO-030 SOLIDIFIED GRINDING SLUDGE, ETC.

Generating Unit (e.g. Building or Process): BL : Bettis Laboratory

Material or Waste Type and Action: Mixed Low Level Waste: Contact Handled

Record Status: Inactive

Record Lock Parameters: 05/08/2013 09:19:54 [redacted]

Insert Parameters: 04/24/2013 09:22:59 [redacted]

Inactivation allows a record to remain selectable for historical profiles prior to the inactivation date. The inactivation data defaults to the date/time of inactivation, but can be changed to a user defined date/time. A canceled record will not be selectable by past, present, or future records. After a record is cancelled, a historical profile may continue to reference it, but any attempt to update the reference will require a new selection.

Integrated Waste Tracking System Material Profile

Information Only

Certification, Review & Approval 7123Q.R1

Certified 	Name: [redacted] Date: 05/08/2013 Phone: [redacted] Fax: [redacted] E-Mail [redacted]	This profile is being certified, reviewed, or approved to transfer a container(s) to facilitate further characterization or stage for shipment. This certification, review, or approval does not imply that this profile is acceptable for treatment and/or disposal. Information required for treatment and/or disposal of this waste is incomplete. To accomplish proper treatment and/or disposal the container must be moved to a facility where the contents can be sampled, evaluated and/or analyzed.
Reviewed 	Name: [redacted] Date: 05/08/2013 Phone: [redacted] Fax: [redacted] E-Mail [redacted]	This profile is being certified, reviewed, or approved to transfer a container(s) to facilitate further characterization or stage for shipment. This certification, review, or approval does not imply that this profile is acceptable for treatment and/or disposal. Information required for treatment and/or disposal of this waste is incomplete. To accomplish proper treatment and/or disposal the container must be moved to a facility where the contents can be sampled, evaluated and/or analyzed.
Approved 	Name: [redacted] Date: 05/08/2013 Phone: [redacted] Fax: E-Mail [redacted]	This profile is being certified, reviewed, or approved to transfer a container(s) to facilitate further characterization or stage for shipment. This certification, review, or approval does not imply that this profile is acceptable for treatment and/or disposal. Information required for treatment and/or disposal of this waste is incomplete. To accomplish proper treatment and/or disposal the container must be moved to a facility where the contents can be sampled, evaluated and/or analyzed.

Last Profile Update and Approval 7123Q.R1

Update/Approvals	Name: Date: Phone: Fax: E-Mail	

	First Name	Last Name	Phone	Fax	E-Mail	Mail Stop
Generator Contact:	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	
Technical Contact:	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	
Charge No:	[redacted]					

Material Profile Rejection Log 7123Q.R1 No Data Available

Revision History 7123Q.R1

Char_id	Profile Name	Profile Date	Record Status
7123Q	U233 Solidified Grinding Sludge and Debris	11/12/2012	Inactive
7123Q.R1	U233 Solidified Grinding Sludge and Debris	04/24/2013	Inactive

Integrated Waste Tracking System Material Profile

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Material Profile Process 7123Q.R1

1. No **Will material and waste characterization be fully capable of complying with applicable Waste Acceptance Criteria?**

   a. **Waste Acceptance Criteria requirements not met (list each):** Waste to be Macroencapsulated on-site to meet LDRs prior to disposal

   b. **Receiving organization approval letter number for nonstandard material or waste:**

2. **Waste Generated from:** | **Cleanup/Stabilization Activity:** | **Generating Status:**

   Cleanup/Stabilization Activities | One-time Only Generation | On-going

   No **Is this secondary waste?**

3. **Generating Process description (describe the process and/or operations generating material, be specific):**

   Rev 1 to this profile needed to envelope BL020, BL040 and BL081 material.

   This waste consists of solidfied grinding sludge, neutralized and solidified chemical wastes and debris such as filters, rags, gloves, plastic, paper, metal, brick, rubber, glass etc. associated with, and generated during, the production of fuel pellets for the Light Water Breeder Reactor (LWBR) program at Bettis Atomic Power Laboratory's (BAPL) Fuel Manufacturing Facility. BAPL waste streams IDC BL010 (U233 Compressible Debris), IDC BL020 (Non-Compressible Debris and neutralized and solidified chemical wastes), IDC BL030 (U233 grinding sludge and associated debris), IDC BL040 (Solidified Binary Scrap Powder, Pellets or Rods) and IDC BL081 (U233 metallography mounts) are covered by this profile.

   Containers in this profile may include waste from several different IDC waste streams e.g. a container identified as a BL040 or as a BL081 may include BL010 or BL020 type material. Placement in this material profile signifies that there is debris and/or rad lead solids associated with IDC□s BL010, BL020 or BL030 within the container that requires MACRO treatment.

   Waste may carry EPA codes D008 and/or F001 and F002. See comments section for more detail on each IDC waste stream.
   Waste to be macroencapsulated to treat the rad lead solids and debris. UHC's not identified.

4. **Physical state at 70 degrees F:** solid

5. No **Does material contain free liquids?**

6. Yes **Current waste minimization plan?** **Reference:** DOE/ID-10333

Special Characteristic 7123Q.R1

Characteristic

Accountable nuclear material

Debris - RCRA

Integrated Waste Tracking System Material Profile

Information Only

Characterization Requirements 7123Q.R1

1. Yes **Is this DOT regulated hazardous material ?**

   If yes, identify DOT primary hazard: Class 7 **and DOT subsidiary hazard(s):**

2. Yes **At the point of generation did this material contain any RCRA "F", "K", "U", or "P" Listed waste either in pure form, as a mixture, or as a treatment residue (i.e., ash, leachate, spill cleanup), or "D" Characteristic waste?**

   Waste Description: Solid waste from operations, maintenance or cleanup

   Source Code: G61 Waste Not Physically Generated On-Site: Haz waste received from off-site for storage/bulking & transfer off-site for treatment or disposal

   Source Code Comments:

   Form Code: W002 Mixed Media/Debris/Devices: Contaminated debris: paper/clothing/rags/wood, empty containers, glass/piping/other solids

   Form Code Comments:

3. **RCRA hazardous waste determination was made by:** Process Knowledge

4. No **Does this Material Profile contain Lab Packs?**

5. No **Was an Underlying Hazardous Constituent (UHC) determination performed?**

   If a UHC determination was performed, were any detected in concentrations exceeding the Universal Treatment Standards? List on UHC Screen.

6. Yes **Is supporting documentation submitted? If yes, list:**

   WDDFs: RWMC1009.R2, INTEC-027-12, INTEC-026-12, INTEC-028-12 and INTEC-06-13. Safeguard and Security Forms 741, AMWTP-RPT-TRUW-60, Rev. 0, TBL-462 and TBL-467.

7. Yes **Additional narrative:**

   Waste is to be macroencapsulated prior to offsite disposal.

8. No **Is the material LDR Compliant?**

Generation Active Estimates 7123Q.R1

Estimate Date	Start Date	End Date	Vol Qty	Vol Units	Mass Qty	Mass Units	Data Entered By	Active	Estimate Type	Inactivated By	Inactivated Date
04/24/2013	04/24/2013	04/24/2014	3300	GAL			[redacted]	Yes	CY		

Generation Inactive Estimates 7123Q.R1 No Data Available

Layers 7123Q.R1

Layer or Phase	Physical State at 70 F	Range of Percentage From	To	Units	Color
1	solid	0	100	vol%	various. sludge
2	solid	0	100	vol%	various. debris

Integrated Waste Tracking System Material Profile

Information Only

Physical Characteristics 7123Q.R1

1. **Density of material or waste (may not be required for hazardous waste and recyclable material):**

   Liquid: **To:** **g/ml** **Solid:** **To:**

2. No **Is this aqueous waste? If yes, give total solids range:**

   From: **To:** **g/ml**

3. No **Is this incinerable liquid? If yes, give viscosity range:**

   From: **To:** **SSU**

Physical Composition 7123Q.R1

Char. No.	Related Characteristic (Use *Other* Where NA)	Name of Material	Carcinogen	Composition Range From/To/Units		
0	*Other*	Debris items e.g. rubber gloves, rags, cellulosics, metal, plastic, glass, brick	No	0	100	vol%
0	*Other*	Neutralized and solidified chemical wastes	No	0	100	vol%
0	*Other*	Radioactive lead solids	Yes	0	100	vol%
0	*Other*	Solidified Grinding Sludge	No	0	100	vol%
0	*Other*	Thorium oxide	No	0	25	vol%
0	*Other*	uranium oxide	No	0	10	vol%
2	Free liquid - Aqueous based	Neutralized chemical waste	No	0	1	vol%
3	Absorbents	Oil dry, vermiculite or similar absorbents	No	0	10	vol%
34	Metal combinations or assemblies	Met Mounts	No	0	95	vol%

Flash Point, Incinerable Properties, and RCRA 7123Q.R1

1. No **Is flash point applicable? If yes, complete the following:**

   Flash Point: **To:** **Method used:**

   (Specify Other):

2. **Information for incinerable waste only:**

   a. **Heat of combustion:** **To:** **BTU/lb**

   b. **Ash content:** **To:** **wt%**

   c. **Total halogen content:** **To:** **ppm**

   d. **Water content:** **To:** **wt%**

   e. **Suspended particulates content:** **To:** **ppm**

3. Yes **Was a RCRA Waste analysis performed? If yes, enter data using "EPA Codes" screen.**

4. No **Were the sampling and analysis protocols used in full compliance with SW-846 protocol or other equivalent regulatory agency approved methods?**

Integrated Waste Tracking System Material Profile

Information Only

EPA Codes 7123Q.R1

Hazardous Constituents

			Expected Range			Representative Sample			Detection Limit	
EPA Code ID	TCLP Value	Type of Analysis	From	To	Units	From	To	Units	Limit	Units
D008A	No	Process Knowledge								
Lead										
D008C	No	Process Knowledge								
Lead Radioactive lead solids										
F001A	No	Process Knowledge								
Spent halogenated solvents used in degreasing 1,1,1-Trichloroethane										
F001B	No	Process Knowledge								
Spent halogenated solvents used in degreasing 1,1,2-Trichloro-1,2,2-trifluoroethane										
F001C	No	Process Knowledge								
Spent halogenated solvents used in degreasing Carbon tetrachloride										
F001D	No	Process Knowledge								
Spent halogenated solvents used in degreasing Methylene chloride										
F001E	No	Process Knowledge								
Spent halogenated solvents used in degreasing Tetrachloroethylene										
F001F	No	Process Knowledge								
Spent halogenated solvents used in degreasing Trichloroethylene										
F002B	No	Process Knowledge								
Spent halogenated solvents 1,1,1-Trichloroethane										
F002C	No	Process Knowledge								
Spent halogenated solvents 1,1,2-Trichloro-1,2,2-trifluoroethane										
F002F	No	Process Knowledge								
Spent halogenated solvents Methylene chloride										
F002H	No	Process Knowledge								
Spent halogenated solvents Tetrachloroethylene										
F002I	No	Process Knowledge								
Spent halogenated solvents Trichloroethylene										
F002K	No	Process Knowledge								
Spent halogenated solvents Carbon Tetrachloride										

Underlying Hazardous Constituents 7123Q.R1 No Data Available

Integrated Waste Tracking System Material Profile

Information Only

Chemical Composition 7123Q.R1

CAS	Flam-mable	EPCRA	TSCA	TCLP Value	Type of Analysis	Expected Range From	Expected Range To	Expected Range Units	Representative Sample From	Representative Sample To	Representative Sample Units	Detection Limit Limit	Detection Limit Units
71-55-6 1,1,1-Trichloroethane		Yes	No	No	Process Knowledge								
56-23-5 Carbon Tetrachloride		Yes	No	No	Process Knowledge								
7439-92-1 Lead		Yes	No	No	Process Knowledge								
75-09-2 Methylene Chloride		Yes	No	No	Process Knowledge								
127-18-4 Tetrachloroethene		Yes	No	No	Process Knowledge								
79-01-6 Trichloroethene	X	Yes	No	No	Process Knowledge								
76-13-1 Freon-113		No	No	No	Process Knowledge								

Radiological Characteristics 7123Q.R1

1. Y **Is fissile material present?** **Is fissile material >=.04 g/kg, waste matrix group is:** Polyethylene

2. **Total transuranic activity per gram of waste is:**

Y **<= 10 nCi/g (LLW)**

Y **> 10 nCi/g and <= 100 nCi/g (alpha LLW)**

N **> 100 nCi/g (TRU)**

3. **Expected radiation dose rate:**

at contact of waste package(s)	0.1	**to**	100	**mrem/hr**
at 30cm from waste package(s)	0.1	**to**	90	**mrem/hr**
at 1-meter from waste package(s)	0.1	**to**	80	**mrem/hr**

4. N **Is the waste greater than Class C as defined in 10 CFR 61.55?**

Isotopes - TRU U233, U-235 7123Q.R1

Isotope	Activity Range or Sample Data From	To	Sample	Units	Fissionable Material Range or Sample Data From	To	Sample	Units
Pu-239	0.000E+00	2.600E-01		Ci/m3	0.000E+00	9.000E+01		nCi/g
U-233	0.000E+00	2.600E+03		Ci/m3	0.000E+00	9.000E+01		nCi/g
U-235	0.000E+00	3.400E-02		Ci/m3	0.000E+00	9.000E+01		nCi/g

Isotopes - Other 7123Q.R1

Isotope	Activity Range or Sample Data From	To	Sample	Units
Ac-225	0.000E+00	9.300E+00		Ci/m3
Ac-227	0.000E+00	1.300E-05		Ci/m3
Ac-228	0.000E+00	7.100E-01		Ci/m3

At-217	0.000E+00	9.300E+00	Ci/m3
Bi-210	0.000E+00	2.300E-05	Ci/m3
Bi-211	0.000E+00	1.300E-05	Ci/m3
Bi-212	0.000E+00	3.000E+01	Ci/m3
Bi-213	0.000E+00	9.300E+00	Ci/m3
Bi-214	0.000E+00	7.200E-05	Ci/m3
Fr-221	0.000E+00	9.300E+00	Ci/m3
Fr-223	0.000E+00	1.700E-07	Ci/m3
Pa-231	0.000E+00	2.900E-05	Ci/m3
Pa-234	0.000E+00	4.500E-04	Ci/m3
Pa-234m	0.000E+00	3.500E-01	Ci/m3
Pb-209	0.000E+00	9.300E+00	Ci/m3
Pb-210	0.000E+00	2.300E-05	Ci/m3
Pb-211	0.000E+00	1.300E-05	Ci/m3
Pb-212	0.000E+00	3.000E+01	Ci/m3
Pb-214	0.000E+00	7.200E-05	Ci/m3
Po-210	0.000E+00	2.300E-05	Ci/m3
Po-211	0.000E+00	3.500E-08	Ci/m3
Po-212	0.000E+00	1.900E+01	Ci/m3
Po-213	0.000E+00	9.100E+00	Ci/m3
Po-214	0.000E+00	7.200E-05	Ci/m3
Po-215	0.000E+00	1.300E-05	Ci/m3
Po-216	0.000E+00	3.000E+01	Ci/m3
Po-218	0.000E+00	7.200E-05	Ci/m3
Ra-223	0.000E+00	1.300E-05	Ci/m3
Ra-224	0.000E+00	3.000E+01	Ci/m3
Ra-225	0.000E+00	9.300E+00	Ci/m3
Ra-226	0.000E+00	7.200E-05	Ci/m3
Ra-228	0.000E+00	7.100E-01	Ci/m3
Rn-219	0.000E+00	1.300E-05	Ci/m3
Rn-220	0.000E+00	3.000E+01	Ci/m3
Rn-222	0.000E+00	7.200E-05	Ci/m3
Th-227	0.000E+00	1.200E-05	Ci/m3
Th-228	0.000E+00	3.000E+01	Ci/m3
Th-229	0.000E+00	9.300E+00	Ci/m3
Th-230	0.000E+00	8.400E-03	Ci/m3
Th-231	0.000E+00	3.400E-02	Ci/m3
Th-232	0.000E+00	7.100E-01	Ci/m3
Th-234	0.000E+00	3.500E-01	Ci/m3

Tl-206	0.000E+00	3.000E-11	Ci/m3
Tl-207	0.000E+00	1.300E-05	Ci/m3
Tl-208	0.000E+00	1.100E+01	Ci/m3
Tl-209	0.000E+00	1.900E-01	Ci/m3
U-232	0.000E+00	2.900E+01	Ci/m3
U-234	0.000E+00	2.300E+01	Ci/m3
U-236	0.000E+00	7.000E-03	Ci/m3
U-238	0.000E+00	3.500E-01	Ci/m3

Containers 7123Q.R1

Container Barcode	Container Date	Size	Container Units	Type	Common Name of Materials	Decommissioned
10032037	10/12/1976	55	GAL	DM	U233 Solidified Grinding Sludge and Debris	No
10289756	08/18/1973	55	GAL	DM	U233 Solidified Grinding Sludge and Debris	No
10289773	09/14/1973	55	GAL	DM	U233 Solidified Grinding Sludge and Debris	No
10290111	01/23/1974	55	GAL	DM	U233 Solidified Grinding Sludge and Debris	No
10290115	09/14/1973	55	GAL	DM	U233 Solidified Grinding Sludge and Debris	No
10291024	08/13/1973	83	GAL	DM	U233 Solidified Grinding Sludge and Debris	No

Integrated Waste Tracking System Material Profile

Information Only

Material Profile Define 7124Q

Material Profile No.: 7124Q

Profile Date: 11/12/2012 11:49:57 AM

Name of Waste or Material: U233 metallography mounts

Site Treatment Plan ID: ID-BTO-081TN MET SAMPLES FISSILE

Generating Unit (e.g. Building or Process): BL : Bettis Laboratory

Material or Waste Type and Action: Low Level Waste: Contact Handled

Record Status: Inactive

Record Lock Parameters: 02/06/2013 14:17:59 [redacted]

Insert Parameters: 11/12/2012 11:53:34 [redacted]

Inactivation allows a record to remain selectable for historical profiles prior to the inactivation date. The inactivation data defaults to the date/time of inactivation, but can be changed to a user defined date/time. A canceled record will not be selectable by past, present, or future records. After a record is cancelled, a historical profile may continue to reference it, but any attempt to update the reference will require a new selection.

Integrated Waste Tracking System Material Profile

Information Only

Certification, Review & Approval 7124Q

Certified 	Name: [redacted] Date: 02/06/2013 Phone: [redacted] Fax: [redacted] E-Mail [redacted]	This profile is being certified, reviewed, or approved to transfer a container(s) to facilitate further characterization or stage for shipment. This certification, review, or approval does not imply that this profile is acceptable for treatment and/or disposal. Information required for treatment and/or disposal of this waste is incomplete. To accomplish proper treatment and/or disposal the container must be moved to a facility where the contents can be sampled, evaluated and/or analyzed.
Reviewed 	Name: [redacted] Date: 04/23/2013 Phone: [redacted] Fax: [redacted] E-Mail [redacted]	This profile is being certified, reviewed, or approved to transfer a container(s) to facilitate further characterization or stage for shipment. This certification, review, or approval does not imply that this profile is acceptable for treatment and/or disposal. Information required for treatment and/or disposal of this waste is incomplete. To accomplish proper treatment and/or disposal the container must be moved to a facility where the contents can be sampled, evaluated and/or analyzed.
Approved 	Name: [redacted] Date: 04/23/2013 Phone: [redacted] Fax: [redacted] E-Mail [redacted]	This profile is being certified, reviewed, or approved to transfer a container(s) to facilitate further characterization or stage for shipment. This certification, review, or approval does not imply that this profile is acceptable for treatment and/or disposal. Information required for treatment and/or disposal of this waste is incomplete. To accomplish proper treatment and/or disposal the container must be moved to a facility where the contents can be sampled, evaluated and/or analyzed.

Last Profile Update and Approval 7124Q

Update/Approvals	Name: Date: Phone: Fax: E-Mail	

	First Name	Last Name	Phone	Fax	E-Mail	Mail Stop
Generator Contact:	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	
Charge No:						

Material Profile Rejection Log 7124Q No Data Available

Revision History 7124Q

Char_id	Profile Name	Profile Date	Record Status
7124Q	U233 metallography mounts	11/12/2012	Inactive

Integrated Waste Tracking System Material Profile

Information Only

Material Profile Process 7124Q

1. Yes **Will material and waste characterization be fully capable of complying with applicable Waste Acceptance Criteria?**

   a. **Waste Acceptance Criteria requirements not met (list each):**

   b. **Receiving organization approval letter number for nonstandard material or waste:**

2. **Waste Generated from:** | **Cleanup/Stabilization Activity:** | **Generating Status:**

   Cleanup/Stabilization Activities | One-time Only Generation | On-going

   No **Is this secondary waste?**

3. **Generating Process description (describe the process and/or operations generating material, be specific):**

   This waste consists of metallography mounts prepared by sawing specimens from fuel and rod components. The fuel and rod components were generated during the development of the Light Water Breeder Reactor (LWBR) during the 1970s at the Bettis Atomic Power Laboratory. This waste stream was identified as IDC BL081. This waste is not spent fuel nor high-level waste, as defined by the Nuclear Waste Policy Act of 1982. These wastes were received at the INL in 1987.
   The microstructure of the samples was examined in cross section by mounting in a plastic medium (Hysol epoxy resin), polishing with abrasives and/or chemically etching. The mount material is identified as Quickmount powder and liquid which are non-hazardous materials per RCRA. The polished and etched sections were viewed and photographed with bright field-reflected illumination. Various fuel compositions of uranium, thorium, zirconium, and calcium oxides were evaluated.
   A solution of nitric acid, hydrofluoric acid, and water was identified as being used to etch fuel rods. It is assumed this solution could have also been used in metallographic examinations conducted for materials fabricated during other historical operations. Since the etching solution consists of a mixture of acids, the hydrofluoric acid constituent was not a discarded commercial chemical product, an off-specification species, or a container residue as identified in 40 CFR 261.33

4. **Physical state at 70 degrees F:** solid

5. No **Does material contain free liquids?**

6. No **Current waste minimization plan?** **Reference:**

Special Characteristic 7124Q

Characteristic
Accountable nuclear material

Integrated Waste Tracking System Material Profile

Information Only

Characterization Requirements 7124Q

1. Yes **Is this DOT regulated hazardous material ?**

   If yes, identify DOT primary hazard: Class 7 **and DOT subsidiary hazard(s):**

2. No **At the point of generation did this material contain any RCRA "F", "K", "U", or "P" Listed waste either in pure form, as a mixture, or as a treatment residue (i.e., ash, leachate, spill cleanup), or "D" Characteristic waste?**

   Waste Description:

   Source Code:

   Source Code Comments:

   Form Code:

   Form Code Comments:

3. **RCRA hazardous waste determination was made by:** Process Knowledge

4. No **Does this Material Profile contain Lab Packs?**

5. No **Was an Underlying Hazardous Constituent (UHC) determination performed?**

   If a UHC determination was performed, were any detected in concentrations exceeding the Universal Treatment Standards? List on UHC Screen.

6. Yes **Is supporting documentation submitted? If yes, list:**

   Safeguard and Security forms 741 and associated shipping papers, U233 drum survey maps and container data sheets,AMWTP-RPT-TRUW-60 rev 0 "Acceptable Knowledge Document for INL Stored Waste - Bettis Atomic Power Laboratory", TBL-467 Rad source term

7. No **Additional narrative:**

8. N/A **Is the material LDR Compliant?**

Generation Active Estimates 7124Q

Estimate Date	Start Date	End Date	Vol Qty	Vol Units	Mass Qty	Mass Units	Data Entered By	Active	Estimate Type	Inactivated By	Inactivated Date
11/12/2012	11/12/2012	11/12/2013	5000	GAL			[redacted]	Yes	CY		

Generation Inactive Estimates 7124Q No Data Available

Layers 7124Q

Layer or Phase	Physical State at 70 F	Range of Percentage From	To	Units	Color
1	solid	100	100	vol%	various

Integrated Waste Tracking System Material Profile

Information Only

Physical Characteristics 7124Q

1. **Density of material or waste (may not be required for hazardous waste and recyclable material):**

   Liquid: **To:** **g/ml** **Solid:** **To:**

2. No **Is this aqueous waste? If yes, give total solids range:**

   From: **To:** **g/ml**

3. No **Is this incinerable liquid? If yes, give viscosity range:**

   From: **To:** **SSU**

Physical Composition 7124Q

Char. No.	Related Characteristic (Use *Other* Where NA)	Name of Material	Carcinogen	Composition Range From/To/Units		
34	Metal combinations or assemblies	Met Mounts	No	100	100	vol%

Flash Point, Incinerable Properties, and RCRA 7124Q

1. No **Is flash point applicable? If yes, complete the following:**

   Flash Point: **To:** **Method used:**

   (Specify Other):

2. **Information for incinerable waste only:**

   a. **Heat of combustion:** **To:** **BTU/lb**

   b. **Ash content:** **To:** **wt%**

   c. **Total halogen content:** **To:** **ppm**

   d. **Water content:** **To:** **wt%**

   e. **Suspended particulates content:** **To:** **ppm**

3. No **Was a RCRA Waste analysis performed? If yes, enter data using "EPA Codes" screen.**

4. No **Were the sampling and analysis protocols used in full compliance with SW-846 protocol or other equivalent regulatory agency approved methods?**

EPA Codes 7124Q No Data Available

Underlying Hazardous Constituents 7124Q No Data Available

Chemical Composition 7124Q No Data Available

Integrated Waste Tracking System Material Profile

Information Only

Radiological Characteristics 7124Q

1. Y **Is fissile material present?** **Is fissile material >=.04 g/kg, waste matrix group is:**
2. **Total transuranic activity per gram of waste is:**
   - Y **<= 10 nCi/g (LLW)**
   - Y **> 10 nCi/g and <= 100 nCi/g (alpha LLW)**
   - N **> 100 nCi/g (TRU)**
3. **Expected radiation dose rate:**
   - **at contact of waste package(s)** **to** 120 **mrem/hr**
   - **at 30cm from waste package(s)** **to** 50 **mrem/hr**
   - **at 1-meter from waste package(s)** **to** 50 **mrem/hr**
4. N **Is the waste greater than Class C as defined in 10 CFR 61.55?**

Isotopes - TRU U233, U-235 7124Q

Isotope	Activity Range or Sample Data					Fissionable Material Range or Sample Data			
	From	To	Sample	Units		From	To	Sample	Units
Pu-239		7.040E-02		Ci/m3			5.000E+00		nCi/g
U-233		7.150E+02		Ci/m3					nCi/g
U-235		1.610E-04		Ci/m3					nCi/g

Isotopes - Other 7124Q

Isotope	Activity Range or Sample Data			
	From	To	Sample	Units
Ac-225		2.530E+00		Ci/m3
Ac-228		3.590E-01		Ci/m3
At-217		2.530E+00		Ci/m3
Bi-210		6.730E-06		Ci/m3
Bi-212		9.490E+00		Ci/m3
Bi-213		2.530E+00		Ci/m3
Bi-214		2.140E-05		Ci/m3
Fr-221		2.530E+00		Ci/m3
Pa-234m		1.063E-04		Ci/m3
Pb-209		2.530E+00		Ci/m3
Pb-210		6.730E-06		Ci/m3
Pb-212		9.490E+00		Ci/m3
Pb-214		2.140E-05		Ci/m3
Po-210		6.730E-06		Ci/m3
Po-212		6.080E+00		Ci/m3
Po-213		2.480E+00		Ci/m3
Po-214		2.140E-05		Ci/m3
Po-216		9.490E+00		Ci/m3
Po-218		2.140E-05		Ci/m3

Ra-224	9.490E+00	Ci/m3
Ra-225	2.530E+00	Ci/m3
Ra-226	2.140E-05	Ci/m3
Ra-228	3.590E-01	Ci/m3
Rn-220	9.490E+00	Ci/m3
Rn-222	2.140E-05	Ci/m3
Th-228	9.480E+00	Ci/m3
Th-229	2.530E+00	Ci/m3
Th-230	2.470E-03	Ci/m3
Th-231	1.610E-04	Ci/m3
Th-232	3.620E-01	Ci/m3
Th-234	1.030E-04	Ci/m3
Tl-208	3.410E+00	Ci/m3
Tl-209	5.320E-02	Ci/m3
U-232	8.930E+00	Ci/m3
U-234	6.650E+00	Ci/m3
U-236	1.070E-03	Ci/m3
U-238	1.030E-04	Ci/m3

Integrated Waste Tracking System Material Profile

Information Only

Containers 7124Q

Container Barcode	Container Date	Container Size	Container Units	Container Type	Common Name of Materials	Decommissioned
10045718	05/01/1987	55	GAL	DM	U233 metallography mounts	No
10045719	04/29/1987	55	GAL	DM	U233 metallography mounts	No
10045722	04/27/1987	55	GAL	DM	U233 metallography mounts	No
10045724	04/14/1987	55	GAL	DM	U233 metallography mounts	No
10045726	05/13/1987	55	GAL	DM	U233 metallography mounts	No
10045727	04/21/1987	55	GAL	DM	U233 metallography mounts	No
10045729	05/07/1987	55	GAL	DM	U233 metallography mounts	No
10045771	05/08/1987	55	GAL	DM	U233 metallography mounts	No
10045772	04/20/1987	55	GAL	DM	U233 metallography mounts	No
10045775	04/20/1987	55	GAL	DM	U233 metallography mounts	No
10045781	05/01/1987	55	GAL	DM	U233 metallography mounts	No
10045785	04/29/1987	55	GAL	DM	U233 metallography mounts	No
10045828	04/14/1987	55	GAL	DM	U233 metallography mounts	No
10045829	04/27/1987	55	GAL	DM	U233 metallography mounts	No
10045830	05/19/1987	55	GAL	DM	U233 metallography mounts	No
10045833	05/15/1987	55	GAL	DM	U233 metallography mounts	No
10045834	05/20/1987	55	GAL	DM	U233 metallography mounts	No

Comments 7124Q

Insert Data	Comment
[redacted] 11/12/2012 13:12:06	This waste consists of metallography mounts prepared by sawing specimens from fuel and rod components. The fuel and rod components were generated during the development of the Light Water Breeder Reactor (LWBR) during the 1970s at the Bettis Atomic Power Laboratory. This waste stream was identified as IDC BL081. This waste is not spent fuel nor high-level waste, as defined by the Nuclear Waste Policy Act of 1982. These wastes were received at the INL in 1987. The microstructure of the samples was examined in cross section by mounting in a plastic medium (Hysol epoxy resin), polishing with abrasives and/or chemically etching. The mount material is identified as Quickmount powder and liquid which are non-hazardous materials per RCRA. The polished and etched sections were viewed and photographed with bright field-reflected illumination. Various fuel compositions of uranium, thorium, zirconium, and calcium oxides were evaluated. A solution of nitric acid, hydrofluoric acid, and water was identified as being used to etch fuel rods. It is assumed this solution could have also been used in metallographic examinations conducted for materials fabricated during other historical operations. Since the etching solution consists of a mixture of acids, the hydrofluoric acid constituent was not a discarded commercial chemical product, an off-specification species, or a container residue as identified in 40 CFR 261.33

Quality Record 7124Q

Screen	Column	Trans. Type	Before Change	After Change	Reason for Change	Inserted By	Insert Date
Isotopes-TRU (Pu-239)	Activity Range to	Update	0.0328	7.04E-02	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-TRU (U-233)	Activity Range to	Update	334	7.15E+02	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-TRU (U-235)	Activity Range to	Update	0.0000753	1.61E-04	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Ac-225)	Activity Range to	Update	1.18	2.53E+00	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Ac-228)	Activity Range to	Update	0.168	3.59E-01	Change activity range to envelope the entire container group.	[redacted]	04/23/2013

Integrated Waste Tracking System Material Profile

Information Only

Quality Record 7124Q

Screen	Column	Trans. Type	Before Change	After Change	Reason for Change	Inserted By	Insert Date
Isotopes-Other (At-217)	Activity Range to	Update	1.18	2.53E+00	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Bi-210)	Activity Range to	Update	3.14E-6	6.73E-06	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Bi-212)	Activity Range to	Update	4.43	9.49E+00	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Bi-213)	Activity Range to	Update	1.18	2.53E+00	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Bi-214)	Activity Range to	Update	0.00001	2.14E-5	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Fr-221)	Activity Range to	Update	1.18	2.53E+00	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Pa-234m)	Activity Range to	Update	0.0000482	1.063E-04	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Pb-209)	Activity Range to	Update	1.18	2.53E+00	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Pb-210)	Activity Range to	Update	3.14E-6	6.73E-06	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Pb-212)	Activity Range to	Update	4.43	9.49E+00	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Pb-214)	Activity Range to	Update	0.00001	2.14E-5	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Po-210)	Activity Range to	Update	3.14E-6	6.73E-06	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Po-212)	Activity Range to	Update	2.84	6.08E+00	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Po-213)	Activity Range to	Update	1.16	2.48E+00	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Po-214)	Activity Range to	Update	0.00001	2.14E-05	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Po-216)	Activity Range to	Update	4.43	9.49E+00	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Po-218)	Activity Range to	Update	0.00001	2.14E-05	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Ra-224)	Activity Range to	Update	4.43	9.49E+00	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Ra-225)	Activity Range to	Update	1.18	2.53E+00	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Ra-226)	Activity Range to	Update	0.00001	2.14E-05	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Ra-228)	Activity Range to	Update	0.168	3.59E-01	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Rn-220)	Activity Range to	Update	4.43	9.49E+00	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Rn-222)	Activity Range to	Update	0.00001	2.14E-05	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Th-228)	Activity Range to	Update	4.43	9.48E+00	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Th-229)	Activity Range to	Update	1.18	2.53E+00	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Th-230)	Activity Range to	Update	0.00115	2.47E-03	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Th-231)	Activity Range to	Update	0.0000753	1.61E-04	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Th-232)	Activity Range to	Update	0.169	3.62E-01	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Th-234)	Activity Range to	Update	0.0000482	1.03E-04	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Tl-208)	Activity Range to	Update	1.59	3.41E+00	Change activity range to envelope the entire container group.	[redacted]	04/23/2013

Integrated Waste Tracking System Material Profile

Information Only

Quality Record 7124Q

Screen	Column	Trans. Type	Before Change	After Change	Reason for Change	Inserted By	Insert Date
Isotopes-Other (U-232)	Activity Range to	Update	4.17	8.93E+00	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (Tl-209)	Activity Range to	Update	0.0248	5.32E-02	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (U-234)	Activity Range to	Update	3.1	6.65E+00	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (U-236)	Activity Range to	Update	0.000501	1.07E-03	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Isotopes-Other (U-238)	Activity Range to	Update	0.0000482	1.03E-04	Change activity range to envelope the entire container group.	[redacted]	04/23/2013
Define	Site Treatment Plan ID	Update		ID-BTO-081TN	ADDING STP ID	[redacted]	12/12/2013

Edit Log 7124Q

Explanation and References

Name/Date/Time	Explanation
IWTS 04/27/2014 00:00:00	Material Profile inactivated on 2014-04-27 due to lack of yearly reapproval.
[redacted] 12/12/2013 13:22:31	ADDING STP ID
[redacted] 12/12/2013 13:22:21	[redacted]. STP. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 12/12/2013 09:43:37	[redacted]. STP. Call Point-4. Generating Unit Authorization Failed (BL).
[redacted] 12/12/2013 09:39:11	[redacted]. STP. Call Point-4. Generating Unit Authorization Failed (BL).
[redacted] 12/12/2013 09:35:42	[redacted]. STP. Call Point-4. Generating Unit Authorization Failed (BL).
[redacted] 12/11/2013 16:09:02	[redacted]. STP. Call Point-4. Generating Unit Authorization Failed (BL).
[redacted] 12/11/2013 16:08:50	[redacted]. STP. Call Point-4. Generating Unit Authorization Failed (BL).
[redacted] 04/23/2013 16:13:25	Unlocked to change the activity range to envelope the entire container group.
[redacted] 04/23/2013 16:12:11	[redacted]. WGS-QR. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 04/23/2013 14:00:30	Material Profile: 7124Q BEGIN VALIDATION FOR MATERIAL PROFILE APPROVE [redacted]. WGS-QR. Call Point-7. Authorized on Generating Unit (BL). RAD DATA VALIDATION PASSED COMPOSITION VALIDATION PASSED OVERALL VALIDATION PASSED
[redacted] 04/23/2013 13:41:15	Material Profile: 7124Q BEGIN VALIDATION FOR MATERIAL PROFILE REVIEW [redacted]. WGS-QR. Call Point-6. Authorized on Generating Unit (BL). RAD DATA VALIDATION PASSED COMPOSITION VALIDATION PASSED OVERALL VALIDATION PASSED
[redacted] 04/23/2013 13:40:54	Unlocked the material profile to perform an independent review.
[redacted] 04/23/2013 13:40:28	[redacted]. WGS-QR. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 04/23/2013 13:21:24	data entry
[redacted] 04/23/2013 13:21:19	[redacted]. WGS-QR. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 02/06/2013 14:17:57	Material Profile: 7124Q BEGIN VALIDATION FOR MATERIAL PROFILE CERTIFY [redacted]. WGS-QR. Call Point-5. Authorized on Generating Unit (BL). RAD DATA VALIDATION PASSED COMPOSITION VALIDATION PASSED OVERALL VALIDATION PASSED

Integrated Waste Tracking System Material Profile

Information Only

Material Profile Define 3597T.R2

Material Profile No.: 3597T.R2

Profile Date: 11/7/2012 4:27:03 PM

Name of Waste or Material: BL040CH : Solidified Binary Scrap Powder, Pellets or Rods

Site Treatment Plan ID: ID-BTO-040T SOLID BINARY SCRAP POWDER, ETC.

Generating Unit (e.g. Building or Process): BL : Bettis Laboratory

Material or Waste Type and Action: Low Level Waste: Contact Handled

Record Status: Active

Record Lock Parameters: 11/27/2012 16:46:12 [redacted]

Insert Parameters: 11/07/2012 16:27:03 [redacted]

Inactivation allows a record to remain selectable for historical profiles prior to the inactivation date. The inactivation data defaults to the date/time of inactivation, but can be changed to a user defined date/time. A canceled record will not be selectable by past, present, or future records. After a record is cancelled, a historical profile may continue to reference it, but any attempt to update the reference will require a new selection.

Integrated Waste Tracking System Material Profile

Information Only

Certification, Review & Approval 3597T.R2

Certified	Name: [redacted] Date: 11/27/2012 Phone: [redacted] Fax: [redacted] E-Mail [redacted]	This profile is being certified, reviewed, or approved to transfer a container(s) to facilitate further characterization or stage for shipment. This certification, review, or approval does not imply that this profile is acceptable for treatment and/or disposal. Information required for treatment and/or disposal of this waste is incomplete. To accomplish proper treatment and/or disposal the container must be moved to a facility where the contents can be sampled, evaluated and/or analyzed.
Reviewed	[redacted] Date: 12/05/2012 Phone: [redacted] Fax: [redacted] E-Mail [redacted]	This profile is being certified, reviewed, or approved to transfer a container(s) to facilitate further characterization or stage for shipment. This certification, review, or approval does not imply that this profile is acceptable for treatment and/or disposal. Information required for treatment and/or disposal of this waste is incomplete. To accomplish proper treatment and/or disposal the container must be moved to a facility where the contents can be sampled, evaluated and/or analyzed.
Approved	Name: [redacted] Date: 12/13/2012 Phone: [redacted] Fax: E-Mail [redacted]	This profile is being certified, reviewed, or approved to transfer a container(s) to facilitate further characterization or stage for shipment. This certification, review, or approval does not imply that this profile is acceptable for treatment and/or disposal. Information required for treatment and/or disposal of this waste is incomplete. To accomplish proper treatment and/or disposal the container must be moved to a facility where the contents can be sampled, evaluated and/or analyzed.

Last Profile Update and Approval 3597T.R2

Update/Approvals	Name: [redacted] Date: 07/30/2014 Phone: [redacted] Fax: [redacted]4 E-Mail [redacted]	Waste defined by this Material and Waste Characterization Profile is currently being generated. An update and approval (as defined by the original approval statement) of this profile has been performed per the annual approval requirement established in the IWAC.

	First Name	Last Name	Phone	Fax	E-Mail	Mail Stop
Generator Contact:	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	
Technical Contact:	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	
Charge No:	[redacted]					

Material Profile Rejection Log 3597T.R2 No Data Available

Revision History 3597T.R2

Char_id	Profile Name	Profile Date	Record Status
3597T	Solidified Binary Scrap Powder etc. IDC-40	10/15/1997	Inactive
3597T.R1	BL040CH : Solidified Binary Scrap Powder, Pellets or Rods	04/22/2004	Inactive
3597T.R2	BL040CH : Solidified Binary Scrap Powder, Pellets or Rods	11/07/2012	Active

Integrated Waste Tracking System Material Profile

Information Only

Material Profile Process 3597T.R2

1. Yes **Will material and waste characterization be fully capable of complying with applicable Waste Acceptance Criteria?**

   a. **Waste Acceptance Criteria requirements not met (list each):**

   b. **Receiving organization approval letter number for nonstandard material or waste:**

2. **Waste Generated from:** Routine Operations | **Cleanup/Stabilization Activity:** | **Generating Status:** On-going

   Is this secondary waste?

3. **Generating Process description (describe the process and/or operations generating material, be specific):**

   IDC 040, Solid Binary Scrap Powder, etc.

   Waste consists of solid binary scrap in the form of powder, pellets, or rods. The waste will also include "Kilorods" or fuel rods constructed of fuel pellets within hollow, zirconium tubes.

   The majority of waste was generated by C-Area, Experimental Physics Facility and TRX Facility.

   Binary scrap consists of unusable fuel material in the form of powder, pellets, or rods. The material is made of ceramic-based UO2 and ThO2.

   The waste was generated during the development of the Light Water Breeder Reactor (LWBR) during the 1970's.

   The LWBR fuel pellets are high-fired, ceramic material manufactured from a mixture of uranium dioxide (UO2) and thorium oxide (ThO2). The ceramic contains, on the average, slightly more than 2.1% U-233 as UO2 to as high as 12% U-233. The uranium is a mixture of 97% U-233 and 3% other uranium isotopes.

   The ceramic was manufactured by the Bettis Atomic Power Laboratory under the direction of the Office of Naval Reactors. The fuel pellets were fabricated by compressing intimate mixtures of UO2 and ThO2

   See Comments Section for Additional Information

4. **Physical state at 70 degrees F:** solid

5. No **Does material contain free liquids?**

6. Yes **Current waste minimization plan?** **Reference:** DOE/ID-10333

Special Characteristic 3597T.R2

Characteristic

Accountable nuclear material

LLW Off-Site DOE Owned Facilities

Integrated Waste Tracking System Material Profile

Information Only

Characterization Requirements 3597T.R2

1. Yes **Is this DOT regulated hazardous material ?**

   If yes, identify DOT primary hazard: 7 **and DOT subsidiary hazard(s):**

2. No **At the point of generation did this material contain any RCRA "F", "K", "U", or "P" Listed waste either in pure form, as a mixture, or as a treatment residue (i.e., ash, leachate, spill cleanup), or "D" Characteristic waste?**

   Waste Description:

   Source Code:

   Source Code Comments:

   Form Code:

   Form Code Comments:

3. **RCRA hazardous waste determination was made by:** Process Knowledge

4. No **Does this Material Profile contain Lab Packs?**

5. No **Was an Underlying Hazardous Constituent (UHC) determination performed?**

   If a UHC determination was performed, were any detected in concentrations exceeding the Universal Treatment Standards? List on UHC Screen.

6. Yes **Is supporting documentation submitted? If yes, list:**

   WDDF RWMC1009.R2 "U-233 Pellets and Rods", Safeguard and Security Forms 741, survey maps, AMWTP-RPT-TRUW-60, Rev. 0, TBL-462, Rev 0, "Source Terms for Unirradiated BAPL Fuel Rods, Pellets and Waste", INEEL/EXT-98-00336, and EDF-5159.

7. No **Additional narrative:**

8. N/A **Is the material LDR Compliant?**

Generation Active Estimates 3597T.R2

Estimate Date	Start Date	End Date	Vol Qty	Vol Units	Mass Qty	Mass Units	Data Entered By	Active	Estimate Type	Inactivated By	Inactivated Date
11/07/2012	11/07/2012	09/30/2013	39.5	M3			[redacted]	Yes	FY		

Generation Inactive Estimates 3597T.R2 No Data Available

Layers 3597T.R2

Layer or Phase	Physical State at 70 F	Range of Percentage From	To	Units	Color
1	solid	100	100	vol%	various

Integrated Waste Tracking System Material Profile

Information Only

Physical Characteristics 3597T.R2

1. **Density of material or waste (may not be required for hazardous waste and recyclable material):**

   Liquid: **To:** **g/ml** **Solid:** **To:**

2. No **Is this aqueous waste? If yes, give total solids range:**

   From: **To:** **g/ml**

3. No **Is this incinerable liquid? If yes, give viscosity range:**

   From: **To:** **SSU**

Physical Composition 3597T.R2

Char. No.	Related Characteristic (Use *Other* Where NA)	Name of Material	Carcinogen	Composition Range From/To/Units		
0	*Other*	debris (rags, gloves, paper, filters, plastic, metal scrap, glassware)	No	0	95	vol%
0	*Other*	thorium oxide	No	0	99	vol%
0	*Other*	uranium oxide	No	0.47	26	vol%
0	*Other*	zirconium alloy tubes	No	0	50	vol%
0	*Other*	zirconium oxide	No	0	74	vol%

Flash Point, Incinerable Properties, and RCRA 3597T.R2

1. No **Is flash point applicable? If yes, complete the following:**

   Flash Point: **To:** **Method used:**

   (Specify Other):

2. **Information for incinerable waste only:**

   a. **Heat of combustion:** **To:** **BTU/lb**

   b. **Ash content:** **To:** **wt%**

   c. **Total halogen content:** **To:** **ppm**

   d. **Water content:** **To:** **wt%**

   e. **Suspended particulates content:** **To:** **ppm**

3. No **Was a RCRA Waste analysis performed? If yes, enter data using "EPA Codes" screen.**

4. No **Were the sampling and analysis protocols used in full compliance with SW-846 protocol or other equivalent regulatory agency approved methods?**

EPA Codes 3597T.R2 No Data Available

Underlying Hazardous Constituents 3597T.R2 No Data Available

Integrated Waste Tracking System Material Profile

Information Only

Chemical Composition 3597T.R2 No Data Available

Radiological Characteristics 3597T.R2

1. Y **Is fissile material present?** **Is fissile material >=.04 g/kg, waste matrix group is:** DOT 6M Shipping Pkg
2. **Total transuranic activity per gram of waste is:**
   - Y **<= 10 nCi/g (LLW)**
   - Y **> 10 nCi/g and <= 100 nCi/g (alpha LLW)**
   - N **> 100 nCi/g (TRU)**
3. **Expected radiation dose rate:**

at contact of waste package(s)	10	**to**	150	**mrem/hr**
at 30cm from waste package(s)	5	**to**	70	**mrem/hr**
at 1-meter from waste package(s)	3	**to**	40	**mrem/hr**

4. N **Is the waste greater than Class C as defined in 10 CFR 61.55?**

Isotopes - TRU U233, U-235 3597T.R2

	Activity Range or Sample Data					Fissionable Material Range or Sample Data			
Isotope	From	To	Sample	Units		From	To	Sample	Units
Pu-239	5.010E+00	3.400E+01		nCi/g					nCi/g
U-233	5.040E+04	2.290E+06		nCi/g					
U-235	1.660E-02	1.000E+02		nCi/g					nCi/g

Isotopes - Other 3597T.R2

	Activity Range or Sample Data			
Isotope	From	To	Sample	Units
Ac-225	1.780E+02	9.000E+03		nCi/g
Ac-227	6.130E-06	3.000E-02		nCi/g
Ac-228	7.140E-10	1.000E+02		nCi/g
At-217	1.780E+02	9.000E+03		nCi/g
Bi-210	6.830E-04	3.000E-02		nCi/g
Bi-211	6.140E-06	3.000E-02		nCi/g
Bi-212	3.110E+03	1.420E+05		nCi/g
Bi-213	1.780E+02	9.000E+03		nCi/g
Bi-214	2.180E-03	1.000E-01		nCi/g
Fr-221	1.780E+02	9.000E+03		nCi/g
Fr-223	8.440E-08	4.000E-04		nCi/g
Pa-231	1.410E-05	6.000E-02		nCi/g
Pa-234	1.380E-05	6.000E-01		nCi/g
Pa-234m	1.060E-02	5.000E+02		nCi/g
Pb-209	1.780E+02	9.000E+03		nCi/g
Pb-210	6.830E-04	3.000E-02		nCi/g

Pb-211	6.140E-06	3.000E-02	nCi/g
Pb-212	3.110E+03	1.420E+05	nCi/g
Pb-214	2.180E-03	1.000E-01	nCi/g
Po-210	6.830E-04	3.000E-02	nCi/g
Po-211	1.690E-08	8.000E-05	nCi/g
Po-212	2.000E+03	9.000E+04	nCi/g
Po-213	1.740E+02	8.000E+03	nCi/g
Po-214	2.180E-03	1.000E-01	nCi/g
Po-215	6.140E-06	3.000E-02	nCi/g
Po-216	3.110E+03	1.420E+05	nCi/g
Po-218	2.180E-03	1.000E-01	nCi/g
Ra-223	6.140E-06	3.000E-02	nCi/g
Ra-224	3.110E+03	1.420E+05	nCi/g
Ra-225	1.780E+02	9.000E+03	nCi/g
Ra-226	2.180E-03	1.000E-01	nCi/g
Ra-228	7.140E-10	1.000E+02	nCi/g
Rn-219	6.140E-06	3.000E-02	nCi/g
Rn-220	3.110E+03	1.420E+05	nCi/g
Rn-222	2.180E-03	1.000E-01	nCi/g
Th-227	6.060E-06	3.000E-02	nCi/g
Th-228	3.110E+03	1.420E+05	nCi/g
Th-229	1.780E+02	9.000E+03	nCi/g
Th-230	2.520E-01	1.000E+02	nCi/g
Th-231	1.660E-02	8.000E+01	nCi/g
Th-232	8.990E-10	1.000E+02	nCi/g
Th-234	1.060E-02	5.000E+02	nCi/g
Tl-206	9.020E-10	4.000E-08	nCi/g
Tl-207	6.120E-06	3.000E-02	nCi/g
Tl-208	1.120E+03	6.000E+04	nCi/g
Tl-209	3.730E+00	2.000E+02	nCi/g
U-232	3.030E+03	1.380E+05	nCi/g
U-234	6.830E+02	3.000E+04	nCi/g
U-236	1.100E-01	5.000E+00	nCi/g
U-238	1.060E-02	5.000E+02	nCi/g

Containers 3597T.R2

Container Barcode	Container Date	Container Size	Container Units	Container Type	Common Name of Materials	Decommissioned
10021668	07/28/1983	55	GAL	DM	BL040CH : Solidified Binary Scrap Powder, Pellets or Rods	No

10029923	06/11/1976	55	GAL	DM	Solidified Binary Scrap Powder	No
10029973	06/11/1976	55	GAL	DM	Solidified Binary Scrap Powder	No
10032033	10/05/1976	55	GAL	DM	Solidified Binary Scrap Powder	No
10032346	07/08/1976	55	GAL	DM	Solidified Binary Scrap Powder	No
10032348	06/30/1976	55	GAL	DM	Solidified Binary Scrap Powder	No
10032350	11/02/1976	55	GAL	DM	Solidified Binary Scrap Powder	No
10032372	08/18/1976	55	GAL	DM	Solidified Binary Scrap Powder	No
10032376	08/17/1976	55	GAL	DM	Solidified Binary Scrap Powder	No
10032411	11/02/1976	55	GAL	DM	Solidified Binary Scrap Powder	No
10032423	09/13/1976	55	GAL	DM	Solidified Binary Scrap Powder	No
10032538	07/06/1976	55	GAL	DM	Solidified Binary Scrap Powder	No
10033527	09/20/1976	55	GAL	DM	Solidified Binary Scrap Powder	No
10052374	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10052383	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10052389	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10052391	11/14/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10052611	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10052613	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10052615	11/14/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10052619	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10053598	11/14/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10053599	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10053616	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10053618	11/14/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10053946	10/01/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10053952	10/02/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10053953	10/01/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10053954	10/01/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10054088	10/02/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10054089	10/01/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10054099	10/02/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10054100	10/01/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10055398	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10055447	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10055455	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10055472	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10056683	11/14/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10056689	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10056690	11/14/1979	55	GAL	DM	Solidified Binary Scrap Powder	No

10056694	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10056701	11/14/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10056703	11/14/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10056717	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10056718	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10056721	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10056734	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10056900	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10056901	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10056964	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10056965	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10057119	10/02/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10057120	10/01/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10057121	10/02/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10057122	10/01/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10057386	10/02/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10057387	10/01/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10057401	10/02/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10057402	10/01/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10057759	11/14/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10057760	07/31/1980	55	GAL	DM	Solidified Binary Scrap Powder	No
10057931	10/01/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10057932	10/02/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10057939	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10057940	11/15/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10057950	10/02/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10057951	10/01/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10058279	10/01/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10058289	10/01/1979	55	GAL	DM	Solidified Binary Scrap Powder	No
10061710	01/06/1978	55	GAL	DM	Solidified Binary Scrap Powder	No
10061712	10/26/1977	55	GAL	DM	Solidified Binary Scrap Powder	No
10061722	01/05/1978	55	GAL	DM	Solidified Binary Scrap Powder	No
10061728	01/06/1978	55	GAL	DM	Solidified Binary Scrap Powder	No
10062260	09/16/1977	55	GAL	DM	Solidified Binary Scrap Powder	No
10062554	01/06/1978	55	GAL	DM	Solidified Binary Scrap Powder	No
10062555	01/06/1978	55	GAL	DM	Solidified Binary Scrap Powder	No
10062629	03/05/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062630	02/26/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062631	03/05/1980	110	GAL	DM	Solidified Binary Scrap Powder	No

10062632	03/05/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062633	03/05/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062634	03/04/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062635	02/27/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062636	02/29/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062637	03/03/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062638	03/03/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062639	03/05/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062640	02/27/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062641	02/26/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062642	02/26/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062643	02/26/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062644	03/03/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062645	02/22/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062646	02/25/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062647	03/03/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062648	02/22/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062649	02/21/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062650	02/22/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062651	02/20/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10062652	02/22/1980	110	GAL	DM	Solidified Binary Scrap Powder	No
10099435	09/20/1976	55	GAL	DM	Solidified Binary Scrap Powder	No
10099469	10/07/1976	55	GAL	DM	Solidified Binary Scrap Powder	No
10099482	10/12/1976	55	GAL	DM	Solidified Binary Scrap Powder	No
10286737	07/28/1975	55	GAL	DM	Solidified Binary Scrap Powder	No
10290114	08/23/1973	55	GAL	DM	Solidified Binary Scrap Powder	No

Integrated Waste Tracking System Material Profile

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Insert Data	Comment
[redacted] 11/07/2012 16:29:44	process description #1 The unirradiated U233 pellets and rod waste consists of fabricated materials that were generated during the development of the Light Water Breeder Reactor (LWBR) during the 1970s. The Bettis Atomic Power Laboratory waste stream was identified as IDC BL040. This waste is not spent nuclear fuel nor high-level waste, as defined by the Nuclear Waste policy Act of 1982. This material was received from Bettis from the mid 1970s into the 1980s. There are several historical documents descr bing the fabrication of the pellets. WAPD-TM-588, Fabrication of Fuel Rods Containing U233 Pelletized Oxide Fuels was written in February of 1967. It descr bes the process for fabricating fuel rods containing U233 ceramic pellets encapsulated in Zircaloy cladding for a physics critical experiment at the Bettis Atomic Power Laboratory as part of the LWBR development program. The report indicated that Pu was found in the UO2 powder at 15 ppm. The 26 w/o 233UO2 was used in the seed rods. The total length of the seed rod is 20.83 inches and the total length of the pellets within the rods is 15 inches. WAPD-TM-1101, U233 Oxide-Thorium oxide Detailed Cell Critical Experiments, written in October of 1974 has Table 2 which shows the typical ORNL analyses of the U233 inventory. Inventory of the U233 solution identifies the impurities for the six ORNL uranium storage tanks. Each tank indicates Pu239 was present at <10 ppm in each of the tanks. The document also descr bes the fuel rods as seamless Zircaloy tubes with welded end caps, top and bottom, and contain pellets of both thoria and binary fuel. The top and bottom zones of rods having a total pellet length of 102" have a minimum of 9 inches of thoria pellets.
[redacted] 11/07/2012 16:31:39	process description #2 ORNL/CF-79/279, The Preparation of Kilogram Quantities of 233UO2 for the Light Waster Breeder Reactor Demonstration Program was written in September 1979. The report indicates Oak Ridge under contract with BAPL completed the preparation of several hundred kilograms of ceramic grade 233UO2 for the LWBR Demonstration Program. The contract also included recovery of U233 from 29 tons of UO2-ThO2 scrap generated during pellet fabrication at BAPL. The BAPL scrap was dissolved in nitric acid. Sixty runs were required to complete this phase of the project and yielded1390 kg of U233 which was recovered as high purity nitrate solution suitable for recycle to the 233UO2 conversion process. Table 12.1in this document identifies the weekly whole body radiation exposure to operating personnel during production of 233UO2 and recovery of U233 from scrap. The time period for this project started FY73 and ended during the first quarter of FY77. The work in FY77 pertained to post production scrap recovery and equipment clean out. The peak production occurred in FY 76 when BAPL requirements dictated the need to operate the conversion facility on a 6-day-per-week basis to produce approximately 120 kg of UO2 per month. WAPD-TM-1422, Uranium-233 Purification and Conversion to Stabilized Ceramic Grade Urania for LWBR Fuel Fabrication, written in October 1980 pertains to a developmental study to establish the operating parameters of the conversion process for transforming the U233 into urania powder with the appropriate chemical and physical attributes for use in fabricating the LWBR core fuel. The developmental study included several topics one of which was the development of a procedure and a facility to reprocess the unirradiated thoria-urania fuel scrap from the LWBR core manufacturing operations to recover the U233 and convert it into high purity ceramic grade urania for LWBR core fabrication.
[redacted] 11/07/2012 16:33:04	process description #3 This report indicated the urania conversion production process and equipment were evaluated by a series of preproduction runs in which a total of 26 lots of 233UO2 powder were prepared. The lots ranged in size from a single 1-kilogram batch to six 1-kilogram batches. The characterization data obtained from the powder lots included the impurity analysis of the U233 storage tank solution before and after the ion exchange decontamination and purification operations and also the impurity analysis of the 233UO2powder product. The characterization data from ORNL preproduction lot number 23, consisting of five 1-kilogram batches of 233UO2 are presented in Table 10 of the document as typical of the results from the preproduction runs. Table 10 indicates Lot 23has a Pu239 impurity with an initial specification of <25 wt ppm in UO2, <18 ppm in raw nitrate, 2 ppm in purified nitrate and 2 ppm in product 233UO2 powder. The LWBR pellets are high-fired, ceramic material manufactured from a mixture of uranium dioxide (UO2) and thorium oxide (ThO2) and uranium dioxide (UO2) and zirconium oxide (ZrO2). The ceramic contains, on the average, slightly more than 2.1% U233 as UO2 to as high as 26% U233.The uranium mixture is a mixture of 97% U233 and 3% other uranium isotopes. Report ICP/EXT-05-00781 states there is Pu239 contamination in the U233 feedstock from neutron irradiation of U238 which is converted to Pu239. The report states that initially the Pu239 contamination was established at 25 ppm and that radiochemical analysis was performed and demonstrated that the Pu239 contamination was 5.1 ppm.

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[redacted] 11/07/2012 16:34:06	process description #4 The ceramic was manufactured by BAPL under the direction of the Office of Naval Reactors. The pellets were fabricated by compressing intimate mixtures of UO2 and ThO2 powders and UO2 and ZrO2 powders. The compressed pellets were then sintered at a temperature of 1790 degrees C for 12 hour periods. The resultant high-fired pellets have densities greater than 97% of the theoretical density and have the characteristics of glass in that the material is tightly bonded together in a nearly crystalline form and exhibits conchoidal fracture that is a characteristic of glass. The LWBR material was made from U233 oxide powder prepared at the Oak Ridge that contained less than 10 ppm U232. The low concentration of U232 meant the material could be handled in non-shielded facilities for a short period immediately after separation of the U233 from the U232 daughter products. Also because of the low concentration of U232 (less than 1 ppm U232) in the final matrix, and the self-shielding effects due to the large amount of thorium oxide and zirconium oxide in the ceramic, the pellets radiation field is insufficient to cause significant radiation damage to surrounding materials or personnel. The majority of the waste was generated by C-Area-Experimental Physics Facility and TRX Facility at the BAPL. The waste will also include "Kilorods" or rods constructed of pellets within hollow zirconium tubes.
[redacted] 11/07/2012 16:34:42	process description #5 Some of the containers in this waste stream have debris associated with pellets and powder. Analytical laboratory operations were conducted in support of fuel manufacturing operations and for research and development operations. The function of the Experimental Physics group was to evaluate the nuclear physics characteristics of fuel rods. Wastes generated by this group consisted of combustible, (rags, gloves, paper, filters and plastic) and noncombustible (metal scrap, glassware, binary scrap powder, and fuel rods and pellets) wastes contaminated with uranium and thorium oxides. Five containers in this waste stream contain small amounts of enriched, depleted and natural uranium according to the 741 form PZA-VSB-42. According to Fabrication of Fuel Rods Containing U-233 Pelletized Oxide Fuels, WAPD-TM-588, a preproduction run using depleted uranium oxide was conducted at Nuclear Fuel Services, including chemical analysis to minimize contamination and eliminating the need for special equipment, such as spectrographic equipment for impurity analysis and autoclaves for corrosion testing. BAPL conducted corrosion testing of preproduction depleted uranium oxide pellets at 750 degrees F and 2000 psi in steam for three days. The material was dry when packaged. No free liquids should be present. No explosives, explosive mixtures, or compressed gases have been identified in this material. No pyrophoric materials have been identified in this material. No regulated quantities of toxic materials have been identified in this material. The material is neither characteristic nor listed. The material does not contain PCBs or asbestos. Lead to be used as shielding was placed by the generator in the 2R inner containers.
[redacted] 11/07/2012 16:35:43	process description #6 AMWTP-RPT-TRUW-60 rev 0, Acceptable Knowledge Document for INL Stored Waste - Bettis Atomic Power Laboratory indicated the waste carries a D008 waste code. However, the code was conservatively applied for the lead shielding within the waste containers. This shielding is used for its intended purpose and is not waste. Therefore the waste code D008 is not applicable. EDF-5159, TRU Waste Determination for Waste Containing U233 Stored at the RWMC, was written September 15, 2004 to evaluate whether the BAPL U233 wastes were transuranic. The EDF concluded that 1 and 3% wastes do not qualify as TRU waste while the 26% will likely qualify as TRU waste. The EDF indicates in the mixed-oxide fuel (uranium-oxide weight expressed as a percentage of total mixed-oxide weight), the minimum concentration of Pu239 in the U233 used to make the fuel for the mixed oxide to qualify as TRU is: 183.5 ppm for 1% uranium oxide in mixed oxide fuel 61.17 ppm for 3% uranium oxide in mixed oxide fuel 7.058 ppm for 26% uranium oxide in mixed oxide fuel. The EDF also says if the waste contains other material in addition to the LWBR fuel, the concentration limit of Pu239 in the U233 for the waste to qualify as TRU will have to be increased accordingly from the above limits to allow for the waste mass increase, which decreases the concentrations of Pu239 in the waste. The historical documents indicate that the typical Pu239 concentrations in the raw nitrate and the U233 storage tanks were less than 18ppm and <10 ppm respectively. WAPD-TM-1422 indicated that analyses found typical concentrations of 2 ppm Pu239 in purified nitrate and 2 ppm in product 233UO2 powder.

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[redacted] 11/07/2012 16:36:21	process description #7 WAPD-TM-588 indicates the 26% uranium oxide pellets comprise only 15 inches of the 20.83 inch zircaloy seed rod. Therefore based on the historical documentation indicating the U233 pellet fabrication processes were tightly controlled and quality and uniformity the highest Pu239 concentration identified in the historical documentation for uranium oxide is 15 ppm. The 7.058 ppm Pu239 TRU limit identified in EDF-5159 for 26% uranium oxide is extrapolated on the waste being composed of only 26% uranium oxide. As indicated in WAPD-TM-588 the 20.83 inch seed rods containing the 26% uranium oxide only have 15 inches of uranium oxide pellets with the rest of the space composed of zircaloy spacers and end caps. The 26% uranium oxide rods are also smaller in diameter than the rods with the 1 - 3% uranium oxide concentrations and have uranium oxide quantities similar to the 1 and 3% concentrations of uranium oxide. Therefore based on similar quantities of uranium oxide within the containers and additional weight consisting of the zircaloy tubes, spacers and end caps, not just of 26% uranium oxide, the 26% uranium oxide containers are not TRU (than 100 nCi/g TRU constituents) waste. The source term which is currently being developed and documented in a TBL by Rad Engineering will identify the Pu239 quantity in the waste based on the Bills of Lading, Form 741s and associated shipping documents. Calculations in IWTS will identify the container TRU concentrations based on the TBL quantities and the net volumes provided in the IWTS container profiles.
[redacted] 11/28/2012 09:32:47	Radiological concentration lower and upper range limits in this material profile are (as of 11/28/12) based on the container source terms developed in TBL-462 for the 80 BL040 containers with identified net weights at this time. The highest container concentrations for each isotope have been rounded up slightly.

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Screen	Column	Trans. Type	Before Change	After Change	Reason for Change	Inserted By	Insert Date
Composition (0: thorium oxide)	Composition Range To	Update	49.5	99	worst case Th concentration	[redacted]	01/24/2013
Isotopes-TRU (U-235)	Activity Range to	Update	1	100	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (Ac-227)	Activity Range to	Update	0.0003	0.03	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (Bi-211)	Activity Range to	Update	0.0003	0.03	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (Fr-223)	Activity Range to	Update	4.0E-6	4.0E-4	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (Pa-231)	Activity Range to	Update	0.0006	0.06	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (Pa-234)	Activity Range to	Update	0.0006	0.06	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (Pa-234m)	Activity Range to	Update	0.5	50	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (Pb-211)	Activity Range to	Update	0.0003	0.03	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (Po-211)	Activity Range to	Update	8.0E-7	8.0E-5	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (Po-215)	Activity Range to	Update	0.0003	0.03	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (Ra-223)	Activity Range to	Update	0.0003	0.03	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (Rn-219)	Activity Range to	Update	0.0003	0.03	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (Th-227)	Activity Range to	Update	0.0003	0.03	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (Th-231)	Activity Range to	Update	0.8	80	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (Th-234)	Activity Range to	Update	0.5	50	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (U-238)	Activity Range to	Update	0.5	50	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (Tl-207)	Activity Range to	Update	0.0003	0.03	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (Pa-234)	Activity Range to	Update	0.06	0.6	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (U-238)	Activity Range to	Update	50	500	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (Th-234)	Activity Range to	Update	50	500	need to bound additional U and DU components	[redacted]	01/31/2013
Isotopes-Other (Pa-234m)	Activity Range to	Update	50	500	need to bound additional U and DU components	[redacted]	01/31/2013
Define	Site Treatment Plan ID	Update		ID-BTO-040T	ADDING STP ID	[redacted]	12/16/2013
Define	Record Status	Update	2	1	profile has waste for disposal	[redacted]	07/30/2014

Edit Log 3597T.R2

Explanation and References

Name/Date/Time	Explanation
[redacted] 07/30/2014 08:50:51	change profile to active
[redacted] 07/30/2014 08:50:39	[redacted]. WGS-QR. Call Point-4. Authorized on Generating Unit (BL).

Integrated Waste Tracking System Material Profile

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Explanation and References

Name/Date/Time	Explanation
[redacted] 07/30/2014 08:27:59	Material Profile: 3597T.R2 BEGIN VALIDATION FOR MATERIAL PROFILE ANNUAL REVIEW [redacted]. WGS-QR. Call Point-7. Authorized on Generating Unit (BL). RAD DATA VALIDATION PASSED COMPOSITION VALIDATION PASSED OVERALL VALIDATION PASSED
[redacted] 12/16/2013 11:55:25	ADDING STP ID
[redacted] 12/16/2013 11:55:18	[redacted]. STP. Call Point-4. Authorized on Generating Unit (BL).
IWTS 12/15/2013 00:00:00	Material Profile inactivated on 2013-12-15 due to lack of yearly reapproval.
[redacted] 11/19/2013 12:53:32	[redacted]. STP. Call Point-4. Generating Unit Authorization Failed (BL).
[redacted] 01/31/2013 08:22:48	increase rad limits
[redacted] 01/31/2013 08:22:32	[redacted]. WGS-QR. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 01/31/2013 08:09:49	increase nuclide limits
[redacted] 01/31/2013 08:09:16	[redacted]. WGS-QR. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 01/24/2013 08:40:35	edit thorium oxide upper limit
[redacted] 01/24/2013 08:40:19	[redacted]. WGS-QR. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 12/13/2012 10:29:20	Material Profile: 3597T.R2 BEGIN VALIDATION FOR MATERIAL PROFILE APPROVE [redacted]. WGS_ADMIN. Call Point-7. Authorized on Generating Unit (BL). RAD DATA VALIDATION PASSED COMPOSITION VALIDATION PASSED OVERALL VALIDATION PASSED
[redacted] 12/13/2012 10:24:48	Remove the sentence "The 65 drums addressed by this Material Profile are enriched at 3%." from the Generating Process Description.
[redacted] 12/13/2012 10:23:47	[redacted]. WGS_ADMIN. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 12/11/2012 10:52:36	data entry
[redacted] 12/11/2012 10:52:25	[redacted]. WGS-QR. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 12/05/2012 16:29:19	Material Profile: 3597T.R2 BEGIN VALIDATION FOR MATERIAL PROFILE REVIEW [redacted]. WGS-QR. Call Point-6. Authorized on Generating Unit (BL). RAD DATA VALIDATION PASSED COMPOSITION VALIDATION PASSED OVERALL VALIDATION PASSED
[redacted] 12/05/2012 16:26:12	data entry
[redacted] 12/05/2012 16:26:06	[redacted]. WGS-QR. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 12/05/2012 11:33:55	unlock to remove item on special characteristic screen which is not available on the pick list

Edit Log 3597T.R2

Explanation and References

Name/Date/Time	Explanation
[redacted] 12/05/2012 11:33:12	[redacted]. WGS-QR. Call Point-4. Authorized on Generating Unit (BL).
[redacted]12/05/2012 09:23:19	Add a , to process description
[redacted] 12/05/2012 09:22:47	[redacted]. WGS_ADMIN. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 12/04/2012 16:21:44	data entry
[redacted] 12/04/2012 16:21:38	[redacted]. WGS-QR. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 12/04/2012 16:19:19	data entry
[redacted] 12/04/2012 16:19:11	[redacted]. WGS-QR. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 11/28/2012 09:27:30	add comment
[redacted] 11/28/2012 09:27:21	[redacted]. WGS. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 11/27/2012 16:46:08	Material Profile: 3597T.R2 BEGIN VALIDATION FOR MATERIAL PROFILE CERTIFY [redacted]. WGS. Call Point-5. Authorized on Generating Unit (BL). RAD DATA VALIDATION PASSED COMPOSITION VALIDATION PASSED OVERALL VALIDATION PASSED

Integrated Waste Tracking System Material Profile

Information Only

Material Profile Define 7203Q.R1

Material Profile No.: 7203Q.R1

Profile Date: 10/17/2013 11:05:56 AM

Name of Waste or Material: U233 Assorted IDC low level waste drums - BAPL

Site Treatment Plan ID: ID-BL-LLW BETTIS LAB WASTE LLW

Generating Unit (e.g. Building or Process): BL : Bettis Laboratory

Material or Waste Type and Action: Low Level Waste: Contact Handled

Record Status: Inactive

Record Lock Parameters: 10/21/2013 14:43:16 [redacted]

Insert Parameters: 10/17/2013 11:05:56 [redacted]

Inactivation allows a record to remain selectable for historical profiles prior to the inactivation date. The inactivation data defaults to the date/time of inactivation, but can be changed to a user defined date/time. A canceled record will not be selectable by past, present, or future records. After a record is cancelled, a historical profile may continue to reference it, but any attempt to update the reference will require a new selection.

Integrated Waste Tracking System Material Profile

Information Only

Certification, Review & Approval 7203Q.R1

Certified 	Name: [redacted] Date: 10/21/2013 Phone: [redacted] Fax: [redacted] E-Mail [redacted]	A waste determination process for this waste stream has been performed. Characterization data was derived by approved analytical methods or process knowledge information and any data limitations have been documented. Legally and scientifically defensible data was used for characterization whenever poss ble. The required data provided in this Material & Waste Characterization Profile is complete and accurate based on the analytical data or process knowledge information used for characterization.
Reviewed 	Name: [redacted] Date: 10/21/2013 Phone: [redacted] Fax: [redacted] E-Mail [redacted]	An independent review of the Material and Waste Characterization Profile has shown that a waste determination was performed and that the required profile data is complete and accurate based on the analytical data or process knowledge information provided. All comments from this review have been addressed. The characterization data is sufficient to justify an approval or disapproval for the material or waste to be offered for disposition.
Approved 	Name: [redacted] Date: 11/04/2013 Phone [redacted] Fax: E-Mail [redacted]	The Material and Waste Characterization Profile has been certified and independently reviewed. A regulatory based disposition path has been identified for the material defined by this profile. Approval to offer this material or waste for disposition is granted.

Last Profile Update and Approval 7203Q.R1

Update/Approvals	Name: Date: Phone: Fax: E-Mail	

	First Name	Last Name	Phone	Fax	E-Mail	Mail Stop
Generator Contact:	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Technical Contact:	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Charge No:						

Material Profile Rejection Log 7203Q.R1 No Data Available

Revision History 7203Q.R1

Char_id	Profile Name	Profile Date	Record Status
7203Q	U233 Solidified grinding sludge from pellet fuel - BAPL LLW	08/15/2013	Inactive
7203Q.R1	U233 Assorted IDC low level waste drums - BAPL	10/17/2013	Inactive

Integrated Waste Tracking System Material Profile

Information Only

Material Profile Process 7203Q.R1

1. Yes **Will material and waste characterization be fully capable of complying with applicable Waste Acceptance Criteria?**

   a. Waste Acceptance Criteria requirements not met (list each):

   b. Receiving organization approval letter number for nonstandard material or waste:

2. **Waste Generated from:** | **Cleanup/Stabilization Activity:** | **Generating Status:**

   Cleanup/Stabilization Activities | One-time Only Generation | On-going

   No **Is this secondary waste?**

3. **Generating Process description (describe the process and/or operations generating material, be specific):**

   The waste for this material profile is low level waste consisting of solidified neutralized chemical solutions, solidified grinding sludge or powder, solid binary scrap powder, pellet scrap, and container caps/disks generated at the Bettis Atomic Power Laboratory (BAPL) Fuel Manufacturing Facility from the production of fuel pellets for the light water breeder reactor (LWBR) program. The waste was shipped to the Idaho National Laboratory between 1973 and 1988. The waste drums are currently identified under content code IDC BL030 and IDC BL040. The waste is not spent nuclear fuel or high-level waste, as defined by the Nuclear Waste Policy Act of 1982.

   The solidified chemical solutions were spent sulfuric or phosphoric waste neutralized with sodium hydroxide and absorbed with □absorbal□ (diatomaceous earth) or neutralized/absorbed with hydrated lime. Other liquids such as water and oil (hydraulic, grinding) were also absorbed with □absorbal□

   The grinding sludge/powder was composed of pellet material and the abrasive materials from grinding wheels that included diamond dust, aluminum oxide, carborundum and rubber, used during the grinding of sintered pellets to obtain final geometric shape and size. Binary powder (ceramic based UO2 and ThO2), floor sweepings and Carbowax 6000 (polyethylene glycol in powder or flake form) may also be present in the drums.

   Scrap pellet material may be present in the waste.

   Real-time radiography (RTR) videos were reviewed to verify the drum contents.

   RTR indicates free liquid in a few containers either above bagging or in individual inner waste containers. The amount of liquid is less than 1% of the total drum capacity and meets the disposal facility waste acceptance criteria for free liquids.

   Radiological Characterization: developed by Radiological Engineering and documented in TBL-462.
   Additional text for this section is included in a comment.

4. **Physical state at 70 degrees F:** solid

5. No **Does material contain free liquids?**

6. Yes **Current waste minimization plan?** **Reference:** DOE/ID-10333

Special Characteristic 7203Q.R1

Characteristic
Accountable nuclear material

Integrated Waste Tracking System Material Profile

Information Only

Characterization Requirements 7203Q.R1

1. Yes **Is this DOT regulated hazardous material ?**

   If yes, identify DOT primary hazard: Class 7 **and DOT subsidiary hazard(s):**

2. No **At the point of generation did this material contain any RCRA "F", "K", "U", or "P" Listed waste either in pure form, as a mixture, or as a treatment residue (i.e., ash, leachate, spill cleanup), or "D" Characteristic waste?**

   Waste Description:

   Source Code:

   Source Code Comments:

   Form Code:

   Form Code Comments:

3. **RCRA hazardous waste determination was made by:** Process Knowledge

4. No **Does this Material Profile contain Lab Packs?**

5. No **Was an Underlying Hazardous Constituent (UHC) determination performed?**

   If a UHC determination was performed, were any detected in concentrations exceeding the Universal Treatment Standards? List on UHC Screen.

6. Yes **Is supporting documentation submitted? If yes, list:**

   WDDF: INTEC-09-13.R1, AMWTP-RPT-TRUW-60, TBL-462

7. No **Additional narrative:**

8. N/A **Is the material LDR Compliant?**

Generation Active Estimates 7203Q.R1

Estimate Date	Start Date	End Date	Vol Qty	Vol Units	Mass Qty	Mass Units	Data Entered By	Active	Estimate Type	Inactivated By	Inactivated Date
10/17/2013	10/17/2013	10/17/2013	2365	GAL			[redacted]	Yes	CY		

Generation Inactive Estimates 7203Q.R1 No Data Available

Layers 7203Q.R1

Layer or Phase	Physical State at 70 F	Range of Percentage From	To	Units	Color
1	solid		100	vol%	various
2	liquid	0	1	vol%	various

Integrated Waste Tracking System Material Profile

Information Only

Physical Characteristics 7203Q.R1

1. **Density of material or waste (may not be required for hazardous waste and recyclable material):**

   Liquid: 1 **To:** 1.1 **g/ml** **Solid:** 2.2 **To:** 10 g/cc

2. **Is this aqueous waste? If yes, give total solids range:**

   From: **To:** **g/ml**

3. **Is this incinerable liquid? If yes, give viscosity range:**

   From: **To:** **SSU**

Physical Composition 7203Q.R1

Char. No.	Related Characteristic (Use *Other* Where NA)	Name of Material	Carcinogen	Composition Range From/To/Units		
0	*Other*	Any combination of U233 pellet waste, plastic, metal	No	0	100	vol%
2	Free liquid - Aqueous based	Neutralized chemical waste	No	0	1	vol%

Flash Point, Incinerable Properties, and RCRA 7203Q.R1

1. No **Is flash point applicable? If yes, complete the following:**

   Flash Point: **To:** **Method used:**

   (Specify Other):

2. **Information for incinerable waste only:**

   a. **Heat of combustion:** **To:** **BTU/lb**

   b. **Ash content:** **To:** **wt%**

   c. **Total halogen content:** **To:** **ppm**

   d. **Water content:** **To:** **wt%**

   e. **Suspended particulates content:** **To:** **ppm**

3. No **Was a RCRA Waste analysis performed? If yes, enter data using "EPA Codes" screen.**

4. No **Were the sampling and analysis protocols used in full compliance with SW-846 protocol or other equivalent regulatory agency approved methods?**

EPA Codes 7203Q.R1 No Data Available

Underlying Hazardous Constituents 7203Q.R1 No Data Available

Chemical Composition 7203Q.R1 No Data Available

Integrated Waste Tracking System Material Profile

Information Only

Radiological Characteristics 7203Q.R1

1. Y **Is fissile material present?** **Is fissile material >=.04 g/kg, waste matrix group is:**
2. **Total transuranic activity per gram of waste is:**
   - Y **<= 10 nCi/g (LLW)**
   - Y **> 10 nCi/g and <= 100 nCi/g (alpha LLW)**
   - N **> 100 nCi/g (TRU)**
3. **Expected radiation dose rate:**

at contact of waste package(s)	1	**to**	125	**mrem/hr**
at 30cm from waste package(s)	0.3	**to**	55	**mrem/hr**
at 1-meter from waste package(s)	0.2	**to**	15	**mrem/hr**

4. N **Is the waste greater than Class C as defined in 10 CFR 61.55?**

Isotopes - TRU U233, U-235 7203Q.R1

Isotope	Activity Range or Sample Data					Fissionable Material Range or Sample Data			
	From	To	Sample	Units		From	To	Sample	Units
Pu-239	0.000E+00	2.600E-01		Ci/m3		0.000E+00	9.000E+01		nCi/g
U-233	0.000E+00	2.600E+03		Ci/m3		0.000E+00	9.000E+01		nCi/g
U-235	0.000E+00	3.400E-02		Ci/m3		0.000E+00	9.000E+01		nCi/g

Isotopes - Other 7203Q.R1

Isotope	Activity Range or Sample Data			
	From	To	Sample	Units
Ac-225	0.000E+00	9.300E+00		Ci/m3
Ac-227	0.000E+00	1.300E-05		Ci/m3
Ac-228	0.000E+00	7.100E-01		Ci/m3
At-217	0.000E+00	9.300E+00		Ci/m3
Bi-210	0.000E+00	2.300E-05		Ci/m3
Bi-211	0.000E+00	1.300E-05		Ci/m3
Bi-212	0.000E+00	3.000E+01		Ci/m3
Bi-213	0.000E+00	9.300E+00		Ci/m3
Bi-214	0.000E+00	7.200E-05		Ci/m3
Fr-221	0.000E+00	9.300E+00		Ci/m3
Fr-223	0.000E+00	1.700E-07		Ci/m3
Pa-231	0.000E+00	2.900E-05		Ci/m3
Pa-234	0.000E+00	4.500E-04		Ci/m3
Pa-234m	0.000E+00	3.500E-01		Ci/m3
Pb-209	0.000E+00	9.300E+00		Ci/m3
Pb-210	0.000E+00	2.300E-05		Ci/m3
Pb-211	0.000E+00	1.300E-05		Ci/m3
Pb-212	0.000E+00	3.000E+01		Ci/m3
Pb-214	0.000E+00	7.200E-05		Ci/m3

Po-210	0.000E+00	2.300E-05	Ci/m3
Po-211	0.000E+00	3.500E-08	Ci/m3
Po-212	0.000E+00	1.900E+01	Ci/m3
Po-213	0.000E+00	9.100E+00	Ci/m3
Po-214	0.000E+00	7.200E-05	Ci/m3
Po-215	0.000E+00	1.300E-05	Ci/m3
Po-216	0.000E+00	3.000E+01	Ci/m3
Po-218	0.000E+00	7.200E-05	Ci/m3
Ra-223	0.000E+00	1.300E-05	Ci/m3
Ra-224	0.000E+00	3.000E+01	Ci/m3
Ra-225	0.000E+00	9.300E+00	Ci/m3
Ra-226	0.000E+00	7.200E-05	Ci/m3
Ra-228	0.000E+00	7.100E-01	Ci/m3
Rn-219	0.000E+00	1.300E-05	Ci/m3
Rn-220	0.000E+00	3.000E+01	Ci/m3
Rn-222	0.000E+00	7.200E-05	Ci/m3
Th-227	0.000E+00	1.200E-05	Ci/m3
Th-228	0.000E+00	3.000E+01	Ci/m3
Th-229	0.000E+00	9.300E+00	Ci/m3
Th-230	0.000E+00	8.400E-03	Ci/m3
Th-231	0.000E+00	3.400E-02	Ci/m3
Th-232	0.000E+00	7.100E-01	Ci/m3
Th-234	0.000E+00	3.500E-01	Ci/m3
Tl-206	0.000E+00	3.000E-11	Ci/m3
Tl-207	0.000E+00	1.300E-05	Ci/m3
Tl-208	0.000E+00	1.100E+01	Ci/m3
Tl-209	0.000E+00	1.900E-01	Ci/m3
U-232	0.000E+00	2.900E+01	Ci/m3
U-234	0.000E+00	2.300E+01	Ci/m3
U-236	0.000E+00	7.000E-03	Ci/m3
U-238	0.000E+00	3.500E-01	Ci/m3

Containers 7203Q.R1

		Container				
Container Barcode	Container Date	Size	Units	Type	Common Name of Materials	Decommissioned
10022375	07/28/1983	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10022420	11/04/1975	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10030001	02/02/1976	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No

10032035	10/07/1976	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10032353	09/14/1976	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10033535	09/27/1976	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10033537	07/09/1976	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10061290	06/02/1977	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10061310	01/06/1978	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10062222	02/10/1977	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10062225	08/09/1977	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10099466	09/21/1976	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10276555	06/26/1974	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10286735	04/16/1975	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289757	12/23/1973	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289758	01/05/1974	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289759	11/10/1973	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289760	01/21/1974	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289761	08/09/1973	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289762	12/04/1973	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289763	12/04/1973	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289764	01/19/1974	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289765	12/26/1973	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289766	02/01/1974	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289768	01/24/1974	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289769	12/28/1973	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289770	01/05/1974	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289771	12/14/1973	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289772	08/18/1973	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289774	01/31/1974	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289775	11/01/1973	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289776	02/07/1974	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10289777	01/28/1974	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10290100	01/30/1974	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10290101	11/28/1973	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No

10290102	08/23/1973	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10290104	09/04/1973	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10290116	01/07/1974	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10290117	09/14/1973	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10290118	10/17/1973	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10290119	12/29/1973	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10290120	12/20/1973	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No
10290121	10/17/1973	55	GAL	DM	U233 Assorted IDC low level waste drums - BAPL	No

Comments 7203Q.R1

Insert Data	Comment
[redacted] 10/21/2013 13:22:06	Isotopes TRU/Isotopes Other: The radiological information from material profile 7123Q.R1 was transferred over to this material profile. The radiological information applies and remains valid for these containers. The source term is documented in TBL-462.
[redacted] 10/21/2013 15:35:14	The majority of IDC BL030 drums contain solidified grinding sludge. Some of the IDC BL030 drums in this waste stream were originally assigned IDC BL020 or IDC BL010 but were subsequently changed to BL030 by AMWTP. The waste drums contain 100 % absorbed materials so the initial IDC code assignment was consistent with documents AMWTP-RPT-TRUW-60 and WM-F1-81-015 which indicate that absorbed liquid wastes were packaged in drums labeled as content code 10 (combustibles) or content code 20 (noncombustibles). It was not however expected to be the predominant waste. The IDC will be left as currently assigned. The IDC BL040 drums contain solid binary powder, pellet material, solidified material in bottles or cans and in one drum there are what looks l ke 3-4 in diameter shallow dishes or lids. BL040 drums did not generally contain a mixture of waste types. There are no RCRA waste codes associated with the absorbed liquid wastes, binary powder, and sludge or pellet material. F001/F002 solvents were identified as being used during the production of the fuel pellets. The pellet material itself underwent heat treatment processes during generation so no solvent residue is expected on the pellet material. The solvents could be present on wipes or rags in trace amounts. The containers in this material profile were verified through RTR videos to contain no wipes or rags nor gloves or brass. Lead was associated with leaded rubber gloves and brass. Therefore, there are no EPA codes assigned to these waste drums.

Quality Record 7203Q.R1

Screen	Column	Trans. Type	Before Change	After Change	Reason for Change	Inserted By	Insert Date
Define	Site Treatment Plan ID	Update	ID-BTO-030T	ID-BTO-030	STP ID	[redacted]	12/16/2013
Define	Site Treatment Plan ID	Update	ID-BTO-030	ID-BL-LLW	Updated to reflect Bettis LL Lab Waste	[redacted]	01/27/2015

Edit Log 7203Q.R1

Explanation and References

Name/Date/Time	Explanation
[redacted] 01/27/2015 16:02:30	Updating STP ID to reflect Bettis LLW
[redacted] 01/27/2015 16:02:10	[redacted]. STP. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 11/09/2014 00:00:00	Material Profile inactivated on 2014-11-09 due to lack of yearly reapproval.
[redacted] 12/16/2013 12:00:04	CHANGING STP FROM 030T TO 030
[redacted] 12/16/2013 11:59:52	[redacted]. STP. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 11/04/2013 07:49:33	Material Profile: 7203Q.R1 BEGIN VALIDATION FOR MATERIAL PROFILE APPROVE [redacted]. WGS_ADMIN. Call Point-7. Authorized on Generating Unit (BL). RAD DATA VALIDATION PASSED COMPOSITION VALIDATION PASSED OVERALL VALIDATION PASSED
[redacted] 10/29/2013 09:14:14	Change 1-meter expected radiation dose.
[redacted] 10/29/2013 09:13:20	[redacted]. WGS_ADMIN. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 10/21/2013 16:11:47	Material Profile: 7203Q.R1 BEGIN VALIDATION FOR MATERIAL PROFILE REVIEW [redacted]. WGS-QR. Call Point-6. Authorized on Generating Unit (BL). RAD DATA VALIDATION PASSED COMPOSITION VALIDATION PASSED OVERALL VALIDATION PASSED
[redacted] 10/21/2013 15:30:55	add adtl text to process description and add comment
[redacted] 10/21/2013 15:30:30	[redacted]. WGS. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 10/21/2013 14:51:57	Drop reference to TBL-467 in process description; does not apply
[redacted] 10/21/2013 14:51:28	[redacted]. WGS. Call Point-4. Authorized on Generating Unit (BL).
[redacted] 10/21/2013 14:43:14	Material Profile: 7203Q.R1 BEGIN VALIDATION FOR MATERIAL PROFILE CERTIFY [redacted]. WGS. Call Point-5. Authorized on Generating Unit (BL). RAD DATA VALIDATION PASSED COMPOSITION VALIDATION PASSED OVERALL VALIDATION PASSED